Mathematical Reviews

EDITORIAL COMMITTEE
Wendell H. Fleming
Philip J. Hanlon
Jean-Louis Loday
John L. Selfridge
Hans F. Weinberger
Donald G. Babbitt, *Executive Editor*

Annual Index — 1993

Author Index A–L

TABLE OF CONTENTS

Preface ..... iii–iv
Author Index A – L 1–770

Index of Mathematical Papers Volume 25
American Mathematical Society
Providence, Rhode Island USA
ISSN 0025-5629

Mathematical Reviews

Published by

American Mathematical Society

Editorial Committee

W. H. Fleming, P. J. Hanlon, J.-L. Loday, J. L. Selfridge, H. F. Weinberger

Executive Editor	D. G. Babbitt
Associate Executive Editor	J. E. Kister
Editors	A. A. Armendáriz, W. D. Bouwsma, A. L. Dontchev, E. Gerlach, A. Greenspoon, A. Iacob, P. D. F. Ion, T. Józefiak, M. Rabindranathan, P. B. Smith, N. Tanović-Miller, S. Zdravkovska
Editorial Consultants	A. Azarkhin, R. J. Muirhead, M. S. Ramanujan, R. A. Scott, C.-T. Shih
Office Manager	P. S. Ball
Manager, Copy Editors	D. J. Kimball
Editorial Associate	B. D. Dudzik
Production Manager	S. K. Barth
Manager, Reviewer Services	L. M. Dann
Manager, Bibliographic Services	B. TePaske-King
Manager, Systems	D. R. Burton, Jr.

General Information

Journal references in Mathematical Reviews (MR) appear in the following form: *J. Utopian Math. Soc.* (6) **5(56)** (1991/92), *no.* 2, 18–53 (1993), where, after the abbreviated title, one has: (series number) volume number(volume number in first series, if given) (nominal date), issue number if given, first page–last page (imprint date). If only one date is given, it is the nominal date and follows the volume number. If no volume number is given, the year is used in its place. The symbol ★ precedes the title of a book or other nonperiodical that is being reviewed as a whole; the symbol Ⓥ precedes the title of a videocassette. If an issue of a journal is to be reviewed as a whole and an ad hoc title is devised for this purpose then this title appears in braces { }. Articles that have been accepted for publication in certain important journals are now reviewed in MR from the final manuscript; the symbol ○ at the end of a review denotes such an item.

References to reviews in Mathematical Reviews before Volume 20 (1959) are by volume and page number (e.g., MR 18, 122); from Volume 20 to Volume 58 (1979), by volume and review number (e.g., MR 20 #4185 or MR 23 #A513); from 1980 on, by issue and review number (e.g., MR 80a:46017). References to reviews in Jahrbuch über die Fortschritte der Mathematik and Zentralblatt für Mathematik are by volume and page number for the period before 1972 (e.g., Jbuch 50, 173; Zbl 29, 323) and by volume and review number since 1972 (e.g., Zbl 218:46017). Reviews reprinted from Applied Mechanics Reviews, Computing Reviews, Mathematics of Computation, Physics Abstracts, Referativnyi Zhurnal Matematika (Mekhanika, etc.), or Zentralblatt für Mathematik are identified by AMR, CR, MC, PA, RZhMat (RZhMekh, etc.), or Zbl, respectively, in parentheses following the reviewer's name.

Authors' names are given as listed in the item being reviewed. In order to identify each author uniquely, MR has assigned to certain authors' names an identifying form of the name. Superscript numbers are used in identifying forms where necessary. The identifying form is added in brackets following the published name.

Most review headings include institution codes. An institution code, indicating the author's address as listed in the reviewed item, consists of two [or three] parts separated by hyphens (e.g., 1-MR [or F-LYON-P]); these parts designate the country, the university or institution [and the department]. The absence of a department code usually indicates Department of Mathematics. Institution codes are also used to indicate the reviewer location for some reviewers. A list of codes appears in the most recent Annual Index of Mathematical Reviews.

Editorial Office: MR is a publication of the American Mathematical Society; it is edited at the University of Michigan in Ann Arbor. All editorial correspondence should be addressed to Mathematical Reviews, 416 Fourth Street, PO Box 8604, Ann Arbor, MI 48107-8604, USA; it may also be sent electronically via Internet to MATHREV@MATH.AMS.ORG or by FAX to (313) 996-2916. All other correspondence should be addressed to the American Mathematical Society, PO Box 6248, Providence, RI 02940-6248, USA. Orders should be addressed to the American Mathematical Society, PO Box 5904, Boston, MA 02206-5904. *All orders must be accompanied by payment.*

Subscription information: Prices for MR for the year 1993, including the annual index, are $4591 list, $3673 institutional member, $561 individual member ($611 outside the US), $377 reviewer ($427 outside the US). Combination paper and microfiche subscriptions are $6106 list, $4885 institutional member. Nonindividual subscribers outside the United States and India must pay a postage surcharge of $60; nonindividual subscribers in India must pay a postal surcharge of $153. Expedited delivery to destinations in North America $108; elsewhere $379. A late charge of $200 will be billed for orders received from nonmembers after January 1 of the subscription year.

Back volumes information: Back issues are available for all volumes of MR; price information can be obtained from the American Mathematical Society, PO Box 6248, Providence, RI 02940-6248. Back volumes are also available in microform from University Microfilms International, 300 North Zeeb Road, Ann Arbor, MI 48106-1346.

Cumulative indexes: There are sets of cumulative author and subject indexes that cover the entire span of MR from 1940–1984.

There are several other services that are of interest to users of MR:

- Current Mathematical Publications (CMP) provides an early announcement of books, collections and research articles in the mathematical sciences, many of which will be reviewed in MR.
- MathSci is the electronic version of CMP and MR; it also contains additional listings of items in statistics and computer science. It is available online through Dialog, a commercial vendor. MathSci tapes can also be leased by institutions for campus-wide use.
- MathSci Disc, the 3-disc CD-ROM version of MR and CMP, contains bibliographic data from MR 1940–79, MR from 1980–present and over 80,000 items from CMP.
- MathDoc is the document delivery service enabling researchers to obtain copies of most articles listed in CMP, MR or MathSci.

Further information about these services can be obtained by writing the Ann Arbor or Providence offices, or by consulting advertisements at the end of the monthly issues of MR.

Mathematical Reviews (USPS 333-940) is published monthly plus, in December, an annual author and subject index issue, by the American Mathematical Society, 201 Charles Street, Providence, RI 02904-2213. Second-class postage paid at Providence, RI, and additional mailing offices. Postmaster: Send address changes to Mathematical Reviews, American Mathematical Society, PO Box 6248, Providence, RI 02940-6248.

© *Copyright* 1993 *by the American Mathematical Society. All rights reserved.*

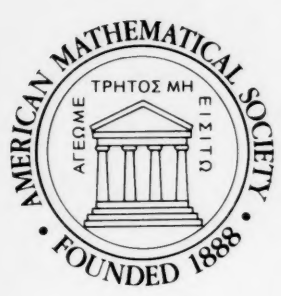
Typeset in TEX. *Printed by Cushing-Malloy, Inc., Ann Arbor, MI, USA.*

ISSN 0025-5629 ISBN 0-8218-4035-5

⊖ The paper used in this journal is acid-free and falls within the guidelines established to ensure permanence and durability.

♻ Printed on recycled paper.

10 9 8 7 6 5 4 3 2 1 9 2 9 7 9 6 9 5 9 4 9 3



Mathematical Reviews

EDITORIAL COMMITTEE
Wendell H. Fleming
Philip J. Hanlon
Jean-Louis Loday
John L. Selfridge
Hans F. Weinberger
Donald G. Babbitt, *Executive Editor*

Annual Index — 1993

Author/Key Index

TABLE OF CONTENTS

Preface ..... iii–iv
Author Index A – L 1–770
Author Index M – Z 771–1482
Key Index 1483–1548
Abbreviations of Names of Serials J1–J30
Journals in Translation J31–J32
Institution Codes and Addresses AA1–AA168
Transliterations of Cyrillic C1–C2

Index of Mathematical Papers Volume 25
American Mathematical Society
Providence, Rhode Island USA
ISSN 0025-5629

Mathematical Reviews

Published by

American Mathematical Society

Editorial Committee

W. H. Fleming, P. J. Hanlon, J.-L. Loday, J. L. Selfridge, H. F. Weinberger

Executive Editor	D. G. Babbitt	**Office Manager**	P. S. Ball
Associate Executive Editor	J. E. Kister	**Manager, Copy Editors**	D. J. Kimball
Editors	A. A. Armendáriz, W. D. Bouwsma, A. L. Dontchev, E. Gerlach, A. Greenspoon, A. Iacob, P. D. F. Ion, T. Józefiak, M. Rabindranathan, P. B. Smith, N. Tanović-Miller, S. Zdravkovska	**Editorial Associate**	B. D. Dudzik
		Production Manager	S. K. Barth
		Manager, Reviewer Services	L. M. Dann
		Manager, Bibliographic Services	B. TePaske-King
		Manager, Systems	D. R. Burton, Jr.
Editorial Consultants	A. Azarkhin, R. J. Muirhead, M. S. Ramanujan, R. A. Scott, C.-T. Shih		

General Information

Journal references in Mathematical Reviews (MR) appear in the following form: *J. Utopian Math. Soc.* (6) **5(56)** (1991/92), *no.* 2, 18–53 (1993), where, after the abbreviated title, one has: (series number) volume number(volume number in first series, if given) (nominal date), issue number if given, first page–last page (imprint date). If only one date is given, it is the nominal date and follows the volume number. If no volume number is given, the year is used in its place. The symbol ★ precedes the title of a book or other nonperiodical that is being reviewed as a whole; the symbol Ⓥ precedes the title of a videocassette. If an issue of a journal is to be reviewed as a whole and an ad hoc title is devised for this purpose then this title appears in braces { }. Articles that have been accepted for publication in certain important journals are now reviewed in MR from the final manuscript; the symbol ○ at the end of a review denotes such an item.

References to reviews in Mathematical Reviews before Volume 20 (1959) are by volume and page number (e.g., MR **15**, 122); from Volume 20 to Volume 58 (1979), by volume and review number (e.g., MR **20** #4185 or MR **23** #A513); from 1980 on, by issue and review number (e.g., MR 80a:46017). References to reviews in Jahrbuch über die Fortschritte der Mathematik and Zentralblatt für Mathematik are by volume and page number for the period before 1972 (e.g., Jbuch **50**, 173; Zbl **29**, 323) and by volume and review number since 1972 (e.g., Zbl 218:46017). Reviews reprinted from Applied Mechanics Reviews, Computing Reviews, Mathematics of Computation, Physics Abstracts, Referativnyĭ Zhurnal Matematika (Mekhanika, etc.), or Zentralblatt für Mathematik are identified by AMR, CR, MC, PA, RZhMat (RZhMekh, etc.), or Zbl, respectively, in parentheses following the reviewer's name.

Authors' names are given as listed in the item being reviewed. In order to identify each author uniquely, MR has assigned to certain authors' names an identifying form of the name. Superscript numbers are used in identifying forms where necessary. The identifying form is added in brackets following the published name.

Most review headings include institution codes. An institution code, indicating the author's address as listed in the reviewed item, consists of two [or three] parts separated by hyphens (e.g., 1-MR [or F-LYON-P]); these parts designate the country, the university or institution [and the department]. The absence of a department code usually indicates Department of Mathematics. Institution codes are also used to indicate the reviewer location for some reviewers. A list of codes appears in the most recent Annual Index of Mathematical Reviews.

Editorial Office: MR is a publication of the American Mathematical Society; it is edited at the University of Michigan in Ann Arbor. All editorial correspondence should be addressed to Mathematical Reviews, 416 Fourth Street, PO Box 8604, Ann Arbor, MI 48107-8604, USA; it may also be sent electronically via Internet to `MATHREV@MATH.AMS.ORG` or by FAX to (313) 996-2916. All other correspondence should be addressed to the American Mathematical Society, PO Box 6248, Providence, RI 02940-6248, USA. Orders should be addressed to the American Mathematical Society, PO Box 5904, Boston, MA 02206-5904. *All orders must be accompanied by payment.*

Subscription information: Prices for MR for the year 1993, including the annual index, are $4591 list, $3673 institutional member, $561 individual member ($611 outside the US), $377 reviewer ($427 outside the US). Combination paper and microfiche subscriptions are $6106 list, $4885 institutional member. Nonindividual subscribers outside the United States and India must pay a postage surcharge of $60; nonindividual subscribers in India must pay a postal surcharge of $153. Expedited delivery to destinations in North America $108; elsewhere $379. A late charge of $200 will be billed for orders received from nonmembers after January 1 of the subscription year.

Back volumes information: Back issues are available for all volumes of MR; price information can be obtained from the American Mathematical Society, PO Box 6248, Providence, RI 02940-6248. Back volumes are also available in microform from University Microfilms International, 300 North Zeeb Road, Ann Arbor, MI 48106-1346.

Cumulative indexes: There are sets of cumulative author and subject indexes that cover the entire span of MR from 1940–1984.

There are several other services that are of interest to users of MR:

- Current Mathematical Publications (CMP) provides an early announcement of books, collections and research articles in the mathematical sciences, many of which will be reviewed in MR.
- MathSci is the electronic version of CMP and MR; it also contains additional listings of items in statistics and computer science. It is available online through Dialog, a commercial vendor. MathSci tapes can also be leased by institutions for campus-wide use.
- MathSci Disc, the 3-disc CD-ROM version of MR and CMP, contains bibliographic data from MR 1940–79, MR from 1980–present and over 80,000 items from CMP.
- MathDoc is the document delivery service enabling researchers to obtain copies of most articles listed in CMP, MR or MathSci.

Further information about these services can be obtained by writing the Ann Arbor or Providence offices, or by consulting advertisements at the end of the monthly issues of MR.

Mathematical Reviews (USPS 333-940) is published monthly plus, in December, an annual author and subject index issue, by the American Mathematical Society, 201 Charles Street, Providence, RI 02904-2213. Second-class postage paid at Providence, RI, and additional mailing offices. Postmaster: Send address changes to Mathematical Reviews, American Mathematical Society, PO Box 6248, Providence, RI 02940-6248.

© *Copyright* 1993 *by the American Mathematical Society. All rights reserved.*

Typeset in TEX. *Printed by Cushing-Malloy, Inc., Ann Arbor, MI, USA.*

ISSN 0025-5629 ISBN 0-8218-4035-5

♾ The paper used in this journal is acid-free and falls within the guidelines established to ensure permanence and durability.

♻ Printed on recycled paper.

10 9 8 7 6 5 4 3 2 1 98 97 96 95 94 93

PREFACE

This annual index of Mathematical Reviews (MR) is included with each subscription and is also available separately. It is also called Volume 25 of the Index of Mathematical Papers (IMP). Volumes 6–9 of IMP are the annual indexes of MR for the years 1974–77 and are available as a set. The 1978 annual index was the first to be included with each subscription. There are cumulative author indexes to MR that cover 1940–59 (Vols. 1–20), 1960–64 (Vols. 21–28) and 1965–72 (Vols. 29–44), subject indexes for 1940–58 (Vols. 1–19) and 1959–72 (Vols. 20–44), and author and subject indexes for 1973–79 (Vols. 45–58) and 1980–84.

The classification scheme used in the present index is the 1991 Mathematics Subject Classification (MSC). A copy of the 1991 MSC is printed in the back of the subject portion of this index.

The entries in the author, key and subject indexes are comprised of all items reviewed in MR during a given year and some items which will not be reviewed by MR but which have appeared in Current Mathematical Publications (CMP). A star (★) preceding a title indicates a book, or other item that is not a periodical, which is reviewed as a whole. The symbol Ⓥ preceding a title indicates that the item is a videocassette. Some titles in this index include the word ARTWORK, indicating special symbols which appear only in printed MR and CMP.

Author index; separate key index

The entries in the author and key indexes give full bibliographic information. These entries are accompanied by review numbers {if available} and classification numbers; secondary classification numbers are given in parentheses. Entries are listed alphabetically by author; entries having several authors are listed in full under each author. Surnames consisting of more than one part (e.g., de Acosta, van der Mee) are listed under the first capital letter. Collections of papers, proceedings, bibliographies, tables, etc. that are edited rather than authored are listed in the key index by title and by "key entry". For example, the publication entitled *Computer intensive methods in statistics* is listed under **Computer intensive methods in statistics** and is also listed under **Conference: Computer Intensive Methods in Statistics** and under the location of the conference. Some monographic series (e.g., American Mathematical Society Translations, Series 2) have entries under the series title in this index.

Arrangement of entries in the author and key indexes

For a given heading (i.e., the primary name of an author, or a title), full entries are listed in order of nominal publication dates; the cross-references are in MR number order after the full entries. The arrangement of each entry is the same as in the heading of its review in MR. The general form for entries is as follows:

Books, Monographs. (Coauthors {if necessary}) ★Title. (Language of original {if necessary}) [English translation of title {if necessary}] Miscellaneous information {edition, editors, translators, series, etc.}. Publisher, city, date. Pagination. ISBN. (Reviewer's name) Review number {if available} Primary classification (Secondary classifications {if necessary}).

Journal article. (Coauthors {if necessary}) Title of article {in English translation if the original title is not in English}. (Language of original {if necessary}. Summary languages {if necessary}) Journal abbreviation {including series number if necessary} volume number(volume number in first series {if given}) (nominal date), issue number {if necessary}, first page–last page (imprint date). (Reviewer's name) Review number {if available} Primary classification (Secondary classifications {if necessary}).

The first three digits of the review number of an item refer to the MR issue in which the review is published and the last five digits refer to its position within that issue. The first two digits after the colon are the general subject classification of the item.

The phrase "EA 93m" after an MR number indicates that an MR erratum or addendum to the review appears at the end of the 93m issue.

Subject index

The entries in the subject index are arranged in classification order. For a given classification, all entries with that classification as a primary appear first, with authored entries appearing before unauthored entries. These are followed by entries with that classification as a secondary. Again, authored entries appear before unauthored entries. Each section under a given classification is arranged in alphabetical order. For each entry, the author(s), title, language, translated title {if necessary} and the review number {if available} appear at the first author only. The entries for subsequent authors are cross-references to the first author. Complete bibliographic information is available in the annual author and key indexes as well as in the MR review.

Cross-references

There are four kinds of cross-references in these indexes:

Name variations. An author's primary name is the variation of the name that MR has chosen on the basis of frequency and currency of usage. Items by a given author are usually listed under the author's primary name. In the author index, cross-references to the primary form are given from sufficiently distinct alternative forms of the author's name.

Authors in other capacities. In the author index, the names of persons associated with an item in a capacity other than that of author (e.g., editor, translator, subject of a biography, etc.) are also listed. In the subject index, such names appear in parentheses. In both indexes these items occur only as cross-references to complete listings.

Key entries. Cross-references for such entries as bibliographies, obituaries and references to special events are made to the authors of the papers in which these items appear, e.g. **Bibliography: Fried, Ervin** *see* **Schmidt, Tamás, 93d:01077**.

Unreviewed entries. Some entries in these indexes have not been reviewed in MR (e.g., items that do not appear to be in final form, or that are at the fringes of MR's scope) although they have been listed in CMP. Unreviewed items appear in the author, key and subject indexes in a format similar to that of reviewed items. For unreviewed items that are part of a collection, the review number in parentheses is a cross-reference to the table-of-contents review, i.e. (see 93x:xxxxx) or (93x:xxxxx). For unreviewed items that are not part of a collection, there is no review number cross-reference.

Transliteration

Since 1983, MR has used the Cyrillic transliteration in use by ANSI, LC, Zbl, ISI, and others. This is also the system used throughout this index. A Cyrillic transliteration table appears at the end of the author/key index.

Names of Chinese authors

The name of a Chinese author appears in the index in Western form. For example, Li Shaokuan will be listed as Li, Shao Kuan, as though the author's name were Shao Kuan Li. The pinyin transliteration is used for mainland Chinese authors and the Wade-Giles transliteration is used for Taiwanese authors.

In an undertaking of this size, errors are inevitable, despite elaborate precautions and checks. The editors of Mathematical Reviews would be very glad to have their attention drawn to errors in this index and also in the earlier indexes.

Mathematical Reviews

Issue year 1993, annual index **Author Index** **Pages 1–1482**

–A–

Aaberge, T. A Lorentz covariant description of the classical radiation field. (English summary) *Helv. Phys. Acta* **65** (1992), *no.* 7, 898–909. (Summary) **93j:78004** 78A25 (22E70, 81V10)

Aalen, Odd O. Modelling heterogeneity in survival analysis by the compound Poisson distribution. (English summary) *Ann. Appl. Probab.* **2** (1992), *no.* 4, 951–972. (Jack Cuzick) **93i:60021** 60E05 (62M05)

Aanonsen, S. I. Application of fractional-flow theory to 3-phase, 1-dimensional surfactant flooding. *The mathematics of oil recovery* (*Cambridge*, 1989), 161–171, *Inst. Math. Appl. Conf. Ser. New Ser.*, 31, *Oxford Univ. Press, New York*, 1992. (*see* **93b:76086**) 76S05 (76T05)

Aarna, O. (*with* Fathi, Zohreh; Ramirez, W. Fred) Joint state and parameter estimation for a nuclear reactor with fast and slow modes. (English summary) *Optimal Control Appl. Methods* **13** (1992), *no.* 2, 105–120. 93C95 (93B30)

Aaronson, Jon (*with* Gilat, David; Keane, Michael S.) On the structure of 1-dependent Markov chains. (English summary) *J. Theoret. Probab.* **5** (1992), *no.* 3, 545–561. (Vincent De Valk) **93i:60123** 60J10 (28D05, 54H20, 60G10)

Aarts, Emile H. L. (*with* van Laarhoven, Peter J. M.) Local search in coding theory. (English summary) A collection of contributions in honour of Jack van Lint. *Discrete Math.* **106/107** (1992), 11–18. (John Karlof) **93h:94036** 94B99

Aarts, Jan M. (*with* Fokkink, Robbert J.) On composants of the bucket handle. *Fund. Math.* **139** (1991), *no.* 3, 193–208. (Edward D. Tymchatyn) **93a:54030** 54F15 (54H20)

— (*with* Oversteegen, Lex G.) The geometry of Julia sets. (English summary) *Trans. Amer. Math. Soc.* **338** (1993), *no.* 2, 897–918. (Fuyao Ren) **93j:30021** 30D05 (54F65, 54H20, 58F23)

Aasma, Ants Characterization of matrix transformations of summability fields. (Estonian summary) *Tartu Ül. Toimetised No.* 928 (1991), 3–14. (Jozef Antoni) **93f:40008** 40D20 (40D05)

Abad, A. (*with* Elipe Sánchez, Antonio C.; Arribas, M.) Scaling Hamiltonians in attitude dynamics of two rigid bodies. (English summary) *Rev. Acad. Cienc. Zaragoza* (2) **47** (1992), 147–154. (Summary) **93k:70010** 70E99 (70H05, 70M20)

vázquez-Abad, Felisa J. *see* **Vázquez-Abad, Felisa J.**

Abad, J. (*with* Sesma, Javier) Computation of Coulomb wave functions at low energies. (English summary) *Comput. Phys. Comm.* **71** (1992), *no.* 1-2, 110–124. (Summary) **93e:65032** 65D20 (81–08)

cao-Abad, R. *see* **Cao-Abad, R.**

Abadi, Martín (*with* Lamport, Leslie) The existence of refinement mappings. *Theoret. Comput. Sci.* **82** (1991), *no.* 2, *Logic Semantics Theory Program.*, 253–284. (Summary) **93a:68090** 68Q60

rostam Abadi, Mohammad B. *see* **Rostam Abadi, Mohammad B.**

Abadir, Karim M. OLS bias in a nonstationary autoregression. (English summary) *Econometric Theory* **9** (1993), *no.* 1, 81–93. 62M10

Abadov, Z. A. (*with* Sil'vestrov, D. S.) Uniform representations of exponential moments of sums of random variables defined on a Markov chain and of distributions of the times of attainment. I. (Russian) *Teor. Veroyatnost. i Mat. Statist. No.* 45 (1991), 108–127; *translation in Theory Probab. Math. Statist. No.* 45 (1992), 105–120. (Gh. Oprişan) **93h:60104** 60J05 (60F05)

Abaffy, J. Superlinear convergence theorems for Newton-type methods for nonlinear systems of equations. *J. Optim. Theory Appl.* **73** (1992), *no.* 2, 269–277. (G. M. Ostrovsky) **93g:65072** 65H10 (90C30)

Abakhti-Mchachti, A. (*with* Fleckinger, Jacqueline Pellé) Existence of positive solutions for noncooperative semilinear elliptic system defined on an unbounded domain. *Progress in partial differential equations: elliptic and parabolic problems* (*Pont-à-Mousson*, 1991), 92–106, *Pitman Res. Notes Math. Ser.*, 266, *Longman Sci. Tech., Harlow*, 1992. (Yasuhiro Furusho) **93m:35076** 35J65 (35B05, 35J60)

Abakumov, E. V. (*with* Simonova, O. Yu.) 64 cubicles. (Russian) *Geometric problems in the theory of functions and sets* (*Russian*), 4–14, *Kalinin. Gos. Univ., Kalinin*, 1989. (Jerzy Kaczmarek) **93c:04001** 04A05

Abakumov, Yu. G. Noncontinuable Chebyshev systems that admit transformation into Markov systems. (Russian) *Application of functional analysis in approximation theory* (*Russian*), 4–8, *Tver. Gos. Univ., Tver'*, 1990. (*see* **93k:00021**) 41A50

— (*with* Banin, V. G.) An approach to the study of approximation properties of linear operators. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* **1991**, *no.* 11, 3–6 (1992); *translation in Soviet Math.* (*Iz. VUZ*) **35** (1991), *no.* 11, 1–4. (V. A. Tkachenko) **93h:41020** 41A36 (47B38)

vázquez-Abal, María Elena *see* **Vázquez-Abal, María Elena**

Abanin, A. V. Characterization of minimal systems of exponents of representative systems of generalized exponentials. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* **1991**, *no.* 2, 3–12; *translation in Soviet Math.* (*Iz. VUZ*) **35** (1991), *no.* 2, 1–12. (V. A. Tkachenko) **93c:30005** 30B60

Abanov, A. G. Phase transitions in dimer systems. *Soviet Phys. JETP* **74** (1992), *no.* 6, 1036–1040; *translated from Zh. Èksper. Teoret. Fiz.* **101** (1992), *no.* 6, 1937–1944 (*Russian*). (Summary) **93f:82008** 82B20 (82B23)

Abarbanel, H. D. I. (*with* Brown, Reggie; Kennel, M. B.) Local Lyapunov exponents computed from observed data. (English summary) *J. Nonlinear Sci.* **2** (1992), *no.* 3, 343–365. (Summary) **93f:58140** 58F13 (58F40)

Abasov, M. T. (*with* Rasulov, M. A.; Ragimova, T. A.) On the identification of the saturation jump in oil displacement by water in a two-dimensional domain. (Russian) *Dokl. Akad. Nauk SSSR* **319** (1991), *no.* 4, 943–947. (From the text) **93a:76104** 76S05 (86A20)

Abatangelo, L. Maria On the scalar curvature of submanifolds in $S3$-like Finsler spaces. *Tensor (N.S.)* **51** (1992), *no.* 2, 189–192. (Andrzej Bucki) **93m:53019** 53B40 (53B25)

Abatangelo, Vito On Buekenhout-Metz unitals in $PG(2, q^2)$, q even. *Arch. Math. (Basel)* **59** (1992), *no.* 2, 197–203. (Gary L. Ebert) **93f:51013** 51E21 (05B25)

Abate, Joseph (*with* Kijima, Masaaki; Whitt, Ward) Decompositions of the $M/M/1$ transition function. *Queueing Systems Theory Appl.* **9** (1991), *no.* 3, 323–336. (Brian Conolly) **93b:60205** 60K25

— (*with* Whitt, Ward) Numerical inversion of probability generating functions. (English summary) *Oper. Res. Lett.* **12** (1992), *no.* 4, 245–251. (Summary) **93g:65173** 65U05 (42A38, 60–04, 60K25)

— (*with* Whitt, Ward) Solving probability transform functional equations for numerical inversion. (English summary) *Oper. Res. Lett.* **12** (1992), *no.* 5, 275–281. (Summary) **93i:60163** 60K25 (39B22, 60–04, 60E10, 65Q05, 65U05, 90B22)

— (*with* Whitt, Ward) The Fourier-series method for inverting transforms of probability distributions. *Queueing Systems Theory Appl.* **10** (1992), *no.* 1-2, 5–87. (Summary) **93b:60002** 60–04 (60E10, 60K25, 65R10)

Abate, Marco Iteration theory, compactly divergent sequences and commuting holomorphic maps. *Ann. Scuola Norm. Sup. Pisa Cl. Sci.* (4) **18** (1991), *no.* 2, 167–191. (Tadeusz Kuczumow) **93e:32034a** 32H50 (32H15, 58C10, 58C30)

— Errata-corrige: "Iteration theory, compactly divergent sequences and commuting holomorphic maps". *Ann. Scuola Norm. Sup. Pisa Cl. Sci.* (4) **18** (1991), *no.* 4, 631. (Tadeusz Kuczumow) **93e:32034b** 32H50 (32H15, 58C10, 58C30)

— The infinitesimal generators of semigroups of holomorphic maps. *Ann. Mat. Pura Appl.* (4) **161** (1992), 167–180. (Camilla Horst) **93i:32029** 32H02 (32H20, 47B38, 47D03)

— (*with* Geatti, Laura) Cohomogeneity two hyperbolic acyclic Stein manifolds. *Internat. J. Math.* **3** (1992), *no.* 5, 591–608. (B. Gilligan) **93i:32015** 32E10 (32H20, 32M05)

— (*with* Heinzner, Peter) Holomorphic actions on contractible domains without fixed points. *Math. Z.* **211** (1992), *no.* 4, 547–555. (Dennis Snow) **93i:32037** 32M05 (32H50, 32M10)

— A characterization of hyperbolic manifolds. *Proc. Amer. Math. Soc.* **117** (1993), *no.* 3, 789–793. (Chi-Keung Cheung) **93d:32037** 32H20

Abbad, Mohammed (*with* Filar, Jerzy A.) Perturbation and stability theory for Markov control problems. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 9, 1415–1420. (Summary) **93f:93132** 93E20 (90C40)

— (*with* Filar, Jerzy A.; Bielecki, Tomasz R.) Algorithms for singularly perturbed limiting average Markov control problems. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 9, 1421–1425. (Masami Yasuda) **93i:93128** 93E20 (90C40)

el Abbadi, A. *see* **El Abbadi, A.**

Abbasi, S. J. (*with* Meldrum, J. D. P.) On matrix near-rings. *Math. Pannon.* **2** (1991), *no.* 2, 107–113. (Günter Pilz) **93a:16035** 16Y30

el-Abbasy, E. M. *see* **El-Abbasy, E. M.**

Abbena, E. (*with* Garbiero, S.) Einstein metrics on some special manifolds. (Italian summary) *Riv. Mat. Univ. Parma* (4) **17** (1991), 29–39 (1992). (Wolfgang Ziller) **93h:53042** 53C25

— (*with* Garbiero, S.; Vanhecke, Lieven) Einstein-like metrics on three-dimensional Riemannian homogeneous manifolds. (English summary) *Simon Stevin* **66** (1992), *no.* 1-2, 173–183. (Oleg K. Mushkarov) **93m:53044** 53C30 (53C25)

Abbey, T. M. (*with* Bestman, A. R.; Mbeledogu, I. U.) The flow of a two-component plasma model in a porous rotating hot sphere. (English summary) *Astrophys. Space Sci.* **197** (1992), *no.* 1, 61–76. (Summary) **93h:85001** 85A30

Abbott, H. L. On a conjecture of Funar concerning generalized sum-free sets. *Nieuw Arch. Wisk.* (4) **9** (1991), *no.* 3, 249–252. (B. Garrison) **93d:11010** 11B05 (11P99)

— (*with* Zhou, Bing) On a conjecture of Gallai concerning complete subgraphs of k-critical graphs. Special volume to mark the centennial of Julius Petersen's "Die Theorie der regulären Graphs", Part I. *Discrete Math.* **100** (1992), *no.* 1-3, 223–228. (C. L. Lucchesi) **93h:05065** 05C15

— (*with* Exoo, Geoffrey) On set systems not containing delta systems. *Graphs Combin.* **8** (1992), *no.* 1, 1–9. (Zoltán Füredi) **93c:05110** 05D05

— (*with* Katchalski, M.) Estimates for snakes and pseudosnakes in K_n^d. (English summary) *Utilitas Math.* **43** (1993), 97–100. (Summary) **93m:05104** 05C38

Abbott, L. F. (*with* Vanvreeswijk, Carl) Self-sustained firing in populations of integrate-and-fire neurons. (English summary) *SIAM J. Appl. Math.* **53** (1993), *no.* 1, 253–264. 92C20

Abbott, M. B. (*with* Basco, D. R.) ★ Computational fluid dynamics. An introduction for engineers. *Longman Scientific & Technical, Harlow; copublished in the United States with John Wiley & Sons, Inc., New York*, 1990. xiv+425 *pp. ISBN* 0-582-01365-8 (From the publisher's presentation) **93b:76055** 76Mxx (76–01, 86A05)

Abbott, Tyler (*with* Tufillaro, Nicholas B.; Reilly, Jeremiah) ★ An experimental approach to nonlinear dynamics and chaos. (English. English summary) With 1 Macintosh floppy disk (3.5 inch; DD). Addison-Wesley Studies in Nonlinearity. *Addison-Wesley Publishing Company, Advanced Book Program, Redwood City, CA*, 1992. xvi+340+BB45+QM35 *pp. ISBN* 0-201-55441-0 (Qi Keith Chen) **93m:58077** 58F13 (34C15, 34C99, 58–01, 70K50)

Abbott de Blanco, Rita On number theory. (Spanish) *Rev. Mat. Dominicana No.* 1-2 (1986), 21–28. 11–03 (01A20, 01A45)

Abboud, Toufic (*with* Nédélec, Jean-Claude) Electromagnetic waves in an inhomogeneous medium. *J. Math. Anal. Appl.* **164** (1992), *no.* 1, 40–58. (Kotik K. Lee) **93a:78005** 78A25 (35Q60)

ben Abda, Amel *see* **Ben Abda, Amel**

Abdalla, Elcio Thirring strings: use of generalized nonabelian bosonization techniques. *Quantum mechanics of fundamental systems*, 2 (*Santiago*, 1987), 281–299, *Ser. Cent. Estud. Cient. Santiago, Plenum, New York*, 1989. (*see* **93e:81005**) 81T30

— (*with* Abdalla, M. C. B.; Dalmazi, D.; Harada, Koji) Correlation functions in noncritical (super) string theory. (English summary) *Internat. J. Modern Phys. A* **7** (1992), *no.* 29, 7339–7363. 81T30

— (*with* Forger, M.) Current algebra of WZNW models at and away from criticality. (English summary) *Modern Phys. Lett. A* **7** (1992), *no.* 26, 2437–2447. (Summary) **93g:81136** 81T40 (81R10)

— (*with* Abdalla, M. C. B.; Dalmazi, D.) On the amplitudes for noncritical $N = 2$ superstrings. (English summary) *Phys. Lett. B* **291** (1992), *no.* 1-2, 32–38. (Summary) **93f:81100** 81T30

Abdalla, M. C. B. (*with* Abdalla, Elcio; Dalmazi, D.; Harada, Koji) Correlation functions in noncritical (super) string theory. (English summary) *Internat. J. Modern Phys. A* **7** (1992), *no.* 29, 7339–7363. 81T30

— (*with* Abdalla, Elcio; Dalmazi, D.) On the amplitudes for noncritical $N = 2$ superstrings. (English summary) *Phys. Lett. B* **291** (1992), *no.* 1-2, 32–38. (Summary) **93f:81100** 81T30

Abdalla, M. Sebawe The statistical properties of a generalized two-mode squeezed operator. *J. Modern Opt.* **39** (1992), *no.* 5, 1067–1081. (K. Wódkiewicz) **93c:81263** 81V10

ben Abdallah, Naoufel *see* **Ben Abdallah, Naoufel**

Abd-Elal, L. F. A fast method for the numerical solution of singular integro-differential equations. (Arabic summary) *Proc. Math. Phys. Soc. Egypt No.* 61 (1986), 11–25 (1991). (Summary) **93c:65159** 65R20 (45L10)

— (*with* Delves, L. M.) Fredholm integral equations with singular convolution kernels. (Arabic summary) *Proc. Math. Phys. Soc. Egypt No.* 63 (1987), 123–141 (1990). (Summary) **93e:45002** 45B05 (45E10)

Abdel-All, N. H. Pseudo isotropic stratification of line manifolds. *Tensor (N.S.)* **50** (1991), *no.* 3, 189–193. (George Stamou) **93g:53021** 53A25 (53A40)

— A geometric interpretation of fundamental differential invariants of line manifolds in Galilean space. (English summary) *Bull. Calcutta Math. Soc.* **84** (1992), *no.* 5, 413–418. (Andrzej Bucki) **93m:53013** 53A25 (53A35)

Abdel-Fattah, A. M. (*with* Bassily, N. L.) On the duality of some martingale spaces. *Bull. Austral. Math. Soc.* **45** (1992), *no.* 1, 43–52. (Tamotsu Tsuchikura) **93c:60064** 60G42 (46E30, 60G46)

Abdel-Gawad, H. R. (*with* Nasr, M. A.) On the Fekete-Szegő problem for close-to-convex functions of order ρ. *New trends in geometric function theory and applications* (*Madras*, 1990), 66–74, *World Sci. Publishing, River Edge, NJ*, 1991. (Wolfram Koepf) **93g:30020** 30C45

Abdèl'-Gilel', Mukhamed Akhmed A stable method for solving a two-stage problem of linear programming. (Russian. Tajiki summary) *Dokl. Akad. Nauk Tadzhik. SSR* **34** (1991), *no.* 3, 143–146. (Joachim Käschel) **93b:90041** 90C05 (90C31)

Abd El-Hakeim, K. M. (*with* Allam, A. A.) Functions with closed graphs and strongly closed graphs in fuzzy neighbourhood spaces. (English summary) *Fuzzy Sets and Systems* **48** (1992), *no.* 3, 377–382. (Summary) **93d:54010** 54A40 (04A72)

— (*with* Ramadan, A. A.) Operations on L-fuzzy topological spaces. (English summary) *Fuzzy Sets and Systems* **53** (1993), *no.* 3, 347–357. (Summary) **93k:54013** 54A40 (04A72)

Abd-El-Hakim, Nagi S. (*with* Al-Hussaini, Essam K.) Efficiency of schemes of sampling from the inverse Gaussian-Weibull mixture model. (English summary) *Comm. Statist. Theory Methods* **21** (1992), *no.* 11, 3143–3169. (Summary) **93h:62054** 62F12

Abd El-Halim, Fayza (*with* Dabbour, Abd El-Sattar A.; Sayed, Nawal) Canonical homology of partitions. *Kyungpook Math. J.* **32** (1992), *no.* 2, 247–256. (L. J. Hernández) **93m:55004** 55N05 (55N07)

Abdel Halim, I. H. (*with* Hassan, A. A. M.) Some asymptotic formulae for doubly connected regions. *J. Math. Phys. Sci.* **25** (1991), *no.* 4, 375–402. (Summary) **93c:35119** 35P20 (35J05, 58G18, 58G25)

Abd El-Latif, G. M. (*with* Zaghrout, Afaf A. S.) On stability of quasi-linear systems. *Proc. Pakistan Acad. Sci.* **28** (1991), *no.* 1, 17–22. (H. O. Tejumola) **93d:34089** 34D10

Abd-el-Malek, M. B. (*with* Boutros, Y. Z.; Badran, N. A.) Group-theoretic approach for solving time-independent free-convective boundary layer flow on a nonisothermal vertical flat plate. (Russian and Polish summaries) *Arch. Mech.* (*Arch. Mech. Stos.*) **42** (1990), *no.* 3, 377–395 (1991). (From the summary) **93a:76030** 76D10 (76R10, 80A20)

Abdel Masih, S. (*with* Milaszewicz, J. P.) Elimination and fixed point iterations. (English summary) *Comput. Math. Appl.* **25** (1993), *no.* 5, 43–53. (Xiaojun Chen) **93m:65072** 65H10

Abd El-Moneim, M. A. (*with* El-Rayes, A. B.; Fergani, H. A.) On the generalized linear search problem. (English and Arabic summaries) *Delta J. Sci.* **16** (1992), *no.* 2, 1–10. 90B40

Abdel-Moneim, Tharwat M. (*with* El Mawaziny, Ahmed H.; Shoukry, Elham) Weibull accelerated life testing under competing risks by using power rule model with increasing stress, and in case of step-stress. (English summary) *J. Inst. Math. Comput. Sci. Math. Ser.* **5** (1992), *no.* 1, 19–44. 62N05

Abd El-Monsef, M. E. (*with* Mahmoud, R. A.; Nasef, A. A.) A class of functions stronger than M-precontinuity, preirresolute and A-functions. (English and Arabic summaries) *Qatar Univ. Sci. Bull.* **10** (1990), 41–48. 54C08

— (*with* Hanafy, I. M.; El-Deeb, S. N.) Fuzzy weakly α-continuous functions. *Bull. Inst. Math. Acad. Sinica* **19** (1991), *no.* 1, 75–85. (Osmo Kaleva) **93c:54002** 54A40 (04A72)

— (*with* Mahmoud, R. A.; Nasef, A. A.) Functions based on compactness. *Kyungpook Math. J.* **31** (1991), *no.* 2, 275–287. (Douglas Mooney) **93g:54018** 54C08

— (*with* Lashien, E. F.; Nasef, A. A.) On I-open sets and I-continuous functions. *Kyungpook Math. J.* **32** (1992), *no.* 1, 21–30. (Summary) **93c:54010** 54C10 (54D25, 54D30)

Abd El-Rady, A. S. (*with* Saady, M. R.) The rate of decay of a solution to a singularly perturbed quasilinear Robin problem as $\varepsilon \to 0^+$. (English summary) *Bull. Calcutta Math. Soc.* **84** (1992), *no.* 3, 227–230. 34E15 (34B15)

— Application of the maximum principle to a nonlinear singular perturbation problem. (English summary) *Bull. Calcutta Math. Soc.* **84** (1992), *no.* 5, 451–452. 34E15 (34B15)

— Uniqueness theorem for the generalized solution of the Dirichlet problem for second order elliptic equation in an unbounded domain. (English summary) *Simon Stevin* **66** (1992), *no.* 1-2, 9–18. (Michelangelo Francioni) **93m:35040** 35D05 (35J25)

Abd Èl'-Samad Diab, Adel' Takha *see* **Samadov, K.**

Abdel-Wahab, A. *see* **Abdul-Wahab, Abdul-Amir A.**

Abdessemed, A. Bounds for constants in some operator inequalities in the Schatten classes. *J. London Math. Soc.* (2) **41** (1990), *no.* 2, 303–309. (Fuad Kittaneh) **93d:47013** 47A30 (47B10, 47B15, 47B47)

Abdinazarov, S. Estimates for fundamental solutions for a higher-order equation with multiple characteristics. (Russian) *Boundary value problems for nonclassical equations in mathematical physics* (*Russian*) (*Novosibirsk*, 1989), 72–75, *Akad. Nauk SSSR Sibirsk. Otdel., Inst. Mat., Novosibirsk*, 1989. (*see* **93d:35001**) 35A30 (35B45)

— (*with* Dzhuraev, T. D.) On the theory of odd-order equations with multiple characteristics. (Russian) *Dokl. Akad. Nauk SSSR* **320** (1991), *no.* 6, 1305–1309; *translation in Soviet Math. Dokl.* **44** (1992), *no.* 2, 619–623. (Victor V. Zharinov) **93b:35005** 35A30 (35F05, 35G15)

Abdizhalilov, M. (*with* Yakhno, V. G.) A multidimensional inverse problem in a ray formulation for a system of Maxwell equations. (Russian. Russian summary) *Methods for solving inverse problems* (*Russian*), 3–17, 142, *Akad. Nauk SSSR Sibirsk. Otdel., Inst. Mat., Novosibirsk*, 1990. (Summary) **93j:35180** 35R30 (35Q60, 78A25, 78A40)

— (*with* Yakhno, V. G.) A two-dimensional inverse dynamic problem for a system of Maxwell equations. (Russian. Russian summary) *Sibirsk. Mat. Zh.* **33** (1992), *no.* 3, 7–20, 218; *translation in Siberian Math. J.* **33** (1992), *no.* 3, 373–384 (1993). (Summary) **93h:78008** 78A45 (35Q60, 35R30)

Abdou, J. (*with* Keiding, H.) ★ Effectivity functions in social choice. Theory and Decision Library. Series C: Game Theory, Mathematical Programming and Operations Research, 8. *Kluwer Academic Publishers Group, Dordrecht*, 1991. x+198 *pp. ISBN* 0-7923-1147-7 (Maurice Salles) **93m:90001** 90–02 (90A08, 90D12)

Abdous, Belkacem (*with* Rémillard, Bruno; Reischer, Corina) A note on entropy. (English summary) *C. R. Math. Rep. Acad. Sci. Canada* **14** (1992), *no.* 6, 279–284. (Summary) **93i:60008** 60A10 (60B05)

— (*with* Theodorescu, Radu) Note on the spatial quantile of a random vector. *Statist. Probab. Lett.* **13** (1992), *no.* 4, 333–336. (Robin K. Milne) **93d:62094** 62G30 (60E99, 62H11)

— Note on the minimum mean integrated squared error of kernel estimates of a distribution function and its derivatives. (English summary) *Comm. Statist. Theory Methods* **22** (1993), *no.* 2, 603–609. (Summary) **93k:62077** 62G05

Abdrakhmanov, A. M. On the stability of two-link periodic trajectories of a billiard on two-dimensional surfaces of constant curvature. (Russian) *Vestnik Moskov. Univ. Ser. I Mat. Mekh.* **1991**, *no.* 4, 88–90. (J. S. Joel) **93k:58186** 58F22 (58F10, 70F99)

Abdrakhmanov, M. A. Estimates for solutions of model problems for a pseudoparabolic equation. (Russian. Russian summary) *Dinamika Sploshn. Sredy No.* 95 (1990), 3–23, 161. (Summary) **93d:35089** 35K70 (35A08, 35B45)

— L_2-estimates for solutions of general boundary value problems for an equation with mixed parabolic-elliptic structure. (Russian. English summary) *Zap. Nauchn. Sem. S.-Peterburg. Otdel. Mat. Inst. Steklov.* (*POMI*) **197** (1992), *Kraev. Zadachi Mat. Fiz. Smezh. Voprosy Teor. Funktsii.* 23, 4–27, 179. (V. V. Kovrizhkin) **93j:35115** 35M10 (35B45, 35E15)

Abdrakhmanov, V. G. (*with* Makagonova, M. A.; Smolin, Yu. N.) Representation of solutions of linear equations in some Banach spaces. (Russian) *Differential equations (qualitative theory)* (*Russian*), 3–12, *Ryazan. Gos. Ped. Inst., Ryazan'*, 1990. (Galimzian G. Islamov) **93g:47010** 47A50 (34K05, 47G10, 47N20)

— The conjugate operator to an unbounded operator in a space of continuous functions. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* **1992**, *no.* 2, 3–7. (Galimzian G. Islamov) **93m:47072** 47N20 (34K05, 47B38)

Abdrashitov, D. V. (*with* Gafurov, M. B.) Investigation of nonreflecting conditions on the boundaries of a computational domain for elastoplastic media. (Russian) *Numerical methods for solving boundary value problems* (*Russian*), 4–11, *Akad. Nauk SSSR Ural. Otdel., Bashkir. Nauchn. Tsentr, Ufa*, 1989. (*see* **93m:00033**) 73V20 (73E99)

Abdukarimov, A. (*with* Yarmukhamedov, Sh. Ya.; Malikov, Z.) The Cauchy problem for first-order elliptic systems. (Russian) *Dokl. Akad. Nauk* **323** (1992), *no.* 1, 39–42; *translation in Russian Acad. Sci. Dokl. Math.* **45** (1992), *no.* 2, 266–268 (1993). 35J45

Abdukhalikov, K. S. On a group of automorphisms of an orthogonal decomposition of a Lie algebra of type A_{2^m-1}. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* **1991**, *no.* 10, 11–14; *translation in Soviet Math.* (*Iz. VUZ*) **35** (1991), *no.* 10, 9–12. (V. V. Astrakhantsev) **93i:17024** 17B40 (17B50)

Abdul-Al, Khaled I. Estimating functionals of probability density for uniform mixing processes. (English summary) *Sankhya Ser. A* **54** (1992), *no.* 1, 40–52. (Wolfgang Wertz) **93m:62062** 62G05

Abdulali, Salman Conjugation of Kuga fiber varieties. *Math. Ann.* **294** (1992), *no.* 2, 225–234. (Wenchen Chi) **93h:11060** 11G18 (14K05)

Abdulfattah, S. (*with* Soueycatt, Mohamed) Analyse épi/hypo-graphique. [Epi/hypo-graphic analysis] *Sém. Anal. Convexe* **21** (1991), *Exp. No.* 13, 59 *pp.* (W. W. Breckner) **93b:46148** 46N10 (46G99, 49J40)

Abdulhadi, Zayid (*with* Hengartner, Walter) Univalent harmonic mappings on the left half-plane with periodic dilatations. (English summary) *Univalent functions, fractional calculus, and their applications* (*Kōriyama*, 1988), 13–28, *Ellis Horwood Ser. Math. Appl., Horwood, Chichester*, 1989. (Summary) **93h:30023** 30C55 (31A05)

— (*with* Hengartner, Walter; Szynal, Jan) Univalent logharmonic ring mappings. (English summary) *Proc. Amer. Math. Soc.* **119** (1993), *no.* 3, 735–745. (Y. Komatu) **93m:30026** 30C55

Abdul Halim, S. On a class of analytic functions involving the Sălăgean differential operator. *Tamkang J. Math.* **23** (1992), *no.* 1, 51–58. (Grigore Stefan Sălăgean) **93i:30009** 30C45

Abdul Jalil, Ithnin (*with* Shariffudin, Rio Hirowati) Formulae-variable for conjugate gradient strategies. (English summary) *Optimization, Vol.* 1, 2 (*Singapore*, 1992), 72–79, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93d:90005**) 90C30

Abdullaev, A. R. On the local well-posedness of boundary value problems. (Russian. Russian summary) *Boundary value problems* (*Russian*), 61–66, *Perm. Politekh. Inst., Perm'*, 1989. (*see* **93k:00022**) 47A50 (34B05)

— On the Green operator with minimal norm. (Russian. Russian summary) *Boundary value problems* (*Russian*), 3–6, *Perm. Politekh. Inst., Perm'*, 1991. (*see* **93m:00017**) 34K10 (47N20)

Abdullaev, F. G. An inequality of Bernstein-Nikol'skiĭ type for orthogonal polynomials. (Russian) *Special problems in function theory, No. IV* (*Russian*), 12–19, "*Élm*", *Baku*, 1989. (*see* **93m:00037**) 41A17

Abdullaev, F. Kh. ★ Динамический хаос солитонов. (Russian) [Dynamical chaos of solitons] "*Fan*", *Tashkent*, 1990. 168 *pp. ISBN* 5-648-00991-7 (Woodford W. Zachary) **93h:35171** 35Q51 (58F07, 58F13)

Abdullaev, U. G. Unbounded solutions of a nonlinear heat equation with a sink. (Russian. Russian summary) *Zh. Vychisl. Mat. i Mat. Fiz.* **32** (1992), *no.* 8, 1244–1257; *translation in Comput. Math. Math. Phys.* **32** (1992), *no.* 8, 1109–1120. (Summary) **93h:35090** 35K55 (35B05)

Abdullaev, Zh. I. (*with* Lakaev, S. N.) On the spectral properties of the matrix-valued Friedrichs model. *Many-particle Hamiltonians: spectra and scattering*, 1–37, *Adv. Soviet Math.*, 5, *Amer. Math. Soc., Providence, RI*, 1991. (H. Baumgärtel) **93e:47098** 47N50 (47A10, 47G99, 81T10)

Abdullah, Saleh On solvability of systems of convolution equations in K'_M. *Hokkaido Math. J.* **20** (1991), *no.* 3, 441–446. (Arpad Takači) **93b:46068** 46F10

Abdulloev, Kh. O. (*with* Khakimov, F. Kh.; Lebedev, D. R.) The hierarchy of integrable nonlocal equations connected with the Riemann problem on a one-dimensional complex torus. (Russian. Tajiki summary) *Dokl. Akad. Nauk Tadzhik. SSR* **34** (1991), *no.* 1, 19–22. (B. A. Kupershmidt) **93c:35149** 35Q58 (35R10, 58F07)

— (*with* Maksudov, A. T.; Muminov, Kh. Kh.) Hamiltonian equations of motion in the space $SU(3)/SU(2) \times U(1)$. (Russian. Tajiki summary) *Dokl. Akad. Nauk Tadzhik. SSR* **34** (1991), *no.* 7, 415–418 (1992). (Victor I. Gerasimenko) **93j:82045** 82C20

Abdul-Wahab, Abdul-Amir A. (*with* Zohdy, Mohamed A.; Fadali, M. S.) Robust control system design with state constraints. (English summary) *Internat. J. Systems Sci.* **24** (1993), *no.* 1, 193–202. (Summary) **93m:93033** 93B36 (93B51)

Abdurakhimov, A. O. Quadratic optimization of a linear control system with indeterminate terminal constraints. (Russian. Russian summary) *Vestnik Beloruss. Gos. Univ. Ser. I Fiz. Mat. Mekh.* **1992**, *no.* 1, 60–62, 78. 49N15 (49K45)

Abdurakhmanov, Zh. K. (*with* Pulatov, A. K.) Construction of perfect codes on convex polyhedra. (Russian) *Metody Diskret. Analiz. No.* 50 (1990), 3–9, 85. 94B27

Abdurazakov, A. (*with* Mukhidinov, N.) Numerical investigation of a nonlinear boundary value problem of multilayer filtration of a gas. (Russian. Russian summary) *Voprosy Vychisl. i Prikl. Mat.* (*Tashkent*) *No.* 88 (1990), 12–19, 158. 76S05 (76N15)

Abdushukurov, A. M. On the Riemann-Hilbert problem for the Moisil-Teodorescu system and a generalization of this system. (Russian. Russian summary) *Differentsial'nye Uravneniya* **28** (1992), *no.* 5, 791–799, 917; *translation in Differential Equations* **28** (1992), *no.* 5, 635–642. (Summary) **93j:35127** 35Q15 (35J45)

Abe, Eiichi Groups associated with some types of infinite-dimensional Lie algebras. *Proceedings of the International Conference on Algebra, Part* 1 (*Novosibirsk*, 1989), 3–12, *Contemp. Math.*, 131, *Part* 1, *Amer. Math. Soc., Providence, RI*, 1992. (*see* **93b:00029**) 17B65

— (*with* Takeuchi, Mitsuhiro) Groups associated with some types of infinite-dimensional Lie algebras. *J. Algebra* **146** (1992), *no.* 2, 385–404. (E. J. Taft) **93b:17037** 17B35 (17B45, 17B65, 22E65, 22E67)

Abe, Jair Minoro (*with* Krause, Décio) The work of N. C. A. da Costa in logic. (Portuguese. English summary) Theory, history and foundations of the formal sciences (Spanish). *Theoria* (*San Sebastián*) (2) **7** (1992), *no.* 16-18, *A*, 347–386. (Marcel Guillaume) **93k:01070** 01A70 (01A60, 03–03, 03B53)

Abe, Ken-ichi (*with* Ishihara, Tadashi; Takeda, Hiroshi) Discrete-time iterative learning controller using approximation inverse model. (English summary) *Adaptive systems in control and signal processing*, 1989 (*Glasgow*), 385–390, *IFAC Sympos. Ser.*, 1990, *No.* 1, *Pergamon, Oxford*, 1990. (*see* **93j:93007**) 93E35

— (*with* Xu, L.; Saito, Osami) On 2D bilateral polynomial matrix equations. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, II* (*Kobe*, 1991), 177–182, *Mita, Tokyo*, 1992. (*see* **93g:93006**) 93C35 (93C80)

— (*with* Su, Laiping; Miwa, Tetsuya) Intersample behavior optimization for linear time-invariant systems with piecewise constant sampled-data hold functions. (English summary) *Control Theory Adv. Tech.* **8** (1992), *no.* 4, 687–706. (Summary) **93j:93091** 93C57 (49N10)

Abe, Kōjun Closed regular curves and the fundamental form on the projective spaces. *Proc. Japan Acad. Ser. A Math. Sci.* **68** (1992), *no.* 6, 123–125. (Wolfgang Ziller) **93k:53049** 53C35 (53C40)

Abe, Masahumi On the conductor of algebraic Hecke character generated by Gauss sums. *Mem. Fac. Sci. Kyushu Univ. Ser. A* **46** (1992), *no.* 1, 45–56. (Joe P. Buhler) **93j:11054** 11L05 (11S31)

Abe, Mitsuo (*with* Nakanishi, Noboru) Zweibein operator formalism of two-dimensional quantum gravity. *Progr. Theoret. Phys.* **86** (1991), *no.* 2, 517–545. (Summary) **93c:81189** 81T40

— (*with* Nakanishi, Noboru) Wightman functions in covariant operator formalism of two-dimensional quantum gravity. *Progr. Theoret. Phys.* **86** (1991), *no.* 5, 1087–1109. (Summary) **93a:83015** 83C45

— (*with* Nakanishi, Noboru) Perturbative reconfirmation of the exact covariant solution to the two-dimensional quantum gravity. (English summary) *Internat. J. Modern Phys. A* **7** (1992), *no.* 25, 6405–6420. (Summary) **93f:81122** 81T40

— (*with* Nakanishi, Noboru) Indefiniteness of the conformal anomaly of the string theory in the harmonic gauge. *Modern Phys. Lett. A* **7** (1992), *no.* 20, 1799–1804. (Summary) **93c:81230** 81T50 (81T30)

— (*with* Nakanishi, Noboru) Wightman functions in covariant operator formalism of two-dimensional quantum gravity. II. Composite fields. *Progr. Theoret. Phys.* **87** (1992), *no.* 2, 495–505. (Summary) **93e:83032** 83C45

— (*with* Nakanishi, Noboru) Wightman functions in covariant operator formalism of two-dimensional quantum gravity. III. New definition. *Progr. Theoret. Phys.* **87** (1992), *no.* 3, 757–769. (Summary) **93e:83033** 83C45 (81T05)

Abe, Ryuji Rigidity and factors of horocycle flows on surfaces of negative curvature. *Keio Sci. Tech. Rep.* **44** (1991), *no.* 2, 7–35. (Viviane Baladi) **93h:58117** 58F17 (58F11)

Abe, Shun-ichi Asymptotic evaluation of flow reliability for coherent repairable networks under periodic demand variation. (English summary) *J. Oper. Res. Soc. Japan* **35** (1992), *no.* 2, 152–171. (Summary) **93g:90041** 90B25

Abe, Sumiyoshi Super Wigner function. *J. Math. Phys.* **33** (1992), *no.* 5, 1690–1694. (Summary) **93f:81042** 81Q60 (81S30)

— Fluctuations around the Wheeler-DeWitt trajectories in third-quantized cosmology. (English summary) *Phys. Rev. D* (3) **47** (1993), *no.* 2, 718–721. (Summary) **93j:83035** 83C45 (83F05)

— *see also* **Maamache, M. et al., 93d:81083**

Abe, T. (*with* Tamura, H.; Yamaguchi, A.; Sengoku, M.; Shinoda, S.) Location problems and their dual problems on undirected flow networks. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, II* (*Kobe*, 1991), 495–500, *Mita, Tokyo*, 1992. (*see* **93g:93006**) 05C35 (90B80)

Abeasis, Silvana Poincaré series of n-tuples of 3×3 matrices. *Geometry Seminars*, 1988–1991 (*Italian*) (*Bologna*, 1988–1991), 1–8, *Univ. Stud. Bologna, Bologna*, 1991. (P. E. Newstead) **93a:20067** 20G05 (13A50, 15A72)

Abed, Eyad H. (*with* Saydy, L.; Tits, André L.) Robust stability of complex families of matrices and polynomials. (English summary) *Control of uncertain systems* (*Bremen*, 1989), 259–269, *Progr. Systems Control Theory*, 6, *Birkhäuser Boston, Boston, MA*, 1990. (Summary) **93i:93102** 93D09

— (*with* Fu, Jyun-Horng) Families of Lyapunov functions for nonlinear systems in critical cases. (English summary) *IEEE Trans. Automat. Control* **38** (1993), *no.* 1, 3–16. (Wei Bing Gao) **93k:93073** 93D05 (34D20, 93C10)

Abedzadeh, F. (*with* Pak, R. Y. S.) Torsional traction on an open finite cylindrical cavity. *Proc. Roy. Soc. London Ser. A* **438** (1992), *no.* 1902, 133–144. (Summary) **93d:73025** 73C35

Abel, Mati Gateaux differentiable manifolds. (English summary) *Proceedings of the 3rd Congress of Geometry* (*Thessaloniki*, 1991), 28–34, *Aristotle Univ. Thessaloniki, Thessaloniki*, 1992. (Andreas Kriegl) **93i:58012** 58B10 (46J99)

Abel, Niels Henrik ★ Œuvres complètes. Tome I. (French) [Complete works. Vol. I] Edited and with a preface by L. Sylow and S. Lie. Reprint of the second (1881) edition. *Éditions Jacques Gabay, Sceaux*, 1992. viii+621 *pp. ISBN* 2-87647-073-X (Editors) **93i:01028a** 01A75

— ★ Œuvres complètes. Tome II. (French) [Complete works. Vol. II] Suivi de "Niels Henrik Abel: sa vie et son action scientifique" par C.-A. Bjerknes. [Followed by "Niels Henrik Abel: his life and his scientific activity" by C.-A. Bjerknes] (1884). Edited and with notes by L. Sylow and S. Lie. Reprint of the second (1881) edition. *Éditions Jacques Gabay, Sceaux*, 1992. vi+716 *pp. ISBN* 2-87647-073-X (Editors) **93i:01028b** 01A75 (01A70)

— *see also* **Gårding, Lars, 93g:01038**

Abel, S. A. Thermodynamic determination of the string vacuum? *Nuclear Phys. B* **372** (1992), *no.* 1-2, 189–200. (Tsou Sheung Tsun) **93e:81087** 81T30 (81V22)

Abell, M. L. (*with* Ames, William F.) Semi-symmetry reduction of partial differential equations. (English summary) *Computational and applied mathematics, II* (*Dublin*, 1991), 101–105, *North-Holland, Amsterdam*, 1992. (*see* **93j:00008**) 35A30 (35Q35, 76D08)

— (*with* Ames, William F.) Symmetry reduction of Reynolds equation and applications to film lubrication. (English summary) *Trans. ASME J. Appl. Mech.* **59** (1992), *no.* 1, 206–210. (Summary) **93d:76015** 76D08

Abellanas, M. (*with* Hernández, Gregorio; Neumann Lara, Víctor; Urrutia, Jorge) A combinatorial property of convex sets. (Spanish. English summary) *II Meeting on Computational Geometry* (*Spanish*) (*Madrid*, 1991), 71–78, *Univ. Politéc. Madrid, Madrid*, 1992. (Summary) **93c:52003** 52A37 (05B99)

Abello, James (*with* Lu, Mi; Lin, Hua) An efficient parallel algorithm for longest common subsequence problem. (English summary) *Parallel computing '91* (*London*, 1991), 123–130, *Adv. Parallel Comput.*, 4, *North-Holland, Amsterdam*, 1992. (Summary) **93i:68080** 68Q22 (68R15)

— (*with* Lin, Hua; Pisupati, Sekhar) On visibility graphs of simple polygons. (English summary) Proceedings of the Twenty-third Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, FL, 1992). *Congr. Numer.* **90** (1992), 119–128. (Summary) **93j:05121** 05C75

Abels, Herbert The group of values of a W-distance is a Coxeter group. *Group theory from a geometrical viewpoint* (*Trieste*, 1990), 296–301, *World Sci. Publishing, River Edge, NJ*, 1991. (Bernhard Mühlherr) **93j:20087** 20F55

— The gallery distance of flags. *Order* **8** (1991), *no.* 1, 77–92. (Summary) **93b:06020** 06C10 (20E42)

— The geometry of the chamber system of a semimodular lattice. *Order* **8** (1991), *no.* 2, 143–158. (Summary) **93d:06008** 06C10 (20E42, 52B40)

Abenda, S. (*with* Demko, S.; Turchetti, Giorgio) Local moments and inverse problem for fractal measures. (English summary) *Inverse Problems* **8** (1992), *no.* 5, 739–750. (Summary) **93f:28006** 28A80 (44A60)

Aberbach, Ian M. Test elements in excellent rings with an application to the uniform Artin-Rees property. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 2, 355–363. (Liam O'Carroll) **93g:13004** 13A35 (13D25, 13F40)

Abergel, F. (*with* Hilhorst, Danielle; Issard-Roch, F.) On a Stefan problem with surface tension in the neighborhood of a stationary solution. *Progress in partial differential equations: elliptic and parabolic problems* (*Pont-à-Mousson*, 1991), 149–155, *Pitman Res. Notes Math. Ser.*, 266, *Longman Sci. Tech., Harlow*, 1992. (Cristina Turner) **93k:35274** 35R35 (35K99, 76R50, 80A22)

— (*with* Hilhorst, Danielle; Issard-Roch, F.) On a dissolution-growth problem with surface tension in the neighborhood of a stationary solution. (English summary) *SIAM J. Math. Anal.* **24** (1993), *no.* 2, 299–316. (Summary) **93m:35187** 35R35 (35K50)

Aberth, Oliver (*with* Schaefer, Mark J.) Precise matrix eigenvalues using range arithmetic. (English summary) *SIAM J. Matrix Anal. Appl.* **14** (1993), *no.* 1, 235–241. (Summary) **93m:65045** 65F15

Abesser, H. (*with* Steigenberger, Joachim) On structure preserving transformations in Hamiltonian control systems. *Z. Anal. Anwendungen* **10** (1991), *no.* 3, 319–333. (Andrei V. Sarychev) **93b:93026** 93B17 (34H05, 58F40)

Abeyaratne, Rohan (*with* Hou, Hang-Sheng) Cavitation in elastic and elastic-plastic solids. *J. Mech. Phys. Solids* **40** (1992), *no.* 3, 571–592. (Raymond W. Ogden) **93g:73067** 73G05

— (*with* Knowles, James K.) Wave propagation in linear, bilinear and trilinear elastic bars. *Wave Motion* **15** (1992), *no.* 1, 77–92. (Introduction) **93g:73047** 73D35 (73D30, 73D40, 73K05)

Abgrall, Rémi Sur le comportement asymptotique des coefficients de certaines approximations polynomiales. (English summary) [On the asymptotic behavior of the coefficients of some polynomial approximations] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 1, 97–100. (Summary) **93e:41009** 41A10 (65D15)

— (*with* Chargy, D.; Fezoui, L.; Larrouturou, Bernard) Conservative numerical schemes for multicomponent inviscid flows. *Rech. Aérospat.* (*English Edition*) **1992,** *no.* 2, 61–80; *translated from Rech. Aérospat.* **1992,** *no.* 2, 61–80 (*French. English and French summaries*). (Summary) **93g:76083** 76M20

Abhyankar, Shreeram S. (*with* Joshi, Sanjeevani B.) Generalized rodeletive correspondence between multitableux and multimonomials. *Discrete Math.* **93** (1991), *no.* 1, 1–17. (Daniel Ashlock) **93a:05129** 05E10

— (*with* Ghorpade, Sudhir R.) Young tableaux and linear independence of standard monomials in multiminors of a multimatrix. *Discrete Math.* **96** (1991), *no.* 1, 1–32. (Alexander I. Barvinok) **93b:15033** 15A72 (05E10)

— (*with* Heinzer, William J.) Singular locus of an infinite integral extension. *J. Algebra* **143** (1991), *no.* 2, 436–469. (Sherwood Washburn) **93a:13010** 13F40 (14E20, 14J99)

— (*with* Seiler, Wolfgang K.; Popp, Herbert) Mathieu-group coverings of the affine line. *Duke Math. J.* **68** (1992), *no.* 2, 301–311. (Kang Zuo) **93j:14018** 14E20

— Linear disjointness of polynomials. *Proc. Amer. Math. Soc.* **116** (1992), *no.* 1, 7–12. (Summary) **93i:12004** 12F10 (14E22, 14H30)

Abia, L. (*with* Sanz-Serna, J. M.) Partitioned Runge-Kutta methods for separable Hamiltonian problems. (English summary) *Math. Comp.* **60** (1993), *no.* 202, 617–634. (Daniel Stoffer) **93i:65074** 65L06 (34A50, 58F05, 70–08, 70H05, 70H15)

Abian, Alexander (*with* Amin, Wael A.) On transfinite splittings of infinite sets. (Italian summary) *Rend. Istit. Mat. Univ. Trieste* **21** (1989), *no.* 1, 122–127 (1991). (N. Hindman) **93c:05015** 05A18

— The angle between two sets and their inner product in any Banach space. *Anal. Numér. Théor. Approx.* **19** (1990), *no.* 1, 1–6. (Summary) **93b:46038** 46B99 (46C99)

— (*with* Phillips, Jon D., Jr.) An everywhere differentiable absolutely continuous function whose derivative is not Riemann integrable. *J. Nigerian Math. Soc.* **10** (1991), 1–7. (Jack B. Brown) **93h:28001** 28–01 (26A27, 26A42)

— (*with* Kemp, Paula) On properties of derivatives of continuous functions. (English summary) *Simon Stevin* **66** (1992), *no.* 1-2, 19–27. (Ryszard J. Pawlak) **93m:26007** 26A24

Abid, A. D. (*with* Mukhopadhyay, Nitis) Sequential sampling methodologies for comparing strata means. *Comm. Statist. Theory Methods* **21** (1992), *no.* 2, 485–500. (M. Hušková) **93d:62150** 62L12

Abid, Mohammad (*with* Jena, Subas Chandra) Absolute summability factors of a Fourier series. *J. Indian Math. Soc.* (*N.S.*) **56** (1991), *no.* 1-4, 153–158. (Rafat N. Siddiqi) **93a:42004** 42A28

Abidi, Mongi A. Fusion of multi-dimensional data using regularization. *Data fusion in robotics and machine intelligence*, 415–455, *Academic Press, Boston, MA*, 1992. (*see* **93g:68002**) 68U05 (68T30, 70B15, 70Q05)

— *see also* **Data fusion in robotics and machine intelligence, 93g:68002**

nour el Abidine, Driss *see* **Nour El Abidine, Driss**

Abi-Khuzam, Faruk F. On the growth of subharmonic functions in space. *J. Math. Anal. Appl.* **165** (1992), *no.* 2, 310–332. (Vladimir Logvinenko) **93a:31005** 31B05 (30D35)

Abil'daev, E. A. (*with* Kasymov, K. A.) On an initial jump of any order for linear differential equations. (Russian) *Vestnik Akad. Nauk Kazakh. SSR* **1991,** *no.* 12, 45–48. (Vasiliy Pavlovich Yakovets) **93h:34092** 34E15 (34B05)

— (*with* Kasymov, K. A.) Asymptotic estimates for solutions of singularly perturbed boundary value problems with initial jumps for linear differential equations. (Russian. Russian summary) *Differentsial'nye Uravneniya* **28** (1992), *no.* 10, 1659–1668, 1837; *translation in Differential Equations* **28** (1992), *no.* 10, 1345–1352 (1993). (Summary) **93k:34120** 34E15 (34B05)

Abilov, V. A. An estimate for the width of a class of functions in the space $L_2[-1,1]$. (Russian) *C. R. Acad. Bulgare Sci.* **44** (1991), *no.* 10, 9–10 (1992). (From the text) **93c:41040** 41A46

— Estimation of the width of a class of functions in the space $L_2(R, e^{-x^2})$. (Russian) *C. R. Acad. Bulgare Sci.* **44** (1991), *no.* 12, 13–14. 41A46

— Once more on an extremal property of classical orthogonal polynomials. (Russian) *C. R. Acad. Bulgare Sci.* **45** (1992), *no.* 6, 33–34. 42C05

Abiteboul, Serge (*with* Vianu, Victor) Datalog extensions for database queries and updates. *J. Comput. System Sci.* **43** (1991), *no.* 1, 62–124. (C. Masalagiu) **93c:68012** 68N17 (03B70, 03D15, 68P15, 68Q45)

— (*with* Vianu, Victor) Expressive power of query languages. *Theoretical studies in computer science*, 207–251, *Academic Press, Boston, MA*, 1992. (Marc Gyssens) **93g:68021** 68P15 (68Q05, 68Q15)

Ablowitz, Mark J. (*with* Clarkson, Peter A.) ★ Solitons, nonlinear evolution equations and inverse scattering. London Mathematical Society Lecture Note Series, 149. *Cambridge University Press, Cambridge*, 1991. xii+516 *pp. ISBN* 0-521-38730-2 (Walter Oevel) **93g:35108** 35Qxx (35–02, 35P25, 58F07, 81T13)

— (*with* Chakravarty, Sarbarish; Takhtajan, L. A.) Self-dual Yang-Mills equation and new special functions in integrable systems. (English summary) *Nonlinear evolution equations and dynamical systems* (*Baia Verde*, 1991), 3–11, *World Sci. Publishing, River Edge, NJ*, 1992. (R. S. Ward) **93i:58069** 58F07 (53C07, 81T13)

— (*with* Wadati, Miki; Segur, Harvey) A new Hamiltonian amplitude equation governing modulated wave instabilities. *J. Phys. Soc. Japan* **61** (1992), *no.* 4, 1187–1193. (Summary) **93f:35221** 35Q55

— (*with* Herbst, Ben M.) Numerical chaos, symplectic integrators, and exponentially small splitting distances. (English summary) *J. Comput. Phys.* **105** (1993), *no.* 1, 122–132. (Summary) **93m:65120** 65M06 (58F13, 65L99)

Ably, Mohammed Résultats quantitatifs d'indépendance algébrique pour les groupes algébriques. (English summary) [Quantitative results of algebraic independence for algebraic groups] *J. Number Theory* **42** (1992), *no.* 2, 194–231. (R. C. Baker) **93g:11082** 11J89 (11J13)

samareh-Abolhassani, Jamshid *see* **Samareh-Abolhassani, Jamshid**

Abolnikov, Lev (*with* Dukhovny, Alexander) Markov chains with transition delta-matrix: ergodicity conditions, invariant probability measures and applications. *J. Appl. Math. Stochastic Anal.* **4** (1991), *no.* 4, 333–355. (B. R. K. Kashyap) **93e:60132** 60J10 (60K25, 60K30, 90B22)

— (*with* Dshalalow, Jewgeni H.) A first passage problem and its applications to the analysis of a class of stochastic models. *J. Appl. Math. Stochastic Anal.* **5** (1992), *no.* 1, 83–97. (S. Kalpakam) **93d:60146** 60K10 (60K15, 60K25)

— (*with* Dshalalow, Jewgeni H.) On a multilevel controlled bulk queueing system $M^X/G^{r,R}/1$. (English summary) *J. Appl. Math. Stochastic Anal.* **5** (1992), *no.* 3, 237–260. (B. R. K. Kashyap) **93m:60177** 60K25 (90B22)

— (*with* Dshalalow, Jewgeni H.; Dukhovny, Alexander) On stochastic processes in a multilevel control bulk queueing system. *Stochastic Anal. Appl.* **10** (1992), *no.* 2, 155–179. (B. R. K. Kashyap) **93b:60206** 60K25 (90B22)

— (*with* Dshalalow, Jewgeni H.) Semi-regenerative analysis of controlled bulk queueing systems with a bilevel service delay discipline and some ergodic theorems. (English summary) *Comput. Math. Appl.* **25** (1993), *no.* 3, 107–116. (Summary) **93j:60139** 60K25

Abouammoh, A. M. (*with* Ahmed, Abdul-Hadi Nabih; Khalique, A.) Stochastic classes of life distributions. (English and Arabic summaries) *Qatar Univ. Sci. Bull.* **10** (1990), 11–24. (Summary) **93c:62157** 62N05

— (*with* Ahmed, Abdul-Hadi Nabih) On renewal failure rate classes of life distributions. *Statist. Probab. Lett.* **14** (1992), *no.* 3, 211–217. (Summary) **93c:62158** 62N05 (60K10)

Abou-El-Ela, A. M. A. (*with* Sadek, A. I.) On the asymptotic behaviour of solutions of some differential equations of the fourth-order. *Ann. Differential Equations* **8** (1992), *no.* 1, 1–12. (Summary) **93c:34110** 34D05

Abouelsaood, Ahmed Equivalence of the quadratic Lagrangians for chiral bosons. (English summary) *Internat. J. Modern Phys. A* **7** (1992), *no.* 20, 4965–4979. (Summary) **93d:81179** 81T70 (81T10)

Abou-Kandil, Hisham (*with* Jódar, Lucas; Navarro, Enrique) Explicit solutions of coupled Riccati equations occurring in Nash games—the open-loop case. (Russian and Polish summaries) *Control Cybernet.* **20** (1991), *no.* 1, 59–66. (Vladimir B. Larin) **93a:93101** 93E05 (34A05, 34A99, 90D05, 93B40)

— (*with* Jank, Gerhard) Asymptotic behaviour of coupled matrix-Riccati-differential equation: a computer algebra approach. (English summary) *Computational and applied mathematics, II* (*Dublin*, 1991), 247–251, *North-Holland, Amsterdam*, 1992. (*see* **93j:00008**) 93B25 (34A99)

Abou-Rabia, O. (*with* Birta, L. G.; Yang, M.) An adaptive approach to stepsize control in ODE solvers. (English summary) *Math. Comput. Simulation* **35** (1993), *no.* 1, 63–78. (Summary) **93h:65088** 65L05 (65Y20)

Abousleiman, Y. (*with* Cheng, A. H.-D.; Roegiers, J. C.) Boundary element method for viscoporoelasticity with rock mechanics applications. (English summary) *Boundary element technology, VII* (*Albuquerque, NM*, 1992), 173–183, *Comput. Mech., Southampton*, 1992. (*see* **93b:65002**) 76M15 (65N38, 73Q05, 76S05)

Abouzahra, M. (*with* Lewin, Leonard) Polylogarithmic ladders. *Structural properties of polylogarithms*, 27–47, *Math. Surveys Monographs*, 37, *Amer. Math. Soc., Providence, RI*, 1991. (*see* **93b:11158**) 33B10 (11R70)

— (*with* Lewin, Leonard) Ladders in the trans-Kummer region. *Structural properties of polylogarithms*, 49–68, *Math. Surveys Monographs*, 37, *Amer. Math. Soc., Providence, RI*, 1991. (*see* **93b:11158**) 33B10 (11R70)

— (*with* Lewin, Leonard) Supernumary ladders. *Structural properties of polylogarithms*, 69–96, *Math. Surveys Monographs*, 37, *Amer. Math. Soc., Providence, RI*, 1991. (*see* **93b:11158**) 33B10 (11R70)

Abraham, Bovas (*with* Thavaneswaran, A.) A nonlinear time series model and estimation of missing observations. *Ann. Inst. Statist. Math.* **43** (1991), *no.* 3, 493–504. (S. M. Pandit) **93a:62122** 62M10

— (*with* Thavaneswaran, A.) Estimation of multivariate nonlinear time series models. *J. Statist. Plann. Inference* **29** (1991), *no.* 3, 351–363. (Francesco Battaglia) **93c:62152** 62M10 (62M09)

— (*with* Chuang, Alice) Expectation-maximization algorithms and the estimation of time series models in the presence of outliers. (English summary) *J. Time Ser. Anal.* **14** (1993), *no.* 3, 221–234. (Summary) **93m:62191** 62M10

Abraham, D. B. (*with* Newman, Charles M.) Remarks on a random surface. (English summary) *Stochastic orders and decision under risk* (*Hamburg*, 1989), 1–6, *IMS Lecture Notes Monograph Ser.*, 19, *Inst. Math. Statist., Hayward, CA*, 1991. (Summary) **93h:60160** 60K35 (60D05, 82B41)

— (*with* Upton, P. J.) Droplet singularity. (English summary) *Phys. Rev. Lett.* **70** (1993), *no.* 11, 1567–1571. (Summary) **93k:82009** 82B20 (82D40)

Abraham, E. R. C. Nonlinear sigma models and their Q-lump solutions. *Phys. Lett. B* **278** (1992), *no.* 3, 291–296. (Summary) **93a:81115** 81T10

— (*with* Townsend, P. K.) Q-kinks. (English summary) *Phys. Lett. B* **291** (1992), *no.* 1-2, 85–88. (Summary) **93f:81146** 81T60 (81T40)

Abraham, Ralph (*with* Keith, Alexander; Koebbe, Matthew; Mayer-Kress, Gottfried) Computational unfolding of double-cusp models of opinion formation. *Internat. J. Bifur. Chaos Appl. Sci. Engrg.* **1** (1991), *no.* 2, 417–430. (D. R. J. Chillingworth) **93b:58023** 58C28 (58–04, 58F13, 58F14, 92K10)

ben-Abraham, S. I. *see* **Ben-Abraham, S. I.**

Abrahamowicz, Michal (*with* Ciampi, Antonio; Ramsay, James O.) Nonparametric density estimation for censored survival data: regression-spline approach. (English and French summaries) *Canad. J. Statist.* **20** (1992), *no.* 2, 171–185. (Summary) **93e:62099** 62G05

Abrahams, Andrew M. (*with* Cook, Gregory B.) Horizon structure of initial-data sets for axisymmetric two-black-hole collisions. *Phys. Rev. D* (3) **46** (1992), *no.* 2, 702–713. 83C57

— (*with* Heiderich, Karen R.; Shapiro, Stuart L.; Teukolsky, Saul A.) Vacuum initial data, singularities, and cosmic censorship. (English summary) *Phys. Rev. D* (3) **46** (1992), *no.* 6, 2452–2463. (Francis Cagnac) **93g:83077** 83C75 (83C05)

Abrahams, I. D. (*with* Engineer, J. C.) A secularity condition for systems of linear partial differential equations. *J. Sound Vibration* **150** (1991), *no.* 2, 338–341. (Introduction) **93a:73058** 73K12 (35F15, 73D30, 76Q05)

— (*with* Wickham, G. R.) Scattering of elastic waves by an arbitrary small imperfection in the surface of a half-space. (English summary) *J. Mech. Phys. Solids* **40** (1992), *no.* 8, 1683–1706. (Sergei Edelstein) **93j:73026** 73D25 (35J25)

— (*with* Wickham, G. R.) Scattering of elastic waves by a small inclined surface-breaking crack. (English summary) *J. Mech. Phys. Solids* **40** (1992), *no.* 8, 1707–1733. (Sergei Edelstein) **93j:73027** 73D25 (35J25, 73D20)

— (*with* Wickham, G. R.) The propagation of elastic waves in a certain class of inhomogeneous anisotropic materials. I. The refraction of a horizontally polarized shear wave source. (English summary) *Proc. Roy. Soc. London Ser. A* **436** (1992), *no.* 1898, 449–478. (Ivan Andronov and Andrew Badanin) **93j:73023** 73D15 (73B40, 73D25)

Abrahamson, Karl (*with* Fellows, Michael R.; Langston, Michael A.; Moret, Bernard M. E.) Constructive complexity. Combinatorics and theoretical computer science (Washington, DC, 1989). *Discrete Appl. Math.* **34** (1991), *no.* 1-3, 3–16. (Lane Hemaspaandra) **93a:68042** 68Q15

Abramchuk, V. S. Directed search methods for solving the systems $Ax = f$. (Russian. English summary) *Dokl. Akad. Nauk Ukrainy* **1992**, *no.* 6, 5–9, 170. (Summary) **93c:65038** 65F05 (65F35)

Abramov, A. A. (*with* Alvarez, L. M.; Gonzales Felipe, R.; Rodriges, A. R.) Some possibilities of the operator splitting method. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **31** (1991), *no.* 7, 953–961; *translation in Comput. Math. Math. Phys.* **31** (1991), *no.* 7, 8–14 (1992). (K. Balla) **93e:34023a** 34A50 (34B30, 34E99, 65L10)

— (*with* Ul'yanova, V. I.) A method for solving an equation of biharmonic type with a singularly entering small parameter. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **32** (1992), *no.* 4, 567–575; *translation in Comput. Math. Math. Phys.* **32** (1992), *no.* 4, 481–487. (Summary) **93d:35038** 35J40 (35B25)

— (*with* Alvarez, L. M.; Gonzales Felipe, R.; Rodriges, A. R.) Erratum: "Some possibilities of the operator splitting method". (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **32** (1992), *no.* 5, 674. (K. Balla) **93e:34023b** 34A50 (34B30, 34E99, 65L10)

Abramov, A. P. Problems on the choice of plan-proportions. (Russian) *Operations research (models, systems, solutions)* (*Russian*), 3–64, *Ross. Akad. Nauk, Vychisl. Tsentr, Moscow*, 1991. (Florica Luban) **93h:90054** 90C05 (90C90)

— First-order alternative extremum conditions. (Russian) *Operations research (models, systems, solutions)* (*Russian*), 3–8, *Akad. Nauk SSSR, Vychisl. Tsentr, Moscow*, 1991. (*see* **93c:90004**) 90C48 (49K27)

Abramov, D. I. (*with* Gusev, V. V.) The Coulomb two-centre problem near the boundary of the continuous spectrum. *J. Phys. B* **25** (1992), *no.* 11, 2445–2457. (Summary) **93a:81216** 81V45 (81Q05)

Abramov, Viktor Anatol'evich On symplectic structure of the topological quantum field theory. Application of topology in algebra and differential geometry (Tartu, 1991). *Tartu Ül. Toimetised No.* 940 (1992), 11–16. (Matthias Blau) **93h:57048** 57R57 (58D27, 58Z05, 81T70)

Abramova, I. V. (*with* Zakharov, E. V.) A numerical method for solving problems of the diffraction of electromagnetic waves by surfaces of revolution. (Russian. Russian summary) *Direct and inverse problems in mathematical physics* (*Russian*), 109–115, 262, *Moskov. Gos. Univ., Moscow*, 1991. (*see* **93f:00006**) 78A45 (78–08)

Abramova, M. V. A gradient algorithm for the approximate solution of problems in parametric programming. (Russian. Russian summary) *Computer systems and problems in decision making* (*Russian*), 151–157, 212, *Moskov. Gos. Univ., Moscow*, 1991. (Joachim Käschel) **93k:90091** 90C31 (90C30)

Abramovich, Yu. A. (*with* Veksler, A. I.) Schaefer realization of Banach lattices with a quasi-interior element. (Russian. Russian summary) *Ordered spaces and operator equations* (*Russian*), 5–8, 158, *Syktyvkar. Gos. Univ., Syktyvkar*, 1989. (*see* **93m:00034**) 46B42

— (*with* Lozanovskiĭ, G. Ya.) Three new cardinal invariants for normed lattices. *Proc. Roy. Irish Acad. Sect. A* **90** (1990), *no.* 2, 191–200. (W. A. J. Luxemburg) **93c:46033** 46B40 (06B99)

— (*with* Wickstead, A. W.) Regular operators from and into a small Riesz space. *Indag. Math. (N.S.)* **2** (1991), *no.* 3, 257–274. (W. A. J. Luxemburg) **93i:47052** 47B65 (46A40, 47B37, 47D15)

— (*with* Aliprantis, C. D.; Burkinshaw, O.) Positive operators on Kreĭn spaces. (English summary) Positive operators and semigroups on Banach lattices (Curaçao, 1990). *Acta Appl. Math.* **27** (1992), *no.* 1-2, 1–22. (Peter Meyer-Nieberg) **93h:47045** 47B60 (46C20)

— (*with* Filter, Wolfgang) A remark on the representation of vector lattices as spaces of continuous real-valued functions. (English summary) Positive operators and semigroups on Banach lattices (Curaçao, 1990). *Acta Appl. Math.* **27** (1992), *no.* 1-2, 23–26. (W. A. Feldman) **93k:46003** 46A40 (46E05)

— (*with* Wickstead, A. W.) Singular extensions and restrictions of order continuous functionals. (English summary) *Hokkaido Math. J.* **21** (1992), *no.* 3, 475–482. (W. A. J. Luxemburg) **93j:46008** 46A40 (46A22, 46B42)

— (*with* Wickstead, A. W.) A compact regular operator without modulus. *Proc. Amer. Math. Soc.* **116** (1992), *no.* 3, 721–726. (Peter Dodds) **93a:47038** 47B65 (47B07, 47B60)

— (*with* Wickstead, A. W.) Some characterizations of Dedekind α-completeness of a Riesz space. (English summary) *Canad. Math. Bull.* **36** (1993), *no.* 1, 3–7. (W. A. J. Luxemburg) **93k:46002** 46A40 (47B65, 47D15)

Abramovich, Yu. I. (*with* Arov, D. Z.) Realization of arbitrary rational matrix-function as the transfer function of passive ladder filter. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, II* (*Kobe*, 1991), 533–538, *Mita, Tokyo*, 1992. (Summary) **93j:94038** 94C05 (30E05, 47N70, 94A05)

Abramovici, Gilles (*with* Aubry, Serge; Raimbault, Jean-Luc) Chaotic polaronic and bipolaronic states in the adiabatic Holstein model. *J. Statist. Phys.* **67** (1992), *no.* 3-4, 675–780. (Ariel Fernández) **93e:82047** 82D10 (58F07, 58F13)

Abramowicz, Marek A. Relativistic astrophysics. *General relativity and gravitation*, 1989 (*Boulder, CO*, 1989), 253–261, *Cambridge Univ. Press, Cambridge*, 1990. (*see* **93b:83002**) 83B05

Abramowski, Stephan (*with* Müller, Heinrich) ★ Geometrisches Modellieren. (German) [Geometric modeling] Reihe Informatik [Computer Science Series], 75. *Bibliographisches Institut, Mannheim*, 1991. x+429 *pp. ISBN* 3-411-14491-2 (H. W. Guggenheimer) **93a:68145** 68U05 (65D17, 65Y25, 68U07)

Abrams, G. D. (*with* Phạm Ngọc Ánh; Márki, L.) A topological approach to Morita equivalence for rings with local units. (English summary) *Rocky Mountain J. Math.* **22** (1992), *no.* 2, 405–416. (Weimin Xue) **93g:16007** 16D90 (54H13)

— *see also* **Methods in module theory, 93h:16001**

Abramsky, Samson Abstract interpretation, logical relations, and Kan extensions. *J. Logic Comput.* **1** (1990), *no.* 1, 5–40. (John C. Mitchell) **93i:68125** 68Q60 (03B40, 03B70)

— Domain theory in logical form. Second Annual IEEE Symposium on Logic in Computer Science (Ithaca, NY, 1987). *Ann. Pure Appl. Logic* **51** (1991), *no.* 1-2, 1–77. (Eugenio Moggi) **93e:03040** 03B70 (68Q55)

Abramson, Ian (*with* Goldstein, Larry Mark) Efficient nonparametric testing by functional estimation. *J. Theoret. Probab.* **4** (1991), *no.* 1, 137–159. (K. C. Chanda) **93d:62084** 62G10 (62G05, 62G20)

Abramyan, L. A. (*with* Stepan'yants, Yu. A.; Shrira, V. I.) Non-one-dimensional solitons in shear flows of boundary layer type. (Russian) *Dokl. Akad. Nauk* **327** (1992), *no.* 4-6, 460–466; *translation in Soviet Phys. Dokl.* **37** (1992), *no.* 12, 575–578 (1993). 76B25 (76B15, 76D10, 76D33, 76F10)

Abrarov, R. M. (*with* Christiansen, Peter L.; Darmanyan, S. A.; Scott, A. C.; Soerensen, M. P.) Soliton propagation in three coupled nonlinear Schrödinger equations. (English summary) *Phys. Lett. A* **171** (1992), *no.* 5-6, 298–302. (Summary) **93k:35238** 35Q55 (35Q51)

Abrashin, V. N. (*with* Zhadaeva, N. G.) An efficient method for solving multidimensional problems in mathematical physics. (Russian) *Conference on Differential Equations and Applications* (*Ruse*, 1989), 322–334, *Tech. Univ., Ruse*, 1991. (*see* **93f:34004**) 65M99

— (*with* Vabishchevich, S. I.) Efficient schemes for solving systems of evolution equations. (Russian) *Differentsial'nye Uravneniya i Primenen. No.* 46 (1991), 9–17. (Summary) **93b:65131** 65M12

— (*with* Dzyuba, I. A.; Kamenskaya, N. E.) Efficient methods for solving multidimensional thermoelasticity problems. (Russian. Russian summary) *Differentsial'nye Uravneniya* **28** (1992), *no.* 2, 290–305, 366; *translation in Differential Equations* **28** (1992), *no.* 2, 249–261. (Michael Fröhner) **93j:65208** 65P05 (35Q99, 73B30, 73V15)

Abresch, Uwe (*with* Schroeder, Viktor) Graph manifolds, ends of negatively curved spaces and the hyperbolic 120-cell space. *J. Differential Geom.* **35** (1992), *no.* 2, 299–336. (Zhongmin Shen) **93c:53025** 53C21 (53C20, 53C23)

Abreu, Dilip (*with* Matsushima, Hitoshi) Virtual implementation in iteratively undominated strategies: complete information. (English summary) *Econometrica* **60** (1992), *no.* 5, 993–1008. (Summary) **93f:90012** 90A08 (90D40)

pérez-Abreu, V. *see* **Pérez-Abreu, V.**

de Abreu-Garcia, Jose A. *see* **De Abreu-Garcia, Jose A.**

Abrham, Jaromír (*with* Kotzig, Anton) Extensions of graceful valuations of 2-regular graphs consisting of 4-gons. *Ars Combin.* **32** (1991), 257–262. (Indrakanty H. Nagaraja Rao) **93f:05077** 05C78

— (*with* Rosa, Alexander; Sabidussi, Gert; Turgeon, Jean M.) Anton Kotzig (1919–1991). *Bull. Inst. Combin. Appl.* **3** (1991), 100–104. (Editors) **93e:01015** 01A70

— Extensions of graceful valuations of 2-regular bipartite graphs. Proceedings of the Twenty-second Southeastern Conference on Combinatorics, Graph Theory, and Computing (Baton Rouge, LA, 1991). *Congr. Numer.* **84** (1991), 51–59. (R. Balakrishnan) **93e:05084** 05C78

— Graceful 2-regular graphs and Skolem sequences. *Discrete Math.* **93** (1991), *no.* 2-3, 115–121. (R. Balakrishnan) **93h:05138** 05C78

— (*with* Rosa, Alexander; Sabidussi, Gert; Turgeon, Jean M.) Anton Kotzig: 1919–1991. *Math. Slovaca* **42** (1992), *no.* 3, 381–383. (Editors) **93h:01033** 01A70

Abrikosov, A. A., Jr. "Matsubara" approach in classical statistical physics: method and a toy example. (English summary) *Nuclear Phys. B* **382** (1992), *no.* 3, 581–596. (Summary) **93g:82060** 82C05 (81T70)

Abrosimov, A. V. Local automorphisms of some quadrics of codimension two. (Russian. Russian summary) *Mat. Zametki* **52** (1992), *no.* 1, 9–14, 154; *translation in Math. Notes* **52** (1992), *no.* 1-2, 636–640 (1993). (Roman Dwilewicz) **93k:32033** 32F25 (32H02)

Abrusci, V. Michele Phase semantics and sequent calculus for pure noncommutative classical linear propositional logic. *J. Symbolic Logic* **56** (1991), *no.* 4, 1403–1451. (P. Štěpánek) **93a:03060** 03F03 (03F05)

Abt, Markus Some exact optimal designs for linear covariance functions in one dimension. *Comm. Statist. Theory Methods* **21** (1992), *no.* 7, 2059–2069. (Girdhar G. Agarwal) **93g:62099** 62K05

Abud, Mario (*with* Ader, Jean-Pierre; Cappiello, Luigi) Prepotentials and unconstrained BRST for Yang-Mills and p-forms. *Modern Phys. Lett. A* **7** (1992), *no.* 22, 2039–2049. (Summary) **93c:81115** 81T13 (81T70)

— (*with* Fiore, Gaetano) Batalin-Vilkovisky approach to the metric independence of TQFT. (English summary) *Phys. Lett. B* **293** (1992), *no.* 1-2, 89–93. 81T40 (81T70)

Abu-Dayyeh, Walid (*with* Ahmed, Muhammad Salahuddin) A double inequality for the tail probability of standard normal distribution. (English summary) *J. Inform. Optim. Sci.* **14** (1993), *no.* 2, 155–159. 60E15

Abudiak, Fawaz M. On Z_p actions on the solid Klein bottle. (English and Turkish summaries) *Doğa Mat.* **16** (1992), *no.* 3, 183–186. (Allan Edmonds) **93k:57033** 57M60

Abu el Ata-Doss, S. (*with* Richalet, J.; Coïc, A.) Global identification and optimal input design. (English summary) *Identification and system parameter estimation* 1991, *Vol.* 1,2 (*Budapest*, 1991), 1121–1126, *IFAC Sympos. Ser.*, 3, *Pergamon, Oxford*, 1992. (*see* **93h:93009**) 93B30

— (*with* Coïc, A.; Fliess, Michel) Nonlinear predictive control by inversion: discontinuities for critical behaviour. *Internat. J. Control* **55** (1992), *no.* 6, 1521–1533. 93B25 (93C10)

Abuelma'atti, Muhammad Taher A simple algorithm for fitting measured data to Fourier-series models. (English summary) *Internat. J. Math. Ed. Sci. Tech.* **24** (1993), *no.* 1, 107–112. 65D10

Abujabal, Hamza A. S. (*with* Khan, Mohd. Saeed) Commutativity results for rings via iteration. *J. Nigerian Math. Soc.* **9** (1990), 1–5. (Summary) **93b:16062** 16U80

— (*with* Khan, Mohd. Saeed) Commutativity theorems for s-unital rings. (Chinese summary) *Acta Sci. Natur. Univ. Jilin.* **1991**, *no.* 3, 37–41. 16U80

— On the characters of an extension of p-groups. *J. Nigerian Math. Soc.* **10** (1991), 39–53. (Roderick Gow) **93d:20014** 20C15

— On commutativity of left s-unital rings. *Acta Sci. Math. (Szeged)* **56** (1992), *no.* 1-2, 51–62. (Introduction) **93k:16063** 16U80

— (*with* Khan, Moharram A.) On commutativity of one-sided s-unital rings. (English summary) *Internat. J. Math. Math. Sci.* **15** (1992), *no.* 4, 813–818. (Summary) **93h:16063** 16U80

— (*with* Ashraf, M.; Obaid, M.) Commutativity with certain constraints. (English summary) *Math. Japon.* **37** (1992), *no.* 5, 965–972. 16U80

— (*with* Aslam, M.; Thaheem, A. B.) A characterization of minimal prime ideals of BCK-algebras. (English summary) *Math. Japon.* **37** (1992), *no.* 5, 973–978. (Summary) **93h:06027** 06F35 (03G25)

— (*with* Khan, Mohd. Saeed; Khan, Moharram A.) On commutativity of semi-prime rings. (English summary) *Math. Japon.* **37** (1992), *no.* 6, 1041–1046. (Hal G. Moore) **93k:16062** 16U80 (16N60, 16R40)

— (*with* Perić, Veselin) Commutativity theorems for s-unital rings with constraints on commutators. *Results Math.* **21** (1992), *no.* 3-4, 256–263. (Summary) **93d:16037** 16U80

— (*with* Khan, Mohd. Saeed) Results on commutativity of rings. *Soochow J. Math.* **18** (1992), *no.* 1, 29–33. (Silvia Pellegrini) **93c:16033** 16U80

— (*with* Khan, Moharram A.; Samman, M. S.) On commutativity of one-sided s-unital rings. (English summary) *Tamkang J. Math.* **23** (1992), *no.* 3, 253–268. (Summary) **93j:16021** 16U80

Abu-Khuzam, H. Commutativity results for periodic rings. *Acta Math. Hungar.* **58** (1991), *no.* 3-4, 273–277. (Antonio Giambruno) **93c:16032** 16U80

Abul-Ez, M. A. Inverse sets of polynomials in Clifford analysis. *Arch. Math. (Basel)* **58** (1992), *no.* 6, 561–567. (Guy Laville) **93h:30068** 30G35

Abul-Magd, A. Y. (*with* Müller, Kirsten) Stochastic transition of free motion in billiards with borders given by equipotential lines of the diamagnetic Kepler problem. (English summary) *Phys. Rev. A* (3) **46** (1992), *no.* 12, 7424–7430. (Summary) **93i:58103** 58F13 (58F40)

Abundo, M. (*with* Mele, G.) Absolutely continuous invariant measures for expanding maps of a d-dimensional unit cube in $\mathbf{R}^d$ and their entropy. (English summary) *Note Mat.* **10** (1990), *no.* 2, 217–233. (Pawel Gora) **93j:58070** 58F11 (28D05, 58F03)

Aburawash, Usama A. The structure of *-simple involution rings with minimal *-bi-ideals. *Beiträge Algebra Geom. No.* 33 (1992), 77–83. (Summary) **93f:16002** 16D20 (16W10)

— On the structure of involution rings. (English summary) *Math. Japon.* **37** (1992), *no.* 5, 987–994. (Summary) **93h:16064** 16W10

Abur-Robb, M. F. K. Explicit solutions of some nonlinear ordinary differential equations with applications to Fisher's equation. (English and Arabic summaries) *Dirāsāt Ser. B Pure Appl. Sci.* **17** (1990), *no.* 4, 37–41. 34A05

Abu-Saymeh, Sadi On Noetherian modules. (English and Arabic summaries) *Dirāsāt Ser. B Pure Appl. Sci.* **18** (1991), *no.* 2, 103–107 (1992). (Summary) **93h:13019** 13E05 (13C05)

Abutaliev, F. B. (*with* Kul'muradov, M. È.) Modeling processes, taking place in the atmosphere, by means of a multicomponent spectral barotropic model. (Russian. Russian summary) *Voprosy Vychisl. i Prikl. Mat. (Tashkent) No.* 87 (1989), 4–10, 162. 86A10 (76C99)

— (*with* Salakhutdinov, R. Z.) Some types of parametrized operations in the theory of fuzzy sets. (Russian. Russian summary) *Voprosy Vychisl. i Prikl. Mat. (Tashkent) No.* 88 (1990), 4–11, 158. 03E72

Abu-Youssef, S. E. (*with* Mohie El-Din, M. M.; Mahmoud, M. A. W.) Recurrence relations between moment generating function of order statistics for doubly truncated continuous distributions. (English summary) *Egyptian Statist. J.* **36** (1992), *no.* 1, 82–94. (Summary) **93h:62101** 62G30

el-Abyad, Abdelwahab M. *see* **El-Abyad, Abdelwahab M.**

A'Campo-Neuen, Annette Morphisms of G-modules with finite fibers. (English and French summaries) *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 3, 255–260. (Summary) **93e:20057** 20G05 (14L30)

Accardi, Luigi (*with* Lu, Yun Gang) The low density limit and the quantum Poisson process. *Probability theory and mathematical statistics, Vol. I (Vilnius, 1989)*, 1–27, "*Mokslas*", *Vilnius*, 1990. (Summary) **93i:46122** 46L60 (81S25, 82C10)

— Quantum probability and the foundations of quantum theory. *Statistics in science*, 119–147, *Boston Stud. Philos. Sci.*, 122, *Kluwer Acad. Publ., Dordrecht*, 1990. (D. J. Foulis) **93a:81005** 81P05 (60A05)

— (*with* Lu, Yun Gang) The low density limit in the finite temperature case. I. *Gaussian random fields (Nagoya, 1990)*, 70–85, *Ser. Probab. Statist.*, 1, *World Sci. Publishing, River Edge, NJ*, 1991. (Summary) **93c:82033** 82C10

— A new class of quantum states: examples and applications. *Quantum aspects of optical communications (Paris, 1990)*, 138–150, *Lecture Notes in Phys.*, 378, *Springer, Berlin*, 1991. (*see* **93e:81158**) 81S25 (46L60, 93E11)

— (*with* Korolyuk, D. V.) Quantum Markov chains: the recurrence problem. *Quantum probability & related topics*, 63–73, *QP-PQ, VI, World Sci. Publishing, River Edge, NJ*, 1991. (Kalyanapuram R. Parthasarathy) **93h:81068** 81S25 (46L50, 60J10, 82B10)

— (*with* Lu, Yun Gang) Squeezing noises as weak coupling limit of Hamiltonian system. *Rep. Math. Phys.* **29** (1991), *no.* 2, 227–256. (Gennady Berman) **93c:81091** 81S25

— (*with* Lu, Yun Gang) On the weak coupling limit for quantum electrodynamics. (English summary) *Probabilistic methods in mathematical physics (Siena, 1991)*, 16–29, *World Sci. Publishing, River Edge, NJ*, 1992. (David Applebaum) **93i:81293** 81V10 (81S25, 81V80)

— (*with* Frigerio, Alberto; Lu, Yun Gang) On the relation between the singular and the weak coupling limits. Application of statistical methods in theoretical physics and fluid mechanics (Calcutta, 1991). *Acta Appl. Math.* **26** (1992), *no.* 3, 197–208. (Kalyanapuram R. Parthasarathy) **93i:81109** 81S25 (81–02, 82C99)

— (*with* Fagnola, Franco; Quaegebeur, J.) A representation free quantum stochastic calculus. *J. Funct. Anal.* **104** (1992), *no.* 1, 149–197. (Robin Hudson) **93e:81061** 81S25 (46L50, 46N50, 60H05)

— (*with* Lu, Yun Gang) The low density limit in finite temperature case. *Nagoya Math. J.* **126** (1992), 25–87. (Kalyanapuram R. Parthasarathy) **93j:81056** 81S25 (46L60, 82C99)

— *see also* **Quantum probability & related topics, 93e:81006**

Accola, Robert D. M. Theta vanishings for some smooth abelian coverings of Riemann surfaces. (English summary) *Curves, Jacobians, and abelian varieties (Amherst, MA, 1990)*, 1–29, *Contemp. Math.*, 136, *Amer. Math. Soc., Providence, RI*, 1992. (John B. Little) **93k:14040** 14H42 (14H30, 30F10)

López Acedo, Genaro *see* **López Acedo, Genaro**

Acerbi, Emilio (*with* Buttazzo, Giuseppe; Percivale, Danilo) A variational definition of the strain energy for an elastic string. *J. Elasticity* **25** (1991), *no.* 2, 137–148. (Introduction) **93c:73025** 73C50 (49N99, 73B05, 73K03, 73V25)

— (*with* Percivale, Danilo) Reinforcement of plates in Hencky's plasticity. *Comm. Partial Differential Equations* **17** (1992), *no.* 11-12, 2127–2136. (From the introduction) **93j:73045** 73K10 (35Q72, 49S05, 73E99, 73V25)

— (*with* Chiadò Piat, V.; Dal Maso, Gianni; Percivale, Danilo) An extension theorem from connected sets, and homogenization in general periodic domains. *Nonlinear Anal.* **18** (1992), *no.* 5, 481–496. (Alexander Belyaev) **93a:35014** 35B27 (35A15, 46E35)

Acerbi, F. (*with* Morchio, G.; Strocchi, F.) Algebraic fermion bosonization. (English summary) *Lett. Math. Phys.* **26** (1992), *no.* 1, 13–22. (Nicolaas P. Landsman) **93k:81133** 81T05 (46L60)

Achard, J.-L. (*with* Canot, E.) An overview of boundary integral formulations for potential flows in fluid-fluid systems. *Arch. Mech. (Arch. Mech. Stos.)* **43** (1991), *no.* 4, 453–498 (1992). (Summary) **93d:76053** 76M99 (76E99, 76M15, 76T05)

Acharya, Arup (*with* Badrinath, B. R.) Recording distributed snapshots based on causal order of message delivery. (English summary) *Inform. Process. Lett.* **44** (1992), *no.* 6, 317–321. 68M10

Acharya, B. Devadas Edge symmetric difference hypergraphs. (English summary) *Proceedings of the Symposium on Graph Theory and Combinatorics (Cochin, 1991)*, 1–6, *Publication*, 21, *Centre Math. Sci., Trivandrum*, 1991. (Summary) **93j:05122** 05C75 (05C65)

— (*with* Hegde, S. M.) Strongly indexable graphs. *Discrete Math.* **93** (1991), *no.* 2-3, 123–129. (Qing De Kang) **93f:05078** 05C78

Acharya, Krishna (*with* Singh, Surendra Prasad) On the nuclearity of mappings in locally convex spaces. *Ganita* **41** (1990), *no.* 1-2, 1–5 (1991). (Jan H. Fourie) **93a:46003** 46A03 (47A05, 47B10)

— (*with* Singh, Saket Bihari; Prasad, Anandi) On quasi-sequential locally convex algebra. *Proc. Math. Soc.* **7** (1991), 183–184 (1992). 46H05

Acharya, Raj (*with* Ibaroudene, Djaffer) Linear hypertree for multidimensional image representation. (English summary) *Inform. Sci.* **68** (1993), *no.* 1-2, 123–154. 68P20

Achasova, S. M. ★ Вычисления на нейронных сетях. (Russian. English summary) [Computations on neural networks] Препринт [Preprint], 920. *Akad. Nauk SSSR Sibirsk. Otdel., Vychisl. Tsentr, Novosibirsk*, 1990. 51 *pp.* (Max Garzon) **93i:92004** 92B20 (68T05)

Achcar, Jorge Alberto (*with* Louzada Neto, Francisco) Accelerated life tests with one stress variable: a Bayesian analysis of the Eyring model. (English summary) *Rebrape* **5** (1991), *no.* 2, 169–179. 62N05

— A Bayesian approach in the detection of outliers for normal and Weibull distributions. (English and Portuguese summaries) *Rev. Mat. Estatíst.* **9** (1991), 91–108. 62F15

— (*with* Louzada Neto, Francisco) A Bayesian approach for accelerated life tests considering the Weibull distribution. (English summary) *Comput. Statist.* **7** (1992), *no.* 4, 355–369. 62N05 (62F15)

Achdou, Yves (*with* Pironneau, Olivier) Integral equations for the generalized Stokes operator. (French summary) *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 1, 91–96. (Summary) **93c:65160** 65R20 (45K05, 76D07)

— (*with* Glowinski, Roland; Pironneau, Olivier) Tuning the mesh of a mixed method for the stream function. Vorticity formulation of the Navier-Stokes equations. (English summary) *Numer. Math.* **63** (1992), *no.* 2, 145–163. (Lutz Tobiska) **93m:65165** 65N50 (35Q30, 65N30, 76D05, 76D07, 76M10)

— (*with* Avellaneda, Marco) Influence of pore roughness and pore-size dispersion in estimating the permeability of a porous medium from electrical measurements. (English summary) *Phys. Fluids A* **4** (1992), *no.* 12, 2651–2673. (Summary) **93m:76068** 76S05

— Numerical optimization of a photocell. (English summary) *Comput. Methods Appl. Mech. Engrg.* **102** (1993), *no.* 1, 89–106. (Summary) **93j:78014** 78A45 (78–08, 78A55)

Achenbach, J. D. In memoriam: Julius Miklowitz 1919–1992. *Wave Motion* **16** (1992), *no.* 3, i. 01A70

— (*with* Wang, Canyun) A new look at 2-D time-domain elastodynamic Green's functions for general anisotropic solids. (English summary) *Wave Motion* **16** (1992), *no.* 4, 389–405. (Summary) **93j:73022** 73D10 (73B40, 73D30, 73V10)

Acheson, D. J. ★ Elementary fluid dynamics. Oxford Applied Mathematics and Computing Science Series. *The Clarendon Press, Oxford University Press, New York*, 1990. x+397 *pp. ISBN* 0-19-859660-X; 0-19-859679-0 (Andrei Iacob) **93k:76001** 76–01

Achinstein, Peter The evidence against Kronz. *Philos. Stud.* **67** (1992), *no.* 2, 169–175. 03B48

Acho, Thomas M. Scalar wave scattering of a prolate spheroid as a parameter expansion of that of a sphere. (English summary) *Quart. Appl. Math.* **50** (1992), *no.* 3, 451–468. (Summary) **93f:35038** 35J05 (35P25)

Achtziger, W. (*with* Bendsøe, M.; Ben-Tal, A.; Zowe, Jochem) Equivalent displacement based formulations for maximum strength truss topology design. (English summary) *Impact Comput. Sci. Engrg.* **4** (1992), *no.* 4, 315–345. (Summary) **93j:73057** 73K40 (73K05, 90C05)

Achúcarro, Ana Chern-Simons supergravities. *Supermembranes and physics in 2+1 dimensions (Trieste, 1989)*, 261–268, *World Sci. Publishing, River Edge, NJ*, 1990. (*see* **93g:81003**) 83E30 (81T60)

— Lineal gravity from planar gravity. (English summary) *Phys. Rev. Lett.* **70** (1993), *no.* 8, 1037–1040. (Summary) **93k:81188** 81T40 (83C57)

Ilerena Achutegui, Agustín *see* **Llerena Achutegui, Agustín**

Achuthan, N. R. (*with* Simanihuruk, M.) On potentially P-graphic degree sequences. Combinatorial mathematics and combinatorial computing, Vol. 2 (Brisbane, 1989). *Australas. J. Combin.* **2** (1990), 29–38. (Prabir Das) **93b:05158** 05C99

— (*with* Caccetta, L.; Caccetta, P.; Geelen, J. F.) Algorithms for the minimum weight spanning tree with bounded diameter problem. (English summary) *Optimization, Vol. 1, 2 (Singapore, 1992)*, 297–304, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93d:90005**) 90C35

— (*with* Lotulelei, T.) Project crashing with earliness and tardiness penalties: a goal programming model. (English summary) *Optimization, Vol. 1, 2 (Singapore, 1992)*, 375–384, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93d:90005**) 90C29

— (*with* Caccetta, L.) Minimum weight spanning trees with bounded diameter. *Australas. J. Combin.* **5** (1992), 261–276. (Summary) **93a:05049** 05C05 (05C35)

Achuthan, P. (*with* Ponnuswamy, S.) Padé approximants and Eisenstein-Ramanujan continued fraction. (English summary) *J. Comput. Appl. Math.* **41** (1992), *no.* 3, 247–264. (Les Davison) **93m:30006** 30B70 (11A55, 11J70, 41A21, 65B99, 65D15)

— (*with* Rangarajan, R.) Continued fraction solutions of matrix Riccati equation. (English summary) *Mathematical theory of control* (*Bombay*, 1990), 1–10, *Lecture Notes in Pure and Appl. Math.*, 142, *Dekker, New York*, 1993. (*see* **93g:93003**) 93B40 (34A99, 34H05)

van Acker, Nadine *see* **Van Acker, Nadine**

Acketa, Dragan M. (*with* Novak, Ladislav A.) A method for deriving new bipartite graphs from a given one. *Univ. Beograd. Publ. Elektrotehn. Fak. Ser. Mat.* **2** (1991), 26–41. (A. Lakshmi) **93g:05134** 05C99 (05C38)

— (*with* Novak, Ladislav A.; Karadžić, Žarko) A space optimal algorithm for enumerating spanning trees of a connected graph. (Serbo-Croatian summary) *Zb. Rad. Prirod.-Mat. Fak. Ser. Mat.* **21** (1991), *no.* 1, 39–56. (Pawel Winter) **93b:05154** 05C85 (05C05, 05C30, 68R10)

Ackner, Reuven (*with* Kailath, Thomas) On the Ptàk-Young generalization of the Schur-Cohn theorem. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 10, 1601–1604. (Summary) **93i:93030** 93B25 (93B60)

de Acosta, Alejandro D. (*with* Ney, Peter E.; Nummelin, Esa) Large deviation lower bounds for general sequences of random variables. *Random walks, Brownian motion, and interacting particle systems*, 215–221, *Progr. Probab.*, 28, *Birkhäuser Boston, Boston, MA*, 1991. (George L. O'Brien) **93b:60053** 60F10 (60J05, 60K15)

gonzález-Acosta, E. *see* **González-Acosta, E.**

pérez-Acosta, Francisco *see* **Pérez-Acosta, Francisco**

Acosta, María D. *see* **Acosta Vigil, María Dolores**

Acosta, Victor (*with* Klein, Abel) Analyticity of the density of states in the Anderson model on the Bethe lattice. (English summary) *J. Statist. Phys.* **69** (1992), *no.* 1-2, 277–305. (Nariyuki Minami) **93m:82018** 82B44

Acosta Vigil, María Dolores Some results on operators that attain their numerical radius. (Spanish. English summary) *Proceedings of the XVth Portuguese-Spanish Conference on Mathematics, Vol. II* (*Portuguese*) (*Évora*, 1990), 319–324, *Univ. Évora, Évora*, 1991. (Summary) **93b:47007** 47A12 (47B37)

— (*with* Payá-Albert, Rafael) Numerical radius attaining operators and the Radon-Nikodým property. (English summary) *Bull. London Math. Soc.* **25** (1993), *no.* 1, 67–73. (John Duncan) **93j:47005** 47A12 (47D99)

Acquistapace, F. (*with* Broglia, F.) Signatures and flatness. *J. Reine Angew. Math.* **425** (1992), 61–70. (Michael Buchner) **93h:32011** 32C05 (14P15)

Acquistapace, Paolo (*with* Terreni, Brunello) Boundary control problems for nonautonomous parabolic systems. *Stabilization of flexible structures* (*Montpellier*, 1989), 156–166, *Lecture Notes in Control and Inform. Sci.*, 147, *Springer, Berlin*, 1990. (*see* **93c:93006**) 93C20 (93B52)

— On a family of generators of analytic semigroups. *Semigroup theory and evolution equations* (*Delft*, 1989), 1–14, *Lecture Notes in Pure and Appl. Math.*, 135, *Dekker, New York*, 1991. (Alberto Guzman) **93e:47043** 47D03 (47D06, 47N20)

— On BMO regularity for linear elliptic systems. (English summary) *Ann. Mat. Pura Appl.* (4) **161** (1992), 231–269. (John M. Ball) **93i:35027** 35B65 (35J45)

— (*with* Terreni, Brunello) Regularity properties of the evolution operator for abstract linear parabolic equations. *Differential Integral Equations* **5** (1992), *no.* 5, 1151–1184. (Yu. L. Daletskiĭ) **93h:34098** 34G10 (35R20, 47N20)

Acrivos, Andreas *see* **Symposium: Fluid Mechanics of Stirring and Mixing, 93j:76006**

Actor, Alfred ζ- and η-function resummation of infinite series: general case. *J. Phys. A* **24** (1991), *no.* 16, 3741–3759. (Don Redmond) **93a:11073** 11M41 (81T16)

gonzález-Acuña, Francisco Javier *see* **González-Acuña, Francisco Javier**

Acuña-Ortega, Osvaldo Finite objects and automorphisms. (English summary) *Comm. Algebra* **20** (1992), *no.* 12, 3459–3478. (Ioan Tofan) **93k:18008** 18B25 (03G30)

Aczél, János István Fenyő (1917–1987) in memoriam. *General inequalities*, 6 (*Oberwolfach*, 1990), 1–2, *Internat. Ser. Numer. Math.*, 103, *Birkhäuser, Basel*, 1992. (*see* **93k:26001**) 01A70

— (*with* Ng, Che Tat) A lemma on the angles between a fixed line and the lines connecting a fixed point on it with the points of a convex arc. *General inequalities*, 6 (*Oberwolfach*, 1990), 463–464, *Internat. Ser. Numer. Math.*, 103, *Birkhäuser, Basel*, 1992. (*see* **93k:26001**) 26A51

Aczel, Peter (*with* Lunnon, Rachel) Universes and parameters. *Situation theory and its applications, Vol.* 2 (*Loch Rannoch*, 1990), 3–24, *CSLI Lecture Notes*, 26, *Stanford Univ., Stanford, CA*, 1991. (*see* **92m:68006**) 68Q55 (03B70)

Adachi, Norihiko (*with* Nishioka, Katsuhiro) A continuation method for pole assignment by output feedback. (Japanese. English summary) *Trans. Inst. Systems Control Inform. Engrg.* **6** (1993), *no.* 4, 189–195. 93B55 (93B40)

Adachi, Norio (*with* Tanaka, Taro) Imaginary abelian number fields with class number of 2-power. (English summary) *Bull. Sci. Engrg. Res. Lab. Waseda Univ. No.* 135 (1991), 1–6. (Summary) **93h:11120** 11R29 (11R20)

Adam, Gerhard (*with* Seke, J.; Herfort, W.; Hittmair, O.) Nicht-Markoffsche Bewegungsgleichung für die Besetzungszahlinversion und ihre Lösung bei der spontanen Emission eines Zwei-Niveau-Atoms. I. Anwendung der Rotating-Wave-Approximation. [Non-Markovian equation of motion for the inversion of occupancy number and its solution in the spontaneous emission of a two-level atom. I. Application of the rotating wave approximation] *Österreich. Akad. Wiss. Math.-Natur. Kl. Sitzungsber. II* **199** (1990), *no.* 4-7, 103–121. (I. A. Sakmar) **93d:81198** 81V80 (81V45)

— (*with* Seke, J.; Herfort, W.; Hittmair, O.) Nicht-Markoffsche Bewegungsgleichung für die Besetzungszahlinversion und ihre Lösung bei der spontanen Emission eines Zwei-Niveau-Atoms. II. Berücksichtigung der Counter-Rotating-Terme. [Non-Markovian equation of motion for the inversion of occupancy number and its solution in the spontaneous emission of a two-level atom. II. Consideration of counter-rotating terms] *Österreich. Akad. Wiss. Math.-Natur. Kl. Sitzungsber. II* **199** (1990), *no.* 4-7, 123–130. (I. A. Sakmar) **93d:81199** 81V80 (81V45)

— Ordered moments in the case of a one-mode radiation field with Gaussian Wigner functions. (English summary) *Phys. Lett. A* **171** (1992), *no.* 1-2, 66–70. (Summary) **93k:81255** 81V10 (81V80)

Adam, John A. The dynamics of growth-factor-modified immune response to cancer growth: one-dimensional models. (English summary) *Math. Comput. Modelling* **17** (1993), *no.* 3, 83–106. (Summary) **93j:92014** 92C50

Adam, P. (*with* Földesi, I.; Janszky, J.) Antisymmetric straight line superposition of coherent states. (English summary) *Phys. Lett. A* **173** (1993), *no.* 2, 97–100. (Summary) **93j:81040** 81R30 (81V80)

— (*with* Janszky, J.; Földesi, I.) Sudden mass changes of a quantum oscillator and squeezing. (English summary) *Phys. Lett. A* **174** (1993), *no.* 5-6, 368–370. (Summary) **93k:81278** 81V80

Adamatskiĭ, A. I. Identification of probabilistic cellular automata. *Soviet J. Comput. Systems Sci.* **30** (1992), *no.* 3, 118–123; *translated from Izv. Akad. Nauk SSSR Tekhn. Kibernet.* **1991**, *no.* 3, 95–100 (*Russian*). (Summary) **93b:68061** 68Q80 (68Q75)

Adamec, Radek (*with* Klazar, Martin; Valtr, Pavel) Generalized Davenport-Schinzel sequences with linear upper bound. Topological, algebraical and combinatorial structures. Frolík's memorial volume. *Discrete Math.* **108** (1992), *no.* 1-3, 219–229. (Péter Komjáth) **93k:05015** 05A99

Adámek, Jiří (*with* Rosický, Jiří) Reflections in locally presentable categories. (English summary) *Arch. Math.* (*Brno*) **25** (1989), *no.* 1-2, 89–94. (Marek Golasiński) **93k:18006** 18A40

— (*with* Rosický, Jiří) What are locally generated categories? *Category theory* (*Como*, 1990), 14–19, *Lecture Notes in Math.*, 1488, *Springer, Berlin*, 1991. (H. Herrlich) **93h:18001** 18A20 (18A25)

— (*with* Reiterman, Jan; Schwarz, Friedhelm) On universally topological hulls and quasitopos hulls. *Houston J. Math.* **17** (1991), *no.* 3, 375–383. (Y. T. Rhineghost) **93a:18002** 18B25 (18A40, 18B15, 18D30)

— (*with* Rosický, Jiří) On orthogonal subcategories of locally presentable categories. (English summary) Topological, algebraical and combinatorial structures. Frolík's memorial volume. *Discrete Math.* **108** (1992), *no.* 1-3, 133–137. (Summary) **93h:18003** 18A35

— (*with* Reiterman, Jan) A correction: "The quasitopos hull of the category of uniform spaces" [Topology Appl. **27** (1987), no. 2, 97–104; MR 88j:54014]. (English summary) *Topology Appl.* **48** (1992), *no.* 3, 179–184. (Summary) **93m:54023** 54B30 (18B25, 18B30)

— (*with* Rosický, Jiří) On injectivity in locally presentable categories. *Trans. Amer. Math. Soc.* **336** (1993), *no.* 2, 785–804. (Walter Tholen) **93f:18006** 18A99 (18A35, 18B30, 20K40)

Adamov, A. A. Construction of an optimal density for simultaneous estimation of several functionals by the Monte Carlo method. (Russian) *Theory of functions and problems in numerical mathematics* (*Russian*), 60–65, 73, *Kazakh. Gos. Univ., Alma Ata*, 1990. (Summary) **93c:65008** 65C05 (65K10)

Adamowicz, Zofia On maximal theories. *J. Symbolic Logic* **56** (1991), *no.* 3, 885–890. (Constantine Dimitracopoulos) **93f:03025** 03C62 (03D30, 03H15)

— (*with* Dimitracopoulos, C.) On a problem concerning parameter free induction. *Z. Math. Logik Grundlag. Math.* **37** (1991), *no.* 4, 363–366. (Roman Murawski) **93b:03101** 03F30

— A sharp version of the bounded Matijasevich conjecture and the end-extension problem. *J. Symbolic Logic* **57** (1992), *no.* 2, 597–616. (A. J. Wilkie) **93i:03079** 03F30 (03H15)

Adams, B. L. (*with* Boehler, J.-P.; Guidi, M.; Onat, E. T.) Group theory and representation of microstructure and mechanical behavior of polycrystals. *J. Mech. Phys. Solids* **40** (1992), *no.* 4, 723–737. (Summary) **93b:73002** 73B05 (70G05, 73B10, 73S10, 82D25)

Adams, Barry G. Unified treatment of high-order perturbation theory for the Stark effect in a two- and three-dimensional hydrogen atom. (English summary) *Phys. Rev. A* (3) **46** (1992), *no.* 7, 4060–4064. (Summary) **93i:81301** 81V35 (81Q15, 81R05)

Adams, C. M. (*with* Tavares, S. E.) Generating bent sequences. (English summary) *Discrete Appl. Math.* **39** (1992), *no.* 2, 155–159. (Summary) **93f:94023** 94B25

Adams, Colin C. Noncompact hyperbolic 3-orbifolds of small volume. (English summary) *Topology* '90 (*Columbus, OH*, 1990), 1–15, *Ohio State Univ. Math. Res. Inst. Publ.*, 1, *de Gruyter, Berlin*, 1992. (B. N. Apanasov) **93h:57019** 57M50

— Volumes of hyperbolic 3-orbifolds with multiple cusps. *Indiana Univ. Math. J.* **41** (1992), *no.* 1, 149–172. (Darryl McCullough) **93c:57011** 57M50 (20H10, 30F40, 57M25)

— (*with* Brock, Jeffrey F.; Bugbee, John; et al.) Almost alternating links. (English summary) *Topology Appl.* **46** (1992), *no.* 2, 151–165. (Alan W. Reid) **93h:57005** 57M25

Adams, David R. Weakly elliptic systems with obstacle constraints. I. A 2×2 model problem. *Partial differential equations with minimal smoothness and applications* (*Chicago, IL*, 1990), 1–14, *IMA Vol. Math. Appl.*, 42, *Springer, New York*, 1992. (Martin Fuchs) **93b:35054** 35J85 (35B65, 49J40)

— L^p potential theory techniques and nonlinear PDE. *Potential theory* (*Nagoya*, 1990), 1–15, *de Gruyter, Berlin*, 1992. (Ilpo Laine) **93e:31014** 31C45 (35J60)

Adams, Ernst Wilhelm Gear drive vibrations and verified periodic solutions. (English summary) *Computer arithmetic, scientific computation and mathematical modelling* (*Albena*, 1990), 395–416, *IMACS Ann. Comput. Appl. Math.*, 12, *Baltzer, Basel*, 1991. (*see* **93e:00022**) 65L99 (65C20, 65G10, 73K12)

— (*with* Ames, William F.; Postell, F. V.) Optimal numerical algorithms. A Festschrift to honor Professor Garrett Birkhoff on his eightieth birthday. *Appl. Numer. Math.* **10** (1992), *no.* 3-4, 235–259. (Bruno Scheurer) **93h:65110** 65M06 (35A30, 35Q53)

— (*with* Rufeger, W.) A step size control for Lohner's enclosure algorithm for ordinary differential equations with initial conditions. (English summary) *Scientific computing with automatic result verification*, 283–299, *Math. Sci. Engrg.*, 189, *Academic Press, Boston, MA*, 1993. (Summary) **93h:65183** 65Y20 (65L05)

— The reliability question for discretizations of evolution problems. *Scientific computing with automatic result verification*, 423–526, *Math. Sci. Engrg.*, 189, *Academic Press, Boston, MA*, 1993. (I. N. Molchanov) **93k:65067** 65M06 (65L99)

— (*with* Ames, William F.; Kühn, W.; Rufeger, W.; Spreuer, H.) Computational chaos may be due to a single local error. (English summary) *J. Comput. Phys.* **104** (1993), *no.* 1, 241–250. (Summary) **93i:65067** 65L05 (58F13)

— *see also* **Scientific computing with automatic result verification, 93f:65009**

Adams, Gregory T. (*with* McGuire, Paul J.; Paulsen, Vern I.) Analytic reproducing kernels and multiplication operators. *Illinois J. Math.* **36** (1992), *no.* 3, 404–419. (Gong Ning Chen) **93e:46035** 46E22 (47B38)

— (*with* Trebels, Walter) A matricial approach to nuclear reduced Hankel operators. *J. London Math. Soc.* (2) **45** (1992), *no.* 3, 536–548. (Jonathan Arazy) **93h:47025** 47B35 (46E15, 46E20, 47B10)

Adams, J. F. *see* **Symposium: Algebraic Topology, 93a:55001** *and* **May, J. Peter, 93c:01046**

Adams, Jeffrey Lifting of characters. *Harmonic analysis on reductive groups (Brunswick, ME, 1989)*, 1–50, *Progr. Math.*, 101, *Birkhäuser Boston, Boston, MA*, 1991. (David Joyner) **93d:22014** 22E45 (22E46)

— (*with* Barbasch, Dan; Vogan, David A., Jr.) ★ The Langlands classification and irreducible characters for real reductive groups. Progress in Mathematics, 104. *Birkhäuser Boston, Inc., Boston, MA*, 1992. xii+318 *pp. ISBN* 0-8176-3634-X (Brian E. Blank) **93j:22001** 22–02 (22E47)

— (*with* Vogan, David A., Jr.) *L*-groups, projective representations, and the Langlands classification. *Amer. J. Math.* **114** (1992), *no.* 1, 45–138. (D. Miličić) **93c:22021** 22E46 (22E45)

— *see also* **Representation theory of groups and algebras, 93k:00028**

Adams, John C. MUDPACK-2: Multigrid software for approximating elliptic partial differential equations on uniform grids with any resolution. (English summary) *Appl. Math. Comput.* **53** (1993), *no.* 2-3, 235–249. 65–04 (65N99)

Adams, M. E. (*with* Beazer, R.) Congruence uniform distributive lattices. *Acta Math. Hungar.* **57** (1991), *no.* 1-2, 41–52. (R. Balbes) **93c:06017** 06D05 (08A30)

Adams, Malcolm R. (*with* Bergvelt, Maarten) Heisenberg algebras, Grassmannians and isospectral curves. *The geometry of Hamiltonian systems (Berkeley, CA, 1989)*, 1–7, *Math. Sci. Res. Inst. Publ.*, 22, *Springer, New York*, 1991. (Olga Kravchenko) **93b:14078** 14M15 (17B67, 58F07)

Adams, Peter (*with* Billington, Elizabeth J.; Lindner, Charles C.) The spectrum for 3-perfect 9-cycle systems. *Australas. J. Combin.* **5** (1992), 103–108. (Summary) **93a:05076** 05C38 (05C70)

— (*with* Billington, Elizabeth J.) Completing some spectra for 2-perfect cycle systems. (English summary) *Australas. J. Combin.* **7** (1993), 175–187. (Summary) **93k:05123** 05C70 (05B30)

— Lambda-fold 2-perfect 8-cycle systems. (English summary) *Utilitas Math.* **43** (1993), 171–204. (Summary) **93m:05145** 05C70

Adams, Robert H. Special theory of relativity—an alternative perspective. (English summary) *Computational systems analysis* 1992 (*Berlin*, 1992), 117–122, *Elsevier, Amsterdam*, 1992. (Summary) **93f:83002** 83A05

Adams, S. R. (*with* Lyons, Russell) Amenability, Kazhdan's property and percolation for trees, groups and equivalence relations. *Israel J. Math.* **75** (1991), *no.* 2-3, 341–370. (Wolfgang Woess) **93j:43001** 43A07 (22D05)

— (*with* Freire, Alexandre S.) Nonnegatively curved leaves in foliations. *J. Differential Geom.* **34** (1991), *no.* 3, 681–700. (Joan Girbau) **93c:53018** 53C12 (57R30)

Adams, William W. (*with* Liverance, Eric; Shanks, Daniel) Infinitely many necessary and sufficient conditions for primality. *Bull. Inst. Combin. Appl.* **3** (1991), 69–76. (Samuel S. Wagstaff, Jr.) **93e:11011** 11A51

— (*with* Boyle, Ann K.) Some results on Gröbner bases over commutative rings. *J. Symbolic Comput.* **13** (1992), *no.* 5, 473–484. (Ralf Fröberg) **93h:13025** 13P10 (68Q40)

Adamski, Andrzej Probabilistic models of passengers service processes at bus stops. (English summary) *Transportation Res. Part B* **26** (1992), *no.* 4, 253–259. 90B06 (90B22)

Adamson, P. (*with* Tick, E.) Greedy partitioned algorithms for the shortest-path problem. (English summary) *Internat. J. Parallel Programming* **20** (1991), *no.* 4, 271–298. 68Q22 (68R10)

Adamy, J. (*with* Kiendl, H.; Stelzner, P.) Vector norms as Lyapunov functions for linear systems. *IEEE Trans. Automat. Control* **37** (1992), *no.* 6, 839–842. (Denis Khusainov) **93f:34083** 34D20 (93D05)

Adamyan, V. M. Generalized Nehari problem with losses. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, I (Kobe*, 1991), 13–18, *Mita, Tokyo*, 1992. (*see* **93g:93005**) 47A57 (41A58)

Adan, Ivo Jean-Baptiste François ★ A compensation approach for queueing problems. Dissertation, Technische Universiteit Eindhoven, Eindhoven, 1991. With a Dutch summary. *Technische Universiteit Eindhoven, Eindhoven*, 1991. iv+179 *pp.* (M. J. M. Posner) **93c:60136** 60K25 (90B22)

— (*with* Wessels, Jaap; Zijm, W. H. M.) Analysis of the asymmetric shortest queue problem with threshold jockeying. *Comm. Statist. Stochastic Models* **7** (1991), *no.* 4, 615–627. (Ralph L. Disney) **93a:60141** 60K25

— (*with* Wessels, Jaap; Zijm, W. H. M.) Matrix-geometric analysis of the shortest queue problem with threshold jockeying. (English summary) *Oper. Res. Lett.* **13** (1993), *no.* 2, 107–112. (Summary) **93m:90036** 90B22

Addington, Susan *see* **Kuga, Michio, 93k:34012**

Addison, P. S. (*with* Chan, Andrew H. C.; Ervine, D. A.; Williams, K. J.) Observations on numerical method dependent solutions of a modified duffing oscillator. (English summary) *Comm. Appl. Numer. Methods* **8** (1992), *no.* 8, 519–528. 65L05 (65L06)

Adeagbo-Sheikh, A. G. Resource-adjustment problem in the construction of Beer's predictive model. *Kybernetes* **21** (1992), *no.* 1, 46–51. 93A30

Adegboye, O. S. (*with* Ibiejugba, M. A.; Aderibigbe, F. M.) Parameter selection for a delay equation. *J. Nigerian Math. Soc.* **9** (1990), 77–93. (Takao Nambu) **93f:34137** 34K35 (49K25)

Adekola, O. A. Asymptotic posterior normality for stochastic processes: a nonergodic example. *Austral. J. Statist.* **33** (1991), *no.* 2, 135–144. (Zuzana Prášková) **93b:60157** 60J25 (60J80, 62M05)

Adelberg, Arnold Irreducible factors and p-adic poles of higher order Bernoulli polynomials. (English summary) *C. R. Math. Rep. Acad. Sci. Canada* **14** (1992), *no.* 4, 173–178. (Summary) **93e:11029** 11B68 (11S85)

Adelberger, E. G. Experimental tests of the universality of free fall and of the inverse square law. *General relativity and gravitation*, 1989 (*Boulder, CO*, 1989), 273–294, *Cambridge Univ. Press, Cambridge*, 1990. (*see* **93b:83002**) 83B05

Adelmeyer, Moritz (*with* Iooss, Gérard) ★ Topics in bifurcation theory and applications. Advanced Series in Nonlinear Dynamics, 3. *World Scientific Publishing Co., Inc., River Edge, NJ*, 1992. vi+160 *pp. ISBN* 981-02-1009-4 (A. Vanderbauwhede) **93i:58001** 58–02 (34C23, 58F14, 76E99)

Adem, Alejandro Euler characteristics and cohomology of p-local discrete groups. *J. Algebra* **149** (1992), *no.* 1, 183–196. (Olympia Talelli) **93k:20071** 20J05

— On the K-theory of the classifying space of a discrete group. *Math. Ann.* **292** (1992), *no.* 2, 319–327. (From the introduction) **93i:55018a** 55R35 (19L47, 55R50)

— Erratum: "On the K-theory of the classifying space of a discrete group". *Math. Ann.* **293** (1992), *no.* 2, 385–386. (Editors) **93i:55018b** 55R35 (19L47, 55R50)

— Representations and K-theory of discrete groups. *Bull. Amer. Math. Soc. (N.S.)* **28** (1993), *no.* 1, 95–98. (Summary) **93d:55020** 55R35 (19L99, 20C99)

— (*with* Milgram, R. James) $\mathscr{A}_3$-invariants, the cohomology of $L_3(4)$ and related extensions. (English summary) *Proc. London Math. Soc.* (3) **66** (1993), *no.* 1, 187–224. (Nobuaki Yagita) **93m:20070** 20J06 (20D08, 55R35, 55R40)

Adeniyi, R. B. (*with* Onumanyi, P.; Taiwo, O. A.) A computational error estimate of the tau method for nonlinear ordinary differential equations. *J. Nigerian Math. Soc.* **9** (1990), 21–32. (Summary) **93a:65107** 65L70

Ader, Jean-Pierre (*with* Abud, Mario; Cappiello, Luigi) Prepotentials and unconstrained BRST for Yang-Mills and p-forms. *Modern Phys. Lett. A* **7** (1992), *no.* 22, 2039–2049. (Summary) **93c:81115** 81T13 (81T70)

— (*with* Gieres, François; Noirot, Yves) Relating Weyl and diffeomorphism anomalies on super Riemann surfaces. (English summary) *Classical Quantum Gravity* **10** (1993), *no.* 1, 1–18. (Sergey Merkulov) **93m:81139** 81T50 (32C11, 58A50, 81T40)

Aderibigbe, F. M. (*with* Ibiejugba, M. A.; Adegboye, O. S.) Parameter selection for a delay equation. *J. Nigerian Math. Soc.* **9** (1990), 77–93. (Takao Nambu) **93f:34137** 34K35 (49K25)

Aderoba, Adeyemi A model for facility selection and siting in pre-investment decision analysis. (English summary) *Inform. Decision Tech.* **18** (1992), *no.* 5, 323–332. 93A05

Adey, R. A. (*with* Charafi, A.; Wrobel, L. C.) An approach to h-adaptive boundary element method using local reanalysis. (English summary) *Boundary element technology, VII (Albuquerque, NM*, 1992), 905–918, *Comput. Mech., Southampton*, 1992. (*see* **93b:65002**) 65N38

— (*with* Zhao, Zhiye) An alternative approach to shape design sensitivity analysis. (English summary) *Internat. J. Numer. Methods Engrg.* **35** (1992), *no.* 5, 1071–1086. (Summary) **93f:73076** 73K40 (73V15)

Adhar, Gur Saran (*with* Peng, Shietung) Parallel algorithms for finding connected, independent and total domination in interval graphs. *Algorithms and parallel VLSI architectures, II (Château de Bonas*, 1991), 85–90, *Elsevier, Amsterdam*, 1992. (*see* **93f:68003**) 05C85 (68Q22, 68R10)

Adhikari, M. R. (*with* Sen, Mridul Kanti) On division hemirings. (English summary) With an erratum. *Bull. Calcutta Math. Soc.* **83** (1991), *no.* 3, 267–274, 317. (C. J. Maxson) **93m:16030** 16Y60

— (*with* Sen, Mridul Kanti) On maximal k-ideals of semirings. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 3, 699–703. (R. Gorton) **93i:16065** 16Y60

Adhikari, Sadhan K. Complex Kohn variational principle for the solution of Lippmann-Schwinger equations. (English summary) *J. Comput. Phys.* **103** (1992), *no.* 2, 415–421. (Summary) **93k:81253** 81U99 (81V35)

Adhikari, Sukumar Das Towards the exact nature of a certain error term. *Arch. Math. (Basel)* **58** (1992), *no.* 3, 257–264. (S. W. Graham) **93b:11119; EA 93m** 11N37

— (*with* Soundararajan, K.) Towards the exact nature of a certain error term. II. *Arch. Math. (Basel)* **59** (1992), *no.* 5, 442–449. (S. W. Graham) **93k:11086** 11N37

Adhikary, Basudeb (*with* Saha, Tapas Kumar) On intereffect orthogonal designs. *Proceedings of the Symposium on Design of Experiments (Trivandrum*, 1990), 33–54, *Publication*, 19, *Centre Math. Sci., Trivandrum*, 1990. (Ashish Das) **93e:62194** 62K15

— (*with* Panda, Rajendranath) Quality-quantity type second order rotatable design in the presence of quality-quantity type interaction. *Proceedings of the Symposium on Design of Experiments (Trivandrum*, 1990), 73–80, *Publication*, 19, *Centre Math. Sci., Trivandrum*, 1990. (Summary) **93k:62134** 62J05 (62K15)

— (*with* Saha, Tapas Kumar) Construction and combinatorial problems of higher associate cyclic PBIB designs. *Calcutta Statist. Assoc. Bull.* **40** (1990/91), *no.* 157-160, 163–181. (Kishan Lal Sharma) **93k:62151** 62K10 (05B05)

— (*with* Panda, Rajendranath) Sequential method of conducting rotatable designs. (English summary) *Sankhyā Ser. B* **52** (1990), *no.* 2, 212–218. 62K15

— (*with* Das, Premadhis) A study of efficiency of proportional frequency plans. (English summary) *Sankhyā Ser. B* **52** (1990), *no.* 3, 338–342. (Summary) **93e:62195** 62K15 (62K05)

Adi, Mohamed (*with* Kirchner, Claude) AC-unification race: the system solving approach, implementation and benchmarks. (English summary) *J. Symbolic Comput.* **14** (1992), *no.* 1, 51–70. (Ralph W. Wilkerson) **93j:68170** 68T15

Adian, S. I. *see* **Adyan, S. I.**

Adiga, Chandrashekar (*with* Bhargava, Srinivasamurthy; Somashekara, D. D.) Some relations between infinite series and infinite products. *Proceedings of the Symposium on Algebra and Number Theory (Cochin*, 1990), 23–29, *Publication*, 20, *Centre Math. Sci., Trivandrum*, 1990. (Christian Krattenthaler) **93i:33012** 33D20 (33D10)

Adimurthi (*with* Pacella, Filomena; Yadava, S. L.) Interaction between the geometry of the boundary and positive solutions of a semilinear Neumann problem with critical nonlinearity. (French summary) *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 11, 811–815. (Summary) **93c:35040** 35J65 (35B05, 35B30)

— (*with* Yadava, S. L.; Knaap, M. C.) A note on a critical exponent problem with Neumann boundary conditions. *Nonlinear Anal.* **18** (1992), *no.* 3, 287–294. (Cornelius O. Horgan) **93b:35045** 35J65 (35B40)

— (*with* Yadava, S. L.) Nonexistence of nodal solution for m-Laplace equation involving critical Sobolev exponents. *Proc. Indian Acad. Sci. Math. Sci.* **102** (1992), *no.* 1, 23–27. (Summary) **93a:35040** 35J40 (35J65)

— (*with* Yadava, S. L.) On a conjecture of Lin-Ni for a semilinear Neumann problem. *Trans. Amer. Math. Soc.* **336** (1993), *no.* 2, 631–637. (Srinivasan Kesavan) **93f:35073** 35J65 (35P30)

Adin, Ron M. Counting colorful multi-dimensional trees. (English summary) *Combinatorica* **12** (1992), *no.* 3, 247–260. (J. W. Moon) **93j:05036** 05C05 (05C30, 05C50)

— The Gaussian model for fluids and covering a graph by spanning trees. *J. Phys. A* **25** (1992), *no.* 8, L433–L438. (H. N. V. Temperley) **93c:82016** 82B21 (05C50, 05C70)

Adizov, A. A. (*with* Ayupov, Sh. A.; Zhelyabin, V. N.) Multiplicative mappings of ordered Jordan algebras. (Russian) *Mat. Zametki* **51** (1992), *no.* 2, 3–8, 156; *translation in Math. Notes* **51** (1992), *no.* 1-2, 105–109. (Khristo N. Boyadzhiev) **93c:46124** 46L70

Adjali, I. (*with* Zuk, J. A.) On the two-point approximation to the effective chiral action for large solitons. *Internat. J. Modern Phys. A* **7** (1992), *no.* 15, 3549–3565. (Summary) **93a:81211** 81V05

Adjamagbo, Kossivi (*with* van den Essen, Arno) A new inversion formula for a polynomial map in two variables. *J. Pure Appl. Algebra* **76** (1991), *no.* 2, 119–120. (L. Andrew Campbell) **93a:14011** 14E07 (13B25, 13P99, 14E35)
— Les filtrations et les déterminants de Gevrey sur les algèbres de Weyl. (English summary) [Gevrey filtrations and determinants over Weyl algebras] *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 9, 649–652. (Summary) **93g:16041** 16S32 (35A20)
— (*with* Boury, Pierre) A resultant criterion and formula for the inversion of a rational map in two variables. *J. Pure Appl. Algebra* **79** (1992), *no.* 1, 1–13. (Summary) **93d:14024** 14E07
— (*with* van den Essen, Arno) Eulerian operators and the Jacobian conjecture. III. (English summary) *J. Pure Appl. Algebra* **81** (1992), *no.* 2, 111–116. (L. Andrew Campbell) **93k:14022** 14E07 (13B10)
Adjerid, S. (*with* Flaherty, Joseph E.; Moore, P. K.; Wang, Yun J.) High-order adaptive methods for parabolic systems. (English summary) Experimental mathematics: computational issues in nonlinear science (Los Alamos, NM, 1991). *Phys. D* **60** (1992), *no.* 1-4, 94–111. (Summary) **93i:65092** 65M60
Adke, S. R. (*with* Balakrishna, N.) Renewal counting process induced by a discrete Markov chain. (English summary) *Austral. J. Statist.* **34** (1992), *no.* 1, 115–121. (Masakiyo Miyazawa) **93j:60123** 60K05 (60J10)
— (*with* Balakrishna, N.) Estimation of the mean of some stationary Markov sequences. *Comm. Statist. Theory Methods* **21** (1992), *no.* 1, 137–159. (Hans M. Dietz) **93e:62213** 62M05 (60G10)
Adkhamov, A. A. (*with* Tailanov, N. A.) The self-similar regime and the dynamics of the development of instability of the critical state in high-temperature superconductors. (Russian. Tajiki summary) *Dokl. Akad. Nauk Tadzhik. SSR* **34** (1991), *no.* 7, 418–420 (1992). 82D55
Adkins, Lee C. Finite sample moments of a bootstrap estimator of the James-Stein rule. (English summary) *Econometric Rev.* **11** (1992), *no.* 2, 173–193. 62G05
Adkins, William A. Subtransversality and relative transversality. (Italian summary) *Boll. Un. Mat. Ital. B* (7) **6** (1992), *no.* 2, 275–297. (Claudio Martins Mendes) **93e:58014** 58C25 (58C27)
Adkison, Milo D. Parameter estimation for models of chaotic time series. (English summary) *J. Math. Biol.* **30** (1992), *no.* 8, 839–852. (Hans-Peter Herzel) **93j:58087** 58F13 (58F40, 92C60)
Adleman, Leonard M. (*with* Huang, Ming-Deh A.) ★ Primality testing and abelian varieties over finite fields. (English. English summary) Lecture Notes in Mathematics, 1512. *Springer-Verlag, Berlin*, 1992. viii+142 *pp. ISBN* 3-540-55308-8 (Kenneth A. Ribet) **93g:11128** 11Y11 (11G10, 11G25, 14G15, 14K99)
Adler, Allan Cubic invariants for $SL_2(\mathbf{F}_q)$. *J. Algebra* **145** (1992), *no.* 1, 178–186. (Dipendra Prasad) **93c:11026** 11F27 (14J40, 14L30, 20G05)
— Magic cubes and the 3-adic zeta function. *Math. Intelligencer* **14** (1992), *no.* 3, 14–23. (J. Cofman) **93h:00005** 00A08 (05B15, 05B20, 11M41)
— Characterization of modular correspondences by geometric properties. *Pacific J. Math.* **155** (1992), *no.* 1, 1–27. (Bas Edixhoven) **93k:11040** 11F32 (14E20, 14H45)
— Modular correspondences on $X(11)$. (English summary) *Proc. Edinburgh Math. Soc.* (2) **35** (1992), *no.* 3, 427–435. (Bas Edixhoven) **93k:11041** 11F32 (14E20, 14H45, 14J30)
— (*with* Shukla, Pradeep) Formal moduli of modules over local k-algebras. *Trans. Amer. Math. Soc.* **337** (1993), *no.* 1, 143–158. (Summary) **93g:16046** 16S80 (11S20, 13D10, 14B10, 14B12, 14D20, 15A33, 16W60)
Adler, André Accumulation points of a particular normalized random walk. (English summary) *Selected Proceedings of the Sheffield Symposium on Applied Probability (Sheffield*, 1989), 156–158, *IMS Lecture Notes Monograph Ser.*, 18, *Inst. Math. Statist., Hayward, CA*, 1991. (Summary) **93i:60129** 60J15 (60F15)
— (*with* Rosalsky, Andrew) On the norming constants in the Feller-Khintchine-Lévy central limit theorem. (English summary) *Calcutta Statist. Assoc. Bull.* **41** (1991), *no.* 161-164, 145–150. (Petr Lachout) **93k:60050** 60F05 (60G50)
— The "fair" games problem for multidimensionally indexed random variables. (English summary) *Bull. Inst. Math. Acad. Sinica* **20** (1992), *no.* 2, 169–185. (Adhir K. Basu) **93h:60044** 60F15 (60G60)
— One-sided limit theorems for sums of multidimensional indexed random variables. (English summary) *J. Theoret. Probab.* **5** (1992), *no.* 4, 707–726. (F. Móricz) **93i:60054** 60F15
— (*with* Rosalsky, Andrew; Taylor, Robert Lee) On the Azlarov-Volodin theorem for sums of i.i.d. random elements in Banach spaces. (English summary) *Stochastic Anal. Appl.* **10** (1992), *no.* 5, 501–505. (De Li Li) **93k:60014** 60B12 (60F15)
Adler, Ilan (*with* Beling, Peter A.) Polynomial algorithms for LP over a subring of the algebraic integers with applications to LP with circulant matrices. (English summary) *32nd Annual Symposium on Foundations of Computer Science (San Juan, PR*, 1991), 480–487, *IEEE Comput. Soc. Press, Los Alamitos, CA*, 1991. (Jürgen Köhler) **93i:90065** 90C08 (03D15, 68Q25, 90C60)
— (*with* Monteiro, Renato D. C.) A geometric view of parametric linear programming. *Algorithmica* **8** (1992), *no.* 2, 161–176. (K. G. Murty) **93e:90061** 90C31 (90C05)
— (*with* Beling, Peter A.) Polynomial algorithms for LP over a subring of the algebraic integers with applications to LP with circulant matrices. (English summary) *Math. Programming* **57** (1992), *no.* 2, *Ser. B*, 121–143. (Romesh Saigal) **93j:90048** 90C05 (90C08, 90C10)
Adler, Mark (*with* van Moerbeke, P.) A matrix integral solution to two-dimensional W_p-gravity. *Comm. Math. Phys.* **147** (1992), *no.* 1, 25–56. (Claude Itzykson) **93g:58054** 58F07 (17B68, 81T40)
Adler, Robert J. (*with* Lewin, Marica) An evolution equation for the intersection local times of superprocesses. *Stochastic analysis (Durham*, 1990), 1–22, *London Math. Soc. Lecture Note Ser.*, 167, *Cambridge Univ. Press, Cambridge*, 1991. (Steven N. Evans) **93h:60077** 60G57 (60H99, 60J55)
— (*with* Lewin, Marica) Local time and Tanaka formulae for super Brownian and super stable processes. *Stochastic Process. Appl.* **41** (1992), *no.* 1, 45–67. (Klaus Fleischmann) **93e:60169** 60J80 (60G57, 60J55)
Adler, Roy L. Geodesic flows, interval maps, and symbolic dynamics. *Ergodic theory, symbolic dynamics, and hyperbolic spaces (Trieste*, 1989), 93–123, *Oxford Sci. Publ., Oxford Univ. Press, New York*, 1991. (*see* **93e:58002**) 58F17 (28D99, 58F03)
— The torus and the disk. (English summary) *Symbolic dynamics and its applications (New Haven, CT*, 1991), 1–18, *Contemp. Math.*, 135, *Amer. Math. Soc., Providence, RI*, 1992. (Karl Petersen) **93j:54028** 54H20 (28D05, 28D20, 58F03, 94A17)
— *see also* **Weiss, Benjamin, 93i:01026a** *and* **Marcus, Brian H., 93i:01026b**
Adler, Stephen L. Effective action model for the cosmological constant revisited. (English summary) *Gravitation and modern cosmology (Erice*, 1990), 5–10, *Ettore Majorana Internat. Sci. Ser. Phys. Sci.*, 56, *Plenum, New York*, 1991. (*see* **93j:83004**) 83C45
Adler, V. È. Lie-algebraic approach to nonlocal symmetries of integrable systems. (Russian. English summary) *Teoret. Mat. Fiz.* **89** (1991), *no.* 3, 323–336; *translation in Theoret. and Math. Phys.* **89** (1991), *no.* 3, 1239–1248 (1992). (Marek Antonowicz) **93a:58073** 58F07 (35Q58)
Adnadjević, Dušan Connectedness and dimension of GF-spaces. *Fuzzy Sets and Systems* **45** (1992), *no.* 2, 253–259. (Summary) **93h:54004** 54A40 (04A72)
— Some properties of the dimension F-Ind of GF-spaces. (English summary) *Fuzzy Sets and Systems* **54** (1993), *no.* 2, 221–224. (Summary) **93k:54014** 54A40 (04A72)
Adney, Joseph E. (*with* Roseiro, Albert M.; Hall, Jonathan I.; Siegel, Marvin) The trace operator and redundancy of Goppa codes. *IEEE Trans. Inform. Theory* **38** (1992), *no.* 3, 1130–1133. (Summary) **93b:94027** 94B27 (11T71)
Adolfsson, Vilhelm L^2-integrability of second-order derivatives for Poisson's equation in nonsmooth domains. *Math. Scand.* **70** (1992), *no.* 1, 146–160. (Neil A. Watson) **93h:35047** 35J05
— (*with* Goldberg, M.; Jawerth, Björn; Lennerstad, H.) Localized Galerkin estimates for boundary integral equations on Lipschitz domains. (English summary) *SIAM J. Math. Anal.* **23** (1992), *no.* 5, 1356–1374. (Weimin Han) **93f:65087** 65N38 (65N30, 65R20)
Adolphson, Alan *see p*-**adic methods in number theory and algebraic geometry, 93d:11003**
Adomaitis, R. A. (*with* Frouzakis, C. E.; Kevrekidis, I. G.; Golden, M. P.; Ydstie, B. Erik) The structure of basin boundaries in a simple adaptive control system. (English summary) *Chaotic dynamics (Patras*, 1991), 195–210, *NATO Adv. Sci. Inst. Ser. B Phys.*, 298, *Plenum, New York*, 1992. (Summary) **93k:58205** 58F40 (58F13, 93C40)
Adomian, George A. (*with* Rach, R.) Generalization of Adomian polynomials to functions of several variables. *Comput. Math. Appl.* **24** (1992), *no.* 5-6, 11–24. (Summary) **93c:26012** 26C99 (26E05)
— (*with* Rach, R.) Noise terms in decomposition solution series. (English summary) *Comput. Math. Appl.* **24** (1992), *no.* 11, 61–64. 65H99
— (*with* Rach, R.) Analytic solution of nonlinear boundary value problems in several dimensions by decomposition. (English summary) *J. Math. Anal. Appl.* **174** (1993), *no.* 1, 118–137. (Summary) **93k:35009** 35A25 (35F30, 35G30)
Adukov, V. M. Wiener-Hopf factorization of meromorphic matrix functions. (Russian) *Algebra i Analiz* **4** (1992), *no.* 1, 54–74. (L. Rodman) **93h:47021** 47A68 (47A56)
Adve, R. S. (*with* Sarkar, T. K.) Generation of accurate broadband information from narrowband data using the Cauchy method. (English summary) *Probabilistic and stochastic methods in analysis, with applications (Il Ciocco*, 1991), 263–271, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 372, *Kluwer Acad. Publ., Dordrecht*, 1992. (*see* **93e:00029**) 94A12
Adyan, S. I. (*with* Lysënok, I. G.) Groups, all of whose proper subgroups are finite cyclic. (Russian) *Izv. Akad. Nauk SSSR Ser. Mat.* **55** (1991), *no.* 5, 933–990; *translation in Math. USSR-Izv.* **39** (1992), *no.* 2, 905–957. (H. Heineken) **93b:20063** 20F10
— (*with* Lysënok, I. G.) The method of classification of periodic words and the Burnside problem. (English summary) *Proceedings of the International Conference on Algebra, Part* 1 *(Novosibirsk*, 1989), 13–28, *Contemp. Math.*, 131, *Part* 1, *Amer. Math. Soc., Providence, RI*, 1992. (F. Levin) **93j:20083** 20F50 (20F05)
— (*with* Mennicke, J.) On bounded generation of $SL_n(\mathbf{Z})$. *Internat. J. Algebra Comput.* **2** (1992), *no.* 4, 357–365. (Yu. N. Mukhin) **93m:20064** 20H05 (20F05)
Adzhemyan, L. Ts. (*with* Nalimov, M. Yu.) The maximum chaoticity principle in the statistical theory of developed turbulence. I. Homogeneous isotropic turbulence. (Russian. English and Russian summaries) *Teoret. Mat. Fiz.* **91** (1992), *no.* 2, 294–308; *translation in Theoret. and Math. Phys.* **91** (1992), *no.* 2, 532–542. (Summary) **93e:76037** 76F05
Adzhubei, L. T. (*with* Stukanev, I. I.) Minimax estimation of sound potential based on a signal from flat receiver antennas. (Russian. Russian summary) *Vestnik Kiev. Univ. Model. Optim. Slozhn. Sist. No.* 9 (1990), 20–24. 78A50
Adžić, Nevenka Modified Hermite polynomials in the spectral approximation for boundary layer problems. *Bull. Austral. Math. Soc.* **45** (1992), *no.* 2, 267–276. (Summary) **93a:65097** 65L10 (33C45, 34E15)
Aebi, Markus (*with* Embrechts, Paul; Mikosch, Thomas) A large claim index. (English, French and German summaries) *Schweiz. Verein. Versicherungsmath. Mitt.* **1992**, *no.* 2, 143–156. 62P05
Aebi, Robert (*with* Nagasawa, Masao) Large deviations and the propagation of chaos for Schrödinger processes. (English summary) *Probab. Theory Related Fields* **94** (1992), *no.* 1, 53–68. (Ross Pinsky) **93i:60050** 60F10 (60J60)
— Itô's formula for nonsmooth functions. (English summary) *Publ. Res. Inst. Math. Sci.* **28** (1992), *no.* 4, 595–602. (V. Mackevičius) **93k:60198** 60J60 (60H10)
Aerts, Diederik Construction of reality and its influence on the understanding of quantum structures. (English summary) Quantum logics, Part II (Gdańsk, 1990). *Internat. J. Theoret. Phys.* **31** (1992), *no.* 10, 1815–1837. (Lawrence Sklar) **93h:81005** 81P05
— (*with* Van Bogaert, Bruno) Mechanistic classical laboratory situation with a quantum logic structure. (English summary) Quantum logics, Part II (Gdańsk, 1990). *Internat. J. Theoret. Phys.* **31** (1992), *no.* 10, 1839–1848. (Sylvia Pulmannova) **93h:81012** 81P10 (81P15)
Aeschlimann, A. (*with* Schmid, Jürg) Drawing orders using less ink. (English summary) *Order* **9** (1992), *no.* 1, 5–13. (Václav Koubek) **93k:06001** 06-04 (06A06, 90C35)
Aevskiĭ, V. R. Approximate-inertial manifolds for reaction-diffusion equations. (Russian. Russian summary) *Differentsial'nye Uravneniya* **28** (1992), *no.* 9, 1545–1552, 1653; *translation in Differential Equations* **28** (1992), *no.* 9, 1267–1273 (1993). (Summary) **93k:35136** 35K57
Aeyels, Dirk (*with* Willems, Jacques L.) Pole assignment for linear time-invariant second-order systems by periodic static output feedback. *IMA J. Math. Control Inform.* **8** (1991), *no.* 3, 267–274. (T. Kaczorek) **93a:93053** 93B55
— (*with* Willems, Jacques L.) Pole assignment for linear time-invariant systems by periodic memoryless output feedback. (English summary) *Automatica J. IFAC* **28** (1992), *no.* 6, 1159–1168. (T. Kaczorek) **93j:93058** 93B55 (93C05)

— On stabilization by means of the energy-Casimir method. (English summary) *Systems Control Lett.* **18** (1992), *no.* 5, 325–328. (Summary) **93f:70029** 70Q05 (34D99, 70E15, 70K20, 93D15)

Afanas'ev, A. A. On the Hellinger process for binary experiments. (Russian) *Uspekhi Mat. Nauk* **46** (1991), *no.* 4(280), 139–140; *translation in Russian Math. Surveys* **46** (1991), *no.* 4, 165–166. (Friedrich Liese) **93d:60073** 60G30

— On a problem of distinguishing hypotheses in binary partially defined statistical experiments. (Russian) *Uspekhi Mat. Nauk* **47** (1992), *no.* 5(287), 163–164; *translation in Russian Math. Surveys* **47** (1992), *no.* 5, 173–174. 62F05 (62B15)

— On a generalization of a theorem of Chernoff. (Russian) *Uspekhi Mat. Nauk* **47** (1992), *no.* 6(288), 203–204. 62B15

Afanas'ev, G. N. (*with* Dubovik, V. M.) Electromagnetic properties of a toroidal solenoid. (English summary) *J. Phys. A* **25** (1992), *no.* 18, 4869–4886. (Summary) **93g:78004** 78A25

Afanas'ev, V. A. (*with* Kravchenko, V. F.; Rvachëv, V. A.; Rvachëv, V. L.) Optimal finite windows for the reconstruction of images. (Russian) *Dokl. Akad. Nauk SSSR* **322** (1992), *no.* 3, 498–500; *translation in Soviet Phys. Dokl.* **37** (1992), *no.* 1, 29–30. (From the text) **93b:78016** 78A99 (65P05)

Afanas'ev, V. N. (*with* Neusypin, K. A.) A method for constructing reduced models. *J. Automat. Inform. Sci.* **24** (1991), *no.* 6, 62–66 (1993); *translated from Avtomatika* **1991**, *no.* 6, 65–70, 97 (*Russian. English, Russian and Ukrainian summaries*). 93B11

— (*with* Neusypin, K. A.) A method for the compensation of dynamic errors of inertial systems. (Russian. Russian summary) *Avtomat. i Telemekh.* **1992**, *no.* 8, 19–24; *translation in Automat. Remote Control* **53** (1992), *no.* 8, *part* 1, 1141–1146 (1993). 93B52 (70Q05, 93C10)

Afanas'ev, V. V. (*with* Zaslavskiĭ, G. M.) Anomalous transport in dynamical chaos. *From phase transitions to chaos*, 308–321, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93c:58128** 58F13

Afanas'eva, L. G. (*with* Lupanov, O. B.; Belyaev, Yu. K.; Solov'ev, A. D.; **Bulinskaya, E. V.**; Tyurin, Yu. N.) Boris Vladimirovich Gnedenko (on the occasion of his 80th birthday). (Russian) *Vestnik Moskov. Univ. Ser. I Mat. Mekh.* **1992**, *no.* 3, 86–89. 01A70

Afanasiev, G. N. *see* **Afanas'ev, G. N.**

Afanasiev, V. V. *see* **Afanas'ev, V. V.**

Afanas'yev, V. N. *see* **Afanas'ev, V. N.**

Afek, Yehuda (*with* Ricklin, Moty) Sparser: a paradigm for running distributed algorithms. (English summary) *J. Algorithms* **14** (1993), *no.* 2, 316–328. 68Q22

Afendikov, A. L. (*with* Varin, V. P.) An analysis of periodic flows in the vicinity of the plane Poiseuille flow. *European J. Mech. B Fluids* **10** (1991), *no.* 6, 577–603. (Summary) **93a:76038** 76E05 (35Q30, 58F39, 76D05, 76F20)

Affentranger, Fernando Random approximation of convex bodies. (Spanish. English summary) *Publ. Mat.* **36** (1992), *no.* 1, 85–109. (L. A. Santaló) **93g:52003** 52A22 (60D05)

Affleck, Ian Field theory methods and strongly correlated electrons. *Physics, geometry, and topology* (*Banff, AB*, 1989), 1–13, *NATO Adv. Sci. Inst. Ser. B Phys.*, 238, *Plenum, New York*, 1990. (Summary) **93a:82065** 82D55 (82B20)

— (*with* Arovas, Daniel P.; Marston, J. B.; Rabson, D. A.) SU($2n$) quantum antiferromagnets with exact C-breaking ground states. *Nuclear Phys. B* **366** (1991), *no.* 3, 467–506. (Summary) **93m:82003** 82B20 (82B10)

Afraimovich, V. S. (*with* Zheleznyak, A. L.; Zheleznyak, I. L.) Sufficient conditions for the existence of invariant tori in multidimensional dynamical systems. *Internat. J. Bifur. Chaos Appl. Sci. Engrg.* **1** (1991), *no.* 3, 681–689. (Ji Bin Li) **93c:58181** 58F27 (34C30, 58F13)

— (*with* Nekorkin, V. I.) Stable states in chain models of unbounded nonequilibrium media. (Russian. English summary) *Mat. Model.* **3** (1991), *no.* 12, 65–77 (1992). (Katarina Jankova) **93f:58128** 58F10 (58F13, 82D99)

— (*with* Ezersky, A. B.; Rabinovich, M. I.; Shereshevskiĭ, M. A.; Zheleznyak, A. L.) Dynamical description of spatial disorder. (English summary) Interpretation of time series from nonlinear systems (Warwick, 1991). *Phys. D* **58** (1992), *no.* 1-4, 331–338. (Hans-Peter Herzel) **93i:58139** 58F40 (58F13)

— (*with* Shereshevskiĭ, M. A.) Bipermutative cellular automata are topologically conjugate to the one-sided Bernoulli shift. (English summary) *Random Comput. Dynamics* **1** (1992/93), *no.* 1, 91–98. (S. I. Bezuglyĭ) **93i:58082** 58F08 (28D05)

Afrati, Foto The parallel complexity of single rule logic programs. (English summary) *Discrete Appl. Math.* **40** (1992), *no.* 2, 107–126. (Summary) **93h:68015** 68N17 (68Q25)

Africk, Henry Classical logic, intuitionistic logic, and the Peirce rule. *Notre Dame J. Formal Logic* **33** (1992), *no.* 2, 229–235. (Christian Bennet) **93d:03059** 03F05

Afsarinejad, Kasra (*with* Zhang, Yao Ting) A view of the chi-square statistic. (English summary) *Gaoxiao Yingyong Shuxue Xuebao* **7** (1992), *no.* 3, 403–410. (H. Enke) **93j:62159** 62H15 (62H17, 62H20)

Aftabizadeh, A. R. (*with* Aizicovici, Sergiu; Pavel, N. H.) Anti-periodic boundary value problems for higher order differential equations in Hilbert spaces. *Nonlinear Anal.* **18** (1992), *no.* 3, 253–267. (Jan Andres) **93a:34074** 34G20 (34B15, 34C25, 47H15, 47N20)

Agadzhanov, A. N. Properties of monotone limits of Banach spaces. (Russian) *Dokl. Akad. Nauk SSSR* **319** (1991), *no.* 5, 1033–1036; *translation in Soviet Math. Dokl.* **44** (1992), *no.* 1, 247–251. (Guy Noël) **93c:46035** 46B70 (46M35, 47B99)

Agaeva, R. G. The method of quantum integrals of motion and exact solutions of the nonstationary Schrödinger equation. (Russian) *Current group analysis* (*Russian*) (*Baku*, 1988), 3–9, "*Élm*", *Baku*, 1989. (*see* **93d:58002**) 81Q05

Agafonov, S. A. Stability of nonconservative mechanical systems. (Russian) *Dokl. Akad. Nauk* **322** (1992), *no.* 6, 1040–1042; *translation in Soviet Phys. Dokl.* **37** (1992), *no.* 2, 87–88. (A. Ya. Savchenko) **93h:70013** 70K20 (34D20, 70K15)

— The stability of the motion of nonconservative mechanical systems. (Russian. Russian summary) *Prikl. Mat. Mekh.* **56** (1992), *no.* 2, 212–217; *translation in J. Appl. Math. Mech.* **56** (1992), *no.* 2, 183–187. (From the text) **93f:70023** 70K20 (34D05)

Agalakov, S. A. A Lie algebra with one defining relation need not be residually finite. (Russian) *Mat. Zametki* **51** (1992), *no.* 4, 3–7, 139. (From the text) **93f:17014** 17B01

Agalovyan, L. A. (*with* Khachatryan, G. G.) An asymptotic method for solving boundary value problems in the theory of elasticity for nonclassical domains. (Russian) *Issled. Teor. Plastin i Obolochek No.* 23 (1991), 17–21. 73C02 (73V99)

Agamennoni, Osvaldo (*with* Paolini, Eduardo; Desages, Alfredo) On robust stability analysis of a control system using Laguerre series. *Automatica J. IFAC* **28** (1992), *no.* 4, 815–818. 93D09

Aganović, I. Homogenization of free boundary oscillations of an inviscid fluid in a porous reservoir. (English and French summaries) *RAIRO Modél. Math. Anal. Numér.* **27** (1993), *no.* 1, 65–76. (Summary) **93j:35027** 35B27 (35R35, 73B27, 73K70, 76D33, 76S05)

Agarwal, G. S. (*with* Home, D.; Schleich, W.) Einstein-Podolsky-Rosen correlation—parallelism between the Wigner function and the local hidden variable approaches. (English summary) *Phys. Lett. A* **170** (1992), *no.* 5, 359–362. (S. Gudder) **93k:81011** 81P10 (81S30)

Agarwal, Manju (*with* Chaudhry, Mohan L.; Templeton, James G. C.) Exact and approximate numerical solutions of steady-state distributions arising in the queue $GI/G/1$. *Queueing Systems Theory Appl.* **10** (1992), *no.* 1-2, 105–152. (Summary) **93b:60207** 60K25 (65U05, 90B22)

— (*with* Chaudhry, Mohan L.; Templeton, James G. C.) Computing steady-state queueing-time distributions of single-server queues: $GI^X/M/1$. (English summary) *Z. Oper. Res.* **37** (1993), *no.* 1, 13–29. (Summary) **93m:90037** 90B22 (60K25)

Agarwal, Pankaj K. (*with* Sharir, Micha) Red-blue intersection detection algorithms, with applications to motion planning and collision detection. (English summary) *Proceedings of the Fourth Annual Symposium on Computational Geometry* (*Urbana, IL*, 1988), 70–80, *ACM, New York*, 1988. (*see* **93k:68003**) 68U05

— Geometric partitioning and its applications. *Discrete and computational geometry* (*New Brunswick, NJ*, 1989/1990), 1–37, *DIMACS Ser. Discrete Math. Theoret. Comput. Sci.*, 6, *Amer. Math. Soc., Providence, RI*, 1991. (Michel Yves Jambu) **93a:52012** 52B55 (52B30, 68P05, 68Q20)

— (*with* Edelsbrunner, Herbert; Schwarzkopf, Otfried; Welzl, Emo) Euclidean minimum spanning trees and bichromatic closest pairs. *Discrete Comput. Geom.* **6** (1991), *no.* 5, 407–422. (Summary) **93a:68146** 68U05 (65Y10, 68Q25)

— (*with* Matoušek, Jiří) Relative neighborhood graphs in three dimensions. *Proceedings of the Third Annual ACM-SIAM Symposium on Discrete Algorithms* (*Orlando, FL*, 1992), 58–65, *ACM, New York*, 1992. (Summary) **93d:05140** 05C85 (68R10)

— (*with* Sharir, Micha; Toledo, Sivan) Applications of parametric searching in geometric optimization. *Proceedings of the Third Annual ACM-SIAM Symposium on Discrete Algorithms* (*Orlando, FL*, 1992), 72–82, *ACM, New York*, 1992. (Summary) **93d:68063** 68U05 (90C05)

— (*with* van Kreveld, Marc; Overmars, Mark H.) Intersection queries in sets of disks. *BIT* **32** (1992), *no.* 2, 268–279. (Ricardo Baeza-Yates) **93f:68096** 68U05 (68P05)

— (*with* Matoušek, Jiří; Suri, Subhash) Farthest neighbors, maximum spanning trees and related problems in higher dimensions. *Comput. Geom.* **1** (1992), *no.* 4, 189–201. (Michael S. Martin) **93f:68090** 68U05

— (*with* Matoušek, Jiří) Relative neighborhood graphs in three dimensions. (English summary) *Comput. Geom.* **2** (1992), *no.* 1, 1–14. (Summary) **93i:68166** 68U05 (05C85, 68Q25, 68T10)

— Ray shooting and other applications of spanning trees with low stabbing number. *SIAM J. Comput.* **21** (1992), *no.* 3, 540–570. (Ratko Tošić) **93f:68091** 68U05 (52B55, 68Q20)

— (*with* Sharir, Micha) Applications of a new space-partitioning technique. (English summary) *Discrete Comput. Geom.* **9** (1993), *no.* 1, 11–38. (Ivan Stojmenović) **93m:68159** 68U05 (52B55, 68Q25)

Agarwal, R. C. (*with* Kathuria, O. P.) The effect of two-stage sampling on OLS estimators. (English and Hindi summaries) *J. Indian Soc. Agricultural Statist.* **44** (1992), *no.* 3, 227–235, ii. 62J05

Agarwal, R. D. *see* **Agrawal, Ram Das**

Agarwal, R. P. *see* **Agarwal, Ravi Prakash**

Agarwal, Ratan Prakesh Mock theta functions—an analytical point of view. (English summary) *Nat. Acad. Sci. Lett.* **15** (1992), *no.* 2, 51–52. 33D10

Agarwal, Ravi Prakash (*with* Leela, S.) A tribute to Professor V. Lakshmikantham on his 65th birthday. *Recent trends in differential equations*, v–vii, *World Sci. Ser. Appl. Anal.*, 1, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93e:34005**) 01A70

— Component-wise convergence of quasilinearization method for nonlinear boundary value problems. *Hiroshima Math. J.* **22** (1992), *no.* 3, 525–541. (Martin Hermann) **93j:34019** 34A45 (34A50, 34B15, 65L10)

— Computational methods for discrete boundary value problems. II. *J. Math. Anal. Appl.* **166** (1992), *no.* 2, 540–562. (Summary) **93d:65110** 65Q05

— (*with* Pang, P. Y. H.) Periodic boundary value problems for first and second order discrete systems. (English summary) *Math. Comput. Modelling* **16** (1992), *no.* 10, 101–112. (R. M. M. Mattheij) **93j:65214** 65Q05

— (*with* Wong, Patricia J. Y.) A new representation for the error function for the Hermite interpolation and sharper pointwise and uniform error bounds for the derivatives. *Nonlinear Anal.* **19** (1992), *no.* 8, 769–786. (Marc Van Barel) **93i:41001** 41A05 (41A10, 65D05)

— (*with* Sheng, Qin) Periodic solutions of higher-order hyperbolic partial differential equations. *Panamer. Math. J.* **2** (1992), *no.* 3, 1–22. (Pavel Krejčí) **93f:35019** 35B10 (35A35, 35L75)

— *see also* **Recent trends in differential equations, 93e:34005**

Agarwal, S. C. (*with* Das, M. N.) Incomplete block designs for partial diallel cross. (English summary) *Sankhyā Ser. B* **52** (1990), *no.* 1, 75–81. 62K10

Agarwal, Vinod Kumar[2] (*with* Somani, Arun K.) Distributed diagnosis algorithms for regular interconnected structures. (English summary) *IEEE Trans. Comput.* **41** (1992), *no.* 7, 899–906. 68M15

Agashe, Nirmala S. (*with* Chafle, Mangala R.) On submanifolds of a Riemannian manifold with semi-symmetric metric connection. *Tensor* (*N.S.*) **50** (1991), *no.* 3, 208–212. (Angel Ferrández) **93f:53043** 53C40 (53C05)

— (*with* Chafle, Mangala R.) A semi-symmetric nonmetric connection on a Riemannian manifold. *Indian J. Pure Appl. Math.* **23** (1992), *no.* 6, 399–409. (Andrzej Bucki) **93e:53018** 53B05 (53B15)

— (*with* Chafle, Mangala R.) On submanifolds of an almost product Riemannian manifold. *Tensor* (*N.S.*) **51** (1992), *no.* 2, 138–144. (Andrzej Bucki) **93m:53051** 53C40 (53C05, 53C15)

— (*with* Chafle, Mangala R.) On submanifolds of a special paracontact Riemannian manifold. *Tensor* (*N.S.*) **51** (1992), *no.* 2, 145–155. (Andrzej Bucki) **93m:53052** 53C40

(53C15)

Agashe, S. D. (*with* Lande, B. K.) Pole assignment using output feedback. (English summary) *Mathematical theory of control* (*Bombay*, 1990), 225–232, *Lecture Notes in Pure and Appl. Math.*, 142, *Dekker, New York*, 1993. (*see* **93g:93003**) 93B55 (93B52)

— (*with* Rao, Ashok) Matrix polynomials—a new tool in linear system theory. (English summary) *Mathematical theory of control* (*Bombay*, 1990), 293–305, *Lecture Notes in Pure and Appl. Math.*, 142, *Dekker, New York*, 1993. (*see* **93g:93003**) 93C05 (93B25)

— A "derivation" of the Laplace transformation. (English summary) *Internat. J. Math. Ed. Sci. Tech.* **24** (1993), *no.* 1, 73–76. 44A10

Agayan, S. S. (*with* Bayadyan, G. L.; Gevorkyan, D. Z.) Problems in the stability of orthogonal series summation, and calculations of linear transforms. (Russian) *Cybernetics and computer technology, No.* 5 (*Russian*), 132–168, "*Nauka*", *Moscow*, 1991. (Radomir S. Stanković) **93k:65102** 65R10 (94A11)

Agbeko, Kwami N. Optimal average. Third IFSA-EC and EURO-WGFS Workshop on Fuzzy Sets (Visegrád, 1990). *Ann. Univ. Sci. Budapest. Sect. Comput.* **12** (1991), 5–10. (Beloslav Riečan) **93d:28030** 28E10

Agbeko, N. K. On an inequality of Longnecker and Serfling. (Russian summary) *Anal. Math.* **17** (1991), *no.* 1, 3–9. (De Li Li) **93a:60019** 60E15

Ageev, A. A. A polynomial algorithm for solving the location problem on a series-parallel network. (Russian) *Upravlyaemye Sistemy No.* 30 (1990), 3–16, 83. (Jacek Błażewicz) **93g:90081** 90C35 (90B10)

Ageev, O. N. On the centralizer of rigid transformations. (Russian. Russian summary) *Mat. Sb.* **183** (1992), *no.* 4, 20–48; *translation in Russian Acad. Sci. Sb. Math.* **75** (1993), *no.* 2, 445–472. (Anzelm Iwanik) **93m:28018** 28D05

Ageev, S. M. Classifying spaces for free actions and the Hilbert-Smith conjecture. (Russian) *Mat. Sb.* **183** (1992), *no.* 1, 143–151; *translation in Russian Acad. Sci. Sb. Math.* **75** (1993), *no.* 1, 137–144. (Dušan Repovš) **93f:55002** 55M10 (55M15, 55M35, 57S25)

Ageeva, I. Yu. (*with* Lopatin, A. K.) A new criterion for the diagonalizability of a matrix, and an algorithm for reducing it to canonical form. (Russian) *Akad. Nauk Ukrainy Inst. Mat. Preprint* **1991**, *no.* 48, 26 *pp.* 15A21

Agekyan, G. V. (*with* Nersesyan, A. B.) Vectorized algorithms for solving systems with Toeplitz-type matrices. (Russian. Armenian summary) *Akad. Nauk Armenii Dokl.* **93** (1992), *no.* 1, 17–22. (Israel Koltracht) **93j:65062** 65F30 (65Y05)

Agemi, Rentaro (*with* Takamura, Hiroyuki) The lifespan of classical solutions to nonlinear wave equations in two space dimensions. *Hokkaido Math. J.* **21** (1992), *no.* 3, 517–542. (Yun Mei Chen) **93m:35126** 35L70 (35B05)

Ageron, Pierre Quelques aspects de la dualité entre logique et topologie. (English summary) [Some aspects of the duality between logic and topology] *Cahiers Topologie Géom. Différentielle Catégoriques* **33** (1992), *no.* 3, 195–198. 03G99 (18A40, 54A35, 54B30)

— The logic of structures. *J. Pure Appl. Algebra* **79** (1992), *no.* 1, 15–34. (Peter Johnstone) **93e:03083** 03G30 (03B70, 18B99, 68Q55)

Aggarwal, Alok (*with* Edelsbrunner, Herbert; Raghavan, Prabhakar; Tiwari, Prasoon) Optimal time bounds for some proximity problems in the plane. *Inform. Process. Lett.* **42** (1992), *no.* 1, 55–60. (Summary) **93a:68147** 68U05

Aggarwal, Rajesh (*with* Dellwo, David R.; Friedman, Morton B.) Computational aspects of accelerated projection methods for nonlinear integral equations. (English summary) *Integral methods in science and engineering*—90 (*Arlington, TX*, 1990), 158–169, *Ser. Comput. Phys. Process. Mech. Thermal Sci., Hemisphere, New York*, 1991. (*see* **93f:00014**) 65R20

Aggarwal, S. *see* **Aggarwal, Shashi**

Aggarwal, Satish K. (*with* Gupta, D. P.) Least positive values of nonhomogeneous indefinite quadratic forms of signature 4. *J. Indian Math. Soc.* (*N.S.*) **56** (1991), *no.* 1-4, 109–131. (Madhu Raka) **93e:11083** 11H50 (11E20)

Aggarwal, Shashi (*with* Bector, C. R.; Bhatia, Davinder) Multiobjective fractional programming duality: a nondifferentiable case. Proceedings of the Twenty-first Manitoba Conference on Numerical Mathematics and Computing (Winnipeg, MB, 1991). *Congr. Numer.* **87** (1992), 77–85. (Bruce D. Craven) **93c:90068** 90C29 (49J52, 49N15, 90C32)

Aggarwala, B. D. (*with* Nasim, C.) On dual integral equations arising in problems of bending of anisotropic plates. *Internat. J. Math. Math. Sci.* **15** (1992), *no.* 3, 553–562. (Summary) **93f:45016** 45K05 (73K10)

Aggoun, Lakhdar (*with* Elliott, Robert James) Finite-dimensional predictors for hidden Markov chains. (English summary) *Systems Control Lett.* **19** (1992), *no.* 5, 335–340. (P. Neumann) **93k:93109** 93E11

Agha, Nader (*with* Hershkowitz, Daniel; Kogan, Nataly) A solution to an inverse height and level characteristics problem. (English summary) *Linear and Multilinear Algebra* **31** (1992), *no.* 1-4, 139–146. (Jia-yu Shao) **93k:15047** 15A99

Aghadiuno, M. C. K. Mathematics: history, philosophy and applications to science. (English summary) *Internat. J. Math. Ed. Sci. Tech.* **23** (1992), *no.* 5, 683–690. (Kenneth L. Manders) **93i:00008** 00A35 (00A30, 00A69, 01A05)

Aghezzaf, El Houssaine (*with* Wolsey, Laurence A.) Lot-sizing polyhedra with a cardinality constraint. *Oper. Res. Lett.* **11** (1992), *no.* 1, 13–18. (Summary) **93b:90068** 90C27 (90C09, 90C10)

Agiakloglou, C. (*with* Newbold, P.) Empirical evidence on Dickey-Fuller-type tests. (English summary) *J. Time Ser. Anal.* **13** (1992), *no.* 6, 471–483. 62M10

Agishtein, M. E. (*with* Migdal, A. A.) Critical behavior of dynamically triangulated quantum gravity in four dimensions. (English summary) *Nuclear Phys. B* **385** (1992), *no.* 1-2, 395–412. (Summary) **93i:83034** 83C27 (83C45)

al-Agl, Fahd Ali *see* **Al-Agl, Fahd Ali**

Agler, Jim On the representation of certain holomorphic functions defined on a polydisc. (English summary) *Topics in operator theory: Ernst D. Hellinger memorial volume*, 47–66, *Oper. Theory Adv. Appl.*, 48, *Birkhäuser, Basel*, 1990. (Joseph A. Ball) **93m:47013** 47A56 (47A20, 47A60)

Agmon, S. On the representation theorem for solutions of the Helmholtz equation on the hyperbolic space. *Partial differential equations and related subjects* (*Trento*, 1990), 1–20, *Pitman Res. Notes Math. Ser.*, 269, *Longman Sci. Tech., Harlow*, 1992. (J. Alfredo Jiménez) **93k:58218** 58G25 (22E30, 35J05)

Agnes, J. Mary (*with* Raghunathan, K.; Seetharaman, M.; Vasan, S. S.) A Baker-Campbell-Hausdorff disentanglement relation for Lie groups. *J. Phys. A* **25** (1992), *no.* 6, 1527–1534. (A. O. Barut) **93a:22005** 22E15 (81R05)

Agnese, A. G. (*with* La Camera, M.) Gravitational field of a gauge monopole. (English summary) *Modern Phys. Lett. A* **7** (1992), *no.* 32, 2965–2967. 81T13 (81V17)

Agnesi, Maria Gaetana *see* **Sampson, Joseph**, **93a:01056** *and* **93d:01076**

Agnew, G. B. (*with* Beth, Thomas; Mullin, R. C.; Vanstone, Scott A.) Arithmetic operations in GF(2^m). (English summary) *J. Cryptology* **6** (1993), *no.* 1, 3–13. (Summary) **93m:94018** 94A60

Agoh, Takashi Some variations and consequences of the Kummer-Mirimanoff congruences. *Acta Arith.* **62** (1992), *no.* 1, 73–96. (Andrew Granville) **93i:11035** 11D41

Agop, Marcel (*with* Talaşman, S.) The invariantive theory of rigid bodies. (Romanian. French summary) *Mem. Secţ. Ştiinţ. Acad. Repub. Soc. România Ser. IV* **11** (1988), *no.* 1, 107–132 (1991). (Introduction) **93a:70004** 70E15 (70A05)

— (*with* Zet, Gh.) La supergravitation $N = 1$ et le transport parallèle de Levi-Civita du plan de Lobacevski. (Romanian summary) [$N = 1$ supergravity and the Levi-Civita parallel displacement of the Lobachevskiĭ plane] *Bul. Inst. Politehn. Iaşi Secţ. I* **36(40)** (1990), *no.* 1-4, 71–72. 83E50 (51M10)

— (*with* Zet, Gh.; Dariescu, Marina; Săndulescu, Valentina) Le parallélisme des directions et les coordonnées physiques. (Romanian summary) [Parallelism of directions and physical coordinates] *Bul. Inst. Politehn. Iaşi Secţ. I* **36(40)** (1990), *no.* 1-4, 73–76. 51P05 (83C99)

Agoshkov, V. I. (*with* Ipatova, V. M.) On the solvability of basic and conjugate equations in nonlinear problems. (Russian) *Conjugate equations in problems of mathematical physics* (*Russian*), 3–46, *Akad. Nauk SSSR, Otdel Vychisl. Mat., Moscow*, 1990. (Ya. I. Al'ber) **93g:47081** 47H15 (35Qxx, 47H12, 47N20, 65P05)

— (*with* Marchuk, G. I.; Shutyaev, V. P.) ★ Сопряженные уравнения и алгоритмы возмущений в нелинейных задачах математической физики. (Russian) [Conjugate equations and perturbation algorithms in nonlinear problems of mathematical physics] *Akad. Nauk SSSR, Otdel Vychisl. Mat., Moscow*, 1991. 342 *pp. ISBN* 5-201-08802-3 (Ya. I. Al'ber) **93g:47080** 47H15 (35Qxx, 47H12, 47N20, 65P05)

— An inverse problem in transport theory and properties of a reflection operator. (Russian) *Differentsial'nye Uravneniya* **27** (1991), *no.* 6, 1002–1006, 1100; *translation in Differential Equations* **27** (1991), *no.* 6, 709–712. (Summary) **93f:82049** 82C70 (47N20, 47N55)

Agostinelli, Cataldo A particular case of the problem of three bodies mutually attracting by Newton's law. (Italian) *Mem. Accad. Sci. Torino Cl. Sci. Fis. Mat. Natur.* (5) **11** (1987), *no.* 1-2, 38 *pp.* (From the introduction) **93d:70018** 70F07

de Agostino, Sergio *see* **De Agostino, Sergio**

Ágoston, István (*with* Dlab, Vlastimil; Wakamatsu, Takayoshi) Neat algebras. *Comm. Algebra* **19** (1991), *no.* 2, 433–442. (Héctor A. Merklen) **93b:16017** 16E60 (16E10)

— (*with* Dean, Andrew P.; Schewe, Wiebke) Superpurely simple modules. *Arch. Math.* (*Basel*) **58** (1992), *no.* 2, 133–142. (Frank Okoh) **93a:16008** 16G60

Agou, Simon J. A generalized Ore transformation applied to a special class of polynomials over a finite field. *Finite fields, coding theory, and advances in communications and computing* (*Las Vegas, NV*, 1991), 3–13, *Lecture Notes in Pure and Appl. Math.*, 141, *Dekker, New York*, 1993. (S. D. Cohen) **93m:11126** 11T06

Agrachëv, A. A. (*with* Gamkrelidze, R. V.) Volterra series and permutation groups. (Russian) *Current problems in mathematics. Newest results, Vol.* 39 (*Russian*), 3–40, 180, *Itogi Nauki i Tekhniki, Akad. Nauk SSSR, Vsesoyuz. Inst. Nauchn. i Tekhn. Inform., Moscow*, 1991. (Antoni Wawrzynczyk) **93m:58099** 58F30 (22E70, 34C40, 93C10)

Agranovich, M. S. Moduli of eigenvalues of nonselfadjoint problems with a parameter that are elliptic in the Agmon-Douglas-Nirenberg sense. (Russian) *Funktsional. Anal. i Prilozhen.* **26** (1992), *no.* 2, 51–55; *translation in Functional Anal. Appl.* **26** (1992), *no.* 2, 116–119. (Günter Berger) **93f:35164** 35P20 (35P05, 58G25)

Agranovich, P. Z. (*with* Logvinenko, V. N.) Polynomial asymptotic representation of a function that is subharmonic in the plane. (Russian) *Sibirsk. Mat. Zh.* **32** (1991), *no.* 1, 3–21, 219; *translation in Siberian Math. J.* **32** (1991), *no.* 1, 1–16. (Summary) **93a:31002** 31A05 (30D99)

Agranovich, Yu. Ya. (*with* Sobolevskiĭ, P. E.) Motion of a nonlinear viscoelastic fluid. (Russian) *Dokl. Akad. Nauk SSSR* **314** (1990), *no.* 3, 521–525; *translation in Soviet Math. Dokl.* **42** (1991), *no.* 2, 474–478. (Andro Mikelić) **93d:35126** 35Q35 (73F15, 76A10)

Agranovskiĭ, M. L. Perturbations of the spectrum in the Pompeiu problem. (Russian) *Optimizatsiya No.* 48(65) (1990), 47–57. 35P15 (31A35, 35J05)

— (*with* Berenstein, Carlos A.; Chang, Der-Chen E.; Pascuas, Daniel) A Morera type theorem for L^2 functions in the Heisenberg group. (English summary) *J. Anal. Math.* **57** (1991), 282–296. (Gerald B. Folland) **93k:43012** 43A80 (22E30, 32C16)

— (*with* Berenstein, Carlos A.; Chang, Der-Chen E.; Pascuas, Daniel) Théorèmes de Morera et Pompeiu pour le groupe de Heisenberg. (English and French summaries) [Morera and Pompeiu theorems for the Heisenberg group] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 6, 655–658. (Summary) **93g:32026** 32F40 (22E25)

Agrawal, Anil Kumar (*with* Singh, Triloki) Bianchi type-II, VIII and IX in certain new theories of gravitation. *Astrophys. Space Sci.* **191** (1992), *no.* 1, 61–88. (Summary) **93f:83073** 83D05

Agrawal, B. D. (*with* Agrawal, Deepa) On a modified version of Jacobi polynomials. (English summary) *Progr. Math.* (*Varanasi*) **24** (1990), *no.* 1-2, 115–127. (From the summary) **93f:33007** 33C45

Agrawal, B. M. (*with* Gupta, S. C.) Finite summation. I. *J. Indian Acad. Math.* **14** (1992), *no.* 1, 80–85. (David R. Masson) **93h:33010** 33C99 (39A70)

Agrawal, D. (*with* El Abbadi, A.) The generalized tree quorum protocol: an efficient approach for managing replicated data. (English summary) *ACM Trans. Database Systems* **17** (1992), *no.* 4, 689–717. 68M10

Agrawal, Deepa (*with* Agrawal, B. D.) On a modified version of Jacobi polynomials. (English summary) *Progr. Math.* (*Varanasi*) **24** (1990), *no.* 1-2, 115–127. (From the summary) **93f:33007** 33C45

Agrawal, Manindra (*with* Biswas, Somenath) On the complexity of a problem related to union of sets in NP. *National Seminar on Theoretical Computer Science* (*Madras*, 1991), 1–7, *IMS Rep.*, 115, *Inst. Math. Sci., Madras*, 199?. (John P. Helm) **93m:03066** 03D15 (03D25, 68Q15)

Agrawal, Om Prakash A general orthogonal polynomial approach to the sensitivity analysis of linear systems. (English summary) *J. Franklin Inst.* **330** (1993), *no.* 2, 243–258. 93B35

Agrawal, Purshottam Narain (*with* Kasana, H. S.; Gupta, Vijay) Inverse and saturation theorems for linear combination of modified Baskakov operators. *Approx. Theory Appl.* **7** (1991), *no.* 2, 65–82. (Geetha S. Rao) **93a:41029** 41A27 (41A35, 41A40, 47B38)

— (*with* Gupta, Vijay) A saturation theorem for combinations of Bernstein-Durrmeyer polynomials. (English summary) *Ann. Polon. Math.* **57** (1992), *no.* 2, 157–164. (Heinz H. Gonska) **93i:41012** 41A35 (41A25, 41A40)

Agrawal, Ram Das (*with* Singh Chandel, R. C.; Kumar, Hemant[2]) Fourier series involving the multivariable H-function of Srivastava and Panda. *Indian J. Pure Appl. Math.* **23** (1992), *no.* 5, 343–357. (Summary) **93j:33006** 33C60 (42C10)

— (*with* Nag, Debabrata; Jain, R. C.) A thought on deviational variables of goal programming in social problems. *J. Indian Soc. Statist. Oper. Res.* **13** (1992), *no.* 1-4, 35–38. 90C90

— (*with* Singh Chandel, R. C.; Kumar, Hemant[2]) An integral involving sine functions, exponential functions, the Kampé de Fériet function and the multivariable H-function of Srivastava and Panda, and its application in a potential problem on a circular disk. *Pure Appl. Math. Sci.* **35** (1992), *no.* 1-2, 59–69. (Summary) **93f:33016** 33C80 (33C90)

Agrawal, S. R. (*with* Kantawala, P. S.; Patel, C. M.) On strong approximation of Nörlund and Euler means of orthogonal series. *Indian J. Math.* **33** (1991), *no.* 2, 99–117. (K. Tandori) **93d:42036** 42C15

Agrawal, Sanjeev (*with* Yadav, B. S.; Singh, Dinesh) de Branges modules in $H^2(\mathbf{C}^k)$ of the torus. *Functional analysis and operator theory* (*New Delhi*, 1990), 55–74, *Lecture Notes in Math.*, 1511, *Springer, Berlin*, 1992. (Steven George Krantz) **93h:46077** 46J15 (32A35, 46H25, 47A15, 47B38)

Agrawal, Shashi (*with* Singh Chandel, R. C.) A generalization of a class of polynomials. *Jñānabha* **21** (1991), 19–25. (C. L. Koul) **93a:33021** 33C45

Agresti, Alan A survey of exact inference for contingency tables. With comments and a rejoinder by the author. *Statist. Sci.* **7** (1992), *no.* 1, 131–177. 62H17

— Computing conditional maximum likelihood estimates for generalized Rasch models using simple loglinear models with diagonals parameters. (English summary) *Scand. J. Statist.* **20** (1993), *no.* 1, 63–71. 62P15 (62H17)

Agronsky, S. (*with* Ceder, J. G.) What sets can be ω-limit sets in E^n? *Real Anal. Exchange* **17** (1991/92), *no.* 1, 97–109. (Beverly Diamond) **93b:26004a** 26A18 (26B99, 54H20)

— (*with* Ceder, J. G.) Each Peano subspace of E^k is an ω-limit set. *Real Anal. Exchange* **17** (1991/92), *no.* 1, 371–378. (Beverly Diamond) **93b:26004b** 26A18 (26B99, 54H20)

Agu, M. (*with* Yamanaka, Kazuo) A mode of adaptive motion of a particle in an unknown field. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, II* (*Kobe*, 1991), 431–436, *Mita, Tokyo*, 1992. (*see* **93g:93006**) 93C40

Aguadé, J. *see* **Algebraic topology, 93e:55002**

garcía-Aguado, C. *see* **García-Aguado, C.**

de Aguiar, M. A. M. (*with* Furuya, Kyoko; Lewenkopf, C. H.; Nemes, M. C.) Chaos in a spin-boson system: classical analysis. *Ann. Physics* **216** (1992), *no.* 2, 291–312. (Alfredo M. Ozorio de Almeida) **93c:81279** 81V80 (58F13, 58F40)

— (*with* Ozorio de Almeida, Alfredo M.) Action billiards. *Nonlinearity* **5** (1992), *no.* 2, 523–539. (Valery Covachev) **93b:58047** 58F05 (58F30, 70H05)

— One-dimensional action billiards and eigenvalues of truncated Hamiltonians. *Phys. Lett. A* **164** (1992), *no.* 3-4, 284–288. (Summary) **93b:81038** 81Q05 (58F19, 81Q20)

Aguilar, A. (*with* Braun, E.) The specific heat of a general two-dimensional Ising model. *Phys. A* **178** (1991), *no.* 3, 551–560. (H. N. V. Temperley) **93a:82016** 82B23 (82B20)

— (*with* Braun, E.) Exact magnetic transitions in the "union jack" model. *Phys. A* **184** (1992), *no.* 1-2, 244–275. (Ladislav Šamaj) **93e:82009** 82B20 (82B23)

Aguilar, Gerardo P. (*with* Raggi Cárdenas, Francisco Federico) Sublattices of R-tors induced by the skeleton. *Comm. Algebra* **21** (1993), *no.* 4, 1347–1358. (Jonathan Golan) **93k:16059** 16S90

Aguilar, Luis A. The N-body problem in astronomy. (Spanish. English and Spanish summaries) *Rev. Mexicana Fís.* **38** (1992), *no.* 5, 701–738. 70F10 (70F15, 85A05)

González-Aguilera, Víctor *see* **González-Aguilera, Víctor**

Aguilera-Navarro, V. C. (*with* Fernández, Francisco M.; Guardiola, R.; Ros, J.) Large-order perturbation expansions for the charged harmonic oscillator. (English summary) *J. Phys. A* **25** (1992), *no.* 23, 6379–6392. (Summary) **93k:81049** 81Q15

Aguirre, Luis Antonio The least squares Padé method for model reduction. (English summary) *Internat. J. Systems Sci.* **23** (1992), *no.* 10, 1559–1570. 93B11 (41A21)

Aguirre, Manuel (*with* Friedli, C.; Krause, Jorge) SL(3, **R**) as the group of symmetry transformations for all one-dimensional linear systems. III. Equivalent Lagrangian formalisms. *J. Math. Phys.* **33** (1992), *no.* 5, 1571–1578. (M. I. Monastyrskiĭ) **93g:58128** 58F35 (34A26, 70H33, 70J05)

sáez Agulló, Carmen *see* **Sáez Agulló, Carmen**

Agustí, J. (*with* López de Màntaras, R.; Plaza, E.; Sierra, C.) MILORD: a fuzzy expert systems shell. *Fuzzy expert systems*, 213–223, *CRC, Boca Raton, FL*, 1992. (*see* **93g:68133**) 68T35 (03B52)

Agzamov, I. (*with* Kholmatov, T. Kh.; Radzhabov, N. A.) Fundamental solutions of a problem in the theory of elasticity in stresses. (Russian. Russian summary) *Voprosy Vychisl. i Prikl. Mat.* (*Tashkent*) *No.* 87 (1989), 121–126, 166. 73C02

Aha, David W. (*with* Albert, Marc K.) Analyses of instance-based learning algorithms. (English summary) *AAAI-91. Proceedings, Ninth National Conference on Artificial Intelligence, Vol.* 1, 2, 553–558, *AAAI Press, Menlo Park, CA*, 1991. (Summary) **93j:68162** 68T05

Ahara, Kazushi (*with* Hattori, Akio) 4-dimensional symplectic S^1-manifolds admitting moment map. *J. Fac. Sci. Univ. Tokyo Sect. IA Math.* **38** (1991), *no.* 2, 251–298. (Charles-Michel Marle) **93b:58048** 58F05 (53C15, 57R19, 57R91, 57R95)

— (*with* Ikeda, Kazumasa; Ishimura, Naoyuki) Linear discrete model for shortening polygons. (English summary) *J. Fac. Sci. Univ. Tokyo Sect. IA Math.* **39** (1992), *no.* 2, 365–377. (Anders Linnér) **93h:52011** 52A40

Aharoni, Ron Infinite matching theory. Directions in infinite graph theory and combinatorics (Cambridge, 1989). *Discrete Math.* **95** (1991), *no.* 1-3, 5–22. (Karsten Steffens) **93c:05111** 05D15 (05C70)

— (*with* Holzman, Ron) Optimal fractional matchings and covers in infinite hypergraphs: existence and duality. *Graphs Combin.* **8** (1992), *no.* 1, 11–22. (Ioan Tomescu) **93b:05125** 05C65 (05C70)

— (*with* Holzman, Ron) How to guess two letters correctly. (English summary) *J. Combin. Theory Ser. A* **61** (1992), *no.* 1, 1–12. (Svatopluk Poljak) **93g:05140** 05D05

— (*with* Magidor, Menachem; Shore, Richard A.) On the strength of König's duality theorem for infinite bipartite graphs. *J. Combin. Theory Ser. B* **54** (1992), *no.* 2, 257–290. (Summary) **93h:03080** 03F35 (03D45, 05C70)

Aharonov, Yakir (*with* Stern, Ady) Origin of the geometric forces accompanying Berry's geometric potentials. (English summary) *Phys. Rev. Lett.* **69** (1992), *no.* 25, 3593–3597. (Summary) **93i:81294** 81V10

Aharony, Amnon *see* **Fractals in physics, 93d:58004**

Aharony, O. (*with* Sonnenschein, Jacob; Yankielowicz, Shimon) G/G models and W_N strings. (English summary) *Phys. Lett. B* **289** (1992), *no.* 3-4, 309–316. (Henrik Aratyn) **93g:81137** 81T40 (81R10, 81T30, 81T70)

Aherkar, S. M. (*with* Asgekar, G. G.) Relativistic static spheres filled with infinitely conducting charged fluids. *Astrophys. Space Sci.* **190** (1992), *no.* 2, 191–196. (S. Kichenassamy) **93e:83024** 83C20 (83C22)

Ahern, Patrick (*with* Rudin, Walter) Hulls of 3-spheres in $\mathbf{C}^3$. *The Madison Symposium on Complex Analysis* (*Madison, WI*, 1991), 1–27, *Contemp. Math.*, 137, *Amer. Math. Soc., Providence, RI*, 1992. (Herbert Alexander) **93k:32020** 32E20

— (*with* Cohn, William S.) Besov spaces, Sobolev spaces, and Cauchy integrals. *Michigan Math. J.* **39** (1992), *no.* 2, 239–261. (Steven George Krantz) **93d:32005** 32A35 (32A37, 46E35, 47G10)

Ahia, Francis Finiteness of the discrete spectrum of $(N \geq 3)$ N-body Schrödinger operators, which have some determinate subsystems that are virtual at the bottom of the continuum. *J. Math. Phys.* **33** (1992), *no.* 1, 189–202. (Mary Beth Ruskai) **93a:81037** 81Q10 (35J10, 35P05, 47F05, 47N50, 81V70)

— Lower bounds on width of Stark resonances in one dimension. *Lett. Math. Phys.* **24** (1992), *no.* 1, 21–29. (Mary Beth Ruskai) **93a:81207** 81U99 (47N50)

Ahlbrandt, Gisela (*with* Ziegler, Martin) What's so special about $(\mathbf{Z}/4\mathbf{Z})^\omega$? *Arch. Math. Logic* **31** (1991), *no.* 2, 115–132. (U. Felgner) **93e:03047** 03C35 (03C45, 03C60, 20J06)

Ahlén, Anders (*with* Sternad, Mikael) Adaptive input estimation. (English summary) *Adaptive systems in control and signal processing*, 1989 (*Glasgow*), 567–572, *IFAC Sympos. Ser.*, 1990, *No.* 1, *Pergamon, Oxford*, 1990. (*see* **93j:93007**) 93E35 (93E10)

— (*with* Sternad, Mikael) A novel derivation methodology for polynomial-LQ controller design. (English summary) *IEEE Trans. Automat. Control* **38** (1993), *no.* 1, 116–121. (Jan Murgaš) **93m:93039** 93B51

klemisch-Ahlert, Marlies *see* **Klemisch-Ahlert, Marlies**

Ahluwalia, D. S. (*with* Sachdev, P. L.; Gupta, Neelam) Global solutions describing the collapse of a spherical or cylindrical cavity. (English summary) *Z. Angew. Math. Phys.* **43** (1992), *no.* 5, 856–874. (Summary) **93i:76075** 76N15

Ahluwalia, D. V. (*with* Ernst, D. J.) Paradoxical kinematic acausality in Weinberg's equations for massless particles of arbitrary spin. *Modern Phys. Lett. A* **7** (1992), *no.* 22, 1967–1974. (A. O. Barut) **93k:81082** 81R20

Ahluwalia, Rashpal (*with* Rohatgi, Vijay K.; Saleh, A. K. Md. Ehsanes; Ji, Ping) Null distribution of locally most powerful tests for the two sample problem when the combined sample is type II censored. *Soochow J. Math.* **18** (1992), *no.* 2, 123–134. (Title) **93f:62069** 62G10

Ahmad, Aqeel (*with* Shakil, M.) Fixed point theorems for some discontinuous operators in Banach spaces. *Bull. Malaysian Math. Soc.* (2) **14** (1991), *no.* 2, 63–68. (Ljubomir Ćirić) **93b:47115** 47H10

— (*with* Imdad, M.) A common fixed point theorem for four mappings satisfying a rational inequality. (English summary) *Publ. Math. Debrecen* **41** (1992), *no.* 3-4, 181–187. (Summary) **93h:54027** 54H25

Ahmad, B. On Iseki's BCI-algebras. II. *J. Natur. Sci. Math.* **30** (1990), *no.* 2, 19–25. (Marek Pałasiński) **93f:06018** 06F35 (03G25)

— (*with* Rehman, F. U.) Operations on topological spaces. I. (English summary) *Math. Today* **10** (1992), 29–36. (Ljubiša Kočinac) **93m:54006** 54A05

Ahmad, Ibrahim A. A new test for mean residual life times. (English summary) *Biometrika* **79** (1992), *no.* 2, 416–419. (H. L. Harter) **93j:62235** 62N05 (62G10)

— Residuals density estimation in nonparametric regression. *Statist. Probab. Lett.* **14** (1992), *no.* 2, 133–139. (Summary) **93f:62043** 62G05

Ahmad, Khalil (*with* Jain, Pawan Kumar; Maskey, S. M.) Block sequences of subspaces of a Banach space. *Atti Sem. Mat. Fis. Univ. Modena* **39** (1991), *no.* 2, 413–417. (Summary) **93b:46020** 46B15

Ahmad, M. *see* **Ahmad, Mubarak**

Ahmad, Mohammed Salahuddin (*with* Samawi, Hani Michel) Maximum likelihood estimates of Weibull parameters using accelerated life testing. (English and Arabic summaries) *Dirāsāt Ser. B Pure Appl. Sci.* **18** (1991), *no.* 2, 54–69 (1992). 62F10 (62N05)

Ahmad, Mubarak (*with* Hanna, M. H.; Tikoo, S. K.; Raina, T. K.) Coherent state in the roton region of superfluid helium-4. *Nuovo Cimento D* (1) **14** (1992), *no.* 3, 221–238. (Summary) **93a:82063** 82D50 (81R30)

— Nucleation of vortices in superfluid helium-4. *Nuovo Cimento D* (1) **14** (1992), *no.* 3, 239–252. (Summary) **93a:82064** 82D50

Ahmad, Munir (*with* Chaudhry, Muhammad Aslam) On improper integrals of products of logarithmic, power and Bessel functions. *Bull. Austral. Math. Soc.* **45** (1992), *no.* 3, 395–398. (S. P. Goyal) **93h:33003** 33C10

Ahmad, Musheer (*with* Mashhood, Asif) Frattini-high subgroups of abelian groups. *Soochow J. Math.* **18** (1992), *no.* 1, 61–65. (Claudia Böttinger) **93b:20092** 20K27

— (*with* Mashhood, Asif; Javes, Seema) Neat and neat-high extensions. *Tamkang J. Math.* **23** (1992), *no.* 1, 15–19. (Manfred Dugas) **93c:20092** 20K35 (20K27)

Ahmad, R. Nonparametric statistical signal detection problems. *Nonparametric functional estimation and related topics* (*Spetses*, 1990), 477–492, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 335, *Kluwer Acad. Publ., Dordrecht*, 1991. (Summary) **93k:62103** 62G10

Ahmad, Shaheen (*with* Zribi, Mohamed) Lyapunov based control design for multiple robots handling a common object. *Mechanics and control* (*Los Angeles, CA*, 1991), 1–17, *Lecture Notes in Control and Inform. Sci.*, 170, *Springer, Berlin*, 1992. (Sauro Longhi) **93b:93075** 93C85 (70Q05)

— (*with* Luo, Shengwu) Predicting the drift motion for kinematically redundant robots. (English summary) *IEEE Trans. Systems Man Cybernet.* **22** (1992), *no.* 4, 717–728. (Summary) **93g:68141** 68U05 (70B15)

— (*with* Zribi, Mohamed) Lyapunov-based control design for multiple robots handling a common object. (English summary) *Dynamics Control* **3** (1993), *no.* 2, 127–157. (Summary) **93i:93085** 93C85 (70B15, 70Q05)

— (*with* Sira-Ramirez, Hebertt J.; Zribi, Mohamed) Adaptive dynamical feedback regulation strategies for linearizable uncertain systems. (English summary) *Internat. J. Control* **57** (1993), *no.* 1, 121–139. (Summary) **93k:93062** 93C40 (93B52)

Ahmad, Shair On the nonautonomous Volterra-Lotka competition equations. *Proc. Amer. Math. Soc.* **117** (1993), *no.* 1, 199–204. (Hal Leslie Smith) **93c:34109** 34C99 (92D25)

Ahmadi, Javad H. (*with* Ahmadi, Reza H.; Dasu, Sriram; Tang, Christopher S.) Batching and scheduling jobs on batch and discrete processors. (English summary) *Oper. Res.* **40** (1992), *no.* 4, 750–763. 90B35

Ahmadi, Mohammad H. On Egyptian fractions. *Proceedings of the 21st. Annual Iranian Mathematics Conference (Isfahan, 1990)*, 1–20, *Univ. Isfahan, Isfahan*, 199?. (E. J. Barbeau) **93a:01004** 01A16 (11A67)

— One-dimensional game of life and its growth functions. *Internat. J. Math. Math. Sci.* **15** (1992), *no.* 3, 499–508. (William Gasarch) **93c:05004** 05A10

Ahmadi, Reza H. (*with* Ahmadi, Javad H.; Dasu, Sriram; Tang, Christopher S.) Batching and scheduling jobs on batch and discrete processors. (English summary) *Oper. Res.* **40** (1992), *no.* 4, 750–763. 90B35

— (*with* Bagchi, Uttarayan) Minimizing job idleness in deadline constrained environments. (English summary) *Oper. Res.* **40** (1992), *no. 5*, 972–985. 90B35

Ahmed, Abdul-Hadi Nabih (*with* Abouammoh, A. M.; Khalique, A.) Stochastic classes of life distributions. (English and Arabic summaries) *Qatar Univ. Sci. Bull.* **10** (1990), 11–24. (Summary) **93c:62157** 62N05

— (*with* Yehia, A. Y.) Two characterizations of geometric distributions. (English summary) *Egyptian Statist. J.* **35** (1991), *no.* 2, 234–250. (Summary) **93i:62017** 62E10

— (*with* Abouammoh, A. M.) On renewal failure rate classes of life distributions. *Statist. Probab. Lett.* **14** (1992), *no.* 3, 211–217. (Summary) **93c:62158** 62N05 (60K10)

Ahmed, Aqeel (*with* Shakil, M.) Some fixed point theorems satisfying a rational inequality. (English summary) *J. Bihar Math. Soc.* **14** (1993), 26–34. 54H25 (47H10)

Ahmed, Elsayed Mohamed (*with* Hegazi, A. S.) Finite temperature infinitesimally deformed classical and quantum gravity. (English summary) *Gen. Relativity Gravitation* **24** (1992), *no.* 9, 929–934. (Summary) **93i:81088** 81R50 (81T30)

Ahmed, M. ★ Cardinal geometry. *M. Ahmed, Madras*, 1991. viii+434 *pp.* (H. W. Guggenheimer) **93g:51015** 51M04

Ahmed, M. A. Curved-spacetime graviton vertex operator in string theory. (English summary) *Phys. Rev. D* (3) **46** (1992), *no.* 8, 3465–3482. (Boris Moiseevich Zupnik) **93j:81076** 81T30 (81T16, 81T20)

Ahmed, Mainuddin (*with* Mondal, Asit Kumar) Hawking radiation of Dirac particles in Kasner-type spacetime. (English summary) *Internat. J. Theoret. Phys.* **31** (1992), *no.* 12, 2047–2052. 83C47 (83C57)

— (*with* Biswas, Elias Uddin) Cosmic string in the NUT-Kerr-Newman spacetime. (English summary) *Internat. J. Theoret. Phys.* **32** (1993), *no.* 5, 813–818. (Summary) **93m:83007** 83C15 (83F05)

Ahmed, Muhammad Salahuddin (*with* Abu-Dayyeh, Walid) A double inequality for the tail probability of standard normal distribution. (English summary) *J. Inform. Optim. Sci.* **14** (1993), *no.* 2, 155–159. 60E15

Ahmed, N. U. Relaxed controls for stochastic boundary value problems in infinite dimension. (English summary) *Optimal control of partial differential equations (Irsee, 1990)*, 1–10, *Lecture Notes in Control and Inform. Sci.*, **149**, *Springer, Berlin*, 1991. (Nikolaos S. Papageorgiou) **93f:93133** 93E20 (35B37, 49K45)

— Nonlinear evolution equations on Banach space. *J. Appl. Math. Stochastic Anal.* **4** (1991), *no.* 3, 187–202. (A. B. Buche) **93e:34082** 34F05 (34G20, 35Rxx, 47H20, 47N20)

— Partially observed optimal relaxed feedback controls for infinite-dimensional stochastic systems. (English summary) *Mathematics of the analysis and design of process control (Dublin, 1991/Lille, 1991)*, 165–173, *North-Holland, Amsterdam*, 1992. (*see* **93g:93004**) 93C25 (93B52, 93E03)

— Semilinear and quasilinear stochastic differential equations in Banach spaces. (English summary) *Recent trends in differential equations*, 1–14, *World Sci. Ser. Appl. Anal.*, 1, *World Sci. Publishing, River Edge, NJ*, 1992. (A. Ya. Dorogovtsev) **93g:60120** 60H10 (34F05, 34G20, 47H20, 47N20)

— Optimal control of hydrodynamic flow with possible application to artificial heart. *Dynamic Systems Appl.* **1** (1992), *no.* 2, 103–119. (Summary) **93e:49053** 49N55 (34G20, 76D05, 76M99, 76Z05, 92C50, 93C20)

— (*with* Xiang, Xiao Ling) Admissible relaxation in optimal control problems for infinite-dimensional uncertain systems. (English summary) *J. Appl. Math. Stochastic Anal.* **5** (1992), *no.* 3, 227–236. (Erik J. Balder) **93i:49018** 49J45 (49J27)

— (*with* Xiang, Xiao Ling) Existence of periodic solutions of semilinear evolution equations with time lags. *Nonlinear Anal.* **18** (1992), *no.* 11, 1063–1070. (Peter Dormayer) **93e:34105** 34K30 (34G20, 34K15)

— An existence theorem for stochastic nonlinear evolution equations on Banach space. (English summary) *Stochastic Anal. Appl.* **10** (1992), *no.* 4, 379–385. (Víctor Pérez-Abreu) **93m:60127** 60H15 (60H20)

Ahmed, Naseer Equivalent Hamiltonian forms of the Neilsen and Cenov equations of motion. *J. Natur. Sci. Math.* **31** (1991), *no.* 2, 121–131. (B. Vujanović) **93a:70014** 70H05 (70F20)

Ahmed, S. E. (*with* Badahdah, S. O.) On the estimation of the mean vector of a multivariate normal distribution under symmetry. *Comm. Statist. Theory Methods* **21** (1992), *no.* 6, 1759–1778. 62H12

— (*with* Kulperger, R. J.) A bootstrap theorem for a preliminary test estimator. *Comm. Statist. Theory Methods* **21** (1992), *no.* 7, 2071–2082. (Gutti J. Babu) **93g:62067** 62G20 (62G05, 62G09, 62G10)

Ahn, Chang-Jun (*with* Kim, Won-Tae; Park, Young-Jai; Kim, Kee Yong; Kim, Yong Duk) Equivalence of light-cone and conformal gauges in two-dimensional quantum gravity. (English summary) *Modern Phys. Lett. A* **7** (1992), *no.* 25, 2263–2268. (Summary) **93e:81067** 81T13

Ahn, Changhyun $c = 5/2$ free fermion model of WB_2 algebra. (English summary) *Internat. J. Modern Phys. A* **7** (1992), *no.* 27, 6799–6811. (Summary) **93h:81041** 81R10 (17B68, 81T40)

Ahn, Changrim (*with* Chung, Stephen-wei; Tye, S.-H. Henry) New parafermion, SU(2) coset and $N = 2$ superconformal field theories. *Nuclear Phys. B* **365** (1991), *no.* 1, 191–240. (Jean-Pierre Ader) **93a:81162** 81T40 (17B81, 81R10, 81T60, 81T70)

— (*with* Shigemoto, Kazuyasu) One-point functions of loops and constraint equations of the multi-matrix models at finite N. *Phys. Lett. B* **285** (1992), *no.* 1-2, 42–48. (Summary) **93d:81146** 81T40 (81R10)

— RG flows of nonunitary minimal CFTs. (English summary) *Phys. Lett. B* **294** (1992), *no.* 2, 204–208. 81T40 (81T18)

Ahn, Doo-Soo (*with* Lee, Seung; Shim, Jae-Sun; Bae, Jong-Il) A study on estimation of bilinear systems via single term of orthogonal functions. *Control theory, stochastic analysis and applications (Hangzhou, 1991)*, 236–245, *World Sci. Publishing, River Edge, NJ*, 1991. (*see* **93a:93005**) 93E10

Ahn, Ho S. (*with* Carmona, René A.; Molchanov, S. A.) Nonstationary Anderson model with Lévy potential. *Stochastic partial differential equations and their applications (Charlotte, NC, 1991)*, 1–11, *Lecture Notes in Control and Inform. Sci.*, 176, *Springer, Berlin*, 1992. (Dimitri Petritis) **93h:82036** 82C20 (35R60, 60H25)

Ahn, Hyungtaik (*with* Manski, Charles F.) Distribution theory for the analysis of binary choice under uncertainty with nonparametric estimation of expectations. (English summary) *J. Econometrics* **56** (1993), *no.* 3, 291–321. (Summary) **93m:62063** 62G05 (62P20)

Ahn, Seong-Soo (*with* Kim, Nam-Gil; Lee, Sung-Baik; Lim, In-Taik) On characterizations of a real hypersurface of type A in a complex space form. *Honam Math. J.* **14** (1992), *no.* 1, 37–44. (Alfonso Romero) **93j:53069** 53C40

Ahn, Seung Ho (*with* Chung, Jin Myung; Rim, Joong Kyu; Kim, Dong Soo) A proof of the Peter-Weyl theorem by Laplacian. *Collection of papers dedicated to Prof. Jong Geun Park on his sixtieth birthday (Korean)*, 29–44, *Jeonbug, Seoul*, 1989. (Stig I. Andersson) **93g:58134** 58G03 (22E30)

Ahn, Sung K. (*with* Reinsel, Gregory C.) Vector autoregressive models with unit roots and reduced rank structure: estimation, likelihood ratio test, and forecasting. *J. Time Ser. Anal.* **13** (1992), *no.* 4, 353–375. 62M10

— (*with* Cho, Sinsup) Some tests for unit roots in seasonal time series with deterministic trends. (English summary) *Statist. Probab. Lett.* **16** (1993), *no.* 2, 85–95. (Summary) **93k:62177** 62M10

Ahn, Wi Chong (*with* Choi, Bong Dae; Shin, Yang Woo) Retrial queues with collision arising from unslotted CMSA/CD protocol. (English summary) *Queueing Systems Theory Appl.* **11** (1992), *no.* 4, 335–356. (Summary) **93h:68011** 68M20 (60K25, 90B22)

Ahner, John F. (*with* Hsiao, George C.) Iterative solutions of boundary integral equations of the first kind. *J. Math. Anal. Appl.* **167** (1992), *no.* 2, 322–339. (V. V. Vasin) **93h:65164** 65R20 (45B05, 45L05)

Aho, Alfred V. (*with* Ullman, Jeffrey D.) ★ Foundations of computer science. Principles of Computer Science Series. *Computer Science Press, New York*, 1992. xvi+765 *pp. ISBN* 0-7167-8233-2 (D. Z. Spicer) **93i:68001** 68-01

matala-Aho, Tapani *see* **Matala-Aho, Tapani**

Ahrens, Heinz J. (*with* Sánchez, Jesús E.) Imbalance and its influence on variance component estimation. (English summary) *Biometrical J.* **34** (1992), *no.* 5, 539–555. 62J05 (62J10)

Ahsan, J. (*with* Khan, M. F.; Shabir, M.; Takahashi, Michihiro) Characterizations of monoids by p-injective and normal S-systems. *Kobe J. Math.* **8** (1991), *no.* 2, 173–190. (H. J. Weinert) **93d:20118** 20M30 (20M14, 20M35)

Ahsanullah, Mohammad Two characteristic properties of the generalized negative binomial distribution. *Biometrical J.* **33** (1991), *no.* 7, 861–864. (Ramesh C. Gupta) **93a:62012** 62E10

— (*with* Bansal, Naveen K.; Hamedani, G. G.) On characterizations of normal distributions. (English summary) *Calcutta Statist. Assoc. Bull.* **41** (1991), *no.* 161-164, 157–162. (Summary) **93h:62017** 62E10

— Some characteristic properties of the record values from the exponential distribution. (English summary) *Sankhyā Ser. B* **53** (1991), *no.* 3, 403–408. (Summary) **93e:62037** 62E10 (62G30)

— A note on the one parameter power series distribution. (English summary) *Calcutta Statist. Assoc. Bull.* **42** (1992), *no.* 165-166, 119–124. 62E15

— (*with* Balakrishnan, Narayanaswamy; Chan, P. S.) Relations for single and product moments of record values from Gumbel distribution. (English summary) *Statist. Probab. Lett.* **15** (1992), *no.* 3, 223–227. (Summary) **93j:62143** 62G30

— (*with* Bhoj, Dinesh S.) Testing equality of coefficients of variation of two populations. (English summary) *Biometrical J.* **35** (1993), *no.* 3, 355–359. 62F03

Ahsanullah, T. M. G. (*with* Khodadad Khan, A. F. M.) Sequential convergence in fuzzy neighborhood spaces. *Fuzzy Sets and Systems* **46** (1992), *no.* 1, 115–120. (A. Shostak) **93a:54005** 54A40 (04A72, 54E70)

— (*with* Morsi, Nehad N.) Invariant probabilistic metrizability of fuzzy neighbourhood groups. *Fuzzy Sets and Systems* **47** (1992), *no.* 2, 233–245. (Summary) **93d:54008** 54A40 (04A72, 54E70)

Ahuja, O. P. (*with* Silverman, Herb) Strongly starlike functions with negative coefficients. (English summary) *Univalent functions, fractional calculus, and their applications (Kōriyama, 1988)*, 29–38, *Ellis Horwood Ser. Math. Appl., Horwood, Chichester*, 1989. (Summary) **93h:30005** 30C45

Ahuja, Ravindra K. (*with* Orlin, James B.) New scaling algorithms for the assignment and minimum mean cycle problems. *Math. Programming* **54** (1992), *no.* 1, *Ser. A*, 41–56. (Summary) **93b:90040** 90B80 (90C35)

Ahumada Barrios, Rafael Enrique Connectedness and the axiom of completeness. (Spanish) *Bol. Mat.* **21** (1987), *no.* 1, 44–47. 26A03

— (*with* Pureta Ortiz, Fernando) Connectedness and the axiom of completeness in a dense totally ordered set K without first and last elements. (Spanish) *Rev. Integr. Temas Mat.* **9** (1991), *no.* 2, 95–99. 06A05

A-Hussain Ali, A-Hamid Finite order elements in $\mathrm{Aut}(\mathbf{C}^2)$. *Bull. London Math. Soc.* **24** (1992), *no.* 4, 313–316. (L. Andrew Campbell) **93f:14010** 14E09 (13B10, 13B25, 14E07, 20E06)

Ai, Ming Yao (*with* Qin, Hong) Admissibility of linear estimators for random regression coefficients and parameters in a multivariate linear model. (Chinese. English and Chinese summaries) *J. Central China Normal Univ. Natur. Sci.* **26** (1992), *no.* 3, 279–285. (Summary) **93m:62023** 62C15 (62J05)

Ai, Shang Bing Asymptotic integration of delay differential systems. *J. Math. Anal. Appl.* **165** (1992), *no.* 1, 71–101. (István Győri) **93g:34100** 34K05 (34K20)

Aibara, Tsunehiro (*with* Izumida, Masanori; Murakami, Kenji) Analysis of neural network energy functions using standard forms. (English summary) *Systems Comput. Japan* **23** (1992), *no.* 8, 36–45. (Philippe De Wilde) **93i:92006** 92B20 (68T05, 90C27)

Aicardi, Michele (*with* Di Febbraro, Angela; Minciardi, Riccardo) Perturbation analysis of discrete event dynamic systems via minimax algebra. *System modelling and optimization* (*Zurich*, 1991), 925–933, *Lecture Notes in Control and Inform. Sci.*, 180, *Springer, Berlin*, 1992. (*see* **93e:90003**) 90C40

— (*with* Minciardi, Riccardo; Pesenti, Raffaele) Minimizing the customer mean flow time in simple queue networks: upper and lower bounds. *System modelling and optimization* (*Zurich*, 1991), 934–942, *Lecture Notes in Control and Inform. Sci.*, 180, *Springer, Berlin*, 1992. (*see* **93e:90003**) 90B22

— (*with* Casalino, G.; Minciardi, Riccardo; Zoppoli, R.) On the existence of stationary optimal receding-horizon strategies for dynamic teams with common past information structures. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 11, 1767–1771. 93A14 (93B55)

Aida, Haruko Unknotting operations of polygonal type. *Tokyo J. Math.* **15** (1992), *no.* 1, 111–121. (G. Burde) **93f:57007** 57M25

Aida, Shigeki D^∞-cohomology groups and D^∞-maps on submanifolds in Wiener spaces. *J. Funct. Anal.* **107** (1992), *no.* 2, 289–301. (Hélène Airault) **93g:60118** 60H07 (58G32)

Aiello, Walter G. (*with* Freedman, H. I.; Wu, Jian Hong) Analysis of a model representing stage-structured population growth with state-dependent time delay. *SIAM J. Appl. Math.* **52** (1992), *no.* 3, 855–869. (Ovide Arino) **93j:92025** 92D25 (34K15, 34K20)

— (*with* Subbarao, M. V.) A conjecture in addition chains related to Scholz's conjecture. (English summary) *Math. Comp.* **61** (1993), *no.* 203, 17–23, S1–S6. (Anthony A. Gioia) **93k:11015** 11B83 (11Y55)

Aiello, William (*with* Håstad, Johan) Relativized perfect zero knowledge is not BPP. *Inform. and Comput.* **93** (1991), *no.* 2, 223–240. (M. V. D. Burmester) **93b:68076** 68T15

— (*with* Ogielski, Andrew T.) Sparse matrix computations on parallel processor arrays. (English summary) *SIAM J. Sci. Comput.* **14** (1993), *no.* 3, 519–530. 65Y05 (65F50, 68Q22)

Aiena, Pietro Fredholm multipliers of semisimple commutative Banach algebras. *Extracta Math.* **6** (1991), *no.* 2-3, 173–176. 46J05 (47A53, 47D99)

— (*with* González, Manuel) Inessential operators and incomparability of Banach spaces. (English summary) *Extracta Math.* **6** (1991), *no.* 2-3, 177–180. 47B06 (46B20)

— Multipliers on Banach algebras with orthogonal bases. (Italian summary) *Boll. Un. Mat. Ital. B* (7) **6** (1992), *no.* 1, 163–176. (T. Husain) **93e:46062** 46J25 (47B48)

Aigner, Dennis J. (*with* Ghali, Khalifa) Data pooling and self-selection: a mixed effects hierarchical approach. (English summary) *Readings in econometric theory and practice*, 103–141, *Contrib. Econom. Anal.*, 209, *North-Holland, Amsterdam*, 1992. (*see* **93m:62006**) 62J05 (62F15, 62P20)

Aigner, Martin (*with* Pein, J.; Stechmüller, T.) Fraktale regulärer Polygone. [Fractals of regular polygons] *Math. Semesterber.* **38** (1991), *no.* 2, 242–251. (H. W. Guggenheimer) **93b:51022** 51M15 (28A80)

— (*with* Triesch, Eberhard; Tuza, Zsolt) Irregular assignments and vertex-distinguishing edge-colorings of graphs. (English summary) *Combinatorics '90* (*Gaeta*, 1990), 1–9, *Ann. Discrete Math.*, 52, *North-Holland, Amsterdam*, 1992. (Summary) **93h:05066** 05C15

— *see also* **Esterbrock, Jutta, 93m:68145**

Aigrain, Philippe (*with* Nivat, Maurice) Suffix, prefix and maximal tree codes. (English summary) *Tree automata and languages* (*Le Touquet*, 1990), 21–39, *Stud. Comput. Sci. Artif. Intell.*, 10, *North-Holland, Amsterdam*, 1992. (Dong Yang Long) **93m:68096** 68Q45 (05C05, 68R15)

Aihara, Shin'ichi Parameter identification for stochastic parabolic systems. (English summary) *Systems and control*, 1–12, *Mita, Tokyo*, 1991. (Summary) **93j:93140** 93E10 (93C20)

— Regularized maximum likelihood estimate for an infinite-dimensional parameter in stochastic parabolic systems. *SIAM J. Control Optim.* **30** (1992), *no.* 4, 745–764. (Věra Lánská) **93e:93059** 93E10 (93C30, 93E12, 93E30)

— (*with* Bagchi, Arunabha) Maximum likelihood estimator for two-point boundary value process. (English summary) *SIAM J. Control Optim.* **31** (1993), *no.* 1, 147–158. (Yannis A. Phillis) **93j:93147** 93E12 (60H10, 62M09)

Ailte, A. Meromorphic and holomorphic functions that generate normal families on an arbitrary group of conformal automorphisms of a disk. (Russian) *Dokl. Akad. Nauk* **322** (1992), *no.* 4, 631–634; *translation in Soviet Math. Dokl.* **45** (1992), *no.* 1, 141–145. (Shamil Makhmutov) **93k:30056** 30D40

Aikawa, Hiroaki Quasiadditivity of Riesz capacity. *Math. Scand.* **69** (1991), *no.* 1, 15–30. (S. K. Vodop'yanov) **93d:31007** 31C15 (31C45)

— Infinite order Sobolev spaces, analytic continuation and polynomial expansions. *Complex Variables Theory Appl.* **18** (1992), *no.* 3-4, 253–266. (Steven George Krantz) **93c:46049** 46E35 (30B40)

— Thin sets at the boundary. *Proc. London Math. Soc.* (3) **65** (1992), *no.* 2, 357–382. (Matts Essén) **93g:31012** 31B25 (31A15, 31A20, 31B15)

Aiki, Toyohiko The existence of solutions to two-phase Stefan problems for nonlinear parabolic equations. (Russian and Polish summaries) *Control Cybernet.* **19** (1990), *no.* 1-2, 41–62. (Summary) **93h:35216** 35R35 (80A22)

— (*with* Kenmochi, Nobuyuki; Shinoda, Junichi) Periodic stability for Stefan problems with flux boundary conditions. *Free boundary problems involving solids* (*Montreal, PQ*, 1990), 158–163, *Pitman Res. Notes Math. Ser.*, 281, *Longman Sci. Tech., Harlow*, 1993. (*see* **93k:00037**) 35R35 (35B35)

Aikou, Tadashi On complex Finsler manifolds. *Rep. Fac. Sci. Kagoshima Univ. Math. Phys. Chem. No.* 24 (1991), 9–25. (Aurel Bejancu) **93e:53079** 53C60 (53C56)

Ailon, Amit Errata: "An approach for pole assignment by gain output feedback in square singular systems" [Kybernetika (Prague) **27** (1991), no. 4, 317–332; MR 92j:93054]. *Kybernetika* (*Prague*) **28** (1992), *no.* 6, 512. (Editors) **93k:93052** 93B55

— Disturbance decoupling with stability and impulse-free response in singular systems. (English summary) *Systems Control Lett.* **19** (1992), *no.* 5, 401–411. (Summary) **93g:93041** 93B52 (93B10, 93B25, 93C05, 93D15)

Aimar, Hugo Rearrangement and continuity properties of BMO(φ) functions on spaces of homogeneous type. *Ann. Scuola Norm. Sup. Pisa Cl. Sci.* (4) **18** (1991), *no.* 3, 353–362. (Alexander Mekler) **93h:46032** 46E30 (26A12, 26A48)

Aimar, Marie-Thérèse (*with* Intissar, Abdelkader; Paoli, Jean-Martin) Densité des vecteurs propres généralisés d'une classe d'opérateurs non auto-adjoints à résolvante compacte. (English and French summaries) [Denseness of the generalized eigenvectors of a class of nonselfadjoint operators with compact resolvent] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 4, 393–396. (Summary) **93f:47023** 47B25 (47A70, 47N50, 81Q10)

Ainouche, A. An improvement of Fraissé's sufficient condition for Hamiltonian graphs. (English summary) *J. Graph Theory* **16** (1992), *no.* 6, 529–543. (Feng Tian) **93k:05104** 05C45

Ainsworth, Mark (*with* Oden, J. Tinsley) A procedure for a posteriori error estimation for *h-p* finite element methods. (English summary) Reliability in computational mechanics (Kraków, 1991). *Comput. Methods Appl. Mech. Engrg.* **101** (1992), *no.* 1-3, 73–96. (Summary) **93h:73035** 73V05 (65N30)

— (*with* Oden, J. Tinsley) A posteriori error estimators for second order elliptic systems. I. Theoretical foundations and a posteriori error analysis. (English summary) *Comput. Math. Appl.* **25** (1993), *no.* 2, 101–113. (Lutz Angermann) **93j:65170** 65N15 (65N30)

— (*with* Oden, J. Tinsley; Lee, Chang-Yeong) Local a posteriori error estimators for variational inequalities. (English summary) *Numer. Methods Partial Differential Equations* **9** (1993), *no.* 1, 23–33. (Khalil Ahmad) **93m:49015** 49M25 (49J40, 65K10, 73V05, 73V25)

Ainulloev, N. Jackson-type inequalities in the space L_2. (Russian) *Application of functional analysis in approximation theory* (*Russian*), 8–12, *Tver. Gos. Univ., Tver'*, 1990. (*see* **93k:00021**) 41A17

Airapetyan, G. M. On the Hilbert problem in the sense of L^p-convergence, $p > 1$. (Russian) *Dokl. Akad. Nauk* **328** (1993), *no.* 4, 421–423. 30E25

— A boundary value problem of Riemann-Hilbert type for n-holomorphic functions in the class L^1. (Russian) *Dokl. Akad. Nauk* **328** (1993), *no.* 5, 533–535. 30E25

Airapetyan, Yu. N. Approximate solution of the nonlinear diffusion problem taking into account the finite rate of propagation of the front of a concentration wave. (Russian. English and Armenian summaries) *Erevan. Gos. Univ. Uchen. Zap. Estestv. Nauki* **1990**, *no.* 2, 58–63 (1991). (Summary) **93d:80002** 80A20 (35K55, 76R50, 80–08)

Airault, Hélène (*with* Malliavin, Paul) Integration on loop groups. II. Heat equation for the Wiener measure. *J. Funct. Anal.* **104** (1992), *no.* 1, 71–109. (Ana Bela Cruzeiro) **93d:60098** 60H07 (28C20, 43A80, 46G12, 58D20, 60J60)

— Formules de Cameron-Martin-Girsanov-Kusuoka-Buckdahn. Application à l'étude des retractes. (English and French summaries) [Cameron-Martin-Girsanov-Kusuoka-Buckdahn formulas, and the study of retracts] *C. R. Acad. Sci. Paris Sér. I Math.* **316** (1993), *no.* 7, 727–731. (Summary) **93m:60109** 60H07 (58G32, 60G30)

buenos Aires Cyclic Homology Group *see* **Buenos Aires Cyclic Homology Group**

Airy, George Biddell *see* **Chapman, Allan, 93a:01044**

Aisagaliev, S. A. Controllability of a system of differential equations. (Russian) *Differentsial'nye Uravneniya* **27** (1991), *no.* 9, 1475–1486, 1651; *translation in Differential Equations* **27** (1991), *no.* 9, 1037–1045 (1992). (T. R. Gichev) **93a:93013** 93B05 (34H05, 45F05)

Aisagalieva, S. S. Optimal control of linear systems with a quadratic functional with fixed trajectory ends. (Russian. English, Russian and Kazakh summaries) *Izv. Akad. Nauk Kazakh. SSR Ser. Fiz.-Mat.* **1991**, *no.* 5, 3–7. 49N10

Aitchison, I. J. R. (*with* Mehta, Manish A.; Davies, J. A.) Stable soliton solution of the CP^1 model with a Chern-Simons term. *Phys. Lett. B* **281** (1992), *no.* 1-2, 86–89. (Summary) **93b:81148** 81T10 (81T13)

— (*with* Wanelik, K.) On the real and complex geometric phases. (English summary) *Proc. Roy. Soc. London Ser. A* **439** (1992), *no.* 1905, 25–34. (Bing Hong Wang) **93k:81063** 81Q99 (58B99, 58Z05)

Aitchison, I. R. (*with* Rubinstein, J. H.) An introduction to polyhedral metrics of nonpositive curvature on 3-manifolds. *Geometry of low-dimensional manifolds*, 2 (*Durham*, 1989), 127–161, *London Math. Soc. Lecture Note Ser.*, 151, *Cambridge Univ. Press, Cambridge*, 1990. (G. Peter Scott) **93e:57018** 57M50 (53C21)

— (*with* Rubinstein, J. H.) Canonical surgery on alternating link diagrams. (English summary) *Knots* 90 (*Osaka*, 1990), 543–558, *de Gruyter, Berlin*, 1992. (Peter R. Cromwell) **93h:57006** 57M25 (57N10)

— (*with* Rubinstein, J. H.) Combinatorial cubings, cusps, and the dodecahedral knots. (English summary) *Topology '90* (*Columbus, OH*, 1990), 17–26, *Ohio State Univ. Math. Res. Inst. Publ.*, 1, *de Gruyter, Berlin*, 1992. (Terry Lawson) **93i:57016** 57M50 (57M25, 57N10)

— (*with* Lumsden, E.; Rubinstein, J. H.) Cusp structures of alternating links. (English summary) *Invent. Math.* **109** (1992), *no.* 3, 473–494. (Charles Livingston) **93h:57007** 57M25

Aitchison, John On criteria for measures of compositional difference. *Math. Geol.* **24** (1992), *no.* 4, 365–379. (Summary) **93b:86008** 86A32

Aït-Kaci, Hassan (*with* Podelski, Andreas; Smolka, Gert) A feature-based constraint system for logic programming with entailment. (English summary) *Fifth generation computer systems, Vol.* 1, 2 (*Tokyo*, 1992), 1012–1021, *Ohm, Tokyo*, 1992. (*see* **93i:68007**) 68N17

Aitkin, Murray Evidence and the posterior Bayes factor. *Math. Sci.* **17** (1992), *no.* 1, 15–25. 62A10

Aiton, Eric John The contributions of Isaac Newton, Johann Bernoulli and Jakob Hermann to the inverse problem of central forces. *Der Ausbau des Calculus durch Leibniz und die Brüder Bernoulli* (*Basel*, 1987), 48–58, *Studia Leibnitiana Sonderheft*, 17, *Steiner, Wiesbaden*, 1989. (*see* **93e:01009**) 01A45 (70–03)

— *see also* **Duncan, A. M., 93g:01066** *and* **Field, J. V.**

Aivazyan, S. A. *see* **Handbook: Applied statistics, 93d:62002b**

nguyen Ai Viet *see* **Nguyen Ai Viet**

Aiyama, Reiko (*with* Cheng, Qing Ming) Complete space-like hypersurfaces with constant mean curvature in a Lorentz space form of dimension 4. (English summary) *Kodai Math. J.* **15** (1992), *no.* 3, 375–386. (Toru Ishihara) **93i:53063** 53C50 (53C40)

— On the Gauss map of complete space-like hypersurfaces of constant mean curvature in Minkowski space. *Tsukuba J. Math.* **16** (1992), *no.* 2, 353–361. (Xue Shan Zhang) **93m:53062** 53C42 (53C40, 53C50)

Aizawa, Y. *see* **Proceedings: Symposium on Quantum Physics and the Universe, 93m:81006**

Aizenberg, L. A. The possibility of analytic continuation into a domain of a function defined on an arc of the boundary of this domain. A generalized Fock-Kuni theorem. (Russian. Russian summary) *Complex analysis and mathematical physics* (*Russian*) (*Divnogorsk*, 1987), 5–11, 157, *Akad. Nauk SSSR Sibirsk. Otdel., Inst. Fiz., Krasnoyarsk*, 1988. (*see* **93b:32001**) 30B40 (30D40)

— (*with* Kytmanov, A. M.) Holomorphic continuation of functions from a part of the domain boundary. (Russian) *Dokl. Akad. Nauk SSSR* **321** (1991), *no.* 6, 1129–1132; *translation in Soviet Math. Dokl.* **44** (1992), *no.* 3, 839–842. (J. Siciak) **93a:32016** 32D15
— (*with* Kytmanov, A. M.) On the possibility of holomorphic continuation of functions, defined on a connected part of the domain boundary, into the domain. (Russian) *Mat. Sb.* **182** (1991), *no.* 4, 490–507; *translation in Math. USSR-Sb.* **72** (1992), *no.* 2, 467–483. (Introduction) **93d:32016** 32D15 (30B40, 32A25)
— (*with* Gol'dberg, A. A.; Levin, B. Ya.; et al.) Lev Isaakovich Ronkin (on the occasion of his sixtieth birthday). (Russian) *Uspekhi Mat. Nauk* **46** (1991), *no.* 5(281), 181–183; *translation in Russian Math. Surveys* **46** (1991), *no.* 5, 207–209. (Editors) **93e:01016** 01A70
— Carleman formulas with a holomorphic kernel and with integration over boundary sets of maximal dimension. (Russian) *Dokl. Akad. Nauk* **325** (1992), *no.* 6, 1095–1098; *translation in Russian Acad. Sci. Dokl. Math.* **46** (1993), *no.* 1, 153–156. (E. J. Akutowicz) **93j:32005** 32A25
— (*with* Kytmanov, A. M.) On the possibility of holomorphic continuation of functions, defined on a connected part of the boundary of the domain, into the domain. II. (Russian. Russian summary) *Mat. Sb.* **184** (1993), *no.* 1, 3–14. (Summary) **93k:32017** 32D15 (30B40, 32A25)
— *see also* **Complex analysis and mathematical physics, 93b:32001**
Aizengendler, P. G. On the bifurcation of the equilibrium forms of a rod under rotation and axial compression. (Russian) *Functional analysis, No.* 30 (*Russian*), 3–16, *Ul'yanovsk. Gos. Ped. Inst., Ul'yanovsk*, 1989. (From the text) **93k:73045** 73H10 (73K05)
— On the bifurcation of the equilibrium positions of plates. (Russian) *Functional analysis, No.* 31 (*Russian*), 6–20, *Ul'yanovsk. Gos. Ped. Inst., Ul'yanovsk*, 1990. (From the text) **93k:73044** 73H05 (47H15, 73K10)
— Imperfections and bifurcations of forms of equilibrium of a rod under longitudinal compression and torsion. (Russian) *Functional analysis, No.* 32 (*Russian*), 3–14, *Ul'yanovsk. Gos. Ped. Inst., Ul'yanovsk*, 1991. (From the text) **93m:73015** 73H05 (34A47, 73K05)
Aizenman, Michael (*with* Barsky, David J.) Percolation critical exponents under the triangle condition. *Ann. Probab.* **19** (1991), *no.* 4, 1520–1536. (John C. Wierman) **93b:60224** 60K35 (82B43)
Aizenshtat, A. V. (*with* Karlovich, Yu. I.; Litvinchuk, G. S.) Defect numbers of the D. Kveselava–N. Vekua operator with a discontinuous shift derivative. (Russian) *Dokl. Akad. Nauk SSSR* **318** (1991), *no.* 1, 11–16; *translation in Soviet Math. Dokl.* **43** (1991), *no.* 3, 633–638 (1992). (Sergei Grudskiĭ) **93d:30008** 30C35 (30E25, 31A25, 45E10, 47G10)
Aĭzerman, M. A. *see* **Obituary: Aĭzerman, M. A.**
Aizicovici, Sergiu (*with* Reich, Simeon) Anti-periodic solutions to difference inclusions in Banach spaces. *Dynamic Systems Appl.* **1** (1992), *no.* 2, 121–130. (A. Ya. Dorogovtsev) **93e:39001** 39A10 (47B39, 47H06, 47H15, 47N20)
— (*with* Papageorgiou, Nikolaos S.) Extremal solutions to a class of multivalued integral equations in Banach space. (English summary) *J. Appl. Math. Stochastic Anal.* **5** (1992), *no.* 3, 205–220. (Krishnan Balachandran) **93i:45016** 45N05 (34G20, 45D05, 47H15, 47N20, 49J24)
— (*with* Aftabizadeh, A. R.; Pavel, N. H.) Anti-periodic boundary value problems for higher order differential equations in Hilbert spaces. *Nonlinear Anal.* **18** (1992), *no.* 3, 253–267. (Jan Andres) **93a:34074** 34G20 (34B15, 34C25, 47H15, 47N20)
Aizpuru Tomás, Antonio (*with* Benítez Trujillo, Francisco) The weak dense uniform λ-property in normed spaces. (Spanish. English summary) *Proceedings of the XVth Portuguese-Spanish Conference on Mathematics, Vol. II* (*Portuguese*) (*Évora*, 1990), 199–204, *Univ. Évora, Évora*, 1991. (Summary) **93a:46022** 46B20
— (*with* Benítez Trujillo, Francisco) The Bade property and the λ-property in spaces of convergent sequences. (English summary) *Collect. Math.* **42** (1991), *no.* 3, 245–251 (1992). (Richard M. Aron) **93m:46016** 46B45 (46A45, 46E40)
— On the Grothendieck and Nikodým properties of Boolean algebras. *Rocky Mountain J. Math.* **22** (1992), *no.* 1, 1–10. (Robert F. Wheeler) **93f:28003** 28A60 (06E15, 46E99, 54H10)
Ajan, K. S. On some presentations of completely regular semigroups. *Semigroup Forum* **45** (1992), *no.* 2, 214–225. (T. S. Blyth) **93d:20112** 20M17
Ajevsky, V. R. Approximate inertial manifolds for reaction-diffusion equations. (English and Latvian summaries) *Proceedings of the Latvian Probability Seminar, Vol.* 1 (*Riga*, 1991), 70–89, *Riga Tech. Univ., Riga*, 1992. (*see* **93e:60006**) 35K57
prabhu-Ajgaonkar, S. G. *see* **Prabhu-Ajgaonkar, S. G.**
Ajmal, Naseem (*with* Kohli, J. K.) Properties of hyperconnected spaces, their mappings into Hausdorff spaces and embeddings into hyperconnected spaces. *Acta Math. Hungar.* **60** (1992), *no.* 1-2, 41–49. (Vesko Valov) **93m:54025** 54C08 (54C05, 54D05)
— (*with* Dixit, V. N.; Kumar, Rajesh) On fuzzy rings. (English summary) *Fuzzy Sets and Systems* **49** (1992), *no.* 2, 205–213. (T. M. G. Ahsanullah) **93j:13008** 13A99 (04A72)
— (*with* Sarma, Ratna Dev) Various fuzzy topological notions and fuzzy almost continuity. (English summary) *Fuzzy Sets and Systems* **50** (1992), *no.* 2, 209–223. (Summary) **93g:54008** 54A40 (04A72)
— (*with* Sarma, Ratna Dev) Fuzzy nets and their application. (English summary) *Fuzzy Sets and Systems* **51** (1992), *no.* 1, 41–51. 54A40 (04A72)
— (*with* Swaroop Prajapati, Anand) Fuzzy cosets and fuzzy normal subgroups. *Inform. Sci.* **64** (1992), *no.* 1-2, 17–25. (Summary) **93c:20118** 20N25 (04A72)
Ajmone Marsan, M. (*with* Simone, C.) The application of EB-equivalence rules to the structural reduction of GSPN models. *J. Parallel Distrib. Comput.* **15** (1992), *no.* 3, 296–302. 68Q90
Akagawa, Yasumasa The Artinian Λ-module and the pairing on the cyclotomic $\mathbf{Z}_l$-extensions. *Osaka J. Math.* **28** (1991), *no.* 2, 263–284. (Introduction) **93e:11127** 11R23
Akahira, Masafumi Second order asymptotic comparison of the discretized likelihood estimator with asymptotically efficient estimators in the double exponential case. (Italian summary) *Metron* **48** (1990), *no.* 1-4, 5–17 (1991). (Summary) **93e:62081** 62F12
— (*with* Takeuchi, Kei) Asymptotic efficiency of estimators for a location parameter family of densities with the bounded support. *Rep. Statist. Appl. Res. Un. Japan. Sci. Engrs.* **38** (1991), *no.* 1, 1–9. (I. V. Basawa) **93b:62041** 62F12
Akahori, Takao On the existence of a versal family of complex structures over weakly pseudoconvex domains. *Ryukyu Math. J.* **1** (1988), 1–21. (Kimio Miyajima) **93d:32025** 32G05
— A criterion for versality of deformations of tubular neighborhoods of strongly pseudo convex boundaries. *Canad. J. Math.* **44** (1992), *no.* 2, 225–233. (Kimio Miyajima) **93k:32039** 32G05 (32F15, 32F30)
Akama, Seiki The Gentzen-Kripke construction of the intermediate logic LQ. *Notre Dame J. Formal Logic* **33** (1992), *no.* 1, 148–153. (George F. Schumm) **93c:03033** 03B55 (03F05)
— *see also* **Tanaka, Kazuyuki[1], 93k:03058**
Akansu, Ali N. (*with* Haddad, Richard A.) ★ Multiresolution signal decomposition. Transforms, subbands, and wavelets. Telecommunications. *Academic Press, Inc., Boston, MA*, 1992. xii+376 *pp. ISBN* 0-12-047140-X (A. Bultheel) **93m:94004** 94A12 (94–02, 94A11)
Akashi, Shigeo The asymptotic behavior of quantum ε-entropy. *Quantum probability & related topics*, 85–91, *QP-PQ, VI, World Sci. Publishing, River Edge, NJ*, 1991. (Masanori Ohya) **93h:81035** 81Q99 (26A12, 40A05, 94A17)
— A relation between Kolmogorov-Prokhorov's condition and Ohya's fractal dimensions. (English summary) *IEEE Trans. Inform. Theory* **38** (1992), *no.* 5, 1567–1570. (Summary) **93e:94005** 94A17 (28D20, 60G99)
Akatsa, Victor K. Flat resolvents, minimal injective resolutions and negative torsion functors. (English summary) *Comm. Algebra* **20** (1992), *no.* 11, 3105–3118. (Joachim Apel) **93j:13019** 13D25 (18G15)
Akbarov, S. S. Derivations of the algebra of smooth functions on a locally compact abelian group. (Russian) *Mat. Zametki* **50** (1991), *no.* 2, 3–13, 160; *translation in Math. Notes* **50** (1991), *no.* 1-2, 771–778 (1992). (Yu. N. Mukhin) **93e:22006** 22B99 (46J15)
Akbas, M. (*with* Singerman, D.) Symmetries of modular surfaces. *Discrete groups and geometry* (*Birmingham*, 1991), 1–9, *London Math. Soc. Lecture Note Ser.*, 173, *Cambridge Univ. Press, Cambridge*, 1992. (Michael Kapovich) **93j:20099** 20H10 (11F06, 11G05, 30F35)
Akbik, Safwan Large prime divisors of k consecutive integers and special irreducible polynomials over the rationals. *J. Indian Math. Soc.* (*N.S.*) **56** (1991), *no.* 1-4, 7–21. (Matti Jutila) **93b:11114** 11N25 (11C08)
— Normal generators of finite fields. *J. Number Theory* **41** (1992), *no.* 2, 146–149. (Gary L. Mullen) **93d:11128** 11T30
Akbulut, Selman (*with* King, Henry Churchill) Rational structures on 3-manifolds. *Pacific J. Math.* **150** (1991), *no.* 2, 201–214. (A. Tognoli) **93c:57028** 57R99 (14P99)
— (*with* King, Henry Churchill) On approximating submanifolds by algebraic sets and a solution to the Nash conjecture. *Invent. Math.* **107** (1992), *no.* 1, 87–98. (A. Tognoli) **93d:57051** 57R19 (14P05)
Akçay, Hüseyin (*with* Gu, Guoxiang; Khargonekar, Pramod P.) A class of algorithms for identification in $\mathscr{H}_\infty$: continuous-time case. (English summary) *IEEE Trans. Automat. Control* **38** (1993), *no.* 2, 289–294. (Summary) **93j:93035** 93B30 (93B36, 93B40)
Akcoglu, Mustafa (*with* del Junco, Andrés; Lee, W. M. F.) A solution to a problem of A. Bellow. *Almost everywhere convergence, II* (*Evanston, IL*, 1989), 1–7, *Academic Press, Boston, MA*, 1991. (Anzelm Iwanik) **93e:28018** 28D05
— (*with* Bellow, Alexandra; del Junco, Andrés; Jones, Roger L.) Divergence of averages obtained by sampling a flow. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 2, 499–505. (Nathaniel F. G. Martin) **93g:28019** 28D10 (47A35, 58F11)
Akdeniz, K. G. (*with* Dayi, Ömer F.; Kızılersü, A.) Canonical description of a two-dimensional gravity. *Modern Phys. Lett. A* **7** (1992), *no.* 19, 1757–1764. (Gheorghe Zet) **93e:81099** 81T40
Akduman, İbrahim (*with* İdemen, Mithat) On inverse scattering problems related to cylindrical bodies with unknown orientations. (English summary) *Wave Motion* **17** (1993), *no.* 1, 33–48. (Summary) **93k:78011** 78A45
Akella, Ram (*with* Rajagopalan, S.; Singh, Medini R.) Part dispatch in random yield multistage flexible test systems for printed circuit boards. (English summary) *Oper. Res.* **40** (1992), *no.* 4, 776–789. 94C10
Akemann, Charles A. (*with* Pedersen, Gert K.) Facial structure in operator algebra theory. *Proc. London Math. Soc.* (3) **64** (1992), *no.* 2, 418–448. (C. Martin Edwards) **93c:46106** 46L05 (46L10)
Akeroyd, John A note concerning cyclic vectors in Hardy and Bergman spaces. *Function spaces* (*Edwardsville, IL*, 1990), 1–8, *Lecture Notes in Pure and Appl. Math.*, 136, *Dekker, New York*, 1992. (Warren R. Wogen) **93b:47056** 47B38 (47A99)
— Polynomial approximation in the mean with respect to harmonic measure on crescents. II. *Michigan Math. J.* **39** (1992), *no.* 1, 35–40. (James Li Ming Wang) **93g:30052** 30E10 (30C80, 30D55, 46E15)
Akhatov, I. Sh. Application of group analysis for the approximate solution of boundary value problems in filtration theory. (Russian) *Numerical methods for solving boundary value problems* (*Russian*), 117–123, *Akad. Nauk SSSR Ural. Otdel., Bashkir. Nauchn. Tsentr, Ufa*, 1989. (*see* **93m:00033**) 35Q35 (76S05)
Akheyan, A. Z. (*with* Ananikyan, N. S.) The gauge Potts model on a generalized Bethe lattice. *J. Phys. A* **25** (1992), *no.* 11, 3111–3119. (Kornél Szlachányi) **93e:82008** 82B20
Akhiezer, A. I. (*with* Shul'ga, N. F.) Quasiclassical theory of radiation emission from high-energy particles in an external field and the problem of boundary conditions. *Soviet Phys. JETP* **73** (1991), *no.* 3, 437–443; *translated from Zh. Èksper. Teoret. Fiz.* **100** (1991), *no.* 3, 791–802 (*Russian*). (Lawrence P. Horwitz) **93g:78012** 78A35 (70H40, 81U99, 81V10)
Akhiezer, D. N. The homogeneity of two-orbit manifolds with respect to a complete group of automorphisms. (Russian) *Problems in group theory and homological algebra* (*Russian*), 141–154, *Matematika, Yaroslav. Gos. Univ., Yaroslavl'*, 1988. (*see* **93b:00020**) 14L30
— Equivariant complex extensions of homogeneous spaces. (Russian. Russian summary) *Mat. Zametki* **51** (1992), *no.* 6, 3–9, 156; *translation in Math. Notes* **51** (1992), *no.* 5-6, 535–539. (B. Gilligan) **93i:32040** 32M10
Akhlaghi, M. R. A. (*with* Sharma, Ambikeshwar) Some Pál type interpolation problems. *Approximation, optimization and computing*, 37–40, *North-Holland, Amsterdam*, 1990. (D. C. Handscomb) **93j:41002** 41A05
— A Pál-type lacunary interpolation problem. *Acta Math. Hungar.* **58** (1991), *no.* 3-4, 247–259. (K. Jetter) **93a:41002** 41A05
Akhmediev, N. N. (*with* Ankiewicz, Adrian) Novel soliton states and bifurcation phenomena in nonlinear fiber couplers. (English summary) *Phys. Rev. Lett.* **70** (1993), *no.* 16,

2395–2398. (Summary) **93k:35224** 35Q51 (78A55)

Akhmedov, Kh. Kh. Boundary value problems for a parabolic-type equation with multiple characteristics. (Russian) *Mathematical analysis and differential equations* (*Russian*), 64–67, *Novosibirsk. Gos. Univ., Novosibirsk*, 1991. (*see* **93m:00026**) 35K35

Akhmetov, M. U. Periodic solutions of systems of differential equations with a nonclassical right-hand side containing a small parameter. (Russian. Russian summary) *Asymptotic solutions of nonlinear equations with a small parameter* (*Russian*), 11–15, *Akad. Nauk Ukrainy, Inst. Mat., Kiev*, 1991. (Summary) **93g:34061** 34C25 (34A37)

— (*with* Perestyuk, N. A.) Asymptotic representation of solutions of regularly perturbed systems of differential equations with a nonclassical right-hand side. (Russian. Ukrainian summary) *Ukrain. Mat. Zh.* **43** (1991), *no.* 10, 1298–1304; *translation in Ukrainian Math. J.* **43** (1991), *no.* 10, 1209–1214 (1992). (Snezhana Khristova) **93e:34021** 34A37 (34E05)

— (*with* Perestyuk, N. A.) Differential properties of solutions and integral surfaces of nonlinear impulse systems. (Russian. Russian summary) *Differentsial'nye Uravneniya* **28** (1992), *no.* 4, 555–566, 731; *translation in Differential Equations* **28** (1992), *no.* 4, 445–453. (Stepan Ivanov Kostadinov) **93i:34018** 34A37 (34C30)

— (*with* Perestyuk, N. A.) Integral sets of quasilinear impulse systems. (Russian. Russian and Ukrainian summaries) *Ukraïn. Mat. Zh.* **44** (1992), *no.* 1, 5–11; *translation in Ukrainian Math. J.* **44** (1992), *no.* 1, 1–7. (Summary) **93f:34020** 34A37 (34C30, 34C45)

Akhmetzyanov, A. V. (*with* Meerov, M. V.; Bershchanskiĭ, Ya. M.; et al.) ★ Многосвязные системы управления. (Russian) [Multivariable control systems] "*Nauka*", *Moscow*, 1990. 264 *pp. ISBN* 5-02-006648-6 (Publisher's description) **93a:93003** 93–02 (93A15, 93C35)

Akhrif, O. (*with* Blankenship, G. L.) Algebraic computations for design of nonlinear control systems. *Algebraic computing in control* (*Paris*, 1991), 129–155, *Lecture Notes in Control and Inform. Sci.*, 165, *Springer, Berlin*, 1991. (Jean-Pierre Barbot) **93f:93062** 93B51 (93B40)

Akhtyamov, A. M. Calculation of coefficients of expansions in derived chains of a spectral problem. (Russian) *Mat. Zametki* **51** (1992), *no.* 6, 137–139; *translation in Math. Notes* **51** (1992), *no.* 5-6, 618–619. (Zoran Kadelburg) **93i:34148** 34L10 (34B24, 47E05)

Akhtyamov, R. B. Index sets in the Ershov hierarchy. (Russian) *Probabilistic methods and cybernetics*, *No.* 24 (*Russian*), 3–16, *Kazan. Gos. Univ., Kazan'*, 1990. (Victor Selivanov) **93d:03050** 03D45 (03D55)

Aki, Sigeo Waiting time problems for a sequence of discrete random variables. (English summary) *Ann. Inst. Statist. Math.* **44** (1992), *no.* 2, 363–378. (A. N. Philippou) **93k:60041** 60E10 (60C05)

Akian, Jean-Luc (*with* Sánchez-Palencia, Enrique) Approximation de coques élastiques minces par facettes planes. Phénomènes de blocage membranaire. (English and French summaries) [Approximation of thin elastic shells by flat elements. Phenomena of membrane locking] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 3, 363–369. (Summary) **93g:73086** 73K15 (73V05)

Akilov, G. P. (*with* Reshetnyak, Yu. G.; Kutateladze, S. S.) In memoriam of Professor Akilov. (Russian) *Optimizatsiya No.* 48(65) (1990), 5–6. (Editors) **93g:01080a** 01A70

— Introduction to category theory (a fragment of a monograph). (Russian) *Optimizatsiya No.* 48(65) (1990), 7–27. (Z. Semadeni) **93g:01097** 01A75 (18–01)

— *see also* **Veksler, A. I. et al., 93g:01080b**; **Vershik, A. M., 93g:01080c** *and* **Bibliography: Akilov, G. P., 93g:01080d**

Akimenkov, A. M. Subgroups of the braid group B_4. (Russian) *Mat. Zametki* **50** (1991), *no.* 6, 3–13, 156; *translation in Math. Notes* **50** (1991), *no.* 5-6, 1211–1218 (1992). (Marko Kranjc) **93a:20056** 20F36 (57M25)

Akinyele, Olusola (*with* Dahiya, R. S.) Asymptotic and oscillatory behavior of solutions of differential equations with advanced arguments. (English summary) *Arch. Math.* (*Brno*) **26** (1990), *no.* 1, 55–63. (I. Kiguradze) **93i:34125** 34K15 (34K25)

— (*with* Akpan, Edet P.) On the φ_0-stability of comparison differential systems. *J. Math. Anal. Appl.* **164** (1992), *no.* 2, 307–324. (Seppo Heikkilä) **93a:34061** 34D20 (34D05)

Akishev, A. Sh. (*with* Sultangazin, A. U.) New a priori estimates for solutions to nonlinear systems of the Carleman equation. (Russian) *Vestnik Akad. Nauk Kazakh. SSR* **1991**, *no.* 11, 40–47. (Genowefa Majcher) **93h:35042** 35F20 (35F30)

Akishev, G. A. (*with* Kospanova, R. K.) Some embedding theorems in symmetric spaces. (Russian. English, Russian and Kazakh summaries) *Izv. Akad. Nauk Kazakh. SSR Ser. Fiz.-Mat.* **1991**, *no.* 5, 7–11. (J. Musielak) **93i:46049** 46E30 (41A50, 46E35)

Akishin, P. G. ★ Об одном методе решения задачи магнитостатики в дифференциальной постановке. (Russian) [A method for solving a problem in magnetostatics in a differential formulation] With an English summary. Сообщения Объединенного Института Ядерных Исследований. Дубна [Communications of the Joint Institute for Nuclear Research. Dubna], R11-92-80. *Joint Inst. Nuclear Res., Dubna*, 1992. 17 *pp.* (Ll. G. Chambers) **93d:78004** 78A30 (65N30, 78–08)

Akivis, M. A. Three-webs, differentiable quasigroups and local algebras. (Russian. English summary) Quasigroups and nonassociative algebras in physics (Russian) (Tartu, 1989). *Eesti NSV Tead. Akad. Füüs. Inst. Uurim. No.* 66 (1990), 67–78. (N. V. Gvozdovich) **93f:53015** 53A60 (17B68, 20N05)

— (*with* Shelekhov, A. M.) ★ Geometry and algebra of multidimensional three-webs. With an appendix by E. V. Ferapontov. Translated from the Russian by Vladislav V. Goldberg. Mathematics and its Applications (Soviet Series), 82. *Kluwer Academic Publishers Group, Dordrecht*, 1992. xviii+358 *pp. ISBN* 0-7923-1684-3 (N. V. Gvozdovich) **93k:53021** 53A60

— Drei-gewebe und geschlossene G-strukturen. [Three-webs and closed G-structures] *Proceedings of the 3rd Congress of Geometry* (*Thessaloniki*, 1991), 35–40, *Aristotle Univ. Thessaloniki, Thessaloniki*, 1992. (Vladislav Goldberg) **93f:53016** 53A60 (53C10)

— *see also* **Fomenko, A. T. et al., (93m:53002)** *and* **Bibliography: Akivis, M. A., (93m:53002)**

Akiyama, Shigeki A note on Hecke's absolute invariants. (English summary) *J. Ramanujan Math. Soc.* **7** (1992), *no.* 1, 65–81. (George Gilbert) **93f:11037** 11F30

Akiyama, Shinji A derivation of a Langevin type map from a many-degrees-of-freedom symplectic map and its invariant measure. *Progr. Theoret. Phys.* **87** (1992), *no.* 1, 235–240. (Summary) **93b:58049** 58F05 (58F11)

Akizuki, Kageo (*with* Hashimoto, Hiroshi) Global convergence of implicit STC. (English summary) *Systems and control*, 85–96, *Mita, Tokyo*, 1991. (Summary) **93h:93072** 93E03 (93B52, 93E25)

Akkar, Mohamed (*with* Illoussamen, E.; Ouadadess, M.) Continuité des modules dérivations dans les algèbres de Fréchet. (English and French summaries) [Continuity of module derivations in Fréchet algebras] *Ann. Sci. Math. Québec* **16** (1992), *no.* 2, 117–124. (Summary) **93m:46054** 46H25 (46H05)

— (*with* Oubbi, L.; Oudadess, M.) Some results on weakly topologized algebras. (Arabic summary) *J. Univ. Kuwait Sci.* **19** (1992), *no.* 1, 1–9. (José E. Galé) **93g:46044** 46H05

Akkari, Safwan A minimal 3-connectedness result for matroids. *Discrete Math.* **103** (1992), *no.* 3, 221–232. (James G. Oxley) **93g:05032** 05B35 (05C40)

Akkerman, G. J. (*with* Baeten, J. C. M.) Term rewriting analysis in process algebra. *CWI Quarterly* **4** (1991), *no.* 4, 257–267. (Peter R. J. Asveld) **93f:68054** 68Q42 (68Q10, 68Q60)

Akl, Selim G. (*with* Osiakwan, Constantine N. K.) Parallel computation of matchings in trees. *Parallel Comput.* **17** (1991), *no.* 6-7, 643–656. (Narsingh Deo) **93a:68052** 68Q22 (05C70, 05C85, 68R10)

— (*with* Cosnard, Michel; Ferreira, Afonso G.) Data-movement-intensive problems: two folk theorems in parallel computation revisited. (French summary) *Theoret. Comput. Sci.* **95** (1992), *no.* 2, 323–337. (Summary) **93a:68035** 68Q10

Akopov, N. Z. (*with* Savvidi, G. K.; Ter-Arutyunyan-Savvidi, N. G.) Matrix generator of pseudorandom numbers. *J. Comput. Phys.* **97** (1991), *no.* 2, 573–579. (J. Spanier) **93a:65007** 65C10

Akopyan, A. A. (*with* Gevorgyan, O. V.; Saakyan, A. A.) Two-dimensional polynomial interpolation. (Russian. Russian summary) *Mat. Sb.* **183** (1992), *no.* 6, 111–126. (R. A. Lorentz) **93k:41003** 41A05 (41A63, 65D05)

Akopyan, G. S. (*with* Shakhbagyan, R. L.) Construction of attractors of higher-order nonlinear parabolic operators. (Russian. English and Armenian summaries) *Izv. Akad. Nauk Armyan. SSR Ser. Mat.* **25** (1990), *no.* 6, 549–559, 605 (1991); *translation in Soviet J. Contemporary Math. Anal.* **25** (1990), *no.* 6, 45–55 (1991). (Stepan A. Terziyan) **93a:35067** 35K25 (34D45, 34G20, 58F39)

Akopyan, L. M. Point derivations of algebras of generalized analytic functions. (Russian. English and Armenian summaries) *Erevan. Gos. Univ. Uchen. Zap. Estestv. Nauki* **1990**, *no.* 2, 19–27 (1991). (E. A. Gorin) **93d:43005** 43A17 (46J15)

Aköz, A. Y. (*with* Uzcan, N.) The new functional for Reissner plates and its application. (English summary) *Comput. & Structures* **44** (1992), *no.* 5, 1139–1144. (Summary) **93f:73057** 73K10 (73V05, 73V25)

Akpan, Edet P. (*with* Akinyele, Olusola) On the φ_0-stability of comparison differential systems. *J. Math. Anal. Appl.* **164** (1992), *no.* 2, 307–324. (Seppo Heikkilä) **93a:34061** 34D20 (34D05)

Akritas, Michael G. Nonparametric inference in heteroskedastic regression. *Nonparametric functional estimation and related topics* (*Spetses*, 1990), 287–296, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 335, *Kluwer Acad. Publ., Dordrecht*, 1991. (Summary) **93a:62075** 62G20 (62G05, 62J02)

— (*with* Johnson, Richard A.) Symmetrized approximate score rank tests for the two-sample case. (English summary) *Ann. Inst. Statist. Math.* **44** (1992), *no.* 4, 745–753. (P. W. Mielke, Jr.) **93m:62100** 62G10 (62G20)

— Rank transform statistics with censored data. *Statist. Probab. Lett.* **13** (1992), *no.* 3, 209–221. (James N. Adichie) **93c:62080** 62G10

Akrivis, Georgios D. (*with* Dougalis, Vassilios A.) Finite difference discretization with variable mesh of the Schrödinger equation in a variable domain. *Bull. Soc. Math. Grèce* (*N.S.*) **31** (1990), 19–28. (G. Fairweather) **93a:65111** 65M06 (65M12, 65M15)

— Finite difference discretization of the Kuramoto-Sivashinsky equation. (English summary) *Numer. Math.* **63** (1992), *no.* 1, 1–11. (Meng Zhao Qin) **93g:65108** 65M06 (65M15)

Aksenov, V. P. Solution of the phase problem based on the Radon transformation of distributions. *J. Modern Opt.* **39** (1992), *no.* 5, 1017–1027. (Kurt Bernardo Wolf) **93i:78008** 78A45 (44A12)

Aksenov, V. V. ★ Алгоритмы разделения геофизических полей. (Russian) [Algorithms for dividing geophysical fields] *Akad. Nauk SSSR Sibirsk. Otdel., Vychisl. Tsentr, Novosibirsk*, 1989. 260 *pp.* 86A25 (86–02, 86–08)

Aksent'ev, L. A. (*with* Zorin, I. A.) Classes of multivalent analytic functions that solve the Hilbert problem. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* **1991**, *no.* 12, 77–80; *translation in Soviet Math.* (*Iz. VUZ*) **35** (1991), *no.* 12, 75–78. (Petras Alekna) **93m:30050** 30E25

Aksirov, M. M. A class of dependent solutions of field equations and the structure of relativistic acceleration. (Russian. Russian summary) *Differentsial'nye Uravneniya* **28** (1992), *no.* 7, 1272–1274, 1287–1288. (Summary) **93i:83013** 83C10

Aksoy, Asuman G. A generalization of n-widths. *Approximation theory, spline functions and applications* (*Maratea*, 1991), 269–278, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 356, *Kluwer Acad. Publ., Dordrecht*, 1992. (Summary) **93h:41023** 41A46 (41A65, 46B20, 47B06)

Aktas, Y. (*with* Evans, M. W.; Farahi, F.) On the relativistic theory of charge. (English summary) *Modern Phys. Lett. B* **7** (1993), *no.* 6, 413–419. 78A25 (78A35)

Aktosun, Tuncay (*with* van der Mee, Cornelis) Scattering and inverse scattering for the 1-D Schrödinger equation with energy-dependent potentials. *J. Math. Phys.* **32** (1991), *no.* 10, 2786–2801. (Sergei Grudskiĭ) **93b:34107** 34L25 (34A55, 34L40, 81U05)

— (*with* Klaus, Martin; van der Mee, Cornelis) Explicit Wiener-Hopf factorization for certain nonrational matrix functions. (English summary) *Integral Equations Operator Theory* **15** (1992), *no.* 6, 879–900. (I. Spitkovsky) **93j:47030** 47A68 (15A23, 34A55, 34L25, 47B35, 81U99)

— (*with* Klaus, Martin; van der Mee, Cornelis) Scattering and inverse scattering in one-dimensional nonhomogeneous media. *J. Math. Phys.* **33** (1992), *no.* 5, 1717–1744. (Woodford W. Zachary) **93g:81200** 81U40 (34A55, 34L25, 81U05)

Akulenko, L. D. (*with* Kostin, G. V.) The perturbation method in problems of the dynamics of nonuniform elastic rods. (Russian. Russian summary) *Prikl. Mat. Mekh.* **56** (1992), *no.* 3, 452–464; *translation in J. Appl. Math. Mech.* **56** (1992), *no.* 3, 372–382. (Vadim Komkov) **93j:73051** 73K12 (35Q72, 73D30, 73K05)

Akulinin, O. B. A priori estimation of the boundaries of a domain for the search for the minimum of a functional. (Russian) *Numerical methods for solving boundary value problems* (*Russian*), 99–116, *Akad. Nauk SSSR Ural. Otdel., Bashkir. Nauchn. Tsentr, Ufa*, 1989. (*see* **93m:00033**) 90C35 (65K99)

Akulov, V. P. Super-p-branes and isometric embedding in "flat" superspace. *Soviet J. Nuclear Phys.* **55** (1992), *no.* 9, 1443–1444; *translated from Yadernaya Fiz.* **55** (1992),

no. 9, 2586–2588 (*Russian*). (Alexander A. Zheltukhin) **93k:83070** 83E30 (58A50)

Akutsu, Yasuhiro (*with* Deguchi, Tetsuo) A new hierarchy of colored vertex models. *J. Phys. Soc. Japan* **60** (1991), *no.* 12, 4051–4059. (Emil Vinţeler) **93h:82015** 82B23 (20F36)

— (*with* Wadati, Miki; Deguchi, Tetsuo) Yang-Baxter relation, exactly solvable models and link polynomials. (English summary) *Quantum groups* (*Leningrad*, 1990), 373–388, *Lecture Notes in Math.*, 1510, *Springer, Berlin*, 1992. (Summary) **93e:57016** 57M25 (82B23)

— (*with* Kiwata, Hirohito) Exactly solvable SU(M) spin chain with long-range interactions. *J. Phys. Soc. Japan* **61** (1992), *no.* 5, 1441–1444. (Summary) **93e:82019** 82B23 (35Q58, 82B20)

— (*with* Kiwata, Hirohito) Long-range SU(M) spin chain: exact ground state with arbitrary symmetry. (English summary) *J. Phys. Soc. Japan* **61** (1992), *no.* 7, 2161–2164. (Ladislav Šamaj) **93k:82019** 82B23

— (*with* Deguchi, Tetsuo) Colored braid matrices from infinite-dimensional representations of $U_q(g)$. *Modern Phys. Lett. A* **7** (1992), *no.* 9, 767–779. (Zhong Qi Ma) **93b:81111** 81R50 (17B37, 82B23)

Akyıldız, Ersan SL_2 actions and cohomology of Schubert varieties. *Topics in algebra, Part* 2 (*Warsaw*, 1988), 13–26, *Banach Center Publ.*, 26, *Part* 2, *PWN, Warsaw*, 1990. (Konrad Drechsler) **93j:14066** 14M15 (14F25)

— (*with* Lascoux, Alain; Pragacz, Piotr) Cohomology of Schubert subvarieties of GL_n/P. *J. Differential Geom.* **35** (1992), *no.* 3, 511–519. (V. L. Popov) **93g:14058** 14M15

Akyildiz, I. F. (*with* Cheng, Ying; Hwang, F. K.; Hsu, D. Frank) Routing algorithms for double loop networks. (English summary) *Internat. J. Found. Comput. Sci.* 3 (1992), *no.* 3, 323–331. (Summary) **93m:68013** 68M10 (68Q25)

Akylas, T. R. (*with* Grimshaw, R. H. J.) Solitary internal waves with oscillatory tails. (English summary) *J. Fluid Mech.* **242** (1992), 279–298. (Yu. Z. Aleshkov) **93k:76025** 76C10 (76V05)

abdul-Al, Khaled I. *see* **Abdul-Al, Khaled I.**

Alabau, Fatiha Comportement de la courbe caractéristique potentiel appliqué-courant d'une diode en polarisation inverse et directe. (English summary) [Behavior of the characteristic voltage-current curve of reverse and forward biased diodes] *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 12, 881–886. (Summary) **93d:82086** 82D99 (34E15, 78A55, 82C70)

— A method for proving uniqueness theorems for the stationary semiconductor device and electrochemistry equations. *Nonlinear Anal.* **18** (1992), *no.* 9, 861–872. (Jacob Rubinstein) **93d:78006** 78A70 (35Q60, 92C40, 92E99)

Alabert i Romero, Aureli On the optimization of hydroelectric power generation with random water inflows. (Catalan. Catalan summary) *Qüestiió* **15** (1991), *no.* 3, 307–348. 90C15 (90C90)

Alad'ev, V. Z. ★ Однородные структуры. (Russian) [Homogeneous structures] Теоретические и прикладные аспекты. [Theoretical and applied aspects] With an English summary. "*Tekhnika*", *Kiev*, 1990. 272 *pp. ISBN* 5-335-00949-7 (Summary) **93f:68028** 68Q10 (68M07)

Alagar, V. S. (*with* Goyal, Pankaj; Nair, P. S.; Sadri, Fereidoon) Permutation dependency in Datalog programs. (English summary) *Inform. Sci.* **68** (1993), *no.* 3, 207–223. (Summary) **93k:68025** 68P20 (68T30)

Alaghband, Gita Solution of structurally identical sparse linear systems based on a parallel pivoting technique. (English summary) *Parallel processing for scientific computing* (*Houston, TX*, 1991), 41–46, *SIAM, Philadelphia, PA*, 1992. (*see* **93g:65178**) 65F50 (65Y05)

Al-Agl, Fahd Ali (*with* Steiner, Richard) Nerves of multiple categories. *Proc. London Math. Soc.* (3) **66** (1993), *no.* 1, 92–128. (Jürgen Koslowski) **93m:18013** 18D05 (55U99)

Al-Ali, M. I. M. M. On the character table of the wreath product $2 \cdot G \operatorname{Wr} C_2$. *J. Inst. Math. Comput. Sci. Math. Ser.* **4** (1991), *no.* 3, 401–405. (From the summary) **93b:20016** 20C15 (20E22)

— On the conjugacy classes of the maximal subgroup $q^3{:}\,\mathrm{GL}_2(q)/\langle -1\rangle$ of the projective symplectic group $\mathrm{PSP}_4(q)$—q-odd. (English summary) *Math. Japon.* **37** (1992), *no.* 4, 675–682. (Ronald Solomon) **93g:20030** 20D06

— On irreducible characters of the split extension $p^3{:}\,\mathrm{GL}_2(p)/\langle -1\rangle$, p-odd prime. (English summary) *Math. Japon.* **38** (1993), *no.* 1, 141–153. (Bhama Srinivasan) **93m:20011** 20C15

masood-ul-Alam, A. K. M. *see* **Masood-ul-Alam, A. K. M.**

Alam, Khursheed (*with* Mitra, Amitava) On estimating the scale and noncentrality matrices of a Wishart distribution. (English summary) *Sankhyā Ser. B* **52** (1990), *no.* 2, 133–143. (Anant M. Kshirsagar) **93e:62145** 62H12

— (*with* Kulasekera, K. B.) Truncation error in the expansion of the distribution of a quadratic form. (English summary) *Sankhyā Ser. B* **54** (1992), *no.* 1, 13–23. (Summary) **93k:62033** 62F03 (60E15, 62F10, 62H10)

Alam, S. S. (*with* Bit, A. K.; Biswal, M. P.) Fuzzy programming approach to multicriteria decision making transportation problem. (English summary) *Fuzzy Sets and Systems* **50** (1992), *no.* 2, 135–141. 90C70 (04A72)

Alama, Stanley (*with* Li, Yan Yan) Existence of solutions for semilinear elliptic equations with indefinite linear part. *J. Differential Equations* **96** (1992), *no.* 1, 89–115. (Rainer Hempel) **93d:47135** 47N20 (35J60, 47F05, 47H15, 58E05)

gutiérrez del Alamo, Joaquín M. *see* **Gutiérrez del Alamo, Joaquín M.**

Al Amrani, Abdallah Anneau de K-théorie complexe des espaces lenticulaires tordus. [The complex K-theory ring of twisted lens spaces] *Comm. Algebra* **20** (1992), *no.* 6, 1591–1614. (Norreddine Mahammed) **93g:55006** 55N15 (19L64)

Alang-Rashid, N. K. (*with* Heger, A. S.) A method for transforming operators' skill to fuzzy logic controllers. (English summary) *Control Theory Adv. Tech.* **8** (1992), *no.* 3, 513–523. 93C42

Alanson, T. A "quantal" Hilbert space formulation for nonlinear dynamical systems in terms of probability amplitudes. *Phys. Lett. A* **163** (1992), *no.* 1-2, 41–45. (Summary) **93a:81006** 81P05 (81Q99)

el kacimi-Alaoui, A. *see* **El Kacimi-Alaoui, A.**

Alaoui, L. (*with* Arino, Ovide) Compactness and spectral properties for positive translation semigroups associated to models of populations dynamics. *Differential Integral Equations* **6** (1993), *no.* 2, 459–480. (G. F. Webb) **93m:47045** 47D06 (34K25, 47B38, 47N20, 92D25)

Alarcón, E. (*with* Beltran, F. J.) Accuracy estimates based on multifield variational principles. (English summary) *European J. Mech. A Solids* **11** (1992), *no.* 4, 487–518. (Summary) **93e:73041** 73V05 (73K10, 73V25)

Alarcón Athens, Winston An instrumental foundation of arithmetic. (Spanish. English summary) *Cienc. Tecn.* **14** (1990), *no.* 1-2, 183–197 (1992). (Summary) **93b:03002** 03A05 (00A30, 03B30)

Al-Areefi, S. M. (*with* Khedr, F. H.; Noiri, Takashi) Precontinuity and semiprecontinuity in bitopological spaces. (English summary) *Indian J. Pure Appl. Math.* **23** (1992), *no.* 9, 625–633. (C. V. Riecke) **93k:54064** 54E55 (54C08)

Alart, P. (*with* Lemaire, Bernard) Penalization in nonclassical convex programming via variational convergence. *Math. Programming* **51** (1991), *no.* 3, (*Ser. A*), 307–331. (Summary) **93c:90056** 90C25 (49M30)

Alas, O. T. On the number of open sets. II. *Proceedings of the International Symposium on Mathematics and Theoretical Physics* (*Guarujá*, 1989), 161–171, *Sympos. Gaussiana Ser. A Math. Theoret. Phys.*, 1, *Inst. Gaussianum, Toronto, ON*, 1990. (Angelo Bella) **93g:54003** 54A25

— On weakly $\aleph_1$-collectionwise Hausdorffness. (English summary) *Questions Answers Gen. Topology* **10** (1992), *no.* 2, 93–96. (Summary) **93g:54034** 54D15

Alavi, Yousef (*with* Lick, Don R.; Zou, Hung-Bin) Second order degree regular graphs. *Graph theory, combinatorics, and applications, Vol.* 1 (*Kalamazoo, MI*, 1988), 1–8, *Wiley-Intersci. Publ., Wiley, New York*, 1991. (Koduvayur R. Parthasarathy) **93d:05125** 05C75 (05C12)

— (*with* Behzad, Mehdi; Erdős, Paul; Lick, Don R.) Double vertex graphs. (English summary) *J. Combin. Inform. System Sci.* **16** (1991), *no.* 1, 37–50. (Summary) **93d:05126** 05C75

— (*with* Liu, Jiu Qiang; McCanna, Joseph; Erdős, Paul) On the minimum size of graphs with a given bandwidth. (English summary) *Bull. Inst. Combin. Appl.* **6** (1992), 22–32. (Summary) **93g:05071** 05C35 (05C78)

— (*with* Liu, Jiu Qiang; Wang, Jian Fang; Zhang, Zhong Fu) On total covers of graphs. Special volume to mark the centennial of Julius Petersen's "Die Theorie der regulären Graphs", Part I. *Discrete Math.* **100** (1992), *no.* 1-3, 229–233. (Linda Lesniak) **93h:05120** 05C70

— (*with* Liu, Jiu Qiang; Wang, Jian Fang) Highly irregular digraphs. (English summary) Graph theory and combinatorics (Marseille-Luminy, 1990). *Discrete Math.* **111** (1993), *no.* 1-3, 3–10. (Summary) **93j:05063** 05C20

— *see also* **Graph theory, combinatorics, and applications, 93b:05002** *and* **93b:05003**

Alavidze, T. G. Operators that act on a set of factorizable evolution systems. (Russian. Russian summary) *Decomposition and optimization in complex systems* (*Russian*), 46–55, 79, *Akad. Nauk SSSR, Vychisl. Tsentr, Moscow*, 1991. (J. Chrastina) **93h:58029** 58D25 (35A30, 35Q99)

— Conditional morphisms of evolution systems. (Russian. Russian summary) *Decomposition and optimization in complex systems* (*Russian*), 56–62, 79, *Akad. Nauk SSSR, Vychisl. Tsentr, Moscow*, 1991. (J. Chrastina) **93h:58030** 58D25 (35A30, 35Q99)

— Nongroup factorization of systems of evolution equations. (Russian. English and Russian summaries) *Mat. Model.* **4** (1992), *no.* 8, 107–118. (Summary) **93k:35252** 35Q72 (35A30, 35K22, 58D25)

Alawneh, A. D. (*with* Shawagfeh, Nabil) The low-frequency acoustic scattering by a soft ellipsoid. (English and Arabic summaries) *Dirāsāt Ser. B Pure Appl. Sci.* **17** (1990), *no.* 2, 38–50. 76Q05 (73K70)

Alaya, M. Ben Sur la méthode du shift en simulation. [On the shift method in simulation] *Probabilités numériques*, 61–66, *Collect. Didact.*, 10, *INRIA, Rocquencourt*, 1992. (*see* **93k:65002**) 65C20

Al-'Āyib, 'Alī Precise measurements in ibn al-Haytham's treatise on geography. (Arabic. French summary) *Deuxième Colloque Maghrebin sur l'Histoire des Mathématiques Arabes* (*Tunis*, 1988), A68–A86, 202, *Maghreb, Tunis*, 19??. (Summary) **93c:01008** 01A30

Albacea, Eliezer A. A parallel algorithm for edge-coloring of graphs with edge-disjoint cycles. (English summary) *Inform. Process. Lett.* **43** (1992), *no.* 6, 309–314. (Summary) **93i:68076** 68Q22 (05C05, 05C15, 68Q20, 68R10)

ardanuy Albájar, Ramón *see* **Ardanuy Albájar, Ramón**

Albanese, Angela Anna A Fréchet space of continuous functions which is a prequojection. *Bull. Soc. Roy. Sci. Liège* **60** (1991), *no.* 6, 409–417. (P. Pérez Carreras) **93c:46037** 46E10 (46A04)

Albanese, Carlo (*with* Napolitano, Luigi G.) Remarks on Riemannian thermodynamics. (Italian summary) *Atti Accad. Naz. Lincei Cl. Sci. Fis. Mat. Natur. Rend. Lincei* (9) *Mat. Appl.* **3** (1992), *no.* 1, 45–50. (Summary) **93a:80001** 80A05 (53B50)

Albar, Muhammad A. (*with* Al-Shuaibi, Abdul-Aziz A.) On Mennicke groups of deficiency zero. II. *Canad. Math. Bull.* **34** (1991), *no.* 3, 289–293. (Summary) **93e:20043** 20F05

Al-Bassam, M. A. Applications of fractional calculus to a class of third order differential equations. *Conference on Differential Equations and Applications* (*Ruse*, 1989), 88–99, *Tech. Univ., Ruse*, 1991. (*see* **93f:34004**) 34A25 (33C45, 44A20)

Al-Bassam, Sulaiman (*with* Venkatesan, R.; Bose, Bella) Codes for detecting and correcting propagation errors. *Comput. Math. Appl.* **24** (1992), *no.* 4, 103–109. (Summary) **93b:94029** 94B50 (94A13)

— (*with* Bose, Bella) Byte unidirectional error correcting and detecting codes. (English summary) *IEEE Trans. Comput.* **41** (1992), *no.* 12, 1601–1606. (Summary) **93m:94024** 94B05

— (*with* El-Rewini, Hesham; Bose, Bella; Lewis, T. G.) Processor allocation for hypercubes. (English summary) *J. Parallel Distrib. Comput.* **16** (1992), *no.* 4, 394–401. 68M07

Alber, Mark S. Complex geometric asymptotics, geometric phases and nonlinear integrable problems. *Huygens' principle* 1690–1990: *theory and applications* (*The Hague and Scheveningen*, 1990), 415–427, *Stud. Math. Phys.*, 3, *North-Holland, Amsterdam*, 1992. (M. S. Agranovich) **93m:58085** 58F19 (35A30, 58G18, 58Z05, 81Q20)

Albers, Donald J. *see* **More mathematical people, 93b:01045**

Albers, Susanne (*with* Hagerup, Torben) Improved parallel integer sorting without concurrent writing. *Proceedings of the Third Annual ACM-SIAM Symposium on Discrete Algorithms* (*Orlando, FL*, 1992), 463–472, *ACM, New York*, 1992. (*see* **93b:68005**) 68P10

Albers, Willem Asymptotic expansions for two-stage rank tests. (English summary) *Ann. Inst. Statist. Math.* **44** (1992), *no.* 2, 335–356. (Summary) **93k:62104** 62G10

— Deficiencies of combined rank tests. (English summary) *J. Statist. Plann. Inference* **32** (1992), *no.* 1, 5–24. (Joachim Krauth) **93m:62101** 62G10 (62G20)

Albert, Douglas (*with* Baldinger, Robert; Rhodes, John) Undecidability of the identity problem for finite semigroups. *J. Symbolic Logic* **57** (1992), *no.* 1, 179–192. (Michael Anshel) **93f:03030** 03D35 (03D40, 20M05, 68Q05)

Albert, H.-F. An extension of Hamilton's principle for dissipative continua. (English, German and Russian summaries) *Z. Angew. Math. Mech.* **72** (1992), *no.* 9, 407–414. (Takayuki Nōno) **93k:73002** 73B05 (49S05, 73V25)

Albert, James A Bayesian analysis of a Poisson random effects model for home run hitters. (English summary) *Amer. Statist.* **46** (1992), *no.* 4, 246–253. 62F15

Albert, Jeffrey M. A corrected likelihood ratio statistic for the multivariate regression model with antedependent errors. *Comm. Statist. Theory Methods* **21** (1992), *no.* 7, 1823–1843. 62H15

Albert, John P. Positivity properties and stability of solitary-wave solutions of model equations for long waves. *Comm. Partial Differential Equations* **17** (1992), *no.* 1-2, 1–22. (L. Hsiao) **93d:35140** 35Q53 (35B05, 76B15, 76B25, 76E99)

Albert, Marc K. (*with* Aha, David W.) Analyses of instance-based learning algorithms. (English summary) *AAAI-91. Proceedings, Ninth National Conference on Artificial Intelligence, Vol.* 1, 2, 553–558, *AAAI Press, Menlo Park, CA*, 1991. (Summary) **93j:68162** 68T05

Albert, Max Die Falsifikation statistischer Hypothesen. (English summary) [The falsification of statistical hypotheses] *J. Gen. Philos. Sci.* **23** (1992), *no.* 1, 1–32. 03B48 (62A20, 62F03)

payá-Albert, Rafael *see* **Payá-Albert, Rafael**

Alberti, Giovanni (*with* Buttazzo, Giuseppe) Integral representation of functionals defined on Sobolev spaces. *Composite media and homogenization theory* (*Trieste*, 1990), 1–12, *Progr. Nonlinear Differential Equations Appl.*, 5, *Birkhäuser Boston, Boston, MA*, 1991. (Michele Mininni) **93e:49018** 49J45 (46E35, 46E50)

Alberti, Peter M. Geometry of completely positive maps over certain injective vN-algebras. (English summary) *Elementary operators and applications* (*Blaubeuren*, 1991), 117–141, *World Sci. Publishing, River Edge, NJ*, 1992. (Raúl E. Curto) **93j:46065** 46L10 (46L50, 47B38, 47D07)

Albertini, Giuseppe Bethe-ansatz type equations for the Fateev-Zamolodchikov spin model. *J. Phys. A* **25** (1992), *no.* 7, 1799–1813. (Yu Kui Zhou) **93g:82031** 82B23 (82B20)

Albertini, Tamara La quadrature du cercle d'ibn al-Haytham: solution philosophique ou mathématique? (Arabic summary) [ibn al-Haytham's squaring of the circle: philosophical or mathematical solution?] *J. Hist. Arabic Sci.* **9** (1991), *no.* 1-2, 5–21, 132. (Y. Dold) **93h:01008** 01A30

Albertson, Michael O. Turán theorems with repeated degrees. Special volume to mark the centennial of Julius Petersen's "Die Theorie der regulären Graphs", Part I. *Discrete Math.* **100** (1992), *no.* 1-3, 235–241. (Douglas B. West) **93g:05072** 05C35

Albeverio, Sergio (*with* Röckner, Michael) Infinite-dimensional diffusions connected with positive generalized white noise functionals. *White noise analysis* (*Bielefeld*, 1989), 1–21, *World Sci. Publishing, River Edge, NJ*, 1990. (Byron Schmuland) **93g:60165** 60J60 (31C25, 60G20, 60H99)

— (*with* Karwowski, Witold) Diffusion on p-adic numbers. *Gaussian random fields* (*Nagoya*, 1990), 86–99, *Ser. Probab. Statist.*, 1, *World Sci. Publishing, River Edge, NJ*, 1991. (Eugen Belokolos) **93d:60123** 60J60

— (*with* Blanchard, Philippe; Ma, Zhi Ming) Feynman-Kac semigroups in terms of signed smooth measures. (English summary) *Random partial differential equations* (*Oberwolfach*, 1989), 1–31, *Internat. Ser. Numer. Math.*, 102, *Birkhäuser, Basel*, 1991. (Yoichi Ōshima) **93i:60140** 60J45 (31C25, 47D07, 47N30)

— (*with* Ma, Zhi Ming) Necessary and sufficient conditions for the existence of m-perfect processes associated with Dirichlet forms. *Séminaire de Probabilités, XXV*, 374–406, *Lecture Notes in Math.*, 1485, *Springer, Berlin*, 1991. (Michael Röckner) **93m:31011** 31C25 (60J40, 60J45)

— (*with* Iwata, Koichiro; Kolsrud, Torbjörn) Conformally invariant random fields and processes—old and new. *Stochastic analysis and applications* (*Lisbon*, 1989), 1–10, *Progr. Probab.*, 26, *Birkhäuser Boston, Boston, MA*, 1991. (Helge Holden) **93h:81145** 81T99 (60G60, 81S20)

— (*with* Ma, Zhi Ming) Diffusion processes with singular Dirichlet forms. *Stochastic analysis and applications* (*Lisbon*, 1989), 11–28, *Progr. Probab.*, 26, *Birkhäuser Boston, Boston, MA*, 1991. (Yoichi Ōshima) **93m:60157** 60J45 (31C25, 47N30, 60J40, 81Q99)

— (*with* Høegh-Krohn, Raphael; Surgailis, Donatas) Some Euclidean integer-valued random fields with Markov properties. (English summary) *Ideas and methods in mathematical analysis, stochastics, and applications* (*Oslo*, 1988), 93–114, *Cambridge Univ. Press, Cambridge*, 1992. (Summary) **93i:60180** 60K35 (60G60, 82B05)

— (*with* Ma, Zhi Ming; Röckner, Michael) A Beurling-Deny type structure theorem for Dirichlet forms on general state spaces. *Ideas and methods in mathematical analysis, stochastics, and applications* (*Oslo*, 1988), 115–123, *Cambridge Univ. Press, Cambridge*, 1992. (Tu Sheng Zhang) **93m:31013** 31C25

— (*with* Fenstad, Jens Erik; Høegh-Krohn, Raphael; Karwowski, Witold; Lindstrøm, Tom) Schrödinger operators with potentials supported by null sets. (English summary) *Ideas and methods in quantum and statistical physics* (*Oslo*, 1988), 63–95, *Cambridge Univ. Press, Cambridge*, 1992. (Sylvie Paycha) **93m:81025** 81Q10 (31B99, 35J10, 47F05, 47N50, 81Q15)

— (*with* Blanchard, Philippe; Gandolfo, Daniel; Høegh-Krohn, Raphael; Mebkhout, Mohammed) Morphology and classification of galaxies. A stochastic model. (English summary) *Ideas and methods in quantum and statistical physics* (*Oslo*, 1988), 447–460, *Cambridge Univ. Press, Cambridge*, 1992. (Summary) **93g:85005** 85A35

— (*with* Brzeźniak, Zdzisław) Infinite-dimensional oscillatory integrals: finite-dimensional approach and some applications. (English summary) *Probabilistic methods in mathematical physics* (*Siena*, 1991), 30–49, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93h:81072** 81S40 (58D30, 81–02)

— (*with* Iwata, Koichiro; Kolsrud, Torbjörn) Random parallel transport on surfaces of finite type, and relations to homotopy. (English summary) *Probabilistic methods in mathematical physics* (*Siena*, 1991), 50–57, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93g:81002**) 58G32 (55P99, 81T13)

— (*with* Ma, Zhi Ming) Characterization of Dirichlet forms associated with Hunt processes. (English summary) *Stochastics and quantum mechanics* (*Swansea*, 1990), 1–25, *World Sci. Publishing, River Edge, NJ*, 1992. (Tu Sheng Zhang) **93j:60109** 60J40 (31C25)

— (*with* Ma, Zhi Ming; Röckner, Michael) Nonsymmetric Dirichlet forms and Markov processes on general state space. (French summary) *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 1, 77–82. (Summary) **93c:60109** 60J40 (31C25, 47B38, 47D07, 47N30)

— (*with* Ma, Zhi Ming; Röckner, Michael) Regularization of Dirichlet spaces and applications. (French summary) *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 11, 859–864. (Summary) **93b:60171** 60J40 (31C25, 47N30, 60J45)

— (*with* Fukushima, Masatoshi; Hansen, Wolfhard; Ma, Zhi Ming; Röckner, Michael) An invariance result for capacities on Wiener space. *J. Funct. Anal.* **106** (1992), *no.* 1, 35–49. (Denis Feyel) **93f:28013** 28C20 (31C25, 46G12, 60H07)

— (*with* Hohler, Erling G. B.; Zegarliński, Bogusław) Ferromagneticity of simplicial fields on two-dimensional compact manifolds. *J. Math. Phys.* **33** (1992), *no.* 8, 2808–2818. (Kornél Szlachányi) **93k:81161** 81T25 (53C80)

— (*with* Ma, Zhi Ming) Additive functionals, nowhere Radon and Kato class smooth measures associated with Dirichlet forms. *Osaka J. Math.* **29** (1992), *no.* 2, 247–265. (Yoichi Ōshima) **93m:60158** 60J45 (31C45, 46G99, 47N30)

— Mathematical physics and stochastic analysis. (English summary) *Bull. Sci. Math.* (2) **117** (1993), *no.* 1, 125–151. (Summary) **93m:60128** 60H15 (58G32, 58Z05, 60G60, 60J65, 81T08, 81T30)

— (*with* Ma, Zhi Ming; Röckner, Michael) Quasi-regular Dirichlet forms and Markov processes. (English summary) *J. Funct. Anal.* **111** (1993), *no.* 1, 118–154. (Niels Jacob) **93m:31012** 31C25 (47N30, 60J40, 60J45)

— *see also* **Ideas and methods in mathematical analysis, stochastics, and applications, 93e:00033** *and* **Ideas and methods in quantum and statistical physics, 93e:00034**

Albin, J. M. P. On the general law of iterated logarithm with application to selfsimilar processes and to Gaussian processes in $\mathbf{R}^n$ and Hilbert space. *Stochastic Process. Appl.* **41** (1992), *no.* 1, 1–31. (Michael T. Lacey) **93c:60039** 60F15 (60B12, 60G18)

— Extremes and crossings for differentiable stationary processes with application to Gaussian processes in $\mathbf{R}^m$ and Hilbert space. *Stochastic Process. Appl.* **42** (1992), *no.* 1, 119–147. (Robert J. Adler) **93h:60056** 60G10 (60G15, 60G17)

Albin, Peter Approximations of cooperative equilibria in multi-person prisoners' dilemma played by cellular automata. (English summary) *Math. Social Sci.* **24** (1992), *no.* 2-3, 293–319. (Summary) **93g:90093** 90D12 (68Q80, 90D06)

Albis, Víctor Samuel The proportions of the Sun of the Pastos. (Spanish) *Bol. Mat.* **21** (1987), *no.* 2-3, 110–134. 01A99

Alborova, M. S. (*with* Vodop'yanov, S. K.) Removable singularities of bounded solutions of quasi-elliptic equations. (Russian. Russian summary) *Sibirsk. Mat. Zh.* **33** (1992), *no.* 4, 3–14, 220; *translation in Siberian Math. J.* **33** (1992), *no.* 4, 543–556 (1993). (Peter R. Popivanov) **93k:35079** 35J30 (35A20, 35B60)

sergeev-Al'bov, N. N. *see* **Sergeev-Al'bov, N. N.**

Albrecht, Felix (*with* Villari, Gabriele) Periodic orbits of planar polynomial Liénard systems with a small parameter. *Delay differential equations and dynamical systems* (*Claremont, CA*, 1990), 41–52, *Lecture Notes in Math.*, 1475, *Springer, Berlin*, 1991. (Noel G. Lloyd) **93a:34042** 34C15 (34C05, 58F21)

Albrecht, M. Approximation of functional relationships to fuzzy observations. (English summary) *Fuzzy Sets and Systems* **49** (1992), *no.* 3, 301–305. (Summary) **93g:65022** 65D10 (04A72)

Albrecht, Ulrich On the quasi-splitting of exact sequences. *J. Algebra* **144** (1991), *no.* 2, 344–358. (P. L. Sperry) **93b:20091** 20K15

— Endomorphism rings, tensor products and Fuchs' problem 47. (English summary) *Abelian groups and noncommutative rings*, 17–31, *Contemp. Math.*, 130, *Amer. Math. Soc., Providence, RI*, 1992. (Khalid Benabdallah) **93j:20106** 20K15 (20K30)

Al'brekht, È. G. (*with* Sobolev, O. N.) On a connection between optimal control problems with mobile ends and with fixed ends. (Russian. Russian summary) *Control problems with guaranteed result* (*Russian*), 3–14, 116, *Ross. Akad. Nauk, Ural. Otdel., Ekaterinburg*, 1992. (Summary) **93j:49035** 49N10 (49K15, 49M30)

Albu, A. F. Optimization of systems described by an equation of parabolic type. (Russian) *Operations research* (*models, systems, solutions*) (*Russian*), 65–79, *Ross. Akad. Nauk, Vychisl. Tsentr, Moscow*, 1991. (*see* **93b:90011**) 49M07 (49K20)

Albu, Toma (*with* Wisbauer, Robert) Generators in Grothendieck categories with right perfect endomorphism rings. *Osaka J. Math.* **28** (1991), *no.* 2, 295–304. (Wolfgang Grölz) **93b:18015** 18E15 (16D90)

— Kummer extensions with few roots of unity. *J. Number Theory* **41** (1992), *no.* 3, 322–358. (Martin Epkenhans) **93f:12006** 12F05

Albuquerque, Helena On the generation of semisimple Jordan algebras. (Portuguese. English summary) *Proceedings of the XVth Portuguese-Spanish Conference on Mathematics, Vol. I* (*Portuguese*) (*Évora*, 1990), 125–130, *Univ. Évora, Évora*, 1991. (Summary) **93b:17080** 17C20

— (*with* Elduque, Alberto) On the nullity of Lie algebras. *Linear Algebra Appl.* **166** (1992), 195–206. (Joseph C. Ferrar) **93c:17051** 17B99

díaz Alcaide, Juan Carlos *see* **Díaz Alcaide, Juan Carlos**

Alcalá, A. (*with* Ardanuy Albájar, Ramón) Minimax principle for stochastic differential games. *Extracta Math.* **6** (1991), *no.* 2-3, 184–186. 93E05 (90D15)

— (*with* Ardanuy Albájar, Ramón) Weak infinitesimal operators and stochastic differential games. (English summary) *Stochastica* **13** (1992), *no.* 1, 5–12. (Summary) **93j:93139** 93E05 (90C15)

— (*with* Ardanuy Albájar, Ramón; Soldevilla Moreno, Ma. del Mar) A linear calibration model with correlated standards and roundings. (English summary) *J. Inst. Math. Comput. Sci. Math. Ser.* **6** (1993), *no.* 1, 25–37. 62J05

Alchekov, A. K. Stability of impulse action in an asymptotic phase consolidation scheme. (Russian. Russian summary) *Asymptotic methods in problems in the theory of random evolutions* (*Russian*), 4–12, *Akad. Nauk Ukrain. SSR, Inst. Mat., Kiev*, 1991. (*see* **93e:60002**) 60H10 (34A37, 34F05, 60J25)

fernández-Alcober, Gustavo A. *see* **Fernández-Alcober, Gustavo A.**

Aldabe, F. (*with* Bes, D. R.; Scoccola, N. N.) Soliton quantization in the BRST scheme. (English summary) *Phys. Lett. B* **293** (1992), *no.* 1-2, 81–88. (Summary) **93g:81188** 81T70

Aldama, A. A. (*with* Paniconi, C.) An analysis of the convergence of Picard iterations for implicit approximations of Richard's equation. (English summary) *Computational methods in water resources, IX, Vol.* 1 (*Denver, CO*, 1992), 521–528, *Comput. Mech., Southampton*, 1992. (*see* **93g:76002**) 76M25 (65P05, 76S05, 86–08)

— (*with* Beckie, R.; Wood, E. F.) A multigrid acceleration for domain decomposition mixed finite element simulation of groundwater flow. (English summary) *Computational methods in water resources, IX, Vol. 1 (Denver, CO, 1992)*, 589–596, *Comput. Mech., Southampton*, 1992. (*see* **93g:76002**) 76M10 (76S05, 86–08)

Aldana J., Ana Teresa (*with* Nova G., Lucimar) Common fixed-point theory for permutable operators. (Spanish. Spanish summary) *Bol. Mat.* **22** (1988), *no.* 1-3, 11–22 (1991). 54H25

Aldashev, S. A. Some boundary value problems for hyperbolic equations with a wave operator in the principal part. (Russian) *Boundary value problems for nonclassical equations in mathematical physics (Russian) (Novosibirsk, 1989)*, 68–72, *Akad. Nauk SSSR Sibirsk. Otdel., Inst. Mat., Novosibirsk*, 1989. (*see* **93d:35001**) 35L20

— The mean-value theorem and boundary value problems for a one-dimensional polywave equation. (Russian) *Nonclassical equations and equations of mixed type (Russian)*, 12–15, *Akad. Nauk SSSR Sibirsk. Otdel., Inst. Mat., Novosibirsk*, 1990. (*see* **93b:35002**) 35L35 (35B05)

— Darboux problems for the multidimensional wave equation. (Russian. English and Russian summaries) *Dokl. Akad. Nauk Ukrainy* **1992**, *no.* 2, 5–7, 168. (Pavel Krejčí) **93h:35114** 35L05 (35L20)

— On the well-posedness of the Tricomi problem for the multidimensional Lavrent'ev-Bitsadze equation. (Russian. English and Russian summaries) *Dokl. Akad. Nauk Ukrainy* **1992**, *no.* 3, 5–6, 159. (Summary) **93f:35158** 35M10

— Darboux problems for multidimensional degenerate hyperbolic equations. (Russian. English summary) *Dokl. Akad. Nauk Ukrainy* **1992**, *no.* 6, 12–14, 170. (Summary) **93c:35109** 35L80

Aldaya, Víctor (*with* Navarro-Salas, José) Higher-order polarizations on the Virasoro group and anomalies. *Comm. Math. Phys.* **139** (1991), *no.* 3, 433–440. (Summary) **93e:81057** 81S10 (17B68, 22E65, 58F06, 81T50)

— (*with* Loll, R.; Navarro-Salas, José) Quantum dynamics on (super)groups: constraints and the "BRST" supergroup. *J. Math. Phys.* **32** (1991), *no.* 12, 3346–3360. (Rudolf Schmid) **93a:81195** 81T70 (58F06)

— (*with* Navarro-Salas, José; Navarro, Miguel) Hidden symmetries in field theory. (English summary) *Mathematical aspects of classical field theory (Seattle, WA, 1991)*, 1–25, *Contemp. Math.*, 132, *Amer. Math. Soc., Providence, RI*, 1992. (Henrik Aratyn) **93j:81084** 81T40 (17B65, 22E60, 81R50, 81S10)

— (*with* Navarro-Salas, José; Bisquert, J.; Loll, R.) Symmetry and quantization: higher-order polarization and anomalies. (English summary) *J. Math. Phys.* **33** (1992), *no.* 9, 3087–3097. (Alexander D. Popov) **93h:81037** 81R05 (22E70, 81S10)

— (*with* Navarro-Salas, José; Navarro, Miguel) Covariant phase space quantization of the Jackiw-Teitelboim model of two-dimensional gravity. (English summary) *Phys. Lett. B* **292** (1992), *no.* 1-2, 19–24. (Summary) **93g:81167** 81T40 (58Z05)

Aldaz, J. M. On tau-smooth measure spaces without thick Lindelöf subsets. *Real Anal. Exchange* **17** (1991/92), *no.* 1, 379–385. (Marek Balcerzak) **93b:28002** 28A05 (03E35, 28C15, 54D20, 54H99)

Aldazabal, G. (*with* Allekotte, I.; Font, Anamaría; Núñez, Carmen A.) $N = 2$ coset compactifications with nondiagonal invariants. (English summary) *Internat. J. Modern Phys. A* **7** (1992), *no.* 25, 6273–6297. (Eric J. Raiten) **93i:81180** 81T30 (11F22, 81T40)

Aldeen, M. (*with* Crusca, F.) A controller design method for large-scale systems in the frequency domain. (English summary) *Control '91, Vol.* 1, 2 (*Edinburgh*, 1991), 687–692, *IEE Conf. Publ. Ser.*, 332, *IEE, London*, 1991. (*see* **93h:93007**) 93B51

— (*with* Gong, Z.) On the characterization of fixed modes in decentralized control. *IEEE Trans. Automat. Control* **37** (1992), *no.* 7, 1046–1050. (Zoran Gajic) **93f:93009** 93A14 (93B10)

Alden, Jeffrey M. (*with* Smith, Robert L.) Rolling horizon procedures in nonhomogeneous Markov decision processes. *Oper. Res.* **40** (1992), *suppl.* 2, S183–S194. 90C40

Alderson, Steven G. A solution by operational calculus to the problem of the optimization of tidal power. (English summary) *IMA J. Appl. Math.* **49** (1992), *no.* 2, 123–138. 86A05

Aldhaheri, Rabah W. (*with* Bamani, Ali H.) Combined Schur/L_2-model reduction for nonminimal systems. (English summary) *Optimal Control Appl. Methods* **13** (1992), *no.* 2, 169–177. 93B11

Al-Dhahir, M. W. (*with* Ghalieh, K.) On minor forms of Desargues and Pappus. *Geom. Dedicata* **42** (1992), *no.* 3, 329–344. (Ferenc Wettl) **93c:51001** 51A30 (51A20, 51A25)

Aldis, G. K. (*with* Barry, S. I.; Parker, K. H.) Fluid flow over a thin deformable porous layer. *Z. Angew. Math. Phys.* **42** (1991), *no.* 5, 633–648. (Summary) **93c:76089** 76Z05 (73K70, 76D99, 76S05, 92C35)

— (*with* Barry, S. I.) Radial flow through deformable porous shells. (English summary) *J. Austral. Math. Soc. Ser. B* **34** (1993), *no.* 3, 333–354. (Summary) **93k:76108** 76S05 (73P20, 76Z05, 92C05)

Aldosray, Falih A. M. (*with* Stewart, Ian N.) Ascending chain conditions on special classes of ideals of Lie algebras. *Hiroshima Math. J.* **22** (1992), *no.* 1, 1–13. (Joseph C. Ferrar) **93d:17009** 17B05 (17B20)

Aldous, David J. A random tree model associated with random graphs. *Random Structures Algorithms* **1** (1990), *no.* 4, 383–402. (E. M. Palmer) **93a:05111** 05C80 (60C05)

— Applications of random walks on finite graphs. (English summary) *Selected Proceedings of the Sheffield Symposium on Applied Probability (Sheffield, 1989)*, 12–26, *IMS Lecture Notes Monograph Ser.*, 18, *Inst. Math. Statist., Hayward, CA*, 1991. (Summary) **93g:60145** 60J15

— The continuum random tree. II. An overview. *Stochastic analysis (Durham, 1990)*, 23–70, *London Math. Soc. Lecture Note Ser.*, 167, *Cambridge Univ. Press, Cambridge*, 1991. (Robin Pemantle) **93f:60010** 60C05 (05C80)

— Random walk covering of some special trees. *J. Math. Anal. Appl.* **157** (1991), *no.* 1, 271–283. (Robin Pemantle) **93b:60147** 60J15 (05C05, 60C05)

— Meeting times for independent Markov chains. *Stochastic Process. Appl.* **38** (1991), *no.* 2, 185–193. (Hermann Thorisson) **93m:60142** 60J10

— Greedy search on the binary tree with random edge-weights. (English summary) *Combin. Probab. Comput.* **1** (1992), *no.* 4, 281–293. (Summary) **93k:68078** 68R10 (05C05, 05C85)

— (*with* Steele, J. Michael) Asymptotics for Euclidean minimal spanning trees on random points. *Probab. Theory Related Fields* **92** (1992), *no.* 2, 247–258. (Robin Pemantle) **93c:60007** 60D05

— (*with* Hofri, Micha; Szpankowski, Wojciech) Maximum size of a dynamic data structure: hashing with lazy deletion revisited. *SIAM J. Comput.* **21** (1992), *no.* 4, 713–732. (Helmut Alt) **93i:68042** 68P05 (60K25, 60K30, 68P20)

Aldred, R. E. L. (*with* Holton, D. A.; Jackson, Bill) Uniform cyclic edge connectivity in cubic graphs. *Combinatorica* **11** (1991), *no.* 2, 81–96. (Nicholas Wormald) **93e:05055** 05C40

— Note on distance-regular graphs with a pair of equal subdegrees. (English summary) *Australas. J. Combin.* **6** (1992), 35–37. (Summary) **93j:05082** 05C35

Aldroubi, Akram (*with* Unser, Michael) Polynomial splines and wavelets—a signal processing perspective. *Wavelets*, 91–122, *Wavelet Anal. Appl.*, 2, *Academic Press, Boston, MA*, 1992. (Summary) **93a:94011** 94A12 (41A15, 41A63)

— (*with* Unser, Michael) Families of wavelet transforms in connection with Shannon's sampling theory and the Gabor transform. *Wavelets*, 509–528, *Wavelet Anal. Appl.*, 2, *Academic Press, Boston, MA*, 1992. (Summary) **93a:94003** 94A12 (41A15, 42C15)

— (*with* Unser, Michael; Eden, Murray) On the asymptotic convergence of B-spline wavelets to Gabor functions. *IEEE Trans. Inform. Theory* **38** (1992), *no.* 2, *part* 2, 864–872. (Ewald Quak) **93f:41020** 41A15 (41A58, 42C15)

Aldrovandi, Ettore (*with* Dohrn, Daniela; Guerra, Francesco) The Lagrangian approach to stochastic variational principles on curved manifolds. Application of statistical methods in theoretical physics and fluid mechanics (Calcutta, 1991). *Acta Appl. Math.* **26** (1992), *no.* 3, 219–236. (Jacques Vauthier) **93m:58123** 58G32 (81P20)

Aldrovandi, R. Extended gauge theories. *J. Math. Phys.* **32** (1991), *no.* 9, 2503–2512. (Summary) **93h:81079** 81T13

— Two-dimensional quantum gas. (English summary) *Fortschr. Phys.* **40** (1992), *no.* 7, 631–649. (V. I. Yukalov) **93j:82003** 82B10 (20F36, 81S05)

Alduncin, G. Primal and mixed upwind finite element approximations of control advection-diffusion problems. (English summary) *Comput. Mech.* **11** (1993), *no.* 2-3, 93–106. (Summary) **93m:76062** 76M30 (76M10, 76R99)

Aleev, R. Ž. *see* **Aliev, R. Zh.**

Alefeld, Götz E. (*with* Potra, Florian A.) Some efficient methods for enclosing simple zeros of nonlinear equations. *BIT* **32** (1992), *no.* 2, 334–344. (R. P. Tewarson) **93d:65048** 65H05 (65G10)

durand-Alegría, Ana Isabel *see* **Durand-Alegría, Ana Isabel**

sarabia Alegría, José María *see* **Sarabia Alegría, José María**

Alekhina, M. A. Reliability of schemes in the basis $\{x \& y, x \vee y, \overline{x}\}$ with one-type constant faults on the element outputs. (Russian) *Vestnik Moskov. Univ. Ser. I Mat. Mekh.* **1992**, *no.* 6, 56–58. 94C10

Aleksandrov, A. G. Vector fields on a complete intersection. (Russian) *Funktsional. Anal. i Prilozhen.* **25** (1991), *no.* 4, 64–66; *translation in Functional Anal. Appl.* **25** (1991), *no.* 4, 283–284 (1992). (From the introduction) **93d:14073** 14M10 (13N05)

— (*with* Kistlerov, V. L.) Computer method in calculating b-functions of nonisolated singularities. *Proceedings of the International Conference on Algebra, Part* 3 (*Novosibirsk*, 1989), 319–335, *Contemp. Math.*, 131, *Part* 3, *Amer. Math. Soc., Providence, RI*, 1992. (Introduction) **93k:32077** 32S40 (32–04, 32S30)

— (*with* Martin, Bernd) Derivations and deformations of Artinian algebras. *Beiträge Algebra Geom. No.* 33 (1992), 115–130. (Summary) **93d:14008** 14B07 (13E10)

Aleksandrov, A. G. (*with* Brutyan, V. Kh.) Optimization of the soft landing of a spacecraft on the surface of the moon. (Russian. Russian summary) *Applied problems in optimal control: models, methods and algorithms (Russian)*, 41–48, 73–74, *Inst. Problem Upravlen., Moscow*, 1990. (*see* **93m:93004**) 70Q05

Aleksandrov, A. V. (*with* Soldatov, A. P.) Boundary properties of integrals of Cauchy type. The L_p case. (Russian) *Differentsial'nye Uravneniya* **27** (1991), *no.* 1, 3–8, 179; *translation in Differential Equations* **27** (1991), *no.* 1, 1–5. (Summary) **93i:30029** 30E20 (30D55)

Aleksandrov, Aleksandr G. *see* **Aleksandrov, A. G.**

Aleksandrov, E. L. (*with* Shvedenko, L. A.) On the closedness of systems of functions $\{\varphi^k\}$ in the spaces $L^2(0, 1)$ and $L^2(\mathbf{R})$. (Russian) *Functional analysis, No.* 30 (*Russian*), 17–25, *Ul'yanovsk. Gos. Ped. Inst., Ul'yanovsk*, 1989. (Michal Zajac) **93k:47042** 47B38 (42C30, 47B25)

— Spectral properties of operators with kernels that depend on the difference and sum of arguments. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* **1991**, *no.* 8, 3–8; *translation in Soviet Math. (Iz. VUZ)* **35** (1991), *no.* 8, 1–5. (N. K. Karapetyants) **93g:47030** 47B35 (47A10, 47G10)

Aleksandrov, G. A. (*with* Babev, V. D.) A new Banach space without the Kadec-Klee property. *Bull. Austral. Math. Soc.* **45** (1992), *no.* 3, 463–465. (Catherine Finet) **93f:46013** 46B20

Aleksandrov, I. A. (*with* Uglyanskaya, L. S.) Use of generalized hypergeometric functions in the solution of a coefficient problem. (Russian. Russian summary) *Complex analysis and mathematical physics (Russian) (Divnogorsk, 1987)*, 12–19, 157, *Akad. Nauk SSSR Sibirsk. Otdel., Inst. Fiz., Krasnoyarsk*, 1988. (*see* **93b:32001**) 30C50

— *see also* **Algebra and analysis, 93e:00020**

Aleksandrov, N. D. (*with* Neifel'd, È. G.; Aleksandrova, E. V.) Bundles on associated algebras to hypersurfaces in a centro-affine space. I. (Russian) *Trudy Geom. Sem. Kazan. Univ. No.* 21 (1991), 31–40. (Vladislav Goldberg) **93h:53014** 53A15

Aleksandrov, P. S. ★ Einführung in die Gruppentheorie. (German) [Introduction to group theory] Tenth edition. With an appendix by J. P. Solowjew [Yu. P. Solov'ev]. Translated from the 1980 Russian edition by Lothar Uhlig. Translation revised by Hans-Dietrich Hecker. *Verlag Harri Deutsch, Thun*, 1992. 152 *pp. ISBN* 3-8171-1270-X (Editors) **93i:20001** 20–01

— *see also* **Kolmogorov, A. N., 93d:01097**

Aleksandrov, S. E. Discontinuous velocity fields under arbitrary deformation of an ideal rigid-plastic body. (Russian) *Dokl. Akad. Nauk* **324** (1992), *no.* 4, 769–772; *translation in Soviet Phys. Dokl.* **37** (1992), *no.* 6, 283–284. 73E05 (73D99, 73E50)

Aleksandrov, V. A. Remarks on Efimov's theorem about differential tests of homeomorphism. Analyse complexe (Bucharest, 1989). *Rev. Roumaine Math. Pures Appl.* **36** (1991), *no.* 3-4, 101–105. (Miodrag Perović) **93e:26009** 26B10 (58C15)

— (*with* Dairbekov, N. S.) Remarks on the theorem of M. and S. Rădulescu about an initial value problem for the differential equation $x^{(n)} = f(t, x)$. *Rev. Roumaine Math. Pures Appl.* **37** (1992), *no.* 2, 95–102. (Summary) **93f:34098** 34G20 (34A12)

— On the isometricity of polyhedral domains whose boundaries are locally isometric in relative metrics. (Russian) *Sibirsk. Mat. Zh.* **33** (1992), *no.* 2, 3–9, 219; *translation in Siberian Math. J.* **33** (1992), *no.* 2, 177–182. (J. G. Krzyż) **93j:52003** 52A15

— An interconnection between the problem of unique determination of a domain in $\mathbf{R}^n$ and the problem of reconstruction of a locally Euclidean metric. (Russian. Russian summary) *Sibirsk. Mat. Zh.* **33** (1992), *no.* 4, 206–211, 224; *translation in Siberian Math. J.* **33** (1992), *no.* 4, 732–736 (1993). (V. Oproiu) **93k:53043** 53C23

Aleksandrova, E. V. (*with* Aleksandrov, N. D.; Neĭfel'd, È. G.) Bundles on associated algebras to hypersurfaces in a centro-affine space. I. (Russian) *Trudy Geom. Sem. Kazan. Univ. No.* 21 (1991), 31–40. (Vladislav Goldberg) **93h:53014** 53A15

Aleksandrova, N. I. Approximation of boundary conditions in problems of hydroelasticity. (Russian. English summary) *Mat. Model.* **3** (1991), *no.* 12, 16–30 (1992). (Summary) **93c:73076** 73K70 (73V15, 76M10)

Aleksandrovich, I. N. (*with* Roshchupkina, O. N.) The Riemann integral operator for nonstationary processes in the axisymmetric case. (Russian) *Vychisl. Prikl. Mat. (Kiev) No.* 72 (1990), 16–22 (1991). (Summary) **93b:35021** 35C15

Aleksanyan, A. A. ★ Дизъюнктивные нормальные формы над линейными функциями. (Russian) [Disjunctive normal forms over linear functions] Теория и приложения. [Theory and applications] *Erevan. Univ., Erevan*, 1990. 201 *pp. ISBN* 5-8084-0164-X (S. Rudeanu) **93h:06024** 06E30 (03G05, 68T10, 94B05, 94C10)

— (*with* Serobyan, R. K.) Coverings associated with quadratic equations over a finite field. (Russian. Armenian summary) *Akad. Nauk Armenii Dokl.* **93** (1992), *no.* 1, 6–10. (Simon N. Litsyn) **93i:11148** 11T30 (05B40)

Alekseenko, S. V. (*with* Cherep, A. A.) Formation of spiral waves under circular motion of a source in a dispersive medium. (Russian) *Dokl. Akad. Nauk* **327** (1992), *no.* 3, 306–310; *translation in Soviet Phys. Dokl.* **37** (1992), *no.* 11, 537–539 (1993). 76C05

Alekseenko, V. N. A summation scheme for solving the Laplace equation. (Russian. Russian summary) *Methods for solving inverse problems (Russian)*, **18–21**, 142, *Akad. Nauk SSSR Sibirsk. Otdel., Inst. Mat., Novosibirsk*, 1990. (*see* **93i:35002**) 65N99 (35A35)

Alekseev, A. *see* **Alekseev, A. Yu.**

Alekseev, A. A. On the absence of periodic solutions to the Liénard equation. (Russian) *Differential and integral equations (Russian)*, 37–49, *Gor'kov. Gos. Univ., Gorki*, 1990. (From the text) **93i:34071** 34C25 (34C15)

— (*with* Kudryashov, N. A.) Approximating pseudopotentials for evolution equations that contain a small parameter. (Russian. English and Russian summaries) *Teoret. Mat. Fiz.* **91** (1992), *no.* 3, 355–362; *translation in Theoret. and Math. Phys.* **91** (1992), *no.* 3, 575–580. (Summary) **93g:35117** 35Q40 (58D25)

Alekseev, A. O. (*with* Alekseev, O. G.; Kulagin, O. A.) An experimental estimate for the efficiency of an algorithm for solving the minimax traveling salesman problem. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **33** (1993), *no.* 3, 476–478; *translation in Comput. Math. Math. Phys.* **33** (1993), *no.* 3, 441–442. 90C27 (90–08)

Alekseev, A. S. (*with* Erokhin, G. N.) A complex approach in the solution of inverse problems of integral geophysics. (Russian) *Nonclassical equations and equations of mixed type (Russian)*, 5–11, *Akad. Nauk SSSR Sibirsk. Otdel., Inst. Mat., Novosibirsk*, 1990. (Introduction) **93f:86003** 86A22 (35R30)

— (*with* Avdeev, A. V.; Fat'yanov, A. G.; Cheverda, V. A.) A closed cycle of the mathematical modeling of wave processes in vertically inhomogeneous media (direct and inverse problems). (Russian. English summary) *Mat. Model.* **3** (1991), *no.* 10, 80–94. (Summary) **93b:86003** 86A15 (73D50)

Alekseev, A. V. (*with* Sushilov, N. V.) Analytic solutions of Bloch and Maxwell-Bloch equations in the case of arbitrary field amplitude and phase modulation. *Phys. Rev. A* (3) **46** (1992), *no.* 1, 351–355. (Summary) **93i:81311** 81V80 (34A99)

Alekseev, A. Yu. (*with* Faddeev, L. D.) $(T^*G)_t$: a toy model for conformal field theory. *Comm. Math. Phys.* **141** (1991), *no.* 2, 413–422. (Summary) **93g:81138** 81T40 (17B37, 58F05, 58F07, 81R50)

— (*with* Faddeev, L. D.; Semenov-Tyan-Shanskiĭ, M. A.) Hidden quantum groups inside Kac-Moody algebras. *Quantum groups (Leningrad*, 1990), 148–158, *Lecture Notes in Math.*, 1510, *Springer, Berlin*, 1992. (Vladimir A. Stukopin) **93i:17013** 17B37 (17B67, 81R50)

— (*with* Faddeev, L. D.; Semenov-Tyan-Shanskiĭ, M. A.) Hidden quantum groups inside Kac-Moody algebra. (English summary) *Comm. Math. Phys.* **149** (1992), *no.* 2, 335–345. (Stanislav Z. Pakuliak) **93j:17017** 17B37 (17B67, 81R10, 81R50)

— (*with* Faddeev, L. D.) Involution and dynamics in the system "q-deformed top". (Russian. English and Russian summaries) *Zap. Nauchn. Sem. S.-Peterburg. Otdel. Mat. Inst. Steklov. (POMI)* **200** (1992), *Kraev. Zadachi Mat. Fiz. Smezh. Voprosy Teor. Funktsiĭ.* 24, 3–16, 187. (J. S. Joel) **93k:58103** 58F06 (17B37)

Alekseev, G. V. (*with* Komarov, E. G.) A nonselfadjoint singular spectral problem for the Helmholtz operator with discontinuous coefficients. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **32** (1992), *no.* 4, 587–612; *translation in Comput. Math. Math. Phys.* **32** (1992), *no.* 4, 499–507. (Summary) **93c:35023** 35J05 (34L05, 65L15, 76Q05, 86A05)

Alekseev, O. G. (*with* Alekseev, A. O.; Kulagin, O. A.) An experimental estimate for the efficiency of an algorithm for solving the minimax traveling salesman problem. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **33** (1993), *no.* 3, 476–478; *translation in Comput. Math. Math. Phys.* **33** (1993), *no.* 3, 441–442. 90C27 (90–08)

Alekseev, V. E. Range of values of entropy of hereditary classes of graphs. (Russian. Russian summary) *Diskret. Mat.* **4** (1992), *no.* 2, 148–157. (Peter Mihók) **93k:05140** 05C75 (05C35)

Alekseev, V. G. On spectral density estimates for a Gaussian periodically correlated random field. *Probab. Math. Statist.* **11** (1990), *no.* 2, 157–167 (1991). (H. Salehi) **93a:62130** 62M15 (62M40)

— Asymptotic properties of higher-order periodograms. (Russian) *Otbor i Obrabotka Informatsii No.* 8(84) (1992), 16–22. 62M15

Alekseev, V. M. *see* **Poincaré, Henri, 93j:01016b**

Alekseeva, L. A. Boundary integral equations of initial-boundary value problems for the wave equation. (Russian. Russian summary) *Differentsial'nye Uravneniya* **28** (1992), *no.* 8, 1451–1453, 1471. (Summary) **93k:35153** 35L05

Alekseevskiĭ, A. V. On gradings of simple Lie algebras connected with groups generated by transvections. *Algebra and analysis (Tomsk*, 1989), 1–40, *Amer. Math. Soc. Transl. Ser.* 2, 151, *Amer. Math. Soc., Providence, RI*, 1992. (Jorge A. Vargas) **93k:17013** 17B20 (17B70, 20G40)

— (*with* Alekseevskiĭ, D. V.) G-manifolds with one-dimensional orbit space. *Lie groups, their discrete subgroups, and invariant theory*, 1–31, *Adv. Soviet Math.*, 8, *Amer. Math. Soc., Providence, RI*, 1992. (Yoshinobu Kamishima) **93c:57029** 57S15

Alekseevskiĭ, D. V. (*with* Alekseevskiĭ, A. V.) G-manifolds with one-dimensional orbit space. *Lie groups, their discrete subgroups, and invariant theory*, 1–31, *Adv. Soviet Math.*, 8, *Amer. Math. Soc., Providence, RI*, 1992. (Yoshinobu Kamishima) **93c:57029** 57S15

— (*with* Graev, M. M.) Twistors and G-structures. (Russian) *Izv. Ross. Akad. Nauk Ser. Mat.* **56** (1992), *no.* 1, 3–37; *translation in Russian Acad. Sci. Izv. Math.* **40** (1993), *no.* 1, 1–31. (Sergey Merkulov) **93e:53036** 53C10 (32L25)

— Lorentzian space-homogeneous manifolds. Application of topology in algebra and differential geometry (Tartu, 1991). *Tartu Ül. Toimetised No.* 940 (1992), 17–20. (Philippos J. Xenos) **93g:53067** 53C30 (53C50)

Alekseĭ, S. F. Generalization of the Horner scheme. (Russian) *Algebraic structures and geometry (Russian)*, 3–6, 156, "*Shtiintsa*", *Kishinev*, 1991. (From the introduction) **93c:12001** 12D05

— A method for reducing a quadratic form to canonical form. (Russian) *Algebraic structures and geometry (Russian)*, 6–8, 156, "*Shtiintsa*", *Kishinev*, 1991. (Summary) **93c:15013** 15A21 (11E04)

Alekseichuk, A. N. (*with* Elizarov, V. P.) Finite rings with a large number of zero divisors. (Russian. Russian summary) *Diskret. Mat.* **4** (1992), *no.* 2, 45–51. (Summary) **93g:16028** 16P10

Aleksidze, M. A. ★ Фундаментальные функции в приближенных решениях граничных задач. (Russian) [Fundamental functions in approximate solutions of boundary value problems] With an English summary. Справочная Математическая Библиотека. [Mathematical Reference Library] "*Nauka*", *Moscow*, 1991. 352 *pp. ISBN* 5-02-014251-4 (Jiří Nedoma) **93c:65155** 65N99 (35A35, 73V99, 76M99, 86A25)

Alencar, Hilário (*with* Frensel, Katia) Hypersurfaces whose tangent geodesics omit a nonempty set. *Differential geometry*, 1–13, *Pitman Monographs Surveys Pure Appl. Math.*, 52, *Longman Sci. Tech., Harlow*, 1991. (Thomas Hasanis) **93f:53048** 53C42 (53C40)

— Minimal hypersurfaces of $\mathbf{R}^{2m}$ invariant by $SO(m) \times SO(m)$. *Trans. Amer. Math. Soc.* **337** (1993), *no.* 1, 129–141. (Martin A. Magid) **93g:53081** 53C42

Alenitsyn, Yu. E. On functions that are weakly p-valent in the mean. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* **1991**, *no.* 3, 3–5; *translation in Soviet Math. (Iz. VUZ)* **35** (1991), *no.* 3, 1–3. (Z. Lewandowski) **93b:30009** 30C45

Aleš, J. (*with* Bačik, R.) Strong elimination ordering of the total graph of a tree. (English summary) *Discrete Appl. Math.* **39** (1992), *no.* 3, 293–295. (Summary) **93g:05128** 05C85 (05C05, 68R10)

Aleshina, N. A. Semantics of Montague type for probabilistic logic. (Russian) *Investigations in current inductive logic (Russian)*, 19–26, *Akad. Nauk SSSR, Inst. Filos., Moscow*, 1989. (*see* **93m:03039**) 03B48 (03B65)

Aleshkov, Yu. Z. Waves on the surface of a heavy fluid. (Russian) *Asymptotic methods in the theory of systems (Russian)*, 135–156, *Akad. Nauk SSSR Sibirsk. Otdel., Irkut·sk. Nauchn. Tsentr, Irkutsk*, 1989. (Vladan D. Djordjević) **93f:76007** 76B15 (76B25)

Aleshkyavichene, A. K. *see* **Aleškevičienė, Aldona**

Aleskerov, F. D. (*with* Ibragimov, I. I.) Convergence of the derivatives of singular integrals that depend on two variables. (Russian) *Special problems in function theory, No. IV (Russian)*, 4–12, "*Élm*", *Baku*, 1989. (*see* **93m:00037**) 42A38

Aleškevičienė, Aldona On the maximum of sums of random variables and the supremum for stable processes. *Probability theory and mathematical statistics, Vol. I (Vilnius*, 1989), 35–51, "*Mokslas*", *Vilnius*, 1990. (N. H. Bingham) **93e:60148** 60J30 (60G50)

— Large and moderate deviations for L-statistics. (Russian. English and Lithuanian summaries) *Litovsk. Mat. Sb.* **31** (1991), *no.* 2, 227–241; *translation in Lithuanian Math. J.* **31** (1991), *no.* 2, 145–156 (1992). (S. A. Book) **93h:60035** 60F10 (62E20, 62G30)

Alessandrini, B. (*with* Raganelli, V.) The propagation of acoustic and elastic waves in an heterogeneous discrete medium. (English summary) *European J. Mech. A Solids* **11** (1992), *no.* 4, 519–538. (Summary) **93e:73014** 73D15 (73N20, 73V15, 73V20, 76Q05, 86A15)

Alessandrini, Giovanni A symmetry theorem for condensers. *Math. Methods Appl. Sci.* **15** (1992), *no.* 5, 315–320. (From the introduction) **93d:35047** 35J65

Alessandrini, Lucia (*with* Bassanelli, Giovanni) Smooth proper modifications of compact Kähler manifolds. *Complex analysis (Wuppertal*, 1991), 1–7, *Aspects of Math., E17, Vieweg, Braunschweig*, 1991. (Bo Berndtsson) **93c:32041** 32J27 (32C17)

— (*with* Bassanelli, Giovanni) Positive $\partial\overline{\partial}$-closed currents and non-Kähler geometry. *J. Geom. Anal.* **2** (1992), *no.* 4, 291–316. (Salomon Ofman) **93g:32012** 32C30 (32C17, 32J27)

— (*with* Bassanelli, Giovanni) Metric properties of manifolds bimeromorphic to compact Kähler spaces. *J. Differential Geom.* **37** (1993), *no.* 1, 95–121. (Shanyu Ji) **93m:32040** 32J27 (32C17, 32C30, 53C55)

Alev, J. (*with* Chamarie, M.) Dérivations et automorphismes de quelques algèbres quantiques. [Derivations and automorphisms of some quantum algebras] *Comm. Algebra* **20** (1992), *no.* 6, 1787–1802. (V. A. Artamonov) **93f:16036** 16S99

Alex, Leo J. (*with* Foster, Lorraine L.) On the Diophantine equation $1 + x + y = z$. *Rocky Mountain J. Math.* **22** (1992), *no.* 1, 11–62. (A. Pethő) **93e:11040** 11D61

Alexander, Carol (*with* Giblin, I.; Newton, Dan) Symmetry groups of fractals. *Math. Intelligencer* **14** (1992), *no.* 2, 32–38. (Colleen D. Cutler) **93g:58123** 58F23 (58F12)

Alexander, Francis J. (*with* Gerlach, Ulrich H.) Coulomb field of an accelerated charge: physical and mathematical aspects. *Phys. Rev. D* (3) **44** (1991), *no.* 12, 3887–3898. (N. V. Mitskevich) **93a:83022** 83C50 (78A35)

— (*with* Cheng, Zheming; Janowsky, Steven A.; Lebowitz, Joel L.) Shock fluctuations in the two-dimensional asymmetric simple exclusion process. (English summary) *J. Statist. Phys.* **68** (1992), *no.* 5-6, 761–785. (Summary) **93g:82066** 82C22 (60K35, 82–04, 82C24)

Alexander, H. On the totally real spheres of Ahern and Rudin and Weinstein. *The Madison Symposium on Complex Analysis (Madison, WI*, 1991), 29–35, *Contemp. Math.*, 137, *Amer. Math. Soc., Providence, RI*, 1992. (Donna Kumagai) **93m:32020** 32E20

— Ends of varieties. (English and French summaries) *Bull. Soc. Math. France* **120** (1992), *no.* 4, 523–547. (Bo Berndtsson) **93k:32012** 32C25 (32B15)

Alexander, J. *see* **Alexander, James Ernest**

Alexander, J. C. (*with* Yorke, James A.; You, Zhiping; Kan, Ittai) Riddled basins. (English summary) *Internat. J. Bifur. Chaos Appl. Sci. Engrg.* **2** (1992), *no.* 4, 795–813. (Ian Melbourne) **93k:58140** 58F12 (34D08, 34D45)

Alexander, James Ernest (*with* Hirschowitz, André) La méthode d'Horace éclatée: application à l'interpolation en degré quatre. [The blown-up Horace method: application

to fourth-order interpolation] *Invent. Math.* **107** (1992), *no.* 3, 585–602. (Giorgio Bolondi) **93d:13017** 13B25 (14J17)

— (*with* Hirschowitz, André) Un lemme d'Horace différentiel: application aux singularités hyperquartiques de $\mathbf{P}^5$. [A differential Horace lemma: application of hyperquartic singularities in $\mathbf{P}^5$] *J. Algebraic Geom.* **1** (1992), *no.* 3, 411–426. (Kurt Behnke) **93e:14004** 14B05 (14B10, 14F17)

Alexander, Kenneth S. Stability of the Wulff minimum and fluctuations in shape for large finite clusters in two-dimensional percolation. *Probab. Theory Related Fields* **91** (1992), *no.* 3-4, 507–532. (H. Kesten) **93e:60191** 60K35 (82B43)

Alexander, Peter Pragmatic paradoxes. *Reflexivity*, 179–181, *North-Holland, Amsterdam*, 1992. (*see* **93g:03005**) 03A05

Alexander, Stephanie B. (*with* Berg, I. David; Bishop, Richard L.) Geometric curvature bounds in Riemannian manifolds with boundary. *Trans. Amer. Math. Soc.* **339** (1993), *no.* 2, 703–716. (I. G. Nikolaev) **93m:53034** 53C21 (53C20)

Alexanderson, Gerald L. *see* **More mathematical people, 93b:01045**

theon of Alexandria *see* **Theon of Alexandria**

Alexandris, N. (*with* Foundas, E.) Algorithms and properties on balanced permutations. (English summary) *J. Inform. Optim. Sci.* **13** (1992), *no.* 2, 219–229. 05A05

Alexandroff, P. S. *see* **Aleksandrov, P. S.**

Alexandrou, C. (*with* Rosenfelder, R.) Stochastic solution to highly nonlocal actions: the polaron problem. (English summary) *Phys. Rep.* **215** (1992), *no.* 1, 1–48. (Summary) **93c:81277** 81V70 (81–08)

Alexandrov, G. A. *see* **Aleksandrov, G. A.**

Alexandrov, V. A. *see* **Aleksandrov, V. A.**

Alexanian, Moorad One-dimensional dynamics for a discontinuous map. *Phys. A* **181** (1992), *no.* 1-2, 53–68. (Yong Nian Huang) **93d:58093; EA 93m** 58F13 (58F12)

Alexeev, V. A. Theorems about good divisors on log Fano varieties (case of index $r > n - 2$). *Algebraic geometry* (*Chicago, IL*, 1989), 1–9, *Lecture Notes in Math.*, 1479, *Springer, Berlin*, 1991. (Zhaohua Luo) **93j:14049** 14J45

Alexiewicz, Andrzej (*with* Szmuksta-Zawadzka, Maria) Waelbroeck sequences. *Comment. Math. Prace Mat.* **31** (1991), 1–8. (Pedro J. Paúl) **93b:46013** 46A16 (46A13, 54A20)

Alexopoulos, A. H. (*with* Klibi, A.; Wiest, J. M.) Singularity cancellation in boundary integral equations for axisymmetric Stokes flow. *Internat. J. Numer. Methods Fluids* **15** (1992), *no.* 4, 491–497. 76M99 (76D07)

Alexopoulos, G. An application of homogenization theory to harmonic analysis: Harnack inequalities and Riesz transforms on Lie groups of polynomial growth. (English and French summaries) *Canad. J. Math.* **44** (1992), *no.* 4, 691–727. (Ewa Damek) **93j:22006** 22E15 (22E30, 43A80)

— A lower estimate for central probabilities on polycyclic groups. (English summary) *Canad. J. Math.* **44** (1992), *no.* 5, 897–910. (Vadim A. Kaimanovich) **93j:60007** 60B15 (20F16, 43A80)

Al-Ezeh, H. Exchange PF-rings and almost PP-rings. (Serbo-Croatian summary) *Mat. Vesnik* **42** (1990), *no.* 2, 77–80. (Summary) **93c:13010** 13C13 (13J07, 54C40)

— Some properties of the submodules of a module over principal ideal domains. (English and Arabic summaries) *Dirāsāt Ser. B Pure Appl. Sci.* **18** (1991), *no.* 1, 96–101. (Chin-Pi Lu) **93h:13012** 13C13 (13F10)

— Further results on reticulated rings. *Acta Math. Hungar.* **60** (1992), *no.* 1-2, 1–6. (C. P. L. Rhodes) **93i:13001** 13A15 (06D05)

Alfa, Attahiru Sule (*with* Gupta, Yash P.) Quality control in manufacturing systems using $M/G/1$ queues with $(N + 1)$ different inspection rates. (English summary) *J. Inform. Optim. Sci.* **13** (1992), *no.* 2, 279–291. 90B22

martínez Alfaro, J. *see* **Martínez Alfaro, J.**

Alfaro, Jorge (*with* Urrutia, Luis F.; Vergara, José David) Anomalous Jacobians and the vector anomaly. *Quantum mechanics of fundamental systems*, 2 (*Santiago*, 1987), 1–12, *Ser. Cent. Estud. Cient. Santiago, Plenum, New York*, 1989. (*see* **93e:81005**) 81T50

— Hidden BRST symmetry, Schwinger-Dyson equations and large N. (English summary) *Nonperturbative methods in low-dimensional quantum field theories* (*Debrecen*, 1990), 481–490, *World Sci. Publishing, River Edge, NJ*, 1991. (*see* **93f:81005**) 81T70

— (*with* Damgaard, P. H.) BRST symmetry of field redefinitions. (English summary) *Ann. Physics* **220** (1992), *no.* 2, 188–211. (Silvio Paolo Sorella) **93k:81236** 81T70 (81T10, 81T15, 81T50)

— (*with* Damgaard, P. H.) The $D = 1$ matrix model and the renormalization group. (English summary) *Phys. Lett. B* **289** (1992), *no.* 3-4, 342–346. (David Sénéchal) **93i:81155** 81T17 (81T40)

Alfaro, Manuel (*with* Marcellán, F.; Rezola, M. L.; Ronveaux, A.) On orthogonal polynomials of Sobolev type: algebraic properties and zeros. *SIAM J. Math. Anal.* **23** (1992), *no.* 3, 737–757. (Walter Van Assche) **93g:42015** 42C05 (33C45, 46E35)

Alfaro, Ricardo T-Galois extensions on rings and a submodule correspondence. *Comm. Algebra* **20** (1992), *no.* 6, 1777–1786. (F. DeMeyer) **93h:16065** 16W20

— Noncommutative separability and group actions. (English summary) *Publ. Mat.* **36** (1992), *no.* 2A, 359–367 (1993). (F. DeMeyer) **93m:16024** 16W20 (16S35)

de Alfaro, Vittorio (*with* Fubini, Sergio; Furlan, Giuseppe) Why we like octonions. (Italian summary) *Mem. Accad. Sci. Torino Cl. Sci. Fis. Mat. Natur.* (5) **10** (1986), *no.* 2, 57–76 (1987). (Dominique Lambert) **93d:17002** 17A35 (81T13)

Alfeld, Peter (*with* Schumaker, Larry L.; Sirvent, Maritza) On dimension and existence of local bases for multivariate spline spaces. *J. Approx. Theory* **70** (1992), *no.* 2, 243–264. (Zygmunt Wronicz) **93f:41015** 41A15 (41A63, 65D07)

Alferes, José Júlio (*with* Pereira, Luís Moniz; Aparício, Joaquim Nunes) Counterfactual reasoning based on revising assumptions. (English summary) *Logic programming* (*San Diego, CA*, 1991), 566–577, *MIT Press Ser. Logic Program., MIT Press, Cambridge, MA*, 1991. (Summary) **93j:68124** 68Q55 (03B70, 68N17, 68T27)

— (*with* Pereira, Luís Moniz; Aparício, Joaquim Nunes) Adding closed world assumptions to well founded semantics. (English summary) *Fifth generation computer systems, Vol.* 1, 2 (*Tokyo*, 1992), 562–569, *Ohm, Tokyo*, 1992. (*see* **93i:68007**) 68Q55

Alferov, E. A. N-almost periodic random processes. (Russian) *Differential equations and function theory, No.* 8 (*Russian*), 24–36, *Saratov. Gos. Univ., Saratov*, 1989. (*see* **93b:00016**) 60G99

Alfimov, G. L. (*with* Kulagin, N. E.) On the existence of radially asymmetric solutions of quasilinear equations of elliptic type. (Russian. English summary) *Mat. Model.* **2** (1990), *no.* 10, 67–79 (1991). (Russell C. Thompson) **93g:35038** 35J60 (35P30, 35Q99, 65P05)

— (*with* Eleonskiĭ, V. M.; Kulagin, N. E.) Dynamical systems in the theory of solitons in the presence of nonlocal interactions. (English summary) *Chaos* **2** (1992), *no.* 4, 565–570. (Summary) **93k:35225** 35Q51

Alfonsi, Liliane (*with* Weissler, Fred B.) Blow up in $\mathbf{R}^n$ for a parabolic equation with a damping nonlinear gradient term. *Nonlinear diffusion equations and their equilibrium states*, 3 (*Gregynog*, 1989), 1–20, *Progr. Nonlinear Differential Equations Appl.*, 7, *Birkhäuser Boston, Boston, MA*, 1992. (Siegfried Carl) **93f:35118** 35K60 (35B05)

Alford, Cecil O. (*with* Fielder, Daniel C.) Pascal's triangle: top gun or just one of the gang? *Applications of Fibonacci numbers, Vol.* 4 (*Winston-Salem, NC*, 1990), 77–90, *Kluwer Acad. Publ., Dordrecht*, 1991. (Piero Filipponi) **93i:11021** 11B65 (05A10)

Alford, Mark G. (*with* March-Russell, John) New order parameters for nonabelian gauge theories. *Nuclear Phys. B* **369** (1992), *no.* 1-2, 276–298. (Kornél Szlachányi) **93b:81193** 81T25

— (*with* Lee, Kai-Ming; March-Russell, John; Preskill, John) Quantum field theory of nonabelian strings and vortices. (English summary) *Nuclear Phys. B* **384** (1992), *no.* 1-2, 251–317. (Emil Vinţeler) **93j:81077** 81T30

Al-Fuhaid, A. S. *see* **Liu, Xiao Ping[2]**

Algazin, S. D. Prediction of the dynamics of a nuclear reactor. (Russian. Russian summary) *Applied problems in optimal control: models, methods and algorithms* (*Russian*), 36–40, 73, *Inst. Problem Upravlen., Moscow*, 1990. (*see* **93m:93004**) 93B30 (82D75, 93C95)

— Discretization of the Laplace operator and the fast solution of the Poisson equation in a torus. (Russian. Russian summary) *Zh. Vychisl. Mat. i Mat. Fiz.* **32** (1992), *no.* 10, 1661–1666; *translation in Comput. Math. Math. Phys.* **32** (1992), *no.* 10, 1491–1495 (1993). (Summary) **93i:65119** 65N99

Alghoussein, Ahmad On bimodular spaces over a field with nontrivial valuation. (English summary) *Discuss. Math.* **11** (1991), 123–126 (1992). (Dinamérico P. Pombo, Jr.) **93h:46109** 46S10 (46A70, 46A80)

Algoet, Paul H. Universal schemes for prediction, gambling and portfolio selection. *Ann. Probab.* **20** (1992), *no.* 2, 901–941. (Lorenzo Peccati) **93d:60075** 60G40 (60G10, 90A09, 90D60)

— (*with* Marcus, Brian H.) Large deviation theorems for empirical types of Markov chains constrained to thin sets. *IEEE Trans. Inform. Theory* **38** (1992), *no.* 4, 1276–1291. (Summary) **93c:60097** 60J10 (60F10)

Al-Gwaiz, M. A. ★ Theory of distributions. Monographs and Textbooks in Pure and Applied Mathematics, 159. *Marcel Dekker, Inc., New York*, 1992. xii+257 *pp. ISBN* 0-8247-8672-6 (W. Kecs) **93g:46035** 46Fxx (46–01)

— (*with* Deshmukh, Sharief) Totally real surfaces in $\mathbf{CP}^2$ with parallel mean curvature vector. *Internat. J. Math. Math. Sci.* **15** (1992), *no.* 3, 589–592. (Maria Luiza Leite) **93e:53021** 53B25

— (*with* Deshmukh, Sharief) Hypersurfaces of the two-dimensional complex projective space. *Nihonkai Math. J.* **3** (1992), *no.* 1, 1–7. (M. Okumura) **93i:53052** 53C40

Al-Harby, Abdullah H. (*with* Amira, Tarik A.; Habib, Mohamed E.) Estimation of the intensity function of nonhomogeneous Poisson process using nonparametric density estimation methods. (English summary) *Egyptian Statist. J.* **35** (1991), *no.* 2, 324–338. (Ludger Rüschendorf) **93j:62088** 62G05 (62M09)

Al-Hashimi, Basil Atta (*with* Naoum, Adil G.; Hassan, Hytham R.) Maximal, prime and primary submodules of finitely generated multiplication modules. (English and Arabic summaries) *Dirāsāt Ser. B Pure Appl. Sci.* **18** (1991), *no.* 1, 7–17. (Jian-Pan Wang) **93j:13015** 13C13

— (*with* Naoum, Adil G.; Kider, J. R.) On the module of homomorphisms on finitely generated multiplication modules. I. *Period. Math. Hungar.* **22** (1991), *no.* 2, 97–105. (From the introduction) **93f:13005** 13C13

— (*with* Naoum, Adil G.; Kider, J. R.) On the module of homomorphisms on finitely generated multiplication modules. II. *Period. Math. Hungar.* **22** (1991), *no.* 3, 153–160. (Shi Zhong Pan) **93f:13006** 13C13

Al-Hassan, Qassem M. A variable order–variable stepsize continuation method that can trace difficult curves. (English and Arabic summaries) *Dirāsāt Ser. B Pure Appl. Sci.* **18** (1991), *no.* 1, 79–95. (Summary) **93c:65018** 65D10

— (*with* Al-Rawash, Hussein) Construction of admissible tests for the geometric distribution with numerical applications. (English summary) *J. Inform. Optim. Sci.* **14** (1993), *no.* 1, 11–19. 62F03

— On the solution of nonlinear programming problems with equality constraints via continuation using special LU factorization. (English summary) *J. Inform. Optim. Sci.* **14** (1993), *no.* 2, 189–201. (Summary) **93m:90074** 90C30 (65K05)

Alhassid, Y. (*with* Leviatan, A.) Partial dynamical symmetry. (English summary) *J. Phys. A* **25** (1992), *no.* 23, L1265–L1271. (Summary) **93k:81069** 81R05 (22E70, 81V35)

Al-Hawaj, A. Y. (*with* Bajpai, S. D.) Some integrals and Fourier series involving Meijer's G-functions. *J. Natur. Sci. Math.* **29** (1989), *no.* 2, 115–123. (P. Anandani) **93a:33025** 33C60

— A double expansion formula for Fox's H-function involving Jacobi polynomials and Bessel functions. (English and Arabic summaries) *Delta J. Sci.* **14** (1990), *no.* 4, 1332–1339. 33C60

— (*with* Essawy, A. H.) The optimum shape of an hydrofoil with no cavitation. (English summary) *Rev. Colombiana Mat.* **25** (1991), *no.* 1-4, 103–122. (Summary) **93m:76004** 76B05 (76M30)

Alhazen *see* **ibn al-Haytham, Ḥasan**

Al-Hemyari, Z. A. (*with* Kambo, N. S.; Handa, B. R.) On Huntsberger type shrinkage estimator. *Comm. Statist. Theory Methods* **21** (1992), *no.* 3, 823–841. (Khursheed Alam) **93h:62046** 62F10

Alhendi, H. (*with* Taha, M. O.) Massless φ^4 theory is not asymptotically free. (English summary) *Phys. Lett. B* **300** (1993), *no.* 4, 373–375. (Henryk Arodź) **93k:81135** 81T08 (81T17)

Alhlaghi, M. R. *see* **Akhlaghi, M. R. A.**

Al Humaidan, S. (*with* Azzam, Ali) On mixed boundary value problems for elliptic equations in domains with corners. (Arabic summary) *Arabian J. Sci. Engrg.* **16** (1991), *no.* 4, 475–481. (Lew Lefton) **93g:35032** 35J25 (35B65)

Al-Hussaini, A. N. The Hida calculus approach to stochastic integration. *Gaussian random fields* (*Nagoya*, 1990), 100–113, *Ser. Probab. Statist.*, 1, *World Sci. Publishing, River Edge, NJ*, 1991. (Summary) **93h:60084** 60H05

— (*with* Schmuland, Byron) Convergence of some martingale-like sequences. *Rev. Roumaine Math. Pures Appl.* **37** (1992), *no.* 4, 289–297. (Nicholas Frangos) **93j:60059** 60G48

Al-Hussaini, Essam K. (*with* Abd-El-Hakim, Nagi S.) Efficiency of schemes of sampling from the inverse Gaussian-Weibull mixture model. (English summary) *Comm. Statist. Theory Methods* **21** (1992), *no.* 11, 3143–3169. (Summary) **93h:62054** 62F12

Al-Huzali, A. H. (*with* Jain, Surender Kumar; López-Permouth, Sergio R.) Rings whose cyclics have finite Goldie dimension. (English summary) *J. Algebra* **153** (1992), *no.* 1, 37–40. (Summary) **93k:16006** 16D70 (16D50)

— (*with* Jain, Surender Kumar; López-Permouth, Sergio R.) Weakly-injective rings and modules. *Osaka J. Math.* **29** (1992), *no.* 1, 75–87. (Alberto Facchini) **93b:16005** 16D50 (16L60)

Ali, A. H. A. (*with* Gardner, G. A.; Gardner, L. R. T.) A collocation solution for Burgers' equation using cubic *B*-spline finite elements. (English summary) *Comput. Methods Appl. Mech. Engrg.* **100** (1992), *no.* 3, 325–337. (Summary) **93j:65156** 65M70 (35Q53, 76M25)

a-hussain Ali, A-Hamid *see* **A-Hussain Ali, A-Hamid**

Ali, Abbas (*with* Kumar, Alok[2]; Maharana, Jnanadeva; Sengupta, Gautam) Algebraic structure of topological superconformal field theory on Riemann surfaces. (English summary) *Comm. Math. Phys.* **148** (1992), *no.* 1, 117–137. (Stanislav Z. Pakuliak) **93f:81123** 81T40 (17B81, 81R10, 81T60, 81T70)

Ali, Abdunnabi M. (*with* Saleh, A. K. Md. Ehsanes) Estimation of means and treatment effects in a one-way ANOVA model. *Soochow J. Math.* **17** (1991), *no.* 2, 287–309. (Wibawa Sutanto) **93b:62035** 62F10 (62J07, 62J10)

Ali, Ashraf (*with* Kaljević, Igor; Saigal, Sunil) An infinite boundary element formulation for three-dimensional potential problems. (English summary) *Internat. J. Numer. Methods Engrg.* **35** (1992), *no.* 10, 2079–2100. 65N38

Ali, Dewan Muslim Some other types of fuzzy connectedness. *Fuzzy Sets and Systems* **46** (1992), *no.* 1, 55–61. (Siegfried Gottwald) **93d:54009** 54A40 (04A72, 54D05)

— On the R_1-property in fuzzy topology. (English summary) *Fuzzy Sets and Systems* **50** (1992), *no.* 1, 97–101. 54A40 (04A72)

Ali, Ismael (*with* Castro, Alfonso; Shivaji, R.) Uniqueness and stability of nonnegative solutions for semipositone problems in a ball. *Proc. Amer. Math. Soc.* **117** (1993), *no.* 3, 775–782. (M. Biroli) **93d:35048** 35J65 (35B32, 35B35, 35P30)

Ali, M. A. *see* **Ali, Mohamed Akkas**

al-Ali, M. I. M. M. *see* **Al-Ali, M. I. M. M.**

Ali, Mir M. *see* **Ali, Mir Maswood**

Ali, Mir Masoom (*with* Ali, Mohamed Akkas) Impacts of equi-correlated responses on multicollinearity. *Comm. Statist. Theory Methods* **21** (1992), *no.* 7, 1965–1975. (V. K. Srivastava) **93j:62167** 62J05

— (*with* Roy, Manindra Kumar; Rahman, S.) A class of Poisson mixtured distributions. (English summary) *J. Inform. Optim. Sci.* **13** (1992), *no.* 2, 207–218. (Ramesh C. Gupta) **93j:62041** 62E15

— (*with* Roy, Manindra Kumar; Roy, Ashish Kumar) Binomial mixtures of some standard distributions. (English summary) *J. Inform. Optim. Sci.* **14** (1993), *no.* 1, 57–71. 62E15

Ali, Mir Maswood (*with* Joarder, Anwarul H.) Distribution of the correlation coefficient for the class of bivariate elliptical models. (French summary) *Canad. J. Statist.* **19** (1991), *no.* 4, 447–452. (Hisao Nagao) **93e:62141** 62H10 (62H20)

— (*with* Joarder, Anwarul H.) Distribution of the correlation matrix for a class of elliptical models. *Comm. Statist. Theory Methods* **21** (1992), *no.* 7, 1953–1964. (Minoru Siotani) **93h:62106** 62H10

Ali, Mohamed Akkas Impacts of auxiliary information on outliers in regression. *Comm. Statist. Theory Methods* **20** (1991), *no.* 10, 3271–3281. (A. L. Nagar) **93c:62113** 62J05

— Restricted minimum bias linear estimation in regression. *Comm. Statist. Theory Methods* **20** (1991), *no.* 12, 3751–3760. (Michael R. Chernick) **93c:62114** 62J05

— On estimation of linear functions of parameters of a linear regression model. (English summary) *Sankhyā Ser. B* **53** (1991), *no.* 1, 64–73. (Summary) **93f:62096** 62J07

— (*with* Ali, Mir Masoom) Impacts of equi-correlated responses on multicollinearity. *Comm. Statist. Theory Methods* **21** (1992), *no.* 7, 1965–1975. (V. K. Srivastava) **93j:62167** 62J05

— (*with* Smadi, A. A.) Modified generalized Stein estimator of regression coefficients. (English summary) *J. Inform. Optim. Sci.* **13** (1992), *no.* 2, 303–309. (Kurt Hoffmann) **93j:62182** 62J07 (62C15, 62J05)

Ali, Mukhtar M. (*with* Tsui, Albert K.) Approximations to the distribution of the least squares estimator in a first order stationary autoregressive model. *Comm. Statist. Simulation Comput.* **21** (1992), *no.* 2, 463–484. 62M10

Ali, Rosihan M. (*with* Thomas, D. K.) On the starlikeness of the Bernardi integral operator. *Proc. Japan Acad. Ser. A Math. Sci.* **67** (1991), *no.* 9, 319–321. (H. M. Srivastava) **93c:30014** 30C45

eaqub Ali, S. M. *see* **Eaqub Ali, S. M.**

Ali, S. M. Eaqub *see* **Eaqub Ali, S. M.**

Ali, S. Tahir (*with* Bokhari, Ashfaque H.) Solutions of Einstein-Maxwell field equations. (English summary) *Nuovo Cimento B* (11) **107** (1992), *no.* 7, 777–783. (A. H. Taub) **93i:83030** 83C22

Ali, S. Twareque (*with* Antoine, Jean-P.; Gazeau, Jean-Pierre) Square integrability of group representations on homogeneous spaces. I. Reproducing triples and frames. (French summary) *Ann. Inst. H. Poincaré Phys. Théor.* **55** (1991), *no.* 4, 829–855. (Palle E. T. Jørgensen) **93a:22002** 22D10 (22E70, 46E22, 81R30)

— (*with* Antoine, Jean-P.; Gazeau, Jean-Pierre) Square integrability of group representations on homogeneous spaces. II. Coherent and quasi-coherent states. The case of the Poincaré group. (French summary) *Ann. Inst. H. Poincaré Phys. Théor.* **55** (1991), *no.* 4, 857–890. (Palle E. T. Jørgensen) **93a:22003** 22D10 (22E70, 46E22, 81R30)

— (*with* Antoine, Jean-P.; Gazeau, Jean-Pierre) Square integrability of group representations on homogeneous spaces and generalized coherent states. Proceedings of the Winter School on Geometry and Physics (Srní, 1990). *Rend. Circ. Mat. Palermo* (2) *Suppl. No.* 26 (1991), 47–56. (A. O. Barut) **93d:81080** 81R30

Ali, S. W. (*with* Cosner, C.) On the uniqueness of the positive steady state for Lotka-Volterra models with diffusion. (English summary) *J. Math. Anal. Appl.* **168** (1992), *no.* 2, 329–341. (Kazuaki Narita) **93f:92026** 92D40 (35K57)

Ali, Shahid (*with* Husain, S. I.) Submersions of CR-submanifolds of a nearly Kaehler manifold. I. (Serbo-Croatian summary) *Rad. Mat.* 7 (1991), *no.* 2, 197–205. (Aurel Bejancu) **93c:53040** 53C40 (53C55)

Ali, Sk. Jaker (*with* Chakraborty, N. D.) On Dunford and Gel'fand integrals in locally convex spaces. *Indian J. Pure Appl. Math.* **23** (1992), *no.* 3, 203–216. (Richard Becker) **93f:46066** 46G10 (28B05)

Aliabadi, M. Hosseini (*with* Ortiz, E. L.) On the numerical behaviour of different formulations of the tau method for the treatment of differential inclusions. *Proceedings of the Second International Symposium on Numerical Analysis* (*Prague*, 1987), 162–174, *Teubner-Texte Math.*, 107, *Teubner, Leipzig*, 1988. (*see* **93b:65007**) 65L05 (34A50, 34A60)

— (*with* Ortiz, E. L.) The algebraic kernel method for the numerical solution of partial differential equations. *Numer. Funct. Anal. Optim.* **12** (1991), *no.* 3-4, 339–360. (Stephen W. Brady) **93b:65193** 65N99

— *see also* **Adaptive finite and boundary element methods, 93m:65005**

Aliabadi, S. K. (*with* Tezduyar, T. E.; Behr, M.; Mittal, S.; Ray, S. E.) A new mixed preconditioning method for finite element computations. (English summary) *Comput. Methods Appl. Mech. Engrg.* **99** (1992), *no.* 1, 27–42. (Summary) **93f:73104** 73V05

Aliaga, J. (*with* Crespo, G.; Proto, A. N.) Squeezing in the SU(1, 1) group. (English summary) *Instabilities and nonequilibrium structures, III* (*Valparaíso*, 1989), 87–94, *Math. Appl.*, 64, *Kluwer Acad. Publ., Dordrecht*, 1991. (*see* **93b:00027**) 81V10 (81R30)

— (*with* Crespo, G.; Proto, A. N.) Information-theoretic and Wigner-function approaches to the nonclassical state dynamics for the variable-frequency harmonic oscillator. (English summary) *Phys. Rev. Lett.* **70** (1993), *no.* 4, 434–436. 81Q05 (81Q20, 81R30)

bilotti-Aliaga, Martha *see* **Bilotti-Aliaga, Martha**

Alías, Luis J. (*with* Ferrández, Angel; Lucas, Pascual) Submanifolds in pseudo-Euclidean spaces satisfying the condition $\Delta x = Ax + B$. *Geom. Dedicata* **42** (1992), *no.* 3, 345–354. (Thomas Hasanis) **93d:53066** 53C40 (53C50)

Alibekov, G. A. (*with* Trofimenko, V. I.) Summation of Faber series by de la Vallée-Poussin, Rogosinski and Jackson methods in domains with a piecewise-smooth boundary. (Russian. Russian summary) *Studies in the theory of the approximation of functions* (*Russian*), 4–12, *Akad. Nauk Ukrain. SSR, Inst. Mat., Kiev*, 1991. (Summary) **93m:42014** 42C15 (40G99, 41A25)

Alicki, Robert (*with* Rudnicki, S.; Sadowski, S.) Quantum stochastic differential equations. (English summary) *Acta Phys. Polon. B* **23** (1992), *no.* 4, 317–322. 81S25

— Dirac equations for MHD waves: Hamiltonian spectra and supersymmetry. (English summary) *J. Phys. A* **25** (1992), *no.* 22, 6075–6085. (Summary) **93i:76098** 76W05 (35Q35, 85A30)

Alidaee, B. Optimal assignment of NOP due-dates and sequencing in a single machine shop. (English summary) *Z. Oper. Res.* **36** (1992), *no.* 4, 333–341. (Summary) **93e:90030** 90B35

— Maximizing set function formulation of two scheduling problems. (English summary) *Z. Oper. Res.* **36** (1992), *no.* 5, 409–416. 90B35

Alidema, Rashit Imer On the boundedness of solutions of systems of integro-differential equations with periodic nonlinear functions. (Russian) *Univ. Beograd. Publ. Elektrotehn. Fak. Ser. Mat.* **2** (1991), 49–54. (Summary) **93a:34080** 34K15 (34K20, 45J05)

Aliev, A. B. (*with* Aliev, Fakhraddin Abbas oglu) A global minimal attractor for quasilinear hyperbolic equations with dissipation on the boundary of the domain. (Russian) *Boundary value problems for nonclassical equations in mathematical physics* (*Russian*) (*Novosibirsk*, 1989), 75–79, *Akad. Nauk SSSR Sibirsk. Otdel., Inst. Mat., Novosibirsk*, 1989. (*see* **93d:35001**) 35L70 (58F12)

Aliev, B. *see* **Aliev, B. S.**

Aliev, B. N. (*with* Leznov, A. N.) The problem of the principal chiral field with the parameters depending on free arguments and its integration. (English summary) *Acta Appl. Math.* **28** (1992), *no.* 3, 201–217. (R. S. Ward) **93i:58065** 58F07 (81T13)

— (*with* Leznov, A. N.) Einstein's vacuum fields with nonabelian group of motion G_2 II. *Classical Quantum Gravity* **9** (1992), *no.* 5, 1261–1270. (Jörg Frauendiener) **93i:83024** 83C20 (83C05, 83C40)

— (*with* Leznov, A. N.) Exact solutions of the vacuum Einstein's equations allowing for two noncommutative Killing vectors (type G_2II of Petrov classification). *J. Math. Phys.* **33** (1992), *no.* 7, 2567–2573. (Nora Bretón Báez) **93e:83023** 83C20 (83C15)

Aliev, B. S. On the generalized residual principle and method in the case of approximate specification of data. (Russian. Tajiki summary) *Dokl. Akad. Nauk Tadzhik. SSR* **34** (1991), *no.* 3, 139–143. (A. B. Bakushinskiĭ) **93k:65047** 65J10 (47A50, 65J20)

Aliev, Fakhraddin Abbas oglu (*with* Aliev, A. B.) A global minimal attractor for quasilinear hyperbolic equations with dissipation on the boundary of the domain. (Russian) *Boundary value problems for nonclassical equations in mathematical physics* (*Russian*) (*Novosibirsk*, 1989), 75–79, *Akad. Nauk SSSR Sibirsk. Otdel., Inst. Mat., Novosibirsk*, 1989. (*see* **93d:35001**) 35L70 (58F12)

— (*with* Maksudov, F. G.) A problem for a higher-order nonlinear hyperbolic equation with dissipation on the boundary of the domain. (Russian) *Dokl. Akad. Nauk SSSR* **321** (1991), *no.* 4, 673–676; *translation in Soviet Math. Dokl.* **44** (1992), *no.* 3, 771–774. (Andreas Müller-Rettkowski) **93b:35095** 35L75 (35B30)

Aliev, I. A. Inequalities of various metrics for generalized polynomials in terms of the Newton polyhedron. (Russian) *Special problems in function theory, No. IV* (*Russian*), 20–38, "Élm", *Baku*, 1989. (*see* **93m:00037**) 32A05

Aliev, R. Zh. Structure constants of simple Lie algebras. *Proceedings of the International Conference on Algebra, Part* 2 (*Novosibirsk*, 1989), 3–13, *Contemp. Math.*, 131, *Part* 2, *Amer. Math. Soc., Providence, RI*, 1992. (Mohammad Hailat) **93f:17017** 17B20

Alifanov, O. M. (*with* Nenarokomov, A. V.) A three-dimensional inverse problem of heat conduction in an extremal formulation. (Russian) *Dokl. Akad. Nauk* **325** (1992), *no.* 5, 950–954; *translation in Soviet Phys. Dokl.* **37** (1992), *no.* 8, 409–410 (1993). (From the introduction) **93m:80005** 80A20 (35R30)

Alikhani-Koopaei, Aliasghar Borel measurability of extreme local derivatives. *Real Anal. Exchange* **17** (1991/92), *no.* 2, 521–534. (Zbigniew Grande) **93e:26004** 26A24 (26A15, 26A21)

Alikulov, È. O. (*with* Gorlenko, S. V.) Analyticity of functions with rectilinear monogeneity sets. (Russian. Russian summary) *Akad. Nauk Ukrainy Inst. Mat. Preprint* **1992**, *no.* 29, 11 *pp.* 30A05 (30G30)

Alikulov, T. A. (*with* Mellev, T. K.) On the asymptotic integration of systems of second-order linear differential equations. (Russian. Russian summary) *Asymptotic solutions of nonlinear equations with a small parameter* (*Russian*), 4–10, *Akad. Nauk Ukrainy, Inst. Mat., Kiev*, 1991. (Summary) **93g:34079** 34E05 (34A05)

Ali Mehmeti, Felix (*with* Nicaise, Serge) Nonlinear interaction problems. *Nonlinear Anal.* **20** (1993), *no.* 1, 27–61. (Ioan I. Vrabie) **93m:35093** 35K15 (34G20, 35M10, 47N20, 73C50)

Ali Mousa, M. A. M. The bootstrap risk of linear empirical Bayes estimates. (English summary) *Austral. J. Statist.* **34** (1992), *no.* 3, 537–544. 62C12 (62G09)

Alimov, D. Some remarks on "artificial" regeneration. (Russian. Russian summary) *Stochastic equations and boundary theorems* (*Russian*), 4–14, *Akad. Nauk Ukrainy, Inst. Mat., Kiev*, 1991. (Summary) **93k:60179** 60J25

— Semicontinuous processes with independent increments with a boundary and with a "fractional-linear" time change. (Russian) *Teor. Veroyatnost. i Primenen.* **36** (1991), *no.* 3, 542–548; *translation in Theory Probab. Appl.* **36** (1991), *no.* 3, 557–564 (1992). (M. G. Shur) **93c:60107** 60J30

— A remark on limit distributions of integral functionals of an ergodic Markov process. (Russian. Ukrainian summary) *Ukrain. Mat. Zh.* **43** (1991), *no.* 9, 1267–1269; *translation in Ukrainian Math. J.* **43** (1991), *no.* 9, 1180–1182 (1992). (Summary) **93b:60158** 60J25 (60F05)

— Convergence of integral functionals of limit-degenerate Markov functionals. (Russian. English and Russian summaries) *Dokl. Akad. Nauk Ukrainy* **1992**, *no.* 1, 31–35, 177. (Summary) **93g:60154** 60J25 (60F05)

— Three examples of Markovian functionals. (Russian. Russian and Ukrainian summaries) *Ukraïn. Mat. Zh.* **44** (1992), *no.* 3, 299–304; *translation in Ukrainian Math. J.* **44** (1992), *no.* 3, 259–264. (Summary) **93j:60101** 60J25 (60F05)

— Transformations of Markovian functionals. (Russian. Russian and Ukrainian summaries) *Ukraïn. Mat. Zh.* **44** (1992), *no.* 4, 460–467; *translation in Ukrainian Math. J.* **44** (1992), *no.* 4, 402–408. (Summary) **93g:60155** 60J25

Alimov, Sh. A. On the spectrum of the Schrödinger operator for some many-particle systems. *J. Phys. A* **25** (1992), *no.* 10, L615–L616. (Summary) **93c:81038** 81Q10 (35J10, 35P15, 81V45)

Alinhac, Serge (*with* Gérard, Patrick) ★ Opérateurs pseudo-différentiels et théorème de Nash-Moser. (French) [Pseudodifferential operators and the Nash-Moser theorem] Savoirs Actuels. [Current Scholarship] *InterEditions, Paris*; *Éditions du Centre National de la Recherche Scientifique* (*CNRS*), *Meudon*, 1991. 190 *pp. ISBN* 2-7296-0364-6 (Luigi Rodino) **93g:35001** 35–02 (35Sxx, 47G30, 47H15, 47N20, 58G15)

— Some remarks about the instability of the vortex patch problem. *Nonlinear hyperbolic equations and field theory* (*Lake Como*, 1990), 1–7, *Pitman Res. Notes Math. Ser.*, 253, *Longman Sci. Tech., Harlow*, 1992. (*see* **93d:35003**) 35Q30 (35B40, 76D05)

— Une solution approchée en grand temps des équations d'Euler compressibles axisymétriques en dimension deux. [A large-time approximate solution for two-dimensional axisymmetric compressible Euler equations] *Comm. Partial Differential Equations* **17** (1992), *no.* 3-4, 447–490. (Bruno Scheurer) **93f:35175** 35Q30 (35C20, 76N10)

Aliprantis, C. D. (*with* Abramovich, Yu. A.; Burkinshaw, O.) Positive operators on Krein spaces. (English summary) Positive operators and semigroups on Banach lattices (Curaçao, 1990). *Acta Appl. Math.* **27** (1992), *no.* 1-2, 1–22. (Peter Meyer-Nieberg) **93h:47045** 47B60 (46C20)

Ališauskas, Sigitas Comment on: "The matrix representation of U_4 in the $U_2 \times U_2$ basis and some isoscalar factors for $U_{p+q} \supset U_p \times U_q$" [J. Math. Phys. **31** (1990), no. 6, 1333–1339; MR 91d:81040] by F. Pan. *J. Math. Phys.* **33** (1992), *no.* 6, 1980–1982. (Summary) **93c:81058** 81R05 (20C35, 22E70, 81R30)

— Explicit canonical tensor operators and orthonormal coupling coefficients of SU(3). *J. Math. Phys.* **33** (1992), *no.* 6, 1983–2004. (Wojciech Lisiecki) **93i:81051** 81R05 (22E70)

sanz Alix, Miguel A. *see* **Sanz Alix, Miguel A.**

Aliyazicioglu, Zekeriya (*with* Erbas, Cengiz; Tanik, Murat M.) Linear congruence equations for the solutions of the *N*-queens problem. *Inform. Process. Lett.* **41** (1992), *no.* 6, 301–306. (Summary) **93b:05040** 05B99

Alizadeh, Farid (*with* Karp, Richard M.; Newberg, Lee Aaron; Weisser, Deborah K.) Physical mapping of chromosomes: a combinatorial problem in molecular biology. *Proceedings of the Fourth Annual ACM-SIAM Symposium on Discrete Algorithms* (*Austin, TX*, 1993), 371–381, *ACM, New York*, 1993. (*see* **93k:05002**) 92D20

Aljančić, Slobodan (*with* Tomić, Miodrag) Radivoje Kašanin as a mathematician. (Serbo-Croatian. English summary) *The present past* (*Serbo-Croatian*), 9–21, *Istor. Mat. Mekh. Nauka*, 4, *Mat. Inst., Belgrade*, 1991. (Editors) **93a:01059a** 01A70

Aljarrah, Radwan (*with* Hasan, Mohamed R.) Interpolation of entire functions associated with some Freud weights. I. (English summary) *J. Approx. Theory* **71** (1992), *no.* 2, 123–137. (Franz Peherstorfer) **93k:41004** 41A05 (41A55)

Al-Juboury, Hussain Ali Estimation of the error of Runge-Kutta's method in multivariate case. (English and Russian summaries) *Annuaire Univ. Sofia Fac. Math. Inform.* **83** (1989), 81–88 (1992). 65L06

Al-Kadi, Ibrahim A. Origins of cryptology: the Arab contributions. *Cryptologia* **16** (1992), *no.* 2, 97–126. (Summary) **93b:01010** 01A30 (94–03)

Al-Kāshī, Ghiyāth al-Dīn Jamshīd *see* **al-Kāshī, Ghiyāth al-Dīn Jamshīd**

Al-Khalidi, H. R. (*with* Hwang, L. J.) Some pitfalls of tests of separate families of hypotheses: normality vs. lognormality. *Comm. Statist. Theory Methods* **20** (1991), *no.* 8, 2505–2528. (Adnan M. Awad) **93c:62028** 62F03 (62F05)

Al-Khayyal, Faiz A. (*with* Hoàng Tụy) A class of global optimization problems solvable by sequential unconstrained convex minimization. *Recent advances in global optimization* (*Princeton, NJ*, 1991), 141–151, *Princeton Ser. Comput. Sci., Princeton Univ. Press, Princeton, NJ*, 1992. (Zulfiqar Ali Khan) **93b:90084** 90C30 (49M37, 65K10)

— (*with* Horst, Reiner; Pardalos, Panos M.) Global optimization of concave functions subject to quadratic constraints: an application in nonlinear bilevel programming. Hierarchical optimization. *Ann. Oper. Res.* **34** (1992), *no.* 1-4, 125–147. (Jan Rückmann) **93c:90072** 90C30 (90C20, 90C31)

Al-Khāzinī, Abū'l-Fatḥ 'Abd ar-Rahmān al-Mansur *see* **al-Khāzinī, Abū'l-Fatḥ 'Abd ar-Rahmān al-Mansur**

Alkhutov, Yu. A. On the smoothness and limit properties of solutions of second-order parabolic equations. (Russian) *Mat. Zametki* **50** (1991), *no.* 4, 150–152; *translation in Math. Notes* **50** (1991), *no.* 3-4, 1085–1087 (1992). (I. Lojczyk-Królikiewicz) **93c:35057** 35K10 (35B65)

— (*with* Kondrat'ev, V. A.) Solvability of the Dirichlet problem for second-order elliptic equations in a convex domain. (Russian. Russian summary) *Differentsial'nye Uravneniya* **28** (1992), *no.* 5, 806–818, 917; *translation in Differential Equations* **28** (1992), *no.* 5, 650–662. (Summary) **93k:35074** 35J25

Al-Khwārizmī, Muḥammad ibn Mūsā *see* **al-Khwārizmī, Muḥammad ibn Mūsā**

abdel-All, N. H. *see* **Abdel-All, N. H.**

Alla, H. (*with* Zerhouni, N.) Sur l'analyse des lignes de fabrication par réseaux de Petri continus. (English and French summaries) [Manufacturing-lines analysis using continuous Petri nets] *RAIRO Automat.-Prod. Inform. Ind.* **26** (1992), *no.* 3, 253–275. 68Q90

Allaire, Grégoire Continuity of the Darcy's law in the low-volume fraction limit. *Ann. Scuola Norm. Sup. Pisa Cl. Sci.* (4) **18** (1991), *no.* 4, 475–499. (Andro Mikelić) **93a:76096** 76S05 (35Q30, 76D07)

— Homogénéisation et convergence à deux échelles. Application à un problème de convection diffusion. (English summary) [Homogeneization and two-scale convergence. Application to an advection-diffusion problem] *C. R. Acad. Sci. Paris Sér. I Math.* **312** (1991), *no.* 8, 581–586. (Andro Mikelić) **93d:76063** 76Rxx (35B27, 49J45, 73B27)

— Homogenization of the unsteady Stokes equations in porous media. *Progress in partial differential equations: calculus of variations, applications* (*Pont-à-Mousson*, 1991), 109–123, *Pitman Res. Notes Math. Ser.*, 267, *Longman Sci. Tech., Harlow*, 1992. (Taras A. Mel'nyk) **93m:35022** 35B27 (35Q35, 76S05)

— Homogenization and two-scale convergence. (English summary) *SIAM J. Math. Anal.* **23** (1992), *no.* 6, 1482–1518. (Maria Luisa Mascarenhas) **93k:35022** 35B27 (35B40, 73B27)

Allaire, Richard *see* **Spatial representation and spatial skills, 93k:00040** *and* **93k:00041**

Allakhverdiev, Kh. B. (*with* Pletner, Yu. D.; Sveshnikov, A. G.) On the oscillations of a vertical column of a stratified fluid with a free surface. (Russian. Russian summary) *Zh. Vychisl. Mat. i Mat. Fiz.* **32** (1992), *no.* 11, 1814–1820; *translation in Comput. Math. Math. Phys.* **32** (1992), *no.* 11, 1641–1647 (1993). (Introduction) **93j:76063** 76V05 (76C10)

Allam, A. A. (*with* Abd El-Hakeim, K. M.) Functions with closed graphs and strongly closed graphs in fuzzy neighbourhood spaces. (English summary) *Fuzzy Sets and Systems* **48** (1992), *no.* 3, 377–382. (Summary) **93d:54010** 54A40 (04A72)

— (*with* Zahran, A. A.) On fuzzy δ-continuity and α-near compactness in fuzzy topological spaces. (English summary) *Fuzzy Sets and Systems* **50** (1992), *no.* 1, 103–112. (Summary) **93h:54005** 54A40 (04A72)

— (*with* Zahran, A. M.) Functions and αS-closedness in fuzzy topological spaces. (English summary) *Fuzzy Sets and Systems* **52** (1992), *no.* 1, 103–111. (Summary) **93g:54009** 54A40 (04A72)

Allam, M. A. M. On reduction of thermoviscoelastic equations to integral equations. II. (English summary) *Proc. Pakistan Acad. Sci.* **28** (1991), *no.* 2, 145–150. (Summary) **93j:73035** 73F15 (45J05, 73B30)

Allam, R. M. (*with* Salekh, S. A.) Regularized traces for multi-point problems of differential operators of the fourth order. *Proc. Pakistan Acad. Sci.* **28** (1991), *no.* 4, 419–430. (Wen Ming Li) **93g:34132** 34L15 (34L20, 47E05)

Allanazarov, Zh. P. (*with* Prikazchikov, V. G.) The accuracy of a discrete spectral problem with a mixed derivative. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* **1991**, *no.* 9, 83–85; *translation in Soviet Math. (Iz. VUZ)* **35** (1991), *no.* 9, 82–84. (I. P. Gavrilyuk) **93h:65134** 65N25

Allard, André La diffusion en occident des premières œuvres latines issues de l'arithmétique perdue d'al-Khwārizmī. [The dissemination in the West of the first Latin works derived from the lost arithmetic of al-Khwārizmī] *J. Hist. Arabic Sci.* **9** (1991), *no.* 1-2, 101–105. (Jan P. Hogendijk) **93c:01013** 01A35 (01A30)

Allaway, Wm. R. Convolution shift, *c*-orthogonality preserving maps, and the Laguerre polynomials. *J. Math. Anal. Appl.* **157** (1991), *no.* 1, 284–299. (Summary) **93e:42036** 42C05 (33C45)

Allday, Christopher Elementary abelian p-group actions on lens spaces. (English summary) *Topology Hawaii* (*Honolulu, HI*, 1990), 1–11, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93e:57068** 57S25 (57S17)

Allegra, Giuseppe *see* **de Gennes, Pierre-Gilles, 93i:82084**

Allegretto, W. (*with* Xie, Hong) Existence of solutions for the time-dependent thermistor equations. *IMA J. Appl. Math.* **48** (1992), *no.* 3, 271–281. (Summary) **93d:35165** 35Q99 (35K50, 78A55)

— Principal eigenvalues for indefinite-weight elliptic problems in $\mathbf{R}^n$. *Proc. Amer. Math. Soc.* **116** (1992), *no.* 3, 701–706. (Jan Bochenek) **93a:35114** 35P05 (35J10, 47F05)

Allekotte, I. (*with* Aldazabal, G.; Font, Anamaría; Núñez, Carmen A.) $N = 2$ coset compactifications with nondiagonal invariants. (English summary) *Internat. J. Modern Phys. A* **7** (1992), *no.* 25, 6273–6297. (Eric J. Raiten) **93i:81180** 81T30 (11F22, 81T40)

Allen, Beth Price and quantity competition in homogeneous duopoly markets. *Econom. Lett.* **38** (1992), *no.* 4, 417–422. 90A60

— (*with* Van Zandt, Timothy) Uniform continuity of information combination. A corrigendum: "Neighboring information and distributions of agents' characteristics under uncertainty" [J. Math. Econom. **12** (1983), no. 1, 63–101; MR 85e:90012] by Allen. (English summary) *J. Math. Econom.* **21** (1992), *no.* 5, 453–459. (From the text) **93j:90023** 90A14 (46N10)

— (*with* Hellwig, Martin) Bertrand-Edgeworth duopoly with proportional residual demand. (English summary) *Internat. Econom. Rev.* **34** (1993), *no.* 1, 39–60. (Summary) **93h:90014** 90A12

Allen, Bruce (*with* McLaughlin, John G.; Ottewill, Adrian C.) Photon and graviton Green's functions on cosmic string space-times. *Phys. Rev. D* (3) **45** (1992), *no.* 12, 4486–4503. (Summary) **93c:83043** 83C45 (81T20, 81V17)

— (*with* McLaughlin, John G.; Ottewill, Adrian C.) Examples of the Vilkovisky-DeWitt effective action in one-loop quantum gravity. *Phys. Rev. D* (3) **45** (1992), *no.* 12, 4504–4513. (Summary) **93f:83034** 83C45

— (*with* Ottewill, Adrian C.) Gauge independence in Hadamard renormalization. *Phys. Rev. D* (3) **46** (1992), *no.* 2, 861–864. (Michael B. Mensky) **93i:81152** 81T16 (58G26, 81T13, 81V10)

Allen, Edward E. A conjecture of Procesi and the straightening algorithm of Rota. *Proc. Nat. Acad. Sci. U.S.A.* **89** (1992), *no.* 9, 3980–3984. (Joseph Kung) **93d:05153** 05E05 (05E10, 13F50)

Allen, G. D. Toward a dynamics for power and control in society. (English summary) *J. Math. Sociol.* **17** (1992), *no.* 1, 1–38. (Fred W. Roush) **93h:92044** 92H10 (92K10)

Allen, Jeffery C. (*with* Whitehouse, Harper J.) Displacement rank and deconvolution: applications and open problems. (English summary) *Radar and sonar, Part II*, 149–155, *IMA Vol. Math. Appl.*, 39, *Springer, New York*, 1992. (*see* **93m:00045**) 65F99 (65Y20, 68U10)

Allen, Scott (*with* Pathria, R. K.) Analytical evaluation of a class of phase-modulated lattice sums. (English summary) *J. Math. Phys.* **34** (1993), *no.* 4, 1497–1507. (Summary) **93m:11142** 11Z50 (11L99, 82B20, 82B26)

Allenby, R. B. J. T. Conjugacy separability of a class of 1-relator products. *Proc. Amer. Math. Soc.* **116** (1992), *no.* 3, 621–628. (Martin Edjvet) **93a:20045** 20F05

Allender, Eric (*with* Hemachandra, Lane A.) Lower bounds for the low hierarchy. *J. Assoc. Comput. Mach.* **39** (1992), *no.* 1, 234–251. (Klaus W. Wagner) **93c:68026** 68Q15 (03D15)

— (*with* Hemachandra, Lane A.; Ogiwara, Mitsunori; Watanabe, Osamu[2]) Relating equivalence and reducibility to sparse sets. *SIAM J. Comput.* **21** (1992), *no.* 3, 521–539. (Evangelos Kranakis) **93d:68019** 68Q15 (03D15)

Alles, Peter On a conjecture of J. Pelikán. *J. Combin. Theory Ser. A* **60** (1992), *no.* 2, 312–313. (Georges Grekos) **93i:11028** 11B75 (11B83)

Allgower, Eugene L. (*with* Böhmer, Klaus; Mei, Zhen) On a problem decomposition for semilinear nearly symmetric elliptic problems. *Parallel algorithms for partial differential equations* (*Kiel*, 1990), 1–17, *Notes Numer. Fluid Mech.*, 31, *Vieweg, Braunschweig*, 1991. (Summary) **93c:65152** 65N55 (35J65, 47H15, 58G28)

— (*with* Böhmer, Klaus; Mei, Zhen) An extended equivariant branching theory. (English summary) *Math. Methods Appl. Sci.* **15** (1992), *no.* 6, 433–451. (H. J. Kuiper) **93h:58035** 58E09 (35B32, 35J65, 35P30, 47H15)

— (*with* Böhmer, Klaus; Georg, Kurt; Miranda, Rick) Exploiting symmetry in boundary element methods. *SIAM J. Numer. Anal.* **29** (1992), *no.* 2, 534–552. (Johannes Elschner) **93b:65184** 65N38 (45L10, 65R20, 65Y20)

— (*with* Georg, Kurt; Miranda, Rick) The method of resultants for computing real solutions of polynomial systems. *SIAM J. Numer. Anal.* **29** (1992), *no.* 3, 831–844. (Gerd Pönisch) **93e:65079** 65H10 (15A15, 26C10, 65H20)

Alliney, S. A note on the greedy algorithm. (Italian summary) *Boll. Un. Mat. Ital. B* (7) **6** (1992), *no.* 4, 873–886. (Horst W. Hamacher) **93m:90061** 90C27 (90C10)

— (*with* Carnicer, R. S.) A hybrid finite element model for multilayered plates. (English summary) *Comput. Mech.* **10** (1992), *no.* 5, 319–333. (Summary) **93g:73107** 73V05 (73K10, 73K20)

Allison, B. N. Construction of (3 × 3)-matrix Lie algebras and some Lie algebras of type D_4. *J. Algebra* **143** (1991), *no.* 1, 63–92. (Joseph C. Ferrar) **93b:17069** 17B60 (17B25)

— Quartic Cayley algebras and some Lie algebras of type D_4. *Proceedings of the International Conference on Algebra, Part 2* (*Novosibirsk*, 1989), 15–22, *Contemp. Math.*, 131, *Part 2, Amer. Math. Soc., Providence, RI*, 1992. (*see* **93b:00030**) 17B60

— (*with* Faulkner, John R.) Norms on structurable algebras. *Comm. Algebra* **20** (1992), *no.* 1, 155–188. (Michel L. Racine) **93b:17005** 17A30 (17A40)

Allison, L. Lazy dynamic-programming can be eager. (English summary) *Inform. Process. Lett.* **43** (1992), *no.* 4, 207–212. 68R15

Allouche, H. (*with* Cuyt, Annie) On the structure of a table of multivariate rational interpolants. *Constr. Approx.* **8** (1992), *no.* 1, 69–86. (D. J. Leeming) **93e:41046** 41A63 (41A20)

Allouche, Jean-Paul Sur la transcendance de la série formelle π. (English summary) [On the transcendence of the formal power series π] Journées Arithmétiques, 1989 (Luminy, 1989). *Astérisque No.* 198-200 (1991), 35–39 (1992). (F. Beukers) **93b:11094** 11J99

— Des nouvelles des automates. [Some news about automata] *Groupe de Travail en Théorie Analytique et Élémentaire des Nombres*, 1989–1990, 1–4, *Publ. Math. Orsay*, 92-01, *Univ. Paris XI, Orsay*, 1992. (*see* **93f:11004**) 11J91

— The number of factors in a paperfolding sequence. *Bull. Austral. Math. Soc.* **46** (1992), *no.* 1, 23–32. (Jeffrey O. Shallit) **93f:11020** 11B83 (05A15, 11B85, 68Q45, 68R15)

— (*with* Bacher, Roland) Toeplitz sequences, paperfolding, Towers of Hanoi and progression-free sequences of integers. (English summary) *Enseign. Math.* (2) **38** (1992), *no.* 3-4, 315–327. (Gérald Tenenbaum) **93j:11017** 11B85 (28D05)

— (*with* Morton, Patrick; Shallit, Jeffrey) Pattern spectra, substring enumeration, and automatic sequences. Discrete mathematics and applications to computer science (Marseille, 1989). *Theoret. Comput. Sci.* **94** (1992), *no.* 2, 161–174. (A. J. van der Poorten) **93i:11030** 11B85 (68R15)

Allston, J. L. (*with* Stanton, R. G.) Weight bounds on small packings. Proceedings of the Twenty-first Manitoba Conference on Numerical Mathematics and Computing (Winnipeg, MB, 1991). *Congr. Numer.* **86** (1992), 123–127. (Stanislav Jendrol') **93d:05038** 05B40 (05B05)

Allwright, J. C. (*with* Papavasiliou, G. C.) On linear programming and robust model-predictive control using impulse-responses. *Systems Control Lett.* **18** (1992), *no.* 2, 159–164. (Summary) **93a:93054** 93B55 (90C05, 93B36, 93C62)

Allwright, James New (Δ, D) graphs discovered by heuristic search. (English summary) *Discrete Appl. Math.* **37/38** (1992), 3–8. (Peter B. Gibbons) **93i:05119** 05C85 (68R10)

Al-Maaitah, A. A. (*with* Antone, T. A.) Analytical solutions to classes of linear oscillator equations with time varying frequencies. (English summary) *J. Math. Phys.* **33** (1992), *no.* 10, 3330–3339. (Summary) **93f:70022** 70J30 (34A05)

ozorio de Almeida, Alfredo M. *see* **Ozorio de Almeida, Alfredo M.**

Almeida, C. A. S. (*with* Helayël-Neto, J. A.; Smith, A. William) The superspace gauging of (2, 0) nonlinear sigma models in the presence of torsion. *Phys. Lett. B* **279** (1992), *no.* 1-2, 75–77. (Gheorghe Zet) **93d:81173** 81T60

Almeida, D. F. (*with* Sharma, Chandra Shekhar) The first mathematical proof of Wigner's theorem. (English summary) *J. Natur. Geom.* **2** (1992), *no.* 2, 113–123. (M. J. Mączyński) **93i:47025** 47A99 (46C15, 47B15, 47N50, 81P10)

de Almeida, J. P. Moitinho (*with* de Freitas, J. A. Teixeira) Continuity conditions for finite element analysis of solids. *Internat. J. Numer. Methods Engrg.* **33** (1992), *no.* 4, 845–853. (Summary) **93b:73035** 73V05

d'Almeida, Jean Courbe de ramification de la projection sur $\mathbf{P}^2$ d'une surface de $\mathbf{P}^3$. [Ramification curve of the projection onto $\mathbf{P}^2$ of a surface in $\mathbf{P}^3$] *Duke Math. J.* **65** (1992), *no.* 2, 229–233. (Ovidiu Păsărescu) **93a:14013** 14E22 (14H45, 14J25)

Almeida, Jorge ★ Semigrupos finitos e álgebra universal. (Portuguese) [Finite semigroups and universal algebra] *Universidade de São Paulo, Instituto de Matemática e Estatística, São Paulo*, 199?. viii+419 *pp.* (Celestina Cotti-Ferrero) **93f:20074** 20M07 (08-01, 20M35)

— On direct product decompositions of finite $\mathscr{J}$-trivial semigroups. *Internat. J. Algebra Comput.* **1** (1991), *no.* 3, 329–337. (P. M. Higgins) **93b:20095** 20M07

— Counting factors in words, semidirect products and power semigroups. *Words, languages and combinatorics* (*Kyoto*, 1990), 1–15, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93a:20090** 20M07 (20M10)

— A unified syntactical approach to theorems of Putcha, Margolis, and Straubing on finite power semigroups. *Semigroup Forum* **46** (1993), *no.* 1, 90–97. (Pascal Weil) **93j:20125** 20M07 (20M10)

— Locally commutative power semigroups and counting factors of words. (English summary) International Colloquium on Words, Languages and Combinatorics (Kyoto, 1990). *Theoret. Comput. Sci.* **108** (1993), *no.* 1, 3–16. (M. M. Lesokhin) **93m:20090** 20M07 (20M14)

Almeida, M. A. (*with* Moreira, I. C.) Noether symmetries and the swinging Atwood machine. (English summary) *J. Physique II* **1** (1991), *no.* 7, 711–715. (From the text) **93h:70010** 70H05 (58F05, 70H33, 70K99)

— (*with* Moreira, I. C.; Yoshida, Haruo) On the nonintegrability of the Störmer problem. *J. Phys. A* **25** (1992), *no.* 5, L227–L230. (Simos Ichtiaroglou) **93b:70017** 70H05 (58F07)

— (*with* Moreira, I. C.) Lie symmetries for the reduced three-wave interaction problem. *J. Phys. A* **25** (1992), *no.* 11, L669–L672. (A. Roy Chowdhury) **93f:58216** 58F37 (34A26, 35A30, 39A12, 76D33)

Almeida, Michael J. Deontic problems with prohibition dilemmas. *Logique et Anal.* (*N.S.*) **32** (1989), *no.* 127-128, 163–175. 03B45

de Almeida, R. M. C. (*with* Arenzon, J. J.; Iglesias, J. R.) A multineuron interaction model for neural networks. (English summary) *J. Statist. Phys.* **69** (1992), *no.* 1-2, 385–409. (Summary) **93g:82073** 82C32 (92B20)

Almeida Benítez, Pedro (*with* Montero García, Gustavo; Winter, Gabriel; Cuesta Moreno, Pedro) Solution of nonsymmetric systems with preconditioned conjugate double gradient in adaptive processes. (Spanish. English summary) *Proceedings of the XII Congress on Differential Equations and Applications/II Congress on Applied Mathematics* (*Spanish*) (*Oviedo*, 1991), 625–630, *Univ. Oviedo, Oviedo*, 1991. (*see* **93j:00009**) 65F35 (65N30)

Almgren, Frederick J., Jr. (*with* Lieb, Elliott H.) The (non)continuity of symmetric decreasing rearrangement. (English summary) *Variational methods* (*Paris*, 1988), 3–16, *Progr. Nonlinear Differential Equations Appl.*, 4, *Birkhäuser Boston, Boston, MA*, 1990. (Bernhard Kawohl) **93m:49020** 49Q15 (46E30, 47H99)

— (*with* Lieb, Elliott H.) How many singularities can there be in an energy minimizing map from the ball to the sphere? (English summary) *Ideas and methods in mathematical analysis, stochastics, and applications* (*Oslo*, 1988), 394–408, *Cambridge Univ. Press, Cambridge*, 1992. (Wei Yue Ding) **93k:58061** 58E20 (49Q20)

Almkvist, Gert Commutative and noncommutative invariant theory. *Topics in algebra, Part 2* (*Warsaw*, 1988), 259–268, *Banach Center Publ.*, 26, *Part 2, PWN, Warsaw*, 1990. (E. Formanek) **93d:16043** 16W20 (13A50)

— On the differences of the partition function. *Acta Arith.* **61** (1992), *no.* 2, 173–181. (Richard P. Lewis) **93b:11133** 11P82 (05A17)

idestam-Almquist, Peter *see* **Idestam-Almquist, Peter**

Al'mukambetov, A. A. A local limit theorem for critical branching processes with immigration. (Russian. English, Russian and Kazakh summaries) *Izv. Akad. Nauk Kazakh. SSR Ser. Fiz.-Mat.* **1991**, *no.* 5, 11–14. (Summary) **93g:60182** 60J80

Al-Musallam, Fadhel A. The distance to operators satisfying some growth conditions. *Indiana Univ. Math. J.* **41** (1992), *no.* 1, 17–35. (F.-H. Vasilescu) **93d:47006** 47A10 (47A55)

Al-Nashef, Bassam On weakly σ-spaces. (Arabic summary) *J. Univ. Kuwait Sci.* **18** (1991), 29–36. (C. R. Borges) **93g:54042** 54E18

Alniaçik, Kâmil On semi-strong U-numbers. *Acta Arith.* **60** (1992), *no.* 4, 349–358. (Alain Faisant) **93b:11086** 11J25

— On p-adic T-numbers. (English and Turkish summaries) *Doğa Mat.* **16** (1992), *no.* 2, 119–128. (From the text) **93h:11134** 11S85

Alon, Noga (*with* Goldreich, Oded; Håstad, Johan; Peralta, René) Simple constructions of almost k-wise independent random variables. 31*st Annual Symposium on Foundations of Computer Science, Vol. I, II* (*St. Louis, MO*, 1990), 544–553, *IEEE Comput. Soc. Press, Los Alamitos, CA*, 1990. (Summary) **93a:65008** 65C10 (65U05, 68Q25)

— (*with* Galil, Zvi; Margalit, Oded) On the exponent of the all pairs shortest path problem. (English summary) 32*nd Annual Symposium on Foundations of Computer Science* (*San Juan, PR*, 1991), 569–575, *IEEE Comput. Soc. Press, Los Alamitos, CA*, 1991. (Summary) **93e:68029** 68Q25 (05C85)

— Nonconstructive proofs in combinatorics. *Proceedings of the International Congress of Mathematicians, Vol. I, II* (*Kyoto*, 1990), 1421–1429, *Math. Soc. Japan, Tokyo*, 1991. (J. Spencer) **93a:05002** 05–02 (05A18, 05C85)

— (*with* Spencer, Joel H.) ★ The probabilistic method. With an appendix by Paul Erdős. Wiley-Interscience Series in Discrete Mathematics and Optimization. A Wiley-Interscience Publication. *John Wiley & Sons, Inc., New York*, 1992. xvi+254 *pp. ISBN* 0-471-53588-5 (Bert Fristedt) **93h:60002** 60–02 (05C80, 11K99, 60C05)

— (*with* Azar, Yossi) Comparison-sorting and selecting in totally monotone matrices. *Proceedings of the Third Annual ACM-SIAM Symposium on Discrete Algorithms* (*Orlando, FL*, 1992), 403–408, *ACM, New York*, 1992. (*see* **93b:68005**) 68P10 (68U05)

— (*with* Kleitman, Daniel J.) Piercing convex sets and the Hadwiger-Debrunner (p, q)-problem. (English summary) *Adv. Math.* **96** (1992), *no.* 1, 103–112. (John D. Baildon) **93m:52008** 52A35 (52A30)

— (*with* Kleitman, Daniel J.) Piercing convex sets. *Bull. Amer. Math. Soc.* (*N.S.*) **27** (1992), *no.* 2, 252–256. (Marilyn Breen) **93a:52005** 52A35

— Choice numbers of graphs: a probabilistic approach. (English summary) *Combin. Probab. Comput.* **1** (1992), *no.* 2, 107–114. (J. Spencer) **93f:05084** 05C80 (05C15)

— (*with* Tarsi, Michael) Colorings and orientations of graphs. (English summary) *Combinatorica* **12** (1992), *no.* 2, 125–134. (David M. Berman) **93h:05067** 05C15 (05C45)

— (*with* McDiarmid, Colin J. H.; Reed, Bruce) Star arboricity. (English summary) *Combinatorica* **12** (1992), *no.* 4, 375–380. (C. St. J. A. Nash-Williams) **93k:05124** 05C70

— Transmitting in the n-dimensional cube. (English summary) *Discrete Appl. Math.* **37/38** (1992), 9–11. (Summary) **93e:94001** 94A05 (05C35, 05C90)

— (*with* Kleitman, Daniel J.) Partitioning a rectangle into small perimeter rectangles. *Discrete Math.* **103** (1992), *no.* 2, 111–119. (Jonathan I. Hall) **93f:05028** 05B40

— (*with* Peres, Yuval) Uniform dilations. *Geom. Funct. Anal.* **2** (1992), *no.* 1, 1–28. (Robert F. Tichy) **93a:11061** 11J71 (11K38)

— (*with* Scheinerman, Edward R.) Generalized sum graphs. *Graphs Combin.* **8** (1992), *no.* 1, 23–29. (David M. Berman) **93b:05145** 05C78

— (*with* Yuster, Raphael) Almost H-factors in dense graphs. *Graphs Combin.* **8** (1992), *no.* 2, 95–102. (Ian Anderson) **93g:05109** 05C70

— (*with* Bar-Noy, Amotz; Linial, Nathan; Peleg, David) Single round simulation on radio networks. (English summary) *J. Algorithms* **13** (1992), *no.* 2, 188–210. (Summary) **93m:68011** 68M10 (90B12)

— (*with* Goldreich, Oded; Håstad, Johan; Peralta, René) Simple constructions of almost k-wise independent random variables. *Random Structures Algorithms* **3** (1992), *no.* 3, 289–304. (Summary) **93k:94006a** 94A55 (65C10, 68Q30)

— (*with* Caro, Yair; Krasikov, I.) Bisection of trees and sequences. (English summary) Combinatorics and algorithms (Jerusalem, 1988). *Discrete Math.* **114** (1993), *no.* 1-3, 3–7. (Summary) **93m:05054** 05C05 (05C70)

— (*with* Goldreich, Oded; Håstad, Johan; Peralta, René) Addendum to: "Simple constructions of almost k-wise independent random variables". *Random Structures Algorithms* **4** (1993), *no.* 1, 119–120. (From the text) **93k:94006b** 94A55 (65C10, 68Q30)

— *see also* **Combinatorics and algorithms, 93k:00032**

Alon, Ofir E. (*with* Moiseyev, Nimrod) Balslev-Combes theorem within the framework of the finite-matrix approximation. (English summary) *Phys. Rev. A* (3) **46** (1992), *no.* 7, 3807–3811. (Summary) **93i:81303** 81V45 (81–04, 81U05, 81V55)

Alonso, A. I. (*with* Obaya García, Rafael) Floquet theory for the one-dimensional Schrödinger equation with quasiperiodic potential. (Spanish) *Proceedings of the XII Congress on Differential Equations and Applications/II Congress on Applied Mathematics (Spanish)* (*Oviedo*, 1991), 99–104, *Univ. Oviedo, Oviedo*, 1991. (*see* **93j:00009**) 34L40 (34B24, 34C27, 58F27)

peral Alonso, I. *see* **Peral Alonso, I.**

hermida Alonso, J. Á. *see* **Hermida Alonso, J. Á.**

Alonso, Javier *see* **Alonso Romero, Javier**

peral Alonso, Juan Carlos *see* **Peral Alonso, Juan Carlos**

Alonso, Juan M. Growth functions of amalgams. *Arboreal group theory* (*Berkeley, CA*, 1988), 1–34, *Math. Sci. Res. Inst. Publ.*, 19, *Springer, New York*, 1991. (D. E. Cohen) **93a:20037** 20E06 (57M07)

— (*with* et al.) Notes on word hyperbolic groups. Edited by H. Short. *Group theory from a geometrical viewpoint* (*Trieste*, 1990), 3–63, *World Sci. Publishing, River Edge, NJ*, 1991. (From the text) **93g:57001** 57M07 (20F38)

martínez Alonso, L. *see* **Martínez Alonso, L.**

Alonso, Laurent (*with* Goldstein, Arthur S.; Reingold, Edward M.) "Lion and man": upper and lower bounds. (English summary) *ORSA J. Comput.* **4** (1992), *no.* 4, 447–452. 90D40 (90D25)

Alonso, María Emilia (*with* Mora, Teo; Raimondo, Mario) A computational model for algebraic power series. *J. Pure Appl. Algebra* **77** (1992), *no.* 1, 1–38. (Alessandro Logar) **93c:13021** 13P10 (13F25)

Alonso Álvarez, J. N. ★ Extensiones cleft en categorías cerradas. Interpretación cohomológica. (Spanish) [Cleft extensions in closed categories. Cohomological interpretation] Álxebra [Algebra], 58. *Universidad de Santiago de Compostela, Departamento de Álgebra, Santiago de Compostela*, 1992. iv+ 98 *pp. ISBN* 84-604-1871-5 (J. L. Gómez Pardo) **93h:18014** 18D15 (13A20, 13B05)

Alonso Gomez, Angel J. (*with* Fernández Arias, Arturo) On extensions of Klein surfaces. Proceedings of the Colloquium on Complex Analysis and the Sixth Romanian-Finnish Seminar. *Rev. Roumaine Math. Pures Appl.* **36** (1991), *no.* 9-10, 529–535. (Daniel M. Gallo) **93i:30035** 30F50

Alonso Mallo, I. (*with* Palencia de Lara, C.) One-step methods for initial and boundary value problems. (Spanish. English summary) *Proceedings of the XII Congress on Differential Equations and Applications/II Congress on Applied Mathematics (Spanish)* (*Oviedo*, 1991), 191–196, *Univ. Oviedo, Oviedo*, 1991. (*see* **93j:00009**) 65J10 (34A12, 34G10, 47N20, 65L05)

Alonso Martínez, J. (*with* Gavete, Luis; Herranz Calzada, J.) A conformal mapping for the generation of singular elements. (Spanish) *Proceedings of the XII Congress on Differential Equations and Applications/II Congress on Applied Mathematics (Spanish)* (*Oviedo*, 1991), 477–483, *Univ. Oviedo, Oviedo*, 1991. (*see* **93j:00009**) 65N50

Alonso Moron, Manuel *see* **Morón, Manuel Alonso**

Alonso Rodríguez, Ana Numerical solution of the semilinear heat equation with strong absorption. (Spanish) *Proceedings of the XII Congress on Differential Equations and Applications/II Congress on Applied Mathematics (Spanish)* (*Oviedo*, 1991), 197–202, *Univ. Oviedo, Oviedo*, 1991. (*see* **93j:00009**) 65M99 (35K55)

Alonso Romero, Javier (*with* Ullán de Celis, Antonio) Moduli in normed linear spaces and characterization of inner product spaces. *Arch. Math.* (*Basel*) **59** (1992), *no.* 5, 487–495. (Anatolij M. Plichko) **93m:46018** 46C15 (46B20)

— Some remarks on inequalities that characterize inner product spaces. *Internat. J. Math. Math. Sci.* **15** (1992), *no.* 1, 31–34. (Wolfgang Lusky) **93a:46037** 46C15 (46B20, 46C05)

Al-Osh, Mohamed A. (*with* Alzaid, Abdulhamid A.) Characterization of probability distributions based on the relation $X \stackrel{d}{=} U(X_1 + X_2)$. (English summary) *Sankhya Ser. B* **53** (1991), *no.* 2, 188–190. 62E10

— (*with* Aly, Emad-Eldin A. A.) First order autoregressive time series with negative binomial and geometric marginals. (English summary) *Comm. Statist. Theory Methods* **21** (1992), *no.* 9, 2483–2492. 62M10

Alouges, François An energy-decreasing algorithm for harmonic map. (English summary) *Nematics* (*Orsay*, 1990), 1–13, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 332, *Kluwer Acad. Publ., Dordrecht*, 1991. (Wei Yue Ding) **93f:58040** 58E20 (65M06)

— (*with* Soyeur, Alain) On global weak solutions for Landau-Lifshitz equations: existence and nonuniqueness. *Nonlinear Anal.* **18** (1992), *no.* 11, 1071–1084. (Kotik K. Lee) **93i:35148** 35Q99 (35D05, 58E20, 82D40)

Alpár, L. Tauberian theorems for power series of two real variables. II. *Studia Sci. Math. Hungar.* **26** (1991), *no.* 1, 115–122. (Zsolt Páles) **93a:40005** 40E05

Alpay, Daniel (*with* Dewilde, Patrick M.; Dym, Harry) Lossless inverse scattering and reproducing kernels for upper triangular operators. *Extension and interpolation of linear operators and matrix functions*, 61–135, *Oper. Theory Adv. Appl.*, 47, *Birkhäuser, Basel*, 1990. (E. R. Tsekanovs'kiĭ) **93b:47027** 47A57 (46E22, 47A40, 47N70)

— (*with* Bruinsma, Piet; Dijksma, Aalt; de Snoo, Henk) A Hilbert space associated with a Nevanlinna function. *Signal processing, scattering and operator theory, and numerical methods* (*Amsterdam*, 1989), 115–122, *Progr. Systems Control Theory*, 5, *Birkhäuser Boston, Boston, MA*, 1990. (Vladimir Derkach) **93b:47013** 47A45 (46E22, 47B38, 47B99)

— (*with* Dym, Harry) Structured invariant spaces of vector valued rational functions, Hermitian matrices, and a generalization of the Iohvidov laws. *Linear Algebra Appl.* **137/138** (1990), 137–181. (Summary) **93g:46024** 46E20 (15A57, 46C20, 47A99, 47B35, 47B50)

— (*with* Dym, Harry) Structured invariant spaces of vector valued functions, sesquilinear forms, and a generalization of the Iohvidov laws. *Linear Algebra Appl.* **137/138** (1990), 413–451. (Summary) **93g:46025** 46E20 (15A57, 46E22, 47A99, 47B35, 47B50)

— (*with* Bruinsma, Piet; Dijksma, Aalt; de Snoo, Henk) Interpolation problems, extensions of symmetric operators and reproducing kernel spaces. I. *Topics in matrix and operator theory* (*Rotterdam*, 1989), 35–82, *Oper. Theory Adv. Appl.*, 50, *Birkhäuser, Basel*, 1991. (Vladimir Derkach) **93k:47026a** 47A57 (30E05, 46E20, 47A20, 47B25)

— (*with* Bruinsma, Piet; Dijksma, Aalt; de Snoo, Henk) Interpolation problems, extensions of symmetric operators and reproducing kernel spaces. II. *Integral Equations Operator Theory* **14** (1991), *no.* 4, 465–500. (Vladimir Derkach) **93k:47026b** 47A57 (30E05, 46E20, 47A20, 47B25)

— (*with* Dewilde, Patrick M.; Dym, Harry) Interpolation in a class of upper-triangular operators. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, I* (*Kobe*, 1991), 43–52, *Mita, Tokyo*, 1992. (*see* **93g:93005**) 47A57 (47N70, 93B28)

— (*with* Ball, Joseph A.; Gohberg, Israel; Rodman, Leiba) State space theory of automorphisms of rational matrix functions. *Integral Equations Operator Theory* **15** (1992), *no.* 3, 349–377. (E. R. Tsekanovs'kiĭ) **93d:47029** 47A56 (47N70, 93B28)

— (*with* Bruinsma, Piet; Dijksma, Aalt; de Snoo, Henk) Addendum: "Interpolation problems, extensions of symmetric operators and reproducing kernel spaces. II". *Integral Equations Operator Theory* **15** (1992), *no.* 3, 378–388. (Vladimir Derkach) **93k:47026c** 47A57 (30E05, 46E20, 47A20, 47B25)

— (*with* Baratchart, Laurent; Leblond, Juliette) Some extremal problems linked with identification from partial frequency data. (English summary) *Analysis and optimization of systems: state and frequency domain approaches for infinite-dimensional systems* (*Sophia-Antipolis*, 1992), 563–573, *Lecture Notes in Control and Inform. Sci.*, 185, *Springer, Berlin*, 1993. (*see* **93i:93005**) 93B30 (93C20)

Alperin, J. L. (*with* Mason, Geoffrey) On simple modules for SL(2, q). *Bull. London Math. Soc.* **25** (1993), *no.* 1, 17–22. (Donald L. White) **93j:20033** 20C33 (20C20, 20G05)

Alperin, Roger C. Free subgroups of quaternion algebras. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 1, 15–17. (Oleg I. Tavgen′) **93f:20032** 20E08 (57M07)

Alpern, Steve (*with* Prasad, V. S.) Typical recurrence for lifts of mean rotation zero annulus homeomorphisms. *Bull. London Math. Soc.* **23** (1991), *no.* 5, 477–481. (G. R. Goodson) **93a:28012** 28D05 (54H20)

— (*with* Prasad, V. S.) Topological ergodic theory and mean rotation. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 1, 279–284. (Run Sheng Yang) **93f:58130** 58F11 (28D05)

Alpert, Bradley K. Wavelets and other bases for fast numerical linear algebra. *Wavelets*, 181–216, *Wavelet Anal. Appl.*, 2, *Academic Press, Boston, MA*, 1992. (Fritz Keinert) **93f:65094** 65R20 (42C15, 65M99, 65T10)

— Construction of simple multiscale bases for fast matrix operations. *Wavelets and their applications*, 211–226, *Jones and Bartlett, Boston, MA*, 1992. (*see* **93e:00031**) 65Y20 (65Fxx)

— A class of bases in L^2 for the sparse representation of integral operators. (English summary) *SIAM J. Math. Anal.* **24** (1993), *no.* 1, 246–262. (Summary) **93k:65104** 65R20 (42C15, 45L05)

— (*with* Beylkin, Gregory; Coifman, Ronald R.; Rokhlin, Vladimir V.) Wavelet-like bases for the fast solution of second-kind integral equations. (English summary) *SIAM J. Sci. Comput.* **14** (1993), *no.* 1, 159–184. (Summary) **93i:65126** 65R20 (42C15, 45L05)

Alpuente Frasnedo, María (*with* Falaschi, Moreno; Gabbrielli, Maurizio; Levi, Giorgio) The semantics of equational logic programming as an instance of CLP. (English summary) *Logic programming languages*, 49–81, *MIT Press, Cambridge, MA*, 1993. (*see* **93k:68020**) 68N17

Al-Rabeh, Ala Towards a general integration algorithm for time-dependent one-dimensional systems of parabolic partial differential equations using the method of lines. (English summary) *J. Comput. Appl. Math.* **42** (1992), *no.* 2, 187–198. 65M20

Al-Rahmani, Hamed M. (*with* Franklin, Gene F.) Multirate control: a new approach. *Automatica J. IFAC* **28** (1992), *no.* 1, 35–44. (Hisham M. Soliman) **93b:93074** 93C83 (93B51)

Al-Rawash, Hussein (*with* Al-Hassan, Qassem M.) Construction of admissible tests for the geometric distribution with numerical applications. (English summary) *J. Inform. Optim. Sci.* **14** (1993), *no.* 1, 11–19. 62F03

Al-Rawwash, Hussein M. On dominating the χ^2-test in the case of multivariate normal distribution with one-sided alternatives. (English summary) *Sankhya Ser. B* **52** (1990), *no.* 2, 174–182. (Summary) **93e:62022** 62C07 (62C15, 62H15)

Al-Saggaf, Ubaid M. Robust digital control of a high-performance engine. (English summary) *Dynamics Control* **2** (1992), *no.* 4, 363–383. 93C95

— Subsystem interconnection and near optimum control of discrete balanced systems. *IEEE Trans. Automat. Control* **37** (1992), *no.* 7, 1026–1033. (Summary) **93c:93033** 93C55 (93B52)

— Approximate balanced-truncation model reduction for large scale systems. (English summary) *Internat. J. Control* **56** (1992), *no.* 6, 1263–1273. (T. R. Gichev) **93j:93010** 93B05 (93A14, 93C05, 93C73)

Al-Salam, Nadhla A. (*with* Ismail, Mourad E. H.) On sieved orthogonal polynomials. VIII. Sieved associated Pollaczek polynomials. *J. Approx. Theory* **68** (1992), *no.* 3, 306–321. (Mizan Rahman) **93b:33004** 33C45 (33D45)

Alsedà i Soler, Lluís (*with* Mañosas, Francesc) Monotonicity of the entropy for a family of circle maps. (English summary) *European Conference on Iteration Theory* (*Batschuns*, 1989), 1–5, *World Sci. Publishing, River Edge, NJ*, 1991. (Makoto Mori) **93i:58093** 58F11 (58F08)

— (*with* Gambaudo, Jean-Marc; Mumbrú, Pere) Sur la reconnaissance des itinéraires de rotations. (English summary) [On the recognition of itineraries of rotations] *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 6, 467–470. (Summary) **93b:58044** 58F03

— (*with* Falcó, Antonio) An entropy formula for a class of circle maps. (French summary) *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 9, 677–682. (Frederick R. Marotto) **93e:58103** 58F11 (28D20, 58F08)

— (*with* Mañosas, Francesc) The monotonicity of the entropy for a family of degree one circle maps. *Trans. Amer. Math. Soc.* **334** (1992), *no.* 2, 651–684. (Paweł Góra) **93b:58090** 58F11 (54C70, 54H20, 58F08, 58F20)

— (*with* Llibre, Jaume) Periods for triangular maps. (English summary) *Bull. Austral. Math. Soc.* **47** (1993), *no.* 1, 41–53. (Peter E. Kloeden) **93m:58033** 58F03 (26A18)

— (*with* Mañosas, Francesc; Szlenk, Wiesław) A characterization of the uniquely ergodic endomorphisms of the circle. *Proc. Amer. Math. Soc.* **117** (1993), *no.* 3, 711–714. (Romeo F. Thomas) **93d:58086** 58F11 (58F20)

Al'sevich, V. V. Synthesis of optimal regulator for stationary delay systems. *Computational systems analysis* 1992 (*Berlin*, 1992), 123–128, *Elsevier, Amsterdam*, 1992. (*see* **93e:00021**) 49K25 (93B50)

— Synthesis of an optimal controller for linear systems with delay. (Russian. English summary) *Dokl. Akad. Nauk Belarusi* **36** (1992), *no.* 1, 18–22, 93. (Summary) **93b:49030** 49K25 (49N35, 93B51)

Al-Shakhs, Adnan A. Spaces with a σ-hereditarily closure preserving closed k-network. (English summary) *Questions Answers Gen. Topology* **10** (1992), *no.* 2, 127–135. (E. G. Pytkeev) **93k:54065** 54E99

Al'shanskii, L. A. (*with* Kushkulei, A. Kh.) Identities of the natural representation of the infinitely based semigroup. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 3, 931–937. (N. R. Reilly) **93i:20071** 20M07 (08B05)

Al'shanskii, M. A. (*with* Mel'nikova, I. V.; Freĭberg, A. Yu.) Numerical realization of the method of boundary value problems. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **31** (1991), *no.* 6, 929–933; *translation in Comput. Math. Math. Phys.* **31** (1991), *no.* 6, 108–111 (1992). (J. Mikliček) **93c:65095** 65L10 (34A50, 65N06)

Al-Shemas, Eman H. (*with* Noor, Muhammad Aslam) Iterative algorithms for general quasi complementarity problems. *Honam Math. J.* **14** (1992), *no.* 1, 107–121. (George Isac) **93g:90077** 90C33 (65J15)

Al-Shemmeri, T. T. Error analysis of boundary element solutions for free-surface flows. (English summary) *Boundary element technology, VII* (*Albuquerque, NM*, 1992), 935–947, *Comput. Mech., Southampton*, 1992. (*see* **93b:65002**) 76M15 (65N38)

Al-Shibani, A. M. (*with* Khedr, F. H.) On pairwise weakly θ-continuous mappings. (English summary) *J. Inst. Math. Comput. Sci. Math. Ser.* **5** (1992), *no.* 1, 81–91. 54E55 (54C08)

Alsholm, Preben Existence of limit cycles for generalized Liénard equations. *J. Math. Anal. Appl.* **171** (1992), *no.* 1, 242–255. (Sui Lin Cai) **93j:34035** 34C05 (34C15)

— Nonexistence of periodic solutions in a model of continuous fermentation. (English summary) *Proc. Roy. Soc. London Ser. A* **438** (1992), *no.* 1903, 311–318. (Summary) **93h:92017** 92C45 (34C25)

Al-Shuaibi, Abdul-Aziz A. (*with* Albar, Muhammad A.) On Mennicke groups of deficiency zero. II. *Canad. Math. Bull.* **34** (1991), *no.* 3, 289–293. (Summary) **93e:20043** 20F05

Alshynbaeva, E. On transformations of Fourier coefficients of a double trigonometric series. (Russian) *Theory of functions and problems in numerical mathematics* (*Russian*), 3–6, 70, *Kazakh. Gos. Univ., Alma Ata*, 1990. (*see* **93a:00020**) 42B05

Alsina, Claudi (*with* García Roig, J.-L.) On some inequalities characterizing the exponential function. (English summary) *Arch. Math.* (*Brno*) **26** (1990), *no.* 2-3, 67–71. (B. Crstici) **93k:39007** 39B72

— (*with* García Roig, J.-L.; Targoński, Gy.) A remark on Pythagoras theorem and functional conjugacy. *European Conference on Iteration Theory* (*Batschuns*, 1989), 6–8, *World Sci. Publishing, River Edge, NJ*, 1991. (*see* **93e:58001**) 51M04 (39B99)

— (*with* Tomás, M. S.) On the functional equations $\rho' \pm (T(x), T(y)) = \rho' \pm (x, y)$. *J. Inst. Math. Comput. Sci. Math. Ser.* **4** (1991), *no.* 3, 411–417. (Wazir Hasan Abdi) **93f:39018** 39B52 (46C15)

— (*with* García Roig, J.-L.) On a functional equation characterizing inner product spaces. *Publ. Math. Debrecen* **39** (1991), *no.* 3-4, 299–304. (Sever S. Dragomir) **93c:46036** 46C15 (39B52)

— On a method of Pi Calleja for describing additive generators of associative functions. *Aequationes Math.* **43** (1992), *no.* 1, 14–20. (B. Crstici) **93e:39010** 39B22

— (*with* Trillas, E.) On almost distributive Lukasiewicz triplets. (English summary) *Fuzzy Sets and Systems* **50** (1992), *no.* 2, 175–178. 03B52 (03E72)

— (*with* Trillas, E.) Some remarks on approximate entailment. *Internat. J. Approx. Reason.* **6** (1992), *no.* 4, 525–533. (Jian Ming Gao) **93b:03039** 03B52 (03B70, 68T27)

— (*with* Mayor, G.; Tomás, M. S.; Torrens, Joan) A characterization of a class of aggregation functions. (English summary) *Fuzzy Sets and Systems* **53** (1993), *no.* 1, 33–38. (Summary) **93h:03079** 03E72 (04A72)

Alsmeyer, Gerold On generalized renewal measures and certain first passage times. (English summary) *Ann. Probab.* **20** (1992), *no.* 3, 1229–1247. (Allan Gut) **93i:60089** 60G50 (60F05, 60G40, 60K05)

Alspach, Brian (*with* Hare, Donovan R.) Edge-pancyclic block-intersection graphs. *Discrete Math.* **97** (1991), *no.* 1-3, 17–24. (Bojan Mohar) **93a:05081** 05C45 (05C38)

— (*with* Liu, Gui Zhen; Heinrich, Katherine) Some results on orthogonal factorizations. (Chinese. English and Chinese summaries) *Adv. in Math.* (*China*) **21** (1992), *no.* 2, 211–215. (Zhong Fu Zhang) **93g:05114** 05C70

— Cayley graphs with optimal fault tolerance. (English summary) *IEEE Trans. Comput.* **41** (1992), *no.* 10, 1337–1339. (Summary) **93g:05065** 05C25 (94C15)

Alspach, Dale E. On the complemented subspaces of X_p. *Israel J. Math.* **74** (1991), *no.* 1, 33–45. (James Hagler) **93c:46016** 46B20

— (*with* Argyros, Spiros A.) Complexity of weakly null sequences. (English summary) *Dissertationes Math.* (*Rozprawy Mat.*) **321** (1992), 44 *pp.* (M. I. Kadets) **93j:46014** 46B20

— A l_1-predual which is not isometric to a quotient of $C(\alpha)$. (English summary) *Banach spaces* (*Mérida*, 1992), 9–14, *Contemp. Math.*, 144, *Amer. Math. Soc., Providence, RI*, 1993. (Summary) **93j:46030** 46E15 (46B04)

Alster, K. Some remarks concerning the Lindelöf property of the product of a Lindelöf space with the irrationals. Proceedings of the Symposium on General Topology and Applications (Oxford, 1989). *Topology Appl.* **44** (1992), *no.* 1-3, 19–25. (Summary) **93g:54013** 54B10 (54D20)

Alstrøm, Preben (*with* Stassinopoulos, Dimitris) Space-time renormalization at the onset of spatio-temporal chaos in coupled maps. (English summary) *Chaos* **2** (1992), *no.* 3, 301–306. (Summary) **93k:58143** 58F13

— (*with* Christiansen, Bo; Levinsen, Mogens T.) Collective dynamics of coupled modulated oscillators with random pinning. *Phys. D* **56** (1992), *no.* 1, 23–35. (Summary) **93b:34047** 34C15 (70K99, 70L05)

Al-Sultan, K. S. (*with* Murty, Katta G.) Exterior point algorithms for nearest points and convex quadratic programs. (English summary) *Math. Programming* **57** (1992), *no.* 2, *Ser. B*, 145–161. (Tamás Terlaky) **93j:90073** 90C20 (65K05)

Alt, Hans Wilhelm (*with* Pawłow, Irena) A mathematical model of dynamics of nonisothermal phase separation. (English summary) *Phys. D* **59** (1992), *no.* 4, 389–416. (B. H. Lavenda) **93m:82029** 82C26

— (*with* Pawłow, Irena) Solutions for a model of nonisothermal phase separation. *Free boundary problems involving solids* (*Montreal, PQ*, 1990), 214–219, *Pitman Res. Notes Math. Ser.*, 281, *Longman Sci. Tech., Harlow*, 1993. (*see* **93k:00037**) 80A22

Alt, Helmut (*with* Fleischer, Rudolf; Kaufmann, Michael; Mehlhorn, Kurt; Näher, Stefan; Schirra, Stefan; Uhrig, Christian) Approximate motion planning and the complexity of the boundary of the union of simple geometric figures. (English summary) 1990 Computational Geometry Symposium (Berkeley, CA, 1990). *Algorithmica* **8** (1992), *no.* 5-6, 391–406. (Summary) **93k:68097** 68U05 (52B55, 68Q25)

Alt, René On the actual convergence order of computed sequences. (English summary) *Computational and applied mathematics, I* (*Dublin*, 1991), 1–9, *North-Holland, Amsterdam*, 1992. (*see* **93j:00007**) 65G05

ruiz-Altaba, M. *see* **Ruiz-Altaba, M.**

korthals-Altes, Chris P. *see* **Korthals-Altes, Chris P.**

Althoen, S. C. (*with* Hansen, K. D.; Kugler, L. D.) Rotational scaled quaternion division algebras. *J. Algebra* **146** (1992), *no.* 1, 124–143. (P. M. Cohn) **93e:16025** 16K20

Althöfer, Ingo An incremental error correcting evaluation algorithm for recursion networks without circuits. (English summary) *Trees and hierarchical structures* (*Bielefeld*, 1987), 125–137, *Lecture Notes in Biomath.*, 84, *Springer, Berlin*, 1990. (*see* **93f:92004**) 92B10 (05C85)

— (*with* Sillke, Torsten) An "average distance" inequality for large subsets of the cube. *J. Combin. Theory Ser. B* **56** (1992), *no.* 2, 296–301. (A. N. Philippou) **93i:05057** 05C12

— (*with* Das, Gautam; Dobkin, David P.; Joseph, Deborah; Soares, José) On sparse spanners of weighted graphs. (English summary) *Discrete Comput. Geom.* **9** (1993), *no.* 1, 81–100. (Peter B. Gibbons) **93h:05161** 05C99 (05C85, 68R10)

— (*with* Triesch, Eberhard) Edge search in graphs and hypergraphs of bounded rank. (English summary) *Discrete Math.* **115** (1993), *no.* 1-3, 1–9. (Summary) **93m:05179** 05C85 (05C65)

Al-Thukair, Fawzi A. (*with* Samhan, Marouf A.) Fuzzy algebraic structures of universal algebras. (English and Arabic summaries) *Arab Gulf J. Sci. Res.* **10** (1992), *no.* 3, 1–15. (Summary) **93h:08006** 08A99 (04A72)

— Fuzzy congruence pairs of inverse semigroups. (English summary) *Fuzzy Sets and Systems* **56** (1993), *no.* 1, 117–122. 20N25 (04A72)

Altınel, İsmail Kuban The design of optimum component test plans in the demonstration of a series system reliability. (English summary) *Comput. Statist. Data Anal.* **14** (1992), *no.* 3, 281–292. (Leandro Pardo) **93m:62209** 62N05 (90B25)

Altıntaş, Osman (*with* Owa, Shigeyoshi; Cho, Nak Eun) Linear combinations of starlike and convex functions of order α. (English summary) *J. Fac. Sci. Tech. Kinki Univ. No.* 28 (1992), 23–30. (S. Bhargava) **93m:30017** 30C45

Altman, Eitan (*with* Konstantopoulos, Panagiotis; Liu, Zhen) Stability, monotonicity and invariant quantities in general polling systems. (English summary) *Queueing Systems Theory Appl.* **11** (1992), *no.* 1-2, 35–57. (Summary) **93f:60131** 60K25 (68M20)

— (*with* Khamisy, Asad; Yechiali, Uri) On elevator polling with globally gated regime. (English summary) *Queueing Systems Theory Appl.* **11** (1992), *no.* 1-2, 85–90. (Summary) **93f:60132** 60K25 (68M20)

Altman, Mieczyslaw ★ A theory of optimization and optimal control for nonlinear evolution and singular equations. Applications to nonlinear partial differential equations. *World Scientific Publishing Co., Inc., River Edge, NJ*, 1990. xviii+274 *pp. ISBN* 981-02-0326-8 (Nikolaos S. Papageorgiou) **93e:49002** 49-02 (35B37, 47N20, 47N70, 49K20, 93C20)

Altman, N. S. An introduction to kernel and nearest-neighbor nonparametric regression. (English summary) *Amer. Statist.* **46** (1992), *no.* 3, 175–185. 62G05

Altmann, Klaus Equisingular deformations below the Newton boundary. *Compositio Math.* **80** (1991), *no.* 3, 257–283. (Jonathan M. Wahl) **93a:14002** 14B07 (14J17, 14M25, 32S15, 32S25)

Altmann, Simon L. ★ Band theory of solids: an introduction from the point of view of symmetry. Oxford Science Publications. *The Clarendon Press, Oxford University Press, New York*, 1991. xiv+286 *pp. ISBN* 0-19-855184-3 (From the preface) **93g:82097** 82D20 (82-02, 82D35)

— ★ Icons and symmetries. *The Clarendon Press, Oxford University Press, New York*, 1992. xii+104 *pp. ISBN* 0-19-855599-7 (S. D. Chatterji) **93d:00023** 00A79 (01A55, 01A60)

Altomare, Francesco Convergence subspaces associated to discrete measures. *Atti Sem. Mat. Fis. Univ. Modena* **39** (1991), *no.* 2, 473–486. (Constantin Dumitrescu) **93c:28012** 28C05 (46J99)

— Positive projections, approximation processes and degenerate diffusion equations. (English summary) Recent developments in mathematical analysis and its applications (Italian) (Bari, 1990). *Confer. Sem. Mat. Univ. Bari No.* 237-244 (1991), 57–82. (L. L. Schumaker) **93i:41015** 41A36 (41A25, 41A35, 47B38, 65J10)

— Lototsky-Schnabl operators on the unit interval and degenerate diffusion equations. *Progress in functional analysis* (*Peñíscola*, 1990), 259–277, *North-Holland Math. Stud.*, 170, *North-Holland, Amsterdam*, 1992. (Manfred Wolff) **93e:41034** 41A36 (35K57, 47B38, 47D03, 47F05)

Altschüler, D. (*with* Saleur, H.) Level-rank duality in quantum groups. *Nuclear Phys. B* **354** (1991), *no.* 2-3, 579–613. (Peter J. Forrester) **93b:17051** 17B37 (57M25, 81R50, 82B23)

Altschuler, Steven J. Singularities of the curve shrinking flow for space curves. *J. Differential Geom.* **34** (1991), *no.* 2, 491–514. (Anders Linnér) **93a:58036** 58E10 (53A04)

— (*with* Grayson, Matthew A.) Shortening space curves and flow through singularities. *J. Differential Geom.* **35** (1992), *no.* 2, 283–298. (Anders Linnér) **93b:58031** 58E10 (53A10)

Altshuler, Amos (*with* Brehm, Ulrich) Neighborly maps with few vertices. *Discrete Comput. Geom.* **8** (1992), *no.* 1, 93–104. (Ren Ding) **93b:52016** 52B70 (05C85, 57M20)

Al'-Tundzhi, M. (*with* Mikityuk, Ya. V.) On the operator of multiplication by a matrix polynomial. (Ukrainian. Russian and Ukrainian summaries) *Ukraïn. Mat. Zh.* **44** (1992), *no.* 9, 1287–1289. (Summary) **93j:47049** 47B38 (47A55)

Alty, L. J. (*with* D'Eath, P. D.; Dowker, H. F.) Quantum wormhole states and local supersymmetry. (English summary) *Phys. Rev. D* (3) **46** (1992), *no.* 10, 4402–4412. (Summary) **93g:83041** 83C45 (83E50)

Altynnikova, L. A. (*with* Sklyar, S. N.) Stability of approximations with respect to time in parabolic problems. (Russian. Russian summary) *Model. Mekh.* **4** (1990), *no.* 6, 134–145. (Summary) **93i:65089** 65M12

Aluffi, Paolo How many smooth plane cubics with given j-invariant are tangent to 8 lines in general position? *Enumerative algebraic geometry* (*Copenhagen*, 1989), 15–29, *Contemp. Math.*, 123, *Amer. Math. Soc., Providence, RI*, 1991. (Raquel Mallavibarrena) **93e:14063** 14N10 (14C17, 14H45)

Alujević, A. (*with* Rek, Z.; Skerget, L.) Vorticity-velocity formulation for turbulent flow by BEM. (English summary) *Boundary elements in fluid dynamics*, 123–130, *Comput. Mech., Southampton*, 1992. (*see* **93i:76003**) 76M15 (76F99)

— (*with* Škerget, P.; Žagar, I.; Rek, Z.) Computational fluid dynamics by the boundary-domain integral method. *Boundary elements in fluid dynamics*, 241–261, *Comput. Mech., Southampton*, 1992. (*see* **93i:76003**) 76M15 (76M25)

Alumäe, Nikolai *see* **Obituary: Alumäe, Nikolai, 93h:01060**

Aluru, Srinivas (*with* Prabhu, G. M.; Gustafson, John) A random number generator for parallel computers. (English summary) *Parallel Comput.* **18** (1992), *no.* 8, 839–847. (Summary) **93e:65008** 65C10 (65Y05)

Alutina, E. F. (*with* Gorelik, V. A.) The discrete maximum principle in dynamic multicriterial problems. (Russian. Russian summary) *Decomposition and optimization in complex systems* (*Russian*), 3–13, 77, *Akad. Nauk SSSR, Vychisl. Tsentr, Moscow*, 1991. (*see* **93c:49002**) 49K15 (90C29)

sadooghi-Alvandi, S. M. *see* **Sadooghi-Alvandi, S. M.**

Alvarado, Fernando L. (*with* Schreiber, Robert) Fast parallel solution of sparse triangular systems. (English summary) *Computational and applied mathematics, I* (*Dublin*, 1991), 21–28, *North-Holland, Amsterdam*, 1992. (*see* **93j:00007**) 65Y05 (65F50)

— (*with* Schreiber, Robert) Optimal parallel solution of sparse triangular systems. (English summary) *SIAM J. Sci. Comput.* **14** (1993), *no.* 2, 446–460. 65F50 (65Y05)

Alvarado, Pedro Geometric constructions with rule and compass. (Spanish) *Rev. Mat. Dominicana No.* 3-4 (1987), 51–54. 51M15

tarantino-Alvarado, Rocco *see* **Tarantino-Alvarado, Rocco**

Alvarado R., Pedro Sums of powers and Bernoulli numbers. (Spanish) *Rev. Mat. Dominicana No.* 1-2 (1986), 29–36. (P. Bundschuh) **93f:11018** 11B68

perasa Alʹvares, Ameriko *see* **Perasa Alʹvares, Ameriko**

Alʹvares, L. M. *see* **Alvarez, L. M.**

Alvarez, Carlos (*with* Tineo, Antonio) A different consideration about the globally asymptotically stable solution of the periodic n-competing species problem. *J. Math. Anal. Appl.* **159** (1991), *no.* 1, 44–50. (Summary) **93d:34080** 34C25 (34C99, 34D05, 92D40)

Alvarez, Enrique (*with* Céspedes, J.; Verdaguer, E.) A new action for the gravitational interaction. (English summary) *Phys. Lett. B* **289** (1992), *no.* 1-2, 51–55. (Summary) **93g:83005** 83C05

sánchez de Alvarez, G. *see* **Sánchez de Alvarez, G.**

carmona Alvárez, J. *see* **Carmona Alvárez, J.**

Alvarez, Jose A. *see* **Álvarez García, José Antonio**

Alvarez, L. M. (*with* Abramov, A. A.; Gonzales Felipe, R.; Rodriges, A. R.) Some possibilities of the operator splitting method. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **31** (1991), *no.* 7, 953–961; *translation in Comput. Math. Math. Phys.* **31** (1991), *no.* 7, 8–14 (1992). (K. Balla) **93e:34023a** 34A50 (34B30, 34E99, 65L10)

— (*with* Abramov, A. A.; Gonzales Felipe, R.; Rodriges, A. R.) Erratum: "Some possibilities of the operator splitting method". (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **32** (1992), *no.* 5, 674. (K. Balla) **93e:34023b** 34A50 (34B30, 34E99, 65L10)

Alvarez, Luis *see* **Álvarez León, Luis**

Alvarez, Orlando (*with* Singer, I. M.; Windey, Paul) The supersymmetric σ-model and the geometry of the Weyl-Kac character formula. *Nuclear Phys. B* **373** (1992), *no.* 3, 647–687. (Akira Asada) **93f:58224** 58G10 (17B67, 81R10, 81T60)

Alvarez, Sergio A. *see* **Álvarez-Andrade, Sergio**

Álvarez, Teresa (*with* Álvarez García, José Antonio; González, Manuel) The gap between subspaces and perturbation of non-semi-Fredholm operators. *Bull. Austral. Math. Soc.* **45** (1992), *no.* 3, 369–376. (R. W. Cross) **93c:47015** 47A55 (46B20)

Álvarez-Andrade, Sergio L^p arithmetic. *Amer. Math. Monthly* **99** (1992), *no.* 7, 656–662. (N. Ya. Kruglyak) **93g:46027** 46E30 (46M35)

— Sur les accroissements du processus de Poisson doublement stochastique. (English and French summaries) [On the increments of doubly stochastic Poisson processes] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 5, 609–614. (Summary) **93g:60099** 60G55 (60F15, 60J30)

— Accroissements du processus de renouvellement et conditions sur les moments des vecteurs aléatoires. (English and French summaries) [Moment conditions on random vectors and increments of the renewal process] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 10, 1113–1116. (Summary) **93i:60158** 60K05 (60F15)

Alvarez-Dios, J. A. (*with* Viaño Rey, Juan M.) An asymptotic theory of bending and torsion for nonhomogeneous anisotropic elastic beams. (Spanish. Spanish summary) *Proceedings of the XII Congress on Differential Equations and Applications/II Congress on Applied Mathematics* (*Spanish*) (*Oviedo*, 1991), 351–355, *Univ. Oviedo, Oviedo*, 1991. (*see* **93j:00009**) 73K05

Álvarez García, José Antonio (*with* Álvarez, Teresa; González, Manuel) The gap between subspaces and perturbation of non-semi-Fredholm operators. *Bull. Austral. Math. Soc.* **45** (1992), *no.* 3, 369–376. (R. W. Cross) **93c:47015** 47A55 (46B20)

Alvarez-Gaumé, Luis (*with* Labastida, J. M. F.; Ramallo, A. V.) Remarks on topological Chern-Simons theory. Recent advances in field theory (Annecy-le-Vieux, 1990). *Nuclear Phys. B Proc. Suppl.* **18B** (1990), 1–9 (1991). (From the introduction) **93a:58030** 58D27 (32G81, 81T13, 81T40)

— Random surfaces, statistical mechanics and string theory. *Helv. Phys. Acta* **64** (1991), *no.* 4, 359–526. (Alexander R. Kavalov) **93d:81131** 81T30 (81–02, 81T40, 83C45)

— (*with* Zaugg, Ph.) Some correlation functions of minimal superconformal models coupled to supergravity. *Phys. Lett. B* **273** (1991), *no.* 1-2, 81–89. (A. D. Popova) **93g:81183** 81T60 (81T40)

— (*with* Zaugg, Ph.) Structure constants in the $N = 1$ superoperator algebra. *Ann. Physics* **215** (1992), *no.* 1, 171–230. (Katsushi Ito) **93b:81235** 81T40 (81R10, 81T60)

— (*with* Barbón, J. L. F.; Gómez, César) Fusion rules in two-dimensional gravity. *Nuclear Phys. B* **368** (1992), *no.* 1, 57–78. (Katsushi Ito) **93b:81236** 81T40

Alvarez Jimenez, Carlos *see* **Cavailiès, Jean, 93i:00006**

Álvarez León, Luis (*with* Guichard, Frédéric; Lions, Pierre-Louis; Morel, Jean-Michel) Équations fondamentales de l'analyse multiéchelle des films. (English and French summaries) [Fundamental equations of the multiscale analysis of movies] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 11, 1145–1148. (Summary) **93j:68217** 68U10

— (*with* Lions, Pierre-Louis; Morel, Jean-Michel) Image selective smoothing and edge detection by nonlinear diffusion. II. *SIAM J. Numer. Anal.* **29** (1992), *no.* 3, 845–866. (Summary) **93a:35072** 35K55 (35–04, 49J45, 49L25, 65M12, 94A99)

Alvarez López, Jesús A. The basic component of the mean curvature of Riemannian foliations. (English summary) *Ann. Global Anal. Geom.* **10** (1992), *no.* 2, 179–194. (Summary) **93h:53027** 53C12 (58G05)

— A type of nonequivalent pseudogroups. Application to foliations. *Ann. Polon. Math.* **56** (1992), *no.* 2, 187–194. (John Cantwell) **93c:57018** 57R30 (58H05)

Alvarez Pereira, Carlos (*with* Vega, José M.) On the pulsating instability of two-dimensional flames. *European J. Appl. Math.* 3 (1992), *no.* 1, 55–73. (Graeme C. Wake) **93c:80011** 80A25 (35K57)

Álvarez Vázquez, L. J. (*with* Viaño Rey, Juan M.) Asymptotic derivation of a linear thermoelastic evolution model for beams. (Spanish. Spanish summary) *Proceedings of the XII Congress on Differential Equations and Applications/II Congress on Applied Mathematics* (*Spanish*) (*Oviedo*, 1991), 357–361, *Univ. Oviedo, Oviedo*, 1991. (*see* **93j:00009**) 73K05 (73B30)

— (*with* Viaño Rey, Juan M.) Asymptotic justification of an evolution model for nonlinear elastic beams. (Spanish. Spanish summary) *Proceedings of the XII Congress on Differential Equations and Applications/II Congress on Applied Mathematics* (*Spanish*) (*Oviedo*, 1991), 363–368, *Univ. Oviedo, Oviedo*, 1991. (*see* **93j:00009**) 73K05 (35Q72, 73C50)

— (*with* Viaño Rey, Juan M.) Asymptotic derivation of an evolution thermoelastic model for linear rods. (English summary) *Computational and applied mathematics, II* (*Dublin*, 1991), 3–13, *North-Holland, Amsterdam*, 1992. (Ján Lovišek) **93k:73007** 73B30 (73B27, 73K05)

— (*with* Quintela Estévez, Peregrina) The effect of different scalings in the modelling of nonlinearly elastic plates with rapidly varying thickness. *Comput. Methods Appl. Mech. Engrg.* **96** (1992), *no.* 1, 1–24. (Tomasz Lewiński) **93h:73024** 73K10 (73B27, 73K20)

Alvarez Vigil, A. E. (*with* González Nicieza, C.; Ordieres Meré, J. B.) Numerical solution of an optimal shape design problem with elastic solids. (English summary) *Comput. Methods Appl. Mech. Engrg.* **99** (1992), *no.* 2-3, 147–170. (Vadim Komkov) **93g:73093** 73K40 (49Q10, 73V05)

Alves, A. S. *see* **Discrete models of fluid dynamics, 93f:82001**

Alves, M. S. (*with* Farina de Souza, Carlos) Trace anomaly in a scalar theory with an auxiliary external field. (English summary) *Classical Quantum Gravity* **9** (1992), *no.* 8, 1841–1850. (Summary) **93e:81133** 81T50

Alvino, Angelo (*with* Díaz Díaz, Jesús Ildefonso; Lions, Pierre-Louis; Trombetti, Guido) Équations elliptiques et symétrisation de Steiner. (English summary) [Elliptic equations and Steiner symmetrization] *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 13, 1015–1020. (J. Chrastina) **93f:35047** 35J25 (35A30)

Alvis, Dean On finite groups admitting certain sharp characters with irrational values. *Comm. Algebra* **21** (1993), *no.* 2, 535–554. (Hiroyoshi Yamaki) **93m:20012** 20C15

Alvo, Mayer (*with* Ertas, Kadir) Graphical methods for ranking data. (English and French summaries) *Canad. J. Statist.* **20** (1992), *no.* 4, 469–482. (Summary) **93m:62008** 62–07 (62H20)

Alwadi, Y. (*with* Dgheim, B.; Roczen, Marko) Divisor class groups of some 3-dimensional singularities. *Topics in algebra, Part* 2 (*Warsaw*, 1988), 27–30, *Banach Center Publ.*, 26, *Part* 2, *PWN, Warsaw*, 1990. (From the introduction) **93k:13020** 13C20 (14C22)

Alwash, M. A. M. (*with* Naoum, Adil G.) Universal and almost universal maps. (English and Arabic summaries) *Dirāsat Ser. B Pure Appl. Sci.* **17** (1990), *no.* 2, 140–146. (Summary) **93e:54012** 54C99 (54H25)

de Alwis, S. P. (*with* Cohn, J. D.) String field theory for $d \leq 1$ matrix models. *Nuclear Phys. B* **368** (1992), *no.* 1, 79–97. (Yolanda Lozano) **93c:81200** 81T40 (81T27)

— Comments on no-hair theorems and stability of black holes. *Phys. Lett. B* **281** (1992), *no.* 1-2, 43–48. (Summary) **93b:83041** 83C57 (83C75)

— Quantization of a theory of 2D dilaton gravity. (English summary) *Phys. Lett. B* **289** (1992), *no.* 3-4, 278–282. (Summary) **93f:81124** 81T40

— Quantum black holes in two dimensions. (English summary) *Phys. Rev. D* (3) **46** (1992), *no.* 12, 5429–5438. (Summary) **93i:81203** 81T40

Aly, Emad-Eldin A. A. On the convergence of an Anderson-Darling statistic based on normalized spacings. *Utilitas Math.* **40** (1991), 33–39. (M. Hušková) **93b:62070** 62G10 (60F05, 62E20)

— (*with* Shayib, Mohammed A.) On some goodness-of-fit tests for the normal, logistic and extreme-value distributions. *Comm. Statist. Theory Methods* **21** (1992), *no.* 5, 1297–1308. 62G10

— (*with* Al-Osh, Mohamed A.) First order autoregressive time series with negative binomial and geometric marginals. (English summary) *Comm. Statist. Theory Methods* **21** (1992), *no.* 9, 2483–2492. 62M10

Aly, Jean-Jacques (*with* Pérez, Jérôme) On the stability of a gaseous sphere against nonradial perturbations. (English summary) *Monthly Notices Roy. Astronom. Soc.* **259** (1992), *no.* 1, 95–103. (Summary) **93i:85002** 85A05 (76E20)

— A model for magnetic energy storage and Taylor's relaxation in the solar corona. I. Helicity-constrained minimum energy state in a half-cylinder. (English summary) *Phys. Fluids B* **5** (1993), *no.* 1, 151–163. (Summary) **93k:85004** 85A15 (82D10)

— Some properties of a thermodynamic model for the equilibrium of a current-carrying quasineutral plasma. (English summary) *Phys. Fluids B* **5** (1993), *no.* 2, 281–294. (Summary) **93k:82066** 82D10 (76X05)

Alyakin, V. A. (*with* Svistula, M. G.) Boundedness of multivalued measures. (Russian) *Functional analysis, No.* 29 (*Russian*), 3–10, *Ulʹyanovsk. Gos. Ped. Inst., Ulʹyanovsk*, 1989.

(*see* **93h:47002**) 28B20

Al Yousef, M. H. (*with* Shalaby, O. A.) Bayesian analysis of the parameters of a doubly truncated Weibull distribution. (English summary) *Egyptian Statist. J.* **36** (1992), *no.* 1, 39–56. 62F15

Alzaid, Abdulhamid A. (*with* Al-Osh, Mohamed A.) Characterization of probability distributions based on the relation $X \stackrel{d}{=} U(X_1 + X_2)$. (English summary) *Sankhya Ser. B* **53** (1991), *no.* 2, 188–190. 62E10

— (*with* Proschan, Frank) Dispersivity and stochastic majorization. *Statist. Probab. Lett.* **13** (1992), *no.* 4, 275–278. (Vishnu Dayal Jha) **93j:62142** 62G30

Al-Zanaidi, Mansour (*with* Grossmann, Christian) Monotone discretization in boundary value problems using PASCAL-SC. *Proceedings of the Second International Symposium on Numerical Analysis (Prague, 1987)*, 91–98, *Teubner-Texte Math.*, 107, *Teubner, Leipzig*, 1988. (*see* **93b:65007**) 65L10

Alzati, Alberto (*with* Pirola, Gian Pietro) Some remarks on the de Franchis theorem. (Italian summary) *Ann. Univ. Ferrara Sez. VII (N.S.)* **36** (1990), 45–52 (1991). (R. F. Lax) **93b:14041** 14H05 (14H30, 30F99)

— Barth type vanishing theorems. (English summary) *Geom. Dedicata* **44** (1992), *no.* 2, 159–168. (Luis Narváez Macarro) **93k:14027** 14F17 (14F10, 14M07)

— (*with* Ottaviani, Giorgio) The theorem of Mather on generic projections in the setting of algebraic geometry. *Manuscripta Math.* **74** (1992), *no.* 4, 391–412. (Enrique Outerelo Domínguez) **93d:58012** 58C27 (14E15)

— (*with* Pirola, Gian Pietro) Rational orbits on three-symmetric products of abelian varieties. *Trans. Amer. Math. Soc.* **337** (1993), *no.* 2, 965–980. (Claudio Pedrini) **93h:14035** 14K05 (14C15, 14H40)

Alzer, Horst An extension of an inequality of G. Pólya. (Romanian summary) *Bul. Inst. Politehn. Iaşi Secţ. I* **36(40)** (1990), *no.* 1-4, 17–18. (E. Thandapani) **93h:26028** 26D15

— A note on the arithmetic mean-geometric mean inequality. *Ann. Univ. Sci. Budapest. Eötvös Sect. Math.* **34** (1991), 11–13 (1992). (L. Losonczi) **93d:26016** 26D15

— A remark on an inequality of M. Mikolás. *Ann. Univ. Sci. Budapest. Eötvös Sect. Math.* **34** (1991), 137–138 (1992). (J. Matkowski) **93d:26017** 26D15

— A short proof of Ky Fan's inequality. (English summary) *Arch. Math. (Brno)* **27B** (1991), 199–200. (E. Thandapani) **93h:26029** 26D15

— (*with* Brenner, J. L.) A note on Henrici's inequalities. *General inequalities, 6 (Oberwolfach, 1990)*, 437–440, *Internat. Ser. Numer. Math.*, 103, *Birkhäuser, Basel*, 1992. (*see* **93k:26001**) 26D15

— (*with* Lemmert, Roland) A note on an inequality of G. Talenti. (English summary) *General inequalities, 6 (Oberwolfach, 1990)*, 441–443, *Internat. Ser. Numer. Math.*, 103, *Birkhäuser, Basel*, 1992. (*see* **93k:26001**) 26D10

— (*with* Jagers, Bert) A functional inequality for real-analytic functions. *Aequationes Math.* **43** (1992), *no.* 2-3, 225–235. (B. Crstici) **93d:39018** 39B72 (26D20)

— On a converse Cauchy inequality of D. Zagier. *Arch. Math. (Basel)* **58** (1992), *no.* 2, 157–159. (A. Lupaş) **93a:26013** 26D15

— (*with* Brenner, J. L.) On a double-inequality of Schlömilch-Lemonnier. *J. Math. Anal. Appl.* **168** (1992), *no.* 2, 319–328. (P. S. Bullen) **93g:26026** 26D15

— A refinement of the Cauchy-Schwarz inequality. (English summary) *J. Math. Anal. Appl.* **168** (1992), *no.* 2, 596–604. (Summary) **93f:26014** 26D15

— A continuous and a discrete variant of Wirtinger's inequality. *Math. Pannon.* **3** (1992), *no.* 1, 83–89. (Chung Lie Wang) **93h:26030** 26D15

— A refinement of Tchebyschef's inequality. (English summary) *Nieuw Arch. Wisk.* (4) **10** (1992), *no.* 1-2, 7–9. (Zsolt Páles) **93i:26015** 26D15

— On an inequality for nondecreasing sequences. *Rocky Mountain J. Math.* **22** (1992), *no.* 3, 801–804. (Zsolt Páles) **93i:26016** 26D15

— A short note on two inequalities for sine polynomials. *Tamkang J. Math.* **23** (1992), *no.* 2, 161–163. (Chung Lie Wang) **93h:26031** 26D15

— Sharp upper and lower bounds for the exponential function. *Internat. J. Math. Ed. Sci. Tech.* **24** (1993), *no.* 2, 315–316. 26D07

— Some gamma function inequalities. *Math. Comp.* **60** (1993), *no.* 201, 337–346. (Aurelio Cannizzo) **93f:33001** 33B15 (26D20)

— Refinements of Ky Fan's inequality. *Proc. Amer. Math. Soc.* **117** (1993), *no.* 1, 159–165. (P. S. Bullen) **93c:26022** 26D20

Alziary de Roquefort, T. (*with* Farcy, A.) Pseudospectral multi-domain method for incompressible viscous flow computation. (English summary) *Spectral and hfgh order methods for partial differential equations (Como, 1989)*, 337–346, *North-Holland, Amsterdam*, 1990. (*see* **93d:65005**) 65N35 (76M25)

el-Amaari, Ali *see* **El-Amaari, Ali**

Amado, R. D. (*with* Cannata, F.; Dedonder, J. P.) Supersymmetric quantum mechanics, phase equivalence, and low energy scattering anomalies. *Phys. Rev. C* (3) **43** (1991), *no.* 5, 2077–2081. (Summary) **93b:81076** 81Q60 (81U05)

Amado Reyes, A. Pauli's exclusion principle. (Spanish) *Rev. Mat. Dominicana No.* 1-2 (1986), 55–64. 81P99

— Long-term behavior of solutions for a diffusion-reaction problem. (Spanish) *Rev. Mat. Dominicana No.* 7-8 (1992), 15–24. (Summary) **93d:35072** 35K57 (35B30)

Amaha, Abraham *F* matrix connecting points on opposite sides of a parabolic potential well. (English summary) *Molecular Phys.* **78** (1993), *no.* 2, 345–356. (M. Znojil) **93m:81033** 81Q20 (34E20)

jerbi Amamou, Moufida *see* **Jerbi Amamou, Moufida**

Amann, Anton C^*-systems without norm-continuity properties. (English summary) *Current topics in operator algebras (Nara, 1990)*, 137–145, *World Sci. Publishing, River Edge, NJ*, 1991. (Yoshikazu Katayama) **93m:46078** 46L55 (46L60)

— *see also* **Large-scale molecular systems, 93c:82001**

Amano, Kaname A bidirectional method for numerical conformal mapping based on the charge simulation method. *J. Inform. Process.* **14** (1991), *no.* 4, 473–482. (Summary) **93c:30011** 30C30 (65E05)

Amano, Kaoru (*with* Higuchi, Saburo) Topology change in ISO(2, 1) Chern-Simons gravity. *Nuclear Phys. B* **377** (1992), *no.* 1-2, 218–235. (Michael Kapovich) **93h:58031** 58D29 (57M50, 58D30, 81T13)

Amano, Kazuo On the Euclidean modules. *Bull. Fac. Gen. Ed. Gifu Univ. No.* 27 (1991), 63–66. (From the text) **93f:16006** 16D80

Amano, Kiyoshi *see* **Takata, Seiji, 93h:01053**

Amar, Denise A condition for a Hamiltonian bipartite graph to be bipancyclic. *Discrete Math.* **102** (1992), *no.* 3, 221–227. (J. Mitchem) **93e:05060** 05C45

— (*with* Manoussakis, Yannis) Hamiltonian paths and cycles, number of arcs and independence number in digraphs. (English summary) *Discrete Math.* **105** (1992), *no.* 1-3, 157–172. (Dominique Sotteau) **93k:05108** 05C45 (05C20)

Amar, É. Dominant sets on the unit sphere of $\mathbf{C}^n$. *The Madison Symposium on Complex Analysis (Madison, WI, 1991)*, 37–41, *Contemp. Math.*, 137, *Amer. Math. Soc., Providence, RI*, 1992. (Harold P. Boas) **93j:32008** 32A35

Amar, Makhlouf On the periodic solutions of a particular Lamé equation. *Celestial Mech. Dynam. Astronom.* **52** (1991), *no.* 4, 397–406. (Summary) **93c:34089** 34C25 (33E05, 34A30)

ben Amar, Martine *see* **Ben Amar, Martine**

Amar, Micol *G*-convergence of quasi-linear ordinary differential operators of monotone type. (Italian summary) *Ann. Univ. Ferrara Sez. VII (N.S.)* **36** (1990), 113–141 (1991). (From the introduction) **93g:47087** 47N20 (34B15, 47H99, 49J45)

— (*with* Norando, Tullia) On the Green's function for parabolic equations in nondivergence form. (Italian summary) *Boll. Un. Mat. Ital. B* (7) **6** (1992), *no.* 4, 703–731. (K. Hawlitschek) **93k:35123** 35K20

do Amaral, R. L. P. G. (*with* Marino, E. C.) Canonical quantization of theories containing fractional powers of the d'Alembertian operator. (English summary) *J. Phys. A* **25** (1992), *no.* 19, 5183–5200. (Nicolaas P. Landsman) **93i:81125** 81T10 (70G50)

Amaranath, T. (*with* Padmavathi, B. S.) A solution for the problem of Stokes flow past a porous sphere. (English summary) *Z. Angew. Math. Phys.* **44** (1993), *no.* 1, 178–184. (Summary) **93m:76022** 76D07 (76S05)

Amaro de Matos, J. M. G. (*with* Zagrebnov, V. A.; Patrick, A. E.) Gibbs measures for the Curie-Weiss random field Ising model. *Probability theory and mathematical statistics, Vol. II (Vilnius, 1989)*, 590–601, "*Mokslas*", *Vilnius*, 1990. (Volker Warstat) **93a:82033** 82B44 (60G60, 82B20)

— (*with* Baêta Segundo, J. A.; Perez, J. Fernando) Fluctuations in dilute antiferromagnets: Curie-Weiss models. *J. Phys. A* **25** (1992), *no.* 10, 2819–2830. (Summary) **93b:82071** 82C44

gori nicolò-Amati, Laura *see* **Gori Nicolò-Amati, Laura**

Amato, David A. (*with* Lee, Eric W.; Wei, L. J.) Cox-type regression analysis for large numbers of small groups of correlated failure time observations. (English summary) With a discussion by Sue Leurgans and a rejoinder by the authors. *Survival analysis: state of the art (Columbus, OH, 1991)*, 237–247, *NATO Adv. Sci. Inst. Ser. E Appl. Sci.*, 211, *Kluwer Acad. Publ., Dordrecht*, 1992. (*see* **93b:62005**) 62N05 (62F12, 62J02)

Amato, Nancy M. (*with* Preparata, Franco P.) The parallel 3D convex hull problem revisited. *Internat. J. Comput. Geom. Appl.* **2** (1992), *no.* 2, 163–173. (Evangelos Kranakis) **93d:68064** 68U05 (52B55, 68Q22)

— Improved processor bounds for parallel algorithms for weighted directed graphs. (English summary) *Inform. Process. Lett.* **45** (1993), *no.* 3, 147–152. 68Q22 (68Q10)

Amato, P. Schauder's fixed point theorem using a Caccioppoli theorem. (Italian summary) *Rend. Mat. Appl.* (7) **11** (1991), *no.* 4, 925–929. (Olga Hadžić) **93f:47071** 47H10

Amato, Roberto Some regularity results for basic nonlinear parabolic systems. (Italian. English summary) *Atti Accad. Peloritana Pericolanti Cl. Sci. Fis. Mat. Natur.* **68** (1990), 387–399 (1992). (Summary) **93m:35099** 35K55 (35B65, 35K40)

Amato, Umberto (*with* Occorsio, Mario Rosario) Influence of the smoothing functional in the approximation of first-kind Fredholm integral equations. (English summary) *Atti Sem. Mat. Fis. Univ. Modena* **40** (1992), *no.* 2, 577–590. (Summary) **93h:65165** 65R20 (45L05)

Amatov, M. A. (*with* Amatova, G. M.) Periodic motions of impulse systems with an infinite number of shocks in a period. (Russian) *Differential equations (qualitative theory) (Russian)*, 27–33, *Ryazan. Gos. Ped. Inst., Ryazan'*, 1990. (*see* **93b:34003**) 34C25 (34A37)

Amatova, G. M. Stability of singular points of n-dimensional turbulent systems. (Russian) *Differential equations (qualitative theory) (Russian)*, 20–27, *Ryazan. Gos. Ped. Inst., Ryazan'*, 1990. (From the text) **93e:34074** 34D99 (34A37)

— (*with* Amatov, M. A.) Periodic motions of impulse systems with an infinite number of shocks in a period. (Russian) *Differential equations (qualitative theory) (Russian)*, 27–33, *Ryazan. Gos. Ped. Inst., Ryazan'*, 1990. (*see* **93b:34003**) 34C25 (34A37)

el-Amawy, A. *see* **El-Amawy, A.**

Amaya, K. (*with* Aoki, S.) Optimization of cathodic protection system (optimum location of electrode on wall). *Theory and applications of boundary element methods (Beijing, 1991)*, 391–398, *Internat. Acad. Publ., Beijing*, 1991. (*see* **93b:65008**) 65N38 (65K10)

Ambartsumyan, R. V. On condensable point processes. (English summary) *New trends in probability and statistics, Vol.* 1 (*Bakuriani*, 1990), 655–667, *VSP, Utrecht*, 1991. (Günter Last) **93m:60090** 60G55

Amberg, B. (*with* Franciosi, Silvana; de Giovanni, Francesco) Rank formulae for factorized groups. (Russian and Ukrainian summaries) *Ukrain. Mat. Zh.* **43** (1991), *no.* 7-8, 1078–1084; *reprinted in Ukrainian Math. J.* **43** (1991), *no.* 7-8, 1012–1018 (1992). (John S. Wilson) **93b:20064** 20F16 (20E15)

Ambika, G. (*with* Valsamma, K. M.; Babu Joseph, K.) Multifractals in polynomial circle maps. *Phys. Lett. A* **165** (1992), *no.* 3, 231–234. (Summary) **93d:58106** 58F13

Ambjørn, Jan 2D gravity, random surfaces and all that. Lattice 90 (Tallahassee, FL, 1990). *Nuclear Phys. B Proc. Suppl.* **20** (1991), 701–710. (Summary) **93c:81191** 81T40 (82B99)

— (*with* Kristjansen, C. F.; Makeenko, Yu. M.) Higher genus correlators for the complex matrix model. (English summary) *Modern Phys. Lett. A* **7** (1992), *no.* 34, 3187–3202. 81T40

— (*with* Varsted, Steen) Three-dimensional simplicial quantum gravity. *Nuclear Phys. B* **373** (1992), *no.* 2, 557–577. (Summary) **93h:83019** 83C27 (83C45)

— (*with* Johnson, Clifford V.; Morris, Tim R.) Stochastic quantization vs. KdV flows in two-dimensional quantum gravity. *Nuclear Phys. B* **374** (1992), *no.* 3, 496–510. (From the text) **93m:81074** 81S20 (58F07, 81T40)

— Regularized quantum gravity and string theory. (English summary) Random surfaces and 2D quantum gravity (Barcelona, 1991). *Nuclear Phys. B Proc. Suppl.* **25A** (1992), 8–24. (Summary) **93f:81101** 81T30 (81T40, 81T80, 82-02, 83C45)

— (*with* Jurkiewicz, Jerzy Władysław) Four-dimensional simplicial quantum gravity. *Phys. Lett. B* **278** (1992), *no.* 1-2, 42–50. (Annalisa Marzuoli) **93i:83035** 83C27 (83C45)

— (*with* Chekhov, L.; Makeenko, Yu. M.) Higher genus correlators from the Hermitian one-matrix model. *Phys. Lett. B* **282** (1992), *no.* 3-4, 341–348. (Summary) **93c:81190**

81T40
— *see also* **Random surfaces and 2D quantum gravity, 93d:81004**
Ambos-Spies, Klaus (*with* Nies, André) Cappable recursively enumerable degrees and Post's program. (English summary) *Arch. Math. Logic* **32** (1992), *no.* 1, 51–56. (John P. Helm) **93m:03070** 03D25
— (*with* Nies, André; Shore, Richard A.) The theory of the recursively enumerable weak truth-table degrees is undecidable. (English summary) *J. Symbolic Logic* **57** (1992), *no.* 3, 864–874. (Marius Zimand) **93i:03060** 03D35 (03D30)
Ambrosetti, Antonio (*with* Ekeland, Ivar) Perturbation results for a class of singular Hamiltonian systems. (Italian summary) *Atti Accad. Naz. Lincei Rend. Cl. Sci. Fis. Mat. Natur.* (8) **83** (1989), 129–132 (1990). (Vittorio Coti Zelati) **93d:58129** 58F22 (58F05, 58F30, 70F07, 70H05)
— (*with* Bessi, U.) Multiple periodic trajectories in a relativistic gravitational field. *Variational methods (Paris, 1988)*, 373–381, *Progr. Nonlinear Differential Equations Appl.*, 4, *Birkhäuser Boston, Boston, MA*, 1990. (Shi Qing Zhang) **93k:58187** 58F22 (34C25, 58E05, 70H05)
— Remarks on dynamical systems with singular potentials. *Nonlinear analysis*, 51–60, *Quaderni, Scuola Norm. Sup., Pisa*, 1991. (Fabio Giannoni) **93m:58018** 58E05 (34C99, 58F05, 70H35)
— (*with* Bertotti, Maria Letizia) Homoclinics for second order conservative systems. *Partial differential equations and related subjects (Trento, 1990)*, 21–37, *Pitman Res. Notes Math. Ser.*, 269, *Longman Sci. Tech., Harlow*, 1992. (Gabriella Tarantello) **93k:58041** 58E05 (34C25, 34C37, 58F05)
— Recent progress in singular Hamiltonian systems. *Progress in variational methods in Hamiltonian systems and elliptic equations (L'Aquila, 1990)*, 1–9, *Pitman Res. Notes Math. Ser.*, 243, *Longman Sci. Tech., Harlow*, 1992. (From the text) **93d:34072** 34C25 (58F05, 58F22, 70H05)
— (*with* Coti Zelati, Vittorio) Closed orbits of fixed energy for a class of N-body problems. (French summary) *Ann. Inst. H. Poincaré Anal. Non Linéaire* **9** (1992), *no.* 2, 187–200. (Marco Degiovanni) **93e:58156a** 58F22 (34C25, 58E05, 70F10)
— (*with* Coti Zelati, Vittorio) Addendum to: "Closed orbits of fixed energy for a class of N-body problems". *Ann. Inst. H. Poincaré Anal. Non Linéaire* **9** (1992), *no.* 3, 337–338. (Marco Degiovanni) **93e:58156b** 58F22 (34C25, 58E05, 70F10)
— (*with* Coti Zelati, Vittorio) Multiplicité des orbites homoclines pour des systèmes conservatifs. (English summary) [Multiplicity of homoclinic orbits for a class of conservative systems] *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 8, 601–604. (Gabriella Tarantello) **93c:58041** 58E05 (34C05, 58F05, 70K05)
— (*with* Bessi, U.) Multiple closed orbits for perturbed Keplerian problems. *J. Differential Equations* **96** (1992), *no.* 2, 283–294. (Michele Matzeu) **93g:34062** 34C25 (58F22, 58F30, 70F05, 70H05)
— Critical points and nonlinear variational problems. (French summary) *Mém. Soc. Math. France (N.S.)* *No.* 49 (1992), 139 *pp.* (Marco Degiovanni) **93g:58024** 58E05 (34C25, 34C37, 35J65, 47H15, 47N20)
— *see also* **Nonlinear analysis, 93h:00022**
Ambrosiewicz, Jan A square of set of elements of order two in orthogonal groups. *Publ. Math. Debrecen* **41** (1992), *no.* 3-4, 189–198. (From the text) **93j:20093** 20G20 (20G40)
Ambrosio, Luigi (*with* Ascenzi, O.) Hölder continuity of solutions of one-dimensional Lagrange problems of calculus of variations. (English summary) *Ricerche Mat.* **40** (1991), *no.* 2, 311–319 (1992). (Jean-Pierre Raymond) **93m:49018** 49N60 (49K40)
— On some properties of convex functions. (Italian. English and Italian summaries) *Atti Accad. Naz. Lincei Cl. Sci. Fis. Mat. Natur. Rend. Lincei* (9) *Mat. Appl.* **3** (1992), *no.* 3, 195–202. (Constantin Zălinescu) **93m:26026** 26B25 (49N15)
— (*with* Tortorelli, V. M.) On the approximation of free discontinuity problems. (Italian summary) *Boll. Un. Mat. Ital. B* (7) **6** (1992), *no.* 1, 105–123. (Ll. G. Chambers) **93e:49010** 49J27 (65K10, 78A99)
— (*with* Dal Maso, Gianni) On the relaxation in $BV(\Omega;\mathbf{R}^m)$ of quasi-convex integrals. (English summary) *J. Funct. Anal.* **109** (1992), *no.* 1, 76–97. (U. D'Ambrosio) **93j:49012** 49J45 (49Q15, 58C35)
Ambroszkiewicz, Stanisław Kollektivs and finite random sequences. (English summary) *Bull. Polish Acad. Sci. Math.* **39** (1991), *no.* 3-4, 259–269. (From the text) **93m:60012** 60A05 (03B48)
d'Ambrumenil, N. (*with* Li, Y. M.) A self-energy functional for the infinite-dimensional Hubbard model. (English summary) *Modern Phys. Lett. B* **6** (1992), *no.* 28, 1827–1833. 82D99
Amel'kin, V. V. Differential systems with common trajectories. (Russian) *Differentsial'nye Uravneniya* **27** (1991), *no.* 10, 1813–1814, 1838. (Summary) **93a:34040** 34C11
Amellal, A. (*with* Nicolis, G.; Dupont, G.; Mareschal, M.) Nonequilibrium states and long range correlations in chemical dynamics. *Stochastic methods in experimental sciences (Szklarska Poręba, 1989)*, 332–346, *World Sci. Publishing, River Edge, NJ*, 1990. (Andrzej Fuliński) **93b:82056** 82C26 (80A30, 82C31)
Amemiya, Yasuo (*with* Anderson, T. W.) Testing dimensionality in the multivariate analysis of variance. *Statist. Probab. Lett.* **12** (1991), *no.* 6, 445–463. (H. K. Hsieh) **93d:62101** 62H10 (62H15, 62J10)
Amendola, Giovambattista Cylindrical waves in incompressible thermoelastic solids. (Italian. English summary) *Mem. Accad. Sci. Torino Cl. Sci. Fis. Mat. Natur.* (5) **12** (1988), *no.* 3, 23 *pp.* (B. A. Boley) **93d:73033** 73D99 (73B30)
Amendola, Luca Cosmology with nonminimal derivative couplings. (English summary) *Phys. Lett. B* **301** (1993), *no.* 2-3, 175–182. (Summary) **93j:83079** 83F05
castejón-Amenedo, J. *see* **Castejón-Amenedo, J.**
Amenta, Nina Finding a line transversal of axial objects in three dimensions. *Proceedings of the Third Annual ACM-SIAM Symposium on Discrete Algorithms (Orlando, FL, 1992)*, 66–71, *ACM, New York*, 1992. (Summary) **93d:68065** 68U05 (90C05)
Amer, Mahmoud On arithmetical functions over Gaussian integers having at most k distinct values in some domain. *Ann. Univ. Sci. Budapest. Eötvös Sect. Math.* **34** (1991), 3–6 (1992). (Armel Mercier) **93b:11006** 11A25
Amer, Mustafa A. (*with* Morsi, Nehad N.) Characterizations of some fuzzy topological notions in probabilistic metric spaces. (English summary) *Fuzzy Sets and Systems* **51** (1992), *no.* 3, 351–359. (Summary) **93k:54015** 54A40 (04A72)
America, P. H. M. (*with* Rutten, Jan J. M. M.) ★ A parallel object-oriented language: design and semantic foundations. CWI Tract, 81. *Stichting Mathematisch Centrum, Centrum voor Wiskunde en Informatica, Amsterdam*, 1991. vi+316 *pp. ISBN* 90-6196-402-4 (Editors) **93a:68071** 68Q45 (68Q55)
Amerov, T. K. (*with* Fushchich, V. I.; Serov, N. I.) On the conditional symmetry of the generalized Korteweg-de Vries equation. (Russian. English and Russian summaries) *Dokl. Akad. Nauk Ukrainy* **1991,** *no.* 12, 15–18, 169. (Summary) **93d:35143** 35Q53 (35C05)
— (*with* Fushchich, V. I.; Serov, N. I.) Nonlocal ansätze for a nonlinear one-dimensional heat equation. (Russian. English and Russian summaries) *Dokl. Akad. Nauk Ukrainy* **1992,** *no.* 1, 26–30, 176. (Summary) **93g:35067** 35K55 (80A20)
— (*with* Fushchich, V. I.; Serov, N. I.) Conditional invariance and exact solutions of gas dynamics equations. (Russian summary) *Dokl. Akad. Nauk Ukrainy* **1992,** *no.* 5, 35–40, 159. (Summary) **93g:35008** 35A30 (35C05, 35Q35, 76N15)
— (*with* Fushchich, V. I.; Serov, N. I.; Tychinin, V. A.) On nonlocal symmetries of nonlinear heat equation. (Russian summary) *Dokl. Akad. Nauk Ukrainy* **1992,** *no.* 11, 27–33, 171. (Summary) **93k:35010** 35A30 (35A25, 35K55)
Amershi, Amin H. (*with* Sadanand, Asha; Sadanand, Venkatraman) Player importance and forward induction. *Econom. Lett.* **38** (1992), *no.* 3, 291–297. (Summary) **93c:90118** 90D40 (90A14, 90D70)
Ames, K. A. (*with* Payne, L. E.) Stabilizing solutions of the equations of dynamical linear thermoelasticity backward in time. *Stability Appl. Anal. Contin. Media* **1** (1991), *no.* 3, 243–260. (D. G. Natroshvili) **93f:35231** 35Q99 (73B30, 73H99)
Ames, William F. ★ Numerical methods for partial differential equations. Third edition. Computer Science and Scientific Computing. *Academic Press, Inc., Boston, MA*, 1992. xvi+451 *pp. ISBN* 0-12-056761-X (Ian Gladwell) **93g:65003** 65–01
— (*with* Abell, M. L.) Semi-symmetry reduction of partial differential equations. (English summary) *Computational and applied mathematics, II (Dublin, 1991)*, 101–105, *North-Holland, Amsterdam*, 1992. (*see* **93j:00008**) 35A30 (35Q35, 76D08)
— (*with* Nakayama, M.; Mason, D. P.) Symmetry reduction of a partial differential equation describing nonlinear waves in a compacting medium. (English summary) *Computational and applied mathematics, II (Dublin, 1991)*, 193–199, *North-Holland, Amsterdam*, 1992. (Summary) **93m:35012** 35A30 (35Q80)
— (*with* Postell, F. V.; Adams, Ernst Wilhelm) Optimal numerical algorithms. A Festschrift to honor Professor Garrett Birkhoff on his eightieth birthday. *Appl. Numer. Math.* **10** (1992), *no.* 3-4, 235–259. (Bruno Scheurer) **93h:65110** 65M06 (35A30, 35Q53)
— (*with* Abell, M. L.) Symmetry reduction of Reynolds equation and applications to film lubrication. (English summary) *Trans. ASME J. Appl. Mech.* **59** (1992), *no.* 1, 206–210. (Summary) **93d:76015** 76D08
— (*with* Adams, Ernst Wilhelm; Kühn, W.; Rufeger, W.; Spreuer, H.) Computational chaos may be due to a single local error. (English summary) *J. Comput. Phys.* **104** (1993), *no.* 1, 241–250. (Summary) **93i:65067** 65L05 (58F13)
— *see also* **Differential equations with applications to mathematical physics, 93i:00013** *and* **Computational and applied mathematics, 93j:00008**
Amey, Alphonse K. A. (*with* Gupta, Arjun K.) Testing sphericity under a mixture model. (English summary) *Austral. J. Statist.* **34** (1992), *no.* 3, 451–460. (Summary) **93m:62126** 62H15 (62H10)
Amici, Oriella (*with* Casciaro, Biagio) Special Lagrange spaces and conservation laws. (Italian summary) *Mem. Secţ. Ştiinţ. Acad. Repub. Soc. România Ser. IV* **10** (1987), *no.* 1, 23–40 (1989). (Mihai Anastasie) **93c:53054** 53C60 (53B40)
Amick, C. J. (*with* Toland, J. F.) Solitary waves with surface tension. I. Trajectories homoclinic to periodic orbits in four dimensions. *Arch. Rational Mech. Anal.* **118** (1992), *no.* 1, 37–69. (J. Thomas Beale) **93b:76014** 76B25 (34C37, 35Q51, 76B45)
— (*with* Ching, E. S. C.; Kadanoff, Leo P.; Rom-Kedar, Vered) Beyond all orders: singular perturbations in a mapping. *J. Nonlinear Sci.* **2** (1992), *no.* 1, 9–67. (Jürgen Scheurle) **93c:58185** 58F30 (58F15)
— (*with* Toland, J. F.) Global uniqueness of homoclinic orbits for a class of fourth order equations. (English summary) *Z. Angew. Math. Phys.* **43** (1992), *no.* 4, 591–597. (James A. Murdock) **93f:34073** 34C37 (58F05, 70H05)
Amiez, G. (*with* Gremaud, P.-A.) Error estimates for Euler forward scheme related to two-phase Stefan problems. (French summary) *RAIRO Modél. Math. Anal. Numér.* **26** (1992), *no.* 2, 365–383. (Zheng Hui Xie) **93a:65144** 65N30 (35R35, 65N06, 80A22)
montesinos Amilibia, Angel *see* **Montesinos Amilibia, Angel**
Amin, Ashok T. (*with* Slater, Peter J.) Neighborhood domination with parity restrictions in graphs. (English summary) Proceedings of the Twenty-third Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, FL, 1992). *Congr. Numer.* **91** (1992), 19–30. (Summary) **93j:05141** 05C85 (68R10)
— (*with* Siegrist, Kyle T.; Slater, Peter J.) The optimal unicyclic graphs for pair-connected reliability. (English summary) *Discrete Appl. Math.* **41** (1993), *no.* 3, 235–243. (Charles J. Colbourn) **93k:05103** 05C40 (05C05)
Amin, M. H. (*with* Ibbini, M. S.) New explicit parameterized state feedback controller. (English summary) *Control Theory Adv. Tech.* **8** (1992), *no.* 3, 659–675. (Sergey K. Korovin) **93k:93047** 93B52
Amin, Wael A. (*with* Abian, Alexander) On transfinite splittings of infinite sets. (Italian summary) *Rend. Istit. Mat. Univ. Trieste* **21** (1989), *no.* 1, 122–127 (1991). (N. Hindman) **93c:05015** 05A18
Amine, Saïda Loi des grands nombres et théorème de la limite centrale pour les distributions sur l'espace de Wiener. (English and French summaries) [Law of large numbers and central limit theorem for distributions on Wiener space] *C. R. Acad. Sci. Paris Sér. I Math.* **316** (1993), *no.* 4, 381–384. (Summary) **93m:60110** 60H07 (60B10, 60G20)
Amini, S. (*with* Chen, Ke) Numerical analysis of boundary integral solution of the Helmholtz equation in domains with nonsmooth boundaries. (English summary) *IMA J. Numer. Anal.* **13** (1993), *no.* 1, 43–66. (Summary) **93i:65115** 65N38 (65R20, 76M15, 76Q05)
Aminov, A. B. Stability of automatic control systems with a polynomial model. (Russian) *Avtomat. i Telemekh.* **1991,** *no.* 10, 44–51; *translation in Automat. Remote Control* **52** (1991), *no.* 10, *part* 1, 1362–1368 (1992). (Nikita E. Barabanov) **93b:34059** 34D05 (34H05, 93D05)
Aminov, Yu. A. Asymptotic lines of submanifolds. (Russian. Russian summary) *Mat. Zametki* **52** (1992), *no.* 5, 3–12, 140; *translation in Math. Notes* **52** (1992), *no.* 5-6, 1081–1087 (1993). (D. I. Papuc) **93k:53025** 53B25

Aminova, A. V. Lie algebras of projective motions of the spaces $V(K)$ of Lorentz signature. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* **1991**, *no.* 9, 3–15; *translation in Soviet Math. (Iz. VUZ)* **35** (1991), *no.* 9, 1–13. (D. I. Papuc) **93g:53089** 53C50

Amir, Amihood (*with* Farach, Martin) Two-dimensional dictionary matching. (English summary) *Inform. Process. Lett.* **44** (1992), *no.* 5, 233–239. (Summary) **93k:68111** 68U15

Amir, Madjid Sticky Brownian motion as the strong limit of a sequence of random walks. *Stochastic Process. Appl.* **39** (1991), *no.* 2, 221–237. (S. J. Taylor) **93a:60120** 60J60 (60J15, 60J65)

Amir, R. (*with* Hadim, A.) Some structured dynamic programs arising in economics. (English summary) *Comput. Math. Appl.* **24** (1992), *no.* 8-9, 209–218. (Peter Bod) **93i:90105** 90C39 (90A14)

Amira, Tarik A. (*with* Habib, Mohamed E.; Al-Harby, Abdullah H.) Estimation of the intensity function of nonhomogeneous Poisson process using nonparametric density estimation methods. (English summary) *Egyptian Statist. J.* **35** (1991), *no.* 2, 324–338. (Ludger Rüschendorf) **93j:62088** 62G05 (62M09)

Amirat, Youcef (*with* Hamdache, K.; Ziani, A.) Some results on homogenization of convection-diffusion equations. *Arch. Rational Mech. Anal.* **114** (1991), *no.* 2, 155–178. (Andro Mikelić) **93d:76064** 76Rxx (35B27, 73B27)

— (*with* Hamdache, K.; Ziani, A.) Kinetic formulation for a transport equation with memory. *Comm. Partial Differential Equations* **16** (1991), *no.* 8-9, 1287–1311. (Luisa Arlotti) **93a:82054** 82C70 (35Q99, 45K05, 47N55)

— (*with* Hamdache, K.; Ziani, A.) Homogenisation of parametrised families of hyperbolic problems. *Proc. Roy. Soc. Edinburgh Sect. A* **120** (1992), *no.* 3-4, 199–221. (Fu Ru Jiang) **93f:35021** 35B27 (35L40, 73B27, 78A25)

Amirkhanov, I. V. (*with* Zhidkov, E. P.; Ignatov, V. V.; Il'ina, A. N.; Il'in, I. V.; Il'in, V. D.) ★ О стохастизации движения заряженных частиц в геомагнитном поле и поле волнового пакета. (Russian. English and Russian summaries) [Stochastization of the motion of charged particles in a geomagnetic field and a wave packet field] Сообщения Объединенного Института Ядерных Исследований. Дубна [Communications of the Joint Institute for Nuclear Research. Dubna], R11-92-288. *Joint Inst. Nuclear Res., Dubna*, 1992. 13 *pp.* (Introduction) **93m:78008** 78A35 (58F40, 86A10)

Amir-Moéz, Ali R. ★ Extreme properties of linear transformations. *Polygonal Publ. House, Washington, NJ*, 1990. viii+166 *pp. ISBN* 0-936428-12-0 (Chandler Davis) **93a:15001** 15–02 (15A18)

Amirov, A. Kh. Solvability of the inverse problem for the transfer equation. (Russian. Russian summary) *Questions of well-posedness in problems of analysis* (*Russian*), 3–32, 181, *Akad. Nauk SSSR Sibirsk. Otdel., Inst. Mat., Novosibirsk*, 1989. (*see* **93e:00018**) 35R30 (35L10)

— (*with* Ègamov, B. N.) On the existence and uniqueness of the solution of an inverse problem for a kinetic equation. (Russian. Russian summary) *Methods for solving inverse problems* (*Russian*), 22–35, 142, *Akad. Nauk SSSR Sibirsk. Otdel., Inst. Mat., Novosibirsk*, 1990. (Summary) **93k:35268** 35R30 (35Q72, 45K05, 82C40)

— An inverse problem for a system of Vlasov type. (Russian) *Nonclassical equations and equations of mixed type* (*Russian*), 15–21, *Akad. Nauk SSSR Sibirsk. Otdel., Inst. Mat., Novosibirsk*, 1990. (*see* **93b:35002**) 35R30 (35Q99)

Amirov, R. Kh. Integral geometry and the problem of determining the Riemannian metric. (Russian) *Dokl. Akad. Nauk SSSR* **316** (1991), *no.* 5, 1033–1034; *translation in Soviet Math. Dokl.* **43** (1991), *no.* 1, 214–215. (R. G. Mukhometov) **93e:53081** 53C65

Amit, Yali (*with* Miller, Michael I.) Large deviations for the asymptotics of Ziv-Lempel codes for 2-D Gibbs fields. *IEEE Trans. Inform. Theory* **38** (1992), *no.* 4, 1271–1275. 94B60

Amitai, Dganit (*with* Averbuch, Amir; Itzikowitz, Samuel; Israeli, Moshe) Parallel adaptive and time-stabilizing schemes for constant-coefficient parabolic PDEs. (English summary) *Comput. Math. Appl.* **24** (1992), *no.* 10, 33–53. 65M06 (65M12, 65Y05)

Amman, Hans M. *see* **Computational economics and econometrics, 93b:90009**

Ammann, Robert (*with* Grünbaum, Branko; Shephard, G. C.) Aperiodic tiles. *Discrete Comput. Geom.* **8** (1992), *no.* 1, 1–25. (Marjorie Senechal) **93g:52015** 52C20

Ammar, A. A. Linear systems of differential equations with f-periodic solutions. *Proc. Pakistan Acad. Sci.* **28** (1991), *no.* 3, 245–252. (Ivan N. Grod) **93k:34088** 34C25 (34A30)

— Effects of dispersal on the stability of two predators and a common prey. (English summary) *Proc. Pakistan Acad. Sci.* **28** (1991), *no.* 3, 331–342. (Summary) **93h:92023** 92D25

Ammar, Elsaid (*with* Metz, Joachim) On fuzzy convexity and parametric fuzzy optimization. (English summary) *Fuzzy Sets and Systems* **49** (1992), *no.* 2, 135–141. 04A72 (90C20)

ben Ammar, Mohamed *see* **Ben Ammar, Mohamed**

Amodio, P. (*with* Brugnano, L.) Parallel factorizations and parallel solvers for tridiagonal linear systems. Second NIU Conference on Linear Algebra, Numerical Linear Algebra and Applications (DeKalb, IL, 1991). *Linear Algebra Appl.* **172** (1992), 347–364. (Summary) **93b:15014** 15A23 (65F05, 65Y05)

— Optimized cyclic reduction for the solution of linear tridiagonal systems on parallel computers. (English summary) *Comput. Math. Appl.* **26** (1993), *no.* 3, 45–53. 65Y05 (65F05)

mirás Amor, Julio *see* **Mirás Amor, Julio**

d'Amore, Fabrizio (*with* Franciosa, Paolo Giulio) On the optimal binary plane partition for sets of isothetic rectangles. (English summary) *Inform. Process. Lett.* **44** (1992), *no.* 5, 255–259. (Summary) **93k:68098** 68U05

— (*with* Marchetti-Spaccamela, Alberto; Nanni, Umberto) The weighted list update problem and the lazy adversary. (English summary) *Theoret. Comput. Sci.* **108** (1993), *no.* 2, 371–384. (Summary) **93m:68036** 68P10 (68P20)

Amosov, A. A. (*with* Zlotnik, A. A.) Solvability "in the large" of a system of equations for the one-dimensional motion of an inhomogeneous viscous heat-conducting gas. (Russian. Russian summary) *Mat. Zametki* **52** (1992), *no.* 2, 3–16, 155; *translation in Math. Notes* **52** (1992), *no.* 1-2, 753–763 (1993). (Summary) **93h:35163** 35Q35 (76N15)

Amosova, N. N. On the necessity of Cramér's condition in local limit theorems. *Probability theory and mathematical statistics, Vol. I* (*Vilnius*, 1989), 52–56, "*Mokslas*", *Vilnius*, 1990. (Summary) **93b:60054** 60F10

ben-Amram, Amir M. *see* **Ben-Amram, Amir M.**

al Amrani, Abdallah *see* **Al Amrani, Abdallah**

el Amrani, Mohammed *see* **El Amrani, Mohammed**

Amrein, W. O. (*with* Mohapatra, A.; Sinha, Kalyan B.) Configuration space properties of the scattering operator and time delay for potentials decaying like $|x|^{-\alpha}$, $\alpha > 1$. (English and French summaries) *Ann. Inst. H. Poincaré Phys. Théor.* **57** (1992), *no.* 1, 89–113. (Evgeni L. Korotyaev) **93g:81198** 81U05 (35P25, 47A40, 47N50)

el Amri, Hassan *see* **El Amri, Hassan**

Amrouche, C. Sur une classe de fluides non newtoniens: les solutions aqueuses de polymères. (English and French summaries) [On a class of non-Newtonian fluids: aqueous polymer solutions] *Quart. Appl. Math.* **50** (1992), *no.* 4, 779–791. (Paolo Maremonti) **93k:76004** 76A05 (35Q35, 76D05)

iommi Amunátegui, Godofredo *see* **Iommi Amunátegui, Godofredo**

An, Gang Singular perturbation of Robin problem for differential-difference equation. *Northeast. Math. J.* **7** (1991), *no.* 4, 433–447. (Hussain S. Nur) **93c:34156** 34K25 (34E05, 34E15)

An, Hong Zhi (*with* Xie, Zhong Jie) Time series analysis in China. *The development of statistics: recent contributions from China*, 7–40, *Pitman Res. Notes Math. Ser.*, 258, *Longman Sci. Tech., Harlow*, 1992. (*see* **93e:62004**) 62M10

— Nonnegative autoregressive models. *J. Time Ser. Anal.* **13** (1992), *no.* 4, 283–295. (Zuzana Prášková) **93j:62218** 62M10 (60G10)

An, Ing *see* **An, Ying**

An, Jian Bei 2-weights for general linear groups. *J. Algebra* **149** (1992), *no.* 2, 500–527. (Martin W. Liebeck) **93j:20025** 20C20 (20C33)

— 2-weights for unitary groups. *Trans. Amer. Math. Soc.* **339** (1993), *no.* 1, 251–278. (Karin Erdmann) **93k:20018** 20C20 (20G40)

An, Kai Finiteness and continuity of $E_f \log f^a$. (Chinese. English summary) *J. Systems Sci. Math. Sci.* **12** (1992), *no.* 1, 5–14. 62G99 (62H40)

An, Li Bang (*with* Qian, Ming Hai; Wu, Hong Ji; Liu, Jian) A study on saddle point programming and geometric error evaluation theory. (Chinese. English and Chinese summaries) *J. Dalian Univ. Tech.* **33** (1993), *no.* 1, 33–38. 49J35 (90C30)

An, Lian Jun (*with* Schaeffer, David G.) The flutter instability in granular flow. *J. Mech. Phys. Solids* **40** (1992), *no.* 3, 683–698. (Paul W. Cleary) **93c:73053** 73H10 (35L10, 35L55, 73E05)

An, Myoung (*with* Tolimieri, Richard; Lu, Chao) ★ Algorithms for discrete Fourier transform and convolution. *Springer-Verlag, New York*, 1989. xv+350 *pp. ISBN* 0-387-97118-1 (Y. Kobayashi (Zbl 705:65105)) **93i:65131** 65T20 (65D99)

— (*with* Lu, Chun Qing; Prince, E.; Tolimieri, Richard) Fast Fourier transform algorithms for real and symmetric data. *Acta Cryst. Sect. A* **48** (1992), *no.* 4, 415–418. (Summary) **93a:65185** 65T20

An, Ying (*with* Song, He Shan; Ding, Shu Xue) Chern-Simons gauge theory and Ginzburg-Landau type theories. I. Abelian cases. (English summary) *Comm. Theoret. Phys.* **17** (1992), *no.* 3, 381–384. (Summary) **93k:81146** 81T13

An, You Shan The Dirichlet problem for the operator $\mathscr{L}_\alpha^l$ on the Heisenberg group H^n. (Chinese) *Chinese Ann. Math. Ser. A* **12** (1991), *no.* 6, 679–689. (Xue Bo Luo) **93f:22008** 22E30 (22E25)

An, Zhi (*with* Bell, David Andrew; Hughes, J. G.) Relation-based evidential reasoning. (English summary) *Internat. J. Approx. Reason.* **8** (1993), *no.* 3, 231–251. 68T27 (03B70, 68T30)

Anada, Hajime (*with* Kitazoe, Tetsuro; Mizumoto, Yoshihiko) Perturbative method to solve the quantum gravity equation. (Japanese. English summary) *Mem. Fac. Engrg. Miyazaki Univ. No.* 22 (1993), 83–89. 83C45

Anagnostopoulos, Konstantinos N. (*with* Bowick, Mark J.; Schwarz, Albert) The solution space of the unitary matrix model string equation and the Sato Grassmannian. (English summary) *Comm. Math. Phys.* **148** (1992), *no.* 3, 469–485. (Jacek Szmigielski) **93m:58046** 58F07 (58B25, 81T27, 81T40)

Anagnostou, George (*with* Rønquist, Einar M.; Patera, Anthony T.) A computational procedure for part design. (English summary) *Comput. Methods Appl. Mech. Engrg.* **97** (1992), *no.* 1, 33–48. (Summary) **93g:73094** 73K40 (80–08)

Anai, Hirokazu (*with* Inoue, Masayoshi; Hata, Hiroki; Fujisaka, Hirokazu) Synchronized states in asymmetric coupled map systems. *Progr. Theoret. Phys.* **87** (1992), *no.* 1, 103–110. (Summary) **93g:58075** 58F10 (58F14)

Analyti, Anastasia (*with* Pramanik, Sakti) Performance analysis of a main memory multi-directory hashing technique. (English summary) *Inform. Process. Lett.* **45** (1993), *no.* 4, 191–197. (Summary) **93k:68026** 68P20

Ananchuen, W. (*with* Caccetta, L.) Graphs with a prescribed adjacency property. (English summary) *Australas. J. Combin.* **6** (1992), 155–175. (Brian Alspach) **93k:05141** 05C75

Anand, Kailash K. A discussion of "Some oscillating integrands with small ripples" by R. L. Hall [J. Math. Anal. Appl. **145** (1990), no. 2, 365–370; MR 91b:26003]. *Conference on Differential Equations and Applications* (*Ruse*, 1989), 100–109, *Tech. Univ., Ruse*, 1991. (*see* **93f:34004**) 26A09

Ananda, Malwane M. A. Estimating the exponential reliability function for a system in series with type II censored data. (English summary) *Comm. Statist. Theory Methods* **21** (1992), *no.* 11, 3219–3227. (S. N. Alam) **93m:62210** 62N05 (62F15, 90B25)

— (*with* Rukhin, Andrew L.) Risk behavior of variance estimators in multivariate normal distribution. *Statist. Probab. Lett.* **13** (1992), *no.* 2, 159–166. (Summary) **93c:62016** 62C15 (62F10)

Anandalingam, G. (*with* Fetterolf, Peter C.) A Lagrangian relaxation technique for optimizing interconnection of local area networks. (English summary) *Oper. Res.* **40** (1992), *no.* 4, 678–688. 90C35

Anandam, I. V. Functions of generalized bounded argument rotation. *New trends in geometric function theory and applications* (*Madras*, 1990), 1–9, *World Sci. Publishing, River Edge, NJ*, 1991. (Evelyn M. Silvia) **93g:30011** 30C45

Anandan, J. (*with* Sudarshan, E. C. G.; Govindarajan, T. R.) A group-theoretic treatment of the geometric phase. *Phys. Lett. A* **164** (1992), *no.* 2, 133–137. (Brian DeFacio) **93j:81024** 81R05 (22E45, 81P15, 81R30)

— (*with* Mazur, Paweł O.) Geometric phase for the relativistic Klein-Gordon equation. (English summary) *Phys. Lett. A* **173** (1993), *no.* 2, 116–120. 81Q05

Ananias Neto, Jorge (*with* Ferreira, Erasmo) Movable singularities in sigma and Skyrme models. *J. Math. Phys.* **33** (1992), *no.* 3, 1185–1199. (Claus Montonen) **93g:81077** 81T10

— (*with* Ferreira, Erasmo) Singularities in the solutions of the massive Skyrme model. *J. Math. Phys.* **33** (1992), *no.* 7, 2626–2632. (Summary) **93b:81305** 81V05 (58Z05, 81T13)

Ananikyan, N. S. (*with* Akheyan, A. Z.) The gauge Potts model on a generalized Bethe lattice. *J. Phys. A* **25** (1992), *no.* 11, 3111–3119. (Kornél Szlachányi) **93e:82008** 82B20

Anan'in, A. Z. Representability of Noetherian finitely generated algebras. *Arch. Math. (Basel)* **59** (1992), *no.* 1, 1–5. (Sverre O. Smalø) **93g:16036** 16R20 (16P40, 16P60)

Ananth, M. S. (*with* Sundaresan, K. R.) On unsteady state moving boundary problems for nonplane geometries. *Internat. J. Engrg. Sci.* **30** (1992), *no.* 7, 847–859. (Summary) **93b:80011** 80A32

Ananthanarayan, B. A superstring model with R symmetries and low B-L breaking. (English summary) *Internat. J. Modern Phys. A* **7** (1992), *no.* 21, 5085–5103. (Summary) **93f:81102** 81T30 (81T60, 81V22)

Anantharam, Venkat (*with* Gharavi, Reza) Effect of noise on long-term memory in cellular automata with asynchronous delays between the processors. *Complex Systems* **6** (1992), *no.* 3, 287–300. (Katsushi Inoue) **93b:68102** 68Q80 (68T99)

— On fast simulation of the time to saturation of slotted ALOHA. *J. Appl. Probab.* **29** (1992), *no.* 3, 682–690. (Summary) **93g:60206** 60K99 (60F10, 68M10, 90B12)

Anashkin, O. V. On stability in singularly perturbed nonlinear systems. *Dynamical systems and related topics (Nagoya, 1990)*, 1–19, *Adv. Ser. Dyn. Syst.*, 9, *World Sci. Publishing, River Edge, NJ*, 1991. (Summary) **93c:34113** 34D15 (34E15)

Anastasiei, Mihai (*with* Miron, Radu; Roşca, Radu; Buchner, Klaus) New aspects of Lagrangian relativity. *Found. Phys. Lett.* **5** (1992), *no.* 2, 141–171. (L. Tamássy) **93b:53020** 53B40 (53B50, 83D05)

— (*with* Kawaguchi, Hiroaki) Geometry of multiparametrized Lagrangians. *Publ. Math. Debrecen* **42** (1993), *no.* 1-2, 29–37. (Frans Cantrijn) **93m:58038** 58F05 (53C05, 58E30, 70G99, 70H35)

Anastassiou, George A. Weak convergence and the Prokhorov radius for probability measures. *Approximation, optimization and computing*, 47–48, *North-Holland, Amsterdam*, 1990. (*see* **93a:41001**) 60B10

— (*with* Yu, Xiang Ming) Bivariate probabilistic wavelet approximation. *Approximation theory (Memphis, TN, 1991)*, 79–92, *Lecture Notes in Pure and Appl. Math.*, 138, *Dekker, New York*, 1992. (W. R. Madych) **93k:41020** 41A30 (41A25)

— (*with* Rachev, Svetlozar T.) Moment problems and their applications to the stability of queueing models. (English summary) *Comput. Math. Appl.* **24** (1992), *no.* 8-9, 229–246. (W. Szczotka) **93k:60222** 60K25

— Weak convergence and the Prokhorov radius. *J. Math. Anal. Appl.* **163** (1992), *no.* 2, 541–558. (Rae M. Shortt) **93b:60008** 60A10 (28A33, 60B10)

— (*with* Yu, Xiang Ming) Probabilistic discrete wavelet approximation. *Numer. Funct. Anal. Optim.* **13** (1992), *no.* 1-2, 117–121. (Summary) **93d:42034** 42C15 (41A30)

— (*with* Yu, Xiang Ming) Monotone and probabilistic wavelet approximation. *Stochastic Anal. Appl.* **10** (1992), *no.* 3, 251–264. (Summary) **93e:41031** 41A30 (42C15)

— *see also* **Approximation theory, 93b:41001**

Anatriello, Giuseppina Global $\mathcal{F}$-convergence of the successive approximation method. (Italian. English summary) *Rend. Accad. Sci. Fis. Mat. Napoli* (4) **56** (1989), 147–157 (1990). (Jean Mawhin) **93c:58097** 58F08 (54H25, 58F20)

Anbuchelvi, V. (*with* Parvatham, Rajagopalan) Jack's lemma for a vector valued function. (English summary) *Serdica* **17** (1991), *no.* 4, 241–242. 30C45 (30G30, 46G10)

Ancarani, L. U. (*with* Baye, D.) Iterative supersymmetric construction of phase-equivalent potentials. *Phys. Rev. A* (3) **46** (1992), *no.* 1, 206–216. (Summary) **93c:81258** 81U05 (81Q60)

Anco, Stephen C. Construction of locally-symmetric Lagrangian field theories from variational identities. (English summary) *Mathematical aspects of classical field theory (Seattle, WA, 1991)*, 27–50, *Contemp. Math.*, 132, *Amer. Math. Soc., Providence, RI*, 1992. (Jaime Muñoz Masqué) **93k:58069** 58E30 (58E15, 81T13)

Ancochéa-Bermúdez, José María (*with* Gómez Martin, José Ramon) On the open subset of the variety of nilpotent filiform Lie algebras of dimension 9. (Spanish. English summary) *Proceedings of the XVth Portuguese-Spanish Conference on Mathematics, Vol. III (Portuguese) (Évora, 1990)*, 95–99, *Univ. Évora, Évora*, 1991. (Summary) **93c:17019** 17B30

— (*with* Goze, Michel; Khakimdzhanov, Yu. B.) Sur les composantes de la variété des algèbres de Lie nilpotentes. (English summary) [On the components of the variety of nilpotent Lie algebras] *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 9, 657–660. (Roger Carles) **93g:17015** 17B30

— (*with* Goze, Michel) Le rang du systeme linéaire des racines d'une algèbre de Lie rigide résoluble complexe. [The rank of a linear system of roots of a complex solvable rigid Lie algebra] *Comm. Algebra* **20** (1992), *no.* 3, 875–887. (Roger Carles) **93a:17006** 17B30

— (*with* Goze, Michel) On the varieties of nilpotent Lie algebras of dimension 7 and 8. *J. Pure Appl. Algebra* **77** (1992), *no.* 2, 131–140. (Roger Carles) **93b:17034** 17B30

Ancona, Vincenzo A vanishing theorem for the cohomology of a vector bundle whose curvature can change its sign. *Geometry and complex variables (Bologna, 1988/1990)*, 1–4, *Lecture Notes in Pure and Appl. Math.*, 132, *Dekker, New York*, 1991. (Takeo Ohsawa) **93a:32049** 32L15 (32L20, 53C55)

— (*with* Gaveau, Bernard) Differential forms and resolutions on certain analytic spaces. I. Irreducible exceptional divisor. *Bull. Sci. Math.* (2) **116** (1992), *no.* 3, 307–324. (Tosiaki Kori) **93g:32013** 32C35 (32C15, 32S45)

— (*with* Gaveau, Bernard) Formes différentielles et résolutions de faisceaux sur certains espaces analytiques. (English summary) [Differential forms and resolution of sheaves of holomorphic functions on certain analytic spaces] *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 2, 133–138. (Giuseppe Tomassini) **93a:32012** 32C35

— (*with* Gaveau, Bernard) Modules plats de différentielles et résolutions de faisceaux sur certains espaces analytiques. (English summary) [Flat modules of differentials and resolution of sheaves on certain analytic spaces] *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 3, 223–225. (Giuseppe Tomassini) **93c:32015** 32C35

— (*with* Gaveau, Bernard) Le complexe de de Rham d'un espace analytique normal. (English and French summaries) [The de Rham complex of a normal analytic space] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 5, 577–581. (Luis Narváez Macarro) **93h:32014** 32C20 (14F40, 32C35)

— (*with* Gaveau, Bernard) Differential forms and resolutions on certain analytic spaces. II. Flat resolutions. *Canad. J. Math.* **44** (1992), *no.* 4, 728–749. (Tosiaki Kori) **93j:32018** 32C35 (32L05)

— *see also* **Complex analysis and geometry, 93j:32001**

Andàs, H. E. Bell's inequalities for quantum mechanics. (English summary) *Phys. Lett. A* **167** (1992), *no.* 1, 6–10. (S. Gudder) **93f:81018** 81P15 (81P10)

— (*with* Gjøtterud, O. K.) Quantum theory and questions of reality and completeness. (English summary) *Found. Phys. Lett.* **6** (1993), *no.* 1, 55–74. 81P15

Anděl, Jiří (*with* Zvára, Karel) Simulation methods in time series. *Proceedings of the Second International Symposium on Numerical Analysis (Prague, 1987)*, 99–113, *Teubner-Texte Math.*, 107, *Teubner, Leipzig*, 1988. (*see* **93b:65007**) 65U05 (62M10)

— Confidence intervals for the mode based on one observation. (Serbo-Croatian summary) *Zb. Rad. No.* 5 (1991), 87–96. (Jon Stene) **93a:62043** 62F25

— Nonnegative multivariate AR(1) processes. *Kybernetika (Prague)* **28** (1992), *no.* 3, 213–226. (N. Leonenko) **93i:62077** 62M10 (62F12, 62M09)

Anders, I. A. (*with* Kotlyarov, V. P.) An inverse scattering problem for the operator $\partial_x^2 + 2u\partial_x$. (Russian) *Operator theory, subharmonic functions (Russian)*, 3–12, "*Naukova Dumka*", *Kiev*, 1991. (Summary) **93d:34137** 34L25 (34A55, 35P25, 35R30)

Andersén, Erik (*with* Lempert, László) On the group of holomorphic automorphisms of $\mathbf{C}^n$. *Invent. Math.* **110** (1992), *no.* 2, 371–388. (Marco Abate) **93i:32038** 32M05 (32E30)

Andersen, Henning Haahr (*with* Polo, Patrick; Wen, Ke Xin) Injective modules for quantum algebras. *Amer. J. Math.* **114** (1992), *no.* 3, 571–604. (Jie Du) **93j:17018** 17B37 (16W30, 81R50)

— (*with* Wen, Ke Xin) Representations of quantum algebras. The mixed case. *J. Reine Angew. Math.* **427** (1992), 35–50. (Jie Du) **93j:17019** 17B37 (16W30, 81R50)

Andersen, J. A. (*with* Levkovitz, R.; Mitra, Gautam) The interior point method for LP on parallel computers. (English summary) *System modelling and optimization (Zurich, 1991)*, 241–250, *Lecture Notes in Control and Inform. Sci.*, 180, *Springer, Berlin*, 1992. (*see* **93e:90003**) 90C05

Andersen, Kenneth F. Weighted generalized Hardy inequalities for nonincreasing functions. *Canad. J. Math.* **43** (1991), *no.* 6, 1121–1135. (Petr Gurka) **93e:26012** 26D15 (42B25, 47B38)

Andersen, Kirsti ★ Brook Taylor's work on linear perspective. A study of Taylor's role in the history of perspective geometry. Including facsimiles of Taylor's two books on perspective. Sources in the History of Mathematics and Physical Sciences, 10. *Springer-Verlag, New York*, 1992. x+259 *pp. ISBN* 0-387-97486-5 (James J. Tattersall) **93c:01016** 01A50 (01A75, 53–03)

— Perspective and the plan and elevation technique, in particular in the work by Piero della Francesca. *Amphora*, 1–23, *Birkhäuser, Basel*, 1992. (Jens Høyrup) **93k:01016** 01A40

Andersen, Lars Døvling The strong chromatic index of a cubic graph is at most 10. (English summary) Topological, algebraical and combinatorial structures. Frolík's memorial volume. *Discrete Math.* **108** (1992), *no.* 1-3, 231–252. (András Gyárfás) **93h:05068** 05C15 (05C35)

— (*with* Ding, Song Kang; Sabidussi, Gert; Vestergaard, Preben Dahl) Edge orbits and edge-deleted subgraphs. *Graphs Combin.* **8** (1992), *no.* 1, 31–44. (William L. Kocay) **93g:05102** 05C60

— *see also* **Julius Petersen graph theory centennial, 93i:05003**; **Special volume to mark the centennial of Julius Petersen's "Die Theorie der regulären Graphs"**

Andersen, Lars Smedegaard Inference for hidden Markov models. (English summary) *Spatial statistics and imaging (Brunswick, ME, 1988)*, 1–13, *IMS Lecture Notes Monograph Ser.*, 20, *Inst. Math. Statist., Hayward, CA*, 1991. (Summary) **93h:62176** 62M40 (62M05)

Andersen, Per Kragh (*with* Nielsen, Gert G.; Gill, Richard D.; Sørensen, Thorkild I. A.) A counting process approach to maximum likelihood estimation in frailty models. *Scand. J. Statist.* **19** (1992), *no.* 1, 25–43. (Summary) **93a:62116** 62M07 (60G55)

Andersland, Mark S. (*with* Teneketzis, Demosthenis) Information structures, causality, and nonsequential stochastic control. I. Design-independent properties. (English summary) *SIAM J. Control Optim.* **30** (1992), *no.* 6, 1447–1475. (Guy Jumarie) **93i:93081** 93C55 (93E03)

Anderson, Arlen (*with* Myers, Robert C.; Periwal, Vipul) Branched polymers from a double-scaling limit of matrix models. *Nuclear Phys. B* **360** (1991), *no.* 2-3, 463–479. (Andrew R. Kavalov) **93b:81196** 81T27 (81T40, 82B23, 82D60)

— (*with* Schleich, Kristin) Constraints on the topology of axionic wormhole solutions. *Classical Quantum Gravity* **9** (1992), *no.* 1, 89–100. (Aleksandar R. Miković) **93c:83056** 83C45

— Symmetric space two-matrix models. (English summary) *Internat. J. Modern Phys. A* **7** (1992), *no.* 23, 5781–5796. (David Sénéchal) **93h:81104** 81T40 (22E70, 81T27)

Anderson, Brian D. O. (*with* Kennedy, R. A.; Bitmead, Robert R.) Stochastic dynamics of blind decision feedback equalizer adaptation. (English summary) *Adaptive systems in control and signal processing, 1989 (Glasgow)*, 579–584, *IFAC Sympos. Ser.*, 1990, *No.* 1, *Pergamon, Oxford*, 1990. (*see* **93j:93007**) 93C40 (93B52)

— Optimizing the discretization of continuous-time controllers. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, I (Kobe, 1991)*, 475–480, *Mita, Tokyo*, 1992. (A. Halanay) **93j:93086** 93C57 (93B36, 93C62)

— (*with* Li, Gang; Gevers, Michel) Optimal FWL design of state-space digital systems with weighted sensitivity minimization and sparseness consideration. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, I (Kobe, 1991)*, 549–554, *Mita, Tokyo*, 1992. (*see* **93g:93005**) 93B51 (93C57)

— (*with* Yan, Wei Yong; Bitmead, Robert R.) Trade-offs among conflicting objectives in robust control design. *Robust control system techniques and applications, Part 1*, 1–53, *Control Dyn. Syst. Adv. Theory Appl.*, 50, *Academic Press, San Diego, CA*, 1992. (Antonis I. G. Vardulakis) **93m:93041** 93B52 (93B36)

— (*with* Limebeer, David J. N.; Hendel, B.) Mixed H_2/H_∞ filtering by the theory of Nash games. (English summary) *Robust control (Tokyo, 1991)*, 9–15, *Lecture Notes in Control and Inform. Sci.*, 183, *Springer, Berlin*, 1992. (*see* **93f:93006**) 93E11 (93B36)

— (*with* Limebeer, David J. N.; Hendel, B.) Nash games and mixed H_2/H_∞ control. (English summary) *Robust control (Tokyo, 1991)*, 210–217, *Lecture Notes in Control and Inform. Sci.*, 183, *Springer, Berlin*, 1992. (*see* **93f:93006**) 93B36

— (*with* Kraus, Frantisek J.; Mansour, Mohamed; Truöl, W.) Robust stability of control systems: extreme point results for the stability of edges. *Internat. J. Control* **55** (1992), *no.* 5, 1039–1049. (Hong Zhang) **93a:93084** 93D09

— (*with* Er, Meng J.) Performance study of multi-rate output controllers under noise disturbances. (English summary) *Internat. J. Control* **56** (1992), *no.* 3, 531–545. (Summary) **93d:93086** 93E20 (93B52)

— (*with* Helmke, Uwe) Hermitian pencils and output feedback stabilization of scalar systems. (English summary) *Internat. J. Control* **56** (1992), *no.* 4, 857–876. (Wiland Schmale) **93g:93071** 93D15 (93B27, 93B55)

— (*with* White, Langford B.) Stationary discrete-time covariance factorization using Newton-Raphson iteration. *Math. Control Signals Systems* **5** (1992), *no.* 3, 263–279. (Gregory Ammar) **93g:93038** 93B40 (47N70, 93B25, 93C55)

— (*with* Limebeer, David J. N.; Khargonekar, Pramod P.; Green, Michael) A game-theoretic approach to $\mathscr{H}^\infty$ control for time-varying systems. *SIAM J. Control Optim.* **30** (1992), *no.* 2, 262–283. (Tamer Başar) **93c:93022** 93B36 (90D25, 93C60)

— (*with* Mansour, Mohamed) Kharitonov's theorem and the second method of Lyapunov. (English summary) *Systems Control Lett.* **20** (1993), *no.* 1, 39–47. (Jacob Hammer) **93j:93109** 93D09 (93C05)

Anderson, Bruce A. A doubling construction for certain self-orthogonal 2-sequencings. Proceedings of the Twenty-second Southeastern Conference on Combinatorics, Graph Theory, and Computing (Baton Rouge, LA, 1991). *Congr. Numer.* **84** (1991), 61–95. (Summary) **93a:05098** 05C70 (05C45)

— (*with* Ihrig, Edwin C.) All groups of odd order have starter-translate 2-sequencings. (English summary) *Australas. J. Combin.* **6** (1992), 135–146. (Ĭ. Ya. Subbotin) **93j:20049** 20D99

— Bailey's conjecture holds through 87 except possibly for 64. (English summary) *J. Combin. Math. Combin. Comput.* **12** (1992), 187–195. (Ĭ. Ya. Subbotin) **93i:20025** 20D99

— *see also* **Leonard, P. A.**

Anderson, C. Anthony *see* **Anderson, Curtis Anthony**

Anderson, C. L. A characterization of the Minkowski norms. *Canad. Math. Bull.* **34** (1991), *no.* 1, 12–14. (K. Sundaresan) **93a:46035** 46B45 (46A45, 52A21)

Anderson, Christopher R. An implementation of the fast multipole method without multipoles. *SIAM J. Sci. Statist. Comput.* **13** (1992), *no.* 4, 923–947. (Summary) **93b:65012** 65C99 (34B27, 35J05)

Anderson, Curtis Anthony Zalta's intensional logic. *Philos. Stud.* **69** (1993), *no.* 2-3, 221–229. 03B45 (03B65)

Anderson, D. D. (*with* Anderson, David F.; Zafrullah, Muhammad) Splitting the t-class group. *J. Pure Appl. Algebra* **74** (1991), *no.* 1, 17–37. (Claudio Pedrini) **93d:13023** 13C20

— (*with* Mott, J. L.; Zafrullah, Muhammad) Finite character representations for integral domains. (Italian summary) *Boll. Un. Mat. Ital. B* (7) **6** (1992), *no.* 3, 613–630. (Valentina Barucci) **93k:13001** 13A15 (13G05)

— (*with* Anderson, David F.; Zafrullah, Muhammad) Atomic domains in which almost all atoms are prime. *Comm. Algebra* **20** (1992), *no.* 5, 1447–1462. (Jiří Močkoř) **93e:13040** 13G05 (13A05, 13A15)

— (*with* Mott, J. L.) Cohen-Kaplansky domains: integral domains with a finite number of irreducible elements. *J. Algebra* **148** (1992), *no.* 1, 17–41. (Iuliu Crivei) **93e:13041** 13G05

— (*with* Anderson, David F.) Elasticity of factorizations in integral domains. *J. Pure Appl. Algebra* **80** (1992), *no.* 3, 217–235. (Fazal Mehdi) **93h:13021** 13G05

— (*with* Anderson, David F.; Chapman, Scott T.; Smith, William W.) Rational elasticity of factorizations in Krull domains. *Proc. Amer. Math. Soc.* **117** (1993), *no.* 1, 37–43. (Liam O'Carroll) **93c:13014** 13F05 (13A05, 13F15, 13G05)

Anderson, Dale N. A multivariate Linnik distribution. (English summary) *Statist. Probab. Lett.* **14** (1992), *no.* 4, 333–336. (Summary) **93e:60032** 60E07 (62F10)

Anderson, David F. (*with* Anderson, D. D.; Zafrullah, Muhammad) Splitting the t-class group. *J. Pure Appl. Algebra* **74** (1991), *no.* 1, 17–37. (Claudio Pedrini) **93d:13023** 13C20

— (*with* Dobbs, David E.; Fontana, Marco) Hilbert rings arising as pullbacks. (English summary) *Canad. Math. Bull.* **35** (1992), *no.* 4, 431–438. (Salah-Eddine Kabbaj) **93j:13003** 13A15 (13G05)

— (*with* Anderson, D. D.; Zafrullah, Muhammad) Atomic domains in which almost all atoms are prime. *Comm. Algebra* **20** (1992), *no.* 5, 1447–1462. (Jiří Močkoř) **93e:13040** 13G05 (13A05, 13A15)

— (*with* Dobbs, David E.; Fontana, Marco; Khalis, Mohammed) Catenarity of formal power series rings over a pullback. *J. Pure Appl. Algebra* **78** (1992), *no.* 2, 109–122. (J. W. Brewer) **93d:13022** 13C15 (13J05)

— (*with* Anderson, D. D.) Elasticity of factorizations in integral domains. *J. Pure Appl. Algebra* **80** (1992), *no.* 3, 217–235. (Fazal Mehdi) **93h:13021** 13G05

— Star operations and the $D + M$ construction. (English summary) *Rend. Circ. Mat. Palermo* (2) **41** (1992), *no.* 2, 221–230. (Ming-chang Kang) **93k:13002** 13A15

— (*with* Anderson, D. D.; Chapman, Scott T.; Smith, William W.) Rational elasticity of factorizations in Krull domains. *Proc. Amer. Math. Soc.* **117** (1993), *no.* 1, 37–43. (Liam O'Carroll) **93c:13014** 13F05 (13A05, 13F15, 13G05)

Anderson, Donald A. (*with* Krehbiel, Timothy C.) Optimal fractional factorial designs for estimating interactions of one factor with all others: 3^m series. *Comm. Statist. Theory Methods* **20** (1991), *no.* 3, 1055–1072. (Summary) **93e:62199** 62K15 (62K05)

Anderson, Douglas R. (*with* Connolly, Francis X.) Finiteness obstructions and cocompact actions on $S^m \times \mathbf{R}^n$. *Comment. Math. Helv.* **68** (1993), *no.* 1, 85–110. (A. A. Ranicki) **93k:57053** 57Q12 (19J35, 57S30)

— (*with* Munkholm, Hans Jørgen) The bounded and thin Whitehead theorems. *Proc. Amer. Math. Soc.* **117** (1993), *no.* 2, 551–560. (A. A. Ranicki) **93d:19007** 19J10 (55P10)

— (*with* Munkholm, Hans Jørgen) The boundedly controlled Whitehead theorem. *Proc. Amer. Math. Soc.* **117** (1993), *no.* 2, 561–568. (A. A. Ranicki) **93d:19008** 19J10 (55P10)

Anderson, Edward J. (*with* Aramendia, Miguel) A linear programming approach to the search game on a network with mobile hider. *SIAM J. Control Optim.* **30** (1992), *no.* 3, 675–694. (Michael A. Trick) **93b:90123** 90D26 (90B10, 90C05, 90C35)

Anderson, G. D. (*with* Vamanamurthy, M. K.; Vuorinen, Matti) Functional inequalities for hypergeometric functions and complete elliptic integrals. *SIAM J. Math. Anal.* **23** (1992), *no.* 2, 512–524. (J. M. H. Peters) **93b:33001** 33C05 (33C75)

Anderson, Gary L. *see* **Intelligent structural systems, 93e:73030**

Anderson, Greg W. Local factorization of determinants of twisted DR cohomology groups. *Compositio Math.* **83** (1992), *no.* 1, 69–105. (Adolfo Quirós) **93k:14031** 14F40 (14F05)

Anderson, Ian (*with* Finizio, Norman J.) A generalization of a construction of E. H. Moore. (English summary) *Bull. Inst. Combin. Appl.* **6** (1992), 39–46. (Summary) **93g:05058** 05C20

— (*with* Liaw, Y. S.) Addendum to: "Z-cyclic Room squares" [Bull. Inst. Combin. Appl. **5** (1992), 51–57; MR 92m:05034]. *Bull. Inst. Combin. Appl.* **6** (1992), 56. (From the text) **93i:05029** 05B15

— (*with* Finizio, Norman J.) An infinite class of cyclic triplewhist tournaments. (English summary) Proceedings of the Twenty-third Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, FL, 1992). *Congr. Numer.* **91** (1992), 7–18. (Summary) **93j:05064** 05C20

Anderson, J. D. (*with* Degrez, G.; Dick, Erik; Grundmann, R.) ★ Computational fluid dynamics. An introduction. Edited and with a preface by John F. Wendt. A von Karman Institute Book. *Springer-Verlag, Berlin*, 1992. xii+291 *pp. ISBN* 3-540-53460-1 (Corneliu Berbente) **93a:76081** 76N10 (76–01)

Anderson, J. M. *see* **Anderson, James Milne**

Anderson, J. T. Erratum: "Semiclassical chaos in quartic anharmonic oscillators" [Phys. Rev. A (3) **45** (1992), no. 8, 5373–5377; MR 92m:81052]. *Phys. Rev. A* (3) **46** (1992), *no.* 12, 8034. (Editors) **93k:81055** 81Q50 (81Q20)

Anderson, James H. (*with* Grošelj, Bojan) Beyond atomic registers: bounded wait-free implementations of nontrivial objects. (English summary) *Sci. Comput. Programming* **19** (1992), *no.* 3, 197–237. (Summary) **93k:68016** 68N05 (68P05)

Anderson, James L. Multiple time scale methods for adiabatic systems. (English summary) *Amer. J. Phys.* **60** (1992), *no.* 10, 923–927. (Piotr Kosiński) **93h:81036** 81Q99 (34C99, 70H99)

Anderson, James Milne (*with* Housworth, E. A.; Pitt, Loren D.) The spectral theory of multiplication operators and recurrence properties for nondifferentiable functions in the Zygmund class Λ_*^α. (English summary) *Mathematika* **39** (1992), *no.* 1, 136–151. (Paul Bourdon) **93h:30050** 30D40 (26A27, 30D45, 47A10, 47B38)

— (*with* Khavinson, Dmitry; Lomonosov, V.) Spectral properties of some integral operators arising in potential theory. *Quart. J. Math. Oxford Ser.* (2) **43** (1992), *no.* 172, 387–407. (Krzysztof Samotij) **93j:47073** 47G10 (30E20, 31A15, 31B15, 47A10)

Anderson, Jeffrey L. On minimal decoding sets for the extended binary Golay code. (English summary) *IEEE Trans. Inform. Theory* **38** (1992), *no.* 5, 1560–1561. 94B35

Anderson, John T. On an example of Ahern and Rudin. *Proc. Amer. Math. Soc.* **116** (1992), *no.* 3, 695–699. (A. Sadullaev) **93c:32021** 32E20

Anderson, Jon E. (*with* Louis, Thomas A.; Holm, Niels V.; Harvald, Bent) Time-dependent association measures for bivariate survival distributions. (English summary) *J. Amer. Statist. Assoc.* **87** (1992), *no.* 419, 641–650. (Summary) **93f:62133** 62N05 (62P10)

Anderson, Michael T. (*with* Cheeger, Jeff) C^α-compactness for manifolds with Ricci curvature and injectivity radius bounded below. *J. Differential Geom.* **35** (1992), *no.* 2, 265–281. (Xiao Wei Peng) **93c:53028** 53C23 (53C21)

Anderson, Niall H. (*with* Hall, Peter Gavin; Titterington, D. M.) Interpolation rules suggested by asymptotic expansions. (English summary) *Biometrika* **79** (1992), *no.* 3, 651–653. 62E20

Anderson, P. L. (*with* Vecchia, A. V.) Asymptotic results for periodic autoregressive moving-average processes. (English summary) *J. Time Ser. Anal.* **14** (1993), *no.* 1, 1–18. (Summary) **93k:62178** 62M10

Anderson, Peter G. A Fibonacci-based pseudo-random number generator. *Applications of Fibonacci numbers, Vol.* 4 (*Winston-Salem, NC*, 1990), 1–8, *Kluwer Acad. Publ., Dordrecht*, 1991. (*see* **93g:11004**) 11Y16

Anderson, Robert F. V. Intrinsic parameters and stability of differential-delay equations. *J. Math. Anal. Appl.* **163** (1992), *no.* 1, 184–199. (Denis Khusainov) **93b:34097** 34K20 (34K05)

Anderson, Robert Joseph On the Möbius sum function. *Acta Arith.* **59** (1991), *no.* 3, 205–213. (Herman J. J. te Riele) **93c:11069** 11M26 (11A25)

Anderson, Robert Leonard (*with* Rideau, Guy; Hebda, Piotr W.) Canonical quantization of the Bateman-Morse-Feshbach damped oscillator. *Lett. Math. Phys.* **23** (1991), *no.* 1, 79–89. (W. Slowikowski) **93d:81101** 81S99 (81Q05, 81S05)

Anderson, Ronald (*with* Stedman, Geoffrey E.) Distance and the conventionality of simultaneity in special relativity. *Found. Phys. Lett.* **5** (1992), *no.* 3, 199–220. (Lawrence Sklar) **93d:83004** 83A05

Anderson, Roy M. (*with* Swinton, Jonathan; Garnett, Geoffrey P.; Brunham, Robert C.) Gonococcal infection, infertility, and population growth. I. Endemic states in behaviourally homogeneous growing populations. (English summary) *IMA J. Math. Appl. Med. Biol.* **9** (1992), *no.* 2, 107–126. 92C60 (92D30)

— (*with* Garnett, Geoffrey P.; Swinton, Jonathan; Brunham, Robert C.) Gonococcal infection, infertility, and population growth. II. The influence of heterogeneity in sexual behaviour. (English summary) *IMA J. Math. Appl. Med. Biol.* **9** (1992), *no.* 2, 127–144. 92C60

Anderson, T. W. (*with* Amemiya, Yasuo) Testing dimensionality in the multivariate analysis of variance. *Statist. Probab. Lett.* **12** (1991), *no.* 6, 445–463. (H. K. Hsieh) **93d:62101** 62H10 (62H15, 62J10)

— The asymptotic distribution of autocorrelation coefficients. (English summary) *The art of statistical science*, 9–25, *Wiley Ser. Probab. Math. Statist. Probab. Math. Statist., Wiley, Chichester*, 1992. (Luis Firinguetti) **93h:62174** 62M20 (62E20, 62M10, 62P20)

— (*with* Fang, Kai Tai) Theory and applications of elliptically contoured and related distributions. *The development of statistics: recent contributions from China*, 41–62, *Pitman Res. Notes Math. Ser.*, 258, *Longman Sci. Tech., Harlow*, 1992. (*see* **93e:62004**) 62H05 (62H10, 62H12, 62H15)

— (*with* Kunitomo, Naoto) Asymptotic distributions of regression and autoregression coefficients with martingale difference disturbances. *J. Multivariate Anal.* **40** (1992), *no.* 2, 221–243. (B. L. S. Prakasa Rao) **93e:62227** 62M10

— (*with* Mentz, R. P.) A note on maximum likelihood estimation in the first-order Gaussian moving average model. (English summary) *Statist. Probab. Lett.* **16** (1993), *no.* 3, 205–211. 62M10

Anderson, Warren G. (*with* Brady, Patrick R.; Camporesi, Roberto) Vacuum polarization and the black hole singularity. (English summary) *Classical Quantum Gravity* **10** (1993), *no.* 3, 497–503. (Summary) **93k:83044** 83C57 (81T20, 83C47)

— (*with* Brady, Patrick R.; Israel, Werner; Morsink, Sharon M.) Quantum effects in black hole interiors. (English summary) *Phys. Rev. Lett.* **70** (1993), *no.* 8, 1041–1044.

(Summary) **93j:83052** 83C57 (83C47)

Anderssen, Robert S. (*with* Scherzer, Otmar; Engl, Heinz W.) Parameter identification from boundary measurements in a parabolic equation arising from geophysics. *Nonlinear Anal.* **20** (1993), *no.* 2, 127–156. (Guan Quan Zhang) **93m:35185** 35R30 (35K99, 65M12, 65M30, 86A25)

— *see also* **Miniconference: Inverse Problems in Partial Differential Equations, 93i:00020** *and* **Miniconfereeuce: Free and Moving Boundary and Diffusion Problems, 93j:35005**

Andersson, Åke E. (*with* Zhang, Wei-Bin) Topics in mathematical economics—on fixed points and structural change. *Theory & control of dynamical systems* (*Huddinge*, 1991), 1–30, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93d:92001**) 90–02 (90A14)

— *see also* **Theory & control of dynamical systems, 93d:92001**

Andersson, Arne (*with* Ottmann, Thomas) Faster uniquely represented dictionaries. (English summary) 32*nd Annual Symposium on Foundations of Computer Science* (*San Juan, PR*, 1991), 642–649, *IEEE Comput. Soc. Press, Los Alamitos, CA*, 1991. (*see* **93d:68005**) 68P05 (68P20)

— Comments on: "On the balance property of Patricia tries: external path length viewpoint" [Theoret. Comput. Sci. **68** (1989), no. 1, 1–17; MR 91a:68036] by P. Kirschenhofer, H. Prodinger and W. Szpankowski. (English summary) With a reply by Kirschenhofer, Prodinger and Szpankowski. *Theoret. Comput. Sci.* **106** (1992), *no.* 2, 391–400. (Ricardo Baeza-Yates) **93k:68021** 68P05 (68Q25, 68R10)

Andersson, H. I. MHD flow of a viscoelastic fluid past a stretching surface. (English summary) *Acta Mech.* **95** (1992), *no.* 1-4, 227–230. 76W05 (76A10)

— *see also* **Application of statistical methods in theoretical physics and fluid mechanics**

Andersson, Lars Åke (*with* Peters, Gunnar) Geometric quantization on Wiener manifolds. *Stochastic analysis and applications* (*Lisbon*, 1989), 29–51, *Progr. Probab.*, 26, *Birkhäuser Boston, Boston, MA*, 1991. (Jacques Vauthier) **93f:58085** 58F06 (58B20, 58G32, 60H99)

— (*with* Chruściel, Piotr T.; Friedrich, Helmut) On the regularity of solutions to the Yamabe equation and the existence of smooth hyperboloidal initial data for Einstein's field equations. (English summary) *Comm. Math. Phys.* **149** (1992), *no.* 3, 587–612. (Robert McOwen) **93i:53040** 53C21 (58G16, 58G30, 83C05)

Andersson, Mats Cauchy-Fantappiè-Leray formulas with local sections and the inverse Fantappiè transform. (French summary) *Bull. Soc. Math. France* **120** (1992), *no.* 1, 113–128. (Ta Chung Li) **93d:32003** 32A25 (32E20)

— (*with* Carlsson, Hasse) Boundary convergence in non-nontangential and nonadmissible approach regions. *Math. Scand.* **70** (1992), *no.* 2, 293–301. (Manfred Stoll) **93j:31008** 31B25 (32F15)

Andersson, Nils (*with* Linnaeus, Staffan) Quasinormal modes of a Schwarzschild black hole: improved phase-integral treatment. (English summary) *Phys. Rev. D* (3) **46** (1992), *no.* 10, 4179–4187. (Summary) **93f:83055** 83C57

— A numerically accurate investigation of black-hole normal modes. (English summary) *Proc. Roy. Soc. London Ser. A* **439** (1992), *no.* 1905, 47–58. (Summary) **93i:83058** 83C57

Andersson, Roger K.-E. (*with* Dahlberg, Björn E. J.) Interactive techniques for visual design. *Topics in surface modeling*, 95–113, *Geom. Des. Publ., SIAM, Philadelphia, PA*, 1992. (*see* **93c:65026**) 65D17

Andersson, Steen A. (*with* Perlman, Michael D.) Lattice-ordered conditional independence models for missing data. *Statist. Probab. Lett.* **12** (1991), *no.* 6, 465–486. (N. Giri) **93c:62088** 62H05

Andersson, Stig I. Zusammenfassende Bemerkungen zur nicht-abelschen Kohomologietheorie nebst Anwendungen. [Summarizing remarks on nonabelian cohomology theory and its applications] *Proceedings of the* 3*rd Congress of Geometry* (*Thessaloniki*, 1991), 41–48, *Aristotle Univ. Thessaloniki, Thessaloniki*, 1992. (Akira Asada) **93g:58135** 58G05 (18G50, 35A27, 53C05, 58H99)

— (*with* Högfors, Christian) History dependence. *Theory & control of dynamical systems* (*Huddinge*, 1991), 52–60, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93d:92001**) 92B05

— *see also* **Theory & control of dynamical systems, 93d:92001**

Andjel, Enrique D. (*with* Liggett, Thomas M.; Mountford, Thomas S.) Clustering in one-dimensional threshold voter models. *Stochastic Process. Appl.* **42** (1992), *no.* 1, 73–90. (H. Kesten) **93i:60181** 60K35

Andler, Martin Bruhat order and transfer for complex reductive groups. (English summary) *Canad. J. Math.* **44** (1992), *no.* 5, 911–923. (David Joyner) **93i:22018** 22E50 (22E10)

Ando, Hideo Relations among fibres and cofibres of induced maps derived from a homotopy commutative cube. *Mem. College Ed. Akita Univ. Natur. Sci. No.* 43 (1992), 1–35. (John F. Oprea) **93f:55010** 55P99

Ando, Kazuaki (*with* Itamiya, K.; Shin, Seiichi) Robust model reference learning control system based on approximated weighting functions. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, II* (*Kobe*, 1991), 407–412, *Mita, Tokyo*, 1992. (*see* **93g:93006**) 93E35

Ando, Shigeru (*with* Peng, Chen) A theory of waveform analysis based on exponentiality and anti-exponentiality. (English summary) *J. Fac. Engrg. Univ. Tokyo Ser. B* **41** (1992), *no.* 3, 513–530. 94A11

Ando, Shiro (*with* Sato, Daihachiro) On the proof of GCD and LCM equalities concerning the generalized binomial and multinomial coefficients. *Applications of Fibonacci numbers, Vol.* 4 (*Winston-Salem, NC*, 1990), 9–16, *Kluwer Acad. Publ., Dordrecht*, 1991. (G. L. Alexanderson) **93m:11015** 11B65 (11B39)

— (*with* Long, Calvin) Two generalizations of Gould's Star of David theorem. *Applications of Fibonacci numbers, Vol.* 4 (*Winston-Salem, NC*, 1990), 219–230, *Kluwer Acad. Publ., Dordrecht*, 1991. (F. T. Howard) **93j:11015** 11B65 (05A10)

Ando, T. *see* **Ando, Tsuyoshi**

Ando, Tetsuya *see* **Fukuda, Shigetaka, 93g:14011**

Ando, Tsuyoshi (*with* Okubo, Kazuyoshi) Norms of Schur multiplication operator. *Functional analysis & related topics* (*Sapporo*, 1990), 206–210, *World Sci. Publishing, River Edge, NJ*, 1991. (C. S. Sharma) **93b:15030** 15A60 (47A30)

— (*with* Hara, Takuya) Another approach to the strong Parrott theorem. *J. Math. Anal. Appl.* **171** (1992), *no.* 1, 125–130. (Joseph A. Ball) **93k:47011** 47A20

Ando, Y. *see* **Ando, Yoshinori**

Ando, Yoshifumi An existence theorem of foliations with singularities A_k, D_k and E_k. *Hokkaido Math. J.* **20** (1991), *no.* 3, 571–578. (Stanislaw Janeczko) **93c:58030** 58C27 (58F18)

Ando, Yoshinori (*with* Suzuki, Masayuki; Hibino, R.) High gain observer and reduced order observer. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, I* (*Kobe*, 1991), 455–460, *Mita, Tokyo*, 1992. (*see* **93g:93005**) 93B06

Ando, Yutaka Correction to: "Cohomology of a Hopf algebra over Z_2" [Kodai Math. J. **12** (1989), no. 3, 332–338; MR 91a:57039]. *Kodai Math. J.* **15** (1992), *no.* 2, 310–311. (Editors) **93j:57023** 57T05 (18G99, 35S99)

Andoh, E. (*with* Kamiya, Norio) Standard eigenvalue analysis by boundary-element method. (English summary) *Comm. Numer. Methods Engrg.* **9** (1993), *no.* 6, 489–495. 65N25 (65N38)

Andonie, Răzvan (*with* Carai, Eugen) Gaussian smoothing by optimal iterated uniform convolutions. (English summary) *Comput. Artificial Intelligence* **11** (1992), *no.* 4, 363–373. (Summary) **93h:68140** 68U10 (94A12)

Andotra, Janak Singh (*with* Deo, Satya) On G-finitistic spaces and related notions. *Internat. J. Math. Math. Sci.* **15** (1992), *no.* 2, 371–378. (Dennis J. Garity) **93i:54031** 54F45 (54B17)

Andrade, Ana (*with* Pethe, S. P.) On the rth-order nonhomogeneous recurrence relation and some generalized Fibonacci sequences. *Fibonacci Quart.* **30** (1992), *no.* 3, 256–262. (From the introduction) **93h:11015** 11B37 (11B39)

de Andrade, Eliana Xavier Linhares (*with* Sri Ranga, A.) Eigenvalues of a class of Hessenberg matrices. (Portuguese. English and Portuguese summaries) *Rev. Mat. Estatíst.* **9** (1991), 61–67. 15A18

— (*with* Sri Ranga, A.) Zeros of polynomials which satisfy a certain three-term recurrence relation. *Comm. Anal. Theory Contin. Fractions* **1** (1992), 61–65. (Maurice Mignotte) **93k:41017** 41A20 (41A55)

soto-Andrade, Jorge *see* **Soto-Andrade, Jorge**

garcia de Andrade, L. C. *see* **Garcia de Andrade, L. C.**

Andrade, Plácido The set of vector fields with transverse foliations. *J. Math. Soc. Japan* **45** (1993), *no.* 1, 21–35. (John Cantwell) **93j:58110** 58F18 (57R30)

álvarez-Andrade, Sergio *see* **Álvarez-Andrade, Sergio**

Andramonov, M. Yu. (*with* Zabotin, Ya. I.) On the reduction of a quasiconvex programming problem to an unconditional minimization problem by the conic projection method. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* **1992**, *no.* 1, 3–7. (From the introduction) **93j:90094** 90C30 (90C25)

André, Johannes Über Gruppenräume, deren minimale Unterräume einen affinen Raum bilden. [On group spaces whose minimal subspaces form an affine space] *Arch. Math.* (*Basel*) **59** (1992), *no.* 5, 496–504. (Franz B. Kalhoff) **93k:51004** 51A99 (20B25, 51A30)

— Configurational conditions and digraphs. *J. Geom.* **43** (1992), *no.* 1-2, 22–29. (R. Fritsch) **93e:51003** 51A20 (05C20, 51D15, 51D20)

André, Yves Mumford-Tate groups of mixed Hodge structures and the theorem of the fixed part. *Compositio Math.* **82** (1992), *no.* 1, 1–24. (Min Ho Lee) **93b:14026** 14D07 (14C30)

Andrea, Stephen A. (*with* Berry, T. G.) Continued fractions and periodic Jacobi matrices. *Linear Algebra Appl.* **161** (1992), 117–134. (M. Znojil) **93e:15002** 15A18 (12Y05, 14H05, 39A70, 47A10, 47B99)

Andreadakis, S. (*with* Gupta, Chander Kanta) Automorphism groups of free metabelian nilpotent groups. *Algebra and Logic* **29** (1990), *no.* 6, 480–483 (1991). (Introduction) **93c:20065** 20F28 (20F18)

— (*with* Raptis, E.; Varsos, D.) Hopficity of certain HNN-extensions. *Comm. Algebra* **20** (1992), *no.* 5, 1511–1533. (David Meier) **93g:20043** 20E06 (20F05)

Andreae, Thomas Extremal graphs for the unit interval number. *Contemporary methods in graph theory*, 73–81, *Bibliographisches Inst., Mannheim*, 1990. (J. R. Griggs) **93a:05071** 05C35

— Some results on visibility graphs. (English summary) Combinatorial methods in VLSI. *Discrete Appl. Math.* **40** (1992), *no.* 1, 5–17. (Charles H. C. Little) **93k:05142** 05C75 (68Q25, 68R10)

d'Andréa-Novel, B. (*with* Campion, Guy; Bastin, G.) Controllability and state feedback stabilizability of nonholonomic mechanical systems. (English summary) *Advanced robot control* (*Grenoble*, 1990), 106–124, *Lecture Notes in Control and Inform. Sci.*, 162, *Springer, Berlin*, 1991. (Summary) **93f:70030** 70Q05 (70B15, 70F25, 93C85)

— (*with* Boustany, F.; Conrad, Francis) Control of an overhead crane: stabilization of flexibilities. *Boundary control and boundary variation* (*Sophia-Antipolis*, 1990), 1–26, *Lecture Notes in Control and Inform. Sci.*, 178, *Springer, Berlin*, 1992. (*see* **93b:49001**) 93D15 (93C95)

— (*with* Martin, Philippe; Sepulchre, R.) Full linearization of a class of mechanical systems via dynamic state feedback. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, II* (*Kobe*, 1991), 327–332, *Mita, Tokyo*, 1992. (*see* **93g:93006**) 93B18 (70Q05)

Andreassen, Øyvind (*with* Wasberg, Carl Erik) Pseudospectral methods with open boundary conditions for the study of atmospheric wave phenomena. (English summary) *Spectral and high order methods for partial differential equations* (*Como*, 1989), 459–465, *North-Holland, Amsterdam*, 1990. (*see* **93d:65005**) 65N35 (76C15, 76M25)

Andreatta, M. (*with* Lanteri, Antonio) On projective surfaces arising from an adjunction process. *Japan. J. Math.* (*N.S.*) **17** (1991), *no.* 2, 285–298. (Jonathan M. Wahl) **93f:14018** 14J10 (14J26)

— (*with* Palleschi, Marino) On the 2 very ampleness of the adjoint bundle. With an appendix by E. Ballico. *Manuscripta Math.* **73** (1991), *no.* 1, 45–62. (Elvira Laura Livorni) **93a:14005** 14C20 (14J25)

— (*with* Ballico, Edoardo; Wiśniewski, Jarosław A.) Projective manifolds containing large linear subspaces. *Classification of irregular varieties* (*Trento*, 1990), 1–11, *Lecture Notes in Math.*, 1515, *Springer, Berlin*, 1992. (Marino Palleschi) **93i:14006** 14C20 (14J40)

— (*with* Ballico, Edoardo; Wiśniewski, Jarosław A.) Vector bundles and adjunction. *Internat. J. Math.* **3** (1992), *no.* 3, 331–340. (Antonio Lanteri) **93h:14031** 14J60 (14C20)

Andreev, A. *see* **Andreev, Andrei St.**

Andreev, A. A. Nonlocal boundary value problems for a model degenerate system of hyperbolic type. (Russian) *Boundary value problems for equations in mathematical physics* (*Russian*), 3–6, *Kuibyshev. Gos. Ped. Inst., Kuybyshev*, 1991. (*see* **93f:35006**) 35L80

Andreev, A. B. (*with* Kascieva, V. A.; Vanmaele, M.) Some results in lumped mass finite-element approximation of eigenvalue problems using numerical quadrature formulas. (English summary) *J. Comput. Appl. Math.* **43** (1992), *no.* 3, 291–311. (Georges A. Lebaud) **93k:65088** 65N30 (65N25)

Andreev, Andrei St. (*with* Atanassova, Lidiya) On some higher order interval methods. (English summary) *Computer arithmetic, scientific computation and mathematical modelling* (*Albena*, 1990), 265–279, *IMACS Ann. Comput. Appl. Math.*, 12, *Baltzer, Basel*, 1991. (Summary) **93h:65065** 65G10 (65H05)

— (*with* Kyurkchiev, Nikolai V.) On the generalization of the Alefeld-Herzberger's method. (German summary) *Computing* **47** (1992), *no.* 3-4, 355–360. (Summary) **93a:65064** 65H05 (65G10)

— *see also* **Mathematical modelling and scientific computations, 93a:65004**

Andreev, O. D. Modular invariant one-point correlation functions for SU(2) Wess-Zumino model. (English summary) *Internat. J. Modern Phys. A* **7** (1992), *no.* 25, 6257–6272. (Yi Xin Chen) **93i:81204** 81T40 (81R10)

Andreev, V. A. The inverse scattering method in equations in quantum optics. II. Singular and radiation solutions. (Russian. English summary) *Trudy Fiz. Inst. Lebedev.* **211** (1991), 3–37. (Woodford W. Zachary) **93i:81312** 81V80 (34A55, 34L25, 34L40, 35Q55)

— (*with* Lerner, P. B.) Supersymmetry of multiphoton transitions. *Nuovo Cimento A* (11) **105** (1992), *no.* 6, 773–779. (Alexei D. Kiselev) **93f:81168** 81V80 (81Q60)

— (*with* Ivanova, O. A.) The dynamics of three-boson interaction and algebraic Bethe ansatz. (English summary) *Phys. Lett. A* **171** (1992), *no.* 3-4, 145–150. (Yu Kui Zhou) **93k:82004** 82B10 (81V70)

— (*with* Kharchev, S. M.; Shmakova, M. V.) The supersymmetric structure of the Kadomtsev-Petviashvili equation: a connection between supersymmetry and Bäcklund transformations. (Russian. English and Russian summaries) *Teoret. Mat. Fiz.* **91** (1992), *no.* 3, 426–432; *translation in Theoret. and Math. Phys.* **91** (1992), *no.* 3, 623–628. (Vladimir Mikhalev) **93h:58064** 58F07 (35Q58, 58F37, 81T60)

Andreev, V. K. (*with* Rodionov, A. A.) Instability under stretching of a cylindrical layer of fluid. (Russian) *Prikl. Mekh. Tekhn. Fiz.* **1992**, *no.* 4, 100–107; *translation in J. Appl. Mech. Tech. Phys.* **33** (1992), *no.* 4, 567–573 (1993). (From the text) **93h:76027** 76E10 (76B45, 76C05)

Andreeva, E. A. (*with* Pickenhain, Sabine) Duality in optimal control problems with retarded argument. (Russian) *Geometric problems in the theory of functions and sets* (*Russian*), 15–23, *Kalinin. Gos. Univ., Kalinin*, 1989. (Rolf Klötzler) **93a:49021** 49N15 (34K05, 49K15)

— (*with* Kolmanovskiĭ, V. B.; Shaĭkhet, L. E.) ★ Управление системами с последействием. (Russian. English and Russian summaries) [Control of systems with aftereffect] "*Nauka*", *Moscow*, 1992. 336 *pp. ISBN* 5-02-014875-X (B. Mordukhovich) **93i:49001** 49–02 (34K35, 49K25, 93–02, 93C30)

Andreeva, I. Yu. (*with* Sesekin, A. N.) A degenerate linear-quadratic problem of periodic optimization. (Russian. Russian summary) *Nonlinear oscillations and control theory* (*Russian*), 19–28, 87, *Udmurt. Gos. Univ., Izhevsk*, 1989. (*see* **93m:00031**) 49N10 (49N20)

Andreian Cazacu, Cabiria On the disc theorem. Proceedings of the Tenth Conference on Analytic Functions (Szczyrk, 1990). *Ann. Polon. Math.* **55** (1991), 1–10. (Summary) **93f:30032** 30D35 (30F99)

— Erratum to the paper: "On the disc theorem" [Ann. Polon. Math. **55** (1991), 1–10; MR 93f:30032]. *Ann. Polon. Math.* **57** (1992), *no.* 3, 303. (Editors) **93k:30042** 30D35 (30F99)

André-Jeannin, Richard On the equations $U_n = U_q x^2$, where q is odd, and $V_n = V_q x^2$, where q is even. *Fibonacci Quart.* **30** (1992), *no.* 2, 133–135. (M. A. Owens) **93c:11008** 11B39

Andréka, Hajnal (*with* Németi, István) On Jónsson's clones of operations on binary relations. *Algebraic logic* (*Budapest*, 1988), 431–442, *Colloq. Math. Soc. János Bolyai*, 54, *North-Holland, Amsterdam*, 1991. (D. Monk) **93b:03115** 03G15 (03G25, 06A15, 08A40)

— (*with* Düntsch, I.; Németi, István) A nonpermutational integral relation algebra. *Michigan Math. J.* **39** (1992), *no.* 3, 371–384. (D. Monk) **93i:03089** 03G15

Andres, Ján (*with* Vlček, Vladimír) Asymptotic behaviour of solutions to the nth order nonlinear differential equation under forcing. (Italian summary) *Rend. Istit. Mat. Univ. Trieste* **21** (1989), *no.* 1, 128–143 (1991). (Stanisław Sędziwy) **93c:34079** 34C11 (34D05)

— (*with* Gaudenzi, Marcellino; Zanolin, Fabio) A transformation theorem for periodic solutions of nondissipative systems. *Rend. Sem. Mat. Univ. Politec. Torino* **48** (1990), *no.* 2, 171–186 (1992). (Bogdan Przeradzki) **93h:34059** 34C25

— Periodic solutions of the third-order differential equation with right-hand side in the form of nonlinear restoring term plus general gradient-like part. *Acta Univ. Palack. Olomuc. Fac. Rerum Natur. Math.* **30** (1991), 143–148. (From the text) **93c:34090** 34C25 (34B15)

— (*with* Vlček, Vladimír) Note to the existence of periodic solutions for higher-order differential equations with nonlinear restoring term and time-variable coefficients. *Acta Univ. Palack. Olomuc. Fac. Rerum Natur. Math.* **30** (1991), 149–157. (From the introduction) **93e:34057** 34C25

— Note to a certain third-order nonlinear differential equation related to the problem of Littlewood. (English summary) Third International Seminar on Ordinary Differential Equations (Poznań, 1990). *Fasc. Math. No.* 23 (1991), 5–8 (1992). (Li Li) **93g:34050** 34C11 (34D20, 70K20)

— (*with* Vlček, Vladimír) Periodic solutions of the third order parametric differential equations involving large nonlinearities. *Math. Slovaca* **41** (1991), *no.* 4, 337–349. (Anthony Uyi Afuwape) **93e:34055** 34C25 (34B15)

— Asymptotic properties of solutions to quasi-linear differential systems. (English summary) Asymptotic methods in analysis and combinatorics. *J. Comput. Appl. Math.* **41** (1992), *no.* 1-2, 57–64. (Miklós Farkas) **93h:34049** 34C11 (34A34, 34C25)

— Existence of periodic solutions for an nth order differential equation with nonlinear restoring term and time-variable coefficients. *J. Math. Anal. Appl.* **167** (1992), *no.* 1, 1–11. (I. Kiguradze) **93e:34056** 34C25

— Note to the asymptotic behaviour of solutions of damped pendulum equations under forcing. *Nonlinear Anal.* **18** (1992), *no.* 8, 705–712. (John Brindley) **93d:34062** 34C11 (34C10, 34D05, 70K40)

de Andrés, Luis C. (*with* Fernández, Marisa Luisa; Gray, Alfred; Mencía, José J.) Moduli spaces of complex structures on compact four-dimensional nilmanifolds. (Italian summary) *Boll. Un. Mat. Ital. A* (7) **5** (1991), *no.* 3, 381–389. (Elsa Abbena) **93e:58022** 58D27 (53C15, 53C50)

— (*with* Fernández, Marisa Luisa; de León, Manuel; Mencía, José J.) Some six-dimensional compact symplectic and complex solvmanifolds. (English and Italian summaries) *Rend. Mat. Appl.* (7) **12** (1992), *no.* 1, 59–67. (Elsa Abbena) **93h:53030** 53C15 (53C55)

fernandez Andrés, Manuel *see* **Fernandez Andrés, Manuel**

Andretta, Alessandro Building iteration trees. *J. Symbolic Logic* **56** (1991), *no.* 4, 1369–1384. (A. Kanamori) **93e:03075** 03E55 (03E05)

palmer Andreu, Vicente *see* **Palmer Andreu, Vicente**

Andreucci, Daniele New results on the Cauchy problem for parabolic systems and equations with strongly nonlinear sources. (English summary) *Manuscripta Math.* **77** (1992), *no.* 2-3, 127–159. (Ya Zhe Chen) **93k:35129** 35K45 (35K65)

— (*with* DiBenedetto, E.) Weak solutions of the type of nonstationary filtration. *Nonlinear Anal.* **19** (1992), *no.* 1, 29–41. (Ioan I. Vrabie) **93g:35062** 35K55 (35D05, 76S05)

Andrew, Alan L. (*with* Chu, K.-w. Eric; Lancaster, Peter) Sensitivities of eigenvalues and eigenvectors of problems nonlinear in the eigenparameter. *Appl. Math. Lett.* **5** (1992), *no.* 3, 69–72. (Anna Lee) **93d:15013** 15A18 (15A54, 73K40)

Andrews, Donald W. K. Generic uniform convergence. (English summary) *Econometric Theory* **8** (1992), *no.* 2, 241–257. (B. M. Pötscher) **93i:60068** 60F99 (60B12, 62E20)

— (*with* Monahan, J. Christopher) An improved heteroskedasticity and autocorrelation consistent covariance matrix estimator. *Econometrica* **60** (1992), *no.* 4, 953–966. 62P20 (62G99, 62M10)

Andrews, George E. Three aspects of partitions. *Séminaire Lotharingien de Combinatoire* (*Salzburg*, 1990), 5–18, *Publ. Inst. Rech. Math. Av.*, 462, *Univ. Louis Pasteur, Strasbourg*, 1991. (Richard P. Lewis) **93j:11066** 11P83 (05A17, 05A19, 05A30, 11P81)

— Partitions and the Gaussian sum. *The mathematical heritage of C. F. Gauss*, 35–42, *World Sci. Publishing, River Edge, NJ*, 1991. (Christian Krattenthaler) **93c:05013** 05A17 (05A19, 11P81)

— Bailey chains and generalized Lambert series. I. Four identities of Ramanujan. *Illinois J. Math.* **36** (1992), *no.* 2, 251–274. (Christian Krattenthaler) **93i:11020** 11B65 (05A30, 33D20)

— (*with* Berndt, Bruce C.; Lorentzen, Lisa; Lamphere, Robert L.) The continued fractions found in the unorganized portions of Ramanujan's notebooks. *Mem. Amer. Math. Soc.* **99** (1992), *no.* 477, vi+71 *pp.* (Liang-Cheng Zhang) **93f:11008** 11A55 (01A60, 05A19, 11B65)

Andrews, Kevin T. (*with* Mikelić, Andro; Shi, Peter; Shillor, Meir; Wright, Stephen James) One-dimensional thermoelastic contact with a stress-dependent radiation condition. (English summary) *SIAM J. Math. Anal.* **23** (1992), *no.* 6, 1393–1416. (Ján Lovišek) **93i:73047** 73T05 (35K99, 73B30)

razafy Andriamampianina, Désiré *see* **Razafy Andriamampianina, Désiré**

Andrianov, Anatoliĭ Nikolaevich Composition of solutions of quadratic Diophantine equations. (Russian) *Uspekhi Mat. Nauk* **46** (1991), *no.* 2(278), 3–40, 240; *translation in Russian Math. Surveys* **46** (1991), *no.* 2, 1–44. (Summary) **93e:11049** 11E25 (11D09)

Andrianov, D. L. (*with* Maksimov, V. P.; Rumyantsev, A. N.) Some boundary value problems in economic dynamics. (Russian. Russian summary) *Functional-differential equations* (*Russian*), 10–27, *Perm. Politekh. Inst., Permʹ*, 1991. (Summary) **93h:34117** 34K10 (90A16, 90A30, 92D40)

Andrianov, I. V. (*with* Shevchenko, V. V.) Punctured plates and shells. (Russian. Russian summary) *Asymptotic methods in the theory of systems* (*Russian*), 217–243, 280, *Akad. Nauk SSSR Sibirsk. Otdel., Irkut·sk. Nauchn. Tsentr, Irkutsk*, 1989. (*see* **93d:00031**) 73K12 (73K20)

— (*with* Shevchenko, V. V.) Solution of the cell problem for the case of a large square hole in problems of the bending and oscillations of densely punctured plates. (Russian. Russian summary) *Differential equations and their applications in physics* (*Russian*), 83–89, 107, *Dnepropetrovsk. Gos. Univ., Dnepropetrovsk*, 1990. (*see* **93k:00023**) 73K10

— (*with* Obraztsov, I. F.; Nerubaĭlo, B. V.) ★ Асимптотические методы в строительной механике тонкостенных конструкций. (Russian) [Asymptotic methods in the structural mechanics of thin-walled structures] "*Mashinostroenie*", *Moscow*, 1991. 416 *pp.* (Publisher's description) **93a:73064** 73K99 (41A60, 73B30, 73K10, 73K15)

— Application of Padé-approximants in perturbation methods. (English and Russian summaries) *Adv. in Mech.* **14** (1991), *no.* 2, 3–25. (Chandra B. Sharma) **93j:73061** 73K99 (70–08, 70K99, 73V25, 76M99)

— (*with* Manevich, L. I.) Asymptotology. I. Problems, ideas and results. (English summary) *J. Natur. Geom.* **2** (1992), *no.* 2, 137–150. 00A69 (00A30, 81V99)

Andrianov, Yu. A. The module of principal units of a regular local field. (Russian) *Rings and linear groups* (*Russian*), 4–13, *Kuban. Gos. Univ., Krasnodar*, 1988. (*see* **93i:00023**) 16U60

Andrica, Dorin The Morse-Smale characteristic of a compact differentiable manifold. *Seminar on Geometry*, 19–32, *Preprint*, 91-2, "*Babeş-Bolyai*" *Univ., Cluj-Napoca*, 1991. (Leslie Charles Wilson) **93m:57037** 57R70

— Some remarks on the equation $f(x) = 0$ in $\mathbf{R}^n$. *Mathematica* (*Cluj*) **33(56)** (1991), *no.* 1-2, 1–7. (J. P. Holmes) **93e:58015** 58C25

— (*with* Fejes Tóth, László) Some remarks on Stieltjes constants of the zeta function. *Stud. Cerc. Mat.* **43** (1991), *no.* 1-2, 3–9. (Daniel A. Goldston) **93c:11066** 11M06

Andrieux, Stéphane (*with* Ben Abda, Amel) Identification de fissures planes par une donnée de bord unique: un procédé direct de localisation et d'identification. (English and French summaries) [Identification of planar cracks by unique boundary measurement: a direct location and identification process] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 12, 1323–1328. (Giovanni Crosta) **93k:73021** 73C99 (31B20, 35R30, 73M25)

— (*with* Léger, A.) Multiple scaling method for the calculation of threaded assemblies. (English summary) *Comput. Methods Appl. Mech. Engrg.* **102** (1993), *no.* 3, 293–317. (Luis Trabucho) **93m:73033** 73K99 (73V05)

Andrievskiĭ, V. V. Approximation of analytic functions and their real part. *Constr. Approx.* **8** (1992), *no.* 2, 233–239. (D. M. Israfilov) **93f:30039** 30E10

— (*with* Hansen, Wolfhard; Nadirashvili, N. S.) Isoperimetric inequalities for capacities in the plane. *Math. Ann.* **292** (1992), *no.* 2, 191–195. 31A15 (30C85)

— (*with* Gaier, Dieter) Uniform convergence of Bieberbach polynomials in domains with piecewise quasianalytic boundary. *Mitt. Math. Sem. Giessen No.* 211 (1992), 49–60. (N. Papamichael) **93k:30013** 30C30 (30C35)

— Uniform harmonic approximation on compact sets in $\mathbf{R}^k$, $k \geq 3$. (English summary) *SIAM J. Math. Anal.* **24** (1993), *no.* 1, 216–222. (Norman Levenberg) **93m:41010** 41A10 (31B05)

Andriyanov, V. L. On an application of boundary value problems in the theory of the interpolation of analytic functions. (Russian) *Differential and integral equations* (*Russian*), 106–113, *Gorʹkov. Gos. Univ., Gorki*, 1990. (*see* **93g:34001**) 30E05

Andronikof, Emmanuel On the $\mathscr{E}^\infty$-singularities of regular holonomic distributions. (English and French summaries) *Ann. Inst. Fourier* (*Grenoble*) **42** (1992), *no.* 3, 695–705. (Luis Narváez Macarro) **93h:58146** 58G07 (35A20)

— The Kashiwara conjugation and wave-front sets of regular holonomic distributions on a complex manifold. (English summary) *Invent. Math.* **111** (1993), *no.* 1, 35–49. (Daniel Barlet) **93k:32016** 32C38 (35A27, 35A30, 58G07)

Andronov, I. V. Application of point models of cracks in boundary value contact problems of acoustics. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **32** (1992), *no.* 2, 285–295; *translation in Comput. Math. Math. Phys.* **32** (1992), *no.* 2, 236–244. (B. Belinskiy) **93g:73043** 73D25 (35Q35, 47F05, 47N20, 76Q05)

Andronov, I. V. Integro-differential convolution equations on a finite interval with a kernel that has a logarithmic singularity. (Russian. English and Russian summaries) *Zap. Nauchn. Sem. S.-Peterburg. Otdel. Mat. Inst. Steklov. (POMI)* **203** (1992), *Mat. Voprosy Teor. Rasprostr. Voln.* 22, 5–11, 173. (Summary) **93g:45008** 45J05

Androsenko, N. P. Second-order differential-difference equations with instantaneous correction of initial data. (Russian) *Akad. Nauk Ukrainy Inst. Mat. Preprint* **1991,** *no.* 26, 19 *pp.* (Summary) **93c:34140** 34K15 (34A37, 34K05)

— (*with* Mitropol'skiĭ, Yu. A.) Asymptotic integration of second-order differential-difference equations with instantaneous correction of initial data. (Russian. Russian summary) *Akad. Nauk Ukrainy Inst. Mat. Preprint* **1992,** *no.* 4, 25 *pp.* (Summary) **93g:34127** 34K99

— (*with* Mitropol'skiĭ, Yu. A.; Elgondyev, K. K.; Samoĭlenko, V. Gr.) Construction of asymptotic approximations for weakly nonlinear first-order differential-difference equations with instantaneous correction of the initial data. (Russian) *Akad. Nauk Ukrainy Inst. Mat. Preprint* **1992,** *no.* 6, 1–13. (Klaus Morgenthal) **93j:34115** 34K25 (34K15)

Andruchow, E. (*with* Recht, Lázaro; Stojanoff, D.) The space of spectral measures is a homogeneous reductive space. (English summary) *Integral Equations Operator Theory* **16** (1993), *no.* 1, 1–14. (Stanisław Goldstein) **93j:46078** 46L89 (46L50, 47B15, 47D99, 58B20)

Andrunakievich, V. A. *see* **Birthday: Andrunakievich, V. A.**

Andrus, J. F. An exterior point method for the convex programming problem. *J. Optim. Theory Appl.* **72** (1992), *no.* 1, 37–63. (Eugenia Duca) **93f:90126** 90C25 (65K05)

— Stability of a multi-rate method for numerical integration of ODEs. (English summary) *Comput. Math. Appl.* **25** (1993), *no.* 2, 3–14. (Summary) **93j:65123** 65L20 (34A50, 65L06)

Andruskiewitsch, Nicolás On the realization of forms of affine Kac-Moody algebras. *Indag. Math. (N.S.)* **2** (1991), *no.* 3, 275–281. (Guy Rousseau) **93f:17036** 17B67

— The representation theory of inner almost compact forms of Kac-Moody algebras. *Tôhoku Math. J.* (2) **43** (1991), *no.* 3, 425–445. (From the introduction) **93c:17011** 17B10

— On spherical modules. *New developments in Lie theory and their applications (Córdoba, 1989)*, 187–198, *Progr. Math.*, 105, *Birkhäuser Boston, Boston, MA*, 1992. (Jia-Chen Ye) **93i:20047** 20G05 (14L30, 22E99)

— Some exceptional compact matrix pseudogroups. (English and French summaries) *Bull. Soc. Math. France* **120** (1992), *no.* 3, 297–325. (Benjamin David Enriquez) **93k:17023** 17B37 (16W30, 46L89, 58B30)

— (*with* Enriquez, Benjamin) Examples of compact matrix pseudogroups arising from the twisting operation. (English summary) *Comm. Math. Phys.* **149** (1992), *no.* 1, 195–207. (Albert Jeu-Liang Sheu) **93k:17022** 17B37 (16W30, 46L89, 81R50)

— Some forms of Kac-Moody algebras. *J. Algebra* **147** (1992), *no.* 2, 324–344. (Maarten Bergvelt) **93j:17048** 17B67

Andruszkiewicz, R. R. On accessible subrings of associative rings. *Proc. Edinburgh Math. Soc.* (2) **35** (1992), *no.* 1, 101–107. (André Leroy) **93a:16017** 16N40

Andrzejewski, Paweł Equivariant finiteness obstruction and its geometric applications—a survey. *Algebraic topology Poznań 1989*, 20–37, *Lecture Notes in Math.*, 1474, *Springer, Berlin*, 1991. (Sören Illman) **93d:57041** 57Q12 (57Q91, 57S15)

Anellis, Irving H. (*with* Houser, Nathan R.) Nineteenth-century roots of algebraic logic and universal algebra. *Algebraic logic (Budapest, 1988)*, 1–36, *Colloq. Math. Soc. János Bolyai*, 54, *North-Holland, Amsterdam*, 1991. (Marcel Guillaume) **93a:01027** 01A55 (03–03, 03B10, 03Gxx, 06–03, 08–03)

— Hanf's bibliography. *Modern Logic* **1** (1991), *no.* 4, 354. (Editors) **93b:01041b** 01A70

— A note and correction on Zbigniew Lis' contributions to the tree method: "From semantic tableaux to Smullyan trees: a history of the falsifiability tree method" [Modern Logic **1** (1990), no. 1, 36–69; MR 92a:03001]. *Modern Logic* **2** (1991), *no.* 2, 219. (Summary) **93a:03003** 03–03 (01A60, 03B10, 03B35, 03C07, 03C13)

— Joon Fang of Jaean—a retrospective. *Modern Logic* **3** (1993), *no.* 2, 145–155. (J. S. Joel) **93m:01049** 01A70 (01A60, 03A05)

— (*with* Drucker, Thomas) In memoriam—William C. Kneale. *Modern Logic* **3** (1993), *no.* 2, 158–161. (Editors) **93m:01050** 01A70 (03–03)

— *see also* **Special Issue: van Heijenoort, Jean, 93d:03003**

Anezíris, Charílaos N. Dynamics of and superselection rules on one-dimensional multiply connected systems. *Internat. J. Modern Phys. A* **6** (1991), *no.* 13, 2289–2307. (H. Hogreve) **93b:81055** 81Q10

— Statistics of linked strings. (English summary) *Modern Phys. Lett. A* **7** (1992), *no.* 40, 3789–3800. (Yu Liang Liu) **93k:81111** 81S05 (20F29, 81T30)

Anfinogenov, A. Yu. (*with* Lifanov, I. I.) On numerical solution of integral equations of planar and spatial diffraction problems. (English summary) *Russian J. Numer. Anal. Math. Modelling* **7** (1992), *no.* 5, 387–403. (Summary) **93i:78001** 78–08 (65P05, 76M25, 76Q05)

Ang, D. D. *see* **Dặng Đình Áng**

Ang, Dang Dinh *see* **Dặng Đình Áng**

Ang, Tian Se (*with* Lam, Lay Yong) ★ Fleeting footsteps. Tracing the conception of arithmetic and algebra in ancient China. With an English translation of *The mathematical classic* of Sun Zi. *World Scientific Publishing Co., Inc., River Edge, NJ*, 1992. xvi+199 *pp. ISBN* 981-02-1118-X (Catherine Jami) **93m:01014** 01A25

— The mathematical relations between ancient China and India. (Chinese) Translated by Fei Jin Luo. *Collected research papers on the history of mathematics, Vol.* 3 (*Chinese*), 6–15, *Inner Mongolia Univ. Press, Hohhot*, 1992. (*see* **93i:01006**) 01A25 (01A32)

Angelescu, N. (*with* Verbeure, André; Zagrebnov, V. A.) On Bogoliubov's model of superfluidity. *J. Phys. A* **25** (1992), *no.* 12, 3473–3491. (Summary) **93d:82082** 82D50

— (*with* Bundaru, M.) A remark on the condensation in the hard-core lattice Bose gas. (English summary) *J. Statist. Phys.* **69** (1992), *no.* 3-4, 897–903. (Summary) **93i:82004** 82B10 (82B20)

de Angelis, G. F. *see* **De Angelis, G. F.**

Angelis, Lefteris (*with* Kageyama, Sanpei; Moyssiadis, Chronis) Tables of *A*-efficient BTIUB designs. (English summary) *Bull. Fac. School Ed. Hiroshima Univ. Part II* **15** (1993), 45–50. 05B05

Angell, I. O. (*with* Moore, R. E. M.) Voronoĭ polygons and polyhedra. (English summary) *J. Comput. Phys.* **105** (1993), *no.* 2, 301–305. (Summary) **93m:68179** 68U05 (52B55)

Angell, Thomas S. (*with* Kleinman, Ralph E.) A constructive method for shape optimization: a problem in hydromechanics. *IMA J. Appl. Math.* **47** (1991), *no.* 3, 265–281. (Masato Koda) **93d:49045** 49Q10 (49K20, 49K22, 76B99)

— (*with* Kirsch, Andreas) Multicriteria optimization in antenna design. (English summary) *Math. Methods Appl. Sci.* **15** (1992), *no.* 9, 647–660. (Summary) **93h:90078** 90C29 (78A50, 90C90)

— (*with* Kirsch, Andreas) The conductive boundary condition for Maxwell's equations. (English summary) *SIAM J. Appl. Math.* **52** (1992), *no.* 6, 1597–1610. (W. E. Williams) **93k:78009** 78A45 (35Q60, 86A20)

hog-Angeloni, Cynthia *see* **Hog-Angeloni, Cynthia**

Angelopoulos, Eugénios Propriétés universelles relatives à la réduction du produit tensoriel de g-modules. (English summary) [Universal properties related to the reduction of the tensor product of g-modules] *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 10, 705–708. (Summary) **93c:17012** 17B10

Angelos, James R. (*with* Kaufman, E., Jr.; Lenker, T.; Henry, M. S.) Bounds for extended Lipschitz constants. *Acta Math. Hungar.* **58** (1991), *no.* 1-2, 81–93. (Martin Bartelt) **93c:41010** 41A10 (41A50)

— (*with* Cowen, Carl C.; Narayan, Sivaram K.) Triangular truncation and finding the norm of a Hadamard multiplier. *Linear Algebra Appl.* **170** (1992), 117–135. (Jorma Kaarlo Merikoski) **93d:15039** 15A60

Angelov, Plamen (*with* Filev, Dimiter) Fuzzy optimal control. *Fuzzy Sets and Systems* **47** (1992), *no.* 2, 151–156. (J. J. Buckley) **93d:93050** 93C42 (04A72, 49K30, 90C70)

— (*with* Filev, Dimiter) Optimal control in a fuzzy environment. (English summary) *Yugosl. J. Oper. Res.* **2** (1992), *no.* 1, 33–43. (J. J. Buckley) **93i:93080** 93C42

Angelov, V. G. Uniform asymptotic stability and contractive semigroups of mappings in uniform spaces. *Acta Math. Hungar.* **59** (1992), *no.* 3-4, 345–353. (A. W. Hager) **93i:54032** 54H15 (47H20)

Angenent, Sigurd B. Shrinking doughnuts. *Nonlinear diffusion equations and their equilibrium states*, 3 (*Gregynog*, 1989), 21–38, *Progr. Nonlinear Differential Equations Appl.*, 7, *Birkhäuser Boston, Boston, MA*, 1992. (Anders Linnér) **93d:58032** 58E12 (35B99, 53A10)

Angermann, Lutz An a posteriori estimation for the solution of elliptic boundary value problems by means of upwind FEM. *IMA J. Numer. Anal.* **12** (1992), *no.* 2, 201–215. (Stephen W. Brady) **93g:65139** 65N30 (65N15)

Angers, Jean-François (*with* Delampady, Mohan) Hierarchical Bayesian curve fitting and smoothing. (French summary) *Canad. J. Statist.* **20** (1992), *no.* 1, 35–49. (D. V. Lindley) **93e:62100** 62G05 (62F15)

Anghel, N. Extrinsic upper bounds for eigenvalues of Dirac-type operators. *Proc. Amer. Math. Soc.* **117** (1993), *no.* 2, 501–509. (Stig I. Andersson) **93d:58171** 58G25 (53C42)

Angleraud, Patrice Caractérisation duale du bon comportement de fonctions convexes. (English summary) [Dual characterization of good behavior for convex functions] *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 7, 583–586. (Juan-Enrique Martínez-Legaz) **93c:49023** 49N15 (26B25, 90C25)

Anglin, J. R. (*with* Myers, Robert C.) Wormholes and supersymmetry. (English summary) *Phys. Rev. D* (3) **46** (1992), *no.* 6, 2469–2479. (Annalisa Marzuoli) **93k:83025** 83C45 (81T60, 83E50)

Anglin, W. S. Mathematics and history. *Math. Intelligencer* **14** (1992), *no.* 4, 6–12. (Michael Otte) **93m:01004** 01A05 (00A30)

Angluin, Dana (*with* Dean, Thomas; Basye, Kenneth; et al.) Inferring finite automata with stochastic output functions and an application to map learning. (English summary) *AAAI-92. Proceedings, Tenth National Conference on Artificial Intelligence (San Jose, CA*, 1992), 208–214, *Amer. Assoc. Artif. Intell., Menlo Park, CA*, 1992. (*see* **93j:68007**) 68T05 (68T10)

Ango Nzé, Patrick (*with* Portier, Bruno) Estimation de la densité et de la fonction de régression d'un processus stationnaire géométriquement β-mélangeant. (English and French summaries) [Estimation of the density or of the regression function for a β-mixing stationary process] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 8, 953–956. (Summary) **93h:62066** 62G05 (62M99)

— Critères d'ergodicité de quelques modèles à représentation markovienne. (English and French summaries) [Criteria of ergodicity for some models with a Markovian representation] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 12, 1301–1304. (Summary) **93h:60103** 60J05 (62M10)

Angot, Philippe (*with* Caltagirone, Jean-Paul; Khadra, Khodor) Une méthode adaptative de raffinement local: la correction du flux à l'interface. (English and French summaries) [An adaptative method for local mesh refinement: the flux interface correction] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 6, 739–745. 65N55

Angrisani, Massimo A condition of contractive type for common fixed points. *Mathematica (Cluj)* **34(57)** (1992), *no.* 1, 9-16. 54H25

Angulo Ibañez, J. M. (*with* Gutiérrez Jáimez, Ramón; Juan Gonzalez, A.; Pérez, Rigoberto) Inference in lognormal multidimensional diffusion processes with exogenous factors: application to modelling in economics. *Appl. Stochastic Models Data Anal.* **7** (1991), *no.* 4, 295–316. (Summary) **93k:62172** 62M05

Anguraj, A. (*with* Balachandran, Krishnan) Existence, continuous dependence and periodic solutions of nonlinear integrodifferential equation with infinite delay. (English summary) *Riv. Mat. Univ. Parma* (4) **17** (1991), 171–180 (1992). (George Seifert) **93f:45010** 45J05

— (*with* Balachandran, Krishnan) Existence of solution for a mixed neutral system. (English summary) *J. Appl. Math. Stochastic Anal.* **5** (1992), *no.* 3, 221–226. (K. Smítalová) **93h:34115** 34K05 (34K40)

— (*with* Balachandran, Krishnan) Existence of solutions of nonlinear differential inclusions. *Mem. Fac. Sci. Kôchi Univ. Ser. A Math.* **13** (1992), 61–66. (Evgenios P. Avgerinos) **93h:34025** 34A60 (47N20)

— (*with* Balachandran, Krishnan) On the solution sets of differential inclusion in Banach spaces. *Tamkang J. Math.* **23** (1992), *no.* 1, 59–65. (Evgenios P. Avgerinos) **93g:34023** 34A60 (34G20, 47N20)

Angus, John E. An alternative derivation of asymptotic normality for sample quantiles. *SIAM Rev.* **34** (1992), *no.* 2, 304–306. (Summary) **93c:62024** 62E20

— Limit laws in a stochastic model for profit from units sold under pro rata warranty. (English summary) *Comm. Statist. Stochastic Models* **9** (1993), *no.* 1, 1–12. (Summary) **93h:62190** 62P20 (62F12)
— Asymptotic theory for bootstrapping the extremes. (English summary) *Comm. Statist. Theory Methods* **22** (1993), *no.* 1, 15–30. (Summary) **93j:62112** 62G09
— Computer-assisted improvement of mean squared error in statistical estimation. (English summary) *Math. Comput. Simulation* **35** (1993), *no.* 1, 1–13. (Summary) **93k:62047** 62F10 (62C05)
phạm kỳ Anh *see* **Phạm Kỳ Anh**
Anh, Nguyen Huu *see* **Nguyễn Hữu Anh**
Ánh, P. N. *see* **Phạm Ngọc Ánh**
Anh, V. V. (*with* Lunney, K. E.) Spectral representation and ergodicity of asymptotically stationary processes. *Austral. J. Statist.* **33** (1991), *no.* 1, 85–94. (Ed McKenzie) **93b:60075** 60G12
— (*with* Lunney, K. E.) Generalised harmonic analysis of a class of nonstationary random fields. (English summary) *J. Austral. Math. Soc. Ser. A* **53** (1992), *no.* 3, 385–401. (M. M. Rao) **93i:60093** 60G60 (42B10, 62M99)
phạm Anh Minh *see* **Phạm Anh Minh**
lê Anh Vũ *see* **Lê Anh Vũ**
Anichini, G. (*with* Conti, Giuseppe) Existence of solutions of a boundary value problem through the solution map of a linearized type problem. *Rend. Sem. Mat. Univ. Politec. Torino* **48** (1990), *no.* 2, 149–159 (1992). (Jesús Hernández) **93d:34029** 34B15 (47H15, 47N20)
Anick, David J. Single loop space decompositions. *Trans. Amer. Math. Soc.* **334** (1992), *no.* 2, 929–940. (Elmer G. Rees) **93g:55011** 55P35 (55Q20)
— (*with* Peterson, F. P.) A_2-annihilated elements in $H_*(\Omega\Sigma\mathbf{RP}^2)$. *Proc. Amer. Math. Soc.* **117** (1993), *no.* 1, 243–250. (N. J. Kuhn) **93c:55020** 55S10 (55R40)
Anikonov, Yu. E. New equations and formulas in inverse problems for evolution equations. (Russian. Russian summary) *Complex analysis and mathematical physics* (*Russian*) (*Divnogorsk*, 1987), 20–28, 157, *Akad. Nauk SSSR Sibirsk. Otdel., Inst. Fiz., Krasnoyarsk*, 1988. (*see* **93b:32001**) 35R30 (35K10)
— Analytic methods in the theory of multidimensional inverse problems. (Russian) *Boundary value problems for nonclassical equations in mathematical physics* (*Russian*) (*Novosibirsk*, 1989), 3–9, *Akad. Nauk SSSR Sibirsk. Otdel., Inst. Mat., Novosibirsk*, 1989. (*see* **93d:35001**) 35R30
— Inverse problems for nonlinear equations. (Russian) *Nonclassical equations and equations of mixed type* (*Russian*), 21–31, *Akad. Nauk SSSR Sibirsk. Otdel., Inst. Mat., Novosibirsk*, 1990. (*see* **93b:35002**) 35R30 (35K55)
— (*with* Stepanov, V. N.) An inversion formula in a problem of integral geometry. (Russian) *Dokl. Akad. Nauk SSSR* **318** (1991), *no.* 2, 265–266; *translation in Soviet Math. Dokl.* **43** (1991), *no.* 3, 678–679 (1992). (R. G. Mukhometov) **93d:53090** 53C65
— New methods and results in multidimensional inverse problems for kinetic equations. *Ill-posed problems in natural sciences* (*Moscow*, 1991), 244–253, *VSP, Utrecht*, 1992. (*see* **93m:00041**) 35R30 (49K05, 82C40)
— Distribution functions, evolution equations and inverse problems. (Russian) *Dokl. Akad. Nauk* **323** (1992), *no.* 5, 871–875; *translation in Soviet Phys. Dokl.* **37** (1992), *no.* 4, 172–174. (Wen Huan Yu) **93m:35138** 35Q30 (35R30, 76D05)
— (*with* Smirnov, O. N.) Some algebraic questions in the theory of multidimensional inverse problems for nonlinear evolution equations. (Russian) *Dokl. Akad. Nauk* **324** (1992), *no.* 2, 303–308; *translation in Soviet Phys. Dokl.* **37** (1992), *no.* 5, 226–228. (Summary) **93i:35151** 35R30 (35K55)
— An inverse problem in mathematical biology. (Russian. Russian summary) *Sibirsk. Mat. Zh.* **33** (1992), *no.* 3, 21–25, 218; *translation in Siberian Math. J.* **33** (1992), *no.* 3, 385–388 (1993). (Summary) **93g:92018** 92D25 (35R10, 35R30)
— (*with* Bogolyubov, N. N.; Ershov, Yu. L.; Zhizhchenko, A. B.; Mishchenko, E. F.; Romanov, V. G.) Mikhail Mikhailovich Lavrent'ev (on the occasion of his sixtieth birthday). (Russian) *Uspekhi Mat. Nauk* **47** (1992), *no.* 3(285), 183–185; *translation in Russian Math. Surveys* **47** (1992), *no.* 3, 197–200. (Editors) **93h:01034** 01A70
Anile, A. M. (*with* Pennisi, Sebastiano; Sammartino, Marco) Covariant radiation hydrodynamics. (French summary) *Ann. Inst. H. Poincaré Phys. Théor.* **56** (1992), *no.* 1, 49–74. (L. F. Oster) **93a:85001** 85A25 (76Y05, 83C55, 85A30)
— Causality and dissipation phenomena in relativity. (Italian) *Boll. Un. Mat. Ital. A* (7) **6** (1992), *no.* 1, 35–47. (Gh. Procopiuc) **93c:83068** 83C55
— (*with* Pennisi, Sebastiano) Extended thermodynamics of the Blotekjaer hydrodynamical model for semiconductors. (English summary) *Contin. Mech. Thermodyn.* **4** (1992), *no.* 3, 187–197. (Ioan Bâldea) **93h:82068** 82C70 (78A02, 82C05, 82C35)
Anily, S. (*with* Hassin, Refael) The swapping problem. *Networks* **22** (1992), *no.* 4, 419–433. (Summary) **93c:05057** 05C35 (05C85, 68R10, 90B10)
— (*with* Federgruen, Awi) Two-echelon distribution systems with vehicle routing costs and central inventories. (English summary) *Oper. Res.* **41** (1993), *no.* 1, 37–47. (Summary) **93i:90039** 90B05
Aniol, Grażyna (*with* Pych-Taberska, Paulina) Approximation properties of the gamma and beta operators. (English summary) *Fasc. Math. No.* 22 (1991), 43–51 (1992). (Paşc Gâvruţa) **93f:41024** 41A25 (41A35)
Anishchenko, V. S. (*with* Neiman, A. B.) Structure and properties of chaos in the presence of noise. (English summary) *Nonlinear dynamics of structures* (*Vladimir Maiakovskiĭ*, 1990), 21–48, *World Sci. Publishing, River Edge, NJ*, 1991. (Summary) **93h:58093** 58F13 (34D45, 34F05)
— (*with* Safonova, M. A.; Chua, Leon O.) Stochastic resonance in Chua's circuit. (English summary) *Internat. J. Bifur. Chaos Appl. Sci. Engrg.* **2** (1992), *no.* 2, 397–401. 94C05 (58F13)
— (*with* Vadivasova, T. E.; Postnov, D. È.; Safonova, M. A.) Synchronization of chaos. (English summary) *Internat. J. Bifur. Chaos Appl. Sci. Engrg.* **2** (1992), *no.* 3, 633–644. (Summary) **93f:58141** 58F13 (34C15)
Anisimov, E. G. (*with* Anisimov, V. G.) A branch and bound algorithm for a class of problems in scheduling theory. (Russian. Russian summary) *Zh. Vychisl. Mat. i Mat. Fiz.* **32** (1992), *no.* 12, 2000–2005; *translation in Comput. Math. Math. Phys.* **32** (1992), *no.* 12, 1827–1832 (1993). 90C10 (90C27)
Anisimov, N. A. An algebra of regular macronets for formal specification of communication protocols. (Russian summary) *Comput. Artificial Intelligence* **10** (1991), *no.* 6, 541–560. (Neculai Curteanu) **93c:68075** 68Q90 (68Q10, 68Q60)
Anisimov, V. B. *see* **Anisimov, Vladimir Vladislavovich**
Anisimov, V. G. (*with* Anisimov, E. G.) A branch and bound algorithm for a class of problems in scheduling theory. (Russian. Russian summary) *Zh. Vychisl. Mat. i Mat. Fiz.* **32** (1992), *no.* 12, 2000–2005; *translation in Comput. Math. Math. Phys.* **32** (1992), *no.* 12, 1827–1832 (1993). 90C10 (90C27)
Anisimov, Vladimir Vladislavovich (*with* Atadzhanov, Kh. L.) ★ Асимптотический анализ очередей в системах с повторными вызовами и сдвоенными соединениями. (Russian. Russian summary) [Asymptotic analysis of queues in systems with repeated calls and with duplex connections] Препринт [Preprint], 91-28. *Akad. Nauk Ukrain. SSR, Inst. Kibernet., Kiev*, 1991. 22 *pp.* (Summary) **93f:60133** 60K25 (60K30)
— (*with* Atatdzhanov, Kh. L.) Asymptotic analysis of highly reliable systems with repeated calls. (Russian) *Issled. Operatsiĭ i ASU No.* 37 (1991), 24–31. (Summary) **93d:60150** 60K25
— (*with* Atadzhanov, Kh. L.) Diffusion approximation of systems with repeated calls. (Russian) *Teor. Veroyatnost. i Mat. Statist. No.* **44** (1991), 3–8; *translation in Theory Probab. Math. Statist. No.* 44 (1992), 1–5. (Summary) **93d:60151** 60K25
— The averaging principle for recurrent switching sequences. (Russian) *Teor. Veroyatnost. i Mat. Statist. No.* 45 (1991), 3–12; *translation in Theory Probab. Math. Statist. No.* 45 (1992), 1–8. (Editors) **93d:60052** 60F17
— The averaging principle for switching processes. (Ukrainian. Russian and Ukrainian summaries) *Teor. Ĭmovir. ta Mat. Statist. No.* 46 (1992), 3–13. (Summary) **93k:60219** 60K15 (60F05, 60H10)
Anisov, A. M. ★ Время и компьютер. (Russian) [Time and the computer] Негеометрический образ времени. [A nongeometric representation of time] "*Nauka*", *Moscow*, 1991. 152 *pp. ISBN* 5-02-008113-2 (A. A. Mullin) **93k:00008** 00A30 (01A99, 68Q99)
Anisov, S. S. The collineation group of Hilbert's example of a projective plane. (Russian) *Uspekhi Mat. Nauk* **47** (1992), *no.* 3(285), 147–148; *translation in Russian Math. Surveys* **47** (1992), *no.* 3, 163–164. (H. W. Guggenheimer) **93m:51001** 51A35
Anistratov, D. Yu. (*with* Gol'din, V. Ya.) A two-stage scheme with complex coefficients for systems of first-order nonlinear ordinary differential equations. (Russian. English and Russian summaries) *Mat. Model.* **4** (1992), *no.* 2, 45–50. (Summary) **93f:65053** 65L05 (34A45)
— (*with* Gol'din, V. Ya.) Nonlinear methods for solving particle transport problems. (English summary) Frontiers in numerical transport theory (College Station, TX, 1991). *Transport Theory Statist. Phys.* **22** (1993), *no.* 2-3, 125–163. (Summary) **93m:82042** 82C70 (82–08, 82C80)
Anisyutin, B. M. Energy estimates for the solution of a heat conduction problem with a time derivative in the boundary condition. (Russian. Russian summary) *Dinamika Sploshn. Sredy No.* 95 (1990), 24–39, 161–162. (Summary) **93d:35059** 35K20 (35B45, 80A20)
— The effect of rounding off on the numerical solution of the Poisson equation. (Russian. Russian summary) *Dinamika Sploshn. Sredy No.* 96 (1990), 3–8, 153. 65N99
Aniya, Mitsuru (*with* Ogiwara, Haruo) Adaptive equalization and trellis-coded modulation for selective fading channel. (English summary) *Electron. Comm. Japan Part III Fund. Electron. Sci.* **75** (1992), *no.* 6, 106–113. 94A14 (94A40)
Anjaneyulu, G. V. S. R. (*with* Radhakrishna, C.; Dattatreya Rao, A. V.) Estimation of parameters in a two-component mixture generalized gamma distribution. *Comm. Statist. Theory Methods* **21** (1992), *no.* 6, 1799–1805. 62F10
Anker, Jean-Philippe Handling the inverse spherical Fourier transform. *Harmonic analysis on reductive groups* (*Brunswick, ME*, 1989), 51–56, *Progr. Math.*, 101, *Birkhäuser Boston, Boston, MA*, 1991. (Aleksander Strasburger) **93f:43007** 43A85 (22E30, 43A90)
— Sharp estimates for some functions of the Laplacian on noncompact symmetric spaces. *Duke Math. J.* **65** (1992), *no.* 2, 257–297. (Michael Cowling) **93b:43007** 43A85 (22E30, 58G11)
— (*with* Setti, Alberto G.) Asymptotic finite propagation speed for heat diffusion on certain Riemannian manifolds. *J. Funct. Anal.* **103** (1992), *no.* 1, 50–61. (P. Günther) **93c:58208** 58G11
Ankiewicz, Adrian (*with* Akhmediev, N. N.) Novel soliton states and bifurcation phenomena in nonlinear fiber couplers. (English summary) *Phys. Rev. Lett.* **70** (1993), *no.* 16, 2395–2398. (Summary) **93k:35224** 35Q51 (78A55)
fam ngok An' Kyong *see* **Fam Ngok An' Kyong**
An-Min, Li *see* **Li, An Min**
Annabi, H. (*with* Annabi, Mohamed Larbi; Dumortier, Freddy) Continuous dependence on parameters in the Bogdanov-Takens bifurcation. *Geometry and analysis in nonlinear dynamics* (*Groningen*, 1989), 1–21, *Pitman Res. Notes Math. Ser.*, 222, *Longman Sci. Tech., Harlow*, 1992. (Robert Roussarie) **93e:58135** 58F14
Annabi, Mohamed Larbi Dépendance continue par rapport aux paramètres dans la bifurcation de Hopf-Takens de codimension 3. (English and French summaries) [Continuous dependence on the parameters in a codimension-3 Hopf-Takens bifurcation] *Ann. Fac. Sci. Toulouse Math.* (5) **12** (1991), *no.* 3, 295–327. (Robert Roussarie) **93h:58125** 58F21 (58F14)
— (*with* Annabi, H.; Dumortier, Freddy) Continuous dependence on parameters in the Bogdanov-Takens bifurcation. *Geometry and analysis in nonlinear dynamics* (*Groningen*, 1989), 1–21, *Pitman Res. Notes Math. Ser.*, 222, *Longman Sci. Tech., Harlow*, 1992. (Robert Roussarie) **93e:58135** 58F14
Annovazzi, Lorella (*with* Corradi, Leone; Genna, Francesco) Holonomic versus rate relations in plasticity. *Unilateral problems in structural analysis, IV* (*Capri*, 1989), 29–38, *Internat. Ser. Numer. Math.*, 101, *Birkhäuser, Basel*, 1991. (*see* **93a:73001**) 73E05
Ano, Katsunori A secretary problem with restricted offering chances and random number of applications. *Comput. Math. Appl.* **24** (1992), *no.* 1-2, 157–162. (Summary) **93c:60060** 60G40
Anokhin, A. V. On the continuous dependence of the solution of an abstract functional-differential equation on the parameters. (Russian. Russian summary) *Functional-differential equations* (*Russian*), 142–145, *Perm. Politekh. Inst., Permʹ*, 1990. (*see* **93m:00024**) 34K05 (34K30)
— (*with* Shindyapin, A. I.) The beating phenomenon for an impulsive differential equation. (Russian. Russian summary) *Functional-differential equations* (*Russian*), 112–118, *Perm. Politekh. Inst., Permʹ*, 1991. (Stepan Ivanov Kostadinov) **93i:34019** 34A37 (34A12)
— A boundary value problem for an impulse differential equation. (Russian) *Vestnik Chelyabinsk. Univ. Ser. Mat. Mekh. No.* 1 (1991), 100–105. (Snezhana Khristova)

93h:34118 34K10 (34A37)

Anoshkina, E. V. Topological classification of an integrable case of Goryachev-Chaplygin type with a generalized potential in the dynamics of a rigid body. (Russian) *Uspekhi Mat. Nauk* **47** (1992), *no.* 3(285), 149–150; *translation in Russian Math. Surveys* **47** (1992), *no.* 3, 165–166. (Galina G. Okuneva) **93h:58048** 58F05 (58F07, 70E15, 70H05)

Anosov, V. P. Coercive solvability of abstract parabolic equations. (Russian) *Boundary value problems for nonclassical equations in mathematical physics* (*Russian*) (*Novosibirsk*, 1989), 79–82, *Akad. Nauk SSSR Sibirsk. Otdel., Inst. Mat., Novosibirsk*, 1989. (*see* **93d:35001**) 35K15 (35R20)

Anosova, J. P. (*with* Orlov, V. V.) The types of motion in hierarchical and nonhierarchical triple systems: numerical experiments. (English summary) *Astronom. and Astrophys.* **260** (1992), *no.* 1-2, 473–484. (Summary) **93d:70019** 70F07 (70–08)

Anoussis, Michalis Intégrales invariantes et formules de caractères pour un groupe de Lie connexe à radical co-compact. (English and French summaries) [Invariant integrals and character formulas for a connected Lie group with cocompact radical] *Bull. Soc. Math. France* **120** (1992), *no.* 3, 347–370. (Rebecca Herb) **93i:22011** 22E30 (22E45)

— (*with* Katsoulis, E. G.) Complemented subspaces of C_p spaces and CSL algebras. *J. London Math. Soc.* (2) **45** (1992), *no.* 2, 301–313. (David R. Pitts) **93i:47064** 47D25 (46K50, 47B10, 47D50)

— (*with* Katsoulis, E. G.; Moore, Robert Laurens; Trent, T. T.) Interpolation problems for ideals in nest algebras. *Math. Proc. Cambridge Philos. Soc.* **111** (1992), *no.* 1, 151–160. (Xing De Dai) **93b:47087** 47D25 (47D50)

Anquela, José Angel Modular Jordan nilpotent algebras. (English summary) *Nonassociative algebraic models* (*Zaragoza*, 1989), 17–24, *Nova Sci. Publ., Commack, NY*, 1992. (Holger P. Petersson) **93m:17001** 17A10 (17C50)

— On Herstein's theorems relating modularity in A and $A^{(+)}$. *Extracta Math.* **7** (1992), *no.* 1, 5–8. 17C50

Ansari, Ali A. Polynomial control in partially controllable systems. (English summary) *Dynamic Systems Appl.* **1** (1992), *no.* 4, 467–476. (Summary) **93i:93014** 93B05

Ansari, M. M. (*with* Sinha, B. B.) Almost product Finsler F-connection. *Ganita* **42** (1991), *no.* 1-2, 1–12 (1992). 53B40

Ansari, Q. H. (*with* Siddiqi, A. H.) General strongly nonlinear variational inequalities. *J. Math. Anal. Appl.* **166** (1992), *no.* 2, 386–392. (George Isac) **93e:47088** 47H19 (47H17, 49J40)

Ansari, Zaheer K. (*with* Namdeo, R. K.) Fixed point theorems on compact metric space. (English summary) *Ultra Sci. Phys. Sci.* **4** (1992), *no.* 2, 203–205. 54H25

Ansari Toroghy, H. (*with* Sharp, Rodney Y.) Integral closures of ideals relative to injective modules over commutative Noetherian rings. *Quart. J. Math. Oxford Ser.* (2) **42** (1991), *no.* 168, 393–402. (Shi Zhong Pan) **93d:13002** 13A15

— (*with* Sharp, Rodney Y.) Asymptotic behaviour of ideals relative to injective modules over commutative Noetherian rings. II. (English summary) *Proc. Edinburgh Math. Soc.* (2) **35** (1992), *no.* 3, 511–518. (Stephen McAdam) **93j:13004** 13A15 (13C11)

Anselmi, Damiano Functional integration measure in quantum gravity. *Phys. Rev. D* (3) **45** (1992), *no.* 12, 4473–4485. (Summary) **93c:83044** 83C45 (81T20, 81V17)

Anselone, P. M. (*with* Lee, John Walter) Nonlinear integral equations of the half line. *J. Integral Equations Appl.* **4** (1992), *no.* 1, 1–14. (J. Kolomý) **93d:47136** 47N20 (45L05, 45L10, 47H15)

Ansemil, J. M. (*with* Aron, R. M.; Ponte, S.) Spaces of holomorphic functions and germs on quotients. *Progress in functional analysis* (*Peñíscola*, 1990), 163–177, *North-Holland Math. Stud.*, 170, *North-Holland, Amsterdam*, 1992. (G. Coeuré) **93f:46071** 46G20 (46E50)

— (*with* Aron, R. M.; Ponte, S.) Embeddings of spaces of holomorphic functions of bounded type. (English summary) *J. London Math. Soc.* (2) **46** (1992), *no.* 3, 482–490. (Jorge Mujica) **93m:46050** 46G20

Ansley, Craig F. (*with* Kohn, Robert Jacob; Wong, Chi-Ming) Nonparametric spline regression with autoregressive moving average errors. (English summary) *Biometrika* **79** (1992), *no.* 2, 335–346. (Summary) **93h:62085** 62G05 (62M10)

— (*with* Kohn, Robert Jacob; Shively, Thomas S.) Computing p-values for the generalized Durbin-Watson and other invariant test statistics. (English summary) *J. Econometrics* **54** (1992), *no.* 1-3, 277–300. (Peter M. Robinson) **93k:62211** 62P20 (62M10)

Anson, Louisa F. *see* **Barnsley, Michael F., 93m:68182**

Anstee, R. P. Matching theory: fractional to integral. New Zealand Mathematics Colloquium (Dunedin, 1991). *New Zealand J. Math.* **21** (1992), 17–32. (W. T. Tutte) **93c:05090** 05C70

Anstreicher, Kurt M. On monotonicity in the scaled potential algorithm for linear programming. Interior point methods for linear programming. *Linear Algebra Appl.* **152** (1991), 223–232. (Guang Jun Chen) **93a:90034** 90C05

— (*with* Bosch, Robert A.) Long steps in an $O(n^3L)$ algorithm for linear programming. *Math. Programming* **54** (1992), *no.* 3, *Ser. A*, 251–265. (S. R. Arora) **93f:90104** 90C05

— (*with* Lee, Jon[2]; Rutherford, Thomas F.) Crashing a maximum-weight complementary basis. *Math. Programming* **54** (1992), *no.* 3, *Ser. A*, 281–294. (K. G. Murty) **93a:90069** 90C33

— On interior algorithms for linear programming with no regularity assumptions. (English summary) *Oper. Res. Lett.* **11** (1992), *no.* 4, 209–212. (Summary) **93f:90105** 90C05 (90C60)

— (*with* Bosch, Robert A.) On partial updating in a potential reduction linear programming algorithm of Kojima, Mizuno, and Yoshise. (English summary) *Algorithmica* **9** (1993), *no.* 2, 184–197. (A. G. Azpeitia) **93k:90046** 90C05

Antamoshkin, A. N. (*with* Semënkin, E. S.) Optimization of polymodal locally monotone pseudo-Boolean functions. (English, Russian and Lithuanian summaries) *Informatica* **2** (1991), *no.* 3, 331–351, 455, 462. (Béla Vizvári) **93h:90067** 90C09

— (*with* Koshkin, Yurij) The cutting off algorithms for pseudo-Boolean optimization. (English, Russian and Lithuanian summaries) *Informatica* **2** (1991), *no.* 4, 539–551, 598, 607. (Jürgen Köhler) **93j:90063** 90C09 (06E30)

Antanovskiĭ, L. K. Symmetrization of phase transition equations. (Russian. Russian summary) *Dinamika Sploshn. Sredy No.* 96 (1990), 101–110, 155. (From the introduction) **93e:80002** 80A22 (35Q99)

— Transient motion of a drop in boundless liquid with surfactants. (English and Bulgarian summaries) *J. Theoret. Appl. Mech.* **22** (1991), *no.* 4, 5, 41–49 (1992). 76D99 (76D45, 80A10)

— The effect of capillary forces on the non-steady-state fall of a drop in an unbounded fluid. (Russian) *Prikl. Mekh. Tekhn. Fiz.* **1991,** *no.* 6, 60–65; *translation in J. Appl. Mech. Tech. Phys.* **32** (1991), *no.* 6, 875–880 (1992). (From the text) **93c:76023** 76D45

— Symmetrization of interface dynamics equations. (English summary) *European J. Appl. Math.* **3** (1992), *no.* 3, 283–297. (Summary) **93f:80012** 80A22 (80A20)

— The bi-analytic stress-stream function in plane quasistationary problems of capillary hydrodynamics. (Russian) *Sibirsk. Mat. Zh.* **33** (1992), *no.* 1, 3–15, 218; *translation in Siberian Math. J.* **33** (1992), *no.* 1, 1–11. (From the text) **93g:76036** 76D05 (35Q30, 76D07, 76D45)

Anthony, Martin (*with* Biggs, Norman) ★ Computational learning theory. An introduction. Cambridge Tracts in Theoretical Computer Science, 30. *Cambridge University Press, Cambridge*, 1992. xiv+157 *pp. ISBN* 0-521-41603-5 (Mark R. Jerrum) **93f:68078** 68T05 (68–02, 92B20)

— (*with* Shawe-Taylor, John; Biggs, Norman) Bounding sample size with the Vapnik-Chervonenkis dimension. (English summary) *Discrete Appl. Math.* **42** (1993), *no.* 1, 65–73. (Summary) **93j:68167** 68T05

Antimirov, M. Ya. (*with* Kolyshkin, A. A.; Vaillancourt, Rémi) Solution of direct asymmetric problems in eddy current testing by a perturbation method. (English and French summaries) *C. R. Math. Rep. Acad. Sci. Canada* **14** (1992), *no.* 5, 195–200. (Summary) **93k:78015** 78A55 (35Q60, 65P05)

Antimirov, V. M. (*with* Voronkov, A. A.; Degtyarëv, A. I.; Zakhar'yashchev, M. V.; Protsenko, V. S.) Mathematical logic in programming. A survey. (Russian) *Mathematical logic in programming* (*Russian*), 331–407, *Mat. Obespechen. ÈVM*, "*Mir*", *Moscow*, 1991. (*see* **93d:68004**) 68N05 (03B70)

Antimirov, Yu. M. Effective representation of an inverse linear differential operator by a complex integral and its applications. (Russian. English, Italian and Russian summaries) *Applied problems in mathematical physics: mathematical modeling* (*Russian*), 59–70, 192, 198–199, 204–205, *Latv. Univ. Zināt. Raksti*, 564, *Latv. Univ., Riga*, 1991. (Hong Xiang Li) **93h:35037** 35C15 (76W05)

Antipov, M. V. ★ О математической случайности. (Russian. English and Russian summaries) [Mathematical randomness] Препринт [Preprint], 927. *Akad. Nauk SSSR Sibirsk. Otdel., Vychisl. Tsentr, Novosibirsk*, 1991. 20 *pp.* (Summary) **93e:00003** 00A30 (60A99, 65C10, 65Y20)

— ★ Границы случайности. (Russian. English and Russian summaries) [Limits of randomness] Препринт [Preprint], 928. *Akad. Nauk SSSR Sibirsk. Otdel., Vychisl. Tsentr, Novosibirsk*, 1991. 28 *pp.* (Summary) **93e:00004** 00A30 (60A99, 65C10, 65Y20)

Antipov, Yu. A. (*with* Arutyunyan, N. Kh.) Contact problems in elasticity theory in the presence of friction and adhesion. (Russian) *Prikl. Mat. Mekh.* **55** (1991), *no.* 6, 1005–1017; *translation in J. Appl. Math. Mech.* **55** (1991), *no.* 6, 887–901 (1992). (From the text) **93b:73033** 73T05 (73C35, 73V35)

Antle, Charles E. *see* **Harter, H. Leon, 93c:62001b**

Antman, Stuart S. (*with* Marlow, Randall Scot) Material constraints, Lagrange multipliers, and compatibility. Applications to rod and shell theories. *Arch. Rational Mech. Anal.* **116** (1991), *no.* 3, 257–299. (Ralph Saxton) **93c:73026** 73C50 (58E50, 73B05, 73K05)

— (*with* Lanza de Cristoforis, Massimo) The large deformation of non-linearly elastic shells in axisymmetric flows. (English and French summaries) *Ann. Inst. H. Poincaré Anal. Non Linéaire* **9** (1992), *no.* 4, 433–464. (Frank Benkert) **93k:73066** 73K70 (35Q72, 73G05, 73K15, 76B99)

— (*with* Marlow, Randall Scot) Transcritical buckling of columns. *Z. Angew. Math. Phys.* **43** (1992), *no.* 1, 7–27. (Reiner Lauterbach) **93e:73018** 73H05 (47H15, 58E07, 73C50, 73K05)

Antoch, Jaromír *see* **Computational aspects of model choice, 93k:62001**

Antoci, S. The electromagnetic properties of material media and Einstein's unified field theory. (English summary) *Progr. Theoret. Phys.* **87** (1992), *no.* 6, 1343–1357. (Summary) **93e:83058** 83D05 (81V22)

Antoine, Jean-P. Partial $*$-algebras of closable operators. (English summary) *Current topics in operator algebras* (*Nara*, 1990), 186–201, *World Sci. Publishing, River Edge, NJ*, 1991. (Giuseppina Epifanio) **93m:47051** 47D40 (46K05)

— (*with* Ali, S. Twareque; Gazeau, Jean-Pierre) Square integrability of group representations on homogeneous spaces. I. Reproducing triples and frames. (French summary) *Ann. Inst. H. Poincaré Phys. Théor.* **55** (1991), *no.* 4, 829–855. (Palle E. T. Jørgensen) **93a:22002** 22D10 (22E70, 46E22, 81R30)

— (*with* Ali, S. Twareque; Gazeau, Jean-Pierre) Square integrability of group representations on homogeneous spaces. II. Coherent and quasi-coherent states. The case of the Poincaré group. (French summary) *Ann. Inst. H. Poincaré Phys. Théor.* **55** (1991), *no.* 4, 857–890. (Palle E. T. Jørgensen) **93a:22003** 22D10 (22E70, 46E22, 81R30)

— (*with* Inoue, Atsushi) Normal forms on partial O^*-algebras. *J. Math. Phys.* **32** (1991), *no.* 8, 2074–2081. (Camillo Trapani) **93e:47059** 47D40 (46K05, 46L99)

— (*with* Inoue, Atsushi; Trapani, Camillo) Partial $*$-algebras of closable operators. II. States and representations of partial $*$-algebras. *Publ. Res. Inst. Math. Sci.* **27** (1991), *no.* 3, 399–430. (Introduction) **93f:47052** 47D40 (46K05, 46L05)

— (*with* Ali, S. Twareque; Gazeau, Jean-Pierre) Square integrability of group representations on homogeneous spaces and generalized coherent states. Proceedings of the Winter School on Geometry and Physics (Srní, 1990). *Rend. Circ. Mat. Palermo* (2) *Suppl. No.* 26 (1991), 47–56. (A. O. Barut) **93d:81080** 81R30

Antoine, Louis *see* **Ibisch, Horst, 93k:01068**

Antone, T. A. (*with* Al-Maaitah, A. A.) Analytical solutions to classes of linear oscillator equations with time varying frequencies. (English summary) *J. Math. Phys.* **33** (1992), *no.* 10, 3330–3339. (Summary) **93f:70022** 70J30 (34A05)

— Expansion of Jacobi polynomials in terms of orthogonal functions. (English summary) *J. Phys. A* **26** (1993), *no.* 4, 927–934. (Summary) **93m:33002** 33C45 (33C80, 42C10)

Antonelli, Peter L. Finsler Volterra-Hamilton systems in ecology. *Tensor* (*N.S.*) **50** (1991), *no.* 1, 22–31. (M. C. Chaki) **93f:92027** 92D40 (53B40)

— (*with* Shimada, Hideo) On 1-form Finsler connections with constant coefficients. *Tensor* (*N.S.*) **50** (1991), *no.* 3, 263–275. (László Kozma) **93g:53031** 53B40 (92D40)

Antonelli, Silvano (*with* Baiardi, F.; Pelagatti, Susanna; Vanneschi, M.) Modeling concurrent programs for static mapping. (English summary) *Parallel computing* '91 (*London*, 1991), 357–366, *Adv. Parallel Comput.*, 4, *North-Holland, Amsterdam*, 1992. (*see* **93f:00016**) 68Q10

— (*with* Pelagatti, Susanna) On the complexity of the mapping problem for massively parallel architectures. (English summary) *Internat. J. Found. Comput. Sci.* **3** (1992),

no. 3, 379–387. (Summary) **93k:68029** 68Q10 (68M07, 68Q25)

Antoniadis, Ignatios (*with* Gava, E.; Narain, K. S.) Moduli corrections to gauge and gravitational couplings in four-dimensional superstrings. (English summary) *Nuclear Phys. B* **383** (1992), *no.* 1-2, 93–109. (C. Gauthier) **93i:81181** 81T30

— (*with* Mazur, Pawel O.; Mottola, Emil) Conformal symmetry and central charges in 4 dimensions. (English summary) *Nuclear Phys. B* **388** (1992), *no.* 3, 627–647. (C. Gauthier) **93m:81140** 81T50 (81T20, 81T40)

— (*with* Rizos, J.; Tamvakis, K.) Gauge symmetry breaking in the hidden sector of the flipped SU(5) × U(1) superstring model. *Phys. Lett. B* **278** (1992), *no.* 3, 257–265. (Summary) **93a:81147** 81T30 (81V22)

— (*with* Gava, E.; Narain, K. S.) Moduli corrections to gravitational couplings from string loops. *Phys. Lett. B* **283** (1992), *no.* 3-4, 209–212. (Summary) **93c:81159** 81T30 (81V17)

Antoniadis, Jannis A. Modulformen auf $\Gamma_0(N)$ mit rationalen Perioden. (English summary) [Modular forms on $\Gamma_0(N)$ with rational periods] *Manuscripta Math.* **74** (1992), *no.* 4, 359–384. (Rolf Berndt) **93b:11056** 11F67 (11F11, 11F25)

Antonini, C. D. Guaranteed H_∞ disturbance attenuation and l_1 control and output bounds with LEB regulators. (English summary) *Control* '91, *Vol.* 1, 2 (*Edinburgh*, 1991), 202–207, *IEE Conf. Publ. Ser.*, 332, *IEE, London*, 1991. (*see* **93h:93007**) 93B36

giuliano Antonini, Rita *see* **Giuliano Antonini, Rita**

Antonini, Rita Giuliano *see* **Giuliano Antonini, Rita**

Antonino, José A. (*with* Romaguera, Salvador) Star Čech complete spaces. (English summary) *Houston J. Math.* **18** (1992), *no.* 3, 473–479. (Gerald Beer) **93m:54049** 54E35 (54E15)

Antoniou, G. *see* **Antoniou, Grigoris**

Antoniou, George E. (*with* Friedland, Bernard; Mentzelopoulou, Sophia E.) On a property of compensators designed by the separation principle. (English summary) *IEEE Trans. Automat. Control* **38** (1993), *no.* 2, 370–373. 93B51 (93C80)

— (*with* Glentis, George Othon; Mentzelopoulou, Sophia E.) Determination of the transfer matrix of multidimensional-singular systems. (English summary) *Internat. J. Systems Sci.* **24** (1993), *no.* 1, 211–218. 93B40 (93C80)

Antoniou, Grigoris (*with* Sperschneider, V.) ★ Logic: a foundation for computer science. International Computer Science Series. *Addison-Wesley Publishing Company, Wokingham*, 1991. xii+495 *pp. ISBN* 0-201-56514-5 (Gabriel Ciobanu) **93a:03002** 03-01 (03B10, 03B70, 68-01, 68Q60)

Antoniou, Ioannis E. (*with* Tasaki, S.) Generalized spectral decomposition of the β-adic baker's transformation and intrinsic irreversibility. (English summary) *Phys. A* **190** (1992), *no.* 3-4, 303–329. (Remo Badii) **93j:58071** 58F11 (58F15, 82C05)

— (*with* Prigogine, Ilya) Intrinsic irreversibility and integrability of dynamics. (English summary) *Phys. A* **192** (1993), *no.* 3, 443–464. (B. H. Lavenda) **93m:82022** 82C03

Antonippillai, A. (*with* Pastijn, Francis) Subsemigroups of completely simple semigroups. (English summary) *Pacific J. Math.* **156** (1992), *no.* 2, 251–263. (Heinrich Seidel) **93i:20073** 20M10

Antonishin, I. O. (*with* Mitropol'skiĭ, Yu. A.; Prikarpat·skiĭ, A. K.; Samoĭlenko, V. Gr.) Symplectic analysis of adiabatic invariants of nonlinear dynamical systems with a small parameter. A new criterion for stabilization of homoclinic separatrices and its application. (Ukrainian. English, Russian and Ukrainian summaries) *Akad. Nauk Ukrainy Inst. Mat. Preprint* **1991**, *no.* 53, 53 *pp.* (Summary) **93k:58173** 58F15 (58F30)

— (*with* Parasyuk, I. O.; Protsak, L. V.) Bifurcation of centrally symmetric solutions of soliton type in a nonlinear biharmonic equation. (Russian) *Mat. Fiz. Nelinein. Mekh. No.* 15(49) (1991), 54–59. (Igor V. Barashenkov) **93b:35012** 35B32 (35B40, 35J60, 35Q51)

— (*with* Verbitskaya, L. V.; Suyarov, U. S.) Quasi-invariant submanifolds of weakly perturbed nonlinear integrable dynamical systems. (Russian) *Akad. Nauk Ukrainy Inst. Mat. Preprint* **1992**, *no.* 6, 14–18. (Vladimir Mikhalev) **93i:58152** 58G18 (58F30)

— (*with* Mitropol'skiĭ, Yu. A.; Prikarpat·skiĭ, A. K.; Samoĭlenko, V. Gr.) Symplectic analysis of dynamical systems with a small parameter. A new criterion for stabilization of homoclinic separatrices and its application. (Ukrainian. Russian and Ukrainian summaries) *Ukraïn. Mat. Zh.* **44** (1992), *no.* 1, 46–66; *translation in Ukrainian Math. J.* **44** (1992), *no.* 1, 41–58. (J. S. Joel) **93h:58061** 58F05 (34C35, 35Q58, 58F15)

Antonopoulos, Constantin Bivalence, contradiction and the logic of change. (English summary) *Logique et Anal. (N.S.)* **31** (1988), *no.* 123-124, 403–432. (Charles F. Kielkopf) **93m:03004** 03A05 (03B50)

Antonov, V. K. A method for the synthesis of linear regulators with given time-optimality and minimum condition for the oscillation of transient processes. (Russian. Russian summary) *Kibernet. i Vychisl. Tekhn. No.* 95 (1992), 52–55. 93B50 (49N35)

Antonova, N. A. Application of a frequency stabilization criterion for investigating the dynamics of an autogenerator. (Russian. Russian summary) *Ordered spaces and operator equations* (*Russian*), 104–108, 162–163, *Syktyvkar. Gos. Univ., Syktyvkar*, 1989. (*see* **93m:00034**) 34D99 (34H05, 70K20)

Antonowicz, Marek (*with* Rauch-Wojciechowski, Stefan) Restricted flows of soliton hierarchies: coupled KdV and Harry Dym case. *J. Phys. A* **24** (1991), *no.* 21, 5043–5061. (Peter L. Christiansen) **93e:35092** 35Q51 (35Q53, 58F07)

— (*with* Rauch-Wojciechowski, Stefan) How to construct finite-dimensional bi-Hamiltonian systems from soliton equations: Jacobi integrable potentials. *J. Math. Phys.* **33** (1992), *no.* 6, 2115–2125. (Summary) **93d:58062** 58F07

— (*with* Rauch-Wojciechowski, Stefan) Bi-Hamiltonian formulation of the Hénon-Heiles system and its multidimensional extensions. *Phys. Lett. A* **163** (1992), *no.* 3, 167–172. (Jacek Szmigielski) **93i:58066** 58F07

— Gel'fand-Dikiĭ hierarchies with sources and Lax representations for restricted flows. *Phys. Lett. A* **165** (1992), *no.* 1, 47–52. (Wen Xiu Ma) **93d:58063** 58F07 (35Q53)

Antonsen, Thomas M., Jr. (*with* Varosi, Frank; Ott, Edward) The spectrum of fractal dimensions of passively convected scalar gradients in chaotic fluid flows. (English summary) Symposium on Fluid Mechanics of Stirring and Mixing (La Jolla, CA, 1990). *Phys. Fluids A* **3** (1991), *no.* 5, *part* 2, 1017–1028. (Summary) **93k:76065** 76F20 (58F13, 76R99)

— (*with* Couchman, Luise; Ott, Edward) Quantum chaos in systems with ray splitting. (English summary) *Phys. Rev. A* (3) **46** (1992), *no.* 10, 6193–6210. (Summary) **93k:81059** 81Q50 (58F13, 81-04)

Antonsson, Erik K. (*with* Otto, Kevin N.; Lewis, Andrew D.) Approximating α-cuts with the vertex method. (English summary) *Fuzzy Sets and Systems* **55** (1993), *no.* 1, 43–50. (Summary) **93m:04018** 04A72

Antontsev, S. N. (*with* Chipot, Michel) Existence, stability and blowup of the solution of the thermistor problem. (Russian) *Dokl. Akad. Nauk* **324** (1992), *no.* 2, 309–313; *translation in Soviet Phys. Dokl.* **37** (1992), *no.* 5, 229–231. (Summary) **93k:35247** 35Q60 (35Q72, 73B30, 73R05, 78A99, 80A20)

— Localization of solutions of a problem of mass transport in a porous medium. (Russian) *Dokl. Akad. Nauk* **326** (1992), *no.* 2, 268–271; *translation in Soviet Phys. Dokl.* **37** (1992), *no.* 9, 464–466 (1993). (From the text) **93j:76057** 76S05 (35K55, 35Q99)

— (*with* Shmarëv, S. I.) Local energy method and vanishing properties of weak solutions of quasilinear parabolic equations. *Free boundary problems involving solids* (*Montreal, PQ*, 1990), 2–6, *Pitman Res. Notes Math. Ser.*, 281, *Longman Sci. Tech., Harlow*, 1993. (*see* **93k:00037**) 35K55 (35D99)

Antonucci, Salvatore Constructing regular graphs. (Italian. Italian summary) *Riv. Mat. Univ. Parma* (4) **17** (1991), 265–270 (1992). (Mario Gionfriddo) **93h:05130** 05C75

Antony, Jessy (*with* Subrahmanyam, P. V.) Common fixed points and weak compatibility. (English summary) *Fixed point theory and applications* (*Halifax, NS*, 1991), 1–11, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93g:54054** 54H25

Antonyan, L. V. Homogeneous nilpotent elements of periodically graded semisimple Lie algebras. (Russian) *Problems in group theory and homological algebra* (*Russian*), 55–64, *Matematika, Yaroslav. Gos. Univ., Yaroslavl'*, 1987. (*see* **93d:20002**) 17B70

Antonyuk, A. Val. (*with* Kondrat'ev, Yu. G.) Dirichlet forms and corresponding operators on Riemannian manifolds. (Russian) *Methods of functional analysis in problems of mathematical physics* (*Russian*), 5–21, *Akad. Nauk Ukrain. SSR, Inst. Mat., Kiev*, 1990. (Summary) **93c:58202** 58G03 (47F05, 58G30)

— Log-concave smooth measures and some properties of corresponding Dirichlet operators. (Russian. Russian summary) *Applications of the methods of functional analysis in mathematical physics* (*Russian*), 4–14, *Akad. Nauk Ukrainy, Inst. Mat., Kiev*, 1991. (Summary) **93h:58163** 58G30 (46N50, 47D03, 81Q10)

Antonyuk, A. Vikt. (*with* Kondrat'ev, Yu. G.) Cluster expansions for Gibbs measures of quantum lattice systems at zero temperature. (Russian. Russian summary) *Applications of the methods of functional analysis in mathematical physics* (*Russian*), 14–20, *Akad. Nauk Ukrainy, Inst. Mat., Kiev*, 1991. (Summary) **93g:82014** 82B20

Antonyuk, E. Ya. (*with* Larin, V. B.; Pedchenko, A. M.) An algorithm for the choice of generalized coordinates. (Russian) *Akad. Nauk Ukrainy Inst. Mat. Preprint* **1991**, *no.* 52, 36 *pp.* (Summary) **93b:70015** 70G10 (70B15, 70F99, 70Q05)

Antoranz, J. C. (*with* Rubio, M. A.) Transition to chaos in nonlinear oscillators. *The global geometry of turbulence* (*Rota*, 1990), 287–295, *NATO Adv. Sci. Inst. Ser. B Phys.*, 268, *Plenum, New York*, 1991. (Tomasz Kapitaniak) **93e:58122** 58F13 (34C15)

Antosik, Piotr (*with* Swartz, Charles) Multiplier convergent series and the Schur theorem. *Southeast Asian Bull. Math.* **15** (1991), *no.* 2, 173–182. (Enno Kolk) **93b:46016** 46A45 (40C05)

— (*with* Swartz, Charles) The Nikodým convergence theorem for lattice-valued measures. *Rev. Roumaine Math. Pures Appl.* **37** (1992), *no.* 4, 299–306. (Pedro Jiménez Guerra) **93e:28015** 28B05 (46G10)

Antsaklis, Panos J. (*with* Gao, Zhiqiang) Reconfigurable control system design via perfect model following. (English summary) *Internat. J. Control* **56** (1992), *no.* 4, 783–798. (Summary) **93e:93031** 93B50 (93B52)

— (*with* Gao, Zhiqiang) Explicit asymmetric bounds for robust stability of continuous and discrete-time systems. (English summary) *IEEE Trans. Automat. Control* **38** (1993), *no.* 2, 332–335. (Summary) **93j:93103** 93D09 (93C55, 93C60)

Antsiferov, E. G. (*with* Bulatov, V. P.) On polynomial methods in convex programming. (Russian) *Optimization: models, methods, solutions* (*Russian*) (*Irkutsk*, 1989), 4–29, "*Nauka*" *Sibirsk. Otdel., Novosibirsk*, 1992. (*see* **93k:90002**) 90C25

Antunes, Carlos Henggeler (*with* Clímaco, João C. Namorado) Sensitivity analysis in MCDM using the weight space. (English summary) *Oper. Res. Lett.* **12** (1992), *no.* 3, 187–196. (Summary) **93f:90140** 90C29 (90C05, 90C31)

Anturkar, N. R. (*with* Papanastasiou, T. C.; Wilkes, J. O.) Compound matrix method for eigenvalue problems in multiple connected domains. (English summary) *Comm. Appl. Numer. Methods* **8** (1992), *no.* 11, 811–818. 65P05 (76M25)

Antyufeev, V. S. Direct and inverse problems of the radiation transfer in a vegetative cover. *Russian J. Numer. Anal. Math. Modelling* **7** (1992), *no.* 3, 187–204. (Summary) **93c:78008** 78A45 (65C05, 65R20, 78-08, 78A55)

Antzoulakos, Demetris L. (*with* Philippou, Andreas N.) Multivariate Fibonacci polynomials of order k and the multiparameter negative binomial distribution of the same order. *Applications of Fibonacci numbers, Vol.* 3 (*Pisa*, 1988), 273–279, *Kluwer Acad. Publ., Dordrecht*, 1990. (Editors) **93f:11015** 11B39 (11B68, 60C05)

Anunchuen, N. (*with* Caccetta, L.) On critically k-extendable graphs. (English summary) *Australas. J. Combin.* **6** (1992), 39–65. (Charles H. C. Little) **93k:05125** 05C70 (05C75)

Anzaldo-Meneses, A. Krichever-Novikov algebras on Riemann surfaces of genus zero and one with N punctures. (English summary) *J. Math. Phys.* **33** (1992), *no.* 12, 4155–4163. (A. K. Raina) **93j:81025** 81R10 (17B68, 17B81)

Aoki, K. (*with* Tanaka, Masataka; Nakamura, M.) A study on computational accuracy of the Laplace transform BEM for transient elastodynamic problems. *Theory and applications of boundary element methods* (*Beijing*, 1991), 37–44, *Internat. Acad. Publ., Beijing*, 1991. (*see* **93b:65008**) 65N38 (65R10, 73V10)

Aoki, Keiko (*with* Ohkubo, K.; Ohmori, Hiromitsu; Sano, A.) $\mathscr{H}_\infty$ controller reduction in trajectory sensitivity minimization. *Control* '91, *Vol.* 1, 2 (*Edinburgh*, 1991), 208–213, *IEE Conf. Publ. Ser.*, 332, *IEE, London*, 1991. (*see* **93h:93007**) 93B36

Aoki, Kenichi (*with* Kanezashi, Masakazu; Itoh, Masaru; Matsuura, Haruki) Power generation scheduling by neural network. (English summary) *Internat. J. Systems Sci.* **23** (1992), *no.* 11, 1977–1989. 90B35 (92B20)

Aoki, Kenichiro (*with* Montano, David; Sonnenschein, Jacob) The role of the contact algebra in multimatrix models. *Internat. J. Modern Phys. A* **7** (1992), *no.* 8, 1755–1766. (Yolanda Lozano) **93f:81125** 81T40 (81R10)

— (*with* D'Hoker, Eric) On the Liouville approach to correlation functions for 2D quantum gravity. *Modern Phys. Lett. A* **7** (1992), *no.* 3, 235–249. (Guillermo Zemba) **93d:81147** 81T40

— (*with* D'Hoker, Eric) Correlation functions of minimal models coupled to two-dimensional quantum supergravity. *Modern Phys. Lett. A* **7** (1992), *no.* 4, 333–343. (C. Gauthier) **93b:81237** 81T40 (81T60, 83E50)

Aoki, Kunimasa (*with* Shinoda, Juichi; Tsuda, Teruko) Strong minimal pair theorem for the honest polynomial degrees of Δ_2^0 low sets. *J. Math. Soc. Japan* **44** (1992), *no.* 3, 505–514. (Decheng Ding) **93e:03059** 03D30 (03D15, 68Q15)

Aoki, Masanao (*with* Dorfman, Jeffrey H.) Statistical analysis of some identification procedures for state space innovation models. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, I* (*Kobe*, 1991), 619–624, *Mita, Tokyo*, 1992. (*see* **93g:93005**) 93E11

Aoki, Noboru Gross' conjecture on the special values of abelian L-functions at $s = 0$. *Comment. Math. Univ. St. Paul.* **40** (1991), *no.* 1, 101–124. (Alexey A. Panchishkin) **93f:11084** 11R42 (11R27)

Aoki, Nobuo The set of Axiom A diffeomorphisms with no cycle. *Dynamical systems and related topics* (*Nagoya*, 1990), 20–35, *Adv. Ser. Dyn. Syst.*, 9, *World Sci. Publishing, River Edge, NJ*, 1991. (Romeo F. Thomas) **93f:58175** 58F15 (58F09)

— (*with* Oka, Masatoshi) Homoclinic points C^r-created under hypotheses by probability measures. *Probability measures on groups, X* (*Oberwolfach*, 1990), 1–9, *Plenum, New York*, 1991. (Waldyr M. Oliva) **93g:58110** 58F15

Aoki, S. (*with* Amaya, K.) Optimization of cathodic protection system (optimum location of electrode on wall). *Theory and applications of boundary element methods* (*Beijing*, 1991), 391–398, *Internat. Acad. Publ., Beijing*, 1991. (*see* **93b:65008**) 65N38 (65K10)

Aoki, Shigeru (*with* Kato, Suehiro) On invariant eigendistributions on $U(p,q)/(U(r) \times U(p-r,q))$. *Proc. Japan Acad. Ser. A Math. Sci.* **67** (1991), *no.* 6, 203–207. (Christopher Meaney) **93c:22015** 22E30 (33C80)

Aoki, Shinko The moon-test in Newton's *Principia*: accuracy of inverse-square law of universal gravitation. *Arch. Hist. Exact Sci.* **44** (1992), *no.* 2, 147–190. (Peeter Müürsepp) **93d:01016** 01A45

Aoki, T. *see* **Aoki, Takeshi**

Aoki, Takafumi (*with* Kameyama, Michitaka; Higuchi, Tatsuo) Design of an ultrahigher-valued biocomputing system based on set-valued logic networks. (English summary) *Systems Comput. Japan* **23** (1992), *no.* 7, 35–43. 68Q05 (94C10)

Aoki, Takashi (*with* Nakano, Yasuo; Nakazono, Shūji; Takasugi, Tsutomu; Yamauchi, Noriyo) On the index of ordinary differential operators with polynomial coefficients. *J. Fac. Sci. Tech. Kinki Univ. No.* 27 (1991), 27–30. (A. Haimovici) **93b:35026** 35E20 (34A20)

Aoki, Takeshi (*with* Sunahara, Yoshifumi; Ishikawa, Masaaki) On the suboptimal control for a class of stochastic distributed parameter systems with nonlinear boundary conditions. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, I* (*Kobe*, 1991), 103–108, *Mita, Tokyo*, 1992. (*see* **93g:93005**) 93E20 (93C20)

Aomoto, Kazuhiko (*with* Kato, Yoshifumi; Mimachi, Katsuhisa) A solution of the Yang-Baxter equation as connection coefficients of a holonomic q-difference system. *Internat. Math. Res. Notices* **1992**, *no.* 1, 7–15. (P. D. F. Ion) **93d:39007** 39A12 (16W30, 33D80, 82B23)

Aoshima, Makoto (*with* Dudewicz, Edward J.; Siotani, Minoru) Heteroscedastic discriminant analysis with a preassigned misclassification probability. (English summary) Modern sequential analysis (SSA), Vol. II (Syracuse, NY, 1989). *Amer. J. Math. Management Sci.* **11** (1991), *no.* 3-4, 371–386. (Richard A. Johnson) **93m:62136** 62H30

— Asymptotic distributions of quasi-Wishart matrix and its latent roots in the heteroscedastic case. *SUT J. Math.* **27** (1991), *no.* 2, 263–273. (Minoru Siotani) **93d:62102** 62H10 (60E10)

Aouf, M. K. (*with* Owa, Shigeyoshi; Obradović, Milutin) Certain classes of analytic functions of complex order and type beta. (Italian summary) *Rend. Mat. Appl.* (7) **11** (1991), *no.* 4, 691–714. (E. P. Merkes) **93d:30010** 30C45

— (*with* Srivastava, Hari M.) A certain fractional derivative operator and its applications to a new class of analytic and multivalent functions with negative coefficients. (English summary) *J. Math. Anal. Appl.* **171** (1992), *no.* 1, 1–13. (Shigeyoshi Owa) **93m:30021** 30C45

Aoyama, Hideaki Borel-summable perturbation series for theories with degenerate minima. *Modern Phys. Lett. A* **7** (1992), *no.* 15, 1337–1344. (Summary) **93b:81170** 81T15

— (*with* Tamra, Arihiro M.) Path integral for quantum tunneling. (English summary) *Nuclear Phys. B* **384** (1992), *no.* 1-2, 229–250. (Summary) **93h:81073** 81S40

Aoyama, Shogo Quantization of the 2d effective gravity in the geometrical formulation. (English summary) *Internat. J. Modern Phys. A* **7** (1992), *no.* 23, 5761–5779. (Summary) **93e:81100** 81T40

— (*with* Pasti, P.; Tonin, M.) The GS and NRS heterotic strings from twistor-string models. *Phys. Lett. B* **283** (1992), *no.* 3-4, 213–217. (Tsou Sheung Tsun) **93j:81078** 81T30 (81R25, 83E30)

Apanasov, B. N. ★ Discrete groups in space and uniformization problems. Translated and revised from the 1983 Russian original. Mathematics and its Applications (Soviet Series), 40. *Kluwer Academic Publishers Group, Dordrecht*, 1991. xviii+482 *pp. ISBN* 0-7923-0216-8 (From the preface) **93h:57026** 57M60 (20H10, 30F40, 51M10, 57–02)

— ★ Геометрия дискретных групп и многообразий. (Russian) [The geometry of discrete groups and manifolds] With an English summary. "*Nauka*", *Moscow*, 1991. 428 *pp. ISBN* 5-02-014289-1 (Michael Kapovich) **93i:57051** 57S30 (30F40, 30F60, 57M50, 58H15)

— The canonical Riemannian metric on conformal manifolds. (Russian) *Dokl. Akad. Nauk SSSR* **320** (1991), *no.* 3, 525–528; *translation in Soviet Math. Dokl.* **44** (1992), *no.* 2, 467–470. (Nikolai K. Smolentsev) **93e:53040** 53C20 (53A30, 53C15, 57R20, 57S30, 58D27)

— Hyperbolic cobordism and conformal structures. (English summary) *Topology* '90 (*Columbus, OH*, 1990), 27–36, *Ohio State Univ. Math. Res. Inst. Publ.*, 1, *de Gruyter, Berlin*, 1992. (Michael Kapovich) **93h:57020** 57M50 (30F40, 53A30)

— (*with* Gutsul, I. S.) Greatly symmetric totally geodesic surfaces and closed hyperbolic 3-manifolds which share a fundamental polyhedron. (English summary) *Topology* '90 (*Columbus, OH*, 1990), 37–53, *Ohio State Univ. Math. Res. Inst. Publ.*, 1, *de Gruyter, Berlin*, 1992. (Athanase Papadopoulos) **93i:57017** 57M50 (20H15, 51M10)

— *see also* **Topology '90, 93d:57001**

Aparicio, E. *see* **Aparicio Bernardo, Emiliano**

Aparício, Joaquim Nunes (*with* Pereira, Luís Moniz; Alferes, José Júlio) Counterfactual reasoning based on revising assumptions. (English summary) *Logic programming* (*San Diego, CA*, 1991), 566–577, *MIT Press Ser. Logic Program., MIT Press, Cambridge, MA*, 1991. (Summary) **93j:68124** 68Q55 (03B70, 68N17, 68T27)

— (*with* Pereira, Luís Moniz; Alferes, José Júlio) Adding closed world assumptions to well founded semantics. (English summary) *Fifth generation computer systems, Vol.* 1, 2 (*Tokyo*, 1992), 562–569, *Ohm, Tokyo*, 1992. (*see* **93i:68007**) 68Q55

Aparicio Bernardo, Emiliano *see* **Proceedings: Congress on Number Theory**, **93h:11002** *and* **Kiselëv, A. I. et al., 93i:34001**

Apel, T. (*with* Dobrowolski, Manfred) Anisotropic interpolation with applications to the finite element method. (German summary) *Computing* **47** (1992), *no.* 3-4, 277–293. (Gheorghe Micula) **93b:65166** 65N30 (65D07)

Apell, Jürgen (*with* Nguyễn Hồng Thái; Zabreĭko, P. P.) Multivalued superposition operators in ideal spaces of vector functions. III. *Indag. Math.* (*N.S.*) **3** (1992), *no.* 1, 1–9. (Moshe Marcus) **93f:47087** 47H30 (46E30)

Apéry, François An algebraic halfway model for the eversion of the sphere. With an appendix by Bernard Morin. *Tôhoku Math. J.* (2) **44** (1992), *no.* 1, 103–150. (Summary) **93h:57046** 57R42 (57R52)

Apfeldorf, Karyn M. Hamiltonian reduction on the weight lattice. (English summary) *Nuclear Phys. B* **381** (1992), *no.* 1-2, 431–447. (Summary) **93j:81026** 81R10 (17B68, 58F07, 81T40)

vuolle-Apiala, Juha *see* **Vuolle-Apiala, Juha**

Aplevich, J. D. ★ Implicit linear systems. Lecture Notes in Control and Information Sciences, 152. *Springer-Verlag, Berlin*, 1991. xii+176 *pp. ISBN* 3-540-53537-3 (From the preface) **93b:93001** 93–02 (49N10, 93B25, 93B51, 93C05)

Apolloni, Bruno (*with* de Falco, Diego) Probabilistic aspects of machine learning. *White noise analysis* (*Bielefeld*, 1989), 22–30, *World Sci. Publishing, River Edge, NJ*, 1990. (Summary) **93a:82045** 82C32 (68T05, 92B20)

Apostol, Tom M. An extension of the Lehmers' picturesque exponential sums. (English summary) *Math. Comp.* **61** (1993), *no.* 203, 25–28. (S. W. Graham) **93k:11071** 11L03

— *see also* **Century of calculus, 93h:00023a** *and* **93h:00023b**

Apostolakis, Ioannis S. An estimation algorithm for multirate sampled digital control systems. (English summary) *Internat. J. Control* **56** (1992), *no.* 4, 813–830. 93C83 (93B40)

Apostolatos, Theocharis A. (*with* Thorne, Kip S.) Rotation halts cylindrical, relativistic gravitational collapse. (English summary) *Phys. Rev. D* (3) **46** (1992), *no.* 6, 2435–2444. (Summary) **93f:83053** 83C55

Apostolico, Alberto (*with* Crochemore, M.) Optimal canonization of all substrings of a string. *Inform. and Comput.* **95** (1991), *no.* 1, 76–95. (Friedrich Otto) **93a:68121** 68R15 (68Q25)

— Optimal parallel detection of squares in strings. (English summary) *Algorithmica* **8** (1992), *no.* 4, 285–319. (Summary) **93h:68116** 68R15 (68Q22, 68Q25)

— (*with* Atallah, Mikhail J.; Hambrusch, Susanne E.) New clique and independent set algorithms for circle graphs. *Discrete Appl. Math.* **36** (1992), *no.* 1, 1–24. (Linda Pagli) **93b:05151** 05C85 (68Q25, 68R10, 90C35)

— (*with* Szpankowski, Wojciech) Self-alignments in words and their applications. (English summary) *J. Algorithms* **13** (1992), *no.* 3, 446–467. (Summary) **93c:68081** 68R15

— Efficient CRCW-PRAM algorithms for universal substring searching. (English summary) *Theoret. Comput. Sci.* **108** (1993), *no.* 2, 331–344. (Maxime Crochemore and Dany Breslauer) **93m:68061** 68Q22 (68T10, 68U15)

Apostolopoulos, C. (*with* Van den Bergh, Michel; Van Oystaeyen, Freddy) On Schur rings of group rings of finite groups. *Comm. Algebra* **20** (1992), *no.* 7, 2139–2152. (Burkhard Külshammer) **93d:16020** 16H05 (16S34, 16S99)

Apostolopoulos, Theodore (*with* Dassios, George) A parallel algorithm for solving the inverse scattering moment problem. (English summary) *J. Comput. Appl. Math.* **42** (1992), *no.* 1, 63–77. 65Y05 (76Q05)

Apostolova, Liliya Nikolova On local solvability of systems of complex vector fields. (Polish summary) *Bull. Soc. Sci. Lett. Łódź* **40** (1990), *no.* 1-10, 31–41 (1991). (Sabir Umarov) **93f:35010** 35A07 (35A30, 35F05)

Apostolova, M. P. (*with* Nikolova, V. B.) On a special case of hypersurfaces in P_4 obtained by a quadric, a plane and a collineation. (Bulgarian. English and Russian summaries) *Godishnik Vissh. Uchebn. Zaved. Prilozhna Mat.* **23** (1987), *no.* 3, 175–191 (1989). (Summary) **93f:51027** 51N35

— (*with* Nikolova, V. B.) Hypersurfaces in P_4 obtained by stereographic projection of a quadric onto a plane and a collineation for a special case. I. (Bulgarian. English and Russian summaries) *Godishnik Vissh. Uchebn. Zaved. Prilozhna Mat.* **23** (1987), *no.* 4, 169–180 (1989). (Summary) **93c:51025** 51N35

— (*with* Petrov, L. K.) Special cases of hypersurfaces in P_4 obtained by stereographic projection of a quadric onto a plane and a collineation. II. (Bulgarian. English and Russian summaries) *Godishnik Vissh. Uchebn. Zaved. Prilozhna Mat.* **23** (1987), *no.* 4, 181–188 (1989). (J. Čižmár) **93f:51028** 51N35 (14N05)

Appell, Jürgen Elliptic systems without monotonicity. *Conference on Differential Equations and Applications* (*Ruse*, 1989), 239–243, *Tech. Univ., Ruse*, 1991. (*see* **93f:34004**) 47H15 (35J60)

— (*with* Nguyễn Hồng Thái; Zabreĭko, P. P.) Multivalued superposition operators in ideal spaces of vector functions. I, II. *Indag. Math.* (*N.S.*) **2** (1991), *no.* 4, 385–395, 397–409. (Moshe Marcus) **93f:47086** 47H30 (46E30)

— (*with* De Pascale, E.; Zabreĭko, P. P.) Multivalued superposition operators. (Italian summary) *Rend. Sem. Mat. Univ. Padova* **86** (1991), 213–231 (1992). (Pavel Drábek) **93a:47070** 47H30

— (*with* Zabreĭko, P. P.) Linear differential equations in scales of Banach spaces. *Analysis* **12** (1992), *no.* 1-2, 31–45. (Summary) **93h:34099** 34G10 (34A12, 35A10, 35R20, 46E30, 47E05, 47N20)

— (*with* Zabreĭko, P. P.; Shirokanova, N. I.) General properties of polylinear and power integral operators in ideal spaces of functions. (Russian. English and Russian summaries) *Dokl. Akad. Nauk Belarusi* **36** (1992), *no.* 3-4, 197–201, 284. (Summary) **93d:47129** 47H30 (46E30, 47B07, 47B38, 47G10)

— (*with* Semënov, E. M.) On the equivalence of the Lorentz and Marcinkiewicz norm on subsets of measurable functions. *J. Funct. Anal.* **104** (1992), *no.* 1, 47–53. (A. V. Bukhvalov) **93a:46045** 46E30

— (*with* Zabreĭko, P. P.) Bifurcation points of Hammerstein equations. (English summary) *Integral Equations Operator Theory* **16** (1993), *no.* 1, 15–37. (J. Kolomý) **93m:47067** 47H15 (45G10, 47H30, 47N20, 58E07)

Appell, Paul *see* **Encyclopedia: Pure and applied mathematical sciences, 93m:00055a** *and* **93m:00055b**

Applebaum, David Unitary evolutions and horizontal lifts in quantum stochastic calculus. *Comm. Math. Phys.* **140** (1991), *no.* 1, 63–80. (Robin Hudson) **93f:81061** 81S25 (46L50, 46L60, 47N50)

Appling, William D. L. Set functions, finite additivity and joint distribution function representations. *Real Anal. Exchange* **17** (1991/92), *no.* 1, 140–170. (Summary) **93g:28004** 28A25 (28A10)

Apt, K. R. *see* **Logic programming languages, 93k:68020**

Apter, Arthur W. A note on strong compactness and supercompactness. *Bull. London Math. Soc.* **23** (1991), *no.* 2, 113–115. (Donna M. Carr) **93h:03074** 03E55

— (*with* Henle, James M.) Relative consistency results via strong compactness. *Fund. Math.* **139** (1991), *no.* 2, 133–149. (James Baumgartner) **93h:03071** 03E35 (03E55, 03E60)

Apushkinskaya, D. E. An estimate for the maximum of solutions of parabolic equations with the Venttsel' condition. (Russian. English summary) *Vestnik Leningrad. Univ. Mat. Mekh. Astronom.* **1991,** *vyp.* 2, 3–12, 124; *translation in Vestnik Leningrad Univ. Math.* **24** (1991), *no.* 2, 1–11. (Nikolaĭ Kutev) **93i:35082** 35K60 (35B45, 35B50, 35K65)

Aquaro, G. *see* **Recent developments in mathematical analysis and its applications, 93e:00035**

Aquilanti, Vincenzo (*with* Cavalli, Simonetta; Sevryuk, M. B.) Asymptotic (short-wave) equivalence of one-dimensional Schrödinger equations by formal canonical transformations and its generalizations. *J. Phys. A* **24** (1991), *no.* 19, 4475–4494. (Tuncay Aktosun) **93d:34139** 34L40 (34E20, 81Q20)

— (*with* Zhu, Chaoyuan; Nakamura, Hiroki; Re, Nazzareno) The two-state linear curve crossing problems revisited. I. Analysis of Stokes phenomenon and expressions for scattering matrices. *J. Chem. Phys.* **97** (1992), *no.* 3, 1892–1904. (Summary) **93d:34138** 34L25 (34E20, 81U05)

Ara, Pere *K*-theory for Rickart C^*-algebras. *K-Theory* **5** (1991), *no.* 3, 281–292. (J. A. Mingo) **93d:46118** 46L80 (16E20, 19K99, 46L05)

— (*with* Mathieu, Martin) A local version of the Dauns-Hofmann theorem. *Math. Z.* **208** (1991), *no.* 3, 349–353. (Horst Behncke) **93b:46109** 46L05 (46M10)

— (*with* Mathieu, Martin) On ultraprime Banach algebras with nonzero socle. *Proc. Roy. Irish Acad. Sect. A* **91** (1991), *no.* 1, 89–98. (Khristo N. Boyadzhiev) **93h:46061** 46H20

— Elementary operators on semiprime rings. *Elementary operators and applications* (*Blaubeuren*, 1991), 143–147, *World Sci. Publishing, River Edge, NJ*, 1992. (John Clark) **93h:16032** 16N60 (46L05)

Aragane, Kenichi (*with* Tabata, Hiroyoshi) Horn formulas in a fuzzy propositional logic. *Proceedings of the 15th Symposium on Semigroups* (*Matsue*, 1991), 49–53, *Shimane Univ., Matsue*, 1992. (*see* **93e:20073**) 03B52 (04A72)

— (*with* Tabata, Hiroyoshi) Connections between the free structures and the structures provided by McNulty. (English summary) *Math. Japon.* **37** (1992), *no.* 4, 737–741. (John T. Baldwin) **93j:03017** 03C07

Aragão de Carvalho, C. Fermion induced solitons. (English summary) *J. J. Giambiagi Festschrift*, 1–14, *World Sci. Publishing, River Edge, NJ*, 1990. (*see* **93b:81004**) 82D60 (81V05)

— (*with* Baulieu, Laurent) Local BRST symmetry and superfield formulation of the Donaldson-Witten theory. *Phys. Lett. B* **275** (1992), *no.* 3-4, 323–330. (Danny Birmingham) **93b:81152** 81T13 (57R57, 58D27, 81T70)

Aragon, Jorge (*with* Pathak, Pramod K.) An algorithm for optimal integration of two surveys. (English summary) *Sankhyā Ser. B* **52** (1990), *no.* 2, 198–203. 62D05

— (*with* Eberly, David) Existence and uniqueness of maximum likelihood estimators for certain size-biased discrete distributions. (English summary) *Sankhyā Ser. B* **53** (1991), *no.* 2, 213–228. (Summary) **93e:62068** 62F10

— (*with* Eberly, David; Eberly, Shelly) Existence and uniqueness of the maximum likelihood estimator for the two-parameter negative binomial distribution. (English summary) *Statist. Probab. Lett.* **15** (1992), *no.* 5, 375–379. 62F10

Aragone, C. Theories of quantum gravity. I. Superstring theory. *General relativity and gravitation*, 1989 (*Boulder, CO*, 1989), 441–447, *Cambridge Univ. Press, Cambridge*, 1990. (*see* **93b:83002**) 83C45 (83E30)

— (*with* Mundarain, D.) Comparing quantum entropies and uncertainties for two-mode squeezed, coherent and intelligent spin states. *Phys. Lett. A* **165** (1992), *no.* 2, 89–95. (Summary) **93a:81074** 81R30 (81V80)

Arai, Asao A general class of infinite-dimensional Dirac operators and related aspects. *Functional analysis & related topics* (*Sapporo*, 1990), 85–98, *World Sci. Publishing, River Edge, NJ*, 1991. (Akira Asada) **93c:58203** 58G03 (47N50, 58B99, 58G10)

— A theorem on essential selfadjointness with application to Hamiltonians in nonrelativistic quantum field theory. *J. Math. Phys.* **32** (1991), *no.* 8, 2082–2088. (From the text) **93e:81019** 81Q10 (47B25, 47N50)

— Long-time behavior of an electron interacting with a quantized radiation field. *J. Math. Phys.* **32** (1991), *no.* 8, 2224–2242. (H. Baumgärtel) **93c:81264** 81V10

— A general class of infinite-dimensional Dirac operators and path integral representation of their index. *J. Funct. Anal.* **105** (1992), *no.* 2, 342–408. (Alan L. Carey) **93j:58124** 58G10 (46G12, 46N50, 47N50, 58D30, 81T60)

— Momentum operators with gauge potentials, local quantization of magnetic flux, and representation of canonical commutation relations. (English summary) *J. Math. Phys.* **33** (1992), *no.* 10, 3374–3378. (Helmut R. Reeh) **93h:81025** 81Q10 (81S05)

Arai, Hitoshi Area integrals for Riesz measures on the Siegel upper half space of type II. (English summary) *Tôhoku Math. J.* (2) **44** (1992), *no.* 4, 613–622. (Aline Bonami) **93m:32009** 32A35 (31C05, 32A40, 42B25, 42B30)

Arai, Kaori (*with* Yamamura, Kiyotaka; Kiyoi, Masahiro) A piecewise-linear homotopy method for nonlinear programming. *Electron. Comm. Japan Part III Fund. Electron. Sci.* **74** (1991), *no.* 10, 28–38 (1992). (Jürgen Guddat) **93h:90094** 90C30 (65H20, 65K10, 90C31)

Arai, Masaharu (*with* Yamada, Osanobu) A remark on essential spectrum of magnetic Schrödinger operators with exploding potentials. *Mem. Res. Inst. Sci. Engrg. Ritsumeikan Univ. No.* 50 (1991), 21–32 (1992). (Hitoshi Kitada) **93f:35160** 35P05 (35J10, 47F05, 47N50, 81Q10)

Arai, Tadashi (*with* Ueno, Shuichi; Kajitani, Yoji) Generalization of a theorem on the parametric maximum flow problem. (English summary) *Discrete Appl. Math.* **41** (1993), *no.* 1, 69–74. (Summary) **93h:05095** 05C35

Arai, Toshiyasu A slow growing analogue to Buchholz' proof. *Ann. Pure Appl. Logic* **54** (1991), *no.* 2, 101–120. (Peter Clote) **93a:03065** 03F30 (03D15, 03F35)

Arak, T. (*with* Surgailis, Donatas) Markov random graphs and polygonal fields with Y-shaped nodes. *Probability theory and mathematical statistics, Vol. I* (*Vilnius*, 1989), 57–67, "*Mokslas*", *Vilnius*, 1990. (Christian Maes) **93c:60054** 60G17 (05C80, 60G60, 60K35, 82B21)

Arakawa, Tsuneo Selberg zeta functions associated with a theta multiplier system of $SL_2(\mathbf{Z})$ and Jacobi forms. *Math. Ann.* **293** (1992), *no.* 2, 213–237. (Nils-Peter Skoruppa) **93g:11043** 11F37 (11M41)

Arakelyan, N. U. (*with* Avetisyan, Ruben Abelevich) Best approximations by meromorphic functions on the real axis. (Russian. English and Armenian summaries) *Izv. Akad. Nauk Armyan. SSR Ser. Mat.* **25** (1990), *no.* 6, 534–548, 605 (1991); *translation in Soviet J. Contemporary Math. Anal.* **25** (1990), *no.* 6, 29–44 (1991). (Krzysztof Reczek) **93c:41031** 41A30 (30D30, 30E10)

Araki, Huzihiro *see* **Current topics in operator algebras, 93g:46002** *and* **Special issue dedicated to R. Haag on the occasion of his 70th birthday, 93h:81004**

Araki, Keisuke (*with* Kawahara, Takuji; Toh, Sadayoshi) Interactions of two-dimensionally localized pulses of the regularized-long-wave equation. (English summary) *Phys. D* **59** (1992), *no.* 1-3, 79–89. 65P05 (35Q53)

Araki, Makoto On the Hölder continuous nonnegative weak solutions of the Dirichlet problem for a degenerate quasilinear elliptic system. *Mem. Fac. Sci. Kōchi Univ. Ser. A Math.* **14** (1993), 29–39. (G. Albinus) **93m:35065** 35J55 (35J70)

Araki, Mituhiko (*with* Hagiwara, Tomomichi; Soma, H.) Simultaneous pole assignment and stabilization by multirate digital controllers. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, I* (*Kobe*, 1991), 505–510, *Mita, Tokyo*, 1992. (*see* **93g:93005**) 93B55 (93C57)

— (*with* Hagiwara, Tomomichi) Robust stability of sampled data systems. (English summary) *Robust control* (*Tokyo*, 1991), 48–55, *Lecture Notes in Control and Inform. Sci.*, 183, *Springer, Berlin*, 1992. (*see* **93f:93006**) 93D09 (93C57)

— (*with* Fujigaki, M.; Hagiwara, Tomomichi) Optimal robust servo controllers with two degrees of freedom and application to the control of electric power generators. (English summary) *Control Theory Adv. Tech.* **8** (1992), *no.* 2, 289–314. 93B36 (93C95)

— (*with* Choe, Yeon-Wook) Control of serial sampling systems. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 8, *part I*, 1202–1205. (Dieter Franke) **93f:93083** 93C57 (93B07, 93B52, 93C05)

Araki, S. (*with* Nomura, H.; Hayashi, Isao; Wakami, N.) Fuzzy modeling with an iterative generation mechanism for fuzzy inference rules. (English summary) *Japanese J. Fuzzy Theory Systems* **4** (1992), *no.* 4, 399–411. 03B52 (93C42)

Aramaki, Junichi Asymptotic behavior of eigenvalues for a class of pseudodifferential operators on $\mathbf{R}^n$. (English summary) *Pacific J. Math.* **156** (1992), *no.* 1, 19–44. (G. V. Rozenblyum) **93j:35123** 35P20 (35S05, 47G30, 58G15)

Aramanovich, I. G. (*with* Volkovyskiĭ, L. I.; Lunts, G. L.) ★ A collection of problems on complex analysis. Translated from the 1960 Russian original by J. Berry. Reprint of the 1965 English translation. *Dover Publications, Inc., New York*, 1991. x+426 *pp. ISBN* 0-486-66913-0 (Editors) **93e:30003** 30–01 (00A07)

Aramendia, Miguel (*with* Anderson, Edward J.) A linear programming approach to the search game on a network with mobile hider. *SIAM J. Control Optim.* **30** (1992), *no.* 3, 675–694. (Michael A. Trick) **93b:90123** 90D26 (90B10, 90C05, 90C35)

Aramova, Annetta G. Symmetric products of Gorenstein varieties. *J. Algebra* **146** (1992), *no.* 2, 482–496. (Alfio Ragusa) **93e:13008** 13A50 (13H10)

saralegi Aranguren, Martin *see* **Saralegi Aranguren, Martin**

Aranson, I. (*with* Golomb, D.; Sompolinsky, H.) Spatial coherence and temporal chaos in macroscopic systems with asymmetrical couplings. *Phys. Rev. Lett.* **68** (1992), *no.* 24, 3495–3498. (Summary) **93b:58097** 58F13

Arapostathis, Aristotle (*with* Fernández-Gaucherand, Emmanuel; Marcus, Steven I.) Adaptive control of a partially observed controlled Markov chain. (English summary) *Stochastic theory and adaptive control* (*Lawrence, KS*, 1991), 161–171, *Lecture Notes in Control and Inform. Sci.*, 184, *Springer, Berlin*, 1992. (*see* **93g:93007**) 93E35

— (*with* Fernández-Gaucherand, Emmanuel; Marcus, Steven I.) Structured solutions for stochastic control problems. (English summary) *Stochastic theory and adaptive control* (*Lawrence, KS*, 1991), 172–184, *Lecture Notes in Control and Inform. Sci.*, 184, *Springer, Berlin*, 1992. (*see* **93g:93007**) 93E20

— (*with* Ghosh, Mrinal K.; Marcus, Steven I.) Optimal control of switching diffusions modelling a flexible manufacturing system. (English summary) *Stochastic theory and adaptive control* (*Lawrence, KS*, 1991), 210–224, *Lecture Notes in Control and Inform. Sci.*, 184, *Springer, Berlin*, 1992. (*see* **93g:93007**) 49N55 (93E20)

Arapura, Donu Fano maps and fundamental groups. *Algebraic geometry* (*Chicago, IL*, 1989), 10–14, *Lecture Notes in Math.*, 1479, *Springer, Berlin*, 1991. (Richard Randell) **93h:14012** 14E20 (14F17)

Aras, Girish (*with* Whitaker, Lyn R.) A sequential scheme to estimate the optimal age replacement policy. (English summary) *Comm. Statist. Theory Methods* **21** (1992), *no.* 8, 2325–2338. (S. Panchapakesan) **93m:62211** 62N05 (62G05, 62L05)

Arason, Jón Kr. (*with* Elman, Richard; Jacob, Bill) On indecomposable vector bundles. *Comm. Algebra* **20** (1992), *no.* 5, 1323–1351. (K. Szymiczek) **93e:14051** 14J60 (14F05, 14H60)

Arasu, K. T. (*with* Jungnickel, Dieter; Pott, Alexander) Symmetric divisible designs with $k - \lambda_1 = 1$. *Discrete Math.* **97** (1991), *no.* 1-3, 25–38. (Sylvia A. Hobart) **93b:05011** 05B05 (05B10, 20D60)

— (*with* Pott, Alexander) Some constructions of group divisible designs with Singer groups. *Discrete Math.* **97** (1991), *no.* 1-3, 39–45. (Dinesh G. Sarvate) **93b:05020** 05B10 (05B30, 20D60)

— (*with* Xiang, Qing) On the existence of periodic complementary binary sequences. (English summary) *Des. Codes Cryptogr.* **2** (1992), *no.* 3, 257–262. (Summary) **93g:11017** 11B50 (05B10)

— (*with* Pott, Alexander) Cyclic affine planes and Paley difference sets. (English summary) A collection of contributions in honour of Jack van Lint. *Discrete Math.* **106/107** (1992), 19–23. (R. C. Mullin) **93f:05019** 05B10 (51E15)

— Falsity of a conjecture on dicyclic designs. *Utilitas Math.* **41** (1992), 253–258. (Summary) **93b:05012** 05B05 (05B10)

— (*with* Sehgal, Surinder K.) Some new results on abelian difference sets. (English summary) *Utilitas Math.* **42** (1992), 225–233. (Summary) **93k:12015** 12H10 (05B10, 20C99)

Aratyn, Henrik A geometric approach to the string BRS cohomology. *Differential geometric methods in theoretical physics (Davis, CA, 1988)*, 431–443, *NATO Adv. Sci. Inst. Ser. B Phys.*, 245, *Plenum, New York*, 1990. (Rudolf Schmid) **93h:81141** 81T70 (17B56, 81R10)

— (*with* Constantinidis, C. P.; Ferreira, L. A.; Gomes, J. F.; Zimerman, A. H.) Higher spin symmetries and w_∞ algebra in the conformal affine Toda model. *Phys. Lett. B* **281** (1992), *no.* 3-4, 245–253. (Summary) **93b:81238** 81T40 (81R10)

— (*with* Nissimov, E.; Pacheva, S.) Classical r-matrices and Poisson bracket structures on infinite-dimensional groups. *Phys. Lett. B* **284** (1992), *no.* 3-4, 273–282. (Alberto Medina) **93m:58010** 58B25 (22E65, 58F05)

— (*with* Ferreira, L. A.; Gomes, J. F.; Zimerman, A. H.) A new deformation of W-infinity and applications to the two-loop WZNW and conformal affine Toda models. (English summary) *Phys. Lett. B* **293** (1992), *no.* 1-2, 67–71. (Summary) **93j:81027** 81R10 (17B68, 17B81, 81T40)

carneiro de Araújo, J. H. *see* **Carneiro de Araújo, J. H.**

Araujo, Jesús Distance from an isometry to the Banach-Stone maps. *p-adic functional analysis (Laredo, 1990)*, 1–12, *Lecture Notes in Pure and Appl. Math.*, 137, *Dekker, New York*, 1992. (N. De Grande-De Kimpe) **93b:47143** 47S10 (47B38)

— (*with* Fernández-Ferreirós Erviti, Pilar; Martínez-Maurica, J.) Pseudocompact and P-spaces in non-Archimedean functional analysis. *p-adic functional analysis (Laredo, 1990)*, 13–21, *Lecture Notes in Pure and Appl. Math.*, 137, *Dekker, New York*, 1992. (From the text) **93a:54021** 54D30 (46S10)

Araujo, Marcelo E. (*with* Dray, Tevian; Skea, James E. F.) Finding isometry groups in theory and practice. *Gen. Relativity Gravitation* **24** (1992), *no.* 5, 477–500. (A. H. Taub) **93c:83001** 83–04 (83C99)

Aravire, Roberto (*with* Baeza, Ricardo) Milnor's k-theory and quadratic forms over fields of characteristic two. *Comm. Algebra* **20** (1992), *no.* 4, 1087–1107. (Hong You) **93a:11030** 11E81 (19G12)

Arazmyradov, T. (*with* Makarov, Vladimir Leonidovich; Kulyev, D. T.) Solution of a nonlocal boundary value problem in classes of generalized functions. (Russian. English summary) *Izv. Akad. Nauk Turkm. Ser. Fiz.-Mat. Tekhn. Khim. Geol. Nauk* **1992**, *no.* 2, 3–8. (From the summary) **93a:35089** 35K60 (35D05)

Arazy, Jonathan Operator means and symmetric normed ideals. *Signal processing, scattering and operator theory, and numerical methods (Amsterdam, 1989)*, 543–550, *Progr. Systems Control Theory*, 5, *Birkhäuser Boston, Boston, MA*, 1990. (T. Ando) **93g:47021** 47A63 (47B10, 47D50)

— (*with* Fisher, Stephen D.; Janson, Svante; Peetre, Jaak) Membership of Hankel operators on the ball in unitary ideals. *J. London Math. Soc.* (2) **43** (1991), *no.* 3, 485–508. (Ke He Zhu) **93c:47030** 47B35 (47B10, 47G10)

— Integral formulas for the invariant inner products in spaces of analytic functions on the unit ball. *Function spaces (Edwardsville, IL, 1990)*, 9–23, *Lecture Notes in Pure and Appl. Math.*, 136, *Dekker, New York*, 1992. (Julià Cufí) **93a:46044** 46E22 (32A37, 46J15)

— Realization of the invariant inner products on the highest quotients of the composition series. *Ark. Mat.* **30** (1992), *no.* 1, 1–24. (Harald Upmeier) **93i:32045** 32M15 (46E99, 47B38)

— (*with* Khavinson, Dmitry) Spectral estimates of Cauchy's transform in $L^2(\Omega)$. (English summary) *Integral Equations Operator Theory* **15** (1992), *no.* 6, 901–919. (N. K. Karapetyants) **93k:47058** 47G10 (47B06)

Arbarello, Enrico (*with* De Concini, Corrado) Abelian varieties, infinite-dimensional Lie algebras, and the heat equation. *Complex geometry and Lie theory (Sundance, UT, 1989)*, 1–31, *Proc. Sympos. Pure Math.*, 53, *Amer. Math. Soc., Providence, RI*, 1991. (John B. Little) **93f:14023** 14K10 (14K25, 17B65, 58B20, 58F07)

Arbeiter, E. (*with* Zähle, M.) Kinematic relations for Hausdorff moment measures in spherical spaces. *Math. Nachr.* **153** (1991), 333–348. (Adrian Baddeley) **93f:52006** 52A22 (60D05)

Arbenz, Peter Divide and conquer algorithms for the bandsymmetric eigenvalue problem. (English summary) *Parallel computing '91 (London, 1991)*, 151–158, *Adv. Parallel Comput.*, 4, *North-Holland, Amsterdam*, 1992. (*see* **93f:00016**) 65F15

— Divide and conquer algorithms for the bandsymmetric eigenvalue problem. (English summary) *Parallel Comput.* **18** (1992), *no.* 10, 1105–1128. (Summary) **93i:65043** 65F15

Arbib, Claudio (*with* Mocci, Ugo; Scoglio, Caterina) Methodological aspects of ring network design. (English summary) *System modelling and optimization (Zurich, 1991)*, 135–144, *Lecture Notes in Control and Inform. Sci.*, 180, *Springer, Berlin*, 1992. (*see* **93e:90003**) 90C35 (90C10)

Arbogast, Todd (*with* Chilakapati, A.; Wheeler, Mary Fanett) A characteristic-mixed method for contaminant transport and miscible displacement. (English summary) *Computational methods in water resources, IX, Vol. 1 (Denver, CO, 1992)*, 77–84, *Comput. Mech., Southampton*, 1992. (*see* **93g:76002**) 86–08 (76M25, 76R50)

— A simplified dual-porosity model for two-phase flow. (English summary) *Computational methods in water resources, IX, Vol. 2 (Denver, CO, 1992)*, 419–426, *Comput. Mech., Southampton*, 1992. (*see* **93g:76003**) 76T05 (76S05)

— The existence of weak solutions to single porosity and simple dual-porosity models of two-phase incompressible flow. *Nonlinear Anal.* **19** (1992), *no.* 11, 1009–1031. (Andro Mikelić) **93k:76107** 76S05 (35D05, 35Q35, 76T05)

Arcangéli, R. (*with* López de Silanes, M. C.) Sur la convergence des D^m-splines d'ajustement pour des données exactes ou bruitées. (English summary) [On the convergence of fitting D^m-splines for exact or noisy data] *Rev. Mat. Univ. Complut. Madrid* **4** (1991), *no.* 2-3, 279–294. (D. Zwick) **93g:41008** 41A15

de Arcangelis, Riccardo *see* **De Arcangelis, Riccardo**

Archambault, Sylvain (*with* Moore, Marc) On the asymptotic behavior of some statistics based on morphological operations. (English summary) *Spatial statistics and imaging (Brunswick, ME, 1988)*, 258–274, *IMS Lecture Notes Monograph Ser.*, 20, *Inst. Math. Statist., Hayward, CA*, 1991. (Summary) **93j:60038** 60F15 (62M30)

Archbold, R. J. (*with* Zaki, Adel M.) Limits of pure states. II. *Proc. Edinburgh Math. Soc.* (2) **35** (1992), *no.* 2, 227–231. (Steve Wright) **93h:46086** 46L30 (46L05)

Archdeacon, Dan (*with* Dinitz, Jeffrey H.) Constructing indecomposable 1-factorizations of the complete multigraph. *Discrete Math.* **92** (1991), *no.* 1-3, 9–19. (A. Rosa) **93a:05099** 05C70

— A survey of self-dual polyhedra. (English summary) *Fourth Czechoslovakian Symposium on Combinatorics, Graphs and Complexity (Prachatice, 1990)*, 5–12, *Ann. Discrete Math.*, 51, *North-Holland, Amsterdam*, 1992. (Summary) **93j:05043** 05C10

— (*with* Širáň, Jozef; Škoviera, Martin) Self-dual regular maps from medial graphs. *Acta Math. Univ. Comenian. (N.S.)* **61** (1992), *no.* 1, 57–64. (Arthur T. White) **93m:05059** 05C10

— The medial graph and voltage-current duality. *Discrete Math.* **104** (1992), *no.* 2, 111–141. (Narsingh Deo) **93i:05051** 05C10 (94C05)

— Densely embedded graphs. *J. Combin. Theory Ser. B* **54** (1992), *no.* 1, 13–36. (Nora Hartsfield) **93c:05043** 05C10

— (*with* Hartsfield, Nora) Self-dual embeddings of complete bipartite graphs. *J. Combin. Theory Ser. B* **54** (1992), *no.* 2, 249–256. (Saul Stahl) **93b:05046** 05C10

— (*with* Bonnington, C. P.; Little, C. H. C.) Cycles, cocycles and diagonals: a characterization of planar graphs. (English summary) *Planar graphs (New Brunswick, NJ, 1991)*, 1–3, *DIMACS Ser. Discrete Math. Theoret. Comput. Sci.*, 9, *Amer. Math. Soc., Providence, RI*, 1993. (*see* **93m:05005**) 05C10 (05C75)

Archer, Jean-Claude (*with* Le Gruyer, Erwan) Stabilité et convergence des schémas d'extension par fonctions continues dans des espaces métriques quelconques. (English and French summaries) [Stability and convergence of extension schemes by continuous functions in general metric spaces] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 7, 803–806. (Summary) **93k:54038** 54C20 (54E35)

— (*with* Le Gruyer, Erwan) Deux résultats sur les champs tayloriens. (English and French summaries) [Two results on Taylor fields] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 8, 937–939. (Enrique Outerelo Domínguez) **93i:58018** 58C25 (26E20, 46G05, 58C20)

— (*with* Le Gruyer, Erwan) A constructive proof of a Whitney extension theorem in one variable. (English summary) *J. Approx. Theory* **71** (1992), *no.* 3, 312–328. (Zygfryd Kominek) **93m:26008** 26A24 (41A10, 42C05)

Archibald, Thomas Riemann and the theory of electrical phenomena: Nobili's rings. *Centaurus* **34** (1991), *no.* 3, 247–271. (I. Grattan-Guinness) **93d:01026** 01A55

— Essay review of *Convolutions in French mathematics, 1800–1840: from the calculus and mechanics to mathematical analysis and mathematical physics. Vol. II* [Birkhäuser, Basel, 1990; MR 92h:01032b] by I. Grattan-Guinness. *Historia Math.* **19** (1992), *no.* 3, 303–310. 01A55 (01A72)

garcía-Archilla, B. *see* **García-Archilla, B.**

Archimedes *see* **Yañez C., Gabriel**

Arcidiacono, G. (*with* Singh, Triloki) On a Birkhoff-type theorem in general projective relativity. (English summary) *Algebras Groups Geom.* **9** (1992), *no.* 1, 29–34. (Carl Brans) **93h:83032** 83D05

Arcones, Miguel A. (*with* Giné, Evarist) On the bootstrap of U and V statistics. *Ann. Statist.* **20** (1992), *no.* 2, 655–674. (Michael R. Chernick) **93f:62021** 62E20 (60F05, 62F05, 62G09)

— Large deviations for U-statistics. (English summary) *J. Multivariate Anal.* **42** (1992), *no.* 2, 299–301. (Summary) **93h:60036** 60F10 (60B12)

— On the arg max of a Gaussian process. (English summary) *Statist. Probab. Lett.* **15** (1992), *no.* 5, 373–374. (Summary) **93j:60045** 60G15

Arczewski, Krzysztof Graph theoretical approach. I. Determination of kinetic energy for a class of particle systems. *J. Franklin Inst.* **329** (1992), *no.* 3, 469–481. (A. E. Zakrzhevskiĭ) **93d:70023a** 70F99 (70G99)

— Graph theoretical approach. II. Determination of generalized forces for a class of systems consisting of particles and springs. *J. Franklin Inst.* **329** (1992), *no.* 3, 483–491. (A. E. Zakrzhevskiĭ) **93d:70023b** 70F99 (70G99)

— Graph theoretical approach. III. Equations of motion of a class of constrained particle systems. *J. Franklin Inst.* **329** (1992), *no.* 3, 493–510. (A. E. Zakrzhevskiĭ) **93d:70023c** 70F99 (70G99)

Ardanuy Albájar, Ramón (*with* Alcalá, A.) Minimax principle for stochastic differential games. *Extracta Math.* **6** (1991), *no.* 2-3, 184–186. 93E05 (90D15)

— (*with* Soldevilla Moreno, Ma. del Mar) Some results on universally measurable mappings. *J. Inst. Math. Comput. Sci. Math. Ser.* **4** (1991), *no.* 3, 385–389. (O. Lipovan) **93e:28017** 28B20 (28A99)

— (*with* Soldevilla Moreno, Ma. del Mar; Martín Martín, Quintín) A normality omnibus test based on skewness and kurtosis coefficients. *Rev. Roumaine Math. Pures Appl.* **37** (1992), *no.* 3, 185–197. 62G10

— (*with* Alcalá, A.) Weak infinitesimal operators and stochastic differential games. (English summary) *Stochastica* **13** (1992), *no.* 1, 5–12. (Summary) **93j:93139** 93E05 (90C15)

— (*with* Soldevilla Moreno, Ma. del Mar; Alcalá, A.) A linear calibration model with correlated standards and roundings. (English summary) *J. Inst. Math. Comput. Sci. Math. Ser.* **6** (1993), *no.* 1, 25–37. 62J05

Ardehali, M. Bell inequalities with a magnitude of violation that grows exponentially with the number of particles. (English summary) *Phys. Rev. A* (3) **46** (1992), *no.* 9, 5375–5378. (Emilio Santos) **93k:81012** 81P10

Ardema, M. D. (*with* Skowronski, J. M.) Dynamic game applied to coordination control of two arm robotic system. (English summary) *Differential games—developments in modelling and computation (Espoo, 1990)*, 118–130, *Lecture Notes in Control and Inform. Sci.*, 156, *Springer, Berlin*, 1991. (Clementina D. Mladenova) **93f:93088** 93C85 (70B15, 70Q05, 90D25)

Arecchi, F. T. Rate processes in nonlinear optical dynamics with many attractors. *Chaos* **1** (1991), *no.* 3, 357–372. (Summary) **93d:78001** 78A10 (58F40)

Arede, Teresa Heat kernels on Lie groups. *Stochastic analysis and applications (Lisbon, 1989)*, 52–62, *Progr. Probab.*, 26, *Birkhäuser Boston, Boston, MA*, 1991. (Józef Dodziuk) **93e:22016** 22E30 (58G11)

al-Areefi, S. M. *see* **Al-Areefi, S. M.**

Aref, Hassan Stochastic particle motion in laminar flows. (English summary) Symposium on Fluid Mechanics of Stirring and Mixing (La Jolla, CA, 1990). *Phys. Fluids A* **3** (1991), *no. 5, part 2*, 1009–1016. (Summary) **93k:76062** 76F20 (76M35, 76M99)

Aref'ev, V. N. The smoothness of generalized solutions of some equations of mixed type with discontinuous coefficients. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* **1991**, *no.* 8, 8–13; *translation in Soviet Math. (Iz. VUZ)* **35** (1991), *no.* 8, 6–10. 35D10 (35M10, 35R05)

Aref'eva, I. Ya. Physics at the Planck length and p-adic field theories. *Differential geometric methods in theoretical physics (Davis, CA, 1988)*, 387–398, *NATO Adv. Sci. Inst. Ser. B Phys.*, 245, *Plenum, New York*, 1990. (From the text) **93d:81132** 81T30 (11S99)

— (*with* Volovich, I. V.) Quantum group chiral fields and differential Yang-Baxter equations. *Phys. Lett. B* **264** (1991), *no.* 1-2, 62–68. (Summary) **93d:81084** 81R50 (17B37, 81T40, 82B20)
— (*with* Volovich, I. V.) Quantum group particles and non-Archimedean geometry. *Phys. Lett. B* **268** (1991), *no.* 2, 179–187. (Vladimir A. Stukopin) **93a:81080** 81R50 (11S80, 81P05)
— Quantum group gauge fields. *Sakharov Memorial Lectures in Physics, Vol.* 1, 2 (*Moscow*, 1991), 99–110, *Nova Sci. Publ., Commack, NY*, 1992. (*see* **93h:81003**) 81T13 (81R50)
— (*with* Zubarev, A. P.) Semi-free field representation and string field theory in 2D gravity. *Modern Phys. Lett. A* **7** (1992), *no.* 8, 677–687. (W. Cox) **93c:81160** 81T30 (81T40)
ramírez de Arellano, Enrique *see* **Ramírez de Arellano, Enrique**
Arenas, A. Rational equivalence of primitive integral binary quadratic forms. *Proc. Roy. Soc. Edinburgh Sect. A* **118** (1991), *no.* 1-2, 157–160. (Introduction) **93d:11041** 11E12 (11E16)
Arendt, Wolfgang (*with* Batty, Charles J. K.) L'holomorphie du semi-groupe engendré par le laplacien Dirichlet sur $L^1(\Omega)$. (English summary) [Holomorphy of the semigroup generated by the Dirichlet Laplacian on $L^1(\Omega)$] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 1, 31–35. (P. R. Chernoff) **93d:47090** 47F05 (47D03)
— (*with* Batty, Charles J. K.; Bénilan, Philippe) Asymptotic stability of Schrödinger semigroups on $L^1(\mathbf{R}^N)$. *Math. Z.* **209** (1992), *no.* 4, 511–518. (J. A. Van Casteren) **93i:47057** 47D06 (31A05, 35J10, 47F05, 47N20)
— (*with* Bénilan, Philippe) Inegalités de Kato et semi-groupes sous-markoviens. (English summary) [Kato inequalities and sub-Markovian semigroups] *Rev. Mat. Univ. Complut. Madrid* **5** (1992), *no.* 2-3, 279–308. (C. J. K. Batty) **93j:47062** 47D07 (47B38)
— (*with* Neubrander, Frank; Schlotterbeck, Ulf) Interpolation of semigroups and integrated semigroups. *Semigroup Forum* **45** (1992), *no.* 1, 26–37. (S. Kantorovitz) **93e:47044** 47D03 (46M35)
Arens, Richard F. Newton's observations about the field of a uniform thin spherical shell. Dedicated to the memory of Professor Gottfried Köthe. *Note Mat.* **10** (1990), *suppl.* 1, 39–45 (1992). (From the introduction) **93g:70006** 70D05 (70F05)
— (*with* Goldberg, Moshe) A class of seminorms on function algebras. *J. Math. Anal. Appl.* **162** (1991), *no.* 2, 592–609. (M. Abel) **93g:46047** 46J10
— (*with* Goldberg, Moshe; Luxemburg, W. A. J.) Multiplicativity factors for seminorms. II. (English summary) *J. Math. Anal. Appl.* **170** (1992), *no.* 2, 401–413. (John Duncan) **93k:46039** 46H05 (46H70)
— Pseudo regular elements in a normed ring. *Pacific J. Math.* **154** (1992), *no.* 1, 1–15. (Robin Harte) **93a:46100** 46J05
— (*with* Goldberg, Moshe) Quadrative seminorms and Jordan structures on algebras. (English summary) *Linear Algebra Appl.* **181** (1993), 269–278. (Summary) **93m:46055** 46H70 (17C99)
Arensburg, A. (*with* Horwitz, L. P.) A first-order equation for spin in a manifestly relativistically covariant quantum theory. (English summary) *Found. Phys.* **22** (1992), *no.* 8, 1025–1039. (A. O. Barut) **93k:81083** 81R20
Arenson, E. L. (*with* Kitover, A. K.) Compact operators that preserve disjointness. (Russian) *Funktsional. Anal. i Prilozhen.* **26** (1992), *no.* 2, 55–57; *translation in Functional Anal. Appl.* **26** (1992), *no.* 2, 119–121. (From the text) **93d:47069** 47B60
Arenzon, J. J. (*with* de Almeida, R. M. C.; Iglesias, J. R.) A multineuron interaction model for neural networks. (English summary) *J. Statist. Phys.* **69** (1992), *no.* 1-2, 385–409. (Summary) **93g:82073** 82C32 (92B20)
Arestov, V. V. Integral inequalities for algebraic polynomials with a restriction on their zeros. (Russian summary) *Anal. Math.* **17** (1991), *no.* 1, 11–20. (Gradimir V. Milovanović) **93g:42001** 42A05 (26C05, 26D05, 30C10, 41A10)
kruseman Aretz, Frans E. J. *see* **Kruseman Aretz, Frans E. J.**
Arezzo, D. On set-theoretic complete intersection varieties. (Italian) *Atti Accad. Peloritana Pericolanti Cl. Sci. Fis. Mat. Natur.* **68** (1990), 61–66 (1992). 14M10
Arge, Erlend (*with* Dæhlen, Morten; Tveito, Aslak) Box spline interpolation; a computational study. (English summary) *J. Comput. Appl. Math.* **44** (1992), *no.* 3, 303–329. (Matthias Eck) **93m:65013** 65D07
— (*with* Dæhlen, Morten) Grid point interpolation on finite regions using C^1 box splines. *SIAM J. Numer. Anal.* **29** (1992), *no.* 4, 1136–1153. (Peter Alfeld) **93g:41001** 41A05 (41A15, 65D07)
Arghami, N. R. (*with* Billard, Lynne) A partial sequential t-test. *Sequential Anal.* **10** (1991), *no.* 3-4, 181–197. (Z. Govindarajulu) **93d:62145** 62L10
Argon, Ali S. (*with* Mott, Peter H.; Suter, Ulrich W.) The atomic strain tensor. *J. Comput. Phys.* **101** (1992), *no.* 1, 140–150. 82B20 (73B99, 73V99, 82–08)
Argoul, F. (*with* Arneodo, Alain; Muzy, J. F.; Pouligny, B.; Freysz, E.) The optical wavelet transform. *Wavelets and their applications*, 241–273, *Jones and Bartlett, Boston, MA*, 1992. (*see* **93e:00031**) 78A55
Arguchintseva, M. A. (*with* Pilyugin, N. N.) Extremal problems for heat exchange between three-dimensional bodies moving at hypersonic velocities. (Russian. Russian summary) *Prikl. Mat. Mekh.* **56** (1992), *no.* 4, 643–657; *translation in J. Appl. Math. Mech.* **56** (1992), *no.* 4, 545–558. (From the introduction) **93m:80006** 80A20 (49N55, 76K05)
Argyres, Philip C. (*with* Grochocinski, James M.; Tye, S.-H. Henry) Structure constants of the fractional supersymmetry chiral algebras. *Nuclear Phys. B* **367** (1991), *no.* 1, 217–254. (Alex Jay Feingold) **93d:81064** 81R10 (17B68, 81T40)
— (*with* Lyman, Edwin; Tye, S.-H. Henry) Low-lying states of the six-dimensional fractional superstring. (English summary) *Phys. Rev. D* (3) **46** (1992), *no.* 10, 4533–4565. (David Sénéchal) **93i:81182** 81T30
Argyris, John (*with* Mlejnek, Hans-Peter) ★ Dynamics of structures. Texts on Computational Mechanics, V. *North-Holland Publishing Co., Amsterdam*, 1991. xxii+606 *pp. ISBN* 0-444-89045-9; 0-444-89112-9 (Chandra B. Sharma) **93c:73055** 73Kxx (73–02)
— (*with* Faust, Gunter; Haase, Maria) Χάoζ—an adventure in chaos. Second World Congress on Computational Mechanics, Part III (Stuttgart, 1990). *Comput. Methods Appl. Mech. Engrg.* **91** (1991), *no.* 1-3, 997–1091. (Helena E. Nusse) **93f:58142** 58F13 (34C99, 70K50)
— (*with* Poteraşu, Victor Florin) Large rotations revisited: application of Lie algebra. (English summary) *Comput. Methods Appl. Mech. Engrg.* **103** (1993), *no.* 1-2, 11–42. (Summary) **93m:70003** 70Bxx (70–01)
Argyros, Ioannis K. On the improvement of the speed of convergence of some iterations converging to solutions of quadratic equations. *Acta Math. Hungar.* **57** (1991), *no.* 3-4, 245–252. (Teodor Potra) **93d:47121** 47H17 (47H10, 65J15)
— Iterations converging faster than Newton's method to the solutions of nonlinear equations in Banach space. *Ann. Univ. Sci. Budapest. Sect. Comput.* **11** (1991), 97–104. (Gérard Lebourg) **93b:65081** 65J15
— A fixed point theorem for orbitally continuous functions. *Proyecciones* **10** (1991), *no.* 17, 53–57. (Ramendra Krishna Bose) **93d:47101** 47H10
— (*with* Losta, Mansor M.) Integral equations for two-point boundary value problems. *Rev. Acad. Cienc. Zaragoza* (2) **46** (1991), 25–35. (Ján Pekár) **93b:65205** 65R20 (65L10)
— On an iterative algorithm for solving nonlinear operator equations. (German and Russian summaries) *Z. Anal. Anwendungen* **10** (1991), *no.* 1, 83–92. (Summary) **93b:47132** 47H17 (65J15)
— On an application of a modification of the Zincenko method to the approximation of implicit functions. *Z. Anal. Anwendungen* **10** (1991), *no.* 3, 391–396. (Tetsuro Yamamoto) **93b:47133** 47H17 (58C15, 65J15)
— Sharp error bounds for Newton-like methods under weak smoothness assumptions. *Bull. Austral. Math. Soc.* **45** (1992), *no.* 3, 415–422. (A. G. Kartsatos) **93c:65076** 65J15 (47H17)
— (*with* Szidarovszky, Ferenc) On the monotone convergence of general Newton-like methods. *Bull. Austral. Math. Soc.* **45** (1992), *no.* 3, 489–502. (A. G. Kartsatos) **93c:65077** 65J15 (47H17)
— On the convergence of generalized Newton methods and implicit functions. (English summary) *J. Comput. Appl. Math.* **43** (1992), *no.* 3, 335–342. (J. W. Schmidt) **93m:65076** 65J15 (47H17)
— (*with* Szidarovszky, Ferenc) Convergence of general iteration schemes. *J. Math. Anal. Appl.* **168** (1992), *no.* 1, 42–62. (S. Sridhar) **93d:65055** 65J05 (40A30)
— On an application of a Newton-like method to the approximation of implicit functions. (English summary) *Math. Slovaca* **42** (1992), *no.* 3, 339–347. (J. W. Schmidt) **93h:65081** 65J15 (47H17)
— On an application of the Zincenko method to the approximation of implicit functions. *Publ. Math. Debrecen* **40** (1992), *no.* 1-2, 43–49. (A. M. Galperin) **93c:47076** 47H17 (65J15)
— (*with* Szidarovszky, Ferenc) On the convergence of Newton-like methods. (English summary) *Tamkang J. Math.* **23** (1992), *no.* 3, 165–170. (J. W. Schmidt) **93m:65077** 65J15 (47H17)
Argyros, Spiros A. (*with* Petrakis, M.) A property of nonstrongly regular operators. *Geometry of Banach spaces* (*Strobl*, 1989), 5–23, *London Math. Soc. Lecture Note Ser.*, 158, *Cambridge Univ. Press, Cambridge*, 1990. (Gilles Godefroy) **93e:47035** 47B38 (46E40)
— (*with* Alspach, Dale E.) Complexity of weakly null sequences. (English summary) *Dissertationes Math.* (*Rozprawy Mat.*) **321** (1992), 44 *pp.* (M. I. Kadets) **93j:46014** 46B20
— (*with* Deliyanni, Irene) Representations of convex nondentable sets. *Pacific J. Math.* **155** (1992), *no.* 1, 29–70. (Walter Schachermayer) **93g:46016** 46B22
Arhangel'skiĭ, A. V. *see* **Arkhangel'skiĭ, A. V.**
Arhippainen, Jorma On commutative locally m-convex algebras. (Estonian summary) *Tartu Ül. Toimetised No.* 928 (1991), 15–28. (R. Arens) **93b:46098** 46J05
— On the ideal structure of algebras of LMC-algebra valued functions. *Studia Math.* **101** (1992), *no.* 3, 311–318. (M. Abel) **93g:46049** 46J40 (46H10)
Arian, Yair (*with* Levy, Yonatan) Algorithms for generalized round robin routing. (English summary) *Oper. Res. Lett.* **12** (1992), *no.* 5, 313–319. 90B22 (90C35)
Arianrhod, R. (*with* McIntosh, Colin B. G.) Principal null directions of Petrov type I Weyl spinors: geometry and symmetry. (English summary) *Classical Quantum Gravity* **9** (1992), *no.* 8, 1969–1982. (J. B. Griffiths) **93i:83025** 83C20 (83C60)
Ariaratnam, S. T. (*with* Xie, Wei Chau) Lyapunov exponents in stochastic structural dynamics. (English summary) *Lyapunov exponents* (*Oberwolfach*, 1990), 271–291, *Lecture Notes in Math.*, 1486, *Springer, Berlin*, 1991. (Introduction) **93f:73063** 73K12 (34D08, 34F05, 60H25, 73B35, 73H10, 73K35)
— (*with* Xie, Wei Chau) Lyapunov exponents and stochastic stability of coupled linear systems under real noise excitation. (English summary) *Trans. ASME J. Appl. Mech.* **59** (1992), *no.* 3, 664–673. (Summary) **93g:73092** 73K35 (70L05)
fernández Arias, Arturo *see* **Fernández Arias, Arturo**
Arias de Reyna Martínez, Juan (*with* Rodríguez-Piazza, Luis) Finite metric spaces needing high dimension for Lipschitz embeddings in Banach spaces. (English summary) *Israel J. Math.* **79** (1992), *no.* 1, 103–111. (Grattan P. Murphy) **93k:54062** 54E35 (46B99)
Arigazin, A. K. (*with* Jannussis, A.; Lopez, D. F.; Nishioka, M.; Veljanoski, B.) ★ Santilli's Lie-isotopic generalization of Galilei's and Einstein's relativities. *Kostakaris Publishers, Athens*, 1991. xii+392 *pp. ISBN* 0-911767-56-8 (Maurizio Gasperini) **93j:17056** 17B81 (22E70, 58–01, 70G99, 70H40, 81R05)
Arik, Metin The q-difference operator, the quantum hyperplane, Hilbert spaces of analytic functions and q-oscillators. *Z. Phys. C* **51** (1991), *no.* 4, 627–632. (J. S. Joel) **93a:58014** 58B30 (17B37, 46E20, 46E40, 58A10)
— (*with* Mungan, Muhittin) q-oscillators and relativistic position operators. *Phys. Lett. B* **282** (1992), *no.* 1-2, 101–104. (Summary) **93b:81120** 81S05 (81R50)
— (*with* Demircan, E.; Turgut, T.; Ekinci, L.; Mungan, Muhittin) Fibonacci oscillators. (English summary) *Z. Phys. C* **55** (1992), *no.* 1, 89–95. (Boris Moiseevich Zupnik) **93g:81069** 81S99 (11B39, 81R50)
Arikan, Erdal (*with* Radosavljevic, Branko; Hajek, Bruce) Sequential decoding of low-density parity-check codes by adaptive reordering of parity checks. (English summary) *IEEE Trans. Inform. Theory* **38** (1992), *no.* 6, 1833–1839. 94B35
Arikawa, Setsuo (*with* Shi, Yihua) Approximate extensions in default logic. *Bull. Inform. Cybernet.* **25** (1992), *no.* 1-2, 7–19. (Summary) **93c:68095** 68T27 (03B60)
— (*with* Shinohara, Takeshi; Yamamoto, Akihiro) Learning elementary formal systems. *Theoret. Comput. Sci.* **95** (1992), *no.* 1, 97–113. (Summary) **93b:68040** 68Q45 (03B70, 03D05, 68N17)
— *see also* **Algorithmic learning theory, 93j:68003**
Arima, S. (*with* Hidaka, F.; Asaeda, You) On the spaces of general tensors. *Proceedings of the International Symposium on Mathematics and Theoretical Physics* (*Guarujá*, 1989), 192–198, *Sympos. Gaussiana Ser. A Math. Theoret. Phys.*, 1, *Inst. Gaussianum, Toronto, ON*, 1990. (B. Reichstein) **93b:15032** 15A69 (15A72)

Arimitsu, Toshihico Nonequilibrium thermofield dynamics and thermal processes. *Thermal field theories (Ibaraki, 1990)*, 207–221, *North-Holland Delta Ser., North-Holland, Amsterdam*, 1991. (Summary) **93a:82038** 82C10
— (*with* Ban, Masashi; Saito, Takesi) A new aspect within nonequilibrium thermofield dynamics and its applications. *Thermal field theories (Ibaraki, 1990)*, 459–468, *North-Holland Delta Ser., North-Holland, Amsterdam*, 1991. (Summary) **93d:82052** 82C10 (81T99)
— (*with* Saito, Takesi) Quantum stochastic Heisenberg equation. (English summary) *Modern Phys. Lett. B* **6** (1992), *no.* 21, 1319–1327. (Summary) **93h:82046** 82C35
Arimoto, Suguru Passivity of robot dynamics implies capability of motor program learning. (English summary) *Advanced robot control (Grenoble, 1990)*, 49–68, *Lecture Notes in Control and Inform. Sci.*, 162, *Springer, Berlin*, 1991. (*see* **93d:70002**) 70Q05 (70B15, 93C85)
Arina, Renzo (*with* Canuto, Claudio) A self-adaptive domain decomposition for the viscous/inviscid coupling. I. Burgers equation. (English summary) *J. Comput. Phys.* **105** (1993), *no.* 2, 290–300. (Summary) **93m:76061** 76M25 (65M55, 65N55, 76D05)
Aringazin, A. K. Validity of Pauli's principle in the exterior branch of hadronic mechanics. *Hadronic J.* **13** (1990), *no.* 3, 183–190. (Anthony J. Bracken) **93d:81049a** 81Q60 (81S05)
— Supersymmetric hadronic mechanical harmonic oscillator. *Hadronic J.* **13** (1990), *no.* 4, 263–276. (Anthony J. Bracken) **93d:81049b** 81Q60 (81S05)
Arino, Ovide (*with* Ben M'Barek, A.) Periodic solutions of a system of differential equations of first order with discontinuous coefficients. (Serbo-Croatian summary) *Facta Univ. Ser. Math. Inform. No.* 5 (1990), 57–66. (Constantin D. Chirilà) **93d:34073** 34C25
— Monotone semi-flows which have a monotone first integral. *Delay differential equations and dynamical systems (Claremont, CA, 1990)*, 64–75, *Lecture Notes in Math.*, 1475, *Springer, Berlin*, 1991. (Hal Leslie Smith) **93a:34081** 34K15 (34G20, 47H20, 47N20)
— (*with* Sanchez, Eva; Kimmel, Marek) Noncompact semigroups of operators generated by cell kinetics models. *Differential Integral Equations* **4** (1991), *no.* 6, 1233–1249. (V. N. Razzhevaikin) **93e:47090** 47H20 (34K25, 47N60, 92C05)
— (*with* Ben M'Barek, A.) Uniqueness of periodic solutions of a second order ODE implied by jump discontinuities of the coefficients. (English summary) *Recent trends in differential equations*, 31–45, *World Sci. Ser. Appl. Anal.*, 1, *World Sci. Publishing, River Edge, NJ*, 1992. (M. Cecchi) **93i:34072** 34C25 (34A34)
— (*with* Chérif, A. A.) On the existence of periodic solutions for a class of nonlinearly forced systems. *Funkcial. Ekvac.* **35** (1992), *no.* 3, 485–503. (Raul F. Manasevich) **93k:34089** 34C25 (34C23)
— (*with* Benkhalti, Rachid) Bifurcation properties for a sequence of approximation of delay equations. *J. Math. Anal. Appl.* **171** (1992), *no.* 2, 377–388. (Xiao Biao Lin) **93j:34098** 34K15
— (*with* Mortabit, Abdessamad) A periodicity result for a nonlinear functional integral equation. *J. Math. Biol.* **30** (1992), *no.* 5, 437–456. (Hans Engler) **93i:34126** 34K15 (34K20, 45M15, 47N20, 92C05)
— Some spectral properties for the asymptotic behavior of semigroups connected to population dynamics. (English summary) *SIAM Rev.* **34** (1992), *no.* 3, 445–476. (R. Nagel) **93h:47051** 47D06 (34G10, 47B65, 47N20, 92D25)
— (*with* Alaoui, L.) Compactness and spectral properties for positive translation semigroups associated to models of populations dynamics. *Differential Integral Equations* **6** (1993), *no.* 2, 459–480. (G. F. Webb) **93m:47045** 47D06 (34K25, 47B38, 47N20, 92D25)
Ario, Ichiro (*with* Ikeda, Kiyohiro; Torii, Kunio) Block-diagonalization analysis of symmetric plates. (English summary) *Internat. J. Solids Structures* **29** (1992), *no.* 22, 2779–2793. (Summary) **93c:73061** 73K10 (73V99)
Arioli, Mario (*with* Duff, I. S.; Ruiz, Daniel; Sadkane, Miloud) Techniques for accelerating the block Cimmino method. (English summary) *Parallel processing for scientific computing (Houston, TX, 1991)*, 98–104, *SIAM, Philadelphia, PA*, 1992. (*see* **93g:65178**) 65F10 (65F50, 65Y10)
Aris, Rutherford (*with* Astarita, Gianni) On aliases of differential equations. (Italian summary) *Atti Accad. Naz. Lincei Rend. Cl. Sci. Fis. Mat. Natur.* (8) **83** (1989), 7–11 (1990). (Summary) **93f:80024** 80A32 (45G10)
el-Arishy, Samia M. *see* **El-Arishy, Samia M.**
Aristotle *see* **Smith, Robin**, **93d:03001**; **Mancosu, Paolo**, **93e:01008**; **Owens, Joseph**, (**93g:01015**); **Turnbull, Robert G.**, (**93g:01015**); **Mueller, Ian**, (**93g:01015**) *and* **Barker, Andrew D.**, (**93g:01015**)
Aristova, E. Yu. Construction of wing profiles with suction and blast that can be modeled by point singularities. (Russian) *Trudy Sem. Kraev. Zadacham No.* 26 (1991), 19–29. 76B05
Aristoxenus *see* **Barker, Andrew D.**, (**93g:01015**)
Ariyawansa, K. A. (*with* Lau, D. T. M.) On the updating scheme in a class of collinear scaling algorithms for sparse minimization. (English summary) *J. Optim. Theory Appl.* **75** (1992), *no.* 1, 183–193. (Summary) **93j:65095** 65K05 (90C30)
niño de Ariza, Margarita *see* **Niño de Ariza, Margarita**
Arizmendi, C. M. (*with* Rizzo, A. H.; Sanchez, J. R.) Degree of ultrametricity of fractal sets. *Nonlinear phenomena in fluids, solids and other complex systems (Santiago, 1990)*, 231–240, *North-Holland Delta Ser., North-Holland, Amsterdam*, 1991. (Summary) **93c:58198** 58F40 (28A80)
Arizmendi Peimbert, Hugo (*with* Carrillo, Angel) On the extended spectral radius in some classes of locally convex algebras. *Function spaces (Edwardsville, IL, 1990)*, 25–29, *Lecture Notes in Pure and Appl. Math.*, 136, *Dekker, New York*, 1992. (Abdullah H. Al-Moajil) **93c:46080** 46H05
Arjas, Elja (*with* Norros, Ilkka) Should minimal repair depend on information? (English summary) *Topics in statistical dependence (Somerset, PA, 1987)*, 5–12, *IMS Lecture Notes Monograph Ser.*, 16, *Inst. Math. Statist., Hayward, CA*, 1990. (Summary) **93i:60091** 60G55 (60K10, 90B25)
— (*with* Norros, Ilkka) Stochastic order and martingale dynamics in multivariate life length models: a review. (English summary) *Stochastic orders and decision under risk (Hamburg, 1989)*, 7–24, *IMS Lecture Notes Monograph Ser.*, 19, *Inst. Math. Statist., Hayward, CA*, 1991. (Summary) **93j:60061** 60G55 (60E15, 60K10, 90B25)
— (*with* Haara, Pentti) Observation scheme and likelihood. *Scand. J. Statist.* **19** (1992), *no.* 2, 111–132. (František Rublík) **93m:60091** 60G55 (62A10, 92C50)
— (*with* Haara, Pentti; Norros, Ilkka) Filtering the histories of a partially observed marked point process. *Stochastic Process. Appl.* **40** (1992), *no.* 2, 225–250. (Federico Marchetti) **93j:60054** 60G35 (60G55, 62M20, 93E11)
font Arjó, Joaquín *see* **Font Arjó, Joaquín**
Arkeryd, Leif On stability and long term behaviour for rarefied gases. (English summary) *Waves and stability in continuous media (Sorrento, 1989)*, 1–8, *Ser. Adv. Math. Appl. Sci.*, 4, *World Sci. Publishing, River Edge, NJ*, 1991. (*see* **93g:00030**) 82C40 (35B35, 76P05)
— On the strong L^1 trend to equilibrium for the Boltzmann equation. (English summary) *Stud. Appl. Math.* **87** (1992), *no.* 3, 283–288. (Carlo Cercignani) **93h:82048** 82C40 (35Q99, 45K05)
Arkhangel'skiĭ, A. V. (*with* Choban, M. M.) On the functional equivalence of Tikhonov spaces. (Russian. English, Russian and Moldavian summaries) *Izv. Akad. Nauk Respub. Moldova Mat.* **1991**, *no.* 3, 43–51, 92. (Roman Pol) **93k:54039** 54C35 (46E10)
— (*with* Choban, M. M.) Extenders of Kuratowski-van Douwen and classes of spaces. *C. R. Acad. Bulgare Sci.* **45** (1992), *no.* 1, 5–7. 54D35
— The general concept of cleavability of a topological space. Proceedings of the Symposium on General Topology and Applications (Oxford, 1989). *Topology Appl.* **44** (1992), *no.* 1-3, 27–36. (M. Katětov) **93k:54047** 54C99 (03E35, 54A35, 54D55, 54E20, 54E30)
— (*with* Bella, Angelo) The product of biradial compact spaces. *Topology Appl.* **45** (1992), *no.* 2, 157–162. (Gino Tironi) **93g:54004** 54A25 (54B10, 54D55)
— (*with* et al.) Obituary: Boris Èmil'evich Shapirovskiĭ. (Russian) *Uspekhi Mat. Nauk* **47** (1992), *no.* 6(288), 199–200. (Editors) **93m:01051** 01A70
Arkhipov, M. V. (*with* Bukov, V. N.) Estimation in an adaptive optimal control system. (Russian. Russian summary) *Avtomat. i Telemekh.* **1992**, *no.* 5, 82–88; *translation in Automat. Remote Control* **53** (1992), *no.* 5, *part* 1, 695–701. (Summary) **93e:93042** 93C40 (49K45, 93E11)
Arkhipova, A. A. On the regularity of the solution of a problem with an obstacle that goes out to the boundary, for strongly elliptic operators. (Russian. Russian summary) *Some applications of functional analysis to problems of mathematical physics (Russian)*, 3–20, 143, *Akad. Nauk SSSR Sibirsk. Otdel., Inst. Mat., Novosibirsk*, 1988. (*see* **93b:00021**) 35J85 (49N60)
— Inverse Hölder inequalities with a boundary integral and L_p-estimates in problems with a Neumann condition. (Russian) *Embedding theorems and their applications to problems in mathematical physics (Russian)*, 3–17, 140, *Akad. Nauk SSSR Sibirsk. Otdel., Inst. Mat., Novosibirsk*, 1989. (Summary) **93a:35011** 35B05 (35B45, 35J25)
Arkin, Joseph (*with* Arney, David C.; Dewald, Lee S.; Giordano, Frank R.) Supercube. *Applications of Fibonacci numbers, Vol.* 4 (*Winston-Salem, NC*, 1990), 17–32, *Kluwer Acad. Publ., Dordrecht*, 1991. (*see* **93g:11004**) 05B15
— (*with* Arney, David C.; Giordano, Frank R.; Kolb, Rickey A.) A note on fundamental properties of recurring series. *Applications of Fibonacci numbers, Vol.* 4 (*Winston-Salem, NC*, 1990), 33–36, *Kluwer Acad. Publ., Dordrecht*, 1991. (Ronald J. Evans) **93m:11004** 11A07 (11B65)
— (*with* Arney, David C.; Giordano, Frank R.; Kolb, Rickey A.; Smith, Paul) Reverse digit constructions of perfect, magic, and doubly magic cubes. (English summary) *Transactions of the Tenth Army Conference on Applied Mathematics and Computing (West Point, NY, 1992)*, 91–101, *ARO Rep.*, 93-1, *U.S. Army Res. Office, Research Triangle Park, NC*, 1993. (*see* **93m:00047**) 05B15
Arkun, Yaman (*with* Calvet, Jean-Paul) Robust stabilization of input/output linearizable systems under uncertainty and disturbances. (English summary) *AIChE J.* **38** (1992), *no.* 8, 1145–1156. 93D15 (93B36)
— (*with* Chiu, Min-Sen) A methodology for sequential design of robust decentralized control systems. (English summary) *Automatica J. IFAC* **28** (1992), *no.* 5, 997–1001. 93A14 (93B35, 93B52)
Arlettaz, Dominique A note on the mod 2 cohomology of SL(**Z**). *Algebraic topology Poznań 1989*, 365–370, *Lecture Notes in Math.*, 1474, *Springer, Berlin*, 1991. (Frans Clauwens) **93g:19005** 19D55 (20J05, 55S10)
— A splitting result for the second homology group of the general linear group. *Adams Memorial Symposium on Algebraic Topology, 1 (Manchester, 1990)*, 83–88, *London Math. Soc. Lecture Note Ser.*, 175, *Cambridge Univ. Press, Cambridge*, 1992. (A. J. Berrick) **93g:19004** 19D06 (55S45)
Arlinghaus, William C. Smallest tournaments with given abelian automorphism group. (English summary) *J. Combin. Inform. System Sci.* **16** (1991), *no.* 1, 63–66. (Summary) **93d:05056** 05C20
Arlinskiĭ, Yu. M. A class of extensions of a $C(\alpha)$-suboperator. (Russian. English and Russian summaries) *Dokl. Akad. Nauk Ukrainy* **1992**, *no.* 8, 12–16, 168. (Vladimir Derkach) **93k:47008** 47A20 (47B15)
Arlo Costa, Horacio L. Conditionals and monotonic belief revisions: the success postulate. *Studia Logica* **49** (1990), *no.* 4, 557–566. (David Makinson) **93c:03035** 03B60 (68T27)
Arlotti, Luisa (*with* Frosali, Giovanni) Runaway particles for a Boltzmann-like transport equation. *Math. Models Methods Appl. Sci.* **2** (1992), *no.* 2, 203–221. (Carlo Cercignani) **93g:82078** 82C40 (47N55, 76P05, 82D10)
Armand, Paul Comportement combinatoire des polyèdres perturbés en programmation linéaire. (English and French summaries) [Combinatorial behavior of perturbed polyhedra in linear programming] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 3, 241–244. (Summary) **93e:52023** 52B12 (90C05)
Armando Luis, K. (*with* Beĭko, I. V.) An approximate method for solving a partially discrete optimization problem. (Russian. Russian summary) *Vestnik Kiev. Univ. Model. Optim. Slozhn. Sist. No.* 9 (1990), 44–46. 90C10 (65K10)
Armas, S. (*with* Margalef Roig, Juan; Outerelo Domínguez, Enrique; Padrón, E.) A theorem on boundary-preserving immersions. (Spanish) *Proceedings of the XVth Portuguese-Spanish Conference on Mathematics, Vol. III (Portuguese) (Évora, 1990)*, 149–154, *Univ. Évora, Évora*, 1991. (Introduction) **93a:58021** 58C25 (58C15)
Armbruster, Dieter (*with* Heiland, Randy; Kostelich, Eric J.; Nicolaenko, Basil) Phase-space analysis of bursting behavior in Kolmogorov flow. (English summary) Interpretation of time series from nonlinear systems (Warwick, 1991). *Phys. D* **58** (1992), *no.* 1-4, 392–401. (Summary) **93i:76046** 76F99 (76D05, 76M99)
zarzuela Armengou, Santiago *see* **Zarzuela Armengou, Santiago**
Armentrout, Steven L. Links and nonshellable cell partitionings of S^3. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 2, 635–639. (R. J. Daverman) **93g:57024** 57N12 (57M25, 57M40)
— (*with* Reggia, James A.; Chou, Hui-Hsien; Peng, Yun) Simple systems that exhibit self-directed replication. (English summary) *Science* **259** (1993), *no.* 5099, 1282–1287. 68Q80 (92B05)

Armero, F. (*with* Simo, Juan C.) Geometrically nonlinear enhanced strain mixed methods and the method of incompatible modes. *Internat. J. Numer. Methods Engrg.* **33** (1992), *no.* 7, 1413–1449. (Summary) **93a:73082** 73V05 (73G05, 73V25)

— (*with* Simo, Juan C.) A new unconditionally stable fractional step method for nonlinear coupled thermomechanical problems. (English summary) *Internat. J. Numer. Methods Engrg.* **35** (1992), *no.* 4, 737–766. (Summary) **93c:73101** 73V20 (73B30)

Arminjon, M. Macro-homogeneous strain fields with arbitrary local inhomogeneity. (Russian and Polish summaries) *Arch. Mech.* (*Arch. Mech. Stos.*) **43** (1991), *no.* 2-3, 191–214 (1992). (Summary) **93c:73004** 73B27 (73B99, 73E99)

Armitage, D. H. (*with* Kuran, Ü.) Lacunary Poisson functions and axial harmonic polynomials. *J. London Math. Soc.* (2) **44** (1991), *no.* 3, 476–490. (A. I. Kheifits) **93b:31004** 31B05

— (*with* Goldstein, Myron) Characterizations of balls and strips via harmonic quadrature. *Approximation by solutions of partial differential equations* (*Hanstholm*, 1991), 1–9, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 365, *Kluwer Acad. Publ., Dordrecht*, 1992. (Steven George Krantz) **93d:31002** 31B05 (31B15)

— (*with* Goldstein, Myron) Better than uniform approximation on closed sets by harmonic functions with singularities and applications. *Approximation by solutions of partial differential equations* (*Hanstholm*, 1991), 11–14, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 365, *Kluwer Acad. Publ., Dordrecht*, 1992. (*see* **93a:31001**) 41A30 (31B20)

— (*with* Goldstein, Myron) Quadrature and harmonic approximation of subharmonic functions in strips. (English summary) *J. London Math. Soc.* (2) **46** (1992), *no.* 1, 171–179. (Matts Essén) **93j:31003** 31B05

— (*with* Kuran, Ü.) The convergence of the Pizzetti series in potential theory. *J. Math. Anal. Appl.* **171** (1992), *no.* 2, 516–531. (Neil A. Watson) **93k:31002** 31B05

— Cones on which entire harmonic functions can vanish. *Proc. Roy. Irish Acad. Sect. A* **92** (1992), *no.* 1, 107–110. (Tom Carroll) **93h:31003** 31B05

— (*with* Nelson, C. S.) A harmonic quadrature formula characterizing open strips. *Math. Proc. Cambridge Philos. Soc.* **113** (1993), *no.* 1, 147–151. (Steven George Krantz) **93h:31004** 31B05 (31B15)

— (*with* Gardiner, Stephen J.; Netuka, Ivan) Separation of points by classes of harmonic functions. *Math. Proc. Cambridge Philos. Soc.* **113** (1993), *no.* 3, 561–571. (David A. Herron) **93m:31004** 31B05

— (*with* Goldstein, Myron) Nonuniqueness for the Radon transform. *Proc. Amer. Math. Soc.* **117** (1993), *no.* 1, 175–178. (P. A. Kuchment) **93c:44004** 44A12 (92C55)

Arms, Judith M. (*with* Wilbour, Don C.) Reduction procedures for Poisson manifolds. *Symplectic geometry and mathematical physics* (*Aix-en-Provence*, 1990), 462–475, *Progr. Math.*, 99, *Birkhäuser Boston, Boston, MA*, 1991. (Alberto Medina) **93h:58063** 58F05

Armstrong, D. M. What makes induction rational? *Dialogue* **30** (1991), *no.* 4, 503–511 (1992). 03B48

Armstrong, Ronald D. (*with* Jin, Zhiying) Solving linear bottleneck assignment problems via strong spanning trees. (English summary) *Oper. Res. Lett.* **12** (1992), *no.* 3, 179–180. (Summary) **93f:90130** 90C27 (90B80)

— (*with* Sklar, Michael G.) Lagrangian approach for large-scale least absolute value estimation. (English summary) *Comput. Oper. Res.* **20** (1993), *no.* 1, 83–93. (Summary) **93i:65132** 65U05

Armstrong, Thomas E. Hierarchical Arrow social welfare functions. *Econom. Theory* **2** (1992), *no.* 1, 27–41. (Wulf Gaertner) **93d:90008** 90A08 (90A05)

Arnab, Raghunath Estimation of a finite population total in two-stage and stratified sampling under superpopulation models. *Comm. Statist. Theory Methods* **20** (1991), *no.* 8, 2495–2503. (Summary) **93d:62018** 62D05

— Estimation of a finite population mean under superpopulation models. *Comm. Statist. Theory Methods* **21** (1992), *no.* 6, 1717–1724. (Summary) **93e:62028** 62D05

Arnal, Didier (*with* Cahen, Michel; Gutt, Simone; Zahir, H.) A Moyal type $*$ product on Hermitian symmetric spaces. (English summary) *Acad. Roy. Belg. Bull. Cl. Sci.* (6) **2** (1991), *no.* 1-3, 91–103. (Akira Yoshioka) **93i:81052** 81R05 (22E99, 81S99)

— (*with* Cahen, Benjamin; Cahen, Michel; Gutt, Simone) Une classe d'orbites coadjointes qui sont symplectomorphes à un fibré cotangent. (English summary) [A class of coadjoint orbits that are symplectomorphic to a cotangent bundle] *C. R. Acad. Sci. Paris Sér. I Math.* **312** (1991), *no.* 1, 127–130. (Alberto Medina) **93e:22021** 22E45 (58F05)

— Transition description and prediction. *Numerical simulation of unsteady flows and transition to turbulence* (*Lausanne*, 1990), 303–316, *Cambridge Univ. Press, Cambridge*, 1992. (From the introduction) **93g:76069** 76F99

— (*with* Benamor, Hédi; Benayadi, Saïd; Pinczon, Georges) Une algèbre de Lie non semi-simple rigide et sympathique: $H^1(g) = H^2(g) = H^0(g,g) = H^1(g,g) = H^2(g,g) = \{0\}$. (English and French summaries) [A nonsemisimple sympathetic and rigid Lie algebra: $H^1(g) = H^2(g) = H^0(g,g) = H^1(g,g) = H^2(g,g) = \{0\}$] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 3, 261–263. (From the text) **93g:17034** 17B40

— (*with* Ludwig, Jean) La convexité de l'application moment d'un groupe de Lie. (English summary) [Convexity of the moment mapping of a Lie group] *J. Funct. Anal.* **105** (1992), *no.* 2, 256–300. (T. Sund) **93j:22013** 22E27 (22E60, 58F06)

Arnaoudov, Yani *see* **Arnaudov, Ya. N.**

Arnaud, Marie-Claude Type des points fixes des difféomorphismes symplectiques de $\mathbf{T}^n \times \mathbf{R}^n$. (English summary) [The type of fixed points of the symplectic diffeomorphisms of $\mathbf{T}^n \times \mathbf{R}^n$] *Mém. Soc. Math. France* (*N.S.*) *No.* 48 (1992), 63 *pp.* (Helmut Rüssmann) **93c:58065** 58F05 (58F30, 70H05)

Arnaudon, Daniel On periodic representations of quantum groups. (English summary) Topological and quantum group methods in field theory and condensed matter physics. *Internat. J. Modern Phys. B* **6** (1992), *no.* 11-12, 1873–1880. (Roland Berger) **93k:17024** 17B37 (16W30, 81R50)

— New fusion rules and $\mathcal{R}$-matrices for $SL(N)_q$ at roots of unity. *Phys. Lett. B* **280** (1992), *no.* 1-2, 31–38. (Jian-Pan Wang) **93d:81085** 81R50 (17B37)

Arnaudon, Marc Propriétés asymptotiques des semi-martingales à valeurs dans des variétés à bord peu régulier. (English and French summaries) [Asymptotic properties of semimartingales with values in manifolds with nonsmooth boundary] *C. R. Acad. Sci. Paris Sér. I Math.* **316** (1993), *no.* 7, 717–722. (Summary) **93k:60114** 60G44 (58G32)

Arnaudov, Ya. N. (*with* Dassios, George; Georgiev, Vladimir) High-frequency asymptotics in inverse scattering by ellipsoids. (English summary) *Math. Methods Appl. Sci.* **16** (1993), *no.* 1, 1–12. (Summary) **93j:35181** 35R30 (35J05, 76Q05)

Arnautov, V. I. (*with* Beĭdar, K. I.; Glavatskiĭ, S. T.; Mikhalëv, A. V.) The intersection property in the theory of radicals of topological algebras. (English summary) *J. Soviet Math.* **60** (1992), *no.* 6, 1782–1789. (Stefan Veldsman) **93h:16036** 16N80 (16W80)

Arneodo, Alain (*with* Argoul, F.; Muzy, J. F.; Pouligny, B.; Freysz, E.) The optical wavelet transform. *Wavelets and their applications*, 241–273, *Jones and Bartlett, Boston, MA*, 1992. (*see* **93e:00031**) 78A55

— (*with* Bacry, Emmanuel; Muzy, J. F.) Singularity spectrum of fractal signals from wavelet analysis: exact results. (English summary) *J. Statist. Phys.* **70** (1993), *no.* 3-4, 635–674. (Remo Badii) **93m:58065** 58F11 (28A80, 42C15)

— *see also* **Homoclinic chaos, 93i:58005**

Arney, David C. (*with* Arkin, Joseph; Dewald, Lee S.; Giordano, Frank R.) Supercube. *Applications of Fibonacci numbers, Vol.* 4 (*Winston-Salem, NC*, 1990), 17–32, *Kluwer Acad. Publ., Dordrecht*, 1991. (*see* **93g:11004**) 05B15

— (*with* Arkin, Joseph; Giordano, Frank R.; Kolb, Rickey A.) A note on fundamental properties of recurring series. *Applications of Fibonacci numbers, Vol.* 4 (*Winston-Salem, NC*, 1990), 33–36, *Kluwer Acad. Publ., Dordrecht*, 1991. (Ronald J. Evans) **93m:11004** 11A07 (11B65)

— (*with* Arkin, Joseph; Giordano, Frank R.; Kolb, Rickey A.; Smith, Paul) Reverse digit constructions of perfect, magic, and doubly magic cubes. (English summary) *Transactions of the Tenth Army Conference on Applied Mathematics and Computing* (*West Point, NY*, 1992), 91–101, *ARO Rep.*, 93-1, *U.S. Army Res. Office, Research Triangle Park, NC*, 1993. (*see* **93m:00047**) 05B15

— (*with* Biswas, Rupak; Flaherty, Joseph E.) An adaptive mesh-moving and refinement procedure for one-dimensional conservation laws. (English summary) *Appl. Numer. Math.* **11** (1993), *no.* 4, 259–282. 65M50

Arno, Steven The imaginary quadratic fields of class number 4. *Acta Arith.* **60** (1992), *no.* 4, 321–334. (Duncan A. Buell) **93b:11144** 11R29 (11-04, 11R11', 11R42)

Arnold, André An extension of the notions of traces and of asynchronous automata. (French summary) *RAIRO Inform. Théor. Appl.* **25** (1991), *no.* 4, 355–393. (Yves Metivier) **93c:68070** 68Q70 (20M14, 68Q10)

— *see also* **Colloquium: Trees in Algebra and Programming**

Arnold, Barry C. Dependence in conditionally specified distributions. (English summary) *Topics in statistical dependence* (*Somerset, PA*, 1987), 13–18, *IMS Lecture Notes Monograph Ser.*, 16, *Inst. Math. Statist., Hayward, CA*, 1990. (Summary) **93i:62012** 62E10

— (*with* Norton, Robert M.) On Cauchy-like distributions. (English summary) *Sankhyā Ser. A* **52** (1990), *no.* 3, 371–375. (Summary) **93f:62012** 62E10 (60E05)

— (*with* Strauss, David) Pseudolikelihood estimation: some examples. (English summary) *Sankhyā Ser. B* **53** (1991), *no.* 2, 233–243. (Summary) **93e:62069** 62F10 (62A10)

— (*with* Castillo, Enrique; Sarabia Alegría, José María) ★ Conditionally specified distributions. Lecture Notes in Statistics, 73. *Springer-Verlag, Berlin*, 1992. xiv+151 *pp. ISBN* 3-540-97794-5 (J. A. Melamed) **93h:60018** 60E05 (62E10)

— Logistic and semi-logistic processes. *J. Comput. Appl. Math.* **40** (1992), *no.* 2, 139–149. (S. T. Rachev) **93e:60099** 60G70 (60J25)

Arnold, Bernhard F. Optimal control charts and discrimination between "acceptable" and "unacceptable" states. (English summary) *Sankhyā Ser. B* **51** (1989), *no.* 3, 375–389. 62N10

Arnold, David M. (*with* Richman, Fred; Vinsonhaler, Charles I.) General p-valuations on abelian groups. *Comm. Algebra* **19** (1991), *no.* 11, 3075–3088. (Ulrich Albrecht) **93d:20097** 20K20

— (*with* Richman, Fred) Field-independent representations of partially ordered sets. *Forum Math.* **4** (1992), *no.* 4, 349–357. (Claudia Böttinger) **93h:16016** 16G20 (06A06, 06B15)

— (*with* Vinsonhaler, Charles I.) Invariants for classes of indecomposable representations of finite posets. *J. Algebra* **147** (1992), *no.* 1, 245–264. (Claudia Böttinger) **93c:16011** 16G20 (20K20)

— (*with* Vinsonhaler, Charles I.) Quasi-isomorphism invariants for two classes of finite rank Butler groups. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 1, 19–26. (Frank Okoh) **93f:20067** 20K15

Arnold, Douglas N. Innovative finite element methods for plates. (Portuguese summary) *Mat. Apl. Comput.* **10** (1991), *no.* 2, 77–88. (Summary) **93c:65136** 65N30 (73K10, 73V05)

Arnold, E. M. On joint summability of Fourier series and conjugate series. *Real Anal. Exchange* **17** (1991/92), *no.* 2, 775–780. (S. N. Mukhopadhyay) **93h:42004** 42A24 (42A50)

Arnold, J. M. Spectral methods in edge-diffraction theories. (English summary) *J. Opt. Soc. Amer. A* **9** (1992), *no.* 12, 2192–2205. (Summary) **93k:78010** 78A45

Arnold, Ludwig (*with* Crauel, Hans) Random dynamical systems. *Lyapunov exponents* (*Oberwolfach*, 1990), 1–22, *Lecture Notes in Math.*, 1486, *Springer, Berlin*, 1991. (Philippe Bougerol) **93m:60116** 60H10 (28D10, 58F11, 60J25)

— (*with* Boxler, Petra) Additive noise turns a hyperbolic fixed point into a stationary solution. (English summary) *Lyapunov exponents* (*Oberwolfach*, 1990), 159–164, *Lecture Notes in Math.*, 1486, *Springer, Berlin*, 1991. (Ji Bin Li) **93g:58127** 58F30 (34C99, 34F05, 58F11, 58F15)

— (*with* Boxler, Petra) Stochastic bifurcation: instructive examples in dimension one. (English summary) *Diffusion processes and related problems in analysis, Vol. II* (*Charlotte, NC*, 1990), 241–255, *Progr. Probab.*, 27, *Birkhäuser Boston, Boston, MA*, 1992. (Jacques Vauthier) **93i:58094** 58F11 (34C23, 34F05, 58F14, 60H10)

— (*with* Crauel, Hans) Iterated function systems and multiplicative ergodic theory. (English summary) *Diffusion processes and related problems in analysis, Vol. II* (*Charlotte, NC*, 1990), 283–305, *Progr. Probab.*, 27, *Birkhäuser Boston, Boston, MA*, 1992. (Philippe Bougerol) **93k:58132** 58F11 (60H99)

— *see also* **Lyapunov exponents, 93d:00037**

Arnold, M. (*with* Weiner, Rüdiger; Rentrop, Peter; Strehmel, Karl) Partitioning strategies in Runge-Kutta type methods. (English summary) *IMA J. Numer. Anal.* **13** (1993), *no.* 2, 303–319. (Summary) **93m:65107** 65L06 (34A45)

Arnold, Randolf (*with* Wellerding, Andreas) On the Sobolev distance of convex bodies. *Aequationes Math.* **44** (1992), *no.* 1, 72–83. (P. R. Goodey) **93e:52006** 52A20 (52A27, 52A39, 52A40)

Arnol'd, V. I. ★ Математические методы классической механики. (Russian) [Mathematical methods of classical mechanics] Third edition. "*Nauka*", *Moscow*, 1989. 472 *pp. ISBN* 5-02-014282-4 (Andrei Iacob) **93c:70001** 70–02 (58F05, 70Hxx)

— ★ Singularities of caustics and wave fronts. Mathematics and its Applications (Soviet Series), 62. *Kluwer Academic Publishers Group, Dordrecht*, 1990. xiv+259 *pp. ISBN* 0-7923-1038-1 (I. R. Porteous) **93b:58019** 58C27 (58F05, 58F14, 78A05)

— Dynamics of complexity of intersections. *Bol. Soc. Brasil. Mat. (N.S.)* **21** (1990), *no.* 1, 1–10. (J. S. Joel) **93c:58031** 58C27 (53C99, 57R99, 58F14)

— Cardiac arrhythmias and circle mappings. *Chaos* **1** (1991), *no.* 1, 20–24. (Wolf-Jürgen Beyn) **93e:92007** 92C50 (58F08)

— Bernoulli-Euler updown numbers associated with function singularities, their combinatorics and arithmetics. *Duke Math. J.* **63** (1991), *no.* 2, 537–555. (J. S. Joel) **93b:58020** 58C27 (05A19, 11B68)

— Topological and ergodic properties of closed 1-forms with incommensurable periods. (Russian) *Funktsional. Anal. i Prilozhen.* **25** (1991), *no.* 2, 1–12, 96; *translation in Functional Anal. Appl.* **25** (1991), *no.* 2, 81–90. (From the introduction) **93e:58104** 58F11 (58A10)

— ★ Ordinary differential equations. Translated from the third Russian edition by Roger Cooke. Springer Textbook. *Springer-Verlag, Berlin*, 1992. 334 *pp. ISBN* 3-540-54813-0 (Editors) **93b:34001** 34–01 (34Cxx, 58–01)

— ★ Catastrophe theory. Translated from the Russian by G. S. Wassermann. Based on a translation by R. K. Thomas. Third edition. *Springer-Verlag, Berlin*, 1992. xiv+150 *pp. ISBN* 3-540-54811-4 (Peter Giblin) **93h:58018** 58C28 (00A05, 00A69, 32S05, 58–02, 58C27)

— (*with* Khesin, B. A.) Topological methods in hydrodynamics. *Annual review of fluid mechanics, Vol.* 24, 145–166, *Annual Reviews, Palo Alto, CA*, 1992. (Bing Hong Wang) **93d:58020** 58D05 (58B20, 58F32, 76A02)

— Springer numbers and Morsification spaces. *J. Algebraic Geom.* **1** (1992), *no.* 2, 197–214. (Aleksandr G. Aleksandrov) **93d:58013** 58C27 (05A15, 20F55)

— (*with* Sena, L. A.; Feoktistov, L. P.; Smirnov, Yu. N.; Gershtein, S. S.; Dolgov, A. D.) Master. (Russian) *Priroda* **1992**, *no.* 2, 84–111. (Editors) **93g:01083** 01A70

— Snake calculus and the combinatorics of the Bernoulli, Euler and Springer numbers of Coxeter groups. (Russian) *Uspekhi Mat. Nauk* **47** (1992), *no.* 1(283), 3–45, 240; *translation in Russian Math. Surveys* **47** (1992), *no.* 1, 1–51. (O. V. Shvartsman) **93h:20042** 20F55 (05A10, 58C27)

— (*with* et al.) Obituary: Dmitriĭ Andreevich Gudkov. (Russian) *Uspekhi Mat. Nauk* **47** (1992), *no.* 6(288), 195–198. (Editors) **93m:01052** 01A70

— *see also* **Kolmogorov, A. N., 93d:01096**; **Poincaré, Henri, 93j:01016a** *and* **Dynamical systems, 93k:58028**

Arnoux, Pierre (*with* Marin, Alexis) The Kühnel triangulation of the complex projective plane from the view point of complex crystallography. II. *Mem. Fac. Sci. Kyushu Univ. Ser. A* **45** (1991), *no.* 2, 167–244. (T. Banchoff) **93b:57028** 57Q15 (20H15, 51M15)

Arnowitt, R. (*with* Nath, Pran) Implications in the electroweak region of Calabi-Yau string theory. *Particles, strings and cosmology (Boston, MA*, 1990), 361–394, *World Sci. Publishing, River Edge, NJ*, 1991. (*see* **93a:81004**) 81V15 (81T30)

Arocena, Rodrigo Characteristic functions of unitary colligations and of isometries with scale subspaces. *Acta Cient. Venezolana* **38** (1987), *no.* 5-6, 540–543. (Summary) **93d:47019** 47A45 (47A48)

Arocha Pérez, Jorge Luis (*with* Fuentes Rodríguez, Alberto; Leont'ev, V. K.; Ruiz Shulcloper, José) On a certain metric in the n-dimensional unit cube. (Spanish. English summary) *An. Inst. Mat. Univ. Nac. Autónoma México* **31** (1991), 1–20 (1992). (Summary) **93e:52033** 52C07

— (*with* Bracho, Javier; Neumann Lara, Víctor) On the minimum size of tight hypergraphs. *J. Graph Theory* **16** (1992), *no.* 4, 319–326. (Ioan Tomescu) **93h:05119** 05C65 (05C10, 05C15, 05C35)

Arodź, H. (*with* Węgrzyn, P.) A remark on the effective action method in dynamics of vortices. (English summary) *Phys. Lett. B* **291** (1992), *no.* 3, 251–254. 81T99

Arolska-Hekimova, Mariya At. (*with* Baĭnov, Drumi Dimitrov; Vel'ov, V. M.) Asymptotic procedure for solving boundary value problems for singularly perturbed linear systems with impulses. (English summary) *Bull. Inst. Math. Acad. Sinica* **20** (1992), *no.* 3, 211–229. (A. S. Vatsala) **93k:34029** 34A37 (34B05, 34E15, 65L10)

Aron, M. (*with* Croitoro, E.) On deformations with constant modified stretches. *J. Elasticity* **28** (1992), *no.* 1, 79–89. (Summary) **93c:73048** 73G05

Aron, R. M. (*with* Ansemil, J. M.; Ponte, S.) Spaces of holomorphic functions and germs on quotients. *Progress in functional analysis (Peñíscola*, 1990), 163–177, *North-Holland Math. Stud.*, 170, *North-Holland, Amsterdam*, 1992. (G. Coeuré) **93f:46071** 46G20 (46E50)

— (*with* Ansemil, J. M.; Ponte, S.) Embeddings of spaces of holomorphic functions of bounded type. (English summary) *J. London Math. Soc.* (2) **46** (1992), *no.* 3, 482–490. (Jorge Mujica) **93m:46050** 46G20

Aronov, Boris (*with* Fortune, Steven; Wilfong, Gordon) The furthest-site geodesic Voronoĭ diagram. *Proceedings of the Fourth Annual Symposium on Computational Geometry (Urbana, IL*, 1988), 229–240, *ACM, New York*, 1988. (*see* **93k:68003**) 68U05

— (*with* Sharir, Micha) Triangles in space or building (and analyzing) castles in the air. (English summary) *Proceedings of the Fourth Annual Symposium on Computational Geometry (Urbana, IL*, 1988), 381–391, *ACM, New York*, 1988. (*see* **93k:68003**) 68U05

— (*with* O'Rourke, Joseph) Nonoverlap of the star unfolding. ACM Symposium on Computational Geometry (North Conway, NH, 1991). *Discrete Comput. Geom.* **8** (1992), *no.* 3, 219–250. (Henk J. A. M. Heijmans) **93h:68135** 68U05 (52B55, 65Y25, 68Q25)

— (*with* Pellegrini, Marco; Sharir, Micha) On the zone of a surface in a hyperplane arrangement. (English summary) *Discrete Comput. Geom.* **9** (1993), *no.* 2, 177–186. (Rade Živaljević) **93j:52019** 52B30

Aronov, R. A. Philosophical foundations of mathematics and the Chlodwig syndrome. (Russian) *Priroda* **1992**, *no.* 3, 87–93. (Roman Murawski) **93d:01027** 01A55 (00A30)

Aronson, D. G. (*with* Golubitsky, Martin; Krupa, Martin) Coupled arrays of Josephson junctions and bifurcation of maps with S_N symmetry. *Nonlinearity* **4** (1991), *no.* 3, 861–902. (Michael J. Field) **93d:58107a** 58F14 (34C23, 34C25, 58F22)

— (*with* Golubitsky, Martin; Mallet-Paret, John) Ponies on a merry-go-round in large arrays of Josephson junctions. *Nonlinearity* **4** (1991), *no.* 3, 903–910. (Michael J. Field) **93d:58107b** 58F14 (34C23, 34C25, 58F22)

Aronsson, Gunnar Aspects of p-harmonic functions in the plane. *Summer School in Potential Theory (Joensuu*, 1990), 9–34, *Joensuun Yliop. Luonnont. Julk.*, 26, *Univ. Joensuu, Joensuu*, 1992. (Juan J. Manfredi) **93j:35069** 35J60 (30C62, 35–02, 35J70)

Arora, Jasbir S. (*with* House, John M.; Smith, Theodore F.) Comparison of methods for design sensitivity analysis for optimal control of thermal systems. (English summary) *Optimal Control Appl. Methods* **14** (1993), *no.* 1, 17–37. 93B30 (93C95)

Arora, Kamal (*with* Rathie, Arjun K.) Some theorems contiguous to Whipple and Dixon theorems for the series ${}_3F_2(1)$. *J. Fract. Calc.* **1** (1992), 79–86. (A. K. Agarwal) **93k:33003** 33C20 (33B15)

Arora, S. C. (*with* Sharma, Sharda) On two-parameter semigroup of operators. *Functional analysis and operator theory (New Delhi*, 1990), 147–153, *Lecture Notes in Math.*, 1511, *Springer, Berlin*, 1992. (From the introduction) **93e:47045** 47D03

— (*with* Bala, Pawan) On the structure of selfadjoint algebra of finite strict multiplicity. *Internat. J. Math. Math. Sci.* **15** (1992), *no.* 2, 355–358. (Sing Cheong Ong) **93c:47049** 47D25 (47A15)

— (*with* Bala, Pawan) Invariant subspaces of algebras of finite strict multiplicity. (English summary) *Math. Japon.* **37** (1992), *no.* 5, 909–912. (Warren R. Wogen) **93h:47057** 47D30 (47A15)

Arora, Sanjay (*with* Srivastava, Jagdish N.) An infinite series of resolution III.2 designs for the 2^m factorial experiment. *Discrete Math.* **98** (1991), *no.* 1, 35–56. (P. D. Puri) **93c:62131** 62K15 (05B05)

Arora, Satya R. (*with* Hales, A. W.; Passi, I. B. S.) Jordan decomposition and hypercentral units in integral group rings. *Comm. Algebra* **21** (1993), *no.* 1, 25–35. (Héctor A. Merklen) **93m:20005** 20C05 (16S34, 20F14)

Arora, Savita (*with* Malik, S. C.) ★ Mathematical analysis. Second edition. *John Wiley & Sons, Inc., New York*, 1992. xii+903 *pp. ISBN* 0-470-21858-4 (From the preface) **93h:00002** 00A05 (26–01, 28–01)

Arosio, Alberto (*with* Natalini, Roberto; Panizzi, Stefano; Paoli, Maria Gabriella) Fourth order abstract evolution equations. (English summary) *Nonlinear hyperbolic equations and field theory (Lake Como*, 1990), 8–22, *Pitman Res. Notes Math. Ser.*, 253, *Longman Sci. Tech., Harlow*, 1992. (*see* **93d:35003**) 35L75 (35R20, 73K05)

— (*with* Natalini, Roberto; Paoli, Maria Gabriella) Fourth order quasilinear evolution equations of hyperbolic type. *J. Math. Soc. Japan* **44** (1992), *no.* 4, 619–630. (Ya. A. Roĭtberg) **93h:35119** 35L30

— (*with* Panizzi, Stefano; Paoli, Maria Gabriella) Inhomogeneous Timoshenko beam equations. (English summary) *Math. Methods Appl. Sci.* **15** (1992), *no.* 9, 621–630. (Takashi Narazaki) **93j:73042** 73K05 (35Q72, 73D30, 73K12)

ben Arous, Gérard *see* **Ben Arous, Gérard**

Arov, D. Z. Regular J-inner matrix-functions and related continuation problems. *Linear operators in function spaces (Timişoara*, 1988), 63–87, *Oper. Theory Adv. Appl.*, 43, *Birkhäuser, Basel*, 1990. (Heinz Langer) **93b:47028** 47A57 (30D50, 30E05)

— (*with* Abramovich, Yu. I.) Realization of arbitrary rational matrix-function as the transfer function of passive ladder filter. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, II (Kobe*, 1991), 533–538, *Mita, Tokyo*, 1992. (Summary) **93j:94038** 94C05 (30E05, 47N70, 94A05)

— (*with* Fritzsche, Bernd; Kirstein, Bernd) Completion problems for j_{pq}-inner functions. I. (English summary) *Integral Equations Operator Theory* **16** (1993), *no.* 2, 155–185. (Joseph A. Ball) **93k:47027** 47A57 (47A56)

Arovas, Daniel P. (*with* Affleck, Ian; Marston, J. B.; Rabson, D. A.) SU($2n$) quantum antiferromagnets with exact C-breaking ground states. *Nuclear Phys. B* **366** (1991), *no.* 3, 467–506. (Summary) **93m:82003** 82B20 (82B10)

— Fractional statistics in quantum mechanics. *Quantum mechanics of fundamental systems*, 3 (*Santiago*, 1990), 1–27, *Ser. Cent. Estud. Cient. Santiago, Plenum, New York*, 1992. (*see* **93j:81003**) 81–02 (81S05)

Arratia, Richard (*with* Tavaré, Simon) The cycle structure of random permutations. (English summary) *Ann. Probab.* **20** (1992), *no.* 3, 1567–1591. (Lars Holst) **93g:60013** 60C05 (05A05, 60B15, 60F17)

— (*with* Tavaré, Simon) Limit theorems for combinatorial structures via discrete process approximations. *Random Structures Algorithms* **3** (1992), *no.* 3, 321–345. (Bert Fristedt) **93g:60014** 60C05 (05A05, 60F05)

Arraut, J. L. (*with* Moreira dos Santos, Nathan) The characteristic mapping of a foliated bundle. *Topology* **31** (1992), *no.* 3, 545–555. (Elmar Vogt) **93j:57016** 57R30 (57S20)

Arregi Lizarraga, Jesús María (*with* Vera López, Antonio; Vera López, Francisco José) Classification of finite groups with many minimal subgroups and with the number of conjugacy classes of $G/S(G)$ equal to 8. *Collect. Math.* **41** (1990), *no.* 3, 243–279 (1992). (N. F. Kuzennyi) **93h:20028** 20D99

— (*with* Vera López, Antonio) Conjugacy classes in Sylow p-subgroups of GL(n, q). II. *Proc. Roy. Soc. Edinburgh Sect. A* **119** (1991), *no.* 3-4, 343–346. (Summary) **93a:20030** 20D20 (20G40)

— (*with* Vera López, Antonio) Conjugacy classes in metacyclic finite groups. (English summary) *Portugal. Math.* **49** (1992), *no.* 3, 281–293. (Summary) **93j:20048** 20D60

bilbao Arrese, Jesús Mario *see* **Bilbao Arrese, Jesús Mario**

Arribas, M. (*with* Elipe Sánchez, Antonio C.; Abad, A.) Scaling Hamiltonians in attitude dynamics of two rigid bodies. (English summary) *Rev. Acad. Cienc. Zaragoza* (2) **47** (1992), 147–154. (Summary) **93k:70010** 70E99 (70H05, 70M20)

trigos-Arrieta, F. Javier *see* **Trigos-Arrieta, F. Javier**

Arrieta, José (*with* De Carvalho, Alexandre Nolasco; Hale, Jack K.) A damped hyperbolic equation with critical exponent. *Comm. Partial Differential Equations* **17** (1992), *no.* 5-6, 841–866. (Piotr Biler) **93f:35145** 35L70 (34D45, 34G20, 47H20, 47N20, 58F39)

Arrighi, Gino An Adelardian version of Euclid. (Italian. English and Italian summaries) *Rend. Accad. Naz. Sci. XL Mem. Mat.* (5) **16** (1992), 39–41. 01A35 (01A20, 01A30)

— *see also* **Contributions to the history of mathematics, 93m:01002**

Arrigo, D. J. Group properties of a Monge-Ampère type equation. (English summary) *Computational and applied mathematics, II (Dublin*, 1991), 107–115, *North-Holland, Amsterdam*, 1992. (Summary) **93j:35012** 35A30 (35Q99, 76N15)

Arrondo, Enrique (*with* Sols Lucía, Ignacio) On congruences of lines in the projective space. (English and French summaries) *Mém. Soc. Math. France (N.S.) No.* 50 (1992), 96 *pp.* (Giorgio Ottaviani) **93g:14040** 14J10 (14F05, 14M15)

Arrowsmith, D. K. (*with* Place, C. M.) ★ Dynamical systems. Differential equations, maps and chaotic behaviour. Chapman and Hall Mathematics Series. *Chapman & Hall, London*, 1992. x+330 *pp. ISBN* 0-412-39070-1; 0-412-39080-9 (Yi Yuan Chen) **93j:58040** 58Fxx (34–01, 34C35, 34Cxx, 58F13)

sánchez-Arroyo, Abdón *see* **Sánchez-Arroyo, Abdón**

González-Arroyo, Antonio *see* **González-Arroyo, Antonio**

fernández y fernández-Arroyo, Fidel José *see* **Fernández y Fernández-Arroyo, Fidel José**

Arruda, J. R. F. Analysis of non-equally spaced data using a regressive discrete Fourier series. *J. Sound Vibration* **156** (1992), *no.* 3, 571–574. 94A12

Arruda, L. V. R. (*with* Favier, G.) A review and a comparison of robust estimation methods. (English summary) *Identification and system parameter estimation* 1991, *Vol.* 1,2 (*Budapest*, 1991), 247–253, *IFAC Sympos. Ser.*, 3, *Pergamon, Oxford*, 1992. (*see* **93h:93009**) 93B30

Arscott, F. M. Multiplicative solution theory for three-path combinations. (English summary) *Arch. Math.* (*Brno*) **26** (1990), *no.* 2-3, 73–81. (Summary) **93g:34006** 34A20 (34A30, 34B30)

Arsen'ev, A. A. An initial-boundary value problem for the quantum Liouville equation. (Russian. Russian summary) *Mat. Model.* **4** (1992), *no.* 3, 119–124. (Robert Alicki) **93j:81019** 81Q20 (35Q40, 35R60, 81S30)

Arsen'ev, S. A. (*with* Gubar', A. Yu.; Rykunov, L. N.; Shelkovnikov, N. K.) On the effect of frequency division in spectra of surface gravitational waves. (Russian) *Dokl. Akad. Nauk* **322** (1992), *no.* 6, 1062–1064. 76B15 (86A15)

— (*with* Gubar', A. Yu.; Rykunov, L. N.; Shelkovnikov, N. K.) A new type of instability of long waves in shallow water: nonlinear sign-variable viscosity in tides. (Russian) *Dokl. Akad. Nauk* **323** (1992), *no.* 1, 58–61. (Radyadour Kh. Zeytounian) **93g:76041** 76D33 (76B15, 76E20, 86A05)

Arsenin, V. Ya. (*with* Kryanev, A. V.) Generalized maximum likelihood method and its application for solving ill-posed problems. (English summary) *Ill-posed problems in natural sciences* (*Moscow*, 1991), 3–12, *VSP, Utrecht*, 1992. (*see* **93m:00041**) 65C99 (65U05)

Arshansky, R. I. (*with* Zerzion, Daniel; Horwitz, L. P.) Classical mechanics of special relativity in a Riemannian space-time. *J. Math. Phys.* **32** (1991), *no.* 7, 1788–1795. (Summary) **93b:70020** 70H40 (70G05, 83A05)

Arslanov, F. Kh. (*with* Nasyrov, S. R.) On a combination of sufficient conditions for the univalence of analytic functions that generalizes the Becker condition. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* **1991**, *no.* 4, 78–79; *translation in Soviet Math.* (*Iz. VUZ*) **35** (1991), *no.* 4, 77–79. (E. Złotkiewicz) **93a:30017** 30C55

Arsu, G. Spectral analysis for simply characteristic operators by Mourre's method. I. *Linear operators in function spaces* (*Timişoara*, 1988), 89–99, *Oper. Theory Adv. Appl.*, 43, *Birkhäuser, Basel*, 1990. (H. Baumgärtel) **93c:47011** 47A40 (35P05, 47F05, 47N50, 81U05)

Artamonov, V. A. (*with* Salii, V. N.; Skornyakov, L. A.; Shevrin, L. N.; Shul'geifer, E. G.) ★ Общая алгебра. Том 2. (Russian) [General algebra. Vol. 2] Edited and with a preface by Skornyakov. Справочная Математическая Библиотека. [Mathematical Reference Library] "*Nauka*", *Moscow*, 1991. 480 *pp. ISBN* 5-02-014427-4 (Boris M. Schein) **93a:00001b** 00A05 (06–01, 08–01, 18–01, 20–01)

— Projective modules and matrices over modular Lie algebras. (Russian. English and Russian summaries) *Abelian groups and modules, No.* 10 (*Russian*), 5–8, 182, 188, *Tomsk. Gos. Univ., Tomsk*, 1991. (Summary) **93j:17010** 17B10 (17B50)

— The structure of Hopf algebras. (Russian) *Algebra. Topology. Geometry, Vol.* 29 (*Russian*), 3–63, *Itogi Nauki i Tekhniki, Akad. Nauk SSSR, Vsesoyuz. Inst. Nauchn. i Tekhn. Inform., Moscow*, 1991. (Helmut Boseck) **93b:16064** 16W30 (16S40)

— Nilpotency, projectivity and decomposability. (Russian) *Sibirsk. Mat. Zh.* **32** (1991), *no.* 6, 3–11, 203; *translation in Siberian Math. J.* **32** (1991), *no.* 6, 901–909 (1992). (Ivan Chajda) **93j:08009** 08B10 (08A30, 08B20)

— Projective modules and groups of invertible matrices over crossed products. *Proceedings of the International Conference on Algebra, Part* 2 (*Novosibirsk*, 1989), 227–235, *Contemp. Math.*, 131, *Part* 2, *Amer. Math. Soc., Providence, RI*, 1992. (*see* **93b:00030**) 16S35 (16D70, 16S30, 16S36, 19A13, 19B99, 19C20)

— Projective metabelian D-groups and Lie superalgebras. (English summary) *J. Soviet Math.* **60** (1992), *no.* 6, 1790–1795. (Summary) **93e:20049** 20F16 (17A70)

Arteca, G. A. (*with* Fernández, Francisco M.; Castro, E. A.) ★ Large order perturbation theory and summation methods in quantum mechanics. Lecture Notes in Chemistry, 53. *Springer-Verlag, Berlin*, 1990. xii+644 *pp. ISBN* 3-540-52847-4 (K. Kumar) **93b:81003** 81–02 (81Q15, 81V45, 81V55)

Artémiadis, Nicolas K. On some new major developments and concepts in mathematics. *Proceedings of the* 3*rd Congress of Geometry* (*Thessaloniki*, 1991), 15–26, *Aristotle Univ. Thessaloniki, Thessaloniki*, 1992. (*see* **93d:53003**) 01A05

Artemovich, O. D. Global reduction of group systems. (Ukrainian. Russian summary) *Visnik L'vîv. Derzh. Univ. Ser. Mekh.-Mat. No.* 30 (1988), 32–35, 75. 20K99 (93A10)

— Hypocentral p-groups with complemented nonabelian normal subgroups. (Ukrainian) *Visnik L'vîv. Derzh. Univ. Ser. Mekh.-Mat. No.* 32 (1989), 59–63. 20D15

— On a right Hamiltonian ring. (Ukrainian) *Visnik L'vîv. Univ. Ser. Mekh. Mat. No.* 34 (1990), 70–73. 16S99

Arthur, James Some problems in local harmonic analysis. *Harmonic analysis on reductive groups* (*Brunswick, ME*, 1989), 57–78, *Progr. Math.*, 101, *Birkhäuser Boston, Boston, MA*, 1991. (Jeffrey Adams) **93e:22034** 22E50 (11F72)

— *see also* **Shokranian, Salahoddin, 93j:11029**

Arthurs, E. (*with* Goodman, M. S.) A quantum experiment uncertainty principle: a general 2nd moment uncertainty relation. (English summary) *Quantum aspects of optical communications* (*Paris*, 1990), 18–26, *Lecture Notes in Phys.*, 378, *Springer, Berlin*, 1991. (Summary) **93i:81015** 81P15 (83B05)

Artin, Michael (*with* Tate, John; Van den Bergh, Michel) Modules over regular algebras of dimension 3. *Invent. Math.* **106** (1991), *no.* 2, 335–388. (G. Krause) **93e:16055** 16W50 (14H52, 16E10)

— Geometry of quantum planes. *Azumaya algebras, actions, and modules* (*Bloomington, IN*, 1990), 1–15, *Contemp. Math.*, 124, *Amer. Math. Soc., Providence, RI*, 1992. (Michel Van den Bergh) **93b:14004** 14A22 (16W50, 58B30)

Artino, R. A. (*with* Barros-Neto, J.) Matrix triangulation of hypoelliptic boundary value problems. (English and French summaries) *Ann. Inst. Fourier* (*Grenoble*) **42** (1992), *no.* 4, 805–824. (Yu. V. Egorov) **93k:35287** 35S15 (35H05)

Artmann, Benno Über voreuklidische "Elemente" aus der Schule des Eudoxos. [On pre-Euclidean "elements" from the school of Eudoxos of Cnidos] *Mathematikdidaktik, Bildungsgeschichte, Wissenschaftsgeschichte, II* (*Georgsmarienhütte*, 1986), 14–16, *IDM-Reihe*, 15, *Aulis/Deubner, Cologne*, 1990. (*see* **93j:01001**) 01A20

Artola, Michel (*with* Cessenat, Michel) Diffraction d'une onde électromagnétique par une couche composite mince accolée à un corps conducteur épais. I. Cas des inclusions fortement conductrices. (English summary) [Scattering of an electromagnetic wave by a slender composite slab in contact with a thick perfect conductor. I. Inclusions with high conductivity] *C. R. Acad. Sci. Paris Sér. I Math.* **313** (1991), *no.* 5, 231–236. (Introduction) **93c:78009** 78A45

— (*with* Cessenat, Michel) Diffraction d'une onde électromagnétique par une couche composite mince accolée à un corps conducteur épais. II. Cas d'inclusions (ou d'une couche) de forte permitivité et de forte perméabilité. (English summary) [Scattering of an electromagnetic wave by a slender composite slab in contact with a thick perfect conductor. II. Inclusions (or coated material) with high conductivity and high permeability] *C. R. Acad. Sci. Paris Sér. I Math.* **313** (1991), *no.* 6, 381–385. (From the introduction) **93c:78010** 78A45

— (*with* Cessenat, Michel) Diffraction d'une onde électromagnétique par un obstacle borné à permittivité et perméabilité élevées. (English summary) [Diffraction of an electromagnetic wave by a bounded body with high permittivity and permeability] *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 5, 349–354. (Summary) **93m:78012** 78A45

Artstein, Zvi A variational convergence that yields chattering systems. (English summary) *Analyse non linéaire* (*Perpignan*, 1987), 49–71, *Univ. Montréal, Montreal, PQ*, 1989. (*see* **93h:49003**) 49J45 (34H05)

— Sensitivity to σ-fields of information in stochastic allocation. *Stochastics Stochastics Rep.* **36** (1991), *no.* 1, 41–63. (Erik J. Balder) **93f:90165** 90C31 (49K45, 93E20)

Artuso, Roberto (*with* Casati, Giulio; Shepelyanskii, D. L.) Breakdown of universality in renormalization dynamics for critical invariant torus. *Europhys. Lett.* **15** (1991), *no.* 4, 381–386. (Yong Nian Huang) **93a:58118** 58F13 (82C27, 82C28)

— Diffusive dynamics and periodic orbits of dynamical systems. *Phys. Lett. A* **160** (1991), *no.* 6, 528–530. (Summary) **93c:58165** 58F20

— *see also* **Chaos, order, and patterns, 93i:58003**

Artykov, G. (*with* Orazov, M. B.) Ion-acoustic waves in a nonmagnetized plasma. (Russian) *Differentsial'nye Uravneniya* **27** (1991), *no.* 10, 1814–1817, 1838. (From the text) **93a:76110** 76X05

Artyushin, L. M. (*with* Chistyakov, V. A.) Optimal control on the basis of the method of inverse problems of dynamics in man-machine systems. (Russian) *Kibernet. i Vychisl. Tekhn. No.* 92 (1991), 11–15. 49N55

— (*with* Chistyakov, V. A.) Optimal control of nonlinear systems based on the solution of an inverse problem of dynamics. (Russian. Russian summary) *Kibernet. i Vychisl. Tekhn. No.* 96 (1992), 36–43. (Summary) **93k:49027** 49M30 (49N55)

ben-Artzi, Asher *see* **Ben-Artzi, Asher**

ben-Artzi, Matania *see* **Ben-Artzi, Matania**

Artzrouni, Marc A modeled time-varying density function for the incubation period of AIDS. (English summary) *J. Math. Biol.* **31** (1992), *no.* 1, 73–99. 92C60

Artzy, Rafael ★ Geometry. An algebraic approach. *Bibliographisches Institut, Mannheim*, 1992. viii+262 *pp. ISBN* 3-411-15351-2 (E. J. F. Primrose) **93i:51001** 51–01 (51A05, 51A25, 51Fxx)

— Dynamics of quadratic functions in cycle planes. *J. Geom.* **44** (1992), *no.* 1-2, 26–32. (W. Benz) **93f:51006** 51B20 (51B15)

bottaro Aruffo, Ada *see* **Bottaro Aruffo, Ada**

Arugay, Esperanza B. Uniquely path colorable graphs. *Proceedings of Asian Mathematical Conference*, 1990 (*Hong Kong*, 1990), 11–14, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93b:00022**) 05C15

Arumainayagam, S. Devaraj (*with* Soundararajan, V.) Quick switching system for costly and destructive testing. (English summary) *Sankhya Ser. B* **54** (1992), *no.* 1, 1–12. 62N10

Arumugam, G. (*with* Samy, A. Antony; Devasahayam, M. Paul; Xavier, C.) A recognition algorithm for the intersection graphs of internally disjoint paths in trees. *National Seminar on Theoretical Computer Science* (*Madras*, 1991), 169–178, *IMS Rep.*, 115, *Inst. Math. Sci., Madras*, 199?. (*see* **93b:68006**) 05C85 (68Q22, 68R10)

Arumugam, S. (*with* Paulraj Joseph, J.) On connected cutfree domination in graphs. (English summary) *Indian J. Pure Appl. Math.* **23** (1992), *no.* 9, 643–647. (Summary) **93f:05051** 05C35

Arun, K. S. A unitarily constrained total least squares problem in signal processing. *SIAM J. Matrix Anal. Appl.* **13** (1992), *no.* 3, 729–745. (Zdeněk Strakoš) **93g:65055** 65F20 (15A18)

Arundhathi, S. An analogue of Bade and Curtis theorem for real function algebras. *J. Math. Phys. Sci.* **25** (1991), *no.* 4, 319–330. (Krzysztof Jarosz) **93d:46085** 46J10

Arun-Kumar, S. (*with* Chockalingam, T.) Genetic search algorithms and their randomized operators. (English summary) *Comput. Math. Appl.* **25** (1993), *no.* 5, 91–100. (Summary) **93h:68034** 68P20 (65K99, 65Y20)

Arutyunov, A. V. On the properties of quadratic mappings in a Banach space. (Russian) *Mat. Zametki* **50** (1991), *no.* 4, 10–20, 157; *translation in Math. Notes* **50** (1991), *no.* 3-4, 993–999 (1992). (Summary) **93b:46082** 46G05 (46N10, 47H99, 49K27)

— (*with* Blagodat·skikh, V. I.) The maximum principle for differential inclusions with phase constraints. (Russian) *Trudy Mat. Inst. Steklov.* **200** (1991), 4–26; *translation in Proc. Steklov Inst. Math.* **1993**, *no.* 2, 3–25. (Halina Frankowska) **93e:49032** 49K24 (34A60, 34H05, 49N15)

— Higher-order extremum conditions in abnormal minimization problems. (Russian. Russian summary) *Sibirsk. Mat. Zh.* **33** (1992), *no.* 4, 15–23, 220; *translation in Siberian Math. J.* **33** (1992), *no.* 4, 557–565 (1993). (Andrei V. Dmitruk) **93h:49039** 49K27 (49N15, 90C48)

Arutyunyan, L. L. Results of the optimal realization of programs for a multilevel model of a microprogram processor. (Russian. Armenian summary) *Akad. Nauk Armenii Dokl.* **93** (1992), *no.* 2, 58–62. 68Q05 (68N05)

Arutyunyan, N. Kh. (*with* Manzhirov, A. V.; Naumov, V. È.) ★ Контактные задачи механики растущих тел. (Russian. English and Russian summaries) [Contact problems in the mechanics of growing bodies] "*Nauka*", *Moscow*, 1991. 176 *pp. ISBN* 5-02-006752-0 (Jiří Nedoma) **93i:73048** 73T05 (73B99, 73E50)

— (*with* Antipov, Yu. A.) Contact problems in elasticity theory in the presence of friction and adhesion. (Russian) *Prikl. Mat. Mekh.* **55** (1991), *no.* 6, 1005–1017; *translation in J. Appl. Math. Mech.* **55** (1991), *no.* 6, 887–901 (1992). (From the text) **93b:73033** 73T05 (73C35, 73V35)

Arutyunyan, S. Kh. Geometry of submanifolds of a pseudo-Euclidean space E^n_{2s}. (Russian) *Mat. Zametki* **50** (1991), *no.* 3, 3–11, 156; *translation in Math. Notes* **50** (1991), *no.* 3-4, 887–892 (1992). (V. Oproiu) **93g:53030** 53B30 (53B40)

ter-Arutyunyan-Savvidi, N. G. *see* **Ter-Arutyunyan-Savvidi, N. G.**

Arvanitis, K. G. (*with* Paraskevopoulos, P. N.) Output feedback uniform decoupling problem of linear time-varying analytic systems. (English summary) *Internat. J. Systems Sci.* **23** (1992), *no.* 11, 2037–2061. (Devendra P. Garg) **93k:93046** 93B51 (93C05, 93C50)

— (*with* Paraskevopoulos, P. N.) Uniform exact model matching for a class of linear time-varying analytic systems. (English summary) *Systems Control Lett.* **19** (1992), *no.* 4, 313–323. (Krzysztof Kuźmiński) **93i:93054** 93B50

Arvanitoyeorgos, Andreas New invariant Einstein metrics on generalized flag manifolds. *Trans. Amer. Math. Soc.* **337** (1993), *no.* 2, 981–995. (Wolfgang Ziller) **93h:53043** 53C25 (53C30)

Arveson, William (*with* Kishimoto, Akitaka) A note on extensions of semigroups of $*$-endomorphisms. *Proc. Amer. Math. Soc.* **116** (1992), *no.* 3, 769–774. (Sze-Kai Tsui) **93a:46133** 46L57

— *see also* **Operator algebras and topology, 93e:00027** *and* **Operator algebras and operator theory, 93e:00028**

Arvind, K. (*with* Pandu Rangan, C.) Connected domination and Steiner set on weighted permutation graphs. *Inform. Process. Lett.* **41** (1992), *no.* 4, 215–220. (Summary) **93b:68067** 68R10 (05C85, 68Q25)

Arvind, V. (*with* Biswas, Somenath) Edge-deletion graph problems with first-order expressible subgraph properties. *Internat. J. Found. Comput. Sci.* **2** (1991), *no.* 2, 83–99. (Gerard J. Chang) **93e:68030** 68Q25 (03D15, 05C85, 68R10)

Arvola, William A. The fundamental group of the complement of an arrangement of complex hyperplanes. *Topology* **31** (1992), *no.* 4, 757–765. (Hiroaki Terao) **93k:32078** 32S40 (52B30)

Arya, Anil (*with* Young, Richard A.; Woodlock, Peter) Managerial reporting discretion and the truthfulness of disclosures. (English summary) *Econom. Lett.* **39** (1992), *no.* 2, 163–168. 90B50 (90A05)

Arya, S. P. (*with* Gupta, Kavita) s-regularly ordered and almost s-regularly ordered spaces. (English summary) *Indian J. Pure Appl. Math.* **23** (1992), *no.* 11, 797–806. (Joe D. Mashburn) **93m:54054** 54F05 (54D10, 54D15)

ben-Aryeh, Y. *see* **Ben-Aryeh, Y.**

Arzoumanian, Y. (*with* Moser, W. O. J.) A sequence with a smaller maximum overlap. *Bull. Inst. Combin. Appl.* **7** (1993), 53–54. 05D05

Arzumanyan, V. A. (*with* Nakhapetyan, B. S.; Pogosyan, S. K.) A local limit theorem for the number of particles in lattice spin systems. (Russian. English summary) *Teoret. Mat. Fiz.* **89** (1991), *no.* 2, 178–189; *translation in Theoret. and Math. Phys.* **89** (1991), *no.* 2, 1138–1146 (1992). (Claus Montonen) **93d:82007** 82B05 (60F05, 60K35, 82B20)

Asaad, M. Groups without certain minimal nonnilpotent subgroups. *Pure Math. Appl. Ser. A* **2** (1992), *no.* 3-4, 157–160. (From the text) **93f:20021** 20D10 (20D25)

Asad, A. (*with* Hussein, D.) The p-quasi-center of a Banach algebra. (Arabic summary) *Arabian J. Sci. Engrg.* **16** (1991), *no.* 4, 471–474. (Peter Dixon) **93d:46077** 46H05

Asada, Yura (*with* Koriyama, Akira) M_1-set of cubic complex polynomials. *Proc. Fac. Sci. Tokai Univ.* **26** (1991), 15–20. (Summary) **93i:30022** 30D05 (58F23)

Asadchii, O. A. On the maximum principle for n-dimensional quasiconformal mappings. (Russian) *Mat. Zametki* **50** (1991), *no.* 6, 14–23, 156; *translation in Math. Notes* **50** (1991), *no.* 5-6, 1219–1226 (1992). (Matti Vuorinen) **93a:30025** 30C65

Asadzadeh, Mohammad (*with* Kumlin, Peter; Larsson, Stig) The discrete ordinates method for the neutron transport equation in an infinite cylindrical domain. (English summary) *Math. Models Methods Appl. Sci.* **2** (1992), *no.* 3, 317–338. (Edward W. Larsen) **93i:82064** 82C70 (65R20, 82–04)

Asaeda, You (*with* Hidaka, F.; Arima, S.) On the spaces of general tensors. *Proceedings of the International Symposium on Mathematics and Theoretical Physics (Guarujá, 1989)*, 192–198, *Sympos. Gaussiana Ser. A Math. Theoret. Phys.*, 1, *Inst. Gaussianum, Toronto, ON*, 1990. (B. Reichstein) **93b:15032** 15A69 (15A72)

— (*with* Yoshidome, Kakuzi) On Ono's problem on quadratic fields. *Proc. Japan Acad. Ser. A Math. Sci.* **67** (1991), *no.* 10, 348–352. (F. Diaz y Diaz) **93e:11122** 11R11

Asai, Kiyoji (*with* Terano, Toshiro; Sugeno, Michio) ★ Fuzzy systems theory and its applications. Translated from the Japanese. *Academic Press, Inc., Boston, MA*, 1992. xii+268 *pp. ISBN* 0-12-685245-6 (J. Albrycht) **93c:04006** 04A72 (68T99, 94D05)

Asai, Nobuyoshi The numerical solution of $xJ'_m(x) + HJ_m(x) = 0$ where $m > -1$ and $m > -H$. (Japanese. English summary) *Parallel processing for matrix computation (Yokohama, 1991)*, 1–6, *Adv. Numer. Methods Large Sparse Sets Linear Equations*, 7, *Keio Univ., Yokohama*, 1991. (*see* **93e:65040**) 65H05 (65F15)

Asaithambi, N. S. A numerical method for an inhomogeneous nonlinear diffusion problem. *Appl. Math. Comput.* **50** (1992), *no.* 2-3, 307–319. (From the text) **93d:65087** 65M55 (65M06)

— A Galerkin method for Stefan problems. (English summary) *Appl. Math. Comput.* **52** (1992), *no.* 2-3, 239–250. (Summary) **93i:65107** 65N30

— (*with* Garner, J. B.) Taylor series solution of a class of diffusion problems in physiology. (English summary) *Math. Comput. Simulation* **34** (1992), *no.* 6, 563–570. (Summary) **93g:92009** 92C30 (65L99)

Asakura, Toshiyuki On self-tuning control of a double-walled thermostatic container. (English summary) *Systems and control*, 13–22, *Mita, Tokyo*, 1991. (*see* **93f:93007**) 93C95

— (*with* Xu, B.) A method to stabilization of nonlinear systems with time lag (the application to electropneumatic valve positioner). (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, II (Kobe, 1991)*, 383–388, *Mita, Tokyo*, 1992. (*see* **93g:93006**) 93D15

Asami, Yasushi A note on the derivation of the first and second derivatives of objective functions in geographical optimization problems. (English summary) *J. Fac. Engrg. Univ. Tokyo Ser. B* **41** (1991), *no.* 1, 1–13. (Summary) **93j:90128** 90C45 (49J50)

Asano, Hiroshi Generalized Jordan triple systems. *Nonassociative algebras and related topics (Hiroshima, 1990)*, 1–7, *World Sci. Publishing, River Edge, NJ*, 1991. (Erhard Neher) **93b:17001** 17–02 (17C10)

— Classification of noncompact real simple generalized Jordan triple systems of the second kind. *Hiroshima Math. J.* **21** (1991), *no.* 3, 463–489. (Erhard Neher) **93c:17004** 17A40 (17C20)

Asano, Naruyoshi (*with* Nakajima, Hideo) Construction of the two-dimensional recursion operators. (English summary) *Nonlinear evolution equations and dynamical systems (Baia Verde, 1991)*, 341–348, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93h:58136** 58F35 (35Q99)

Asano, Takao *see* **Symposium: Algorithms, 93m:68006**

Asano, Tetsuo (*with* Bhattacharya, Binay; Keil, J. Mark; Yao, Foong Frances) Clustering algorithms based on minimum and maximum spanning trees. (English summary) *Proceedings of the Fourth Annual Symposium on Computational Geometry (Urbana, IL, 1988)*, 252–257, *ACM, New York*, 1988. (*see* **93k:68003**) 68R05 (68U05)

— Difficulty of the maximum independent set problem on intersection graphs of geometric objects. *Graph theory, combinatorics, and applications, Vol. 1 (Kalamazoo, MI, 1988)*, 9–18, *Wiley-Intersci. Publ., Wiley, New York*, 1991. (*see* **93b:05002**) 05C85

Asanov, A. R. (*with* Mamayusupov, O. Sh.) Determination of the right-hand side of a pseudohyperbolic equation. (Russian. Russian summary) *Questions of well-posedness in problems of analysis (Russian)*, 114–121, 185, *Akad. Nauk SSSR Sibirsk. Otdel., Inst. Mat., Novosibirsk*, 1989. (*see* **93e:00018**) 35R30 (35L80)

Asanov, G. S. Finslerian fibered extension of gauge field theory: Lie-invariance fibres and effective Lagrangian. *Rep. Math. Phys.* **26** (1988), *no.* 3, 367–399. (H. Rund) **93c:81116** 81T13 (53C60, 53C80)

— (*with* Kiselev, M. V.) Comparing the Finslerian gauge approach with the SU(3) × SU(2) × U(1)-model. *Rep. Math. Phys.* **26** (1988), *no.* 3, 401–411. (H. Rund) **93c:81117** 81T13 (53C60, 53C80, 81V15)

— The gauge-covariant extension $g_{pq} = \frac{1}{2}D_pD_qF^2$ of Finslerian metric tensor. *An. Ştiinţ. Univ. "Al. I. Cuza" Iaşi Secţ. I a Mat. (N.S.)* **36** (1990), *no.* 3, 241–245. (Mihai Anastasie) **93a:53060** 53C60

— (*with* Stavrinos, Panayiotis) Finslerian deviations of geodesics over tangent bundle. *Rep. Math. Phys.* **30** (1991), *no.* 1, 63–69 (1992). (László Kozma) **93g:53057** 53C22 (53B40, 53C80)

— Gauge-covariant stationary curves on Finslerian and jet fibrations and gauge extension of Lorentz force. *Tensor (N.S.)* **50** (1991), *no.* 2, 122–137. (H. Rund) **93c:53011** 53B40 (58A20, 70G50, 78A35, 81T13)

— (*with* Kawaguchi, Tomoaki) Anomalously-Finslerian corrections to speed-of-light given by metric tensor $g_{ij}(x, \dot{x}) = r_{ij}(x) + \beta l_i l_j$. *Tensor (N.S.)* **50** (1991), *no.* 2, 170–176. (H. Rund) **93c:53012** 53B40 (53B50, 83D05)

Asanuma, Teruo Noninvariant two-dimensional affine domains. *Math. J. Toyama Univ.* **14** (1991), 167–175. (W. Heinzer) **93g:13019** 13F20 (13G05)

Asarin, E. (*with* Diamond, Phil; Fomenko, I. V.; Pokrovskii, A. V.) Chaotic phenomena in desynchronized systems and stability analysis. *Comput. Math. Appl.* **25** (1993), *no.* 1, 81–87. (Peter E. Kloeden) **93k:58144** 58F13 (58F03, 58F10, 93D05)

Asashiba, Hideto The selfinjectivity of a local algebra A and the condition $\mathrm{Ext}^1_A(DA, A) = 0$. *Representations of finite-dimensional algebras (Tsukuba, 1990)*, 9–23, *CMS Conf. Proc.*, 11, *Amer. Math. Soc., Providence, RI*, 1991. (Birge Zimmermann-Huisgen) **93e:16006** 16D50 (16E99, 16G10)

Asatryan, Hrachia M. (*with* Murayama, Akihiro) Toward the realistic three-generation model in the $(2, 0)$ heterotic string compactification. (English summary) *Internat. J. Modern Phys. A* **7** (1992), *no.* 20, 5005–5017. (Summary) **93d:81191** 81V22 (81T30)

Ascenzi, O. (*with* Ambrosio, Luigi) Hölder continuity of solutions of one-dimensional Lagrange problems of calculus of variations. (English summary) *Ricerche Mat.* **40** (1991), *no.* 2, 311–319 (1992). (Jean-Pierre Raymond) **93m:49018** 49N60 (49K40)

van Asch, A. G. (*with* van der Blij, F.) ★ Hoeken en hun maat. (Dutch) [Angles and their size] CWI Syllabi, 29. *Stichting Mathematisch Centrum, Centrum voor Wiskunde en Informatica, Amsterdam*, 1992. iv+93 *pp. ISBN* 90-6196-407-5 (H. W. Guggenheimer) **93f:51001** 51–01

Asch, M. (*with* Kohler, Werner E.; Papanicolaou, G. C.; Postel, M.; White, Benjamin S.) Frequency content of randomly scattered signals. *SIAM Rev.* **33** (1991), *no.* 4, 519–625. (Marcel Ovidiu Vlad) **93f:73041** 73D35 (60H15, 73B35, 76Q05, 86A15)

Aschbacher, Michael Representations of finite groups as permutation groups. *American Mathematical Society centennial publications, Vol. II (Providence, RI, 1988)*, 1–6, *Amer. Math. Soc., Providence, RI*, 1992. (W. Feit) **93g:20005** 20B15 (20D05)

— (*with* Segev, Yoav) Extending morphisms of groups and graphs. *Ann. of Math.* (2) **135** (1992), *no.* 2, 297–323. (Ulrich Meierfrankenfeld) **93d:20034** 20D08 (05C25)

— Daniel Gorenstein (1923–1992). *Notices Amer. Math. Soc.* **39** (1992), *no.* 10, 1190–1191. (Editors) **93m:01053** 01A70

Asche, David ★ An introduction to groups. With a separately available computer disk. A Computer Illustrated Text. *Adam Hilger, Ltd., Bristol; ESM, Cambridge*, 1989. viii+89 *pp. ISBN* 0-85274-377-7 20–01

Ascher, Marcia Before the conquest. *Math. Mag.* **65** (1992), *no.* 4, 211–218. (From the text) **93g:01006** 01A12

— *see also* **Katz, Victor J.**

Ascher, Uri M. (*with* Petzold, Linda R.) Projected collocation for higher-order higher-index differential-algebraic equations. (English summary) Orthogonal polynomials and numerical methods. *J. Comput. Appl. Math.* **43** (1992), *no.* 1-2, 243–259. (Summary) **93i:65080** 65L60

— (*with* Petzold, Linda R.) Stability of computational methods for constrained dynamics systems. (English summary) *SIAM J. Sci. Comput.* **14** (1993), *no.* 1, 95–120. (Summary) **93i:65068** 65L05 (34A09, 34A50, 70–08, 70H35)

Ascheuer, N. (*with* Escudero, L. F.; Grötschel, Martin; Stoer, Mechthild) A cutting plane approach to the sequential ordering problem (with applications to job scheduling in manufacturing). (English summary) *SIAM J. Optim.* **3** (1993), *no.* 1, 25–42. (Summary) **93k:90033** 90B10 (90B30)

Aschieri, Paolo (*with* Castellani, Leonardo) Bicovariant differential geometry of the quantum group $GL_q(3)$. (English summary) *Phys. Lett. B* **293** (1992), *no.* 3-4, 299–308. (Arne Schirrmacher) **93h:58009** 58B30 (17B37)

Aschman, David The legacy of Erwin Schrödinger: quantum mechanics. *Trans. Roy. Soc. South Africa* **47** (1989), *no.* 1, 81–101. (H. Treder) **93a:01029** 01A60 (81–03)

Aseev, V. V. On the conformal modulus distortion under quasi-Möbius mappings. *Ann. Acad. Sci. Fenn. Ser. A I Math.* **16** (1991), *no.* 1, 155–168. (Matti Vuorinen) **93b:30019** 30C65

guil Asensio, F. *see* **Guil Asensio, F.**

Asensio, M. Jesus (*with* Gómez Torrecillas, José; Torrecillas Jover, Blas) Krull dimensions of divisorially graded rings. *Comm. Algebra* **19** (1991), *no.* 12, 3447–3464. (G. Krause) **93b:16043** 16P60 (16P40, 16S90, 16W50)

— (*with* Torrecillas Jover, Blas) The local Gabriel correspondence. *Comm. Algebra* **20** (1992), *no.* 3, 847–866. (T. Albu) **93b:16057** 16S90 (16D50, 16P60)

guil Asensio, P. A. *see* **Guil Asensio, P. A.**

Asgekar, G. G. (*with* Aherkar, S. M.) Relativistic static spheres filled with infinitely conducting charged fluids. *Astrophys. Space Sci.* **190** (1992), *no.* 2, 191–196. (S. Kichenassamy) **93e:83024** 83C20 (83C22)

Asghar, Saleem (*with* Zaman, F. D.; Hanif, Khalid) Dispersion of Love waves in an inhomogeneous layer due to a source. *Punjab Univ. J. Math.* (*Lahore*) **24** (1991), 1–10. (Summary) **93a:73025** 73D20 (73N20, 86A15)

Ash, Avner (*with* Pinch, Richard G. E.; Taylor, Richard) An $\widehat{A_4}$ extension of **Q** attached to a nonselfdual automorphic form on GL(3). *Math. Ann.* **291** (1991), *no.* 4, 753–766. (Daniel Bump) **93c:11031** 11F55 (11F67, 11F80)

— Galois representations attached to mod p cohomology of $GL(n, \mathbf{Z})$. *Duke Math. J.* **65** (1992), *no.* 2, 235–255. (Dipendra Prasad) **93c:11036** 11F80 (11F33, 11F75, 11R39)

— (*with* McConnell, Mark) Doubly cuspidal cohomology for principal congruence subgroups of GL(3, **Z**). *Math. Comp.* **59** (1992), *no.* 200, 673–688. (Joachim Schwermer) **93b:11066** 11F75 (11F70)

— (*with* McConnell, Mark) mod p cohomology of $SL(n, \mathbf{Z})$. *Topology* **31** (1992), *no.* 2, 349–365. (Dominique Arlettaz) **93f:20059** 20G10 (20J05, 55N91, 57M07)

Ash, C. J. A construction for recursive linear orderings. *J. Symbolic Logic* **56** (1991), *no.* 2, 673–683. (Rodney G. Downey) **93a:03047** 03D45 (06A05)

— (*with* Knight, J. F.) Relatively recursive expansions. *Fund. Math.* **140** (1992), *no.* 2, 137–155. (Yu. G. Ventsov) **93h:03048** 03C57 (03C75)

Ash, J. Marshall (*with* Cohen, Jonathan; Freiling, Chris; Gatto, A. E.; Rinne, Dan) Generalized derivatives. *Partial differential equations with minimal smoothness and applications* (*Chicago, IL*, 1990), 25–32, *IMA Vol. Math. Appl.*, **42**, *Springer, New York*, 1992. (G. Petruska) **93c:26009** 26B05 (35J99, 42B05)

— (*with* Freiling, Chris; Rinne, Dan) Uniqueness of rectangularly convergent trigonometric series. *Ann. of Math.* (2) **137** (1993), *no.* 1, 145–166. (R. L. Cooke) **93m:42002** 42B05 (42A63, 42B99)

— (*with* Cohen, Jonathan; Freiling, Chris; Rinne, Dan) Generalizations of the wave equation. *Trans. Amer. Math. Soc.* **338** (1993), *no.* 1, 57–75. (Summary) **93j:35104** 35L05 (26B40, 42B99)

Ashbaugh, Mark S. (*with* Benguria, Rafael D.) A sharp bound for the ratio of the first two eigenvalues of Dirichlet Laplacians and extensions. *Ann. of Math.* (2) **135** (1992), *no.* 3, 601–628. (Cornelius O. Horgan) **93d:35105** 35P15 (35J05)

— (*with* Benguria, Rafael D.) A second proof of the Payne-Pólya-Weinberger conjecture. *Comm. Math. Phys.* **147** (1992), *no.* 1, 181–190. (Boro Döring) **93k:33002** 33C10

Ashby, Neil *see* **General relativity and gravitation, 93b:83002**

Asheim, Geir B. A unique solution to n-person sequential bargaining. *Games Econom. Behav.* **4** (1992), *no.* 2, 169–181. (Akira Okada) **93d:90072** 90D06 (90A14, 90D10)

Ashikaga, Tadashi Normal two-dimensional hypersurface triple points and the Horikawa type resolution. *Tôhoku Math. J.* (2) **44** (1992), *no.* 2, 177–200. (Tadashi Tomaru) **93e:14040** 14J17 (14B05, 32S10, 32S25, 32S55)

Ashiq, M. (*with* Mushtaq, Qaiser; Maqsood, T.) The symmetric group as a quotient of $G^{3,8,720}$. *Math. Japon.* **37** (1992), *no.* 1, 9–16. (Marston Conder) **93a:20046** 20F05 (20B30)

Ashirov, O. A. (*with* Mamsa, E. Yu.) On the stability of solutions of a class of differential equations with impulse action. (Russian. Russian summary) *Nonlinear problems in the theory of differential equations* (*Russian*), 4–8, *Akad. Nauk Ukrain. SSR, Inst. Mat., Kiev*, 1991. (Summary) **93g:34077** 34D05 (34A37)

Ashkenazi, Max (*with* Chow, Shui-Nee; Drachman, Byron) Symbolic computation of normal forms for nonlinear Hamiltonian systems (Algorithm 34). *J. Comput. Appl. Math.* **39** (1992), *no.* 3, 363–378. (Summary) **93c:65103** 65L99 (34–04, 34C20, 58F36, 70–04, 70H05)

Ashley, Jonathan LR conjugacies of shifts of finite type are uniquely so. (English summary) *Symbolic dynamics and its applications* (*New Haven, CT*, 1991), 57–84, *Contemp. Math.*, 135, *Amer. Math. Soc., Providence, RI*, 1992. (Fred W. Roush) **93h:58045** 58F03 (28D20, 54H20)

— An extension theorem for closing maps of shifts of finite type. *Trans. Amer. Math. Soc.* **336** (1993), *no.* 1, 389–420. (Fred W. Roush) **93e:58048** 58F03 (28D15, 54H20)

Ashlock, Daniel A. The Costas invariant on graphs. (English summary) Proceedings of the Twenty-third Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, FL, 1992). *Congr. Numer.* **90** (1992), 7–14. (Summary) **93k:05082** 05C35

— Compositional attractors and enumeration of permutation polynomials over finite fields. *J. Pure Appl. Algebra* **81** (1992), *no.* 1, 1–9. (R. L. Kruse) **93h:13022** 13M10 (05A15, 13F10)

Ashour, S. K. (*with* El-Wakeel, M. A. M. H.) Estimation of the unknown parameters of the generalized Burr distribution. (English summary) *Egyptian Statist. J.* **36** (1992), *no.* 1, 1–14. 62F10

Ashraf, M. (*with* Quadri, M. A.) Some commutativity theorems for torsion free rings. (English summary) *Riv. Mat. Univ. Parma* (4) **17** (1991), 241–245 (1992). 16U80

— (*with* Abujabal, Hamza A. S.; Obaid, M.) Commutativity with certain constraints. (English summary) *Math. Japon.* **37** (1992), *no.* 5, 965–972. 16U80

— (*with* Quadri, M. A.) Some conditions for the commutativity of rings. *Acta Math. Hungar.* **61** (1993), *no.* 1-2, 75–79. (Silvia Pellegrini) **93k:16064** 16U80

Ashtekar, Abhay Self-duality, quantum gravity, Wilson loops and all that. *General relativity and gravitation, 1989* (*Boulder, CO*, 1989), 369–390, *Cambridge Univ. Press, Cambridge*, 1990. (*see* **93b:83002**) 83C45 (83C05)

— ★ Lectures on nonperturbative canonical gravity. In collaboration with Ranjeet S. Tate. Advanced Series in Astrophysics and Cosmology, 6. *World Scientific Publishing Co., Inc., River Edge, NJ*, 1991. xx+334 *pp. ISBN* 981-02-0573-2; 981-02-0574-0 (Jorge A. Pullin) **93c:83003** 83C05 (83–02, 83C45)

— Loops, gauge fields and gravity. *Proceedings of the 4th Canadian Conference on General Relativity and Relativistic Astrophysics* (*Winnipeg, MB*, 1991), 53–65, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93b:83003**) 83C45

— (*with* Romano, Joseph D.) Spatial infinity as a boundary of spacetime. *Classical Quantum Gravity* **9** (1992), *no.* 4, 1069–1100. (R. Beig) **93c:83035** 83C30

— (*with* Rovelli, Carlo) A loop representation for the quantum Maxwell field. *Classical Quantum Gravity* **9** (1992), *no.* 5, 1121–1150. (Jorge A. Pullin) **93h:83021** 83C45 (81R30, 81T70, 81V10, 83C50)

— (*with* Isham, Chris J.) Representations of the holonomy algebras of gravity and nonabelian gauge theories. *Classical Quantum Gravity* **9** (1992), *no.* 6, 1433–1467. (Jorge A. Pullin) **93i:83042** 83C45 (46L60, 81T13)

— (*with* Rovelli, Carlo; Smolin, Lee) Self-duality and quantization. *J. Geom. Phys.* **8** (1992), *no.* 1-4, 7–27. (Ingemar Bengtsson) **93c:81243** 81T70 (81V10, 83C45)

— (*with* Isham, Chris J.) Inequivalent observable algebras. Another ambiguity in field quantisation. *Phys. Lett. B* **274** (1992), *no.* 3-4, 393–398. (Camillo Trapani) **93a:81110** 81T05

— (*with* Rovelli, Carlo; Smolin, Lee) Weaving a classical metric with quantum threads. *Phys. Rev. Lett.* **69** (1992), *no.* 2, 237–240. (Summary) **93c:83045** 83C45 (81V17)

Ashurov, S. B. (*with* Kurbonov, K. Yu.) Classical solution of reinforced-regular boundary value problems for a second-order operator-differential equation. (Russian. Tajiki summary) *Dokl. Akad. Nauk Tadzhik. SSR* **34** (1991), *no.* 2, 72–77. (Irena Rachůnková) **93a:34072** 34G10 (34B05)

— Equivalence of a part of the derived chains of boundary value problems for second-order ordinary differential equations. (Russian. Russian and Ukrainian summaries) *Ukraïn. Mat. Zh.* **44** (1992), *no.* 8, 1003–1011; *translation in Ukrainian Math. J.* **44** (1992), *no.* 8, 907–914 (1993). (Branko Najman) **93j:34119** 34L10 (34B05, 47E05)

Ashwin, P. (*with* Swift, J. W.) The dynamics of n weakly coupled identical oscillators. *J. Nonlinear Sci.* **2** (1992), *no.* 1, 69–108. (A. Vanderbauwhede) **93g:58103** 58F14 (34C15, 58F10, 58F35)

Ashworth, E. Jennifer Equivocation and analogy in fourteenth century logic: Ockham, Burley and Buridan. *Historia philosophiae medii aevi, Band I, II*, 23–43, *Grüner, Amsterdam*, 1991. (*see* **93e:01001**) 01A35 (03–03)

Ashyralyev, A. Coercive solvability of elliptic equations in spaces of smooth functions. (Russian) *Boundary value problems for nonclassical equations in mathematical physics* (*Russian*) (*Novosibirsk*, 1989), 82–86, *Akad. Nauk SSSR Sibirsk. Otdel., Inst. Mat., Novosibirsk*, 1989. (*see* **93d:35001**) 35J15 (35R20)

Ashyralyev, Ch. A variational method for solving a modified mixed boundary value problem for analytic functions. (Russian. Russian summary) *Dinamika Sploshn. Sredy No.* 96 (1990), 9–20, 153. (Adrian Carabineanu) **93f:76079** 76M30 (30E25, 35J20, 65E05, 76M25)

Askari, Hassan Randjbar (*with* Riazi, Nematullah) Spherically symmetric, static solutions of the Brans-Dicke field equations in vacuum. (English summary) *Monthly Notices Roy. Astronom. Soc.* **261** (1993), *no.* 1, 229–232. (Summary) **93k:83065** 83D05

Askeri, V. M. (*with* Bugrii, A. I.; Shadura, V. N.) The effect of boundary conditions on the operator content of the two-dimensional Ising model: the results of an exact solution. (Russian. English, Russian and Ukrainian summaries) *Ukrain. Fiz. Zh.* **36** (1991), *no.* 12, 1846–1857. (Summary) **93i:82010** 82B20 (81R10, 81T27)

Askey, Richard In memoriam: Antoni Zygmund (December 26, 1900–May 30, 1992). *J. Approx. Theory* **71** (1992), *no.* 1, 1–2. (Editors) **93g:01057a** 01A70

Askhabov, S. N. (*with* Betilgiriev, M. A.) A nonlinear equation of convolution type with an almost increasing kernel. (Russian) *Well-posed boundary value problems for nonclassical equations* (*Russian*), 55–58, *Akad. Nauk SSSR Sibirsk. Otdel., Inst. Mat., Novosibirsk*, 1990. (*see* **93m:35006**) 45E10

— (*with* Karapetyants, N. K.) Discrete equations of convolution type with monotone nonlinearity in complex spaces. (Russian) *Dokl. Akad. Nauk* **322** (1992), *no.* 6, 1015–1018; *translation in Soviet Math. Dokl.* **45** (1992), *no.* 1, 206–210. (From the text) **93d:47110** 47H15 (39A12, 47B35, 47N99)

vahidi-Asl, Mohammad Q. *see* **Vahidi-Asl, Mohammad Q.**

Aslam, M. (*with* Abujabal, Hamza A. S.; Thaheem, A. B.) A characterization of minimal prime ideals of BCK-algebras. (English summary) *Math. Japon.* **37** (1992), *no.* 5, 973–978. (Summary) **93h:06027** 06F35 (03G25)

Aslam Noor, Muhammad *see* **Noor, Muhammad Aslam**

Aslangul, C. (*with* Pottier, N.; Chvosta, P.; Saint-James, D.; Skála, L.) Random-random walk on an asymmetric chain with a trapping attractive center. (English summary) *J. Statist. Phys.* **69** (1992), *no.* 1-2, 17–34. (Summary) **93g:82086** 82C41

Aslanidi, K. G. (*with* Modenov, V. P.) The projection sewing method in a problem on the joining of waveguides. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **32** (1992), *no.* 2, 277–284; *translation in Comput. Math. Math. Phys.* **32** (1992), *no.* 2, 229–235. (Summary) **93g:78025** 78A50 (65P05)

Aslanov, G. I. Differential equations with operator coefficients in Hilbert spaces. (Russian) *Mat. Zametki* **53** (1993), *no.* 3, 153–155. 35R20 (47N20)

Aslanova, N. Kh. (*with* Faradzhev, R. G.) On the block approach to problems in the theory of sequential machines. (Russian) *Avtomat. i Telemekh.* **1992,** *no.* 1, 123–131; *translation in Automat. Remote Control* **53** (1992), *no.* 1, *part* 2, 100–107. (Summary) **93b:93067** 93C55 (68Q68)

— (*with* Faradzhev, R. G.) Arithmetic representation of functions of many-valued logic and a parallel algorithm for finding such a representation. (Russian. Russian summary) *Avtomat. i Telemekh.* **1992,** *no.* 2, 120–131; *translation in Automat. Remote Control* **53** (1992), *no.* 2, *part* 2, 251–261. (Summary) **93j:03016** 03B50 (03B35)

Asmar, Nakhlé (*with* Berkson, Earl; Gillespie, Thomas Alastair) Transferred bounds for square functions. *Houston J. Math.* **17** (1991), *no.* 4, 525–550. (Mario Milman) **93d:43003** 43A15 (43A25, 43A32)

— (*with* Berkson, Earl; Gillespie, Thomas Alastair) Almost everywhere convergence for transferred convolution operators. *Function spaces* (*Edwardsville, IL*, 1990), 31–44, *Lecture Notes in Pure and Appl. Math.*, 136, *Dekker, New York*, 1992. (Mario Milman) **93g:43002** 43A22 (47B35)

— (*with* Berkson, Earl; Gillespie, Thomas Alastair) Transfert de la convergence presque partout. (English and French summaries) [Transference of almost everywhere convergence] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 13, 1389–1392. (Summary) **93j:43006** 43A22 (28D99, 43A65)

— (*with* Berkson, Earl; Gillespie, Thomas Alastair) Invariant subspaces and harmonic conjugation on compact abelian groups. (English summary) *Pacific J. Math.* **155** (1992), *no.* 2, 201–213. (K. Yale) **93j:43005** 43A17 (47A15, 47B38)

— (*with* Berkson, Earl; Gillespie, Thomas Alastair) Transference of weak type maximal inequalities by distributionally bounded representations. *Quart. J. Math. Oxford Ser.* (2) **43** (1992), *no.* 171, 259–282. (Gerald B. Folland) **93f:43003** 43A22 (42B25, 43A65)

Asmuss, S. Sharp error estimates for approximation by two-dimensional splines. (Russian. English and Russian summaries) *Mathematics* (*Russian*), 11–26, *Latv. Univ. Zināt. Raksti*, 562, *Latv. Univ., Riga*, 1991. (Summary) **93j:65017** 65D07 (41A15)

— An operator method based on the transformation of stepwise representations by means of splines for local mean values. (Russian. English and Russian summaries) *Mathematics* (*Russian*), 27–42, *Latv. Univ. Zināt. Raksti*, 562, *Latv. Univ., Riga*, 1991. (Summary) **93j:65018** 65D07 (41A15)

Asmussen, Søren (*with* Rubinstein, Reuven Y.) The efficiency and heavy traffic properties of the score function method in sensitivity analysis of queueing models. *Adv. in Appl. Probab.* **24** (1992), *no.* 1, 172–201. (I. Vaduva) **93d:60152** 60K25 (65U05, 90B20)

— Light traffic equivalence in single-server queues. (English summary) *Ann. Appl. Probab.* **2** (1992), *no.* 3, 555–574. (T. Rolski) **93j:60140** 60K25

— On coupling and weak convergence to stationarity. (English summary) *Ann. Appl. Probab.* **2** (1992), *no.* 3, 739–751. (Mikhail Sverchkov) **93k:60180** 60J25 (60F05, 60K05)

— Phase-type representations in random walk and queueing problems. *Ann. Probab.* **20** (1992), *no.* 2, 772–789. (Noël Veraverbeke) **93c:60100** 60J15 (60J05, 60K25)

— (*with* Perry, David) On cycle maxima, first passage problems and extreme value theory for queues. (English summary) *Comm. Statist. Stochastic Models* **8** (1992), *no.* 3, 421–458. (Summary) **93i:60164** 60K25 (60G70)

— (*with* Rolski, Tomasz) Computational methods in risk theory: a matrix-algorithmic approach. *Insurance Math. Econom.* **10** (1992), *no.* 4, 259–274. 62P05 (60K99)

— Queueing simulation in heavy traffic. *Math. Oper. Res.* **17** (1992), *no.* 1, 84–111. (G. Sankaranarayanan) **93e:90027** 90B22 (60K25)

Asorey, Manuel Conformal invariance in quantum field theory and statistical mechanics. *Fortschr. Phys.* **40** (1992), *no.* 3, 273–327. (Arthur Greenspoon) **93c:81002** 81–02 (81R10, 81T40, 82B23)

Asperti, Andrea (*with* Longo, Giuseppe[1]) ★ Categories, types, and structures. An introduction to category theory for the working computer scientist. Foundations of Computing Series. *MIT Press, Cambridge, MA*, 1991. xii+306 *pp. ISBN* 0-262-01125-5 (Philip J. Scott) **93i:18001** 18–01 (03B40, 03G30, 68Q55)

— (*with* Martini, Simone) Categorical models of polymorphism. *Inform. and Comput.* **99** (1992), *no.* 1, 1–79. (Edmund Robinson) **93i:03017** 03B40 (03G30, 18D30, 68Q55)

Aspray, William An annotated bibliography of secondary sources on the history of software. *Ann. Hist. Comput.* **9** (1988), *no.* 3-4, 291–343. 01–00 (68–00, 68–03)

— John von Neumann's contributions to computing and computer science. (English summary) *Ann. Hist. Comput.* **11** (1989), *no.* 3, 189–195. 01A60 (68–03)

Asratyan, A. S. (*with* Sarkisyan, G. V.) Cyclic properties of some Hamiltonian graphs. (Russian) *Diskret. Mat.* **3** (1991), *no.* 4, 91–104; *translation in Discrete Math. Appl.* **2** (1992), *no.* 6, 623–637. (Ioan Tomescu) **93e:05061a** 05C45 (05C38)

— (*with* Sarkisyan, G. V.) Errata: "Cyclic properties of some Hamiltonian graphs". (Russian) *Diskret. Mat.* **4** (1992), *no.* 1, 159. (Ioan Tomescu) **93e:05061b** 05C45 (05C38)

— (*with* Mirumyan, A. N.) Counterexamples to the Kotzig problem. (Russian. Russian summary) *Diskret. Mat.* **4** (1992), *no.* 2, 96–98. (Peter Mihók) **93h:05069** 05C15

Assad, M. J. D. (*with* Romero, Carlos Augusto) Eternal and pulsating universes in Einstein-Cartan space-time. *Astrophys. Space Sci.* **191** (1992), *no.* 2, 289–297. (Summary) **93a:83030** 83D05

Assadi, Amir H. A fixed point property of permutation complexes with duality. *Proceedings of the* 21*st. Annual Iranian Mathematics Conference* (*Isfahan*, 1990), 25–37, *Univ. Isfahan, Isfahan*, 199?. (Ruth Charney) **93k:57068** 57S17 (20J05)

— (*with* Barlow, Rebecca; Knop, Friedrich) Abelian group actions on algebraic varieties with one fixed point. *Math. Z.* **210** (1992), *no.* 1, 129–136. (From the introduction) **93b:14071** 14L30 (57S17)

Assaf, Ahmed M. (*with* Mills, William H.; Mullin, R. C.) On tricovers of pairs by quintuples: $v \equiv 0 \pmod 4$. (English summary) *Ars Combin.* **33** (1992), 31–46. (Summary) **93e:05023b** 05B40 (05B05)

— (*with* Mills, William H.; Mullin, R. C.) On tricovers of pairs by quintuples: $v \equiv 1 \pmod 4$. (English summary) *Ars Combin.* **33** (1992), 179–191. (Summary) **93e:05023a** 05B40 (05B05)

— (*with* Shalaby, Nabil) On covering designs with block size 5 and index 4. (English summary) *Ars Combin.* **33** (1992), 227–237. (Summary) **93d:05017** 05B05

— (*with* Hartman, Alan; Shalaby, Nabil) Packing designs with block size 6 and index 5. *Discrete Math.* **103** (1992), *no.* 2, 121–128. (R. N. Mohan) **93d:05018** 05B05 (05B40)

— (*with* Shalaby, Nabil) Packing designs with block size 5 and indexes 8, 12, 16. *J. Combin. Theory Ser. A* **59** (1992), *no.* 1, 23–30. (Summary) **93h:05034** 05B30 (05B40)

Assaf, David (*with* Levikson, Benny) Optimal advertising policy for selling a single asset. *Probab. Engrg. Inform. Sci.* **5** (1991), *no.* 1, 89–100. (Syed N. U. A. Kirmani) **93f:90049** 90A60 (90B60, 90C40)

— (*with* Ritov, Ya'acov) Adaptive sampling for detecting a change point in the past. (English summary) *Sequential Anal.* **11** (1992), *no.* 3, 237–255. (V. Dupač) **93h:62144** 62L10

Assaf, M. A. (*with* Jentsch, Lothar) On the elasticity theory of microporous solids. (English, German and Russian summaries) *Z. Angew. Math. Mech.* **72** (1992), *no.* 8, 321–340. (From the introduction) **93k:73009** 73B99 (35Q72, 73B25, 73C99, 73S10, 73T05, 73V10)

Assani, I. The return times and the Wiener-Wintner property for mean-bounded positive operators in L^p. *Ergodic Theory Dynamical Systems* **12** (1992), *no.* 1, 1–12. (Alberto de la Torre) **93d:47017** 47A35 (47B38, 47B65)

— A Wiener-Wintner property for the helical transform. (English summary) *Ergodic Theory Dynamical Systems* **12** (1992), *no.* 2, 185–194. (Manfred Denker) **93h:28023** 28D05 (47A35)

van Assche, Walter *see* **Van Assche, Walter**

Assem, Ibrahim Tilting theory—an introduction. *Topics in algebra, Part* 1 (*Warsaw*, 1988), 127–180, *Banach Center Publ.*, 26, *Part* 1, *PWN, Warsaw*, 1990. (Dieter Happel) **93g:16011** 16G10 (16D90)

— (*with* Skowroński, Andrzej) Multicoil algebras. (English summary) *Proceedings of the Sixth International Conference on Representations of Algebras* (*Ottawa, ON*, 1992), 40 *pp.*, *Carleton-Ottawa Math. Lecture Note Ser.*, 14, *Carleton Univ., Ottawa, ON*, 1992. (V. Dlab) **93k:16020** 16G10

Assimakopoulos, Nikitas A systems approach for hierarchically organized systems. (English summary) *Cybernet. Systems* **23** (1992), *no.* 5, 531–548. 93A13 (93A05)

Assmus, E. F., Jr. (*with* Key, J. D.) ★ Designs and their codes. Cambridge Tracts in Mathematics, 103. *Cambridge University Press, Cambridge*, 1992. x+352 *pp. ISBN* 0-521-41361-3 (Vera Pless) **93j:51003** 51E05 (05B05, 05B25, 51E22, 94B25)

— On the Reed-Muller codes. (English summary) A collection of contributions in honour of Jack van Lint. *Discrete Math.* **106/107** (1992), 25–33. (David H. Green) **93h:94028** 94B27

Assohoun, Adje Sur- et sous-solutions dans les équations semi-linéaires de type elliptique avec conditions aux limites non linéaires. (English and French summaries) [Upper and lower solutions of elliptic semilinear equations with nonlinear boundary conditions] *Portugal. Math.* **49** (1992), *no.* 2, 131–146. (Jie Yang) **93k:35095** 35J65 (35R70)

Astaf'ev, N. N. ★ Бесконечные системы линейных неравенств в математическом программировании. (Russian) [Infinite systems of linear inequalities in mathematical programming] With an English summary. "*Nauka*", *Moscow*, 1991. 136 *pp. ISBN* 5-02-000114-7 (Adam Korytowski) **93b:90002** 90–02 (65K05, 90C05, 90C25, 90C48)

— A connection between the properties of quasifiniteness and regularity in problems of semi-infinite linear programming. (Russian. Russian and Ukrainian summaries) *Ukraïn. Mat. Zh.* **44** (1992), *no.* 6, 725–729; *translation in Ukrainian Math. J.* **44** (1992), *no.* 6, 653–656 (1993). (Summary) **93g:90079** 90C34 (90C08)

Astaf'eva, M. N. On the problem of justifying the averaging method for multifrequency impulse systems with slowly changing parameters. (Russian) *Mat. Fiz. Nelinein. Mekh. No.* 16(50) (1991), 1–6. (Snezhana Khristova) **93a:34053** 34C29 (34A37)

Astarita, Gianni (*with* Aris, Rutherford) On aliases of differential equations. (Italian summary) *Atti Accad. Naz. Lincei Rend. Cl. Sci. Fis. Mat. Natur.* (8) **83** (1989), 7–11 (1990). (Summary) **93f:80024** 80A32 (45G10)

Astashkin, S. V. Interpolation of bilinear operators by the real method. (Russian. Russian summary) *Mat. Zametki* **52** (1992), *no.* 1, 15–24, 154; *translation in Math. Notes* **52** (1992), *no.* 1-2, 641–648 (1993). (N. Ya. Kruglyak) **93m:46093** 46M35 (47A99)

Irac-Astaud, Michèle *see* **Irac-Astaud, Michèle**

Astesiano, Egidio (*with* Cerioli, Maura) Partial higher-order specifications. Mathematical foundations of computer science '91 (Kazimierz Dolny, 1991). *Fund. Inform.* **16** (1992), *no.* 2, 101–126. (Chantal Berline) **93g:68053** 68Q25

— (*with* Giovini, Alessandro; Reggio, Gianna) Observational structures and their logic. Second Workshop on Concurrency and Compositionality (San Miniato, 1990). *Theoret. Comput. Sci.* **96** (1992), *no.* 1, 249–283. (Gabriel Ciobanu) **93e:68075** 68Q65 (03B70)

Asthagiri, Rajappa K. Weak uniform continuity and weak sequential continuity of continuous n-linear mappings between Banach spaces. *Extracta Math.* **6** (1991), *no.* 2-3, 139–141. (Summary) **93f:46023** 46B28 (46M05)

Astié-Vidal, Annie (*with* Dugat, Vincent; Tuza, Zsolt) Construction of nonisomorphic regular tournaments. (English summary) *Combinatorics* '90 (*Gaeta*, 1990), 11–23, *Ann. Discrete Math.*, 52, *North-Holland, Amsterdam*, 1992. (Summary) **93h:05082** 05C20

— (*with* Dugat, Vincent) Near-homogeneous tournaments and permutation groups. *Discrete Math.* **102** (1992), *no.* 2, 111–120. (K. B. Reid) **93e:05037** 05C20 (05B30, 05C25)

— (*with* Dugat, Vincent) Autonomous parts and decomposition of regular tournaments. (English summary) Graph theory and combinatorics (Marseille-Luminy, 1990). *Discrete Math.* **111** (1993), *no.* 1-3, 27–36. (Summary) **93j:05065** 05C20

Astolfi, Alessandro (*with* Isidori, Alberto) Disturbance attenuation and H_∞-control via measurement feedback in nonlinear systems. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 9, 1283–1293. (Kang-Zhi Liu) **93i:93043** 93B36 (93C10)

— (*with* Isidori, Alberto) Nonlinear H_∞-control via measurement feedback. *J. Math. Systems Estim. Control* **2** (1992), *no.* 1, 31–44. (Ian Petersen) **93a:93041** 93B36 (49J24, 49N55, 93C10)

Aston, P. J. (*with* Spence, A.; Wu, Wei[1]) Bifurcation to rotating waves in equations with O(2)-symmetry. *SIAM J. Appl. Math.* **52** (1992), *no.* 3, 792–809. (Norman Dancer) **93e:58025** 58E09 (35B32, 65L99, 76E99)

Astrauskas, A. (*with* Levy, J. B.; Taqqu, Murad S.) The asymptotic dependence structure of the linear fractional Lévy motion. (Russian and Lithuanian summaries) *Litovsk. Mat. Sb.* **31** (1991), *no.* 1, 3–28; *reprinted in Lithuanian Math. J.* **31** (1991), *no.* 1, 1–19 (1992). (Makoto Maejima) **93f:60049** 60G18 (60E07)

Åström, Karl Johan Adaptive control—a perspective. (English summary) *Adaptive systems in control and signal processing*, 1989 (*Glasgow*), 1–6, *IFAC Sympos. Ser.*, 1990, *No.* 1, *Pergamon, Oxford*, 1990. (*see* **93j:93007**) 93–06 (93C40)

— Directions in intelligent control. (English summary) *Intelligent tuning and adaptive control* (*Singapore*, 1991), 1–9, *IFAC Sympos. Ser.*, 1991, *No.* 7, *Pergamon, Oxford*, 1991. (*see* **93i:93007**) 93C83

— (*with* Hägglund, T.) Identification of systems using periodic excitation. (English summary) *Identification and system parameter estimation* 1991, *Vol.* 1,2 (*Budapest*, 1991), 727–732, *IFAC Sympos. Ser.*, 3, *Pergamon, Oxford*, 1992. (*see* **93h:93009**) 93B30

— (*with* Lilja, Mats) Approximate pole placement approach. (English summary) *J. Guidance Control Dynamics* **15** (1992), *no.* 5, 1082–1086. 93B55

— *see also* **Baillieul, John**, **93m:01055**

Astrovskii, A. I. Points of degeneracy of a fundamental matrix for linear systems with delay with respect to the state. (Russian. English and Russian summaries) *Vestsi Akad. Navuk Belarust Ser. Fiz. Mat. Navuk* **1992**, *no.* 5-6, 3–7, 124. (Summary) **93k:34149** 34K05

Atadan, S. Periodic behaviour in nonlinear discrete-time systems and its application to a digital control system. (English summary) *Dynamics Stability Systems* **7** (1992), *no.* 3, 151–161. (Summary) **93j:93087** 93C57 (93C10, 93C55)

abu el Ata-Doss, S. *see* **Abu el Ata-Doss, S.**

Atadzhanov, B. A. Oscillation properties of solutions of higher-order equations. (Russian. Russian summary) *Boundary value problems* (*Russian*), 63–67, *Perm. Politekh. Inst., Perm'*, 1990. (Summary) **93i:34054** 34C10

Atadzhanov, Kh. L. (*with* Anisimov, Vladimir Vladislavovich) ★ Асимптотический анализ очередей в системах с повторными вызовами и сдвоенными соединениями. (Russian. Russian summary) [Asymptotic analysis of queues in systems with repeated calls and with duplex connections] Препринт [Preprint], 91-28. *Akad. Nauk Ukrain. SSR, Inst. Kibernet., Kiev*, 1991. 22 *pp.* (Summary) **93f:60133** 60K25 (60K30)

— (*with* Anisimov, Vladimir Vladislavovich) Diffusion approximation of systems with repeated calls. (Russian) *Teor. Veroyatnost. i Mat. Statist. No.* **44** (1991), 3–8; *translation in Theory Probab. Math. Statist. No.* 44 (1992), 1–5. (Summary) **93d:60151** 60K25

Atakishiev, N. M. (*with* Suslov, S. K.) On the Askey-Wilson polynomials. *Constr. Approx.* **8** (1992), *no.* 3, 363–369. (David R. Masson) **93h:33011** 33D45 (33D05, 33D15, 39A10)

Atalla, Robert E. Characterization of weakly monotone stochastic matrices. *Linear Algebra Appl.* **168** (1992), 65–69. (Editors) **93h:15014** 15A51

Atallah, Mikhail J. (*with* Chen, Danny Z.) Parallel rectilinear shortest paths with rectangular obstacles. *Comput. Geom.* **1** (1991), *no.* 2, 79–113. (Summary) **93h:68136** 68U05 (68P05, 68P20)

— (*with* Tsay, Jyh Jong) On the parallel-decomposability of geometric problems. (English summary) *Algorithmica* **8** (1992), *no.* 3, 209–231. (Summary) **93i:68077** 68Q22 (68M10, 68U05)

— (*with* Apostolico, Alberto; Hambrusch, Susanne E.) New clique and independent set algorithms for circle graphs. *Discrete Appl. Math.* **36** (1992), *no.* 1, 1–24. (Linda Pagli) **93b:05151** 05C85 (68Q25, 68R10, 90C35)

— (*with* Manning, Joseph) Fast detection and display of symmetry in outerplanar graphs. (English summary) *Discrete Appl. Math.* **39** (1992), *no.* 1, 13–35. (Mirko Křivánek) **93m:68172** 68U05 (05C85, 68Q20)

— (*with* Kosaraju, S. Rao) An efficient parallel algorithm for the row minima of a totally monotone matrix. (English summary) *J. Algorithms* **13** (1992), *no.* 3, 394–413. (Summary) **93d:65119** 65Y05 (65F30)

— A faster parallel algorithm for a matrix searching problem. (English summary) *Algorithmica* **9** (1993), *no.* 2, 156–167. (Summary) **93m:68062** 68Q22 (65F99, 68Q25)

— *see also* **Symposium: Computational Geometry**

Atamian, C. (*with* Dinh, G. V.; Glowinski, Roland; He, Jiwen; Périaux, Jacques) On some imbedding methods applied to fluid dynamics and electromagnetics. Second World Congress on Computational Mechanics, Part III (Stuttgart, 1990). *Comput. Methods Appl. Mech. Engrg.* **91** (1991), *no.* 1-3, 1271–1299. (Rolf Rannacher) **93c:76066** 76M25 (65K10, 65N30, 65N55, 78–08)

Atanacković, Teodor M. (*with* Djukić, Djordje S.) Extremum variational principle for an inextensible rotating rod. (English summary) *Internat. J. Non-Linear Mech.* **27** (1992), *no.* 4, 591–595. (Summary) **93c:73060** 73K05 (73K12, 73V25)

Atanasiu, Dragu Sur les variables aléatoires échangeables. (English and French summaries) [On exchangeable random variables] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 5, 589–591. (Summary) **93e:60067** 60G09

Atanasiu, Gheorghe (*with* Munteanu, Gheorghe) On Miron-connections in Lagrange spaces of second order. *Tensor (N.S.)* **50** (1991), *no.* 3, 241–247. (Sándor Bácsó) **93k:53023** 53B15 (53B40)

— (*with* Munteanu, Gheorghe) New aspects in geometry of time dependent generalized metrics. *Tensor (N.S.)* **50** (1991), *no.* 3, 248–255. (Sándor Bácsó) **93f:53062** 53C60 (53C05)

— (*with* Hashiguchi, Masao) Structures presque tangentes sur fibrés vectoriels. [Almost tangent structures on vector bundles] *Mathematica (Cluj)* **34(57)** (1992), *no.* 1, 17–21. (Andrzej Bucki) **93j:53041** 53C15

Atanasova, Elena S. Third- and fourth-order linear differential equations whose solutions are products of solutions and their derivatives of second-order linear differential equations. (Macedonian. English summary) *Mat. Bilten* **39** (1989), *no.* 13, 45–51 (1990). (Summary) **93a:34004** 34A05

Atanassov, Krassimir T. (*with* Vasilev, Mladen V.) One extremal problem. V. *Bull. Number Theory Related Topics* **12** (1988), 26–30. (J. Sándor) **93d:11021** 11B65

— New integer functions, related to ψ and σ functions. IV. *Bull. Number Theory Related Topics* **12** (1988), 31–35. (Author's review) **93m:11006** 11A25

— One extremal problem. VI. *Bull. Number Theory Related Topics* **12** (1988), 90–92. (J. Sándor) **93d:11022** 11B39

— Remark on variants of Fibonacci squares. *Bull. Number Theory Related Topics* **13** (1989), 25–27. 11B39

— One property of φ and σ functions. (English summary) *Bull. Number Theory Related Topics* **13** (1989), 29–37. (J. L. Brenner) **93e:11008** 11A25 (11N56)

— A remark on a Fibonacci plane. *Bull. Number Theory Related Topics* **13** (1989), 69–71. 11B39

— (*with* Shannon, A. G.; Turner, John Christopher) A generalized tableau associated with colored convolution trees. *Discrete Math.* **92** (1991), *no.* 1-3, 329–340. (Daniel Ashlock) **93a:05130** 05E10 (05A10, 11B39)

— (*with* Hlebarska, J.; Mihov, S.) Recurrent formulas of the generalized Fibonacci and Tribonacci sequences. *Fibonacci Quart.* **30** (1992), *no.* 1, 77–79. (Shreedhara Prasada Mohanty) **93e:11023** 11B39

— Remarks on the intuitionistic fuzzy sets. (English summary) *Fuzzy Sets and Systems* **51** (1992), *no.* 1, 117–118. 03E72 (03F55)

— (*with* Georgiev, Christo) Intuitionistic fuzzy Prolog. (English summary) *Fuzzy Sets and Systems* **53** (1993), *no.* 2, 121–128. 68N17 (03B52, 03B70, 03E72, 03F55, 68T25)

— *see also* **Vasilev, Mladen V.**

Atanassova, Lidiya (*with* Andreev, Andrei St.) On some higher order interval methods. (English summary) *Computer arithmetic, scientific computation and mathematical modelling (Albena, 1990)*, 265–279, *IMACS Ann. Comput. Appl. Math.*, 12, *Baltzer, Basel*, 1991. (Summary) **93h:65065** 65G10 (65H05)

— On the R-order of a single-step Nourein type method. (English summary) *Computer arithmetic and enclosure methods (Oldenburg, 1991)*, 179–187, *North-Holland, Amsterdam*, 1992. (*see* **93i:65006**) 65H05 (65G10)

— (*with* Herzberger, Jürgen) A general approach to simultaneous inclusion methods for polynomial zeros. (English summary) *Computer arithmetic and enclosure methods (Oldenburg, 1991)*, 189–197, *North-Holland, Amsterdam*, 1992. (Summary) **93j:65076** 65H05 (65G10)

— *see also* **Computer arithmetic and enclosure methods, 93i:65006**

Atanasyan, L. S. *see* **Geometry of embedded manifolds, 93g:53003**

Atanbaev, S. A. (*with* Baĭbatyrov, Zh. K.) A regularization method for an ill-posed Cauchy problem for an evolution equation. (Russian) *Theory of functions and problems in numerical mathematics (Russian)*, 7–15, 70, *Kazakh. Gos. Univ., Alma Ata*, 1990. (Summary) **93b:65091** 65L05

Atatdzhanov, Kh. L. Limit distributions of the time of first customer loss in two-level queueing systems. (Russian. Russian summary) *Vestnik Kiev. Univ. Model. Optim. Slozhn. Sist. No.* 9 (1990), 34–38. 90B22

— (*with* Anisimov, Vladimir Vladislavovich) Asymptotic analysis of highly reliable systems with repeated calls. (Russian) *Issled. Operatsiĭ i ASU No.* 37 (1991), 24–31. (Summary) **93d:60150** 60K25

Atela, Pau (*with* McLachlan, Robert I.) The accuracy of symplectic integrators. *Nonlinearity* **5** (1992), *no.* 2, 541–562. (Richard C. Churchill) **93d:70030** 70H05 (41A29, 58F05, 65L05, 70–08)

— The Mandelbrot set and σ-automorphisms of quotients of the shift. *Trans. Amer. Math. Soc.* **335** (1993), *no.* 2, 683–703. (Remo Badii) **93d:58132** 58F23 (58F03, 58F13)

Athanasiadis, Christodoulos The low-frequency magnetic field of an electromagnetic scatterer with a perfectly conducting core. (English summary) *J. Inst. Math. Comput. Sci. Math. Ser.* **5** (1992), *no.* 2, 245–264. 78A45

Athanassenas, Maria ★ Kapillarflächen mit freien Rändern. (German) [Capillary surfaces with free boundaries] Dissertation, Rheinische Friedrich-Wilhelms-Universität Bonn, Bonn, 1990. Bonner Mathematische Schriften [Bonn Mathematical Publications], 214. *Universität Bonn, Mathematisches Institut, Bonn*, 1991. iv+60 *pp.* (J. E. Brothers) **93m:49019** 49Q10 (58E15, 76B45)

— A free boundary problem for capillary surfaces. *Manuscripta Math.* **76** (1992), *no.* 1, 5–19. (Alberto Valli) **93g:35144** 35R35 (49Q20, 58E12, 76B45)

Athans, Michael (*with* Papastavrou, Jason D.) On optimal distributed decision architectures in a hypothesis testing environment. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 8, *part I*, 1154–1169. 90A05 (93A14)

Athavale, Ameer Relating the normal extension and the regular unitary dilation of a subnormal tuple of contractions. *Acta Sci. Math. (Szeged)* **56** (1992), *no.* 1-2, 121–124. (Mihai Putinar) **93k:47035** 47B20 (47A20)

alarcón Athens, Winston *see* **Alarcón Athens, Winston**

Atherton, Derek P. (*with* Yang, Tai Cheng) The development of programs for nonlinear control systems in MATLAB. *Control '91, Vol.* 1, 2 (*Edinburgh*, 1991), 1240–1245, *IEE Conf. Publ. Ser.*, 332, *IEE, London*, 1991. (*see* **93h:93007**) 93B40

— Predicting the autonomous behavior of simple nonlinear feedback systems. *Integral methods in science and engineering—90 (Arlington, TX*, 1990), 460–475, *Ser. Comput. Phys. Process. Mech. Thermal Sci., Hemisphere, New York*, 1991. (*see* **93f:00014**) 93B52

— (*with* Xue, Dingyu) The analysis of feedback systems with piecewise linear nonlinearities when subjected to Gaussian inputs. (English summary) *Systems and control*, 23–38, *Mita, Tokyo*, 1991. (Summary) **93k:93104** 93E03 (93B52)

Athorne, C. Stability and periodicity in coupled Pinney equations. (English summary) *J. Differential Equations* **100** (1992), *no.* 1, 82–94. (V. G. Zadorozhniĭ) **93h:34019** 34A34 (34C25, 34D99)

Athreya, K. B. (*with* Fuh, C. D.) Bootstrapping Markov chains. (English summary) *Exploring the limits of bootstrap (East Lansing, MI*, 1990), 49–64, *Wiley Ser. Probab. Math. Statist. Probab. Math. Statist., Wiley, New York*, 1992. (Summary) **93h:62153** 62M05 (62G09)

— On a maximum sequence in a critical multitype branching process. *Ann. Probab.* **20** (1992), *no.* 2, 746–752. (A. Spătaru) **93e:60170** 60J80

— On measures of nondegeneracy. *J. Appl. Probab.* **29** (1992), *no.* 3, 733–739. (Anthony G. Pakes) **93g:60023** 60E05 (60J80)

— Rates of decay for the survival probability of a mutant gene. *J. Math. Biol.* **30** (1992), *no.* 6, 577–581. (Dean H. Fearn) **93h:60135** 60J80

— (*with* Fuh, C. D.) Bootstrapping Markov chains: countable case. (English summary) *J. Statist. Plann. Inference* **33** (1992), *no.* 3, 311–331. (Thomas Mikosch) **93j:62113** 62G09 (60F05, 60J10, 62M99)

Atik, Youssef L'épître d'algèbre de Sinān Ibn al-Fath (Xe siècle). (Arabic summary) [The epistle on algebra of Sinān Ibn al-Fath (tenth century)] *Deuxième Colloque Maghrebin sur l'Histoire des Mathématiques Arabes (Tunis*, 1988), 5–19, A178, *Maghreb, Tunis*, 19??. (Y. Dold) **93g:01018** 01A30

Atilgan, Taskin (*with* Bozdogan, Hamparsum) Convergence properties of MLE's and asymptotic simultaneous confidence intervals in fitting cardinal B-splines for density estimation. *Statist. Probab. Lett.* **13** (1992), *no.* 2, 89–98. (M. Bertrand-Retali) **93d:62050** 62G05 (62G20)

Atiyah, Michael F. Representations of braid groups. Notes by S. K. Donaldson. *Geometry of low-dimensional manifolds*, 2 (*Durham*, 1989), 115–122, *London Math. Soc. Lecture Note Ser.*, 151, *Cambridge Univ. Press, Cambridge*, 1990. (Darren D. Long) **93e:57001** 57M07 (20F36, 57M25)

— On the work of Edward Witten. *Proceedings of the International Congress of Mathematicians, Vol. I, II (Kyoto*, 1990), 31–35, *Math. Soc. Japan, Tokyo*, 1991. (Arthur Greenspoon) **93e:81001b** 81–02 (01A65, 01A70)

— The mysteries of space. The 1991 Josiah Willard Gibbs Lecture presented in San Francisco, California, January 1991. Selected Lectures in Mathematics. *American Mathematical Society, Providence, RI*, 1992. 1 *videocassette (NTSC*; 1/2 *inch*; *VHS)* (60 *min.*); *sd., col. ISBN* 0-8218-8076-4 (From the publisher's description) **93h:01028** 01A60 (57–01, 58–01)

Atkeson, Andrew (*with* Lucas, Robert E., Jr.) On efficient distribution with private information. *Rev. Econom. Stud.* **59** (1992), *no.* 3, 427–453. (Christian Gilles) **93e:90015** 90A16 (90A35, 90C39)

Atkin, A. O. L. (*with* Morain, F.) Finding suitable curves for the elliptic curve method of factorization. *Math. Comp.* **60** (1993), *no.* 201, 399–405. (Joe P. Buhler) **93k:11115** 11Y05 (11G20)

— (*with* Morain, F.) Elliptic curves and primality proving. (English summary) *Math. Comp.* **61** (1993), *no.* 203, 29–68. (Philippe Satgé) **93m:11136** 11Y11 (11F11, 11G20, 11R37)

Atkins, H. L. (*with* Casper, Jay) A finite-volume high-order ENO scheme for two-dimensional hyperbolic systems. (English summary) *J. Comput. Phys.* **106** (1993), *no.* 1, 62–76. (Summary) **93m:65135** 65M20

Atkins, Joel E. (*with* Sherman, Gary J.) Sets of typical subsamples. *Statist. Probab. Lett.* **14** (1992), *no.* 2, 115–117. (Summary) **93e:62008** 62A05 (62E10, 62F25)

Atkinson, Colin (*with* Sherwood, J. D.) The torque on a rotating n-bladed vane in a Newtonian fluid or linear elastic medium. *Proc. Roy. Soc. London Ser. A* **438** (1992), *no.* 1902, 183–196. (Summary) **93c:73077** 73K70 (76A15, 76D99)

Atkinson, F. V. Asymptotic integration and a borderline case in the theory of elliptic equations involving critical exponents. *Ordinary and partial differential equations, Vol. III (Dundee, 1990)*, 1–24, *Pitman Res. Notes Math. Ser.*, **254**, *Longman Sci. Tech., Harlow*, 1991. (Walter G. Kelley) **93e:34076** 34E05 (35B05, 35B20, 35J60)

— Higher approximations to eigenvalues for a nonlinear elliptic problem. *Nonlinear diffusion equations and their equilibrium states, 3 (Gregynog, 1989)*, 39–69, *Progr. Nonlinear Differential Equations Appl.*, 7, *Birkhäuser Boston, Boston, MA*, 1992. (Erich Miersemann) **93f:35174** 35P30 (35J65, 35P20)

— (*with* Peletier, L. A.; Serrin, James) Estimates for vertical points of solutions of prescribed mean curvature type equations. II. *Asymptotic Anal.* **5** (1992), *no.* 4, 283–310. (Friedrich Sauvigny) **93c:35034** 35J60 (35B40, 53A10)

Atkinson, Kendall E. A survey of numerical methods for solving nonlinear integral equations. *J. Integral Equations Appl.* **4** (1992), *no.* 1, 15–46. (Summary) **93a:65177** 65R20 (45L10)

— (*with* Flores, J.) The discrete collocation method for nonlinear integral equations. (English summary) *IMA J. Numer. Anal.* **13** (1993), *no.* 2, 195–213. (Summary) **93m:65180** 65R20 (45L05)

Atkinson, M. D. Solomon's descent algebra revisited. (English summary) *Bull. London Math. Soc.* **24** (1992), *no.* 6, 545–551. (Witold Kraśkiewicz) **93i:20012** 20C30 (05E99, 16G10)

Atkinson, O. D. (*with* Brüdern, J.; Cook, Roger J.) Simultaneous additive congruences to a large prime modulus. *Mathematika* **39** (1992), *no.* 1, 1–9. (D. R. Heath-Brown) **93g:11028** 11D79

Atkinson, Scott E. (*with* Wilson, Paul W.) The bias of bootstrapped versus conventional standard errors in the general linear and SUR models. (English summary) *Econometric Theory* **8** (1992), *no.* 2, 258–275. (M. Hušková) **93j:62184** 62J12 (62G09, 62J05)

Atlagh, Mohamed (*with* Weber, Michel Jean Georges) Un théorème central limite presque sûr relatif à des sous-suites. (English and French summaries) [An almost sure central limit theorem relative to subsequences] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 2, 203–206. (Summary) **93g:60060** 60F15

Atlas, Radosław (*with* Kordecki, Wojciech) Reliability of series systems with additional elements joining every other nodes. (English summary) *Discuss. Math.* **11** (1991), 51–62 (1992). 90B25

Atluri, S. N. (*with* Chien, C. C.; Rajiyah, H.) On the evaluation of hyper-singular integrals arising in the boundary element method for linear elasticity. (English summary) *Comput. Mech.* **8** (1991), *no.* 1, 57–70. (Summary) **93f:73108** 73V10 (73C02)

— (*with* Cazzani, A.) Four-noded mixed finite elements, using unsymmetric stresses, for linear analysis of membranes. (English summary) *Comput. Mech.* **11** (1993), *no.* 4, 229–251. (Summary) **93k:73077** 73V05 (73K10)

Atsuyama, Kenji Simple Lie algebras and projective planes in a wider sense. *Nonassociative algebras and related topics (Hiroshima, 1990)*, 9–18, *World Sci. Publishing, River Edge, NJ*, 1991. (Linus K. H. Kramer) **93d:51033** 51H20 (17B20, 53C35)

— Projective spaces in a wider sense. I. *Kodai Math. J.* **15** (1992), *no.* 3, 324–340. (O. Kowalski) **93h:53052** 53C35

Attal, Stéphane Représentation des endomorphismes de l'espace de Wiener qui préservent les martingales. (English and French summaries) [Representation of martingale-preserving endomorphisms of Wiener space] *C. R. Acad. Sci. Paris Sér. I Math.* **316** (1993), *no.* 7, 739–744. (Summary) **93m:60111** 60H07 (46L50, 47N30, 81S25)

el Attar, M. *see* **El Attar, M.**

Atteia, Marc (*with* Elqortobi, Abdelkader) Polaire de la somme de deux ensembles. (English summary) [The polar of the sum of two sets] *Ann. Sci. Math. Québec* **15** (1991), *no.* 2, 117–121. (S. Simons) **93a:46008** 46A20 (49N15, 52A20, 90C48)

Attele, K. R. M. Toeplitz and Hankel operators on Bergman one space. *Hokkaido Math. J.* **21** (1992), *no.* 2, 279–293. (Ke He Zhu) **93d:47051** 47B35 (30D45)

— Multipliers of the range of composition operators. *Tokyo J. Math.* **15** (1992), *no.* 1, 185–198. (Vadim A. Tolokonnikov) **93j:47042** 47B38 (30D55)

Atteson, Kevin An overview of the minimum description length principle. 1990 *lectures in complex systems (Santa Fe, NM, 1990)*, 483–486, *Santa Fe Inst. Stud. Sci. Complexity Lectures, III, Addison-Wesley, Redwood City, CA*, 1991. (*see* **93h:68003**) 68Q30

Attia, F. A. On a reflected Ornstein-Uhlenbeck process with an application. *Bull. Austral. Math. Soc.* **43** (1991), *no.* 3, 519–528. (O. K. Zakusilo) **93c:60114** 60J60 (60K30, 93E20)

Attie, Oliver (*with* Block, Jonathan; Weinberger, Shmuel) Characteristic classes and distortion of diffeomorphisms. *J. Amer. Math. Soc.* **5** (1992), *no.* 4, 919–921. (Christophe Bavard) **93a:53027** 53C21 (57R20)

Attili, Basem S. Characterization and computation of bifurcation points with corank two. (English summary) *Computational and applied mathematics, I (Dublin, 1991)*, 39–46, *North-Holland, Amsterdam*, 1992. (Iuliana Oprea) **93k:58164** 58F14 (65H17)

— A direct method for the characterization and computation of bifurcation points with corank 2. (German summary) *Computing* **48** (1992), *no.* 2, 149–159. (Summary) **93c:65073** 65H17 (47H15, 58E07)

Attouch, Hédy (*with* Wets, Roger J.-B.) Epigraphical analysis. (English summary) *Analyse non linéaire (Perpignan, 1987)*, 72–100, *Univ. Montréal, Montreal, PQ*, 1989. (*see* **93h:49003**) 49J45 (49J52)

— (*with* Lucchetti, Roberto; Wets, Roger J.-B.) The topology of the ρ-Hausdorff distance. *Ann. Mat. Pura Appl.* (4) **160** (1991), 303–320 (1992). (Julian Revalski) **93d:54022** 54B20 (46N10, 49J45)

— (*with* Beer, Gerald) On the convergence of subdifferentials of convex functions. *Sém. Anal. Convexe* **21** (1991), *Exp. No.* 8, 21 *pp.* (Witold Jarczyk) **93b:26032** 26E15 (26B25, 46G05, 49J52)

— (*with* Moudafi, A.; Riahi, Hassan) Quantitative stability analysis for maximal monotone operators and semi-groups of contractions. *Sém. Anal. Convexe* **21** (1991), *Exp. No.* 9, 38 *pp.* (Simeon Reich) **93j:47075** 47H05 (47H20)

— (*with* Beer, Gerald) Stability of the geometric Ekeland variational principle: the convex case. *Sém. Anal. Convexe* **21** (1991), *Exp. No.* 11, 23 *pp.* (Julian Revalski) **93a:49005** 49J45 (26E15, 46N10)

— *see also* **Nonlinear analysis, 93h:49003**

Atzeni, Paolo (*with* Torlone, Riccardo) Updating relational databases through weak instance interfaces. (English summary) *ACM Trans. Database Systems* **17** (1992), *no.* 4, 718–745. (Summary) **93h:68035** 68P20

Atzmon, A. (*with* Manos, H.) The integration operator in two variables. *Proc. Amer. Math. Soc.* **119** (1993), *no.* 2, 513–523. (Thomas Hoover) **93k:47007** 47A15 (47G10)

Au, S. T. (*with* Yao, Yi-Ching) Least-squares estimation of a step function. (English summary) *Sankhyā Ser. A* **51** (1989), *no.* 3, 370–381. (Summary) **93c:62077** 62G05 (62E20)

Auba, T. (*with* Funahashi, Yasuyuki) The structure of all-pass matrices that satisfy directional interpolation requirements. *IEEE Trans. Automat. Control* **36** (1991), *no.* 12, 1485–1489. (Yun Zou) **93d:93029** 93B36 (15A54, 41A05)

— (*with* Funahashi, Yasuyuki) The structure of all-pass matrices that satisfy two-sided interpolation requirements. *IEEE Trans. Automat. Control* **36** (1991), *no.* 12, 1489–1493. (Yun Zou) **93d:93030** 93B36 (15A54, 41A05)

— (*with* Funahashi, Yasuyuki) Upper and lower bounds of Gramian for a class of perturbed linear systems. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 10, 1659–1661. 93B25 (93B60)

— (*with* Funahashi, Yasuyuki) A note on Kharitonov's theorem. (English summary) *IEEE Trans. Automat. Control* **38** (1993), *no.* 4, 663–664. 93D09

Aubert, Anne-Marie Foncteurs de Mackey et dualité de Curtis généralisés. (English and French summaries) [Generalized Mackey functors and Curtis duality] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 6, 663–668. (R. W. Carter) **93j:20096** 20G40 (20C15)

— (*with* Howe, Roger E.) Géométrie des cônes aigus et application à la projection euclidienne sur la chambre de Weyl positive. [Geometry of acute cones and application to Euclidean projection onto the positive Weyl chamber] *J. Algebra* **149** (1992), *no.* 2, 472–493. (Michel Brion) **93i:17008** 17B20 (22E46, 52A20)

Aubin, Jean-Pierre Tracking property: a viability approach. (English summary) *Modelling and inverse problems of control for distributed parameter systems (Laxenburg, 1989)*, 1–15, *Lecture Notes in Control and Inform. Sci.*, 154, *Springer, Berlin*, 1991. (*see* **93d:93006**) 93B03 (34A60)

— (*with* Frankowska, Halina) Viability kernel of control systems. *Nonlinear synthesis (Sopron, 1989)*, 12–33, *Progr. Systems Control Theory*, 9, *Birkhäuser Boston, Boston, MA*, 1991. (Summary) **93e:49008** 49J24 (93B52)

— (*with* Frankowska, Halina) Hyperbolic systems of partial differential inclusions. *Ann. Scuola Norm. Sup. Pisa Cl. Sci.* (4) **18** (1991), *no.* 4, 541–562. (Manfred W. Kracht) **93c:35167** 35R70 (35L40)

— (*with* Da Prato, Giuseppe) Contingent solutions to the center manifold equation. (French summary) *Ann. Inst. H. Poincaré Anal. Non Linéaire* **9** (1992), *no.* 1, 13–28. (Jose Luis Menaldi) **93h:35034** 35B99 (34A26, 34C99, 35L60, 49L25)

— (*with* Seube, Nicolas) Apprentissage adaptatif de lois de rétroaction de systèmes contrôlés par résaux de neurones. (English summary) [Adaptive learning of feedback control laws by neural networks] *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 12, 957–963. (Summary) **93e:68108** 68T05 (92B20, 93C40)

— *see also* **Nonlinear analysis, 93h:49003**

saint-Aubin, Yvan *see* **Saint-Aubin, Yvan**

Aubry, Nadine (*with* Guyonnet, Régis; Lima, Ricardo) Spatio-temporal symmetries and bifurcations via bi-orthogonal decompositions. *J. Nonlinear Sci.* **2** (1992), *no.* 2, 183–215. (Yi Yuan Chen) **93e:58136** 58F14 (34C23)

— (*with* Guyonnet, Régis; Lima, Ricardo) Turbulence spectra. *J. Statist. Phys.* **67** (1992), *no.* 1-2, 203–228. (Olec Troshkin) **93f:76052** 76F05 (76F99)

— (*with* Lian, Wen Yu; Titi, Edriss S.) Preserving symmetries in the proper orthogonal decomposition. (English summary) *SIAM J. Sci. Comput.* **14** (1993), *no.* 2, 483–505. (Summary) **93m:65149** 65M99 (76M25)

Aubry, Serge (*with* Abramovici, Gilles; Raimbault, Jean-Luc) Chaotic polaronic and bipolaronic states in the adiabatic Holstein model. *J. Statist. Phys.* **67** (1992), *no.* 3-4, 675–780. (Ariel Fernández) **93e:82047** 82D10 (58F07, 58F13)

— (*with* MacKay, Robert S.; Baesens, Claude) Equivalence of uniform hyperbolicity for symplectic twist maps and phonon gap for Frenkel-Kontorova models. *Phys. D* **56** (1992), *no.* 2-3, 123–134. (James D. Meiss) **93e:58144** 58F15 (58F05, 70H05, 70K50)

Aubry, Yves Reed-Muller codes associated to projective algebraic varieties. (English summary) *Coding theory and algebraic geometry (Luminy, 1991)*, 4–17, *Lecture Notes in Math.*, 1518, *Springer, Berlin*, 1992. (Simon N. Litsyn) **93g:11127** 11T71 (94B27)

Audin, Michèle ★ Opérations hamiltoniennes de tores sur les variétés symplectiques (quelques méthodes topologiques). (French) [Hamiltonian operations of tori on symplectic manifolds (some topological methods)] Publication de l'Institut de Recherche Mathématique Avancée. [Publication of the Institute of Advanced Mathematical Research] *Université Louis Pasteur, Département de Mathématique, Institut de Recherche Mathématique Avancée, Strasbourg*, 1989. 173 *pp.* (L. S. Polyakova) **93m:58039** 58F05 (57S15, 57S25, 58E40, 58F07)

— Sommes connexes de variétés symplectiques ou presque complexes. (English summary) [Connected sums of symplectic or almost complex manifolds] *Séminaire Gaston Darboux de Géometrie et Topologie Différentielle*, 1989–1990 (*Montpellier*, 1989/1990), v, 1–7, *Univ. Montpellier II, Montpellier*, 1991. (Luis A. Ibort) **93d:57049** 57R15 (53C15)

Audounet, J. (*with* Moreux, V.) Petrov-Galerkin type finite element approximations of K-diagonalizable hyperbolic systems: applications to multidimensional Euler equations. *Rech. Aérospat. (English Edition)* **1991**, *no.* 6, 27–45 (1992); *translated from Rech. Aérospat.* **1991**, *no.* 6, 27–45 (*French. English and French summaries*). (Anders Szepessy) **93j:65145** 65M60 (76L05, 76M10, 76N15)

— (*with* Montseny, G.; Mbodje, B.) A simple viscoelastic damper model—application to a vibrating string. (English summary) *Analysis and optimization of systems: state and frequency domain approaches for infinite-dimensional systems (Sophia-Antipolis, 1992)*, 436–446, *Lecture Notes in Control and Inform. Sci.*, 185, *Springer, Berlin*, 1993. (*see* **93i:93005**) 93A30 (73K12, 73K50, 93C20)

Audretsch, Jürgen Quantum field theory in curved space-time. *General relativity and gravitation, 1989 (Boulder, CO, 1989)*, 467–470, *Cambridge Univ. Press, Cambridge*, 1990. (*see* **93b:83002**) 83C47 (81T20)

— Mutually interacting quantum fields in curved space-times: the outcome of physical processes. *Quantum mechanics in curved space-time (Erice, 1989)*, 233–264, *NATO Adv. Sci. Inst. Ser. B Phys.*, 230, *Plenum, New York*, 1990. (*see* **93d:83003**) 81T20 (83C47)

— (*with* Lämmerzahl, Claus) Reasons for a physical field to obey linear partial differential equations. *J. Math. Phys.* **32** (1991), *no.* 5, 1354–1359. (Agostino Prástaro) **93i:53068** 53C80 (35Q75)

— *see also* **How many lives has Schrödinger's cat, 93b:81006** *and* **Quantum mechanics in curved space-time, 93d:83003**

Auerbach, Ditza (*with* Grebogi, Celso; Ott, Edward; Yorke, James A.) Controlling chaos in high-dimensional systems. (English summary) *Phys. Rev. Lett.* **69** (1992), *no.* 24, 3479–3482. (Summary) **93f:58143** 58F13

Auestad, Bjørn (*with* Tjøstheim, Dag) Functional identification in nonlinear time series. *Nonparametric functional estimation and related topics (Spetses,* 1990), 493–507, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 335, *Kluwer Acad. Publ., Dordrecht,* 1991. (Summary) **93a:62123** 62M10 (62G05)

Auffray, Yves (*with* Enjalbert, Patrice) Modal theorem proving: an equational viewpoint. (English summary) *J. Logic Comput.* **2** (1992), *no.* 3, 247–295. (Neculai Curteanu) **93i:03016** 03B35 (03B45, 68T15)

Aufranc, Martial Junctions between three-dimensional and two-dimensional non-linearly elastic structures. *Asymptotic Anal.* **4** (1991), *no.* 4, 319–338. (Christoph Schwab) **93a:73054** 73K05 (73C50, 73K10)

Auger, François (*with* Doncarli, Christian) Quelques commentaires sur des représentations temps-fréquence proposées récemment. (English summary) [Some remarks about recently proposed time-frequency representations] *Traitement Signal* **9** (1992), *no.* 1, 3–25. (Summary) **93a:94004** 94A12

Auger, John M. On discrete games of infiltration. *Differential games—developments in modelling and computation (Espoo,* 1990), 144–150, *Lecture Notes in Control and Inform. Sci.*, 156, *Springer, Berlin,* 1991. (*see* **93c:90003**) 90D50 (90D26)

Augestein, Donald R. (*with* Baras, John S.; Fisher, Shalom M.) Parameter identification of large spacecraft systems based on frequency characteristics. (English summary) *Analysis and optimization of systems: state and frequency domain approaches for infinite-dimensional systems (Sophia-Antipolis,* 1992), 624–635, *Lecture Notes in Control and Inform. Sci.*, 185, *Springer, Berlin,* 1993. (*see* **93i:93005**) 93B30 (73K50, 93C95)

Augot, Daniel (*with* Charpin, Pascale; Sendrier, Nicolas) Studying the locator polynomials of minimum weight codewords of BCH codes. *IEEE Trans. Inform. Theory* **38** (1992), *no.* 3, 960–973. (Summary) **93a:94030** 94B15

rietze-Augst, Gudrun *see* **Rietze-Augst, Gudrun**

Augusteijn, Lex (*with* Leermakers, René; Kruseman Aretz, Frans E. J.) A functional LR parser. (English summary) *Theoret. Comput. Sci.* **104** (1992), *no.* 2, 313–323. (Summary) **93i:68115** 68Q52

Augustine, M. K. Congruences of monoids of Lie type. *Monoids and semigroups with applications (Berkeley, CA,* 1989), 324–333, *World Sci. Publishing, River Edge, NJ,* 1991. (Summary) **93e:20097** 20M99

Auinger, Karl A class of inverse semigroups with Boolean congruence lattices. Proceedings of the Second International Mathematical Miniconference, Part II (Budapest, 1988). *Period. Polytech. Transportation Engrg.* **19** (1991), *no.* 1-2, 3–13. (S. Sribala) **93g:20112** 20M10

— The congruence lattice of a Tully semigroup. *Algebra Universalis* **29** (1992), *no.* 2, 184–210. (Gradimir Vojvodić) **93b:20096** 20M10

— Semigroups with atomistic congruence lattices. *J. Austral. Math. Soc. Ser. A* **52** (1992), *no.* 1, 88–102. (G. Pollák) **93c:20110** 20M99 (06B10, 08A30)

— Free objects in joins of strict inverse and completely simple semigroup varieties. *J. London Math. Soc.* (2) **45** (1992), *no.* 3, 491–507. (Št. Schwarz) **93i:20079** 20M17 (20M07)

— The congruence lattice of a strict regular semigroup. (English summary) *J. Pure Appl. Algebra* **81** (1992), *no.* 3, 219–245. (Št. Schwarz) **93i:20078** 20M17

Aulakh, C. S. Charged topological solitons in $(4+1)$-dimensional YMCS theory. (English summary) *Modern Phys. Lett. A* **7** (1992), *no.* 27, 2469–2475. 81T13

Aular de Durán, Judith (*with* Kalla, Shyam L.) An application of fractional calculus to the solution of $(n+1)$th-order ordinary and partial differential equations. (English summary) *J. Fract. Calc.* **2** (1992), 67–76. (S. G. Samko) **93j:26005** 26A33 (34A05, 35C99)

Aulaskari, Rauno (*with* Lappan, Peter) On BMOA and additive automorphic functions. Analyse complexe (Bucharest, 1989). *Rev. Roumaine Math. Pures Appl.* **36** (1991), *no.* 7-8, 407–412. (T. A. Metzger) **93b:30038** 30F35 (30D45)

Aulbach, Bernd One-dimensional center manifolds are C^∞. *Results Math.* **21** (1992), *no.* 1-2, 3–11. (A. Vanderbauwhede) **93c:34105** 34C30 (34C45, 58F25)

Aul'chenko, S. M. A variational method for constructing subsonic wing profiles. (Russian) *Prikl. Mekh. Tekhn. Fiz.* **1992**, *no.* 4, 90–93; *translation in J. Appl. Mech. Tech. Phys.* **33** (1992), *no.* 4, 558–561 (1993). (From the text) **93i:76048** 76G25 (76H05, 76M30)

Aulestia, Luis (*with* Hojman, Sergio A.; Pardo, Francisco; de Lisa, Francisco) Lagrangians for differential equations of any order. *J. Math. Phys.* **33** (1992), *no.* 2, 584–590. (José F. Cariñena) **93e:49052** 49N45 (34A99, 70G99, 70H35)

Aumann, Günter Zum Entwurf abwickelbarer Bézier-Flächen. [On the design of developable Bézier surfaces] *Proceedings of the 3rd Congress of Geometry (Thessaloniki,* 1991), 49–60, *Aristotle Univ. Thessaloniki, Thessaloniki,* 1992. (Heinz H. Gonska) **93g:65025** 65D17

Aumann, Robert *see* **Roth, Alvin E., 93b:90001**

Aupetit, B. (*with* Zemánek, Jaroslav) Erratum: "A characterization of normal matrices by their exponentials" [Linear Algebra Appl. **132** (1990), 119–121; MR 91f:47031]. *Linear Algebra Appl.* **180** (1993), 1–2. (From the text) **93m:47026** 47B15 (15A57)

Aupoix, B. (*with* Brazier, J. Ph.; Cousteix, J.) Second-order effects in hypersonic laminar boundary layers. (English summary) *Computational methods in hypersonic aerodynamics,* 265–291, *Fluid Mech. Appl.*, 9, *Kluwer Acad. Publ., Dordrecht,* 1991. (*see* **93d:76001**) 76K05 (76N20)

Aurell, Erik (*with* She, Zhen Su; Frisch, Uriel) The inviscid Burgers equation with initial data of Brownian type. (English summary) *Comm. Math. Phys.* **148** (1992), *no.* 3, 623–641. (Cun-Zheng Wang) **93h:35182** 35Q53 (60H15, 76B15, 76L05)

— (*with* Frisch, Uriel; Lutsko, J.; Vergassola, M.) On the multifractal properties of the energy dissipation derived from turbulence data. *J. Fluid Mech.* **238** (1992), 467–486. (Summary) **93b:76043** 76F05

Aurenche, P. (*with* Becherrawy, T.) A comparison of the real-time and the imaginary-time formalisms of finite-temperature field theory for 2-, 3- and 4-point Green functions. *Nuclear Phys. B* **379** (1992), *no.* 1-2, 259–303. (Summary) **93a:81201** 81T99

Aurenhammer, Franz (*with* Stöckl, Gerd) Searching for segments with largest relative overlap. (English summary) *System modelling and optimization (Zurich,* 1991), 77–84, *Lecture Notes in Control and Inform. Sci.*, 180, *Springer, Berlin,* 1992. (*see* **93e:90003**) 65Y25

— (*with* Hagauer, Johann) Computing equivalence classes among the edges of a graph with applications. (English summary) Algebraic graph theory (Leibnitz, 1989). *Discrete Math.* **109** (1992), *no.* 1-3, 3–12. (Peter B. Gibbons) **93k:05167** 05C85 (68R10)

Auriault, J.-L. (*with* He, S.) Liquid phase sintering: rearrangement and densification. (English summary) *European J. Mech. A Solids* **12** (1993), *no.* 1, 125–143. (Summary) **93k:73010** 73B99 (73B27, 73S10, 76A99, 76D99, 76T05)

Aurich, R. (*with* Steiner, Frank) Staircase functions, spectral rigidity, and a rule for quantizing chaos. *Phys. Rev. A* (3) **45** (1992), *no.* 2, 583–592. (Donal Hurley) **93d:81045** 81Q50 (58F17)

— (*with* Steiner, Frank) From classical periodic orbits to the quantization of chaos. *Proc. Roy. Soc. London Ser. A* **437** (1992), *no.* 1901, 693–714. (Donal Hurley) **93k:81056** 81Q50 (58F20)

Aurilia, Antonio (*with* Spallucci, Euro) The role of extended objects in particle theory and in cosmology. *Supermembranes and physics in* 2+1 *dimensions (Trieste,* 1989), 29–39, *World Sci. Publishing, River Edge, NJ,* 1990. (*see* **93g:81003**) 81T30 (83F05)

— (*with* Smailagic, A.; Spallucci, Euro) Membrane pregeometry and the vanishing of the cosmological constant. (English summary) *Classical Quantum Gravity* **9** (1992), *no.* 8, 1883–1890. (Summary) **93g:83042** 83C45 (83E99)

— (*with* Spallucci, Euro) Axionic membranes. *Phys. Lett. B* **282** (1992), *no.* 1-2, 50–55. (Summary) **93b:81202** 81T30

Auscher, Pascal Wavelets with boundary conditions on the interval. *Wavelets,* 217–236, *Wavelet Anal. Appl.*, 2, *Academic Press, Boston, MA,* 1992. (Summary) **93c:42029** 42C15

— (*with* Weiss, Guido; Wickerhauser, Mladen Victor) Local sine and cosine bases of Coifman and Meyer and the construction of smooth wavelets. *Wavelets,* 237–256, *Wavelet Anal. Appl.*, 2, *Academic Press, Boston, MA,* 1992. (B. S. Rubin) **93e:42042** 42C15

Auslander, Louis (*with* Tsao, Anna) On parallelizable eigensolvers. *Adv. in Appl. Math.* **13** (1992), *no.* 3, 253–261. (Heike Faßbender) **93f:65098** 65Y05 (65F15)

Auslander, Maurice (*with* Reiten, Idun) Graded modules and their completions. *Topics in algebra, Part* 1 (*Warsaw,* 1988), 181–192, *Banach Center Publ.*, 26, *Part* 1, *PWN, Warsaw,* 1990. (Piotr Grzeszczuk) **93m:16008** 16G50 (16G70, 16W50)

— (*with* Reiten, Idun) On a theorem of E. Green on the dual of the transpose. *Representations of finite-dimensional algebras (Tsukuba,* 1990), 53–65, *CMS Conf. Proc.*, 11, *Amer. Math. Soc., Providence, RI,* 1991. (Daniel Simson) **93b:16019** 16G10

— (*with* Kleiner, Mark) The Green correspondence for adjoint functors. (English summary) *Proceedings of the Sixth International Conference on Representations of Algebras (Ottawa, ON,* 1992), 12 *pp., Carleton-Ottawa Math. Lecture Note Ser.*, 14, *Carleton Univ., Ottawa, ON,* 1992. (*see* **93j:16001**) 20C20

— (*with* Green, Edward L.) Modules over endomorphism rings. *Comm. Algebra* **20** (1992), *no.* 5, 1259–1278. (Dieter Happel) **93b:16009** 16D90 (16G99)

Auslender, A. A. (*with* Crouzeix, Jean-Pierre) Well behaved asymptotical convex functions. (English summary) *Analyse non linéaire (Perpignan,* 1987), 101–121, *Univ. Montréal, Montreal, PQ,* 1989. (*see* **93h:49003**) 49K45 (26B25, 90C31)

— Asymptotic properties of the Fenchel dual functional and applications to decomposition problems. *J. Optim. Theory Appl.* **73** (1992), *no.* 3, 427–449. (Doug Ward) **93e:90049** 90C25 (49N15)

Austen-Smith, David (*with* Wright, John R.) Competitive lobbying for a legislator's vote. (English summary) *Soc. Choice Welf.* **9** (1992), *no.* 3, 229–257. (Summary) **93e:90017** 90A28 (90A08)

— Interested experts and policy advice: multiple referrals under open rule. (English summary) *Games Econom. Behav.* **5** (1993), *no.* 1, 3–43. (Summary) **93j:90144** 90D40 (90A05)

Austin, Elizabeth J. (*with* Wilkinson, Michael) Statistical properties of parameter-dependent classically chaotic quantum systems. (English summary) *Nonlinearity* **5** (1992), *no.* 5, 1137–1150. (Summary) **93h:81029** 81Q50 (58F13, 81–04)

Ausubel, Lawrence M. (*with* Deneckere, Raymond J.) Bargaining and the right to remain silent. *Econometrica* **60** (1992), *no.* 3, 597–625. (Hans Haller) **93c:90030** 90A60 (90D12)

— (*with* Deneckere, Raymond J.) Durable goods monopoly with incomplete information. (English summary) *Rev. Econom. Stud.* **59** (1992), *no.* 4, 795–812. (Summary) **93f:90050** 90A60

Autret, Laurent Entire vectors and time reversible Cauchy problems. (English summary) *Semigroup Forum* **46** (1993), *no.* 3, 347–351. (Summary) **93m:47046** 47D06 (34G10, 47N20)

Au-Yang, Helen (*with* Perk, Jacques H. H.) Multicomponent chiral Potts models. (English summary) *Infinite analysis, Part A, B (Kyoto,* 1991), 1007–1023, *Adv. Ser. Math. Phys.*, 16, *World Sci. Publishing, River Edge, NJ,* 1992. (Yu Kui Zhou) **93j:82015** 82B23 (82B20)

— (*with* Perk, Jacques H. H.) Solutions of the star-triangle equations in (N_α, N_β) Potts models. (English summary) *Infinite analysis, Part A, B (Kyoto,* 1991), 1025–1046, *Adv. Ser. Math. Phys.*, 16, *World Sci. Publishing, River Edge, NJ,* 1992. (H. N. V. Temperley) **93i:82028** 82B23

Auzinger, W. Error structures and extrapolation in time for parabolic problems. (English summary) *Extrapolation and defect correction* (1990), 41–56, *Bonner Math. Schriften,* 228, *Univ. Bonn, Bonn,* 1991. (Summary) **93g:65116** 65M15 (65M06)

— (*with* Frank, Reinhard M.; Kirlinger, G.) Modern convergence theory for stiff initial value problems. (English summary) *J. Comput. Appl. Math.* **45** (1993), *no.* 1-2, 5–16. (Summary) **93j:65124** 65L20 (65L05, 65L70)

Auziņš, Andrejs (*with* Bārzdiņš, Jānis; Bičevskis, Jānis; Čerāns, Kārlis; Kalniņš, Audris) Automatic construction of test sets: theoretical approach. *Baltic computer science,* 286–359, *Lecture Notes in Comput. Sci.*, 502, *Springer, Berlin,* 1991. (Summary) **93h:68083** 68Q60

Avagliano, Aaron J. (*with* Hill, James M.; Edwards, Maureen P.) Some exact results for nonlinear diffusion with absorption. *IMA J. Appl. Math.* **48** (1992), *no.* 3, 283–304. (From the summary) **93c:35067** 35K55 (35C05)

Avakyan, A. M. Best approximation of classes of functions with a bounded first derivative by piecewise constants in the one-dimensional and two-dimensional cases. (Russian. English and Armenian summaries) *Izv. Akad. Nauk Armyan. SSR Ser. Mat.* **25** (1990),

no. 3, 215–235, 309; *translation in Soviet J. Contemporary Math. Anal.* **25** (1990), *no.* 3, 1–21. (D. K. Ugulava) **93f:41040** 41A50 (41A52)

Avaldi, L. (*with* Quarteroni, Alfio; Saleri, F.) Finite element simulation of electron optical systems. (English summary) *Math. Models Methods Appl. Sci.* **2** (1992), *no.* 3, 339–356. (Summary) **93g:65140** 65N30 (65N55, 78A35)

Avallone, Anna (*with* Trombetta, Giulio) Measures of noncompactness in the space L_0 and a generalization of the Arzelà-Ascoli theorem. (Italian summary) *Boll. Un. Mat. Ital. B* (7) **5** (1991), *no.* 3, 573–587. (Zvonko Čerin) **93b:54019** 54C99 (28C99, 47H09)

Avan, Jean (*with* Jevicki, Antal) Classical integrability and higher symmetries of collective string field theory. *Phys. Lett. B* **266** (1991), *no.* 1-2, 35–41. (Summary) **93e:58078** 58F07 (81R10, 81T30)

— Integrability properties of the collective string field theory. *New symmetry principles in quantum field theory* (*Cargèse*, 1991), 407–412, *NATO Adv. Sci. Inst. Ser. B Phys.*, 295, *Plenum, New York*, 1992. (*see* **93h:81002**) 81T30

— (*with* Jevicki, Antal) Algebraic structures and eigenstates for integrable collective field theories. (English summary) *Comm. Math. Phys.* **150** (1992), *no.* 1, 149–166. (David Sénéchal) **93i:81183** 81T30 (17B81, 81R05)

— Generalized Toda and Volterra models. (English summary) *Internat. J. Modern Phys. A* **7** (1992), *no.* 20, 4855–4869. (Anni Koubek) **93i:81205** 81T40 (58F07, 81R10, 81T27)

— (*with* Jevicki, Antal) String field actions from W_∞. *Modern Phys. Lett. A* **7** (1992), *no.* 4, 357–370. (C. Gauthier) **93a:81148** 81T30 (81R10)

Avancini, S. S. (*with* Menezes, D. P.; Providência, C.) Quantum algebraic description of the Moszkowski model. (English summary) *J. Phys. A* **25** (1992), *no.* 23, 6317–6322. (Summary) **93i:81094** 81R50 (81V35)

Avantaggiati, Antonio Arguments for a scientific didactics. (Italian. English summary) *Confer. Sem. Mat. Univ. Bari No.* 245 (1992), 50 *pp.* (Cristian Calude) **93d:00018** 00A35

Avcı, Yusuf (*with* Złotkiewicz, E.) On harmonic univalent mappings. (Polish summary) *Ann. Univ. Mariae Curie-Skłodowska Sect. A* **44** (1990), 1–7 (1991). (J. Clunie) **93e:30045** 30C55 (30C45)

— Further results on the univalent functions with the monotonic modulus property. *Ann. Polon. Math.* **53** (1991), *no.* 3, 233–236. (Summary) **93a:30008** 30C45

Avdeev, A. V. (*with* Alekseev, A. S.; Fat'yanov, A. G.; Cheverda, V. A.) A closed cycle of the mathematical modeling of wave processes in vertically inhomogeneous media (direct and inverse problems). (Russian. English summary) *Mat. Model.* **3** (1991), *no.* 10, 80–94. (Summary) **93b:86003** 86A15 (73D50)

Avdeev, L. V. (*with* Grigoryev, G. V.; Kazakov, D. I.) Renormalizations in abelian Chern-Simons field theories with matter. (English summary) *Nuclear Phys. B* **382** (1992), *no.* 3, 561–580. (Summary) **93g:81084** 81T13 (81T15)

Avdeyuk, P. I. (*with* Teplinskiĭ, Yu. V.) Reduction of the problem of the existence of an invariant torus of an infinite differential system to the finite-dimensional case. (Russian. Ukrainian summary) *Ukrain. Mat. Zh.* **43** (1991), *no.* 9, 1251–1255; *translation in Ukrainian Math. J.* **43** (1991), *no.* 9, 1165–1169 (1992). (Summary) **93a:34056** 34C30 (34G20)

Avdonin, N. A. *see* **Avdonins, N.**

Avdonin, S. A. (*with* Belishev, M. I.; Ivanov, S. A.) Dirichlet boundary control in a capture region for the multidimensional wave equation. *Soviet J. Automat. Inform. Sci.* **24** (1991), *no.* 2, 76–80 (1992); *translated from Avtomatika* **1991**, *no.* 2, 78–82, 97 (*Russian. English summary*). (Zbigniew Emirsajlow) **93f:93069** 93C20 (49J20, 93B05)

— (*with* Ivanov, S. A.; Ishmukhametov, A. Z.) A quadratic problem of the optimal control of the vibrations of a string. (Russian) *Dokl. Akad. Nauk SSSR* **316** (1991), *no.* 4, 781–785; *translation in Soviet Math. Dokl.* **43** (1991), *no.* 1, 154–158. (Introduction) **93d:49025** 49K20 (47N70, 73D30, 73K50)

— (*with* Gorshkova, O. Ya.) Controllability and quasicontrollability of parabolic systems with delay. (Russian. Russian summary) *Differentsial'nye Uravneniya* **28** (1992), *no.* 3, 442–451, 548; *translation in Differential Equations* **28** (1992), *no.* 3, 374–383. (Adam Kowalewski) **93k:93011** 93B05 (49J20, 93C20)

Avdonins, N. *see* **Applied problems in mathematical physics: mathematical modeling, 93d:00030**

Aved'yan, È. D. (*with* Tsypkin, Ya. Z.) Optimal off-line signal processing. (English summary) *Adaptive systems in control and signal processing*, 1989 (*Glasgow*), 467–470, *IFAC Sympos. Ser.*, 1990, *No.* 1, *Pergamon, Oxford*, 1990. (*see* **93j:93007**) 93E10 (94A12)

Avellaneda, Marco (*with* Majda, Andrew J.) Homogenization and renormalization of multiple-scattering expansions for Green functions in turbulent transport. *Composite media and homogenization theory* (*Trieste*, 1990), 13–35, *Progr. Nonlinear Differential Equations Appl.*, 5, *Birkhäuser Boston, Boston, MA*, 1991. (Dieter H. Mayer) **93e:76042** 76F99 (35B27, 35Q35, 76F10)

— Bounds on the effective elastic constants of two-phase composite materials. *Nonlinear partial differential equations and their applications. Collège de France Seminar, Vol. X* (*Paris*, 1987–1988), 1–34, *Pitman Res. Notes Math. Ser.*, 220, *Longman Sci. Tech., Harlow*, 1991. (Ekaterina Guibianskaya) **93f:73070** 73K20 (73B27, 73C02)

— (*with* Majda, Andrew J.) An integral representation and bounds on the effective diffusivity in passive advection by laminar and turbulent flows. *Comm. Math. Phys.* **138** (1991), *no.* 2, 339–391. (Summary) **93e:76043** 76F99 (76E99, 76R50)

— (*with* Bardos, Claude; Rauch, Jeffrey) Contrôlabilité exacte, homogénéisation et localisation d'ondes dans un milieu non-homogène. [Exact controllability, homogenization and localization of waves in a nonhomogeneous medium] *Asymptotic Anal.* **5** (1992), *no.* 6, 481–494. (Vera Winitzky de Spinadel) **93e:93004** 93B05 (35B27, 35B37, 73B27, 93B07)

— (*with* Majda, Andrew J.) Mathematical models with exact renormalization for turbulent transport. II. Fractal interfaces, non-Gaussian statistics and the sweeping effect. *Comm. Math. Phys.* **146** (1992), *no.* 1, 139–204. (Summary) **93g:76066** 76F10 (76M35, 76R50, 82C70)

— (*with* Majda, Andrew J.) Superdiffusion in nearly stratified flows. (English summary) *J. Statist. Phys.* **69** (1992), *no.* 3-4, 689–729. (Summary) **93j:82068** 82C80 (76F99, 76R50, 76V05, 82C70)

— (*with* Majda, Andrew J.) Approximate and exact renormalization theories for a model for turbulent transport. *Phys. Fluids A* **4** (1992), *no.* 1, 41–57. (Dieter H. Mayer) **93g:76067** 76F10 (76M99, 76R50, 82C70)

— (*with* Achdou, Yves) Influence of pore roughness and pore-size dispersion in estimating the permeability of a porous medium from electrical measurements. (English summary) *Phys. Fluids A* **4** (1992), *no.* 12, 2651–2673. (Summary) **93m:76068** 76S05

— *see also* **Lafarge, Denis, 93k:76111**

Avenhaus, Rudolf (*with* Okada, Akira) Statistical criteria for sequential inspector-leadership games. (English summary) *J. Oper. Res. Soc. Japan* **35** (1992), *no.* 2, 134–151. (Summary) **93g:90095** 90D15 (62N10, 90D05, 93E05)

Avens-Avenin', Ya. A. (*with* Zhulin, V. P.) The effect of random changes of the parameter on the stability of a control system. (Russian) *Microprocessor systems for control and guidance* (*Russian*), 78–82, 130, *Rizh. Tekhn. Univ., Riga*, 1991. (Summary) **93a:93109** 93E15

Averbakh, I. L. A multilevel decomposition scheme in block mixed-integer programming. (Russian) *Avtomat. i Telemekh.* **1991**, *no.* 11, 119–126; *translation in Automat. Remote Control* **52** (1991), *no.* 11, *part* 2, 1582–1587 (1992). (Klaus Hofstedt) **93a:90046** 90C11 (90C06)

— (*with* Tsurkov, V. I.) Block problems of mixed-integer programming with connected variables. (Russian. Russian summary) *Kibernet. i Vychisl. Tekhn. No.* 89 (1991), 62–67. 90C10

— An iterative method for solving two-stage discrete problems of stochastic programming with additively separable variables. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **31** (1991), *no.* 6, 810–818; *translation in Comput. Math. Math. Phys.* **31** (1991), *no.* 6, 21–27 (1992). (Ya. I. Al'ber) **93b:90053** 90C15

— A group-theoretic method for decomposition in integer linear programming. (Russian. Russian summary) *Zh. Vychisl. Mat. i Mat. Fiz.* **32** (1992), *no.* 8, 1229–1243; *translation in Comput. Math. Math. Phys.* **32** (1992), *no.* 8, 1097–1108. (Klaus Hofstedt) **93i:90067** 90C10 (90C08)

Averbuch, Amir (*with* Galil, Zvi; Winograd, Shmuel) Classification of all the minimal bilinear algorithms for computing the coefficients of the product of two polynomials modulo a polynomial. II. The algebra $G[u]/(u^n)$. *Theoret. Comput. Sci.* **86** (1991), *no.* 2, 143–203. (Hans F. de Groote) **93a:68065** 68Q40 (12D05)

— (*with* Amitai, Dganit; Itzikowitz, Samuel; Israeli, Moshe) Parallel adaptive and time-stabilizing schemes for constant-coefficient parabolic PDEs. (English summary) *Comput. Math. Appl.* **24** (1992), *no.* 10, 33–53. 65M06 (65M12, 65Y05)

— (*with* Bshouty, Nader H.; Kaminski, Michael) A classification of algorithms for multiplying polynomials of small degree over finite fields. (English summary) *J. Algorithms* **13** (1992), *no.* 4, 577–588. (Jacques Calmet) **93k:68051** 68Q40 (68Q25)

Averick, Brett M. (*with* Ortega, James M.) Fast solution of nonlinear Poisson-type equations. (English summary) *SIAM J. Sci. Comput.* **14** (1993), *no.* 1, 44–48. (Summary) **93i:65120** 65N99 (65F30)

Averin, A. V. (*with* Voloshchenko, A. M.) A consistent P_1 synthetic acceleration method for outer iterations. (Russian. English summary) *Akad. Nauk SSSR Inst. Prikl. Mat. Preprint* **1991**, *no.* 98, 24 *pp.* (Summary) **93c:65121** 65M99 (65B99, 82-08, 82C70)

Averin, B. P. Limit cycles of a differential equation. (Russian) *Differential equations* (*qualitative theory*) (*Russian*), 12–20, *Ryazan. Gos. Ped. Inst., Ryazan'*, 1990. (Summary) **93c:34071** 34C05

Avetisyan, P. S. Coercive solvability of an equation with a parameter. (Russian. English and Armenian summaries) *Erevan. Gos. Univ. Uchen. Zap. Estestv. Nauki* **1990**, *no.* 3, 29–33 (1991). (Summary) **93a:35027** 35G05

— Solvability of a resolvent equation. (Russian) *Izv. Akad. Nauk Armyan. SSR Ser. Mat.* **25** (1990), *no.* 6, 594–597, 606 (1991); *translation in Soviet J. Contemporary Math. Anal.* **25** (1990), *no.* 6, 91–94 (1991). (Summary) **93b:47098** 47F05 (35H05, 35J99)

Avetisyan, Ruben Abelevich Representation of analytic functions by series of simple fractions. (Russian) *Izv. Akad. Nauk Armyan. SSR Ser. Mat.* **25** (1990), *no.* 3, 303–308, 310; *translation in Soviet J. Contemporary Math. Anal.* **25** (1990), *no.* 3, 84–89. (A. A. Borichev) **93e:30010** 30B60 (30E20)

— (*with* Arakelyan, N. U.) Best approximations by meromorphic functions on the real axis. (Russian. English and Armenian summaries) *Izv. Akad. Nauk Armyan. SSR Ser. Mat.* **25** (1990), *no.* 6, 534–548, 605 (1991); *translation in Soviet J. Contemporary Math. Anal.* **25** (1990), *no.* 6, 29–44 (1991). (Krzysztof Reczek) **93c:41031** 41A30 (30D30, 30E10)

Avez, André ★ La leçon de géométrie à l'oral de l'agrégation. (French) [The geometry lesson of the oral examination for the Agrégation] *Masson, Paris*, 1992. vi+210 *pp. ISBN* 2-225-82833-4 (Dan Brânzei) **93g:00001** 00-01 (51-01, 53-01)

— A short proof of a theorem of Erdös and Mordell. *Amer. Math. Monthly* **100** (1993), *no.* 1, 60–62. (H. W. Guggenheimer) **93j:51019** 51M16

Avgerinos, Evgenios P. (*with* Flytzanis, E.; Papageorgiou, Nikolaos S.) On $U(\cdot)$-invariance for finite- and infinite-dimensional control systems. *Acta Math. Hungar.* **59** (1992), *no.* 3-4, 309–318. (Krystyn Styczeń) **93f:93014** 93B03 (34G20, 34H05, 47N70, 49K15, 93C15, 93C25)

— (*with* Papageorgiou, Nikolaos S.) On the solution set of maximal monotone differential inclusions in $\mathbf{R}^m$. (English summary) *Math. Japon.* **38** (1993), *no.* 1, 91–110. (Michał Kisielewicz) **93m:34018** 34A60 (34F05, 49J24)

Avgustinovich, S. V. (*with* Sevast'yanov, S. V.) Vector summation within minimal angle. (English summary) *Comput. Geom.* **2** (1993), *no.* 5, 235–239. (Summary) **93j:68207** 68U05 (52B55)

Avi-Itzhak, Benjamin (*with* Halfin, Shlomo) Servers in tandem with communication and manufacturing blocking. (English summary) *J. Appl. Probab.* **30** (1993), *no.* 2, 429–437. (Summary) **93m:60195** 60K35 (90B30)

esquivel-Avila, Jorge A. *see* **Esquivel-Avila, Jorge A.**

Aviles, Patricio (*with* Manfredi, Juan J.) On null sets of P-harmonic measures. *Partial differential equations with minimal smoothness and applications* (*Chicago, IL*, 1990), 33–36, *IMA Vol. Math. Appl.*, 42, *Springer, New York*, 1992. (P. Lindqvist) **93b:35051** 35J70 (31B35)

— (*with* Escobar, José F.) On the Sobolev quotient of an Einstein manifold. *Indiana Univ. Math. J.* **41** (1992), *no.* 2, 435–438. (Zhi Ren Jin) **93i:53045** 53C25 (53C21, 58G30)

Avis, David (*with* Fukuda, Komei) A pivoting algorithm for convex hulls and vertex enumeration of arrangements and polyhedra. ACM Symposium on Computational Geometry (North Conway, NH, 1991). *Discrete Comput. Geom.* **8** (1992), *no.* 3, 295–313. (Henk J. A. M. Heijmans) **93h:68137** 68U05 (52B55, 65Y25)

Avital, S. (*with* Kleiner, Israel) Themes in the evolution of number systems. *Internat. J. Math. Ed. Sci. Tech.* **23** (1992), *no.* 3, 445–461. (Victor J. Katz) **93g:00016** 00A35 (01A99, 11-03)

Avkhadiev, F. G. Conditions for the univalence of the solution in problems of constructing wing profiles. (Russian) *Trudy Sem. Kraev. Zadacham No.* 26 (1991), 3–19. (From the

text) **93g:76015** 76B05 (30C99, 76M99)

Avraamova, O. D. A generalized density theorem. (Russian. Russian summary) *Abelian groups and modules, No. 8 (Russian)*, 3–16, 172, *Tomsk. Gos. Univ., Tomsk*, 1989. (Summary) **93k:16033** 16N60

Avram, Florin (*with* Bertsimas, Dimitris J.) The minimum spanning tree constant in geometrical probability and under the independent model: a unified approach. *Ann. Appl. Probab.* **2** (1992), *no.* 1, 113–130. (Robin Pemantle) **93b:60027** 60D05 (90C27)

— (*with* Taqqu, Murad S.) Weak convergence of sums of moving averages in the α-stable domain of attraction. *Ann. Probab.* **20** (1992), *no.* 1, 483–503. (J. L. Mijnheer) **93b:60067** 60F17 (60J30)

Avramenko, V. I. (*with* Blokhin, A. L.) Effective Hamiltonian within the microscopic unitary nuclear model. II. The study of sd nuclei with two valence particles. *J. Math. Phys.* **32** (1991), *no.* 7, 1696–1702. (David J. Rowe) **93b:81310** 81V35 (22E70, 81R05)

Avramov, Luchezar L. (*with* Foxby, Hans-Bjørn) Homological dimensions of unbounded complexes. *J. Pure Appl. Algebra* **71** (1991), *no.* 2-3, 129–155. (M. H. Bijan-Zadeh) **93g:18017** 18G20 (13D05, 18E25, 18G15, 55U25)

— Problems on infinite free resolutions. *Free resolutions in commutative algebra and algebraic geometry (Sundance, UT, 1990)*, 3–23, *Res. Notes Math., 2, Jones and Bartlett, Boston, MA*, 1992. (Matthew Miller) **93e:13024** 13D40 (13D02, 13H99)

— (*with* Foxby, Hans-Bjørn) Locally Gorenstein homomorphisms. *Amer. J. Math.* **114** (1992), *no.* 5, 1007–1047. (Rafael H. Villarreal) **93i:13019** 13H10 (13D03, 13D25)

— (*with* Eisenbud, David) Regularity of modules over a Koszul algebra. (English summary) *J. Algebra* **153** (1992), *no.* 1, 85–90. (Dinh Van Huynh) **93k:16018** 16E99 (16W50)

— (*with* Foxby, Hans-Bjørn; Lescot, Jack) Bass series of local ring homomorphisms of finite flat dimension. *Trans. Amer. Math. Soc.* **335** (1993), *no.* 2, 497–523. (Marc Aubry) **93d:13026** 13D03 (13C11, 13D25, 18G15, 55T20)

Avron, Arnon Hypersequents, logical consequence and intermediate logics for concurrency. *Ann. Math. Artificial Intelligence* **4** (1991), *no.* 3-4, 225–248. (Michael V. Zakharyashchev) **93a:03028** 03B70 (03B40, 03B55, 03F05, 68T27)

— A note of provability, truth and existence. *J. Philos. Logic* **20** (1991), *no.* 4, 403–409. (Roman Murawski) **93b:03102** 03F30 (03A05, 03F40)

— Natural 3-valued logics—characterization and proof theory. *J. Symbolic Logic* **56** (1991), *no.* 1, 276–294. (Wojciech Dzik) **93b:03032** 03B50

— (*with* Honsell, Furio; Mason, Ian A.; Pollack, Robert) Using typed lambda calculus to implement formal systems on a machine. (English summary) *J. Automat. Reason.* **9** (1992), *no.* 3, 309–354. (Summary) **93j:68171** 68T15 (03B35, 03B40)

— Axiomatic systems, deduction and implication. *J. Logic Comput.* **2** (1992), *no.* 1, 51–98. (W. Rautenberg) **93k:03009** 03B22

— Whither relevance logic? *J. Philos. Logic* **21** (1992), *no.* 3, 243–281. (Kosta Došen) **93j:03013** 03B46 (03A05)

Avrunin, George S. (*with* Carlson, Jon F.) Nilpotency degree of cohomology rings in characteristic two. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 2, 339–343. (U. Stammbach) **93g:20098** 20J06

Awad, Adnan M. (*with* Hussein, D.; Azzam, M.) Some results on the Beurling spaces. (English and Arabic summaries) *Dirāsāt Ser. B Pure Appl. Sci.* **17** (1990), *no.* 2, 62–66. (M. Valdivia) **93m:46041** 46F05 (46A30, 46E10)

— On the Fisher β-sufficient partition. (English summary) *Comm. Statist. Theory Methods* **21** (1992), *no.* 9, 2645–2664. (K. K. Ferentinos) **93k:62009** 62B10

— On the Fisher information. (English summary) *J. Inform. Optim. Sci.* **14** (1993), *no.* 1, 95–110. (Summary) **93m:94010** 94A15

Awada, M. A. The supersymmetric modified KdV hierarchy and nonperturbative spinning string theory in less than one dimension. *Classical Quantum Gravity* **9** (1992), *no.* 4, 801–821. (M. I. Monastyrskiĭ) **93e:81088** 81T30 (58F07)

Awane, A. k-symplectic structures. (English summary) *J. Math. Phys.* **33** (1992), *no.* 12, 4046–4052. (P. Molino) **93i:53028** 53C15 (58F05)

Awartani, Marwan M. An uncountable collection of mutually incomparable chainable continua. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 1, 239–245. (Michel Smith) **93f:54045** 54F15 (54D35)

Awata, Hidetoshi (*with* Tsuchiya, Akihiro; Yamada, Yasuhiko) Integral formulas for the WZNW correlation functions. *Nuclear Phys. B* **365** (1991), *no.* 3, 680–696. (From the introduction) **93h:81105** 81T40 (17B67, 81R10)

— (*with* Yamada, Yasuhiko) Fusion rules for the fractional level $\widehat{\mathrm{sl}(2)}$ algebra. *Modern Phys. Lett. A* **7** (1992), *no.* 13, 1185–1195. (Robert E. C. Perret) **93i:81058** 81R10 (17B67)

— (*with* Yamada, Yasuhiko) Fusion rules for the q-vertex operators of $U_q(\widehat{\mathrm{sl}(2)})$. (English summary) *Modern Phys. Lett. A* **7** (1992), *no.* 24, 2235–2243. (Kailash C. Misra) **93j:17020** 17B37 (17B67, 81R10, 81R50)

Awatif, Sayah Équations d'Hamilton-Jacobi du premier ordre avec termes intégro-différentiels. I. Unicité des solutions de viscosité. [First-order Hamilton-Jacobi equations with integro-differential terms. I. Uniqueness of the viscosity solutions] *Comm. Partial Differential Equations* **16** (1991), *no.* 6-7, 1057–1074. (Martino Bardi) **93b:35027a** 35F20 (45K05, 49L25)

— Équations d'Hamilton-Jacobi du premier ordre avec termes intégro-différentiels. II. Existence de solutions de viscosité. [First-order Hamilton-Jacobi equations with integro-differential terms. II. Existence of viscosity solutions] *Comm. Partial Differential Equations* **16** (1991), *no.* 6-7, 1075–1093. (Martino Bardi) **93b:35027b** 35F20 (45K05, 49L25)

Awerbuch, Baruch (*with* Peleg, David) Routing with polynomial communication-space trade-off. *SIAM J. Discrete Math.* **5** (1992), *no.* 2, 151–162. (Qiao Li) **93e:68095** 68R10 (05C70, 05C85, 68M10, 68Q22)

Awrejcewicz, Jan ★ Bifurcation and chaos in coupled oscillators. *World Scientific Publishing Co., Inc., River Edge, NJ*, 1991. x+245 *pp. ISBN* 981-02-0579-1 (Remo Badii) **93f:58144** 58F13 (34C15, 34C23, 58F14, 70Kxx, 73K12, 92C10)

— (*with* Someya, Tsuneo) A twisted horseshoe in the roll-slide oscillator. *J. Phys. Soc. Japan* **61** (1992), *no.* 5, 1556–1559. (Summary) **93d:70041** 70K50 (34C15, 58F12)

— (*with* Someya, Tsuneo) Analytical condition for the existence of two-parameter family of quasiperiodic orbits in the autonomous system (nonresonance case). (English summary) *J. Phys. Soc. Japan* **61** (1992), *no.* 7, 2231–2234. 34C15 (70K99)

Axelrad, D. R. (*with* Frydrychowicz, W.; Kamal, M. R.) Stochastic analysis of polymer melts with a binary structure. *Z. Angew. Math. Phys.* **43** (1992), *no.* 3, 536–552. (Yuriĭ Raikher) **93e:82056** 82D60 (60J99, 82C41)

Axelsson, Owe A priori bounds and discretization error estimates for parabolic problems. *Proceedings of the Second International Symposium on Numerical Analysis (Prague, 1987)*, 8–18, *Teubner-Texte Math.*, 107, *Teubner, Leipzig*, 1988. (*see* **93b:65007**) 65N15 (35K10)

— (*with* Gustafsson, Ivar) An efficient finite element method for nonlinear diffusion problems. *Bull. Greek Math. Soc.* **32** (1991), 45–61. (Summary) **93a:65145** 65N30

— On algebraic multilevel iteration methods for selfadjoint elliptic problems with anisotropy. Numerical methods in applied science and industry (Torino, 1990). *Rend. Sem. Mat. Univ. Politec. Torino* **1991**, *Special Issue*, 31–61 (1992). (T. A. Porsching) **93d:65033** 65F10 (65N22, 65N50)

— Bounds of eigenvalues of preconditioned matrices. Iterative methods in numerical linear algebra (Copper Mountain, CO, 1990). *SIAM J. Matrix Anal. Appl.* **13** (1992), *no.* 3, 847–862. (A. Barraud) **93e:65056** 65F15 (65F50)

Axelsson, Reynir (*with* Magnússon, Jón) A characterization of symmetric and exterior algebras in characteristic zero. *Comm. Algebra* **20** (1992), *no.* 3, 631–638. (Vesselin Drensky) **93e:16059** 16W55 (15A75, 15A78, 16W30)

Axenides, Minos Aspects of Q-matter stability. (English summary) *Internat. J. Modern Phys. A* **7** (1992), *no.* 28, 7169–7184. (Summary) **93g:81205** 81V25 (81V99)

— (*with* Johansen, A. A.) The global SU(2) anomaly for massive fermions. (English summary) *Phys. Lett. B* **300** (1993), *no.* 3, 251–255. 81T50

Axler, Sheldon (*with* Bourdon, Paul S.; Ramey, Wade) ★ Harmonic function theory. Graduate Texts in Mathematics, 137. *Springer-Verlag, New York*, 1992. xii+231 *pp. ISBN* 0-387-97875-5 (Christopher Bishop) **93f:31001** 31–01

— (*with* Zhu, Ke He) Boundary behavior of derivatives of analytic functions. *Michigan Math. J.* **39** (1992), *no.* 1, 129–143. (A. B. Aleksandrov) **93e:30073** 30D45

— Interpolation by multipliers of the Dirichlet space. *Quart. J. Math. Oxford Ser.* (2) **43** (1992), *no.* 172, 409–419. (Aristomenis Siskakis) **93k:30079** 30H05 (30E05, 46E20, 46J15)

— *see also* **Birman, Joan S.**, **93f:01029**

Axsäter, Sven Optimization of order-up-to-S policies in two-echelon inventory systems with periodic review. (English summary) *Naval Res. Logist.* **40** (1993), *no.* 2, 245–253. 90B05

Ayache, Ahmed (*with* Cahen, Paul-Jean) Anneaux vérifiant absolument l'inégalité ou la formule de la dimension. (Italian summary) [Rings that absolutely satisfy the dimension inequality or formula] *Boll. Un. Mat. Ital. B* (7) **6** (1992), *no.* 1, 39–65. (Summary) **93c:13006** 13B02 (13C15)

Ayad, Mohamed Points Δ-entiers sur les courbes elliptiques. [Δ-integral points on elliptic curves] *J. Number Theory* **38** (1991), *no.* 3, 323–337. (Summary) **93a:11049** 11G05 (14H52)

— Points S-entiers des courbes elliptiques. [S-integral points of elliptic curves] *Manuscripta Math.* **76** (1992), *no.* 3-4, 305–324. (Salvador Comalada) **93i:11064** 11G05 (11D25)

Ayala, G. (*with* Ferrándiz, Juan; Montes, F.) On parametric estimation in Boolean models. (English summary) *Survey of statistical methods and applications*, 8 (*Italian*) (*Cagliari*, 1989–1990), 1–17, *Coll. Atti Congr., Pitagora, Bologna*, 1993. (*see* **93m:62007**) 62M99 (60D05)

Ayala, R. (*with* Domínguez Murillo, Eladio; Márquez, Alberto; Quintero, A.) Lusternik-Schnirelmann invariants in proper homotopy theory. *Pacific J. Math.* **153** (1992), *no.* 2, 201–215. (John F. Oprea) **93a:55005** 55P55 (55M30)

Ayala, Víctor (*with* Vergara B., Luis A.) Co-adjoint representation and controllability. *Proyecciones* **11** (1992), *no.* 1, 37–48. (José Basto Goncalves) **93i:93015** 93B05 (58F05, 93B27)

Ayala Bravo, Victor Controllability and the rank condition of the control vectors. (English and Portuguese summaries) *Mat. Apl. Comput.* **11** (1992), *no.* 1, 41–44. (Summary) **93i:93016** 93B05

ben-Ayed, Omar *see* **Ben-Ayed, Omar**

Ayerbe Toledano, J. Some properties of the Maharam density topology. Proceedings of the Colloquium on Complex Analysis and the Sixth Romanian-Finnish Seminar. *Rev. Roumaine Math. Pures Appl.* **36** (1991), *no.* 9-10, 565–569. (M. Laczkovich) **93k:28006** 28A35 (28A51)

özta\u{s} Ayhan, H. *see* **Öztaş Ayhan, H.**

Ayissi Eteme, Fidèle Anatomie du spectre θ-valent d'un anneau chrysippien θ-valent et représentation intrinsèque d'ach θ. [Anatomy of the θ-valent spectrum of a θ-valent Chrysippian ring and intrinsic representation of an ach θ] *Rev. Roumaine Math. Pures Appl.* **37** (1992), *no.* 2, 103–114. (S. Comer) **93i:03092** 03G25

romera Ayllón, Ma. Rosario *see* **Romera Ayllón, Ma. Rosario**

Ayoub, Jamil Edge connectivity of communication networks. (English and Arabic summaries) *Dirāsāt Ser. B Pure Appl. Sci.* **18** (1991), *no.* 4, 115–126 (1992). (Summary) **93j:05098** 05C40 (90B12)

Ayoubi, I. S. Numerical solution of the inverse scattering problem for hyperbolic systems of n-components in semi-infinite media. (English summary) *Invariant imbedding and inverse problems (Albuquerque, NM*, 1990), 187–208, *SIAM, Philadelphia, PA*, 1992. (Frank Natterer) **93m:65138** 65M30 (35R30, 86A22)

Aytuna, A. (*with* Terzioğlu, T.) Some applications of a decomposition method. *Progress in functional analysis (Peñíscola*, 1990), 85–95, *North-Holland Math. Stud.*, 170, *North-Holland, Amsterdam*, 1992. (M. S. Ramanujan) **93k:46005** 46A45 (46E10)

Ayupov, Sh. A. Probability measures on quantum logics and a noncommutative Choquet theory. *Probability theory and mathematical statistics, Vol. I (Vilnius*, 1989), 68–77, "*Mokslas*", *Vilnius*, 1990. (Jan Hamhalter) **93d:46106** 46L50 (81P10)

— Center-valued traces on real operator algebras. (Russian) *Funktsional. Anal. i Prilozhen.* **26** (1992), *no.* 2, 1–9, 96; *translation in Functional Anal. Appl.* **26** (1992), *no.* 2, 77–83. (Khristo N. Boyadzhiev) **93e:46082** 46L70 (46K70, 46L10, 47D25)

— (*with* Adizov, A. A.; Zhelyabin, V. N.) Multiplicative mappings of ordered Jordan algebras. (Russian) *Mat. Zametki* **51** (1992), *no.* 2, 3–8, 156; *translation in Math. Notes* **51** (1992), *no.* 1-2, 105–109. (Khristo N. Boyadzhiev) **93c:46124** 46L70

Ayupova, N. B. (*with* Golubyatnikov, V. P.) Algorithms for solving multidimensional inverse problems of integral geometry, and line and plane complexes. (Russian. Russian summary) *Methods for solving inverse problems (Russian)*, 36–44, 143, *Akad. Nauk SSSR Sibirsk. Otdel., Inst. Mat., Novosibirsk*, 1990. (Summary) **93k:53075** 53C65

Ayyaswamy, P. S. (*with* Ramakrishna, K.; Cohen, I. M.) Numerical methods for two-dimensional analysis of electrical breakdown in a nonuniform gap. (English sum-

mary) *J. Comput. Phys.* **104** (1993), *no.* 1, 173–184. (Summary) **93i:78002** 78–08

Ayyub, Bilal M. *see* **Analysis and management of uncertainty: theory and applications, 93f:68004**

Azad, H. (*with* Loeb, J.-J.) Plurisubharmonic functions and the Kempf-Ness theorem. *Bull. London Math. Soc.* **25** (1993), *no.* 2, 162–168. (Michel Brion) **93m:32044** 32M05 (32E10, 32F05, 32M10)

Azaïs, Jean-Marc (*with* Lang, Gabriel) Estimation de l'exposant de longue dépendance dans un cadre semi-paramétrique. (English and French summaries) [Nonparametric estimation of the long-range dependence exponent] *C. R. Acad. Sci. Paris Sér. I Math.* **316** (1993), *no.* 6, 611–614. (Summary) **93k:62078** 62G05

Azam, Akbar (*with* Beg, Ismat) Fixed points of asymptotically regular multivalued mappings. (English summary) *J. Austral. Math. Soc. Ser. A* **53** (1992), *no.* 3, 313–326. (Wojciech Kryszewski) **93m:54033** 54C60 (47H04, 47H10, 54H25)

Azamatova, V. I. (*with* Lizunova, I. V.) Noethericity of an integral operator of convolution type. (Russian. English summary) *Vestst Akad. Navuk BSSR Ser. Fiz.-Mat. Navuk* **1991**, *no.* 6, 16–19, 123. (Summary) **93b:47102** 47G10 (45E10, 47A35, 47B35)

Azanov, N. P. On an infinitesimal deformation of a thermoelastic membrane. (Russian) *Trudy Geom. Sem. Kazan. Univ. No.* 21 (1991), 21–31. (From the text) **93h:73026** 73K15 (53B50, 73B30)

Azar, Yossi (*with* Naor, Joseph; Rom, Raphael) The competitiveness of on-line assignments. *Proceedings of the Third Annual ACM-SIAM Symposium on Discrete Algorithms (Orlando, FL, 1992)*, 203–210, *ACM, New York*, 1992. (*see* **93b:68005**) 90B22 (68Q20)

— (*with* Alon, Noga) Comparison-sorting and selecting in totally monotone matrices. *Proceedings of the Third Annual ACM-SIAM Symposium on Discrete Algorithms (Orlando, FL, 1992)*, 403–408, *ACM, New York*, 1992. (*see* **93b:68005**) 68P10 (68U05)

Azarenkov, S. V. Solving the problem of controlling a stationary acoustic field in the presence of nonstochastic interference. *Soviet J. Automat. Inform. Sci.* **24** (1991), *no.* 4, 62–66 (1992); *translated from Avtomatika* **1991**, *no.* 4, 62–67, 95 (*Russian. English, Russian and Ukrainian summaries*). 93C95

Azari, A. S. (*with* Müller, Hans-Georg) Preaveraged localized orthogonal polynomial estimators for surface smoothing and partial differentiation. (English summary) *J. Amer. Statist. Assoc.* **87** (1992), *no.* 420, 1005–1017. (Summary) **93k:62079** 62G05

Azarin, V. S. (*with* Giner, V. B.) Multipliers of entire functions of finite order. (Russian) *Dokl. Akad. Nauk SSSR* **314** (1990), *no.* 5, 1033–1036; *translation in Soviet Math. Dokl.* **42** (1991), *no.* 2, 555–558. (Valentin Napalkov) **93f:30028** 30D20

Azbelev, N. V. (*with* Domoshnitskii, A. I.) On the sign of the Green function of the de la Vallée-Poussin problem. (Russian. Russian summary) *Boundary value problems (Russian)*, 3–7, *Perm. Politekh. Inst., Perm'*, 1990. (*see* **93g:00023**) 34K10

— The role of certain traditions in the development of the study of differential equations. (Russian. Russian summary) *Functional-differential equations (Russian)*, 3–10, *Perm. Politekh. Inst., Perm'*, 1991. (Summary) **93g:34101** 34K05 (00A35, 34–03)

— (*with* Berezanskii, L. M.; Simonov, P. M.; Chistyakov, Aleksandr Vladimirovich) The stability of linear systems with aftereffect. III. (Russian) *Differentsial'nye Uravneniya* **27** (1991), *no.* 10, 1659–1668, 1834; *translation in Differential Equations* **27** (1991), *no.* 10, 1165–1172 (1992). (D. N. Cheban) **93e:34101** 34K20 (47N20)

— *see also* **Functional-differential equations, 93f:34005**; **Boundary value problems, 93g:00023**; **93k:00022**; **93m:00017** *and* **Functional-differential equations, 93m:00024**

de Azcárraga, J. A. (*with* Lukierski, Jerzy; Niederle, Jiří) Contractions yielding new supersymmetric extensions of the Poincaré algebra. *Rep. Math. Phys.* **30** (1991), *no.* 1, 33–40 (1992). (J. F. Cornwell) **93h:17009** 17A70 (17B70, 81R05, 81T60)

— Wess-Zumino terms, extended algebras and anomalies in classical physics. (English summary) *Mathematical aspects of classical field theory (Seattle, WA, 1991)*, 75–98, *Contemp. Math.*, 132, *Amer. Math. Soc., Providence, RI*, 1992. (Henrik Aratyn) **93k:81227** 81T50 (81T60)

— (*with* Izquierdo, J. M.; Zakrzewski, Wojciech J.) A supergroup based supersigma model. *J. Math. Phys.* **33** (1992), *no.* 7, 2357–2364. (Jaime Muñoz Masqué) **93e:81134** 81T60 (58A50)

— (*with* Chaichian, M.; Prešnajder, Peter; Ródenas, F.) Oscillator realization of the q-deformed anti-de Sitter algebra. (English summary) *Phys. Lett. B* **291** (1992), *no.* 4, 411–417. (A. U. Klimyk) **93i:81090** 81R50 (17B37)

— (*with* Izquierdo, J. M.; Townsend, P. K.) Kaluza-Klein origin for the superstring tension. *Phys. Rev. D* (3) **45** (1992), *no.* 10, R3321–R3325. (Summary) **93a:83036** 83E30 (81T30, 81T50)

Azéma, J. *see* **Seminar: Probability Theory, 93g:60002**

Azemi, Asad (*with* Yaz, Engin) Variable structure observer with a boundary-layer for correlated noise/disturbance models and disturbance minimization. (English summary) *Internat. J. Control* **57** (1993), *no.* 5, 1191–1206. 93B12 (93E12)

Azencott, Robert Boltzmann machines: high-order interactions and synchronous learning. *Stochastic models, statistical methods, and algorithms in image analysis (Rome, 1990)*, 14–45, *Lecture Notes in Statist.*, 74, *Springer, Berlin*, 1992. (*see* **93e:62005**) 68Q10 (92C20)

— *see also* **Simulated annealing, 93e:65003**

de Azeredo Campos, R. Dirac quantization of higher order systems with odd variables. (French summary) *Canad. J. Phys.* **70** (1992), *no.* 2-3, 148–151. (Summary) **93a:81088** 81S05 (81Q60)

— Canonical quantization of supersymmetric second-order systems. *J. Math. Phys.* **33** (1992), *no.* 4, 1341–1347. (André Burnel) **93b:81121** 81S05 (81Q60)

Azevedo Breda, Ana M. R. A class of tilings of S^2. (English summary) *Geom. Dedicata* **44** (1992), *no.* 3, 241–253. (George E. Martin) **93m:52021** 52C20 (51M20)

Azimi, Parviz A note on Azimi-Hagler Banach spaces. *Functional analysis & related topics (Sapporo, 1990)*, 247–252, *World Sci. Publishing, River Edge, NJ*, 1991. (R. C. James) **93b:46023** 46B20 (46B25)

Azimov, R. K. The aggregation form of a stochastic system based on a matrix Lyapunov function. (Russian. English summary) *Dokl. Akad. Nauk Ukrainy* **1991**, *no.* 11, 5–8, 172. (Summary) **93b:34070** 34F05 (34D20)

— Stochastic stability of linear singularly perturbed systems. (Russian. English summary) *Dokl. Akad. Nauk Ukrainy* **1992**, *no.* 6, 38–41, 171. (Summary) **93d:34099** 34F05 (34D10, 34E15, 60H10)

Azimova, G. M. A scattering problem for a first-order nonselfadjoint difference operator. (Russian. English and Azerbaijani summaries) *Izv. Akad. Nauk Azerbaĭdzhan. SSR Ser. Fiz.-Tekhn. Mat. Nauk* **10** (1989), *no.* 2-3, 13–17 (1992). (From the text) **93f:47036** 47B39 (34L25, 39A12, 47N50, 81U99)

Aziz, A. K. (*with* Lemmert, Roland; Schneider, Manfred Friedrich) The existence of generalized solutions for a class of linear and nonlinear equations of mixed type. (English summary) Dedicated to the memory of Professor Gottfried Köthe. *Note Mat.* **10** (1990), *suppl.* 1, 47–64 (1992). (Megumi Saigo) **93k:35060** 35D05 (35M10)

Aziz, Sawsan M. A characterization of ordinary differential polynomials in the space $C[a, b]$. (English summary) *Proc. Pakistan Acad. Sci.* **29** (1992), *no.* 1, 19–25. 47B38 (47E05)

Azizov, Kh. F. Boundary regimes with peaking and localization in nonlinear non-Newtonian flow through porous media. *Fluid Dynamics* **26** (1991), *no.* 4, 552–557 (1992); *translated from Izv. Akad. Nauk SSSR Mekh. Zhidk. Gaza* **1991**, *no.* 4, 91–97 (*Russian*). (Lalit M. Srivastava) **93f:76092** 76S05 (76A05, 76D99)

Azizov, T. Ya. (*with* Sukhocheva, L. I.) A new approach to the proof of a theorem on the reduction of matrices to Jordan form. (Russian) *Functional analysis, No.* 31 (*Russian*), 3–5, *Ul'yanovsk. Gos. Ped. Inst., Ul'yanovsk*, 1990. (V. V. Sergeichuk) **93k:15013** 15A21

— Operator theory in Krein spaces and operator pencils. *Linear operators in function spaces (Timişoara, 1988)*, 111–121, *Oper. Theory Adv. Appl.*, 43, *Birkhäuser, Basel*, 1990. (Daniel Alpay) **93d:47030** 47A56 (34L10, 47A70, 47B50)

— (*with* Jonas, Peter) Compact perturbations of normal operators in a Krein space. (Russian. Ukrainian summary) *Ukrain. Mat. Zh.* **42** (1990), *no.* 10, 1299–1306; *translation in Ukrainian Math. J.* **42** (1990), *no.* 10, 1155–1161 (1991). (T. Ando) **93d:47067** 47B50 (47A55)

— (*with* Khatskevich, V. L.) Some applications of operator theory in Krein spaces to the solvability of nonlinear Hamiltonian systems. (Russian) *Mat. Zametki* **50** (1991), *no.* 4, 3–9, 157; *translation in Math. Notes* **50** (1991), *no.* 3-4, 987–992 (1992). (Pavel Drábek) **93c:47082** 47N20 (34B15, 47A75, 47B50, 58F05)

Azizova, A. A. (*with* Kuznetsov, A. O.; Loginov, B. V.) The method of group transformations in computations of the bending forms of rods. (Russian) *Boundary value problems for differential equations of mixed types (Russian)*, 43–49, 202, "*Fan*", *Tashkent*, 1991. (From the text) **93c:73057** 73K05 (34B15, 65L06, 65L10)

Azmy, Y. Y. (*with* Protopopescu, V.) Topological chaos for a class of linear models. *Math. Models Methods Appl. Sci.* **2** (1992), *no.* 1, 79–90. (Gong Fu Liao) **93c:58126** 58F12 (58F13)

— (*with* Boffi, V. C.; Mandrekas, J.; Protopopescu, V.) Lie group analysis for a multispecies, spatially inhomogeneous, mutually interacting gas mixture. *Transport Theory Statist. Phys.* **21** (1992), *no.* 1-2, 119–131. (F. Oliveri) **93c:35003** 35A30 (58G35, 82B40, 82C22)

Azofeifa-Zamora, Carlos Enrique Elements of the best approximation in normed linear spaces. (Spanish. English summary) *Cienc. Tecn.* **14** (1990), *no.* 1-2, 15–23 (1992). (J. B. Prolla) **93c:41050** 41A65

— Best approximation in normed linear spaces by means of extreme points. (Spanish. English summary) *Cienc. Tecn.* **14** (1990), *no.* 1-2, 25–33 (1992). (J. B. Prolla) **93c:41051** 41A65

— Some definitions of contractive functions. (Spanish. English summary) *Cienc. Tecn.* **14** (1990), *no.* 1-2, 69–80 (1992). (Summary) **93e:54022** 54E40 (54H25)

garcía Azorero, J. *see* **García Azorero, J.**

Azovskii, V. V. (*with* Volkodavov, V. F.; Rodionova, I. N.) On the theory of Volterra equations of the first kind with functions Ξ_2 and Φ_2^* in the kernels. (Russian) *Boundary value problems for equations in mathematical physics (Russian)*, 39–56, *Kuĭbyshev. Gos. Ped. Inst., Kuĭbyshev*, 1991. (Nicolay A. Magnitskii) **93m:45001** 45D05

Azuma, Takahiro (*with* Koikawa, Takao) Classification of an infinite series of static solutions to the vacuum Einstein equations. (English summary) *Gen. Relativity Gravitation* **24** (1992), *no.* 12, 1223–1234. (Ciprian Dariescu) **93j:83020** 83C20 (35Q51, 83C15)

Azumaya, Goro Locally pure-projective modules. *Azumaya algebras, actions, and modules (Bloomington, IN, 1990)*, 17–22, *Contemp. Math.*, 124, *Amer. Math. Soc., Providence, RI*, 1992. (S. S. Page) **93e:16027** 16L30 (16D40)

Azzam, Ali (*with* Al Humaidan, S.) On mixed boundary value problems for elliptic equations in domains with corners. (Arabic summary) *Arabian J. Sci. Engrg.* **16** (1991), *no.* 4, 475–481. (Lew Lefton) **93g:35032** 35J25 (35B65)

Azzam, M. (*with* Hussein, D.; Awad, Adnan M.) Some results on the Beurling spaces. (English and Arabic summaries) *Dirāsāt Ser. B Pure Appl. Sci.* **17** (1990), *no.* 2, 62–66. (M. Valdivia) **93m:46041** 46F05 (46A30, 46E10)

Azzouni, Jody A priori truth. *Erkenntnis* **37** (1992), *no.* 3, 327–346. 03A05

– B –

Ba, M. S. (*with* Borevich, Z. I.) Arrangements of intermediate subgroups. (Russian) *Rings and linear groups (Russian)*, 14–41, *Kuban. Gos. Univ., Krasnodar*, 1988. (*see* **93i:00023**) 20D30

Baadhio, Randy A. (*with* Lee, Pascal) On the global gravitational instanton and soliton that are homotopy spheres. *J. Math. Phys.* **32** (1991), *no.* 10, 2869–2874. (Summary) **93c:57026** 57R60 (81T30, 83E15)

— Global gravitational instantons and their degrees of symmetry. *J. Math. Phys.* **33** (1992), *no.* 2, 721–724. (Summary) **93e:57056** 57R60 (57S25)

Baaijens, Frank P. T. A U-ALE formulation of 3-D unsteady viscoelastic flow. (English summary) *Internat. J. Numer. Methods Engrg.* **36** (1993), *no.* 7, 1115–1143. (Summary) **93m:76057** 76M10 (73F15, 76A10)

Baaijens, Frank P. T. (*with* Kootwijk, Carolien M.) Application of the satisfying Babuška-Brezzi method to a two-dimensional diffusion problem. (English summary) *Appl. Math. Modelling* **17** (1993), *no.* 4, 184–194. 65M60

Baaj, Saad Représentation régulière du groupe quantique $E_\mu(2)$ de Woronowicz. (English summary) [Regular representation of the Woronowicz quantum group $E_\mu(2)$] *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 13, 1021–1026. (Albert Jeu-Liang Sheu) **93f:46106** 46L87 (16W30, 22D25, 58B30)

Baake, M. (*with* Klitzing, R.; Schlottmann, M.) Fractally shaped acceptance domains of quasiperiodic square-triangle tilings with dodecagonal symmetry. (English summary) Fractals and disorder (Hamburg, 1992). *Phys. A* **191** (1992), *no.* 1-4, 554–558. (Marjorie Senechal) **93j:52032** 52C20

— (*with* Joseph, D.; Kramer, Peter) Periodic clustering in the spectrum of quasiperiodic Kronig-Penney models. (English summary) *Phys. Lett. A* **168** (1992), *no.* 3, 199–208. (Summary) **93e:81151** 81V70 (81Q50)

van Baal, Pierre Analytic methods from finite to infinite volumes. Lattice 90 (Tallahassee, FL, 1990). *Nuclear Phys. B Proc. Suppl.* **20** (1991), 3–15. (Summary) **93c:81146** 81T20 (81T13, 81T25, 81T80)

— More (thoughts on) Gribov copies. *Nuclear Phys. B* **369** (1992), *no.* 1-2, 259–275. (James E. Hetrick) **93a:58028** 58D19 (58Z05, 81T13)

— *see also* **Lattice 92, 93m:81005**

Basquie, Belal E. Functional-differential realization of the SU(2) Kac-Moody algebra. *Internat. J. Modern Phys. A* **7** (1992), *no.* 11, 2509–2513. (Eric J. Raiten) **93c:81061** 81R10 (17B67, 81T40)

— Path integral derivation of the U(1) Kac-Moody characters and of the Weyl-Kac denominator. *Internat. J. Modern Phys. A* **7** (1992), *no.* 13, 2973–2979. (Andrew Pressley) **93b:17055** 17B67 (81R10, 81S40)

— (*with* Rajeev, S. G.) Long distance behavior of the four-dimensional nonlinear sigma model with anomaly. (English summary) *Modern Phys. Lett. A* **8** (1993), *no.* 7, 625–634. 81T13

Baars, Jan (*with* de Groot, Joost) On the l-equivalence of metric spaces. *Fund. Math.* **137** (1991), *no.* 1, 25–43. (Philip L. Bowers) **93c:54012** 54C35 (57N17)

— Equivalence of certain free topological groups. *Comment. Math. Univ. Carolin.* **33** (1992), *no.* 1, 125–130. (Dieter Remus) **93g:54049** 54H11 (22A05, 54C35)

Baart, M. L. (*with* Coetzee, M. A.) Review of geometric continuity, with application to the construction of G^2 continuous curves. (English summary) 17th South African Symposium on Numerical Mathematics (Umhlanga, 1991). *Quaestiones Math.* **15** (1992), *no.* 3, 279–298. (Zong Min Wu) **93m:65021** 65D17 (51N05, 65Y25, 68U05)

Baartmans, Alphonse (*with* Yucas, Joseph L.) On the existence of a double extension of PG(3, 2). (English summary) *Ars Combin.* **33** (1992), 145–156. (Tamás Szőnyi) **93i:05013** 05B05 (51E10)

— (*with* Wallis, Walter; Yucas, Joseph L.) A geometric construction of the Steiner system $S(4, 7, 23)$. *Discrete Math.* **102** (1992), *no.* 2, 177–186. (Tamás Szőnyi) **93i:05014** 05B05 (51E10)

— (*with* Yucas, Joseph L.) Kirkman years in PG(3, 2). (English summary) *Australas. J. Combin.* **7** (1993), 129–132. (Summary) **93k:05036** 05B30

vries-Baayens, A. E. *see* **Vries-Baayens, A. E.**

Baaz, Matthias Automatisches Beweisen für endlichwertige Logiken. (English summary) [Automatic theorem proving for finite-valued logics] Mathematische Wissenschaften gestern und heute. 300 Jahre Mathematische Gesellschaft in Hamburg, Teil 4 (Hamburg, 1990). *Mitt. Math. Ges. Hamburg* **12** (1991), *no.* 4, 1141–1155 (1992). (A. Tauts) **93k:03024** 03B50 (03B35, 68T15)

Baba, Akio The L_2-wellposed Cauchy problem for Schrödinger type equations. *Tsukuba J. Math.* **16** (1992), *no.* 1, 235–256. (Ross Pinsky) **93k:35121** 35K10 (35K15)

Baba, Kiyoshi Examples of Krull domains in Galois descent theory. III. (English summary) *Res. Bull. Fac. Ed. Oita Univ.* **13** (1991), *no.* 2, 275–280. (George Szeto) **93g:13017** 13F05 (13B05, 14C22)

— Radical descent on Picard groups. I. *Res. Bull. Fac. Ed. Oita Univ.* **14** (1992), *no.* 1, 189–196. (Nica Vasile) **93h:13014** 13C20 (13B10)

Baba, Norio (*with* Morimoto, Akira) Stochastic approximation method for solving the stochastic multiobjective programming problem. (English summary) *Internat. J. Systems Sci.* **24** (1993), *no.* 4, 789–796. (Summary) **93k:90058** 90C15 (90C29, 90C39)

Baba, Yoshitomo The injectivity of quasi-projective modules and the projectivity of quasi-injective modules. *Proceedings of the 25th Symposium on Ring Theory* (*Matsumoto*, 1992), 95–98, *Okayama Univ., Okayama*, 1992. (*see* **93i:16001**) 16D50

— The injectivity of quasi-projective modules, the projectivity of quasi-injective modules and the projective covers of injective modules. *Proceedings of the First China-Japan International Symposium on Ring Theory* (*Guilin*, 1991), 4–6, *Okayama Univ., Okayama*, 1992. (*see* **93k:16001**) 16D50

Baba, Yutaka A gated processor-sharing $M/G/1$ queue with limited number of service positions. *Sci. Rep. Yokohama Nat. Univ. Sect. I Math. Phys. Chem. No.* 38 (1991), 17–24. 60K25 (68M20, 90B22)

Babadzhanyants, L. K. (*with* Chekashkin, Yu. V.) An analytic method for calculating perturbations in the coordinates of planets. (Russian. English summary) *Vestnik Leningrad. Univ. Mat. Mekh. Astronom.* **1990**, *vyp.* 3, 101–107, 128. (Summary) **93b:70011** 70F15

Babaev, Dzh. A. (*with* Mamedov, K. Sh.; Shikhaliev, N. Sh.) Reduction of the solution of a general problem of nonlinear discrete programming to the solution of a sequence of problems with fewer constraints. (Russian) *Diskret. Mat.* **4** (1992), *no.* 1, 50–59. (Johannes Terno) **93f:90118** 90C10

Babaev, M.-B. A. Estimates for the best uniform approximation by sums of functions of the least number of variables. (Russian) *Special problems in function theory, No. IV* (*Russian*), 38–46, "*Élm*", *Baku*, 1989. (*see* **93m:00037**) 41A63 (26B40)

— (*with* Mukhtarov, A. Sh.) Approximation by some superpositions in a mixed norm. (Russian) *Special problems in function theory, No. IV* (*Russian*), 46–57, "*Élm*", *Baku*, 1989. (*see* **93m:00037**) 41A63 (26B40)

Babaeva, R. A. (*with* Burlak, È. M.; Vulpe, N. I.) On the number, multiplicity and types of singular points of a differential system. (Russian. English, Russian and Moldavian summaries) *Izv. Akad. Nauk Respub. Moldova Mat.* **1992**, *no.* 3, 3–8, 93. (Summary) **93k:34059** 34C05

Babaguchi, Noboru (*with* Moriuma, Jun-ichi; Tezuka, Yoshikazu) An algorithm for constructing extensions of propositional autoepistemic logic. (English summary) *J. Inform. Process.* **15** (1992), *no.* 1, 72–78. (Summary) **93e:68116** 68T27

Babai, László (*with* Friedl, Katalin) Approximate representation theory of finite groups. (English summary) 32*nd Annual Symposium on Foundations of Computer Science* (*San Juan, PR*, 1991), 733–742, *IEEE Comput. Soc. Press, Los Alamitos, CA*, 1991. (Ralph W. Wilkerson) **93i:68098** 68Q40 (20C40, 68Q25)

— Computational complexity in finite groups. *Proceedings of the International Congress of Mathematicians, Vol. I, II* (*Kyoto*, 1990), 1479–1489, *Math. Soc. Japan, Tokyo*, 1991. (W. M. Kantor) **93a:20008** 20B40 (20D05, 20D99, 68Q25)

— (*with* Fortnow, Lance) Arithmetization: a new method in structural complexity theory. *Comput. Complexity* **1** (1991), *no.* 1, 41–66. (Marius Zimand) **93c:68027** 68Q15 (68Q60)

— Deciding finiteness of matrix groups in Las Vegas polynomial time. *Proceedings of the Third Annual ACM-SIAM Symposium on Discrete Algorithms* (*Orlando, FL*, 1992), 33–40, *ACM, New York*, 1992. (Nigel B. Backhouse) **93j:68066** 68Q25 (20H05)

— (*with* Lengyel, Tamás) A convergence criterion for recurrent sequences with application to the partition lattice. *Analysis* **12** (1992), *no.* 1-2, 109–119. (Edward A. Bender) **93f:05005** 05A15 (11B37, 40A05)

— (*with* Szegedy, Mário) Local expansion of symmetrical graphs. *Combin. Probab. Comput.* **1** (1992), *no.* 1, 1–11. (Hui Ling Li) **93h:05086** 05C25

— (*with* Sós, Vera T.) Tibor Gallai, 1912–1992. *Combinatorica* **12** (1992), *no.* 4, 371–372. (Editors) **93m:01054a** 01A70

— (*with* Fortnow, Lance; Lund, Carsten) Addendum to: "Nondeterministic exponential time has two-prover interactive protocols" [Comput. Complexity **1** (1991), no. 1, 3–40; MR 92h:68031]. *Comput. Complexity* **2** (1992), *no.* 4, 374. 68Q15 (68Q60)

— (*with* Seress, Ákos) On the diameter of permutation groups. (English summary) *European J. Combin.* **13** (1992), *no.* 4, 231–243. (Alberto Delgado) **93h:20001** 20B05 (20F05)

— (*with* Nisan, Noam; Szegedy, Mário) Multiparty protocols, pseudorandom generators for logspace, and time-space trade-offs. (English summary) Twenty-first Symposium on the Theory of Computing (Seattle, WA, 1989). *J. Comput. System Sci.* **45** (1992), *no.* 2, 204–232. (Norbert Blum) **93m:68048** 68Q05 (68Q15, 68Q22, 68Q25, 68Q30)

— Bounded round interactive proofs in finite groups. *SIAM J. Discrete Math.* **5** (1992), *no.* 1, 88–111. (Václav Koubek) **93c:68023** 68Q10 (20D60, 68Q15)

Baba-Zade, M. A. A fractional integral in moduli of smoothness. (Russian) *Special problems in function theory, No. IV* (*Russian*), 57–73, "*Élm*", *Baku*, 1989. (*see* **93m:00037**) 26A15 (26A33)

Babbage, Charles ★ Science and reform. Selected works of Charles Babbage. Edited and with an introduction and a discussion by Anthony Hyman. *Cambridge University Press, Cambridge*, 1989. vi+356 *pp. ISBN* 0-521-34311-9 (I. Grattan-Guinness (Zbl 698:01022)) **93i:01029** 01A75 (01A55)

— *see also* **Taylor, Nicholas K., 93k:01042**; **Durand-Richard, Marie-José, 93k:01043a**; **93k:01043b** *and* **Toole, Betty A., 93k:01093**

Babcsányi, I. On output behaviour of Mealy-automata. Proceedings of the Second International Mathematical Miniconference, Part II (Budapest, 1988). *Period. Polytech. Transportation Engrg.* **19** (1991), *no.* 1-2, 15–21. (Bolesław Mikołajczak) **93e:68077** 68Q70

— On the simplicity of cyclic Mealy-automata. Automata, languages and programming systems (Salgótarján, 1990). *Pure Math. Appl. Ser. A* **1** (1991), *no.* 3-4, 275–286. (S. M. Goberstein) **93b:68051** 68Q70 (20M35)

— $(t; m, n)$-commutative automata. *Pure Math. Appl. Ser. A* **2** (1992), *no.* 3-4, 161–174. (Summary) **93d:68048** 68Q70 (20M35)

— On (m, n)-commutative semigroups. *Pure Math. Appl. Ser. A* **2** (1992), *no.* 3-4, 175–180. (Summary) **93f:20082** 20M14

Babelon, O. (*with* Bonora, L.) Exchange algebra in the conformal affine sl_2 Toda field theory. *Differential geometric methods in theoretical physics* (*Rapallo*, 1990), 173–184, *Lecture Notes in Phys.*, 375, *Springer, Berlin*, 1991. (Olga Kravchenko) **93b:81239** 81T40 (58F07)

— Integrable systems associated to the lattice version of the Virasoro algebra. I. The classical open chain. (English summary) *Integrable systems and quantum groups* (*Pavia*, 1990), 51–74, *World Sci. Publishing, River Edge, NJ*, 1992. (Stanislav Z. Pakuliak) **93k:58107** 58F07 (17B68, 35Q58, 81T25)

— (*with* Talon, Michel) Separation of variables for the classical and quantum Neumann model. *Nuclear Phys. B* **379** (1992), *no.* 1-2, 321–339. (Richard C. Churchill) **93g:58047** 58F05 (58F07, 81Q05)

Babenko, I. K. (*with* Bogatyi, S. A.) Behavior of the index of periodic points under iterations of a mapping. (Russian) *Izv. Akad. Nauk SSSR Ser. Mat.* **55** (1991), *no.* 1, 3–31; *translation in Math. USSR-Izv.* **38** (1992), *no.* 1, 1–26. (Georgii Osipenko) **93a:58139** 58F20 (55M20)

Babenko, V. F. On the best uniform approximations by splines in the presence of constraints on their derivatives. (Russian) *Mat. Zametki* **50** (1991), *no.* 6, 24–30, 156; *translation in Math. Notes* **50** (1991), *no.* 5-6, 1227–1232 (1992). (Gheorghe Micula) **93c:41017** 41A15

— On the best L_1-approximations by splines with constraints on their derivatives. (Russian. Russian summary) *Mat. Zametki* **51** (1992), *no.* 5, 12–19, 156; *translation in Math. Notes* **51** (1992), *no.* 5-6, 432–437. (Zhen Xiang Xiong) **93h:41011** 41A15

— Best approximations of classes of functions defined by means of a modulus of continuity. (Russian. Russian and Ukrainian summaries) *Ukraïn. Mat. Zh.* **44** (1992), *no.* 5, 579–589; *translation in Ukrainian Math. J.* **44** (1992), *no.* 5, 519–528 (1993). (L. G. Labsker) **93m:41012** 41A15 (41A30, 42A10)

Babenko, V. I. (*with* Pogorelov, A. V.) Geometric methods in the theory of stability of thin shells (a survey). (Russian. English and Ukrainian summaries) *Prikl. Mekh.* **28** (1992), *no.* 1, 3–22; *translation in Internat. Appl. Mech.* **28** (1992), *no.* 1, 1–17. (Introduction) **93g:73089** 73K15 (73H05)

Babënyshev, S. V. Decidability of the problem of the admissibility of inference rules in the modal logic S4.2. (Russian) *Proceedings of the XXIX All-Union Scientific Student Conference "The Student and Scientific-Technological Progress"* (*Russian*) (*Novosibirsk*, 1991), 3–6, *Novosibirsk. Gos. Univ., Novosibirsk*, 1991. (*see* **93k:00038**) 03B45

Babeshko, V. A. (*with* Glushkov, E. V.; Glushkova, N. V.) Energy vortices and backward fluxes in elastic waveguides. (English summary) *Wave Motion* **16** (1992), *no.* 3, 183–192. (Summary) **93f:73032** 73D15 (73D25)

Babev, V. D. (*with* Aleksandrov, G. A.) A new Banach space without the Kadec-Klee property. *Bull. Austral. Math. Soc.* **45** (1992), *no.* 3, 463–465. (Catherine Finet) **93f:46013** 46B20

Babić, D. Isospectral benzenoid graphs with an odd number of vertices. (English summary) Applied graph theory and discrete mathematics in chemistry (Saskatoon, SK, 1991). *J. Math. Chem.* **12** (1993), *no.* 1-4, 137–146. (Summary) **93m:92025** 92E10 (05C90)

Babich, M. D. ★ О приближенном решении одного класса нелинейных интегральных уравнений. (Russian) [Approximate solution of a class of nonlinear integral equations] Препринт [Preprint], 91-15. *Akad. Nauk Ukrain. SSR, Inst. Kibernet., Kiev*, 1991. 35 *pp.* (Summary) **93d:65111** 65R20 (45L05)

Babich, O. A. (*with* Pershin, O. Yu.) Problems involving taking into account constraints on the development of industrial systems in the case of the optimal development of oil fields. (Russian. Russian summary) *Avtomat. i Telemekh.* **1992**, *no.* 6, 132–138; *translation in Automat. Remote Control* **53** (1992), *no.* 6, *part* 2, 901–906. 49N55 (90A30)

Babich, V. M. Hadamard's ansatz, its analogues, generalizations and applications. (Russian. Russian summary) *Algebra i Analiz* **3** (1991), *no.* 5, 1–37; *translation in St. Petersburg Math. J.* **3** (1992), *no.* 5, 937–972. (Yu. V. Egorov) **93i:35004** 35A08 (35C20, 35L15)

— A case of the exact integrability of the SH-wave equation. (Russian. English and Russian summaries) *Zap. Nauchn. Sem. S.-Peterburg. Otdel. Mat. Inst. Steklov.* (*POMI*) **203** (1992), *Mat. Voprosy Teor. Rasprostr. Voln.* 22, 12–16, 173. (Valery Covachev) **93k:35253** 35Q72 (73D25)

— Construction of Gaussian beams with exponentially small residual. (Russian. English and Russian summaries) *Zap. Nauchn. Sem. S.-Peterburg. Otdel. Mat. Inst. Steklov.* (*POMI*) **203** (1992), *Mat. Voprosy Teor. Rasprostr. Voln.* 22, 17–20, 173–174. (Genowefa Majcher) **93m:35053** 35J15

Babillot, M. Comportement asymptotique du mouvement brownien sur une variété homogène à courbure négative ou nulle. (English summary) [Asymptotic behavior of Brownian motion on a homogeneous manifold with negative or zero curvature] *Ann. Inst. H. Poincaré Probab. Statist.* **27** (1991), *no.* 1, 61–90. (J. C. Taylor) **93b:60180** 60J65 (58G32)

Babin, A. V. (*with* Vishik, M. I.) ★ Attractors of evolution equations. Translated and revised from the 1989 Russian original by Babin. Studies in Mathematics and its Applications, 25. *North-Holland Publishing Co., Amsterdam*, 1992. x+532 *pp. ISBN* 0-444-89004-1 (Woodford W. Zachary) **93d:58090** 58F12 (35B40, 35K22, 47H20, 47N20, 58F39, 76D05)

— Asymptotic expansion at infinity of a strongly perturbed Poiseuille flow. *Properties of global attractors of partial differential equations*, 1–83, *Adv. Soviet Math.*, 10, *Amer. Math. Soc., Providence, RI*, 1992. (*see* **93i:58102**) 58F12 (35B40, 35Q30, 58F39, 76D05)

— *see also* **Properties of global attractors of partial differential equations, 93i:58102**

Babinkostov, V. An error estimate for the matrix-quadrature process. (Macedonian. Russian summary) *Mat. Bilten* **41** (1991), *no.* 15, 69–76. (Gradimir V. Milovanović) **93e:65034** 65D30

Baboolal, D. On local connectedness. (English summary) *Math. Japon.* **37** (1992), *no.* 5, 865–869. (Summary) **93f:54027** 54D05 (54C10, 54E15)

Babovsky, Hans (*with* Padula, Mariarosaria) A new contribution to nonlinear stability of a discrete velocity model. *Comm. Math. Phys.* **144** (1992), *no.* 1, 87–106. (Giuseppe Toscani) **93b:82060** 82C40 (76P05, 82B40)

— Efficient treatment of collisions in simulation codes for heavy-ion reactions. (English summary) *J. Sci. Comput.* **7** (1992), *no.* 2, 163–174. 82C40 (82C80)

Babu, B. Re. Victor *see* **Victorbabu, B. Re.**

Babu, Gutti Jogesh (*with* Rao, M. Bhaskara; Rao, Calyampudi Radhakrishna) Nonparametric estimation of survival functions under dependent competing risks. *Nonparametric functional estimation and related topics* (*Spetses*, 1990), 431–441, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 335, *Kluwer Acad. Publ., Dordrecht*, 1991. (Summary) **93a:62063** 62G05

— Smoothness of the distributions of arithmetic functions. (English summary) *New trends in probability and statistics, Vol.* 2 (*Palanga*, 1991), 191–199, *VSP, Utrecht*, 1992. (Jean-Loup Mauclaire) **93m:11079** 11K65

— (*with* Rao, Calyampudi Radhakrishna) Expansions for statistics involving the mean absolute deviations. (English summary) *Ann. Inst. Statist. Math.* **44** (1992), *no.* 2, 387–403. (Richard A. Johnson) **93m:62038** 62E20 (60F05)

— Subsample and half-sample methods. (English summary) *Ann. Inst. Statist. Math.* **44** (1992), *no.* 4, 703–720. (Jan Mielniczuk) **93k:62101** 62G09

— (*with* Feigelson, Eric D.) Analytical and Monte Carlo comparisons of six different linear least squares fits. *Comm. Statist. Simulation Comput.* **21** (1992), *no.* 2, 533–549. (Summary) **93e:62167** 62J05

— (*with* Rao, Calyampudi Radhakrishna; Rao, M. Bhaskara) Nonparametric estimation of specific occurrence/exposure rate in risk and survival analysis. *J. Amer. Statist. Assoc.* **87** (1992), *no.* 417, 84–89. (Niels Keiding) **93k:62080** 62G05 (62N05, 62P10)

— (*with* Serinko, Regis J.) Weak limit theorems for univariate k-mean clustering under a nonregular condition. *J. Multivariate Anal.* **41** (1992), *no.* 2, 273–296. (Zhi-Dong Bai) **93k:60062** 60F05 (62E20)

— (*with* Bai, Zhi Dong) Edgeworth expansions for errors-in-variables models. (English summary) *J. Multivariate Anal.* **42** (1992), *no.* 2, 226–244. (Jon Stene) **93j:62168** 62J05 (62E20, 62F12)

syam Babu, M. *see* **Syam Babu, M.**

Babu, V. (*with* Korpela, Seppo A.) On the direct solution of Poisson's equation on a nonuniform grid. (English summary) *J. Comput. Phys.* **104** (1993), *no.* 1, 93–98. 65N99 (65Y20)

Babu Joseph, K. (*with* Valsamma, K. M.; Ambika, G.) Multifractals in polynomial circle maps. *Phys. Lett. A* **165** (1992), *no.* 3, 231–234. (Summary) **93d:58106** 58F13

Baburin, Yu. S. An elementary method for inverting total singular integral equations of the second kind with a Hilbert kernel and with a degenerate regular part of the kernel. (Russian) *Boundary value problems for equations in mathematical physics* (*Russian*), 7–15, *Kuibyshev. Gos. Ped. Inst., Kuybyshev*, 1991. (From the text) **93h:45001** 45F15

Babuška, Ivo M. (*with* Suri, Manil) The p- and h-p versions of the finite element method, an overview. (English summary) *Spectral and high order methods for partial differential equations* (*Como*, 1989), 5–26, *North-Holland, Amsterdam*, 1990. (*see* **93d:65005**) 65N30 (73V05)

— (*with* Guo, Ben Qi; Stephan, E. P.) The h-p version of the boundary element method with geometric mesh on polygonal domains. (English summary) *Spectral and high order methods for partial differential equations* (*Como*, 1989), 319–325, *North-Holland, Amsterdam*, 1990. (*see* **93d:65005**) 65N30 (65N50)

— (*with* Szabo, Barna A.) ★ Finite element analysis. A Wiley-Interscience Publication. *John Wiley & Sons, Inc., New York*, 1991. xvi+368 *pp. ISBN* 0-471-50273-1 (Richard Scott) **93f:73001** 73-01 (73Kxx, 73V05, 76M10)

— (*with* Li, Li Kang) The corner singularity and boundary layer and computation for hierarchic plate model. (English summary) *Proceedings of International Conference on Scientific Computation* (*Hangzhou*, 1991), 109–120, *Ser. Appl. Math.*, 1, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93d:65004**) 73V05 (65N30)

— (*with* Oh, Hae Soo) The p-version of the finite element method for the elliptic boundary value problems with interfaces. *Comput. Methods Appl. Mech. Engrg.* **97** (1992), *no.* 2, 211–231. (Summary) **93a:65157** 65N30

— (*with* Planck, L.; Rodríguez, Rodolfo) Basic problems of a posteriori error estimation. (English summary) Reliability in computational mechanics (Kraków, 1991). *Comput. Methods Appl. Mech. Engrg.* **101** (1992), *no.* 1-3, 97–112. (Summary) **93h:73036** 73V05

— (*with* Plank, Lothar; Rodríguez, Rodolfo) Quality assessment of the a posteriori error estimation in finite elements. *Finite Elem. Anal. Des.* **11** (1992), *no.* 4, 285–306. (Summary) **93c:65137** 65N30 (65N15)

— (*with* Suri, Manil) Locking effects in the finite element approximation of elasticity problems. *Numer. Math.* **62** (1992), *no.* 4, 439–463. (Luis Trabucho) **93i:65108** 65N30 (73V05)

— (*with* Durán, Ricardo; Rodríguez, Rodolfo) Analysis of the efficiency of an a posteriori error estimator for linear triangular finite elements. *SIAM J. Numer. Anal.* **29** (1992), *no.* 4, 947–964. (Summary) **93d:65096** 65N30 (65N15)

— (*with* Elman, H. C.; Markley, K.) Parallel implementation of the hp-version of the finite element method on a shared-memory architecture. (English summary) *SIAM J. Sci. Statist. Comput.* **13** (1992), *no.* 6, 1433–1459. (Summary) **93h:65179** 65Y05 (65N30)

— (*with* Rodríguez, Rodolfo) The problem of the selection of an a posteriori error indicator based on smoothening techniques. (English summary) *Internat. J. Numer. Methods Engrg.* **36** (1993), *no.* 4, 539–567. (Summary) **93k:65089** 65N30 (65N15, 73V05)

— *see also* **Cheng, Xiao Liang, 93c:65115** *and* **Reliability in computational mechanics, 93g:73001**

Bača, Martin On magic labellings of convex polytopes. (English summary) *Fourth Czechoslovakian Symposium on Combinatorics, Graphs and Complexity* (*Prachatice*, 1990), 13–16, *Ann. Discrete Math.*, 51, *North-Holland, Amsterdam*, 1992. (Summary) **93j:05134** 05C78

— On magic labelings of grid graphs. (English summary) *Ars Combin.* **33** (1992), 295–299. (Summary) **93d:05134** 05C78

— On magic labelings of honeycomb. (English summary) *Discrete Math.* **105** (1992), *no.* 1-3, 305–311. 05C78

— (*with* Holländer, I.) Labelings of a certain class of convex polytopes. *J. Franklin Inst.* **329** (1992), *no.* 3, 539–547. (Peter J. Slater) **93e:05085** 05C78

Baccarani, G. (*with* Ventura, D.; Gnudi, A.; Odeh, Farouk) Multidimensional spherical harmonics expansion of Boltzmann equation for transport in semiconductors. *Appl. Math. Lett.* **5** (1992), *no.* 3, 85–90. (Andrzej Palczewski) **93f:82067** 82D99 (78A55)

Baccelli, François (*with* Bambos, Nicholas; Walrand, Jean) On flows in stochastic marked graphs. (English summary) *Probab. Engrg. Inform. Sci.* **5** (1991), *no.* 2, 145–157. (Summary) **93f:68070** 68Q90 (90C60)

— (*with* Konstantopoulos, Panagiotis) Estimates of cycle times in stochastic Petri nets. *Applied stochastic analysis* (*New Brunswick, NJ*, 1991), 1–20, *Lecture Notes in Control and Inform. Sci.*, 177, *Springer, Berlin*, 1992. (Peter Gerrard Taylor) **93f:68071** 68Q90 (60G10, 60G17, 60J80)

— (*with* Liu, Zhen) On a class of stochastic recursive sequences arising in queueing theory. *Ann. Probab.* **20** (1992), *no.* 1, 350–374. (Volker Schmidt) **93c:60137** 60K25

— Ergodic theory of stochastic Petri networks. *Ann. Probab.* **20** (1992), *no.* 1, 375–396. (Peter Gerrard Taylor) **93a:68110** 68Q90 (60G10, 60G17, 68Q75)

— (*with* Liu, Zhen) Comparison properties of stochastic decision free Petri nets. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 12, 1905–1920. (Summary) **93k:68076** 68Q90

— (*with* Karpelevich, F. I.; Kel'bert, M. Ya.; Pukhal'skii, A. A.; Rybko, A. N.; Sukhov, Yu. M.) A mean-field limit for a class of queueing networks. *J. Statist. Phys.* **66** (1992), *no.* 3-4, 803–825. (K. M. Ramachandran) **93i:60165** 60K25

— (*with* Liu, Zhen) Generalized precedence-based queueing systems. (English summary) *Math. Oper. Res.* **17** (1992), *no.* 3, 615–639. (Summary) **93f:60144** 60K25 (68M20, 90B22)

Bacchus, Fahiem ★ Representing and reasoning with probabilistic knowledge. A logical approach to probabilities. MIT Press Series in Artificial Intelligence. *MIT Press, Cambridge, MA*, 1990. xviii+233 *pp. ISBN* 0-262-02317-2 (Joseph Y. Halpern) **93e:68122** 68T30 (03B48, 68T27)

— On probability distributions over possible worlds. *Uncertainty in artificial intelligence*, 4, 217–226, *Mach. Intell. Pattern Recogn.*, 9, *North-Holland, Amsterdam*, 1990. (Summary) **93e:68117** 68T27 (03B48)

— Default reasoning from statistics. (English summary) *AAAI-91. Proceedings, Ninth National Conference on Artificial Intelligence, Vol.* 1, 2, 392–398, *AAAI Press, Menlo Park, CA*, 1991. (Summary) **93j:68184** 68T27 (03B48, 03B70)

Baccini, Alain (*with* de Falguerolles, Antoine; Qannari, El Mostafa) Approche exploratoire de l'inégalité en situation multivariée. (English and French summaries) [Empirical multivariate analysis of income inequality] *Ann. Économ. Statist.* **1991**, *no.* 24, 61–87. (Summary) **93e:62159** 62H25 (62-07)

— (*with* Khoudraji, A.) Application d'un modèle d'association à l'analyse d'une table de taux. (English and French summaries) [Application of an association model to the analysis of a table of rates] *Rev. Statist. Appl.* **40** (1992), *no.* 4, 59–75. 62H17 (62H20)

Bacciotti, Andrea (*with* Boieri, Paolo) Stabilizability of oscillatory systems: a classical approach supported by symbolic computation. *Matematiche* (*Catania*) **45** (1990), *no.* 2, 319–335 (1991). (Michel Cotsaftis) **93b:93095** 93D15

di Bacco, Mario *see* **Di Bacco, Mario**

Bach, Alexander Indistinguishability, interchangeability, and indeterminism. *Statistics in science*, 149–166, *Boston Stud. Philos. Sci.*, 122, *Kluwer Acad. Publ., Dordrecht*, 1990. (G. A. Skorobogatov) **93i:81005** 81P05 (82B03)

— Why are independent bosons distributed according to Maxwell-Boltzmann statistics? *Europhys. Lett.* **14** (1991), *no.* 5, 391–396. (O. Penrose) **93b:82006** 82B10 (81V80)

— de Finetti's theorem and Bell-type correlation inequalities. *Europhys. Lett.* **16** (1991), *no.* 6, 513–518. (S. Gudder) **93b:81007** 81P05

Bach, Edward (*with* Furuta, Takayuki) Counterexample to a question on the operator equation $T(H^{1/n}T)^n = K$. (English summary) *Linear Algebra Appl.* **177** (1992), 157–162. (Summary) **93i:47020** 47A62 (47B15)

Bach, Eric (*with* Huelsbergen, Lorenz) Statistical evidence for small generating sets. (English summary) *Math. Comp.* **61** (1993), *no.* 203, 69–82. (D. R. Heath-Brown) **93k:11089** 11N69

Bacharach, Michael Backward induction and beliefs about oneself. *Synthese* **91** (1992), *no.* 3, 247–284. (Summary) **93b:90125** 90D40 (90A05, 90A06)

Bachas, C. A proof of exponential suppression of high-energy transitions in the anharmonic oscillator. *Nuclear Phys. B* **377** (1992), *no.* 3, 622–648. (Summary) **93b:81039** 81Q05

Bachelier, Louis ★ Calcul des probabilités. (French) [Probability theory] Reprint of the 1912 original. Les Grands Classiques Gauthier-Villars. [Gauthier-Villars Great Classics] *Éditions Jacques Gabay, Sceaux*, 1992. viii+517 *pp. ISBN* 2-87647-090-X (Editors) **93m:60001** 60–01 (01A75)

Bachelot, Alain Scattering of electromagnetic field by de Sitter-Schwarzschild black hole. *Nonlinear hyperbolic equations and field theory* (*Lake Como*, 1990), 23–35, *Pitman Res. Notes Math. Ser.*, 253, *Longman Sci. Tech., Harlow*, 1992. (*see* **93d:35003**) 83C57 (83C50)

— (*with* Pujols, Agnès) Équations intégrales espace-temps pour le système de Maxwell. (English summary) [Time-dependent integral equations for the Maxwell system] *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 8, 639–644. (Summary) **93a:65164** 65N38 (35Q60, 78A45)

Bacher, Roland (*with* Allouche, Jean-Paul) Toeplitz sequences, paperfolding, Towers of Hanoi and progression-free sequences of integers. (English summary) *Enseign. Math.* (2) **38** (1992), *no.* 3-4, 315–327. (Gérald Tenenbaum) **93j:11017** 11B85 (28D05)

Bachmair, Leo ★ Canonical equational proofs. Progress in Theoretical Computer Science. *Birkhäuser Boston, Inc., Boston, MA*, 1991. x+135 *pp. ISBN* 0-8176-3555-6 (Ursula Martin) **93e:68111** 68T15 (03B25, 68–01, 68Q40, 68Q42)

— Associative-commutative reduction orderings. (English summary) *Inform. Process. Lett.* **43** (1992), *no.* 1, 21–27. (Summary) **93i:68103** 68Q42 (68T15)

Bachoc, C. (*with* Kwon, S.-H.) Sur les extensions de groupe de Galois $\widetilde{A}_4$. [On extensions of Galois group $\widetilde{A}_4$] *Acta Arith.* **62** (1992), *no.* 1, 1–10. (Jaime-Luis Garcia-Roig) **93i:12006** 12F12 (11R32)

bella Baci, Abderrazak *see* **Bella Baci, Abderrazak**

Bačik, R. (*with* Aleš, J.) Strong elimination ordering of the total graph of a tree. (English summary) *Discrete Appl. Math.* **39** (1992), *no.* 3, 293–295. (Summary) **93g:05128** 05C85 (05C05, 68R10)

Back, Kerry (*with* Brown, David P.) GMM, maximum likelihood, and nonparametric efficiency. (English summary) *Econom. Lett.* **39** (1992), *no.* 1, 23–28. (Summary) **93c:62035** 62F10 (62G20)

Backelin, Jörgen Some homological properties of "high" Veronese subrings. With corrections to: "On the rates of growth of the homologies of Veronese subrings" [in *Algebra, algebraic topology and their interactions* (Stockholm, 1983), 79–100, Lecture Notes in Math., 1183, Springer, Berlin, 1986; MR 87k:13042]. *J. Algebra* **146** (1992), *no.* 1, 1–17. (From the introduction) **93h:13001** 13A02

de Backer, Bruno *see* **De Backer, Bruno**

Backes, W. (*with* Schwiegelshohn, U.; Thiele, L.) Multidimensional discrete event systems and their applications in parallel program design. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, II* (*Kobe*, 1991), 67–72, *Mita, Tokyo*, 1992. (*see* **93g:93006**) 05C90 (68N05)

Backhaus, G. Zum Evolutionsgesetz der kinematischen Verfestigung in objektiver Darstellung. (English and German summaries) [On the law of evolution of kinematic hardening in objective presentation] *Z. Angew. Math. Mech.* **72** (1992), *no.* 9, 397–406. (Summary) **93i:73022** 73E05 (73E50)

Backlund, Ulf ★ Envelopes of holomorphy for bounded holomorphic functions. Dissertation, Umeå Universitet, Umeå, 1992. Doctoral Thesis, 2. *University of Umeå, Department of Mathematics, Umeå*, 1992. iv+77 *pp. ISBN* 91-7174-677-3 (Stefano Trapani) **93e:32016** 32D10

Bäckström, Christer (*with* Nebel, Bernhard) On the computational complexity of temporal projection and plan validation. (English summary) *AAAI-92. Proceedings, Tenth National Conference on Artificial Intelligence* (*San Jose, CA*, 1992), 748–753, *Amer. Assoc. Artif. Intell., Menlo Park, CA*, 1992. (*see* **93j:68007**) 68T27 (03B70)

Backx, A. C. P. M. (*with* Zhu, Yu Cai) MIMO process identification for controller design: test signals, nominal model and error bounds. (English summary) *Identification and system parameter estimation* 1991, *Vol.* 1,2 (*Budapest*, 1991), 127–132, *IFAC Sympos. Ser.*, 3, *Pergamon, Oxford*, 1992. (*see* **93h:93009**) 93B30

Bacopoulos, A. (*with* Botsaris, C. A.) A new conic method for unconstrained minimization. *J. Math. Anal. Appl.* **167** (1992), *no.* 1, 12–31. (Vincenţiu Dumitru) **93c:90073** 90C30 (65K10)

Bacro, Jean-Noël (*with* Brito, Margarida) Comportement asymptotique presque sûr de la différence de statistiques d'ordre uniformes. (English summary) [Almost sure asymptotic behavior of the difference of uniform order statistics] *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 4, 317–320. (Summary) **93a:60044** 60F15 (60G70, 62G30)

Bacry, Emmanuel (*with* Muzy, J. F.; Arneodo, Alain) Singularity spectrum of fractal signals from wavelet analysis: exact results. (English summary) *J. Statist. Phys.* **70** (1993), *no.* 3-4, 635–674. (Remo Badii) **93m:58065** 58F11 (28A80, 42C15)

Bacry, H. Le spin et la relativité restreinte. (English and French summaries) [Spin and special relativity] *Ann. Inst. H. Poincaré Phys. Théor.* **56** (1992), *no.* 4, 345–356. (Dominique Lambert) **93j:83005** 83A05 (81V17)

Bacsó, G. (*with* Tuza, Zsolt) Domination properties and induced subgraphs. (English summary) Graph theory and combinatorics (Marseille-Luminy, 1990). *Discrete Math.* **111** (1993), *no.* 1-3, 37–40. (Summary) **93m:05158** 05C75

nguyen Bac Van *see* **Nguyen Bac Van**

Bacyinszki, János Lattice of pr-closed classes of logical functions. (Hungarian. English and Hungarian summaries) *Alkalmaz. Mat. Lapok* **15** (1990/91), *no.* 3-4, 289–302. (Summary) **93g:03052** 03G05 (06E30)

Badaev, S. A. Weakly precomplete positive equivalences. (Russian) *Sibirsk. Mat. Zh.* **32** (1991), *no.* 2, 166–169, 213; *translation in Siberian Math. J.* **32** (1991), *no.* 2, 321–323. (Roman Murawski) **93a:03043** 03D25

— On a problem of S. S. Goncharov. (Russian) *Sibirsk. Mat. Zh.* **32** (1991), *no.* 3, 212–214; *translation in Siberian Math. J.* **32** (1991), *no.* 3, 532–534 (1992). (Andrzej Orlicki) **93h:03063** 03D45

— On minimal enumerations. (English summary) Siberian Advances in Mathematics. *Siberian Adv. Math.* **2** (1992), *no.* 2, 1–30. (Andrzej Orlicki) **93h:03064** 03D45

Badahdah, S. O. (*with* Ahmed, S. E.) On the estimation of the mean vector of a multivariate normal distribution under symmetry. *Comm. Statist. Theory Methods* **21** (1992), *no.* 6, 1759–1778. 62H12

Badalbaev, I. S. (*with* Mukhitdinov, A. A.) ★ Статистические задачи многотипных ветвящихся процессов. (Russian) [Statistical problems for multitype branching processes] "*Fan*", *Tashkent*, 1990. 108 *pp. ISBN* 5-648-00710-8 (Summary) **93c:62138** 62M05 (60J80)

Badalyan, G. V. ★ Квазистепенной ряд и квазианалитические классы функций. (Russian) [A quasipower series and quasi-analytic classes of functions] "*Nauka*", *Moscow*, 1990. 208 *pp. ISBN* 5-02-014463-0 (A. A. Borichev) **93c:26023** 26E10 (30D60, 40G99)

Badanin, A. V. (*with* Belinskiĭ, B. P.; Il'inskiĭ, K. N.; Uzdin, V. M.) Supersymmetry and acoustic problems. (Russian. English and Russian summaries) *Teoret. Mat. Fiz.* **90** (1992), *no.* 3, 407–411; *translation in Theoret. and Math. Phys.* **90** (1992), *no.* 3, 277–280. (Summary) **93f:76080** 76N10 (35Q35, 35Q40, 76Q05)

Badard, R. (*with* Mashhour, Ali S.; Ramadan, A. A.) On *L*-fuzzy pretopological spaces. (English summary) *Fuzzy Sets and Systems* **49** (1992), *no.* 2, 215–221. (Summary) **93f:54003** 54A40 (04A72)

Bade, W. G. (*with* Dales, H. G.) The Wedderburn decomposability of some commutative Banach algebras. *J. Funct. Anal.* **107** (1992), *no.* 1, 105–121. (E. A. Gorin) **93d:46090** 46J99 (43A15)

Badea, Cătălin The Gleason-Kahane-Żelazko theorem and Ransford's generalised spectra. (French summary) *C. R. Acad. Sci. Paris Sér. I Math.* **313** (1991), *no.* 10, 679–683. (R. Arens) **93a:46086** 46H05 (46H30)

Badiale, Marino Monotonicity of solutions for elliptic systems on unbounded domains. (Italian summary) *Boll. Un. Mat. Ital. A* (7) **6** (1992), *no.* 1, 59–69. (Guo Chun Wen) **93g:35037** 35J55 (35J65)

— (*with* Bardi, Martino) Asymptotic symmetry of solutions of nonlinear partial differential equations. *Comm. Pure Appl. Math.* **45** (1992), *no.* 7, 899–921. (J. Chrastina) **93c:35035** 35J60 (35A30, 35F99, 35J70)

Badii, R. (*with* Finardi, M.; Broggi, G.) Unfolding complexity and modelling asymptotic scaling behavior. (English summary) *Chaos, order, and patterns* (*Lake Como*, 1990), 259–275, *NATO Adv. Sci. Inst. Ser. B Phys.*, 280, *Plenum, New York*, 1991. (Summary) **93k:58075** 58F03

Bad'in, A. V. Isometric embeddings of revolution metrics given on a sphere in the form of surfaces of revolution in E^4. (Russian. Russian summary) *Vestnik Moskov. Univ. Ser. III Fiz. Astronom.* **33** (1992), *no.* 2, 24–29. (Vladislav Goldberg) **93g:53009** 53A07 (53A05)

Badiozzaman, A. J. (*with* Thorpe, B.) A uniform ergodic theorem and summability. *Bull. London Math. Soc.* **24** (1992), *no.* 4, 351–360. (Alberto de la Torre) **93i:47009** 47A35 (40G05, 40J05)

Badora, Roman On a joint generalization of Cauchy's and d'Alembert's functional equations. *Aequationes Math.* **43** (1992), *no.* 1, 72–89. (B. Crstici) **93a:39022** 39B52 (43A99)

Badr, Ahmed Z. Adaptive controller for minimum phase multi-input multi-output systems. (English summary) *Internat. J. Systems Sci.* **23** (1992), *no.* 9, 1527–1532. 93C40 (93E35)

Badralexe, Eugene (*with* Marksteiner, P.; Oh, Y.; Freeman, A. J.) Computation of the Kummer functions and Whittaker functions by using Neumann type series expansions. (English summary) *Comput. Phys. Comm.* **71** (1992), *no.* 1-2, 47–55. (Summary) **93e:65033** 65D20 (33–04)

Badran, N. A. (*with* Boutros, Y. Z.; Abd-el-Malek, M. B.) Group-theoretic approach for solving time-independent free-convective boundary layer flow on a nonisothermal vertical flat plate. (Russian and Polish summaries) *Arch. Mech.* (*Arch. Mech. Stos.*) **42** (1990), *no.* 3, 377–395 (1991). (From the summary) **93a:76030** 76D10 (76R10, 80A20)

Badri, Matooq Ahmad (*with* Sejeeni, Fowzi Ahmad) The moment spaces of normed linear spaces. *Bull. Austral. Math. Soc.* **45** (1992), *no.* 2, 277–283. (M. S. Ramanujan) **93c:46028** 46B20

Badriev, I. B. (*with* Voloshanovskaya, S. N.) ★ Численные методы. (Russian) [Numerical methods] Приближение функций и численное интегрирование. [Approximation of functions, and numerical integration] *Kazan. Gos. Univ., Kazan'*, 1990. 172 *pp.* (Editors) **93m:65001** 65–01 (41–01, 65Dxx)

— (*with* Karchevskiĭ, M. M.) Convergence of an iterative process in a Banach space. (Russian) *Issled. Prikl. Mat. No.* 17 (1990), 3–15. (Hong Kun Xu) **93a:47067** 47H17 (47H05, 47H15, 65J15)

Badrinath, B. R. (*with* Acharya, Arup) Recording distributed snapshots based on causal order of message delivery. (English summary) *Inform. Process. Lett.* **44** (1992), *no.* 6, 317–321. 68M10

Badrinath, Vivek (*with* Mazumdar, Ravi R.; Guillemin, Fabrice; Kannurpatti, Raghavan) On pathwise behavior of queues. (English summary) *Oper. Res. Lett.* **12** (1992), *no.* 4, 263–270. (Summary) **93g:90038** 90B22 (60K25)

Badyukov, V. F. Uniqueness of the solution of three types of boundary value problems of scattering by a periodic boundary. (Russian. Russian summary) *Applied numerical analysis and mathematical modeling* (*Russian*), 28–37, 174–175, *Akad. Nauk SSSR, Dal'nevostochn. Otdel., Vladivostok*, 1989. (*see* **93d:00029**) 35P25 (35J05)

— Asymptotics of Fourier coefficients in a problem of scattering by periodic boundaries. (Russian. Russian summary) *Asymptotic methods in the theory of systems* (*Russian*), 165–190, 278–279, *Akad. Nauk SSSR Sibirsk. Otdel., Irkut·sk. Nauchn. Tsentr, Irkutsk*, 1989. (Summary) **93f:35039** 35J05 (35P25)

— Two-sided estimates for Fourier coefficients in a problem of scattering by a periodic surface. A logarithmic boundary. (Russian. Russian summary) *Asymptotic methods in the theory of systems* (*Russian*), 255–275, 280, *Akad. Nauk SSSR Sibirsk. Otdel., Irkut·sk. Nauchn. Tsentr, Irkutsk*, 1989. (Summary) **93f:35169** 35P25 (35J05)

Badzo, M. I. (*with* Vasil'eva, N. V.; Ivanchov, M. I.) Some inverse problems of heat conduction with integral overdetermination. (Ukrainian) *Visnik L'viv. Univ. Ser. Mekh. Mat. No.* 34 (1990), 3–7. 35R30 (35K05)

Bae, Hyeong Ohk (*with* Poston, Timothy; Lee, Chung-Nim) Bifurcation structure of the Eckalbar stock-holding model. *Appl. Math. Comput.* **48** (1992), *no.* 1, 21–43. (Masafumi Sasaki) **93a:90022** 90B05 (58F14, 58F40)

Bae, Jong-Il (*with* Ahn, Doo-Soo; Lee, Seung; Shim, Jae-Sun) A study on estimation of bilinear systems via single term of orthogonal functions. *Control theory, stochastic analysis and applications* (*Hangzhou*, 1991), 236–245, *World Sci. Publishing, River Edge, NJ*, 1991. (*see* **93a:93005**) 93E10

Bae, Sung Han (*with* Kim, Jae Moon; Lee, In-Sok) Cyclotomic units in Z_p-extensions. *Israel J. Math.* **75** (1991), *no.* 2-3, 161–165. (Nancy Childress) **93i:11120** 11R23

— Values of L-functions at $s = 0$. *Arch. Math.* (*Basel*) **58** (1992), *no.* 6, 551–560. (Ted Chinburg) **93i:11133** 11R42 (11R34, 14F20)

— (*with* Hahn, Sang-Geun) On the ring of integers of cyclotomic function fields. *Bull. Korean Math. Soc.* **29** (1992), *no.* 1, 153–163. (David Goss) **93a:11050** 11G09 (11R58)

— (*with* Kang, Pyung-Lyun) On Tate-Drinfel'd modules. *Canad. Math. Bull.* **35** (1992), *no.* 2, 145–151. (David Goss) **93b:11073** 11G09

— On the modular equation for Drinfel'd modules of rank 2. (English summary) *J. Number Theory* **42** (1992), *no.* 2, 123–133. (David Goss) **93g:11060** 11G09 (11G15)

— (*with* Koo, Ja Kyung) On the singular Drinfel'd modules of rank 2. *Math. Z.* **210** (1992), *no.* 2, 267–275. (Ernst-Ulrich Gekeler) **93d:11061** 11G09 (11G15, 11R58)

— (*with* Kang, Pyung-Lyun) Local isogeny theorem for Drinfel'd modules with nonintegral invariants. *Proc. Amer. Math. Soc.* **119** (1993), *no.* 1, 19–25. (David Goss) **93k:11054** 11G09 (14F30)

Baehmann, Peggy L. (*with* Shephard, Mark S.; Flaherty, Joseph E.) A posteriori error estimation for triangular and tetrahedral quadratic elements using interior residuals. The Second World Congress of Computational Mechanics, Part III (Stuttgart, 1990). *Internat. J. Numer. Methods Engrg.* **34** (1992), *no.* 3, 979–996. (Summary) **93a:73076** 73V05

Baek, Ehung G. (*with* Brock, William A.) A nonparametric test for independence of a multivariate time series. *Statist. Sinica* **2** (1992), *no.* 1, 137–156. (Zuzana Prášková) **93d:62085** 62G10 (62M10)

Baek, In Soo (*with* Lee, Hung Hwan) On d-measure and d-dimension. *Real Anal. Exchange* **17** (1991/92), *no.* 2, 590–596. (B. Rodríguez-Salinas) **93f:28005** 28A78 (26A27)

— (*with* Lee, Hung Hwan) Dimensions of a Cantor type set and its distribution sets. *Kyungpook Math. J.* **32** (1992), *no.* 2, 149–152. (William Douglas Withers) **93m:58069** 58F12 (28A78, 28A80, 58F11)

Baek, Jong-il (*with* Kim, Tae-Sung) Relationships among some concepts of multivariate negative dependence. *J. Korean Statist. Soc.* **20** (1991), *no.* 1, 77–83. (Ramesh C. Gupta) **93b:62087** 62H20

Baekler, P. (*with* Mielke, Eckehard W.; Hehl, Friedrich W.) Dynamical symmetries in topological 3D gravity with torsion. *Nuovo Cimento B* (11) **107** (1992), *no.* 1, 91–110. (Carl Brans) **93d:83053** 83D05 (81V17)

Baĭkova, S. O. (*with* Turbaev, B. E.) Local invariant manifolds of a singularly perturbed system. (Russian. Russian summary) *Nonlinear problems in the theory of differential equations* (*Russian*), 9–14, *Akad. Nauk Ukrain. SSR, Inst. Mat., Kiev*, 1991. (Summary) **93i:34082** 34C30 (34E15)

Baer, Detlef Punktverteilungen in Würfeln beliebiger Dimension bezüglich der Maximum-norm. [Point distributions in cubes of arbitrary dimension with respect to the maximum norm] *Wiss. Z. Pädagog. Hochsch. Erfurt/Mühlhausen Math.-Natur. Reihe* **28** (1992), *no.* 1, 87–92. (Béla Uhrin) **93k:52017** 52C10

Baer, M. (*with* Embid, Pedro) Mathematical analysis of a two-phase continuum mixture theory. (English summary) *Contin. Mech. Thermodyn.* **4** (1992), *no.* 4, 279–312. (Summary) **93h:80004** 80A25 (35Q35, 73B30, 76T05)

Baer, Stephen C. The discovery of space frames with fivefold symmetry. *Fivefold symmetry*, 205–219, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93i:52002**) 00A69 (52C25)

de Baerdemaeker, J. *see* **De Baerdemaeker, J.**

de Baere, W. *see* **De Baere, W.**

Baesens, Claude Noise effect on dynamic bifurcations: the case of a period-doubling cascade. *Dynamic bifurcations* (*Luminy*, 1990), 107–130, *Lecture Notes in Math.*, 1493, *Springer, Berlin*, 1991. (Helena E. Nusse) **93i:58112** 58F14 (58F30)

— (*with* Guckenheimer, John; Kim, Seung-hwan; MacKay, Robert S.) Three coupled oscillators: mode-locking, global bifurcations and toroidal chaos. *Phys. D* **49** (1991), *no.* 3, 387–475. (Henk Broer) **93c:58155** 58F14 (34C15, 34C23, 58F13, 58F27, 70K50)

— (*with* MacKay, Robert S.) Uniformly travelling water waves from a dynamical systems viewpoint: some insights into bifurcations from Stokes' family. (English summary) *J. Fluid Mech.* **241** (1992), 333–347. (Mikhail Zaks) **93h:76007** 76B15 (58F14, 76E99)

— (*with* Aubry, Serge; MacKay, Robert S.) Equivalence of uniform hyperbolicity for symplectic twist maps and phonon gap for Frenkel-Kontorova models. *Phys. D* **56** (1992), *no.* 2-3, 123–134. (James D. Meiss) **93e:58144** 58F15 (58F05, 70H05, 70K50)

Baessler, Felix A heuristic 0-1 integer programming method. (German summary) *OR Spektrum* **14** (1992), *no.* 1, 11–18. (Ferenc Forgó) **93c:90044** 90C09 (65K05)

Baêta Segundo, J. A. (*with* Amaro de Matos, J. M. G.; Perez, J. Fernando) Fluctuations in dilute antiferromagnets: Curie-Weiss models. *J. Phys. A* **25** (1992), *no.* 10, 2819–2830. (Summary) **93b:82071** 82C44

Baeten, J. C. M. (*with* Akkerman, G. J.) Term rewriting analysis in process algebra. *CWI Quarterly* **4** (1991), *no.* 4, 257–267. (Peter R. J. Asveld) **93f:68054** 68Q42 (68Q10, 68Q60)

— *see also* **Applications of process algebra, 93g:68090**

Baev, A. V. A method for solving an inverse dynamic problem of seismics with absorption. (Russian. Russian summary) *Direct and inverse problems in mathematical physics* (*Russian*), 26–30, 259, *Moskov. Gos. Univ., Moscow*, 1991. (Summary) **93k:86012** 86A22 (73D50)

— (*with* Tabakov, A. A.) Solution of inverse problems of seismic profiling and monitoring during borehole drilling. (Russian) *Dokl. Akad. Nauk* **324** (1992), *no.* 1, 73–76. (Introduction) **93m:86003** 86A15 (35R30, 73D50)

Baez, John C. Differential calculi on quantum vector spaces with Hecke-type relations. *Lett. Math. Phys.* **23** (1991), *no.* 2, 133–141. (Michael Ringe) **93c:58019** 58B30 (16W30, 17B37, 81R50)

— (*with* Bishop, Alan R.; Dandoloff, Rossen) On the Hopf term in a two-dimensional σ model for antiferromagnets. *Modern Phys. Lett. B* **5** (1991), *no.* 30, 2003–2005. (Ioan Bâldea) **93f:82017** 82B21 (82D40)

— (*with* Segal, Irving E.; Zhou, Zheng-Fang) ★ Introduction to algebraic and constructive quantum field theory. Princeton Series in Physics. *Princeton University Press, Princeton, NJ*, 1992. xviii+291 *pp. ISBN* 0-691-08546-3 (Giuseppina Epifanio) **93m:81002** 81–02 (46L60, 46N50, 81T05, 81T08)

— (*with* Zhou, Zheng-Fang) Renormalized oscillator Hamiltonians. *Adv. Math.* **92** (1992), *no.* 1, 106–127. (Tony C. Dorlas) **93e:81020** 81Q15 (47A55, 47N50, 81T08)

— R-commutative geometry and quantization of Poisson algebras. (English summary) *Adv. Math.* **95** (1992), *no.* 1, 61–91. (Palle E. T. Jørgensen) **93j:58009** 58B30 (16W55, 18G50, 46L87)

— (*with* Zhou, Zheng-Fang) On quantum fields satisfying a given wave equation. *J. Funct. Anal.* **106** (1992), *no.* 2, 439–453. (Bruce K. Driver) **93f:81076** 81T08 (47N50)

— Link invariants of finite type and perturbation theory. (English summary) *Lett. Math. Phys.* **26** (1992), *no.* 1, 43–51. (Jorge A. Pullin) **93k:57006** 57M25 (81T10, 83C45)

Báez, José J. Existence of unsolvable equations according to Galois. (Spanish. Spanish summary) *Rev. Mat. Dominicana No.* 5-6 (1990), 1–11. 12F10

Baeza, Ricardo (*with* Aravire, Roberto) Milnor's k-theory and quadratic forms over fields of characteristic two. *Comm. Algebra* **20** (1992), *no.* 4, 1087–1107. (Hong You) **93a:11030** 11E81 (19G12)

Baeza-Vega, R. (*with* Benavides, R.) Some $\mathcal{J}$-algebras of rank 3 with associative bilinear forms. (Spanish) *Proyecciones* **11** (1992), *no.* 1, 29–35. (Summary) **93c:16006** 16D70

— (*with* Benavides, R.) Associative bilinear forms in some baric algebras. (English summary) *Linear Algebra Appl.* **180** (1993), 219–226. (Summary) **93k:17061** 17D92 (17C10)

Baeza-Yates, Ricardo A. (*with* Cunto, Walter) Unbalanced multiway trees improved by partial expansions. (English summary) *Acta Inform.* **29** (1992), *no.* 5, 443–460. (Summary) **93f:68020** 68P05

— (*with* Gonnet, Gaston H.; Ziviani, Nivio) Improved bounds for the expected behaviour of AVL trees. *BIT* **32** (1992), *no.* 2, 297–315. (Boris Derzhavets) **93i:68059** 68P20 (05C05, 05C85)

Bagai, Isha (*with* Prakasa Rao, B. L. S.) Estimation of the survival function for stationary associated processes. *Statist. Probab. Lett.* **12** (1991), *no.* 5, 385–391. (G. Roussas) **93e:62101** 62G05

— (*with* Prakasa Rao, B. L. S.) Analysis of survival data with two dependent competing risks. (English summary) *Biometrical J.* **34** (1992), *no.* 7, 801–814. (Summary) **93j:62236** 62N05 (62G05, 62P10)

Bagarello, F. (*with* Morchio, G.) Dynamics of mean-field spin models from basic results in abstract differential equations. *J. Statist. Phys.* **66** (1992), *no.* 3-4, 849–866. (Guido A. Raggio) **93c:82034** 82C10 (46L60)

Bagby, T. (*with* Gauthier, Paul M.) Uniform approximation by global harmonic functions. *Approximation by solutions of partial differential equations* (*Hanstholm*, 1991), 15–26, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 365, *Kluwer Acad. Publ., Dordrecht*, 1992. (Manfred Stoll) **93g:31015** 31C12 (30F15)

Bagchi, A. *see* **Bagchi, Arunabha**

Bagchi, Amitava (*with* Schmeichel, Edward; Hakimi, S. Louis) Sequential information dissemination by packets. *Networks* **22** (1992), *no.* 4, 317–333. (Summary) **93c:68006** 68M10 (68Q25, 90B12)

Bagchi, Anindo (*with* Hakimi, S. Louis) Data transfers in broadcast networks. (English summary) *IEEE Trans. Comput.* **41** (1992), *no.* 7, 842–847. (Summary) **93i:68024** 68M20 (05C90)

Bagchi, Arunabha (*with* ten Brummelhuis, P.) Parameter identification in hyperbolic systems with boundary noise. (English summary) *Identification and system parameter estimation* 1991, *Vol.* 1,2 (*Budapest*, 1991), 1151–1154, *IFAC Sympos. Ser.*, 3, *Pergamon, Oxford*, 1992. (*see* **93h:93009**) 93C20 (93B30)

— (*with* Aihara, Shin'ichi) Maximum likelihood estimator for two-point boundary value process. (English summary) *SIAM J. Control Optim.* **31** (1993), *no.* 1, 147–158. (Yannis A. Phillis) **93j:93147** 93E12 (60H10, 62M09)

Bagchi, Bhaskar (*with* Brouwer, Andries; Wilbrink, H. A.) Notes on binary codes related to the O(5, q) generalized quadrangle for odd q. *Geom. Dedicata* **39** (1991), *no.* 3, 339–355. (Arrigo Bonisoli) **93e:51017** 51E22 (05B25, 51E12, 94B05, 94B25)

— (*with* Bagchi, Sunanda; Mukhopadhyay, A. C.) Covering morphisms between nets. *Ars Combin.* **33** (1992), 238–244. (Vladimir D. Tonchev) **93f:05014** 05B05 (62K05)

— On quasi-symmetric designs. *Des. Codes Cryptogr.* **2** (1992), *no.* 1, 69–79. (Vladimir D. Tonchev) **93c:05019** 05B05 (05B20, 05B30)

— *see also* **Schmidt, Bernhard, 93k:05024**

Bagchi, Parthasarathy (*with* Kadane, Joseph B.) Laplace approximation for curved surfaces. (English summary) *Bayesian analysis in statistics and econometrics* (*Bangalore*, 1988), 1–12, *Lecture Notes in Statist.*, 75, *Springer, New York*, 1992. (Summary) **93i:62024** 62F15

Bagchi, Sitadri N. Characterisations of classes of multivalued processes using Riesz approximations. (English summary) *J. Multivariate Anal.* **42** (1992), *no.* 1, 23–34. (Gabriella Salinetti) **93h:60072** 60G48 (46N30)

Bagchi, Sunanda (*with* Mukhopadhyay, A. C.; Sinha, Bikas Kumar) A search for optimal nested row-column designs. (English summary) *Sankhyā Ser. B* **52** (1990), *no.* 1, 93–104. (Summary) **93e:62181** 62K05 (62K10)

— (*with* Bagchi, Bhaskar; Mukhopadhyay, A. C.) Covering morphisms between nets. *Ars Combin.* **33** (1992), 238–244. (Vladimir D. Tonchev) **93f:05014** 05B05 (62K05)

— *see also* **Schmidt, Bernhard, 93k:05024**

Bagchi, Tapati (*with* Mukhopadhyay, Parimal) On comparing sampling strategies. (English and Hindi summaries) *J. Indian Soc. Agricultural Statist.* **44** (1992), *no.* 2, 138–148, ii. 62D05

Bagchi, Uttarayan (*with* Ahmadi, Reza H.) Minimizing job idleness in deadline constrained environments. (English summary) *Oper. Res.* **40** (1992), *no.* 5, 972–985. 90B35

Bagdasaryan, D. T. (*with* Oganisyan, I. V.) Boundary properties of M. M. Dzhrbashyan's functions $B_\alpha(z; z_k)$. (Russian. Armenian summary) *Akad. Nauk Armyan. SSR Dokl.* **90** (1990), *no.* 5, 199–205. (Translated from RZhMat 1992:4 B111) **93e:30070** 30D40

el Bagdouri, M. *see* **El Bagdouri, M.**

Bagemihl, F. The three-separated-arc property of functions in a disk. *Ann. Acad. Sci. Fenn. Ser. A I Math.* **16** (1991), *no.* 1, 169–172. (G. Piranian) **93j:30033** 30D40

Bagga, Kunwarjit S. (*with* Owens, Frank W.) Some graph-theoretic properties of deadlocks and traps in Petri nets. *Graph theory, combinatorics, and applications, Vol.* 1 (*Kalamazoo, MI*, 1988), 19–28, *Wiley-Intersci. Publ., Wiley, New York*, 1991. (Summary) **93d:68053** 68Q90 (05C90, 68R10)

— (*with* Beineke, Lowell W.; Lipman, Marc J.; Pippert, Raymond E.) The concept of leverage in network vulnerability. *Graph theory, combinatorics, and applications, Vol.*

1 (*Kalamazoo, MI*, 1988), 29–39, *Wiley-Intersci. Publ., Wiley, New York*, 1991. (*see* **93b:05002**) 05C90

— (*with* Beineke, Lowell W.; Lipman, Marc J.; Pippert, Raymond E.) Extensions of an algorithm for computing the edge-integrity of trees. *Graph theory, combinatorics, and applications, Vol.* 1 (*Kalamazoo, MI*, 1988), 41–53, *Wiley-Intersci. Publ., Wiley, New York*, 1991. (*see* **93b:05002**) 05C85

— (*with* Beineke, Lowell W.; Lipman, Marc J.; Pippert, Raymond E.) Explorations into graph vulnerability. *Graph theory, combinatorics, and applications, Vol.* 1 (*Kalamazoo, MI*, 1988), 143–158, *Wiley-Intersci. Publ., Wiley, New York*, 1991. (*see* **93b:05002**) 05C90

Baggen, C. P. M. J. (*with* Tolhuizen, L. M. G. M.) On the weight enumerator of product codes. (English summary) A collection of contributions in honour of Jack van Lint. *Discrete Math.* **106/107** (1992), 483–488. (Iiro Honkala) **93f:94022** 94B05

Bagger, Jonathan (*with* Goulian, Mark) Coulomb-gas construction on higher-genus Riemann surfaces. *Differential geometric methods in theoretical physics* (*Davis, CA*, 1988), 189–201, *NATO Adv. Sci. Inst. Ser. B Phys.*, 245, *Plenum, New York*, 1990. (David Sénéchal) **93i:81206** 81T40 (81T30)

— (*with* Wess, Julius) ★ Supersymmetry and supergravity. Second edition. Princeton Series in Physics. *Princeton University Press, Princeton, NJ*, 1992. x+259 *pp. ISBN* 0-691-08556-0; 0-691-02530-4 (Gheorghe Zet) **93a:81003** 81–02 (81T60, 83E50)

Baggett, Lawrence W. (*with* Packer, Judith A.) C^*-algebras associated to two-step nilpotent groups. *Selfadjoint and nonselfadjoint operator algebras and operator theory* (*Fort Worth, TX*, 1990), 1–6, *Contemp. Math.*, 120, *Amer. Math. Soc., Providence, RI*, 1991. (È. V. Kissin) **93d:22005** 22D25 (46L05)

— ★ Functional analysis. A primer. Monographs and Textbooks in Pure and Applied Mathematics, 153. *Marcel Dekker, Inc., New York*, 1992. xii+267 *pp. ISBN* 0-8247-8598-3 (Christian Fenske) **93a:46001** 46–01 (00A05, 47–01, 58–01)

Baggs, I. (*with* Freedman, H. I.) Convergence to equilibria in general models of unilingual-bilingual interactions. (English summary) *Differential equations models in biology, epidemiology and ecology* (*Claremont, CA*, 1990), 28–33, *Lecture Notes in Biomath.*, 92, *Springer, Berlin*, 1991. (*see* **93g:92001**) 92D20 (34C25)

Bagiński, Czesław Modular group algebras of 2-groups of maximal class. *Comm. Algebra* **20** (1992), *no.* 5, 1229–1241. (Andreas Caranti) **93a:20010** 20C05 (16U60, 20D15)

Bagirov, A. M. A method for the approximation of a subdifferential. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **32** (1992), *no.* 4, 652–658; *translation in Comput. Math. Math. Phys.* **32** (1992), *no.* 4, 561–566. (Nguyen Dong Yen) **93d:49016** 49J52 (65D15)

Bagirov, L. A. (*with* Kondrat'ev, V. A.) On the asymptotic behavior of solutions of differential equations in a Hilbert space. (Russian) *Mat. Sb.* **182** (1991), *no.* 4, 508–525; *translation in Math. USSR-Sb.* **72** (1992), *no.* 2, 485–501. (Russell C. Thompson) **93a:34073** 34G10 (34E05, 35D99, 35J45, 35R20)

— On the solutions for a class of elliptic equations degenerate at the boundary. *Symposium "Analysis on Manifolds with Singularities"* (*Breitenbrunn*, 1990), 20–27, *Teubner-Texte Math.*, 131, *Teubner, Stuttgart*, 1992. (*see* **93k:35004**) 35J70

Bagirova, N. Kh. Asymptotic behavior of the solution of the Bolza-Mayer problem in the critical case. (Russian. English and Azerbaijani summaries) *Akad. Nauk Azerbaidzhan. SSR Dokl.* **46** (1990), *no.* 4-5, 3–5 (1992). 49K40

Bagley, R. W. (*with* Wu, Ta Sun; Yang, Jeong Sheng) On connected groups and related topics. *Rocky Mountain J. Math.* **22** (1992), *no.* 1, 63–79. (Shunsuke Funakoshi) **93c:22006** 22D05 (22E05)

Baglivo, Jenny (*with* Olivier, Donald; Pagano, Marcello) Methods for exact goodness-of-fit tests. *J. Amer. Statist. Assoc.* **87** (1992), *no.* 418, 464–469. 62G10

Bagnoli, Franco Boolean derivatives and computation of cellular automata. *Internat. J. Modern Phys. C* **3** (1992), *no.* 2, 307–320. (Frederic Green) **93h:68100** 68Q80

— (*with* Rechtman, Raúl; Ruffo, Stefano) General algorithm for two-dimensional totalistic cellular automata. *J. Comput. Phys.* **101** (1992), *no.* 1, 176–184. 82C80 (68Q80)

Bagro, S. V. Some probabilistic inequalities and a central limit theorem in function spaces. (Russian) *Teor. Veroyatnost. i Mat. Statist. No.* 44 (1991), 8–16; *translation in Theory Probab. Math. Statist. No.* 44 (1992), 7–13. (Vladimir I. Chebotarev) **93h:60026** 60E15 (60B12, 60F17)

Bagrov, V. G. (*with* Shapovalov, A. V.; Shirokov, I. V.) Identities in the enveloping algebra on solutions of conformally-invariant wave equations. (Russian. Russian summary) *Izv. Vyssh. Uchebn. Zaved. Fiz.* **34** (1991), *no.* 9, 14–18; *translation in Soviet Phys. J.* **34** (1991), *no.* 9, 751–755 (1992). (Summary) **93k:58237** 58G35 (35A30, 81R20)

— (*with* Shapovalov, A. V.; Shirokov, I. V.) Methods for the generation of integrable potentials of the Schrödinger equation, and nonlocal symmetries. (Russian. Russian summary) *Izv. Vyssh. Uchebn. Zaved. Fiz.* **34** (1991), *no.* 9, 19–25; *translation in Soviet Phys. J.* **34** (1991), *no.* 9, 755–761 (1992). (Summary) **93j:35059** 35J10

— (*with* Obukhov, V. V.) Complete classification of Stäckel spaces of type (2.1) in the Brans-Dicke theory. (Russian) *Izv. Vyssh. Uchebn. Zaved. Fiz.* **35** (1992), *no.* 2, 93–96; *translation in Soviet Phys. J.* **35** (1992), *no.* 2, 177–180. 83D05

— (*with* Obukhov, V. V.; Sakhapov, A. G.) Stäckel electrovacuum spaces that admit complete separation of variables in a diagonalized Dirac equation. Type (2.1). (Russian) *Izv. Vyssh. Uchebn. Zaved. Fiz.* **35** (1992), *no.* 2, 116–120; *translation in Soviet Phys. J.* **35** (1992), *no.* 2, 198–201. 83C20 (83C50)

— (*with* Bukhbinder, I. L.; Shapiro, I. L.) Possible experimental manifestations of a torsion field. (Russian. Russian summary) *Izv. Vyssh. Uchebn. Zaved. Fiz.* **35** (1992), *no.* 3, 5–12; *translation in Soviet Phys. J.* **35** (1992), *no.* 3, 208–213. (Summary) **93f:83006** 83B05 (83D05)

— (*with* Obukhov, V. V.; Sakhapov, A. G.) Stäckel electrovacuum spaces that admit complete separation of variables in a diagonalized Dirac equation. Type (1, 1). (Russian) *Izv. Vyssh. Uchebn. Zaved. Fiz.* **35** (1992), *no.* 6, 31–34; *translation in Russian Phys. J.* **35** (1992), *no.* 6, 518–521. (A. V. Aminova) **93k:83017** 83C22 (83C20)

— (*with* Obukhov, V. V.) New method of integration for the Dirac equation on a curved space-time. *J. Math. Phys.* **33** (1992), *no.* 6, 2279–2289. (Summary) **93a:35128** 35Q40 (81T20)

— (*with* Belov, V. V.; Rogova, A. M.) Quasiclassically concentrated states in quantum mechanics. (Russian. English summary) *Teoret. Mat. Fiz.* **90** (1992), *no.* 1, 84–94; *translation in Theoret. and Math. Phys.* **90** (1992), *no.* 1, 55–61. (K. Wódkiewicz) **93b:81064** 81Q20

Bagshyev, A. A. On the stability of an integral manifold. (Russian. English summary) *Izv. Akad. Nauk Turkmen. SSR Ser. Fiz.-Tekhn. Khim. Geol. Nauk* **1991,** *no.* 5, 96–98. (From the text) **93m:34073** 34D35 (34C30, 34H05)

Bagwell, Kyle (*with* Staiger, Robert W.) The sensitivity of strategic and corrective R & D policy in battles for monopoly. (English summary) *Internat. Econom. Rev.* **33** (1992), *no.* 4, 795–816. 90A70 (90D40)

Bahar, Leon Y. (*with* Sosa, Horacio A.) Transition from Airy stress function to state space formulation of elasticity. (English summary) *J. Franklin Inst.* **329** (1992), *no.* 5, 817–828. (Summary) **93f:73025** 73C02

Bahl, Shashi (*with* Tuteja, R. K.) Multivariate product estimators. (English summary) *Calcutta Statist. Assoc. Bull.* **41** (1991), *no.* 161-164, 109–115. 62D05

Bahler, Dennis (*with* Bowen, James) Conditional existence of variables in generalized constraint networks. (English summary) *AAAI-91. Proceedings, Ninth National Conference on Artificial Intelligence, Vol.* 1, 2, 215–220, *AAAI Press, Menlo Park, CA*, 1991. (Summary) **93j:68188** 68T27

— (*with* Bowen, James; Lai, Robert) Lexical imprecision in fuzzy constraint networks. (English summary) *AAAI-92. Proceedings, Tenth National Conference on Artificial Intelligence* (*San Jose, CA*, 1992), 616–621, *Amer. Assoc. Artif. Intell., Menlo Park, CA*, 1992. (Summary) **93j:68189** 68T27 (03B52)

Bahnasawi, Ahmed A. (*with* Mahmoud, Magdi S.) Reduced-order adaptive control scheme. *Internat. J. Control* **55** (1992), *no.* 6, 1503–1520. 93C40

— *see also* **Liu, Xiao Ping[2]**

Bahouri, H. (*with* Dehman, B.) Remarque sur un problème de Cauchy semi-linéaire à données discontinues en un point. [Remark on a semilinear Cauchy problem with discontinuous data at one point] *Indiana Univ. Math. J.* **41** (1992), *no.* 1, 253–260. (Sergiu Aizicovici) **93c:35101** 35L70 (35R05)

Bahri, Abbas (*with* Rabinowitz, Paul H.) Periodic solutions of some problems of 3-body type. *Variational methods* (*Paris*, 1988), 383–394, *Progr. Nonlinear Differential Equations Appl.*, 4, *Birkhäuser Boston, Boston, MA*, 1990. (Shi Qing Zhang) **93k:58042** 58E05 (34C25, 58F05, 58F22, 70F07, 70H05)

— (*with* Lions, Pierre-Louis) Solutions of superlinear elliptic equations and their Morse indices. *Progress in variational methods in Hamiltonian systems and elliptic equations* (*L'Aquila*, 1990), 10–20, *Pitman Res. Notes Math. Ser.*, 243, *Longman Sci. Tech., Harlow*, 1992. (Xin Kang Guo) **93g:35044** 35J65 (58E05)

— (*with* Lions, Pierre-Louis) Solutions of superlinear elliptic equations and their Morse indices. (English summary) *Comm. Pure Appl. Math.* **45** (1992), *no.* 9, 1205–1215. (Vittorio Coti Zelati) **93m:35077** 35J65 (58E05)

Bahturin, Yu. A. *see* **Bakhturin, Yu. A.**

Bahya, Ahmed Ould Étude des cônes nucléaires. (English summary) [Study of nuclear cones] *Ann. Sci. Math. Québec* **15** (1991), *no.* 2, 123–133. (Juan Carlos Díaz Alcaide) **93a:46009** 46A40 (46A11)

Bai, Chang Yun Rearrangements of the coefficients of an entire function $f(z) = \sum_{n=0}^{\infty} a_n z^n$. (Chinese. English and Chinese summaries) *J. Central China Normal Univ. Natur. Sci.* **26** (1992), *no.* 3, 286–288. (Summary) **93k:30035** 30D10 (30B10)

Bai, Do Sun (*with* Hong, Y. W.) Estimation of $\Pr(X < Y)$ in the exponential case with common location parameter. *Comm. Statist. Theory Methods* **21** (1992), *no.* 1, 269–282. (Summary) **93c:62036** 62F10

— (*with* Kim, Sang Boo) Economic design of one-sided screening procedures based on a correlated variable with all parameters unknown. *Metrika* **39** (1992), *no.* 2, 85–93. (Elart von Collani) **93e:62255** 62N10

Bai, Dong Hua A free boundary problem governed by nonlinear degenerate equations of parabolic type. (English summary) *J. Partial Differential Equations* **5** (1992), *no.* 2, 37–52. (Krystyna Twardowska) **93g:35145** 35R35 (35K65, 76A05, 76M30)

— (*with* Tao, Fu Zhou; Li, Xiao Ping[2]; et al.) Mathematical inversion for two-sided logging. (Chinese. English and Chinese summaries) *Sichuan Daxue Xuebao* **29** (1992), *no.* 3, 352–359. (Summary) **93k:86013** 86A22 (65P05, 86–08)

Bai, Er Wei Uncertainty bound of sampled data systems. (English summary) *Systems Control Lett.* **19** (1992), *no.* 2, 151–156. 93C57

— (*with* Chyung, Dong H.) Improving delay estimates derived from least-square algorithms and Padé approximations. (English summary) *Internat. J. Systems Sci.* **24** (1993), *no.* 4, 745–756. (Summary) **93j:93036** 93B30 (93B40)

Bai, Shi Zhong Regular semi-open sets and semihomeomorphism space classes. (Chinese. English and Chinese summaries) *Pure Appl. Math.* **7** (1991), *no.* 1, 97–99. (Summary) **93k:54036** 54C10

— Fuzzy weak semicontinuity. *Fuzzy Sets and Systems* **47** (1992), *no.* 1, 93–98. (Summary) **93a:54003** 54A40 (04A72)

— Fuzzy strongly semiopen sets and fuzzy strong semicontinuity. (English summary) *Fuzzy Sets and Systems* **52** (1992), *no.* 3, 345–351. (Summary) **93m:54011** 54A40 (04A72)

Bai, Y. A modified Lobatto collocation for linear boundary value problems of differential-algebraic equations. (English and German summaries) *Computing* **49** (1992), *no.* 2, 139–150. (Lucas Jódar) **93m:65109** 65L10 (34A09, 34B05)

Bai, Yi Estimation of the lower bound of an optimal Hamiltonian cycle. (Chinese. English and Chinese summaries) *J. Northwest Univ.* **22** (1992), *no.* 2, 143–145. (Yong Bing Shi) **93j:05100** 05C45 (05C35, 05C38)

Bai, Yuan Huai On translation functors. (Chinese. English and Chinese summaries) *J. Math. (Wuhan)* **11** (1991), *no.* 3, 311–319. (Zong Zhu Lin) **93k:20062** 20G05

Bai, Z. D. *see* **Bai, Zhi Dong**

Bai, Zhao Jun (*with* Hu, D. Y.; Reichel, Lothar) An implementation of the GMRES method using QR factorization. (English summary) *Parallel processing for scientific computing* (*Houston, TX*, 1991), 84–91, *SIAM, Philadelphia, PA*, 1992. (*see* **93g:65178**) 65F05 (65Y05)

Bai, Zhi Dong (*with* Rao, Calyampudi Radhakrishna; Yin, Yong Quan) Least absolute deviations analysis of variance. (English summary) *Sankhya Ser. A* **52** (1990), *no.* 2, 166–177. (Summary) **93d:62121** 62J05 (62J10)

— (*with* Chow, Mo Suk) Inadmissibility of the maximum likelihood estimator in the sequential estimation of the size of a population. *Biometrika* **78** (1991), *no.* 4, 817–823. (Summary) **93k:62167** 62L12 (62C15)

— (*with* Krishnaiah, P. R.; Zhao, Lin Cheng) Variable selection in logistic regression. (Chinese summary) *J. China Univ. Sci. Tech.* **21** (1991), *no.* 2, 137–145. (Thomas J. Santner) **93c:62106** 62H17 (62J05)

— Edgeworth expansion for convolutions. (English summary) *J. Combin. Inform. System Sci.* **16** (1991), *no.* 2-3, 190–206. (Manfred Denker) **93j:62042** 62E20

— (*with* Chen, Xi Ru; Krishnaiah, P. R.; Wu, Yue Hua; Zhao, Lin Cheng) Strong consistency of maximum likelihood parameter estimation of superimposed exponential signals in noise. *Teor. Veroyatnost. i Primenen.* **36** (1991), *no.* 2, 392–397; *reprinted in Theory Probab. Appl.* **36** (1991), *no.* 2, 349–355 (1992). (A. Ya. Dorogovtsev) **93b:62042** 62F12

— (*with* Chen, Xi Ru; Zhao, Lin Cheng; Wu, Yue Hua) Consistency of minimum L_1-norm estimates in linear models. *The development of statistics: recent contributions from China*, 249–260, *Pitman Res. Notes Math. Ser.*, 258, *Longman Sci. Tech., Harlow*, 1992. (K. C. Chanda) **93m:62148** 62J05 (60F15, 62F12)

— (*with* Babu, Gutti Jogesh) Edgeworth expansions for errors-in-variables models. (English summary) *J. Multivariate Anal.* **42** (1992), *no.* 2, 226–244. (Jon Stene) **93j:62168** 62J05 (62E20, 62F12)

— (*with* Rao, Calyampudi Radhakrishna; Wu, Yue Hua) *M*-estimation of multivariate linear regression parameters under a convex discrepancy function. *Statist. Sinica* **2** (1992), *no.* 1, 237–254. (Song Gui Wang) **93c:62060** 62F35 (62H12, 62J05)

Baiardi, F. (*with* Antonelli, Silvano; Pelagatti, Susanna; Vanneschi, M.) Modeling concurrent programs for static mapping. (English summary) *Parallel computing '91 (London, 1991)*, 357–366, *Adv. Parallel Comput.*, 4, *North-Holland, Amsterdam*, 1992. (*see* **93f:00016**) 68Q10

Baĭbatyrov, Zh. K. (*with* Atanbaev, S. A.) A regularization method for an ill-posed Cauchy problem for an evolution equation. (Russian) *Theory of functions and problems in numerical mathematics (Russian)*, 7–15, 70, *Kazakh. Gos. Univ., Alma Ata*, 1990. (Summary) **93b:65091** 65L05

Baica, Malvina More units from the periodicity of an algorithm. *Bull. Number Theory Related Topics* **12** (1988), 81–89. (Duncan A. Buell) **93b:11167** 11Y40 (11R27)

— Halter-Koch units from the periodicity of ACF algorithm. (English summary) *Bull. Number Theory Related Topics* **13** (1989), 73–80. (Duncan A. Buell) **93e:11130** 11R27

— The periodicity of an algorithm over the complex number field (ACF) and the solution of the Hermite problem. *The mathematical heritage of C. F. Gauss*, 43–52, *World Sci. Publishing, River Edge, NJ*, 1991. (Mary E. Flahive) **93b:11009** 11A55 (11J70)

Baida, S. V. Unit sliding mode control in continuous- and discrete-time systems. (English summary) *Internat. J. Control* **57** (1993), *no.* 5, 1125–1132. (Summary) **93m:93018** 93B12

Baĭdel'dinov, B. L. On the problem of the solvability of the singular Sturm-Liouville equation in weighted L_p-classes. (Russian. English, Russian and Kazakh summaries) *Izv. Akad. Nauk Kazakh. SSR Ser. Fiz.-Mat.* **1991**, *no.* 5, 15–20. (From the text) **93g:34040** 34B24 (34L40, 47E05, 47G10)

Baider, Alberto Completion of vector fields and the Painlevé property. *J. Differential Equations* **97** (1992), *no.* 1, 27–53. (Martin Kummer) **93i:58128** 58F25 (32S65, 34A20, 58F05)

— (*with* Sanders, Jan A.) Further reduction of the Takens-Bogdanov normal form. *J. Differential Equations* **99** (1992), *no.* 2, 205–244. (Robert Roussarie) **93m:58101** 58F36 (34C20)

Baidosov, V. A. Semigroup properties of multivalued and conjugate mappings in differential games. (Russian. Russian summary) *Control in dynamical systems (Russian)*, 3–11, 124, *Akad. Nauk SSSR Ural. Otdel., Sverdlovsk*, 1990. (Summary) **93g:90100** 90D25 (49J45)

— (*with* Ushakov, V. N.) On the approach problem in a differential game with a particular form of a fuzzy objective set. (Russian. Russian summary) *Control in dynamical systems (Russian)*, 12–17, 124, *Akad. Nauk SSSR Ural. Otdel., Sverdlovsk*, 1990. (Introduction) **93g:90099** 90D25 (04A72)

Baier, G. (*with* Peinke, Joachim; Klein, Michael; et al.) Nowhere differentiable boundaries in differentiable systems. A proposed explanation. *Europhys. Lett.* **14** (1991), *no.* 7, 615–620. (Summary) **93e:58133** 58F13

Băieţica, Cornel On two-generated ideals in commutative rings. *Rev. Roumaine Math. Pures Appl.* **37** (1992), *no.* 1, 1–5. (Ho Kuen Ng) **93e:13021** 13D05 (13A15)

Baik, B. S. (*with* Hur, K.; Lim, P.-K.; Rhee, C. J.) Hyperspace contractibility of type $\sin(1/x)$-continua. *J. Korean Math. Soc.* **29** (1992), *no.* 1, 15–42. (Sarah E. Holte) **93h:54008** 54B20 (54F15)

Baikoussis, Christos (*with* Blair, David E.) Finite type integral submanifolds of the contact manifold $\mathbf{R}^{2n+1}(-3)$. *Bull. Inst. Math. Acad. Sinica* **19** (1991), *no.* 4, 327–350. (Sorin Dragomir) **93d:53067** 53C40 (53C25, 53C42)

— (*with* Chen, Bang-Yen; Verstraelen, Leopold) Surfaces with finite type Gauss maps. *Geometry and topology of submanifolds, IV (Leuven, 1991)*, 214–216, *World Sci. Publishing, River Edge, NJ*, 1992. (Introduction) **93h:53056** 53C40

— (*with* Blair, David E.) Integral surfaces of Sasakian space forms. *J. Geom.* **43** (1992), *no.* 1-2, 30–40. (Ion Mihai) **93c:53033** 53C25 (53C42)

— (*with* Koufogiorgos, Themis) On a type of contact manifolds. *J. Geom.* **46** (1993), *no.* 1-2, 1–9. (Zbigniew Olszak) **93m:53038** 53C25 (53C15)

Baĭkov, P. A. (*with* Il'in, V. A.) Status of γ^5 in dimensional regularization. (Russian. English summary) *Teoret. Mat. Fiz.* **88** (1991), *no.* 2, 163–191; *translation in Theoret. and Math. Phys.* **88** (1991), *no.* 2, 789–809 (1992). (E. Wieczorek) **93b:81174** 81T16

— (*with* Hayashi, Masaki; Nelipa, N. F.; Ostapchenko, S.) Ghost- and tachyon-free gauge-invariant, Poincaré, affine and projective Lagrangians. *Gen. Relativity Gravitation* **24** (1992), *no.* 8, 867–880. (Summary) **93c:83091** 83D05 (81V17)

Baĭkov, V. A. (*with* Gazizov, R. K.; Khasanov, M. M.) Formation of stationary structures in anisotropic filtration of a fluid with negative viscosity. (Russian) *Numerical methods for solving boundary value problems (Russian)*, 30–36, *Akad. Nauk SSSR Ural. Otdel., Bashkir. Nauchn. Tsentr, Ufa*, 1989. (*see* **93m:00033**) 76S05

Baikovicius, Jimmy (*with* Gerencsér, László) Change-point detection using stochastic complexity. (English summary) *Identification and system parameter estimation* 1991, *Vol.* 1,2 (*Budapest*, 1991), 73–78, *IFAC Sympos. Ser.*, 3, *Pergamon, Oxford*, 1992. (*see* **93h:93009**) 93E12

— (*with* Gerencsér, László) Change-point detection as model selection. (English, Russian and Lithuanian summaries) *Informatica* **3** (1992), *no.* 1, 3–20, 119, 127. 62M10 (93E03)

Baĭkusheva, Kristina Al. On the theory of acoustic-gravitational waves in a stratified ocean. (Russian. English and Russian summaries) *Annuaire Univ. Sofia Fac. Phys.* **80** (1992), 21–29. 76V05 (86A05)

Bailey, Colin (*with* Downey, Rodney) Tabular degrees in α-recursion theory. *Ann. Pure Appl. Logic* **55** (1992), *no.* 3, 205–236. (Yu. G. Ventsov) **93i:03063** 03D60 (03D30)

Bailey, D. F. Some binomial coefficient congruences. *Appl. Math. Lett.* **4** (1991), *no.* 4, 1–5. (Andrew Granville) **93b:11018** 11B65

— More binomial coefficient congruences. *Fibonacci Quart.* **30** (1992), *no.* 2, 121–125. (Christian Krattenthaler) **93j:11014** 11B65 (05A10, 11A07)

Bailey, Michael P. (*with* Glazebrook, Kevin D.; Whitaker, Lyn R.) Cost rate heuristics for semi-Markov decision processes. *J. Appl. Probab.* **29** (1992), *no.* 3, 633–644. (Gerhard Hübner) **93f:90180** 90C40 (90C42, 93E35)

Bailey, P. B. (*with* Everitt, W. N.; Zettl, Anton) Computing eigenvalues of singular Sturm-Liouville problems. *Results Math.* **20** (1991), *no.* 1-2, 391–423. (K. Balla) **93a:65102** 65L15 (34L15, 65-04)

Bailey, R. A. (*with* Cheng, Ching-Shui; Kipnis, Patricia) Construction of trend-resistant factorial designs. (English summary) *Statist. Sinica* **2** (1992), *no.* 2, 393–411. (Bhagwandas) **93j:62197** 62K15

— Efficient semi-Latin squares. (English summary) *Statist. Sinica* **2** (1992), *no.* 2, 413–437. (Ferenc Wettl) **93j:62199** 62K99 (05B15)

Bailey, T. N. The space of leaves of a shear-free congruence, multipole expansions, and Robinson's theorem. *J. Math. Phys.* **32** (1991), *no.* 6, 1465–1469. (Vladimir Souček) **93a:83025** 83C60 (32L25, 81R25)

Bailey, William A. Bootstrapping for order statistics sans random numbers (operational bootstrapping). (English summary) *Exploring the limits of bootstrap (East Lansing, MI*, 1990), 309–318, *Wiley Ser. Probab. Math. Statist. Probab. Math. Statist., Wiley, New York*, 1992. (Summary) **93j:62114** 62G09

Bailin, David (*with* Dunbar, David C.; Love, Alex) Generations in irreducible $N = 2$ superconformal coset theories. *Internat. J. Modern Phys. A* **6** (1991), *no.* 10, 1659–1674. (Young-Hun Kwon) **93e:81089** 81T30 (17B81, 81R10)

— (*with* Katechou, E. K.; Love, Alex) Flipped SU(5) × U(1) in superconformal models. *Internat. J. Modern Phys. A* **7** (1992), *no.* 1, 153–169. (Summary) **93m:81159** 81V22 (81T30, 81T40)

— (*with* Love, Alex) Matter field Kähler potentials for $Z_3 \times Z_3$ and Z_3 orbifold theories. (English summary) *Modern Phys. Lett. A* **7** (1992), *no.* 31, 2931–2941. (Ilya Shapiro) **93i:81184** 81T30 (83E30)

— (*with* Love, Alex) Errata: "Fractional charged color singlet states and string unification" [Modern Phys. Lett. A **7** (1992), no. 16, 1485–1495; 1165029]. *Modern Phys. Lett. A* **7** (1992), *no.* 31, 2963. 81T30 (81V22)

— (*with* Love, Alex; Sabra, W. A.) Twisted sector Yukawa couplings for the $Z_3 \times Z_3$ orbifold. (English summary) *Modern Phys. Lett. A* **7** (1992), *no.* 38, 3607–3615. (C. Gauthier) **93k:81164** 81T30

— (*with* Love, Alex) String unification in $Z_3 \times Z_3$ orbifold models. *Phys. Lett. B* **278** (1992), *no.* 1-2, 125–130. (Summary) **93d:81133** 81T30 (81T17, 81V22, 83E30)

— (*with* Love, Alex) String unification and extra matter multiplets below the string scale. *Phys. Lett. B* **280** (1992), *no.* 1-2, 26–30. (Summary) **93b:81203** 81T30 (81V22)

— (*with* Love, Alex) Kähler potentials for twisted sectors of Z_N orbifolds. (English summary) *Phys. Lett. B* **288** (1992), *no.* 3-4, 263–268. (Yi Xin Chen) **93j:81079** 81T30 (32G81, 83E30)

— (*with* Love, Alex) String unification, grand unification and string loop threshold corrections. (English summary) *Phys. Lett. B* **292** (1992), *no.* 3-4, 315–320. (Summary) **93h:81149** 81V22

Baillie, C. F. (*with* Johnston, Desmond Alexander) Strong self-avoidance and crumpling in random surfaces with extrinsic curvature. *Phys. Lett. B* **283** (1992), *no.* 1-2, 55–62. (Summary) **93a:81143** 81T27 (81V70, 83C27)

Baillie, D. H. Attriables acceptance sampling plans. *Frontiers in statistical quality control*, 4 (*Baton Rouge, LA*, 1990), 3–33, *Physica, Heidelberg*, 1992. (*see* **93i:62002**) 62N10

Baillie, Richard T. (*with* Bollerslev, Tim) Prediction in dynamic models with time-dependent conditional variances. *J. Econometrics* **52** (1992), *no.* 1-2, 91–113. (A. L. Nagar) **93f:62146** 62P20 (62M10)

Baillieul, John IEEE Medal of Honor award. (English summary) *IEEE Trans. Automat. Control* **38** (1993), *no.* 3, 386–389. (Summary) **93m:01055** 01A70

Baillon, Jean-Bernard (*with* Bruck, Ronald E.) Ergodic theorems and the asymptotic behavior of contraction semigroups. (English summary) *Fixed point theory and applications (Halifax, NS*, 1991), 12–26, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93i:47107** 47H20 (47A35, 47H09, 47N20)

— (*with* Bruck, Ronald E.) Optimal rates of asymptotic regularity for averaged nonexpansive mappings. (English summary) *Fixed point theory and applications (Halifax, NS*, 1991), 27–66, *World Sci. Publishing, River Edge, NJ*, 1992. (A. G. Kartsatos) **93i:47082** 47H09 (47H15, 47H20)

— (*with* Simons, Stephen) Almost-fixed-point and fixed-point theorems for discrete-valued maps. *J. Combin. Theory Ser. A* **60** (1992), *no.* 1, 147–154. (Indrakanty H. Nagaraja Rao) **93f:54054** 54H25

Bain, Lee J. (*with* Engelhardt, Max) Statistical analysis of a Weibull process with left-censored data. (English summary) With a discussion by Saul Blumenthal. *Survival analysis: state of the art (Columbus, OH*, 1991), 173–195, *NATO Adv. Sci. Inst. Ser. E Appl. Sci.*, 211, *Kluwer Acad. Publ., Dordrecht*, 1992. (Summary) **93d:62169** 62N05 (62M07, 62M09)

— *see also* **Harter, H. Leon, 93c:62001d**

Bainov, Drumi Dimitrov (*with* Khristova, S. G.) Method for solving the periodic problem for integro-differential equations. (English summary) *Anal. Numér. Théor. Approx.* **19** (1990), *no.* 2, 137–142. 65R99 (34K10, 45J05)

— (*with* Khristova, S. G.) Numeric-analytic method for finding the periodic solutions of nonlinear differential-difference equations with impulses. *Mathematica (Cluj)* **32(55)** (1990), *no.* 1, 19–25. (R. M. M. Mattheij) **93c:34146** 34K15 (34A37, 34A50, 65Q05)

— (*with* Mishev, D. P.) ★ Oscillation theory for neutral differential equations with delay. *Adam Hilger, Ltd., Bristol*, 1991. viii+280 *pp. ISBN* 0-7503-0142-2 (István Győri) **93g:34106** 34K15 (34G10, 34K40, 35R10)

— (*with* Manolov, Sp.; Shopolov, N.; et al.) A national scientific seminar on "differential equations and applications". (Russian) *Conference on Differential Equations and Applications (Ruse*, 1989), 44–55, *Tech. Univ., Ruse*, 1991. (*see* **93f:34004**) 01A60 (34-02)

— (*with* Milev, Nedelcho Velev) Ordinary dichotomy and perturbations of the coefficient matrix of the linear impulsive differential equation. (English and French summaries) *Ann. Fac. Sci. Toulouse Math.* (5) **12** (1991), *no.* 1, 127–135. (Alexander V. Anokhin) **93j:34014** 34A37 (34A30, 34D10)

— (*with* Kovachev, V. Khr.; Stamova, Ivanka) Estimates of the solutions of impulsive quasilinear functional-differential equations. (English and French summaries) *Ann. Fac.*

Sci. Toulouse Math. (5) **12** (1991), *no.* 2, 149–161. (Alexander V. Anokhin) **93j:34092** 34K05 (26D10, 34A37, 34A40)
— (*with* Milusheva, Svetla Dimitrova) Averaging method for neutral type impulsive differential equations with supremums. (English and French summaries) *Ann. Fac. Sci. Toulouse Math.* (5) **12** (1991), *no.* 3, 391–403. (O. S. Chernikova) **93m:34134** 34K40 (34A37, 34C29, 34K15)
— (*with* Zakhariev, Andreĭ; Petrov, V. V.) Asymptotic and oscillatory behaviour of the solutions of second order linear neutral differential equations with distributed delay. *Bull. Inst. Math. Acad. Sinica* **19** (1991), *no.* 4, 313–325. (John R. Graef) **93b:34084** 34K15 (34K40)
— (*with* Simeonov, Pavel) Theory of Lyapunov's characteristic exponents for impulsive differential systems. III. Regular systems. (Bulgarian summary) *J. Theoret. Appl. Mech.* **22** (1991), *no.* 3, 3, 8–14. (A. S. Vatsala) **93b:34061** 34D08 (34A37)
— (*with* Kolmanovskiĭ, V. B.) Periodic solutions of stochastic functional-differential equations. *Math. J. Toyama Univ.* **14** (1991), 1–39. (From the text) **93i:60119** 60H99 (34K15, 34K20, 34K50)
— (*with* Voulov, Hristo) On the asymptotic stability of differential equations with "maxima". *Rend. Circ. Mat. Palermo* (2) **40** (1991), *no.* 3, 385–420. (Tibor Krisztin) **93g:34122** 34K20
— (*with* Milev, Nedelcho Velev) Exponential stability of linear impulsive differential equations. (English summary) *Riv. Mat. Univ. Parma* (4) **17** (1991), 99–109 (1992). (O. S. Chernikova) **93h:34079a** 34Dxx (34A37)
— (*with* Kostadinov, S. I.; Zabreĭko, P. P.) Stability of the exponential dichotomy of linear impulsive differential equations. (English summary) *Riv. Mat. Univ. Parma* (4) **17** (1991), 271–277 (1992). (O. S. Chernikova) **93h:34021** 34A37 (34A30, 34D10, 34G10)
— (*with* Simeonov, Pavel) ★ Integral inequalities and applications. Translated by R. A. M. Hoksbergen and V. Covachev [V. Khr. Kovachev]. Mathematics and its Applications (East European Series), 57. *Kluwer Academic Publishers Group, Dordrecht,* 1992. xii+245 *pp. ISBN* 0-7923-1714-9 (B. G. Pachpatte) **93g:26027** 26D15 (26D10, 34K05, 45P05)
— (*with* Petrov, V. V.) On the asymptotic behaviour of first order neutral differential equations with distributed delay. (English summary) *Differential equations* (*Plovdiv*, 1991), 29–42, *World Sci. Publishing, River Edge, NJ,* 1992. (John R. Graef) **93k:34155** 34K15 (34K40)
— (*with* Petrov, V. V.) Asymptotic behaviour of the nonoscillating solutions of first order linear nonautonomous neutral equations. (English summary) *Recent trends in differential equations,* 47–62, *World Sci. Ser. Appl. Anal.*, 1, *World Sci. Publishing, River Edge, NJ,* 1992. (Yiannis Sficas) **93g:34105** 34K15 (34K25, 34K40)
— (*with* Voulov, Hristo) Asymptotic stability for a homogeneous singularly perturbed system of differential equations with unbounded delay. (English summary) *Appl. Math. Comput.* **51** (1992), *no.* 1, 1–16. (A. Halanay) **93g:34123** 34K20
— (*with* Dishliev, A. B.) Population dynamics control in regard to minimizing the time necessary for the regeneration of a biomass taken away from the population. (English summary) *Bull. Calcutta Math. Soc.* **84** (1992), *no.* 1, 21–30. (Summary) **93i:92011** 92D25
— (*with* Dishliev, A. B.) Investigation of the Lipschitz stability via limiting equations. (English summary) *Bull. Calcutta Math. Soc.* **84** (1992), *no.* 3, 235–240. (Summary) **93k:34104** 34D05 (34D99)
— (*with* Dishliev, A. B.) Investigation of the Lipschitz stability via limiting equations. (English summary) *Bull. Inst. Math. Acad. Sinica* **20** (1992), *no.* 2, 187–193. (Zvi Artstein) **93k:34108** 34D20
— (*with* Arolska-Hekimova, Mariya At.; Vel'ov, V. M.) Asymptotic procedure for solving boundary value problems for singularly perturbed linear systems with impulses. (English summary) *Bull. Inst. Math. Acad. Sinica* **20** (1992), *no.* 3, 211–229. (A. S. Vatsala) **93k:34029** 34A37 (34B05, 34E15, 65L10)
— (*with* Dimitrova, M. B.; Myshkis, A. D.) Oscillatory and asymptotic properties of the solutions of a class of operator-differential equations. *C. R. Acad. Bulgare Sci.* **45** (1992), *no.* 6, 29–31. 34C10 (34G10)
— (*with* Petrov, V. V.) Necessary and sufficient conditions for oscillation of second order autonomous neutral equations with distributed delay. *C. R. Acad. Bulgare Sci.* **45** (1992), *no.* 7, 11–12. 34K15 (34K40, 45J05)
— (*with* Milev, Nedelcho Velev) Exponential stability of linear impulsive differential equations. *Internat. J. Theoret. Phys.* **31** (1992), *no.* 7, 1325–1334. (O. S. Chernikova) **93h:34079b** 34Dxx (34A37)
— (*with* Kostadinov, S. I.; Zabreĭko, P. P.) Necessary and sufficient conditions for existence of exponential dichotomy of impulsive equations. (English summary) *Internat. J. Theoret. Phys.* **31** (1992), *no.* 8, 1521–1526. (Introduction) **93e:34022** 34A37 (34A30, 34D99)
— (*with* Mishev, D. P.) A necessary and sufficient condition for oscillation of neutral type hyperbolic equations. (English summary) *J. Comput. Appl. Math.* **42** (1992), *no.* 2, 215–220. (Summary) **93h:35016** 35B05 (35L10, 35R10)
— (*with* Petrov, V. V.) Necessary and sufficient conditions for oscillation of second order autonomous neutral equations with distributed delay. (English summary) *Nihonkai Math. J.* **3** (1992), *no.* 2, 87–102. (I. P. Stavroulakis) **93m:34104** 34K15 (34K40)
— (*with* Mishev, D. P.) Oscillations of the solutions of nonlinear hyperbolic equations of neutral type. (English summary) *Publ. Mat.* **36** (1992), *no.* 1, 3–18. (Summary) **93f:35237** 35R10 (35B05, 35L70)
— (*with* Mishev, D. P.) A necessary and sufficient condition for oscillation of neutral type hyperbolic equations. (English and Italian summaries) *Rend. Mat. Appl.* (7) **12** (1992), *no.* 3, 545–553. (Summary) **93m:35017** 35B05 (35L10, 35R10)
— (*with* Khristova, S. G.) Asymptotics of the solution of the initial value problem for a nonlinear singularly perturbed system of impulsive differential equations. *Riv. Mat. Pura Appl. No.* 10 (1992), 67–87. (Snezhana Khristova) **93f:34021** 34A37 (34A12, 34E15)
— (*with* Ronkov, A. B.) Integral equations and inequalities of Volterra type for functions defined in partially ordered spaces with values in Banach spaces. (English summary) *Riv. Mat. Pura Appl. No.* 11 (1992), 29–46. (Da Jun Guo) **93h:47081** 47N20 (45D05)
— (*with* Dishliev, A. B.) Uniform stability with respect to the impulse hypersurfaces of the solutions of differential equations with impulses. (English summary) *J. Math. Anal. Appl.* **172** (1993), *no.* 2, 452–462. (S. G. Deo) **93k:34030** 34A37 (34D99)
— *see also* **Differential equations, 93g:34002**

Baiocchi, Andrea Asymptotic behaviour of the loss probability of the $M/G/1/K$ and $G/M/1/K$ queues. *Queueing Systems Theory Appl.* **10** (1992), *no.* 3, 235–247. (Summary) **93c:60138** 60K25 (90B22)
Bairamov, È. M. (*with* Maksudov, F. G.; Orudzheva, R. U.) An inverse scattering problem for an infinite Jacobi matrix with operator elements. (Russian) *Dokl. Akad. Nauk* **323** (1992), *no.* 3, 415–419; *translation in Russian Acad. Sci. Dokl. Math.* **45** (1992), *no.* 2, 366–370 (1993). (Yordan Perrov Mishev) **93i:47036** 47B39 (34A55, 39A12, 47A40)
Bairamov, I. G. (*with* Petunin, Yu. I.) Statistical criteria based on training samples. (Russian. English and Ukrainian summaries) *Kibernetika (Kiev)* **1991,** *no.* 3, 74–77, 134; *translation in Cybernetics* **27** (1991), *no.* 3, 408–413 (1992). (J. A. Melamed) **93d:62086** 62G10
— Statistical criteria based on training samples in the problem of classification of observations. (Ukrainian. Russian and Ukrainian summaries) *Teor. Ĭmovir. ta Mat. Statist. No.* 46 (1992), 13–17. (Summary) **93j:62163** 62H30
Baird, C. Robert (*with* Li, X.) A disturbance rejection self-tuning controller for a class of MIMO nonminimum phase systems. (English summary) *Internat. J. Systems Sci.* **23** (1992), *no.* 10, 1549–1557. 93B50 (93C05)
— (*with* Xu, Hong Yue; Riordan, D.) An integrated identification methodology for control and identification. (English summary) *Internat. J. Systems Sci.* **23** (1992), *no.* 11, 1825–1839. (Summary) **93g:93029** 93B30
— (*with* Xu, Hong Yue) An expert system for parameter estimation. (English and Polish summaries) *Systems Sci.* **18** (1992), *no.* 1-2, 19–25 (1993). 93E12
Baird, Paul A Bochner technique for harmonic mappings from a 3-manifold to a surface. *Ann. Global Anal. Geom.* **10** (1992), *no.* 1, 63–72. (Andrea Ratto) **93g:58034** 58E20
— Riemannian twistors and Hermitian structures on low-dimensional space forms. (English summary) *J. Math. Phys.* **33** (1992), *no.* 10, 3340–3355. (Andrea Ratto) **93h:53069** 53C55 (32L25, 58E20)
— (*with* Gudmundsson, Sigmundur) p-harmonic maps and minimal submanifolds. *Math. Ann.* **294** (1992), *no.* 4, 611–624. (Caio J. C. Negreiros) **93j:58030** 58E20 (53C42)
— A Hamiltonian system on hyperbolic space and associated harmonic maps. (English summary) *Phys. D* **59** (1992), *no.* 4, 349–364. (Yang Lian Pan) **93i:58035** 58E20 (58F05)
— (*with* Wood, John C.) Harmonic morphisms, Seifert fibre spaces and conformal foliations. *Proc. London Math. Soc.* (3) **64** (1992), *no.* 1, 170–196. (Andrea Ratto) **93c:58051** 58E20 (53C12, 57R30)
— (*with* Ratto, Andrea) Conservation laws, equivariant harmonic maps and harmonic morphisms. *Proc. London Math. Soc.* (3) **64** (1992), *no.* 1, 197–224. (Ji-Ping Sha) **93a:58045** 58E20 (58E40)
Bais, F. Alexander (*with* de Vos, Koos) A coset-construction for integrable hierarchies. *Differential geometric methods in theoretical physics* (*Davis, CA*, 1988), 291–296, *NATO Adv. Sci. Inst. Ser. B Phys.*, 245, *Plenum, New York,* 1990. (Summary) **93c:58079** 58F07 (17B67)
— (*with* van Driel, Peter; de Wild Propitius, Mark) Quantum symmetries in discrete gauge theories. *Phys. Lett. B* **280** (1992), *no.* 1-2, 63–70. (Summary) **93b:81153** 81T13
Baisnab, A. P. (*with* Chikkala, Raghu) An analogue of Caristi-fixed-point theorem in a quasi-metric space. *Proc. Nat. Acad. Sci. India Sect. A* **61** (1991), *no.* 2, 237–243. 54H25
Baizaev, S. (*with* Mukhamadiev, È.) On the index of first-order elliptic operators in the plane. (Russian. Russian summary) *Differentsial'nye Uravneniya* **28** (1992), *no.* 5, 818–827, 917–918; *translation in Differential Equations* **28** (1992), *no.* 5, 663–672. (Ai Nong Fang) **93m:35064** 35J45 (47A53, 47F05)
Bajaj, A. K. (*with* Johnson, J. M.) On the amplitude dynamics and crisis in resonant motion of stretched strings. *Philos. Trans. Roy. Soc. London Ser. A* **338** (1992), *no.* 1649, 1–41. (Summary) **93a:73053** 73K03 (34C23, 58F13, 73D35, 73K12)
Bajaj, Chanderjit L. (*with* Kim, Myung Soo) Convex hulls of objects bounded by algebraic curves. *Algorithmica* **6** (1991), *no.* 4, 533–553. (From the introduction) **93c:52016** 52B55 (68U05)
— Surface fitting using implicit algebraic surface patches. *Topics in surface modeling,* 23–52, *Geom. Des. Publ., SIAM, Philadelphia, PA,* 1992. (*see* **93c:65026**) 65D17
Bajnok, Bela Chebyshev-type quadrature formulas on the sphere. Proceedings of the Twenty-second Southeastern Conference on Combinatorics, Graph Theory, and Computing (Baton Rouge, LA, 1991). *Congr. Numer.* **85** (1991), 214–218. (Ryoh Fuji-Hara) **93a:05038** 05B30 (05E30)
— (*with* Rabau, Patrick) Bounds for the number of nodes in Chebyshev type quadrature formulas. *J. Approx. Theory* **67** (1991), *no.* 2, 199–214. (I. P. Mysovskikh) **93c:41044** 41A50 (65D32)
— Construction of spherical t-designs. (English summary) *Geom. Dedicata* **43** (1992), *no.* 2, 167–179. (J. J. Seidel) **93i:05038** 05B30
Bajnok, Z. (*with* Palla, L.; Takács, G.) A_2 Toda theory in reduced WZNW framework and the representations of the W-algebra. (English summary) *Nuclear Phys. B* **385** (1992), *no.* 1-2, 329–360. (A. Hamid Bougourzi) **93k:81189** 81T40 (17B68, 17B81, 81R10)
Bajorski, Piotr Exact Bahadur efficiency of max-type rank tests in the two-sample problem. (English summary) *Statist. Probab. Lett.* **13** (1992), *no.* 5, 357–363. (James N. Adichie) **93m:62118** 62G20
— Max-type rank tests in the two-sample problem. *Zastos. Mat.* **21** (1992), *no.* 3, 371–385. (Arnold Janssen) **93m:62102** 62G10 (62E20, 62E25, 62G20)
Bajpai, Kamini (*with* Karade, T. M.) On Eulerian angles. *Indian J. Pure Appl. Math.* **23** (1992), *no.* 7, 509–530. (Gestur Olafsson) **93h:51032** 51N30 (22E15, 51F25)
Bajpai, S. D. (*with* Al-Hawaj, A. Y.) Some integrals and Fourier series involving Meijer's G-functions. *J. Natur. Sci. Math.* **29** (1989), *no.* 2, 115–123. (P. Anandani) **93a:33025** 33C60
— Meijer's G-function and heat flow in a two-dimensional rectangular region. (Arabic summary) *Delta J. Sci.* **14** (1990), *no.* 1, 41–59. (P. Anandani) **93c:33008** 33C60 (80A20)
— Formulae involving Bessel polynomial and Meijer's G-function. *J. Natur. Sci. Math.* **30** (1990), *no.* 2, 37–43. (Ram Kishore Saxena) **93d:33008** 33C60 (33C45)
— Two-dimensional expansions of Meijer's G-function involving Legendre functions. *J. Math. Phys. Sci.* **25** (1991), *no.* 4, 443–446. (From the introduction) **93d:33009** 33C60
— A new class of two-dimensional expansion of Meijer's G-function involving Bessel functions and Jacobi polynomials. (Hindi. English summary) *Vijnana Parishad Anusandhan Patrika* **34** (1991), *no.* 4, 233–236. 33C60 (33C10)
— Fourier Legendre series for Fox's H-function of two variables. (English summary) *Bull. Calcutta Math. Soc.* **84** (1992), *no.* 3, 241–248. (From the introduction) **93m:33008**

33C60
— New class of two-dimensional series expansion for product of Fox's *H*-function and cosine function. (English summary) *Math. Ed. (Siwan)* **26** (1992), *no.* 2, 63–65. 33C60
— Solution of a partial differential equation related to queuing theory, heat conduction and quantum mechanics. (English summary) *Nat. Acad. Sci. Lett.* **15** (1992), *no.* 1, 29–30. 35K10 (35Q99, 60K25, 80A20, 81Q05)
— Some results involving Laguerre polynomial, confluent hypergeometric function and Meijer's *G*-function. *Rev. Mat. Dominicana No.* 7-8 (1992), 7–14. (Summary) **93d:33010** 33C60 (94A12)
— Solution of a one-dimensional Schrödinger equation. (Hindi. English and Hindi summaries) *Vijnana Parishad Anusandhan Patrika* **35** (1992), *no.* 1, 23–25. (Summary) **93m:81022** 81Q05 (35J10)
— Solution of a partial differential equation related to quantum mechanics. (English summary) *Zeszyty Nauk. Politech. Rzeszowskiej Mat. Fiz. No.* 16 (1992), 79–81. 35Q40 (81Q05)
Bak, Anthony (*with* Morimoto, Masaharu) Equivariant surgery and applications. (English summary) *Topology Hawaii (Honolulu, HI,* 1990), 13–25, *World Sci. Publishing, River Edge, NJ,* 1992. (Summary) **93e:57058** 57R67 (57S25)
Bak, J.-G. (*with* McMichael, J. D.; Oberlin, Daniel M.) Convolution estimates for some measures on flat curves. *J. Funct. Anal.* **101** (1991), *no.* 1, 81–96. (Yu. A. Brudnyi) **93k:42011** 42B10 (42B15, 42B20, 46E30)
Bąk, Mirosław On the extremal submeasures on a 3-set. *Discuss. Math.* **10** (1990), 41–45 (1991). (Z. Lipecki) **93e:28004** 28A12
Bakaev, N. Yu. On a study of the stability of difference schemes of the Runge-Kutta method. (Russian. Russian summary) *Boundary value problems (Russian),* 109–115, *Perm. Politekh. Inst., Permʹ,* 1989. (*see* **93k:00022**) 65L06 (65L20)
— Estimates for the stability of difference schemes for a differential equation with a constant operator. II. (Russian) *Embedding theorems and their applications to problems in mathematical physics (Russian),* 18–37, 140, *Akad. Nauk SSSR Sibirsk. Otdel., Inst. Mat., Novosibirsk,* 1989. (A. M. Galperin) **93b:65080** 65J10 (34G10, 65L06, 65L20, 65M12)
— Estimates for the stability of difference schemes for a differential equation with a constant operator. I. (Russian) *Partial differential equations (Russian),* 3–14, 142, *Akad. Nauk SSSR Sibirsk. Otdel., Inst. Mat., Novosibirsk,* 1989. (A. M. Galperin) **93b:65079** 65J10 (34G10, 65L20)
— On a class of difference schemes for the heat equation. (Russian. Russian summary) *Boundary value problems (Russian),* 6–12, *Perm. Politekh. Inst., Permʹ,* 1991. (*see* **93m:00017**) 65M06
— A multistep difference method for parabolic equations. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **32** (1992), *no.* 2, 261–276; *translation in Comput. Math. Math. Phys.* **32** (1992), *no.* 2, 216–228. (Reinhard Redlinger) **93d:65074** 65M06 (65M12)
Bakan, A. G. Separability and distance. (Russian) *Mat. Zametki* **50** (1991), *no.* 5, 18–22, 159; *translation in Math. Notes* **50** (1991), *no.* 5-6, 1103–1106 (1992). (Summary) **93b:46006** 46A03
— (*with* Golub, A. P.) Some negative results on sequences of multipliers of the first kind. (Russian. Russian and Ukrainian summaries) *Ukraïn. Mat. Zh.* **44** (1992), *no.* 3, 305–309; *translation in Ukrainian Math. J.* **44** (1992), *no.* 3, 264–268. (Summary) **93m:26030** 26C05 (82B99)
Bakan, G. M. Synthesizing nonlinear control systems optimal with respect to an error- and error derivative-dependent functional. *Soviet J. Automat. Inform. Sci.* **24** (1991), *no.* 4, 12–17 (1992); *translated from Avtomatika* **1991**, *no.* 4, 14–19, 94 (*Russian. English, Russian and Ukrainian summaries*). (Summary) **93f:93059** 93B50 (93C10)
— (*with* Kussulʹ, N. N.) Nonstochastic identification of parameters of a linear static object under unknown noise intensity. (Russian. Russian summary) *Kibernet. i Vychisl. Tekhn. No.* 93 (1992), 6–10. (Summary) **93k:93113** 93E12 (65C20, 93B30)
Bakas, Ioannis Conformal algebras and nonlinear differential equations. *Differential geometric methods in theoretical physics (Davis, CA,* 1988), 203–211, *NATO Adv. Sci. Inst. Ser. B Phys.,* 245, *Plenum, New York,* 1990. (Summary) **93c:58080** 58F07 (81T40)
— Area-preserving diffeomorphisms and higher spin fields in two dimensions. *Supermembranes and physics in* 2+1 *dimensions (Trieste,* 1989), 352–362, *World Sci. Publishing, River Edge, NJ,* 1990. (*see* **93g:81003**) 81T40 (17B81, 81R10)
— (*with* Kiritsis, Elias B.) Structure and representations of the W_∞ algebra. (English summary) Common trends in mathematics and quantum field theories (Kyoto, 1990). *Progr. Theoret. Phys. Suppl. No.* 102 (1990), 15–37 (1991). (Katsushi Ito) **93g:81034** 81R10 (17B68)
— (*with* Kiritsis, Elias B.) Beyond the large N limit: nonlinear W_∞ as symmetry of the $SL(2,\mathbf{R})/U(1)$ coset model. (English summary) *Infinite analysis, Part A, B (Kyoto,* 1991), 55–81, *Adv. Ser. Math. Phys.,* 16, *World Sci. Publishing, River Edge, NJ,* 1992. (Katsushi Ito) **93m:81041** 81R10 (17B81, 58F07, 81T30)
— (*with* Depireux, Didier A.) The origin of gauge symmetries in integrable systems of the KdV type. *Internat. J. Modern Phys. A* **7** (1992), *no.* 8, 1767–1792. (Luen-Chau Li) **93b:58061** 58F07 (17B65, 81R10, 81T13)
— (*with* Kiritsis, Elias B.) Target space description of W_∞ symmetry in coset models. (English summary) *Phys. Lett. B* **301** (1993), *no.* 1, 49–52. (C. Gauthier) **93m:81042** 81R10 (81T40)
Bakasov, A. A. A dynamic model of a single-mode laser. I. The regime of stable stationary generation. (Russian. English summary) *Teoret. Mat. Fiz.* **89** (1991), *no.* 2, 278–292; *translation in Theoret. and Math. Phys.* **89** (1991), *no.* 2, 1209–1219 (1992). (Summary) **93b:78013** 78A60
Bakelman, Ilya J. *see* **Geometric analysis and nonlinear partial differential equations, 93i:00018** *and* **Taliaferro, Steven D., 93m:01085**
Baker, A. *see* **Baker, Alan**
Baker, A. J. *see* **Baker, Allen Jerome**
Baker, Alan The evolution of transcendence theory. Mathematische Wissenschaften gestern und heute. 300 Jahre Mathematische Gesellschaft in Hamburg, Teil 3 (Hamburg, 1990). *Mitt. Math. Ges. Hamburg* **12** (1991), *no.* 3, 513–521. (F. Beukers) **93a:01030** 01A60 (11-03, 11Jxx)
Baker, Allen Jerome (*with* Noronha, W. P.; Wachspress, E. L.) Consistent sparse factorization. (English summary) *Comput. Math. Appl.* **24** (1992), *no.* 7, 25–44. (Summary) **93c:65064** 65F50 (65N22)
— (*with* Iannelli, G. S.) A non-linearly stable implicit finite element algorithm for hypersonic aerodynamics. The Second World Congress of Computational Mechanics, Part II (Stuttgart, 1990). *Internat. J. Numer. Methods Engrg.* **34** (1992), *no.* 2, 419–441. (Summary) **93a:76067** 76M10 (65N30, 76K05)
Baker, B. Mitchell (*with* Handelman, David) Positive polynomials and time dependent integer-valued random variables. *Canad. J. Math.* **44** (1992), *no.* 1, 3–41. (Gabriele Grillo) **93f:60037** 60F15 (46A55, 46L50, 60J15)
Baker, Christopher T. H. (*with* Willé, David R.) The tracking of derivative discontinuities in systems of delay-differential equations. International Conference on the Numerical Solution of Volterra and Delay Equations (Tempe, AZ, 1990). *Appl. Numer. Math.* **9** (1992), *no.* 3-5, 209–222. (Summary) **93a:65109** 65L99 (65-04, 65Q05)
— (*with* Ford, Neville J.) Stability properties of a scheme for the approximate solution of a delay-integro-differential equation. International Conference on the Numerical Solution of Volterra and Delay Equations (Tempe, AZ, 1990). *Appl. Numer. Math.* **9** (1992), *no.* 3-5, 357–370. (Summary) **93c:65161** 65R20
Baker, George A., Jr. (*with* Singh, Rajiv R. P.) Bulk value of the central charge in conformally invariant critical phenomena. Current problems in statistical mechanics (Washington, DC, 1991). *Phys. A* **177** (1991), *no.* 1-3, 123–130. (Roland Koberle) **93d:82041** 82B27 (81T40, 82B23)
— (*with* Wang, Xidi) Monte Carlo calculations of the conformal charge. (English summary) *J. Statist. Phys.* **69** (1992), *no.* 5-6, 1069–1095. (Summary) **93i:82047** 82B80 (81T80, 82B26)
— (*with* Bessis, Daniel; Moussa, Pierre) Asymptotic behavior of some Hankel-Toeplitz determinants. *Rev. Math. Phys.* **4** (1992), *no.* 1, 65–94. (From the text) **93i:33009** 33C80 (33D80, 47B35, 47N55, 81T40)
Baker, Graham Accelerated bisection techniques for tri- and quindiagonal matrices. *Internat. J. Numer. Methods Engrg.* **35** (1992), *no.* 1, 203–218. (Summary) **93a:65045** 65F15
Baker, I. N. (*with* Weinreich, J.) Boundaries which arise in the dynamics of entire functions. Analyse complexe (Bucharest, 1989). *Rev. Roumaine Math. Pures Appl.* **36** (1991), *no.* 7-8, 413–420. (Janina Kotus) **93e:30056** 30D05 (58F23)
Baker, J. W. *see* **Baker, John Walter**
Baker, John *see* **Baker, John Walter**
Baker, John A. A note on iterated integrals. *Math. Chronicle* **19** (1990), 19–22. (T. V. Panchapagesan) **93b:28016** 28A35 (26B99)
— Difference operators, distributions and functional equations. *Period. Math. Hungar.* **23** (1991), *no.* 3, 171–183. (Mihai Neagu) **93f:39014** 39B22 (39A70, 46F10, 47B38)
Baker, John Walter (*with* Lashkarizadeh-Bami, M.) On the representations of certain idempotent topological semigroups. *Semigroup Forum* **44** (1992), *no.* 2, 245–254. (Bernard L. Madison) **93c:20106** 20M30 (06A12, 20M18)
— (*with* Hindman, Neil; Pym, John) Elements of finite order in Stone-Čech compactifications. (English summary) *Proc. Edinburgh Math. Soc.* (2) **36** (1993), *no.* 1, 49–54. (Michael Tkačenko) **93m:22003** 22A15 (20M99, 22C05)
— (*with* Lashkarizadeh-Bami, M.) The L^∞-representation algebra of an idempotent topological semigroup. *Semigroup Forum* **46** (1993), *no.* 1, 32–36. (M. Rajagopalan) **93m:22005** 22A20
Baker, Mark D. Link complements and integer rings of class number greater than one. *Topology* '90 (*Columbus, OH,* 1990), 55–59, *Ohio State Univ. Math. Res. Inst. Publ.,* 1, *de Gruyter, Berlin,* 1992. (Alan W. Reid) **93k:57007** 57M25 (11R04, 11R29, 22E40, 57M50)
Baker, R. C. (*with* Schäffer, S.) Pairs of additive quadratic forms modulo one. *Acta Arith.* **62** (1992), *no.* 1, 45–59. (Jörg Brüdern) **93j:11041** 11J25 (11D75, 11J71)
— Correction to: "Weyl sums and Diophantine approximation" [J. London Math. Soc. (2) **25** (1982), no. 1, 25–34; MR 83c:10043]. *J. London Math. Soc.* (2) **46** (1992), *no.* 2, 202–204. (R. J. Cook) **93m:11058** 11J54 (11L15)
— Singular n-tuples and Hausdorff dimension. II. *Math. Proc. Cambridge Philos. Soc.* **111** (1992), *no.* 3, 577–584. (F. Schweiger) **93d:11076** 11J83 (28A78)
— (*with* Brüdern, J.; Harman, Glyn) Simultaneous Diophantine approximation with square-free numbers. *Acta Arith.* **63** (1993), *no.* 1, 51–60. (R. J. Cook) **93m:11055** 11J13 (11L07)
— (*with* Brüdern, J.) Pairs of quadratic forms modulo one. *Glasgow Math. J.* **35** (1993), *no.* 1, 51–61. (D. R. Heath-Brown) **93j:11042** 11J25 (11D75, 11J71)
Baker, R. D. (*with* Ebert, G. L.) On Buekenhout-Metz unitals of odd order. *J. Combin. Theory Ser. A* **60** (1992), *no.* 1, 67–84. (Tamás Szőnyi) **93g:51009** 51E21
Baker, Richard L. K_0 of certain subdiagonal subalgebras of von Neumann algebras. *Proc. Amer. Math. Soc.* **116** (1992), *no.* 1, 13–19. (Summary) **93e:46083** 46L80 (19A49)
Baker, Stuart G. (*with* Wax, Yohanan; Patterson, Blossom H.) A score test for noninformative censoring using doubly sampled grouped survival data. (English summary) *J. Roy. Statist. Soc. Ser. C* **42** (1993), *no.* 1, 159–172. 62P10
Bakhtadze, N. N. A rapidly converging algorithm for the identification of a linear object under correlated inputs. (Russian. Russian summary) *Avtomat. i Telemekh.* **1993**, *no.* 1, 86–91; *translation in Automat. Remote Control* **54** (1993), *no.* 1, *part* 2, 79–84. 93E35
Bakhterev, D. V. (*with* Tsirulʹskii, A. V.) On the problem of equivalence for domains with a piecewise-analytic boundary and variable density. (Russian) *Izv. Akad. Nauk SSSR Ser. Fiz. Zemli* **1991**, *no.* 1, 113–118. (From the text) **93b:86007** 86A20 (31A10)
Bakhtin, I. A. The contraction mapping principle in almost metric space. (Russian) *Functional analysis, No.* 30 (*Russian*), 26–37, *Ulʹyanovsk. Gos. Ped. Inst., Ulʹyanovsk,* 1989. (I. A. Rus) **93m:54072** 54H25 (47H10)
Bakhtin, V. I. Averaging in a single-frequency system in general position. (Russian) *Differentsialʹnye Uravneniya* **27** (1991), *no.* 9, 1493–1505, 1651; *translation in Differential Equations* **27** (1991), *no.* 9, 1051–1061 (1992). (Henryk Żołądek) **93b:34055** 34C29 (34C15, 58F30, 70K99)
Bakhtizin, R. N. (*with* Latypov, A. R.) Estimation of the order of linear objects from experimental information. (Russian. Russian summary) *Avtomat. i Telemekh.* **1992**, *no.* 3, 108–112; *translation in Automat. Remote Control* **53** (1992), *no.* 3, *part* 2, 416–419. 93C40
Bakhturin, Yu. A. (*with* Zaĭtsev, M. V.) Residual finiteness of color Lie superalgebras. *Trans. Amer. Math. Soc.* **337** (1993), *no.* 1, 159–180. (Anargyros Fellouris) **93g:17004** 17A70 (17B70)
— *see also* **All-Union School: Lie Algebras and their Applications in Mathematics and Physics, 93d:00026** *and* **Olʹshanskiĭ, A. Yu., 93g:20071**

Bakhvalov, N. S. (*with* Knyazev, Andrei Vladimirovich) Methods for the effective computation of averaged characteristics of composites of periodic structure consisting of essentially different materials. (Russian) *Computational processes and systems, No. 8 (Russian)*, 52–94, "*Nauka*", *Moscow*, 1991. (Alexander Belyaev) **93c:35006** 35B27 (35J55, 65N55, 73B27)

— (*with* Knyazev, Andrei Vladimirovich) An effective iterative method for the solution of Lamé equations for almost incompressible media and of Stokes equations. (Russian) *Dokl. Akad. Nauk SSSR* **319** (1991), *no.* 1, 13–17; *translation in Soviet Math. Dokl.* **44** (1992), *no.* 1, 4–9. (Michael Fröhner) **93b:65194** 65N99 (65J10, 73C02, 73V99)

— (*with* Èglit, M. È.) On the rate of propagation of perturbations in micro-inhomogeneous elastic media with small shear elasticity. (Russian) *Dokl. Akad. Nauk* **323** (1992), *no.* 1, 13–18; *translation in Russian Acad. Sci. Dokl. Math.* **45** (1992), *no.* 2, 239–244 (1993). (Serguei M. Kozlov) **93g:73053** 73D99 (35B40, 35Q99, 73B27, 73S10)

— (*with* Èglit, M. È.) Propagation of small perturbations in weakly thermoconducting and weakly viscous microononhomogeneous media. (Russian) *Dokl. Akad. Nauk* **325** (1992), *no.* 1, 9–15; *translation in Russian Acad. Sci. Dokl. Math.* **46** (1993), *no.* 1, 1–7. (Adrian Carabineanu) **93k:80006** 80A20 (35B10, 35Q35)

Bakia, I. A. On the payoff convergence rate estimation in the problem of optimal stopping of random processes in the Kalman-Bucy scheme. (Russian and Georgian summaries) *Soobshch. Akad. Nauk Gruzii* **140** (1990), *no.* 3, 493–496 (1991). 60G40 (93E11)

Bakirov, N. K. Testing nonparametric hypothesis for random processes. *Probability theory and mathematical statistics (Kiev*, 1991), 1–4, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93k:60008**) 62G10 (62M07)

Bakirov, Zh. Zh. (*with* Sklyar, S. N.) A modification of a classical difference scheme for solving a selfadjoint singularly perturbed boundary value problem. (Russian. Russian summary) *Izv. Akad. Nauk Respub. Kyrgyzstan* **1991**, *no.* 1, 10–16, 79. (Summary) **93c:65098** 65L12 (34B05, 34E15, 65L10)

Bakke, V. L. (*with* Jackiewicz, Z.) Stability analysis of multilag and modified multilag methods for Volterra integrodifferential equations. *IMA J. Numer. Anal.* **12** (1992), *no.* 2, 243–257. (Gene A. Kemper) **93c:34158** 34K99 (45D05, 65R20)

de Bakker, J. W. (*with* Rutten, Jan J. M. M.) Concurrency semantics based on metric domain equations. *Topology and category theory in computer science (Oxford*, 1989), 113–151, *Oxford Sci. Publ., Oxford Univ. Press, New York*, 1991. (*see* **93h:68004**) 68Q10 (18B99, 54E35, 54H25, 68Q55)

— (*with* Warmerdam, J. H. A.) Four domains for concurrency. Images of programming. *Theoret. Comput. Sci.* **90** (1991), *no.* 1, 127–149. (Summary) **93a:68036** 68Q10 (68Q55)

— *see also* **Logic programming languages, 93k:68020**

Bakker, P. G. ★ Bifurcations in flow patterns. Some applications of the qualitative theory of differential equations in fluid dynamics. Nonlinear Topics in the Mathematical Sciences, 2. *Kluwer Academic Publishers Group, Dordrecht*, 1991. xii+209 *pp. ISBN* 0-7923-1428-X (Mikhail Zaks) **93i:76001** 76–02 (34C23, 35Q30, 58F14, 58F40, 76D05, 76E30)

Bakonyi, Mihály On Gaussian elimination and determinant formulas for matrices with chordal inverses. (English summary) *Bull. Austral. Math. Soc.* **46** (1992), *no.* 3, 435–440. (Summary) **93k:15015** 15A23 (15A09, 15A15)

— Completion of operator partial matrices associated with chordal graphs. *Integral Equations Operator Theory* **15** (1992), *no.* 2, 173–185. (Tiberiu Constantinescu) **93c:47020** 47A57 (05C50, 15A23)

— (*with* Woerdeman, Hugo J.) On the strong Parrott completion problem. *Proc. Amer. Math. Soc.* **117** (1993), *no.* 2, 429–433. (Joseph A. Ball) **93d:47011** 47A20 (47A57)

Bakošová, M. (*with* Prokop, R.; Turisová, Z.) Decentralized hybrid adaptive control based on polynomial approach. (English summary) *Mutual impact of computing power and control theory (Prague*, 1992), 151–156, *Czech. Acad. Sci., Prague*, 1992. (*see* **93f:93005**) 93A14 (93C40)

Bakry, Dominique (*with* Michel, Dominique) Inégalités de Sobolev et minorations du semi-groupe de la chaleur. (English and French summaries) [Sobolev inequalities and lower bounds for the heat semigroup] *Ann. Fac. Sci. Toulouse Math.* (5) **11** (1990), *no.* 2, 23–66. (Kazuaki Taira) **93k:47051** 47D07 (31C25, 35K99, 47N20, 60J35)

— Weak Sobolev inequalities. *Stochastic analysis and applications (Lisbon*, 1989), 63–81, *Progr. Probab.*, 26, *Birkhäuser Boston, Boston, MA*, 1991. (Tu Sheng Zhang) **93g:31017** 31C25 (60J35)

Baksalary, Jerzy K. (*with* Puntanen, Simo; Styan, George P. H.) A property of the dispersion matrix of the best linear unbiased estimator in the general Gauss-Markov model. (English summary) *Sankhyā Ser. A* **52** (1990), *no.* 3, 279–296. (Summary) **93f:62089** 62J05 (15A24)

— (*with* Hauke, Jan) Minimum number of experimental units in connected block designs with certain additional properties. *J. Statist. Plann. Inference* **30** (1992), *no.* 2, 173–183. (Summary) **93m:62174** 62K10

— (*with* Pordzik, Pawel R.) Implied linear restrictions in the general Gauss-Markov model. *J. Statist. Plann. Inference* **30** (1992), *no.* 2, 237–248. (V. K. Srivastava) **93c:62115** 62J05 (62J15)

— (*with* Rao, Calyampudi Radhakrishna; Markiewicz, Augustyn) A study of the influence of the "natural restrictions" on estimation problems in the singular Gauss-Markov model. *J. Statist. Plann. Inference* **31** (1992), *no.* 3, 335–351. (Kurt Hoffmann) **93j:62169** 62J05

— (*with* Nurhonen, Markku; Puntanen, Simo) Effect of correlations and unequal variances in testing for outliers in linear regression. *Scand. J. Statist.* **19** (1992), *no.* 1, 91–95. (S. John) **93e:62168** 62J05 (62F03)

— (*with* Styan, George P. H.) Around a formula for the rank of a matrix product with some statistical applications. (English summary) *Graphs, matrices, and designs*, 1–18, *Lecture Notes in Pure and Appl. Math.*, 139, *Dekker, New York*, 1993. (Friedrich Pukelsheim) **93m:15001** 15A03 (62K05)

Bakule, Lubomír On-line decentralized control of uncertain interconnected systems. (English summary) *Computational systems analysis* 1992 (*Berlin*, 1992), 201–206, *Elsevier, Amsterdam*, 1992. (*see* **93e:00021**) 93A14

Bakulin, A. V. (*with* Tseitlin, G. E.) Multilevel structured program designs and their justification. (Russian. English and Ukrainian summaries) *Kibernet. Sistem. Anal.* **1991**, *no.* 5, 98–107, 189; *translation in Cybernet. Systems Anal.* **27** (1991), *no.* 5, 719–726 (1992). 68N05 (03B70)

Bakunda, Athanase Connexions entre les points efficaces et les points relativement faiblement efficaces en programmation multiobjective par rapport à un cône. (English summary) [Connections between efficient points and relatively weakly efficient points in multiobjective programming with respect to a cone] *Bull. Soc. Roy. Sci. Liège* **61** (1992), *no.* 5, 377–395. (Reinhard Nehse) **93j:90084** 90C29 (90A05)

Bakunin, G. N. (*with* Bavrin, I. I.) Ballistic characteristic of continuous functions. (Russian) *Dokl. Akad. Nauk* **323** (1992), *no.* 2, 199–201; *translation in Russian Acad. Sci. Dokl. Math.* **45** (1992), *no.* 2, 269–271 (1993). (Alexander E. Gutman) **93j:26004** 26A30

Bakurov, V. G. On the complete integrability of the Kadomtsev-Petviashvili I equation. *Phys. Lett. A* **160** (1991), *no.* 4, 367–371. (David J. Kaup) **93b:58062** 58F07 (35Q53)

Bakushinskiĭ, A. B. Iterative method for the solution of nonlinear ill-posed problems and their applications. (English summary) *Ill-posed problems in natural sciences (Moscow*, 1991), 13–17, *VSP, Utrecht*, 1992. (*see* **93m:00041**) 65J15 (47H17)

— On a convergence problem of the iterative-regularized Gauss-Newton method. (Russian. Russian summary) *Zh. Vychisl. Mat. i Mat. Fiz.* **32** (1992), *no.* 9, 1503–1509; *translation in Comput. Math. Math. Phys.* **32** (1992), *no.* 9, 1353–1359 (1993). (I. P. Mysovskikh) **93k:65049** 65J15

Bala, Pawan (*with* Arora, S. C.) On the structure of selfadjoint algebra of finite strict multiplicity. *Internat. J. Math. Math. Sci.* **15** (1992), *no.* 2, 355–358. (Sing Cheong Ong) **93c:47049** 47D25 (47A15)

— (*with* Arora, S. C.) Invariant subspaces of algebras of finite strict multiplicity. (English summary) *Math. Japon.* **37** (1992), *no.* 5, 909–912. (Warren R. Wogen) **93h:47057** 47D30 (47A15)

Bala, Venkatesh (*with* Majumdar, Mukul) Chaotic tatonnement. (English summary) *Econom. Theory* **2** (1992), *no.* 4, 437–445. (Summary) **93g:90015** 90A12

Balabaev, V. E. On a class of first-order multidimensional elliptic systems. (Russian. Russian summary) *Differentsial'nye Uravneniya* **28** (1992), *no.* 4, 628–637, 733; *translation in Differential Equations* **28** (1992), *no.* 4, 510–517. (V. S. Rabinovich) **93m:35066** 35J55

Balaban, Alexandru T. (*with* Morikawa, Tetsuo) Topological formulas and upper/lower bounds in chemical polygonal graphs, particularly in benzenoid polyhexes. (English summary) *Match No.* 28 (1992), 235–247. (Summary) **93i:92019** 92E10 (05C90)

— Solved and unsolved problems in chemical graph theory. (English summary) *Quo vadis, graph theory?*, 109–126, *Ann. Discrete Math.*, 55, *North-Holland, Amsterdam*, 1993. (Summary) **93m:92026** 92E10 (05C90)

Bałaban, Tadeusz Constructive gauge theory. II. *Constructive quantum field theory, II (Erice*, 1988), 55–68, *NATO Adv. Sci. Inst. Ser. B Phys.*, 234, *Plenum, New York*, 1990. (*see* **93g:81074**) 81T08

— (*with* O'Carroll, Michael L.; Schor, Ricardo) Properties of block renormalization group operators for Euclidean fermions in an external gauge field. *J. Math. Phys.* **32** (1991), *no.* 11, 3199–3208. (Bing Hong Wang) **93f:81093** 81T17 (81T25)

Balabanyan, G. O. Construction of equations for classical equilibrium correlation Green functions on the basis of kinetic equations. II. (Russian. English summary) *Teoret. Mat. Fiz.* **89** (1991), *no.* 1, 132–150; *translation in Theoret. and Math. Phys.* **89** (1991), *no.* 1, 1106–1119 (1992). (Summary) **93b:82061** 82C40 (82C31)

Balachandran, A. P. (*with* Ercolessi, E.; Morandi, G.; Srivastava, A. M.) ★ Hubbard model and anyon superconductivity. World Scientific Lecture Notes in Physics, 38. *World Scientific Publishing Co., Inc., River Edge, NJ*, 1990. viii+138 *pp. ISBN* 981-02-0348-9; 981-02-0349-7 (Guang Shan Tian) **93g:82108** 82D55 (81V70, 82D40, 82D50)

— (*with* Daughton, A.; Gu, Z.-C.; Marmo, Giuseppe; Sorkin, R. D.; Srivastava, A. M.) A topological spin-statistics theorem or a use of the antiparticle. The birth and early evolution of our Universe (Gräftåvallen, 1990). *Phys. Scripta* **1991**, *Vol.* T36, 253–257. (Yu Liang Liu) **93c:81099** 81S99 (81R99)

— (*with* Marmo, Giuseppe; Simoni, A.; Sparano, G.) Quantum bundles and their symmetries. *Internat. J. Modern Phys. A* **7** (1992), *no.* 8, 1641–1667. (Jan Segert) **93f:58086** 58F06 (58E15, 58Z05, 81S10)

— (*with* Ercolessi, E.) Statistics on networks. (English summary) *Internat. J. Modern Phys. A* **7** (1992), *no.* 19, 4633–4654. (Summary) **93d:81025** 81P99 (82B03)

— (*with* Bimonte, G.; Gupta, K. S.; Stern, Allen Bruce) Conformal edge currents in Chern-Simons theories. (English summary) *Internat. J. Modern Phys. A* **7** (1992), *no.* 19, 4655–4670. (Pablo M. Llatas) **93i:81130** 81T13 (81R10)

— (*with* Bimonte, G.; Gupta, K. S.; Stern, Allen Bruce) The Chern-Simons source as a conformal family and its vertex operators. (English summary) *Internat. J. Modern Phys. A* **7** (1992), *no.* 23, 5855–5876. 81T40

— (*with* Sorkin, R. D.; McGlinn, W. D.; O'Raifeartaigh, Lochlainn; Sen, Siddhartha[1]) The spin-statistics connection from homology groups of configuration space and an anyon Wess-Zumino term. (English summary) *Internat. J. Modern Phys. A* **7** (1992), *no.* 27, 6887–6906. (Giovanni Landi) **93m:81124** 81T40 (81S99)

— (*with* McGlinn, W. D.; O'Raifeartaigh, Lochlainn; Sen, Siddhartha[1]; Sorkin, R. D.; Srivastava, A. M.) Topological spin-statistics theorems for strings. *Modern Phys. Lett. A* **7** (1992), *no.* 16, 1427–1442. (Emil Vinţeler) **93g:81116** 81T30 (81S99)

Balachandran, Krishnan (*with* Ilamaran, S.) Existence of solutions of nonlinear differential equations with deviating arguments. *Bull. Austral. Math. Soc.* **44** (1991), *no.* 3, 467–476. (R. R. Akhmerov) **93b:34079** 34K05 (34K40, 47H09, 47H15, 47N20)

— (*with* Anguraj, A.) Existence, continuous dependence and periodic solutions of nonlinear integrodifferential equation with infinite delay. (English summary) *Riv. Mat. Univ. Parma* (4) **17** (1991), 171–180 (1992). (George Seifert) **93f:45010** 45J05

— (*with* Anguraj, A.) Existence of solution for a mixed neutral system. (English summary) *J. Appl. Math. Stochastic Anal.* **5** (1992), *no.* 3, 221–226. (K. Smítalová) **93h:34115** 34K05 (34K40)

— Controllability of neutral Volterra integrodifferential systems. *J. Austral. Math. Soc. Ser. B* **34** (1992), *no.* 1, 18–25. (Y. Cherruault) **93d:93012** 93B05 (45D05, 45J05)

— (*with* Balasubramaniam, P.) A note on controllability of nonlinear Volterra integrodifferential systems. (English summary) *Kybernetika (Prague)* **28** (1992), *no.* 4, 284–291. (From the introduction) **93f:93015** 93B05 (45D05)

— (*with* Anguraj, A.) Existence of solutions of nonlinear differential inclusions. *Mem. Fac. Sci. Kôchi Univ. Ser. A Math.* **13** (1992), 61–66. (Evgenios P. Avgerinos) **93h:34025** 34A60 (47N20)

— (*with* Anguraj, A.) On the solution sets of differential inclusion in Banach spaces. *Tamkang J. Math.* **23** (1992), *no.* 1, 59–65. (Evgenios P. Avgerinos) **93g:34023** 34A60 (34G20, 47N20)

Baladi, V. Optimality of Ruelle's bound for the domain of meromorphy of generalized zeta functions. *Portugal. Math.* **49** (1992), *no.* 1, 69–83. (Nicolai T. A. Haydn) **93i:58122** 58F20

Balaev, M. K. On the well-posedness of operator-differential equations of arbitrary order. (Russian) *Dokl. Akad. Nauk SSSR* **317** (1991), *no.* 3, 526–529; *translation in Soviet Math. Dokl.* **43** (1991), *no.* 2, 411–415. (From the text) **93d:34102** 34G10 (34A12, 35G10, 47D09, 47N20)

Balagur, A. A. (*with* Shcheglov, V. A.) Fraunhoffer diffraction in nonlinear media at supercritical radiation fields. (Russian) *Trudy Fiz. Inst. Lebedev.* **212** (1991), 78–92. (From the text) **93d:78005** 78A45

Balakrishna, B. S. (*with* Gürsey, Feza; Wali, Kameshwar C.) Towards a unified treatment of Yang-Mills and Higgs fields. *Phys. Rev. D* (3) **44** (1991), *no.* 10, 3313–3321. (Summary) **93h:81080** 81T13 (58B30)

— (*with* Gürsey, Feza; Nguyen Ai Viet; Wali, Kameshwar C.) Towards a unified treatment of Yang-Mills and Higgs fields: a supersymmetric extension. (English summary) *Phys. Rev. D* (3) **46** (1992), *no.* 10, 4698–4703. (Boris Moiseevich Zupnik) **93j:81098** 81T60 (58Z05, 81V25)

— (*with* Wali, Kameshwar C.) Bogomol'nyĭ equations in the Einstein-Yang-Mills-Higgs system. (English summary) *Phys. Rev. D* (3) **46** (1992), *no.* 12, 5228–5231. (Summary) **93i:81298** 81V17 (81T13, 83C20, 83C75)

Balakrishna, N. (*with* Adke, S. R.) Renewal counting process induced by a discrete Markov chain. (English summary) *Austral. J. Statist.* **34** (1992), *no.* 1, 115–121. (Masakiyo Miyazawa) **93j:60123** 60K05 (60J10)

— (*with* Adke, S. R.) Estimation of the mean of some stationary Markov sequences. *Comm. Statist. Theory Methods* **21** (1992), *no.* 1, 137–159. (Hans M. Dietz) **93e:62213** 62M05 (60G10)

Balakrishnan, A. V. Stochastic partial differential equations in control of structures. *Stochastic partial differential equations and their applications* (*Charlotte, NC*, 1991), 12–21, *Lecture Notes in Control and Inform. Sci.*, 176, *Springer, Berlin*, 1992. (Introduction) **93h:93037** 93C20 (35R60, 47N70, 60H15, 73K50)

— A generalization of the Kalman-Yakubovic lemma. *Systems, models and feedback: theory and applications* (*Capri*, 1992), 59, *Progr. Systems Control Theory*, 12, *Birkhäuser Boston, Boston, MA*, 1992. (*see* **93a:93006**) 93D05

— Semigroup theory and control theory. (English summary) *Mathematical theory of control* (*Bombay*, 1990), 11–20, *Lecture Notes in Pure and Appl. Math.*, 142, *Dekker, New York*, 1993. (Gabriel Dimitriu) **93j:93074** 93C25 (47D03, 47N70)

— *see also* **Mathematical theory of control, 93g:93003**

Balakrishnan, Narayanaswamy (*with* Bendre, S. M.; Malik, H. J.) General relations and identities for order statistics from nonindependent nonidentical variables. *Ann. Inst. Statist. Math.* **44** (1992), *no.* 1, 177–183. (Kuo Tung Lin) **93e:62134** 62G30

— (*with* Balasubramanian, Krishnaswami; Malik, H. J.) Operator methods in order statistics. (English summary) *Austral. J. Statist.* **34** (1992), *no.* 3, 489–496. 62G30

— (*with* Lien, Da-Hsiang Donald; Balasubramanian, Krishnaswami) Moments of order statistics from a non-overlapping mixture model with applications to truncated Laplace distribution. *Comm. Statist. Theory Methods* **21** (1992), *no.* 7, 1909–1928. 62G30

— (*with* Liang, TaChen) A characterization of exponential distributions through conditional independence. *J. Roy. Statist. Soc. Ser. B* **54** (1992), *no.* 1, 269–271. (Summary) **93c:62022** 62E10

— (*with* Balasubramanian, Krishnaswami) Indicator method for a recurrence relation for order statistics. *Statist. Probab. Lett.* **14** (1992), *no.* 1, 67–69. (Summary) **93a:62078** 62G30 (62E15)

— (*with* Ahsanullah, Mohammad; Chan, P. S.) Relations for single and product moments of record values from Gumbel distribution. (English summary) *Statist. Probab. Lett.* **15** (1992), *no.* 3, 223–227. (Summary) **93j:62143** 62G30

— (*with* Balasubramanian, Krishnaswami) Equivalence of Hartley-David-Gumbel and Papathanasiou bounds and some further remarks. (English summary) *Statist. Probab. Lett.* **16** (1993), *no.* 1, 39–41. 62G30

— (*with* Balasubramanian, Krishnaswami) A log-concavity property of probability of occurrence of exactly *r* arbitrary events. (English summary) *Statist. Probab. Lett.* **16** (1993), *no.* 3, 249–251. (Summary) **93k:60024** 60C05

— *see also* **Harter, H. Leon, 93c:62001c**

Balakrishnan, R. *see* **Balakrishnan, Rangaswami**

Balakrishnan, Radha (*with* Dandoloff, Rossen; Bishop, Alan R.) Two-level systems: space curve formalism, Berry's phase and Gauss-Bonnet theorem. (English summary) *J. Phys. A* **25** (1992), *no.* 18, L1105–L1110. (Shinichi Tajima) **93i:81048** 81Q99

Balakrishnan, Rangaswami (*with* Sampath Kumar, R.) Almost balanced colourings of infinite sets of lattice points. (English summary) *Proceedings of the Symposium on Graph Theory and Combinatorics* (*Cochin*, 1991), 15–18, *Publication*, 21, *Centre Math. Sci., Trivandrum*, 1991. (Summary) **93k:05059** 05C15

Balakrishnan, V. (*with* Balemi, S.) Branch and bound algorithm for global optimization in control theory. (English summary) *Mutual impact of computing power and control theory* (*Prague*, 1992), 103–108, *Czech. Acad. Sci., Prague*, 1992. (*see* **93f:93005**) 93B40 (90C30)

— (*with* Balemi, S.; Boyd, Stephen P.) Computation of the maximum H_∞-norm of parameter-dependent linear systems by a branch and bound algorithm. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, I* (*Kobe*, 1991), 305–310, *Mita, Tokyo*, 1992. (*see* **93g:93005**) 93B36 (93B40)

— (*with* Revathi, S.; Valsakumar, M. C.; Weiss, George H.) Size-dependent diffusion coefficient in a myopic random walk on a strip. (English summary) Statistical physics of disordered solids, polymers and glasses (Calcutta, 1991/1992). *Phys. A* **186** (1992), *no.* 1-2, 210–219. (Summary) **93g:82052** 82B41

— (*with* Boyd, Stephen P.) On computing the worst-case peak gain of linear systems. (English summary) *Systems Control Lett.* **19** (1992), *no.* 4, 265–269. (Summary) **93j:93085** 93C55 (93B36, 93C05, 93C45)

Balakumar, P. (*with* Duck, Peter W.) On the stability of normal shock waves. (English summary) *Instability, transition, and turbulence* (*Hampton, VA*, 1991), 253–265, *ICASE/NASA LaRC Ser., Springer, New York*, 1992. (Summary) **93k:76054** 76E99 (76L05)

— (*with* Hall, Philip[2]; Papageorgiu, D.) On a class of unsteady three-dimensional Navier-Stokes solutions relevant to rotating disc flows: threshold amplitudes and finite-time singularities. *J. Fluid Mech.* **238** (1992), 297–323. (Summary) **93c:76016** 76D05 (76E30)

Bálan, Trandafir T. Generalizing the Minkowskian space-time. I. (English summary) *Stud. Cerc. Mat.* **44** (1992), *no.* 2, 89–107. (P. C. Vaidya) **93i:83005** 83A05 (03B30, 04A05, 08A05)

Balanda, L. (*with* Viszus, E.) On Liouville theorem and the regularity of weak solutions to some nonlinear elliptic systems of higher order. *Comment. Math. Univ. Carolin.* **32** (1991), *no.* 4, 615–625. (Michael Wiegner) **93f:35059** 35J60 (35D10, 35J45)

Balandin, A. V. On a system of differential equations for invariants of a surface. (Russian) *Differential and integral equations* (*Russian*), 101–103, *Gor'kov. Gos. Univ., Gorki*, 1990. (Josef Janyška) **93j:53018** 53A55 (53A20)

Balandin, M. P. (*with* Zastavenko, L. G.) ★ On two-dimensional quasiclassics. With a Russian summary. Сообщения Объединенного Института Ядерных Исследований. Дубна [Communications of the Joint Institute for Nuclear Research. Dubna], E2-91-133. *Joint Inst. Nuclear Res., Dubna*, 1991. 13 *pp.* (A. Weron) **93b:81065** 81Q20

Balandin, S. P. The Painlevé test and analytic solution of a generalized nonlinear Schrödinger equation. (Russian. English and Russian summaries) *Vestsī Akad. Navuk Belarusī Ser. Fīz. Mat. Navuk* **1992**, *no.* 1, 115–118, 128. 35Q55

Balanis, Constantine A. (*with* Tirkas, Panayiotis A.; Renaut, Rosemary A.) Higher order absorbing boundary conditions for the finite-difference time-domain method. (English summary) *IEEE Trans. Antennas and Propagation* **40** (1992), *no.* 10, 1215–1222. 78–08

Balankin, A. S. Fractal mechanics of deformable media and the topology of fracture of rigid bodies. (Russian) *Dokl. Akad. Nauk* **322** (1992), *no.* 5, 869–874. 73N20 (58F40, 73M25)

— The theory of elasticity of fractals and models of nonlinear elasticity, high elasticity and fracture of materials with a multifractal structure. (Russian) *Dokl. Akad. Nauk* **325** (1992), *no.* 3, 465–471; *translation in Soviet Phys. Dokl.* **37** (1992), *no.* 7, 379–382. 73B99 (73C50, 73M25, 73S10)

Balantekin, A. B. (*with* Castaños, O.; Moshinsky, M.) Relations between the nuclear shell model Hamiltonian and the orthosymplectic superalgebra Osp(1|2). *Phys. Lett. B* **284** (1992), *no.* 1-2, 1–5. (Summary) **93b:81307** 81V35 (81R05)

Balas, Egon (*with* Fischetti, Matteo) The fixed-outdegree 1-arborescence polytope. (English summary) *Math. Oper. Res.* **17** (1992), *no.* 4, 1001–1018. (András Faragó) **93m:90088** 90C35 (68R10, 90C05)

— (*with* Xue, Jue) Addendum: "Minimum weighted coloring of triangulated graphs, with application to maximum weight vertex packing and clique finding in arbitrary graphs" [SIAM J. Comput. **20** (1991), no. 2, 209–221; MR 92h:68069]. *SIAM J. Comput.* **21** (1992), *no.* 5, 1000. (From the text) **93g:68104** 68R10 (05C15, 05C85, 68Q20)

— (*with* Ceria, Sebastián; Cornuéjols, Gérard) Solving mixed 0-1 programs by a lift-and-project method. (English summary) *Proceedings of the Fourth Annual ACM-SIAM Symposium on Discrete Algorithms* (*Austin, TX*, 1993), 232–242, *ACM, New York*, 1993. (*see* **93k:05002**) 90C09

Balas, Gary (*with* Packard, Andy; Zhou, Kemin; Pandey, Pradeep; Leonhardson, Jorn) Optimal, constant I/O similarity scaling for full-information and state-feedback control problems. (English summary) *Systems Control Lett.* **19** (1992), *no.* 4, 271–280. (Summary) **93f:93050** 93B36

Balashov, D. B. Simple waves in the Prandtl-Reuss equations. (Russian) *Prikl. Mat. Mekh.* **56** (1992), *no.* 1, 124–133; *translation in J. Appl. Math. Mech.* **56** (1992), *no.* 1, 107–116. (From the text) **93d:73038** 73E70 (73D05, 73D40, 73E05)

Balashov, L. A. (*with* Dreizin, Yu. A.; Mel'nikov, M. S.) Approximation of exponential functions and the relative proximity of stable signals. (Russian) *Mat. Sb.* **182** (1991), *no.* 11, 1542–1558; *translation in Math. USSR-Sb.* **74** (1993), *no.* 2, 291–307. (Manfred Tasche) **93a:41070** 41A80 (65R10, 94A12)

Balashova, G. S. Limit behavior of solutions of a sequence of infinite-order differential equations. (Russian. Russian summary) *Differentsial'nye Uravneniya* **28** (1992), *no.* 4, 637–651, 733; *translation in Differential Equations* **28** (1992), *no.* 4, 518–528. (Summary) **93h:35222** 35R50 (34A35)

Balasin, H. (*with* Stierle, M.) The action principle revisited. *J. Math. Phys.* **32** (1991), *no.* 5, 1376–1382. (Summary) **93b:81171** 81T15

Balasko, Yves The set of regular equilibria. (English summary) *J. Econom. Theory* **58** (1992), *no.* 1, 1–8. (V. V. Obukhovskiĭ) **93i:90018** 90A14 (58C27)

Balasubrahmanyam, P. (*with* Sudharsan, T. V.; Subramanian, K. G.) On a subclass of close-to-star functions. *J. Math. Phys. Sci.* **25** (1991), *no.* 4, 343–350. 30C45

Balasubramaniam, P. (*with* Balachandran, Krishnan) A note on controllability of nonlinear Volterra integrodifferential systems. (English summary) *Kybernetika* (*Prague*) **28** (1992), *no.* 4, 284–291. (From the introduction) **93f:93015** 93B05 (45D05)

Balasubramanian, G. On extensions of fuzzy topologies. *Kybernetika* (*Prague*) **28** (1992), *no.* 3, 239–244. 54A40 (04A72)

— Fuzzy disconnectedness and its stronger forms. (English summary) *Indian J. Pure Appl. Math.* **24** (1993), *no.* 1, 27–30. (Summary) **93m:54012** 54A40 (04A72)

Balasubramanian, K. *see* **Balasubramanian, Krishnaswami**

Balasubramanian, Krishnan (*with* Gusfield, Dan; Naor, Dalit) Parametric optimization of sequence alignment. *Proceedings of the Third Annual ACM-SIAM Symposium on Discrete Algorithms* (*Orlando, FL*, 1992), 432–439, *ACM, New York*, 1992. (James L. Cornette) **93f:92018** 92D20 (92–04, 92C40)

— Computer generation of Hadamard matrices. (English summary) *J. Comput. Chem.* **14** (1993), *no.* 5, 603–619. (Summary) **93m:05039** 05B20

Balasubramanian, Krishnaswami (*with* Beg, M. I.) On expectations of functions of order statistics. (English summary) *Sankhyā Ser. A* **52** (1990), *no.* 1, 103–114. 62G30

— (*with* Beg, M. I.; Bapat, R. B.) On families of distributions closed under extrema. (English summary) *Sankhyā Ser. A* **53** (1991), *no.* 3, 375–388. (Summary) **93k:62115a** 62G30

— (*with* Balakrishnan, Narayanaswamy; Malik, H. J.) Operator methods in order statistics. (English summary) *Austral. J. Statist.* **34** (1992), *no.* 3, 489–496. 62G30

— (*with* Lien, Da-Hsiang Donald; Balakrishnan, Narayanaswamy) Moments of order statistics from a non-overlapping mixture model with applications to truncated Laplace distribution. *Comm. Statist. Theory Methods* **21** (1992), *no.* 7, 1909–1928. 62G30

— (*with* Dey, A.; Bhimasankaram, P.) Diagonally range dominant matrices. (English summary) *Linear Algebra Appl.* **176** (1992), 45–60. (William Watkins) **93m:15004** 15A09 (15A23, 15A57)

— (*with* Beg, M. I.) Distributions determined by conditioning on a pair of order statistics. *Metrika* **39** (1992), *no.* 2, 107–112. (Javad Behboodian) **93h:62018** 62E10 (62G30)

— (*with* Beg, M. I.; Bapat, R. B.) Corrigendum: "On families of distributions closed under extrema". *Sankhya Ser. A* **54** (1992), *no.* 1, 133. (Editors) **93k:62115b** 62G30

— (*with* Balakrishnan, Narayanaswamy) Indicator method for a recurrence relation for order statistics. *Statist. Probab. Lett.* **14** (1992), *no.* 1, 67–69. (Summary) **93a:62078** 62G30 (62E15)

— (*with* Balakrishnan, Narayanaswamy) Equivalence of Hartley-David-Gumbel and Papathanasiou bounds and some further remarks. (English summary) *Statist. Probab. Lett.* **16** (1993), *no.* 1, 39–41. 62G30

— (*with* Balakrishnan, Narayanaswamy) A log-concavity property of probability of occurrence of exactly r arbitrary events. (English summary) *Statist. Probab. Lett.* **16** (1993), *no.* 3, 249–251. (Summary) **93k:60024** 60C05

Balasubramanian, Ramachandran (*with* Ivić, Aleksandar; Ramachandra, K.) The mean square of the Riemann zeta-function on the line $\sigma = 1$. (English summary) *Enseign. Math.* (2) **38** (1992), *no.* 1-2, 13–25. (Tom Meurman) **93f:11061** 11M06

— (*with* Ramachandra, K.; Sankaranarayanan, Ayyadurai) On the frequency of Titchmarsh's phenomenon for $\zeta(s)$. VIII. *Proc. Indian Acad. Sci. Math. Sci.* **102** (1992), *no.* 1, 1–12. (O. H. Körner) **93f:11062** 11M06

— (*with* Ramachandra, K.) On the zeros of $\zeta'(s) - a$. *Acta Arith.* **63** (1993), *no.* 2, 183–191. (Kohji Matsumoto) **93m:11085** 11M26 (11M06)

Balazard, Michel (*with* Smati, Abdelhakim) Travaux de Pomerance sur la fonction φ d'Euler. [Work of Pomerance on the Euler φ function] *Groupe de Travail en Théorie Analytique et Élémentaire des Nombres*, 1989–1990, 5–36, *Publ. Math. Orsay*, 92-01, *Univ. Paris XI, Orsay*, 1992. (Andrew Granville) **93i:11108** 11N37

— (*with* Nicolas, Jean-Louis; Pomerance, Carl; Tenenbaum, Gérald) Grandes déviations pour certaines fonctions arithmétiques. (English summary) [Large deviations for certain arithmetical functions] *J. Number Theory* **40** (1992), *no.* 2, 146–164. (Antanas Laurinčikas) **93c:11060** 11K65

Balázs, Katherine Simultaneous approximation by the derivatives of Lagrange interpolation in the infinite interval. *Ann. Univ. Sci. Budapest. Eötvös Sect. Math.* **34** (1991), 53–57 (1992). (Muhammad A. Bokhari) **93f:41028** 41A28

— (*with* Kilgore, Theodore) Pointwise exponentially weighted estimates for approximation on the half-line. (English summary) *Numer. Funct. Anal. Optim.* **13** (1992), *no.* 3-4, 223–232. (Ying Guang Shi) **93f:41027** 41A28

Balázs, Martin (*with* Goldner, Gavrilă) Fréchet derivative as a limit of divided differences. *Seminar on Mathematical Analysis*, 115–120, *Preprint*, 91-7, "*Babeş-Bolyai*" *Univ., Cluj-Napoca*, 1991. (*see* **93i:00015**) 46G05

— (*with* Goldner, Gavrilă) Monotone enclosure by Steffensen's method. *Seminar on Mathematical Analysis* (*Cluj-Napoca*, 1991–1992), 79–86, *Preprint*, 92-7, "*Babeş-Bolyai*" *Univ., Cluj-Napoca*, 1992. (*see* **93m:26001**) 65J15 (47H17)

Balazs, N. L. Tunnelling and the lazy baker's map. *Quantum chaos—quantum measurement* (*Copenhagen*, 1991), 139–143, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 358, *Kluwer Acad. Publ., Dordrecht*, 1992. (From the text) **93a:81046** 81Q50 (58F13)

Balbiani, Philippe Modal logic and negation as failure. *J. Logic Comput.* **1** (1991), *no.* 3, 331–356. (Summary) **93a:68077** 68Q55 (03B45, 03B70)

— A modal semantics of negation in logic programming. (English summary) *Fund. Inform.* **16** (1992), *no.* 3-4, 231–262. (Summary) **93e:68060** 68Q55 (03B45, 03B70, 68N17)

Balbinot, Roberto (*with* Kerner, Richard; Fabris, Júlio C.) Cosmological solutions from supersymmetric Kaluza-Klein theory. *Quantum gravity* (*Moscow*, 1990), 633–642, *World Sci. Publishing, River Edge, NJ*, 1991. (Summary) **93c:83111** 83E15 (83C20, 83E50)

— (*with* El Gradechi, Amine M.; Gazeau, Jean-Pierre; Giorgini, Bruno) Phase spaces for quantum elementary systems in anti-de Sitter and Minkowski spacetimes. *J. Phys. A* **25** (1992), *no.* 5, 1185–1210. (J.-P. Antoine) **93j:81058** 81S30 (22E70, 81R05, 81S10)

— *see also* **Modern cosmology in retrospect**, **93f:83088**

Balcar, Bohuslav (*with* Simon, Petr) Reaping number and π-character of Boolean algebras. (English summary) Topological, algebraical and combinatorial structures. Frolík's memorial volume. *Discrete Math.* **108** (1992), *no.* 1-3, 5–12. (S. Comer) **93j:06014** 06E05 (03G05, 54A25)

Balcázar, José L. (*with* Schöning, Uwe) Logarithmic advice classes. *Theoret. Comput. Sci.* **99** (1992), *no.* 2, 279–290. (Helmut Alt) **93i:68070** 68Q15 (03D15)

Balcerzak, Marek Some remarks on sup-measurability. *Real Anal. Exchange* **17** (1991/92), *no.* 2, 597–607. (M. Laczkovich) **93k:28001** 28A05 (03E15, 03E35, 03E65, 28A20)

— Another nonmeasurable set with property (s^0). *Real Anal. Exchange* **17** (1991/92), *no.* 2, 781–784. (Pedro Jiménez Guerra) **93e:28003** 28A05

Balcerzyk, Stanisław *see* **Topics in algebra**, **93a:00023** *and* **93b:00037**

Balchen, Jens Glad (*with* Lund, E. J.; Foss, B. A.) Multiple model estimation with inter-residual distance feedback. (English summary) *Identification and system parameter estimation* 1991, *Vol.* 1,2 (*Budapest*, 1991), 889–894, *IFAC Sympos. Ser.*, 3, *Pergamon, Oxford*, 1992. (*see* **93h:93009**) 93B52

— (*with* Olsen, Odd Arild) Structured modeling of fish physiology. (English summary) *Math. Biosci.* **112** (1992), *no.* 1, 81–113. 92C30

Balcı, Sabahattin On the cohomology groups of complex analytic manifolds. (English summary) *Comm. Fac. Sci. Univ. Ankara Ser. A_1 Math. Statist.* **38** (1989), *no.* 1-2, 67–76 (1990). (Abd El-Sattar Dabbour) **93m:32015** 32C35 (55N30)

Balda, Antonio *see* **Puerta Balda, Antonio**

Baldassarri, Francesco (*with* Chiarellotto, Bruno) On Christol's theorem. A generalization to systems of PDEs with logarithmic singularities depending upon parameters. *p-adic methods in number theory and algebraic geometry*, 1–24, *Contemp. Math.*, 133, *Amer. Math. Soc., Providence, RI*, 1992. (Takashi Harase) **93j:12006** 12H25 (12J27)

— (*with* Chiarellotto, Bruno) On André's transfer theorem. *p-adic methods in number theory and algebraic geometry*, 25–37, *Contemp. Math.*, 133, *Amer. Math. Soc., Providence, RI*, 1992. (Alain Escassut) **93k:12016** 12H25

Balder, Erik J. On equivalence of strong and weak convergence in L_1-spaces under extreme point conditions. *Israel J. Math.* **75** (1991), *no.* 1, 21–47. (W. W. Breckner) **93d:46059** 46E40 (46N10, 49J45)

— On weak convergence implying strong convergence under extremal conditions. *J. Math. Anal. Appl.* **163** (1992), *no.* 1, 147–156. (Michel Valadier) **93b:49045** 49Q15 (28B20, 46E30, 49J45)

— Existence without explicit compactness in stochastic dynamic programming. (English summary) *Math. Oper. Res.* **17** (1992), *no.* 3, 572–580. (Alexei Gaivoronski) **93i:90073** 90C15 (90C39)

Baldi, Paolo (*with* Sanz, Marta) Une remarque sur la théorie des grandes déviations. [A remark on the theory of large deviations] *Séminaire de Probabilités, XXV*, 345–348, *Lecture Notes in Math.*, 1485, *Springer, Berlin*, 1991. (Dominique Lépingle) **93k:60065** 60F10

— (*with* Roynette, Bernard) Entre la normalisation de Strassen et celle de Chung. (English summary) [Between the Strassen and the Chung normalizations] *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 12, 935–940. (Summary) **93c:60120** 60J65

— (*with* Ben Arous, Gérard; Kerkyacharian, Gérard) Large deviations and the Strassen theorem in Hölder norm. *Stochastic Process. Appl.* **42** (1992), *no.* 1, 171–180. (Tzong-Yow Lee) **93f:60034** 60F10

Baldi, Pierre (*with* Venkatesh, Santosh S.) Programmed interactions in higher-order neural networks: the outer-product algorithm. *J. Complexity* **7** (1991), *no.* 4, 443–479. (George Georgiou) **93a:68123** 68T05 (68–02, 82C32)

Baldinger, Robert (*with* Albert, Douglas; Rhodes, John) Undecidability of the identity problem for finite semigroups. *J. Symbolic Logic* **57** (1992), *no.* 1, 179–192. (Michael Anshel) **93f:03030** 03D35 (03D40, 20M05, 68Q05)

Baldini, Ugo (*with* Napolitani, Pier Daniele) Toward a biography of Luca Valerio: published and unpublished sources for a reconstruction of his scientific career. (Italian) *Boll. Storia Sci. Mat.* **11** (1991), *no.* 1, 157 *pp.* (From the introduction) **93i:01013** 01A40 (01A45)

— Boscovich and the Jesuit tradition in natural philosophy: continuity and change. (Italian. English and Italian summaries) *Nuncius Ann. Storia Sci.* **7** (1992), *no.* 2, 3–68. 01A50 (01A70)

Baldino, Roberto Ribeiro Nonstandard analysis: hyperrationals and the location principle. (Portuguese. English and Portuguese summaries) *Rev. Mat. Estatíst.* **9** (1991), 15–21. (Summary) **93d:26025** 26E35 (03H05)

Baldoni Silva, M. W. (*with* Knapp, Anthony W.) Intertwining operators into $L^2(G/H)$. *Representation theory of Lie groups and Lie algebras* (*Fuji-Kawaguchiko*, 1990), 95–119, *World Sci. Publishing, River Edge, NJ*, 1992. (Roger Zierau) **93m:22015** 22E46 (22E30)

Baldwin, John T. *see* **Stability in model theory**, **93m:03003**

Baldwin, P. *see* **Baldwin, Paul**

Baldwin, P. R. A multidimensional continued fraction and some of its statistical properties. *J. Statist. Phys.* **66** (1992), *no.* 5-6, 1463–1505. (F. Schweiger) **93d:11082** 11K55 (11A55, 11Y16, 28D99, 58F11)

— A convergence exponent for multidimensional continued-fraction algorithms. *J. Statist. Phys.* **66** (1992), *no.* 5-6, 1507–1526. (F. Schweiger) **93d:11083** 11K55 (11A55, 11Y16, 28D99, 58F11)

Baldwin, Paul Coefficient functions for an inhomogeneous turning-point problem. *Mathematika* **38** (1991), *no.* 2, 217–238 (1992). (Archibald D. MacGillivray) **93e:34080** 34E20 (34E05)

Baldybekov, D. A. Iterative schemes of the method of fictitious domains for a difference biharmonic problem. (Russian) *Well-posed boundary value problems for nonclassical equations* (*Russian*), 68–77, *Akad. Nauk SSSR Sibirsk. Otdel., Inst. Mat., Novosibirsk*, 1990. (*see* **93m:35006**) 65N06

Baldyga, Jerzy *see* **Kopczyński, Wojciech**, **93e:83001**

Balemi, S. (*with* Balakrishnan, V.) Branch and bound algorithm for global optimization in control theory. (English summary) *Mutual impact of computing power and control theory* (*Prague*, 1992), 103–108, *Czech. Acad. Sci., Prague*, 1992. (*see* **93f:93005**) 93B40 (90C30)

— (*with* Boyd, Stephen P.; Balakrishnan, V.) Computation of the maximum H_∞-norm of parameter-dependent linear systems by a branch and bound algorithm. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, I* (*Kobe*, 1991), 305–310, *Mita, Tokyo*, 1992. (*see* **93g:93005**) 93B36 (93B40)

Balfour, James A. D. ★ Computer analysis of structural frameworks. Second edition. With separately available computer disks. *The Clarendon Press, Oxford University Press, New York*, 1992. xii+490 *pp. ISBN* 0-19-520964-8 (Title) **93f:73002** 73–04 (65–04, 73K99, 73V99)

Balian, Roger Wave problems in terms of complex classical paths. (English summary) *Forty more years of ramifications: spectral asymptotics and its applications*, 101–119, *Discourses Math. Appl.*, 1, *Texas A & M Univ., College Station, TX*, 1991. (Summary) **93h:81027** 81Q20 (58Z05)

— (*with* Vénéroni, Marcel) Correlations and fluctuations in static and dynamic mean-field approaches. *Ann. Physics* **216** (1992), *no.* 2, 351–430. (A. Ventura) **93g:81206** 81V35 (82B10, 82C10)

Balibar, Françoise *see* **Penrose, Roger**, **93k:00013**

Balibrea Gallego, Francisco (*with* Esquembre, Francisco) Existence of a repulsive invariant curve for a mapping of the plane into itself with distinct real eigenvalues. (Spanish. English summary) *Proceedings of the XVth Portuguese-Spanish Conference on Mathematics, Vol. II* (*Portuguese*) (*Évora*, 1990), 347–352, *Univ. Évora, Évora*, 1991. (Summary) **93c:58098** 58F08

— (*with* Esquembre, Francisco) Chaotic properties of the solution of Feigenbaum's functional equation. (Spanish. English summary) *Proceedings of the XVth Portuguese-Spanish Conference on Mathematics, Vol. II* (*Portuguese*) (*Évora*, 1990), 353–358, *Univ. Évora, Évora*, 1991. (Summary) **93c:58129** 58F13 (26A18, 39A12, 54H20)

Balińska, Krystyna T. (*with* Quintas, Louis V.) The random f-graph process. (English summary) *Quo vadis, graph theory?*, 333–339, *Ann. Discrete Math.*, 55, *North-Holland, Amsterdam*, 1993. (*see* **93k:05003**) 05C80

Balinski, M. L. Gaspard Monge: pour la patrie, les sciences et la gloire. [Gaspard Monge: for the motherland, science and glory] *Mathématiques appliquées aux sciences de l'ingénieur* (*Santiago*, 1989), 21–37, *Cépaduès, Toulouse*, 1991. (Gérard Jorland) **93a:01042** 01A70 (01A50, 01A55)

Balinskiĭ, A. I. Parametrization of varieties of symmetrizers for operators in finite-dimensional vector spaces. (Ukrainian. Ukrainian summary) *Mat. Metody i Fiz.-Mekh. Polya No.* 34 (1991), 1–3. (Summary) **93g:15001** 15A03 (47A05, 47A50)

Balk, A. M. (*with* Zakharov, V. E.) Stability of Kolmogorov spectra of weak turbulence. (Russian) *Integrability and kinetic equations for solitons* (*Russian*), 417–472, "*Naukova Dumka*", *Kiev*, 1990. (D. ter Haar) **93c:76042** 76F05

Balk, M. B. ★ Polyanalytic functions. Mathematical Research, 63. *Akademie-Verlag, Berlin*, 1991. 197 *pp. ISBN* 3-05-501292-5 (Heinrich Begehr) **93k:30076** 30G20 (31A30)
— Polyanalytic functions and their generalizations. (Russian) *Complex analysis. One variable*, 1 (*Russian*), 187–246, 256, *Itogi Nauki i Tekhniki, Akad. Nauk SSSR, Vsesoyuz. Inst. Nauchn. i Tekhn. Inform., Moscow*, 1991. (Marin S. Marinov) **93f:30050** 30G30 (30A05)
Balkan, V. V. Regular nonnormal partitions of a Lobachevskiĭ space by noncompact polyhedra. (Russian) *Izv. Akad. Nauk Moldav. SSR Mat.* **1990**, *no.* 3, 74–76, 79. (Z. Nádeník) **93b:51023** 51M20 (51M10)
— (*with* Makarov, V. S.) On the number of near neighbors in regular partitions of Lobachevskiĭ space by compact polyhedra. (Russian. English, Russian and Moldavian summaries) *Izv. Akad. Nauk Respub. Moldova Mat.* **1992**, *no.* 1, 71–77, 92. (E. J. F. Primrose) **93g:51017** 51M20
Balkema, A. A. A note on Trotter's proof of the continuity of local time for Brownian motion. *Seminar on Stochastic Processes*, 1990 (*Vancouver, BC*, 1990), 1–4, *Progr. Probab.*, 24, *Birkhäuser Boston, Boston, MA*, 1991. (Haya Kaspi) **93c:60113** 60J55 (60J65)
Ball, Frank (*with* Milne, Robin K.; Yeo, Geoffrey F.) Aggregated semi-Markov processes incorporating time interval omission. *Adv. in Appl. Probab.* **23** (1991), *no.* 4, 772–797. (Uwe Rösler) **93e:60177** 60K15
— (*with* O'Neill, Philip) A modification of the general stochastic epidemic motivated by AIDS modelling. (English summary) *Adv. in Appl. Probab.* **25** (1993), *no.* 1, 39–62. (Summary) **93j:92028** 92D30 (60J20)
Ball, J. M. (*with* Murat, François) Remarks on rank-one convexity and quasiconvexity. *Ordinary and partial differential equations, Vol. III* (*Dundee*, 1990), 25–37, *Pitman Res. Notes Math. Ser.*, 254, *Longman Sci. Tech., Harlow*, 1991. (Dominikus Noll) **93f:49003** 49J10 (49K10)
— (*with* James, Richard Dana) A characterization of plane strain. *Proc. Roy. Soc. London Ser. A* **432** (1991), *no.* 1884, 93–99. (Kewei Zhang) **93b:73014** 73C50 (35B65, 35J60)
— Dynamic energy minimization and phase transformations in solids. *ICIAM* 91 (*Washington, DC*, 1991), 3–14, *SIAM, Philadelphia, PA*, 1992. (*see* **93b:00026**) 73A05 (35A15, 49R99, 73–01)
— *see also* **New directions in differential equations and dynamical systems, 93i:00024**
Ball, Joseph A. (*with* Cohen, Nir) de Branges-Rovnyak operator models and systems theory: a survey. *Topics in matrix and operator theory* (*Rotterdam*, 1989), 93–136, *Oper. Theory Adv. Appl.*, 50, *Birkhäuser, Basel*, 1991. (E. R. Tsekanovs'kiĭ) **93a:47011** 47A45 (47–02, 47A56, 47B99, 47N70, 93A30)
— (*with* Gohberg, Israel; Rodman, Leiba) Boundary Nevanlinna-Pick interpolation for rational matrix functions. *J. Math. Systems Estim. Control* **1** (1991), *no.* 2, 131–164. (Gong Ning Chen) **93g:47016** 47A57 (30E05, 47A56, 93B25)
— (*with* Gohberg, Israel; Rodman, Leiba) Interpolation problems for rational matrix functions and systems theory. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, I* (*Kobe*, 1991), 3–12, *Mita, Tokyo*, 1992. (*see* **93g:93005**) 93B25 (47A57, 47N70)
— (*with* Helton, J. William; Verma, Madanpal) A J-inner-outer factorization principle for the H^∞ control problem. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, I* (*Kobe*, 1991), 31–36, *Mita, Tokyo*, 1992. (*see* **93g:93005**) 93B36 (47N70)
— (*with* Gohberg, Israel; Kaashoek, Marinus A.) Time-varying systems: Nevanlinna-Pick interpolation and sensitivity minimization. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, I* (*Kobe*, 1991), 53–58, *Mita, Tokyo*, 1992. (Summary) **93m:93027** 93B28 (47N70)
— (*with* Gohberg, Israel; Kaashoek, Marinus A.) Nevanlinna-Pick interpolation for time-varying input-output maps: the discrete case. *Time-variant systems and interpolation*, 1–51, *Oper. Theory Adv. Appl.*, 56, *Birkhäuser, Basel*, 1992. (*see* **93d:47148**) 47A57 (93C50)
— (*with* Gohberg, Israel; Kaashoek, Marinus A.) Nevanlinna-Pick interpolation for time-varying input-output maps: the continuous time case. *Time-variant systems and interpolation*, 52–89, *Oper. Theory Adv. Appl.*, 56, *Birkhäuser, Basel*, 1992. (*see* **93d:47148**) 47A57 (93C50)
— (*with* Alpay, Daniel; Gohberg, Israel; Rodman, Leiba) State space theory of automorphisms of rational matrix functions. *Integral Equations Operator Theory* **15** (1992), *no.* 3, 349–377. (E. R. Tsekanovs'kiĭ) **93d:47029** 47A56 (47N70, 93B28)
— (*with* Helton, J. William) Inner-outer factorization of nonlinear operators. *J. Funct. Anal.* **104** (1992), *no.* 2, 363–413. (Avraham Feintuch) **93e:47099** 47N70 (47H99, 93B25, 93C10)
— (*with* Helton, J. William) Nonlinear H^∞ control theory for stable plants. *Math. Control Signals Systems* **5** (1992), *no.* 3, 233–261. (Tamer Başar) **93c:93021** 93B36 (47N70, 90D25)
Ball, Keith Projection bodies and the Shephard problem. *Séminaire d'Initiation à l'Analyse, Exp. No.* 19, 7 *pp., Publ. Math. Univ. Pierre et Marie Curie*, 95, *Univ. Paris VI, Paris*, 199?. (G. T. Sallee) **93h:52004** 52A20
— (*with* Pajor, Alain) The entropy of convex bodies with "few" extreme points. *Geometry of Banach spaces* (*Strobl*, 1989), 25–32, *London Math. Soc. Lecture Note Ser.*, 158, *Cambridge Univ. Press, Cambridge*, 1990. (Shlomo Reisner) **93b:46024** 46B20 (46C05, 47B99, 52A05)
— Normed spaces with a weak-Gordon-Lewis property. *Functional analysis* (*Austin, TX*, 1987/1989), 36–47, *Lecture Notes in Math.*, 1470, *Springer, Berlin*, 1991. (M. I. Kadets) **93e:46013** 46B07 (52A21)
— Ellipsoids of maximal volume in convex bodies. *Geom. Dedicata* **41** (1992), *no.* 2, 241–250. (From the text) **93k:52006** 52A38 (52A40)
— Markov chains, Riesz transforms and Lipschitz maps. *Geom. Funct. Anal.* **2** (1992), *no.* 2, 137–172. (Aleksandr Koldobsky) **93b:46025** 46B20 (47B99, 47H99, 60J10)
— A lower bound for the optimal density of lattice packings. *Internat. Math. Res. Notices* **1992**, *no.* 10, 217–221. (Martin Henk) **93k:11061** 11H31 (52C07, 52C17)
Ball, William E. (*with* Gamble, Rose F.; Roman, Gruia-Catalin) Formal verification of pure production system programs. (English summary) *AAAI*-91. *Proceedings, Ninth National Conference on Artificial Intelligence, Vol.* 1, 2, 329–334, *AAAI Press, Menlo Park, CA*, 1991. (Summary) **93j:68129** 68Q60
Ballard, David (*with* Hrbáček, Karel) Standard foundations for nonstandard analysis. *J. Symbolic Logic* **57** (1992), *no.* 2, 741–748. (L. D. Kugler) **93d:03071** 03H05 (03C50, 03C55, 03E70)
Ballester-Bolinches, A. (*with* Doerk, Klaus; Pérez-Ramos, M. D.) On the lattice of $\mathfrak{F}$-subnormal subgroups. *J. Algebra* **148** (1992), *no.* 1, 42–52. (Alexander N. Skiba) **93h:20020** 20D10
Ballesteros, Angel (*with* Negro, Javier) A characterization of functional realizations of three-dimensional quantum groups. (English summary) *J. Phys. A* **25** (1992), *no.* 22, 5945–5962. (Marco Tarlini) **93k:81089** 81R50 (17B37)
nuño Ballesteros, Juan J. *see* **Nuño Ballesteros, Juan J.**
Ballico, Edoardo On the general hyperplane section of a curve in char p. (English and Italian summaries) *Rend. Istit. Mat. Univ. Trieste* **22** (1990), *no.* 1-2, 117–125 (1992). (R. F. Lax) **93m:14027** 14H45
— On the tangentially degenerate projective varieties. *Bull. London Math. Soc.* **23** (1991), *no.* 2, 128–130. (Raquel Mallavibarrena) **93c:14041** 14N05 (14C17)
— On the dual of projective varieties. *Canad. Math. Bull.* **34** (1991), *no.* 4, 433–439. (Susan J. Colley) **93a:14045** 14N05 (14N10)
— Life and death of a cohomology class. *J. Algebra* **141** (1991), *no.* 2, 265–274. (A. Hirschowitz) **93e:14038** 14H50 (14H45)
— On reflexive sheaves with low sectional genera on threefolds. *Math. Pannon.* **2** (1991), *no.* 2, 25–36. (Jarosław A. Wiśniewski) **93b:14033** 14F05 (14J30, 14J60)
— On a birational classification of bundles and reflexive sheaves on surfaces. *Rend. Sem. Mat. Univ. Padova* **86** (1991), 29–36 (1992). (Jarosław A. Wiśniewski) **93d:14057** 14J60 (14E05, 14F05)
— (*with* Andreatta, M.; Wiśniewski, Jarosław A.) Projective manifolds containing large linear subspaces. *Classification of irregular varieties* (*Trento*, 1990), 1–11, *Lecture Notes in Math.*, 1515, *Springer, Berlin*, 1992. (Marino Palleschi) **93i:14006** 14C20 (14J40)
— (*with* Ciliberto, Ciro; Catanese, Fabrizio) Open problems. *Classification of irregular varieties* (*Trento*, 1990), 140–146, *Lecture Notes in Math.*, 1515, *Springer, Berlin*, 1992. (*see* **93d:14005**) 14–02
— On the Chern classes of ample vector bundles. (Italian summary) *Boll. Un. Mat. Ital. A* (7) **6** (1992), *no.* 3, 359–364. (Summary) **93h:14032** 14J60 (14C17)
— On projective varieties with projectively equivalent zero-dimensional linear sections. *Canad. Math. Bull.* **35** (1992), *no.* 1, 3–13. (Marino Palleschi) **93d:14079** 14N05
— On pairs of plane curves with projectively equivalent linear sections. *Comm. Algebra* **20** (1992), *no.* 3, 815–828. (Alfio Ragusa) **93c:14032** 14H99
— (*with* Russo, Barbara) On the general osculating flag to a projective curve in characteristic p. *Comm. Algebra* **20** (1992), *no.* 12, 3729–3740. (Rafael Hernandez) **93k:14072** 14N05 (14H45)
— On rank two vector bundles on an algebraic surface. *Forum Math.* **4** (1992), *no.* 3, 231–241. (Jean-Marc Drezet) **93f:14020** 14J60
— (*with* Chiantini, Luca) Some properties of stable rank 2 bundles on algebraic surfaces. *Forum Math.* **4** (1992), *no.* 4, 417–424. (Jean-Marc Drezet) **93g:14049** 14J60 (14F05)
— (*with* Tognoli, Alberto) Algebraic models defined over $\mathbf{Q}$ of differential manifolds. *Geom. Dedicata* **42** (1992), *no.* 2, 155–161. (Henry C. King) **93d:14083** 14P05 (14G05, 55N22, 57R15)
— (*with* Andreatta, M.; Wiśniewski, Jarosław A.) Vector bundles and adjunction. *Internat. J. Math.* **3** (1992), *no.* 3, 331–340. (Antonio Lanteri) **93h:14031** 14J60 (14C20)
— On the homogeneous ideal of finite sets in $\mathbf{P}^n$. *J. Algebra* **150** (1992), *no.* 1, 206–212. (Kwangil Koh) **93i:13016** 13F20 (13A30, 13C14)
— On k-spanned embeddings of projective manifolds. *Manuscripta Math.* **75** (1992), *no.* 1, 103–107. (Marino Palleschi) **93d:14058** 14J60
— (*with* Beltrametti, Mauro C.) On the k-spannedness of the adjoint line bundle. *Manuscripta Math.* **76** (1992), *no.* 3-4, 407–420. (Marco Andreatta) **93k:14010** 14C20 (14E25)
— (*with* Piene, Ragni; Dai, Xin Sheng) A characterization of balanced rational normal surface scrolls in terms of their osculating spaces. II. *Math. Scand.* **70** (1992), *no.* 2, 204–206. (Ming Wei Xu) **93j:14068** 14N10 (14J26)
— On the stability of certain higher rank bundles on $\mathbf{P}^n$. (English summary) *Rend. Circ. Mat. Palermo* (2) **41** (1992), *no.* 2, 309–314. (Olivier Debarre) **93k:14052** 14J60 (14F05)
— On strange projective curves. *Rev. Roumaine Math. Pures Appl.* **37** (1992), *no.* 9, 741–745. (From the text) **93j:14040** 14H99
— *see also* **Andreatta, M., 93a:14005** *and* **Classification of irregular varieties, 93d:14005**
Ballvé, Ma. E. Geometry and integration for operator-valued measures. *J. Math. Anal. Appl.* **165** (1992), *no.* 1, 62–70. (Pedro Jiménez Guerra) **93b:28023** 28B05 (46G10)
Bally, Vlad A stochastic ellipticity assumption. (English summary) *Rev. Roumaine Math. Pures Appl.* **37** (1992), *no.* 5, 353–361. (Patrick Cattiaux) **93m:60140** 60H30 (60H07, 60J60)
Balmforth, N. J. (*with* Howard, L. N.; Spiegel, E. A.) Equilibria of rapidly rotating polytropes. (English summary) *Monthly Notices Roy. Astronom. Soc.* **260** (1993), *no.* 2, 253–272. (Summary) **93j:85005** 85A15 (85A30)
Baloev, A. A. Universal form of writing the solution of a system of linear nonhomogeneous differential equations with constant coefficients. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* **1991**, *no.* 11, 6–13 (1992); *translation in Soviet Math. (Iz. VUZ)* **35** (1991), *no.* 11, 5–11. (L. M. Berkovich) **93h:34015** 34A30
Balog, Antal (*with* Bárány, Imre) On the convex hull of the integer points in a disc. *Discrete and computational geometry* (*New Brunswick, NJ*, 1989/1990), 39–44, *DIMACS Ser. Discrete Math. Theoret. Comput. Sci.*, 6, *Amer. Math. Soc., Providence, RI*, 1991. (Martin Henk) **93b:11083** 11H06 (11P21, 52C07)
— Linear equations in primes. *Mathematika* **39** (1992), *no.* 2, 367–378. (D. R. Heath-Brown) **93m:11103** 11P32 (11D04, 11P55)
Balog, J. (*with* Dąbrowski, Ludwik; Fehér, László) Nonstandard quantum group in Toda and WZNW theories. (English summary) *Nonperturbative methods in low-dimensional quantum field theories* (*Debrecen*, 1990), 279–293, *World Sci. Publishing, River Edge, NJ*, 1991. (*see* **93f:81005**) 81T40 (17B37, 81R10)
— (*with* Palla, L.) Locality problem for the Liouville field. *Phys. Lett. B* **274** (1992), *no.* 3-4, 323–330. (Summary) **93a:81163** 81T40 (81T70)
Balogh, Imre (*with* Slator, Brian M.) Annotated bibliography on the foundations of AI. *The foundations of artificial intelligence*, 443–491, *Cambridge Univ. Press, Cambridge*, 1990. (*see* **93b:68073**) 68T01 (00A15)

Balogh, Zoltan (*with* Moisescu, Marius) On vector topologies on finite-dimensional vector spaces. *Seminar on Mathematical Analysis*, 87–94, *Preprint*, 91-7, "*Babeş-Bolyai*" *Univ., Cluj-Napoca*, 1991. (*see* **93i:00015**) 46A19

Balogh, Zoltán T. (*with* Burke, Dennis K.) A total ladder system space by ccc forcing. Proceedings of the Symposium on General Topology and Applications (Oxford, 1989). *Topology Appl.* **44** (1992), *no.* 1-3, 37–44. (Paul Bankston) **93g:54007** 54A35 (03E35, 03E75, 54G15, 54G20)

Balonin, N. A. (*with* Popov, O. S.) Identification of the parameters of systems under conditions of their normal operation. (Russian. Russian summary) *Avtomat. i Telemekh.* **1992**, *no.* 8, 98–103; *translation in Automat. Remote Control* **53** (1992), *no.* 8, *part* 2, 1217–1221 (1993). 93B30

Baloria, M. S. (*with* Singh, Anand Prakash) On maximum modulus and maximum term of composition of entire functions. *Indian J. Pure Appl. Math.* **22** (1991), *no.* 12, 1019–1026. (Chung-Chun Yang) **93b:30026** 30D15

Balsa, Thomas F. Flow generated by a small oscillating cylinder in a mixing layer. (English summary) *J. Fluid Mech.* **248** (1993), 237–265. (Summary) **93k:76052** 76E99

Balser, Werner (*with* Braaksma, Boele L. J.; Ramis, Jean-Pierre; Sibuya, Yasutaka) Multisummability of formal power series solutions of linear ordinary differential equations. *Asymptotic Anal.* **5** (1991), *no.* 1, 27–45. (Donald A. Lutz) **93f:34011** 34A20 (34E05)

— A different characterization of multi-summable power series. *Analysis* **12** (1992), *no.* 1-2, 57–65. (S. Sridhar) **93d:40009** 40C15 (30E15)

Balsiger, Franz (*with* Burri, Alex) Sind die klassische Mechanik und die spezielle Relativitätstheorie kommensurabel? (English summary) [Are classical mechanics and the special theory of relativity compatible?] *J. Gen. Philos. Sci.* **21** (1990), *no.* 1, 157–162. (J. A. Lester) **93e:83005c** 83A05

Balslev, Erik (*with* Helffer, Bernard) Limiting absorption principle and resonances for the Dirac operator. *Adv. in Appl. Math.* **13** (1992), *no.* 2, 186–215. (Volker Vogelsang) **93g:35106** 35P25 (35B30, 35Q40, 47F05, 47N50)

— *see also* **Schrödinger operators, 93d:81006**

Baltag, I. A. (*with* Solovei, L. E.) Representation of lattices of an n-dimensional Minkowski space by indeterminate integral forms. (Russian) *Algebraic structures and geometry* (*Russian*), 8–16, 156, "*Shtiintsa*", *Kishinev*, 1991. (Simon N. Litsyn) **93e:11082** 11H06

Baltag, V. A. (*with* Vulpe, N. I.) The number and multiplicity of singular points of a quadratic differential system. (Russian) *Dokl. Akad. Nauk* **323** (1992), *no.* 1, 9–12; *translation in Russian Acad. Sci. Dokl. Math.* **45** (1992), *no.* 2, 235–238 (1993). (From the text) **93c:34072** 34C05

Baltagi, Badi H. (*with* Li, Qi) A note on the estimation of simultaneous equations with error components. *Econometric Theory* **8** (1992), *no.* 1, 113–119. (Hilmar Drygas) **93k:62212** 62P20

— (*with* Li, Qi) A monotonic property for iterative GLS in the two-way random effects model. (English summary) *J. Econometrics* **53** (1992), *no.* 1-3, 45–51. (Tom Wansbeek) **93m:62145** 62J05 (62P20)

Balter, B. M. (*with* Popova, I. V.) Neural networks with feedback from the current pattern to neuron response and threshold: recognition of correlated and nonbinary patterns. (Russian. English and Russian summaries) *Mat. Model.* **4** (1992), *no.* 10, 101–110. 68T05 (92B20)

Baltrūnas, A. The asymptotic of harmonic renewal measures. (Russian and Lithuanian summaries) *Litovsk. Mat. Sb.* **31** (1991), *no.* 4, 577–583; *reprinted in Lithuanian Math. J.* **31** (1991), *no.* 4, 395–400 (1992). (Rudolf Grübel) **93b:60197** 60K05

Baltus, C. (*with* Cooper, S. Clement; Craviotto, C.; McCabe, John H.) On the use of a corresponding sequence algorithm for δ-fractions. *J. Comput. Appl. Math.* **37** (1991), *no.* 1-3, 57–69. (Andreas Guthmann) **93a:30001** 30B70 (40A15)

Balzano, Michele (*with* Paderni, G.) Stochastic reinforcement problems and ergodic theory. *Proc. Roy. Soc. Edinburgh Sect. A* **121** (1992), *no.* 1-2, 33–53. (From the introduction) **93g:35151** 35R60 (28D05)

Bamani, Ali H. (*with* Aldhaheri, Rabah W.) Combined Schur/L_2-model reduction for nonminimal systems. (English summary) *Optimal Control Appl. Methods* **13** (1992), *no.* 2, 169–177. 93B11

Bamberger, A. (*with* Ha-Duong, Tuong) Diffraction d'une onde acoustique par une paroi absorbante: nouvelles équations intégrales. (English summary) [Diffraction of an acoustic wave by an absorbing wall: new integral equations] *Math. Methods Appl. Sci.* **9** (1987), *no.* 4, 431–454. (Summary) **93h:35142** 35P05 (35J05, 76Q05)

— (*with* Joly, Patrick; Kern, Michel) Propagation of elastic surface waves along a cylindrical cavity of arbitrary cross section. (French summary) *RAIRO Modél. Math. Anal. Numér.* **25** (1991), *no.* 1, 1–30. (Akira Tsutsumi) **93f:73036** 73D20 (35Q72)

Bambos, Nicholas (*with* Baccelli, François; Walrand, Jean) On flows in stochastic marked graphs. (English summary) *Probab. Engrg. Inform. Sci.* **5** (1991), *no.* 2, 145–157. (Summary) **93f:68070** 68Q90 (90C60)

— On closed ring queueing networks. (English summary) *J. Appl. Probab.* **29** (1992), *no.* 4, 979–995. (Summary) **93h:60145** 60K25 (90B10, 90B22)

Bambusi, Dario Gauge field equation on principal fibre bundle. A Clifford algebra formulation. *Clifford algebras and their applications in mathematical physics* (*Montpellier*, 1989), 337–341, *Fund. Theories Phys.*, 47, *Kluwer Acad. Publ., Dordrecht*, 1992. (*see* **93f:00011**) 58G30 (81T13)

lashkarizadeh-Bami, M. *see* **Lashkarizadeh-Bami, M.**

Bamieh, Bassam A. (*with* Pearson, J. Boyd, Jr.; Francis, Bruce Allen; Tannenbaum, Allen R.) A lifting technique for linear periodic systems with applications to sampled-data control. *Systems Control Lett.* **17** (1991), *no.* 2, 79–88. (Summary) **93c:93018** 93B28 (47N70, 93C57)

— (*with* Dahleh, Munther A.; Pearson, J. Boyd, Jr.) Rejection of persistent, bounded disturbances for sampled-data systems. (English summary) *Robust control* (*Tokyo*, 1991), 32–39, *Lecture Notes in Control and Inform. Sci.*, 183, *Springer, Berlin*, 1992. (*see* **93f:93006**) 93C57 (93B36)

— (*with* Pearson, J. Boyd, Jr.) General framework for linear periodic systems with applications to $\mathscr{H}^\infty$ sampled-data control. *IEEE Trans. Automat. Control* **37** (1992), *no.* 4, 418–435. (Patrizio Colaneri) **93d:93031** 93B36 (93C57)

— (*with* Pearson, J. Boyd, Jr.) The $\mathscr{H}^2$ problem for sampled-data systems. *Systems Control Lett.* **19** (1992), *no.* 1, 1–12. (Summary) **93d:93052** 93C57 (93B36)

Bamón, Rodrigo (*with* Plaza S., Sergio) Dynamically defined Cantor sets with HD = $d \in]0, 1[$. (Spanish) *Proyecciones* **11** (1992), *no.* 1, 77–87. (Hermann Haase) **93h:28009** 28A80 (58F12)

— *see also* **Dynamical systems, 93k:58074**

Bampi, Franco Stochastic disturbances to deterministic systems. Memoirs of mathematical physics in honor of Giovanni Carini on his 70th birthday (Italian). *Atti Accad. Peloritana Pericolanti Cl. Sci. Fis. Mat. Natur.* **68** (1990), *suppl.* 1, 349–368 (1991). (Arcady Ponosov) **93e:35123** 35R60

— (*with* Zordan, Clara) Hilbert transforms in wave propagation theory. (Italian summary) *Boll. Un. Mat. Ital. B* (7) **6** (1992), *no.* 1, 177–191. (Eugene Schlereth) **93f:35012** 35A22 (35L05, 44A15, 78A35)

— *see also* **Joly, G. C. et al., 93a:83007**

to van Ban *see* **To Van Ban**

Ban, Chunsheng A Whitney stratification and equisingular family of quasi-ordinary singularities. *Proc. Amer. Math. Soc.* **117** (1993), *no.* 2, 305–311. (Yih-Nan David Gau) **93d:32062** 32S60 (32S05, 32S15, 32S50)

van den Ban, E. P. (*with* Schlichtkrull, Henrik) Asymptotic expansions on symmetric spaces. *Harmonic analysis on reductive groups* (*Brunswick, ME*, 1989), 79–87, *Progr. Math.*, 101, *Birkhäuser Boston, Boston, MA*, 1991. (Aleksander Strasburger) **93k:22010** 22E46 (22E30, 43A85)

— The principal series for a reductive symmetric space. II. Eisenstein integrals. *J. Funct. Anal.* **109** (1992), *no.* 2, 331–441. (Rebecca Herb) **93j:22025** 22E46 (22E30)

Ban, Gui Ning (*with* Yu, Shu Xia) The orders of the automorphism groups of a class of p-groups. (Chinese. Chinese summary) *Acta Math. Sinica* **35** (1992), *no.* 4, 570–574. (Hugo S. Sun) **93m:20024** 20D15 (20D45)

Bán, J. Ergodic theorems for random compact sets and fuzzy variables in Banach spaces. *Fuzzy Sets and Systems* **44** (1991), *no.* 1, 71–82. (Endre Pap) **93a:46147** 46S40 (04A72, 28E10, 60D05)

Ban, Masashi (*with* Arimitsu, Toshihico; Saito, Takesi) A new aspect within nonequilibrium thermofield dynamics and its applications. *Thermal field theories* (*Ibaraki*, 1990), 459–468, *North-Holland Delta Ser., North-Holland, Amsterdam*, 1991. (Summary) **93d:82052** 82C10 (81T99)

— Relative number state representation and phase operator for physical systems. *J. Math. Phys.* **32** (1991), *no.* 11, 3077–3087. (Bing Hong Wang) **93e:81062** 81S30 (81Q10, 82C10)

— Relaxation of physical systems in relative-number state representation. *Found. Phys. Lett.* **5** (1992), *no.* 4, 297–313. 81S99

Bán, Miklós I. (*with* Stachó, László L.) Mathematical foundation of a global strategy for searching reaction paths. (English summary) *J. Math. Chem.* **11** (1992), *no.* 4, 405–421. (V. I. Bykov) **93k:92012** 92E20

Ban, Octavian Une solution numérique des équations de Navier-Stokes stationnaires. [A numerical solution of the stationary Navier-Stokes equations] *Mathematical topics in fluid mechanics* (*Lisbon*, 1991), 231–236, *Pitman Res. Notes Math. Ser.*, 274, *Longman Sci. Tech., Harlow*, 1992. (From the introduction) **93j:76043** 76M20 (65P05, 76D05)

Banach, Stefan *see* **Haftmann, Rolf, 93c:01042** *and* **Pietsch, Albrecht, 93e:46001**

Banach, Zbigniew (*with* Piekarski, Sławomir) The Einstein-Smoluchowski promeasure. *Thermodynamics and kinetic theory* (*Mądralin*, 1990), 1–10, *Ser. Adv. Math. Appl. Sci.*, 12, *World Sci. Publishing, River Edge, NJ*, 1992. (Introduction) **93d:82003** 82B03

— (*with* Piekarski, Sławomir) The Einstein-Smoluchowski promeasure for (quasiparticle) gases. *Phys. A* **180** (1992), *no.* 3-4, 309–335. (Jerzy Luczka) **93d:82004** 82B03

— (*with* Piekarski, Sławomir) The Einstein-Smoluchowski promeasure versus the Boltzmann(-Peierls) equation. *Phys. A* **180** (1992), *no.* 3-4, 336–358. (Jerzy Luczka) **93d:82049** 82C03

— (*with* Piekarski, Sławomir) The Einstein-Smoluchowski promeasure and the stochastic Boltzmann-Peierls equation. (English summary) *Phys. A* **189** (1992), *no.* 1-2, 234–260. (Alexander Orlov) **93k:82043** 82C22 (82C31, 82D05, 82D25)

Bañados, Máximo (*with* Teitelboim, Claudio; Zanelli, Jorge) Lovelock-Born-Infeld theory of gravity. (English summary) *J. J. Giambiagi Festschrift*, 15–38, *World Sci. Publishing, River Edge, NJ*, 1990. (*see* **93b:81004**) 83D05

— (*with* Teitelboim, Claudio; Zanelli, Jorge) Black hole in three-dimensional spacetime. (English summary) *Phys. Rev. Lett.* **69** (1992), *no.* 13, 1849–1851. (Summary) **93e:83042** 83C57

Banai, Miklós (*with* Lukács, Béla) Economic examples for exactly solvable variational problems. (Hungarian. English summary) *Mat. Lapok* **34** (1983/87), *no.* 4, 307–319 (1991). (From the summary) **93b:90016** 90A09 (49K05)

Banakh, T. O. On the continuation of pseudometrics onto the space of probability measures. (Ukrainian. Russian summary) *Visnik L'viv. Derzh. Univ. Ser. Mekh.-Mat. No.* 30 (1988), 46–48, 77. 28A33 (54H99)

— On the direct limit of iterated functors. (Ukrainian) *Visnik L'viv. Univ. Ser. Mekh. Mat. No.* 34 (1990), 63–65. 18A30

— Fibered Z-sets and fibered rejecting homeomorphisms. (Russian. Russian summary) *Mat. Zametki* **51** (1992), *no.* 6, 10–14, 156; *translation in Math. Notes* **51** (1992), *no.* 5-6, 539–542. (Summary) **93k:57047** 57N20

— On the topology of the Milnor construction of the universal G-bundle. (Russian) *Sibirsk. Mat. Zh.* **33** (1992), *no.* 1, 16–25, 218; *translation in Siberian Math. J.* **33** (1992), *no.* 1, 12–19. (Summary) **93e:55017** 55R10

Banaś, Józef Near convexity in Banach spaces. *Function spaces* (*Poznań*, 1989), 7–14, *Teubner-Texte Math.*, 120, *Teubner, Stuttgart*, 1991. (S. Swaminathan) **93a:46023** 46B20

— (*with* El-Sayed, Wagdy Gomaa) Solvability of Hammerstein integral equation in the class of functions of locally bounded variation. (Italian summary) *Boll. Un. Mat. Ital. B* (7) **5** (1991), *no.* 4, 893–904. (A. S. Potapov) **93f:47089** 47N20 (45G10, 47H09, 47H30)

— (*with* El-Sayed, Wagdy Gomaa) Functions of generalized bounded variation. (Russian and Polish summaries) *Zeszyty Nauk. Politech. Rzeszowskiej Mat. Fiz. No.* 12 (1991), 91–110. (D. K. Dutta) **93b:26012** 26A45

— (*with* El-Sayed, Wagdy Gomaa) Remarks concerning Darboux functions. (Russian and Polish summaries) *Zeszyty Nauk. Politech. Rzeszowskiej Mat. Fiz. No.* 12 (1991), 111–114. (Editors) **93g:26007** 26A21

— (*with* El-Sayed, Wagdy Gomaa) Measures of noncompactness and solvability of an integral equation in the class of functions of locally bounded variation. *J. Math. Anal. Appl.* **167** (1992), *no.* 1, 133–151. (R. R. Akhmerov) **93f:47078** 47H15 (47H09, 47H30, 47N20)

— (*with* Martinón, Antonio) Measures of noncompactness in Banach sequence spaces. (English summary) *Math. Slovaca* **42** (1992), *no.* 4, 497–503. (A. S. Potapov) **93m:47062** 47H09 (46B45, 47H10)

Banaschewski, B. Fixpoints without the natural numbers. *Z. Math. Logik Grundlag. Math.* **37** (1991), *no.* 2, 125–128. (Yehuda Rav) **93b:06001** 06A06 (03E20, 04A05)

— (*with* Pultr, Aleš) A Stone duality for metric spaces. (English summary) *Category theory* 1991 (*Montreal, PQ*, 1991), 33–42, *CMS Conf. Proc.*, 13, *Amer. Math. Soc., Providence, RI*, 1992. (H. Herrlich) **93m:18008** 18B30 (06D99, 54B30, 54E35)

— Bourbaki's fixpoint lemma reconsidered. (English summary) *Comment. Math. Univ. Carolin.* **33** (1992), *no.* 2, 303–309. (Yehuda Rav) **93k:06011** 06A15 (04A05, 06A06, 18B25, 54H99)

— Singly generated frame extensions. (English summary) *J. Pure Appl. Algebra* **83** (1992), *no.* 1, 1–21. (J. R. Isbell) **93k:54029** 54B30 (18B30)

Banasiak, Jacek On L_2-solvability of mixed boundary value problems for elliptic equations in plane nonsmooth domains. *J. Differential Equations* **97** (1992), *no.* 1, 99–111. (Bernhard Kawohl) **93i:35040** 35J15 (35J25)

— On asymptotics of solutions of elliptic mixed boundary value problems of second-order in domains with vanishing edges. (English summary) *SIAM J. Math. Anal.* **23** (1992), *no.* 5, 1117–1124. (Summary) **93h:35053** 35J25 (35B40)

Banaszak, Grzegorz Algebraic K-theory of number fields and rings of integers and the Stickelberger ideal. *Ann. of Math.* (2) **135** (1992), *no.* 2, 325–360. (Manfred Kolster) **93m:11121** 11R70 (19F27)

Banaszczyk, Wojciech ★ Additive subgroups of topological vector spaces. Lecture Notes in Mathematics, 1466. *Springer-Verlag, Berlin*, 1991. viii+178 *pp. ISBN* 3-540-53917-4 (R. Aguiló-Fuster) **93b:46005** 46Axx (47B99)

Banaszuk, A. (*with* Kocięcki, M.; Beauchamps, G.; Lewis, Frank L.) Observability with unknown input and dual properties for singular systems. (English summary) *Mathematical and intelligent models in system simulation, I, II* (*Brussels*, 1990), 125–129, *IMACS Ann. Comput. Appl. Math.*, 10, 11, *Baltzer, Basel*, 1991. (*see* **93c:93005**) 93B07

— (*with* Kocięcki, M.; Lewis, Frank L.) Kalman decomposition for implicit linear systems. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 10, 1509–1514. (Henk Nijmeijer) **93h:93035** 93C05 (93B25, 93B27)

Band, William (*with* Park, James L.) Preparation and measurement in quantum physics. *Found. Phys.* **22** (1992), *no.* 5, 657–668. (Lawrence Sklar) **93c:81009** 81P05 (81P15)

Banda, Siva S. (*with* Yeh, Hsi-Han; Chang, Bor Chin) Necessary and sufficient conditions for mixed H_2 and H_∞ optimal control. *IEEE Trans. Automat. Control* **37** (1992), *no.* 3, 355–358. (Summary) **93b:93040** 93B36

Bandekas, D. V. (*with* Papadopoulos, D. P.) Routh approximation method applied to order reduction of linear MIMO systems. (English summary) *Internat. J. Systems Sci.* **24** (1993), *no.* 1, 203–210. 93B11 (93C10)

Bandelloni, Giuseppe Renormalization of gauge coset models. *J. Math. Phys.* **32** (1991), *no.* 12, 3491–3499. (Summary) **93g:81075** 81T10 (81T16, 81T50)

Bandelt, Hans-Jürgen (*with* Mulder, Henry Martyn) Metric characterization of parity graphs. *Discrete Math.* **91** (1991), *no.* 3, 221–230. (Ioan Tomescu) **93g:05048** 05C12 (05C75)

— (*with* Pesch, Erwin) Efficient characterizations of n-chromatic absolute retracts. *J. Combin. Theory Ser. B* **53** (1991), *no.* 1, 5–31. (Pavol Hell) **93c:05047** 05C15 (05C75, 05C85)

— (*with* Dress, Andreas W. M.) A canonical decomposition theory for metrics on a finite set. *Adv. Math.* **92** (1992), *no.* 1, 47–105. (Henry Martyn Mulder) **93h:54022** 54E35 (05C99)

— Graphs with edge-preserving majority functions. *Discrete Math.* **103** (1992), *no.* 1, 1–5. (C. St. J. A. Nash-Williams) **93g:05116** 05C75

— Centroids and medians of finite metric spaces. *J. Graph Theory* **16** (1992), *no.* 4, 305–317. (Henry Martyn Mulder) **93m:05063** 05C12 (05C75)

Bandemer, Hans (*with* Gottwald, Siegfried) ★ Einführung in Fuzzy-Methoden. (German) [Introduction to fuzzy methods] Theorie und Anwendungen unscharfer Mengen. [Theory and applications of fuzzy sets] Third edition. *Akademie Verlag, Berlin*, 1992. 173 *pp. ISBN* 3-05-501458-8 (J. Albrycht) **93m:04007** 04A72 (00A69, 03E72, 28E10)

— (*with* Näther, Wolfgang) ★ Fuzzy data analysis. Theory and Decision Library. Series B: Mathematical and Statistical Methods, 20. *Kluwer Academic Publishers Group, Dordrecht*, 1992. xii+341 *pp. ISBN* 0-7923-1772-6 (Hung Trung Nguyen) **93m:62009** 62-07 (04A72, 28E10, 62H99)

— *see also* **Modelling uncertain data, 93i:00021**

Bander, Myron (*with* Kebede, Temesgen) Contribution of heavy bosons and fermions to the action for a Robertson-Walker metric. *Phys. Rev. D* (3) **45** (1992), *no.* 10, 3604–3606. (Summary) **93b:83034** 83C47

Bandle, Catherine (*with* Leutwiler, Heinz) On a quasilinear elliptic equation and a Riemannian metric invariant under Möbius transformations. *Aequationes Math.* **42** (1991), *no.* 2-3, 166–181. (Juan J. Manfredi) **93a:35044** 35J60 (53A30, 53C21)

— (*with* Tesei, Alberto) On space-periodic solutions for a class of semilinear elliptic problems. (English summary) *Stability Appl. Anal. Contin. Media* **1** (1991), *no.* 2, 109–126. (Srinivasan Kesavan) **93j:35070** 35J60 (35B10)

— (*with* Marcus, Moshe M.) Large solutions of semilinear elliptic equations with "singular" coefficients. *Optimization and nonlinear analysis* (*Haifa*, 1990), 25–38, *Pitman Res. Notes Math. Ser.*, 244, *Longman Sci. Tech., Harlow*, 1992. (Srinivasan Kesavan) **93j:35020** 35B05 (35J60)

— (*with* Brauner, C.-M.; Schmidt-Lainé, Cl.) A stability analysis for semilinear Neumann problems with concave nonlinearities. (English summary) *Math. Methods Appl. Sci.* **15** (1992), *no.* 8, 571–591. (Maura Ughi) **93k:35144** 35K60 (35B35)

— *see also* **Progress in partial differential equations: elliptic and parabolic problems, 93f:35007** *and* **Progress in partial differential equations: calculus of variations, applications, 93f:35008**

Bandler, Wyllis (*with* Mancini, Vasco) Design for designing: fuzzy relational environmental design assistant (FREDA). *Fuzzy expert systems*, 195–202, *CRC, Boca Raton, FL*, 1992. (*see* **93g:68133**) 68T35 (03B52)

Bandlow, Ingo A characterization of Corson-compact spaces. *Comment. Math. Univ. Carolin.* **32** (1991), *no.* 3, 545–550. (Douglas Harris) **93f:03020** 03C15 (03C62, 46E25, 46J10, 54C35, 54D30)

Bando, Shigetoshi Einstein Kähler metrics of negative Ricci curvature on open Kähler manifolds. *Kähler metric and moduli spaces*, 105–136, *Adv. Stud. Pure Math.*, 18-II, *Academic Press, Boston, MA*, 1990. (Hajime Tsuji) **93b:32044** 32L07 (32C17, 53C25)

Bandos, I. A. (*with* Zheltukhin, A. A.) Green-Schwarz superstrings in spinor moving frame formalism. (English summary) *Phys. Lett. B* **288** (1992), *no.* 1-2, 77–84. (Summary) **93g:81117** 81T30 (83E30)

— (*with* Zheltukhin, A. A.) 11-dimensional supermembrane in a spinor moving repère formalism. (English summary) *Internat. J. Modern Phys. A* **8** (1993), *no.* 6, 1081–1092. (Summary) **93m:83079** 83E30 (81R25, 81T30, 81T60, 83E50)

Bandt, Christoph (*with* Keller, Karsten) Self-similar sets. II. A simple approach to the topological structure of fractals. *Math. Nachr.* **154** (1991), 27–39. (Tim Bedford) **93e:28011** 28A80 (54F65)

— (*with* Graf, Siegfried) Self-similar sets. VII. A characterization of self-similar fractals with positive Hausdorff measure. *Proc. Amer. Math. Soc.* **114** (1992), *no.* 4, 995–1001. (Tim Bedford) **93d:28014** 28A80 (58F08)

— (*with* Pompe, Bernd) The entropy profile—a function describing statistical dependences. (English summary) *J. Statist. Phys.* **70** (1993), *no.* 3-4, 967–983. (Remo Badii) **93m:58034** 58F03 (58F11)

Bandyopadhyay, N. Partition functions for quantized fields in curved space-times. *J. Math. Phys.* **33** (1992), *no.* 7, 2562–2566. (Enric Verdaguer) **93d:81124** 81T20 (81T50, 83C47, 83C50)

Bandyopadhyay, Pratul (*with* Hajra, K.) Equivalence of stochastic, Klauder and geometric quantization. *Internat. J. Modern Phys. A* **7** (1992), *no.* 6, 1267–1285. (Summary) **93g:81059** 81S20 (81S10)

— (*with* Banerjee, Dipti) Topological aspects of a fermion, chiral anomaly, and Berry phase. *J. Math. Phys.* **33** (1992), *no.* 3, 990–997. (Shinichi Tajima) **93a:81092** 81S20 (81Q99, 81T50)

— (*with* Goswami, Gautam) Fractional statistics, Z_p spin system, and XY model. *J. Math. Phys.* **33** (1992), *no.* 3, 1090–1096. (Boris A. Khoruzhenko) **93c:81124** 81T13 (82B20)

— (*with* Roy, Ashim) Topological aspects of Liouville field theory and conformal anomaly. *J. Math. Phys.* **33** (1992), *no.* 3, 1178–1184. (Bani Mitra Södermark) **93b:81278** 81T50 (81S20, 81T30, 81T40)

— (*with* Goswami, Gautam) Spin system, gauge theory, and renormalization group equation. (English summary) *J. Math. Phys.* **34** (1993), *no.* 2, 749–756. (M. Lawrence Glasser) **93k:82026** 82B28 (81T13, 81T17)

Bandyopadhyay, Subir (*with* Sen, Arunabha; Sengupta, Abhijit) On the routing problem in faulty supercubes. *Inform. Process. Lett.* **42** (1992), *no.* 1, 39–46. (M. Dal Cin) **93e:68008** 68M20

Bandyopadhyay, Taradas (*with* Samuelson, Larry) Weakly implementable social choice rules. (English summary) *Theory and Decision* **33** (1992), *no.* 2, 135–151. (Anjan Mukherji) **93m:90007** 90A08 (90A07)

Bandyopadhyay, Uttam (*with* Chatterjee, Shoutir Kishore) On the change-point problem. *Sequential Anal.* **11** (1992), *no.* 2, 101–118. (Albrecht Irle) **93i:62068** 62L10

Bandyopadhyaya, Pradipta Exposed points and points of continuity in closed bounded convex sets. *Functional analysis and operator theory* (*New Delhi*, 1990), 120–127, *Lecture Notes in Math.*, 1511, *Springer, Berlin*, 1992. (R. D. Bourgin) **93f:46014** 46B20

— The Mazur intersection property for families of closed bounded convex sets in Banach spaces. *Colloq. Math.* **63** (1992), *no.* 1, 45–56. (Abderrazzak Sersouri) **93a:46024** 46B20

Banea, H. Sur la résolution d'une équation différentielle ordinaire à l'aide de la dérivation d'ordre nonentier. (Romanian summary) [On the solution of an ordinary differential equation using differentiation of nonintegral order] *Bull. Transylv. Univ. Braşov Ser. C* **34** (1992), 113–116 (1993). 34A05

Banerjea, Sudeshna (*with* Mandal, B. N.) On waves due to rolling of a vertical plate. (English summary) *Indian J. Pure Appl. Math.* **23** (1992), *no.* 10, 753–761. (Summary) **93g:76020** 76B15

— (*with* Mandal, B. N.) Solution of a boundary value problem associated with diffraction of water waves by a partially immersed nearly vertical barrier. (English summary) *Z. Angew. Math. Mech.* **72** (1992), *no.* 10, 517–519. (F. Ursell) **93j:76017** 76B15 (35Q35)

Banerjee, A. *see* **Banerjee, Asit Kumar**

Banerjee, Abhijit V. The economics of rumours. (English summary) *Rev. Econom. Stud.* **60** (1993), *no.* 2, 309–327. 90A35

Banerjee, Asis Rational choice under fuzzy preferences: the Orlovsky choice function. (English summary) *Fuzzy Sets and Systems* **54** (1993), *no.* 3, 295–299. 90A08 (04A72)

Banerjee, Asit Kumar (*with* Raychaudhuri, A. K.; Banerji, S.) ★ General relativity, astrophysics, and cosmology. Astronomy and Astrophysics Library. *Springer-Verlag, New York*, 1992. xii+296 *pp. ISBN* 0-387-97813-5 (Peter R. Law) **93j:83001** 83–01 (83C55, 83F05, 85A40)

— (*with* Dutta Choudhury, S. B.; Chatterjee, Sujit) Nonstatic perfect fluid sphere in higher-dimensional space-time. (English summary) *Gen. Relativity Gravitation* **24** (1992), *no.* 9, 991–999. (Summary) **93g:83060** 83C55 (83E15)

— (*with* Chatterjee, Sujit) Kaluza-Klein type of inhomogeneous cosmological model. (English summary) *Classical Quantum Gravity* **10** (1993), *no.* 1, L1–L5. (Summary) **93h:83034** 83E15

Banerjee, Debasish A technique for solving a class of quadratic FP equations. (English summary) *Sci. Comput. Programming* **19** (1992), *no.* 1, 61–85. (Summary) **93i:68033** 68N05 (68Q55)

Banerjee, Dipti (*with* Bandyopadhyay, Pratul) Topological aspects of a fermion, chiral anomaly, and Berry phase. *J. Math. Phys.* **33** (1992), *no.* 3, 990–997. (Shinichi Tajima) **93a:81092** 81S20 (81Q99, 81T50)

Banerjee, Mihir B. (*with* Bhowmik, S. K.) Salvaging the Thompson-Chandrasekhar criterion: a tribute to S. Chandrasekhar. *J. Math. Anal. Appl.* **167** (1992), *no.* 1, 57–65. (D. ter Haar) **93d:76073** 76W05 (76E25, 85A30)

— (*with* Gupta, J. R.; Prakash, Jyoti) Upper limits to the complex growth rates in thermohaline instability. *J. Math. Anal. Appl.* **167** (1992), *no.* 1, 66–73. (Summary) **93d:76023** 76E15 (76R05)

Banerjee, Mohua (*with* Chakraborty, M. K.) A new category for fuzzy topological spaces. (English summary) *Fuzzy Sets and Systems* **51** (1992), *no.* 2, 227–233. 54A40 (04A72)

Banerjee, Narayan (*with* Chatterjee, D.; Ghosh, Subir) Chiral bosons coupled to Liouville gravity in the Faddeev-Jackiw formalism. (English summary) *Phys. Rev. D* (3) **46** (1992), *no.* 12, 5590–5597. (Summary) **93i:81207** 81T40 (81T50)

Banerjee, Pradeep Kumar An epilogue—H. K. Nandi and Calcutta Statistical Association. *Calcutta Statist. Assoc. Bull.* **40** (1990/91), *no.* 157-160, 343–346. (Editors) **93f:01017b** 01A70

— (*with* Giri, N.; Behara, M.) Locally minimax test of independence in elliptically symmetrical distributions with additional observations. *Metrika* **39** (1992), *no.* 2, 75–84. (Minoru Siotani) **93j:62157** 62H15

Banerjee, Rabin (*with* Ghosh, Subir) Algebraic approach to anomalous sigma models. *Z. Phys. C* **54** (1992), *no.* 4, 577–579. (Summary) **93d:81109** 81T13 (81R10)

Banerjee, S. K. *see* **Banerjee, Shyamal Kumar**

Banerjee, Shakti (*with* Kageyama, Sanpei; Verma, Arvind) A construction of self complementary semi-regular group divisible designs. (English summary) *Sankhyā Ser. B* **51** (1989), *no.* 3, 335–338. 05B05 (62K10)

— (*with* Kageyama, Sanpei) Methods of constructing nested partially balanced incomplete block designs. (English summary) *Utilitas Math.* **43** (1993), 3–6. (Summary) **93m:05019** 05B05 (05E30)

Banerjee, Shyamal Kumar (*with* Roy, S. R.) Bianchi VI cosmological models representing perfect fluid and radiation with electric-type free gravitational fields. (English summary) *Gen. Relativity Gravitation* **24** (1992), *no.* 11, 1117–1124. (Summary) **93h:83012** 83C15 (83C20, 83C30)

Banerjee, Subhankar (*with* Harary, Frank) The minimum detour number of a connected graph. (English and Malayan summaries) *Menemui Mat.* **14** (1992), *no.* 1, 38–43. (Sudhangshu B. Karmakar) **93h:05105** 05C38 (05C40, 05C85, 68Q25, 68R10)

Banerjee, Tathagata (*with* Chatterjee, Shoutir Kishore) Reinforced Mann-Whitney tests for the two-sample location problem. (English summary) *Calcutta Statist. Assoc. Bull.* **41** (1991), *no.* 161-164, 19–43. (S. Rao Jammalamadaka) **93i:62041** 62G10

Banerjee, Uday Approximation of the eigenvalues of a fourth order differential equation with nonsmooth coefficients. *BIT* **31** (1991), *no.* 4, 620–631. (Martin Hermann) **93b:34021** 34A50 (34B05, 65L15, 65L60)

— (*with* Suri, Manil) Analysis of numerical integration in p-version finite element eigenvalue approximation. *Numer. Methods Partial Differential Equations* **8** (1992), *no.* 4, 381–394. (Lubor Malina) **93g:65137** 65N25 (65N30)

Banerji, D. K. (*with* Wilson, T. C.; Basu, Anupam; Majithia, Jay C.) Commutative operand alignment for interconnect optimization in behavioural synthesis. (English summary) *Internat. J. Electron.* **73** (1992), *no.* 2, 417–431. 90C90

Banerji, P. K. (*with* Deora, Yogendra) Double Dirichlet average of e^x using fractional derivatives. (English summary) *J. Fract. Calc.* **3** (1993), 81–86. (Summary) **93m:26012** 26A33

Banerji, Ranan AI, computer science and education: a position paper. *The foundations of artificial intelligence*, 373–379, *Cambridge Univ. Press, Cambridge*, 1990. (*see* **93b:68073**) 68T01

Banerji, S. (*with* Raychaudhuri, A. K.; Banerjee, Asit Kumar) ★ General relativity, astrophysics, and cosmology. Astronomy and Astrophysics Library. *Springer-Verlag, New York*, 1992. xii+296 *pp. ISBN* 0-387-97813-5 (Peter R. Law) **93j:83001** 83–01 (83C55, 83F05, 85A40)

Banfi, Carlo ★ Introduzione alla meccanica dei continui. (Italian) [Introduction to continuum mechanics] *Casa Editrice Dott. Antonio Milani (CEDAM), Padua*, 1990. x+83 *pp. ISBN* 88-13-16964-7 (Gianpietro Del Piero) **93e:73007** 73B99 (76A99)

le van Bang *see* **Le Van Bang**

Bang-Jensen, Jørgen A note on a special case of the 2-path problem for semicomplete digraphs. *Graph theory, combinatorics, and applications, Vol.* 1 (*Kalamazoo, MI*, 1988), 77–86, *Wiley-Intersci. Publ., Wiley, New York*, 1991. (Summary) **93e:05038** 05C20 (05C38)

— (*with* MacGillivray, Gary) Further effects of two directed cycles on the complexity of H-colouring. *J. Combin. Math. Combin. Comput.* **10** (1991), 33–50. (Mukkai S. Krishnamoorthy) **93a:05116** 05C85 (05C15)

— On the structure of locally semicomplete digraphs. Special volume to mark the centennial of Julius Petersen's "Die Theorie der regulären Graphs", Part I. *Discrete Math.* **100** (1992), *no.* 1-3, 243–265. (Matúš Harminc) **93g:05059** 05C20

— (*with* Hell, Pavol; MacGillivray, Gary) On the complexity of colouring by superdigraphs of bipartite graphs. (English summary) Algebraic graph theory (Leibnitz, 1989). *Discrete Math.* **109** (1992), *no.* 1-3, 27–44. (Italo José Dejter) **93m:68051** 68Q15 (05C15, 05C20, 68R10)

— (*with* Manoussakis, Yannis; Thomassen, Carsten) A polynomial algorithm for Hamiltonian-connectedness in semicomplete digraphs. *J. Algorithms* **13** (1992), *no.* 1, 114–127. (Zdeněk Ryjáček) **93d:05141** 05C85 (05C45, 68R10)

— (*with* Thomassen, Carsten) A polynomial algorithm for the 2-path problem for semicomplete digraphs. *SIAM J. Discrete Math.* **5** (1992), *no.* 3, 366–376. (Summary) **93i:05120** 05C85 (68R10)

— (*with* Poljak, Svatopluk) Eulerian trails through a set of terminals in specific, unique and all orders. (English summary) *Graph structure theory (Seattle, WA*, 1991), 247–258, *Contemp. Math.*, 147, *Amer. Math. Soc., Providence, RI*, 1993. (*see* **93m:05004**) 05C45

— (*with* Hell, Pavol) Fast algorithms for finding Hamiltonian paths and cycles in in-tournament digraphs. (English summary) *Discrete Appl. Math.* **41** (1993), *no.* 1, 75–79. (Summary) **93h:05113** 05C45 (05C20, 05C85)

— *see also* **Julius Petersen graph theory centennial, 93i:05003**

Bangov, Ivan P. Computer-assisted structure generation from a gross formula. IV. Fighting against graph-isomorphism disease. (English summary) *Match No.* 27 (1992), 3–30. 05C60 (68R10, 92E10)

Bănică, Constantin Smooth reflexive sheaves. Proceedings of the Colloquium on Complex Analysis and the Sixth Romanian-Finnish Seminar. *Rev. Roumaine Math. Pures Appl.* **36** (1991), *no.* 9-10, 571–593. (G. Horrocks) **93g:14027** 14F05 (14M07)

— (*with* Putinar, Mihai) Fibrés vectoriels complexes de rang stable sur les variétés complexes compactes. (English summary) [Complex vector bundles of stable rank on compact complex manifolds] *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 11, 829–832. (Giorgio Ottaviani) **93g:32040** 32L05 (14F05, 57R20)

Banin, V. G. (*with* Abakumov, Yu. G.) An approach to the study of approximation properties of linear operators. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* **1991,** *no.* 11, 3–6 (1992); *translation in Soviet Math. (Iz. VUZ)* **35** (1991), *no.* 11, 1–4. (V. A. Tkachenko) **93h:41020** 41A36 (47B38)

Baniotopoulos, C. C. A contribution to the analysis of the corner cracking problem in masonry veneer walls by means of the theory of hemivariational inequalities. (Bulgarian summary) *J. Theoret. Appl. Mech.* **22** (1991), *no.* 2, 7, 91–101. (Muhammad Aslam Noor) **93e:73032** 73M25 (49J40, 73K99, 73V25)

Bank, Randolph E. (*with* Benbourenane, Mohamed) The hierarchical basis multigrid method for convection-diffusion equations. *Numer. Math.* **61** (1992), *no.* 1, 7–37. (Rolf Rannacher) **93d:65106** 65N55 (65N30, 76M20, 76Rxx)

— (*with* Santos, Rafael F.) Analysis of some moving space-time finite element methods. (English summary) *SIAM J. Numer. Anal.* **30** (1993), *no.* 1, 1–18. (Summary) **93m:65141** 65M60 (76M10, 76Rxx)

Bank, Steven B. On the complex zeros of solutions of linear differential equations. (English summary) *Ann. Mat. Pura Appl.* (4) **161** (1992), 83–112. (Shi An Gao) **93i:34009** 34A20 (30D35, 34C10)

— (*with* Langley, J. K.) Oscillation theorems for higher order linear differential equations with entire periodic coefficients. *Comment. Math. Univ. St. Paul.* **41** (1992), *no.* 1, 65–85. (Wolfgang Bühring) **93e:34011** 34A20 (34C10)

— On the frequency of complex zeros of solutions of certain differential equations. (English summary) *Kodai Math. J.* **15** (1992), *no.* 2, 165–184. (Ilpo Laine) **93j:34005** 34A20 (34C10)

Bańka, S. Multipurpose controller design in multivariable stochastic control systems. (English summary) *Optimal Control Appl. Methods* **12** (1991), *no.* 2, 89–118. 93B50 (93E03)

Banks, David (*with* Somer, Lawrence) Period patterns of certain second-order linear recurrences modulo a prime. *Applications of Fibonacci numbers, Vol.* 4 (*Winston-Salem, NC*, 1990), 37–40, *Kluwer Acad. Publ., Dordrecht*, 1991. (Padmavathamma) **93k:11012** 11B50 (11B39)

Banks, H. T. (*with* Rebnord, D. A.) Analytic semigroups: applications to inverse problems for flexible structures. *Differential equations with applications in biology, physics, and engineering* (*Leibnitz*, 1989), 21–35, *Lecture Notes in Pure and Appl. Math.*, 133, *Dekker, New York*, 1991. (Hideo Soga) **93h:35206** 35R30 (47D06, 47N20, 73K05, 73K50)

— (*with* Ito, Kazufumi; Wang, Chunming) Exponentially stable approximations of weakly damped wave equations. *Estimation and control of distributed parameter systems* (*Vorau*, 1990), 1–33, *Internat. Ser. Numer. Math.*, 100, *Birkhäuser, Basel*, 1991. (Alexander Doktor) **93f:35132** 35L20 (34G10, 65N12, 93C20, 93D15)

— (*with* Kappel, Franz; Wang, Chunming) Weak solutions and differentiability for size structured population models. *Estimation and control of distributed parameter systems* (*Vorau*, 1990), 35–50, *Internat. Ser. Numer. Math.*, 100, *Birkhäuser, Basel*, 1991. (Hassan Emamirad) **93f:92020** 92D25 (35Q80, 47D03)

— Computational issues in parameter estimation and feedback control problems for partial differential equation systems. (English summary) Experimental mathematics: computational issues in nonlinear science (Los Alamos, NM, 1991). *Phys. D* **60** (1992), *no.* 1-4, 226–238. (Fredi Tröltzsch) **93j:93073** 93C20 (49K20, 49M07, 49N35, 93B30, 93B40)

— *see also* **Control and estimation in distributed parameter systems, 93h:93006**

Banks, J. (*with* Brooks, Jeff; Cairns, Grant; Davis, Gary Ernest; Stacey, P. J.) On Devaney's definition of chaos. *Amer. Math. Monthly* **99** (1992), *no.* 4, 332–334. (J. E. Keesling) **93d:54059** 54H20 (58F13)

Banks, Jeffrey S. (*with* Bordes, Georges; Le Breton, Michel) Covering relations, closest orderings and Hamiltonian bypaths in tournaments. *Soc. Choice Welf.* **8** (1991), *no.* 4, 355–363. (M. Vlach) **93b:90014** 90A08 (05C20, 05C45, 90A28)

— (*with* Sundaram, Rangarajan K.) Denumerable-armed bandits. (English summary) *Econometrica* **60** (1992), *no.* 5, 1071–1096. (Summary) **93g:90107** 90D40 (62L05, 90C40)

— (*with* Calvert, Randall L.) A battle-of-the-sexes game with incomplete information. *Games Econom. Behav.* **4** (1992), *no.* 3, 347–372. (Summary) **93c:90119** 90D40

— (*with* Sundaram, Rangarajan K.) A class of bandit problems yielding myopic optimal strategies. *J. Appl. Probab.* **29** (1992), *no.* 3, 625–632. (Summary) **93f:90214** 90D60 (62L05, 90D40)

Banks, S. P. (*with* Zhang, Yi[1]) On the stability analysis of nonlinear systems. *IMA J. Math. Control Inform.* **8** (1991), *no.* 3, 275–285. (Ethelbert N. Chukwu) **93e:34102** 34K20 (34D99, 93D05)

— Nonlinear systems and Kolmogorov's representation theorem. *Internat. J. Systems Sci.* **22** (1991), *no.* 1, 173–180. (Ethelbert N. Chukwu) **93d:93022** 93B15 (34H05)

— (*with* Iddir, N.) Nonlinear systems, the Lie series, and the left shift operator: application to nonlinear optimal control. (English summary) *IMA J. Math. Control Inform.* **9** (1992), *no.* 1, 23–34. (Henry Hermes) **93g:93025** 93B29 (34A34, 34H05, 93B11, 93B18)

— (*with* Zhang, Yi[1]) k-exponential stability of nonlinear delay systems. (English summary) *IMA J. Math. Control Inform.* **9** (1992), *no.* 1, 89–99. (V. M. Popov) **93g:34124** 34K20 (34K40)

— (*with* Mhana, K. J.) Optimal control and stabilization for nonlinear systems. (English summary) *IMA J. Math. Control Inform.* **9** (1992), *no.* 2, 179–196. 49K15 (93C10)

— Infinite-dimensional Carleman linearization, the Lie series and optimal control of nonlinear partial differential equations. *Internat. J. Systems Sci.* **23** (1992), *no.* 5, 663–675. (Zbigniew Bartosiewicz) **93f:49022** 49K20 (34G10, 35K55, 93B18, 93C20)

— Explicit representations of Lyapunov functions for stable analytic systems. *Internat. J. Systems Sci.* **23** (1992), *no.* 5, 677–682. (Andrzej Banaszuk) **93d:34084** 34D05 (93D05)

Banks, Thomas String phenomenology. *Quantum mechanics of fundamental systems*, 2 (*Santiago*, 1987), 13–25, *Ser. Cent. Estud. Cient. Santiago, Plenum, New York*, 1989. (*see* **93e:81005**) 81T30

— (*with* O'Loughlin, M.) Two-dimensional quantum gravity in Minkowski space. *Nuclear Phys. B* **362** (1991), *no.* 3, 649–664. (Summary) **93i:81208** 81T40

— (*with* Dabholkar, A.; Douglas, M. R.; O'Loughlin, M.) Are horned particles the end point of Hawking evaporation? *Phys. Rev. D* (3) **45** (1992), *no.* 10, 3607–3616. (Summary) **93b:83042** 83C57 (83C47)

Banks, W. H. H. (*with* Watson, P.; Zaturska, M. B.; Drazin, P. G.) Laminar channel flow driven by accelerating walls. *European J. Appl. Math.* **2** (1991), *no.* 4, 359–385. (Mikhail Zaks) **93k:76030** 76D05 (35Q35, 58F13, 58F40, 76E99)

— (*with* Zaturska, M. B.) Buoyancy-driven flow between parallel plane vertical walls. *J. Engrg. Math.* **25** (1991), *no.* 4, 375–397. (A. Pozzi) **93a:76039** 76E05 (76D99, 76R10)

— (*with* Zaturska, M. B.) On flow through a porous annular pipe. *Phys. Fluids A* **4** (1992), *no.* 6, 1131–1141. (Iuliana Oprea) **93c:76029** 76E05 (58F14, 76D99, 76S05)

Bankston, Paul Minimal freeness and commutativity. *Algebra Universalis* **29** (1992), *no.* 1, 88–108. (Peter Puusemp) **93d:08002** 08A35 (20K10)

— H-enrichments and their homeomorphism groups. *Quart. J. Math. Oxford Ser.* (2) **43** (1992), *no.* 170, 127–148. (Ivan L. Reilly) **93m:54065** 54H15 (54A10)

— Pseudobases in direct powers of an algebra. *Trans. Amer. Math. Soc.* **335** (1993), *no.* 1, 79–90. (Summary) **93d:08003** 08A35 (03C05, 12L10)

Bannai, Eiichi On a theorem of Ikuta, Ito and Munemasa. *European J. Combin.* **13** (1992), *no.* 1, 1–3. (D. Cvetković) **93c:05118** 05E30

— *see also* **Conway, J. H., 93h:11069**

Bano, R. (*with* Khan, Mohammad Zubair) Some decomposition theorems in abelian groups like modules. *Soochow J. Math.* **18** (1992), *no.* 1, 1–7. (John D. O'Neill) **93c:16002** 16D10 (20K99)

Bansal, Naveen K. (*with* Bhandary, Madhusudan) Bayes estimation of number of signals. *Ann. Inst. Statist. Math.* **43** (1991), *no.* 2, 227–243. (Yasunori Fujikoshi) **93a:62084** 62H12 (62F10, 62F15)

— (*with* Ahsanullah, Mohammad; Hamedani, G. G.) On characterizations of normal distributions. (English summary) *Calcutta Statist. Assoc. Bull.* **41** (1991), *no.* 161-164, 157–162. (Summary) **93h:62017** 62E10

— On testing linear hypotheses on linear functional and structural relationships. *Comm. Statist. Theory Methods* **20** (1991), *no.* 9, 3001–3019. (Nariaki Sugiura) **93d:62027** 62E20 (62H10, 62J99)

Banshchikov, A. V. (*with* Burlakova, L. A.; Irtegov, V. D.; Novikov, M. A.) Algorithms for the qualitative investigation of complex systems. (Russian. English and Ukrainian summaries) *Kibernet. Sistem. Anal.* **1992,** *no.* 1, 138–148, 190; *translation in Cybernet. Systems Anal.* **28** (1992), *no.* 1, 119–127. (From the text) **93g:70003** 70–08 (34–04, 70–04, 70E99, 70H35, 70K20)

Bantaş, G. (*with* Corduneanu, Constantin) Tiberiu Popoviciu. Professor at the University of Iaşi. *Rev. Anal. Numér. Théor. Approx.* **21** (1992), *no.* 1, 1–8. (Editors) **93m:01056** 01A70

Bántay, P. Orbifolds and Hopf algebras. *Nonperturbative methods in low-dimensional quantum field theories* (*Debrecen,* 1990), 375–382, *World Sci. Publishing, River Edge, NJ,* 1991. (*see* **93f:81005**) 81T40 (16W30, 57S30, 81R50)

— Orbifolds, Hopf algebras, and the Moonshine. *Lett. Math. Phys.* **22** (1991), *no.* 3, 187–194. (Geoffrey Mason) **93e:17012** 17B37 (11F22, 16W30, 20D08, 81R50)

Banu, C. (*with* Ovesea, H.; Simionescu, Corneliu) Détermination des variétés affines associées à un groupe de Lie nilpotent G_3. (Romanian summary) [Determining the affine varieties associated with a nilpotent Lie group G_3] *Bull. Transylv. Univ. Braşov Ser. C* **33** (1991), 33–37 (1992). (Udo Simon) **93c:53017** 53C10 (22E25, 53C30)

Bañuelos, Rodrigo Lifetime and heat kernel estimates in nonsmooth domains. *Partial differential equations with minimal smoothness and applications* (*Chicago, IL,* 1990), 37–48, *IMA Vol. Math. Appl.*, 42, *Springer, New York,* 1992. (Yehuda Pinchover) **93c:31005** 31B05 (35C15, 35J10, 35K05, 60J35)

— (*with* Davis, Burgess) Sharp estimates for Dirichlet eigenfunctions in horn-shaped regions. (English summary) *Comm. Math. Phys.* **150** (1992), *no.* 1, 209–215. (Summary) **93i:35020** 35B40 (35P20, 47F05)

Bănulescu, Martha On the Riesz decomposition property. Analyse complexe (Bucharest, 1989). *Rev. Roumaine Math. Pures Appl.* **36** (1991), *no.* 3-4, 107–114. (Ewa Damek) **93c:31014** 31C05 (43A05)

Bányász, Cs. *see* **Identification and system parameter estimation, 93h:93009**

Bănzaru, T. (*with* Năslău, P.) Boundary element method for higher order Poisson equations. (Romanian summary) *Inst. Politehn. "Traian Vuia" Timişoara Lucrăr. Sem. Mat. Fiz.* **1988,** *November,* 27–31. 65N38

— (*with* Crivăţ, N.) A new type of quasi-uniform convergence for nets of multifunctions. (Romanian summary) *Inst. Politehn. "Traian Vuia" Timişoara Lucrăr. Sem. Mat. Fiz.* **1988,** *November,* 32–38. 54C60 (54A20)

Bao, David (*with* Ratiu, Tudor S.) A candidate maximal torus in infinite dimensions. (English summary) *Mathematical aspects of classical field theory* (*Seattle, WA,* 1991), 117–123, *Contemp. Math.*, 132, *Amer. Math. Soc., Providence, RI,* 1992. (Summary) **93f:58015** 58B25 (22E65, 58D05, 81T40)

Bao, De Hai (*with* Zhu, Zhong Yuan) Ordering problem in geometrical quantization. *J. Phys. A* **25** (1992), *no.* 8, 2381–2385. (Ivailo M. Mladenov) **93i:81101** 81S10 (58F06)

Bao, G. (*with* Stuchlík, Z.) Radiation from hot spots orbiting an extreme Reissner-Nordström black hole. (English summary) *Gen. Relativity Gravitation* **24** (1992), *no.* 9, 945–957. (Summary) **93g:83073** 83C57 (83C15)

Bao, Ge Jun (*with* Ling, Yi) On some classes of analytic functions with negative coefficient. *J. Harbin Inst. Tech.* **23** (1991), *no.* 4, 100–103. (Waleed M. Deeb) **93e:30020** 30C45

— (*with* Sun, Jian Wu) Properties of the composition growth of entire functions and meromorphic functions. (Chinese. English and Chinese summaries) *J. Harbin Inst. Tech.* **24** (1992), *no.* 4, 26–33. (Summary) **93i:30024** 30D20 (30D30)

— (*with* Ling, Yi) A class of analytic functions defined by Hadamard products. (Chinese. English and Chinese summaries) *J. Harbin Inst. Tech.* **24** (1992), *no.* 6, 6–11. 30C45

— (*with* Ling, Yi; Luo, Sheng Zheng) Some properties of certain analytic functions. *Nihonkai Math. J.* **3** (1992), *no.* 1, 31–37. (Shigeyoshi Owa) **93g:30017** 30C45

— (*with* Ling, Yi; Luo, Sheng Zheng) On multivalent functions with negative and missing coefficients. *Nihonkai Math. J.* **3** (1992), *no.* 1, 39–48. (S. L. Shukla) **93i:30010** 30C45

Bao, Gong (*with* Zhang, Zhen Jiu; Huang, Huan Ran; He, Chang Bai) Quantum mechanics of black holes in curved space-time. *Quantum mechanics in curved space-time* (*Erice,* 1989), 111–133, *NATO Adv. Sci. Inst. Ser. B Phys.*, 230, *Plenum, New York,* 1990. (*see* **93d:83003**) 83C47 (81T20, 83C57)

Bao, Ji Guang The obstacle problems for second order fully nonlinear elliptic equations with Neumann boundary conditions. (English summary) *J. Partial Differential Equations* **5** (1992), *no.* 3, 33–45. (Martin Fuchs) **93f:35084** 35J85

Bao, Jia Xiang Construction of finite monoids. IV. *Chinese Sci. Bull.* **34** (1989), *no.* 23, 1937–1940. 20M10

Bao, Jun Dong (*with* Feng, Hui Tao) Oscillation of a class of second-order nonlinear neutral functional-differential equations. (Chinese. English and Chinese summaries) *Neimenggu Daxue Xuebao Ziran Kexue* **24** (1993), *no.* 2, 126–130. 34K15 (34K40)

Bao, Paul G. (*with* Rokne, J. G.) Convergence of Newton-like methods for nonlinear systems. *J. Franklin Inst.* **329** (1992), *no.* 4, 743–750. (Timothy Sauer) **93e:65080** 65H10

Bao, Xiu (*with* Cao, Guang Fu) Joint spectrum and joint numerical range of a family of operators. (Chinese. English summary) *Heilongjiang Daxue Ziran Kexue Xuebao* **9** (1992), *no.* 1, 30–34. (Dian Zhou Zhang) **93k:47006** 47A13 (47A12, 47B20)

— (*with* Chu, Lan Ying; Sun, Gui Lan) A construction method for numerical partial derivatives. (Chinese. English and Chinese summaries) *J. Harbin Inst. Tech.* **24** (1992), *no.* 6, 12–17. 65D25

Baok, Saiman (*with* Suleiman, Mohamed Bin) Using nonconvergence of iteration to partition ODEs. *Appl. Math. Comput.* **49** (1992), *no.* 2-3, 111–140. (Summary) **93b:65100** 65L06 (34A50)

Baotong, Cui *see* **Cui, Bao Tong**

Baouche, A. (*with* Dubuc, Serge) La non-dérivabilité de la fonction de Weierstrass. [The nondifferentiability of the Weierstrass function] *Enseign. Math.* (2) **38** (1992), *no.* 1-2, 89–94. (Introduction) **93g:26009** 26A27 (01A55)

Bapat, R. B. (*with* Balasubramanian, Krishnaswami; Beg, M. I.) On families of distributions closed under extrema. (English summary) *Sankhya Ser. A* **53** (1991), *no.* 3, 375–388. (Summary) **93k:62115a** 62G30

— (*with* Manjunatha Prasad, K.) The generalized Moore-Penrose inverse. *Linear Algebra Appl.* **165** (1992), 59–69. (Ronald L. Smith) **93a:15005** 15A09

— (*with* Constantine, G.) An enumerating function for spanning forests with color restrictions. *Linear Algebra Appl.* **173** (1992), 231–237. (T. R. S. Walsh) **93h:05053** 05C05 (05A15, 05C70, 15A15)

— (*with* Balasubramanian, Krishnaswami; Beg, M. I.) Corrigendum: "On families of distributions closed under extrema". *Sankhya Ser. A* **54** (1992), *no.* 1, 133. (Editors) **93k:62115b** 62G30

— (*with* Manjunatha Prasad, K.) A note on the Khatri-inverse. (English summary) *Sankhya Ser. A* **54** (1992), *no.* 2, 291–295. (Donald W. Robinson) **93m:15007** 15A09

Bapeswara Rao, V. V. (*with* Rao, M. Bhaskara) A three-door game show and some of its variants. (English summary) *Math. Sci.* **17** (1992), *no.* 2, 89–94. (From the text) **93i:90128** 90D40 (90D60)

Baptista de Campos, M. Errata: "Connectedness of certain Quot^p schemes" [Rend. Sem. Mat. Univ. Politec. Torino **46** (1988), no. 3, 289–307; MR 92g:14005]. (French) *Rend. Sem. Mat. Univ. Politec. Torino* **47** (1989), *no.* 2, 211 (1992). 14C05 (14F05)

lee-Bapty, I. P. *see* **Lee-Bapty, I. P.**

Bär, Christian ★ Das Spektrum von Dirac-Operatoren. (German) [The spectrum of Dirac operators] Dissertation, Rheinische Friedrich-Wilhelms-Universität Bonn, Bonn, 1990. Bonner Mathematische Schriften [Bonn Mathematical Publications], 217. *Universität Bonn, Mathematisches Institut, Bonn,* 1991. xii+124 *pp.* (Stig I. Andersson) **93g:58148** 58G25 (35P05, 47F05)

— (*with* Schmutz, Paul) Harmonic spinors on Riemann surfaces. (English summary) *Ann. Global Anal. Geom.* **10** (1992), *no.* 3, 263–273. (Robert Brooks) **93k:14043** 14H55 (30F10)

— The Dirac operator on homogeneous spaces and its spectrum on 3-dimensional lens spaces. *Arch. Math. (Basel)* **59** (1992), *no.* 1, 65–79. (Carolyn Gordon) **93h:58156** 58G25 (53C30)

— The Dirac fundamental tone of the hyperbolic space. *Geom. Dedicata* **41** (1992), *no.* 1, 103–107. (Carolyn Gordon) **93c:58217** 58G25

— Lower eigenvalue estimates for Dirac operators. *Math. Ann.* **293** (1992), *no.* 1, 39–46. (Ruishi Kuwabara) **93i:58153** 58G25

Barabanov, A. E. Controllability of multidimensional polynomial linear systems. *Soviet J. Automat. Inform. Sci.* **24** (1991), *no.* 3, 7–12 (1992); *translated from Avtomatika* **1991,** *no.* 3, 9–15, 96 (*Russian. English summary*). (Summary) **93d:93013** 93B05 (93C05)

— (*with* Sokolov, Andrei Arianovich) Optimal stabilization of a linear discrete object with irregular interference in the object and in the measurements. *Soviet J. Automat. Inform. Sci.* **24** (1991), *no.* 5, 84–91 (1992); *translated from Avtomatika* **1991,** *no.* 5, 87–95, 97 (*Russian. English, Russian and Ukrainian summaries*). (Summary) **93g:93070** 93D15 (93B55)

Barabanov, A. F. (*with* Mikheenkov, A. V.) The spin-wave spectrum of $s = 1/2$ triangular lattice Heisenberg antiferromagnet. *JETP Lett.* **56** (1992), *no.* 9, 454–457; *translated from Pis'ma Zh. Èksper. Teoret. Fiz.* **56** (1992), *no.* 9, 470–473 (*Russian*). (Summary) **93k:82010** 82B20

Barabanov, A. T. Routh's method in the theory of systems. I. Generalization of Routh's problem in problems in the theory of systems. *Soviet J. Comput. Systems Sci.* **29** (1991), *no.* 6, 115–124 (1992); *translated from Izv. Akad. Nauk SSSR Tekhn. Kibernet.* **1991,** *no.* 1, 35–44 (*Russian*). (Michel Cotsaftis) **93h:93076** 93D05 (93D09, 93D15)

— The complete solution of the general Routh problem in systems theory. II. *Soviet J. Comput. Systems Sci.* **30** (1992), *no.* 2, 62–70; *translated from Izv. Akad. Nauk SSSR Tekhn. Kibernet.* **1991,** *no.* 2, 39–47 (*Russian*). (Michel Cotsaftis) **93e:93045** 93D05 (93D09)

Barabanov, A. Ye. *see* **Barabanov, A. E.**

Barabás, György Implementing no-derivative optimizing procedures for optimization of econometric models. (English summary) *Computational economics and econometrics* (*Minneapolis, MN,* 1990), 121–135, *Adv. Stud. Theoret. Appl. Econometrics,* 22, *Kluwer Acad. Publ., Dordrecht,* 1992. (*see* **93b:90009**) 90C30

Barabashev, A. G. ★ Будущее математики: методологические аспекты прогнозирования. (Russian) [Future of mathematics: methodological aspects of prediction] *Moskov. Gos. Univ., Moscow,* 1991. 160 *pp. ISBN* 5-211-01483-9 (Roman Murawski) **93d:00011** 00A30 (01A67)

— *see also* **Fang, Joon, 93g:00013**

Barada, H. (*with* El-Amawy, A.) A methodology for algorithm regularization and mapping into time-optimal VLSI arrays. (English summary) *Parallel Comput.* **19** (1993), *no.* 1, 33–61. (Summary) **93j:65231** 65Y10

Barahona, Francisco Separating from the dominant of the spanning tree polytope. (English summary) *Oper. Res. Lett.* **12** (1992), *no.* 4, 201–203. (Summary) **93i:90100** 90C35 (05C05, 90C27)

— (*with* Cabrelli, Carlos A.; Molter, Ursula M.) Computing the Hutchinson distance by network flows. (English summary) *Random Comput. Dynamics* **1** (1992/93), *no.* 1, 117–129. 90B15

Barak, Amnon (*with* Ben-Natan, Ron) Parallel contractions of grids for task assignment to processor networks. (English summary) *Networks* **22** (1992), *no.* 6, 539–562. (Summary) **93i:68025** 68M20 (68M10)

Barakat, Richard Analytic proofs of the Arago-Fresnel laws for the interference of polarized light. (English summary) *J. Opt. Soc. Amer. A* **10** (1993), *no.* 1, 180–185. (Summary) **93i:78004** 78A10

Baraket, Sami (*with* Ye, Dong) Minimizing harmonic mappings from a surface perfored [perforated] with small holes into a Riemannian manifold. (English summary)

Manuscripta Math. **77** (1992), *no.* 2-3, 191–199. (Wei Yue Ding) **93i:58036** 58E20

Baraki, Gebreselassie A note on abstract interpretation of polymorphic functions. *Functional programming languages and computer architecture* (*Cambridge, MA*, 1991), 367–378, *Lecture Notes in Comput. Sci.*, 523, *Springer, Berlin*, 1991. (Summary) **93a:68024** 68N20 (03B70, 68Q55)

Baral, Chitta R. (*with* Subrahmanian, V. S.) Stable and extension class theory for logic programs and default logics. *J. Automat. Reason.* **8** (1992), *no.* 3, 345–366. (F. J. van der Linden) **93h:68016** 68N17 (03B60, 03B70, 68Q55)

Baram, Asher (*with* Kutasov, David) Random sequential adsorption on a quasi-one-dimensional lattice: an exact solution. *J. Phys. A* **25** (1992), *no.* 8, L493–L498. (Summary) **93a:82051** 82C41

Baram, Yoram (*with* Sal'ee, Dror) Lower bounds on the capacities of binary and ternary networks storing sparse random vectors. (English summary) *IEEE Trans. Inform. Theory* **38** (1992), *no.* 6, 1633–1647. (Summary) **93i:68147** 68T05 (92B20)

Baran, B. E. Maximal degree of vertices in a vertex-diameter critical graph. (Russian) *Proceedings of the XXIX All-Union Scientific Student Conference "The Student and Scientific-Technological Progress"* (*Russian*) (*Novosibirsk*, 1991), 7–12, *Novosibirsk. Gos. Univ., Novosibirsk*, 1991. (*see* **93k:00038**) 05C35

Baran, M. *see* **Baran, Mirosław**

Baran, Mehmet Stacks and filters. (English and Turkish summaries) *Doğa Mat.* **16** (1992), *no.* 2, 95–108. (I. W. Alderton) **93m:54007** 54A20 (18B30, 54B30)

— Separation properties. *Indian J. Pure Appl. Math.* **23** (1992), *no.* 5, 333–341. (Summary) **93d:54034** 54D10 (18B30, 54B30, 54D15)

— Separation properties at p for the topological categories of reflexive relation spaces and preordered spaces. (English summary) *Math. Balkanica (N.S.)* **6** (1992), *no.* 2, 193–198. (Temple H. Fay) **93k:18010** 18B30 (18B99, 54B30, 54D10, 54F05)

Baran, Mirosław (*with* Haruki, Hiroshi) On two new functional equations for generalized Joukowski transformations. *Ann. Polon. Math.* **56** (1991), *no.* 1, 79–85. (F. W. Carroll) **93c:39004** 39B32 (30D05)

— Bernstein type theorems for compact sets in $\mathbf{R}^n$. *J. Approx. Theory* **69** (1992), *no.* 2, 156–166. (M. Lachance) **93e:41021** 41A17

— Plurisubharmonic extremal functions and complex foliations for the complement of convex sets in $\mathbf{R}^n$. *Michigan Math. J.* **39** (1992), *no.* 3, 395–404. (M. Klimek) **93j:32022** 32F05

contreras-Barandiarán, Gonzalo *see* **Contreras-Barandiarán, Gonzalo**

Baranger, Jacques (*with* El Amri, Hassan) A posteriori error estimators for mixed finite element approximation of some quasi-Newtonian flows. (Portuguese summary) *Mat. Apl. Comput.* **10** (1991), *no.* 2, 89–102. (Long An Ying) **93f:76065** 76M10 (65N15, 65N30, 76A05)

— (*with* Sandri, D.) Finite element approximation of viscoelastic fluid flow: existence of approximate solutions and error bounds. I. Discontinuous constraints. (English summary) *Numer. Math.* **63** (1992), *no.* 1, 13–27. (I. Christie) **93k:65090** 65N30 (76A15, 76M10)

— (*with* Sandri, D.) A formulation of Stokes's problem and the linear elasticity equations suggested by the Oldroyd model for viscoelastic flow. (French summary) *RAIRO Modél. Math. Anal. Numér.* **26** (1992), *no.* 2, 331–345. (Summary) **93a:73051** 73G25 (65N30, 73V05, 76A10)

Baranger, M. (*with* Davies, K. T. R.; Huston, T. E.) Calculations of periodic trajectories for the Hénon-Heiles Hamiltonian using the monodromy method. *Chaos* **2** (1992), *no.* 2, 215–224. (Richard C. Churchill) **93f:58072** 58F05 (34C25, 58F10, 58F14, 58F22, 70H05)

Baranidharan, S. (*with* Gopal, E. S. R.; Sasisekharan, V.) Quasiperiodic tilings with fourfold symmetry. (English summary) *Acta Cryst. Sect. A* **48** (1992), *no.* 5, 782–784. (Hanna Nencka) **93h:52026** 52C20 (82D25)

Barannik, A. A. A procedure for estimating the computer resources necessary for the program implementation of finite algorithms. (Russian. Russian summary) *Avtomat. i Telemekh.* **1992**, *no.* 2, 157–166; *translation in Automat. Remote Control* **53** (1992), *no.* 2, *part* 2, 281–288. 68Q25

Barannik, A. F. (*with* Gudivok, P. M.) A ring of projective integral p-adic representations of a finite group. (Ukrainian. Russian summary) *Mathematical investigations* (*Ukrainian*), 44–54, 117, *Zb. Nauk. Prats' L'vtv. Mat. Tov.*, 1, *L'vtv. Mat. Tov., L'viv*, 1991. (Summary) **93h:20012** 20C25

— (*with* Barannik, L. F.; Fushchich, V. I.) Connected subgroups of the conformal group $C(1,4)$. (Russian. Ukrainian summary) *Ukrain. Mat. Zh.* **43** (1991), *no.* 7-8, 870–884; *translation in Ukrainian Math. J.* **43** (1991), *no.* 7-8, 813–826 (1992). (Dao Ji Meng) **93b:17014** 17B05 (22E70)

Barannik, L. F. (*with* Barannik, V. F.) Indices of simple components of crossed group algebras of finite groups and the field of p-adic numbers. (Russian. Ukrainian summary) *Ukrain. Mat. Zh.* **43** (1991), *no.* 6, 723–727; *translation in Ukrainian Math. J.* **43** (1991), *no.* 6, 673–676 (1992). (Ernst-Wilhelm Zink) **93b:20021** 20C25 (11S45, 20D15)

— (*with* Barannik, A. F.; Fushchich, V. I.) Connected subgroups of the conformal group $C(1,4)$. (Russian. Ukrainian summary) *Ukrain. Mat. Zh.* **43** (1991), *no.* 7-8, 870–884; *translation in Ukrainian Math. J.* **43** (1991), *no.* 7-8, 813–826 (1992). (Dao Ji Meng) **93b:17014** 17B05 (22E70)

Barannik, V. F. (*with* Barannik, L. F.) Indices of simple components of crossed group algebras of finite groups and the field of p-adic numbers. (Russian. Ukrainian summary) *Ukrain. Mat. Zh.* **43** (1991), *no.* 6, 723–727; *translation in Ukrainian Math. J.* **43** (1991), *no.* 6, 673–676 (1992). (Ernst-Wilhelm Zink) **93b:20021** 20C25 (11S45, 20D15)

Barannikov, S. A. The space of real polynomials without multiple critical values. (Russian) *Funktsional. Anal. i Prilozhen.* **26** (1992), *no.* 2, 10–17, 96; *translation in Functional Anal. Appl.* **26** (1992), *no.* 2, 84–90. (Stanisław Janeczko) **93e:58016** 58C27 (14B07)

Baranov, A. A. (*with* Gostev, V. I.) Multimode control in multistage automatic control systems. *Soviet J. Automat. Inform. Sci.* **24** (1991), *no.* 4, 56–61 (1992); *translated from Avtomatika* **1991**, *no.* 4, 56–61, 95 (*Russian. English, Russian and Ukrainian summaries*). 93C85

Baranov, V. L. Modeling differential games on computational structures. (Russian. Russian summary) *Gibrid. Vychisl. Mashiny Kompleksy No.* 15 (1992), 3–9. (Summary) **93m:90121** 90D25 (49K15, 49M30, 65K99)

Baranov, V. V. A parametric problem of optimal stochastic control. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **31** (1991), *no.* 12, 1783–1797; *translation in Comput. Math. Math. Phys.* **31** (1991), *no.* 12, 15–25 (1992). (Yu. M. Kabanov) **93a:93113** 93E20

— A model and methods of uniformly optimal stochastic control. (Russian. Russian summary) *Avtomat. i Telemekh.* **1992**, *no.* 5, 42–52; *translation in Automat. Remote Control* **53** (1992), *no.* 5, *part* 1, 656–665. (Eduard Eitelberg) **93f:93134** 93E20 (49K45)

— Numerical methods of successive eliminations and optimization in a model of stochastic optimal control. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **32** (1992), *no.* 2, 247–260; *translation in Comput. Math. Math. Phys.* **32** (1992), *no.* 2, 205–215. (Alexei Gaivoronski) **93f:90179** 90C40 (49K45, 65K10, 93E20)

Baranova, O. V. Uniform global controllability of a linear system with stationary random parameters. (Russian. Russian summary) *Differentsial'nye Uravneniya* **27** (1991), *no.* 11, 1843–1850, 2020; *translation in Differential Equations* **27** (1991), *no.* 11, 1289–1295 (1992). (Igor N. Litvin) **93m:93006** 93B03 (34F05, 34H05, 93E03)

Baranowicz, Józef (*with* Nowakowski, Andrzej) Generalized canonical formalism with applications. (Russian and Polish summaries) *Control Cybernet.* **19** (1990), *no.* 1-2, 93–115. (E. N. Barron) **93e:49043** 49L20 (49J52, 58F05, 70H20)

Baranowski, D. (*with* Rittenberg, Vladimir; Schütz, G.) Higher symmetries in the spin-one Zamolodchikov-Fateev Hamiltonian with a finite number of sites and toroidal boundary conditions. Spectra and operator content of $N = 1$ superconformal systems. *Nuclear Phys. B* **370** (1992), *no.* 3, 551–576. (Stanislav Z. Pakuliak) **93c:81192** 81T40 (81R10, 81T25, 81T60, 82B23)

Barański, Feliks (*with* Musialek, Jan) Fourier problems for time-spatial n-dimensional cylinder and its exterior. (Polish summary) *Opuscula Math.* **1991**, *no.* 10, 19–44. (From the introduction) **93e:35045** 35K20

Baranskii, V. A. Independence of quasi-equational theories and of groups of automorphisms of lattices. (Russian) *Ordered sets and lattices, No.* 10 (*Russian*), 3–10, *Saratov. Gos. Univ., Saratov*, 1991. (From the text) **93d:06003** 06B05 (08B05, 20B27)

Barany, Ernest (*with* Golubitsky, Martin; Turski, Jacek) Bifurcations with local gauge symmetries in the Ginzburg-Landau equations. With an appendix by R. Glowinski and H. J. Nussenzveig Lopes. *Phys. D* **56** (1992), *no.* 1, 36–56. (Woodford W. Zachary) **93i:82079** 82D55 (58G28)

— (*with* Melbourne, Ian) A family of stable equilibria in bifurcation with spherical symmetry. *SIAM J. Math. Anal.* **23** (1992), *no.* 1, 72–80. (Thomas Bartsch) **93c:34085** 34C23 (34C35, 58F14)

Bárány, Imre (*with* Balog, Antal) On the convex hull of the integer points in a disc. *Discrete and computational geometry* (*New Brunswick, NJ*, 1989/1990), 39–44, *DIMACS Ser. Discrete Math. Theoret. Comput. Sci.*, 6, *Amer. Math. Soc., Providence, RI*, 1991. (Martin Henk) **93b:11083** 11H06 (11P21, 52C07)

— (*with* Pach, János) On the number of convex lattice polygons. (English summary) *Combin. Probab. Comput.* **1** (1992), *no.* 4, 295–302. (Paul R. Scott) **93m:52017** 52C05

— (*with* Howe, Roger E.; Lovász, László) On integer points in polyhedra: a lower bound. (English summary) *Combinatorica* **12** (1992), *no.* 2, 135–142. (Martin Henk) **93g:52012** 52C07 (11H56, 52B20)

— (*with* Vershik, A. M.) On the number of convex lattice polytopes. *Geom. Funct. Anal.* **2** (1992), *no.* 4, 381–393. (Martin Henk) **93k:52013** 52B20 (52A40, 52B11)

— (*with* Larman, D. G.) A colored version of Tverberg's theorem. *J. London Math. Soc.* (2) **45** (1992), *no.* 2, 314–320. (Béla Uhrin) **93h:52008** 52A37 (52A35)

— Fair distribution protocols or how the players replace fortune. *Math. Oper. Res.* **17** (1992), *no.* 2, 327–340. (M. S. Shtil'man) **93d:90083** 90D60 (90D40)

— Random polytopes in smooth convex bodies. (English summary) *Mathematika* **39** (1992), *no.* 1, 81–92. (P. R. Goodey) **93k:52002** 52A22

Baras, John S. (*with* Finesso, Lorenzo) Consistent estimation of the order of hidden Markov chains. (English summary) *Stochastic theory and adaptive control* (*Lawrence, KS*, 1991), 26–39, *Lecture Notes in Control and Inform. Sci.*, 184, *Springer, Berlin*, 1992. (Summary) **93h:62154** 62M05

— (*with* Augestein, Donald R.; Fisher, Shalom M.) Parameter identification of large spacecraft systems based on frequency characteristics. (English summary) *Analysis and optimization of systems: state and frequency domain approaches for infinite-dimensional systems* (*Sophia-Antipolis*, 1992), 624–635, *Lecture Notes in Control and Inform. Sci.*, 185, *Springer, Berlin*, 1993. (*see* **93i:93005**) 93B30 (73K50, 93C95)

Barashenkov, I. V. (*with* Zhanlav, T.; Bogdan, M. M.) Instabilities and soliton structures in the driven nonlinear Schroedinger equation. *Nonlinear world, Vol.* 1 (*Kiev*, 1989), 3–9, *World Sci. Publishing, River Edge, NJ*, 1990. (*see* **93b:00012**) 35Q55

— (*with* Getmanov, B. S.; Kovtun, V. E.) The unified approach to integrable relativistic equations: soliton solutions over nonvanishing backgrounds. *Nonlinear fields: classical, random, semiclassical* (*Karpacz*, 1991), 617–654, *World Sci. Publishing, River Edge, NJ*, 1991. (Summary) **93i:58067** 58F07 (81T10)

Barashko, A. S. (*with* Skobtsov, Yu. A.; Speranskii, D. V.) ★ Моделирование и тестирование дискретных устройств. (Russian. Russian summary) [Modeling and testing discrete devices] *"Naukova Dumka"*, *Kiev*, 1992. 286 *pp. ISBN* 5-12-002191-3 (From the introduction) **93j:68020** 68M15 (94C12)

Baratchart, Laurent On the well-posedness of rational approximation and the identification of linear dynamical systems. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, I* (*Kobe*, 1991), 581–587, *Mita, Tokyo*, 1992. (*see* **93g:93005**) 93B30 (93B28)

— (*with* Olivi, M.; Wielonsky, F.) On a rational approximation problem in the real Hardy space H_2. Discrete mathematics and applications to computer science (Marseille, 1989). *Theoret. Comput. Sci.* **94** (1992), *no.* 2, 175–197. (A. Bultheel) **93a:30046** 30E10 (41A20, 65D15)

— (*with* Alpay, Daniel; Leblond, Juliette) Some extremal problems linked with identification from partial frequency data. (English summary) *Analysis and optimization of systems: state and frequency domain approaches for infinite-dimensional systems* (*Sophia-Antipolis*, 1992), 563–573, *Lecture Notes in Control and Inform. Sci.*, 185, *Springer, Berlin*, 1993. (*see* **93i:93005**) 93B30 (93C20)

— (*with* Wielonsky, F.) Rational approximation in the real Hardy space H_2 and Stieltjes integrals: a uniqueness theorem. (English summary) *Constr. Approx.* **9** (1993), *no.* 1, 1–21. (A. Bultheel) **93j:30040** 30E10 (41A20, 42B30)

Baratella, Stefano A completeness result for allowed semi-strict programs with respect to well-behaved and allowed query clauses. *Theoret. Comput. Sci.* **97** (1992), *no.* 1, 143–156. (From the introduction) **93g:68070** 68Q55 (03B50, 03B70)

Barb, Florin Dan (*with* Weiss, Martin) Model reduction techniques for sampled-data systems. (English summary) *Numer. Algorithms* **4** (1993), *no.* 1-2, 47–64. (Petko Petkov)

93k:93024 93B11 (93C57)

Barback, Joseph On the minimality of tame models in the isols. *Proc. Amer. Math. Soc.* **119** (1993), *no.* 3, 935–939. (Thomas McLaughlin) **93m:03079** 03D50 (11U09)

Barba Escriba, Juan A modal embedding for partial information semantics. *Logique et Anal. (N.S.)* **32** (1989), *no.* 125-126, 131–137. 03B45 (03B70, 68Q55)

— A representation of intuitionistic logic in partial information language. *Logique et Anal. (N.S.)* **32** (1989), *no.* 127-128, 211–214. 03B70 (03B20, 03B45)

Barbanel, Julius B. A note on a result of Kunen and Pelletier. *J. Symbolic Logic* **57** (1992), *no.* 2, 461–465. (Donna M. Carr) **93m:03089** 03E55 (03E05)

Barbanera, Franco (*with* Dezani-Ciancaglini, Mariangiola) Intersection and union types. *Theoretical aspects of computer software (Sendai, 1991)*, 651–674, *Lecture Notes in Comput. Sci.*, 526, *Springer, Berlin*, 1991. (From the introduction) **93g:68071** 68Q55 (03B40)

Barbanis, B. A multi-spiral set of solutions of a 3-D Hamiltonian system. (English summary) *Celestial Mech. Dynam. Astronom.* **55** (1993), *no.* 1, 87–98. (Summary) **93h:70009** 70H05 (70–08, 70K50)

Barbasch, Dan Unipotent representations for real reductive groups. *Proceedings of the International Congress of Mathematicians, Vol. I, II (Kyoto, 1990)*, 769–777, *Math. Soc. Japan, Tokyo*, 1991. (From the introduction) **93m:22012** 22E45 (22E40)

— (*with* Adams, Jeffrey; Vogan, David A., Jr.) ★ The Langlands classification and irreducible characters for real reductive groups. Progress in Mathematics, 104. *Birkhäuser Boston, Inc., Boston, MA*, 1992. xii+318 *pp. ISBN* 0-8176-3634-X (Brian E. Blank) **93j:22001** 22–02 (22E47)

— (*with* Moy, Allen) Reduction to real infinitesimal character in affine Hecke algebras. *J. Amer. Math. Soc.* **6** (1993), *no.* 3, 611–635. (David Manderscheid) **93k:22015** 22E50

Barbe, Philippe Limiting distribution of the maximal spacing when the density function admits a positive minimum. *Statist. Probab. Lett.* **14** (1992), *no.* 1, 53–60. (J. A. Melamed) **93e:62047** 62E20 (62G30)

Barber, J. R. (*with* Sturla, F. A.) Application of the reciprocal theorem to some problems for the elastic half-space. *J. Mech. Phys. Solids* **40** (1992), *no.* 1, 17–25. (Summary) **93a:73014** 73C02 (73B40, 73T05)

— (*with* Zhang, Ronggang) Transient thermoelastic contact and stability of two thin-walled cylinders. (English summary) *J. Thermal Stresses* **16** (1993), *no.* 1, 31–54. (Summary) **93k:73076** 73T05 (73B30, 73H99, 73K99)

Barber, Michael N. The Potts model. *Austral. Math. Soc. Gaz.* **18** (1991), *no.* 5, 129–140. (Paul A. Pearce) **93d:82018** 82B20 (01A60, 82–02)

Barbero, J. F. (*with* Odintsov, S. D.) Renormalization group dynamics of higher-derivative gravity coupled to a massive scalar. (English summary) *Classical Quantum Gravity* **10** (1993), *no.* 2, 193–205. (Summary) **93k:83059** 83D05 (83C45)

Barbic, Federico (*with* Maiocchi, Roberto; Pernici, Barbara) Automatic deduction of temporal information. (English summary) *ACM Trans. Database Systems* **17** (1992), *no.* 4, 647–688. (Summary) **93h:68038** 68P20 (03B70, 68T27)

Barbier, Christine (*with* Bettess, Peter; Bettess, Jacqueline A.) Automatic generation of mapping functions for infinite elements using REDUCE. (English summary) *J. Symbolic Comput.* **14** (1992), *no.* 5, 523–534. 65–04 (65N30)

Barbieri, Enrique (*with* Özgüner, Ümit) A new minimum-time control law for a one-mode model of a flexible slewing structure. (English summary) *IEEE Trans. Automat. Control* **38** (1993), *no.* 1, 142–146. 49N55 (93C05)

Barbieri, Francesco (*with* Zuccoli, Marina) New letters of Geminiano Rondelli to Count Luigi Ferdinando Marsili. (Italian. English summary) *Nuncius Ann. Storia Sci.* **6** (1991), *no.* 2, 145–155. (Summary) **93b:01023** 01A50

Barbieri, R. (*with* Filippin, C. G.; de Barcellos, C. S.) Numerical results for *h*- and *p*-convergences for the modified local Green's function method. (English summary) *Boundary element technology, VII (Albuquerque, NM, 1992)*, 887–904, *Comput. Mech., Southampton*, 1992. (*see* **93b:65002**) 65N38 (65N12)

Barbieri Viale, Luca Cohomology theories and algebraic cycles on singular varieties. *Algebraic K-theory, commutative algebra, and algebraic geometry (Santa Margherita Ligure, 1989)*, 197–217, *Contemp. Math.*, 126, *Amer. Math. Soc., Providence, RI*, 1992. (Hurşit Önsiper) **93d:14017** 14C25 (14C35, 19E15)

— Des invariants birationnels associés aux théories cohomologiques. (English and French summaries) [Birational invariants via cohomology theories] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 12, 1259–1262. (Summary) **93i:19007** 19E20 (14C35)

— Zero-cycles on singular varieties: torsion and Bloch's formula. *J. Pure Appl. Algebra* **78** (1992), *no.* 1, 1–13. (Hurşit Önsiper) **93b:14021** 14C25 (14C35, 19E15)

Barbón, J. L. F. (*with* Alvarez-Gaumé, Luis; Gómez, César) Fusion rules in two-dimensional gravity. *Nuclear Phys. B* **368** (1992), *no.* 1, 57–78. (Katsushi Ito) **93b:81236** 81T40

Barbosa, Helio J. C. (*with* Hughes, Thomas J. R.) Circumventing the Babuška-Brezzi condition in mixed finite element approximations of elliptic variational inequalities. *Comput. Methods Appl. Mech. Engrg.* **97** (1992), *no.* 2, 193–210. (Ján Lovišek) **93c:65138** 65N30 (35J85, 73V05, 73V25)

— (*with* Hughes, Thomas J. R.) Boundary Lagrange multipliers in finite element methods: error analysis in natural norms. *Numer. Math.* **62** (1992), *no.* 1, 1–15. (Charles I. Goldstein) **93g:65141** 65N30

Barbour, A. D. (*with* Holst, Lars; Janson, Svante) ★ Poisson approximation. Oxford Studies in Probability, 2. Oxford Science Publications. *The Clarendon Press, Oxford University Press, New York*, 1992. x+277 *pp. ISBN* 0-19-852235-5 (Dietmar Pfeifer) **93g:60043** 60F05 (60C05, 60J80, 62E17)

— (*with* Brown, Timothy C.) The Stein-Chen method, point processes and compensators. (English summary) *Ann. Probab.* **20** (1992), *no.* 3, 1504–1527. (Yu. M. Kabanov) **93g:60100** 60G55 (60F99, 60J75)

— (*with* Chen, Louis H. Y.; Loh, Wei-Liem) Compound Poisson approximation for nonnegative random variables via Stein's method. (English summary) *Ann. Probab.* **20** (1992), *no.* 4, 1843–1866. (Dietmar Pfeifer) **93k:60044** 60E15 (60J10)

— Refined approximations for the Ewens sampling formula. *Random Structures Algorithms* **3** (1992), *no.* 3, 267–276. (S. Tavaré) **93k:60025** 60C05 (60J05, 92D10)

— (*with* Chen, Louis H. Y.) On the binary expansion of a random integer. *Statist. Probab. Lett.* **14** (1992), *no.* 3, 235–241. (Peter Schatte) **93g:11084** 11K16 (60E05)

— (*with* Brown, Timothy C.) Stein's method and point process approximation. (English summary) *Stochastic Process. Appl.* **43** (1992), *no.* 1, 9–31. (Malgorzata Majsnerowska) **93k:60120** 60G55

— (*with* Kafetzaki, Maria) A host-parasite model yielding heterogeneous parasite loads. (English summary) *J. Math. Biol.* **31** (1993), *no.* 2, 157–176. (Summary) **93j:92029** 92D30 (60K99)

Barbour, Julian B. Einstein and Mach's principle. (French summary) *Studies in the history of general relativity (Luminy, 1988)*, 125–153, 460, *Einstein Stud.*, 3, *Birkhäuser Boston, Boston, MA*, 1992. (Introduction) **93d:01037** 01A60 (83–03)

Barbu, Viorel The fractional step method for a nonlinear distributed control problem. *Differential equations and control theory (Iaşi, 1990)*, 7–16, *Pitman Res. Notes Math. Ser.*, 250, *Longman Sci. Tech., Harlow*, 1991. (Wiesław Kotarski) **93c:49014** 49K20 (35B37, 35K60, 49L20)

— (*with* Korman, Philip) Approximating optimal controls for elliptic obstacle problem by monotone iteration schemes. *Numer. Funct. Anal. Optim.* **12** (1991), *no.* 5-6, 429–442 (1992). (Shuzi Zhou) **93e:65090** 65K10 (35J85, 49K20, 65N99, 73K50)

— (*with* Favini, Angelo) Existence for implicit differential equations in Banach spaces. (English and Italian summaries) *Atti Accad. Naz. Lincei Cl. Sci. Fis. Mat. Natur. Rend. Lincei (9) Mat. Appl.* **3** (1992), *no.* 3, 203–215. (Sadakazu Aizawa) **93m:34093** 34G20 (34A09, 34A12, 47H15, 47N20)

— (*with* Da Prato, Giuseppe) A representation formula for the solutions to operator Riccati equation. *Differential Integral Equations* **5** (1992), *no.* 4, 821–829. (P. Brunovský) **93k:49031** 49N10 (34H05, 49K27, 49L15, 93C25)

— ★ Analysis and control of nonlinear infinite-dimensional systems. Mathematics in Science and Engineering, 190. *Academic Press, Inc., Boston, MA*, 1993. x+476 *pp. ISBN* 0-12-078145-X (Asen L. Dontchev) **93j:49002** 49–02 (47N70, 49J27, 49J40, 49K20, 49K27, 93C20)

— (*with* Stojanovic, Srdjan) Controlling the moving boundary of the parabolic obstacle problem. (English summary) *Appl. Math. Optim.* **27** (1993), *no.* 3, 213–230. (Karsten Eppler) **93k:93012** 93B05 (35K85, 35R35, 49K20, 93C20)

— (*with* Iannelli, Mimmo) Approximating some nonlinear equations by a fractional step scheme. *Differential Integral Equations* **6** (1993), *no.* 1, 15–26. (G. F. Webb) **93j:34088** 34G20 (34K30, 47H20, 47N20)

— *see also* **Optimization, optimal control and partial differential equations, 93m:00044**

Barbulyak, V. S. (*with* Kondrat'ev, Yu. G.) Phase transition in order-disorder ferro-electrics. (Russian. Russian summary) *Applications of the methods of functional analysis in mathematical physics (Russian)*, 21–27, *Akad. Nauk Ukrainy, Inst. Mat., Kiev*, 1991. (Summary) **93j:82074** 82D45

— (*with* Kondrat'ev, Yu. G.) Existence theorems for functional integrals that correspond to Gibbs states of quantum lattice systems. (Russian) *Akad. Nauk Ukrainy Inst. Mat. Preprint* **1991**, *no.* 33, 30 *pp.* (Summary) **93b:82010** 82B20

— (*with* Kondrat'ev, Yu. G.) The presence of a long-range order in a system of quantum anharmonic oscillators. (Russian) *Akad. Nauk Ukrainy Inst. Mat. Preprint* **1991**, *no.* 35, 18 *pp.* (Summary) **93d:82012** 82B10

— (*with* Kondrat'ev, Yu. G.) Functional integrals and quantum lattice systems. I. The existence of Gibbs states. (Russian. English summary) *Dokl. Akad. Nauk Ukrain. SSR* **1991**, *no.* 8, 31–34, 183. (Volker Warstat) **93b:82007a** 82B10 (82B21)

— (*with* Kondrat'ev, Yu. G.) Functional integrals and quantum lattice systems. II. Periodic Gibbs states. (Russian. English summary) *Dokl. Akad. Nauk Ukrain. SSR* **1991**, *no.* 9, 38–40, 176. (Volker Warstat) **93b:82007b** 82B10 (82B21)

— (*with* Kondrat'ev, Yu. G.) Functional integrals and quantum lattice systems. III. Phase transitions. (Russian. English summary) *Dokl. Akad. Nauk Ukrain. SSR* **1991**, *no.* 10, 19–21, 180. (Volker Warstat) **93b:82007c** 82B10 (82B21)

— Chess estimates and critical temperature in quantum lattice systems. (Russian. Ukrainian summary) *Ukrain. Mat. Zh.* **43** (1991), *no.* 11, 1574–1578; *translation in Ukrainian Math. J.* **43** (1991), *no.* 11, 1466–1470 (1992). (Claus Montonen) **93f:82024** 82B26 (82B10, 82B20)

— (*with* Kondrat'ev, Yu. G.) A quasiclassical limit for the Schrödinger operator, and phase transitions in quantum statistical physics. (Russian) *Funktsional. Anal. i Prilozhen.* **26** (1992), *no.* 2, 61–64; *translation in Functional Anal. Appl.* **26** (1992), *no.* 2, 124–126. (Lech Jakóbczyk) **93g:82009** 82B10 (47N50, 47N55, 81Q20, 82B20, 82B26)

Barbut, E. (*with* Bialostocki, A.) On regular *r*-tournaments. (English summary) *Ars Combin.* **34** (1992), 97–106. (Summary) **93m:05075** 05C20

Barbuti, Roberto (*with* Giacobazzi, Roberto) A bottom-up polymorphic type inference in logic programming. (English summary) *Sci. Comput. Programming* **19** (1992), *no.* 3, 281–313. (Zhenyu Qian) **93m:68028** 68N17 (03B70, 68Q55)

Barcaro, Umberto The gravitational theory of Adelard of Bath. (Italian. English and Italian summaries) *Physis Riv. Internaz. Storia Sci. (N.S.)* **29** (1992), *no.* 2, 299–318. 01A35

de Barcellos, C. S. (*with* Westphal, T., Jr.) Reissner/Mindlin's plate models and the boundary element method. (English summary) *Boundary element technology, VII (Albuquerque, NM, 1992)*, 589–604, *Comput. Mech., Southampton*, 1992. (*see* **93b:65002**) 73V10 (65N38, 73K10)

— (*with* Filippin, C. G.; Barbieri, R.) Numerical results for *h*- and *p*-convergences for the modified local Green's function method. (English summary) *Boundary element technology, VII (Albuquerque, NM, 1992)*, 887–904, *Comput. Mech., Southampton*, 1992. (*see* **93b:65002**) 65N38 (65N12)

Barcelo, Hélène (*with* Sundaram, Sheila) On some submodules of the action of the symmetric group on the free Lie algebra. (English summary) *J. Algebra* **154** (1993), *no.* 1, 12–26. (Stuart Martin) **93j:20028** 20C30 (17B01, 20C05)

Barceló, Tomeu On the harmonic measure for nondivergence elliptic equations. *Comm. Partial Differential Equations* **16** (1991), *no.* 8-9, 1367–1422. (Heinrich Begehr) **93a:35037** 35J15 (35J55)

— On the Poisson kernel for nondivergence elliptic equations with continuous coefficients. *Partial differential equations with minimal smoothness and applications (Chicago, IL, 1990)*, 49–88, *IMA Vol. Math. Appl.*, 42, *Springer, New York*, 1992. (*see* **92m:00047**) 31B35 (35J25)

Barceló-Conesa, M. A remark on quadratic growth of solutions for a class of fully nonlinear second order PDEs. *Progress in partial differential equations: elliptic and parabolic problems (Pont-à-Mousson, 1991)*, 131–141, *Pitman Res. Notes Math. Ser.*, 266, *Longman Sci. Tech., Harlow*, 1992. (Yoshihito Tomita) **93m:35068** 35J60 (35B05, 35K55)

Barcelos-Neto, J. (*with* Srivastava, P. P.) Chiral bosons with Green-Schwarz supersymmetry. *Phys. Lett. B* **259** (1991), *no.* 4, 456–459. (Summary) **93a:81149** 81T30

— (*with* Wotzasek, Clovis) Faddeev-Jackiw quantization and constraints. (English summary) *Internat. J. Modern Phys. A* **7** (1992), *no.* 20, 4981–5003. (Marc Henneaux) **93j:81053** 81S10 (58F05)
— (*with* Das, Ashok) On the bi-Hamiltonian structures of the sKdV. *J. Math. Phys.* **33** (1992), *no.* 8, 2743–2748. (Yi Cheng) **93h:58065** 58F07 (35Q53, 35Q58, 58F37)
— (*with* Wotzasek, Clovis) Symplectic quantization of constrained systems. *Modern Phys. Lett. A* **7** (1992), *no.* 19, 1737–1747. (Alexander D. Popov) **93e:81058** 81S10 (58F06)
— (*with* Natividade, C. P.) Observations on the path integral quantization of gauge theories. *Nuovo Cimento A* (11) **105** (1992), *no.* 5, 609–618. 81T13 (81S40)
— (*with* Das, Ashok; Panda, Sudhakar; Roy, Shibaji) The zero curvature formulation of the KP and the sKP equations. *Phys. Lett. B* **282** (1992), *no.* 3-4, 365–371. (Hugo H. Torriani) **93j:58057** 58F07 (17B81, 35Q53, 81R10)
— (*with* Santos, D. S.) Effective Lagrangians for points, strings and membranes from the BFV formalism. *Z. Phys. C* **54** (1992), *no.* 1, 101–105. (Introduction) **93d:81134** 81T30
— (*with* Cheb-Terrab, E. S.) Faddeev-Jackiw quantization in superspace. *Z. Phys. C* **54** (1992), *no.* 1, 133–138. (G. Vitiello) **93g:81184** 81T60 (81S10)
Barchielli, Alberto (*with* Lupieri, G.) Convolution semigroups of instruments in quantum probability. *Probability theory and mathematical statistics, Vol. I* (*Vilnius*, 1989), 78–90, "*Mokslas*", *Vilnius*, 1990. (S. Gudder) **93c:46115** 46L50 (47N50, 81P15)
— Quantum stochastic calculus: applications to quantum optics. *Stochastic processes, physics and geometry* (*Ascona and Locarno*, 1988), 112–120, *World Sci. Publishing, Teaneck, NJ*, 1990. (Introduction) **93b:81125** 81S25 (81V80)
— Detection theory in quantum optics and quantum stochastic calculus. *Quantum aspects of optical communications* (*Paris*, 1990), 179–189, *Lecture Notes in Phys.*, **378**, *Springer, Berlin*, 1991. (*see* **93e:81158**) 81S25 (81V80)
Barchini, Leticia (*with* Williams, Floyd L.) Periodic zeta functions for rank 1 space forms of symmetric spaces. *Hiroshima Math. J.* **22** (1992), *no.* 1, 33–56. (Jonathan Huntley) **93h:11049** 11F72 (11F70, 11M41)
— (*with* Knapp, Anthony W.; Zierau, R.) Intertwining operators into Dolbeault cohomology representations. *J. Funct. Anal.* **107** (1992), *no.* 2, 302–341. (Floyd L. Williams) **93e:22026** 22E46 (22E45, 32L10)
Barcilon, Victor Ion flow through narrow membrane channels. I. (English summary) *SIAM J. Appl. Math.* **52** (1992), *no.* 5, 1391–1404. (Brian D. Sleeman) **93m:92007** 92C05 (78A99)
— (*with* Chen, D.-P.; Eisenberg, R. S.) Ion flow through narrow membrane channels. II. (English summary) *SIAM J. Appl. Math.* **52** (1992), *no.* 5, 1405–1425. (Brian D. Sleeman) **93m:92008** 92C05 (78A99)
Barclay, D. W. (*with* Moodie, T. Bryant; He, Yuanping) Wavefront expansions and nonlinear hyperbolic waves. *Wave Motion* **14** (1991), *no.* 4, 347–367. (Alan Jeffrey) **93e:35074** 35L70 (65P05, 76B15)
Barcucci, Elena (*with* Verri, M. Cecilia) Some more properties of Catalan numbers. *Discrete Math.* **102** (1992), *no.* 3, 229–237. (Wenchang Chu) **93d:05010** 05A15 (05A10, 05A19)
— (*with* Pinzani, R.; Sprugnoli, Renzo) The Motzkin family. *Pure Math. Appl. Ser. A* **2** (1992), *no.* 3-4, 249–279. (E. Keith Lloyd) **93h:05008** 05A15 (05A16)
Bardakci, Korkut The classical parafermion algebra, its generalization and its quantization. *Nuclear Phys. B* **369** (1992), *no.* 1-2, 461–477. (Matthias Blau) **93a:81164** 81T40 (81R10, 81T70)
Bardaro, C. (*with* Vinti, Gianluca) Some estimates of certain integral operators in generalized fractional Orlicz classes. *Numer. Funct. Anal. Optim.* **12** (1991), *no.* 5-6, 443–453 (1992). (B. S. Rubin) **93d:47093** 47G10 (26A33)
Bar-David, Israel (*with* Etzion, Tuvi) An explicit construction of Euler circuits in shuffle nets and related networks. (English summary) *Networks* **22** (1992), *no.* 6, 523–529. (Gerald Hammer) **93g:90036** 90B12 (94C15)
Bardi, Martino (*with* Sartori, Caterina) Differential games and totally risk-averse optimal control of systems with small disturbances. (English summary) *Differential games—developments in modelling and computation* (*Espoo*, 1990), 91–99, *Lecture Notes in Control and Inform. Sci.*, 156, *Springer, Berlin*, 1991. (*see* **93c:90003**) 90D25 (93E05)
— (*with* Soravia, Pierpaolo) Approximation of differential games of pursuit-evasion by discrete-time games. (English summary) *Differential games—developments in modelling and computation* (*Espoo*, 1990), 131–143, *Lecture Notes in Control and Inform. Sci.*, 156, *Springer, Berlin*, 1991. (N. Pacchiarotti) **93h:90124** 90D26 (49M25, 65K10)
— (*with* Badiale, Marino) Asymptotic symmetry of solutions of nonlinear partial differential equations. *Comm. Pure Appl. Math.* **45** (1992), *no.* 7, 899–921. (J. Chrastina) **93c:35035** 35J60 (35A30, 35F99, 35J70)
— (*with* Sartori, Caterina) Convergence results for Hamilton-Jacobi-Bellman equations in variable domains. *Differential Integral Equations* **5** (1992), *no.* 4, 805–816. (Sadakazu Aizawa) **93i:35031** 35F30 (35B30, 49L25)
Bardin, M. D. Construction of logical calculi with short deductions. (Russian. English summary) *Akad. Nauk SSSR Inst. Prikl. Mat. Preprint* **1991**, *no.* 11, 24 *pp.* (Summary) **93c:68092** 68T27
Bardos, Claude (*with* Ukai, Seiji) The classical incompressible Navier-Stokes limit of the Boltzmann equation. *Math. Models Methods Appl. Sci.* **1** (1991), *no.* 2, 235–257. (Kiyoshi Asano) **93a:76023** 76D05 (35Q30, 45K05, 76N10, 76P05, 82C40)
— (*with* Avellaneda, Marco; Rauch, Jeffrey) Contrôlabilité exacte, homogénéisation et localisation d'ondes dans un milieu non-homogène. [Exact controllability, homogenization and localization of waves in a nonhomogeneous medium] *Asymptotic Anal.* **5** (1992), *no.* 6, 481–494. (Vera Winitzky de Spinadel) **93e:93004** 93B05 (35B27, 35B37, 73B27, 93B07)
— High frequency asymptotic approach for incomplete spectral and local controllability. (English summary) *Analysis and optimization of systems: state and frequency domain approaches for infinite-dimensional systems* (*Sophia-Antipolis*, 1992), 410–422, *Lecture Notes in Control and Inform. Sci.*, 185, *Springer, Berlin*, 1993. (*see* **93i:93005**) 93B05 (93C20)
Bardsley, Peter Local utility functions. (English summary) *Theory and Decision* **34** (1993), *no.* 2, 109–118. (Summary) **93k:90019** 90A10
Bardzokas, Dem. (*with* Parton, V. Z.) Singular integral equations in problems of crack arrest. (Russian) *Dokl. Akad. Nauk* **325** (1992), *no.* 2, 255–259; *translation in Soviet Phys. Dokl.* **37** (1992), *no.* 7, 377–378. (From the text) **93h:73011** 73C35 (73B40, 73M25, 73V35)
Barefoot, C. A. (*with* Clark, L. H.; Douthett, Jack; Entringer, R. C.; Fellows, Michael R.) Cycles of length 0 modulo 3 in graphs. *Graph theory, combinatorics, and applications, Vol. 1* (*Kalamazoo, MI*, 1988), 87–101, *Wiley-Intersci. Publ., Wiley, New York*, 1991. (Summary) **93c:05067** 05C38
Bareikis, G. (*with* Vilimas, V.) Nonuniformly estimation for the distribution of additive arithmetical functions. (Russian and Lithuanian summaries) *Litovsk. Mat. Sb.* **31** (1991), *no.* 4, 584–593; *reprinted in Lithuanian Math. J.* **31** (1991), *no.* 4, 401–408 (1992). (Douglas Hensley) **93c:11076** 11N37
van Barel, Marc *see* **Van Barel, Marc**
Barelli, Armelle (*with* Bellissard, Jean) Dynamical localization—mathematical framework. *Quantum chaos—quantum measurement* (*Copenhagen*, 1991), 105–129, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 358, *Kluwer Acad. Publ., Dordrecht*, 1992. (Nariyuki Minami) **93a:81042** 81Q20 (46L60, 58B30, 81Q50)
Barenblatt, G. I. Intermediate asymptotics in micromechanics. *ICIAM* 91 (*Washington, DC*, 1991), 15–29, *SIAM, Philadelphia, PA*, 1992. (*see* **93b:00026**) 73S10 (73A05)
Barendregt, Henk Introduction to generalized type systems. *J. Funct. Programming* **1** (1991), *no.* 2, 125–154. (Edmund Robinson) **93e:03019** 03B40 (03B70, 68Q55)
Barendsen, Erik Theoretical pearls: an unsolvable numeral system in lambda calculus. *J. Funct. Programming* **1** (1991), *no.* 3, 367–372. (Alessandro Berarducci) **93g:03012** 03B40
Barenghi, Carlo F. A spectral method for time modulated Taylor-Couette flow. *Spectral and high order methods for partial differential equations* (*Como*, 1989), 223–227, *North-Holland, Amsterdam*, 1990. (*see* **93d:65005**) 65N35 (76M25)
Bares, Juan de Dios The genesis of dimensions in Plato. (Spanish. English summary) Theory, history and foundations of the formal sciences (Spanish). *Theoria* (*San Sebastián*) (2) **7** (1992), *no.* 16-18, *A*, 451–471. (Dan Brânzei) **93m:01008** 01A20
Barg, A. M. (*with* Dumer, I. I.) On computing the weight spectrum of cyclic codes. *IEEE Trans. Inform. Theory* **38** (1992), *no.* 4, 1382–1386. (Summary) **93b:94023** 94B15
— At the dawn of the theory of codes. *Math. Intelligencer* **15** (1993), *no.* 1, 20–26. (Boris D. Kudryashov) **93m:01041** 01A60 (94-03, 94B25)
Barge, Jean (*with* Ghys, Étienne) Cocycles bornés et actions de groupes sur les arbres réels. [Bounded cocycles and actions of groups on real trees] *Group theory from a geometrical viewpoint* (*Trieste*, 1990), 617–621, *World Sci. Publishing, River Edge, NJ*, 1991. (S. Andreadakis) **93f:20033** 20E08 (05C05, 57M07)
Barge, Marcy M. (*with* Gillette, Richard M.) A fixed point theorem for plane separating continua. *Topology Appl.* **43** (1992), *no.* 3, 203–212. (L. Janos) **93d:54062** 54H25 (54H20)
— (*with* Walker, Russell B.) Nonwandering structures at the period-doubling limit in dimensions 2 and 3. *Trans. Amer. Math. Soc.* **337** (1993), *no.* 1, 259–277. (R. Dilão) **93g:58090** 58F12 (54H20, 58F13)
Bargenda, H. W. Universal algebraic completions of right adjoint functors. *Category theory at work* (*Bremen*, 1990), 289–306, *Res. Exp. Math.*, 18, *Heldermann, Berlin*, 1991. (S. B. Niefield) **93b:18004** 18A32 (18A22, 18A35, 18A40)
Baribeau, L. (*with* Ransford, T. J.) Meromorphic multifunctions in complex dynamics. *Ergodic Theory Dynamical Systems* **12** (1992), *no.* 1, 39–52. (Peter M. Makienko) **93c:30037** 30D05 (58F23)
Baric, Lee W. Types P and P^* sequence spaces. *Proc. Roy. Irish Acad. Sect. A* **92** (1992), *no.* 1, 41–48. (Robert DeVos) **93i:46018** 46A45 (46B45)
Bariev, R. Z. (*with* Truong, T. T.; Turban, L.) Exact solution of an N-sublattice vertex model. *J. Phys. A* **25** (1992), *no.* 9, L561–L566. (Summary) **93b:82011** 82B20 (82B23)
— Excitations in the integrable model with two- and three-particle interactions. *J. Phys. A* **25** (1992), *no.* 10, L623–L627. (Summary) **93b:82086** 82D55 (81V70, 82B23)
— (*with* Truong, T. T.) Exactly solvable two-sublattice vertex model with interactions of vertex-arrow type. *Phys. Lett. A* **164** (1992), *no.* 5-6, 439–442. (Summary) **93c:82019** 82B23
— (*with* Klümper, Andreas; Schadschneider, A.; Zittartz, J.) Exact solution of a one-dimensional model of hole superconductivity. (English summary) *J. Phys. A* **26** (1993), *no.* 5, 1249–1257. 82D55
Baringhaus, L. (*with* Henze, N.) Limit distributions for measures of multivariate skewness and kurtosis based on projections. *J. Multivariate Anal.* **38** (1991), *no.* 1, 51–69. (Minoru Siotani) **93a:62086** 62H15 (62H10)
— (*with* Henze, N.) An adaptive omnibus test for exponentiality. *Comm. Statist. Theory Methods* **21** (1992), *no.* 4, 969–978. (František Rublík) **93m:62103** 62G10 (62F03)
— (*with* Henze, N.) A characterization of and new consistent tests for symmetry. *Comm. Statist. Theory Methods* **21** (1992), *no.* 6, 1555–1566. (Truc Nguyen) **93k:62105** 62G10 (62E10)
— (*with* Henze, N.) A goodness of fit test for the Poisson distribution based on the empirical generating function. *Statist. Probab. Lett.* **13** (1992), *no.* 4, 269–274. (S. Rao Jammalamadaka) **93e:62054** 62F03 (62E25)
Baris, Ya. S. (*with* Lykova, O. B.) Integral manifolds and the reduction principle in stability theory. IV. (Russian. Ukrainian summary) *Ukrain. Mat. Zh.* **43** (1991), *no.* 12, 1696–1702; *translation in Ukrainian Math. J.* **43** (1991), *no.* 12, 1582–1588 (1992). (Summary) **93d:34085** 34D05 (34C20, 34C30, 34D35)
Bar-Itzhack, I. Y. (*with* Goshen-Meskin, Drora) Observability analysis of piecewise constant systems. I. Theory. (English summary) *IEEE Trans. Aerospace Electron. Systems* **28** (1992), *no.* 4, 1056–1067. (Mikołaj Busłowicz) **93j:93023** 93B07 (93B27, 93C35, 93C50)
— (*with* Goshen-Meskin, Drora) Observability analysis of piecewise constant systems. II. Application to inertial navigation in-flight alignment. (English summary) *IEEE Trans. Aerospace Electron. Systems* **28** (1992), *no.* 4, 1068–1075. (Mikołaj Busłowicz) **93j:93024** 93B07 (93B27, 93C35, 93C50)
— (*with* Goshen-Meskin, Drora) On the connection between estimability and observability. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 8, *part I*, 1225–1226. (Summary) **93f:93120** 93E10 (93B07)
Barkalov, A. A. (*with* Yusifov, S. I.; Das, D. K.) ★ *PR*-автоматы: функционирование, оптимизация, выбор метода синтеза. (Russian. Russian summary) [*PR*-automata: functioning, optimization, choice of design method] Препринт [Preprint], 91-55. *Akad. Nauk Ukrainy, Inst. Kibernet., Kiev*, 1991. 26 *pp.* 68Q70
Bar-Kana, Izhak (*with* Guez, Allon; Rusnak, Ilan) Multiple objective optimization approach to adaptive and learning control. (English summary) *Internat. J. Control* **56**

(1992), *no.* 2, 469–482. 93E35 (90C29)

Barkar', S. M. On the basis property for some of the eigenvectors of a class of operator pencils. (Russian) *Algebraic structures and geometry (Russian)*, 16–20, 157, "*Shtiintsa*", *Kishinev*, 1991. (Michal Zajac) **93e:47017** 47A56 (47A10, 47N20, 73K70, 76B15)

— On the spectrum of a quadratic operator pencil in the open right half-plane. (Russian) *Algebraic structures and geometry (Russian)*, 20–29, 157, "*Shtiintsa*", *Kishinev*, 1991. (Michal Zajac) **93e:47018** 47A56 (47A10, 73K12)

— (*with* Pivovarchik, V. N.) On the spectrum in the right half-plane of a class of operator pencils. (Russian. English, Russian and Moldavian summaries) *Izv. Akad. Nauk Respub. Moldova Mat.* **1992,** *no.* 1, 17–28, 90. (Michal Zajac) **93m:47017** 47A56 (35Q72, 47F05, 47N20, 73D30)

— (*with* Pivovarchik, V. N.) Small transverse vibrations of a viscoelastic rod with rigidly fastened ends. (Russian) *Mat. Issled. No.* 124, *Funktsional. Metod. Teorii Differ. Uravn.* (1992), 3–14, 142. (Summary) **93b:35129** 35Q99 (73D30, 73F15, 73K12)

Barker, Andrew D. Aristoxenus' harmonics and Aristotle's theory of science. *Science and philosophy in classical Greece*, 188–226, *Sources Stud. Hist. Philos. Class. Sci.*, 2, *Garland, New York*, 1991. (*see* **93g:01015**) 01A20

Barker, George Phillip Automorphisms of triangular matrices over graphs. *Linear Algebra Appl.* **160** (1992), 63–74. (From the text) **93f:15011** 15A33 (05C50)

Barker, Stephen Kant's view of geometry: a partial defense. *Kant's philosophy of mathematics*, 221–243, *Synthese Lib.*, 219, *Kluwer Acad. Publ., Dordrecht*, 1992. (*see* **93i:00007**) 00A30 (01A50)

Barker, William H. *see* **Harmonic analysis on reductive groups, 93a:22001**

Barker-Plummer, Dave Gazing: an approach to the problem of definition and lemma use. *J. Automat. Reason.* **8** (1992), *no.* 3, 311–344. (Summary) **93k:68086** 68T15 (03B35)

Barkin, A. I. (*with* Naumov, B. N.; Sinitsyn, I. N.) Nonlinear control systems: frequency analysis of absolute stability and performance. *Philosophy of nonlinear control systems*, 50–90, *Adv. Sci. Tech. USSR Tech. Ser.*, "*Mir*", *Moscow*, 1990. (Eyad H. Abed) **93d:93060** 93D05 (93C10)

Barkley, Dwight (*with* Tuckerman, Laurette S.) Erratum: "Bifurcation analysis of the Eckhaus instability" [Phys. D **46** (1990), no. 1, 57–86; MR 92g:76046]. *Phys. D* **59** (1992), *no.* 4, 430. (Editors) **93k:76050** 76E30 (35B32, 35Q35, 58F14, 58F39)

Barkovskiĭ, L. M. (*with* Fo Tkhi Nguet Khang) Geometro-optic reflection and transmission operators for stratified anisotropic media. (Russian. English summary) *Vestst Akad. Navuk BSSR Ser. Fiz.-Mat. Navuk* **1991,** *no.* 5, 74–78, 126. (Summary) **93a:78002** 78A05 (78A45)

Barkwell, Lawrence (*with* Lancaster, Peter; Markus, Alexander S.) Gyroscopically stabilized systems: a class of quadratic eigenvalue problems with real spectrum. *Canad. J. Math.* **44** (1992), *no.* 1, 42–53. (T. Ya. Azizov) **93a:47015** 47A56 (47A10, 47N70, 93D15)

— (*with* Lancaster, Peter) Overdamped and gyroscopic vibrating systems. (English summary) *Trans. ASME J. Appl. Mech.* **59** (1992), *no.* 1, 176–181. (Summary) **93f:70021** 70J25

Barles, Guy (*with* Díaz Díaz, Gregorio; Díaz Díaz, Jesús Ildefonso) Uniqueness and continuum of foliated solutions for a quasilinear elliptic equation with a non-Lipschitz nonlinearity. *Comm. Partial Differential Equations* **17** (1992), *no.* 5-6, 1037–1050. (Gershon Wolansky) **93f:35060** 35J60 (35B05)

— (*with* Burdeau, Julien; Romano, Marc; Samsœn, Nicolas) Estimation de la frontière libre des options américaines au voisinage de l'échéance. (English and French summaries) [Estimate on the free boundary of American puts near maturity] *C. R. Acad. Sci. Paris Sér. I Math.* **316** (1993), *no.* 2, 171–174. 90A09 (49K20)

Bar-Lev, Shaul K. (*with* Enis, Peter) Variance stabilizing and normalizing transformations for the compound Poisson process. *Metrika* **39** (1992), *no.* 3-4, 165–175. (Summary) **93c:62156** 62M99

— (*with* Bshouty, Daoud; Enis, Peter) On polynomial variance functions. (English summary) *Probab. Theory Related Fields* **94** (1992), *no.* 1, 69–82. (Paul Embrechts) **93i:62013** 62E10 (60J30)

— (*with* Bshouty, Daoud; Enis, Peter; Ohayon, Avital Y.) Compositions and products of infinitely divisible variance functions. *Scand. J. Statist.* **19** (1992), *no.* 1, 83–89. (Gérard Letac) **93h:60021** 60E07 (62E10)

— (*with* Bshouty, Daoud; Letac, Gérard) Natural exponential families and self-decomposability. *Statist. Probab. Lett.* **13** (1992), *no.* 2, 147–152. (Ryuei Nishii) **93c:60012** 60E05 (62E10)

— (*with* Parlar, Mahmut; Perry, David) Impulse control of a Brownian inventory system with supplier uncertainty. (English summary) *Stochastic Anal. Appl.* **11** (1993), *no.* 1, 11–27. (Summary) **93j:90035** 90B05

Barlotti, Adriano Geometry of quasigroups. *Quasigroups and loops: theory and applications*, 197–203, *Sigma Ser. Pure Math.*, 8, *Heldermann, Berlin*, 1990. (*see* **93g:20133**) 20N05 (20B25, 51A25)

— Summary of some questions suggested by the geometric work of R. C. Bose. (Italian) Graphs, designs and combinatorial geometries (Catania, 1989). *Matematiche (Catania)* **45** (1990), *no.* 1, 5–13 (1991). (Vikram Jha) **93k:51007** 51E20 (05B15, 05B30, 51E05, 51E14)

— Incidence structures and Galois geometries. *Geometry and complex variables (Bologna*, 1988/1990), 5–9, *Lecture Notes in Pure and Appl. Math.*, 132, *Dekker, New York*, 1991. (J. W. P. Hirschfeld) **93d:51022** 51E21

— *see also* **Combinatorics '90, 93f:05003; Generators and relations in groups and geometries, 93i:00017; Combinatorics '88, 93m:00039** *and* **93m:00040**

Barlotti, Marco The normal Fitting class generated by a finite soluble group. (Italian summary) *Ann. Mat. Pura Appl.* (4) **162** (1992), 227–235. (Summary) **93k:20032** 20D10

Barlow, Jesse L. (*with* Vemulapati, Udaya B.) Rank detection methods for sparse matrices. (English summary) *SIAM J. Matrix Anal. Appl.* **13** (1992), *no.* 4, 1279–1297. (Summary) **93f:65041** 65F50 (65F20, 65F35)

— (*with* Lu, Szu-Min) Parallel computation of orthogonal factors of sparse matrices. (English summary) *Parallel processing for scientific computing, Vol. I, II (Norfolk, VA*, 1993), 486–490, *SIAM, Philadelphia, PA*, 1993. (*see* **93k:65003**) 65F50 (65Y05)

Barlow, Martin T. (*with* Evans, Steven N.; Perkins, Edwin A.) Collision local times and measure-valued processes. *Canad. J. Math.* **43** (1991), *no.* 5, 897–938. (Robert J. Adler) **93a:60119** 60J55 (60G57)

— Harmonic analysis on fractal spaces. (English summary) Séminaire Bourbaki, Vol. 1991/92. *Astérisque No.* 206 (1992), *Exp. No.* 755, 5, 345–368. (Davar Khoshnevisan) **93m:60160** 60J60 (28A80)

— (*with* Taylor, Samuel James) Local dimension and regular points. *Math. Proc. Cambridge Philos. Soc.* **112** (1992), *no.* 2, 361–368. (Miguel Angel Martín) **93e:28008** 28A78 (31B15)

— (*with* Bass, Richard F.) Transition densities for Brownian motion on the Sierpiński carpet. *Probab. Theory Related Fields* **91** (1992), *no.* 3-4, 307–330. (Summary) **93k:60203** 60J65

Barlow, Rebecca (*with* Assadi, Amir H.; Knop, Friedrich) Abelian group actions on algebraic varieties with one fixed point. *Math. Z.* **210** (1992), *no.* 1, 129–136. (From the introduction) **93b:14071** 14L30 (57S17)

Barlow, Richard E. (*with* Pereira, Carlos Alberto de Bragança) Conditional independence and probabilistic influence diagrams. (English summary) *Topics in statistical dependence (Somerset, PA*, 1987), 19–33, *IMS Lecture Notes Monograph Ser.*, 16, *Inst. Math. Statist., Hayward, CA*, 1990. (Summary) **93g:60024** 60E05 (62A15, 62B15)

— (*with* Irony, Telba Z.) Foundations of statistical quality control. (English summary) *Current issues in statistical inference: essays in honor of D. Basu*, 99–112, *IMS Lecture Notes Monograph Ser.*, 17, *Inst. Math. Statist., Hayward, CA*, 1992. (Summary) **93g:62125** 62N10

Barmish, B. Ross (*with* Saleh, Saad J.; Petersen, Ian R.) Robust stabilization with uncertainty in a sphere: a closed form for the controller set. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, I (Kobe*, 1991), 415–424, *Mita, Tokyo*, 1992. (*see* **93g:93005**) 93D21

— (*with* Kang, H. I.) Extreme point results for robust stability of interval plants: beyond first order compensators. (English summary) *Automatica J. IFAC* **28** (1992), *no.* 6, 1169–1180. (Hong Zhang) **93m:93067** 93D09

— (*with* Hollot, Christopher V.; Kraus, Frantisek J.; Tempo, Roberto) Extreme point results for robust stabilization of interval plants with first order compensators. *IEEE Trans. Automat. Control* **37** (1992), *no.* 6, 707–714. (Arno Linnemann) **93d:93062** 93D09 (93D21)

— (*with* Tempo, Roberto; Hollot, Christopher V.; Kang, H. I.) An extreme point result for robust stability of a diamond of polynomials. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 9, 1460–1462. (Ian Petersen) **93j:93099** 93D09 (93D20, 93D22)

— *see also* **Yen, K. K., 93k:93092**

Barnard, G. A. *see* **Goldstein, Michael, 93d:62005**

Bar-Natan, Dror (*with* Witten, Edward) Perturbative expansion of Chern-Simons theory with noncompact gauge group. *Comm. Math. Phys.* **141** (1991), *no.* 2, 423–440. (Steven Rosenberg) **93c:81244** 81T70 (58G12, 58G26, 81Q30, 81T13, 81T18)

Barndorff-Nielsen, Ole E. (*with* Jørgensen, Bent) Some parametric models on the simplex. *J. Multivariate Anal.* **39** (1991), *no.* 1, 106–116. (Donald Richards) **93c:62023** 62E15 (62F99, 62H10, 62H99)

— (*with* Chamberlin, S. R.) An ancillary invariant modification of the signed log likelihood ratio. *Scand. J. Statist.* **18** (1991), *no.* 4, 341–352. (Summary) **93c:62025** 62E20

— (*with* Blæsild, P.) Inversion and index notation. (English summary) *The art of statistical science*, 131–151, *Wiley Ser. Probab. Math. Statist. Probab. Math. Statist., Wiley, Chichester*, 1992. (Summary) **93d:62007** 62A99 (15A09, 53A99, 62F99)

— (*with* Blæsild, P.; Carey, A. L.; Jupp, P. E.; Mora, Marianne; Murray, M. K.) Finite-dimensional algebraic representations of the infinite phylon group. (English summary) *Acta Appl. Math.* **28** (1992), *no.* 3, 219–252. (I. Kolář) **93k:58004** 58A20 (20G05, 53A55, 62B99)

— (*with* Klüppelberg, Claudia) A note on the tail accuracy of the univariate saddlepoint approximation. (English and French summaries) *Ann. Fac. Sci. Toulouse Math.* (6) **1** (1992), *no.* 1, 5–14. (Gábor J. Székely) **93k:60033** 60E05 (62E17)

— (*with* Blæsild, P.; Seshadri, Vanamamalai) Multivariate distributions with generalized inverse Gaussian marginals, and associated Poisson mixtures. (English and French summaries) *Canad. J. Statist.* **20** (1992), *no.* 2, 109–120. 62H05

— (*with* Blæsild, P.) A type of second-order asymptotic independence. (English summary) *J. Roy. Statist. Soc. Ser. B* **54** (1992), *no.* 3, 897–901. (Summary) **93h:62026** 62E20

Barner, Klaus Über das Theta-Multiplikatoren-System. [On the theta multiplier system] *Results Math.* **22** (1992), *no.* 1-2, 445–469. (Bruce C. Berndt) **93i:11053** 11F27 (11F20)

Barnes, Bruce A. Spectral properties of linear Volterra operators. *J. Operator Theory* **24** (1990), *no.* 2, 365–382. (A. R. Sourour) **93e:47036** 47B38 (47A10, 47G10)

— Essential spectra in a Banach algebra applied to linear operators. *Proc. Roy. Irish Acad. Sect. A* **90** (1990), *no.* 1, 73–82. (G. Garske (Zbl 728:47001)) **93b:46087** 46H05 (47A10, 47B38)

Barnes, E. R. (*with* Hoffman, A. J.; Rothblum, Uriel G.) Optimal partitions having disjoint convex and conic hulls. *Math. Programming* **54** (1992), *no.* 1, *Ser. A*, 69–86. (Frank K. Hwang) **93d:05014** 05A18 (52A20, 65K10, 90C05)

Barnett, Chris (*with* Lindsay, J. Martin; Wilde, Ivan F.) Quantum stochastic integrals as belated integrals. *Glasgow Math. J.* **34** (1992), *no.* 2, 165–173. (S. Gudder) **93e:46091** 46N50 (46G12, 81S25)

Barnett, D. M. (*with* Chadwick, Paul; Lothe, J.) Addendum: "The behaviour of elastic surface waves polarized in a plane of material symmetry. I. General analysis" [Proc. Roy. Soc. London Ser. A **430** (1990), no. 1878, 213–240; MR 92c:73037] by Chadwick. *Proc. Roy. Soc. London Ser. A* **433** (1991), *no.* 1889, 699–710. (Bair V. Budaev) **93f:73037** 73D20 (73B40)

— (*with* Suo, Z.; Kuo, C.-M.; Willis, J. R.) Fracture mechanics for piezoelectric ceramics. *J. Mech. Phys. Solids* **40** (1992), *no.* 4, 739–765. (Summary) **93c:73085** 73M25 (73R05)

— (*with* Ting, T. C. T.) Image force on line dislocations in anisotropic elastic half-spaces with a fixed boundary. (English summary) *Internat. J. Solids Structures* **30** (1993), *no.* 3, 313–323. (Summary) **93i:73046** 73S10 (73B40)

Barnett, Janet Heine Weak variants of Martin's axiom. (English summary) *Fund. Math.* **141** (1992), *no.* 1, 61–73. (Judith Roitman) **93i:03073** 03E50

Barnett, Jeffrey A. Combining opinions about the order of rule execution. (English summary) *AAAI-91. Proceedings, Ninth National Conference on Artificial Intelligence, Vol.* 1, 2, 477–481, *AAAI Press, Menlo Park, CA*, 1991. (*see* **93i:68011**) 68T30

Barnett, Stephen M. (*with* Phoenix, Simon J. D.) Bell's inequality and the Schmidt decomposition. *Phys. Lett. A* **167** (1992), *no.* 3, 233–237. (S. Gudder) **93f:81016** 81P10 (81P15)

Barnett, William A. *see* **Nonparametric and semiparametric methods in econometrics and statistics, 93c:62005**

Barnhart, Cynthia Dual-ascent methods for large-scale multicommodity flow problems. (English summary) *Naval Res. Logist.* **40** (1993), *no.* 3, 305–324. 90B10

— (*with* Sheffi, Yosef) A network-based primal-dual heuristic for the solution of multicommodity network flow problems. (English summary) *Transportation Sci.* **27** (1993), *no.* 2, 102–117. 90B10

Barnhill, Robert E. (*with* Frost, Todd M.; Kersey, Scott N.) Self-intersections and offset surfaces. *Geometry processing for design and manufacturing*, 35–44, *SIAM, Philadelphia, PA*, 1992. (*see* **93b:65035**) 65D17

— (*with* Bloomquist, Brett K.; Worsey, Andrew J.) Adaptive contouring for triangular Bézier patches. *Geometry processing for design and manufacturing*, 125–135, *SIAM, Philadelphia, PA*, 1992. (*see* **93b:65035**) 65D17

— (*with* Foley, Thomas A.; Lane, David A.) Interpolating scattered multivariate data as a function of time. (English summary) *Comput. Aided Geom. Design* **9** (1992), *no.* 5, 337–348. (Summary) **93i:65014** 65D05

— (*with* Opitz, Karsten; Pottmann, Helmut) Fat surfaces: a trivariate approach to triangle-based interpolation on surfaces. (English summary) *Comput. Aided Geom. Design* **9** (1992), *no.* 5, 365–378. (Manfred Tasche) **93j:65024** 65D17 (65D05)

— *see also* **Geometry processing for design and manufacturing, 93b:65035**

Barnich, Glenn (*with* Henneaux, Marc) Comments on unitarity in the antifield formalism. (English summary) *Modern Phys. Lett. A* **7** (1992), *no.* 29, 2703–2713. (Summary) **93f:81078** 81T13

Bar-Noy, Amotz (*with* Dolev, Danny; Dwork, Cynthia; Strong, H. Raymond) Shifting gears: changing algorithms on the fly to expedite Byzantine agreement. *Inform. and Comput.* **97** (1992), *no.* 2, 205–233. (A. T. Amin) **93f:68036** 68Q22 (68M10)

— (*with* Alon, Noga; Linial, Nathan; Peleg, David) Single round simulation on radio networks. (English summary) *J. Algorithms* **13** (1992), *no.* 2, 188–210. (Summary) **93m:68011** 68M10 (90B12)

— (*with* Dolev, Danny) A partial equivalence between shared-memory and message-passing in an asynchronous fail-stop distributed environment. (English summary) *Math. Systems Theory* **26** (1993), *no.* 1, 21–39. (Summary) **93i:68016** 68M10

Barnsley, Michael F. ★ The Desktop Fractal Design System. IBM version 2.0. With 1 IBM-PC floppy disk (5.25 inch; DD). *Academic Press, Inc., Boston, MA*, 1992. xii+44 *pp. ISBN* 0-12-079066-1 (Editors) **93k:58133a** 58F11 (00A69, 58–04, 65–04)

— ★ The Desktop Fractal Design System. Macintosh version 2.0. With 1 Macintosh floppy disk (3.25 inch; DD). *Academic Press, Inc., Boston, MA*, 1992. xii+44 *pp. ISBN* 0-12-079065-3 (Editors) **93k:58133b** 58F11 (00A69, 58–04, 65–04)

— (*with* Hurd, Lyman P.) ★ Fractal image compression. Illustrations by Louisa F. Anson. *A K Peters, Ltd., Wellesley, MA*, 1993. xii+244 *pp. ISBN* 1-56881-000-8 (Gilbert Crombez) **93m:68182** 68U10 (00A69)

Barnyak, M. Ya. (*with* Tsebrii, R. I.) Reduction of a problem on normal oscillations of a pendulum with a cylindrical cavity filled with a viscous fluid to a system of integro-differential equations, and a projection method for their solution. (Russian. Russian summary) *Problems in the dynamics and stability of multidimensional systems* (*Russian*), 4–10, *Akad. Nauk Ukrainy, Inst. Mat., Kiev*, 1991. (*see* **93g:00025**) 76D33 (70E99)

granja Barón, Angel *see* **Granja Barón, Angel**

Baron, Gerd (*with* Drmota, Michael) Die Komponentenverteilung von gesättigten Teilgraphen in Baumfamilien. [The component distribution of saturated subgraphs in families of trees] *Séminaire Lotharingien de Combinatoire* (*Salzburg*, 1990), 63–65, *Publ. Inst. Rech. Math. Av.*, 462, *Univ. Louis Pasteur, Strasbourg*, 1991. (*see* **93f:00018**) 05C05

— (*with* Drmota, Michael) Distribution properties of induced subgraphs of trees. (English summary) *Ars Combin.* **35** (1993), 193–213. (Summary) **93m:05093** 05C30 (05C05)

Bar-On, Ilan (*with* Sidi, Avram) New algorithms for polynomial and trigonometric interpolation on parallel computers. (English summary) *BIT* **32** (1992), *no.* 3, 464–480. (Summary) **93e:65014** 65D05 (65Y05)

Baron, J. R. *see* **Baron, Judson R.**

Bar-on, Jonathan R. (*with* Jonckheere, Edmond A.) The geometry of the multivariable phase margin. *IEEE Trans. Automat. Control* **37** (1992), *no.* 6, 798–800. (Summary) **93b:93080** 93D09 (51M09)

— (*with* Gray, C. W.) A generalized polar decomposition. *Linear Algebra Appl.* **170** (1992), 75–80. (George P. Barker) **93b:15017** 15A30 (15A23, 15A57)

— (*with* Gray, C. W.) Erratum: "A generalized polar decomposition" [Linear Algebra Appl. **170** (1992), 75–80; MR 93b:15017]. *Linear Algebra Appl.* **180** (1993), 6. (From the text) **93m:15022** 15A30 (15A23, 15A57)

Baron, Judson R. (*with* Kallinderis, J. G.) The finite volume approach for the Navier-Stokes equations. *Computational methods in viscous aerodynamics*, 117–146, *Elsevier, Amsterdam*, 1990. (Timothy Nigel Phillips) **93h:76057** 76M25 (76D05)

Baron, Karol (*with* Volkmann, Peter) On a theorem of van der Corput. *Abh. Math. Sem. Univ. Hamburg* **61** (1991), 189–195. (John A. Baker) **93a:39023** 39B52 (39B05, 46N99)

— (*with* Lasota, Andrzej) Asymptotic properties of Markov operators defined by Volterra type integrals. *Selected topics in functional equations and iteration theory* (*Graz*, 1991), 213–218, *Grazer Math. Ber.*, 316, *Karl-Franzens-Univ. Graz, Graz*, 1992. (*see* **93m:39001**) 45P05 (47B38)

Baron, S. (*with* Tietz, Hubert) Umkehrsätze für Riesz-Verfahren zur Summierung von Doppelreihen. [Inversion theorems for Riesz methods for the summation of double series] *Acta Math. Hungar.* **58** (1991), *no.* 3-4, 279–288. (O. A. Ziza) **93f:40006** 40B05 (40E05, 40G99)

— *see also* **Approximation interpolation and summability, 93k:41001**

roelants van Baronaigien, D. *see* **Roelants van Baronaigien, D.**

Barone, E. (*with* Moscatelli, Vincenzo B.) On the non-σ-associativity of associative means. (Italian. English summary) *Rend. Istit. Mat. Univ. Trieste* **21** (1989), *no.* 2, 211–218 (1991). (I. Muntean) **93b:26015** 26A99 (26D99, 28A12)

Barone, P. *see* **Stochastic models, statistical methods, and algorithms in image analysis, 93e:62005**

Baronets, V. D. (*with* Grechikhin, M. A.) A model for representing the membership function in expert systems. (Russian. Russian summary) *Avtomat. i Telemekh.* **1992**, *no.* 6, 156–160; *translation in Automat. Remote Control* **53** (1992), *no.* 6, *part* 2, 921–925. 68T30

Barón López, Francisco Javier Exact absorbing boundary condition for the Helmholtz equation. (Spanish) *Proceedings of the XII Congress on Differential Equations and Applications/II Congress on Applied Mathematics* (*Spanish*) (*Oviedo*, 1991), 369–374, *Univ. Oviedo, Oviedo*, 1991. (*see* **93j:00009**) 35J05 (35R30)

Baronti, Marco (*with* Papini, Pier Luigi) Norm-one projections onto subspaces of finite codimension in l_1 and c_0. *Period. Math. Hungar.* **22** (1991), *no.* 3, 161–174. (S. Cobzaş) **93a:46034** 46B25 (41A65, 46B20)

— Some remarks on the fixed point stability for nonexpansive mappings. *Publ. Inst. Math. (Beograd) (N.S.)* **49(63)** (1991), 133–136. (E. Lami Dozo) **93a:47059** 47H09 (47H10)

— (*with* Papini, Pier Luigi) Projections, skewness and related constants in real normed spaces. *Math. Pannon.* **3** (1992), *no.* 1, 31–47. (C. Franchetti) **93h:46012** 46B20 (41A65)

Barozzi, E. (*with* Emmer, M.; Gonzalez, E. H. A.) Lagrange multipliers and variational methods for equilibrium problems of fluids. *Rend. Sem. Mat. Univ. Padova* **85** (1991), 35–53. (Klaus Steffen) **93j:49044** 49Q20 (58E30, 76B45, 76E99, 76M30, 76U05)

Barr, Lloyd (*with* Lazalde, Carlos A.) Four-state models and regulation of contraction of smooth muscle. I. Physical considerations, stability, and solutions. (English summary) *Math. Biosci.* **112** (1992), *no.* 1, 1–30. (Summary) **93i:92002** 92B05 (92C30)

— (*with* Lazalde, Carlos A.) Four-state models and regulation of contraction of smooth muscle. II. Properties of the solutions and identification. (English summary) *Math. Biosci.* **112** (1992), *no.* 1, 31–54. (Summary) **93i:92003** 92B05 (92C30)

Barr, Michael (*with* Wells, Charles Frederick) On the limitations of sketches. (English summary) *Canad. Math. Bull.* **35** (1992), *no.* 3, 287–294. (Summary) **93i:18009** 18C10 (18A10)

— Algebraically compact functors. (English summary) *J. Pure Appl. Algebra* **82** (1992), *no.* 3, 211–231. (Kimmo I. Rosenthal) **93i:18010** 18D15 (18A22)

Barrabès, Claude (*with* Israel, Werner) Light-like surface layers in general relativity. *Quantum gravity* (*Moscow*, 1990), 358–364, *World Sci. Publishing, River Edge, NJ*, 1991. (A. D. Popova) **93h:83013** 83C20 (83C75)

— (*with* Gramain, André; Lesigne, E.; Letelier, Patricio S.) Geometric inequalities and the hoop conjecture. (English summary) *Classical Quantum Gravity* **9** (1992), *no.* 9, L105–L110. (Richard Hansen) **93f:83068** 83C99

— (*with* Boisseau, Bruno) Minimal surfaces in symmetric spaces and dynamics of membranes in nonabelian gauge fields. *Phys. Lett. B* **279** (1992), *no.* 3-4, 259–264. (Frans R. Klinkhamer) **93g:81121** 81T30 (53C42)

Barragy, E. (*with* Carey, Graham) Bifurcation detection using the Lanczos method and imbedded subspaces. *Impact Comput. Sci. Engrg.* **3** (1991), *no.* 1, 76–92. (Summary) **93b:65082** 65J15 (65H17, 65N22)

Barraquand, Jérôme (*with* Langlois, Bruno; Latombe, Jean-Claude) Numerical potential field techniques for robot path planning. *IEEE Trans. Systems Man Cybernet.* **22** (1992), *no.* 2, 224–241. 68U05

Barraza, O. (*with* Falomir, H.; Gamboa Saraví, R. E.; Santangelo, E. M.) p determinants and boundary values. *J. Math. Phys.* **33** (1992), *no.* 6, 2046–2052. (Akira Asada) **93d:58183** 58G26 (58G20, 81T16)

Barreau, Hervé Lazare Carnot et la conception leibnizienne de l'infini mathématique. [Lazare Carnot and the Leibnizian conception of the mathematical infinite] *La mathématique non standard*, 43–82, *Fondem. Sci., CNRS, Paris*, 1989. (*see* **93c:01002**) 01A55 (03–03, 03A05, 03H05)

— *see also* **Nonstandard mathematics, 93c:01002**

Barreiro Blas, Antonio Recursive independent state-space and matrix fraction realizations. *IEEE Trans. Automat. Control* **37** (1992), *no.* 3, 404–409. (Zbigniew Bartosiewicz) **93a:93025** 93B15 (65Q05, 93C35, 93C41)

hernández Barrera, Antonio *see* **Hernández Barrera, Antonio**

Barrera-Mora, Fernando (*with* Rzedowski Calderón, Martha; Villa Salvador, Gabriel) On co-Galois extensions. *J. Pure Appl. Algebra* **76** (1991), *no.* 1, 1–11. (Yu Wang) **93c:11102** 11R32 (12F99)

sá Barreto, Antônio *see* **Sá Barreto, Antônio**

Barreto Molina, Jesús (*with* Subit Gómez, Rosa; Muñoz del Sol, Longino; Pentón Espinosa, Morayma) Series of hyperannihilators of a subring A associated with a Sylow p-subgroup S of the group $\mathrm{Aut}(G)$ of automorphisms of a finite abelian p-group G of type $[p^{m_1}, p^{m_2}, \cdots, p^{m_r}]$, with $m_1 > m_2 + 1$ and $m_2 = \cdots = m_r$. (Spanish. English and Spanish summaries) *Cienc. Mat.* (*Havana*) **13** (1992), *no.* 1, 65–81. (Summary) **93m:20047** 20F28 (20K01)

Barrett, Bruce E. (*with* Ling, Robert F.) General classes of influence measures for multivariate regression. *J. Amer. Statist. Assoc.* **87** (1992), *no.* 417, 184–191. (Summary) **93m:62166** 62J20 (62H99)

Barrett, C. R. (*with* Pattanaik, Prasanta K.; Salles, Maurice) Rationality and aggregation of preferences in an ordinally fuzzy framework. (English summary) *Fuzzy Sets and Systems* **49** (1992), *no.* 1, 9–13. (Frada Burstein) **93k:90015** 90A07 (04A72, 90A08)

Barrett, David E. Behavior of the Bergman projection on the Diederich-Fornæss worm. *Acta Math.* **168** (1992), *no.* 1-2, 1–10. (Emil Straube) **93c:32033** 32H10 (32F20, 46E20)

— (*with* Diller, Jeffrey) Poincaré series and holomorphic averaging. (English summary) *Invent. Math.* **110** (1992), *no.* 1, 23–27. (I. Kra) **93k:30071** 30F35 (14H15, 32G15)

— Global convexity properties of some families of three-dimensional compact Levi-flat hypersurfaces. *Trans. Amer. Math. Soc.* **332** (1992), *no.* 1, 459–474. (Mark A. Chinak) **93c:32026** 32F25 (32F40)

Barrett, Geoff (*with* Goldsmith, Michael) Classifying unbounded nondeterminism in CSP. *Topology and category theory in computer science* (*Oxford*, 1989), 57–74, *Oxford Sci. Publ., Oxford Univ. Press, New York*, 1991. (*see* **93h:68004**) 68Q05 (54E99, 68M10)

Barrett, J. F. *see* **Lyapunov, A. M., 93e:01035**

Barrett, J. W. Holonomy and path structures in general relativity and Yang-Mills theory. *Internat. J. Theoret. Phys.* **30** (1991), *no.* 9, 1171–1215. (Michael Murray) **93d:53092** 53C80 (53C05, 58Z05, 81T13, 83C99)

— Finite element approximation of a non-Lipschitz nonlinear eigenvalue problem. (English and French summaries) *RAIRO Modél. Math. Anal. Numér.* **26** (1992), *no.* 5, 627–656. (K. Najzar) **93g:65142** 65N30 (65N25)

Barrett, Martin (*with* Sober, Elliott) Is entropy relevant to the asymmetry between retrodiction and prediction? (English summary) *British J. Philos. Sci.* **43** (1992), *no.* 2, 141–160. (Lawrence Sklar) **93h:82002** 82B03 (00A30)

Barrington, David A. Mix (*with* Compton, Kevin; Straubing, Howard; Thérien, Denis) Regular languages in NC^1. *J. Comput. System Sci.* **44** (1992), *no.* 3, 478–499. (Matti Linna) **93k:68055** 68Q45

Barriola, Manuel (*with* Vachaspati, Tanmay) A new class of defects. (English summary) *Phys. Rev. Lett.* **69** (1992), *no.* 13, 1867–1870. (Summary) **93e:81080** 81T13

Barrionuevo, Jose Averages along uniformly distributed directions on a curve. *Proc. Amer. Math. Soc.* **119** (1993), *no.* 3, 823–827. (Alexander Nagel) **93m:42007** 42B25

— Estimates for some Kakeya-type maximal operators. *Trans. Amer. Math. Soc.* **335** (1993), *no.* 2, 667–682. (Javier Duoandikoetxea) **93f:42038** 42B25 (47B38)

Barrios, Javier A. (*with* Betancor, Jorge J.) The Laplace transformation on new spaces of distributions. *Rend. Sem. Mat. Univ. Politec. Torino* **47** (1989), *no.* 2, 163–177 (1992). (C. Carton-Lebrun) **93f:46060** 46F12 (44A10)

— (*with* Betancor, Jorge J.) Operational calculus for a fractional derivative. (Spanish. English summary) *Proceedings of the XVth Portuguese-Spanish Conference on Mathematics, Vol. II (Portuguese)* (*Évora*, 1990), 143–148, *Univ. Évora, Évora*, 1991. (S. L. Kalla) **93g:44016** 44A40 (26A33)

— (*with* Betancor, Jorge J.) An integral transform of Krätzel in distribution spaces. (Spanish. English summary) *Proceedings of the XVth Portuguese-Spanish Conference on Mathematics, Vol. II (Portuguese)* (*Évora*, 1990), 261–266, *Univ. Évora, Évora*, 1991. (Antonio J. Durán) **93d:46064** 46F12 (44A10)

— (*with* Betancor, Jorge J.) A Krätzel's integral transformation of distributions. (English summary) *Collect. Math.* **42** (1991), *no.* 1, 11–32. (Antonio J. Durán) **93i:46071** 46F12 (44A10, 46F05)

— (*with* Betancor, Jorge J.) A Parseval equation and the K_μ and I_μ transforms of distributions. *Math. Japon.* **36** (1991), *no.* 6, 1063–1083. (Hans-Jürgen Glaeske) **93b:46077** 46F12 (44A15)

— (*with* Betancor, Jorge J.) The Krätzel integral transformation of distributions. *Math. Nachr.* **154** (1991), 11–26. (Hans-Jürgen Glaeske) **93b:46076** 46F12 (44A15)

— (*with* Betancor, Jorge J.) On K_μ and I_μ transforms of generalized functions. *J. Math. Anal. Appl.* **165** (1992), *no.* 1, 12–35. (Gopi Ahuja) **93b:46078** 46F12

Izquierdo Barrios, Milagros *see* **Izquierdo Barrios, Milagros**

ahumada Barrios, Rafael Enrique *see* **Ahumada Barrios, Rafael Enrique**

Barron, Andrew R. Complexity regularization with application to artificial neural networks. *Nonparametric functional estimation and related topics (Spetses*, 1990), 561–576, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 335, *Kluwer Acad. Publ., Dordrecht*, 1991. (Ulrich Stadtmüller) **93b:62052** 62G05

— (*with* Györfi, László; van der Meulen, Edward C.) Distribution estimation consistent in total variation and in two types of information divergence. (English summary) *IEEE Trans. Inform. Theory* **38** (1992), *no.* 5, 1437–1454. (Summary) **93h:62067** 62G05 (94A17)

shepherd-Barron, N. I. *see* **Shepherd-Barron, N. I.**

Barron, R. M. (*with* Hamdan, M. H.) Applications of von Mises coordinates in porous media flow. *J. Comput. Appl. Math.* **39** (1992), *no.* 3, 353–361. (Summary) **93b:76083** 76S05 (76M20)

— (*with* Hamdan, M. H.) On the Darcy-Lapwood-Brinkman-Saffman dusty fluid flow models through porous media. I. Models development. (English summary) *Appl. Math. Comput.* **54** (1993), *no.* 1, 65–79. (Summary) **93k:76110a** 76S05 (76T05)

— (*with* Hamdan, M. H.) On the Darcy-Lapwood-Brinkman-Saffman dusty fluid flow models through porous media. II. Applications to flow into a two-dimensional sink. (English summary) *Appl. Math. Comput.* **54** (1993), *no.* 1, 81–97. (Summary) **93k:76110b** 76S05 (76T05)

Barros, A. (*with* Romero, Carlos Augusto) Brans-Dicke cosmology and the cosmological constant: the spectrum of vacuum solutions. (English summary) *Astrophys. Space Sci.* **192** (1992), *no.* 2, 263–274. (Summary) **93d:83059** 83D05 (83F05)

— (*with* Romero, Carlos Augusto) Brans-Dicke vacuum solutions and the cosmological constant: a qualitative analysis. (English summary) *Gen. Relativity Gravitation* **25** (1993), *no.* 5, 491–502. (Summary) **93k:83066** 83D05

da rocha Barros, Alberto Luiz *see* **da Rocha Barros, Alberto Luiz**

Barros, Manuel There exist no 2-type surfaces in E^3 which are images under stereographic projection of minimal surfaces in S^3. (English summary) *Ann. Global Anal. Geom.* **10** (1992), *no.* 3, 219–226. (Joel L. Weiner) **93k:53052** 53C40 (53A05)

de Barros, Ricardo C. *see* **De Barros, Ricardo C.**

Barros-Neto, J. (*with* Artino, R. A.) Matrix triangulation of hypoelliptic boundary value problems. (English and French summaries) *Ann. Inst. Fourier (Grenoble)* **42** (1992), *no.* 4, 805–824. (Yu. V. Egorov) **93k:35287** 35S15 (35H05)

Barroso, Jorge Alberto (*with* Dineen, Seán) Holomorphic functions on C^1, I uncountable. (English summary) Dedicated to the memory of Professor Gottfried Köthe. *Note Mat.* **10** (1990), *suppl.* 1, 65–71 (1992). (Miguel Caldas Cueva) **93i:46077** 46G20

— Relative compactness and ample boundedness. *Proc. Roy. Irish Acad. Sect. A* **92** (1992), *no.* 1, 133–135. (S. Swaminathan) **93h:46040** 46E40 (46A50)

Barrow, Isaac *see* **Before Newton, 93h:01002**

Barrow, John D. (*with* Saich, Paul) Gravitational collapse of rotating pancakes. (English summary) *Classical Quantum Gravity* **10** (1993), *no.* 1, 79–91. (Yu. N. Obukhov) **93j:83051** 83C55 (83C25, 83F05)

— (*with* Saich, Paul) Scalar-field cosmologies. (English summary) *Classical Quantum Gravity* **10** (1993), *no.* 2, 279–283. (Summary) **93i:83018** 83C15 (83F05)

Barrush, Filipp A class of nonstationary curves in a Hilbert space. (Russian) *Vestnik Khar'kov. Univ. No.* 361, *Prikl. Mat. Mekh.* (1991), 105–110. 60G12 (47N30)

Barry, Daniel (*with* Hartigan, J. A.) Product partition models for change point problems. *Ann. Statist.* **20** (1992), *no.* 1, 260–279. (Friedrich Liese) **93b:62122** 62M10

— (*with* Hartigan, J. A.) A Bayesian analysis for change point problems. (English summary) *J. Amer. Statist. Assoc.* **88** (1993), *no.* 421, 309–319. (Summary) **93k:62062** 62F15

Barry, Michael J. J. (*with* Lo Bello, Anthony J.) The moment generating function of the geometric distribution of order k. *Fibonacci Quart.* **31** (1993), *no.* 2, 178–180. 60E10 (60C05)

Barry, Phillip J. Symmetrizing multiaffine polynomials. *Mathematical methods in computer aided geometric design, II (Biri*, 1991), 1–7, *Academic Press, Boston, MA*, 1992. (*see* **93d:65022**) 65D17 (65D15)

— (*with* Goldman, Ronald N.) Wonderful triangle: a simple, unified, algorithmic approach to change of basis procedures in computer aided geometric design. *Mathematical methods in computer aided geometric design, II (Biri*, 1991), 297–320, *Academic Press, Boston, MA*, 1992. (Summary) **93e:65027** 65D17

— (*with* Zhu, Rui Feng) Another knot insertion algorithm for B-spline curves. (English summary) *Comput. Aided Geom. Design* **9** (1992), *no.* 3, 175–183. (Michael Kallay) **93e:65018** 65D07 (65D17)

Barry, S. I. (*with* Parker, K. H.; Aldis, G. K.) Fluid flow over a thin deformable porous layer. *Z. Angew. Math. Phys.* **42** (1991), *no.* 5, 633–648. (Summary) **93c:76089** 76Z05 (73K70, 76D99, 76S05, 92C35)

— (*with* Aldis, G. K.) Radial flow through deformable porous shells. (English summary) *J. Austral. Math. Soc. Ser. B* **34** (1993), *no.* 3, 333–354. (Summary) **93k:76108** 76S05 (73P20, 76Z05, 92C05)

Bars, Itzhak Noncompact current algebras and heterotic superstring vacua. *Differential geometric methods in theoretical physics (Davis, CA*, 1988), 147–168, *NATO Adv. Sci. Inst. Ser. B Phys.*, 245, *Plenum, New York*, 1990. (C. Gauthier) **93d:81065** 81R10 (17B67, 81T30)

— Membrane symmetries and anomalies. *Supermembranes and physics in* 2+1 *dimensions (Trieste*, 1989), 40–60, *World Sci. Publishing, River Edge, NJ*, 1990. (*see* **93g:81003**) 81T30

— Issues of topology and the spectrum of membranes. *Supermembranes and physics in* 2+1 *dimensions (Trieste*, 1989), 209–212, *World Sci. Publishing, River Edge, NJ*, 1990. (*see* **93g:81003**) 81T30

— (*with* Sfetsos, Konstadinos) Generalized duality and singular strings in higher dimensions. *Modern Phys. Lett. A* **7** (1992), *no.* 12, 1091–1104. (Gheorghe Zet) **93g:81118** 81T30 (83E30)

— (*with* Sfetsos, Konstadinos) Hermitian symmetric spaces and free field topological theories. *Nuclear Phys. B* **371** (1992), *no.* 1-2, 507–518. (Siye Wu) **93b:81088** 81R10 (53C80, 81T40)

— Heterotic string models in curved spacetime. (English summary) *Phys. Lett. B* **293** (1992), *no.* 3-4, 315–320. (Summary) **93j:81072** 81T20 (81T30, 83E30)

— (*with* Sfetsos, Konstadinos) Global analysis of new gravitational singularities in string and particle theories. (English summary) *Phys. Rev. D* (3) **46** (1992), *no.* 10, 4495–4509. (Summary) **93g:81119** 81T30 (81V25, 83E30)

— (*with* Sfetsos, Konstadinos) Conformally exact metric and dilaton in string theory on curved spacetime. (English summary) *Phys. Rev. D* (3) **46** (1992), *no.* 10, 4510–4519. (Summary) **93j:81073** 81T20 (81T30, 83E30)

— (*with* Sfetsos, Konstadinos) $SL(2,\mathbf{R}) \otimes SU(2)/\mathbf{R}^2$ string model in curved spacetime and exact conformal results. (English summary) *Phys. Lett. B* **301** (1993), *no.* 2-3, 183–190. (Summary) **93k:81190** 81T40 (81T20, 81T30)

Bars, R. (*with* Haber, Robert) One-step-ahead adaptive predictive control of nonlinear processes. (English summary) *Mathematics of the analysis and design of process control (Dublin*, 1991/*Lille*, 1991), 435–444, *North-Holland, Amsterdam*, 1992. (*see* **93g:93004**) 93C40 (93C10)

Barsegyan, G. A. (*with* Petrosyan, V. G.) Cartan identity type relations for quantities associated with logarithmic derivatives of meromorphic functions. (Russian. English and Armenian summaries) *Izv. Akad. Nauk Armyan. SSR Ser. Mat.* **25** (1990), *no.* 5, 474–488, 504 (1991). (W. H. J. Fuchs) **93a:30032** 30D30 (30D35)

— (*with* Sukiasyan, G. A.) Distribution of values and proximity of a-points for quotients of Blaschke products with nearby zeros. *Studia Sci. Math. Hungar.* **25** (1990), *no.* 4, 419–428. (L. R. Sons) **93a:30033** 30D30

Barsegyan, V. R. (*with* Malafeev, O. A.) Game-theoretic problems in central Newtonian gravitational field. (Russian) *Dynamical systems (Russian)*, 4–8, *Yakutsk. Gos. Univ., Yakutsk*, 1989. (*see* **93b:34004**) 90D12 (90D25)

Bar-Shalom, Yaakov (*with* Yang, Chun; Lin, Ching Fang) Discrete-time point process filter for mode estimation. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 11, 1812–1816. 93E11

Barshinger, Richard The electrostatic field about a thin oblate dielectric body of revolution. *SIAM J. Appl. Math.* **52** (1992), *no.* 3, 651–675. (P. Rochus) **93c:78007** 78A30

Barskii, I. L. On the behavior of the spectrum of some linear multipoint boundary value problems for ordinary differential equations. The case of an arbitrary number of points. (Russian) *Dokl. Akad. Nauk* **326** (1992), *no.* 1, 9–11. (From the text) **93k:34042** 34B10 (34L05)

Barsky, Brian A. (*with* Seroussi, Gadiel) An explicit derivation of discretely shaped beta-spline basis functions of arbitrary order. *Mathematical methods in computer aided geometric design, II (Biri*, 1991), 567–584, *Academic Press, Boston, MA*, 1992. (From the summary) **93d:41011** 41A15 (65D07, 65D17)

Barsky, David J. (*with* Grimmett, Geoffrey R.; Newman, Charles M.) Dynamic renormalization and continuity of the percolation transition in orthants. *Spatial stochastic processes*, 37–55, *Progr. Probab.*, 19, *Birkhäuser Boston, Boston, MA*, 1991. (Hans-Otto Georgii) **93a:60155** 60K35 (82C28, 82C43)

— (*with* Aizenman, Michael) Percolation critical exponents under the triangle condition. *Ann. Probab.* **19** (1991), *no.* 4, 1520–1536. (John C. Wierman) **93b:60224** 60K35 (82B43)

bertoli Barsotti, Lucio *see* **Bertoli Barsotti, Lucio**

Barston, E. M. On the linear stability of inviscid incompressible plane parallel flow. *J. Fluid Mech.* **233** (1991), 157–163. (Introduction) **93b:76032** 76E05

Barta, Efrath (*with* Liron, Nadav) Motion of a rigid particle in Stokes flow: a new second-kind boundary-integral equation formulation. *J. Fluid Mech.* **238** (1992), 579–598. (A. M. J. Davis) **93c:76019** 76D07

Bartalini, G. (*with* Moretti, P.) On the semi-classical expression of the quantum-mechanical propagator. *Nuovo Cimento B* (11) **107** (1992), *no.* 2, 239–244. (Brian DeFacio) **93i:81035** 81Q20 (58D30, 81S40)

Bartels, Andreas Meaning and the heritage of formalism—the relevance of mathematical philosophy to the modern philosophy of nature. (Polish summary) Mensch—Natur—Kosmos (Podkasztorze, 1988). *Acta Univ. Lodz. Folia Philos. No.* 8 (1991), 169–180. (Paul Ernest) **93h:01029** 01A60 (00A30, 01A55, 03-03, 03A05)

Bartels, Richard H. (*with* Pfeifle, R.; Goldman, Ronald N.) Tensor product slices. *Mathematical methods in computer aided geometric design, II (Biri*, 1991), 431–440, *Academic Press, Boston, MA*, 1992. (*see* **93d:65022**) 65D17

— (*with* Vermeulen, A. H.; Heppler, G. R.) Integrating products of B-splines. *SIAM J. Sci. Statist. Comput.* **13** (1992), *no.* 4, 1025–1038. (Summary) **93b:65018** 65D07 (65D30, 65N30)

Bartels, Robert (*with* Fiebig, Denzil G.; McAleer, Michael) Properties of ordinary least squares estimators in regression models with nonspherical disturbances. (English

summary) *J. Econometrics* **54** (1992), *no.* 1-3, 321–334. (D. S. Tracy) **93k:62136** 62J05

Bartels, Sven G. (*with* Higham, Desmond J.) The structured sensitivity of Vandermonde-like systems. *Numer. Math.* **62** (1992), *no.* 1, 17–33. (George D. Poole) **93e:65071** 65F35 (65F05)

Bartelt, M. W. (*with* Swetits, J. J.) On the norm of the best approximation operator. *Progress in approximation theory*, 23–29, *Academic Press, Boston, MA*, 1991. (Mirko Janc) **93e:41037** 41A50 (41A35)

— (*with* Swetits, J. J.) Local Lipschitz constants and Kolushov polynomials. *Acta Math. Hungar.* **57** (1991), *no.* 3-4, 259–263. (From the introduction) **93b:41032** 41A50 (41A10)

Barth, Andrej (*with* Baumann, Gerd; Nonnenmacher, Theo F.) Measuring Rényi dimensions by a modified box algorithm. *J. Phys. A* **25** (1992), *no.* 2, 381–391. (C. Eugene Wayne) **93f:58134** 58F12 (58F11)

Barth, K. F. (*with* Rippon, P. J.) Angular limits of holomorphic functions of slow growth. *J. London Math. Soc.* (2) **45** (1992), *no.* 1, 55–61. (G. Piranian) **93h:30051** 30D40

Bartha, Miklós An algebraic model of synchronous systems. *Inform. and Comput.* **97** (1992), *no.* 1, 97–131. (Christoph Meinel) **93b:68052** 68Q70

— Foundations of a theory of synchronous systems. *Theoret. Comput. Sci.* **100** (1992), *no.* 2, 325–346. (Stephen J. Hegner) **93m:68119** 68Q65 (68Q05, 68Q55)

Barthel, Gottfried (*with* Brasselet, Jean-Paul; Fieseler, Karl-Heinz) Classes de Chern des variétés toriques singulières. (English and French summaries) [Chern classes of singular toric varieties] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 2, 187–192. (G. K. Sankaran) **93k:14029** 14F32 (14M25)

Barthel, Woldemar (*with* Pabel, Helmut) Interpretationen des Busemannschen Satzes vom Brunn-Minkowskischen Typ. [Interpretations of the Busemann theorem of Brunn-Minkowski type] *Proceedings of the 3rd Congress of Geometry* (*Thessaloniki*, 1991), 61–67, *Aristotle Univ. Thessaloniki, Thessaloniki*, 1992. (W. J. Firey) **93h:52009** 52A38

— (*with* Vollrath, Hans-Joachim) Otto Volk 1892–1989. (German) *Jahresber. Deutsch. Math.-Verein.* **94** (1992), *no.* 3, 118–129. (Editors) **93g:01058** 01A70

Barthélémy, Jean-Pierre (*with* Guénoche, Alain) ★ Trees and proximity representations. With a preface by Michel Minoux. Translated from the French by Gregor Lawden. Wiley-Interscience Series in Discrete Mathematics and Optimization. *John Wiley & Sons, Ltd., Chichester*, 1991. xvi+238 *pp. ISBN* 0-471-92263-3 (Ding Zhu Du) **93b:05042** 05C05 (68T30)

— (*with* Cohen, Gérard Denis; Lobstein, Antoine-C.) ★ Complexité algorithmique et problèmes de communications. (French) [Algorithmic complexity and communications problems] With a preface by M. Minoux. Collection Technique et Scientifique des Télécommunications. [Scientific and Technical Collection on Telecommunications] *Masson, Paris*, 1992. xxviii+228 *pp. ISBN* 2-225-82672-2 (Cristian Calude) **93h:68046** 68Q15 (68–02, 68Q25, 94–02)

— (*with* McMorris, F. R.; Powers, R. C.) Dictatorial consensus functions on n-trees. (English summary) *Math. Social Sci.* **25** (1992), *no.* 1, 59–64. (Summary) **93j:90011** 90A08

— (*with* Constantin, Julien) Median graphs, parallelism and posets. (English summary) Graph theory and combinatorics (Marseille-Luminy, 1990). *Discrete Math.* **111** (1993), *no.* 1-3, 49–63. (Summary) **93j:05123** 05C75

Bartholomew-Biggs, M. C. (*with* Nguyen, T. T.) Orthogonal and conjugate basis methods for solving equality constrained minimization problems. (Spanish summary) *Rev. Técn. Fac. Ingr. Univ. Zulia* **15** (1992), *no.* 1, 37–49. (Summary) **93b:90080** 90C30 (65K10)

Bartish, M. Ya. A class of Newton-type methods for solving extremum problems. (Ukrainian. Russian summary) *Visnik L'viv. Derzh. Univ. Ser. Mekh.-Mat. No.* 29 (1988), 3–5, 61. 65K05

Bartlett, Andrew C. Vertex results for the steady state analysis of uncertain systems. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 11, 1758–1762. (Jacob Hammer) **93j:93100** 93D09 (93C05)

— (*with* Tesi, Alberto; Vicino, Antonio) Vertices and segments of interval plants are not sufficient for step response analyses. (English summary) *Systems Control Lett.* **19** (1992), *no.* 5, 365–370. (Summary) **93f:93045** 93B36 (93D09)

Bartlett, David F. *see* **General relativity and gravitation, 93b:83002**

Bartlett, Steven J. The role of reflexivity in understanding human understanding. *Reflexivity*, 3–18, *North-Holland, Amsterdam*, 1992. (*see* **93g:03005**) 03A05

— The idea of a metalogic of reference. *Reflexivity*, 239–246, *North-Holland, Amsterdam*, 1992. (*see* **93g:03005**) 03A05

— Referential consistency as a criterion of meaning. *Reflexivity*, 247–262, *North-Holland, Amsterdam*, 1992. (*see* **93g:03005**) 03A05

— *see also* **Reflexivity, 93g:03005**

Bartmańska, Barbara (*with* Szynal, Dominik) On Berry-Esseen theorem for some functions of U-statistics. *J. Statist. Plann. Inference* **30** (1992), *no.* 3, 385–393. (Noël Veraverbeke) **93b:60037** 60F05 (62E20)

Bartnik, D. (*with* Jakubowski, Zbigniew J.) On some classes of holomorphic functions. (Russian and Polish summaries) *Zeszyty Nauk. Politech. Rzeszowskiej Mat. Fiz. No.* 12 (1991), 17–35. (Evelyn M. Silvia) **93e:30026** 30C45

Bartnik, Robert Quasi-spherical metrics and prescribed scalar curvature. (English summary) *J. Differential Geom.* **37** (1993), *no.* 1, 31–71. (Piotr T. Chruściel) **93i:53041** 53C21 (58G11, 58G30, 83C05)

Bartocci, Claudio (*with* Bruzzo, Ugo; Hernández Ruipérez, Daniel) Some results on line bundles over SUSY-curves. *Differential geometric methods in theoretical physics* (*Davis, CA*, 1988), 675–680, *NATO Adv. Sci. Inst. Ser. B Phys.*, 245, *Plenum, New York*, 1990. (Wataru Takahasi) **93k:14071** 14M30 (32C11, 32L05)

— (*with* Bruzzo, Ugo; Hernández Ruipérez, Daniel) ★ The geometry of supermanifolds. Mathematics and its Applications, 71. *Kluwer Academic Publishers Group, Dordrecht*, 1991. xx+242 *pp. ISBN* 0-7923-1440-9 (Jaime Muñoz Masqué) **93h:58006** 58A50 (32C11, 58C50)

Bartolini, G. (*with* Ferrara, A.) A direct adaptive pole assignment control scheme for non-necessarily stably invertible discrete-time plants. (English summary) *Intelligent tuning and adaptive control* (*Singapore*, 1991), 387–392, *IFAC Sympos. Ser.*, 1991, *No.* 7, *Pergamon, Oxford*, 1991. (*see* **93i:93007**) 93D21

Bartolomeo, Jerry (*with* Lasiecka, Irena; Triggiani, Roberto) Uniform exponential energy decay of Euler-Bernoulli equations by suitable boundary feedback operators. (Italian summary) *Atti Accad. Naz. Lincei Rend. Cl. Sci. Fis. Mat. Natur.* (8) **83** (1989), 121–128 (1990). (Sergeĭ Alekseevich Ivanov) **93d:93046** 93C20 (35J25, 73K10, 73K50, 93D15)

Bartoloni, A. (*with* Lodovici, C.; Zirilli, Francesco) Inverse problem for a class of one-dimensional wave equations with piecewise constant coefficients. (English summary) *J. Optim. Theory Appl.* **76** (1993), *no.* 1, 13–32. (Summary) **93i:35152** 35R30 (35L05, 49N45)

Bartolozzi, Federico Some remarks concerning not necessarily regular symplectic spaces. (Italian) *Riv. Mat. Pura Appl. No.* 9 (1991), 145–159. (O. H. Kegel) **93c:20079** 20H99 (11E99)

— (*with* Bartolozzi, Margherita) Finitary symplectic groups. (Italian. English summary) *Geom. Dedicata* **44** (1992), *no.* 3, 273–279. (Summary) **93m:20068** 20H99 (51A50)

Bartolozzi, Margherita (*with* Franci, Raffaella) A fragment of the history of algebra: Newton's rule on the number of imaginary roots in an algebraic equation. (Italian. English summary) *Rend. Accad. Naz. Sci. XL Mem. Sci. Fis. Natur.* (5) **14** (1990), *no.* 2, *part II*, 69–85 (1992). (P. Bockstaele) **93g:01032** 01A50 (01A55)

— (*with* Bartolozzi, Federico) Finitary symplectic groups. (Italian. English summary) *Geom. Dedicata* **44** (1992), *no.* 3, 273–279. (Summary) **93m:20068** 20H99 (51A50)

Barton, Susan Maureen The real spectrum of higher level of a commutative ring. (English summary) *Canad. J. Math.* **44** (1992), *no.* 3, 449–462. (L. J. Ratliff, Jr.) **93h:13002** 13A10 (14A05)

Barton, Timothy A. (*with* Fuhrmann, Daniel R.) Covariance structures for multidimensional data. (English summary) *Multidimens. Systems Signal Process.* **4** (1993), *no.* 2, 111–123. (Summary) **93i:94003** 94A12

Bartoszewicz, Artur On the consistency of estimates in noncommutative statistics. *Stochastic methods in experimental sciences* (*Szklarska Poręba*, 1989), 21–25, *World Sci. Publishing, River Edge, NJ*, 1990. (H. Araki) **93i:46113** 46L50 (62F99, 62L12)

Bartoszewicz, Jarosław Asymptotic distributions of tests for dispersive ordering. (English summary) *Statist. Probab. Lett.* **15** (1992), *no.* 1, 11–20. (James N. Adichie) **93k:62113** 62G20 (62G10)

Bartoszyński, Tomek On the structure of measurable filters on a countable set. *Real Anal. Exchange* **17** (1991/92), *no.* 2, 681–701. (Marek Balcerzak) **93d:28003** 28A05 (04A20, 54E52)

— (*with* Shelah, Saharon) Intersection of $< 2^{\aleph_0}$ ultrafilters may have measure zero. *Arch. Math. Logic* **31** (1992), *no.* 4, 221–226. (Janusz Pawlikowski) **93e:03073** 03E35 (03E05, 03E15, 04A15)

— (*with* Goldstern, Martin; Judah, Haim; Shelah, Saharon) All meager filters may be null. *Proc. Amer. Math. Soc.* **117** (1993), *no.* 2, 515–521. (Krzysztof Ciesielski) **93d:03055** 03E35 (28A05, 28E15, 54A25)

Barts, B. I. (*with* Moiseev, S. S.) The wave-turbulent dynamo. (Russian) *Nonlinear waves* (*Russian*), 153–158, "*Nauka*", *Moscow*, 1989. (*see* **92d:00031**) 76F99 (76E25, 76W05, 85A30)

— (*with* Virchenko, Yu. P.; Moiseev, S. S.) Stability and stochastic parametric resonance of an oscillator with multiplicative noise. (Russian. English, Russian and Ukrainian summaries) *Ukraïn. Fiz. Zh.* **37** (1992), *no.* 1, 129–139. (Summary) **93g:70027** 70L05 (34C15, 34F05, 70K20, 70K28)

Bartsch, Michael (*with* Dehler, Micha; Dohlus, Martin; et al.) Solution of Maxwell's equations. (English summary) *Comput. Phys. Comm.* **73** (1992), *no.* 1-3, 22–39. (Summary) **93j:78003** 78–08 (78A25)

Bartsch, Thomas (*with* Clapp, Mónica; Puppe, Dieter) A mountain pass theorem for actions of compact Lie groups. *J. Reine Angew. Math.* **419** (1991), 55–66. (Annamaria Canino) **93d:58023** 58E05 (55P91, 57S99, 58B05, 58E40)

— The global structure of the zero set of a family of semilinear Fredholm maps. *Nonlinear Anal.* **17** (1991), *no.* 4, 313–331. (Claudio Morales) **93d:58028** 58E07 (47H11, 54H25, 58C30)

— (*with* Clapp, Mónica) The compact category and multiple periodic solutions of Hamiltonian systems on symmetric starshaped energy surfaces. *Math. Ann.* **293** (1992), *no.* 3, 523–542. (Gabriella Tarantello) **93f:58028** 58E05 (34C25, 58F05, 58F22)

Bartuccelli, M. V. Fourier spectra in the supercritical regime. (English summary) *Waves and stability in continuous media* (*Sorrento*, 1989), 16–21, *Ser. Adv. Math. Appl. Sci.*, 4, *World Sci. Publishing, River Edge, NJ*, 1991. (*see* **93g:00030**) 58F13

— (*with* Gibbon, J. D.; Malham, S. J. A.) Lattice methods and the pressure field for solutions of the Navier-Stokes equations. (English summary) *Nonlinearity* **6** (1993), *no.* 1, 79–91. (Summary) **93j:35128** 35Q30 (76D05)

Bartušek, Miroslav On oscillatory solutions of nonlinear differential equations of the nth order vanishing at infinity. (English summary) *Arch. Math. (Brno)* **26** (1990), *no.* 2-3, 83–91. (Gary D. Jones) **93f:34060** 34C15

— On oscillatory solutions of differential inequalities. *Czechoslovak Math. J.* **42(117)** (1992), *no.* 1, 45–52. (Uri Elias) **93b:34038** 34C10

Bartuzel, Grzegorz (*with* Fryszkowski, Andrzej) Abstract differential inclusions with some applications to partial differential ones. *Ann. Polon. Math.* **53** (1991), *no.* 1, 67–78. (Evgenios P. Avgerinos) **93e:47094** 47N20 (34A60, 34G20, 35R70, 47H15, 49J24)

— Regularity of generalized solutions of nonsmooth adjoint problem to a parabolic problem. *Demonstratio Math.* **25** (1992), *no.* 3, 411–433. (Alan V. Lair) **93m:35042** 35D10 (35K10, 35K20, 76W05)

Bartz, Krystyna Maria On some connections between zeta-zeros and square-free integers. (English summary) *Monatsh. Math.* **114** (1992), *no.* 1, 15–34. (Grigori Kolesnik) **93i:11104** 11M26

Barua, Rana (*with* Srivatsa, V. V.) Definable hereditary families in the projective hierarchy. *Fund. Math.* **140** (1992), *no.* 2, 183–189. (Peter G. Hinman) **93g:03044** 03E15 (03D55)

— The Hausdorff-Kuratowski hierarchy of ω-regular languages and a hierarchy of Muller automata. *Theoret. Comput. Sci.* **96** (1992), *no.* 2, 345–360. (John P. Helm) **93k:03036** 03D05 (03D15, 68Q45, 68Q70)

— Complexity of winning strategies for Δ^0_2 games. *Proc. Amer. Math. Soc.* **117** (1993), *no.* 1, 227–233. (Lawrence S. Moss) **93c:03063** 03D65

Barucci, Valentina (*with* Gabelli, Stefania; Roitman, Moshe) On semi-Krull domains. *J. Algebra* **145** (1992), *no.* 2, 306–328. (David F. Anderson) **93a:13011** 13G05 (13A15, 13E99, 13F05)

Barut, Asim Orhan Membranes, strings, extended elementary particles as singularities of fields. *Supermembranes and physics in 2+1 dimensions* (*Trieste*, 1989), 3–15, *World Sci. Publishing, River Edge, NJ*, 1990. (*see* **93g:81003**) 81T30

— Quantum theory of single events. (English summary) *Differential geometry, group representations, and quantization*, 241–256, *Lecture Notes in Phys.*, 379, *Springer, Berlin*, 1991. (*see* **93c:81004**) 81P05
— Dynamical symmetries of relativistic two- and many-body systems. *Symmetries in science, V* (*Lochau*, 1990), 1–13, *Plenum, New York*, 1991. (U. Cattaneo) **93c:81069** 81R20 (20C35, 22E70, 81R05)
— (*with* Beker, Henry J.) Exact solutions of spin (Rabi) precession, transmission and reflection in the Eckhart potential. *Europhys. Lett.* **14** (1991), *no.* 3, 197–202. (K. Wódkiewicz) **93b:81040** 81Q05 (81V45)
— How to avoid "quantum paradoxes". *Found. Phys.* **22** (1992), *no.* 1, 137–142. (É. S. Kryachko) **93a:81007** 81P05 (81P15)
— (*with* Bracken, Anthony J.) Particle-like configurations of the electromagnetic field: an extension of de Broglie's ideas. (English summary) *Found. Phys.* **22** (1992), *no.* 10, 1267–1285. (Summary) **93j:78005** 78A25 (81P99)
— (*with* Blaive, B.) On some mathematical problems in the evaluation of fields produced by currents which are generalized functions. *J. Math. Phys.* **33** (1992), *no.* 6, 2164–2168. (Baldev K. Sachdeva) **93i:78006** 78A25 (46F10)
— (*with* Pavšič, M.) A covariant canonical decomposition of the bosonic and spinning extended objects with electric charge. *Modern Phys. Lett. A* **7** (1992), *no.* 15, 1381–1389. (Summary) **93b:81204** 81T30
— More on the radiation reaction and runaway solutions in classical electrodynamics. (English summary) *Phys. Lett. A* **169** (1992), *no.* 1-2, 120–121. (Summary) **93m:81155** 81V10 (78A25)
— Formulation of wave mechanics without the Planck constant $\hbar$. (English summary) *Phys. Lett. A* **171** (1992), *no.* 1-2, 1–2. (Summary) **93i:81006** 81P05
— (*with* Roy, Barnana; Roy, Pinaki) On the dynamical group of the system of two anyons with Coulomb interaction. (English summary) *Phys. Lett. A* **172** (1993), *no.* 5, 316–318. (Yu Liang Liu) **93k:81075** 81R05
— *see also* **Inomata, Akira et al.**

Baruzzi, G. (*with* Strigberger, J.; Habashi, W. G.; Fortin, Michel) Some special purpose preconditioners for conjugate gradient-like methods applied to CFD. (English summary) *Internat. J. Numer. Methods Fluids* **16** (1993), *no.* 7, 581–596. (Summary) **93k:76093** 76M25 (76M10, 76M20)

Barvík, I. (*with* Čápek, V.) Interpolation between the Grover-Silbey and the generalized stochastic Liouville equation theories. (English summary) *Phys. Rev. A* (3) **46** (1992), *no.* 12, 7431–7438. (Summary) **93m:82031** 82C31

Barvinok, A. I. Combinatorial complexity of orbits in representations of the symmetric group. *Representation theory and dynamical systems*, 161–182, *Adv. Soviet Math.*, 9, *Amer. Math. Soc., Providence, RI*, 1992. (G. F. Koster) **93k:20023** 20C30 (52B12)
— Statistical sums in optimization and computational problems. (Russian) *Algebra i Analiz* **4** (1992), *no.* 1, 3–53. (A. H. Žilinskas) **93f:90131** 90C27 (11E45, 65K10, 90C15)
— On equivariant generalization of Dehn-Sommerville equations. (English summary) *European J. Combin.* **13** (1992), *no.* 6, 419–428. (Andrew Vince) **93i:52016** 52B05 (05E25)
— Exponential integrals and sums over convex polyhedra. (Russian) *Funktsional. Anal. i Prilozhen.* **26** (1992), *no.* 2, 64–66; *translation in Functional Anal. Appl.* **26** (1992), *no.* 2, 127–129. (J. S. Joel) **93g:32052** 32S60 (32S30, 52B30)

Barvinskiĭ, A. O. (*with* Kamenshchik, A. Yu.) One-loop quantum cosmology: the general semiclassical solution of the Wheeler-DeWitt equations and its applications. *Quantum gravity* (*Moscow*, 1990), 407–422, *World Sci. Publishing, River Edge, NJ*, 1991. (From the text) **93c:83046** 83C45 (83F05)
— Euclidean quantum gravity versus Lorentzian theory: applications to the inflationary cosmology. *Sakharov Memorial Lectures in Physics, Vol.* 1, 2 (*Moscow*, 1991), 1049–1058, *Nova Sci. Publ., Commack, NY*, 1992. (*see* **93h:81003**) 83C45 (83F05)
— (*with* Kamenshchik, A. Yu.; Karmazin, I. P.) One-loop quantum cosmology: ζ-function technique for the Hartle-Hawking wave function of the Universe. (English summary) *Ann. Physics* **219** (1992), *no.* 2, 201–242. (Dmitri V. Vassilevich) **93k:83026** 83C45 (58G26, 81T20)
— (*with* Kamenshchik, A. Yu.; Karmazin, I. P.; Mishakov, I. V.) 1-loop quantum cosmology: the contributions of matter fields to the wavefunctions of the Universe. *Classical Quantum Gravity* **9** (1992), *no.* 2, L27–L32. (Asghar Qadir) **93d:83028** 83C45 (58G26, 83F05)

Barwise, K. Jon ★ Nonwellfounded sets and their applications. A joint AMS-MAA lecture presented in Louisville, Kentucky, January 1990. AMS-MAA Joint Lecture Series. *American Mathematical Society, Providence, RI*, 1990. 1 *videocassette* (*NTSC*; 1/2 *inch*; *VHS*) (60 *min.*); *sd., col.* (Donna M. Carr) **93b:03088** 03E70
— (*with* Etchemendy, John) ★ The language of first-order logic. Including the Macintosh program Tarski's World (1 Macintosh floppy disk (3.5 inch)). Second edition. CSLI Lecture Notes, 23. *Stanford University, Center for the Study of Language and Information, Stanford, CA*, 1991. xiv+297 *pp. ISBN* 0-937073-74-1 (J. M. Plotkin) **93e:03001** 03-01
— (*with* Moss, Lawrence S.) Hypersets. *Math. Intelligencer* **13** (1991), *no.* 4, 31–41. (A. Lévy) **93a:03057** 03E70 (68P15)

Bärwolf, Andreas (*with* Rosenbaum, Kurt) Die absolut irreduziblen Darstellungen der metazyklischen Gruppen. [The absolutely irreducible representations of metacyclic groups] *Wiss. Z. Pädagog. Hochsch. Erfurt/Mühlhausen Math.-Natur. Reihe* **28** (1992), *no.* 1, 37–50. (Peter Fleischmann) **93j:20022** 20C15 (20F19)

Bar'yakhtar, V. G. Phenomenological theory of relaxation processes in magnets. (Russian) *Integrability and kinetic equations for solitons* (*Russian*), 6–43, "*Naukova Dumka*", *Kiev*, 1990. (Summary) **93e:82055** 82D40
— (*with* Brodin, M. S.; Lisitsa, M. P.; et al.) Aleksandr Sergeevich Davydov (on the occasion of his eightieth birthday). (Russian) *Ukraïn. Fiz. Zh.* **37** (1992), *no.* 12, 1767–1769. 01A70
— *see also* **Nonlinear world, 93b:00012** *and* **93b:00013**

Bar-Yehuda, Reuven (*with* Etzion, Tuvi) Connections between two cycles—a new design of dense processor interconnection networks. (English summary) *Discrete Appl. Math.* **37/38** (1992), 29–43. (Summary) **93f:94033** 94C15 (05C35, 68M10)
— (*with* Goldreich, Oded; Itai, Alon) On the time-complexity of broadcast in multi-hop radio networks: an exponential gap between determinism and randomization. *J. Comput. System Sci.* **45** (1992), *no.* 1, 104–126. 68M10 (68Q25, 90B12)
— (*with* Etzion, Tuvi; Moran, Shlomo) Rotating-table games and derivatives of words. (English summary) *Theoret. Comput. Sci.* **108** (1993), *no.* 2, 311–329. (Edward W. Packel) **93m:68138** 68R15 (68Q45, 90D05)

Bar-Yoseph, Pinchas (*with* Elata, David; Israeli, Moshe) On the generalized L_2 Galerkin finite element method for linear hyperbolic equations. (English summary) *Internat. J. Numer. Methods Engrg.* **36** (1993), *no.* 4, 679–694. (Summary) **93j:65146** 65M60

Baryshnikov, Yu. M. (*with* Eisenberg, Bennett) Independent events and independent experiments. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 2, 615–617. (Anant P. Godbole) **93g:60015** 60C05 (60A99)

Barzdin, G. J. *see* **Bārzdiņš, Guntis**

Barzdin, J. M. *see* **Bārzdiņš, Jānis**

Bārzdiņš, Guntis (*with* Bārzdiņš, Jānis) Rapid construction of algebraic axioms from samples. Images of programming. *Theoret. Comput. Sci.* **90** (1991), *no.* 1, 199–208. (P. Štěpánek) **93h:68118** 68T05

Bārzdiņš, Jānis (*with* Auziņš, Andrejs; Bičevskis, Jānis; Čerāns, Kārlis; Kalniņš, Audris) Automatic construction of test sets: theoretical approach. *Baltic computer science*, 286–359, *Lecture Notes in Comput. Sci.*, 502, *Springer, Berlin*, 1991. (Summary) **93h:68083** 68Q60
— (*with* Bārzdiņš, Guntis) Rapid construction of algebraic axioms from samples. Images of programming. *Theoret. Comput. Sci.* **90** (1991), *no.* 1, 199–208. (P. Štěpánek) **93h:68118** 68T05

Basaglia, Giorgio (*with* Guida, Marco; Marchesi, Paola) Knowledge-based decision support systems for manufacturing decision-making. The Pirelli experience. (English summary) *Inform. Decision Tech.* **18** (1992), *no.* 5, 347–361. 90B50

Basak, Gopal K. Stability for temporally nonhomogeneous singular diffusion. (English summary) *J. Ramanujan Math. Soc.* **7** (1992), *no.* 1, 1–31. (Věra Lánská) **93i:60146** 60J60 (60G17, 93E03, 93E15)

Basak, Indrani Robust regression with censored data. *Naval Res. Logist.* **39** (1992), *no.* 3, 323–344. (Summary) **93b:62047** 62F35

Basak, P. (*with* Lindsay, Bruce G.) On using bivariate moment equations in mixed normal problems. *Estimating functions*, 305–317, *Oxford Statist. Sci. Ser.*, 7, *Oxford Univ. Press, New York*, 1991. (Summary) **93a:62017** 62E15 (62F10)

Basalykas, Alfredas Some properties of distributions of polynomial forms. (Russian. English and Lithuanian summaries) *Litovsk. Mat. Sb.* **31** (1991), *no.* 2, 242–257; *translation in Lithuanian Math. J.* **31** (1991), *no.* 2, 157–169 (1992). (De Li Li) **93e:60040** 60F05 (60E05)

Basapur, Savita B. (*with* Walikar, H. B.) Domatically cocritical graphs. (English summary) *Proceedings of the Symposium on Graph Theory and Combinatorics* (*Cochin*, 1991), 67–74, *Publication*, 21, *Centre Math. Sci., Trivandrum*, 1991. (Summary) **93k:05156** 05C75

Başar, Feyzi Corrigendum to: "f-conservative matrix sequences" [Tamkang J. Math. **22** (1991), no. 2, 205–212; MR 92i:40003]. *Tamkang J. Math.* **23** (1992), *no.* 1, 79–80. (From the introduction) **93e:40002** 40C05 (40B05)

Başar, Tamer (*with* Bernhard, Pierre) ★ H^∞-optimal control and related minimax design problems. A dynamic game approach. Systems & Control: Foundations & Applications. *Birkhäuser Boston, Inc., Boston, MA*, 1991. xii+224 *pp. ISBN* 0-8176-3554-8 (Yu. Ledyaev) **93c:93001** 93-02 (47N70, 90D25, 93B36)
— Game theory and H^∞-optimal control: the continuous-time case. (English summary) *Differential games—developments in modelling and computation* (*Espoo*, 1990), 171–186, *Lecture Notes in Control and Inform. Sci.*, 156, *Springer, Berlin*, 1991. (*see* **93c:90003**) 90D25 (93B36)
— (*with* Srikant, R.) Iterative computation of Nash equilibria in M-player games with partial weak coupling. *Differential games—developments in modelling and computation* (*Espoo*, 1990), 245–256, *Lecture Notes in Control and Inform. Sci.*, 156, *Springer, Berlin*, 1991. (*see* **93c:90003**) 90D06 (93E05)
— Optimum performance levels for minimax filters, predictors and smoothers. *Systems Control Lett.* **16** (1991), *no.* 5, 309–317. (Marcelo Fragoso) **93a:93104** 93E11 (49K45, 62A15, 93B36)

Başar, Y. (*with* Weichert, D.) A finite-rotation theory for elastic-plastic shells under consideration of shear deformations. (German and Russian summaries) *Z. Angew. Math. Mech.* **71** (1991), *no.* 10, 379–389. (Summary) **93a:73060** 73K15 (73E05, 73G05)
— Finite-rotation theories for composite laminates. (English summary) *Acta Mech.* **98** (1993), *no.* 1-4, 159–176. (Summary) **93k:73064** 73K20 (73G05, 73K15, 73V05)

Basarab, A. S. K-loops. (Russian. English, Russian and Moldavian summaries) *Izv. Akad. Nauk Respub. Moldova Mat.* **1992**, *no.* 1, 28–33, 90–91. (Summary) **93g:20130** 20N05

Basarab, Şerban A. (*with* Kuhlmann, Franz-Viktor) An isomorphism theorem for Henselian algebraic extensions of valued fields. (English summary) *Manuscripta Math.* **77** (1992), *no.* 2-3, 113–126. (Luc Bélair) **93k:12017** 12J25 (12F05, 12J12, 12L12)

Basarab-Horwath, P. Integrability by quadratures for systems of involutive vector fields. (Russian and Ukrainian summaries) *Ukrain. Mat. Zh.* **43** (1991), *no.* 10, 1330–1337; *reprinted in Ukrainian Math. J.* **43** (1991), *no.* 10, 1236–1242 (1992). (Irl Bivens) **93e:58167** 58A30 (34A05, 34A26, 58F07, 58G35)
— (*with* Fushchich, V. I.; Serov, N. I.) A simple method of finding solutions of the nonlinear d'Alembert equation. *J. Phys. A* **25** (1992), *no.* 14, L871–L877. (Hideo Yamagata) **93g:35014** 35C05 (35L70)

Başarir, Metin Köthe-Toeplitz duals of some new sequence spaces and related matrix transformations. *J. Inst. Math. Comput. Sci. Math. Ser.* **4** (1991), *no.* 2, 287–290. (Mursaleen) **93c:46011** 46A45 (40C05, 47B37)
— (*with* Nuray, Fatih) Paranormed difference sequence spaces generated by infinite matrices. *Pure Appl. Math. Sci.* **34** (1991), *no.* 1-2, 87–90. (V. K. Srinivasan) **93d:46014** 46A45 (40H05)

Basavayya, D. (*with* Ravindra, G.) Co-strongly perfect bipartite graphs. (English summary) *J. Math. Phys. Sci.* **26** (1992), *no.* 3, 321–327. (Summary) **93k:05153** 05C75 (05C15)

Basawa, Ishwar V. (*with* Sriram, T. N.; Huggins, Richard M.) Sequential estimation for branching processes with immigration. *Ann. Statist.* **19** (1991), *no.* 4, 2232–2243. (Valeri Stefanov) **93b:62118** 62L12 (60J80, 62M05)
— (*with* Kim, Young-Won) Empirical Bayes estimation for first-order autoregressive processes. (English summary) *Austral. J. Statist.* **34** (1992), *no.* 1, 105–114. (A. N. Startsev) **93m:62198** 62M10 (62C12)

— *see also* **Proceedings: Symposium on Applied Probability, 93f:60003** *and* **Queueing and related models, 93i:60006**

Basco, D. R. (*with* Abbott, M. B.) ★ Computational fluid dynamics. An introduction for engineers. *Longman Scientific & Technical, Harlow; copublished in the United States with John Wiley & Sons, Inc., New York*, 1990. xiv+425 *pp. ISBN* 0-582-01365-8 (From the publisher's presentation) **93b:76055** 76Mxx (76-01, 86A05)

Bascuñán, M. E. (*with* Ruiz, Sergio; Slater, Peter J.) The additive bandwidth of grids and complete bipartite graphs. (English summary) Proceedings of the Twenty-third Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, FL, 1992). *Congr. Numer.* **88** (1992), 245–254. (Summary) **93j:05135** 05C78

Baseia, B. (*with* Dantas, Célia M. A.; Pedrosa, I. A.) Harmonic oscillator with time-dependent mass and frequency and a perturbative potential. *Phys. Rev. A* (3) **45** (1992), *no.* 3, 1320–1324. (Summary) **93a:81031** 81Q05 (81R30)

— (*with* de Brito, A. L.) Squeezing in the Schrödinger picture: normal ordering technique to solve the mass-varying oscillator. (English summary) *Quantum Opt.* **4** (1992), *no.* 4, 201–207. (K. Wódkiewicz) **93g:81215** 81V80 (81R30)

Basenspiler, Larry I. Contractions of OP graphs. *Graph theory, combinatorics, and applications, Vol.* 1 (*Kalamazoo, MI*, 1988), 103–112, *Wiley-Intersci. Publ., Wiley, New York*, 1991. (*see* **93b:05002**) 05C60 (05C10)

Başer, Ulviye (*with* Özçaldiran, Kadri) On observability of singular systems. *Circuits Systems Signal Process.* **11** (1992), *no.* 3, 421–430. (Li Yi Dai) **93d:93016** 93B07 (93B27, 93C05)

Basermann, A. (*with* Weidner, Peter) A parallel algorithm for determining all eigenvalues of large real symmetric tridiagonal matrices. (English summary) *Parallel Comput.* **18** (1992), *no.* 10, 1129–1141. 65Y05 (65F15)

Iqbal Basha, R. *see* **Iqbal Basha, R.**

Bashkirov, A. G. Influence of viscous stresses on shock wave stability in gases. (English summary) *Phys. Fluids A* **3** (1991), *no.* 5, *part* 1, 960–966. (Summary) **93k:76073** 76L05 (76E99)

Bashkirov, E. L. On the structure of a defect orthogonal group. (Russian. English summary) *Vestst Akad. Navuk BSSR Ser. Fiz.-Mat. Navuk* **1991,** *no.* 6, 20–23, 123–124. (Summary) **93c:20075** 20G99

Bashmakov, R. A. (*with* Napalkov, V. V.) Sufficient sets on algebraic Riemann surfaces. (Russian) *Dokl. Akad. Nauk SSSR* **318** (1991), *no.* 4, 812–815; *translation in Soviet Math. Dokl.* **43** (1991), *no.* 3, 779–782 (1992). (V. V. Chueshev) **93g:30060** 30F10 (14H55, 30F30, 34A20)

Bashmakova, I. G. François Viète and the formation of mathematics of the new age. (Russian) *Voprosy Istor. Estestvoznan. i Tekhn.* **1991,** *no.* 2, 73–79. (Marek Zakrzewski) **93c:01014** 01A40

— *see also* **de Fermat, Pierre, 93m:01023**

Basile, A. G. (*with* Gray, Christopher George) A relaxation algorithm for classical paths as a function of end points: application to the semiclassical propagator for far-from-caustic and near-caustic conditions. *J. Comput. Phys.* **101** (1992), *no.* 1, 80–93. (Summary) **93c:65030** 65D30 (65P05, 81Q20)

Basile, Achille (*with* Rao, K. P. S. Bhaskara) Common extension of group-valued charges. (Italian summary) *Boll. Un. Mat. Ital. A* (7) **5** (1991), *no.* 2, 157–162. (From the introduction) **93b:28026** 28B10

Basile, Giuseppe (*with* Marro, Giovanni) ★ Controlled and conditioned invariants in linear system theory. With 1 IBM-PC floppy disk (3.5 inch). *Prentice Hall, Inc., Englewood Cliffs, NJ*, 1992. xiv+464 *pp. ISBN* 0-13-172974-8 (Vladimir Veliov) **93e:93001** 93–02 (49N10, 93B27, 93C05)

Basile, N. (*with* Mininni, M.) Proximal normal analysis approach to optimal control problems in infinite-dimensional spaces. *J. Optim. Theory Appl.* **73** (1992), *no.* 1, 121–147. (H. O. Fattorini) **93d:49028** 49K27 (49J27, 49J52)

Basin, M. A. (*with* Lordkipanidze, A. N.; Tkach, A. Ya.) Hydrodynamic characteristics of a carrying complex that moves near the free surface of a heavy fluid. (Russian) *Trudy Sem. Kraev. Zadacham No.* 26 (1991), 29–60. (Adrian Carabineanu) **93j:76013** 76B10

Basin, M. V. (*with* Orlov, Yu. V.) Guaranteed estimation of linear dynamical systems based on discrete-continuous observations. (Russian. Russian summary) *Avtomat. i Telemekh.* **1992,** *no.* 3, 36–45; *translation in Automat. Remote Control* **53** (1992), *no.* 3, *part* 1, 349–357. 93B03 (93C41)

— (*with* Orlov, Yu. V.) Optimal estimation of the state of dynamical processes based on discrete-continuous observations. (Russian) *Dokl. Akad. Nauk* **324** (1992), *no.* 5, 949–952; *translation in Soviet Phys. Dokl.* **37** (1992), *no.* 6, 273–274. 93E12 (93B30)

— (*with* Orlov, Yu. V.) On filtering of the Hilbert space-valued stochastic process over discrete-continuous observations. (English summary) *Analysis and optimization of systems: state and frequency domain approaches for infinite-dimensional systems (Sophia-Antipolis*, 1992), 336–346, *Lecture Notes in Control and Inform. Sci.*, 185, *Springer, Berlin*, 1993. (*see* **93i:93005**) 93E11 (93C25)

Baskakov, A. G. Spectral properties of the differential operator $d/dt - A_0$ with an unbounded operator A_0. (Russian) *Differentsial'nye Uravneniya* **27** (1991), *no.* 12, 2162–2164, 2207. (Summary) **93b:47093** 47E05 (34G10, 34L05, 47D03, 47N20)

— Dichotomy of the spectrum of nonselfadjoint operators. (Russian) *Sibirsk. Mat. Zh.* **32** (1991), *no.* 3, 24–30; *translation in Siberian Math. J.* **32** (1991), *no.* 3, 370–375 (1992). (Jaroslav Zemánek) **93b:47050** 47B25 (47A10)

— On the splitting of a differential operator with unbounded operator coefficients. (Russian) *Dokl. Akad. Nauk* **323** (1992), *no.* 3, 380–384; *translation in Russian Acad. Sci. Dokl. Math.* **45** (1992), *no.* 2, 329–333 (1993). (Irina V. Mel'nikova) **93k:47066** 47N20 (34G10, 34L05, 47A10, 47D03, 47E05)

— Abstract harmonic analysis and asymptotic estimates for elements of inverse matrices. (Russian. Russian summary) *Mat. Zametki* **52** (1992), *no.* 2, 17–26, 155; *translation in Math. Notes* **52** (1992), *no.* 1-2, 764–771 (1993). (Wacław Szymański) **93i:47001** 47A05 (43A50, 47B38)

Baskakov, V. A. Linear approximation with best order of the classes of functions $C^{\psi}_{\beta}(\varepsilon)$ and $L^{\psi}_{\beta}(\varepsilon)$. (Russian) *Application of functional analysis in approximation theory (Russian)*, 12–17, *Tver. Gos. Univ., Tver'*, 1990. (*see* **93k:00021**) 41A50

Baskakova, P. E. (*with* Borodin, A. N.) Tables of distributions of functionals of the Brownian motion process. (Russian. Russian summary) *Zap. Nauchn. Sem. S.-Peterburg. Otdel. Mat. Inst. Steklov.* (*POMI*) **194** (1992), *Problemy Teorii Veroyatnost. Raspred.* 12, 8–20, 176. (Summary) **93g:60169** 60J65 (60J55)

Baskoutas, S. (*with* Jannussis, A.) Quantum tunnelling effect for the inverted Caldirola-Kanai Hamiltonian. (English summary) *J. Phys. A* **25** (1992), *no.* 23, L1299–L1304. (Summary) **93k:81032** 81Q05

— (*with* Jannussis, A.) Quantum mechanics of the inverted Caldirola-Kanai oscillator. *Nuovo Cimento B* (11) **107** (1992), *no.* 3, 255–267. (Summary) **93b:81041** 81Q05 (81R30)

— (*with* Jannussis, A.; Mignani, R.) Study of the generalized parametric oscillator. *Phys. Lett. A* **164** (1992), *no.* 1, 17–22. (Piotr Kosiński) **93d:81057** 81R05 (81Q05)

Basmajian, Ara Generalizing the hyperbolic collar lemma. *Bull. Amer. Math. Soc.* (*N.S.*) **27** (1992), *no.* 1, 154–158. (Summary) **93k:30074** 30F40 (53C22, 57M50)

— The stable neighborhood theorem and lengths of closed geodesics. *Proc. Amer. Math. Soc.* **119** (1993), *no.* 1, 217–224. (Robert C. Penner) **93k:30072** 30F35 (53C22)

— Hyperbolic structures for surfaces of infinite type. *Trans. Amer. Math. Soc.* **336** (1993), *no.* 1, 421–444. (Robert C. Penner) **93e:30087** 30F35 (30F40, 57M50)

Basor, Estelle L. (*with* Tracy, Craig A.; Widom, Harold) Asymptotics of level-spacing distributions for random matrices. *Phys. Rev. Lett.* **69** (1992), *no.* 1, 5–8. (Summary) **93g:82004a** 82B05 (82B10)

— (*with* Tracy, Craig A.; Widom, Harold) Errata: "Asymptotics of level-spacing distributions for random matrices". *Phys. Rev. Lett.* **69** (1992), *no.* 19, 2880. (Editors) **93g:82004b** 82B05 (82B10)

Basov, V. V. Convergence of a linearizing transformation of a nonautonomous differential equation with a small parameter multiplying the derivative. (Russian. Russian summary) *Differentsial'nye Uravneniya* **28** (1992), *no.* 4, 716–718, 735. (Summary) **93g:34081** 34E15 (34C20)

Bass, F. G. (*with* Vekslerchik, V. E.; Konotop, V. V.; Puzenko, S. A.) The effect of higher-order dispersion on the dynamics of a dark soliton in the nonlinear Schrödinger equation. (Russian. English, Russian and Ukrainian summaries) *Ukraïn. Fiz. Zh.* **37** (1992), *no.* 11, 1659–1665. (Summary) **93k:35239** 35Q55 (78A60)

Bass, Hyman Group actions on non-Archimedean trees. *Arboreal group theory* (*Berkeley, CA*, 1988), 69–131, *Math. Sci. Res. Inst. Publ.*, 19, *Springer, New York*, 1991. (Frédéric Paulin) **93d:57003** 57M07 (20E08)

— (*with* Cassidy, Phyllis) Ellis Kolchin (1916–1991). *Notices Amer. Math. Soc.* **39** (1992), *no.* 6, 599–600. (Editors) **93b:01035** 01A70

Bass, Ludvik (*with* Fink, A. M.) Hidden variables of longevity under almost periodic influences. *J. Differential Equations* **94** (1991), *no.* 2, 292–314. (H. I. Freedman) **93a:92009** 92D25 (34C27)

— Schrödinger: a philosopher in Planck's chair. *British J. Philos. Sci.* **43** (1992), *no.* 1, 111–127. (Editors) **93c:01030** 01A70

Bass, Richard F. A centred norm inequality for singular integral operators. *Math. Proc. Cambridge Philos. Soc.* **112** (1992), *no.* 2, 369–383. (Douglas Kurtz) **93f:42020** 42A50 (47A30, 47B38, 47G10)

— (*with* Barlow, Martin T.) Transition densities for Brownian motion on the Sierpiński carpet. *Probab. Theory Related Fields* **91** (1992), *no.* 3-4, 307–330. (Summary) **93k:60203** 60J65

— (*with* Burdzy, Krzysztof) Lifetimes of conditioned diffusions. *Probab. Theory Related Fields* **91** (1992), *no.* 3-4, 405–443. (Michael Cranston) **93e:60155** 60J45 (35K99, 60J65)

— (*with* Khoshnevisan, Davar) Local times on curves and uniform invariance principles. *Probab. Theory Related Fields* **92** (1992), *no.* 4, 465–492. (P. Révész) **93e:60161** 60J55 (60F17, 60J65)

— (*with* Burdzy, Krzysztof) The Martin boundary in non-Lipschitz domains. *Trans. Amer. Math. Soc.* **337** (1993), *no.* 1, 361–378. (Yehuda Pinchover) **93g:31019** 31C35 (60J45, 60J50)

Bass, Thomas A. (*with* Fung, Karen Yuen) A two-stage test for the mean of a multivariate normal distribution with known covariance matrix. (English summary) *Sankhya Ser. B* **51** (1989), *no.* 3, 425–428. 62H15

Bassalygo, L. A. (*with* Gel'fand, S. I.; Pinsker, M. S.) Bounds for codes with separately localized errors. (Russian) *Problemy Peredachi Informatsii* **28** (1992), *no.* 1, 14–21; *translation in Problems Inform. Transmission* **28** (1992), *no.* 1, 11–17. (Summary) **93d:94025** 94B50 (93B05)

— (*with* Pinsker, M. S.) Binary constant-weight codes that correct localized errors. (Russian. Russian summary) *Problemy Peredachi Informatsii* **28** (1992), *no.* 4, 103–105; *translation in Problems Inform. Transmission* **28** (1992), *no.* 4, 390–392 (1993). (Summary) **93j:94035** 94B60

al-Bassam, M. A. *see* **Al-Bassam, M. A.**

al-Bassam, Sulaiman *see* **Al-Bassam, Sulaiman**

Bassan, Bruno (*with* Scarsini, Marco) On the comparison of pure jump processes. (French summary) *RAIRO Rech. Opér.* **26** (1992), *no.* 1, 41–55. (T. Rolski) **93g:60036** 60E15 (60G55)

— (*with* Çinlar, Erhan; Scarsini, Marco) Stochastic comparisons of Itô processes. (English summary) *Stochastic Process. Appl.* **45** (1993), *no.* 1, 1–11. (Youssef Ouknine) **93m:60161** 60J60 (60G44, 60H10, 60J75)

Bassanelli, Giovanni (*with* Alessandrini, Lucia) Smooth proper modifications of compact Kähler manifolds. *Complex analysis* (*Wuppertal*, 1991), 1–7, *Aspects of Math., E17, Vieweg, Braunschweig*, 1991. (Bo Berndtsson) **93c:32041** 32J27 (32C17)

— (*with* Alessandrini, Lucia) Positive $\partial\overline{\partial}$-closed currents and non-Kähler geometry. *J. Geom. Anal.* **2** (1992), *no.* 4, 291–316. (Salomon Ofman) **93g:32012** 32C30 (32C17, 32J27)

— (*with* Alessandrini, Lucia) Metric properties of manifolds bimeromorphic to compact Kähler spaces. *J. Differential Geom.* **37** (1993), *no.* 1, 95–121. (Shanyu Ji) **93m:32040** 32J27 (32C17, 32C30, 53C55)

Bassanezi, Rodney C. (*with* Costa, M. I. S.; Boldrini, José Luiz) Optimal chemical control of populations developing drug resistance. (English summary) *IMA J. Math. Appl. Med. Biol.* **9** (1992), *no.* 3, 215–226. (Summary) **93j:92015** 92C50

— (*with* Greco, Gabriele H.) On the continuity of fuzzy integrals. (English summary) *Fuzzy Sets and Systems* **53** (1993), *no.* 1, 87–91. 28E10 (04A72)

Bassanini, P. (*with* Casciola, C. M.; Lancia, M. R.; Piva, R.) A boundary integral formulation for the kinetic field in aerodynamics. I. Mathematical analysis. *European J.*

Mech. B Fluids **10** (1991), *no.* 6, 605–627. (A. J. Meir) **93f:76060** 76G25 (31B10, 45E10, 76M15)

— (*with* Lancia, M. R.) Boundary integral equations of the first kind for planar vector fields in multiply connected domains. *Acta Mech.* **94** (1992), *no.* 1-2, 43–57. (Summary) **93d:45010** 45K05 (35Q35, 76B05)

Bassett, Gilbert W., Jr. The Gauss Markov property for the median. (English summary) *L_1-statistical analysis and related methods* (*Neuchâtel*, 1992), 23–30, *North-Holland, Amsterdam*, 1992. (Summary) **93m:62146** 62J05 (62G05)

Bassetti, A. (*with* Torricelli, C.) Optimal portfolio selection as a bargaining game. *Dynamic games in economic analysis* (*Espoo*, 1990), 249–259, *Lecture Notes in Control and Inform. Sci.*, 157, *Springer, Berlin*, 1991. (*see* **93d:90003**) 90A60 (90D05)

Bassiakos, Yiannis C. (*with* Meng, Xiao-Li; Lo, Shaw-Hwa) A general estimator of the treatment effect when the data are heavily censored. *Biometrika* **78** (1991), *no.* 4, 741–748. (Summary) **93d:62051** 62G05 (62N05)

— Optimal choice for a Hodges-Lehmann type estimator in the two-sample problem with censoring. (English summary) *Computational statistics, Vol. 2* (*Neuchâtel*, 1992), 79–89, *Physica, Heidelberg*, 1992. (*see* **93k:62003**) 62G05

Bassias, K. V. (*with* Frank, B.) The Hopfield model as the minimum noise model for neurons with variable firing strength. (English summary) *Modern Phys. Lett. B* **6** (1992), *no.* 27, 1761–1764. 82C32

Bassily, N. L. (*with* Ishak, S.) Applications of Wald's identity with some famous stopping times. *Ann. Univ. Sci. Budapest. Eötvös Sect. Math.* **34** (1991), 93–113 (1992). (Tōru Nakai) **93i:60084** 60G40 (62L15)

— A short note on uniform integrability and Orlicz spaces. *Ann. Univ. Sci. Budapest. Eötvös Sect. Math.* **34** (1991), 115–120 (1992). (M. M. Rao) **93d:46045** 46E30 (28A99, 60G05)

— (*with* Ishak, S.; Mogyoródi, József) On stable and mixing sequences of σ-fields. *Ann. Univ. Sci. Budapest. Sect. Comput.* **11** (1991), 11–22. (Nathaniel F. G. Martin) **93b:60009** 60A10 (28D05)

— On an inequality of M. J. Klass. *Ann. Univ. Sci. Budapest. Sect. Comput.* **11** (1991), 53–62. (Summary) **93b:60087** 60G40 (60E15, 60G50)

— On two-sided inequalities for stopped random walks in Orlicz-spaces. *Ann. Univ. Sci. Budapest. Sect. Comput.* **11** (1991), 63–73. (Summary) **93d:60080** 60G42 (42B30, 60E15, 60G46)

— (*with* Ishak, S.) Wald's identity, Blackwell's theorem, and Gut and Janson's theorem using martingale techniques. *Ann. Univ. Sci. Budapest. Sect. Comput.* **11** (1991), 75–95. (Summary) **93c:60063** 60G42 (60G40, 60G50)

— (*with* Abdel-Fattah, A. M.) On the duality of some martingale spaces. *Bull. Austral. Math. Soc.* **45** (1992), *no.* 1, 43–52. (Tamotsu Tsuchikura) **93c:60064** 60G42 (46E30, 60G46)

el-Bassiouny, A. F. *see* **El-Bassiouny, A. F.**

Bassler, Kevin E. (*with* Sasaki, Kazuo; Griffiths, Robert B.) Interface interactions in modulated phases, and upsilon points. *J. Statist. Phys.* **62** (1991), *no.* 1-2, 45–88. (Klaus Ziegler) **93c:82023** 82B24 (82B26)

Bassom, Andrew P. (*with* Hall, Philip[2]) On the interaction of Görtler vortices and Tollmien-Schlichting waves in boundary layer flows. (English summary) *Instability, transition, and turbulence* (*Hampton, VA*, 1991), 51–60, *ICASE/NASA LaRC Ser., Springer, New York*, 1992. (Summary) **93m:76039** 76E30 (76D10, 76D33)

— (*with* Seddougui, Sharon O.) The effects of suction on the nonlinear stability of the three-dimensional boundary layer above a rotating disc. (English summary) *Proc. Roy. Soc. London Ser. A* **436** (1992), *no.* 1897, 405–415. (Summary) **93e:76032** 76E30 (76D05, 76D10)

— (*with* Clarkson, Peter A.; Hicks, A. C.; McLeod, J. Bryce) Integral equations and exact solutions for the fourth Painlevé equation. (English summary) *Proc. Roy. Soc. London Ser. A* **437** (1992), *no.* 1899, 1–24. (Mehmet Can) **93h:34020** 34A34 (34A20, 35Q55, 45P05, 58F37)

— Time-dependent inviscid vortices in three-dimensional boundary layers. (English summary) *Quart. J. Mech. Appl. Math.* **45** (1992), *no.* 3, 339–362. (Summary) **93i:76034** 76E05 (76C05, 76D10)

Bassong-Onana, A. (*with* Darouach, Mohamed) Optimal filtering for singular systems using orthogonal transformations. (English summary) *Control Theory Adv. Tech.* **8** (1992), *no.* 4, 731–742. (Summary) **93i:93120** 93E11 (93C05, 93C55)

Bastero, Jesús (*with* Hudzik, Henryk; Steinberg, A. M.) On smallest and largest spaces among rearrangement-invariant p-Banach function spaces ($0 < p < 1$). *Indag. Math. (N.S.)* **2** (1991), *no.* 3, 283–288. (Alexander Mekler) **93f:46038** 46E30 (46A16, 46M35)

— (*with* Bernués, Julio) Applications of deviation inequalities on finite metric sets. *Math. Nachr.* **153** (1991), 33–41. (Wolfgang Lusky) **93a:46017** 46B07 (46B09, 52A21, 60B05)

Bastian, Michael A perfect lot-tree procedure for the discounted dynamic lot-size problem with speculation. *Naval Res. Logist.* **39** (1992), *no.* 5, 651–668. (Summary) **93f:94014** 94B05

— (*with* Volkmer, M.) A perfect forward procedure for a single facility dynamic location/relocation problem. (English summary) *Oper. Res. Lett.* **12** (1992), *no.* 1, 11–16. (Summary) **93f:90100** 90B80

Bastianelli, Fiorenzo A note on 2D chiral gravity and chiral bosons. (English summary) *Modern Phys. Lett. A* **7** (1992), *no.* 40, 3777–3782. 81T40

— (*with* van Nieuwenhuizen, Peter) Trace anomalies from quantum mechanics. (English summary) *Nuclear Phys. B* **389** (1993), *no.* 1, 53–80. (Yi-Gao Liang) **93m:81141** 81T50 (58G11, 58Z05, 81T20)

Bastin, Françoise Distinguishedness of weighted Fréchet spaces of continuous functions. *Proc. Edinburgh Math. Soc.* (2) **35** (1992), *no.* 2, 271–283. (José Bonet) **93f:46030** 46E10 (46A45)

Bastin, G. (*with* Campion, Guy) Indirect adaptive control of linearly parametrized nonlinear systems. (English summary) *Adaptive systems in control and signal processing, 1989* (*Glasgow*), 153–158, *IFAC Sympos. Ser.*, 1990, *No.* 1, *Pergamon, Oxford*, 1990. (*see* **93j:93007**) 93C40 (93C10)

— (*with* Campion, Guy; d'Andréa-Novel, B.) Controllability and state feedback stabilizability of nonholonomic mechanical systems. (English summary) *Advanced robot control* (*Grenoble*, 1990), 106–124, *Lecture Notes in Control and Inform. Sci.*, 162, *Springer, Berlin*, 1991. (Summary) **93f:70030** 70Q05 (70B15, 70F25, 93C85)

— (*with* Praly, L.; Pomet, J.-B.; Jiang, Z. P.) Adaptive stabilization of nonlinear systems. (English summary) *Foundations of adaptive control* (*Urbana, IL*, 1990), 347–433, *Lecture Notes in Control and Inform. Sci.*, 160, *Springer, Berlin*, 1991. (Vladimir G. Sragovich) **93j:93135** 93D21 (93C40, 93D15)

— (*with* Dasgupta, Soura; Gevers, Michel; Campion, Guy; Chen, L.) Identifiability of scalar linearly parametrized polynomial systems. (English summary) *Identification and system parameter estimation* 1991, *Vol.* 1,2 (*Budapest*, 1991), 835–839, *IFAC Sympos. Ser.*, 3, *Pergamon, Oxford*, 1992. (*see* **93h:93009**) 93C10 (93B30)

— (*with* Jarachi, F.; Wertz, V.) On predictive control of nonlinear recursive systems. (English summary) *Mathematics of the analysis and design of process control* (*Dublin*, 1991/*Lille*, 1991), 445–453, *North-Holland, Amsterdam*, 1992. (*see* **93g:93004**) 93C10 (93C40)

— (*with* Raucent, B.; Campion, Guy; Samin, J.-C.; Willems, P. Y.) Identification of the barycentric parameters of robot manipulators from external measurements. (English summary) *Automatica J. IFAC* **28** (1992), *no.* 5, 1011–1016. 93C85

— (*with* Bitmead, Robert R.; Campion, Guy; Gevers, Michel) Identification of linearly-overparametrized nonlinear systems. *IEEE Trans. Automat. Control* **37** (1992), *no.* 7, 1073–1078. (P. Bertrand) **93g:93027** 93B30 (93C10)

Bastis, A. *see* **Bastys, Algirdas J.**

Basto Gonçalves, J. Reduction of Hamiltonian systems with symmetry. *J. Differential Equations* **94** (1991), *no.* 1, 95–111. (Martin Kummer) **93d:58048** 58F05

Baston, R. J. Almost Hermitian symmetric manifolds. I. Local twistor theory. *Duke Math. J.* **63** (1991), *no.* 1, 81–112. (C.-L. Bejan (Zbl 724:53019)) **93d:53064** 53C35 (32L25, 53C15, 58H10)

— Almost Hermitian symmetric manifolds. II. Differential invariants. *Duke Math. J.* **63** (1991), *no.* 1, 113–138. (C.-L. Bejan (Zbl:724:53020)) **93d:53065** 53C35 (17B56, 32L25, 53C15)

— Quaternionic complexes. *J. Geom. Phys.* **8** (1992), *no.* 1-4, 29–52. (Michael G. Eastwood) **93h:58145** 58G05 (32L25, 35A99)

Baston, V. J. (*with* Bostock, F. A.) On Washburn's deterministic graphical games. *Differential games—developments in modelling and computation* (*Espoo*, 1990), 164–170, *Lecture Notes in Control and Inform. Sci.*, 156, *Springer, Berlin*, 1991. (*see* **93c:90003**) 90D43

— (*with* Bostock, F. A.) A basic searchlight game. *J. Optim. Theory Appl.* **71** (1991), *no.* 1, 47–66. (O. A. Malafeyev) **93g:90090** 90D05

Bastos, M. A. (*with* dos Santos, A. F.) Wiener-Hopf operators with oscillating symbols and convolution operators on a union of intervals. (English summary) *Integral Equations Operator Theory* **15** (1992), *no.* 6, 920–941. (I. Spitkovsky) **93j:47037** 47B35 (47A53)

Bastys, Algirdas J. Generalized localization of Fourier series in eigenfunctions of the Laplace operator in L_p classes. (Russian. English and Lithuanian summaries) *Litovsk. Mat. Sb.* **31** (1991), *no.* 3, 387–405; *translation in Lithuanian Math. J.* **31** (1991), *no.* 3, 269–282 (1992). (B. Belinskiy) **93a:35115** 35P10 (35J05, 42C25)

Basu, A. *see* **Basu, Arup**

Basu, A. K. (*with* Das, J. K.) On estimation and asymptotic properties of the parameters of ARMA(p, q) process in the stable case. (English summary) *Calcutta Statist. Assoc. Bull.* **41** (1991), *no.* 161-164, 45–64. (Ye Ji Xu) **93k:62179** 62M10

Basu, Anupam (*with* Wilson, T. C.; Banerji, D. K.; Majithia, Jay C.) Commutative operand alignment for interconnect optimization in behavioural synthesis. (English summary) *Internat. J. Electron.* **73** (1992), *no.* 2, 417–431. 90C90

Basu, Arup (*with* Bose, Arup; Ghosh, Jayanta K.) Sequential design and allocation rules. *Handbook of sequential analysis*, 475–501, *Statist. Textbooks Monographs*, 118, *Dekker, New York*, 1991. (*see* **93g:62102**) 62L05

— (*with* Kumar, P. Sreenivasa; Kumar, M. Kishore) A parallel algorithm for elimination tree computation and symbolic factorization. (English summary) *Parallel Comput.* **18** (1992), *no.* 8, 849–856. (Summary) **93g:65177** 65Y05 (65F50)

Basu, Asit P. A survey of some inference problems for dependent systems. (English summary) *Topics in statistical dependence* (*Somerset, PA*, 1987), 35–44, *IMS Lecture Notes Monograph Ser.*, 16, *Inst. Math. Statist., Hayward, CA*, 1990. (Summary) **93g:62073** 62H12 (62G10, 62H15, 62N05)

— Sequential methods in reliability and life testing. *Handbook of sequential analysis*, 581–592, *Statist. Textbooks Monographs*, 118, *Dekker, New York*, 1991. (*see* **93g:62102**) 62N05

— (*with* Ebrahimi, Nader) Bayesian approach to some problems in life testing and reliability estimation. (English summary) *Bayesian analysis in statistics and econometrics* (*Bangalore*, 1988), 257–266, *Lecture Notes in Statist.*, 75, *Springer, New York*, 1992. (Summary) **93i:62085** 62N05 (62F15)

— (*with* Thompson, R. D.) Life testing and reliability estimation under asymmetric loss. (English summary) With a discussion by Purushottam W. Laud. *Survival analysis: state of the art* (*Columbus, OH*, 1991), 3–10, *NATO Adv. Sci. Inst. Ser. E Appl. Sci.*, 211, *Kluwer Acad. Publ., Dordrecht*, 1992. (Summary) **93d:62165** 62N05

Basu, C. K. (*with* Mukherjee, M. N.) On semi-θ-closed sets, semi-θ-connectedness and some associated mappings. (English summary) *Bull. Calcutta Math. Soc.* **83** (1991), *no.* 3, 227–238. (Douglas E. Cameron) **93k:54024** 54A99

— (*with* Mukherjee, M. N.) On S-closed and s-closed spaces. (English summary) *Bull. Malaysian Math. Soc.* (2) **15** (1992), *no.* 1, 1–7. (Summary) **93m:54041** 54D20

— (*with* Ganguly, Sobhakar) Further characterizations of s-closed spaces. (English summary) *Indian J. Pure Appl. Math.* **23** (1992), *no.* 9, 635–641. (T. R. Hamlett) **93k:54058** 54D99 (54C08)

Basu, D. *see* **Basu, Debabrata[1]**

Basu, D. K. (*with* Hazra, M.) Derivation of a general class of bilateral and trilateral generating functions for hypergeometric polynomial by group-theoretic method. *Pure Math. Manuscript* **8** (1989), 45–53. (B. P. Parashar) **93e:33003** 33C45

Basu, Debabrata *see* **Basu, Debabrata[2]**

Basu, Debabrata[1] Learning statistics from counterexamples: ancillary statistics. (English summary) *Bayesian analysis in statistics and econometrics* (*Bangalore*, 1988), 217–223, *Lecture Notes in Statist.*, 75, *Springer, New York*, 1992. (Summary) **93j:62003** 62A15 (62B10)

— *see also* **Current issues in statistical inference: essays in honor of D. Basu, 93e:62003**

Basu, Debabrata[2] The Barut-Girardello coherent states. *J. Math. Phys.* **33** (1992), *no.* 1, 114–121. (Mauro Spera) **93a:81075** 81R30

— The Clebsch-Gordan problem of the SL(2, **R**) coherent states. (English summary) *J. Math. Phys.* **33** (1992), *no.* 11, 3826–3835. (A. O. Barut) **93k:81086** 81R30 (22E45,

33C80)

Basu, Kaushik A characterization of the class of rationalizable equilibria of oligopoly games. (English summary) *Econom. Lett.* **40** (1992), *no.* 2, 187–191 (1993). 90D40 (90A15, 90D06)

Basu, Rama (*with* Vilenkin, Alexander) Nucleation of thick topological defects during inflation. (English summary) *Phys. Rev. D* (3) **46** (1992), *no.* 6, 2345–2354. (Summary) **93e:83071** 83F05

Basu, Sankar (*with* Fontaine, Fred L.) Formal power series representation of lossless distributed multiports in terms of Padé approximants. *Algorithms and parallel VLSI architectures, Vol. B* (*Pont-à-Mousson*, 1990), 99–108, *Elsevier, Amsterdam*, 1991. (Summary) **93c:94012** 94C12 (41A21, 65B99, 94A12)

Basu, Sujit Kumar (*with* Mukerjee, Rahul) Optimum ordering policy in a bicomponent inventory model: statistical aspects. *Calcutta Statist. Assoc. Bull.* **40** (1990/91), *no.* 157-160, 229–243. 90B05 (60F05)

— (*with* Roy, Dilip) Control of location parameters in a multivariate situation. *Rep. Statist. Appl. Res. Un. Japan. Sci. Engrs.* **38** (1991), *no.* 1, 10–18. (Truc Nguyen) **93d:62170** 62N10

Basu, Uma (*with* Tripathi, Usha) The generation of tsunamis at inertial surface. (English summary) *Bull. Calcutta Math. Soc.* **83** (1991), *no.* 6, 537–544. (Summary) **93k:76010** 76B15 (86A05)

— (*with* Mandal, Samiran) The reflection of surface waves at inertial surface by undulation of seabed. *Bull. Calcutta Math. Soc.* **84** (1992), *no.* 3, 265–274. 76B15

Basu Mallick, B. (*with* Kundu, A.) Single q-oscillator mode realization of quantum group through canonical bosonizations of $SU(2)_q$ and q-oscillators. *Modern Phys. Lett. A* **6** (1991), *no.* 8, 701–705. (Summary) **93h:81053** 81R50 (17B37)

— (*with* Kundu, A.) Quantum group structures in action: generation of quantum integrable models. (English summary) *Nonlinear evolution equations and dynamical systems* (*Baia Verde*, 1991), 357–365, *World Sci. Publishing, River Edge, NJ*, 1992. (Michael Ringe) **93j:58063** 58F07 (17B37, 81R50)

— (*with* Kundu, A.) Spectral parameter-dependent approach to quantized algebra, its multiparameter deformations and their q-oscillator realizations. (English summary) *J. Phys. A* **25** (1992), *no.* 15, 4147–4156. (Boris Moiseevich Zupnik) **93h:81054** 81R50 (17B37, 82B23)

— (*with* Kundu, A.) Solutions of the nonadditive YBE by spectral parameter factorization and re-Yang-Baxterization. (English summary) *J. Phys. A* **25** (1992), *no.* 23, 6307–6316. (H. N. V. Temperley) **93j:82022** 82B23 (17B37)

— (*with* Kundu, A.) Construction of integrable quantum lattice models through Sklyanin-like algebras. *Modern Phys. Lett. A* **7** (1992), *no.* 1, 61–69. (Summary) **93i:82033** 82B23 (81R50, 81T25)

— (*with* Kundu, A.) Hidden quantum group structure in a relativistic quantum integrable model. (English summary) *Phys. Lett. B* **287** (1992), *no.* 1-3, 149–153. (Summary) **93f:81052** 81R50 (58F07, 81S05)

Basye, Kenneth (*with* Dean, Thomas; Angluin, Dana; et al.) Inferring finite automata with stochastic output functions and an application to map learning. (English summary) *AAAI-92. Proceedings, Tenth National Conference on Artificial Intelligence* (*San Jose, CA*, 1992), 208–214, *Amer. Assoc. Artif. Intell., Menlo Park, CA*, 1992. (*see* **93j:68007**) 68T05 (68T10)

Batabyal, Amitrajeet A. Environmental pollution and unilateral control in an open economy. (English summary) *Natur. Resource Modeling* **5** (1991), *no.* 4, 445–467. (Summary) **93f:90046** 90A30 (92K99)

Batakis, Nicolaos A. (*with* Kehagias, Alexandros A.) A class of monopole vacua. *Phys. Lett. B* **271** (1991), *no.* 1-2, 68–72. (Summary) **93e:81068** 81T13 (81R20)

— (*with* Kehagias, Alexandros A.) On certain topological aspects of the family problem. *Modern Phys. Lett. A* **7** (1992), *no.* 19, 1699–1706. (Summary) **93a:81122** 81T13 (58G40, 58Z05)

Batalin, I. A. (*with* Tyutin, I. V.) Existence theorem for the effective gauge algebra in the generalized canonical formalism with abelian conversion of second-class constraints. *Internat. J. Modern Phys. A* **6** (1991), *no.* 18, 3255–3282. (From the conclusion) **93f:81046** 81R10 (81T70)

— (*with* Lavrov, P. M.; Tyutin, I. V.) Remarks on the Sp(2)-covariant Lagrangian quantization of gauge theories. *J. Math. Phys.* **32** (1991), *no.* 9, 2513–2521. (Tsou Sheung Tsun) **93c:81245** 81T70 (81T13)

— (*with* Lyakhovich, S. L.; Tyutin, I. V.) Split involution and second class constraints. *Modern Phys. Lett. A* **7** (1992), *no.* 21, 1931–1943. (Rudolf Schmid) **93i:81274a** 81T70

— (*with* Lyakhovich, S. L.; Tyutin, I. V.) Errata: "Split involution and second class constraints". *Modern Phys. Lett. A* **7** (1992), *no.* 24, 2249. (Rudolf Schmid) **93i:81274b** 81T70

Batalova, Z. S. (*with* Ezhevskaya, N. A.) The structure of a phase space and bifurcations of the Duffing equation. (Russian) *Dinamika Sistem* **1990**, *Dinam. Stokh. Bifur.*, 4–26. (Henryk Żołądek) **93e:34048** 34C15 (34C23, 58F14, 70K50)

— (*with* Belyakova, G. V.; Ezhevskaya, N. A.) On the stability of nonlinear nonautonomous oscillators. (Russian) *Dinamika Sistem* **1990**, *Dinam. Stokh. Bifur.*, 27–45. (From the text) **93e:34075** 34D99 (34C15, 70K20)

Batard Martínez, Lorgio Analysis of the convergence of solutions to linear inhomogeneous ordinary differential equations with a small parameter. (Spanish. English summary) *Cienc. Mat.* (*Havana*) **11** (1990), *no.* 2, 137–145. (Summary) **93e:34077** 34E15 (34A12, 34A30)

— (*with* Mederos, Otilio B.) Reduction of a class of boundary value problems on partial differential equations with small parameter to a Riemann boundary value problem. (Spanish. English and Spanish summaries) *Cienc. Mat.* (*Havana*) **11** (1990), *no.* 3, 181–196. (Summary) **93i:35009** 35A25 (30E25, 35Q15)

Batchelor, Andrew (*with* Truman, Aubrey) Hitting, killing and capturing in Nelson's stochastic mechanics. *Stochastic processes, physics and geometry* (*Ascona and Locarno*, 1988), 121–137, *World Sci. Publishing, Teaneck, NJ*, 1990. (Summary) **93f:81024** 81P20 (81V35)

Batchelor, Marjorie The graded manifold of smooth maps and the Virasoro algebras. *Differential geometric methods in theoretical physics* (*Chester*, 1988), 253–268, *World Sci. Publishing, Teaneck, NJ*, 1989. (Alice Rogers) **93a:58027** 58D15 (17B68, 58A50)

— Measuring coalgebras, quantum group-like objects and noncommutative geometry. *Differential geometric methods in theoretical physics* (*Rapallo*, 1990), 47–60, *Lecture Notes in Phys.*, 375, *Springer, Berlin*, 1991. (Sergei Spirin) **93c:16036** 16W30 (17B37, 58B30)

Batchelor, Murray T. U_q[SU(2)]-invariant spin chains, related algebras and finite-size corrections. (English summary) Common trends in mathematics and quantum field theories (Kyoto, 1990). *Progr. Theoret. Phys. Suppl. No.* 102 (1990), 39–47 (1991). (H. N. V. Temperley) **93g:82032** 82B23 (17B37, 81R50)

— (*with* Warnaar, S. O.; Nienhuis, B.) Critical properties of the Izergin-Korepin and solvable O(n) models and their related quantum spin chains. *J. Phys. A* **25** (1992), *no.* 11, 3077–3095. (Ladislav Šamaj) **93g:82041** 82B23 (82B20, 82D60)

Batchlelor, M. *see* **Batchelor, Marjorie**

Bates, Larry Symmetry preserving deformations of the Kepler problem. *Rep. Math. Phys.* **26** (1988), *no.* 3, 413–428. (Bruno Cordani) **93c:70009** 70H05 (58F05, 70F05, 70H33)

— (*with* Śniatycki, Jędrzej) On action-angle variables. *Arch. Rational Mech. Anal.* **120** (1992), *no.* 4, 337–343. (Malcolm Adams) **93j:58058** 58F07 (58F05, 70H05)

Bates, Peter W. (*with* Zheng, Song Mu) Inertial manifolds and inertial sets for the phase-field equations. *J. Dynamics Differential Equations* **4** (1992), *no.* 2, 375–398. (Muthiah Daniel) **93b:35187** 35Q55 (34G20, 47H20, 47N20, 58F39)

— Coarsening and nucleation in the Cahn-Hilliard equation. *Free boundary problems involving solids* (*Montreal, PQ*, 1990), 220–225, *Pitman Res. Notes Math. Ser.*, 281, *Longman Sci. Tech., Harlow*, 1993. (*see* **93k:00037**) 80A22 (35Q99, 35R35)

Bates, S. M. Toward a precise smoothness hypothesis in Sard's theorem. *Proc. Amer. Math. Soc.* **117** (1993), *no.* 1, 279–283. (Claudio Martins Mendes) **93c:58028** 58C25 (57R70, 58C27)

Bathe, Klaus-Jürgen (*with* Brezzi, Franco) Recent developments in the finite element approximation of Reissner-Mindlin plates. (Portuguese summary) *Mat. Apl. Comput.* **10** (1991), *no.* 2, 125–135. (Summary) **93f:73058** 73K10 (65N30, 73V05)

— (*with* Eterovic, A. L.) On large strain elastoplastic analysis with frictional contact conditions. Numerical methods in applied science and industry (Torino, 1990). *Rend. Sem. Mat. Univ. Politec. Torino* **1991**, *Special Issue*, 81–93 (1992). (Summary) **93d:73067** 73V05 (65N30, 73E99, 73G05, 73G20, 73T05)

Bather, J. A. Search models. *J. Appl. Probab.* **29** (1992), *no.* 3, 605–615. (Kōji Iida) **93i:90056** 90B40 (60G40)

Bator, Elizabeth M. Remarks on completely continuous operators. (Russian summary) *Bull. Polish Acad. Sci. Math.* **37** (1989), *no.* 7-12, 409–413 (1990). (Kevin T. Andrews) **93c:46031** 46B22 (47B99)

— (*with* Lewis, Paul W.) Weak precompactness and the weak RNP. (Russian summary) *Bull. Polish Acad. Sci. Math.* **37** (1989), *no.* 7-12, 443–452 (1990). (Lawrence H. Riddle) **93c:46017** 46B20

— (*with* Bilyeu, Russell G.; Lewis, Paul W.) The Vitali integral convergence theorem and uniform absolute continuity. *Canad. J. Math.* **43** (1991), *no.* 5, 939–947. (Constantin Dumitrescu) **93b:28014** 28A33 (46E40, 46G05, 58C20)

— A basic construction in duals of separable Banach spaces. *Rocky Mountain J. Math.* **22** (1992), *no.* 1, 81–92. (Lawrence H. Riddle) **93b:46026** 46B20

— Unconditionally converging and compact operators on c_0. (English summary) *Rocky Mountain J. Math.* **22** (1992), *no.* 2, 417–422. (José Bonet) **93f:46015** 46B20 (28B05, 46G10, 47B07)

Batra, S. K. (*with* Fraser, W. B.; Ghosh, T. K.) On unwinding yarn from a cylindrical package. (English summary) *Proc. Roy. Soc. London Ser. A* **436** (1992), *no.* 1898, 479–498. (Summary) **93e:73031** 73K99

Batta, Rajan (*with* Sivakumar, Raj A.; Karwan, Mark H.) A network-based model for transporting extremely hazardous materials. (English summary) *Oper. Res. Lett.* **13** (1993), *no.* 2, 85–93. 90B10

Battalio, Raymond C. (*with* Van Huyck, John B.; Gillette, Ann B.) Credible assignments in coordination games. (English summary) *Games Econom. Behav.* **4** (1992), *no.* 4, 606–626. (Summary) **93f:90186** 90D05 (90D12)

Battalov, R. M. (*with* Lubyshev, F. V.) On an optimal control problem. (Russian) *Numerical methods for solving boundary value problems* (*Russian*), 75–89, *Akad. Nauk SSSR Ural. Otdel., Bashkir. Nauchn. Tsentr, Ufa*, 1989. (*see* **93m:00033**) 49N55 (49K20)

Battelli, Flaviano (*with* Palmer, Kenneth J.) Tangencies between stable and unstable manifolds. *Proc. Roy. Soc. Edinburgh Sect. A* **121** (1992), *no.* 1-2, 73–90. (Ya. L. Umanskii) **93i:58117** 58F15 (34C37, 58F05, 70H05)

— (*with* Palmer, Kenneth J.) Chaos in the Duffing equation. *J. Differential Equations* **101** (1993), *no.* 2, 276–301. (Yi Yuan Chen) **93k:34099** 34C37 (34C15, 58F13, 70K50)

Batten, Lynn Margaret An extension of Wagner's theorem. *Discrete Math.* **92** (1991), *no.* 1-3, 21–23. (M. J. Kallaher) **93d:51020** 51E20

Battezzati, M. The diffusion equation for a particle in a zero-point field. *Nuovo Cimento B* (11) **107** (1992), *no.* 6, 669–679. (Victor I. Gerasimenko) **93h:82060** 82C41 (60H15)

Bättig, Daniel (*with* Knörrer, Horst; Trubowitz, Eugene) A directional compactification of the complex Fermi surface. *Compositio Math.* **79** (1991), *no.* 2, 205–229. (H. Hogreve) **93g:35118** 35Q40 (35R30, 58G25, 81Q99)

— A toroidal compactification of the Fermi surface for the discrete Schrödinger operator. *Comment. Math. Helv.* **67** (1992), *no.* 1, 1–16. (F. Beukers) **93g:58118** 58F19 (14J25, 47B39, 47N55, 82B20)

Battilotti, Stefano A sufficient condition for nonlinear noninteracting control with stability via dynamic state-feedback: block-partitioned outputs. *Internat. J. Control* **55** (1992), *no.* 5, 1141–1160. (Summary) **93c:93038** 93D05 (93B52)

— Necessary conditions for nonlinear block noninteracting control with stability via dynamic state-feedback. (English summary) *Systems Control Lett.* **19** (1992), *no.* 6, 481–491. (Summary) **93j:93056** 93B52 (93D15)

di Battista, Giuseppe *see* **Di Battista, Giuseppe**

Battle, Guy Cardinal spline interpolation and the block spin construction of wavelets. *Wavelets*, 73–90, *Wavelet Anal. Appl.*, 2, *Academic Press, Boston, MA*, 1992. (Louise A. Raphael) **93f:42054** 42C15 (41A15)

— Klein-Gordon propagation of Daubechies wavelets. (English summary) *J. Math. Phys.* **34** (1993), *no.* 3, 1095–1109. (Summary) **93k:35228** 35Q53 (42C15)

Batty, Charles J. K. Tauberian theorems and stability of semigroups. *Séminaire d'Initiation à l'Analyse, Exp. No.* 26, 9 *pp., Publ. Math. Univ. Pierre et Marie Curie*, 95, *Univ. Paris VI, Paris*, 199?. (Alberto Guzman) **93f:47042** 47D03 (44A10)

— (*with* Arendt, Wolfgang) L'holomorphie du semi-groupe engendré par le laplacien Dirichlet sur $L^1(\Omega)$. (English summary) [Holomorphy of the semigroup generated by the

Dirichlet Laplacian on $L^1(\Omega)$] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 1, 31–35. (P. R. Chernoff) **93d:47090** 47F05 (47D03)

— Asymptotic stability of Schrödinger semigroups: path integral methods. *Math. Ann.* **292** (1992), *no.* 3, 457–492. (J. A. Van Casteren) **93g:47050** 47D03 (35P05, 47F05, 60J65)

— (*with* Vũ Quốc Phóng) Stability of strongly continuous representations of abelian semigroups. *Math. Z.* **209** (1992), *no.* 1, 75–88. (Ioana Ciorănescu) **93d:47073** 47D03

— (*with* Arendt, Wolfgang; Bénilan, Philippe) Asymptotic stability of Schrödinger semigroups on $L^1(\mathbf{R}^N)$. *Math. Z.* **209** (1992), *no.* 4, 511–518. (J. A. Van Casteren) **93i:47057** 47D06 (31A05, 35J10, 47F05, 47N20)

Batur, C. (*with* Kasparian, V.) Fuzzy adaptive control. (English summary) *Internat. J. Systems Sci.* **24** (1993), *no.* 2, 301–314. 93C40 (93C42)

Batyrshin, I. Z. Ordering operations and lexicographical estimates of likelihood in models of reasoning. *Soviet J. Comput. Systems Sci.* **30** (1992), *no.* 3, 103–114; *translated from Izv. Akad. Nauk SSSR Tekhn. Kibernet.* **1991**, *no.* 3, 80–91 (*Russian*). (Olga M. Kosheleva) **93e:68123** 68T30 (03B52, 03B60)

Bauch, H. F. Paley-Wiener-Sätze auf kompakten topologischen Gruppen. (English summary) [Paley-Wiener theorems on compact topological groups] *Z. Anal. Anwendungen* **10** (1991), *no.* 2, 211–224. (Walter Schempp) **93d:43010** 43A75 (22C05)

Bauch, Hartmut Self-validating algorithms and imprecise data structures for ordinary initial value and boundary value problems. *Modelling uncertain data* (*Freiberg*, 1992), 56–61, *Math. Res.*, 68, *Akademie-Verlag, Berlin*, 1992. (*see* **93i:00021**) 65G10 (65L05, 65L10)

Bauderon, Michel Infinite hypergraphs. II. Systems of recursive equations. (English and French summaries) *Theoret. Comput. Sci.* **103** (1992), *no.* 2, 165–190. (Giorgio Germano) **93j:68116** 68Q52 (05C65, 68Q25, 68Q45)

Baudinet, Marianne Proving termination properties of Prolog programs: a semantic approach. (English summary) *J. Logic Programming* **14** (1992), *no.* 1-2, 1–29. (Neculai Curteanu) **93j:68128** 68Q60 (03B70)

Baudisch, Andreas A construction of superstable NDOP-NOTOP groups. *J. Symbolic Logic* **56** (1991), *no.* 4, 1385–1390. (Anand Pillay) **93b:03046** 03C45 (03C60, 03C65, 05C99, 20D15)

— (*with* Wilson, John S.) Stable actions of torsion groups and stable soluble groups. *J. Algebra* **153** (1992), *no.* 2, 453–457. (R. M. Bryant) **93m:20041** 20F16 (03C45, 20F50)

Bauer, Douglas (*with* Schmeichel, Edward) On a theorem of Häggkvist and Nicoghossian. *Graph theory, combinatorics, algorithms, and applications* (*San Francisco, CA*, 1989), 20–25, *SIAM, Philadelphia, PA*, 1991. (Günter Schaar) **93a:05082** 05C45 (05C38)

— (*with* Schmeichel, Edward; Veldman, H. J.) Some recent results on long cycles in tough graphs. *Graph theory, combinatorics, and applications, Vol.* 1 (*Kalamazoo, MI*, 1988), 113–123, *Wiley-Intersci. Publ., Wiley, New York*, 1991. (*see* **93b:05002**) 05C38

— (*with* Schmeichel, Edward) Toughness and the cycle structure of graphs. (English summary) *Quo vadis, graph theory?*, 145–151, *Ann. Discrete Math.*, 55, *North-Holland, Amsterdam*, 1993. (*see* **93k:05003**) 05C38

Bauer, Friedrich Ludwig Efficient solution of a nonmonotonic inverse problem. *Beauty is our business*, 19–26, *Texts Monographs Comput. Sci., Springer, New York*, 1990. (Péter Kiss) **93a:11013** 11B39 (11B50)

— Strukturerkennung in der Mathematik und durch die Mathematik. [Structural recognition in mathematics and by means of mathematics] *Nova Acta Leopoldina* (*N.F.*) **67** (1992), *no.* 281, 97–119. 00A05

Bauer, Friedrich-W. A strong homology theory satisfies a clusteraxiom. Dedicated to the memory of Professor Gottfried Köthe. *Note Mat.* **10** (1990), *suppl.* 1, 73–102 (1992). (Stanislava Petkova) **93m:55005** 55N20 (55N07, 55N35)

Bauer, G. (*with* Ottitsch, M.; Piguet, Olivier; Schweda, M.) Quartic ghost terms, nonlinear symmetries and gauge (in)dependence of pure Yang-Mills theories. *Phys. Lett. B* **275** (1992), *no.* 3-4, 387–394. (Summary) **93b:81154** 81T13

Bauer, Heinz ★ Wahrscheinlichkeitstheorie. (German) [Probability theory] Fourth edition. de Gruyter Lehrbuch. [de Gruyter Textbook] *Walter de Gruyter & Co., Berlin*, 1991. xviii+520 *pp. ISBN* 3-11-012190-5; 3-11-012191-3 (Editors) **93a:60002** 60–01

— ★ Maß- und Integrationstheorie. (German) [Theory of measure and integration] Second edition. de Gruyter Lehrbuch. [de Gruyter Textbook] *Walter de Gruyter & Co., Berlin*, 1992. xviii+260 *pp. ISBN* 3-11-013626-0; 3-11-013625-2 (Editors) **93g:28001** 28–01

Bauer, Helmut F. Natural damped frequencies and axial response of a rotating finite viscous liquid column. *Acta Mech.* **93** (1992), *no.* 1-4, 29–52. (R. K. Jain) **93e:76036** 76E99 (76D99, 76E20, 76U05)

— (*with* Kammerer, Lothar) Natural frequencies and axial response of a spinning liquid layer in a micro-gravity field. (English and German summaries) *Z. Angew. Math. Phys.* **44** (1993), *no.* 2, 348–369. (Summary) **93m:76070** 76U05 (76E10)

Bauer, M. *see* **Bauer, Michel**

Bauer, Max Dilatations and continued fractions. (English summary) *Linear Algebra Appl.* **174** (1992), 183–213. (Athanase Papadopoulos) **93h:11010** 11A55 (15A36, 57N05, 58F15)

Bauer, Michel (*with* Di Francesco, Ph.; Itzykson, Claude; Zuber, J.-B.) Covariant differential equations and singular vectors in Virasoro representations. *Nuclear Phys. B* **362** (1991), *no.* 3, 515–562. (P. D. Jarvis) **93c:81062** 81R10 (17B68, 81T30, 81T40)

— (*with* Sochen, N.) Singular vectors by fusions in $A_1^{(1)}$. *Phys. Lett. B* **275** (1992), *no.* 1-2, 82–86. (Alexandr V. Kosyak) **93e:81035** 81R10 (17B67, 81T40)

Bauer, Peter H. (*with* Leclerc, Louis-Jérôme) Bounded-input–bounded-output properties of nonlinear discrete difference equations—applications to fixed-point digital filters. (English summary) *IEEE Trans. Circuits Systems I Fund. Theory Appl.* **39** (1992), *no.* 8, 662–666. 93C55 (93E11)

Bauer, Stefan Some nonreduced moduli of bundles and Donaldson invariants for Dolgachev surfaces. *J. Reine Angew. Math.* **424** (1992), 149–180. (Jean-Marc Drezet) **93e:14043** 14J27 (14J60, 57M50, 57R20)

Bauer, Werner On the conjecture of Birch and Swinnerton-Dyer for abelian varieties over function fields in characteristic $p > 0$. *Invent. Math.* **108** (1992), *no.* 2, 263–287. (Jean-Yves Étesse) **93e:11081** 11G40 (11G10, 14F30, 14F40, 14G10)

Bauermann, Jürgen Lokale Tensorfelder auf arithmetischen Quotienten symmetrischer beschränkter Gebiete. [Local tensor fields on arithmetic quotients of bounded symmetric domains] *J. Reine Angew. Math.* **428** (1992), 111–138. (Rolf Berndt) **93i:32046** 32N15 (11F55, 17C27)

Bauer-Price, Pia ★ The Selberg trace formula for $\mathrm{PSL}(2, \mathscr{O}_K)$ for imaginary quadratic number fields K of arbitrary class number. Dissertation, Rheinische Friedrich-Wilhelms-Universität Bonn, Bonn, 1990. Bonner Mathematische Schriften [Bonn Mathematical Publications], 221. *Universität Bonn, Mathematisches Institut, Bonn*, 1991. iv+77 *pp.* (Minking Eie) **93j:11028** 11F72

Baues, Hans Joachim (*with* Conduché, Daniel) On the tensor algebra of a nonabelian group and applications. *K-Theory* **5** (1991/92), *no.* 6, 531–554. (Timothy Porter) **93f:55015** 55R35

— (*with* Félix, Yves; Thomas, Jean-Claude) Presentations of algebras and the Whitehead Γ-functor for chain algebras. *J. Algebra* **148** (1992), *no.* 1, 123–134. (From the text) **93k:55017** 55P99 (16E30, 55U99)

Baugh, J. W., Jr. Using formal methods to specify the functional properties of engineering software. (English summary) *Comput. & Structures* **45** (1992), *no.* 3, 557–570. 68Q65

Baughman, Lisa A. (*with* Walkington, Noel J.) Co-volume methods for degenerate parabolic problems. (English summary) *Numer. Math.* **64** (1993), *no.* 1, 45–67. (Reinhard Redlinger) **93j:65147** 65M60 (80A22)

Baulieu, Laurent Open gauge algebra and ghost unification. *Quantum mechanics of fundamental systems*, 2 (*Santiago*, 1987), 27–32, *Ser. Cent. Estud. Cient. Santiago, Plenum, New York*, 1989. (*see* **93e:81005**) 81T70

— (*with* Aragão de Carvalho, C.) Local BRST symmetry and superfield formulation of the Donaldson-Witten theory. *Phys. Lett. B* **275** (1992), *no.* 3-4, 323–330. (Danny Birmingham) **93b:81152** 81T13 (57R57, 58D27, 81T70)

— Transmutation of pure 2D supergravity into topological 2D gravity and other conformal theories. (English summary) *Phys. Lett. B* **288** (1992), *no.* 1-2, 59–68. (Summary) **93k:81191** 81T40

Baulina, Yu. N. Fundamental solutions of the equation $x_1^2 + \cdots + x_n^2 = mx_1 \cdots x_n$. (Russian) *Mat. Zametki* **52** (1992), *no.* 5, 136–137; *translation in Math. Notes* **52** (1992), *no.* 5-6, 1168–1169 (1993). (A. Pethő) **93k:11026** 11D72

Baum, Eric B. On optimal game tree propagation for imperfect players. (English summary) *AAAI-92. Proceedings, Tenth National Conference on Artificial Intelligence* (*San Jose, CA*, 1992), 507–512, *Amer. Assoc. Artif. Intell., Menlo Park, CA*, 1992. (*see* **93j:68007**) 68T20 (90D40)

— *see also* **Computational learning & cognition, 93m:68001**

Baum, Paul (*with* Block, Jonathan) Excess intersection in equivariant bivariant K-theory. (French summary) *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 5, 387–392. (G. A. Noskov) **93b:19005** 19K35 (55N33, 57S15)

Baum, Ulrich Existence and efficient construction of fast Fourier transforms on supersolvable groups. *Comput. Complexity* **1** (1991), *no.* 3, 235–256. (Summary) **93d:20031** 20C40 (20C15, 68Q40)

Bauman, Patricia (*with* Owen, Nicholas C.; Phillips, Daniel) Maximum principles and a priori estimates for an incompressible material in nonlinear elasticity. *Comm. Partial Differential Equations* **17** (1992), *no.* 7-8, 1185–1212. (Reza Malek-Madani) **93k:35052** 35B50 (73C50)

Baumann, Bernd (*with* Scoppola, Carlo M.) Canonical bases for normal subgroups of finitely generated free groups with finite abelian factor groups. (English summary) *Forum Math.* **5** (1993), *no.* 1, 23–32. (Summary) **93j:20052** 20E05

Baumann, C. E. (*with* Storti, M. A.; Idelsohn, Sergio R.) A preconditioning mass matrix to accelerate the convergence to the steady Euler solutions using explicit schemes. The Second World Congress of Computational Mechanics, Part II (Stuttgart, 1990). *Internat. J. Numer. Methods Engrg.* **34** (1992), *no.* 2, 519–541. (Summary) **93a:76073** 76M20

— (*with* Storti, M. A.; Idelsohn, Sergio R.) Improving the convergence rate of the Petrov-Galerkin techniques for the solution of transonic and supersonic flows. The Second World Congress of Computational Mechanics, Part II (Stuttgart, 1990). *Internat. J. Numer. Methods Engrg.* **34** (1992), *no.* 2, 543–568. (Summary) **93a:76064** 76M10 (76–04, 76H05, 76J20)

Baumann, Gerd (*with* Glöckle, W. G.; Nonnenmacher, Theo F.) Painlevé test and exact similarity solutions of a class of nonlinear diffusion equations. *J. Math. Phys.* **33** (1992), *no.* 7, 2456–2463. (Mehmet Can) **93e:35107** 35Q58 (35Q35)

— (*with* Barth, Andrej; Nonnenmacher, Theo F.) Measuring Rényi dimensions by a modified box algorithm. *J. Phys. A* **25** (1992), *no.* 2, 381–391. (C. Eugene Wayne) **93f:58134** 58F12 (58F11)

— (*with* Grmela, Miroslav; Nonnenmacher, Theo F.) Discrete Boltzmann-like equations: a dynamical formulation. (English summary) *Phys. A* **187** (1992), *no.* 3-4, 503–518. (Carlo Cercignani) **93g:82079** 82C40

— (*with* Freyberger, M.) Generalized symmetries and integrals of motion for the Hénon-Heiles model. *Z. Angew. Math. Phys.* **43** (1992), *no.* 3, 584–588. (Summary) **93b:85001** 85A05 (70F15, 70H35)

Baumgart, Ralf The set of coefficients such that zero is contained in the weighted algebraic sum of polyhedral sets. *Wiss. Z. Tech. Univ. Chemnitz* **34** (1992), *no.* 1, 21–29. (Reinhard Deumlich) **93e:52024** 52B12 (90C08)

Baumgärtel, Hellmut On the Hilbert spectrum of C^*-systems for compact groups and related properties. *Operator algebras and operator theory* (*Craiova*, 1989), 1–36, *Pitman Res. Notes Math. Ser.*, 271, *Longman Sci. Tech., Harlow*, 1992. (Władysław Adam Majewski) **93m:46066** 46L05 (22D25, 46L55)

Baumgarten, Hanna (*with* Jung, Hermann; Mehlhorn, Kurt) Dynamic point location in general subdivisions. *Proceedings of the Third Annual ACM-SIAM Symposium on Discrete Algorithms* (*Orlando, FL*, 1992), 250–258, *ACM, New York*, 1992. (*see* **93b:68005**) 68U05 (68Q25)

Baumgartner, B. Perturbations of supersymmetric systems in quantum mechanics. (English summary) *Recent developments in quantum mechanics* (*Poiana Braşov*, 1989), 195–208, *Math. Phys. Stud.*, 12, *Kluwer Acad. Publ., Dordrecht*, 1991. (Summary) **93i:81042** 81Q60 (81Q15, 81V45)

— Relative concavity of ground state energies as functions of a coupling constant. (English summary) *Phys. Lett. A* **170** (1992), *no.* 1, 1–4. (Summary) **93i:81022** 81Q05

Baumgartner, James E. Is there a different proof of the Erdős-Rado theorem? *A tribute to Paul Erdős*, 27–37, *Cambridge Univ. Press, Cambridge*, 1990. (Donna M. Carr) **93a:03048** 03E05 (05A05)

— (*with* Spinas, Otmar) Independence and consistency proofs in quadratic form theory. *J. Symbolic Logic* **56** (1991), *no.* 4, 1195–1211. (J. E. Vaughan) **93b:11042** 11E04 (03E35, 12L99, 15A63)

Baumslag, G. (*with* Gersten, S. M.; Shapiro, Michael David; Short, Hamish) Automatic groups and amalgams. *J. Pure Appl. Algebra* **76** (1991), *no.* 3, 229–316. (D. F. Holt) **93a:20048** 20F10 (20F32, 57M07)

Baushev, V. S. (*with* Zhusubaliev, Zh. T.; Kolokolov, Yu. V.; Terekhin, I. V.) On the calculation of local stability of periodic regimes in automatic control impulse systems. (Russian. Russian summary) *Avtomat. i Telemekh.* **1992**, *no.* 6, 93–100; *translation in Automat. Remote Control* **53** (1992), *no.* 6, *part* 2, 865–871. 93C55

Bautista Ramos, Raymundo (*with* Kleiner, Mark) On the existence of almost split sequences in subcategories. *Topics in algebra, Part* 1 (*Warsaw*, 1988), 193–197, *Banach Center Publ.*, 26, *Part* 1, *PWN, Warsaw*, 1990. (Sverre O. Smalø) **93g:16022** 16G70 (16G30)

— (*with* Zhang, Ying Bo) A characterization of finite-dimensional algebras of tame representation type. *Proceedings of the First China-Japan International Symposium on Ring Theory* (*Guilin*, 1991), 7–10, *Okayama Univ., Okayama*, 1992. (*see* **93k:16001**) 16G60

— (*with* Muciño, J.; Rosenbaum, Marcos) SU(2)-multi-instantons over $S^2 \times S^2$. *Lett. Math. Phys.* **24** (1992), *no.* 4, 283–293. (Antony Maciocia) **93d:53032** 53C07 (55R10)

Bautz, M. (*with* Biess, G.) A heuristical polynomial algorithm for orbits of nondirected, connected finite digraphs with at least two vertices. (English summary) *Match No.* 28 (1992), 29–43. (R. C. Read) **93m:05076** 05C20 (05C85, 68R10)

Bavard, Christophe Inégalités isosystoliques conformes. [Conformal isosystolic inequalities] *Comment. Math. Helv.* **67** (1992), *no.* 1, 146–166. (Wolfgang Ziller) **93f:53033** 53C23 (53C22)

— (*with* Ghys, Étienne) Polygones du plan et polyèdres hyperboliques. (English summary) [Polygons in the plane and hyperbolic polyhedra] *Geom. Dedicata* **43** (1992), *no.* 2, 207–224. (Wolfgang Kühnel) **93k:52009** 52A55

— (*with* Meigniez, Gaël) Commutateurs dans les groupes métabéliens. (English summary) [Commutators in metabelian groups] *Indag. Math.* (*N.S.*) **3** (1992), *no.* 2, 129–135. (Stephen J. Pride) **93k:20053** 20F12 (20F16)

Bavencoffe, Edgard PPCM de suites de polynômes. (English and French summaries) [LCM of sequences of polynomials] *Ann. Fac. Sci. Toulouse Math.* (6) **1** (1992), *no.* 2, 147–168. (John B. Friedlander) **93m:11021** 11B83 (11C08, 11N05, 11U05)

— (*with* Boxall, J.) Quelques propriétés arithmétiques des points de 3-division de la jacobienne de $y^2 = x^5 - 1$. (French summary) [Some arithmetical properties of the 3-torsion points of the Jacobian of $y^2 = x^5 - 1$] *Sém. Théor. Nombres Bordeaux* (2) **4** (1992), *no.* 1, 113–128. (David Grant) **93m:11051** 11G16 (11G30, 14H25)

Bavrin, I. I. (*with* Bakunin, G. N.) Ballistic characteristic of continuous functions. (Russian) *Dokl. Akad. Nauk* **323** (1992), *no.* 2, 199–201; *translation in Russian Acad. Sci. Dokl. Math.* **45** (1992), *no.* 2, 269–271 (1993). (Alexander E. Gutman) **93j:26004** 26A30

Bavula, V. V. Generalized Weyl algebras and their representations. (Russian) *Algebra i Analiz* **4** (1992), *no.* 1, 75–97. (Andrzej Skowroński) **93h:16043** 16S32 (16E10)

— Calculation of $H^*(\mathrm{sl}(2), M)$ with coefficients in a simple sl(2)-module. (Russian) *Funktsional. Anal. i Prilozhen.* **26** (1992), *no.* 1, 57–58; *translation in Functional Anal. Appl.* **26** (1992), *no.* 1, 45–46. (Paul Zusmanovich) **93f:17033** 17B56 (17B10)

Bawa, R. K. (*with* Kadalbajoo, M. K.) Cubic spline method for a class of nonlinear singularly perturbed boundary value problems. (English summary) *J. Optim. Theory Appl.* **76** (1993), *no.* 3, 415–428. (Summary) **93m:65111** 65L10

— (*with* Kadalbajoo, M. K.) Third-order variable-mesh cubic spline methods for nonlinear two-point singularly perturbed boundary value problems. (English summary) *J. Optim. Theory Appl.* **77** (1993), *no.* 2, 439–451. 65L10

Baxa, Christoph Über Gandhis Primzahlformel. [On Gandhi's formula for primes] *Elem. Math.* **47** (1992), *no.* 2, 82–84. (Bruce C. Berndt) **93h:11007** 11A51 (11A41)

Baxendale, Peter H. Invariant measures for nonlinear stochastic differential equations. *Lyapunov exponents* (*Oberwolfach*, 1990), 123–140, *Lecture Notes in Math.*, 1486, *Springer, Berlin*, 1991. (Wolfgang Kliemann) **93m:60162** 60J60 (34F05, 60F10, 93E15)

— Stability and equilibrium properties of stochastic flows of diffeomorphisms. *Diffusion processes and related problems in analysis, Vol. II* (*Charlotte, NC*, 1990), 3–35, *Progr. Probab.*, 27, *Birkhäuser Boston, Boston, MA*, 1992. (Ming Liao) **93h:58167** 58G32 (60H10)

Baxley, John V. Euler's constant, Taylor's formula, and slowly converging series. *Math. Mag.* **65** (1992), *no.* 5, 302–313. (G. A. Heuer) **93j:40001** 40A25 (26A06, 40–01)

Baxter, B. J. C. Conditionally positive functions and p-norm distance matrices. *Constr. Approx.* **7** (1991), *no.* 4, 427–440. (G. Baszenski) **93a:65010** 65D05 (15A60, 41A05)

— Norm estimates for inverses of distance matrices. *Mathematical methods in computer aided geometric design, II* (*Biri*, 1991), 9–18, *Academic Press, Boston, MA*, 1992. (*see* **93d:65022**) 65D05 (65F99)

— The asymptotic cardinal function of the multiquadratic $\varphi(r) = (r^2 + c^2)^{1/2}$ as $c \to \infty$. (English summary) Advances in the theory and applications of radial basis functions. *Comput. Math. Appl.* **24** (1992), *no.* 12, 1–6. (Summary) **93j:65023** 65D15

Baxter, J. R. (*with* Jain, Naresh C.; Varadhan, S. R. S.) Some familiar examples for which the large deviation principle does not hold. *Comm. Pure Appl. Math.* **44** (1991), *no.* 8-9, 911–923. (Tsu Shu Chiang) **93d:60038** 60F10 (60J05)

Baxter, Laurence A. (*with* Lee, Eui Yong) Further properties of a model for a system subject to continuous wear. *J. Korean Statist. Soc.* **20** (1991), *no.* 2, 139–146. (Howard Taylor) **93h:90044** 90B25

— (*with* Rachev, Svetlozar T.) The stability of a characterization of the bivariate Marshall-Olkin distribution. *J. Math. Anal. Appl.* **160** (1991), *no.* 2, 563–571. (S. G. Maloshevskiĭ) **93a:60022** 60E99 (62E10, 62E17, 62N05)

— (*with* Harche, Farid) Note: on the greedy algorithm for optimal assembly. (English summary) *Naval Res. Logist.* **39** (1992), *no.* 6, 833–837. (Summary) **93f:90132** 90C27 (65K10)

— (*with* Harche, Farid) On the optimal assembly of series-parallel systems. (English summary) *Oper. Res. Lett.* **11** (1992), *no.* 3, 153–157. 90B35

Baxter, Martin (*with* Williams, David) Symmetry characterizations of certain distributions. I. *Math. Proc. Cambridge Philos. Soc.* **111** (1992), *no.* 2, 387–397. (Jozef L. Teugels) **93c:60121** 60J65 (60E99)

— (*with* Williams, David) Symmetry characterizations of certain distributions. II. Discounted additive functionals and large deviations. *Math. Proc. Cambridge Philos. Soc.* **112** (1992), *no.* 3, 599–611. (Jozef L. Teugels) **93h:60120** 60J55 (60J27)

Baxter, Rodney James Hyperelliptic function parametrization for the chiral Potts model. *Proceedings of the International Congress of Mathematicians, Vol. I, II* (*Kyoto*, 1990), 1305–1317, *Math. Soc. Japan, Tokyo*, 1991. (Summary) **93m:82006** 82B23

— (*with* Bazhanov, V. V.) New solvable lattice models in three dimensions. (English summary) *J. Statist. Phys.* **69** (1992), *no.* 3-4, 453–485. (Murray T. Batchelor) **93j:82016** 82B23 (81R50)

Bayada, Guy (*with* Chambat, Michèle) Conditions aux limites à l'interface d'un milieu poreux et d'un écoulement libre de faible épaisseur. (English and French summaries) [On boundary conditions at the interface between a thin film flow and a porous medium] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 4, 491–495. (Summary) **93f:76093** 76S05 (76D08)

— (*with* Jai, M.; Chambat, Michèle) The L.P.D.E.M., a mixed finite difference method for elliptic problems. (English summary) *Numer. Math.* **63** (1992), *no.* 2, 195–211. (C. Wayne Mastin) **93g:65130** 65N06 (65N12, 65N30, 76D08, 76M20)

Bayadyan, G. L. (*with* Agayan, S. S.; Gevorkyan, D. Z.) Problems in the stability of orthogonal series summation, and calculations of linear transforms. (Russian) *Cybernetics and computer technology, No.* 5 (*Russian*), 132–168, "*Nauka*", *Moscow*, 1991. (Radomir S. Stanković) **93k:65102** 65R10 (94A11)

Bayard, David S. Reduced complexity dynamic programming based on policy iteration. (English summary) *J. Math. Anal. Appl.* **170** (1992), *no.* 1, 75–103. (Michael M. Kostreva) **93i:90106** 90C39 (90C60)

Bayarri, M. J. (*with* DeGroot, M. H.) What Bayesians expect of each other. *J. Amer. Statist. Assoc.* **86** (1991), *no.* 416, 924–932. (Summary) **93k:62063** 62F15 (62A15)

Bayarunas, Eitvidas (*with* Čiegis, Raimondas) Adaptive difference schemes for nonstationary one-dimensional problems. (Russian. English and Lithuanian summaries) *Differentsial'nye Uravneniya i Primenen. No.* 46 (1991), 25–41. (Summary) **93b:65123** 65M06 (65K10)

Bayasgalan, Ts. The numerical range of linear operators in spaces with an indefinite metric. (Russian) *Acta Math. Hungar.* **57** (1991), *no.* 1-2, 7–9. (T. Ya. Azizov) **93a:47036** 47B50 (47A12)

Baye, D. (*with* Vincke, M.; Le Dourneuf, M.) Hydrogen atom in crossed electric and magnetic fields: transition from weak to strong electron-proton decentring. *J. Phys. B* **25** (1992), *no.* 12, 2787–2807. (Summary) **93b:81311** 81V45 (81Q05)

— (*with* Ancarani, L. U.) Iterative supersymmetric construction of phase-equivalent potentials. *Phys. Rev. A* (3) **46** (1992), *no.* 1, 206–216. (Summary) **93c:81258** 81U05 (81Q60)

Baye, Michael R. (*with* Kovenock, Dan; de Vries, Casper G.) It takes two to tango: equilibria in a model of sales. (English summary) *Games Econom. Behav.* **4** (1992), *no.* 4, 493–510. (Summary) **93g:90014** 90A11 (90A14, 90D40)

Bayer, Dave (*with* Stillman, Mike) Some matrices related to Green's conjecture. *Free resolutions in commutative algebra and algebraic geometry* (*Sundance, UT*, 1990), 79–90, *Res. Notes Math.*, 2, *Jones and Bartlett, Boston, MA*, 1992. (Gunnar Fløystad) **93e:14034** 14H45

— (*with* Diaconis, Persi) Trailing the dovetail shuffle to its lair. *Ann. Appl. Probab.* **2** (1992), *no.* 2, 294–313. (David J. Aldous) **93d:60014** 60C05 (20B30, 60B15)

Bayer, P. (*with* Lario, J. C.) On Galois representations defined by torsion points of modular elliptic curves. (English summary) *Compositio Math.* **84** (1992), *no.* 1, 71–84. (Nigel Boston) **93j:11031** 11G05 (11F11, 11F80)

Bayes, Thomas *see* **Dale, Andrew I., 93a:01020**

Baylin, M. (*with* Ragusa, S.) Electromagnetic first-order conservation laws in a medium. *Nuovo Cimento B* (11) **107** (1992), *no.* 1, 17–21. (Summary) **93a:78010** 78A25 (81V10)

Baylis, W. E. (*with* Wei, Jiansu) Monopoles without strings: a conflict between the one-photon condition and duality invariance. *Found. Phys. Lett.* **4** (1991), *no.* 6, 537–556. (Kishin Mariwalla) **93a:81213** 81V10 (78A25)

— Classical eigenspinors and the Dirac equation. *Phys. Rev. A* (3) **45** (1992), *no.* 7, *part A*, 4293–4302. (Summary) **93c:81073** 81R25 (81Q99)

Bayliss, Alvin (*with* Belytschko, Ted; Hansen, David; Turkel, Eli) Adaptive multi-domain spectral methods. (English summary) *Fifth International Symposium on Domain Decomposition Methods for Partial Differential Equations* (*Norfolk, VA*, 1991), 195–203, *SIAM, Philadelphia, PA*, 1992. (*see* **93g:65009**) 65M70

— (*with* Turkel, Eli) Mappings and accuracy for Chebyshev pseudo-spectral approximations. *J. Comput. Phys.* **101** (1992), *no.* 2, 349–359. 65D15 (41A50)

Bayly, Bruce Complexity in fluids. (English summary) 1990 *lectures in complex systems* (*Santa Fe, NM*, 1990), 53–97, *Santa Fe Inst. Stud. Sci. Complexity Lectures, III, Addison-Wesley, Redwood City, CA*, 1991. (Andrew C. Fowler) **93m:76045** 76Fxx (76C05, 76Exx, 76W05)

— (*with* Gilbert, Andrew D.) Magnetic field intermittency and fast dynamo action in random helical flows. (English summary) *J. Fluid Mech.* **241** (1992), 199–214. (Summary) **93f:76101** 76W05 (76E20, 76E25, 76F99, 85A30)

— (*with* Levermore, C. David; Passot, T.) Density variations in weakly compressible flows. *Phys. Fluids A* **4** (1992), *no.* 5, 945–954. (Summary) **93a:76049** 76F05 (76N10, 85A30)

Bayod, José M. Extension of isometries with values in non-Archimedean fields. *p-adic functional analysis* (*Laredo*, 1990), 23–29, *Lecture Notes in Pure and Appl. Math.*, 137, *Dekker, New York*, 1992. (Guang Xing Zeng) **93c:12012** 12J10 (12L15, 54E40)

— The space $l^1(K)$ is not ultrametrizable. *p-adic functional analysis* (*Laredo*, 1990), 221–225, *Lecture Notes in Pure and Appl. Math.*, 137, *Dekker, New York*, 1992. (Wim H. Schikhof) **93a:46140** 46S10 (46B45)

Bayoumi, Aboubakr Remarks on linear functionals and new proof of Kalton's theorem in locally bounded spaces. *Functional analysis & related topics* (*Sapporo*, 1990), 238–246, *World Sci. Publishing, River Edge, NJ*, 1991. (Paweł Domański) **93c:46007** 46A22

Bayoumi, M. (*with* Hu, Chen-Yi; Kearfott, Ralph Baker; Yang, Qing) A parallelized algorithm for the all-row preconditioned interval Newton/generalized bisection method. (English summary) *Parallel processing for scientific computing* (*Houston, TX*, 1991), 205–209, *SIAM, Philadelphia, PA*, 1992. (*see* **93g:65178**) 65H10 (65Y05, 90C30)

Bays, Carter A new candidate rule for the game of three-dimensional life. *Complex Systems* **6** (1992), *no.* 5, 433–441. (From the text) **93m:68126** 68Q80 (90D40)

Baysal, Oktay (*with* Yen, Guan-Wei) Kinematic domain decomposition for boundary-motion-induced flow simulations. (English summary) *Fifth International Symposium on Domain Decomposition Methods for Partial Differential Equations* (*Norfolk, VA*, 1991), 411–419, *SIAM, Philadelphia, PA*, 1992. (*see* **93g:65009**) 65M55 (76M25)

— (*with* Fouladi, Kamran; Newman, James C.) Hybrid domain decomposition for configurations with multiple nonsimilar components. *Fifth International Symposium on Domain Decomposition Methods for Partial Differential Equations* (*Norfolk, VA*, 1991), 476–484, *SIAM, Philadelphia, PA*, 1992. (*see* **93g:65009**) 65M55

Baytekin, Özcan One more step in the methods of integration of $\sin^n ax$. (English summary) *Internat. J. Math. Ed. Sci. Tech.* **24** (1993), *no.* 2, 316–319. 26A36

el Baz, Didie. *see* **El Baz, Didier**

Bazalii, B. V. (*with* Degtyarev, S. P.) The Stefan problem with a kinetic and classical condition on the free boundary. (Russian. Russian and Ukrainian summaries) *Ukraïn. Mat. Zh.* **44** (1992), *no.* 2, 155–166; *translation in Ukrainian Math. J.* **44** (1992), *no.* 2, 139–148. (Summary) **93f:35244** 35R35 (80A22)

— (*with* Tedeev, A. F.) Estimates for the stabilization rate of some problems with a free boundary. (Russian. Russian and Ukrainian summaries) *Ukraïn. Mat. Zh.* **44** (1992), *no.* 10, 1299–1306; *translation in Ukrainian Math. J.* **44** (1992), *no.* 10, 1189–1196 (1993). (Wojciech Okrasiński) **93k:35275** 35R35 (35B40, 35K99)

— (*with* Danilyuk, I. I.; Degtyarev, S. P.) Classical solvability of some free boundary problems for parabolic equations with degeneration. *Free boundary problems involving solids* (*Montreal, PQ*, 1990), 88–91, *Pitman Res. Notes Math. Ser.*, 281, *Longman Sci. Tech., Harlow*, 1993. (*see* **93k:00037**) 35R35 (35K65)

Bazarkhanov, D. B. Best quadrature formulas for some classes of differentiable functions. (Russian) *Theory of functions and problems in numerical mathematics* (*Russian*), 15–18, 70, *Kazakh. Gos. Univ., Alma Ata*, 1990. (Summary) **93c:65034** 65D32 (41A55)

— Best quadrature formulas for improper integrals on certain classes of differentiable functions. (Russian) *Mat. Zametki* **49** (1991), *no.* 6, 132–134; *translation in Math. Notes* **49** (1991), *no.* 5-6, 645–647. (V. I. Polovinkin) **93d:41024** 41A55 (65D32)

Bazarov, D. Nonlocal boundary value problems for an elliptic-parabolic system of second-order equations on a plane. (Russian) *Nonclassical partial differential equations* (*Russian*), 12–18, *Akad. Nauk SSSR Sibirsk. Otdel., Inst. Mat., Novosibirsk*, 1988. (A. S. Berdyshev) **93c:35110** 35M10

— An analogue of the Bitsadze-Samarskiĭ problem for a mixed equation of three types. (Russian) *Boundary value problems for nonclassical equations in mathematical physics* (*Russian*) (*Novosibirsk*, 1989), 9–17, *Akad. Nauk SSSR Sibirsk. Otdel., Inst. Mat., Novosibirsk*, 1989. (*see* **93d:35001**) 35M10

— An analogue of the Bitsadze-Samarskiĭ problem for a model equation of mixed type. (Russian) *Nonclassical equations and equations of mixed type* (*Russian*), 31–38, *Akad. Nauk SSSR Sibirsk. Otdel., Inst. Mat., Novosibirsk*, 1990. (*see* **93b:35002**) 35M10

Bazdenkov, S. V. The effect of bottom friction on the cyclone-anticyclone asymmetry in rotating shallow-water flows with small deformation radius. (English summary) *Phys. Fluids A* **4** (1992), *no.* 11, 2479–2485. (Summary) **93h:76075** 76U05 (76C05, 86A05)

Bazhanov, V. A. New archival material concerning P. S. Poretskiĭ. (Russian. English summary) *Modern Logic* **3** (1992), *no.* 1, 93–94. (Summary) **93h:01020** 01A55 (01A60, 03–03)

— On the history of logic in Kazan (from the 19th to the beginning of the 20th century). (Russian. English summary) *Modern Logic* **3** (1992), *no.* 1, 95–96. 01A55 (01A60, 03–03)

Bazhanov, V. V. (*with* Reshetikhin, N. Yu.) Scattering amplitudes in offcritical models and RSOS integrable models. Common trends in mathematics and quantum field theories (Kyoto, 1990). *Progr. Theoret. Phys. Suppl. No.* 102 (1990), 301–318 (1991). (Peter J. Forrester) **93i:82029** 82B23 (17B81, 81T27)

— (*with* Kashaev, R. M.; Mangazeev, V. V.; Stroganov, Yu. G.) $(Z_N\times)^{n-1}$ generalization of the chiral Potts model. *Comm. Math. Phys.* **138** (1991), *no.* 2, 393–408. (Summary) **93d:82019** 82B20 (17B37, 81R50, 82B23)

— (*with* Baxter, Rodney James) New solvable lattice models in three dimensions. (English summary) *J. Statist. Phys.* **69** (1992), *no.* 3-4, 453–485. (Murray T. Batchelor) **93j:82016** 82B23 (81R50)

Bazhenov, I. I. (*with* Vokueva, I. G.) Almost finite-dimensional vector measures. (Russian. Russian summary) *Ordered spaces and operator equations* (*Russian*), 42–48, 160, *Syktyvkar. Gos. Univ., Syktyvkar*, 1989. (*see* **93m:00034**) 28B05 (46G10)

Bazhenov, M. V. A qualitative study of a simplified model of the dynamics of a reactor with a nonlinear controller. (Russian) *Applied problems in the theory of oscillations* (*Russian*), 89–97, *Gor'kov. Gos. Univ., Gorki*, 1990. (From the introduction) **93i:82086** 82D75 (34C99)

Bazilevich, L. Ė. Completions of a space of functions on Peano continua. (Ukrainian. Russian and Ukrainian summaries) *Ukraïn. Mat. Zh.* **44** (1992), *no.* 9, 1165–1170. (Summary) **93m:54027** 54C35 (54D35, 54F15)

Bazley, Norman W. (*with* Mrziglod, Thomas) Global bifurcation for a special Hill equation with nonlinear boundary conditions. (German summary) *Z. Angew. Math. Phys.* **43** (1992), *no.* 2, 328–334. (Jolanta Przybycin) **93c:34070** 34B30 (34A47, 34B15)

blaksley Bazterrica, Enrique J. *see* **Blaksley Bazterrica, Enrique J.**

Bazylev, V. T. ★ Геометрия дифференцируемых многообразий. (Russian) [Geometry of differentiable manifolds] "*Vyssh. Shkola*", *Moscow*, 1989. 222 *pp. ISBN* 5-06-000462-7 (Lilia Nikolova Apostolova) **93f:58001** 58A05 (53–01, 58–01)

Bazzani, Armando (*with* Siboni, Stefano; Turchetti, Giorgio; Vaienti, Sandro) From dynamical systems to local diffusion processes. *Chaotic dynamics* (*Patras*, 1991), 139–144, *NATO Adv. Sci. Inst. Ser. B Phys.*, 298, *Plenum, New York*, 1992. (*see* **93i:58004**) 58F27 (58F05)

— (*with* Turchetti, Giorgio) Singularities of normal forms and topology of orbits in area-preserving maps. *J. Phys. A* **25** (1992), *no.* 8, L427–L432. (Richard C. Churchill) **93b:58126** 58F36 (34C27, 58F05, 58F10, 58F30, 70H05, 70H15)

Bazzoni, Silvana (*with* Salce, Luigi) Elongations of uniserial modules over valuation domains. *J. Algebra* **146** (1992), *no.* 2, 304–317. (R. Göbel) **93d:13033** 13F30 (13G05)

Beal, Stuart L. Confidence regions with fixed effects linear models in the finite population case. (English summary) *Sankhyā Ser. B* **53** (1991), *no.* 2, 176–187. 62F25 (62D05)

Beale, J. Thomas Solitary water waves with ripples beyond all orders. *Asymptotics beyond all orders* (*La Jolla, CA*, 1991), 293–298, *NATO Adv. Sci. Inst. Ser. B Phys.*, 284, *Plenum, New York*, 1991. (*see* **93i:00016**) 76B25 (76B45)

Bealer, George Universals. *J. Philos.* **90** (1993), *no.* 1, 5–32. 03A05 (03B45)

Beals, Michael (*with* Bézard, Max) Équations de champs non linéaires: des solutions non nécessairement bornées. [Nonlinear field equations: some not necessarily bounded solutions] *Journées "Équations aux Dérivées Partielles"* (*Saint-Jean-de-Monts*, 1992), *Exp. No. XX*, 13 *pp., École Polytech., Palaiseau*, 1992. (Vladimir Georgiev) **93m:35127** 35L70 (35B65, 35Q40, 81Q05)

— Singularities due to cusp interactions in nonlinear waves. *Nonlinear hyperbolic equations and field theory* (*Lake Como*, 1990), 36–51, *Pitman Res. Notes Math. Ser.*, 253, *Longman Sci. Tech., Harlow*, 1992. (Vesselin M. Petkov) **93h:58152** 58G17 (35A20, 35A30, 35L70)

Beals, Richard (*with* Konopel'chenko, B. G.) On nontrivial interactions and complete integrability of soliton equations. *J. Math. Phys.* **32** (1991), *no.* 10, 2695–2702. (Walter Oevel) **93b:58063** 58F07 (35Q58)

— (*with* Novikov, R. G.) New differential equations in the mKdV hierarchy. (French summary) *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 13, 991–996. (Summary) **93c:35147** 35Q58 (35Q53, 58F07)

— (*with* Sattinger, D. H.) Action-angle variables for the Gel'fand-Dikiĭ flows. *Z. Angew. Math. Phys.* **43** (1992), *no.* 2, 219–242. (C. Tomei) **93f:58093** 58F07 (35Q53, 58F37)

Beals, Robert (*with* Gallian, Joseph A.; Headley, Patrick; Jungreis, Douglas S.) Harmonious groups. *J. Combin. Theory Ser. A* **56** (1991), *no.* 2, 223–238. (F. Pérez Monasor) **93a:20033** 20D60 (05C25, 20F05)

Beam, Richard M. (*with* Warming, Robert F.) An eigenvalue analysis of finite-difference approximations for hyperbolic IBVPs. *Proceedings of the Eighth GAMM-Conference on Numerical Methods in Fluid Mechanics* (*Delft*, 1989), 564–573, *Notes Numer. Fluid Mech.*, 29, *Vieweg, Braunschweig*, 1990. (*see* **93b:76002**) 65M06

Beame, Paul (*with* Brisson, Erik; Ladner, Richard) The complexity of computing symmetric functions using threshold circuits. *Theoret. Comput. Sci.* **100** (1992), *no.* 1, 253–265. (Summary) **93e:68024** 68Q20

Bean, James C. (*with* Romeijn, H. Edwin; Smith, Robert L.) Duality in infinite-dimensional linear programming. *Math. Programming* **53** (1992), *no.* 1, *Ser. A*, 79–97. (Adrian S. Lewis) **93a:90079** 90C48 (49M39, 49N15, 90C34)

Bear, H. S. Distance-decreasing functions on the hyperbolic plane. *Michigan Math. J.* **39** (1992), *no.* 2, 271–279. (David A. Herron) **93g:30034** 30C80 (51M10)

Beardah, C. C. (*with* Thomas, Ruth Margaret) Finite difference solution of a singular index one differential/algebraic boundary value problem arising in the modelling of unconfined detonations. *Math. Engrg. Indust.* **3** (1991), *no.* 3, 215–228. (Summary) **93f:80015** 80A25 (34A09, 34B15, 65L60, 80–08)

Beardon, Alan F. An introduction to hyperbolic geometry. *Ergodic theory, symbolic dynamics, and hyperbolic spaces* (*Trieste*, 1989), 1–33, *Oxford Sci. Publ., Oxford Univ. Press, New York*, 1991. (*see* **93e:58002**) 30F45 (51M10)

— (*with* Stephenson, Kenneth) The Schwarz-Pick lemma for circle packings. *Illinois J. Math.* **35** (1991), *no.* 4, 577–606. (Oded Schramm) **93a:30028a** 30C80 (31C20, 52C15, 57M15)

— Polynomials with identical Julia sets. *Complex Variables Theory Appl.* **17** (1992), *no.* 3-4, 195–200. (Summary) **93k:30033** 30D05 (58F23)

— (*with* Stephenson, Kenneth) Addendum to our paper: "The Schwarz-Pick lemma for circle packings". *Illinois J. Math.* **36** (1992), *no.* 2, 177. (Oded Schramm) **93a:30028b** 30C80 (31C20, 52C15, 57M15)

— Two examples of Julia sets. *Nonlinearity* **5** (1992), *no.* 3, 771–775. (Janina Kotus) **93g:30036** 30D05 (58F23)

Beasley, LeRoy B. (*with* Pullman, Norman J.) Linear operators that preserve term rank 1. *Proc. Roy. Irish Acad. Sect. A* **91** (1991), *no.* 1, 71–78. (I. K. Marek) **93h:15011** 15A33 (47B49)

— (*with* Pullman, Norman J.) Linear operators that strongly preserve upper ideals of matrices. (English summary) Proceedings of the Twenty-third Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, FL, 1992). *Congr. Numer.* **88** (1992), 229–243. (Summary) **93k:15027** 15A33

— (*with* Pullman, Norman J.) Linear operators that strongly preserve graphical properties of matrices. *Discrete Math.* **104** (1992), *no.* 2, 143–157. (Summary) **93k:05113** 05C50 (15A60)

— (*with* Pullman, Norman J.) Linear operators strongly preserving idempotent matrices over semirings. *Linear Algebra Appl.* **160** (1992), 217–229. (S. Lajos) **93b:15002** 15A04 (04A72, 15A99)

— (*with* Cummings, Larry J.) Schur extensions of monomial matrix groups. *Linear Algebra Appl.* **161** (1992), 11–25. (A. O. Morris) **93a:15008** 15A15

— (*with* Lee, Sang-Gu) Linear operators strongly preserving r-potent matrices over semirings. Directions in matrix theory (Auburn, AL, 1990). *Linear Algebra Appl.* **162/164** (1992), 589–599. (Walter S. Sizer) **93a:15029** 15A99 (16Y60)

— (*with* Pullman, Norman J.) Polynomials which permute matrices over commutative antinegative semirings. *Linear Algebra Appl.* **165** (1992), 167–172. (Walter S. Sizer) **93a:15028** 15A99 (16Y60)

— (*with* Song, Seok-Zun) A comparison of nonnegative real ranks and their preservers. (English summary) *Linear and Multilinear Algebra* **31** (1992), *no.* 1-4, 37–46. (N. J. Pullman) **93j:15002** 15A03 (15A48)

— Linear operators preserving partition numbers of graphs. (English summary) *Graphs, matrices, and designs*, 19–29, *Lecture Notes in Pure and Appl. Math.*, 139, *Dekker, New York*, 1993. (Summary) **93m:05146** 05C70

— (*with* Laffey, Thomas J.) Erratum: "Linear operators on matrices: the invariance of rank-k matrices" [Linear Algebra Appl. **133** (1990), 175–184; MR 91f:15008]. *Linear Algebra Appl.* **180** (1993), 2. (From the text) **93k:15002** 15A04

Beatovic, D. (*with* Levin, P. L.; Gan, H.; Kokernak, J. M.; Hansen, A. J.) Numerical analysis of open boundary problems using finite element substructuring and Galerkin boundary elements. *COMPEL* **11** (1992), *no.* 2, 295–309. (Summary) **93c:65139** 65N30 (65N38)

Beatrous, Frank Behavior of holomorphic functions near weakly pseudoconvex boundary points. *Indiana Univ. Math. J.* **40** (1991), *no.* 3, 915–966. (Sheng Gong) **93g:32006** 32A40 (46E99)

Beatson, R. K. (*with* Newsam, G. N.) Fast evaluation of radial basis functions. I. (English summary) Advances in the theory and applications of radial basis functions. *Comput. Math. Appl.* **24** (1992), *no.* 12, 7–19. (Summary) **93i:65025** 65D15 (65Y20)

— (*with* Powell, M. J. D.) Univariate multiquadric approximation: quasi-interpolation to scattered data. *Constr. Approx.* **8** (1992), *no.* 3, 275–288. (Summary) **93c:41049** 41A63 (41A05)

— (*with* Powell, M. J. D.) Univariate interpolation on a regular finite grid by a multiquadric plus a linear polynomial. *IMA J. Numer. Anal.* **12** (1992), *no.* 1, 107–133. (K. Böhmer) **93e:65015** 65D05

— (*with* Chacko, E.) Which cubic spline should one use? *SIAM J. Sci. Statist. Comput.* **13** (1992), *no.* 4, 1009–1024. (Summary) **93c:65015** 65D07 (41A15, 65D10)

Beattie, Christopher (*with* Ribbens, Calvin J.) Parallel solution of a generalized symmetric matrix eigenvalue problem. (English summary) *Parallel processing for scientific*

computing (*Houston, TX*, 1991), 16–21, *SIAM, Philadelphia, PA*, 1992. (*see* **93g:65178**) 65F15 (65Y05)

— (*with* Smith, S. W.) Optimal matrix approximants in structural identification. *J. Optim. Theory Appl.* **74** (1992), *no.* 1, 23–56. (Summary) **93c:90074** 90C30 (65F99)

Beattie, Margaret (*with* Stewart, Patrick N.) Graded radicals of graded rings. *Acta Math. Hungar.* **58** (1991), *no.* 3-4, 261–272. (Jeffrey Bergen) **93d:16057** 16W50 (16N80, 16S40)

— (*with* Liu, Shao Xue; Fang, Hong Jin) Graded division rings and the Jacobson density theorem. (Chinese summary) *Beijing Shifan Daxue Xuebao* **27** (1991), *no.* 2, 129–134. (Patrick J. Morandi) **93a:16032** 16W50 (16K99)

— (*with* Jespers, Eric) On perfect graded rings. *Comm. Algebra* **19** (1991), *no.* 8, 2363–2371. (Piotr Grzeszczuk) **93b:16076** 16W50

— On the Blattner-Montgomery duality theorem for Hopf algebras. *Azumaya algebras, actions, and modules* (*Bloomington, IN*, 1990), 23–28, *Contemp. Math.*, 124, *Amer. Math. Soc., Providence, RI*, 1992. (Summary) **93b:16055** 16S40 (16W30)

— Smash products for right comodule algebras. *Proceedings of the First China-Japan International Symposium on Ring Theory* (*Guilin*, 1991), 11–13, *Okayama Univ., Okayama*, 1992. (*see* **93k:16001**) 16W30

Beatty, M. F. (*with* Johnson, M. A.) The Mullins effect in uniaxial extension and its influence on the transverse vibration of a rubber string. (English summary) *Contin. Mech. Thermodyn.* **5** (1993), *no.* 2, 83–115. 73G05 (73C50, 73D35)

Beaty, M. G. (*with* Dodson, M. M.) The distribution of sampling rates for signals with equally wide, equally spaced spectral bands. (English summary) *SIAM J. Appl. Math.* **53** (1993), *no.* 3, 893–906. 94A12 (11J70)

gouyou-Beauchamps, D. *see* **Gouyou-Beauchamps, D.**

Beauchamps, G. (*with* Banaszuk, A.; Kocięcki, M.; Lewis, Frank L.) Observability with unknown input and dual properties for singular systems. (English summary) *Mathematical and intelligent models in system simulation, I, II* (*Brussels*, 1990), 125–129, *IMACS Ann. Comput. Appl. Math.*, 10, 11, *Baltzer, Basel*, 1991. (*see* **93c:93005**) 93B07

Beaudry, M. (*with* McKenzie, Pierre; Thérien, Denis) The membership problem in aperiodic transformation monoids. (English summary) *J. Assoc. Comput. Mach.* **39** (1992), *no.* 3, 599–616. (Friedrich Otto) **93j:68067** 68Q25 (20M07)

Beaulieu, Anne Étude des solutions généralisées pour un système hamiltonien avec potentiel singulier. [Study of generalized solutions for a Hamiltonian system with singular potential] *Duke Math. J.* **67** (1992), *no.* 1, 21–37. (Gabriella Tarantello) **93f:58068** 58F05 (58E05)

Beaulieu, Armand L'énigmatique Gassendi: prévôt et savant. (French summary) [The enigmatic Gassendi: provost and scholar] *C. R. Acad. Sci. Paris Sér. Gén. Vie Sci.* **9** (1992), *no.* 3, 205–229. (Luigi Pepe) **93k:01018** 01A45 (01A70)

Beaulieu, Raymond A. The Artin-Tate lemma for finite normalizing extensions. *Comm. Algebra* **21** (1993), *no.* 1, 269–273. (Miguel Ferrero) **93m:16017** 16S20 (16P10, 16P40)

— (*with* Jensen, Anders) Exact embeddings into Artinian rings. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 2, 391–399. (K. R. Goodearl) **93g:16031** 16P40 (16S36, 16W50, 16W60)

Beaumont, Nicholas Some results pertaining to lumpings of a Markov chain. (English summary) *Asia-Pacific J. Oper. Res.* **9** (1992), *no.* 1, 1–8. 60J10

— A generalization of binary variables. (English summary) *Asia-Pacific J. Oper. Res.* **9** (1992), *no.* 2, 177–181. (Summary) **93j:90067** 90C11

Beauquier, D. *see* **Girault-Beauquier, Danièle**

girault-Beauquier, Danièle *see* **Girault-Beauquier, Danièle**

costa de Beauregard, O. *see* **Costa de Beauregard, O.**

Beauregard, Raymond A. Unique factorization in the ring $R[x]$. (English summary) *J. Austral. Math. Soc. Ser. A* **53** (1992), *no.* 3, 287–293. (P. M. Cohn) **93k:16061** 16U30

— When is $F[x, y]$ a unique factorization domain? *Proc. Amer. Math. Soc.* **117** (1993), *no.* 1, 67–70. (P. M. Cohn) **93c:16030** 16U30

Beauville, Arnaud Erratum: "Vanishing of H^1 and paracanonical systems on surfaces" [J. Reine Angew. Math. **388** (1988), 149–157; MR 89i:14032]. (French) *J. Reine Angew. Math.* **418** (1991), 219–220. (Yoichi Miyaoka) **93d:14052** 14J25 (14C20, 14J05)

Beauzamy, Bernard Products of polynomials and a priori estimates for coefficients in polynomial decompositions: a sharp result. *J. Symbolic Comput.* **13** (1992), *no.* 5, 463–472. (Jean-Pierre Massias) **93h:11140** 11Y05 (12D05, 68Q40)

Beaven, C. H. J. ★ The approximations handbook. The art of nearly. *Sigma Press, Wilmslow*, 1989. x+196 *pp. ISBN* 1-85058-119-3 (From the preface) **93i:00004** 00A20 (41–00, 65–00)

Beavers, Gordon Distribution in Lukasiewicz logics. *Bull. Sect. Logic Univ. Łódź* **21** (1992), *no.* 4, 140–146. 03B50

Beazer, R. (*with* Adams, M. E.) Congruence uniform distributive lattices. *Acta Math. Hungar.* **57** (1991), *no.* 1-2, 41–52. (R. Balbes) **93c:06017** 06D05 (08A30)

— Some p-algebras and double p-algebras having only principal congruences. *Glasgow Math. J.* **34** (1992), *no.* 2, 157–164. (M. E. Adams) **93h:06017** 06D15 (08A30)

— Distributive p-algebras and double p-algebras having n-permutable congruences. *Proc. Edinburgh Math. Soc.* (2) **35** (1992), *no.* 2, 301–307. (M. E. Adams) **93h:06018** 06D15 (08A30)

Beazley Cohen, Paula *see* **Cohen, Paula Beazley**

Bebbouchi, R. L'infini et les mathématiciens arabes. (Arabic summary) [The infinite and Arab mathematicians] *Deuxième Colloque Maghrebin sur l'Histoire des Mathématiques Arabes* (*Tunis*, 1988), 20–26, A168, *Maghreb, Tunis*, 19??. (J. L. Berggren) **93c:01009** 01A30

Bebernes, J. (*with* Bricher, S.) Final time blowup profiles for semilinear parabolic equations via center manifold theory. *SIAM J. Math. Anal.* **23** (1992), *no.* 4, 852–869. (Pierre A. Vuillermot) **93h:35091** 35K55 (34G20, 35B40, 58F39)

Becache, E. A variational boundary integral equation method for an elastodynamic antiplane crack. (English summary) *Internat. J. Numer. Methods Engrg.* **36** (1993), *no.* 6, 969–984. 73M25 (73V10)

Beccacece, F. (*with* Li Calzi, M.) On the decomposition of stochastic discounted cash flows. (English and Italian summaries) *Riv. Mat. Sci. Econom. Social.* **14** (1991), *no.* 2, 59–73. (Summary) **93k:90017** 90A09

Beccari, Giannina (*with* Massaza, Carla) Flat families of perfect height two ideals. *The Curves Seminar at Queen's, Vol. VIII* (*Kingston, ON*, 1990/1991), *Exp.* D, 29 *pp., Queen's Papers in Pure and Appl. Math.*, 88, *Queen's Univ., Kingston, ON*, 1991. (Liam O'Carroll) **93b:14074** 14M07 (13A02, 13D02)

Becerril, Ricardo (*with* Matos, Tonatiuh; Rodríguez, Guadalupe) Exact solutions of $SL(N, \mathbf{R})$-invariant chiral equations: one- and two-dimensional subspaces. (English summary) *J. Math. Phys.* **33** (1992), *no.* 10, 3521–3535. (R. S. Ward) **93i:81140** 81T13 (81R05)

— (*with* Matos, Tonatiuh) Stationary solutions in five-dimensional gravity with a magnetic field. (English summary) *Phys. Rev. D* (3) **46** (1992), *no.* 4, 1540–1545. 83E15

Becher, Heiko (*with* Drescher, K.; Jöckel, K.-H.) Design aspects and odds ratio estimation in multicenter case-control studies. (English and German summaries) *Biometrical J.* **34** (1992), *no.* 6, 675–690. (Summary) **93f:62143** 62P10

Becherrawy, T. (*with* Aurenche, P.) A comparison of the real-time and the imaginary-time formalisms of finite-temperature field theory for 2-, 3- and 4-point Green functions. *Nuclear Phys. B* **379** (1992), *no.* 1-2, 259–303. (Summary) **93a:81201** 81T99

Bechhofer, Robert E. (*with* Chen, Pinyuen) A note on a curtailed sequential procedure for subset selection of multinomial cells. (English summary) Modern sequential analysis (SSA), Vol. II (Syracuse, NY, 1989). *Amer. J. Math. Management Sci.* **11** (1991), *no.* 3-4, 309–324. (Summary) **93k:62163** 62L10 (62F07)

Bechler, Zev ★ Newton's physics and the conceptual structure of the scientific revolution. Boston Studies in the Philosophy of Science, 127. *Kluwer Academic Publishers Group, Dordrecht*, 1991. xviii+588 *pp. ISBN* 0-7923-1054-3 (Pierre Kerszberg) **93d:01017** 01A45 (00A30)

Beck, Anatole (*with* Beck, Micah) The revenge of the linear search problem. *SIAM J. Control Optim.* **30** (1992), *no.* 1, 112–122. (Summary) **93f:90098** 90B40 (90D26, 93B40, 93C15, 93E20)

Beck, Armin (*with* Grabmüller, Hans) Wrinkle-free solutions of circular membrane problems. *Z. Angew. Math. Phys.* **43** (1992), *no.* 3, 481–504. (Summary) **93d:73045** 73K10 (34B15, 73G05)

Beck, Christian (*with* Graudenz, Dirk) Symbolic dynamics of successive quantum-mechanical measurements. (English summary) *Phys. Rev. A* (3) **46** (1992), *no.* 10, 6265–6276. (Summary) **93j:81005** 81P15 (54H20, 58F03)

Beck, István (*with* Krogdahl, Stein) An inequality on paths in a grid. (English summary) *J. Combin. Theory Ser. A* **61** (1992), *no.* 2, 295–301. (Summary) **93g:05009** 05A15

Beck, J. V. (*with* Cole, K. D.; Haji-Sheikh, A.; Litkouhi, B.) ★ Heat conduction using Green's functions. Series in Computational and Physical Processes in Mechanics and Thermal Sciences. *Hemisphere Publishing Corp., London*, 1992. xxviii+523 *pp. ISBN* 1-56032-096-6 (P. M. Gupta) **93g:80005** 80A20 (35–01, 35C15, 35K05, 80–01)

Beck, József The modulus of polynomials with zeros on the unit circle: a problem of Erdős. *Ann. of Math.* (2) **134** (1991), *no.* 3, 609–651. (Jean-Loup Mauclaire) **93e:11091** 11K31 (11K38)

— Flat polynomials on the unit circle—note on a problem of Littlewood. *Bull. London Math. Soc.* **23** (1991), *no.* 3, 269–277. (J. D. Stegeman) **93b:42002** 42A05 (11K60, 42A16)

— Irregularities of distribution and category theorem. *Studia Sci. Math. Hungar.* **26** (1991), *no.* 1, 81–86. (Peter J. Hellekalek) **93d:11079** 11K38

Beck, Micah (*with* Beck, Anatole) The revenge of the linear search problem. *SIAM J. Control Optim.* **30** (1992), *no.* 1, 112–122. (Summary) **93f:90098** 90B40 (90D26, 93B40, 93C15, 93E20)

Beckenstein, Edward (*with* Narici, Lawrence) Automatic continuity results for linear maps on Banach algebras. *Function spaces* (*Poznań*, 1989), 59–74, *Teubner-Texte Math.*, 120, *Teubner, Stuttgart*, 1991. (E. U. Obienu) **93d:46133** 46S10 (46H40)

Becker, Albert *see* **Engeln-Müllges, Gisela**, **93g:65001** *and* **93g:65002b**

Becker, Bernd (*with* Sparmann, Uwe) Computations over finite monoids and their test complexity. *Theoret. Comput. Sci.* **84** (1991), *no.* 2, *Algorithms Automat. Complexity Games*, 225–250. (Summary) **93a:68016** 68M15 (68Q35, 94C12)

Becker, Eberhard (*with* Schwartz, Niels) Reduced Witt rings of infinite level. Mathematische Wissenschaften gestern und heute. 300 Jahre Mathematische Gesellschaft in Hamburg, Teil 2. *Mitt. Math. Ges. Hamburg* **12** (1991), *no.* 2, 287–328. (Adrian R. Wadsworth) **93d:11043** 11E81 (12D15)

Becker, Howard (*with* Kechris, Alexander S.) Borel actions of Polish groups. (English summary) *Bull. Amer. Math. Soc.* (*N.S.*) **28** (1993), *no.* 2, 334–341. (Miroslav Repický) **93m:03083** 03E15 (03C75, 28E99, 54E99, 54H11)

— (*with* Kahane, Sylvain; Louveau, Alain) Some complete Σ^1_2 sets in harmonic analysis. *Trans. Amer. Math. Soc.* **339** (1993), *no.* 1, 323–336. (Jakub Jasiński) **93k:04002** 04A15 (03E35, 43A46)

Becker, Janet M. (*with* Miles, John W.) Progressive radial cross-waves. (English summary) *J. Fluid Mech.* **245** (1992), 29–46. (Summary) **93k:76011** 76B15

Becker, Monique (*with* Douillet, Pierre L.) Une méthode hiérarchique, auto-régulée, de simulation d'événements extrêmement rares. (English and French summaries) [A hierarchical, self-regulated method for simulating very rare events] *C. R. Acad. Sci. Paris Sér. I Math.* **316** (1993), *no.* 1, 87–92. (Summary) **93h:65010** 65C20

Becker, Neal C. *see* **Carroll, John W.**

Becker, Niels G. Analysis of infectious disease data from a sample of households. (English summary) *Selected Proceedings of the Sheffield Symposium on Applied Probability* (*Sheffield*, 1989), 27–40, *IMS Lecture Notes Monograph Ser.*, 18, *Inst. Math. Statist., Hayward, CA*, 1991. (*see* **93f:60003**) 92D30 (62P10)

— Statistical challenges of AIDS. (English summary) *Austral. J. Statist.* **34** (1992), *no.* 2, 129–144. 62P10

Becker, R. *see* **Becker, Richard Edouard**

Becker, Ralf Some problems on derivations on unbounded operator algebras. *Elementary operators and applications* (*Blaubeuren*, 1991), 149–155, *World Sci. Publishing, River Edge, NJ*, 1992. (Geoffrey Price) **93i:46120** 46L57 (46L55, 47D40)

Becker, Richard Edouard Structure des cônes normaux contenus dans un espace de Banach ou dans son dual. (English summary) [Structure of normal cones contained in a Banach space or in its dual] *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 7, 535–539. (A. V. Bukhvalov) **93e:46026** 46B40 (47B10)

— Caractérisation d'opérateurs par des propriétés de rétrécissement d'angles. [Characterization of operators by angle-contraction properties] Measure theory (Oberwolfach, 1990). *Rend. Circ. Mat. Palermo* (2) *Suppl. No.* 28 (1992), 259–264. (G. J. O. Jameson) **93j:47033** 47B07

Becker, Robert A. (*with* Boyd, John H., III) Recursive utility and optimal capital accumulation. II. Sensitivity and duality theory. (English summary) *Econom. Theory* **2** (1992), *no.* 4, 547–563. (Peter Bod) **93i:90028** 90A16

— (*with* Bercovici, Hari; Foias, Ciprian) Weak Pareto optimality and the approximate support property. (English summary) *J. Math. Econom.* **22** (1993), *no.* 1, 61–71. (Summary) **93h:90016** 90A14 (90A53)

Becker, U. (*with* Hotz, Günter) Folding-free coverings and graph embeddings. (English summary) Mathematische Wissenschaften gestern und heute. 300 Jahre Mathematische Gesellschaft in Hamburg, Teil 4 (Hamburg, 1990). *Mitt. Math. Ges. Hamburg* **12** (1991), *no.* 4, 1157–1170 (1992). (E. J. Janse van Rensburg) **93g:54019** 54C10 (05C10, 68R10)

Becker, Wilhelm (*with* Fuka, M.; McIver, J. K.; Orszag, M.; Ramirez, Ricardo) Hamiltonian chaos in a laser damage model. (English summary) *Instabilities and nonequilibrium structures, III* (*Valparaíso*, 1989), 43–57, *Math. Appl.*, 64, *Kluwer Acad. Publ., Dordrecht*, 1991. (Helmut Rüssmann) **93g:58125** 58F27 (58F40, 78–05)

Beckermann, Bernhard (*with* Wimp, Jet) Some dynamically trivial mappings with applications to the improvement of simple iteration. (English summary) *Comput. Math. Appl.* **24** (1992), *no.* 10, 89–97. (Zuhe Shen) **93h:65018** 65D15 (65H05)

— (*with* Cabay, Stan; Labahn, George) On the theory and computation of nonperfect Padé-Hermite approximants. *J. Comput. Appl. Math.* **39** (1992), *no.* 3, 295–313. (Summary) **93c:65020** 65D15 (41A21)

— A reliable method for computing M-Padé approximants on arbitrary staircases. *J. Comput. Appl. Math.* **40** (1992), *no.* 1, 19–42. (A. J. Rodrigues) **93g:65024** 65D15 (41A21)

— (*with* Neuber, A.; Mühlbach, G.) Shanks's transformation revisited. *Linear Algebra Appl.* **173** (1992), 191–219. (Summary) **93g:65011** 65B99 (41A21)

— (*with* Carstensen, Carsten) A reliable modification of the cross rule for rational Hermite interpolation. (English summary) Extrapolation and rational approximation (Puerto de la Cruz, 1992). *Numer. Algorithms* **3** (1992), *no.* 1-4, 29–44. (Summary) **93k:65009** 65D05 (41A05)

— (*with* Labahn, George) A uniform approach for Hermite Padé and simultaneous Padé approximants and their matrix-type generalizations. (English summary) Extrapolation and rational approximation (Puerto de la Cruz, 1992). *Numer. Algorithms* **3** (1992), *no.* 1-4, 45–54. (Summary) **93i:65026** 65D15 (41A21)

Beckermann, C. (*with* Viskanta, R.) Mathematical modeling of transport phenomena during alloy solidification. (English summary) *AMR* **46** (1993), *no.* 1, 1–27. (Summary) **93j:80002** 80A22 (73B30)

Beckers, J. (*with* Debergh, N.) On a general framework for q-particles, paraparticles and q-paraparticles through deformations. *J. Phys. A* **24** (1991), *no.* 21, L1277–L1283. (A. M. Gavrilik) **93g:81046** 81R50

— (*with* Debergh, N.; Nikitin, A. G.) Lie extended symmetries and relativistic particles. (English summary) *J. Phys. A* **25** (1992), *no.* 22, 6145–6154. (A. U. Klimyk) **93j:81036** 81R20 (35A30, 35Q40)

— (*with* Debergh, N.; Nikitin, A. G.) More on supersymmetries of the Schrödinger equation. *Modern Phys. Lett. A* **7** (1992), *no.* 18, 1609–1616. (Summary) **93b:81077** 81Q60

— (*with* Debergh, N.; Nikitin, A. G.) Extended Dirac symmetries and hidden supersymmetry. *Phys. Lett. B* **279** (1992), *no.* 3-4, 333–335. (Summary) **93a:81069** 81R20

Beckers, J. M. Analytical linear numerical stability conditions for an anisotropic three-dimensional advection-diffusion equation. *SIAM J. Numer. Anal.* **29** (1992), *no.* 3, 701–713. (Summary) **93a:65133** 65N06 (76M20, 76R50)

Beckers, Marc (*with* Haegemans, Ann) Transformation of integrands for lattice rules. (English summary) *Numerical integration* (*Bergen*, 1991), 329–340, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 357, *Kluwer Acad. Publ., Dordrecht*, 1992. (*see* **93f:65006**) 65D30

Beckett, P. M. Singular asymptotic expansions for nonlinear oscillator equations. (English summary) *Internat. J. Non-Linear Mech.* **28** (1993), *no.* 1, 87–93. (Summary) **93k:34043** 34B15 (34C15, 34E05)

Beckhoff, Ferdinand The minimal primal ideal space of a C^*-algebra and local compactness. *Canad. Math. Bull.* **34** (1991), *no.* 4, 440–446. (Robert J. Archbold) **93a:46111** 46L05

Beckie, R. (*with* Wood, E. F.; Aldama, A. A.) A multigrid acceleration for domain decomposition mixed finite element simulation of groundwater flow. (English summary) *Computational methods in water resources, IX, Vol.* 1 (*Denver, CO*, 1992), 589–596, *Comput. Mech., Southampton*, 1992. (*see* **93g:76002**) 76M10 (76S05, 86–08)

Beckmann, Sybilla On extensions of number fields obtained by specializing branched coverings. *J. Reine Angew. Math.* **419** (1991), 27–53. (B. Heinrich Matzat) **93a:11095** 11R32 (12F10, 14E22, 14H05)

Beckner, William Moser-Trudinger inequality in higher dimensions. *Internat. Math. Res. Notices* **1991**, *no.* 7, 83–91. (Dennis M. DeTurck) **93a:58172** 58G30 (26D10, 46E35, 53C21, 58G26)

— Sobolev inequalities, the Poisson semigroup, and analysis on the sphere S^n. *Proc. Nat. Acad. Sci. U.S.A.* **89** (1992), *no.* 11, 4816–4819. (Gerald B. Folland) **93d:26018** 26D15 (26A33, 43A85, 46E35, 47D03, 47N99)

Bector, C. R. (*with* Chandra, Suresh; Husain, I.) Sufficient optimality conditions and duality for a continuous-time minmax programming problem. (English summary) *Asia-Pacific J. Oper. Res.* **9** (1992), *no.* 1, 55–76. (Bruce D. Craven) **93j:49028** 49K35 (49N15, 90C45)

— (*with* Husain, I.; Durga Prasad, Modekurti Venkata) Constrained continuous-time games and symmetric duality. Proceedings of the Twenty-first Manitoba Conference on Numerical Mathematics and Computing (Winnipeg, MB, 1991). *Congr. Numer.* **87** (1992), 33–42. (Bruce D. Craven) **93c:90105** 90D05 (90C48)

— (*with* Bhatia, Davinder; Aggarwal, Shashi) Multiobjective fractional programming duality: a nondifferentiable case. Proceedings of the Twenty-first Manitoba Conference on Numerical Mathematics and Computing (Winnipeg, MB, 1991). *Congr. Numer.* **87** (1992), 77–85. (Bruce D. Craven) **93c:90068** 90C29 (49J52, 49N15, 90C32)

— (*with* Singh, Manohar; Husain, I.) Second order symmetric dual continuous-time programming problem. Proceedings of the Twenty-first Manitoba Conference on Numerical Mathematics and Computing (Winnipeg, MB, 1991). *Congr. Numer.* **87** (1992), 107–118. (Bruce D. Craven) **93c:90104** 90C45 (49N15)

— (*with* Hawaleshka, O.; Gill, A.) A 0-1 linear programming formulation for solving an equipment replacement problem. (English summary) *Internat. J. Systems Sci.* **23** (1992), *no.* 12, 2393–2399. (Summary) **93h:90043** 90B25 (90C09)

— (*with* Rueda, Norma G.; Singh, Chanchal) Further properties of b-vex functions. (English summary) *J. Inform. Optim. Sci.* **13** (1992), *no.* 2, 195–206. (Fred Behringer) **93k:90073** 90C25 (26A51, 26B25, 90C29)

— (*with* Husain, I.) Duality for multiobjective variational problems. *J. Math. Anal. Appl.* **166** (1992), *no.* 1, 214–229. (Đinh Thế Luc) **93f:90141** 90C29 (49N15)

— (*with* Chandra, Suresh; Husain, I.) Generalized continuous fractional programming duality: a parametric approach. (English summary) *Utilitas Math.* **42** (1992), 39–60. (Alberto Cambini) **93k:90094** 90C32 (49N15, 90C45)

Bečvář, Jindřich Peano's *Calcolo geometrico* of 1888. Logic and set theory, analytic geometry and linear algebra. (Czech) *Mathematics at the turn of the twentieth century* (*Polish*) (*Jaworze*, 1988), 173–193, *Prace Nauk. Uniw. Śląsk. Katowic.*, 1253, *Uniw. Śląski, Katowice*, 1992. (Štefan Porubský) **93k:01035** 01A55 (03–03, 15–03, 51–03)

Bédard, François (*with* Goupil, Alain) The poset of conjugacy classes and decomposition of products in the symmetric group. *Canad. Math. Bull.* **35** (1992), *no.* 2, 152–160. (Summary) **93c:20005** 20B30 (05E10, 20C30)

Beddas, A. (*with* Oudadess, M.) Saturated p-normed algebras and theorems of Gel'fand-Naĭmark type. (Arabic summary) *Arab Gulf J. Sci. Res.* **10** (1992), *no.* 1, 1–12. (T. W. Palmer) **93c:46086** 46H20 (46K05, 46L05)

Bedeaux, D. (*with* Mazur, Peter) Erratum: "Causality, time-reversal invariance and the Langevin equation" [Phys. A **173** (1991), no. 1-2, 155–174; MR 92g:82083]. *Phys. A* **188** (1992), *no.* 4, 693. (Editors) **93i:82055** 82C31 (60H10)

Bedel'baev, A. A. Second-order subdifferentials of nonsmooth integral functionals. (Russian) *Theory of functions and problems in numerical mathematics* (*Russian*), 19–26, 70–71, *Kazakh. Gos. Univ., Alma Ata*, 1990. (Summary) **93b:49022** 49J52 (49K05, 49N15)

Bedford, Eric Iteration of polynomial automorphisms of $\mathbf{C}^2$. *Proceedings of the International Congress of Mathematicians, Vol. I, II* (*Kyoto*, 1990), 847–858, *Math. Soc. Japan, Tokyo*, 1991. (Marco Abate) **93b:32039** 32H50 (32–02)

— (*with* Smillie, John) Polynomial diffeomorphisms of $\mathbf{C}^2$. III. Ergodicity, exponents and entropy of the equilibrium measure. *Math. Ann.* **294** (1992), *no.* 3, 395–420. (Yasuichiro Nishimura) **93k:32062** 32H50 (32C30, 58F11, 58F23)

Bedford, Tim (*with* Kamae, Teturo) Stieltjes integration and stochastic calculus with respect to self-affine functions. *Japan J. Indust. Appl. Math.* **8** (1991), *no.* 3, 445–459. (Ralph Henstock) **93d:60096** 60H05 (26A39, 26A42)

— *see also* **Ergodic theory, symbolic dynamics, and hyperbolic spaces, 93e:58002**

Bednar, J. Bee *see* **Geophysical inversion, 93e:86007**

Bednář, M. (*with* Burdík, Č.; Couture, Michel Josaphat; Hlavatý, Ladislav) On the quantum symmetries associated with the two parameter free fermion model. *J. Phys. A* **25** (1992), *no.* 7, L341–L346. (Dmitrii I. Gurevich) **93c:17023** 17B37 (81R50, 82B23)

Bednarczuk, Ewa (*with* Penot, Jean-Paul) Metrically well-set minimization problems. (English summary) *Appl. Math. Optim.* **26** (1992), *no.* 3, 273–285. (Julian Revalski) **93f:49027** 49K40 (49J45, 90C31)

— (*with* Penot, Jean-Paul) On the positions of the notions of well-posed minimization problems. (Italian summary) *Boll. Un. Mat. Ital. B* (7) **6** (1992), *no.* 3, 665–683. (T. Zolezzi) **93j:90108** 90C31 (47N10, 49J45)

Bedrick, Edward J. (*with* Hill, Joe R.) A generalized bootstrap. (English summary) *Exploring the limits of bootstrap* (*East Lansing, MI*, 1990), 319–326, *Wiley Ser. Probab. Math. Statist. Probab. Math. Statist., Wiley, New York*, 1992. (Summary) **93j:62115** 62G09

— A comparison of generalized and modified sample biserial correlation estimators. *Psychometrika* **57** (1992), *no.* 2, 183–201. (Summary) **93e:62142** 62H10 (62P15)

Bedrikovetskiĭ, P. G. (*with* Istomin, G. D.) Derivation of averaged equations of filtration-diffusive mass transport in two-layered porous strata. (Russian) *Numerical methods for solving boundary value problems* (*Russian*), 37–46, *Akad. Nauk SSSR Ural. Otdel., Bashkir. Nauchn. Tsentr, Ufa*, 1989. (*see* **93m:00033**) 76S05 (76R50)

Beebee, John Bernoulli numbers and exact covering systems. *Amer. Math. Monthly* **99** (1992), *no.* 10, 946–948. (F. T. Howard) **93i:11025** 11B68 (11B25)

van der Beek, C. G. A. Analysis of a system of two weakly nonlinear coupled harmonic oscillators arising from the field of wind-induced vibrations. (English summary) *Internat. J. Non-Linear Mech.* **27** (1992), *no.* 4, 679–704. (Günter Kern) **93f:73078** 73K70 (70K40)

van Beek, Peter On the minimality and decomposability of constraint networks. (English summary) *AAAI-92. Proceedings, Tenth National Conference on Artificial Intelligence* (*San Jose, CA*, 1992), 447–452, *Amer. Assoc. Artif. Intell., Menlo Park, CA*, 1992. (*see* **93j:68007**) 68T20

— Reasoning about qualitative temporal information. (English summary) *Artificial Intelligence* **58** (1992), *no.* 1-3, 297–326. (Neculai Curteanu) **93j:68185** 68T27 (03B45, 03B65, 03B70, 68T20)

Beem, John K. Pseudoconvexity in Lorentzian geometry. *Differential geometry and its applications* (*Eger*, 1989), 87–91, *Colloq. Math. Soc. János Bolyai*, 56, *North-Holland, Amsterdam*, 1992. (*see* **93i:53001**) 53C50

— (*with* Królak, Andrzej) Censorship, null geodesics and strong visibility. (English summary) *Mathematical aspects of classical field theory* (*Seattle, WA*, 1991), 125–128, *Contemp. Math.*, 132, *Amer. Math. Soc., Providence, RI*, 1992. (*see* **93d:58006**) 83C75 (53C50, 53C80)

— (*with* Królak, Andrzej) Cosmic censorship and pseudoconvexity. *J. Math. Phys.* **33** (1992), *no.* 6, 2249–2253. (Laszlo B. Szabados) **93e:83047** 83C75

de Beer, C. F. (*with* Swanepoel, J. W. H.) A new nonparametric estimator for the mean of the selected population. (English summary) *Comm. Statist. Theory Methods* **21** (1992), *no.* 11, 3229–3246. (Summary) **93g:62040** 62F07 (62G05)

Beer, Gerald A second look at set convergence and linear analysis. (Italian summary) *Rend. Sem. Mat. Fis. Milano* **59** (1989), 161–172 (1992). (Roland Durier) **93e:46089** 46N10 (46B20, 49J45)

— Topologies on closed and closed convex sets and the Effros measurability of set valued functions. *Sém. Anal. Convexe* **21** (1991), *Exp. No.* 2, 44 *pp.* (Anna Salvadori) **93d:46020** 46A99 (28B20, 46G99, 49J45, 54B20)

— The slice topology: a viable alternative to Mosco convergence in nonreflexive spaces. *Sém. Anal. Convexe* **21** (1991), *Exp. No.* 3, 35 *pp.* (J. Borwein) **93e:52001** 52A05 (26A51, 46G99, 49J45, 54B20)

— (*with* Attouch, Hédy) On the convergence of subdifferentials of convex functions. *Sém. Anal. Convexe* **21** (1991), *Exp. No.* 8, 21 *pp.* (Witold Jarczyk) **93b:26032** 26E15 (26B25, 46G05, 49J52)

— (*with* Attouch, Hédy) Stability of the geometric Ekeland variational principle: the convex case. *Sém. Anal. Convexe* **21** (1991), *Exp. No.* 11, 23 *pp.* (Julian Revalski) **93a:49005**

49J45 (26E15, 46N10)
— Polar locally convex topologies and Attouch-Wets convergence. *Bull. Austral. Math. Soc.* **46** (1992), *no.* 1, 33–46. (Cho Ho Chu) **93i:46004** 46A03
— (*with* Lucchetti, Roberto) The epi-distance topology: continuity and stability results with applications to convex optimization problems. (English summary) *Math. Oper. Res.* **17** (1992), *no.* 3, 715–726. (P. S. Kenderov) **93k:49011** 49J45 (26A51, 46N10, 54C35, 90C31)
— The slice topology: a viable alternative to Mosco convergence in nonreflexive spaces. *Nonlinear Anal.* **19** (1992), *no.* 3, 271–290. (Constantin Zălinescu) **93h:49025** 49J45 (54B20)
— (*with* Rockafellar, R. Tyrrell; Wets, Roger J.-B.) A characterization of epi-convergence in terms of convergence of level sets. *Proc. Amer. Math. Soc.* **116** (1992), *no.* 3, 753–761. (Jean-Paul Penot) **93a:49006** 49J45 (47H19, 54B20, 54C30)
— (*with* Lucchetti, Roberto) Weak topologies for the closed subsets of a metrizable space. *Trans. Amer. Math. Soc.* **335** (1993), *no.* 2, 805–822. (Julian Revalski) **93d:54023** 54B20 (54E35)
Be'ery, Yair (*with* Berger, Yuval) Bounds on the trellis size of linear block codes. (English summary) *IEEE Trans. Inform. Theory* **39** (1993), *no.* 1, 203–209. (Summary) **93m:94043** 94B65 (93B12)
Beesham, A. A note on vacuum Friedmann cosomological models in Dunn's scalar-tensor theory of gravitation. (English summary) *Nuovo Cimento B* (11) **107** (1992), *no.* 7, 741–743. 83D05
Beg, Ismat (*with* Shahzad, N.; Iqbal, M.) Fixed point theorems and best approximation in convex metric spaces. (English summary) *Approx. Theory Appl.* **8** (1992), *no.* 4, 97–105. (Summary) **93k:54074** 54H25 (41A65)
— (*with* Azam, Akbar) Fixed points of asymptotically regular multivalued mappings. (English summary) *J. Austral. Math. Soc. Ser. A* **53** (1992), *no.* 3, 313–326. (Wojciech Kryszewski) **93m:54033** 54C60 (47H04, 47H10, 54H25)
Beg, M. I. (*with* Balasubramanian, Krishnaswami) On expectations of functions of order statistics. (English summary) *Sankhyā Ser. A* **52** (1990), *no.* 1, 103–114. 62G30
— Recurrence relations and identities for product moments of order statistics corresponding to non-identically distributed variables. (English summary) *Sankhyā Ser. A* **53** (1991), *no.* 3, 365–374. (Summary) **93g:62068** 62G30
— (*with* Balasubramanian, Krishnaswami; Bapat, R. B.) On families of distributions closed under extrema. (English summary) *Sankhyā Ser. A* **53** (1991), *no.* 3, 375–388. (Summary) **93k:62115a** 62G30
— (*with* Balasubramanian, Krishnaswami) Distributions determined by conditioning on a pair of order statistics. *Metrika* **39** (1992), *no.* 2, 107–112. (Javad Behboodian) **93h:62018** 62E10 (62G30)
— (*with* Balasubramanian, Krishnaswami; Bapat, R. B.) Corrigendum: "On families of distributions closed under extrema". *Sankhyā Ser. A* **54** (1992), *no.* 1, 133. (Editors) **93k:62115b** 62G30
Begalov, B. K. (*with* Piskorskiĭ, L. F.) On an investigation of global optimization algorithms by means of a numerical experiment. (Russian. Russian summary) *Voprosy Vychisl. i Prikl. Mat.* (*Tashkent*) *No.* 87 (1989), 98–107, 165. 90C30
Bege, Antal A note on a sum of one arithmetical function. *Bull. Number Theory Related Topics* **12** (1988), 116–120. (Jean-Marie De Koninck) **93g:11007** 11A25
— Some generalized contractions in metric spaces. *Seminar on Fixed Point Theory*, 1–6, *Preprint*, 91-3, "*Babeş-Bolyai*" *Univ., Cluj-Napoca*, 1992. (*see* **93i:00014**) 54H25
Begehr, Heinrich Moving boundary problems of Hele Shaw type. *Proceedings of the* 21*st. Annual Iranian Mathematics Conference* (*Isfahan*, 1990), 43–63, *Univ. Isfahan, Isfahan*, 199?. (Paul G. Schmidt) **93g:35146** 35R35 (35Q35, 49J40, 76D99, 76S05)
— Estimates of solutions to linear elliptic systems and equations. (English summary) *Partial differential equations, Part* 1, 2 (*Warsaw*, 1990), 45–63, *Banach Center Publ.*, 27, *Part* 1, 2, *Polish Acad. Sci., Warsaw*, 1992. (Summary) **93m:35056** 35J25 (30E25)
— (*with* Lin, Wei[1]) A mixed-contact boundary problem in orthotropic elasticity. (English summary) *Partial differential equations with real analysis*, 219–239, *Pitman Res. Notes Math. Ser.*, 263, *Longman Sci. Tech., Harlow*, 1992. (Summary) **93m:35175** 35Q72 (73B40, 73C35, 73T05)
— (*with* Dai, Dao Qing) Initial-boundary value problem for nonlinear pseudoparabolic equations. *Complex Variables Theory Appl.* **18** (1992), *no.* 1-2, 33–47. (Erwin Schechter) **93b:35024** 35E15 (30E25, 35G25, 35K70)
— *see also* **Partial differential equations with complex analysis, 93h:35005** *and* **Partial differential equations with real analysis, 93k:35003**
Begg, Melissa Dowd (*with* Lagakos, Stephen) Effects of mismodeling on tests of association based on logistic regression models. (English summary) *Ann. Statist.* **20** (1992), *no.* 4, 1929–1952. (M. Hušková) **93k:62037** 62F05 (62J02)
Beggs, Edwin J. Sigma topologies and the Riesz representation theorem. *Stochastics and quantum mechanics* (*Swansea*, 1990), 26–39, *World Sci. Publishing, River Edge, NJ*, 1992. (Vladimir I. Bogachëv) **93m:46039** 46E50 (46G12)
Beghelli, S. (*with* Soverini, U.) Identification of linear relations from noisy data: geometrical aspects. (English summary) *Systems Control Lett.* **18** (1992), *no.* 5, 339–346. (Summary) **93d:93026** 93B30
Beghian, L. E. Statistical foundations of thermal equilibrium. *Nuovo Cimento B* (11) **107** (1992), *no.* 2, 141–152. (Douglas Henderson) **93g:82002** 82B03 (82B10, 82C03)
— The theorem of equipartition of energy revisited. (English summary) *Nuovo Cimento B* (11) **107** (1992), *no.* 7, 841–843. (Summary) **93f:82003** 82B03 (82B10)
Bégin, F. (*with* Sharp, R. T.) Weyl orbits and their expansions in irreducible representations for affine Kac-Moody algebras. *J. Math. Phys.* **33** (1992), *no.* 7, 2343–2356. (Yu Ting Jia) **93h:17056** 17B67
Bégin, L. (*with* Mathieu, Pierre; Walton, M. A.) $\hat{su}(3)_k$ fusion coefficients. (English summary) *Modern Phys. Lett. A* **7** (1992), *no.* 35, 3255–3265. (Stanislav Z. Pakuliak) **93j:81028** 81R10 (17B67, 81R50, 81T40)
Begines Begines, F. (*with* Martín Gómez, José D.) Identification of the diffusion coefficient of salt in manzanilla olives. (Spanish) *Proceedings of the XII Congress on Differential Equations and Applications/II Congress on Applied Mathematics* (*Spanish*) (*Oviedo*, 1991), 291–296, *Univ. Oviedo, Oviedo*, 1991. (*see* **93j:00009**) 93B30 (93C95)
Beglaryan, G. V. (*with* Zaleskiĭ, A. E.) Spectra of p-elements in the normalizer of the extraspecial linear group. (Russian) *Mat. Zametki* **49** (1991), *no.* 5, 7–15, 157; *translation in Math. Notes* **49** (1991), *no.* 5-6, 446–451. (Ja. N. Nuzhin) **93i:20053** 20G40
Begmatov, A. Kh. Reduction of a problem of integral geometry in space to canonical form. (Russian) *Mathematical analysis and differential equations* (*Russian*), 19–22, *Novosibirsk. Gos. Univ., Novosibirsk*, 1991. (*see* **93m:00026**) 53C65
— Problems of integral geometry and special operator equations of Volterra type. (Russian) *Dokl. Akad. Nauk* **324** (1992), *no.* 4, 727–729; *translation in Russian Acad. Sci. Dokl. Math.* **45** (1992), *no.* 3, 606–609 (1993). (From the text) **93j:35167** 35Q58 (35R20, 45D05)
Begmuratov, K. A. Hierarchical matrix Lyapunov function for a linear nonautonomous system. (Russian. English and Russian summaries) *Dokl. Akad. Nauk Ukrainy* **1992**, *no.* 12, 34–37, 170. (Summary) **93i:34092** 34D20
Behara, M. (*with* Dudek, Zbigniew) On paraconcave entropy functions. *Inform. Sci.* **64** (1992), *no.* 1-2, 143–148. (Summary) **93f:94007** 94A17 (26A51)
— (*with* Giri, N.; Banerjee, Pradeep Kumar) Locally minimax test of independence in elliptically symmetrical distributions with additional observations. *Metrika* **39** (1992), *no.* 2, 75–84. (Minoru Siotani) **93j:62157** 62H15
Behera, A. (*with* Panda, G. K.) A generalized nonlinear complementarity problem of mathematical programming in Banach spaces. (English summary) *Indian J. Pure Appl. Math.* **23** (1992), *no.* 10, 693–696. (Summary) **93g:90073** 90C33 (47N10, 90C48)
Behforooz, G. The not-a-knot piecewise interpolatory cubic polynomial. (English summary) *Appl. Math. Comput.* **52** (1992), *no.* 1, 29–35. (Summary) **93g:65015** 65D05 (65D07)
Behler, Raimund (*with* Göbel, Rüdiger; Mines, Ray) Endomorphism rings of p-groups having length cofinal with ω. (English summary) *Abelian groups and noncommutative rings*, 33–48, *Contemp. Math.*, 130, *Amer. Math. Soc., Providence, RI*, 1992. (Mark Lane) **93h:16056** 16S50 (20K30)
Behn, Ulrich (*with* Lange, Adrian) 1D random field Ising model and nonlinear dynamics. *From phase transitions to chaos*, 217–226, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93c:82031** 82B44
Behncke, Horst Absolute continuity of Hamiltonians with von Neumann Wigner potentials. II. *Manuscripta Math.* **71** (1991), *no.* 2, 163–181. (Summary) **93f:81031** 81Q10 (47F05, 47N50)
— Absolute continuity of Hamiltonians with von Neumann-Wigner potentials. *Proc. Amer. Math. Soc.* **111** (1991), *no.* 2, 373–384. (David Pearson) **93c:34160** 34L40 (34B20, 47E05, 81Q10)
Behnke, Henning Bounds for eigenvalues of parameter-dependent matrices. (English and German summaries) *Computing* **49** (1992), *no.* 2, 159–167. 65F15 (65G10)
Behnke, Kurt On infinitesimal deformations of minimally elliptic singularities. *Singularity theory and its applications, Part I* (*Coventry*, 1988/1989), 27–41, *Lecture Notes in Math.*, 1462, *Springer, Berlin*, 1991. (Jonathan M. Wahl) **93b:14006** 14B07 (14J17, 32S30)
— (*with* Christophersen, Jan Arthur) Obstructions and hypersurface sections (minimally elliptic singularities). *Trans. Amer. Math. Soc.* **335** (1993), *no.* 1, 175–193. (Jonathan M. Wahl) **93c:14034** 14J17 (14B07)
Behr, M. (*with* Tezduyar, T. E.; Liou, Jianntyng; Ganjoo, D. K.; Glowinski, Roland) Unsteady incompressible flow computations with the finite-element method. *Finite elements in fluids, Vol.* 8 (*Huntsville, AL*, 1989), 177–209, *Ser. Comput. Phys. Process. Mech. Thermal Sci., Hemisphere, Washington, DC*, 1992. (Max D. Gunzburger) **93h:76050** 76M10 (65M60, 76D05)
— (*with* Tezduyar, T. E.; Liou, Jianntyng) A new strategy for finite element computations involving moving boundaries and interfaces—the deforming-spatial-domain/space-time procedure. I. The concept and the preliminary numerical tests. *Comput. Methods Appl. Mech. Engrg.* **94** (1992), *no.* 3, 339–351. (Summary) **93a:76069a** 76M10
— (*with* Tezduyar, T. E.; Mittal, S.; Liou, Jianntyng) A new strategy for finite element computations involving moving boundaries and interfaces—the deforming-spatial-domain/space-time procedure. II. Computation of free-surface flows, two-liquid flows, and flows with drifting cylinders. *Comput. Methods Appl. Mech. Engrg.* **94** (1992), *no.* 3, 353–371. (Summary) **93a:76069b** 76M10
— (*with* Tezduyar, T. E.; Aliabadi, S. K.; Mittal, S.; Ray, S. E.) A new mixed preconditioning method for finite element computations. (English summary) *Comput. Methods Appl. Mech. Engrg.* **99** (1992), *no.* 1, 27–42. (Summary) **93f:73104** 73V05
Behravesh, A. (*with* Davaran, A.; Kaveh, A.) A finite difference scheme with variable rectilinear mesh for solving multi-harmonic partial differential equations. (English summary) *Comput. & Structures* **44** (1992), *no.* 4, 789–795. (Summary) **93f:65063** 65M06 (73V15)
Behrends, Ehrhard Compact convex sets in the two-dimensional complex linear space with the Yost property. *Progress in functional analysis* (*Peñíscola*, 1990), 383–392, *North-Holland Math. Stud.*, 170, *North-Holland, Amsterdam*, 1992. (Keith Ball) **93a:46025** 46B20 (52A20)
Behrendt, Gerhard Equivalence systems on sets of binary sequences. *Bull. London Math. Soc.* **23** (1991), *no.* 3, 219–223. (John K. Truss) **93a:20004** 20B07
— Maximal antichains and dissecting ideals. *Demonstratio Math.* **24** (1991), *no.* 1-2, 315–321. (N. Prabhakara Rao) **93j:06001** 06A06
— Graph-perfect binary codes. (English summary) *Atti Sem. Mat. Fis. Univ. Modena* **40** (1992), *no.* 2, 485–502. (Boris D. Kudryashov) **93m:94023** 94B05 (94B25)
— Automorphism groups of posets with forbidden subposets. (English summary) *Discrete Math.* **105** (1992), *no.* 1-3, 1–11. (Arjeh M. Cohen) **93j:20009** 20B25 (05E25, 06A06)
— Automorphism groups of graphs with forbidden subgraphs. (English summary) *Graphs Combin.* **8** (1992), *no.* 3, 203–206. (Robert Beezer) **93j:05074** 05C25
— Automorphism groups of covering posets and of dense posets. *Proc. Edinburgh Math. Soc.* (2) **35** (1992), *no.* 1, 115–120. (Peter M. Neumann) **93d:06001** 06A06 (20B27)
Behrndt, K. The tachyon in a linear expanding universe. (English summary) *Phys. Lett. B* **301** (1993), *no.* 1, 29–36. (Summary) **93m:81106** 81T20 (81T40)
Behtash, S. (*with* Shahruz, S. M.) Design of controllers for linear parameter-varying systems by the gain scheduling technique. *J. Math. Anal. Appl.* **168** (1992), *no.* 1, 195–217. (È. G. Al'brekht) **93g:93044** 93B52 (93D15)
Behzad, Mehdi (*with* Mahmoodian, Ebadollah S.) Graphs versus designs—a quasisurvey. *Graph theory, combinatorics, and applications, Vol.* 1 (*Kalamazoo, MI*, 1988), 125–142, *Wiley-Intersci. Publ., Wiley, New York*, 1991. (*see* **93b:05002**) 05C99 (05B05)
— (*with* Alavi, Yousef; Erdős, Paul; Lick, Don R.) Double vertex graphs. (English summary) *J. Combin. Inform. System Sci.* **16** (1991), *no.* 1, 37–50. (Summary) **93d:05126** 05C75

Beichelt, Frank (*with* Tittmann, Peter) A splitting formula for the K-terminal reliability of stochastic networks. *Comm. Statist. Stochastic Models* **8** (1992), *no.* 2, 307–323. (A. T. Amin) **93d:94032** 94C15 (05C90, 68Q25, 68R10)

Beichl, Isabel (*with* Sullivan, Francis E.) Computing $S(\alpha)$ using symbolic Monte Carlo. (English summary) Experimental mathematics: computational issues in nonlinear science (Los Alamos, NM, 1991). *Phys. D* **60** (1992), *no.* 1-4, 358–364. (Summary) **93i:58043** 58F03

Beidar, K. I. (*with* Mikhalëv, A. V.) On Mal'cev's theorem on elementary equivalence of linear groups. *Proceedings of the International Conference on Algebra, Part* 1 (*Novosibirsk*, 1989), 29–35, *Contemp. Math.*, 131, *Part* 1, *Amer. Math. Soc., Providence, RI*, 1992. (O. V. Belegradek) **93h:03049** 03C60 (20A15, 20H25)

— (*with* Arnautov, V. I.; Glavatskiĭ, S. T.; Mikhalëv, A. V.) The intersection property in the theory of radicals of topological algebras. (English summary) *J. Soviet Math.* **60** (1992), *no.* 6, 1782–1789. (Stefan Veldsman) **93h:16036** 16N80 (16W80)

Beidas, Bassem F. (*with* Papavassilopoulos, George P.) Convergence analysis of asynchronous linear iterations with stochastic delays. (English summary) *Parallel Comput.* **19** (1993), *no.* 3, 281–302. (Summary) **93k:65117** 65Y20 (65U05, 68Q22)

Beidleman, James C. (*with* Tomkinson, M. J.) Wreath products and Fitting classes of $\mathfrak{S}_1$-groups. (English summary) *Publ. Mat.* **36** (1992), *no.* 1, 205–215. (Annabelle McIver) **93g:20064** 20F17 (20D10, 20E22)

— (*with* Robinson, Derek J. S.) On the structure of the normal subgroups of a group: supersolubility. *Rend. Sem. Mat. Univ. Padova* **87** (1992), 139–149. (Gheorghe Ivan) **93i:20040** 20F19 (20F16, 20F17)

— (*with* Smith, Howard) On Frattini-like subgroups. *Glasgow Math. J.* **35** (1993), *no.* 1, 95–98. (A. Scarselli) **93k:20054** 20F16 (20E34)

Beierle, Christoph (*with* Meyer, Gregor; Semle, Heiner) Extending the Warren abstract machine to polymorphic order-sorted resolution. (English summary) *Logic programming* (*San Diego, CA*, 1991), 272–286, *MIT Press Ser. Logic Program., MIT Press, Cambridge, MA*, 1991. (*see* **93i:68009**) 68N17 (03B70, 68Q55)

— (*with* Hedtstück, U.; Pletat, U.; Schmitt, Peter H.; Siekmann, Jörg H.) An order-sorted logic for knowledge representation systems. *Artificial Intelligence* **55** (1992), *no.* 2-3, 149–191. (Sławomir Zadrożny) **93e:68124** 68T30 (03B70, 68T27)

— Logic programming with typed unification and its realization on an abstract machine. (English summary) *IBM J. Res. Develop.* **36** (1992), *no.* 3, 375–390. 68N17 (68Q55)

Beig, R. (*with* Simon, Walter) On the spherical symmetry of static perfect fluids in general relativity. *Lett. Math. Phys.* **21** (1991), *no.* 3, 245–250. (Summary) **93b:83037** 83C55 (76Y05)

Beigel, Richard (*with* Bellare, Mihir; Feigenbaum, Joan; Goldwasser, Shafi) Languages that are easier than their proofs. (English summary) 32*nd Annual Symposium on Foundations of Computer Science* (*San Juan, PR*, 1991), 19–28, *IEEE Comput. Soc. Press, Los Alamitos, CA*, 1991. (*see* **93d:68005**) 68Q45 (68Q15, 68Q60)

— (*with* Gasarch, William I.) The mapmaker's dilemma. Combinatorics and theoretical computer science (Washington, DC, 1989). *Discrete Appl. Math.* **34** (1991), *no.* 1-3, 37–48. (Summary) **93e:05029** 05C15

Beigie, Darin (*with* Leonard, Anthony; Wiggins, Stephen) Chaotic transport in the homoclinic and heteroclinic tangle regions of quasiperiodically forced two-dimensional dynamical systems. *Nonlinearity* **4** (1991), *no.* 3, 775–819. (Summary) **93c:58130** 58F13 (34C37, 70H05, 70K40)

— (*with* Leonard, Anthony; Wiggins, Stephen) A global study of enhanced stretching and diffusion in chaotic tangles. (English summary) Symposium on Fluid Mechanics of Stirring and Mixing (La Jolla, CA, 1990). *Phys. Fluids A* **3** (1991), *no.* 5, *part* 2, 1039–1050. (Summary) **93k:76063** 76F20 (58F13, 76C99, 76R99)

van Beijeren, H. (*with* Blawzdziewicz, J.; Cichocki, B.) H-theorem for a linear kinetic theory. *J. Statist. Phys.* **66** (1992), *no.* 1-2, 607–633. (Carlo Cercignani) **93b:82062** 82C40

— (*with* Ernst, M. H.) Diffusion in Lorentz lattice gas automata with backscattering. (English summary) *J. Statist. Phys.* **70** (1993), *no.* 3-4, 793–809. (Summary) **93k:82041** 82C20 (82C40)

Beiko, I. V. (*with* Armando Luis, K.) An approximate method for solving a partially discrete optimization problem. (Russian. Russian summary) *Vestnik Kiev. Univ. Model. Optim. Slozhn. Sist. No.* 9 (1990), 44–46. 90C10 (65K10)

— (*with* Beiko, M. F.) A method for calculating the optimal control of a multiply connected system. (Russian. Russian summary) *Vestnik Kiev. Univ. Model. Optim. Slozhn. Sist. No.* 9 (1990), 47–49. 49M05 (49M37)

Beiko, M. F. (*with* Beiko, I. V.) A method for calculating the optimal control of a multiply connected system. (Russian. Russian summary) *Vestnik Kiev. Univ. Model. Optim. Slozhn. Sist. No.* 9 (1990), 47–49. 49M05 (49M37)

Beil, R. G. Natural gauges for classical charged particles. *Internat. J. Theoret. Phys.* **30** (1991), *no.* 12, 1663–1670. (Andrew Zardecki) **93a:78012** 78A35

— Finsler gauge transformations and general relativity. *Internat. J. Theoret. Phys.* **31** (1992), *no.* 6, 1025–1044. (H. Rund) **93c:83092** 83D05 (53B40)

Beilinson, A. A. (*with* Ginzburg, V. A.) Infinitesimal structure of moduli spaces of G-bundles. *Internat. Math. Res. Notices* **1992**, *no.* 4, 63–74. (Michael M. Kapranov) **93g:14036** 14H60 (32G08, 32L05)

Bein, Wolfgang W. (*with* Brucker, P.; Stallmann, Matthias F. M.) A characterization of network representable polymatroids. (German summary) *Z. Oper. Res.* **35** (1991), *no.* 4, 267–272. (Summary) **93g:90082** 90C35 (90B10)

— (*with* Kamburowski, Jerzy; Stallmann, Matthias F. M.) Optimal reduction of two-terminal directed acyclic graphs. (English summary) *SIAM J. Comput.* **21** (1992), *no.* 6, 1112–1129. (Summary) **93j:68152** 68R10 (05C85, 68Q25, 90B35, 90C35)

Beineke, Lowell W. (*with* Bagga, Kunwarjit S.; Lipman, Marc J.; Pippert, Raymond E.) The concept of leverage in network vulnerability. *Graph theory, combinatorics, and applications, Vol.* 1 (*Kalamazoo, MI*, 1988), 29–39, *Wiley-Intersci. Publ., Wiley, New York*, 1991. (*see* **93b:05002**) 05C90

— (*with* Bagga, Kunwarjit S.; Lipman, Marc J.; Pippert, Raymond E.) Extensions of an algorithm for computing the edge-integrity of trees. *Graph theory, combinatorics, and applications, Vol.* 1 (*Kalamazoo, MI*, 1988), 41–53, *Wiley-Intersci. Publ., Wiley, New York*, 1991. (*see* **93b:05002**) 05C85

— (*with* Bagga, Kunwarjit S.; Lipman, Marc J.; Pippert, Raymond E.) Explorations into graph vulnerability. *Graph theory, combinatorics, and applications, Vol.* 1 (*Kalamazoo, MI*, 1988), 143–158, *Wiley-Intersci. Publ., Wiley, New York*, 1991. (*see* **93b:05002**) 05C90

— *see also* **Selected topics in graph theory, 93h:05003**

Beinhauer, Renate Eine allgemeine Versicherung auf mehrere Leben und ihre Deckungskapitalien. (English, French and German summaries) [A general insurance for several lives and its security capital] *Schweiz. Verein. Versicherungsmath. Mitt.* **1992**, *no.* 1, 47–60. 62P05

Beintema, Mark B. Gorenstein algebras with unimodal h-sequences. *Comm. Algebra* **20** (1992), *no.* 4, 979–997. (Andrew Kustin) **93e:13025** 13D40 (13C40)

Beirão da Veiga, H. Attracting properties for one-dimensional flows of a general barotropic viscous fluid. Periodic flows. (English summary) *Ann. Mat. Pura Appl.* (4) **161** (1992), 153–165. (Summary) **93e:35084** 35Q35 (76N10)

— Structural stability and data dependence for fully nonlinear hyperbolic mixed problems. *Arch. Rational Mech. Anal.* **120** (1992), *no.* 1, 51–60. (Tie Hu Qin) **93h:35129** 35L70 (35B30, 35L20)

Beirlant, Jan (*with* Deheuvels, Paul; Einmahl, John H. J.; Mason, David M.) Bahadur-Kiefer theorems for uniform spacings processes. *Teor. Veroyatnost. i Primenen.* **36** (1991), *no.* 4, 724–743; *reprinted in Theory Probab. Appl.* **36** (1991), *no.* 4, 647–669 (1992). (M. Csörgő) **93g:60061** 60F15 (60F05, 60F17, 62G30)

— (*with* Teugels, Jozef L.) Modeling large claims in non-life insurance. (English summary) *Insurance Math. Econom.* **11** (1992), *no.* 1, 17–29. (Summary) **93g:62127** 62P05

— (*with* Teugels, Jozef L.) Limit distributions for compounded sums of extreme order statistics. *J. Appl. Probab.* **29** (1992), *no.* 3, 557–574. (Sándor Csörgő) **93k:60051** 60F05 (60G70, 62P05)

— (*with* Carbonez, A.; van der Meulen, Edward C.) Long run proportional hazards models of random censorship. (English summary) *J. Statist. Plann. Inference* **32** (1992), *no.* 1, 25–44. (Mir Masoom Ali) **93h:62178** 62N05

— (*with* Vanmarcke, Ann) A note on Bahadur-Kiefer-type expansions for the inverse empirical Laplace transform. (English summary) *Statist. Probab. Lett.* **15** (1992), *no.* 4, 305–311. (Summary) **93j:60020** 60F05

Beisekeev, S. B. (*with* Gutsunaev, Ts. I.) A class of solutions of the steady-state vacuum Einstein equations. *JETP Lett.* **54** (1991), *no.* 11, 599–602 (1992); *translated from Pis'ma Zh. Èksper. Teoret. Fiz.* **54** (1991), *no.* 11, 597–599 (*Russian*). (From the text) **93b:83012** 83C20

Beissner, R. E. Boundary element simulation of eddy current inspection. (English summary) *Boundary element technology, VII* (*Albuquerque, NM*, 1992), 359–372, *Comput. Mech., Southampton*, 1992. (*see* **93b:65002**) 65N38 (78A55)

Beitia, Ma. Asunción (*with* Gracia, Juan-M.; de Hoyos, Inmaculada) A linear matrix equation: a criterion for block similarity. (English summary) *Linear and Multilinear Algebra* **31** (1992), *no.* 1-4, 93–118. (Juan Manuel de Olazábal) **93m:15014** 15A21 (15A24)

Beja, Avraham (*with* Gilboa, Itzhak) Numerical representations of imperfectly ordered preferences (a unified geometric exposition). (English summary) *J. Math. Psych.* **36** (1992), *no.* 3, 426–449. (Summary) **93f:90019** 90A10 (90A43, 92J30)

— Arrow and Gibbard-Satterthwaite revisited: extended domains and shorter proofs. (English summary) *Math. Social Sci.* **25** (1993), *no.* 3, 281–286. (Summary) **93m:90008** 90A08

Bejancu, Aurel Gauge theory on a vector bundle. II. Local gauge invariance and Lagrangians for gauge fields. *An. Ştiinţ. Univ. "Al. I. Cuza" Iaşi Secţ. I a Mat. (N.S.)* **36** (1990), *no.* 3, 247–259. (Kotik K. Lee) **93b:58042** 58E30 (58E15, 81T13)

— (*with* Duggal, K. L.) Lightlike submanifolds of codimension two. *Math. J. Toyama Univ.* **15** (1992), 59–82. (Demir N. Kupeli) **93j:53080** 53C50

Bejarano, J. D. *see* **Díaz Bejarano, José**

díaz Bejarano, José *see* **Díaz Bejarano, José**

Beju, Iulian A uniqueness theorem in thermoelasticity with thermal relaxation. *Internat. J. Engrg. Sci.* **30** (1992), *no.* 5, 657–664. (Reinhard Racke) **93a:73007** 73B30 (35Q99)

Bekakos, M. P. (*with* Evans, David J.) The double alternating group explicit method for nonlinear parabolic equations on MIMD parallel computers. (English summary) *Parallel Comput.* **18** (1992), *no.* 8, 879–895. 65-04 (65M99)

Bekenstein, Jacob D. Conservation law for linked cosmic string loops. *Phys. Lett. B* **282** (1992), *no.* 1-2, 44–49. (Summary) **93c:83122** 83F05

Beker, Henry J. (*with* Barut, Asim Orhan) Exact solutions of spin (Rabi) precession, transmission and reflection in the Eckhart potential. *Europhys. Lett.* **14** (1991), *no.* 3, 197–202. (K. Wódkiewicz) **93b:81040** 81Q05 (81V45)

Bekes, Robert A. An infinite version of the Pólya enumeration theorem. (English summary) *Internat. J. Math. Math. Sci.* **15** (1992), *no.* 4, 697–700. (Stanley Gill Williamson) **93i:05006** 05A15

Bekir, Esmat C. A contribution to the unaliased discrete-time Wigner distribution. (English summary) *J. Acoust. Soc. Amer.* **93** (1993), *no.* 1, 363–371. (Summary) **93j:94001** 94A05

Bekka, K. Regular stratification of subanalytic sets. *Bull. London Math. Soc.* **25** (1993), *no.* 1, 7–16. (Wiesław Pawłucki) **93j:32013** 32B20 (14P10, 57N80)

Bekka, Mohammed E. B. (*with* Lau, Anthony To Ming; Schlichting, G.) On invariant subalgebras of the Fourier-Stieltjes algebra of a locally compact group. *Math. Ann.* **294** (1992), *no.* 3, 513–522. (Ryszard Szwarc) **93k:43006** 43A30 (22D10)

— (*with* Ludwig, Jean) On L^1-kernels of unitary representations of semisimple Lie groups. *Math. Proc. Cambridge Philos. Soc.* **112** (1992), *no.* 2, 343–348. (Adolf R. Mirotin) **93e:22007** 22D10 (22E46)

Bekkali, Mohamed (*with* Bonnet, Robert; Rubin, Matatyahu) Compact interval spaces in which all closed subsets are homeomorphic to clopen ones. I. (English summary) *Order* **9** (1992), *no.* 1, 69–95. (Marcel Erné) **93k:54063a** 54E45 (04A10, 06B05, 06B30, 54F05)

— (*with* Bonnet, Robert; Rubin, Matatyahu) Compact interval spaces in which all closed subsets are homeomorphic to clopen ones. II. (English summary) *Order* **9** (1992), *no.* 2, 177–200. (Marcel Erné) **93k:54063b** 54E45 (04A10, 06B05, 06B30, 54F05)

Bekker, B. M. Abelian extensions of a complete discrete valuation field of finite height. (Russian) *Algebra i Analiz* **3** (1991), *no.* 6, 76–84 (1992); *translation in St. Petersburg Math. J.* **3** (1992), *no.* 6, 1271–1279. (Ernst-Wilhelm Zink) **93f:11090** 11S31 (11S70)

— (*with* Benna, D. G.; Vostokov, S. V.; Zhukov, I. B.; Smirnov, A. L.; Fesenko, I. B.) The seminar "Constructive Class Field Theory". (Russian) *Algebra i Analiz* **4** (1992), *no.* 1, 177–193. (Štefan Porubský) **93i:11003** 11-02 (01A65, 01A72, 11R37, 11S31)

Bekker, I. Kh. (*with* Nikiforov, V. A.) Cohomological characterization of torsion-free abelian FN-groups. (Russian. Russian summary) *Abelian groups and modules, No.* 7

(*Russian*), 3–19, 157, *Tomsk. Gos. Univ., Tomsk*, 1988. (From the text) **93k:20083** 20K40 (20K15, 20K20)

— (*with* Shaposhnikova, E. V.) Crossed homomorphisms into S-separable torsion-free abelian groups. (Russian. English and Russian summaries) *Abelian groups and modules, No.* 10 (*Russian*), 9–16, 182, 188, *Tomsk. Gos. Univ., Tomsk*, 1991. (Summary) **93k:20075** 20K15 (20J05)

Beklemishev, L. D. Provability logics for natural Turing progressions of arithmetical theories. *Studia Logica* **50** (1991), *no.* 1, 107–128. (Alessandro Berarducci) **93e:03022** 03B45 (03F30, 03F40)

Beklemishev, N. N. (*with* Liberzon, M. R.) Investigation of the dynamical properties of systems for the control of technological processes using the electromagnetic field effect. (Russian. Russian summary) *Development and application of the method of Lyapunov functions* (*Russian*) (*Irkutsk*, 1989), 156–161, 285, "*Nauka*" *Sibirsk. Otdel., Novosibirsk*, 1992. (*see* **93m:93005**) 93C95

Bekmet'ev, A. R. The influence of fines on the behavior of a two-sector economic model. (Russian. Russian summary) *Vestnik Moskov. Univ. Ser. XV Vychisl. Mat. Kibernet.* **1992**, *no.* 3, 53–57, 65; *translation in Moscow Univ. Comput. Math. Cybernet.* **47** (1992), *no.* 3, 47–51. 90A14

Bekryayev, R. V. Structure of the climate attractor. *Izv. Acad. Sci. USSR Atmospher. Ocean. Phys.* **27** (1991), *no.* 10, 824–829 (1992); *translated from Izv. Akad. Nauk SSSR Ser. Fiz. Atmosfer. i Okeana* **27** (1991), *no.* 10 (*Russian*). (Summary) **93f:58219** 58F40 (58F12, 86A10)

Bektashov, S. (*with* Yadrenko, M. I.) Statistical estimates for the unknown mean of a homogeneous and isotropic random field. (Russian) *Vychisl. Prikl. Mat.* (*Kiev*) *No.* 73 (1992), 71–78. (Summary) **93c:62155** 62M40

Bektemesov, M. A. Stability of a three-layer difference scheme for ill-posed Cauchy problems. (Russian. Russian summary) *Methods for solving inverse problems* (*Russian*), 45–54, 143, *Akad. Nauk SSSR Sibirsk. Otdel., Inst. Mat., Novosibirsk*, 1990. (Summary) **93j:65086** 65J10

— (*with* Bukhgeim, A. L.) Stability of the problem of determining a boundary condition from the scattering data. (Russian. Russian summary) *Methods for solving inverse problems* (*Russian*), 55–60, 143, *Akad. Nauk SSSR Sibirsk. Otdel., Inst. Mat., Novosibirsk*, 1990. (Summary) **93j:35184** 35R30 (35J05)

Bekturov, A. Sh. (*with* Ospanov, S. S.) An algorithm of the discrete step method for solving the optimization 0-1 knapsack problem. (Russian) *Theory of functions and problems in numerical mathematics* (*Russian*), 39–43, 72, *Kazakh. Gos. Univ., Alma Ata*, 1990. (Summary) **93c:90045** 90C09 (65K10)

Bélair, Jacques Lifespans in population models: using time delays. (English summary) *Differential equations models in biology, epidemiology and ecology* (*Claremont, CA*, 1990), 16–27, *Lecture Notes in Biomath.*, 92, *Springer, Berlin*, 1991. (*see* **93g:92001**) 92D20 (34K15)

Belan, V. V. (*with* Ryzhkov, M. I.; Tunik, A. A.) Design of optimal digital systems for the stabilization of stochastically perturbed unstable dynamic objects. (Russian. Russian summary) *Kibernet. i Vychisl. Tekhn. No.* 89 (1991), 10–15. 93C85

— (*with* Ryzhkov, M. I.; Tunik, A. A.; Sokol, S. A.) Synthesis of optimal digital stabilization systems with higher-order extrapolators. (Russian. Russian summary) *Kibernet. i Vychisl. Tekhn. No.* 93 (1992), 29–33. 93B50

Belavin, A. A direct calculation of the spectrum of masses in an integrable model from the Hopf-algebra symmetry. *Phys. Lett. B* **283** (1992), *no.* 1-2, 67–69. (Satoru Saito) **93h:81106** 81T40 (16W30, 58F07, 81R50)

Belavkin, V. P. Stochastic posterior equations for quantum nonlinear filtering. *Probability theory and mathematical statistics, Vol. I* (*Vilnius*, 1989), 91–109, "*Mokslas*", *Vilnius*, 1990. (Yun Gang Lu) **93b:81126** 81S25 (46N50, 81P15, 93E11)

— A posterior stochastic equation for quantum Brownian motion. *Stochastic methods in experimental sciences* (*Szklarska Poręba*, 1989), 26–42, *World Sci. Publishing, River Edge, NJ*, 1990. (Koichiro Matsuno) **93d:81014** 81P15 (46N50)

— Continuous nondemolition observation quantum filtering and optimal estimation. (English summary) *Quantum aspects of optical communications* (*Paris*, 1990), 151–163, *Lecture Notes in Phys.*, 378, *Springer, Berlin*, 1991. (Summary) **93i:81110** 81S25 (46L60, 81P15)

— Pseudo-Euclidean representation of conditionally positive mappings. (Russian) *Mat. Zametki* **49** (1991), *no.* 6, 135–137; *translation in Math. Notes* **49** (1991), *no.* 5-6, 647–649. (Jan Hamhalter) **93i:46114** 46L50 (47N50, 81S25)

— A quantum posterior stochastics and spontaneous collapse. (English summary) *Stochastics and quantum mechanics* (*Swansea*, 1990), 40–68, *World Sci. Publishing, River Edge, NJ*, 1992. (David Applebaum) **93i:81111** 81S25 (46L55, 46L60, 81P15)

— Quantum continual measurements and a posteriori collapse on CCR. *Comm. Math. Phys.* **146** (1992), *no.* 3, 611–635. (Andrzej Łuczak) **93j:81006** 81P15 (81P20, 81S05, 81S25)

— Quantum stochastic calculus and quantum nonlinear filtering. (English summary) *J. Multivariate Anal.* **42** (1992), *no.* 2, 171–201. (Robin Hudson) **93m:81013** 81P15 (46L50, 46L60, 81S25)

— Chaotic states and stochastic integration in quantum systems. (Russian) *Uspekhi Mat. Nauk* **47** (1992), *no.* 1(283), 47–106, 240; *translation in Russian Math. Surveys* **47** (1992), *no.* 1, 53–116. (Andrzej Łuczak) **93k:81116** 81S25 (46L50, 46N50, 47N50)

— The unified Itô formula has the pseudo-Poisson structure $df(x) = [f(x+b) - f(x)]^{\mu}_{\nu} da^{\nu}_{\mu}$. (English summary) *J. Math. Phys.* **34** (1993), *no.* 4, 1508–1518. (David Applebaum) **93m:81078** 81S25 (60H99)

Belchev, Evgeni (*with* Hineva, Stefana) On the minimal hypersurfaces of a locally symmetric manifold. *Global differential geometry and global analysis* (*Berlin*, 1990), 1–4, *Lecture Notes in Math.*, 1481, *Springer, Berlin*, 1991. (Bang-yen Chen) **93f:53051** 53C42 (53C40)

Belegradek, O. V. The Mal'cev correspondence revisited. *Proceedings of the International Conference on Algebra, Part* 1 (*Novosibirsk*, 1989), 37–59, *Contemp. Math.*, 131, *Part* 1, *Amer. Math. Soc., Providence, RI*, 1992. (U. Felgner) **93m:03059** 03C60 (16B70, 20A15)

— The Mal'tsev correspondence and undecidability. (Russian. Russian summary) *Sibirsk. Mat. Zh.* **33** (1992), *no.* 4, 24–29, 220; *translation in Siberian Math. J.* **33** (1992), *no.* 4, 566–570 (1993). (Yu. G. Ventsov) **93m:03074** 03D30 (03C57, 03C60, 03D35, 13L05, 16B70)

Beletskiĭ, V. V. (*with* Grushevskiĭ, A. V.) Evolution of rotational motions of a satellite under the action of a dissipative aerodynamical moment. (Russian. English summary) *Akad. Nauk SSSR Inst. Prikl. Mat. Preprint* **1991**, *no.* 75, 30 *pp.* (Summary) **93a:70026** 70M20 (70E15)

Belforte, G. (*with* Tay, T. T.) Recursive estimation for linear models with set membership measurement error. (English summary) *Identification and system parameter estimation* 1991, *Vol.* 1,2 (*Budapest*, 1991), 241–246, *IFAC Sympos. Ser.*, 3, *Pergamon, Oxford*, 1992. (*see* **93h:93009**) 93B30

— Parameter identification for models with bounded errors in all variables. (English summary) *Systems Control Lett.* **19** (1992), *no.* 6, 425–428. (Summary) **93h:93082** 93E12 (62M10, 93B30)

Belghiti, Mohamed Variété des points infiniment voisins d'ordre n de points du plan. (English summary) [The variety of infinitely near points of order n to points of the plane] *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 7, 541–545. (Summary) **93a:14046** 14N05 (14N10)

Belhaq, M. 4-subharmonic bifurcation and homoclinic transition near resonance point in nonlinear parametric oscillator. *Mech. Res. Comm.* **19** (1992), *no.* 4, 279–287. (From the introduction) **93g:34058** 34C23 (34C15, 34C37)

Belhouari, A. (*with* Tissir, E.; Hmamed, A.) Stability of interval matrix polynomial in continuous and discrete cases. *Systems Control Lett.* **18** (1992), *no.* 3, 183–189. (Summary) **93g:93062** 93D09 (93B40, 93C55)

Beling, Peter A. (*with* Adler, Ilan) Polynomial algorithms for LP over a subring of the algebraic integers with applications to LP with circulant matrices. (English summary) 32*nd Annual Symposium on Foundations of Computer Science* (*San Juan, PR*, 1991), 480–487, *IEEE Comput. Soc. Press, Los Alamitos, CA*, 1991. (Jürgen Köhler) **93i:90065** 90C08 (03D15, 68Q25, 90C60)

— (*with* Adler, Ilan) Polynomial algorithms for LP over a subring of the algebraic integers with applications to LP with circulant matrices. (English summary) *Math. Programming* **57** (1992), *no.* 2, *Ser. B*, 121–143. (Romesh Saigal) **93j:90048** 90C05 (90C08, 90C10)

Belingeri, C. (*with* Ricci, Paolo Emilio) On three-term recurrence relations for orthonormal polynomials on the unit circle. (Italian. English summary) *Rend. Circ. Mat. Palermo* (2) **41** (1992), *no.* 1, 151–164. (Hans-Jürgen Glaeske) **93f:42042** 42C05

Belinskiĭ, B. P. (*with* Badanin, A. V.; Il'inskiĭ, K. N.; Uzdin, V. M.) Supersymmetry and acoustic problems. (Russian. English and Russian summaries) *Teoret. Mat. Fiz.* **90** (1992), *no.* 3, 407–411; *translation in Theoret. and Math. Phys.* **90** (1992), *no.* 3, 277–280. (Summary) **93f:76080** 76N10 (35Q35, 35Q40, 76Q05)

Belinskiĭ, È. S. Two extremal problems for trigonometric polynomials with a given number of harmonics. (Russian) *Mat. Zametki* **49** (1991), *no.* 1, 12–18, 159; *translation in Math. Notes* **49** (1991), *no.* 1-2, 10–14. (I. Szalay) **93b:42003** 42A05

— On an algebra of functions not generated by its idempotents. (Russian) *Mat. Zametki* **51** (1992), *no.* 1, 3–7, 160; *translation in Math. Notes* **51** (1992), *no.* 1-2, 3–6. (Christopher C. White) **93f:42024** 42A85 (42A05, 42A10, 42A16, 46J10)

Belishev, M. I. (*with* Avdonin, S. A.; Ivanov, S. A.) Dirichlet boundary control in a capture region for the multidimensional wave equation. *Soviet J. Automat. Inform. Sci.* **24** (1991), *no.* 2, 76–80 (1992); *translated from Avtomatika* **1991**, *no.* 2, 78–82, 97 (*Russian. English summary*). (Zbigniew Emirsajlow) **93f:93069** 93C20 (49J20, 93B05)

Bélisle, Claude On the Kallianpur-Robbins law for occupation times. (French summary) *Ann. Sci. Math. Québec* **15** (1991), *no.* 2, 135–142. (P. Révész) **93e:60162** 60J55 (60J65)

— Odd central moments of unimodal distributions. *Statist. Probab. Lett.* **12** (1991), *no.* 2, 97–107. (H. L. MacGillivray) **93a:60020** 60E15 (62E10)

Belitser, E. N. (*with* Korostelëv, A. P.) Pseudovalues and minimax filtering algorithms for the nonparametric median. *Topics in nonparametric estimation*, 115–124, *Adv. Soviet Math.*, 12, *Amer. Math. Soc., Providence, RI*, 1992. (Sidney J. Yakowitz) **93k:60102** 60G35 (62G05, 62M20)

Belitskiĭ, D. A. Some infinite series of balanced Steinhaus triangles. (Russian. Russian summary) *Metody Diskret. Analiz. No.* 51 (1991), 3–6, 112. (Elena Brožíková) **93g:05037** 05B99

Belitskiĭ, G. R. (*with* Lisyanoĭ, V. F.) Formal classification of vector fields with structurally stable singularities in a neighborhood of a circle. (Russian. Ukrainian summary) *Ukrain. Mat. Zh.* **43** (1991), *no.* 10, 1338–1343; *translation in Ukrainian Math. J.* **43** (1991), *no.* 10, 1243–1247 (1992). (Henryk Żołądek) **93d:34069** 34C20 (34A34, 58F14, 58F36)

Belkić, Dževad Vector spherical harmonics and scattering integrals. *Phys. Scripta* **45** (1992), *no.* 1, 9–17. (John A. DeSanto) **93b:81296** 81U05 (33C65)

Belkina, S. R. (*with* Lopatin, A. K.) On normal Bulgakov coordinates. (Russian. Russian summary) *Asymptotic integration of nonlinear equations* (*Russian*), 66–71, *Akad. Nauk Ukrainy, Inst. Mat., Kiev*, 1992. (*see* **93m:00016**) 34A30

— (*with* Lopatin, A. K.) Constructive methods for the decomposition of systems of differential equations with constant coefficients. (Russian. Russian summary) *Akad. Nauk Ukrainy Inst. Mat. Preprint* **1992**, *no.* 35, 18 *pp.* (Summary) **93m:34010** 34A30

Bel'ko, I. V. Characteristic classes of Lie algebroids of principal bundles. (Russian. English and Russian summaries) *Dokl. Akad. Nauk Belarusi* **36** (1992), *no.* 6, 487–489, 571. (V. V. Solodov) **93j:58148** 58H05 (57R32)

Bell, Allen D. Skew differential operators on commutative rings. (English summary) *Abelian groups and noncommutative rings*, 49–67, *Contemp. Math.*, 130, *Amer. Math. Soc., Providence, RI*, 1992. (Yasunori Ishibashi) **93h:13024** 13N10 (16S32, 16S36)

— (*with* Farnsteiner, Rolf) On the theory of Frobenius extensions and its application to Lie superalgebras. *Trans. Amer. Math. Soc.* **335** (1993), *no.* 1, 407–424. (Joris Van der Jeugt) **93c:17049** 17B70 (17A70, 17B55)

Bell, Bradley M. (*with* Cathey, Frederick W.) The iterated Kalman filter update as a Gauss-Newton method. (English summary) *IEEE Trans. Automat. Control* **38** (1993), *no.* 2, 294–297. 93E11

lynden-Bell, D. *see* **Lynden-Bell, D.**

Bell, D. A. *see* **Bell, David Andrew**

Bell, D. J. Harmonic linearization in optimal control. (English summary) *Internat. J. Control* **57** (1993), *no.* 2, 495–500. (Summary) **93j:93028** 93B18

Bell, David Andrew (*with* An, Zhi; Hughes, J. G.) Relation-based evidential reasoning. (English summary) *Internat. J. Approx. Reason.* **8** (1993), *no.* 3, 231–251. 68T27 (03B70, 68T30)

Bell, Howard E. On commutativity, generalized commutativity, and anti-commutativity in rings. *Contributions to general algebra*, 7 (*Vienna*, 1990), 25–28, *Hölder-Pichler-Tempsky, Vienna*, 1991. (A. Yaqub) **93d:16038** 16U80

— (*with* Klein, Abraham A.) On rings with Engel cycles. II. *Results Math.* **21** (1992), *no.* 3-4, 264–273. (A. Yaqub) **93d:16039** 16U80 (16D70)

Bell, James F. The late twentieth-century resolution of a mid-nineteenth-century dilemma generated by the eighteenth-century experiments of Ernst Chladni on the dynamics of rods. *Arch. Hist. Exact Sci.* **43** (1991), *no.* 3, 251–273. (Peter M. Harman) **93d:01025** 01A50 (01A55, 73–03, 73K05, 73K12)

Bell, John B. (*with* Marcus, Daniel L.) Vorticity intensification and transition to turbulence in the three-dimensional Euler equations. *Comm. Math. Phys.* **147** (1992), *no.* 2, 371–394. (Summary) **93c:76048** 76F99 (76C05, 76M25)

Bell, John Stewart Six possible worlds of quantum mechanics. *Found. Phys.* **22** (1992), *no.* 10, 1201–1215. (Lawrence Sklar) **93k:81001** 81–01 (81P05)

— *see also* **Bernstein, Jeremy, 93a:01031** *and* **Science and conception of the world, 93b:00009**

Bell, M. J. (*with* Read, P. L.; Johnson, D. W.; Small, R. M.) Quasi-periodic and chaotic flow regimes in a thermally driven, rotating fluid annulus. *J. Fluid Mech.* **238** (1992), 599–632. (Summary) **93c:76047** 76F20 (76–05, 76E30, 76U05)

Bell, Murray G. Nonhomogeneity of powers of cor images. (English summary) *Rocky Mountain J. Math.* **22** (1992), *no.* 3, 805–812. (Ronnie Levy) **93j:54014** 54D30 (54B10, 54F99)

Bell, Steven R. Solving the Dirichlet problem in the plane by means of the Cauchy integral. *Indiana Univ. Math. J.* **39** (1990), *no.* 4, 1355–1371. (From the introduction) **93e:30017** 30C40 (31A25, 45B05)

— The Szegő projection and the classical objects of potential theory in the plane. *Duke Math. J.* **64** (1991), *no.* 1, 1–26. (Manfred Stoll) **93e:30018** 30C40 (31A05, 47N20)

Bella, Angelo (*with* Kočinac, Ljubiša D.; Cammaroto, F.) Some results on splittability of topological spaces. *Atti Accad. Peloritana Pericolanti Cl. Sci. Fis. Mat. Natur.* **68** (1990), 41–60 (1992). (Summary) **93c:54001** 54A20 (54A25, 54C05, 54C10)

— (*with* Cammaroto, F.) Characterizations of Urysohn-closed spaces. (Serbo-Croatian summary) *Mat. Vesnik* **42** (1990), *no.* 3-4, 131–138. (Michael Tkačenko) **93f:54031** 54D25 (54C08, 54D10)

— (*with* Gerlits, János) On a condition for the pseudo radiality of a product. (English summary) *Comment. Math. Univ. Carolin.* **33** (1992), *no.* 2, 311–313. (Summary) **93h:54001** 54A25 (54B10, 54D55)

— (*with* Arkhangel'skiĭ, A. V.) The product of biradial compact spaces. *Topology Appl.* **45** (1992), *no.* 2, 157–162. (Gino Tironi) **93g:54004** 54A25 (54B10, 54D55)

— Countable productivity of a class of pseudoradial spaces. *Proc. Amer. Math. Soc.* **119** (1993), *no.* 2, 637–640. (Gino Tironi) **93k:54026** 54B10 (54A25)

Bella Baci, Abderrazak La différentielle de la suite spectrale de Feigin-Tsygan-Nistor. (English and French summaries) [The differential of the Feigin-Tsygan-Nistor spectral sequence] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 5, 531–536. (Summary) **93g:19006** 19D55 (18G40)

le Bellac, M. *see* **Le Bellac, M.**

tamburini Bellani, Maria Chiara *see* **Tamburini Bellani, Maria Chiara**

Bellantoni, Stephen (*with* Pitassi, Toniann; Urquhart, Alasdair) Approximation and small-depth Frege proofs. (English summary) *SIAM J. Comput.* **21** (1992), *no.* 6, 1161–1179. (Piotr Wojtylak) **93m:03095** 03F20 (03B05)

Bellare, Mihir (*with* Beigel, Richard; Feigenbaum, Joan; Goldwasser, Shafi) Languages that are easier than their proofs. (English summary) 32*nd Annual Symposium on Foundations of Computer Science* (*San Juan, PR*, 1991), 19–28, *IEEE Comput. Soc. Press, Los Alamitos, CA*, 1991. (*see* **93d:68005**) 68Q45 (68Q15, 68Q60)

Bellen, Alfredo (*with* Zennaro, Marino) Strong contractivity properties of numerical methods for ordinary and delay differential equations. International Conference on the Numerical Solution of Volterra and Delay Equations (Tempe, AZ, 1990). *Appl. Numer. Math.* **9** (1992), *no.* 3-5, 321–346. (Summary) **93a:65104** 65L20 (65Q05)

— (*with* Jackiewicz, Z.; Zennaro, Marino) Local error estimation for singly-implicit formulas by two-step Runge-Kutta methods. (English summary) *BIT* **32** (1992), *no.* 1, 104–117. (Summary) **93k:65062** 65L06

— (*with* Jackiewicz, Z.; Zennaro, Marino) Time-point relaxation Runge-Kutta methods for ordinary differential equations. (English summary) *J. Comput. Appl. Math.* **45** (1993), *no.* 1-2, 121–137. (Summary) **93j:65109** 65L06

— *see also* **Parallel methods for ordinary differential equations, 93f:65008**

Belleni-Morante, Aldo (*with* Totaro, Silvia) A mathematical model for transport and absorption of particles of a poison gas. (English summary) *Confer. Sem. Mat. Univ. Bari No.* 247 (1992), 21 *pp.* (Hassan Emamirad) **93i:82065** 82C70 (47N55, 76N99)

— A mathematical model for particle transport with mollified boundary conditions. *Math. Comput. Modelling* **16** (1992), *no.* 3, 131–137. (Janusz Mika) **93c:82045** 82C40 (45J05, 47D06, 47N55, 82C70)

Beller, Mara The birth of Bohr's complementarity: the context and the dialogues. *Stud. Hist. Philos. Sci.* **23** (1992), *no.* 1, 147–180. (Dennis Dieks) **93d:01038** 01A60 (81–03)

Bellettini, Giovanni A numerical approach to a minimum problem with applications in image segmentation. (Italian summary) *Ann. Univ. Ferrara Sez. VII (N.S.)* **36** (1990), 99–111 (1991). (B. Mordukhovich) **93a:65085** 65K10 (49J45, 49M25)

— (*with* Paolini, M.; Verdi, Claudio) Numerical minimization of functionals with curvature by convex approximations. *Progress in partial differential equations: calculus of variations, applications* (*Pont-à-Mousson*, 1991), 124–138, *Pitman Res. Notes Math. Ser.*, 267, *Longman Sci. Tech., Harlow*, 1992. (*see* **93f:35008**) 65K10 (49M45)

— (*with* Paolini, M.; Verdi, Claudio) Convergence of discrete approximations to sets of prescribed mean curvature. *Free boundary problems involving solids* (*Montreal, PQ*, 1990), 164–169, *Pitman Res. Notes Math. Ser.*, 281, *Longman Sci. Tech., Harlow*, 1993. (*see* **93k:00037**) 65M12 (65P05)

Belleville, Patrice (*with* Shermer, Thomas C.) Probing polygons minimally is hard. (English summary) *Comput. Geom.* **2** (1993), *no.* 5, 255–265. (Summary) **93m:68160** 68U05 (68Q25)

Belley, J.-M. (*with* Fournier, Gilles; Saadi Drissi, K.) Almost periodic weak solutions to forced pendulum type equations without friction. *Aequationes Math.* **44** (1992), *no.* 1, 100–108. (Joël Blot) **93h:34069** 34C27 (34C15)

Bellhouse, D. R. (*with* Lawry, K. A.) Relative efficiency of certain randomization procedures in an $n \times n$ array when spatial correlation is present. (English summary) *J. Statist. Plann. Inference* **32** (1992), *no.* 3, 385–399. (Shahariar Huda) **93m:62173** 62K05 (62K10)

Bellia, Marco (*with* Occhiuto, M. Eugenia) c-expressions: a variable-free calculus for equational logic programming. (English summary) *Theoret. Comput. Sci.* **107** (1993), *no.* 2, 209–252. (Summary) **93k:68087** 68T27 (03B70, 03C05, 68N17)

Bellido, Anne-Mercedes Construction de fonctions d'itération pour le calcul simultané des racines d'une équation du type $f(s) = 0$. (English and French summaries) [Construction of iteration functions for the simultaneous computation of the roots of an equation $f(s) = 0$] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 12, 1309–1314. (Summary) **93h:65070** 65H05

garcía-Bellido, Juan *see* **García-Bellido, Juan**

Bellin, Gianluigi (*with* Ketonen, Jussi) A decision procedure revisited: notes on direct logic, linear logic and its implementation. *Theoret. Comput. Sci.* **95** (1992), *no.* 1, 115–142. (P. Štěpánek) **93g:03010** 03B25 (03B10, 68T27)

Bellissard, Jean Renormalization group analysis and quasicrystals. *Ideas and methods in quantum and statistical physics* (*Oslo*, 1988), 118–148, *Cambridge Univ. Press, Cambridge*, 1992. (Pierre Moussa) **93k:81045** 81Q10 (30D05, 42A75, 46L60, 81–02, 82B28, 82D25)

— (*with* Barelli, Armelle) Dynamical localization—mathematical framework. *Quantum chaos—quantum measurement* (*Copenhagen*, 1991), 105–129, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 358, *Kluwer Acad. Publ., Dordrecht*, 1992. (Nariyuki Minami) **93a:81042** 81Q20 (46L60, 58B30, 81Q50)

— (*with* Vaienti, Sandro) Rigorous diffusion properties for the sawtooth map. *Comm. Math. Phys.* **144** (1992), *no.* 3, 521–536. (James D. Meiss) **93e:58145** 58F15 (60K35, 70K50)

— (*with* Bovier, Anton; Ghez, Jean-Michel) Gap labelling theorems for one-dimensional discrete Schrödinger operators. *Rev. Math. Phys.* **4** (1992), *no.* 1, 1–37. (G. V. Rozenblyum) **93f:47090** 47N50 (19K33, 39A12, 46L99, 47B39, 81Q10)

— (*with* Montambaux, Gilles; Poilblanc, Didier; Sire, Clément) Quantum chaos in spin-fermion models. (English summary) *Phys. Rev. Lett.* **70** (1993), *no.* 4, 497–500. (Summary) **93k:81060** 81Q50 (81–04)

Bellman, R. (*with* Wing, G. Milton) ★ An introduction to invariant imbedding. With the collaboration of R. Kalaba. Reprint of the 1975 original. Classics in Applied Mathematics, 8. *Society for Industrial and Applied Mathematics (SIAM), Philadelphia, PA*, 1992. xviii+248 *pp. ISBN* 0-89871-304-8 (Editors) **93i:82066** 82C70 (01A75, 34A99, 34L40, 82–02)

lo Bello, Anthony J. *see* **Lo Bello, Anthony J.**

soto Bello, D. *see* **Soto Bello, D.**

vázquez-Bello, J. L. *see* **Vázquez-Bello, J. L.**

Bello, Juan A. (*with* Fernández Cara, Enrique; Simon, Jacques) Optimal shape design for Navier-Stokes flow. (English summary) *System modelling and optimization* (*Zurich*, 1991), 481–489, *Lecture Notes in Control and Inform. Sci.*, 180, *Springer, Berlin*, 1992. (Sergei Pavlovich Ohezin) **93h:49010** 49J20 (49K20, 49Q10)

Bellomo, N. (*with* Bonzani, I.) Mathematical aspects of nonlinear shock waves propagation by the discrete Boltzmann equation. *Nonlinear waves and dissipative effects* (*Reggio di Calabria*, 1990), 172–181, *Pitman Res. Notes Math. Ser.*, 227, *Longman Sci. Tech., Harlow*, 1991. (Paul F. Zweifel) **93e:82037** 82C40 (35Q99, 45K05, 76L05, 76P05)

— (*with* Longo, E.) Shock wave profiles in one dimension by the discrete Boltzmann equation with multiple collisions. (English summary) *Waves and stability in continuous media* (*Sorrento*, 1989), 22–33, *Ser. Adv. Math. Appl. Sci.*, 4, *World Sci. Publishing, River Edge, NJ*, 1991. (*see* **93g:00030**) 82C40 (76L05, 76P05)

— (*with* Toscani, G.) On the Cauchy problem for the discrete Boltzmann equation with multiple collisions: existence, uniqueness and stability. (English summary) *Stability Appl. Anal. Contin. Media* **1** (1991), *no.* 2, 165–184. (Benoit Perthame) **93j:35173** 35Q99 (35Q35, 45K05, 76P05, 82C70)

— (*with* Preziosi, Luigi; Teppati, G.) Modeling and solution of stochastic inverse problems in mathematical physics. *Math. Comput. Modelling* **16** (1992), *no.* 5, 37–51. (Krystyna Twardowska) **93c:00004** 00A69 (00A71, 35R30, 35R60)

Bellon, M. P. (*with* Maillard, J.-M.; Rollet, G.; Viallet, Claude-Michel) Deformations of dynamics associated to the chiral Potts model. (English summary) *Internat. J. Modern Phys. B* **6** (1992), *no.* 22, 3575–3584. (Summary) **93m:82028** 82C23 (14E07)

Bellout, Hamid (*with* Bloom, Frederick; Nečas, Jindřich) Global existence of weak solutions to the nonlinear transmission line problem. *Nonlinear Anal.* **17** (1991), *no.* 10, 903–921. (Michael Oberguggenberger) **93f:35137** 35L60 (35D05, 35L65, 35Q60)

— (*with* Bloom, Frederick; Nečas, Jindřich) A model of wave propagation in a nonlinear superconducting dielectric. *Differential Integral Equations* **5** (1992), *no.* 5, 1185–1199. (Kotik K. Lee) **93h:78010** 78A60 (35L70, 35Q60, 78A40)

— A regularity result for a quasilinear equation and its consequences for blowing-up solutions of semilinear heat equations. *J. Differential Equations* **100** (1992), *no.* 1, 162–172. (Victor A. Galaktionov) **93k:35038** 35B40 (35B05, 35K55)

— Stability result for the inverse transmissivity problem. *J. Math. Anal. Appl.* **168** (1992), *no.* 1, 13–27. (Cristina Turner) **93j:35182** 35R30 (35K20)

— (*with* Bloom, Frederick; Nečas, Jindřich) Phenomenological behavior of multipolar viscous fluids. (English summary) *Quart. Appl. Math.* **50** (1992), *no.* 3, 559–583. (Giovanni P. Galdi) **93g:76006** 76A05 (35Q30, 76D05)

Bellow, Alexandra (*with* Jones, Roger L.; Rosenblatt, Joseph) Almost everywhere convergence of weighted averages. *Math. Ann.* **293** (1992), *no.* 3, 399–426. (Richard D. Duncan) **93e:28019** 28D05 (47A35)

— (*with* Akcoglu, Mustafa; del Junco, Andrés; Jones, Roger L.) Divergence of averages obtained by sampling a flow. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 2, 499–505. (Nathaniel F. G. Martin) **93g:28019** 28D10 (47A35, 58F11)

Bellucci, Stefano (*with* Ivanov, Evgenii Alekseevich[2]) Liouville realizations of W_∞-algebras. *Modern Phys. Lett. A* **6** (1991), *no.* 14, 1269–1276. (Raiko Zaikov) **93b:81089** 81R10 (17B65)

— (*with* O'Reilly, D.) Wormholes and charged particles. *Nuclear Phys. B* **364** (1991), *no.* 2, 495–513. (A. D. Popova) **93e:81083** 81T20 (83C45, 83C47)

— The discretization of $D = 2$ surfaces and supersymmetry invariance. Lattice 90 (Tallahassee, FL, 1990). *Nuclear Phys. B Proc. Suppl.* **20** (1991), 737–740. (Summary) **93c:81235** 81T60 (81T30)

— (*with* Ivanov, Evgenii Alekseevich[2]; Krivonos, S. O.) $N = 2$ chiral bosons in superspace. (English summary) *Ann. Physics* **217** (1992), *no.* 2, 194–221. (W. Cox) **93i:81262** 81T50

— Supersymmetry in anti-de Sitter space. (English summary) *Fortschr. Phys.* **40** (1992), *no.* 4, 393–443. (Summary) **93f:81094** 81T20 (81V17, 83E15, 83E30)

— Broken supersymmetry in the matrix model on a circle. *Z. Phys. C* **54** (1992), *no.* 4, 565–572. (Summary) **93c:81236** 81T60 (81T30)

— (*with* Ivanov, Evgenii Alekseevich[2]; Krivonos, S. O.) Towards an integrable $N = 3$ super KdV equation. (English summary) *Phys. Lett. A* **173** (1993), *no.* 2, 143–147. (Summary) **93j:58059** 58F07 (17B65, 35Q53)

Belluce, L. P. Spectral spaces and noncommutative rings. *Comm. Algebra* **19** (1991), *no.* 7, 1855–1865. (K. Kiyek) **93g:16001** 16D30 (14A22, 54H13)

— Semi-simple and complete MV-algebras. *Algebra Universalis* **29** (1992), *no.* 1, 1–9. (Jerzy Kotas) **93b:06025** 06D30 (03B50, 03G25)

— (*with* Di Nola, Antonio; Lettieri, Ada) Subalgebras, direct products and associated lattices of MV-algebras. *Glasgow Math. J.* **34** (1992), *no.* 3, 301–307. (Jerzy Kotas) **93i:03093** 03G25 (06D99)

Belmehdi, S. (*with* Ronveaux, A.) The fourth-order differential equation satisfied by the associated orthogonal polynomials. (Italian summary) *Rend. Mat. Appl.* (7) **11** (1991), *no.* 2, 313–326. (N. Hayek Calil) **93b:33005** 33C45 (34A05)

Belmesk, M. (*with* Habbas, Z.) A process calculus with shared variables. (English summary) *Comput. Artificial Intelligence* **11** (1992), *no.* 4, 335–350. (Summary) **93j:68118** 68Q55

Belnap, Nuel Branching space-time. (English summary) *Synthese* **92** (1992), *no.* 3, 385–434. (Lawrence Sklar) **93h:83002** 83A05 (03B30, 03B48)

Beloglazov, V. A. Asymptotic behavior of the solutions of the Emden-Fowler equation. (Russian) *Differential and integral equations* (*Russian*), 69–76, *Gor'kov. Gos. Univ., Gorki*, 1990. (*see* **93g:34001**) 34C99 (34E99)

Belogortsev, A. B. Bifurcations of tori and chaos in the quasiperiodically forced Duffing oscillator. *Nonlinearity* **5** (1992), *no.* 4, 889–897. (Yi Yuan Chen) **93f:58145** 58F13 (34C15, 34C23, 58F14, 70K50)

Belonogov, V. A. Finite groups with a small principal p-block. (Russian) *Group-theoretic investigations* (*Russian*), 8–30, *Akad. Nauk SSSR Ural. Otdel., Sverdlovsk*, 1990. (Yun Fan) **93d:20021** 20C20

Belonosov, S. M. Application of potential theory to one-dimensional Stefan problems. (Russian. Russian summary) *Applied numerical analysis and mathematical modeling* (*Russian*), 3–12, 174, *Akad. Nauk SSSR, Dal'nevostochn. Otdel., Vladivostok*, 1989. (*see* **93d:00029**) 35R35

— Boundary integral equations of the second kind for a problem on plane-parallel monochromatic oscillations in a piecewise-homogeneous medium. (Russian. Russian summary) *Applied numerical analysis and mathematical modeling* (*Russian*), 12–19, 174, *Akad. Nauk SSSR, Dal'nevostochn. Otdel., Vladivostok*, 1989. (Summary) **93e:78001** 78A40 (45E10)

— Calculation of the inverse Laplace integral of the product of modified Bessel functions of integer index. (Russian. Russian summary) *Applied numerical analysis and mathematical modeling* (*Russian*), 166–167, 181, *Akad. Nauk SSSR, Dal'nevostochn. Otdel., Vladivostok*, 1989. (*see* **93d:00029**) 33C10

— *see also* **Applied numerical analysis and mathematical modeling**, **93d:00029**

Belopol'skaya, Ya. I. Diffusions and parabolic equations in principal bundles. *Probability theory and mathematical statistics, Vol. I* (*Vilnius*, 1989), 110–117, "*Mokslas*", *Vilnius*, 1990. (Hiroshi Akiyama) **93c:58229** 58G32 (60H30, 60J60)

Belotserkovets, I. S. (*with* Timoshenko, V. I.) On the calculation of nonregular interactions of shock waves. (Russian) *Prikl. Mekh. Tekhn. Fiz.* **1992**, *no.* 6, 9–14; *translation in J. Appl. Mech. Tech. Phys.* **33** (1992), *no.* 6, 775–779 (1993). 76L05

Belotserkovskii, O. M. CFD state-of-the-art in the U.S.S.R. The Second World Congress of Computational Mechanics, Part II (Stuttgart, 1990). *Internat. J. Numer. Methods Engrg.* **34** (1992), *no.* 2, 395–415. (Summary) **93a:76063** 76Mxx (76–02)

— CFD state of the art in the USSR. II. (Chinese summary) *Shanghai Keji Daxue Xuebao* **15** (1992), *no.* 1, 19–30. 76Mxx

Belotskii, E. D. (*with* Migranov, N. G.; Tomchuk, P. M.) Applications of the Lie algebras to derivation of the generalized thermodynamic potentials. *Nonlinear world, Vol.* 2 (*Kiev*, 1989), 762–775, *World Sci. Publishing, River Edge, NJ*, 1990. (*see* **93b:00013**) 76A02 (35A30, 82B35)

Belouadah, H. (*with* Posner, M. E.; Potts, C. N.) Scheduling with release dates on a single machine to minimize total weighted completion time. *Discrete Appl. Math.* **36** (1992), *no.* 3, 213–231. (Summary) **93a:90028** 90B35

Belousov, V. D. (*with* Sokolov, E. I.) On the homotopy of inverse n-quasigroups. (Russian) *Mat. Issled. No.* 120, *Bin. i n-arnye Kvazigruppy* (1991), 45–50, 119. (Kazimierz Głazek) **93a:20115** 20N15 (20N05)

Belov, A. A. (*with* Lozovik, Yu. E.) Calculation of the Green function of an electron on a lattice in a homogeneous magnetic field. (Russian. English summary) *Teoret. Mat. Fiz.* **89** (1991), *no.* 1, 48–55; *translation in Theoret. and Math. Phys.* **89** (1991), *no.* 1, 1046–1052 (1992). (Gheorghe Nenciu) **93d:81027** 81Q05

— (*with* Lozovik, Yu. E.) Renormalization-group flux on an affine-Virasoro space in connection with sporadic conformal deformations. *JETP Lett.* **55** (1992), *no.* 6, 307–311; *translated from Pis'ma Zh. Èksper. Teoret. Fiz.* **55** (1992), *no.* 6, 309–312 (*Russian*). (Summary) **93c:81193** 81T40 (17B81, 81R10)

— (*with* Lozovik, Yu. E.) Deformations of conformal field theories with extended symmetries. *Soviet J. Nuclear Phys.* **55** (1992), *no.* 2, 307–317; *translated from Yadernaya Fiz.* **55** (1992), *no.* 2, 553–573 (*Russian*). (Summary) **93a:81165** 81T40 (81R10, 81T17)

— (*with* Lozovik, Yu. E.) Exact solution of the renormalization-group equations for the two-dimensional chiral field theory. *Soviet J. Nuclear Phys.* **55** (1992), *no.* 8, 1256–1264; *translated from Yadernaya Fiz.* **55** (1992), *no.* 8, 2263–2279 (*Russian*). (Summary) **93f:81126** 81T40 (81R10, 81T18)

Belov, A. G. On the uniqueness of maximum likelihood estimators for the parameters of the bivariate Poisson distribution. (Russian. Russian summary) *Vestnik Moskov. Univ. Ser. XV Vychisl. Mat. Kibernet.* **1993**, *no.* 1, 58–59, 65. 62F10

Belov, A. I. On Lie algebras that admit a hypercentrally regular automorphism. (Russian. Russian summary) *Mat. Zametki* **52** (1992), *no.* 4, 15–18, 128; *translation in Math. Notes* **52** (1992), *no.* 3-4, 1003–1005 (1993). (From the text) **93j:17039** 17B50

Belov, A. J. *see* **Belov, A. Ya.**

Belov, A. S. Partial sums of a trigonometric series with convex coefficients. (Russian) *Mat. Zametki* **50** (1991), *no.* 4, 21–27, 157; *translation in Math. Notes* **50** (1991), *no.* 3-4, 1000–1004 (1992). (S. Aljančić) **93f:42015** 42A32

— (*with* Rodin, V. A.) Norms of lacunary polynomials in function spaces. (Russian) *Mat. Zametki* **51** (1992), *no.* 3, 137–139; *translation in Math. Notes* **51** (1992), *no.* 3-4, 318–320. (V. V. Peller) **93h:42009** 42A55 (46E30)

— Order estimates for best approximations and moduli of continuity of a sum of a trigonometric series with quasimonotone coefficients. (Russian) *Mat. Zametki* **51** (1992), *no.* 4, 132–134; *translation in Math. Notes* **51** (1992), *no.* 3-4, 417–419. (Tian Ping Chen) **93i:42005** 42A32 (41A25, 41A50, 42A10)

Belov, A. Ya. Some estimations for nilpotence of nill-algebras [nil-algebras] over a field of an arbitrary characteristic and height theorem. (English summary) *Comm. Algebra* **20** (1992), *no.* 10, 2919–2922. (Summary) **93h:16031** 16N40

— A problem in combinatorial geometry. (Russian) *Uspekhi Mat. Nauk* **47** (1992), *no.* 3(285), 151–152; *translation in Russian Math. Surveys* **47** (1992), *no.* 3, 167–168. (Béla Uhrin) **93h:52016** 52B30

Belov, M. Asymptotic solution of a mixed parabolic problem with discontinuous initial conditions. I. (Russian. English, Russian and Latvian summaries) *Mathematics* (*Russian*), 129–150, *Latv. Univ. Zinat. Raksti*, 562, *Latv. Univ., Riga*, 1991. (Summary) **93h:35039** 35C20 (35K15, 35K20)

Belov, N. N. (*with* Demidov, V. N.; Efremova, L. V.; et al.) Computer modeling of the dynamics of high-velocity impact and of the accompanying physical phenomena. (Russian. Russian summary) *Izv. Vyssh. Uchebn. Zaved. Fiz.* **35** (1992), *no.* 8, 5–48; *translation in Russian Phys. J.* **35** (1992), *no.* 8, 690–723 (1993). (Summary) **93k:73023** 73D05 (73B30, 73E99, 73M25, 73V15)

Belov, V. V. (*with* Bagrov, V. G.; Rogova, A. M.) Quasiclassically concentrated states in quantum mechanics. (Russian. English summary) *Teoret. Mat. Fiz.* **90** (1992), *no.* 1, 84–94; *translation in Theoret. and Math. Phys.* **90** (1992), *no.* 1, 55–61. (K. Wódkiewicz) **93b:81064** 81Q20

Belov, Yu. A. (*with* Gordinskii, L. D.; Kutniv, M. V.) Numerical modeling of proton transfer in systems with a hydrogen bond. (Russian. English and Russian summaries) *Dokl. Akad. Nauk Ukrainy* **1992**, *no.* 10, 19–23, 169. (Summary) **93h:81151** 81V55 (81–08)

Belova, T. I. Resonance structures in $(3 + 1)$-dimensional $\lambda\varphi^4$ field theory and their stability. *Phys. Atomic Nuclei* **56** (1993), *no.* 2, 274–278; *translated from Yadernaya Fiz.* **56** (1993), *no.* 2, 234–243 (*Russian*). (Summary) **93k:81136** 81T10 (83F05)

von Below, Joachim A maximum principle for semilinear parabolic network equations. *Differential equations with applications in biology, physics, and engineering* (*Leibnitz*, 1989), 37–45, *Lecture Notes in Pure and Appl. Math.*, 133, *Dekker, New York*, 1991. (Song Mu Zheng) **93h:35032** 35B50 (35K57)

— An existence result for semilinear parabolic network equations with dynamical node conditions. *Progress in partial differential equations: elliptic and parabolic problems* (*Pont-à-Mousson*, 1991), 274–283, *Pitman Res. Notes Math. Ser.*, 266, *Longman Sci. Tech., Harlow*, 1992. (Introduction) **93k:35130** 35K55

Belshoff, Richard G. (*with* Xu, Jin Zhong) Injective envelopes and flat covers of Matlis reflexive modules. *J. Pure Appl. Algebra* **79** (1992), *no.* 3, 205–215. (J. Zelmanowitz) **93k:13017** 13C13 (13C11)

Bel'skii, V. G. A multigrid method for solving variational inequalities. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **31** (1991), *no.* 9, 1267–1277; *translation in Comput. Math. Math. Phys.* **31** (1991), *no.* 9, 1–8 (1992). (Zdzisław W. Trzaska) **93b:65187** 65N55 (49J40, 65K10, 90C33)

Belsley, David A. The degree of effective identification and a diagnostic measure for assessing it. (English summary) *Computational economics and econometrics* (*Minneapolis, MN*, 1990), 55–62, *Adv. Stud. Theoret. Appl. Econometrics*, 22, *Kluwer Acad. Publ., Dordrecht*, 1992. (*see* **93b:90009**) 62P20 (62J20)

— Paring 3SLS calculations down to manageable proportions. (English summary) *Comput. Sci. Econom. Management* **5** (1992), *no.* 3, 157–169. 62J05 (62–04, 65F05, 65Y10)

— *see also* **Computational economics and econometrics**, **93b:90009**

Beltadze, G. N. Analysis of an infinite-dimensional lexicographic game. (Russian. English and Georgian summaries) *Soobshch. Akad. Nauk Gruzii* **141** (1991), *no.* 2, 241–244. 90D10

— Lexicographic game-theoretic problems of dynamic resource allocation. (Russian. English and Georgian summaries) *Soobshch. Akad. Nauk Gruzii* **142** (1991), *no.* 1, 41–44. 90D40 (90D35)

Beltagy, M. Curves and loops in a 2-dimensional manifold without focal points. (English summary) *Bull. Calcutta Math. Soc.* **82** (1990), *no.* 6, 451–456. (Summary) **93k:53041** 53C22

— Supporting subsets in manifolds without focal points. (Arabic summary) *Delta J. Sci.* **14** (1990), *no.* 2, 372–389. (Summary) **93d:53050** 53C22 (53C20)

— Enlargement of convex bodies in manifolds without focal points. (Arabic summary) *Delta J. Sci.* **14** (1990), *no.* 2, 390–403. (Summary) **93d:53051** 53C22 (53C20)

— Complete hypersurfaces in hyperbolic space. *J. Inst. Math. Comput. Sci. Math. Ser.* **4** (1991), *no.* 3, 343–346. (Andrzej Bucki) **93e:53016** 53A35

Beltrametti, Enrico G. (*with* Mączyński, Maciej J.) Problem of classical and nonclassical probabilities. (English summary) Quantum logics, Part II (Gdańsk, 1990). *Internat. J. Theoret. Phys.* **31** (1992), *no.* 10, 1849–1856. (S. Gudder) **93i:81009** 81P10

Beltrametti, Mauro C. (*with* Sommese, Andrew J.; Wiśniewski, Jarosław A.) Results on varieties with many lines and their applications to adjunction theory. *Complex algebraic varieties* (*Bayreuth*, 1990), 16–38, *Lecture Notes in Math.*, 1507, *Springer, Berlin*, 1992. (Antonio Lanteri) **93i:14007** 14C20 (14J40)

— (*with* Fania, M. Lucia; Sommese, Andrew J.) On the discriminant variety of a projective manifold. (English summary) *Forum Math.* **4** (1992), *no.* 6, 529–547. (Jarosław A. Wiśniewski) **93k:14049** 14J40 (14C20, 14N05)

— (*with* Sommese, Andrew J.) On the adjunction-theoretic classification of polarized varieties. *J. Reine Angew. Math.* **427** (1992), 157–192. (Takao Fujita) **93d:14012** 14C20 (14J10, 14J40)

— (*with* Ballico, Edoardo) On the k-spannedness of the adjoint line bundle. *Manuscripta Math.* **76** (1992), *no.* 3-4, 407–420. (Marco Andreatta) **93k:14010** 14C20 (14E25)

Beltrami, Edward J. Beltrami's operator and the tail of the cat. *Geometry and complex variables* (*Bologna*, 1988/1990), 11–17, *Lecture Notes in Pure and Appl. Math.*, 132, *Dekker, New York*, 1991. (Yu. V. Kostarchuk) **93c:58204** 58G03 (58G40)

Beltran, F. J. (*with* Alarcón, E.) Accuracy estimates based on multifield variational principles. (English summary) *European J. Mech. A Solids* **11** (1992), *no.* 4, 487–518.

(Summary) **93e:73041** 73V05 (73K10, 73V25)

marín Beltrán, M. *see* **Marín Beltrán, M.**

Bel'tyukov, N. B. (*with* Vasil'ev, O. V.; Terletskiĭ, V. A.) Algorithms for the optimization of dynamical systems that are based on the maximum principle. (Russian) *Voprosy Kibernet. (Moscow) No.* 156 (1991), 17–38. (Radosław Pytlak) **93f:49030** 49M05 (49M07, 49M10)

Bely, Vladimer *see* **Belyi, V. A.**

Belyaev, A. G. A boundary value problem for the Poisson equation in a punctured domain with small inclusions. (Russian. Russian summary) *Vestnik Moskov. Univ. Ser. I Mat. Mekh.* **1991,** *no.* 6, 30–35, 102–103; *translation in Moscow Univ. Math. Bull.* **46** (1991), *no.* 6, 29–33. (Summary) **93k:35039** 35B40 (35J05)

— (*with* Mikheev, A. G.; Shamaev, A. S.) Plane wave diffraction by a rapidly oscillating surface. (Russian. Russian summary) *Zh. Vychisl. Mat. i Mat. Fiz.* **32** (1992), *no.* 8, 1258–1272; *translation in Comput. Math. Math. Phys.* **32** (1992), *no.* 8, 1121–1133. (Summary) **93m:78013** 78A45 (35C20, 35J05)

Belyaev, Yu. K. (*with* Dugina, T. N.; Chistyakova, N. V.) Estimation of the reliability of a system with multiple failures on the basis of incomplete data. (Russian. Russian summary) *Avtomat. i Telemekh.* **1992,** *no.* 2, 181–189; *translation in Automat. Remote Control* **53** (1992), *no.* 2, *part* 2, 299–305. 62N05 (90B25)

— (*with* Lupanov, O. B.; Solov'ev, A. D.; Afanas'eva, L. G.; Bulinskaya, E. V.; Tyurin, Yu. N.) Boris Vladimirovich Gnedenko (on the occasion of his 80th birthday). (Russian) *Vestnik Moskov. Univ. Ser. I Mat. Mekh.* **1992,** *no.* 3, 86–89. 01A70

Belyaeva, E. V. Some solutions of the Volterra equation with a singularity. (Russian. Russian summary) *Boundary value problems (Russian)*, 184–190, *Perm. Politekh. Inst., Perm'*, 1989. (*see* **93k:00022**) 47N20

Belyakin, N. V. (*with* Ganov, V. A.) ★ Общая теория вычислений с оракулами. (Russian. Russian summary) [A general theory of calculations with oracles] *Akad. Nauk SSSR Sibirsk. Otdel., Inst. Mat., Novosibirsk*, 1989. 136 *pp.* (Marat M. Arslanov) **93j:03022** 03D10

— Effective hierarchies. (Russian) *Algebra i Logika* **29** (1990), *no.* 4, 385–397, 503; *translation in Algebra and Logic* **29** (1990), *no.* 4, 253–261 (1991). (Roman Murawski) **93b:03080** 03D55

Belyakov, G. V. (*with* Sadovskiĭ, M. A.; Rodionov, V. N.) On a mechanism for the rise of a cavitational vortex. (Russian) *Dokl. Akad. Nauk* **325** (1992), *no.* 1, 42–45; *translation in Soviet Phys. Dokl.* **37** (1992), *no.* 7, 327–328. 76C05 (76–05)

Belyakov, K. I. Properties of Markov operators leaving invariant some classes of functions and measures. (English and Latvian summaries) *Proceedings of the Latvian Probability Seminar, Vol.* 1 (*Riga*, 1991), 48–69, *Riga Tech. Univ., Riga*, 1992. (*see* **93e:60006**) 60J05 (47B38, 47N30)

— Markov operators and finitely additive measures concentrated around a point. (Russian. English and Russian summaries) *Dokl. Akad. Nauk Ukrainy* **1992,** *no.* 2, 7–8, 168. (Summary) **93g:60162** 60J35 (47B38, 47N30)

Belyakova, G. V. (*with* Batalova, Z. S.; Ezhevskaya, N. A.) On the stability of nonlinear nonautonomous oscillators. (Russian) *Dinamika Sistem* **1990,** *Dinam. Stokh. Bifur.*, 27–45. (From the text) **93e:34075** 34D99 (34C15, 70K20)

Belyanin, M. P. (*with* Kalachëv, L. V.; Mamontov, E. V.) Application of the boundary function method for computing some semiconductor devices. (Russian. English summary) *Mat. Model.* **3** (1991), *no.* 8, 63–71. (Summary) **93b:78010** 78A55 (35J25, 35Q60)

Belyankov, A. Ya. ★ Метод исчерпывания в вычислительной линейной алгебре. (Russian. Russian summary) [The exhaustion method in numerical linear algebra] Сообщения по Вычислительной Математике. [Reports in Numerical Mathematics] *Akad. Nauk SSSR, Vychisl. Tsentr, Moscow*, 1990. 64 *pp.* (Zuhe Shen) **93g:65081** 65J10 (65Fxx)

— Formulas for the recomputation of a partial resolvent operator. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **32** (1992), *no.* 1, 157–161; *translation in Comput. Math. Math. Phys.* **32** (1992), *no.* 1, 132–136. (Summary) **93c:65074** 65J10 (15A18, 47A50)

Belyankova, T. I. (*with* Kalinchuk, V. V.) Shear vibrations of a stamp on the surface of a prestressed half-space. (Russian. Russian summary) *Prikl. Mat. Mekh.* **56** (1992), *no.* 2, 313–320; *translation in J. Appl. Math. Mech.* **56** (1992), *no.* 2, 267–273. 73D30 (73T05)

Belyavskaya, G. B. (*with* Tabarov, A. Kh.) The nuclei and center of linear quasigroups. (Russian. English, Russian and Moldavian summaries) *Izv. Akad. Nauk Respub. Moldova Mat.* **1991,** *no.* 3, 37–42, 92. (From the introduction) **93e:20100** 20N05

— (*with* Tabarov, A. Kh.) Characterization of linear and alinear quasigroups. (Russian. Russian summary) *Diskret. Mat.* **4** (1992), *no.* 2, 142–147. (Summary) **93f:20089** 20N05

Belyĭ, S. V. (*with* Tsekanovskiĭ, È. R.) Classes of operator *R*-functions and their realization by conservative systems. (Russian) *Dokl. Akad. Nauk SSSR* **321** (1991), *no.* 3, 441–445; *translation in Soviet Math. Dokl.* **44** (1992), *no.* 3, 692–696. (Björn Textorius) **93f:47013** 47A56 (47B25, 47N70, 93B28)

Belyĭ, V. A. (*with* Kublanovskaya, V. N.) Solution of spectral problems for polynomial matrix pencils. *Proceedings of the Second International Symposium on Numerical Analysis (Prague*, 1987), 221–227, *Teubner-Texte Math.*, 107, *Teubner, Leipzig*, 1988. (*see* **93b:65007**) 65F15

Belykh, V. M. Zero approximation by nonnegative fractions on a system of intervals. (Russian. English summary) *Vestnik Leningrad. Univ. Mat. Mekh. Astronom.* **1991,** *vyp.* 1, 3–7; *translation in Vestnik Leningrad Univ. Math.* **24** (1991), *no.* 1, 1–6. (From the introduction) **93e:41032** 41A30

Belytschko, Ted (*with* Bayliss, Alvin; Hansen, David; Turkel, Eli) Adaptive multi-domain spectral methods. (English summary) *Fifth International Symposium on Domain Decomposition Methods for Partial Differential Equations (Norfolk, VA*, 1991), 195–203, *SIAM, Philadelphia, PA*, 1992. (*see* **93g:65009**) 65M70

— (*with* Lu, Y. Y.) Stability analysis of elemental explicit-implicit partitions by Fourier methods. *Comput. Methods Appl. Mech. Engrg.* **95** (1992), *no.* 1, 87–96. (Summary) **93a:73077** 73V05 (73V15)

— (*with* Lu, Y. Y.) Convergence and stability analyses of multi-time step algorithm for parabolic systems. (English summary) *Comput. Methods Appl. Mech. Engrg.* **102** (1993), *no.* 2, 179–198. (Summary) **93h:65114** 65M12

Bemelmans, J. *see* **Progress in partial differential equations: elliptic and parabolic problems, 93f:35007** *and* **Progress in partial differential equations: calculus of variations, applications, 93f:35008**

van Bemmelen, Theo (*with* Kersten, Paul H. M.) Nonlocal symmetries and recursion operator of the Landau-Lifshitz equation. *J. Math. Phys.* **32** (1991), *no.* 7, 1709–1716. (Summary) **93b:58167** 58G35

garcía Ben, Marta *see* **García Ben, Marta**

Bena, D. Le problème de Riemann généralisé à singularités données pour des systèmes des fonctions analytiques. (French summary) [The generalized Riemann problem with given singularities for systems of analytic functions] *Rev. Roumaine Math. Pures Appl.* **37** (1992), *no.* 7, 539–544. (A. P. Soldatov) **93j:30044** 30E25

— Influence of small local deformations on an airfoil profile. (Romanian. Romanian summary) *Stud. Cerc. Mec. Apl.* **51** (1992), *no.* 4, 351–360. 76B05 (76M99)

Ben Abda, Amel (*with* Andrieux, Stéphane) Identification de fissures planes par une donnée de bord unique: un procédé direct de localisation et d'identification. (English and French summaries) [Identification of planar cracks by unique boundary measurement: a direct location and identification process] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 12, 1323–1328. (Giovanni Crosta) **93k:73021** 73C99 (31B20, 35R30, 73M25)

Benabdallah, Khalid (*with* Mader, A.) When is multiplication by p a closed map? (English summary) *Proceedings of the International Conference on Algebra, Part* 1 (*Novosibirsk*, 1989), 61–66, *Contemp. Math.*, 131, *Part* 1, *Amer. Math. Soc., Providence, RI*, 1992. (Summary) **93f:20066** 20K10

— (*with* Okuyama, Takashi) On subsocles of primary abelian groups. (English summary) *Rocky Mountain J. Math.* **22** (1992), *no.* 3, 813–818. (From the summary) **93h:20058** 20K10

Ben Abdallah, Naoufel Étude d'un système différentiel issu de l'équation de Boltzmann des semi-conducteurs. (English summary) [On a differential system arising from the Boltzmann semiconductor equation] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 1, 5–8. (Summary) **93d:82073** 82C70

Benabdellah, Houcine Sur une classe d'équations différentielles multivoques semi-continues supérieurement à valeurs non convexes. [On a class of upper semicontinuous multivalued differential equations with nonconvex values] *Sém. Anal. Convexe* **21** (1991), *Exp. No.* 6, 37 *pp.* (G. Anichini) **93b:34026** 34A60 (34A12, 34G20, 47H15, 47N20, 49J24)

Bénabou, Jean Some remarks on free monoids in a topos. *Category theory (Como*, 1990), 20–29, *Lecture Notes in Math.*, 1488, *Springer, Berlin*, 1991. (Ieke Moerdijk) **93h:18008** 18B25

Ben-Abraham, S. I. Defective vertex configurations in quasicrystalline structures. (English summary) *Internat. J. Modern Phys. B* **7** (1993), *no.* 6-7, 1415–1425. (Summary) **93m:82050** 82D25 (52C20, 52C22)

Benadé, Gerhard (*with* Broere, Izak) Chromatic relatedness of graphs. (English summary) *Ars Combin.* **34** (1992), 326–330. (Summary) **93m:05067** 05C15

Benakli, Nadia Polyèdre hyperbolique à groupe d'automorphismes non discret. (English summary) [Hyperbolic polyhedra with nondiscrete automorphism group] *C. R. Acad. Sci. Paris Sér. I Math.* **313** (1991), *no.* 10, 667–669. (Frédéric Paulin) **93b:57005** 57M20 (20F55)

Ben Amar, Martine Plumes in Hele-Shaw cells. (English summary) *Phys. Fluids A* **4** (1992), *no.* 12, 2641–2650. (Peter A. McCoy) **93i:76085** 76R10 (76D99, 76R99)

Ben Ammar, Mohamed Décomposition d'Iwasawa du groupe spinoriel. (English summary) [Iwasawa decomposition of spin groups] *Riv. Mat. Univ. Parma* (4) **17** (1991), 83–86 (1992). (Pierre Anglès) **93h:22025** 22E46

Benamor, Hédi (*with* Arnal, Didier; Benayadi, Saïd; Pinczon, Georges) Une algèbre de Lie non semi-simple rigide et sympathique: $H^1(g) = H^2(g) = H^0(g,g) = H^1(g,g) = H^2(g,g) = \{0\}$. (English and French summaries) [A nonsemisimple sympathetic and rigid Lie algebra: $H^1(g) = H^2(g) = H^0(g,g) = H^1(g,g) = H^2(g,g) = \{0\}$] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 3, 261–263. (From the text) **93g:17034** 17B40

Benamou, Jean-David Décomposition de domaine pour le réarrangement monotone d'applications vectorielles. (English and French summaries) [Domain decomposition for the monotonic rearrangement of vector mappings] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 4, 469–474. (Alexandru Donescu) **93f:65089** 65N55

Ben-Amram, Amir M. (*with* Galil, Zvi) On pointers versus addresses. (English summary) *J. Assoc. Comput. Mach.* **39** (1992), *no.* 3, 617–648. (Julian Padget) **93k:68027** 68Q05 (68P20, 68Q30)

Benanav, Dan Recognizing unnecessary clauses in resolution based systems. (English summary) *J. Automat. Reason.* **9** (1992), *no.* 1, 43–76. (Summary) **93g:68119** 68T15 (03B35)

Bénard, Christine (*with* Wang, Xin-Fang; Rosset-Louërat, Marie-Minerve) Inverse problem: identification of a melting front in the 2D case. (English summary) *Optimization, optimal control and partial differential equations (Iaşi*, 1992), 99–110, *Internat. Ser. Numer. Math.*, 107, *Birkhäuser, Basel*, 1992. (*see* **93m:00044**) 49K20 (80A22)

Benardete, Diego (*with* Mitchell, John William) Asymptotic homotopy cycles for flows and Π_1 de Rham theory. *Trans. Amer. Math. Soc.* **338** (1993), *no.* 2, 495–535. (Marc Aubry) **93j:58107** 58F17 (22E25, 57R99, 58A12, 58F11, 58F25)

Ben Arous, Gérard Géométrie de la courbe brownienne plane. [Geometry of the plane Brownian curve] Séminaire Bourbaki, Vol. 1990/91. *Astérisque No.* 201-203 (1991), *Exp. No.* 730, 7–42 (1992). (Introduction) **93b:60181** 60J65 (58G32)

— (*with* Léandre, Rémi) Décroissance exponentielle du noyau de la chaleur sur la diagonale. I. (English summary) [Exponential decay of the heat kernel on the diagonal. I] *Probab. Theory Related Fields* **90** (1991), *no.* 2, 175–202. (Patrick Cattiaux) **93b:60136a** 60H30 (58G32, 60F10, 60H07, 60J60)

— (*with* Léandre, Rémi) Décroissance exponentielle du noyau de la chaleur sur la diagonale. II. (English summary) [Exponential decay of the heat kernel on the diagonal. II] *Probab. Theory Related Fields* **90** (1991), *no.* 3, 377–402. (Patrick Cattiaux) **93b:60136b** 60H30 (58G32, 60F10, 60H07, 60J60)

— (*with* Baldi, Paolo; Kerkyacharian, Gérard) Large deviations and the Strassen theorem in Hölder norm. *Stochastic Process. Appl.* **42** (1992), *no.* 1, 171–180. (Tzong-Yow Lee) **93f:60034** 60F10

— (*with* Deuschel, Jean-Dominique; Stroock, Daniel W.) Precise asymptotics in large deviations. *Bull. Sci. Math.* (2) **117** (1993), *no.* 1, 107–124. (Ofer Zeitouni) **93m:60052** 60F10 (60K35)

Benaroya, Haym Random eigenvalues, algebraic methods and structural dynamic models. (English summary) *Appl. Math. Comput.* **52** (1992), *no.* 1, 37–66. (Summary) **93g:73081** 73K12 (70L05, 73K35)

Ben-Artzi, Asher (*with* Gohberg, Israel) Band matrices and dichotomy. *Topics in matrix and operator theory* (*Rotterdam*, 1989), 137–170, *Oper. Theory Adv. Appl.*, 50, *Birkhäuser, Basel*, 1991. (From the introduction) **93b:47042** 47A99 (15A06, 47B99)

— (*with* Gohberg, Israel) Dichotomy, discrete Bohl exponents, and spectrum of block weighted shifts. *Integral Equations Operator Theory* **14** (1991), *no.* 5, 613–677. (T. A. Gillespie) **93e:47033** 47B37 (39A12, 47A10, 58G25)

— (*with* Gohberg, Israel) A nonstationary analogue of inertia theorems. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, I* (*Kobe*, 1991), 59–63, *Mita, Tokyo*, 1992. (*see* **93g:93005**) 47A99 (15A18, 47N70)

— (*with* Gohberg, Israel) Time variant analogs of orthogonal polynomials and Stein equation. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, I* (*Kobe*, 1991), 77–80, *Mita, Tokyo*, 1992. (Summary) **93i:47123** 47N99 (33C45, 42C05, 47A53, 47B35)

— (*with* Gohberg, Israel) Dichotomy of systems and invertibility of linear ordinary differential operators. *Time-variant systems and interpolation*, 90–119, *Oper. Theory Adv. Appl.*, 56, *Birkhäuser, Basel*, 1992. (*see* **93d:47148**) 47E05 (34L05)

— (*with* Gohberg, Israel) Inertia theorems for block weighted shifts and applications. *Time-variant systems and interpolation*, 120–152, *Oper. Theory Adv. Appl.*, 56, *Birkhäuser, Basel*, 1992. (*see* **93d:47148**) 47B37 (47A53)

Ben-Artzi, Matania (*with* Trèves, François) Uniform estimates for a class of evolution equations. (English summary) *Journées "Équations aux Dérivées Partielles"* (*Saint-Jean-de-Monts*, 1992), *Exp. No. I*, 12 *pp.*, *École Polytech., Palaiseau*, 1992. (*see* **93c:35005**) 35B45 (35K22, 35S05)

— Global estimates for the Schrödinger equation. *J. Funct. Anal.* **107** (1992), *no.* 2, 362–368. (Summary) **93e:35044** 35K15 (35B45, 35J10)

— Global existence and decay for a nonlinear parabolic equation. *Nonlinear Anal.* **19** (1992), *no.* 8, 763–768. (Yun Mei Chen) **93i:35066** 35K15 (35A05, 35B40)

Ben-Aryeh, Y. (*with* Lukš, A.; Peřinová, V.) The concept of equal space commutators in quantum optics. *Phys. Lett. A* **165** (1992), *no.* 1, 19–27. (K. Wódkiewicz) **93d:81189** 81V10 (81S05, 81V80)

Benasseni, Jacques Perturbational aspects in correspondence analysis. (English summary) *Comput. Statist. Data Anal.* **15** (1993), *no.* 4, 393–410. (Summary) **93m:62130** 62H17 (62H25)

Benassi, Albert (*with* Fouque, Jean-Pierre; Saada, E.; Vares, M. E.) Asymmetric attractive particle systems on **Z**: hydrodynamic limit for monotone initial profiles. *J. Statist. Phys.* **63** (1991), *no.* 3-4, 719–735. (From the introduction) **93d:82065** 82C40

— Analyse multi-échelle et probabilités. [Multiscale analysis and probability theory] *Probabilités numériques*, 121–134, *Collect. Didact.*, 10, *INRIA, Rocquencourt*, 1992. (*see* **93k:65002**) 60G15 (42C05, 60G35, 62M10)

— (*with* Jaffard, Stéphane; Roux, Daniel) Module de continuité des champs aléatoires gaussiens étudiés au moyen d'ondelettes appropriées. (English and French summaries) [Modulus of continuity of Gaussian random fields decomposed in an appropriate wavelet basis] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 4, 441–446. (Summary) **93f:60067** 60G60 (60G15)

Benati, M. (*with* Morro, Angelo) Equations for multibody dynamics. Memoirs of mathematical physics in honor of Giovanni Carini on his 70th birthday (Italian). *Atti Accad. Peloritana Pericolanti Cl. Sci. Fis. Mat. Natur.* **68** (1990), *suppl.* 1, 291–308 (1991). (David A. Levinson) **93a:70012** 70F99 (70E99)

Benatti, Fabio Entropic and algebraic K-systems: a comparison. *Quantum probability & related topics*, 181–192, *QP-PQ, VI, World Sci. Publishing, River Edge, NJ*, 1991. (N. N. Ganikhodzhaev) **93b:46126** 46L55 (82C10)

— Deterministic quantum noise and Kolmogorov systems. *Lett. Math. Phys.* **24** (1992), *no.* 1, 31–40. (Matthew J. Donald) **93d:82053** 82C10 (46L60, 46N55)

Benavent López, Enrique (*with* Campos, V.; Corberán, Á.; Mota, E.) The capacitated arc routing problem: lower bounds. (English summary) *Networks* **22** (1992), *no.* 7, 669–690. (Summary) **93h:90032** 90B10 (05C90, 68Q25, 68R10, 90C35)

Benavides, R. (*with* Baeza-Vega, R.) Some $\mathcal{F}$-algebras of rank 3 with associative bilinear forms. (Spanish) *Proyecciones* **11** (1992), *no.* 1, 29–35. (Summary) **93c:16006** 16D70

— (*with* Baeza-Vega, R.) Associative bilinear forms in some baric algebras. (English summary) *Linear Algebra Appl.* **180** (1993), 219–226. (Summary) **93k:17061** 17D92 (17C10)

domínguez Benavides, T. *see* **Domínguez Benavides, T.**

Benayadi, Saïd Certaines propriétés d'une classe d'algèbres de Lie qui généralisent les algèbres de Lie semi-simples. (English and French summaries) [Certain properties of a class of Lie algebras that generalize semisimple Lie algebras] *Ann. Fac. Sci. Toulouse Math.* (5) **12** (1991), *no.* 1, 29–35. (Summary) **93h:17014** 17B20

— (*with* Arnal, Didier; Benamor, Hédi; Pinczon, Georges) Une algèbre de Lie non semi-simple rigide et sympathique: $H^1(g) = H^2(g) = H^0(g, g) = H^1(g, g) = H^2(g, g) = \{0\}$. (English and French summaries) [A nonsemisimple sympathetic and rigid Lie algebra: $H^1(g) = H^2(g) = H^0(g, g) = H^1(g, g) = H^2(g, g) = \{0\}$] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 3, 261–263. (From the text) **93g:17034** 17B40

Ben-Ayed, Omar Bilevel linear programming. (English summary) *Comput. Oper. Res.* **20** (1993), *no.* 5, 485–501. (Stephan Dempe) **93m:90052** 90C08 (90–02)

Benbourenane, Mohamed (*with* Bank, Randolph E.) The hierarchical basis multigrid method for convection-diffusion equations. *Numer. Math.* **61** (1992), *no.* 1, 7–37. (Rolf Rannacher) **93d:65106** 65N55 (65N30, 76M20, 76Rxx)

Bencharif, N. (*with* Ng, S. F.) Method of change of variable decomposition to solve and invert a system of linear equations. *Comput. & Structures* **42** (1992), *no.* 5, 849–852. (From the summary) **93a:65030** 65F05

Benchiboun, M. D. Some results on nonlinear and nonlogarithmic sequences and their acceleration. (English summary) *Zastos. Mat.* **21** (1992), *no.* 3, 407–425. (S. Sridhar) **93g:65012** 65B99 (40A05, 40D05)

Benchoubane, H. (*with* Stoten, D. P.) The decentralized minimal controller synthesis algorithm. (English summary) *Internat. J. Control* **56** (1992), *no.* 4, 967–983. 93A14 (93B40)

— (*with* Stoten, D. P.) The extended minimal controller synthesis algorithm. (English summary) *Internat. J. Control* **56** (1992), *no.* 5, 1139–1165. 93B51 (93B40)

Benci, Vieri (*with* Degiovanni, Marco) Periodic solutions of dissipative dynamical systems. *Variational methods* (*Paris*, 1988), 395–411, *Progr. Nonlinear Differential Equations Appl.*, 4, *Birkhäuser Boston, Boston, MA*, 1990. (Shi Qing Zhang) **93k:58188** 58F22 (34C25)

— (*with* Fortunato, Donato; Giannoni, Fabio) Some results on the existence of geodesics in static Lorentz manifolds with singular boundary. (Italian summary) *Atti Accad. Naz. Lincei Cl. Sci. Fis. Mat. Natur. Rend. Lincei* (9) *Mat. Appl.* **2** (1991), *no.* 1, 17–23. (László Szabó) **93b:53052** 53C50 (53C22, 58E10)

— (*with* Fortunato, Donato; Giannoni, Fabio) Geodesics on static Lorentz manifolds with convex boundary. *Progress in variational methods in Hamiltonian systems and elliptic equations* (*L'Aquila*, 1990), 21–41, *Pitman Res. Notes Math. Ser.*, 243, *Longman Sci. Tech., Harlow*, 1992. (Anders Linnér) **93j:58027** 58E10 (53C50)

— (*with* Fortunato, Donato; Giannoni, Fabio) On the existence of geodesics in static Lorentz manifolds with singular boundary. *Ann. Scuola Norm. Sup. Pisa Cl. Sci.* (4) **19** (1992), *no.* 2, 255–289. (Wen Zhao Lu) **93j:58028** 58E10 (83C15)

— (*with* Dell'Antonio, Gianfausto; D'Onofrio, Biancamaria) Index theory and stability of periodic solutions of Lagrangian systems. (English and French summaries) *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 5, 583–588. (Gabriella Tarantello) **93h:58126** 58F22 (34B15, 34C25, 34D99, 58E05, 70H35)

— (*with* Giannoni, Fabio) Morse theory for functionals of class C^1. (English and French summaries) *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 8, 883–888. (Wen Zhao Lu) **93i:58027** 58E05 (49Q10)

— (*with* Giannoni, Fabio) On the existence of closed geodesics on noncompact Riemannian manifolds. *Duke Math. J.* **68** (1992), *no.* 2, 195–215. (Gudlaugur Thorbergsson) **93i:58030** 58E10 (53C22)

— (*with* Masiello, Antonio) A Morse index for geodesics in static Lorentz manifolds. *Math. Ann.* **293** (1992), *no.* 3, 433–442. (Anders Linnér) **93e:58027** 58E10

Bencivenga, Ermanno Erratum: "Incompleteness of a free arithmetic" [Logique et Anal. (N.S.) **31** (1988), no. 121-122, 79–84; MR 92c:03062]. *Logique et Anal.* (*N.S.*) **32** (1989), *no.* 125-126, i. (Editors) **93k:03060** 03F30

— Adding a few names. *Logique et Anal.* (*N.S.*) **32** (1989), *no.* 125-126, 157–159. 03A05 (03B10)

— A specious puzzle. *Erkenntnis* **38** (1993), *no.* 1, 131–133. (Editors) **93m:03005** 03A05

Benda, Josef Solution of an ideal compressible fluid flow in a plane cascade by the finite element method. *Proceedings of the Second International Symposium on Numerical Analysis* (*Prague*, 1987), 114–119, *Teubner-Texte Math.*, 107, *Teubner, Leipzig*, 1988. (*see* **93b:65007**) 76M10 (65N30, 76N10)

el-Bendari, Sh. E. *see* **El-Bendari, Sh. E.**

Ben-David, Shai (*with* Chor, Benny; Goldreich, Oded; Luby, Michael) On the theory of average case complexity. *J. Comput. System Sci.* **44** (1992), *no.* 2, 193–219. (Helmut Alt) **93d:68020** 68Q15 (03D15, 68Q10)

van Bendegem, Jean Paul *see* **Van Bendegem, Jean Paul**

Bender, Carl M. New approach to the solution of nonlinear problems. (English summary) *Large scale structures in nonlinear physics* (*Villefranche-sur-Mer*, 1991), 190–210, *Lecture Notes in Phys.*, 392, *Springer, Berlin*, 1991. (Alexander W. Smith) **93m:81037** 81Q60 (35Q40, 70G50, 81–08, 81T15, 81T60)

— (*with* Cooper, Fred; Milton, Kimball A.; Moshe, Moshe; Pinsky, Stephen S.; Simmons, L. M., Jr.) δ expansion for local gauge theories. I. A one-dimensional model. *Phys. Rev. D* (3) **45** (1992), *no.* 4, 1248–1260. (Othmar Steinmann) **93g:81085** 81T13 (81T10)

— (*with* Milton, Kimball A.; Moshe, Moshe) δ expansion for local gauge theories. II. Nonperturbative calculation of the anomaly in the Schwinger model. *Phys. Rev. D* (3) **45** (1992), *no.* 4, 1261–1275. (Othmar Steinmann) **93g:81086** 81T13 (81T40, 81V10)

— (*with* Rivers, R. J.; Wong, Chi Chung) Derivative expansions for affinely quantized field theories. II. Scale-invariant quantization. *Phys. Rev. D* (3) **45** (1992), *no.* 12, 4600–4609. (Henryk Arodź) **93h:81097** 81T27 (81S99, 81T10)

— (*with* Boettcher, Stefan; Lipatov, L. N.) Almost zero-dimensional quantum field theories. (English summary) *Phys. Rev. D* (3) **46** (1992), *no.* 12, 5557–5573. (Summary) **93k:81152** 81T16 (81–04)

— (*with* Turbiner, A. V.) Analytic continuation of eigenvalue problems. (English summary) *Phys. Lett. A* **173** (1993), *no.* 6, 442–446. (Summary) **93m:81031** 81Q15 (34L40)

Bender, Edward A. (*with* Canfield, E. Rodney; McKay, Brendan D.) The asymptotic number of labelled weakly-connected digraphs with a given number of vertices and edges. (English summary) *Australas. J. Combin.* **6** (1992), 119–124. (Summary) **93h:05091** 05C30

— (*with* Gao, Zhi-Cheng; Richmond, L. Bruce) Submaps of maps. I. General 0-1 laws. *J. Combin. Theory Ser. B* **55** (1992), *no.* 1, 104–117. (Summary) **93k:52016a** 52B70 (05C10, 57M15)

— (*with* Gao, Zhi-Cheng; McCuaig, William D.; Richmond, L. Bruce) Submaps of maps. II. Cyclically k-connected planar cubic maps. *J. Combin. Theory Ser. B* **55** (1992), *no.* 1, 118–124. (Summary) **93k:52016b** 52B70 (05C10, 57M15)

— (*with* Richmond, L. Bruce) Submaps of maps. III. k-connected nonplanar maps. *J. Combin. Theory Ser. B* **55** (1992), *no.* 1, 125–132. (Summary) **93k:52016c** 52B70 (05C10, 57M15)

— (*with* Canfield, E. Rodney; McKay, Brendan D.) Asymptotic properties of labeled connected graphs. *Random Structures Algorithms* **3** (1992), *no.* 2, 183–202. (Ioan Tomescu) **93f:05085** 05C80 (05C40)

— (*with* Canfield, E. Rodney) Enumeration of degree restricted maps on the sphere. (English summary) *Planar graphs* (*New Brunswick, NJ*, 1991), 13–16, *DIMACS Ser. Discrete Math. Theoret. Comput. Sci.*, 9, *Amer. Math. Soc., Providence, RI*, 1993. (*see* **93m:05005**) 05A15 (05A16, 05C10)

Bendersky, Martin (*with* Davis, Donald M.) 2-primary v_1-periodic homotopy groups of $SU(n)$. *Amer. J. Math.* **114** (1992), *no.* 3, 465–494. (J. W. Rutter) **93g:55018** 55Q52 (55T99)

— The v_1-periodic unstable Novikov spectral sequence. *Topology* **31** (1992), *no.* 1, 47–64. (John McCleary) **93i:55026** 55T15 (55Q70, 55T25)

Ben Dhia, Hachmi Numerical analysis of a bidimensional Hencky problem approximated by a discontinuous finite element method. *SIAM J. Numer. Anal.* **29** (1992), *no.* 4, 1059–1073. (P. Rochus) **93c:65129** 65N15 (65N30, 73E99)

Bendikov, A. D. On Markov processes associated with a projective sequence of harmonic spaces. *Probability theory and mathematical statistics, Vol. I* (*Vilnius*, 1989), 118–127, "*Mokslas*", *Vilnius*, 1990. (L. Stoica) **93c:31016** 31D05 (60J45)

Bendjaballah, C. (*with* le Pas de Sécheval, H.) Some remarks on the phase operator in quantum optics. *Quantum aspects of optical communications* (*Paris*, 1990), 51–58, *Lecture Notes in Phys.*, 378, *Springer, Berlin*, 1991. (*see* **93e:81158**) 81V80

— *see also* **Quantum aspects of optical communications, 93e:81158**

Bendjilali, Boualem (*with* Konsowa, Mokhtar H.; Haroon, Ahmed H.) Conductivity of random trees and the existence of infinite conducting components-percolation model. (English summary) *Egyptian Statist. J.* **35** (1991), *no.* 2, 251–266. (Summary) **93j:60157** 60K35

— On the instability of the Edgeworth process. (English summary) *J. Math. Anal. Appl.* **169** (1992), *no.* 1, 20–29. (Summary) **93f:90036** 90A16 (34D05)

Bendor-Samuel, A. (*with* Currie, J. D.) Words without near-repetitions. *Canad. Math. Bull.* **35** (1992), *no.* 2, 161–166. (Do Long Van) **93h:03057** 03D05 (03D40, 20F10, 68R15)

Bendre, S. M. (*with* Balakrishnan, Narayanaswamy; Malik, H. J.) General relations and identities for order statistics from nonindependent nonidentical variables. *Ann. Inst. Statist. Math.* **44** (1992), *no.* 1, 177–183. (Kuo Tung Lin) **93e:62134** 62G30

Bendsøe, M. (*with* Achtziger, W.; Ben-Tal, A.; Zowe, Jochem) Equivalent displacement based formulations for maximum strength truss topology design. (English summary) *Impact Comput. Sci. Engrg.* **4** (1992), *no.* 4, 315–345. (Summary) **93j:73057** 73K40 (73K05, 90C05)

Bene, Julius (*with* Szépfalusy, Péter) Bounds for the Rényi entropies and dynamical phase transitions. (English summary) *Phys. Rev. A* (3) **46** (1992), *no.* 2, 801–808. (Summary) **93e:58049** 58F03 (58F11, 58F13)

— (*with* Graham, Robert) Supersymmetric Bianchi type IX cosmology with a scalar field. (English summary) *Phys. Lett. B* **302** (1993), *no.* 2-3, 183–188. (Viqar Husain) **93m:83004** 83C05 (83C15, 83C45)

rodellar Benedé, J. *see* **Rodellar Benedé, J.**

Benedek, A. (*with* Panzone, Rafael) On the concept of uniform domain. (Spanish. English summary) *Proceedings of the First "Dr. Antonio A. R. Monteiro" Congress on Mathematics* (*Spanish*) (*Bahía Blanca*, 1991), 1–21, *Univ. Nac. del Sur, Bahía Blanca*, 1991. (Summary) **93m:30030** 30C65

Benedetto, D. (*with* Pulvirenti, Mario) From vortex layers to vortex sheets. *SIAM J. Appl. Math.* **52** (1992), *no.* 4, 1041–1056. (J. Thomas Beale) **93g:76027** 76C05 (35Q35)

di Benedetto, Fabio *see* **Di Benedetto, Fabio**

Benedetto, John J. Stationary frames and spectral estimation. (English summary) *Probabilistic and stochastic methods in analysis, with applications* (*Il Ciocco*, 1991), 117–161, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 372, *Kluwer Acad. Publ., Dordrecht*, 1992. (Summary) **93g:42010** 42B10 (42B25, 60G10, 60G25, 62M15)

— Irregular sampling and frames. *Wavelets*, 445–507, *Wavelet Anal. Appl.*, 2, *Academic Press, Boston, MA*, 1992. (Summary) **93c:42030** 42C15 (94A12)

— (*with* Heinig, H. P.) Fourier transform inequalities with measure weights. (English summary) *Adv. Math.* **96** (1992), *no.* 2, 194–225. (Luboš Pick) **93m:42004** 42B10

di Benedetto, Maria Domenica *see* **Di Benedetto, Maria Domenica**

Benedicks, Michael (*with* Young, Lai Sang) Absolutely continuous invariant measures and random perturbations for certain one-dimensional maps. *Ergodic Theory Dynamical Systems* **12** (1992), *no.* 1, 13–37. (M. L. Blank) **93d:58087** 58F11 (28D10, 28D20, 58F30)

— (*with* Jones, Peter Wilcox) The 1992 Wolf Prize to Lennart Carleson. (Swedish. English summary) *Normat* **40** (1992), *no.* 3, 97–99, 143. (Summary) **93m:01072** 01A70

Ben-Eliyahu, Rachel (*with* Dechter, Rina) Default logic, propositional logic and constraints. (English summary) *AAAI-91. Proceedings, Ninth National Conference on Artificial Intelligence, Vol.* 1, 2, 379–385, *AAAI Press, Menlo Park, CA*, 1991. (Summary) **93j:68186** 68T27 (03B60)

Ben-El-Mechaiekh, H. Fixed points for compact set-valued maps. *Questions Answers Gen. Topology* **10** (1992), *no.* 2, 153–156. 54H25 (54C60)

Benenti, S. Separation of variables in the geodesic Hamilton-Jacobi equation. *Symplectic geometry and mathematical physics* (*Aix-en-Provence*, 1990), 1–36, *Progr. Math.*, 99, *Birkhäuser Boston, Boston, MA*, 1991. (Frans Cantrijn) **93d:58185** 58G30 (53C22, 70H20, 83C15)

Beneš, Viktor (*with* Štěpán, Josef) Extremal solutions in the marginal problem. (English summary) *Advances in probability distributions with given marginals* (*Rome*, 1990), 189–206, *Math. Appl.*, 67, *Kluwer Acad. Publ., Dordrecht*, 1991. (Summary) **93m:60030** 60E05

— Extremal and optimal solutions in the transshipment problem. *Comment. Math. Univ. Carolin.* **33** (1992), *no.* 1, 97–112. (S. T. Rachev) **93g:60004** 60B05

Benet, L. (*with* Moshinsky, M.; Loyola, G.; Salinas, A.) Comparison of perturbative and variational procedures in a relativistic problem. (English and Spanish summaries) *Rev. Mexicana Fís.* **38** (1992), *no.* 5, 778–790. 81Q15

Bénéteau, L. Commutative Moufang loops and related groupoids. *Quasigroups and loops: theory and applications*, 115–142, *Sigma Ser. Pure Math.*, 8, *Heldermann, Berlin*, 1990. (*see* **93g:20133**) 20N05 (20N02)

— Cubic hypersurface quasigroups. *Quasigroups and loops: theory and applications*, 143–150, *Sigma Ser. Pure Math.*, 8, *Heldermann, Berlin*, 1990. (*see* **93g:20133**) 20N05 (14J70)

Benfatto, G. The one-dimensional spinless Fermi gas and the Luttinger model. (English summary) *Probabilistic methods in mathematical physics* (*Siena*, 1991), 70–82, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93j:82030** 82B28 (82-02, 82B10)

— (*with* Renn, J.) Nontrivial fixed points and screening in the hierarchical two-dimensional Coulomb gas. *J. Statist. Phys.* **67** (1992), *no.* 5-6, 957–980. (Summary) **93c:82026** 82B28

Benghabrit, Youssef (*with* Hallin, Marc) Optimal rank-based tests against first-order superdiagonal bilinear dependence. (English summary) *J. Statist. Plann. Inference* **32** (1992), *no.* 1, 45–61. (Endre Csáki) **93i:62040** 62G10 (62M10)

Bengtsson, Ingemar Self-duality and the metric in a family of neighbors of Einstein's equations. *J. Math. Phys.* **32** (1991), *no.* 11, 3158–3161. (Jorge A. Pullin) **93c:83005** 83C05 (53C80, 83D05)

— (*with* Boström, Ola) Infinitely many cosmological constants. *Classical Quantum Gravity* **9** (1992), *no.* 4, L47–L51. (Jorge A. Pullin) **93c:83093** 83D05 (83C05)

— (*with* Peldán, Peter) Another "cosmological" constant. *Internat. J. Modern Phys. A* **7** (1992), *no.* 6, 1287–1308. (Jorge A. Pullin) **93c:83004** 83C05 (83D05)

— Some observations on degenerate metrics. (English summary) *Gen. Relativity Gravitation* **25** (1993), *no.* 1, 101–112. (Jorge A. Pullin) **93j:83008** 83C05

Benguria, Rafael D. (*with* Hoops, Stefan; Siedentop, Heinz) Bounds on the excess charge and the ionization energy for the Hellmann-Weizsäcker model. (English and French summaries) *Ann. Inst. H. Poincaré Phys. Théor.* **57** (1992), *no.* 1, 47–65. (A. Ventura) **93g:81209** 81V45

— (*with* Ashbaugh, Mark S.) A sharp bound for the ratio of the first two eigenvalues of Dirichlet Laplacians and extensions. *Ann. of Math.* (2) **135** (1992), *no.* 3, 601–628. (Cornelius O. Horgan) **93d:35105** 35P15 (35J05)

— (*with* Ashbaugh, Mark S.) A second proof of the Payne-Pólya-Weinberger conjecture. *Comm. Math. Phys.* **147** (1992), *no.* 1, 181–190. (Boro Döring) **93k:33002** 33C10

Benhabib, Jess (*with* Radner, Roy) The joint exploitation of a productive asset: a game-theoretic approach. *Econom. Theory* **2** (1992), *no.* 2, 155–190. (Summary) **93c:90120** 90D40 (90A11)

Ben-Haim, Shlomo (*with* Fruchter, Gila) Dynamic properties of cardiovascular systems. *Math. Biosci.* **110** (1992), *no.* 1, 103–117. (Summary) **93a:92004** 92C50 (92C05, 92C30)

Benharbit, A. M. (*with* Siddiqui, A. M.) Certain solutions of the equations of the planar motion of a second grade fluid for steady and unsteady cases. *Acta Mech.* **94** (1992), *no.* 1-2, 85–96. (A. S. Gupta) **93i:76005** 76A10 (76D05)

Benhenni, Karim (*with* Cambanis, Stamatis) Sampling designs for estimating integrals of stochastic processes. *Ann. Statist.* **20** (1992), *no.* 1, 161–194. (Summary) **93e:60074** 60G12 (62K05, 62M99, 65R20)

Bénilan, Philippe (*with* Boccardo, Lucio; Herrero, Miguel A.) On the limit of solutions of $u_t = \Delta u^m$ as $m \to \infty$. Some topics in nonlinear PDEs (Turin, 1989). *Rend. Sem. Mat. Univ. Politec. Torino* **1989**, *Special Issue*, 1–13 (1991). (Zhen Chao Cao) **93c:35069** 35K57 (35B05)

— (*with* Crandall, Michael G.) Completely accretive operators. *Semigroup theory and evolution equations* (*Delft*, 1989), 41–75, *Lecture Notes in Pure and Appl. Math.*, 135, *Dekker, New York*, 1991. (Gheorghe Moroşanu) **93e:47071** 47H06 (47H20, 47N20)

— (*with* Goldstein, Jerome A.; Rieder, Gisèle Ruiz) A nonlinear elliptic system arising in electron density theory. (English summary) *Comm. Partial Differential Equations* **17** (1992), *no.* 11-12, 2079–2092. (Summary) **93i:35048** 35J60 (35Q60, 81V45)

— (*with* Arendt, Wolfgang; Batty, Charles J. K.) Asymptotic stability of Schrödinger semigroups on $L^1(\mathbf{R}^N)$. *Math. Z.* **209** (1992), *no.* 4, 511–518. (J. A. Van Casteren) **93i:47057** 47D06 (31A05, 35J10, 47F05, 47N20)

— (*with* Arendt, Wolfgang) Inegalités de Kato et semi-groupes sous-markoviens. (English summary) [Kato inequalities and sub-Markovian semigroups] *Rev. Mat. Univ. Complut. Madrid* **5** (1992), *no.* 2-3, 279–308. (C. J. K. Batty) **93j:47062** 47D07 (47B38)

Benilov, E. S. On the surface waves in a shallow channel with an uneven bottom. *Stud. Appl. Math.* **87** (1992), *no.* 1, 1–14. (Summary) **93b:76009** 76B15 (35Q35, 35Q53)

Benim, A. C. Finite-element analysis of enclosed turbulent diffusion flames. *Finite elements in fluids, Vol.* 8 (*Huntsville, AL*, 1989), 295–332, *Ser. Comput. Phys. Process. Mech. Thermal Sci., Hemisphere, Washington, DC*, 1992. (*see* **93e:76050**) 80–08 (65M60, 76F99, 80A25)

Ben-Israel, Adi A volume associated with $m \times n$ matrices. Sixth Haifa Conference on Matrix Theory (Haifa, 1990). *Linear Algebra Appl.* **167** (1992), 87–111. (Marvin Marcus) **93f:15002** 15A15 (15A09)

— (*with* Miao, Jian Ming) On principal angles between subspaces in $\mathbf{R}^n$. *Linear Algebra Appl.* **171** (1992), 81–98. (R. A. Horn) **93i:15028** 15A45 (15A15, 15A18, 15A57)

Benítez, Carlos A note on certain orthogonality in normed linear spaces. *Math. Nachr.* **153** (1991), 7–8. (Abdallah M. Al-Rashed) **93g:46010** 46B20 (39B52, 46C05)

Benítez, J. (*with* Obregón, O.; Socorro, J.) Supersymmetric Taub model, the micro-superspace sector. (English summary) *Astrophys. Space Sci.* **193** (1992), *no.* 1, 61–68. (Summary) **93g:83043** 83C45 (83E50)

— (*with* Obregón, O.) Nonsingular de Sitter universe in $R + R^2 - 2\Lambda$ gravity. (English summary) *Astrophys. Space Sci.* **193** (1992), *no.* 1, 95–98. (Summary) **93g:83082** 83D05

— (*with* Obregón, O.; Socorro, J.) Supersymmetric quantum cosmology proposals and the Bianchi type-II model. (English summary) *Phys. Rev. D* (3) **47** (1993), *no.* 10, 4471–4475. (Summary) **93m:83037** 83C45 (83F05)

almeida Benítez, Pedro *see* **Almeida Benítez, Pedro**

Benítez-Read, J. S. (*with* Jamshidi, M.; Kisner, R. A.) Advanced control designs for nuclear reactors. (English summary) *Control Theory Adv. Tech.* **8** (1992), *no.* 3, 447–464. 93C95 (93B52)

— (*with* Jamshidi, M.) Adaptive input-output linearizing control of nuclear reactors. (English summary) *Control Theory Adv. Tech.* **8** (1992), *no.* 3, 525–545. 93B18 (93C95)

Benítez Trujillo, Francisco (*with* Aizpuru Tomás, Antonio) The weak dense uniform λ-property in normed spaces. (Spanish. English summary) *Proceedings of the XVth Portuguese-Spanish Conference on Mathematics, Vol. II* (*Portuguese*) (*Évora*, 1990), 199–204, *Univ. Évora, Évora*, 1991. (Summary) **93a:46022** 46B20

— (*with* Aizpuru Tomás, Antonio) The Bade property and the λ-property in spaces of convergent sequences. (English summary) *Collect. Math.* **42** (1991), *no.* 3, 245–251 (1992). (Richard M. Aron) **93m:46016** 46B45 (46A45, 46E40)

Benito Clavijo, M. Pilar Determination of Lie algebras with fewer than five ideals. (Spanish. English summary) *Proceedings of the XVth Portuguese-Spanish Conference on Mathematics, Vol. I* (*Portuguese*) (*Évora*, 1990), 119–124, *Univ. Évora, Évora*, 1991. (Michel Goze) **93g:17008** 17B05

— Lie algebras with a small number of ideals. (English summary) *Linear Algebra Appl.* **177** (1992), 233–249. (Aleksandr A. Mikhalev) **93k:17010** 17B05 (17B30)

Benjamin, Arthur T. (*with* Juhnke, Fritz) Another way of counting N^N. *SIAM J. Discrete Math.* **5** (1992), *no.* 3, 377–379. (Xiaodong Liu) **93g:05015** 05A19

Benjamin, Sidney *see* **Coutts, Stewart**

Benjamin, T. Brooke A new kind of solitary wave. (English summary) *J. Fluid Mech.* **245** (1992), 401–411. (Paul Andrew Martin) **93i:76017** 76B25 (35Q53, 76B45, 86A05)

— Note on formulas for the drag of a sphere. (English summary) *J. Fluid Mech.* **246** (1993), 335–342. (Summary) **93i:76032** 76D99 (76D05)

Benjamin, Walter (*with* Coutts, Stewart) Obituary: Sidney Benjamin. *J. Roy. Statist. Soc. Ser. A* **155** (1992), *no.* 3, 465–466. 01A70

Benjamini, Itai (*with* Peres, Yuval) A correlation inequality for tree-indexed Markov chains. *Seminar on Stochastic Processes*, 1991 (*Los Angeles, CA*, 1991), 7–14, *Progr. Probab.*, 29, *Birkhäuser Boston, Boston, MA*, 1992. (Steven N. Evans) **93g:60037** 60E15 (60G60, 60J10)

Benjamini, Yoav (*with* Krieger, Abba M.) Market share paradox and heterogeneous chains. (English summary) *Ann. Appl. Probab.* **2** (1992), *no.* 4, 1019–1023. (From the introduction) **93m:60143** 60J10 (62M05)

Benkaddour, A. (*with* Sanchez-Hubert, J.) Spectral study of a coupled compact-noncompact problem. (English and French summaries) *RAIRO Modél. Math. Anal. Numér.* **26** (1992), *no.* 6, 659–672. (Sergeĭ Edelstein) **93i:35036** 35J05 (35J20, 35P05, 76Q05)

Benkart, Georgia Partitions, tableaux, and stability in the representation theory of classical Lie algebras. *Lie theory, differential equations and representation theory (Montreal, PQ, 1989)*, 47–76, *Univ. Montréal, Montreal, PQ*, 1990. (From the summary) **93e:05101** 05E10 (17B10)

Benkhalti, Rachid (*with* Arino, Ovide) Bifurcation properties for a sequence of approximation of delay equations. *J. Math. Anal. Appl.* **171** (1992), *no.* 2, 377–388. (Xiao Biao Lin) **93j:34098** 34K15

Benkherouf, L. (*with* Watson-Gandy, C. D. T.) A note on the depot location problem with rectilinear distances and rotated axes. (English summary) *J. Indian Soc. Statist. Oper. Res.* **13** (1992), *no.* 1-4, 47–52. 90C90

— (*with* Glazebrook, Kevin D.; Owen, R. W.) Gittins indices and oil exploration. *J. Roy. Statist. Soc. Ser. B* **54** (1992), *no.* 1, 229–241. (John C. Gittins) **93i:90007** 90A05 (90D40, 90D46)

Benkirane, A. Approximations de type Hedberg dans les espaces $W^m L \log L(\Omega)$ et applications. (English and French summaries) [Hedberg-type approximations in the spaces $W^m L \log L(\Omega)$ and applications] *Ann. Fac. Sci. Toulouse Math.* (5) **11** (1990), *no.* 2, 67–78. (Summary) **93f:46044** 46E35 (35J65, 41A30, 41A63)

Ben Larbi, Miloud Régularité des solutions d'un problème de submersion dépendant d'un paramètre pour une classe de fonctions multivoques. (English summary) [Regularity of the solutions of a parametrized submersion problem for a class of multivalued functions] *C. R. Acad. Sci. Paris Sér. I Math.* **313** (1991), *no.* 12, 837–840. (Gérard Lebourg) **93b:47116** 47H10 (47H15, 47N10, 49K27, 58C06, 90C31)

Benlolo, Élise Étude des variétés orbitales dans $\mathfrak{sl}_n(\mathbf{C})$. (English and French summaries) [A study of orbital varieties in $\mathfrak{sl}_n(\mathbf{C})$] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 5, 537–540. (Chon Hu Cheng) **93j:17011** 17B10 (17B35)

Ben M'Barek, A. (*with* Arino, Ovide) Periodic solutions of a system of differential equations of first order with discontinuous coefficients. (Serbo-Croatian summary) *Facta Univ. Ser. Math. Inform. No.* 5 (1990), 57–66. (Constantin D. Chirilă) **93d:34073** 34C25

— (*with* Arino, Ovide) Uniqueness of periodic solutions of a second order ODE implied by jump discontinuities of the coefficients. (English summary) *Recent trends in differential equations*, 31–45, *World Sci. Ser. Appl. Anal.*, 1, *World Sci. Publishing, River Edge, NJ*, 1992. (M. Cecchi) **93i:34072** 34C25 (34A34)

Ben-Menahem, Shahar $D = 0$ matrix model as conjugate field theory. (English summary) *Nuclear Phys. B* **391** (1993), *no.* 1-2, 176–210. (Summary) **93j:81085** 81T40 (81T27)

Benn, I. M. (*with* Wood, W. P.) Dilation currents. *J. Math. Phys.* **33** (1992), *no.* 8, 2765–2767. (Carl Brans) **93e:83030** 83C40 (83A05)

Benna, D. G. (*with* Bekker, B. M.; Vostokov, S. V.; Zhukov, I. B.; Smirnov, A. L.; Fesenko, I. B.) The seminar "Constructive Class Field Theory". (Russian) *Algebra i Analiz* **4** (1992), *no.* 1, 177–193. (Štefan Porubský) **93i:11003** 11–02 (01A65, 01A72, 11R37, 11S31)

Ben-Naoum, K. (*with* Mawhin, Jean) The periodic-Dirichlet problem for some semilinear wave equations. *J. Differential Equations* **96** (1992), *no.* 2, 340–354. (Pavel Krejčí) **93b:35009** 35B10 (35L70, 47H15, 47N20)

Ben Nasr, Fathi Ensembles aléatoires self-affines en loi. (English summary) [Random sets self-affine in law] *Bull. Sci. Math.* (2) **116** (1992), *no.* 1, 111–119. (Hermann Haase) **93c:60008** 60D05 (60G57)

— Dimension de Hausdorff de certains fractals aléatoires. (English and French summaries) [Hausdorff dimension of some random fractals] *Sém. Théor. Nombres Bordeaux* (2) **4** (1992), *no.* 1, 129–140. (Summary) **93h:28008** 28A78 (11K55, 28A80, 60D05, 60G99)

Ben-Natan, Ron (*with* Barak, Amnon) Parallel contractions of grids for task assignment to processor networks. (English summary) *Networks* **22** (1992), *no.* 6, 539–562. (Summary) **93i:68025** 68M20 (68M10)

Bennaton, J. Freitas General solutions for semilinear elliptic equations with electric-thermal coupling. *SIAM J. Appl. Math.* **52** (1992), *no.* 4, 989–997. (Summary) **93d:35044** 35J60 (35Q60)

Bennavail, J.-C. (*with* Chen, Z.; Singh, Madan G.) Judgemental calibration of multivariable constant elasticity models: scenario generation. (English summary) *Inform. Decision Tech.* **18** (1993), *no.* 6, 415–425. 90A05 (90B50)

Bennett, Andrew F. ★ Inverse methods in physical oceanography. Cambridge Monographs on Mechanics and Applied Mathematics. *Cambridge University Press, Cambridge*, 1992. xvi+346 *pp. ISBN* 0-521-38568-7 (Publisher's description) **93h:86001** 86A05

Bennett, Bruce M. (*with* Hoffman, Donald D.; Kakarala, Ramakrishna) Modeling performance in observer theory. (English summary) *J. Math. Psych.* **37** (1993), *no.* 2, 220–240. 92J30

Bennett, Charles H. (*with* Wiesner, Stephen J.) Communication via one- and two-particle operators on Einstein-Podolsky-Rosen states. (English summary) *Phys. Rev. Lett.* **69** (1992), *no.* 20, 2881–2884. (Summary) **93g:81011** 81P15

Bennett, F. E. (*with* Shen, Hao) On indecomposable pure Mendelsohn triple systems. *Discrete Math.* **97** (1991), *no.* 1-3, 47–57. (Summary) **93e:05010** 05B07

Bennett, G. S. (*with* McIver, P.) Scattering of water waves by axisymmetric bodies in a channel. (English summary) *J. Engrg. Math.* **27** (1993), *no.* 1, 1–29. (Summary) **93i:76014** 76B15

Bennett, Grahame Lower bounds for matrices. II. *Canad. J. Math.* **44** (1992), *no.* 1, 54–74. (G. M. Leibowitz) **93c:47008** 47A30 (26D99, 40C05, 47B37)

Bennett, Karin R. (*with* Majaess, Fouad; Keast, Patrick; Fairweather, Graeme) The solution of almost block diagonal linear systems arising in spline collocation at Gaussian points with monomial basis functions. *ACM Trans. Math. Software* **18** (1992), *no.* 2, 193–204. (Summary) **93a:65002** 65–04 (65D15, 65F05)

— (*with* Majaess, Fouad; Keast, Patrick; Fairweather, Graeme) Algorithm 704: ABDPACK and ABBPACK-FORTRAN programs for the solution of almost block diagonal linear systems arising in spline collocation at Gaussian points with monomial basis functions. *ACM Trans. Math. Software* **18** (1992), *no.* 2, 205–210. (Summary) **93a:65003** 65–04 (65F05)

Bennett, L. (*with* Sheer, A.; Simhairi, N.) Trees, cycles and sensitivity of the traffic assignment problem. (English summary) *Mathematics in transport planning and control (Cardiff*, 1989), 145–158, *Inst. Math. Appl. Conf. Ser. New Ser.*, 38, *Oxford Univ. Press, New York*, 1992. (Summary) **93h:90038** 90B20 (05C90, 90B10)

Benney, D. J. (*with* Zhou, Yi Fan) The nonlinear instability characteristics of waves in free shear layers. *Stud. Appl. Math.* **86** (1992), *no.* 1, 53–78. (Joseph J. Roseman) **93g:35110** 35Q30 (76D33, 76E30)

— (*with* Zhou, Yi Fan) Instability of three-dimensional waves in two-layered flows. *Stud. Appl. Math.* **86** (1992), *no.* 4, 269–280. (Summary) **93h:76033** 76E05 (76V05)

Bennighof, J. K. (*with* Boucher, R. L.) Exact minimum-time control of a distributed system using a traveling wave formulation. *J. Optim. Theory Appl.* **73** (1992), *no.* 1, 149–167. (Ovidiu Cârjă) **93e:49007** 49J20 (49J30, 49K20, 49K30, 49M30)

Benninger, Daniel (*with* Schmid, Jürg) Effective subdirect decomposition: a case study. *Theoret. Comput. Sci.* **100** (1992), *no.* 1, 137–156. (Heinrich Seidel) **93h:08002** 08A05 (06A12, 06B05, 06D15, 68Q20)

Benoist, Yves Une nilvariété non affine. (English and French summaries) [A nilmanifold that is not affine] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 9, 983–986. (Michel Nguiffo B. Boyom) **93j:22008** 22E25 (17B30, 22E60)

— (*with* Foulon, Patrick; Labourie, François) Flots d'Anosov à distributions stable et instable différentiables. (English summary) [Anosov flows with stable and unstable differentiable distributions] *J. Amer. Math. Soc.* **5** (1992), *no.* 1, 33–74. (Nicolaï T. A. Haydn) **93b:58112** 58F17 (58F15)

Benoit, Jean-Pierre (*with* Krishna, Vijay) Renegotiation in finitely repeated games. (English summary) *Econometrica* **61** (1993), *no.* 2, 303–323. (Sylvain Sorin) **93m:90112** 90D10 (90D20)

Benouahmane, B. Approximants de Padé "homogènes" et polynômes orthogonaux à deux variables. (English and Italian summaries) [Homogeneous Padé approximants and bivariate orthogonal polynomials] *Rend. Mat. Appl.* (7) **11** (1991), *no.* 4, 673–689. (N. Hayek Calil) **93c:41027** 41A21 (42C05)

Ben-Porath, Elchanan (*with* Dekel, Eddie) Signaling future actions and the potential for sacrifice. *J. Econom. Theory* **57** (1992), *no.* 1, 36–51. (Peter Borm) **93h:90111** 90D10 (90A35)

— Repeated games with finite automata. (English summary) *J. Econom. Theory* **59** (1993), *no.* 1, 17–32. (Summary) **93k:90116** 90D20

Bensaïd, Adaouia (*with* van der Waall, Robert W.) On finite groups whose elements of equal order are conjugate. *Simon Stevin* **65** (1991), *no.* 3-4, 361–374. (Demetris I. Deriziotis) **93e:20024** 20D05

Bensaïd, Nadia Méthode hilbertienne pour la prévision non paramétrique d'un processus ponctuel. (English summary) [Hilbert method for the nonparametric prediction of a point process] *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 11, 865–870. (Summary) **93b:60083** 60G25 (62G99, 62M20)

— Inférence non paramétrique pour un processus ponctuel aminci. (English and French summaries) [Nonparametric inference for a thinned point process] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 3, 325–328. (Summary) **93e:62221** 62M09 (62G05)

Bensebah, Ali Weakness of the topology of a JB^*-algebra. (English summary) *Canad. Math. Bull.* **35** (1992), *no.* 4, 449–454. (Angel Rodríguez-Palacios) **93k:46056** 46L70 (46H70)

Benson, Chal (*with* Jenkins, Joe; Ratcliff, Gail) Bounded K-spherical functions on Heisenberg groups. *J. Funct. Anal.* **105** (1992), *no.* 2, 409–443. (Leonard F. Richardson) **93e:22017** 22E30 (22E25, 33C80)

Benson, D. J. *see* **Benson, David John**

Benson, David Joel Momentum advection on a staggered mesh. *J. Comput. Phys.* **100** (1992), *no.* 1, 143–162. (Summary) **93b:76057** 76M10 (76M20)

— (*with* Schoenfeld, S.) A total variation diminishing shock viscosity. (English summary) *Comput. Mech.* **11** (1993), *no.* 2-3, 107–121. (Summary) **93i:76052** 76M10 (76L05)

Benson, David John ★ Representations and cohomology. II. Cohomology of groups and modules. Cambridge Studies in Advanced Mathematics, 31. *Cambridge University Press, Cambridge*, 1991. x+278 *pp. ISBN* 0-521-36135-4 (K. W. Roggenkamp) **93g:20099** 20J06 (19D55, 20C20, 55P20)

— (*with* Martin, Stuart) Mod 2 cohomology of the unitary groups $U_3(2^n)$. *Comm. Algebra* **19** (1991), *no.* 11, 3125–3144. (Jian-Pan Wang) **93a:20072** 20G10 (20C33)

— (*with* Franjou, V.) Séries de compositions de modules instables et injectivité de la cohomologie du groupe $\mathbf{Z}/2$. [Unstable composition series of modules and injectivity of the group $\mathbf{Z}/2$] *Math. Z.* **208** (1991), *no.* 3, 389–399. (Haynes R. Miller) **93b:55022** 55S10 (16D90, 20J05)

— Resolutions and Poincaré duality for finite groups. (English summary) *Algebraic topology (San Feliu de Guíxols*, 1990), 10–19, *Lecture Notes in Math.*, 1509, *Springer, Berlin*, 1992. (Summary) **93i:20057** 20J06 (20C20)

— (*with* Carlson, Jon F.) The cohomology of extraspecial groups. *Bull. London Math. Soc.* **24** (1992), *no.* 3, 209–235. (J. L. Alperin) **93b:20087** 20J06 (20D15)

— (*with* Carlson, Jon F.) Products in negative cohomology. (English summary) *J. Pure Appl. Algebra* **82** (1992), *no.* 2, 107–129. (U. Stammbach) **93i:20058** 20J06

— (*with* Carlson, Jon F.) Periodic modules with large period. *Quart. J. Math. Oxford Ser.* (2) **43** (1992), *no.* 171, 283–296. (J. L. Alperin) **93e:20011** 20C20 (20J06)

— (*with* Feshbach, M.) Stable splittings of classifying spaces of finite groups. *Topology* **31** (1992), *no.* 1, 157–176. (John C. Harris) **93d:55013** 55P42

Benson, Debbie L. (*with* Maini, Philip K.; Sherratt, Jonathan A.) Pattern formation in reaction-diffusion models with spatially inhomogeneous diffusion coefficients. (English summary) *IMA J. Math. Appl. Med. Biol.* **9** (1992), *no.* 3, 197–213. 92C15

Benson, Harold P. A finite, nonadjacent extreme-point search algorithm for optimization over the efficient set. *J. Optim. Theory Appl.* **73** (1992), *no.* 1, 47–64. (Richard Gallagher) **93a:90052** 90C26 (90C29)

— (*with* Sayin, Serpil) A face search heuristic algorithm for optimizing over the efficient set. (English summary) *Naval Res. Logist.* **40** (1993), *no.* 1, 103–116. (Summary) **93h:90079** 90C29 (90B50)

Benson, R. W. (*with* Jabbari, Faryar) Observers for stabilization of systems with matched uncertainty. *Dynamics Control* **2** (1992), *no.* 3, 303–323. (Summary) **93b:93098** 93D15

Benson, Ya. E. (*with* Nikitin, Ya. Yu.) Conditions for local asymptotic optimality in the sense of Bahadur of weighted Kolmogorov-Smirnov statistics. (Russian. Russian summary) *Zap. Nauchn. Sem. S.-Peterburg. Otdel. Mat. Inst. Steklov. (POMI)* **194** (1992), *Problemy Teorii Veroyatnost. Raspred.* 12, 21–27, 176. (Dana Vorlíčková) **93h:62034** 62F05 (62G30)

Bensoussan, Alain (*with* Glowinski, Roland) Approximation of Zakai equation by the splitting up method. (English summary) *Stochastic systems and optimization* (*Warsaw*, 1988), 257–265, *Lecture Notes in Control and Inform. Sci.*, 136, *Springer, Berlin*, 1989. (*see* **93d:93009**) 34F05 (93E10)

— (*with* Nagai, Hideo) An ergodic control problem on whole Euclidean space. *Stochastic systems and optimization* (*Warsaw*, 1988), 266–273, *Lecture Notes in Control and Inform. Sci.*, 136, *Springer, Berlin*, 1989. (*see* **93d:93009**) 93E10 (49K45)

— Homogenization of a class of stochastic partial differential equations. *Composite media and homogenization theory* (*Trieste*, 1990), 47–65, *Progr. Nonlinear Differential Equations Appl.*, 5, *Birkhäuser Boston, Boston, MA*, 1991. (Fu Ru Jiang) **93a:35015** 35B27 (35R60, 60H15, 93E11)

— Some remarks on the exact controllability of Maxwell's equations. *Differential equations and control theory* (*Iaşi*, 1990), 17–29, *Pitman Res. Notes Math. Ser.*, 250, *Longman Sci. Tech., Harlow*, 1991. (Vera Winitzky de Spinadel) **93d:93014** 93B05 (78A25, 93C20)

— A model of stochastic differential equation in Hilbert spaces applicable to Navier Stokes equation in dimension 2. *Stochastic analysis*, 51–73, *Academic Press, Boston, MA*, 1991. (Yu. L. Daletskii) **93b:60126** 60H15 (35Q30, 35R60)

— ★ Stochastic control of partially observable systems. *Cambridge University Press, Cambridge*, 1992. viii+352 *pp. ISBN* 0-521-35403-X (Yu. M. Kabanov) **93i:93001** 93–02 (60G35, 93E03, 93E11, 93E20)

— (*with* Frehse, J.) On Bellman equations of ergodic control in $\mathbf{R}^n$. *Applied stochastic analysis* (*New Brunswick, NJ*, 1991), 21–29, *Lecture Notes in Control and Inform. Sci.*, 177, *Springer, Berlin*, 1992. (From the introduction) **93f:93135** 93E20 (49K45, 49L20)

— Exact controllability for linear dynamic systems with skew symmetric operators. *Boundary control and boundary variation* (*Sophia-Antipolis*, 1990), 27–36, *Lecture Notes in Control and Inform. Sci.*, 178, *Springer, Berlin*, 1992. (N. U. Ahmed) **93f:93016** 93B05 (93C25)

— (*with* Boccardo, Lucio; Murat, François) Homogenization of a nonlinear partial differential equation with unbounded solution. *Progress in partial differential equations: calculus of variations, applications* (*Pont-à-Mousson*, 1991), 1–12, *Pitman Res. Notes Math. Ser.*, 267, *Longman Sci. Tech., Harlow*, 1992. (Taras A. Mel'nyk) **93m:35023** 35B27

— Splitting up method in the context of stochastic PDE. *Stochastic partial differential equations and their applications* (*Charlotte, NC*, 1991), 22–31, *Lecture Notes in Control and Inform. Sci.*, 176, *Springer, Berlin*, 1992. (*see* **93b:60006**) 60H15 (34F05, 47N20, 65M99)

— (*with* Boccardo, Lucio; Murat, François) *H* convergence for quasi-linear elliptic equations with quadratic growth. (English summary) *Appl. Math. Optim.* **26** (1992), *no.* 3, 253–272. (Józef Joachim Telega) **93j:35028** 35B27 (35J60, 49J40, 73B27)

— (*with* Boccardo, Lucio) On a quasi-linear elliptic PDE with noncoercive principal part. *Asymptotic Anal.* **5** (1992), *no.* 6, 473–480. (Mario M. Coclite) **93h:35069** 35J65 (35B20)

— (*with* Kozlov, S. M.) Diffusion effective dans un flux périodique. (English and French summaries) [Effective diffusion in a periodic flow] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 7, 765–768. (Summary) **93i:35109** 35Q35 (73B27, 76B15, 76R50)

— (*with* Frehse, J.) On Bellman equations of ergodic control in $\mathbf{R}^n$. *J. Reine Angew. Math.* **429** (1992), 125–160. (Tamer Başar) **93h:49046** 49L20 (35B37, 49K45, 93E20)

— *see also* **Analysis and optimization of systems: state and frequency domain approaches for infinite-dimensional systems, 93i:93005**

Ben-Tal, A. (*with* Achtziger, W.; Bendsøe, M.; Zowe, Jochem) Equivalent displacement based formulations for maximum strength truss topology design. (English summary) *Impact Comput. Sci. Engrg.* **4** (1992), *no.* 4, 315–345. (Summary) **93j:73057** 73K40 (73K05, 90C05)

— (*with* Teboulle, Marc) Addenda: "A geometric property of the least squares solution of linear equations" [Linear Algebra Appl. **139** (1990), 165–170; MR 91h:15004]. *Linear Algebra Appl.* **180** (1993), 5. (Editors) **93k:15004** 15A06 (90C20)

van Benthem, Johan Language in action. *J. Philos. Logic* **20** (1991), *no.* 3, 225–263. (From the text) **93b:03003** 03A05 (03B70)

— General dynamics. *Theoret. Linguist.* **17** (1991), *no.* 1-3, 159–201. (A. A. Iskander) **93b:68072** 68S05 (03B65, 03B70, 68Q55)

— Logic as programming. (English summary) *Fund. Inform.* **17** (1992), *no.* 4, 285–317. (Summary) **93k:68017** 68N17 (03B70, 68T27)

Bentil, D. E. (*with* Murray, J. D.) A perturbation analysis of a mechanical model for stable spatial patterning in embryology. (English summary) *J. Nonlinear Sci.* **2** (1992), *no.* 4, 453–480. 92C15

— (*with* Murray, J. D.) On the mechanical theory for biological pattern formation. (English summary) *Phys. D* **63** (1993), *no.* 1-2, 161–190. (Summary) **93j:92008** 92C15

Bentkus, Vidmantas (*with* Götze, Friedrich; Paulauskas, Vygantas; Račkauskas, Alfredas) The accuracy of Gaussian approximation in Banach spaces. (Russian) *Probability theory*, 6 (*Russian*), 39–139, *Itogi Nauki i Tekhniki, Akad. Nauk SSSR, Vsesoyuz. Inst. Nauchn. i Tekhn. Inform., Moscow*, 1991. (Vladimir I. Chebotarev) **93e:60014** 60B12 (60F15)

— (*with* Liubinskas, K.) Convergence rates of moments and related functionals in the invariance principle in Banach spaces. (Russian and Lithuanian summaries) *Litovsk. Mat. Sb.* **31** (1991), *no.* 2, 258–274; *reprinted in Lithuanian Math. J.* **31** (1991), *no.* 2, 169–182 (1992). (Xiang Chen Wang) **93d:60009** 60B12 (60F17)

— Theorems of large deviations in the multivariate invariance principle. *J. Multivariate Anal.* **41** (1992), *no.* 2, 297–313. (Vladimir I. Chebotarev) **93j:60029** 60F10 (60B12)

Bentler, Peter M. (*with* Satorra, Albert) Goodness-of-fit test under IV estimation: asymptotic robustness of a NT test statistic. (English summary) *Applied stochastic models and data analysis* (*Granada*, 1991), 555–567, *World Sci. Publishing, River Edge, NJ*, 1991. (*see* **93g:62001**) 62F35 (62P20)

— (*with* Mooijaart, A.) Robustness of normal theory statistics in structural equation models. *Statist. Neerlandica* **45** (1991), *no.* 2, 159–171. (P. A. K. Covey-Crump) **93a:62090** 62H25

— (*with* Fang, Kai Tai; Yuan, Ke Hai) Applications of sets of points uniformly distributed on a sphere to testing multinormality and robust estimation. (English summary) *Probability and statistics* (*Tianjin*, 1988/1989), 56–73, *Nankai Ser. Pure Appl. Math. Theoret. Phys., World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93b:60004**) 62F99 (62H99)

— (*with* Lee, Sik Yum) Some aspects of covariance structure analysis. *The development of statistics: recent contributions from China*, 107–124, *Pitman Res. Notes Math. Ser.*, 258, *Longman Sci. Tech., Harlow*, 1992. (*see* **93e:62004**) 62P15

Bentley, H. L. (*with* Herrlich, Horst; Lowen, Robert) Improving constructions in topology. *Category theory at work* (*Bremen*, 1990), 3–20, *Res. Exp. Math.*, 18, *Heldermann, Berlin*, 1991. (Y. T. Rhineghost) **93b:54009** 54B30 (54A05, 54D20, 54E17)

— (*with* Lowen-Colebunders, Eva) Completely regular spaces. *Comment. Math. Univ. Carolin.* **32** (1991), *no.* 1, 129–153. (Summary) **93d:54028** 54C30 (18B30, 54C40, 54E17)

Bentley, Jon Louis Fast algorithms for geometric traveling salesman problems. (English summary) *ORSA J. Comput.* **4** (1992), *no.* 4, 387–411. (Summary) **93g:90062** 90C27 (90–04)

— (*with* Clarkson, Kenneth L.; Levine, David B.) Fast linear expected-time algorithms for computing maxima and convex hulls. (English summary) *Algorithmica* **9** (1993), *no.* 2, 168–183. (Summary) **93m:68161** 68U05 (68Q25)

Bento, M. C. (*with* Bertolami, O.; Moniz, P. V.; Mourão, J. M.; Sá, P. M.) On the cosmology of massive vector fields with SO(3) global symmetry. (English summary) *Classical Quantum Gravity* **10** (1993), *no.* 2, 285–298. (Summary) **93i:83026** 83C20 (83C15)

Bentosela, F. Stark-Wannier resonant states. (English summary) *Recent developments in quantum mechanics* (*Poiana Braşov*, 1989), 85–95, *Math. Phys. Stud.*, 12, *Kluwer Acad. Publ., Dordrecht*, 1991. (Summary) **93f:82057** 82D25 (81V10)

— (*with* Grecchi, Vincenzo) Stark Wannier ladders. *Comm. Math. Phys.* **142** (1991), *no.* 1, 169–192. (From the text) **93k:81046** 81Q10 (81V70)

Bentrad, A. On the Cauchy problem for a class of operators with branching. (Russian. Russian summary) *Differentsial'nye Uravneniya* **28** (1992), *no.* 9, 1625–1627, 1655. (Summary) **93k:35005** 35A07 (35A20, 35B32)

Bentsman, Joseph (*with* Lehman, Brad) Vibrational control of linear time lag systems with arbitrarily large but bounded delays. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 10, 1576–1582. (V. Kolmanovskii) **93k:93059** 93C30 (93B52, 93D15)

Benveniste, Albert Multiscale signal processing: from QMF to wavelets. *Algorithms and parallel VLSI architectures, Vol. A* (*Pont-à-Mousson*, 1990), 71–96, *Elsevier, Amsterdam*, 1991. (Summary) **93b:94003** 94A12

— (*with* Zhang, Qinghua) Approximation by wavelet networks. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, II* (*Kobe*, 1991), 539–544, *Mita, Tokyo*, 1992. (*see* **93g:93006**) 94A12 (92B20, 94A11)

— (*with* Le Guernic, Paul; Sorel, Yves; Sorine, Michel) A denotational theory of synchronous reactive systems. *Inform. and Comput.* **99** (1992), *no.* 2, 192–230. (Stefano Mazzanti) **93g:68034** 68Q10 (68Q55)

Benveniste, Yakov (*with* Dvorak, George J.) Uniform fields and universal relations in piezoelectric composites. (English summary) *J. Mech. Phys. Solids* **40** (1992), *no.* 6, 1295–1312. (E. S. Şuhubi) **93g:73101** 73R05 (73B27, 73B35, 73K20, 78A99)

— (*with* Dvorak, George J.) On transformation strains and uniform fields in multiphase elastic media. *Proc. Roy. Soc. London Ser. A* **437** (1992), *no.* 1900, 291–310. (Cesare Davini) **93e:73034a** 73S10 (73B27, 73K20)

Benyaiche, Allami Distributions bi-sousharmoniques sur la boule unité de $\mathbf{R}^n$ ($n \geq 2$). [Bisubharmonic distributions on the unit ball in $\mathbf{R}^n$ ($n \geq 2$)] Analyse complexe (Bucharest, 1989). *Rev. Roumaine Math. Pures Appl.* **36** (1991), *no.* 1-2, 3–20. (Abderrahman Boukricha) **93g:31009** 31B10 (31B30)

Benyamini, Y. (*with* Weit, Y.) Spaces of continuous functions failing spectral analysis. *Geometrical and algebraical aspects in several complex variables* (*Cetraro*, 1989), 27–32, *Sem. Conf.*, 8, *EditEl, Rende*, 1991. (*see* **93m:32002**) 46E10

Benyamin-Seeyar, Anader (*with* Jia, Ming; Le-Ngoc, Tho) Exact lower bounds on the codelength of three-step permutation-decodable cyclic codes. (English summary) *IEEE Trans. Inform. Theory* **38** (1992), *no.* 6, 1812–1817. 93B20

Benz, Walter ★ Geometrische Transformationen. (German) [Geometric transformations] Unter besonderer Berücksichtigung der Lorentztransformationen. [With special reference to the Lorentz transformations] *Bibliographisches Institut, Mannheim*, 1992. 322 *pp. ISBN* 3-411-15071-8 (Horst Struve) **93i:51002** 51A10 (51–01, 51F20)

— On structures $T(t, q, r, n)$. *Combinatorics* '90 (*Gaeta*, 1990), 25–36, *Ann. Discrete Math.*, 52, *North-Holland, Amsterdam*, 1992. (Horst Struve) **93k:51021** 51E25 (05B25, 51B05, 62K99)

— Obituary: Ferenc Radó, 1921–1990. *Aequationes Math.* **43** (1992), *no.* 2-3, 120–126. (Editors) **93d:01053** 01A70

— A conditional dilatation equation. *Aequationes Math.* **43** (1992), *no.* 2-3, 177–182. (Harkrishan Vasudeva) **93f:39019** 39B52

— Functional equations which are exorbitant. *Arch. Math.* (*Basel*) **58** (1992), *no.* 3, 301–306. (B. Crstici) **93c:39002** 39B22

— Zum mathematischen Werk von Hanfried Lenz—eine Ansprache. [On the mathematical work of Hanfried Lenz—an address] *J. Geom.* **43** (1992), *no.* 1-2, 5–13. (J. Strommer) **93a:01043** 01A70

Benzaghou, Benali (*with* Bézivin, Jean-Paul) Propriétés algébriques de suites différentiellement finies. (English and French summaries) [Algebraic properties of differentially finite sequences] *Bull. Soc. Math. France* **120** (1992), *no.* 3, 327–346. (R. Cohn) **93m:12006** 12H10 (39A99)

Benzaken, Claude ★ Systèmes formels. (French) [Formal systems] Introduction à la logique et à la théorie des langages. [Introduction to the logic and theory of language] Logique. Mathématiques. Informatique [Logic. Mathematics. Computer Science], 6. *Masson, Paris*, 1991. xiv+167 *pp. ISBN* 2-225-82567-X (J.-M. Autebert) **93h:68069** 68Q45 (68–02)

Benzécri, J.-P. ★ Correspondence analysis handbook. Translated from the French by T. K. Gopalan. Statistics: Textbooks and Monographs, 125. *Marcel Dekker, Inc., New York*, 1992. xii+665 *pp. ISBN* 0-8247-8437-5 (Alexander Shapiro) **93e:62007** 62–07 (62H25)

Benzel, Steve (*with* Ge, Zhong; Scovel, Clint) Elementary construction of higher-order Lie-Poisson integrators. (English summary) *Phys. Lett. A* **174** (1993), *no.* 3, 229–232. (Summary) **93k:58084** 58F05 (58–04)

Benzi, R. (*with* Succi, S.; Vergassola, M.) Recent advances in the theory of the lattice Boltzmann equation. (English summary) *Discrete models of fluid dynamics* (*Figueira da Foz*, 1990), 97–103, *Ser. Adv. Math. Appl. Sci.*, 2, *World Sci. Publishing, River Edge, NJ*, 1991. (*see* **93f:82001**) 82C40

Benzinger, Harold E. Julia sets and differential equations. *Proc. Amer. Math. Soc.* **117** (1993), *no.* 4, 939–946. (Michael Hurley) **93e:58098** 58F08 (30D05, 58F10, 65H05)

Beohar, Archana (*with* Gupta, Vandana; Gupta, Virendra K.) Approximation by Fourier expansion. (Hindi. English summary) *Vijnana Parishad Anusandhan Patrika* **34** (1991), *no.* 3, 127–132. 42A10

— (*with* Pipliwal, Km. Priti) Approximation of functions by Norlund means of conjugate Fourier series. (Hindi. English summary) *Vijnana Parishad Anusandhan Patrika* **34** (1991), *no.* 3, 165–171. 42A10 (42A24)

Ber, M. G. (*with* Malozëmov, V. N.) Best formulas for the approximate calculation of the discrete Fourier transform. (Russian. Russian summary) *Zh. Vychisl. Mat. i Mat. Fiz.* **32** (1992), *no.* 11, 1709–1719; *translation in Comput. Math. Math. Phys.* **32** (1992), *no.* 11, 1533–1544 (1993). (Summary) **93i:65130** 65T20

Bera, Anil K. (*with* Machado, José A. F.) Estimation of systematic risk using Bayesian analysis with hierarchical and nonnormal priors. (English summary) *Readings in econometric theory and practice*, 143–157, *Contrib. Econom. Anal.*, 209, *North-Holland, Amsterdam*, 1992. (*see* **93m:62006**) 62F15

— (*with* Higgins, M. L.) A test for conditional heteroskedasticity in time series models. (English summary) *J. Time Ser. Anal.* **13** (1992), *no.* 6, 501–519. 62M10

— (*with* Lee, Sangkyu) Information matrix test, parameter heterogeneity and ARCH: a synthesis. (English summary) *Rev. Econom. Stud.* **60** (1993), *no.* 1, 229–240. (Summary) **93h:62191** 62P20 (62J05)

Bera, P. K. (*with* Das, U.; Bhattacharyya, C.; Talukdar, B.) On integral representations of the Coulomb functions. *J. Math. Phys.* **33** (1992), *no.* 4, 1403–1407. (Giorgio Cattapan) **93d:81183** 81U05 (33C15, 81Q60)

— (*with* Talukdar, B.; Das, U.; Bhattacharyya, C.) Phase-equivalent potentials from supersymmetric quantum mechanics. *J. Phys. A* **25** (1992), *no.* 14, 4073–4082. (Summary) **93d:81036** 81Q05 (81T60)

Bera, Rasajit Kumar (*with* Chakrabarti, Aloknath) Cooling of a composite slab in a two-fluid medium. *Z. Angew. Math. Phys.* **42** (1991), *no.* 6, 943–959. (J. R. Ockendon) **93a:80002a** 80A20 (35J25, 35K05)

— (*with* Chakrabarti, Aloknath) Cooling of an infinite slab in a two-fluid medium. *J. Austral. Math. Soc. Ser. B* **33** (1992), *no.* 4, 474–485. (J. R. Ockendon) **93a:80002b** 80A20 (35J25, 35K05)

Beran, Jan (*with* Ghosh, Sucharita) Slowly decaying correlations, testing normality, nuisance parameters. *J. Amer. Statist. Assoc.* **86** (1991), *no.* 415, 785–791. (Summary) **93g:62061** 62G10

Beran, Philip S. (*with* Culick, Fred E. C.) The role of nonuniqueness in the development of vortex breakdown in tubes. (English summary) *J. Fluid Mech.* **242** (1992), 491–527. (Summary) **93f:76037** 76D99 (76D33)

Beran, Rudolf (*with* Ducharme, Gilles R.) ★ Asymptotic theory for bootstrap methods in statistics. *Université de Montréal, Centre de Recherches Mathématiques, Montreal, PQ*, 1991. viii+81 *pp. ISBN* 2-921120-10-0 (Arup Bose) **93c:62002** 62–02 (62G09, 62G15, 62G20)

— Designing prediction bands. *Nonparametric functional estimation and related topics* (*Spetses*, 1990), 577–586, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 335, *Kluwer Acad. Publ., Dordrecht*, 1991. (Summary) **93k:62199** 62M99 (62K99)

— (*with* Millar, P. W.) Tests of fit for logistic models. (English summary) *The art of statistical science*, 153–172, *Wiley Ser. Probab. Math. Statist. Probab. Math. Statist., Wiley, Chichester*, 1992. (Arup Bose) **93j:62125** 62G10 (62G09, 62G20)

— Controlling conditional coverage probability in prediction. *Ann. Statist.* **20** (1992), *no.* 2, 1110–1119. (Raúl Pedro Mentz) **93g:62118** 62M20

— (*with* Hall, Peter Gavin) Estimating coefficient distributions in random coefficient regressions. (English summary) *Ann. Statist.* **20** (1992), *no.* 4, 1970–1984. (Yu. I. Petunin) **93m:62039** 62E20 (62J05)

— Simultaneous prediction regions. *Probab. Theory Related Fields* **92** (1992), *no.* 2, 231–246. (Lionel Weiss) **93e:62089** 62F25

Berani, Idriz Type V surfaces and transversal surfaces adjoint to them. (Russian. English and Serbo-Croatian summaries) *Rad Jugoslav. Akad. Znan. Umjet. No.* 450 (1990), 23–40. (V. Oproiu) **93e:53017** 53A35

Bérard, Alain (*with* Charlier, Alphonse; Charlier, Marie-France; Fristot, Danièle) ★ Tensors and the Clifford algebra. Application to the physics of bosons and fermions. Monographs and Textbooks in Pure and Applied Mathematics, 163. *Marcel Dekker, Inc., New York*, 1992. x+323 *pp. ISBN* 0-8247-8666-1 (Dominique Lambert) **93g:15018** 15A66 (53A50, 81R05, 81R25)

— (*with* Grandati, Y.; Grangé, P.) Exact partition functions of interacting lattice fermions. *J. Math. Phys.* **33** (1992), *no.* 3, 1082–1089. (Yu Kui Zhou) **93g:81112** 81T25 (82B20)

Bérard, Pierre Remarques sur l'équation de J. Simons. (English summary) [Remarks on the equation of J. Simons] *Differential geometry*, 47–57, *Pitman Monographs Surveys Pure Appl. Math.*, 52, *Longman Sci. Tech., Harlow*, 1991. (Guo Ying Jiang) **93g:53082** 53C42 (46E35)

— Transplantation et isospectralité. I. [Transplantation and isospectrality. I] *Math. Ann.* **292** (1992), *no.* 3, 547–559. (Carolyn Gordon) **93a:58168** 58G25 (53C21)

Berbente, C. (*with* Tătăranu, C.) A polynomial method for the calculation of the laminar incompressible boundary layer. *Rev. Roumaine Sci. Tech. Sér. Méc. Appl.* **36** (1991), *no.* 1-2, 19–31. (Summary) **93d:76016** 76D10 (76D15, 76M25)

Berberian, S. K. Lebesgue's "fundamental theorem of calculus" revisited. *Paul Halmos*, 265–285, *Springer, New York*, 1991. (Donald L. Cohn) **93a:26005** 26A42 (26A46, 28A25)

— Number-theoretic functions via convolution rings. *Math. Mag.* **65** (1992), *no.* 2, 75–90. (Lutz Gerhard Lucht) **93e:11009** 11A25 (11–01)

Berbyuk, V. E. (*with* Yanchak, Ya. I.) Speed optimization of transport motion of a portal robot. *Soviet J. Comput. Systems Sci.* **30** (1992), *no.* 1, 94–108; *translated from Izv. Akad. Nauk SSSR Tekhn. Kibernet.* **1991**, *no.* 1, 126–141 (*Russian*). (Clementina D. Mladenova) **93d:93055** 93C85 (70B15, 70Q05)

— On the complete controllability of linear time-dependent systems. (Russian. Russian summary) *Mat. Metody i Fiz.-Mekh. Polya No.* 35 (1992), 160–163. 93B05

Berceanu, S. (*with* Gheorghe, Alexandru Cezar) On equations of motion on compact Hermitian symmetric spaces. *J. Math. Phys.* **33** (1992), *no.* 3, 998–1007. (Mauro Spera) **93a:81076** 81R30 (53C80)

Berckmans, Daniel (*with* De Moor, Bart L. R.; David, Johan; Vandewalle, Joos; De Moor, Maarten) Trade-offs in linear control system design: a practical example. (English summary) *Optimal Control Appl. Methods* **13** (1992), *no.* 2, 121–144. 93B51 (93B36, 93C05)

Bercovici, Hari (*with* Foias, Ciprian; Tannenbaum, Allen R.) On the optimal solutions in spectral commutant lifting theory. *J. Funct. Anal.* **101** (1991), *no.* 1, 38–49. (Daniel Alpay) **93a:47005** 47A20 (30E05, 47A57)

— (*with* Westwood, Derek) The factorization of functions in the polydisc. *Houston J. Math.* **18** (1992), *no.* 1, 1–6. (Daniel H. Luecking) **93b:32006** 32A35 (32A40, 47A68, 47B38)

— (*with* Li, Wing Suet) Normal boundary dilations and rationally invariant subspaces. *Integral Equations Operator Theory* **15** (1992), *no.* 5, 709–721. (Lawrence Fialkow) **93j:47006** 47A15 (47A20, 47A25, 47A65)

— (*with* Voiculescu, Dan) Lévy-Hinčin type theorems for multiplicative and additive free convolution. *Pacific J. Math.* **153** (1992), *no.* 2, 217–248. (Wilfried Hazod) **93k:46052** 46L50 (43A32, 46F10, 60B15)

— (*with* Becker, Robert A.; Foias, Ciprian) Weak Pareto optimality and the approximate support property. (English summary) *J. Math. Econom.* **22** (1993), *no.* 1, 61–71. (Summary) **93h:90016** 90A14 (90A53)

Bercu, B. Sur l'estimateur des moindres carrés généralisé d'un modèle ARMAX. Application à l'identification des modèles ARMA. (English summary) [On the generalized least-square estimator of an ARMAX model. Application to the identification of ARMA models] *Ann. Inst. H. Poincaré Probab. Statist.* **27** (1991), *no.* 3, 425–443. (Pham Dinh Tuan) **93b:62123** 62M10

Bérczi, Szaniszló (*with* Papp, László) A unique fivefold symmetrical building: a Calvinist church in Szeged, Hungary. *Fivefold symmetry*, 235–243, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93i:52002**) 00A69

Berdyshev, A. S. Local boundary value problems for a parabolic-hyperbolic equation. (Russian) *Boundary value problems for nonclassical equations in mathematical physics* (*Russian*) (*Novosibirsk*, 1989), 86–89, *Akad. Nauk SSSR Sibirsk. Otdel., Inst. Mat., Novosibirsk*, 1989. (*see* **93d:35001**) 35M10

— (*with* Salakhitdinov, M. S.) Boundary value problems for a parabolic-hyperbolic equation in a domain with departure from the characteristic. (Russian) *Dokl. Akad. Nauk* **327** (1992), *no.* 3, 303–305. (Megumi Saigo) **93k:35192** 35M10

Berdyshev, Yu. I. Construction of time-optimal control of a nonlinear system in the problem of going around a group of points. (Russian) *Kibernet. Sistem. Anal.* **1991**, *no.* 6, 173–175; *translation in Cybernet. Systems Anal.* **27** (1991), *no.* 6, 949–952 (1992). (Summary) **93h:49056** 49N35 (90D25)

Bereketoğlu, Hüseyin (*with* Çelebi, A. Okay) Some oscillation theorems for perturbed nonlinear differential equations. *Pure Appl. Math. Sci.* **33** (1991), *no.* 1-2, 47–53. (J. S. W. Wong) **93d:34055** 34C10

— On the periodic solutions of certain class of seventh-order differential equations. *Period. Math. Hungar.* **24** (1992), *no.* 1, 13–22. (H. O. Tejumola) **93d:34074** 34C25

Berend, Daniel (*with* Osgood, Charles F.) On the equation $P(x) = n!$ and a question of Erdős. (English summary) *J. Number Theory* **42** (1992), *no.* 2, 189–193. (Summary) **93e:11016** 11B05

— (*with* Moran, William) The inhomogeneous minimum of binary quadratic forms. *Math. Proc. Cambridge Philos. Soc.* **112** (1992), *no.* 1, 7–19. (Douglas Hensley) **93f:11048** 11H50 (11H55, 11J25)

Berens, H. (*with* Xu, Yuan) K-moduli, moduli of smoothness, and Bernstein polynomials on a simplex. *Indag. Math. (N.S.)* **2** (1991), *no.* 4, 411–421. (D. D. Stancu) **93d:41007** 41A10 (41A25, 41A35, 41A63)

— (*with* Schmid, H. J.) On the number of nodes of odd degree cubature formulae for integrals with Jacobi weights on a simplex. (English summary) *Numerical integration* (*Bergen*, 1991), 37–44, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 357, *Kluwer Acad. Publ., Dordrecht*, 1992. (Summary) **93h:65036** 65D32

— (*with* Schmid, H. J.; Xu, Yuan) Bernstein-Durrmeyer polynomials on a simplex. *J. Approx. Theory* **68** (1992), *no.* 3, 247–261. (Wiesław Pleśniak) **93a:41007** 41A10 (41A35, 41A63)

Berenstein, A. D. (*with* Zelevinsky, A. V.) Triple multiplicities for $\mathrm{sl}(r+1)$ and the spectrum of the exterior algebra of the adjoint representation. *J. Algebraic Combin.* **1** (1992), *no.* 1, 7–22. (Dao Ji Meng) **93h:17012** 17B10

Berenstein, Carlos A. An overview of the problem of deconvolution. *Seminars in Complex Analysis and Geometry*, 1988 (*Arcavacata*, 1988), 17–22, *Sem. Conf.*, 4, *EditEl, Rende*, 1990. (*see* **93m:32003**) 94A12

— From Salvatore Pincherle's "Operazioni distributive" to J. Écalle's resurgent functions. *Geometry and complex variables* (*Bologna*, 1988/1990), 19–23, *Lecture Notes in Pure and Appl. Math.*, 132, *Dekker, New York*, 1991. (J. S. Joel) **93a:32017** 32D15 (01A60, 30E15, 47B38)

— (*with* Casadio Tarabusi, Enrico) Inversion formulas for the k-dimensional Radon transform in real hyperbolic spaces. *Duke Math. J.* **62** (1991), *no.* 3, 613–631. (Introduction) **93b:53056** 53C65 (58G99)

— (*with* Agranovskiĭ, M. L.; Chang, Der-Chen E.; Pascuas, Daniel) A Morera type theorem for L^2 functions in the Heisenberg group. (English summary) *J. Anal. Math.* **57** (1991), 282–296. (Gerald B. Folland) **93k:43012** 43A80 (22E30, 32C16)

— (*with* Yger, Alain) Formules de représentation intégrale et problèmes de division. (English summary) [Integral representation formulas and division problems] *Approximations diophantiennes et nombres transcendants* (*Luminy*, 1990), 15–37, *de Gruyter, Berlin*, 1992. (Francesco Amoroso) **93h:32003** 32A25 (12D99)

— (*with* Casadio Tarabusi, Enrico) On the Radon and Riesz transforms in real hyperbolic spaces. (English summary) *Geometric analysis* (*Philadelphia, PA*, 1991), 1–21, *Contemp. Math.*, 140, *Amer. Math. Soc., Providence, RI*, 1992. (Árpád Kurusa) **93j:44003** 44A12 (44A15, 53C65)

— (*with* Chang, Der-Chen E.; Pascuas, Daniel; Zalcman, Lawrence A.) Variations on the theorem of Morera. (English summary) *The Madison Symposium on Complex Analysis* (*Madison, WI*, 1991), 63–78, *Contemp. Math.*, 137, *Amer. Math. Soc., Providence, RI*, 1992. (P. Agranovich) **93j:32007** 32A30 (30E99)

— (*with* Agranovskiĭ, M. L.; Chang, Der-Chen E.; Pascuas, Daniel) Théorèmes de Morera et Pompeiu pour le groupe de Heisenberg. (English and French summaries) [Morera and Pompeiu theorems for the Heisenberg group] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 6, 655–658. (Summary) **93g:32026** 32F40 (22E25)

– *see also* **Geometrical and algebraical aspects in several complex variables, 93m:32002**

Beresnev, V. L. (*with* Zholdoshev, A. Zh.) An algorithm for a problem on maximal flow with gains. (Russian) *Upravlyaemye Sistemy No.* 30 (1990), 17–24, 83. (Summary) **93c:90095** 90C35 (90B10)

Berestetskiĭ, V. B. (*with* Lifshits, E. M.; Pitaevskiĭ, L. P.) ★ Lehrbuch der theoretischen Physik ("Landau-Lifschitz"). Band IV. (German) [Textbook of theoretical physics ("Landau-Lifschitz"). Vol. IV] Quantenelektrodynamik. [Quantum electrodynamics] Translated from the Russian by Adolf Kühnel. Translation edited by Paul Ziesche. With a foreword by Ziesche and Kühnel. Seventh edition. *Akademie-Verlag, Berlin*, 1991. xvi+614 *pp. ISBN* 3-05-500068-4 (Editors) **93b:00001a** 00–01 (81–01)

Berestovskiĭ, V. N. Curvatures of left-invariant Riemannian metrics on Lie groups. (Russian) *Geometry and topology of homogeneous spaces* (*Russian*), 3–12, *Altaĭsk. Gos. Univ., Barnaul*, 1988. (Pavel Grushko) **93f:53040** 53C30

— (*with* Vershik, A. M.) Manifolds with intrinsic metric, and nonholonomic spaces. *Representation theory and dynamical systems*, 253–267, *Adv. Soviet Math.*, 9, *Amer. Math. Soc., Providence, RI*, 1992. (Viktor Schroeder) **93f:53027** 53C20 (53C60)

Berestycki, Henri (*with* Larrouturou, Bernard; Roquejoffre, Jean-Michel) Mathematical investigation of the cold boundary difficulty in flame propagation theory. *Dynamical issues in combustion theory* (*Minneapolis, MN*, 1989), 37–61, *IMA Vol. Math. Appl.*, 35, *Springer, New York*, 1991. (Introduction) **93f:80016** 80A25 (35Q99)

— (*with* Nirenberg, Louis) Asymptotic behaviour via the Harnack inequality. *Nonlinear analysis*, 135–144, *Quaderni, Scuola Norm. Sup., Pisa*, 1991. (Michael Wiegner) **93m:35029** 35B40 (35J15, 35J60)

— (*with* Larrouturou, Bernard) Quelques aspects mathématiques de la propagation des flammes prémélangées. (English summary) [Some mathematical aspects of premixed flame propagation] *Nonlinear partial differential equations and their applications. Collège de France Seminar, Vol. X* (*Paris*, 1987–1988), 65–129, *Pitman Res. Notes Math. Ser.*, 220, *Longman Sci. Tech., Harlow*, 1991. (Riccardo Ricci) **93a:80008** 80A25 (35Q99)

— (*with* Nirenberg, Louis) On the method of moving planes and the sliding method. *Bol. Soc. Brasil. Mat.* (*N.S.*) **22** (1991), *no.* 1, 1–37. (C. A. Swanson) **93a:35048** 35J65 (35B05, 35B50)

— (*with* Nirenberg, Louis) Travelling fronts in cylinders. (English and French summaries) *Ann. Inst. H. Poincaré Anal. Non Linéaire* **9** (1992), *no.* 5, 497–572. (Elias Tuma) **93k:35019** 35B10 (35K57)

— (*with* Larrouturou, Bernard; Roquejoffre, Jean-Michel) Stability of travelling fronts in a model for flame propagation. I. Linear analysis. *Arch. Rational Mech. Anal.* **117** (1992), *no.* 2, 97–117. (Summary) **93g:80008a** 80A25 (35B35, 35K55)

— (*with* Esteban, Maria J.) Sur la structure des solutions pour un problème elliptique dégénéré. Multiplicité et bifurcations. (English and French summaries) [On the structure of the solutions to a degenerate elliptic problem. Multiplicity and bifurcations] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 13, 1375–1380. (Tassilo Küpper) **93k:34044** 34B15 (34A47, 47H15)

— *see also* **Variational methods, 93i:58006**

Bérété, S. (*with* Sanchez-Hubert, J.; Planchard, J.) Spectral properties of an elastic rod-spring coupled system immersed in a fluid. (English summary) *Math. Models Methods Appl. Sci.* **2** (1992), *no.* 4, 441–460. (Introduction) **93i:73039** 73K70 (73K05, 73K12, 73V25, 76B99)

Beretta, Edoardo (*with* Fasano, Antonio) Mathematical model for the dynamics of a phytoplankton population. *Differential equations models in biology, epidemiology and ecology* (*Claremont, CA*, 1990), 161–176, *Lecture Notes in Biomath.*, 92, *Springer, Berlin*, 1991. (J. M. Cushing) **93j:92026** 92D25

— (*with* Fasano, Antonio; Hosono, Yuzo) Equilibrium of a phytoplankton population in a laboratory controlled system. *Surveys Math. Indust.* **1** (1992), *no.* 4, 283–336. (József Terjéki) **93e:92008** 92D25 (45J05)

Berezanski, Yu. M. *see* **Berezanskiĭ, Yu. M.**

Berezanskiĭ, L. M. Stability of *n*th-order linear differential equations with aftereffect. (Russian. Russian summary) *Boundary value problems* (*Russian*), 12–16, *Perm. Politekh. Inst., Permʹ*, 1989. (*see* **93k:00022**) 34K20

— (*with* Azbelev, N. V.; Simonov, P. M.; Chistyakov, Aleksandr Vladimirovich) The stability of linear systems with aftereffect. III. (Russian) *Differentsialʹnye Uravneniya* **27** (1991), *no.* 10, 1659–1668, 1834; *translation in Differential Equations* **27** (1991), *no.* 10, 1165–1172 (1992). (D. N. Cheban) **93e:34101** 34K20 (47N20)

Berezanskiĭ, Yu. M. (*with* Zhernakov, N. V.; Us, G. F.) A spectral approach to quantum stochastic integrals. *Rep. Math. Phys.* **28** (1989), *no.* 3, 347–360. (J. A. Van Casteren) **93b:47142** 47N50 (46G10, 47B15, 47N30, 60H05)

— Projection spectral theorem and its applications to the infinite-dimensional harmonic analysis. *Gaussian random fields* (*Nagoya*, 1990), 114–128, *Ser. Probab. Statist.*, 1, *World Sci. Publishing, River Edge, NJ*, 1991. (Summary) **93b:47032** 47A60 (43A35, 46Fxx, 46Gxx)

— (*with* Livinskiĭ, V. O.; Litvinov, E. V.) A generalization of the Segal transformation. (Russian. English and Russian summaries) *Dokl. Akad. Nauk Ukrainy* **1992**, *no.* 5, 16–20, 158. (From the introduction) **93g:46040** 46F25 (46G12, 46N50)

— (*with* Konstantinov, A. Yu.) Expansion in eigenvectors of multiparameter spectral problems. (Russian) *Funktsional. Anal. i Prilozhen.* **26** (1992), *no.* 1, 81–83; *translation in Functional Anal. Appl.* **26** (1992), *no.* 1, 65–67. (Björn Textorius) **93f:47019** 47A70 (34L10, 47E05, 47F05, 47N20)

— (*with* Mitropolʹskiĭ, Yu. A.; Ostrovskiĭ, I. V.; Pastur, L. A.; Pogorelov, A. V.; Khruslov, E. Ya.) Volodimir Oleksandrovich Marchenko (on the occasion of his seventieth birthday). (Ukrainian) *Ukraïn. Mat. Zh.* **44** (1992), *no.* 8, 1113; *translation in Ukrainian Math. J.* **44** (1992), *no.* 8, 1014–1015 (1993). 01A70

— (*with* Maslov, V. P.; Mitropolʹskiĭ, Yu. A.; Pastur, L. A.; Sinaĭ, Ya. G.) Vladimir Aleksandrovich Marchenko (on the occasion of his seventieth birthday). (Russian) *Uspekhi Mat. Nauk* **47** (1992), *no.* 4(286), 219–221; *translation in Russian Math. Surveys* **47** (1992), *no.* 4, 239–242. (Editors) **93m:01057** 01A70

— *see also* **Applications of the methods of functional analysis in mathematical physics, 93e:00016** *and* **Methods of functional analysis in problems of mathematical physics, 93m:00030**

Berezhkovskiĭ, A. M. (*with* Zitserman, V. Yu.) Generalization of the Kramers-Langer theory: decay of the metastable state in the case of strongly anisotropic friction. *J. Phys. A* **25** (1992), *no.* 8, 2077–2092. (Summary) **93b:82037** 82C05

Berezhnoĭ, E. I. (*with* Zabreĭko, P. P.) Interpolation of the continuity property for partially additive operators. (Russian) *Sibirsk. Mat. Zh.* **33** (1992), *no.* 2, 157–163, 222; *translation in Siberian Math. J.* **33** (1992), *no.* 2, 317–323. (L. I. Nikolova) **93i:46139** 46M35 (47B60, 47H30)

Berezin, A. V. (*with* Kuvshinov, V. I.; Fedorov, F. I.) Vector parametrizations of groups of space-time symmetry and the Poincaré supergroup. (Russian) *Current group analysis* (*Russian*) (*Baku*, 1988), 41–47, "*Élm*", *Baku*, 1989. (*see* **93d:58002**) 81R05 (22E70)

Berezin, F. A. (*with* Shubin, M. A.) ★ The Schrödinger equation. Translated from the 1983 Russian edition by Yu. Rajabov, D. A. Leĭtes and N. A. Sakharova and revised by Shubin. With contributions by G. L. Litvinov and Leĭtes. Mathematics and its Applications (Soviet Series), 66. *Kluwer Academic Publishers Group, Dordrecht*, 1991. xviii+555 *pp. ISBN* 0-7923-1218-X (Editors) **93i:81001** 81–01 (35J10, 35P05, 46N50, 47F05, 47N50)

Berezin, V. A. On a quantum mechanical model of a black hole. *Quantum gravity* (*Moscow*, 1990), 342–357, *World Sci. Publishing, River Edge, NJ*, 1991. (Summary) **93c:83073** 83C57 (83C47)

— (*with* Kuzʹmin, V. A.; Tkachev, I. I.) O(3)-invariant tunneling at false vacuum decay in general relativity. *Quantum gravity* (*Moscow*, 1990), 574–599, *World Sci. Publishing, River Edge, NJ*, 1991. (*see* **93b:83004**) 83C45 (83F05)

— (*with* Kuzʹmin, V. A.; Tkachev, I. I.) O(3)-invariant tunnelling at false vacuum decay in general relativity. The birth and early evolution of our Universe (Gräftåvallen, 1990). *Phys. Scripta* **1991**, *Vol.* T36, 269–275. (Summary) **93a:83038** 83F05 (83C57)

— *see also* **Quantum gravity, 93b:83004**

Berezkina, N. S. (*with* Martynov, I. P.) Solutions of a nonlinear partial differential system. (Russian. Russian summary) *Differentsialʹnye Uravneniya* **28** (1992), *no.* 9, 1627–1630, 1655. (Summary) **93k:35254** 35Q72

Berezněv, V. A. (*with* Karmanov, V. G.; Tretʹyakov, A. A.) Stable methods for solving extremal problems with approximate information. (Russian) *Cybernetics and computer technology, No.* 5 (*Russian*), 169–208, "*Nauka*", *Moscow*, 1991. (Bernd Engelmann) **93f:90146** 90C30 (49M37, 65K05)

Bereznoi, E. I. Inequalities with weights for Hardy operators in function spaces. *Function spaces* (*Poznań*, 1989), 75–79, *Teubner-Texte Math.*, 120, *Teubner, Stuttgart*, 1991. (J. Musielak) **93b:46048** 46E30 (26D07)

Berezovskaya, F. S. (*with* Medvedeva, N. B.) The asymptotics of the return map of a singular point with fixed Newton diagram. (English summary) *J. Soviet Math.* **60** (1992), *no.* 6, 1765–1781. (J. S. Joel) **93f:58198** 58F21 (34C05, 58C27, 58F14)

Berezovskiĭ, A. A. (*with* Kudaeva, F. Kh.) Canonical form of problems with free boundaries in problems of hypothermia and cryodestruction of biological tissue. (Russian. Russian summary) *Asymptotic integration of nonlinear equations* (*Russian*), 23–31, *Akad. Nauk Ukrainy, Inst. Mat., Kiev*, 1992. (*see* **93m:00016**) 35R35 (92C50)

— (*with* Mitropolʹskiĭ, Yu. A.; Plotnitskiĭ, T. A.) Problems with free boundaries for a nonlinear evolution equation in problems of metallurgy, medicine and ecology. (Russian. Russian and Ukrainian summaries) *Ukraïn. Mat. Zh.* **44** (1992), *no.* 1, 67–76; *translation in Ukrainian Math. J.* **44** (1992), *no.* 1, 59–67. (Summary) **93g:35149** 35R35 (35K55, 92B05, 92C50)

Berezovskiĭ, A. I. (*with* Nechiporenko, N. A.) On reconstruction, optimal with respect to accuracy, of difference functions with a given number of interior extrema. (Russian. Russian summary) *Kibernet. i Vychisl. Tekhn. No.* 93 (1992), 90–94. (Summary) **93m:65017** 65D15 (41A05)

Berezovskiĭ, O. A. (*with* Shor, N. Z.) Construction of an ellipsoid of maximum volume inscribed in a polyhedron using sequential space dilatation. (Russian. Russian summary) *Kibernet. i Vychisl. Tekhn. No.* 93 (1992), 1–6. (Summary) **93m:90060** 90C25 (90C08, 93B03)

Berezovsky, Arkady (*with* Kaplansky, Felix) Dynamics of thin vortex rings in a viscous fluid. (Russian and Estonian summaries) *Eesti Tead. Akad. Toimetised Füüs. Mat.* **41** (1992), *no.* 2, 95–103, 173. (Summary) **93g:76044** 76D99

Berg, Gunnar Torsten On the origin of the concept of an Einstein space. (French summary) *Studies in the history of general relativity* (*Luminy*, 1988), 336–343, 460, *Einstein Stud.*, 3, *Birkhäuser Boston, Boston, MA*, 1992. (*see* **93a:01001**) 01A60 (53–03, 83–03)

Berg, I. David (*with* Alexander, Stephanie B.; Bishop, Richard L.) Geometric curvature bounds in Riemannian manifolds with boundary. *Trans. Amer. Math. Soc.* **339** (1993), *no.* 2, 703–716. (I. G. Nikolaev) **93m:53034** 53C21 (53C20)

van den Berg, Imme P. Macroscopic rivers. *Dynamic bifurcations* (*Luminy*, 1990), 190–209, *Lecture Notes in Math.*, 1493, *Springer, Berlin*, 1991. (Peter E. Kloeden) **93f:34076** 34C99 (03H05, 26E35, 34A12, 34C20)

— Extended use of IST. *Ann. Pure Appl. Logic* **58** (1992), *no.* 1, 73–92. (Frank Wattenberg) **93i:03096** 03H05 (03E70)

van den Berg, J. E. (*with* Raftery, J. G.) On a classification of prime rings. (English summary) *Quaestiones Math.* **15** (1992), *no.* 2, 139–150. (John Clark) **93k:16035** 16N60 (16S90)

Berg, Jan *see* **Bolzano, Bernard, 93e:01032** *and* **93m:01100**

Berg, Lothar The asymptotic expansion of a convolution integral. (English summary) Asymptotic methods in analysis and combinatorics. *J. Comput. Appl. Math.* **41** (1992), *no.* 1-2, 159–161. (Sushil Sharma) **93j:41019** 41A60

van den Berg, M. On the trace of the difference of Schrödinger heat semigroups. *Proc. Roy. Soc. Edinburgh Sect. A* **119** (1991), *no.* 1-2, 169–175. (J. A. Van Casteren) **93a:47051** 47F05 (35J10, 35P05, 47D03)

— A Gaussian lower bound for the Dirichlet heat kernel. *Bull. London Math. Soc.* **24** (1992), *no.* 5, 475–477. (Yong-Geun Oh) **93k:35116** 35K05 (35C15, 58G11)

— Dirichlet-Neumann bracketing for horn-shaped regions. *J. Funct. Anal.* **104** (1992), *no.* 1, 110–120. (Rainer Hempel) **93d:35107** 35P20 (35J05, 47F05)

— On the spectral counting function for the Dirichlet Laplacian. *J. Funct. Anal.* **107** (1992), *no.* 2, 352–361. (Johan Tysk) **93h:35148** 35P20 (35J05, 47F05, 58G25)

de Berg, Mark T. (*with* Overmars, Mark H.) Hidden surface removal for *c*-oriented polyhedra. *Comput. Geom.* **1** (1992), *no.* 5, 247–268. (Summary) **93c:68099** 68U05 (65Y25)

— Dynamic output-sensitive hidden surface removal for *c*-oriented polyhedra. (English summary) *Comput. Geom.* **2** (1992), *no.* 3, 119–140. (Summary) **93i:68167** 68U05 (52B55, 68Q25)

— (*with* van Kreveld, Marc; Nilsson, Bengt J.; Overmars, Mark H.) Shortest path queries in rectilinear worlds. (English summary) *Internat. J. Comput. Geom. Appl.* **2** (1992), *no.* 3, 287–309. (Summary) **93j:68208** 68U05 (68P05, 68Q25)

— (*with* Carlsson, Svante; Overmars, Mark H.) A general approach to dominance in the plane. *J. Algorithms* **13** (1992), *no.* 2, 274–296. (Ratko Tošić) **93e:68127** 68U05 (68Q25)

van den Berg, P. M. (*with* Kleinman, Ralph E.) A modified gradient method for two-dimensional problems in tomography. (English summary) *J. Comput. Appl. Math.* **42** (1992), *no.* 1, 17–35. 78–08

Berg, Sven (*with* Jaworski, Jerzy) Probability distributions related to the local structure of a random mapping. *Random graphs, Vol. 2* (*Poznań*, 1989), 1–21, *Wiley-Intersci. Publ., Wiley, New York*, 1992. (Lyuben R. Mutafchiev) **93d:60015** 60C05 (05C80)

— (*with* Lepelley, Dominique) Note sur le calcul de la probabilité des paradoxes du vote. (English and French summaries) [Note on the computation of the voting paradox probability] *Math. Inform. Sci. Humaines No.* 120 (1992), 33–48. (Summary) **93j:90026** 90A28 (60C05)

— (*with* Gehrlein, William V.) The effect of social homogeneity on coincidence probabilities for pairwise proportional lottery and simple majority rules. (English summary) *Soc. Choice Welf.* **9** (1992), *no.* 4, 361–372. 90A28 (60C05)

— Condorcet's jury theorem, dependency among jurors. (English summary) *Soc. Choice Welf.* **10** (1993), *no.* 1, 87–95. (Summary) **93j:90012** 90A08

Bergamasco, Adalberto P. (*with* Petronilho, Gerson) On the hypoellipticity of degenerate elliptic boundary value problems. (English summary) *J. Math. Anal. Appl.* **171** (1992), *no.* 2, 407–417. (You-Shi Lou) **93j:35083** 35J70 (35B65, 35H05, 35S15)

Bergé, A.-M. (*with* Martinet, Jacques) Réseaux extrêmes pour un groupe d'automorphismes. [Extreme lattices for a group of automorphisms] Journées Arithmétiques, 1989 (Luminy, 1989). *Astérisque No.* 198-200 (1991), 41–66 (1992). (Summary) **93f:11049** 11H56 (11H31)

Berge, C. Hypergraphs. *Selected topics in graph theory*, 3, 189–206, *Academic Press, San Diego, CA*, 1988. (*see* **93h:05003**) 05C65

— *see also* **Graph theory and combinatorics, 93i:05001**

ten Berge, Jos M. F. (*with* Kiers, Henk A. L.) Minimization of a class of matrix trace functions by means of refined majorization. (English summary) *Psychometrika* **57** (1992), *no.* 3, 371–382. (Summary) **93e:62140** 62H05 (62P15)

Bergé, Luc (*with* Pesme, Denis) Time dependent solutions of wave collapse. *Phys. Lett. A* **166** (1992), *no.* 2, 116–122. (Summary) **93c:81026** 81Q05

Bergé, Pierre (*with* Pomeau, Yves; Vidal, Christian) ★ Порядок в хаосе. (Russian) [Order in chaos] О детерминистском подходе к турбулентности. [On a deterministic approach to turbulence] With a preface by David Ruelle. Translated from the French by Yu. A. Danilov. "*Mir*", *Moscow*, 1991. 368 *pp. ISBN* 5-03-001804-2 (Olec Troshkin) **93e:58123** 58F13 (76Fxx)

Bergelson, Vitaly (*with* Hindman, Neil) Some topological semicommutative van der Waerden type theorems and their combinatorial consequences. (English summary) *J. London Math. Soc.* (2) **45** (1992), *no.* 3, 385–403. (Wen Li Chen) **93j:05162** 05D10 (03E15, 54H20)

— (*with* Shapiro, Daniel B.) Multiplicative subgroups of finite index in a ring. *Proc. Amer. Math. Soc.* **116** (1992), *no.* 4, 885–896. (Kenneth A. Brown) **93b:16001** 16B99 (05D10, 12E99)

— (*with* Hindman, Neil) Ramsey theory in noncommutative semigroups. *Trans. Amer. Math. Soc.* **330** (1992), *no.* 1, 433–446. (Andreas Blass) **93j:03025** 03E05 (05D10, 22A15, 54H15, 54H20)

Bergen, James R. (*with* Shvaytser, Haim) A probabilistic algorithm for computing Hough transforms. *J. Algorithms* **12** (1991), *no.* 4, 639–656. (Bruno Betrò) **93e:65005** 65C05 (68Q25, 68T10)

Bergen, Jeffrey (*with* Passman, D. S.) Delta methods in enveloping algebras of Lie superalgebras. *Trans. Amer. Math. Soc.* **334** (1992), *no.* 1, 259–280. (Anargyros Fellouris) **93a:17008** 17B35 (17A70, 17B70)

Berger, Arthur W. (*with* Whitt, Ward) The impact of a job buffer in a token-bank rate-control throttle. (English summary) *Comm. Statist. Stochastic Models* **8** (1992), *no.* 4, 685–717. (Summary) **93i:60166** 60K25

— (*with* Whitt, Ward) Comparisons of multi-server queues with finite waiting rooms. (English summary) *Comm. Statist. Stochastic Models* **8** (1992), *no.* 4, 719–732. (Summary) **93i:60167** 60K25

Berger, Clemens Un modèle simplicial fibrant de l'espace des chemins. (English and French summaries) [A simplicial fiber model of the path space] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 2, 193–196. (John F. Oprea) **93k:55027** 55U35

Berger, Erich A note on the strong law of large numbers for partial sums of independent random vectors. *Almost everywhere convergence, II* (*Evanston, IL*, 1989), 49–68, *Academic Press, Boston, MA*, 1991. (Evarist Giné) **93a:60010** 60B12 (60F15)

Berger, James O. (*with* Bernardo, Jose M.) Reference priors in a variance components problem. (English summary) *Bayesian analysis in statistics and econometrics* (*Bangalore*, 1988), 177–194, *Lecture Notes in Statist.*, 75, *Springer, New York*, 1992. (Summary) **93j:62076** 62F15 (62J10)

— (*with* Bernardo, Jose M.) Ordered group reference priors with application to the multinomial problem. *Biometrika* **79** (1992), *no.* 1, 25–37. (D. V. Lindley) **93c:62051** 62F15

— (*with* Fan, Tsai Hung) Behaviour of the posterior distribution and inferences for a normal mean with t prior distributions. *Statist. Decisions* **10** (1992), *no.* 1-2, 99–120. (Summary) **93k:62065** 62F15 (62F35)

Berger, M. *see* **Berger, M. F.**

Berger, M. A. *see* **Berger, Mitchell A.**

Berger, M. F. (*with* Navon, I. M.; Zou, X.; Phua, Paul Kang Hoh; Schlick, Tamar; Le Dimet, François-Xavier) Numerical experience with limited-memory quasi-Newton and truncated Newton methods. (English summary) *Optimization, Vol.* 1, 2 (*Singapore*, 1992), 33–48, *World Sci. Publishing, River Edge, NJ*, 1992. (K. Schittkowski) **93i:90090** 90C30 (90–08)

— (*with* Navon, I. M.; Zou, X.; Phua, Paul Kang Hoh; Schlick, Tamar; Le Dimet, François-Xavier) Testing the reliability and robustness of optimization codes for large-scale optimization problems. (English summary) *Optimization, Vol.* 1, 2 (*Singapore*, 1992), 445–480, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93d:90005**) 90C30 (90C90)

— Hierarchical gradient methods for nonlinear LSQ problems. (English summary) *J. Sci. Comput.* **7** (1992), *no.* 3, 197–228. (Summary) **93m:65080** 65K05

Berger, M. S. (*with* Chen, Yi-Ying) Forced quasiperiodic and almost periodic oscillations of nonlinear Duffing equations. *Nonlinear Anal.* **19** (1992), *no.* 3, 249–257. (Joël Blot) **93j:34062** 34C27 (70K99)

Berger, Marc A. Random affine iterated function systems: mixing and encoding. *Diffusion processes and related problems in analysis, Vol. II* (*Charlotte, NC*, 1990), 315–346, *Progr. Probab.*, 27, *Birkhäuser Boston, Boston, MA*, 1992. (Christoph Bandt) **93k:28010** 28A80 (58F11)

— IFS algorithms for wavelet transforms, curves and surfaces, and image compression. *Stochastic models, statistical methods, and algorithms in image analysis* (*Rome*, 1990), 89–100, *Lecture Notes in Statist.*, 74, *Springer, Berlin*, 1992. (*see* **93e:62005**) 68U10 (65D99)

— (*with* Wang, Yang) Multidimensional two-scale dilation equations. *Wavelets*, 295–323, *Wavelet Anal. Appl.*, 2, *Academic Press, Boston, MA*, 1992. (Summary) **93c:42031** 42C15 (65D17)

— Random affine iterated function systems: curve generation and wavelets. (English summary) *SIAM Rev.* **34** (1992), *no.* 3, 361–385. (Remo Badii) **93g:58069** 58F08 (58F11, 60J20, 68U05)

— ★ An introduction to probability and stochastic processes. Springer Texts in Statistics. *Springer-Verlag, New York*, 1993. xii+205 *pp. ISBN* 0-387-97784-8 (Publisher's description) **93k:60001** 60–01

Berger, Marcel (*with* Gostiaux, Bernard) ★ Géométrie différentielle: variétés, courbes et surfaces. (French. French summary) [Differential geometry: manifolds, curves and surfaces] Second edition. Mathématiques. [Mathematics] *Presses Universitaires de France, Paris*, 1992. vi+513 *pp. ISBN* 2-13-044708-2 (Editors) **93j:53001** 53–01 (58–01)

Berger, Mitchell A. Third-order braid invariants. *J. Phys. A* **24** (1991), *no.* 17, 4027–4036. (Summary) **93d:20073** 20F36 (57M07)

— Energy-crossing number relations for braided magnetic fields. (English summary) *Phys. Rev. Lett.* **70** (1993), *no.* 6, 705–708. (Summary) **93i:85003** 85A15 (53A04, 76W05, 78A25)

Berger, Roland The quantum Poincaré-Birkhoff-Witt theorem. *Comm. Math. Phys.* **143** (1992), *no.* 2, 215–234. (Toshiyuki Tanisaki) **93c:17020** 17B35 (16S30, 16W30, 17B37)

Berger, Ruth I. Class number parity and unit signature. *Arch. Math.* (*Basel*) **59** (1992), *no.* 5, 427–435. (Jean-François Jaulent) **93i:11123** 11R29 (11R11)

— The kernel of $C(N) \to C(N(\sqrt{-1}))$ and the 4-rank of $K_2(O)$. (English summary) *Canad. Math. Bull.* **35** (1992), *no.* 3, 295–302. (Manfred Kolster) **93i:11124** 11R29 (11R70, 19C99)

— Hasse's class number product formula for generalized Dirichlet fields and other types of number fields. (English summary) *Manuscripta Math.* **76** (1992), *no.* 3-4, 397–406. (Stéphane Louboutin) **93h:11121** 11R29 (11R16)

Berger, Stanley A. Ellipticity in the vortex breakdown problem. (English summary) *Instability, transition, and turbulence* (*Hampton, VA*, 1991), 96–106, *ICASE/NASA LaRC Ser., Springer, New York*, 1992. (Summary) **93k:76053** 76E99 (76D99)

— Sir James Lighthill. *Fluid dynamics in biology* (*Seattle, WA*, 1991), xi–xii, *Contemp. Math.*, 141, *Amer. Math. Soc., Providence, RI*, 1993. (*see* **93j:76003**) 01A70

— Flow in large blood vessels. (English summary) *Fluid dynamics in biology* (*Seattle, WA*, 1991), 479–518, *Contemp. Math.*, 141, *Amer. Math. Soc., Providence, RI*, 1993. (Summary) **93k:76129** 76Z05 (73K70)

Berger, T. *see* **Berger, Toby**

Berger, Thierry A direct proof for the automorphism group of Reed-Solomon codes. *Eurocode '90* (*Udine*, 1990), 21–29, *Lecture Notes in Comput. Sci.*, 514, *Springer, Berlin*, 1991. (Wolfgang Knapp) **93d:94020** 94B15 (11T71, 20B25, 94B20)

— (*with* Charpin, Pascale) Groupe d'automorphismes des codes de Reed et Muller q-aires. (English summary) [The automorphism group of q-ary Reed-Muller codes] *C. R. Acad. Sci. Paris Sér. I Math.* **313** (1991), *no.* 12, 883–886. (Brian Mortimer) **93a:94027** 94B05 (20B25)

Berger, Thilo Siegel's chiral boson and the chiral Schwinger model. (English summary) *Modern Phys. Lett. A* **7** (1992), *no.* 26, 2423–2428. 81T10

— On the relation between induced quantum gravity and Jackiw-Teitelboim gravity in two dimensions. (English summary) *Modern Phys. Lett. A* **7** (1992), *no.* 38, 3553–3559. 81T40

Berger, Toby (*with* Hekstra, A.; Orlitsky, Alon) Asymptotic component densities in programmable gate arrays realizing all circuits of a given size. (English summary) *Algorithmica* **9** (1993), *no.* 2, 101–127. (Summary) **93j:68082** 68Q35 (05C85, 68Q25, 68R10)

Berger, Yuval (*with* Be'ery, Yair) Bounds on the trellis size of linear block codes. (English summary) *IEEE Trans. Inform. Theory* **39** (1993), *no.* 1, 203–209. (Summary) **93m:94043** 94B65 (93B12)

Bergeron, François (*with* Bergeron, Nantel) A decomposition of the descent algebra of the hyperoctahedral group. I. *J. Algebra* **148** (1992), *no.* 1, 86–97. (John R. Stembridge) **93d:20077** 20F55 (05E99, 17B01)

— (*with* Garsia, Adriano M.; Reutenauer, Christophe) Homomorphisms between Solomon's descent algebras. (English summary) *J. Algebra* **150** (1992), *no.* 2, 503–519. (Witold Kraśkiewicz) **93i:20013** 20C30 (05E05)

— (*with* Bergeron, Nantel; Howlett, R. B.; Taylor, D. E.) A decomposition of the descent algebra of a finite Coxeter group. *J. Algebraic Combin.* **1** (1992), *no.* 1, 23–44. (Witold Kraśkiewicz) **93g:20079** 20F55 (19A22)

— (*with* Bergeron, Nantel) Orthogonal idempotents in the descent algebra of B_n and applications. *J. Pure Appl. Algebra* **79** (1992), *no.* 2, 109–129. (John R. Stembridge) **93f:20054** 20F55 (05E10, 16E40)

Bergeron, Mario Coherent state path integral for the harmonic oscillator and a spin particle in a constant magnetic field. *Fortschr. Phys.* **40** (1992), *no.* 2, 119–159. (P. Mitra) **93b:81132** 81S40 (81R30)

— (*with* Semenoff, Gordon W.; Douglas, R. R.) Canonical structure of the CP^1 model in three dimensions. *Internat. J. Modern Phys. A* **7** (1992), *no.* 11, 2417–2445. (Marc Henneaux) **93d:81104** 81T10

Bergeron, Nantel A hyperoctahedral analogue of the free Lie algebra. *J. Combin. Theory Ser. A* **58** (1991), *no.* 2, 256–278. (Louis Solomon) **93g:20015** 20C15 (05E10, 05E25, 17B01, 52B30)

— (*with* Garsia, Adriano M.) Zonal polynomials and domino tableaux. *Discrete Math.* **99** (1992), *no.* 1-3, 3–15. (Witold Kraśkiewicz) **93e:20006** 20C05 (05E10)

— (*with* Bergeron, François) A decomposition of the descent algebra of the hyperoctahedral group. I. *J. Algebra* **148** (1992), *no.* 1, 86–97. (John R. Stembridge) **93d:20077** 20F55 (05E99, 17B01)

— A decomposition of the descent algebra of the hyperoctahedral group. II. *J. Algebra* **148** (1992), *no.* 1, 98–122. (John R. Stembridge) **93d:20078** 20F55 (05E99, 17B01)
— (*with* Bergeron, François; Howlett, R. B.; Taylor, D. E.) A decomposition of the descent algebra of a finite Coxeter group. *J. Algebraic Combin.* **1** (1992), *no.* 1, 23–44. (Witold Kraśkiewicz) **93g:20079** 20F55 (19A22)
— A combinatorial construction of the Schubert polynomials. *J. Combin. Theory Ser. A* **60** (1992), *no.* 2, 168–182. (John R. Stembridge) **93i:05138** 05E99 (14M15)
— (*with* Bergeron, François) Orthogonal idempotents in the descent algebra of B_n and applications. *J. Pure Appl. Algebra* **79** (1992), *no.* 2, 109–129. (John R. Stembridge) **93f:20054** 20F55 (05E10, 16E40)
Bergersen, Birger (*with* Xu, Huang-Jian; Chen, Kan) Self-organized ruptures in an elastic medium: a possible model for earthquakes. (English summary) *J. Phys. A* **25** (1992), *no.* 22, L1251–L1256. (Summary) **93h:86004** 86A17 (73N20)
Berggren, J. L. The relation of Greek spherics to early Greek astronomy. *Science and philosophy in classical Greece*, 227–248, *Sources Stud. Hist. Philos. Class. Sci.*, 2, *Garland, New York*, 1991. (*see* **93g:01015**) 01A20
— Medieval Islamic methods for drawing azimuth circles on the astrolabe. *Centaurus* **34** (1991), *no.* 4, 309–344. (Jan P. Hogendijk) **93i:01007** 01A30 (01A20)
— Ḥabash's analemma for representing azimuth circles on the astrolabe. (Arabic summary) *Z. Gesch. Arab.-Islam. Wiss.* **7** (1991/92), 23–30, *Arabic paging* 8. 01A30
van den Bergh, Michel *see* **Van den Bergh, Michel**
van den Bergh, N. *see* **Van den Bergh, N.**
Berghammer, Rudolf (*with* Kempf, Peter; Schmidt, Gunther W.; Ströhlein, Thomas) Relation algebra and logic of programs. *Algebraic logic* (*Budapest*, 1988), 37–58, *Colloq. Math. Soc. János Bolyai*, 54, *North-Holland, Amsterdam*, 1991. (D. Rosenblatt) **93d:03065** 03G15 (03B70, 05C50, 68N05, 68Q60)
vanden Berghe, Guido *see* **Vanden Berghe, Guido**
Bergholz, G. (*with* Richter, K.) Performance evaluation of computer networks with blockings. (English summary) *Computational systems analysis* 1992 (*Berlin*, 1992), 357–362, *Elsevier, Amsterdam*, 1992. (*see* **93e:00021**) 90B22
Berghuis, Harry (*with* Nijmeijer, Henk; Löhnberg, Peter) An addendum on: "Robust control of robots by the computed torque method [law]" [Systems Control Lett. **16** (1991), no. 1, 25–32; MR 91j:93066] by Z. Qu, J. F. Dorsey, X. Zhang and D. M. Dawson. (English summary) *Systems Control Lett.* **18** (1992), *no.* 5, 403–407. (Summary) **93g:93055** 93C85 (70B15, 70Q05)
Bergia, S. *see* **Modern cosmology in retrospect, 93f:83088**
Bergin, James A model of strategic behaviour in repeated games. *J. Math. Econom.* **21** (1992), *no.* 2, 113–153. (Larry Samuelson) **93b:90121** 90D20 (90D40)
— (*with* Bernhardt, Dan) Anonymous sequential games with aggregate uncertainty. (English summary) *J. Math. Econom.* **21** (1992), *no.* 6, 543–562. (Larry Samuelson) **93j:90135** 90D13 (90D15, 93E05)
— Player type distributions as state variables and information revelation in zero sum repeated games with discounting. (English summary) *Math. Oper. Res.* **17** (1992), *no.* 3, 640–656. (Larry Samuelson) **93f:90200** 90D20 (90D05)
— (*with* MacLeod, W. Bentley) Continuous time repeated games. (English summary) *Internat. Econom. Rev.* **34** (1993), *no.* 1, 21–37. (Author's review (J.B.)) **93m:90113** 90D10 (90D13, 90D15, 90D20)
Berglez, Peter On integral operators of Bergman type for systems of linear partial differential equations in two complex variables. *Complex Variables Theory Appl.* **18** (1992), *no.* 1-2, 103–108. (Summary) **93h:35038** 35C15 (35L55, 47G10)
Berglund, Per (*with* Hübsch, Tristan; Parkes, Linda) The complete matter sector in a three-generation compactification. (English summary) *Comm. Math. Phys.* **148** (1992), *no.* 1, 57–100. (Bruce Hunt) **93j:32036** 32J17 (14D07, 14J30, 32G81, 32J81, 81T30, 83E30)
— (*with* Greene, Brian R.; Hübsch, Tristan) Classical vs. Landau-Ginzburg geometry of compactification. *Modern Phys. Lett. A* **7** (1992), *no.* 20, 1855–1869. (C. Gauthier) **93g:81120** 81T30 (32G81, 32J17, 32J81)
Bergman, Clifford Structural completeness in algebra and logic. *Algebraic logic* (*Budapest*, 1988), 59–73, *Colloq. Math. Soc. János Bolyai*, 54, *North-Holland, Amsterdam*, 1991. (Stanisław J. Surma) **93d:08009** 08C15 (03B22, 03G25, 08B20)
Bergman, George M. Isomorphisms from top to bottom. (English summary) *Abelian groups and noncommutative rings*, 69–80, *Contemp. Math.*, 130, *Amer. Math. Soc., Providence, RI*, 1992. (E. Jespers) **93h:16061** 16U60 (13B30, 16S20)
Bergmann, Brad E. (*with* Nambiar, Rajiv V.; Lawrence, Kent L.) Explicit stiffness and error estimator expressions for a family of axisymmetric triangular finite elements. *Integral methods in science and engineering—90* (*Arlington, TX*, 1990), 191–200, *Ser. Comput. Phys. Process. Mech. Thermal Sci., Hemisphere, New York*, 1991. (*see* **93f:00014**) 73V05
Bergmann, Peter Gabriel The canonical formulation of general-relativistic theories: the early years, 1930–1959. *Einstein and the history of general relativity* (*North Andover, MA*, 1986), 293–299, *Einstein Stud.*, 1, *Birkhäuser Boston, Boston, MA*, 1989. (*see* **93g:83001**) 01A60 (83–03)
— My life. *Gravitation and modern cosmology* (*Erice*, 1990), 1–4, *Ettore Majorana Internat. Sci. Ser. Phys. Sci.*, 56, *Plenum, New York*, 1991. (*see* **93j:83004**) 01A70
— *see also* **Gravitation and modern cosmology, 93j:83004**
Bergmann, Reinhard Stochastic orders and their application to a unified approach to various concepts of dependence and association. (English summary) *Stochastic orders and decision under risk* (*Hamburg*, 1989), 48–73, *IMS Lecture Notes Monograph Ser.*, 19, *Inst. Math. Statist., Hayward, CA*, 1991. (Moshe Shaked) **93k:60045** 60E15
Bergqvist, Göran Quasilocal mass for event horizons. *Classical Quantum Gravity* **9** (1992), *no.* 7, 1753–1768. (Summary) **93c:83040** 83C40
— Positivity and definitions of mass. (English summary) *Classical Quantum Gravity* **9** (1992), *no.* 8, 1917–1922. (Peter R. Law) **93k:83022** 83C40 (83C30, 83C60)
Bergshoeff, E. A. (*with* Kallosh, Renata) On the covariant BRST quantization of gauge theories including supermembranes. *Supermembranes and physics in* 2+1 *dimensions* (*Trieste*, 1989), 136–149, *World Sci. Publishing, River Edge, NJ*, 1990. (*see* **93g:81003**) 81T70 (81T30)
— (*with* Bilal, Adel; Stelle, K. S.) *W* symmetries: gauging and geometry. *Internat. J. Modern Phys. A* **6** (1991), *no.* 28, 4959–4983. (Katsushi Ito) **93b:81240** 81T40 (81R10)
— (*with* de Roo, Mees) $N = 2$ w_∞ supergravity. *Phys. Lett. B* **278** (1992), *no.* 1-2, 72–78. (Raiko Zaikov) **93i:81209** 81T40 (17B65, 22E65, 81R10)
— (*with* Sezgin, Ergin) Self-dual supergravity theories in 2 + 2 dimensions. (English summary) *Phys. Lett. B* **292** (1992), *no.* 1-2, 87–92. (Piret Kuusk) **93i:83092** 83E50 (81T30, 81T60, 83E30)
— (*with* Boonstra, H. J.; de Roo, Mees) Realisations of W_3 symmetry. (English summary) *Phys. Lett. B* **292** (1992), *no.* 3-4, 307–314. (Katsushi Ito) **93i:81059** 81R10 (17B68, 81T40)
Bergstra, J. A. (*with* Klop, J. W.) An introduction to process algebra. *Applications of process algebra*, 1–21, *Cambridge Tracts Theoret. Comput. Sci.*, 17, *Cambridge Univ. Press, Cambridge*, 1990. (*see* **93g:68090**) 68Q60 (68Q10)
— A process creation mechanism in process algebra. *Applications of process algebra*, 81–88, *Cambridge Tracts Theoret. Comput. Sci.*, 17, *Cambridge Univ. Press, Cambridge*, 1990. (*see* **93g:68090**) 68Q10 (68Q60)
Bergstrand, Deborah (*with* Hodges, Ken; Jennings, George; Kuklinski, Lisa; Wiener, Janet; Harary, Frank) Product graphs are sum graphs. (English summary) *Math. Mag.* **65** (1992), *no.* 4, 262–264. (Summary) **93g:05117** 05C75
Bergthaller, C. (*with* Singer, Ivan) The distance to a polyhedron. *Linear Algebra Appl.* **169** (1992), 111–129. (Wu Li) **93d:90070** 90C48 (15A60)
Bergum, G. E. *see* **Applications of Fibonacci numbers, 93g:11004**
Bergvelt, Maarten (*with* Adams, Malcolm R.) Heisenberg algebras, Grassmannians and isospectral curves. *The geometry of Hamiltonian systems* (*Berkeley, CA*, 1989), 1–7, *Math. Sci. Res. Inst. Publ.*, 22, *Springer, New York*, 1991. (Olga Kravchenko) **93b:14078** 14M15 (17B67, 58F07)
— (*with* ten Kroode, A. P. E.) ★ Proceedings Seminar 1986–1987. Lectures on Kac-Moody algebras. Edited and with a preface by E. A. de Kerf and H. G. J. Pijls. CWI Syllabi, 30. *Stichting Mathematisch Centrum, Centrum voor Wiskunde en Informatica, Amsterdam*, 1992. vi+97 *pp. ISBN* 90-6196-408-3 (Nicolás Andruskiewitsch) **93h:17057** 17B67
Bergweiler, Walter Canonical products of infinite order. *J. Reine Angew. Math.* **430** (1992), 85–107. (J. Winkler) **93g:30038** 30D20
Berinde, Vasile A fixed point theorem of Maia type in K-metric spaces. *Seminar on Fixed Point Theory*, 7–14, *Preprint*, 91-3, "*Babeş-Bolyai*" *Univ., Cluj-Napoca*, 1992. (*see* **93i:00014**) 54H25
Beringer, Henri (*with* De Backer, Bruno) Intelligent backtracking for CLP languages: an application to CLP(R). (English summary) *Logic programming* (*San Diego, CA*, 1991), 405–419, *MIT Press Ser. Logic Program., MIT Press, Cambridge, MA*, 1991. (*see* **93i:68009**) 68N17
Berk, H. L. (*with* Breizman, B. N.; Ye, Huanchun) Map model for nonlinear alpha particle interaction with toroidal Alfvén waves. (English summary) *Phys. Fluids B* **5** (1993), *no.* 5, 1506–1515. 76X05
Berkan, R. C. (*with* Upadhyaya, B. R.; Kisner, R. A.; Fitzpatrick, Ben G.) Inverse dynamics paradigm: adaptive nonlinear control and identification of large-scale power systems. (English summary) *Control Theory Adv. Tech.* **8** (1992), *no.* 3, 465–477. 93C40 (93C95)
van Berkel, Cornelis Adrianus Maria ★ Integral transformations and spaces of type S. (English. Dutch summary) Dissertation, Technische Universiteit Eindhoven, Eindhoven, 1992. *Technische Universiteit Eindhoven, Eindhoven*, 1992. vi+143 *pp.* (Richard D. Carmichael) **93i:46065** 46F05 (44A15, 45E10, 46F12)
van Berkel,Cornelis Hermanus ★ Handshake circuits: an intermediary between communicating processes and VLSI. Dissertation, Technische Universiteit Eindhoven, Eindhoven, 1992. With a Dutch summary. *Technische Universiteit Eindhoven, Eindhoven*, 1992. viii+253 *pp.* (From the introduction) **93c:68042** 68Q35
Berkeley, G. *see* **Hughes, M., 93c:01015**
Berkes, István (*with* Dehling, H. G.; Móri, Tamás F.) Counterexamples related to the a.s. central limit theorem. *Studia Sci. Math. Hungar.* **26** (1991), *no.* 2-3, 153–164. (Peter Schatte) **93i:60055** 60F15
— Critical LIL behavior of the trigonometric system. *Trans. Amer. Math. Soc.* **338** (1993), *no.* 2, 553–585. (F. Móricz) **93j:60035** 60F15 (42A55)
Berkooz, Gal (*with* Holmes, Philip J.; Lumley, John L.) Turbulence, dynamical systems and the unreasonable effectiveness of empirical eigenfunctions. *Proceedings of the International Congress of Mathematicians, Vol. I, II* (*Kyoto*, 1990), 1607–1617, *Math. Soc. Japan, Tokyo*, 1991. (Zengrong Liu) **93c:76046** 76F20 (76M99)
— (*with* Holmes, Philip J.; Lumley, John L.) Control of the turbulent boundary layer and dynamical systems theory: an update. *The global geometry of turbulence* (*Rota*, 1990), 211–220, *NATO Adv. Sci. Inst. Ser. B Phys.*, 268, *Plenum, New York*, 1991. (*see* **93b:76001**) 76F20 (76D10)
— (*with* Holmes, Philip J.; Lumley, John L.) Intermittent dynamics in simple models of the turbulent wall layer. *J. Fluid Mech.* **230** (1991), 75–95. (Mikhail Zaks) **93f:76054** 76F20 (34C37, 58F40)
— (*with* Holmes, Philip J.; Lumley, John L.) Low-dimensional models of the wall region in a turbulent boundary layer: new results. (English summary) Interpretation of time series from nonlinear systems (Warwick, 1991). *Phys. D* **58** (1992), *no.* 1-4, 402–406. (Summary) **93i:76043** 76Fxx (76D10)
— (*with* Titi, Edriss S.) Galerkin projections and the proper orthogonal decomposition for equivariant equations. (English summary) *Phys. Lett. A* **174** (1993), *no.* 1-2, 94–102. (Summary) **93k:65077** 65M60 (34G20)
Berkovich, Alexander (*with* Gómez, César; Sierra, Germán) On a new class of integrable models. Topological and quantum group methods in field theory and condensed matter physics. *Internat. J. Modern Phys. B* **6** (1992), *no.* 11-12, 1939–1950. (Emil Vinţeler) **93j:82017** 82B23 (17B37)
Berkovich, L. M. The autonomization method. (Russian) *Current group analysis* (*Russian*) (*Baku*, 1988), 47–53, "*Èlm*", *Baku*, 1989. (*see* **93d:58002**) 34A26
— (*with* Nechaevskiĭ, M. L.) Application of computer algebra in the investigation of the group properties of ordinary differential equations. (Russian) *Current group analysis* (*Russian*) (*Baku*, 1988), 53–62, "*Èlm*", *Baku*, 1989. (*see* **93d:58002**) 34A26 (34–04)
— Factorization as a method for finding exact invariant solutions of the Kolmogorov-Petrovskiĭ-Piskunov equation and related equations of Semenov and Zel′dovich. (Russian) *Dokl. Akad. Nauk* **322** (1992), *no.* 5, 823–827; *translation in Soviet Math. Dokl.* **45** (1992), *no.* 1, 162–167. (G. A. Sokhadze) **93j:35098** 35K60 (34A05, 35C05, 35Q99)
Berkovich, T. Ya. Antichains of maximum length in a homocyclic p-group. (Russian) *Problems in group theory and homological algebra* (*Russian*), 56–61, *Matematika, Yaroslav. Gos. Univ., Yaroslavl′*, 1988. (*see* **93b:00020**) 20D15

— (*with* Berkovich, Yakov G.) Continuation of characters from a section to a finite group. (Russian) *Problems in group theory and homological algebra (Russian)*, 61–65, *Matematika, Yaroslav. Gos. Univ., Yaroslavl'*, 1988. (*see* **93b:00020**) 20C15

Berkovich, Yakov G. Calculation of group order in the Brauer-Suzuki-Wall theorem by the Bender method. (Russian) *Problems in group theory and homological algebra (Russian)*, 24–27, *Matematika, Yaroslav. Gos. Univ., Yaroslavl'*, 1987. (*see* **93d:20002**) 20D60

— (*with* Nekrasov, K. G.) Degrees of characters of finite groups. (Russian) *Problems in group theory and homological algebra (Russian)*, 150–154, *Matematika, Yaroslav. Gos. Univ., Yaroslavl'*, 1987. (*see* **93b:20002**) 20C15

— (*with* Berkovich, T. Ya.) Continuation of characters from a section to a finite group. (Russian) *Problems in group theory and homological algebra (Russian)*, 61–65, *Matematika, Yaroslav. Gos. Univ., Yaroslavl'*, 1988. (*see* **93b:00020**) 20C15

— Finite groups with a small number of nonlinear irreducible characters. (Russian) *Problems in group theory and homological algebra (Russian)*, 97–107, *Matematika, Yaroslav. Gos. Univ., Yaroslavl'*, 1990. (From the introduction) **93d:20015** 20C15

— (*with* Freiman, Gregory A.; Praeger, Cheryl E.) Small squaring and cubing properties for finite groups. *Bull. Austral. Math. Soc.* **44** (1991), *no.* 3, 429–450. (W. E. Deskins) **93b:20045** 20D60

— On the order of the commutator subgroup and the Schur multiplier of a finite p-group. *J. Algebra* **144** (1991), *no.* 2, 269–272. (David Gluck) **93b:20022** 20C25 (20D15)

— Counting theorems for finite p-groups. *Arch. Math. (Basel)* **59** (1992), *no.* 3, 215–222. (Gary L. Walls) **93g:20038** 20D15

— On the number of subgroups of given order and exponent p in a finite irregular p-group. *Bull. London Math. Soc.* **24** (1992), *no.* 3, 259–266. (Summary) **93e:20034** 20D60

— On the number of solutions of the equation $x^{p^k} = a$ in a finite p-group. *Proc. Amer. Math. Soc.* **116** (1992), *no.* 3, 585–590. (Avinoam Mann) **93i:20023** 20D60 (20D15)

— Sufficient condition for π-closure of a finite group. *Publ. Math. Debrecen* **41** (1992), *no.* 3-4, 311–316. (Marian Deaconescu) **93j:20016** 20C15 (20D10, 20D20)

Berkovits, Juha (*with* Mustonen, Vesa) An application of the topological degree theory for semilinear equations with strongly monotone nonlinearities. *Bull. London Math. Soc.* **23** (1991), *no.* 5, 470–476. (Lew Lefton) **93a:47064** 47H15 (35L70, 47H11, 47N20)

Berkovits, Nathan (*with* Hatsuda, Machiko; Siegel, Warren) The big picture. *Nuclear Phys. B* **371** (1992), *no.* 1-2, 434–466. (Tsou Sheung Tsun) **93d:81135** 81T30 (81T40, 81T70)

— The heterotic Green-Schwarz superstring on an $N = (2, 0)$ super world-sheet. *Nuclear Phys. B* **379** (1992), *no.* 1-2, 96–120. (Summary) **93c:81161** 81T30

— Lorentz-covariant Green-Schwarz superstring amplitudes. (English summary) *Phys. Lett. B* **300** (1993), *no.* 1-2, 53–60. 81T30 (81R05, 81R25)

Berkovitz, Leonard D. In memory of Magnus R. Hestenes. *J. Optim. Theory Appl.* **73** (1992), *no.* 2, 225–227. (Editors) **93e:01017** 01A70

— (*with* Shreve, Steven E.; Ziemer, William P.) A tribute to Wendell H. Fleming. *SIAM J. Control Optim.* **31** (1993), *no.* 2, 273–281. (Editors) **93m:01058** 01A70

Berkson, Earl (*with* Asmar, Nakhlé; Gillespie, Thomas Alastair) Transferred bounds for square functions. *Houston J. Math.* **17** (1991), *no.* 4, 525–550. (Mario Milman) **93d:43003** 43A15 (43A25, 43A32)

— (*with* Asmar, Nakhlé; Gillespie, Thomas Alastair) Almost everywhere convergence for transferred convolution operators. *Function spaces (Edwardsville, IL, 1990)*, 31–44, *Lecture Notes in Pure and Appl. Math.*, 136, *Dekker, New York*, 1992. (Mario Milman) **93g:43002** 43A22 (47B35)

— (*with* Asmar, Nakhlé; Gillespie, Thomas Alastair) Transfert de la convergence presque partout. (English and French summaries) [Transference of almost everywhere convergence] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 13, 1389–1392. (Summary) **93j:43006** 43A22 (28D99, 43A65)

— (*with* Asmar, Nakhlé; Gillespie, Thomas Alastair) Invariant subspaces and harmonic conjugation on compact abelian groups. (English summary) *Pacific J. Math.* **155** (1992), *no.* 2, 201–213. (K. Yale) **93j:43005** 43A17 (47A15, 47B38)

— (*with* Asmar, Nakhlé; Gillespie, Thomas Alastair) Transference of weak type maximal inequalities by distributionally bounded representations. *Quart. J. Math. Oxford Ser.* (2) **43** (1992), *no.* 171, 259–282. (Gerald B. Folland) **93f:43003** 43A22 (42B25, 43A65)

van Berkum, E. E. M. (*with* Jansen, Johannes; Douven, R. C. M. H.) An annealing algorithm for searching optimal block designs. (English summary) *Biometrical J.* **34** (1992), *no.* 5, 529–538. 62K05

Berliant, Marcus (*with* ten Raa, Thijs) Corrigendum: "A foundation of location theory: consumer preferences and demand" [J. Econom. Theory **44** (1988), no. 2, 336–353; MR 89e:90050]. *J. Econom. Theory* **58** (1992), *no.* 1, 112–113. (Editors) **93k:90029** 90A40 (90A15)

— (*with* Thomson, William L.; Dunz, Karl) On the fair division of a heterogeneous commodity. *J. Math. Econom.* **21** (1992), *no.* 3, 201–216. (Summary) **93a:90019** 90A80

Berliner, L. Mark Likelihood and Bayesian prediction of chaotic systems. *J. Amer. Statist. Assoc.* **86** (1991), *no.* 416, 938–952. (Jack C. Lee) **93e:62228** 62M10 (62A15, 62M20)

— Statistics, probability and chaos. With discussion and a rejoinder by the author. *Statist. Sci.* **7** (1992), *no.* 1, 69–122. 62A99 (28D99, 58F13, 58F40)

Berlinet, Alain Reproducing kernels and finite order kernels. *Nonparametric functional estimation and related topics (Spetses, 1990)*, 3–18, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 335, *Kluwer Acad. Publ., Dordrecht*, 1991. (M. Bertrand-Retali) **93d:62052** 62G05 (62G20)

— Hierarchies of higher order kernels. (English summary) *Probab. Theory Related Fields* **94** (1993), *no.* 4, 489–504. (Matthew Goldstein) **93k:62081** 62G05

Berlyand, L. V. (*with* Kozlov, S. M.) Asymptotics of the homogenized moduli for the elastic chess-board composite. *Arch. Rational Mech. Anal.* **118** (1992), *no.* 2, 95–112. (E. Acerbi) **93h:73003** 73B27 (35B27, 49N20, 73K20, 73V25)

Berman, Abraham (*with* Shaked-Monderer, Naomi) More on extremal positive semidefinite doubly stochastic matrices. Sixth Haifa Conference on Matrix Theory (Haifa, 1990). *Linear Algebra Appl.* **167** (1992), 17–34. (Robert Grone) **93e:15008** 15A51 (05C50, 15A48)

Berman, D. L. Higher-order Hermite-Fejer interpolation processes. (Russian) *Application of functional analysis in approximation theory (Russian)*, 18–28, *Tver. Gos. Univ., Tver'*, 1990. (*see* **93k:00021**) 41A05

— On an extremal polynomial operator of differentiation. (Russian) *Studia Sci. Math. Hungar.* **26** (1991), *no.* 1, 105–110. (Ion Badea) **93f:42002** 42A05

— Extremal problems in the theory of polynomial operators. (Russian) *Acta Math. Hungar.* **59** (1992), *no.* 1-2, 75–83. (J. Szabados) **93c:42001** 42A10 (41A50)

Berman, David (*with* Williamson, Timothy) Locke on particles. A reply to G. Nuchelmans: "The historical background to Locke's account of particles" [Logique et Anal. (N.S.) **29** (1986), no. 113; 53–71]. With a reply by Nuchelmans. *Logique et Anal. (N.S.)* **31** (1988), *no.* 123-124, 213–218. 03–03 (01A45, 03A05)

Berman, G. P. (*with* Rubaev, V. Yu.; Zaslavskii, G. M.) The problem of quantum chaos in a kicked harmonic oscillator. *Nonlinearity* **4** (1991), *no.* 2, 543–566. (Alfredo M. Ozorio de Almeida) **93b:81073** 81Q50 (58F13, 81–04)

— (*with* Bulgakov, E. N.; Zaslavskii, G. M.) Quantum chaos of atoms in a resonant cavity. *Chaos* **2** (1992), *no.* 2, 257–265. (Summary) **93d:81046** 81Q50 (81V10)

Berman, Kenneth A. (*with* Paul, Jerome L.) The bounded chromatic number for graphs of genus g. (English summary) *J. Combin. Theory Ser. B* **56** (1992), *no.* 2, 183–196. (Michael O. Albertson) **93m:05068** 05C15 (05C10)

Berman, Michael (*with* Kosloff, Ronnie; Tal-Ezer, Hillel) Solution of the time-dependent Liouville-von Neumann equation: dissipative evolution. *J. Phys. A* **25** (1992), *no.* 5, 1283–1307. (Robert Alicki) **93d:82054** 82C10

Berman, Oded (*with* Ingco, Divinagracia I.; Odoni, Amedeo R.) Improving the location of minisum facilities through network modification. (English summary) Locational decisions (Fullerton, CA, 1990). *Ann. Oper. Res.* **40** (1992), *no.* 1-4, 1–16 (1993). (Summary) **93m:90028** 90B10 (90B80)

Berman, Piotr (*with* Ramaiyer, Viswanathan) Improved approximations for the Steiner tree problem. *Proceedings of the Third Annual ACM-SIAM Symposium on Discrete Algorithms (Orlando, FL, 1992)*, 325–334, *ACM, New York*, 1992. (*see* **93b:68005**) 05C85 (05C05, 68Q25, 68R10)

— (*with* Garay, Juan A.) Cloture votes: $n/4$-resilient distributed consensus in $t + 1$ rounds. (English summary) *Math. Systems Theory* **26** (1993), *no.* 1, 3–19. (Summary) **93i:68017** 68M10

Berman, Robert D. (*with* Nishiura, Togo) Applications of selection theorems to radial cluster set interpolation for functions on the unit ball. *Ann. Acad. Sci. Fenn. Ser. A I Math.* **16** (1991), *no.* 2, 411–435. (Summary) **93a:26011** 26B35 (26A21, 54C65)

— (*with* Cohn, William S.) Littlewood theorems for limits and growth of potentials along level sets of Hölder continuous functions. *Amer. J. Math.* **114** (1992), *no.* 1, 185–227. (Tom Carroll) **93c:31006** 31B15 (26B99, 31B25)

— Boundary limits and an asymptotic Phragmén-Lindelöf theorem for analytic functions of slow growth. (English summary) *Indiana Univ. Math. J.* **41** (1992), *no.* 2, 465–481. (P. Lappan) **93i:30027** 30D40

Berman, S. *see* **Berman, Stephen**

Berman, Simeon M. Estimation of the tail of the spectral distribution by means of high level sojourn times. *Probability theory and mathematical statistics, Vol. I (Vilnius, 1989)*, 128–140, "*Mokslas*", *Vilnius*, 1990. (Juan Carlos Abril) **93e:62240** 62M15 (60G10, 62M10)

— Central limit theorems for extreme sojourns of stationary Gaussian processes. *Comm. Pure Appl. Math.* **44** (1991), *no.* 8-9, 925–938. (William P. McCormick) **93b:60073** 60G10 (60F05)

— Spectral conditions for sojourn and extreme value limit theorems for Gaussian processes. *Stochastic Process. Appl.* **39** (1991), *no.* 2, 201–220. (Summary) **93i:60037** 60F05 (60G10, 60G15)

— ★ Sojourns and extremes of stochastic processes. The Wadsworth & Brooks/Cole Statistics/Probability Series. *Wadsworth & Brooks/Cole Advanced Books & Software, Pacific Grove, CA*, 1992. xiv+300 *pp. ISBN* 0-534-13932-9 (Michael R. Chernick) **93a:60055** 60G10 (60G17, 60G70)

Berman, Stephen (*with* Moody, R. V.) Lie algebras graded by finite root systems and the intersection matrix algebras of Slodowy. *Invent. Math.* **108** (1992), *no.* 2, 323–347. (Mohammad Hailat) **93e:17031** 17B65 (17B68)

Bermejo, Rodolfo Analysis of an algorithm for the Galerkin-characteristic method. *Numer. Math.* **60** (1991), *no.* 2, 163–194. (Mutsuto Kawahara) **93e:65132** 65N30 (76M25, 76R50)

Bermond, Jean-Claude (*with* Hell, Pavol; Liestman, Arthur L.; Peters, Joseph G.) Sparse broadcast graphs. *Discrete Appl. Math.* **36** (1992), *no.* 2, 97–130. (Summary) **93a:68011** 68M10 (05C90, 90B12, 90C35)

— (*with* Delorme, C.; Quisquater, J.-J.) Table of large (Δ, D)-graphs. *Discrete Appl. Math.* **37/38** (1992), 575–577. 05C75

— *see also* **Interconnection networks, 93j:00012**

Bermúdez, A. *see* **Bermúdez de Castro, Alfredo**

Bermúdez, Alfredo *see* **Bermúdez de Castro, Alfredo**

ancochéa-Bermúdez, José María *see* **Ancochéa-Bermúdez, José María**

Bermúdez de Castro, Alfredo (*with* Muñiz, M. C.; Quintela Estévez, Peregrina) Mathematical and numerical analysis for a Stefan problem with source at the free boundary. (Spanish. Spanish summary) *Proceedings of the XII Congress on Differential Equations and Applications/II Congress on Applied Mathematics (Spanish) (Oviedo, 1991)*, 375–380, *Univ. Oviedo, Oviedo*, 1991. (*see* **93j:00009**) 65N30 (35R35)

— (*with* López Pouso, Óscar) Analysis of a flux method for computing heat radiation. (Spanish. English summary) *Proceedings of the XII Congress on Differential Equations and Applications/II Congress on Applied Mathematics (Spanish) (Oviedo, 1991)*, 381–386, *Univ. Oviedo, Oviedo*, 1991. (*see* **93j:00009**) 80–08

— (*with* Vázquez Cendón, Ma. Elena) Extension of some upwind schemes to generalized conservation laws. (Spanish. English summary) *Proceedings of the XII Congress on Differential Equations and Applications/II Congress on Applied Mathematics (Spanish) (Oviedo, 1991)*, 387–392, *Univ. Oviedo, Oviedo*, 1991. (*see* **93j:00009**) 35L65 (65M06)

— (*with* Pedreira, Dolores G.) A finite-element method for computing propagation modes in waveguides. (Spanish. English summary) *Proceedings of the XII Congress on Differential Equations and Applications/II Congress on Applied Mathematics (Spanish) (Oviedo, 1991)*, 393–398, *Univ. Oviedo, Oviedo*, 1991. (*see* **93j:00009**) 78A50 (65N30)

Bern, Marshall (*with* Gilbert, John R.) Drawing the planar dual. (English summary) *Inform. Process. Lett.* **43** (1992), *no.* 1, 7–13. (Summary) **93i:68168** 68U05

— Approximate closest-point queries in high dimensions. (English summary) *Inform. Process. Lett.* **45** (1993), *no.* 2, 95–99. (Summary) **93m:68162** 68U05 (68P05, 68P20)

Bern, Zvi (*with* Kosower, David A.) The computation of loop amplitudes in gauge theories. *Nuclear Phys. B* **379** (1992), *no.* 3, 451–561. (Silvio Paolo Sorella) **93k:81165** 81T30

Bernadac, Évelyne Fractions continues sur les matrices symétriques réelles et la loi gaussienne inverse. (English and French summaries) [Continued fractions on real symmetric matrices and Gaussian inverse distribution] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 3, 329–332. (Summary) **93g:62070** 62H05

Bernadou, M. (*with* Mato Eiroa, P.; Trouvé, Pascal) On the approximation of general linear thin shell problems by D.K.T. methods. (Portuguese summary) *Mat. Apl. Comput.* **10** (1991), *no.* 2, 103–124. (Summary) **93c:65140** 65N30 (73K15, 73V05)

Bernal, A. (*with* Cerdà, Joan) Complex interpolation of quasi-Banach spaces with an *A*-convex containing space. *Ark. Mat.* **29** (1991), *no.* 2, 183–201. (N. Ya. Kruglyak) **93a:46137** 46M35

rodríguez Bernal, Aníbal *see* **Rodríguez Bernal, Aníbal**

Bernal, Martin Animadversions on the origins of western science. *Isis* **83** (1992), *no.* 4, 596–607. 01A05 (01A16, 01A17, 01A20)

Bernal González, Luis Omnipresent holomorphic operators and maximal cluster sets. *Colloq. Math.* **63** (1992), *no.* 2, 315–322. (P. Lappan) **93k:30057** 30D40 (30E10, 47B38)

Bernard, Alain Fonctions qui opèrent sur un espace de Banach de fonctions. (English summary) [Functions that operate on a Banach space of functions] *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 9, 661–663. (S. J. Sidney) **93h:46030** 46E25 (46J10)

Bernard, Denis Quantum Lie algebras and differential calculus on quantum groups. (English summary) Common trends in mathematics and quantum field theories (Kyoto, 1990). *Progr. Theoret. Phys. Suppl. No.* 102 (1990), 49–66 (1991). (Arne Schirrmacher) **93g:58007** 58B30 (17B37, 81R50)

— (*with* LeClair, André) Quantum group symmetries and nonlocal currents in 2D QFT. *Comm. Math. Phys.* **142** (1991), *no.* 1, 99–138. (Satoru Saito) **93d:81148** 81T40 (17B37, 81–02, 81R50)

— (*with* LeClair, André) Nonlocal currents in 2D QFT: an alternative to the quantum inverse scattering method. *Quantum groups* (*Leningrad*, 1990), 176–196, *Lecture Notes in Math.*, 1510, *Springer, Berlin*, 1992. (Filippo Colomo) **93i:81210** 81T40 (81R50)

— À propos du calcul différentiel sur les groupes quantiques. (English and French summaries) [Concerning the differential calculus on quantum groups] *Ann. Inst. H. Poincaré Phys. Théor.* **56** (1992), *no.* 4, 443–448. (D. V. Yur'ev) **93h:58010** 58B30 (17B37, 46L87, 81R50)

— On symmetries of some massless 2D field theories. *Phys. Lett. B* **279** (1992), *no.* 1-2, 78–86. (Summary) **93e:81101** 81T40 (81T10)

— (*with* Haldane, F. D. M.; Ha, Z. N. C.; Talstra, J. C.; Pasquier, V.) Yangian symmetry of integrable quantum chains with long-range interactions and a new description of states in conformal field theory. (English summary) *Phys. Rev. Lett.* **69** (1992), *no.* 14, 2021–2025. (Summary) **93h:82020** 82B23 (81T40)

Bernard, P. *see* **Bernard, Pierre**

Bernard, Peter S. (*with* Speziale, Charles G.) The energy decay in self-preserving isotropic turbulence revisited. (English summary) *J. Fluid Mech.* **241** (1992), 645–667. (Summary) **93f:76053** 76F05

Bernard, Pierre Quelques méthodes particulaires stochastiques. [Some stochastic particle methods] With the collaboration of D. Talay and L. Tubaro. *Probabilités numériques*, 89–96, *Collect. Didact.*, 10, *INRIA, Rocquencourt*, 1992. (*see* **93k:65002**) 65P05 (65C05, 76M35)

Bernard, Robert S. A MacCormack scheme for incompressible flow. *Comput. Math. Appl.* **24** (1992), *no.* 5-6, 151–168. (Summary) **93d:76045** 76M25 (65N06, 65N50, 76M20)

Bernardi, Christine (*with* Coppoletta, Giuseppe; Girault, Vivette; Maday, Yvon) Spectral methods for the Stokes problem in stream-function formulation. (English summary) *Spectral and high order methods for partial differential equations* (*Como*, 1989), 229–236, *North-Holland, Amsterdam*, 1990. (*see* **93d:65005**) 65N35 (76D07, 76M25)

— (*with* Dauge, Monique; Maday, Yvon) Relèvements de traces préservant les polynômes. (English and French summaries) [Trace liftings which preserve polynomials] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 3, 333–338. (Viorel Arnautu) **93g:65036** 65D99 (46E35, 47B38, 65N30, 65N35)

— (*with* Girault, Vivette; Maday, Yvon) Mixed spectral element approximation of the Navier-Stokes equations in the stream-function and vorticity formulation. (English and French summaries) *IMA J. Numer. Anal.* **12** (1992), *no.* 4, 565–608. (Long An Ying) **93i:65113** 65N35 (35Q30, 76D05, 76M25)

— (*with* Maday, Yvon) Polynomial interpolation results in Sobolev spaces. (English summary) Orthogonal polynomials and numerical methods. *J. Comput. Appl. Math.* **43** (1992), *no.* 1-2, 53–80. (G. Mühlbach) **93k:65010** 65D05 (41A05, 46E35)

— (*with* Laval, Frédéric; Métivet, Brigitte; Pernaud-Thomas, Bernadette) Finite element approximation of viscous flows with varying density. (English and French summaries) *SIAM J. Numer. Anal.* **29** (1992), *no.* 5, 1203–1243. (Lech Slawik) **93g:65143** 65N30 (76D99, 76M10)

Bernardi, Enrico (*with* Bove, Antonio; Nishitani, Tatsuo) Levi conditions for hyperbolic operators with a stratified multiple variety. *Proc. Japan Acad. Ser. A Math. Sci.* **68** (1992), *no.* 3, 49–52. (Vesselin M. Petkov) **93h:58153** 58G17 (35L99)

Bernardin, D. (*with* Séro-Guillaume, O. E.; Sun, C. H.) Thermal conduction in 2D-lattice gases. (English summary) *Discrete models of fluid dynamics* (*Figueira da Foz*, 1990), 72–84, *Ser. Adv. Math. Appl. Sci.*, 2, *World Sci. Publishing, River Edge, NJ*, 1991. (Summary) **93g:82080** 82C40 (82C20)

— (*with* Séro-Guillaume, O. E.; Zouaoui, D.; Brancher, J.-P.) The shape of a magnetic liquid drop. (English summary) *J. Fluid Mech.* **241** (1992), 215–232. (R. Finn) **93h:76080** 76W05 (76B45, 76E25)

— Global invariants and equilibrium states in lattice gases. (English summary) Advanced Research Workshop on Lattice Gas Automata (Nice, 1991). *J. Statist. Phys.* **68** (1992), *no.* 3-4, 457–495. (Dimitri Petritis) **93i:82025** 82B21 (82C21)

aparicio Bernardo, Emiliano *see* **Aparicio Bernardo, Emiliano**

Bernardo, Emiliano Aparicio *see* **Aparicio Bernardo, Emiliano**

Bernardo, Jose M. (*with* Berger, James O.) Reference priors in a variance components problem. (English summary) *Bayesian analysis in statistics and econometrics* (*Bangalore*, 1988), 177–194, *Lecture Notes in Statist.*, 75, *Springer, New York*, 1992. (Summary) **93j:62076** 62F15 (62J10)

— (*with* Berger, James O.) Ordered group reference priors with application to the multinomial problem. *Biometrika* **79** (1992), *no.* 1, 25–37. (D. V. Lindley) **93c:62051** 62F15

Bernat, Andrew (*with* Kreinovich, V. Ya.; Villa, Elsa; Mariscal, Yvonne) Parallel computers. Estimate errors caused by imprecise data. (English and Russian summaries) *Interval Comput./Interval. Vychisl.* **1991**, *no.* 2, 31–46. (Summary) **93e:65160** 65Y05 (65G10)

Bernath, M. (*with* Fendrik, A. J.; Vega, J. L.; Dorso, C. O.) Chaos in billiards of nuclear interest. *Nonlinear phenomena in fluids, solids and other complex systems* (*Santiago*, 1990), 447–459, *North-Holland Delta Ser., North-Holland, Amsterdam*, 1991. (Summary) **93b:58098** 58F13 (81Q50, 81V35)

Bernau, S. J. Sums and extensions of vector lattice homomorphisms. (English summary) Positive operators and semigroups on Banach lattices (Curaçao, 1990). *Acta Appl. Math.* **27** (1992), *no.* 1-2, 33–45. (Summary) **93f:47041** 47B65 (47–02, 47A05)

Berndt, Bruce C. (*with* Evans, Ronald J.) Some elegant approximations and asymptotic formulas of Ramanujan. *J. Comput. Appl. Math.* **37** (1991), *no.* 1-3, 35–41. (Andreas Guthmann) **93a:41055** 41A60 (01A60)

— Hans Rademacher (1892–1969). *Acta Arith.* **61** (1992), *no.* 3, 209–225. (Jeremy Gray) **93d:01054** 01A70

— (*with* Bhargava, Srinivasamurthy) A remarkable identity found in Ramanujan's third notebook. *Glasgow Math. J.* **34** (1992), *no.* 3, 341–345. (H. L. Abbott) **93h:11019** 11B65 (11A99)

— (*with* Zhang, Liang Cheng) Ramanujan's identities for eta-functions. *Math. Ann.* **292** (1992), *no.* 3, 561–573. (Jannis A. Antoniadis) **93g:11039** 11F20

— (*with* Andrews, George E.; Lorentzen, Lisa; Lamphere, Robert L.) The continued fractions found in the unorganized portions of Ramanujan's notebooks. *Mem. Amer. Math. Soc.* **99** (1992), *no.* 477, vi+71 *pp.* (Liang-Cheng Zhang) **93f:11008** 11A55 (01A60, 05A19, 11B65)

— (*with* Evans, Ronald J.) Asymptotic expansion of a series of Ramanujan. *Proc. Edinburgh Math. Soc.* (2) **35** (1992), *no.* 2, 189–199. (F. W. J. Olver) **93i:41020** 41A60 (33B15)

Berndtsson, Bo Weighted estimates for $\overline{\partial}$ in domains in **C**. *Duke Math. J.* **66** (1992), *no.* 2, 239–255. (J. Vesely) **93f:32018** 32F20 (35N15, 46N20)

— Weighted integral formulas. *Several complex variables* (*Stockholm*, 1987/1988), 160–187, *Math. Notes*, 38, *Princeton Univ. Press, Princeton, NJ*, 1993. (Harold P. Boas) **93m:32005** 32A25 (32–02)

Bernfeld, Marvin *see* **Radar and sonar, 93m:00045**

Bernhard, Gudrun (*with* Hommel, Gerhard) Multiple hypotheses testing. (English summary) *Computational aspects of model choice* (*Prague*, 1991), 211–235, *Contrib. Statist., Physica, Heidelberg*, 1993. (*see* **93k:62001**) 62H15 (62F03, 62J15)

Bernhard, Pierre (*with* Başar, Tamer) ★ H^∞-optimal control and related minimax design problems. A dynamic game approach. Systems & Control: Foundations & Applications. *Birkhäuser Boston, Inc., Boston, MA*, 1991. xii+224 *pp. ISBN* 0-8176-3554-8 (Yu. Ledyaev) **93c:93001** 93–02 (47N70, 90D25, 93B36)

— Information and strategies in dynamic games. *SIAM J. Control Optim.* **30** (1992), *no.* 1, 212–228. (T. Parthasarathy) **93a:90090** 90D15 (90D20)

Bernhardsson, Bo (*with* Sternad, Mikael) Feedforward control is dual to deconvolution. (English summary) *Internat. J. Control* **57** (1993), *no.* 2, 393–405. (Summary) **93j:93064** 93C05 (93B17)

Bernhardt, Chris (*with* Coven, Ethan M.) A polynomial-time algorithm for deciding the forcing relation on cyclic permutations. (English summary) *Symbolic dynamics and its applications* (*New Haven, CT*, 1991), 85–93, *Contemp. Math.*, 135, *Amer. Math. Soc., Providence, RI*, 1992. (Jerzy Ombach) **93j:58041** 58F03 (54H20, 68Q25)

Bernhardt, Dan (*with* Bergin, James) Anonymous sequential games with aggregate uncertainty. (English summary) *J. Math. Econom.* **21** (1992), *no.* 6, 543–562. (Larry Samuelson) **93j:90135** 90D13 (90D15, 93E05)

Bernik, V. I. (*with* Kovalevskaya, È. I.) Two-dimensional extremal surfaces with simultaneously extremal partial derivatives. (Russian) *Mat. Zametki* **50** (1991), *no.* 2, 14–19, 160; *translation in Math. Notes* **50** (1991), *no.* 1-2, 779–783 (1992). (Summary) **93f:11055** 11J83

Bernis, Francisco (*with* McLeod, J. Bryce) Similarity solutions of a higher order nonlinear diffusion equation. *Nonlinear Anal.* **17** (1991), *no.* 11, 1039–1068. (Michiel Bertsch) **93a:34016** 34A34 (35K25)

— (*with* Hulshof, Josephus; Vázquez, Juan Luis) A very singular solution for the dual porous medium equation and the asymptotic behaviour of general solutions. *J. Reine Angew. Math.* **435** (1993), 1–31. (Elena Comparini) **93k:35122** 35K15 (35K55, 35Q35, 76S05)

Bernoulli, Jacob I *see* **Development of calculus through Leibniz and the Bernoulli brothers, 93e:01009; Speiser, David, (93e:01009); Roero, Clara Silvia, (93e:01009)** *and* **Hess, Heinz-Jürgen, (93e:01009)**

Bernoulli, Johann I *see* **Development of calculus through Leibniz and the Bernoulli brothers, 93e:01009; Sierksma, Gerard, 93k:01025; Speiser, David; Aiton, Eric John, (93e:01009)** *and* **Nagel, Fritz, (93e:01009)**

brack-Bernsen, Lis *see* **Brack-Bernsen, Lis**

Bernshtein, A. V. (*with* Chernova, S. S.) Probabilistic models of processes for the exchange of housekeeping information in data transmission networks. (Russian) *Probabilistic processes and their applications* (*Russian*), 32–36, *Moskov. Inst. Èlektron. Mashinostroeniya, Moscow*, 1989. (*see* **93b:60003**) 94A40 (68M10)

Bernspång, L. (*with* Zeng, Lingfu; Wiberg, Nils-Erik) An adaptive finite element procedure for 2D dynamic transient analysis using direct integration. The Second World Congress of Computational Mechanics, Part III (Stuttgart, 1990). *Internat. J. Numer. Methods Engrg.* **34** (1992), *no.* 3, 997–1014. (Summary) **93a:73083** 73V05

Bernstein, Arthur J. (*with* Singh, Gurdip) On the relative execution times of distributed protocols. *Internat. J. Parallel Programming* **20** (1991), *no.* 3, 203–235. 68M10

Bernstein, David (*with* Friesz, Terry L.; Smith, Tony E.; Tobin, Roger L.; Wie, B.-W.) A variational inequality formulation of the dynamic network user equilibrium problem. (English summary) *Oper. Res.* **41** (1993), *no.* 1, 179–191. (Summary) **93j:90038** 90B10 (49J40)

Bernstein, David H. (*with* Iarrobino, Anthony) A nonunimodal graded Gorenstein Artin algebra in codimension five. *Comm. Algebra* **20** (1992), *no.* 8, 2323–2336. (Sverre O. Smalø) **93i:13012** 13E10 (13A02, 13H10)

Bernstein, Dennis S. (*with* Halevi, Yoram; Haddad, Wassim M.) On stable full-order and reduced-order LQG controllers. (English summary) *Optimal Control Appl. Methods* **12** (1991), *no.* 3, 163–172. 93B50 (93D15)

— (*with* Haddad, Wassim M.) Robust stabilization with positive real uncertainty: beyond the small gain theorem. *Systems Control Lett.* **17** (1991), *no.* 3, 191–208. (Summary) **93b:93103** 93D21 (93D09, 93D15)

— (*with* Žigić, Dragan; Watson, Layne T.; Collins, Emmanuel G., Jr.) Homotopy methods for solving the optimal projection equations for the H_2 reduced order model problem. *Internat. J. Control* **56** (1992), *no.* 1, 173–191. (Kang-Zhi Liu) **93f:93058** 93B40 (93B36)

— (*with* Collins, Emmanuel G., Jr.; King, James A.) Application of maximum entropy/optimal projection design synthesis to a benchmark problem. (English summary) *J. Guidance Control Dynamics* **15** (1992), *no.* 5, 1094–1102. 93B50

— (*with* Halevi, Yoram; Haddad, Wassim M.) A Riccati equation approach to the singular LQG problem. (English summary) *Automatica J. IFAC* **29** (1993), *no.* 3, 773–778. 93B40 (93E20)

Bernstein, Jeremy ★ Quantum profiles. *Princeton University Press, Princeton, NJ*, 1991. viii+178 *pp. ISBN* 0-691-08725-3 (Pierre Kerszberg) **93a:01031** 01A60 (01A70, 81–03)

Bernstein, S. Operator calculus for elliptic boundary value problems in unbounded domains. *Z. Anal. Anwendungen* **10** (1991), *no.* 4, 447–460. (Sadakazu Aizawa) **93e:35015** 35C15 (35J05, 35Q30, 47N20, 76D07)

Bernués, Julio (*with* Bastero, Jesús) Applications of deviation inequalities on finite metric sets. *Math. Nachr.* **153** (1991), 33–41. (Wolfgang Lusky) **93a:46017** 46B07 (46B09, 52A21, 60B05)

Bernussou, J. (*with* Dias Peres, Pedro Luis; Geromel, J. C.) Quadratic stabilizability of linear uncertain systems in convex-bounded domains. (English summary) *Automatica J. IFAC* **29** (1993), *no.* 2, 491–493. 93D15 (93D21)

Berque, David (*with* Cecchini, Ronald; Goldberg, Mark; Rivenburgh, Reid) The SetPlayer system for symbolic computation on power sets. (English summary) *J. Symbolic Comput.* **14** (1992), *no.* 6, 645–662. (Summary) **93m:68090** 68Q40 (04–04, 05C85, 68R05)

Berr, Ralph The p-real spectrum of a commutative ring. *Comm. Algebra* **20** (1992), *no.* 10, 3055–3103. (Thomas C. Craven) **93h:14040** 14P05 (12D15, 13A99, 14P10)

— The intersection theorem for orderings of higher level in rings. *Manuscripta Math.* **75** (1992), *no.* 3, 273–277. (Murray Marshall) **93e:12002** 12D15 (11E10)

Berred, Mohamed On record values and the exponent of a distribution with regularly varying upper tail. *J. Appl. Probab.* **29** (1992), *no.* 3, 575–586. (N. R. Mohan) **93h:60079** 60G70 (60F05, 62F12)

Berretti, A. (*with* Celletti, Alessandra; Chierchia, L.; Falcolini, Corrado) Natural boundaries for area-preserving twist maps. *J. Statist. Phys.* **66** (1992), *no.* 5-6, 1613–1630. (Helmut Rüssmann) **93b:58121** 58F27 (58F05, 70K50)

Berrick, A. J. (*with* Miller, C. F., III) Strongly torsion generated groups. *Math. Proc. Cambridge Philos. Soc.* **111** (1992), *no.* 2, 219–229. (Johannes Huebschmann) **93d:20094** 20J05

Berry, D. (*with* Mestel, B. D.) Wandering intervals for Lorenz maps with bounded nonlinearity. *Bull. London Math. Soc.* **23** (1991), *no.* 2, 183–189. (Autorreferat (B.D.M.) (Zbl 698:58041)) **93c:58119** 58F12 (58F13)

Berry, Gérard (*with* Boudol, Gérard) The chemical abstract machine. Second Workshop on Concurrency and Compositionality (San Miniato, 1990). *Theoret. Comput. Sci.* **96** (1992), *no.* 1, 217–248. (David B. Benson) **93e:68018** 68Q10 (68Q05, 68Q55)

Berry, J. *see* **Volkovyskiĭ, L. I. et al., 93e:30003**

Berry, J. Calvin (*with* Pal, Nabendu) On invariance and maximum likelihood estimation. (English summary) *Amer. Statist.* **46** (1992), *no.* 3, 209–212. 62F10

— (*with* Jin, Chun) Equivariant estimation of a normal mean vector using a normal concomitant vector for covariance adjustment. (English summary) *Comm. Statist. Theory Methods* **22** (1993), *no.* 2, 335–346. 62H12

Berry, Karl *see* **Probabilistic and stochastic methods in analysis, with applications, 93e:00029**

Berry, Kevin (*with* Tretkoff, Marvin) The period matrix of Macbeath's curve of genus seven. *Curves, Jacobians, and abelian varieties (Amherst, MA*, 1990), 31–40, *Contemp. Math.*, 136, *Amer. Math. Soc., Providence, RI*, 1992. (Montserrat Teixidor i Bigas) **93k:14039** 14H40 (14H30)

Berry, Michael *see* **Berry, Michael W.**

Berry, Michael Victor Asymptotics, superasymptotics, hyperasymptotics. ... *Asymptotics beyond all orders (La Jolla, CA*, 1991), 1–14, *NATO Adv. Sci. Inst. Ser. B Phys.*, 284, *Plenum, New York*, 1991. (*see* **93i:00016**) 41A60 (40A25)

— (*with* Robbins, Jonathan) Discordance between quantum and classical correlation moments for chaotic systems. (English summary) *J. Phys. A* **25** (1992), *no.* 15, L961–L965. (Summary) **93e:81026** 81Q50 (58F13)

— (*with* Keating, Jonathan Peter) A new asymptotic representation for $\zeta(\frac{1}{2} + it)$ and quantum spectral determinants. (English summary) *Proc. Roy. Soc. London Ser. A* **437** (1992), *no.* 1899, 151–173. (Jack Quine) **93j:11057** 11M06 (11M41, 11Z50, 58F20, 81Q50)

— *see also* **Robnik, Marko, 93a:81059**

Berry, Michael W. (*with* Golub, Gene H.) Estimating the largest singular values of large sparse matrices via modified moments. *Numer. Algorithms* **1** (1991), *no.* 4, 353–373. (Cs. J. Hegedűs) **93a:65046** 65F15 (65D32, 65F50, 65Y05)

Berry, T. G. (*with* Andrea, Stephen A.) Continued fractions and periodic Jacobi matrices. *Linear Algebra Appl.* **161** (1992), 117–134. (M. Znojil) **93e:15002** 15A18 (12Y05, 14H05, 39A70, 47A10, 47B99)

Berryman, James G. Waves in partially saturated porous media. (English summary) *Wave propagation and inversion*, 1–25, *SIAM, Philadelphia, PA*, 1992. (Summary) **93f:73033** 73D15 (73B27, 73N20, 76S05)

— Global extrema in traveltime tomography. (English summary) *Computational acoustics, Vol.* 2 (*Cambridge, MA*, 1991), 45–62, *North-Holland, Amsterdam*, 1993. (Summary) **93m:86004** 86A15 (65K99, 73D50)

Bers, A. (*with* Friedland, Lazar) Hermitian description of interacting inhomogeneous electron beams. *Phys. Fluids B* **4** (1992), *no.* 6, 1457–1464. (Summary) **93b:76088** 76X05

— (*with* Chow, Carson C.; Ram, A. K.) Spatiotemporal chaos in the nonlinear three-wave interaction. *Phys. Rev. Lett.* **68** (1992), *no.* 23, 3379–3382. (Summary) **93b:58133** 58F40 (58F13)

Bershadskiĭ, A. G. Inverse cascade in fractal turbulence (vortex-fractons). (English summary) *J. Engrg. Phys. Thermophys.* **62** (1992), *no.* 2, 182–187. (D. ter Haar) **93g:76070** 76F99

— Cascade processes and fractals in turbulence. (Russian) *Prikl. Mekh. Tekhn. Fiz.* **1992**, *no.* 1, 49–53; *translation in J. Appl. Mech. Tech. Phys.* **33** (1992), *no.* 1, 44–48. (Summary) **93b:76046** 76F20 (86A05)

Bershadskiĭ, M. A. (*with* Kutasov, David) Scattering of open and closed strings in 1 + 1 dimensions. (English summary) *Nuclear Phys. B* **382** (1992), *no.* 2, 213–228. (Helmut Rumpf) **93k:81166** 81T30 (81T27, 81T40)

— (*with* Lerche, W.; Nemeschansky, D.; Warner, N. P.) A BRST operator for noncritical W-strings. (English summary) *Phys. Lett. B* **292** (1992), *no.* 1-2, 35–41. (Stanislav Z. Pakuliak) **93i:81185** 81T30 (17B68, 81T40, 81T70)

Bershchanskiĭ, Ya. M. (*with* Meerov, M. V.; Akhmetzyanov, A. V.; et al.) ★ Многосвязные системы управления. (Russian) [Multivariable control systems] "*Nauka*", *Moscow*, 1990. 264 *pp. ISBN* 5-02-006648-6 (Publisher's description) **93a:93003** 93–02 (93A15, 93C35)

Bershtein, L. S. (*with* Melekhin, V. B.) Procedures for the automated formation of conditional programs for the functioning of an integral robot under the appearance of retarded signals in the medium. (Russian. English and Ukrainian summaries) *Kibernet. Sistem. Anal.* **1992**, *no.* 1, 148–154, 161, 191; *translation in Cybernet. Systems Anal.* **28** (1992), *no.* 1, 128–133. 68U05

gillio Berta Mauri, Anna *see* **Gillio Berta Mauri, Anna**

Berteloot, François A remark on local continuous extension of proper holomorphic mappings. *The Madison Symposium on Complex Analysis (Madison, WI*, 1991), 79–83, *Contemp. Math.*, 137, *Amer. Math. Soc., Providence, RI*, 1992. (Masaaki Suzuki) **93m:32037** 32H35 (32D15)

Berthias, Jean-Paul (*with* Shahid-Saless, Bahman) Torsion and nonmetricity in scalar-tensor theories of gravity. (English summary) *Classical Quantum Gravity* **10** (1993), *no.* 5, 1039–1044. (Summary) **93m:83067** 83D05

boutet de monvel-Berthier, Anne-Marie *see* **Boutet de Monvel-Berthier, Anne-Marie**

Berthold, Dietmar On the stability of the classical collocation method for Cauchy-type singular integral equations. (English summary) Orthogonal polynomials and numerical methods. *J. Comput. Appl. Math.* **43** (1992), *no.* 1-2, 171–184. (Jose Cuminato) **93k:65105** 65R20 (45E05)

— (*with* Hoppe, W.; Silbermann, Bernd) A fast algorithm for solving the generalized airfoil equation. (English summary) Orthogonal polynomials and numerical methods. *J. Comput. Appl. Math.* **43** (1992), *no.* 1-2, 185–219. (Jose Cuminato) **93k:65106** 65R20 (45E05)

— (*with* Hoppe, W.; Silbermann, Bernd) The numerical solution of the generalized airfoil equation. *J. Integral Equations Appl.* **4** (1992), *no.* 3, 309–336. (John W. Hilgers) **93m:65181** 65R20 (45L05, 76M25)

Berthold, G. H. (*with* Gibson, A. G.; Waters, A. J.; Chandler, Colston) A new $\mathscr{K}$-matrix approach to N-body scattering. *J. Math. Phys.* **32** (1991), *no.* 11, 3117–3124. (Giorgio Cattapan) **93a:81204** 81U10 (47A40, 47N50)

Bertin, Henri (*with* Quintard, Michel; Whitaker, Stephen) Two-phase flow in heterogeneous porous media: large-scale capillary pressure and permeability determination. *The mathematics of oil recovery (Cambridge*, 1989), 751–765, *Inst. Math. Appl. Conf. Ser. New Ser.*, 31, *Oxford Univ. Press, New York*, 1992. (*see* **93b:76086**) 76S05 (76T05)

Bertin, M.-J. Généralisation des suites de Pisot et de Boyd. II. [Generalization of Pisot and Boyd sequences. II] *Acta Arith.* **59** (1991), *no.* 3, 215–219. (R. G. Stoneham) **93b:11134** 11R06 (11K31)

— (*with* Decomps-Guilloux, A.; Grandet-Hugot, M.; Pathiaux-Delefosse, M.; Schreiber, J.-P.) ★ Pisot and Salem numbers. With a preface by David W. Boyd. *Birkhäuser Verlag, Basel*, 1992. xiv+291 *pp. ISBN* 3-7643-2648-4 (D. Boyd) **93k:11095** 11R06 (11K31, 11K70)

Bertocchi, Maria (*with* Di Odoardo, Claudio) A stochastic algorithm for global optimization based on threshold accepting technique. (English summary) *Optimization, Vol.* 1, 2 (*Singapore*, 1992), 141–146, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93d:90005**) 90C30

— (*with* Cavalli, Enrico; Zambruno, Giovanni) Parallel and symbolic computation in finance. (English summary) *Parallel processing for scientific computing (Houston, TX*, 1991), 199–204, *SIAM, Philadelphia, PA*, 1992. (*see* **93g:65178**) 90A09 (65Y05)

— (*with* Brandolini, L.; Słomiński, Leon; Sobczynska, J.) A Monte-Carlo approach for 0-1 programming problems. (English and German summaries) *Computing* **48** (1992), *no.* 3-4, 259–274. (Béla Vizvári) **93i:90066** 90C09 (65C05, 65K05)

Bertoin, Jean Décomposition du mouvement brownien avec dérive en un minimum local par juxtaposition de ses excursions positives et négatives. [Decomposition of Brownian motion with derivation at a local minimum by juxtaposition of its positive and negative excursions] *Séminaire de Probabilités, XXV*, 330–344, *Lecture Notes in Math.*, 1485, *Springer, Berlin*, 1991. (L. C. G. Rogers) **93k:60204** 60J65 (60J60)

— Increase of a Lévy process with no positive jumps. *Stochastics Stochastics Rep.* **37** (1991), *no.* 4, 247–251. (N. H. Bingham) **93e:60149** 60J30 (60G17)

— (*with* Le Jan, Yves) Representation of measures by balayage from a regular recurrent point. *Ann. Probab.* **20** (1992), *no.* 1, 538–548. (F. B. Knight) **93b:60173** 60J45 (60J55)

— An extension of Pitman's theorem for spectrally positive Lévy processes. (English summary) *Ann. Probab.* **20** (1992), *no.* 3, 1464–1483. (L. C. G. Rogers) **93k:60191** 60J30 (60G17)

— How does a reflected one-dimensional diffusion bounce back? (English summary) *Forum Math.* **4** (1992), *no.* 6, 549–565. (F. B. Knight) **93i:60147** 60J60 (60J55, 60J65)

— Factorizing Laplace exponents in a spectrally positive Lévy process. (English summary) *Stochastic Process. Appl.* **42** (1992), *no.* 2, 307–313. (N. H. Bingham) **93h:60118** 60J30

Bertolami, O. (*with* Kubyshin, Yu. A.; Mourão, J. M.) Stability of compactification in Einstein-Yang-Mills theories after inflation. *Phys. Rev. D* (3) **45** (1992), *no.* 10, 3405–3414. (Summary) **93b:83060** 83E15

— (*with* Bento, M. C.; Moniz, P. V.; Mourão, J. M.; Sá, P. M.) On the cosmology of massive vector fields with SO(3) global symmetry. (English summary) *Classical Quantum Gravity* **10** (1993), *no.* 2, 285–298. (Summary) **93i:83026** 83C20 (83C15)

Bertoli Barsotti, Lucio (*with* Paroli, Roberta) Directions of maximum resolution of the Mortara index: comparison with the most common descriptive normalized measures of association. (Italian. English and Italian summaries) *Statistica (Bologna)* **51** (1991), *no.* 3, 353–376 (1992). (Summary) **93j:62160** 62H17 (62H20)

Bertoloni Meli, Domenico Public claims, private worries: Newton's *Principia* and Leibniz's theory of planetary motion. *Stud. Hist. Philos. Sci.* **22** (1991), *no.* 3, 415–449. (Luigi Pepe) **93a:01014** 01A45

— Guidobaldo dal Monte and the Archimedean revival. (English and Italian summaries) *Nuncius Ann. Storia Sci.* **7** (1992), *no.* 1, 3–34. (Richard L. Francis) **93h:01016** 01A40 (01A20)

Bertolotti, F. P. (*with* Herbert, Th.; Spalart, P. R.) Linear and nonlinear stability of the Blasius boundary layer. (English summary) *J. Fluid Mech.* **242** (1992), 441–474. (Summary) **93g:76061** 76E99 (76D10, 76E30, 76N20)

Bertoni, A. (*with* Massazza, P.; Sabadini, N.) Holonomic generating functions and context free languages. (English summary) *Internat. J. Found. Comput. Sci.* **3** (1992), *no.* 2, 181–191. (Roman Murawski) **93m:03063** 03D05 (03D35, 68Q45)

Bertotti, B. *see* **Modern cosmology in retrospect, 93f:83088**

Bertotti, Maria Letizia Periodic solutions for the elliptic planar restricted three-body problem: a variational approach. (English summary) *Predictability, stability, and chaos in N-body dynamical systems* (*Cortina d'Ampezzo*, 1990), 467–473, *NATO Adv. Sci. Inst. Ser. B Phys.*, 272, *Plenum, New York*, 1991. (*see* **93i:70002**) 70F07 (34C25, 58F22)

— (*with* Ambrosetti, Antonio) Homoclinics for second order conservative systems. *Partial differential equations and related subjects* (*Trento*, 1990), 21–37, *Pitman Res. Notes Math. Ser.*, 269, *Longman Sci. Tech., Harlow*, 1992. (Gabriella Tarantello) **93k:58041** 58E05 (34C25, 34C37, 58F05)

— Homoclinics for Lagrangian systems on Riemannian manifolds. (English summary) *Dynamic Systems Appl.* **1** (1992), *no.* 4, 341–367. (Fabio Giannoni) **93m:58040** 58F05 (34C37, 58F15, 70H35)

Bertram, Aaron (*with* Ein, Lawrence; Lazarsfeld, Robert K.) Surjectivity of Gaussian maps for line bundles of large degree on curves. *Algebraic geometry* (*Chicago, IL*, 1989), 15–25, *Lecture Notes in Math.*, 1479, *Springer, Berlin*, 1991. (Enrique Arrondo) **93i:14031** 14H60

— Moduli of rank-2 vector bundles, theta divisors, and the geometry of curves in projective space. *J. Differential Geom.* **35** (1992), *no.* 2, 429–469. (Arnaud Beauville) **93g:14037** 14H60 (14D20)

Bertram, B. On the use of product integration for the solution of finite part singular integral equations. (English summary) *Integral methods in science and engineering*—90 (*Arlington, TX*, 1990), 132–136, *Ser. Comput. Phys. Process. Mech. Thermal Sci., Hemisphere, New York*, 1991. (*see* **93f:00014**) 65R20

— (*with* Ruehr, O.) Product integration for finite-part singular integral equations: numerical asymptotics and convergence acceleration. (English summary) Asymptotic methods in analysis and combinatorics. *J. Comput. Appl. Math.* **41** (1992), *no.* 1-2, 163–173. (Summary) **93g:65164** 65R20

Bertram, Edward A. Lower bounds for the number of conjugacy classes in finite solvable groups. *Israel J. Math.* **75** (1991), *no.* 2-3, 243–255. (Summary) **93c:20036** 20D10 (11N45)

Bertrand, Anne *see* **Bertrand-Mathis, Anne**

Bertrand, Christine Sur l'algèbre différentielle construite sur un calcul différentiel covariant. (English summary) [On differential algebra built over a left-covariant differential calculus] *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 13, 1043–1048. (Palle E. T. Jørgensen) **93f:58016** 58B30 (17B37, 46L87)

Bertrand, Daniel Exposants des systèmes différentiels, vecteurs cycliques et majorations de multiplicités. [Exponents of differential systems, cyclic vectors and upper bounds on multiplicities] *Équations différentielles dans le champ complexe, Vol. I* (*Strasbourg*, 1985), 61–85, *Publ. Inst. Rech. Math. Av., Univ. Louis Pasteur, Strasbourg*, 1988. (Carlo Viola) **93i:11083** 11J82 (34A20, 41A21)

— Un analogue différentiel de la théorie de Kummer. (English summary) [A differential analogue of Kummer's theory] *Approximations diophantiennes et nombres transcendants* (*Luminy*, 1990), 39–49, *de Gruyter, Berlin*, 1992. (F. Beukers) **93g:12007** 12H20

Bertrand, Jacqueline (*with* Bertrand, Pierre) A class of affine Wigner functions with extended covariance properties. *J. Math. Phys.* **33** (1992), *no.* 7, 2515–2527. (Günter Braunss) **93k:81126a** 81S30 (22E25, 81R05, 94A12)

— (*with* Bertrand, Pierre) Erratum: "A class of affine Wigner functions with extended covariance properties". *J. Math. Phys.* **34** (1993), *no.* 2, 885. (Günter Braunss) **93k:81126b** 81S30 (22E25, 81R05, 94A12)

Bertrand, P. Propriétés et caractérisations topologiques d'une représentation pyramidale. (English summary) [Properties and topological characterizations of a pyramidal representation] *Math. Inform. Sci. Humaines No.* 117 (1992), 5–28. (Summary) **93c:06009** 06A99 (54E05)

Bertrand, Pierre (*with* Bertrand, Jacqueline) A class of affine Wigner functions with extended covariance properties. *J. Math. Phys.* **33** (1992), *no.* 7, 2515–2527. (Günter Braunss) **93k:81126a** 81S30 (22E25, 81R05, 94A12)

— (*with* Bertrand, Jacqueline) Erratum: "A class of affine Wigner functions with extended covariance properties". *J. Math. Phys.* **34** (1993), *no.* 2, 885. (Günter Braunss) **93k:81126b** 81S30 (22E25, 81R05, 94A12)

Bertrand-Mathis, Anne Nombres de Perron et questions de rationnalité. [Perron numbers and problems of rationality] *Séminaire d'Analyse*, 1988–89 (*Clermont-Ferrand*, 1988/1989), *Exp. No.* 8, 14 *pp., Univ. Clermont-Ferrand II, Clermont-Ferrand*, 199?. (D. Boyd) **93e:11120a** 11R06 (15A48, 58F03, 68Q68)

— Nombres de Perron et problèmes de rationnalité. [Perron numbers and problems of rationality] Journées Arithmétiques, 1989 (Luminy, 1989). *Astérisque No.* 198-200 (1991), 67–76 (1992). (D. Boyd) **93e:11120b** 11R06 (15A48, 58F03, 68Q68)

Bertsch, Michiel (*with* Dal Passo, Roberta; Ughi, Maura) Nonuniqueness of solutions of a degenerate parabolic equation. (English summary) *Ann. Mat. Pura Appl.* (4) **161** (1992), 57–81. (Lumin Jiang) **93f:35124** 35K65 (35B05)

— (*with* Dal Passo, Roberta) Hyperbolic phenomena in a strongly degenerate parabolic equation. *Arch. Rational Mech. Anal.* **117** (1992), *no.* 4, 349–387. (Summary) **93g:35078** 35K65 (73B99)

— (*with* Esteban, J. R.; Zhang, Hong Fei) On the asymptotic behaviour of the solutions of a degenerate equation in hydrology. *Nonlinear Anal.* **19** (1992), *no.* 4, 365–374. (L. Hsiao) **93i:35070** 35K55 (35B40, 76R50, 86A05)

— (*with* Hilhorst, Danielle; Hulshof, Josephus) On a free boundary problem arising in detonation theory: convergence to travelling waves. *Emerging applications in free boundary problems* (*Montreal, PQ*, 1990), 146–151, *Pitman Res. Notes Math. Ser.*, 280, *Longman Sci. Tech., Harlow*, 1993. (*see* **93k:00035**) 80A25 (35R35)

Bertsekas, Dimitri P. Auction algorithms for network flow problems: a tutorial introduction. (English summary) *Comput. Optim. Appl.* **1** (1992), *no.* 1, 7–66. (Summary) **93h:90033** 90B10 (90–02, 90C35)

— (*with* Eckstein, Jonathan) On the Douglas-Rachford splitting method and the proximal point algorithm for maximal monotone operators. *Math. Programming* **55** (1992), *no.* 3, *Ser. A*, 293–318. (F. Giannessi) **93c:90057** 90C25 (65K05)

— (*with* Varvarigos, Emmanouel A.) Communication algorithms for isotropic tasks in hypercubes and wraparound meshes. (English summary) *Parallel Comput.* **18** (1992), *no.* 11, 1233–1257. (Wolfgang Feitscher) **93j:68019** 68M10 (90B12)

Bertsik, P. P. (*with* Kolesnik, I. G.) Smoothed particle hydrodynamics and its application to the solution of astrophysical problems. (Russian. English, Russian and Ukrainian summaries) *Kinemat. Fiz. Nebesn. Tel* **9** (1993), *no.* 2, 3–14. 85–08

Bertsimas, Dimitris J. (*with* Avram, Florin) The minimum spanning tree constant in geometrical probability and under the independent model: a unified approach. *Ann. Appl. Probab.* **2** (1992), *no.* 1, 113–130. (Robin Pemantle) **93b:60027** 60D05 (90C27)

— (*with* Servi, L. D.) Deducing queueing from transactional data: the queue inference engine, revisited. *Oper. Res.* **40** (1992), *suppl.* 2, S217–S228. (Summary) **93h:90040** 90B22

— A vehicle routing problem with stochastic demand. (English summary) *Oper. Res.* **40** (1992), *no.* 3, 574–585. (Klaus Jansen) **93i:90040** 90B06 (90B10)

— (*with* Nakazato, Daisuke) Transient and busy period analysis of the $GI/G/1$ queue: the method of stages. *Queueing Systems Theory Appl.* **10** (1992), *no.* 3, 153–184. (Summary) **93c:60139** 60K25 (90B22)

Bertuzzi, Alessandro (*with* Gandolfi, Alberto) Ridge regression versus OLS by Pitman's closeness under quadratic and Fisher's loss. Pitman's measure of closeness. *Comm. Statist. Theory Methods* **20** (1991), *no.* 11, 3581–3590. (Khursheed Alam) **93e:62177** 62J07 (62C15, 62J05)

Bérubé, D. (*with* Kröger, Helmut; Lafrance, R.; Marleau, L.) Axial anomaly on a momentum lattice. *Phys. Rev. D* (3) **45** (1992), *no.* 4, 1332–1341. (Kornél Szlachányi) **93a:81141** 81T25 (81T50)

Berzhe, P. *see* **Bergé, Pierre**

Bes, D. R. (*with* Aldabe, F.; Scoccola, N. N.) Soliton quantization in the BRST scheme. (English summary) *Phys. Lett. B* **293** (1992), *no.* 1-2, 81–88. (Summary) **93g:81188** 81T70

Besag, Julian (*with* Green, Peter J.) Spatial statistics and Bayesian computation. (English summary) *J. Roy. Statist. Soc. Ser. B* **55** (1993), *no.* 1, 25–37. 62M30 (62F15)

Besbes, Mourad Points fixes et théorèmes ergodiques dans les espaces $L^1(E)$. [Fixed points and ergodic theorems in $L^1(E)$-spaces] *Séminaire d'Initiation à l'Analyse, Exp. No.* 18, 5 *pp., Publ. Math. Univ. Pierre et Marie Curie*, 104, *Univ. Paris VI, Paris*, 199?. (*see* **93k:00039**) 47B38 (47A35)

— Points fixes dans les espaces des opérateurs nucléaires. (English summary) [Fixed points in spaces of nuclear operators] *Bull. Austral. Math. Soc.* **46** (1992), *no.* 2, 287–294. (S. Swaminathan) **93h:47066** 47H10 (46B28)

Besieris, Ioannis M. (*with* Ziolkowski, Richard W.; Shaarawi, Amr M.) Aperture realizations of exact solutions to homogeneous-wave equations. (English summary) *J. Opt. Soc. Amer. A* **10** (1993), *no.* 1, 75–87. (Summary) **93j:78009** 78A25 (78A40)

Besklinskaya, E. P. (*with* Kozachenko, Yu. V.) On the convergence of sums of Baxter type in Orlicz spaces. (Ukrainian. Russian and Ukrainian summaries) *Visnik Kiïv. Univ. Mat. Mekh. No.* 32 (1990), 3–7. 60F05 (46E30)

— (*with* Kozachenko, Yu. V.) On the rate of convergence for sub-Gaussian random vectors of strict type in Lévy-Baxter-type theorems. (Russian) *Issled. Operatsii i ASU No.* 37 (1991), 32–37. 60F05 (60G15)

Beslin, Scott J. (*with* Ligh, Steve; Jones, Pat) On group-theoretic properties of divisors. *Bull. Number Theory Related Topics* **12** (1988), 3–9. (Jean-Marie De Koninck) **93f:11007** 11A25

— (*with* el-Kassar, Nasser) GCD matrices and Smith's determinant for a U.F.D. (English summary) *Bull. Number Theory Related Topics* **13** (1989), 17–22. (J. L. Brenner) **93f:11005** 11A25 (11C20, 13F15, 15A33)

— (*with* Ligh, Steve) GCD-closed sets and the determinants of GCD matrices. *Fibonacci Quart.* **30** (1992), *no.* 2, 157–160. (H. L. Abbott) **93e:11003** 11A05

— Elementary sequences. *Internat. J. Math. Math. Sci.* **15** (1992), *no.* 3, 581–587. (Summary) **93c:11007** 11B34 (11Y55)

— A note on topological continuity. *Math. Mag.* **65** (1992), *no.* 4, 257–258. 54C05

Bespalov, A. N. (*with* Kuznetsov, Yurii Alekseevich; Pironneau, Olivier; Vallet, Marie-Gabrielle) Fictitious domains with separable preconditioners versus unstructured adapted meshes. (English summary) *Impact Comput. Sci. Engrg.* **4** (1992), *no.* 3, 217–249. (Summary) **93h:65147** 65N50 (65Y20, 76M25)

Bespalov, V. M. (*with* Ugol'kov, V. N.; Tsitsiashvili, G. Sh.) Estimation of the parameters of a signal against a random noise background on the basis of observations at discrete times. (Russian. Russian summary) *Applied numerical analysis and mathematical modeling* (*Russian*), 128–134, 179, *Akad. Nauk SSSR, Dal'nevostochn. Otdel., Vladivostok*, 1989. (*see* **93d:00029**) 94A12

Bespalov, Yu. N. (*with* Samoĭlenko, Yu. S.; Shul'man, V. S.) Sets of operators connected by semilinear relations. (Russian. Russian summary) *Applications of the methods of functional analysis in mathematical physics* (*Russian*), 28–51, *Akad. Nauk Ukrainy, Inst. Mat., Kiev*, 1991. (W. Timmermann) **93k:47032** 47A99 (47D99)

— (*with* Samoĭlenko, Yu. S.) Algebraic operators and pairs of selfadjoint operators connected with a polynomial relation. (Russian) *Funktsional. Anal. i Prilozhen.* **25** (1991), *no.* 4, 72–74; *translation in Functional Anal. Appl.* **25** (1991), *no.* 4, 289–291 (1992). (From the text) **93d:47044** 47B25 (47A99, 47B50)

— Selfadjoint representations of Sklyanin algebras. (Russian. Ukrainian summary) *Ukrain. Mat. Zh.* **43** (1991), *no.* 11, 1567–1574; *translation in Ukrainian Math. J.* **43** (1991), *no.* 11, 1458–1465 (1992). (Helmut Boseck) **93e:16053** 16W30 (16W50, 81R10)

Bespalova, S. A. (*with* Klokov, Yu. A.) On a singular boundary value problem for a system of second-order ordinary differential equations. (Russian. Russian summary) *Differentsial'nye Uravneniya* **28** (1992), *no.* 6, 1067–1069, 1103. (Summary) **93h:34030** 34B15

— (*with* Klokov, Yu. A.) A boundary value problem for a fourth-order singular system. (Russian. Russian summary) *Differentsial'nye Uravneniya* **28** (1992), *no.* 9, 1484–1490, 1651; *translation in Differential Equations* **28** (1992), *no.* 9, 1206–1212 (1993). (Summary) **93k:34045** 34B15

Bessaga, C. Functional analytic aspects of geometry. Linear extending of metrics and related problems. *Progress in functional analysis (Peñíscola, 1990)*, 247–257, *North-Holland Math. Stud.*, 170, *North-Holland, Amsterdam*, 1992. (Zvonko Čerin) **93a:54015** 54C55 (46B20)

Besse, Philippe PCA stability and choice of dimensionality. (English summary) *Statist. Probab. Lett.* **13** (1992), *no.* 5, 405–410. 62H25

— (*with* de Falguerolles, Antoine) Application of resampling methods to the choice of dimension in principal component analysis. (English summary) *Computer intensive methods in statistics (Louvain-la-Neuve, 1991)*, 167–176, *Statist. Comput., Physica, Heidelberg*, 1993. (*see* **93m:62004**) 62H25

Bessi, U. (*with* Ambrosetti, Antonio) Multiple periodic trajectories in a relativistic gravitational field. *Variational methods (Paris, 1988)*, 373–381, *Progr. Nonlinear Differential Equations Appl.*, 4, *Birkhäuser Boston, Boston, MA*, 1990. (Shi Qing Zhang) **93k:58187** 58F22 (34C25, 58E05, 70H05)

— (*with* Ambrosetti, Antonio) Multiple closed orbits for perturbed Keplerian problems. *J. Differential Equations* **96** (1992), *no.* 2, 283–294. (Michele Matzeu) **93g:34062** 34C25 (58F22, 58F30, 70F05, 70H05)

Bessis, Daniel (*with* Baker, George A., Jr.; Moussa, Pierre) Asymptotic behavior of some Hankel-Toeplitz determinants. *Rev. Math. Phys.* **4** (1992), *no.* 1, 65–94. (From the text) **93i:33009** 33C80 (33D80, 47B35, 47N55, 81T40)

Bessis, G. (*with* Bessis, N.) Perturbed factorization of the symmetric-anharmonic-oscillator eigenequation. (English summary) *Phys. Rev. A* (3) **46** (1992), *no.* 11, 6824–6845. (Summary) **93i:81031** 81Q15

Bessis, Laurence A note on the fixed points of a hypermap automorphism. *European J. Combin.* **13** (1992), *no.* 2, 65–69. (Giorgio Nicoletti) **93g:05135** 05C99 (57M15)

Bessis, N. (*with* Bessis, G.) Perturbed factorization of the symmetric-anharmonic-oscillator eigenequation. (English summary) *Phys. Rev. A* (3) **46** (1992), *no.* 11, 6824–6845. (Summary) **93i:81031** 81Q15

Besso, M. *see* **Bernstein, Jeremy**, **93a:01031**

Besson, O. (*with* Laydi, M. R.) Some estimates for the anisotropic Navier-Stokes equations and for the hydrostatic approximation. (English and French summaries) *RAIRO Modél. Math. Anal. Numér.* **26** (1992), *no.* 7, 855–865. (Rodolfo Salvi) **93m:35139** 35Q30 (76D05)

deBessonet, Cary G. ★ A many-valued approach to deduction and reasoning for artificial intelligence. The Kluwer International Series in Engineering and Computer Science, 129. *Kluwer Academic Publishers, Boston, MA*, 1991. xx+248 *pp. ISBN* 0-7923-9138-1 (Olga M. Kosheleva) **93c:68093** 68T27 (03B50)

Bessonov, A. A. (*with* Zagashvili, Yu. V.; Markelov, A. S.) ★ Методы и средства идентификации динамических объектов. (Russian. Russian summary) [Methods and means for the identification of dynamic objects] *Énergoatomizdat, Leningrad*, 1989. 280 *pp. ISBN* 5-283-04456-4 (Summary) **93m:93002** 93–02 (93B30, 93E12)

Bessonov, G. A. (*with* Korobova, E. V.) Solution of a problem on the synthesis of a positional control for some classes of nonlinear systems. (Russian) *Vestnik Har'kov. Univ. No.* 361, *Prikl. Mat. Mekh.* (1991), 27–33. (Summary) **93g:93011** 93B05 (49N35, 93B51)

Bessonova, N. Yu. (*with* Radvogin, Yu. B.) A marching method for computing three-dimensional steady flows in problems of supersonic flow. (Russian) *Akad. Nauk SSSR Inst. Prikl. Mat. Preprint* **1991**, *no.* 31, 31 *pp.* (Summary) **93b:76052** 76J20 (76L05, 76M20, 76N15)

Best, Eike (*with* Koutny, Maciej) Petri net semantics of priority systems. Second Workshop on Concurrency and Compositionality (San Miniato, 1990). *Theoret. Comput. Sci.* **96** (1992), *no.* 1, 175–215. (Ferucio Laurentiu Tiplea) **93e:68019** 68Q10 (68Q55, 68Q90)

— (*with* Desel, Jörg; Esparza, Javier) Traps characterize home states in free choice systems. (English summary) Selected papers of the International BCS-FACS Workshop on Semantics for Concurrency (Leicester, 1990). *Theoret. Comput. Sci.* **101** (1992), *no.* 2, 161–176. (Summary) **93e:68085** 68Q90

— *see also* **Workshop: Concurrency and Compositionality**, **93m:68007**

el Bestawy, R. S. *see* **El Bestawy, R. S.**

Bestehorn, M. (*with* Fantz, M.; Friedrich, R.; Haken, H.) Evolution of patterns in rotating Bénard convection. *From phase transitions to chaos*, 118–127, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93b:58001**) 76E15

Bestman, A. R. (*with* Abbey, T. M.; Mbeledogu, I. U.) The flow of a two-component plasma model in a porous rotating hot sphere. (English summary) *Astrophys. Space Sci.* **197** (1992), *no.* 1, 61–76. (Summary) **93h:85001** 85A30

Bestuzheva, A. N. (*with* Dorfman, A. A.) Wave motions of a fluid over an inclined bottom that are caused by a moving pressure system. (Russian) *Prikl. Mekh. Tekhn. Fiz.* **1991**, *no.* 6, 38–44; *translation in J. Appl. Mech. Tech. Phys.* **32** (1991), *no.* 6, 855–861 (1992). (Vladan D. Djordjević) **93a:76010** 76B15 (86A05)

Bestvina, Mladen (*with* Mess, Geoffrey) The boundary of negatively curved groups. *J. Amer. Math. Soc.* **4** (1991), *no.* 3, 469–481. (Jerzy Dydak) **93j:20076** 20F32 (57M40)

— (*with* Feighn, M.) A combination theorem for negatively curved groups. *J. Differential Geom.* **35** (1992), *no.* 1, 85–101. (Tadeusz Januszkiewicz) **93d:53053** 53C23 (57M50)

Betancor, Jorge J. (*with* Barrios, Javier A.) The Laplace transformation on new spaces of distributions. *Rend. Sem. Mat. Univ. Politec. Torino* **47** (1989), *no.* 2, 163–177 (1992). (C. Carton-Lebrun) **93f:46060** 46F12 (44A10)

— A new inversion formula and Abelian theorems for a generalized Hankel transform. *Bol. Soc. Mat. Mexicana* (2) **35** (1990), *no.* 2, 71–78. (Antonio J. Durán) **93i:44005** 44A15

— (*with* Barrios, Javier A.) Operational calculus for a fractional derivative. (Spanish. English summary) *Proceedings of the XVth Portuguese-Spanish Conference on Mathematics, Vol. II (Portuguese)* (*Évora*, 1990), 143–148, *Univ. Évora, Évora*, 1991. (S. L. Kalla) **93g:44016** 44A40 (26A33)

— (*with* Barrios, Javier A.) An integral transform of Krätzel in distribution spaces. (Spanish. English summary) *Proceedings of the XVth Portuguese-Spanish Conference on Mathematics, Vol. II (Portuguese)* (*Évora*, 1990), 261–266, *Univ. Évora, Évora*, 1991. (Antonio J. Durán) **93d:46064** 46F12 (44A10)

— A Fox integral transformation of generalized functions. *Bull. Soc. Roy. Sci. Liège* **60** (1991), *no.* 6, 391–400. (Gopi Ahuja) **93e:46047** 46F12 (44A15)

— (*with* Barrios, Javier A.) A Krätzel's integral transformation of distributions. (English summary) *Collect. Math.* **42** (1991), *no.* 1, 11–32. (Antonio J. Durán) **93i:46071** 46F12 (44A10, 46F05)

— (*with* Flores, Manuel T.) A Parseval equation and a generalized finite Hankel transformation. *Comment. Math. Univ. Carolin.* **32** (1991), *no.* 4, 627–638. (E. L. Koh) **93f:46061** 46F12 (44A15)

— (*with* Barrios, Javier A.) A Parseval equation and the K_μ and I_μ transforms of distributions. *Math. Japon.* **36** (1991), *no.* 6, 1063–1083. (Hans-Jürgen Glaeske) **93b:46077** 46F12 (44A15)

— (*with* Barrios, Javier A.) The Krätzel integral transformation of distributions. *Math. Nachr.* **154** (1991), 11–26. (Hans-Jürgen Glaeske) **93b:46076** 46F12 (44A15)

— (*with* Marrero, I.) Some linear topological properties of the Zemanian space $\mathcal{P}'_\mu$. (English summary) *Bull. Soc. Roy. Sci. Liège* **61** (1992), *no.* 3-4, 299–314. (Antonio J. Durán) **93h:46044** 46F05 (46F12)

— (*with* Barrios, Javier A.) On K_μ and I_μ transforms of generalized functions. *J. Math. Anal. Appl.* **165** (1992), *no.* 1, 12–35. (Gopi Ahuja) **93b:46078** 46F12

— A generalized Hankel transformation of certain spaces of distributions. (English summary) *Rev. Roumaine Math. Pures Appl.* **37** (1992), *no.* 6, 445–463. (Hans-Jürgen Glaeske) **93i:44004** 44A15 (46F12)

Betancourt Núñez, Godehardo A. A Riemann boundary value problem for closed rectifiable Jordan curves. (Spanish. English and Spanish summaries) *Cienc. Mat. (Havana)* **13** (1992), *no.* 1, 29–37. 30E25

Beth, Thomas (*with* Hatz, Volker) Design machines: algebraically well described interconnection networks. (English summary) *Des. Codes Cryptogr.* **2** (1992), *no.* 3, 287–298. (Summary) **93f:68029** 68Q10 (05C85, 68R10)

— (*with* Agnew, G. B.; Mullin, R. C.; Vanstone, Scott A.) Arithmetic operations in GF(2^m). (English summary) *J. Cryptology* **6** (1993), *no.* 1, 3–13. (Summary) **93m:94018** 94A60

Bethke, D. (*with* Herzberger, Jürgen) On two algorithms for bounding the inverses of an interval matrix. (English and Russian summaries) *Interval Comput./Interval. Vychisl.* **1991**, *no.* 1, 44–53. (Summary) **93c:65040** 65F05 (65G10)

— (*with* Herzberger, Jürgen) Interval Schulz's methods: on the case of an interval matrix. (English summary) *Computer arithmetic and enclosure methods (Oldenburg, 1991)*, 199–203, *North-Holland, Amsterdam*, 1992. (Summary) **93k:65040** 65G10 (65F10)

Bethuel, Fabrice Approximation in Sobolev spaces between two manifolds and homotopy groups. (English summary) *Variational methods (Paris, 1988)*, 239–249, *Progr. Nonlinear Differential Equations Appl.*, 4, *Birkhäuser Boston, Boston, MA*, 1990. (Summary) **93k:58035** 58D15 (46E35)

— (*with* Coron, Jean-Michel; Demengel, F.; Hélein, Frédéric) A cohomological criterion for density of smooth maps in Sobolev spaces between two manifolds. (English summary) *Nematics (Orsay, 1990)*, 15–23, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 332, *Kluwer Acad. Publ., Dordrecht*, 1991. (Liliana Maxim-Răileanu) **93g:58020** 58D15

— (*with* Coron, Jean-Michel; Ghidaglia, Jean-Michel; Soyeur, Alain) Heat flows and relaxed energies for harmonic maps. *Nonlinear diffusion equations and their equilibrium states*, 3 (*Gregynog*, 1989), 99–109, *Progr. Nonlinear Differential Equations Appl.*, 7, *Birkhäuser Boston, Boston, MA*, 1992. (Wei Yue Ding) **93d:58036** 58E20 (35K05, 58G11)

— (*with* Brézis, Haïm; Coleman, Bernard D.; Hélein, Frédéric) Bifurcation analysis of minimizing harmonic maps describing the equilibrium of nematic phases between cylinders. *Arch. Rational Mech. Anal.* **118** (1992), *no.* 2, 149–168. (E. Acerbi) **93h:49059** 49Q10 (58E20, 76A15, 76M30)

— (*with* Brézis, Haïm; Hélein, Frédéric) Limite singulière pour la minimisation de fonctionnelles du type Ginzburg-Landau. (English summary) [Singular limit for the minimization of Ginzburg-Landau functionals] *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 12, 891–895. (Summary) **93d:58033** 58E12 (35Q55, 58E20)

— Un résultat de régularité pour les solutions de l'équation de surfaces à courbure moyenne prescrite. (English summary) [A regularity result for solutions to the equation of surfaces of prescribed mean curvature] *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 13, 1003–1007. (Dennis M. DeTurck) **93g:53011** 53A10 (35B65, 35J60)

Betilgiriev, M. A. (*with* Askhabov, S. N.) A nonlinear equation of convolution type with an almost increasing kernel. (Russian) *Well-posed boundary value problems for nonclassical equations (Russian)*, 55–58, *Akad. Nauk SSSR Sibirsk. Otdel., Inst. Mat., Novosibirsk*, 1990. (*see* **93m:35006**) 45E10

Betina, Kamel Analyticité des solutions Gevrey de certains systèmes de Pfaff. [Analyticity of Gevrey solutions of certain Pfaffian systems] *Équations différentielles dans le champ complexe, Vol. III (Strasbourg, 1985)*, 19–34, *Publ. Inst. Rech. Math. Av., Univ. Louis Pasteur, Strasbourg*, 1988. (J. S. Joel) **93e:32047** 32S40 (34A20, 58A17)

— Indices polynomiaux et solutions polynomiales de certains systèmes de Pfaff singuliers. (English summary) [Polynomial indices and polynomial solutions of some singular Pfaff systems] *Analysis* **12** (1992), *no.* 1-2, 195–216. (J. S. Joel) **93f:32023** 32G34 (32S70, 34A20, 58A17)

Betke, Ulrich (*with* Weil, Wolfgang) Isoperimetric inequalities for the mixed area of plane convex sets. *Arch. Math. (Basel)* **57** (1991), *no.* 5, 501–507. (A. Florian) **93c:52006** 52A39 (52A40)

— (*with* Henk, M.) Linear programming by minimizing distances. *Z. Oper. Res.* **35** (1991), *no.* 4, 299–307. (C. Bergthaller) **93d:90031** 90C05 (49M30)

— Mixed volumes of polytopes. *Arch. Math. (Basel)* **58** (1992), *no.* 4, 388–391. (W. J. Firey) **93f:52012** 52A39

— (*with* Henk, M.; Wills, J. M.) Successive-minima-type inequalities. (English summary) *Discrete Comput. Geom.* **9** (1993), *no.* 2, 165–175. (Peter M. Gruber) **93j:52026** 52C07 (52C05, 52C17)

Betker, Th. Univalence criteria and Löwner chains. *Bull. London Math. Soc.* **23** (1991), *no.* 6, 563–567. (J. G. Krzyż) **93a:30018** 30C55 (30C62)

Betley, Stanisław Generalized version of stable K-theory. (English summary) *Topology Hawaii (Honolulu, HI, 1990)*, 27–33, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93e:19004** 19D10 (16E20, 19D50, 19D55, 55N15)

— On stable K-theory and topological Hochschild homology. *Comment. Math. Helv.* **67** (1992), *no.* 3, 394–405. (Guillermo Cortiñas and Ayelet Lindenstrauss) **93f:19002** 19D55 (16E40)

— Homology of Gl(R) with coefficients in a functor of finite degree. *J. Algebra* **150** (1992), *no.* 1, 73–86. (Jean-Louis Cathelineau) **93m:20069** 20J05 (19D55)

Betounes, David (*with* Redfern, Mylan) Differential forms with values in $(L^2)^-$. *White noise analysis (Bielefeld, 1989)*, 31–42, *World Sci. Publishing, River Edge, NJ*, 1990. (Ali Süleyman Üstünel) **93f:60050** 60G20 (60H05)

— Generalized stochastic differential equations on ($\mathscr{D}^*$). *Stochastic partial differential equations and their applications* (*Charlotte, NC*, 1991), 32–37, *Lecture Notes in Control and Inform. Sci.*, 176, *Springer, Berlin*, 1992. (Daniel Ocone) **93h:60088** 60H10
— (*with* Redfern, Mylan) Wiener distributions and white noise analysis. *Appl. Math. Optim.* **26** (1992), *no.* 1, 63–93. (Summary) **93k:60098** 60G20 (60H99)
Betrò, Bruno (*with* Ruggeri, Fabrizio) Conditional Γ-minimax actions under convex losses. *Comm. Statist. Theory Methods* **21** (1992), *no.* 4, 1051–1066. (Tamer Başar) **93h:62012** 62C20
Bettayeb, Said (*with* Miller, Zevi; Sudborough, Ivan Hal) Embedding grids into hypercubes. (English summary) *J. Comput. System Sci.* **45** (1992), *no.* 3, 340–366. (Stanislav Jendrol') **93i:05052** 05C10 (68M10)
— (*with* Shen, Xiao Jun; Hu, Qing; Cong, Bin; Sudborough, Ivan Hal; Girou, Mike) The 4-star graph is not a subgraph of any hypercube. (English summary) *Inform. Process. Lett.* **45** (1993), *no.* 4, 199–203. (Summary) **93k:05054** 05C10 (68Q10, 68R10)
Bette, Andreas Hamiltonization of the Lorentz force equation for a massive particle with spin: a twistorial approach. *J. Math. Phys.* **33** (1992), *no.* 6, 2158–2163. (Sergey Merkulov) **93e:81045** 81R25
Betten, Dieter (*with* Braun, Mathias) A tactical decomposition for incidence structures. *Combinatorics '90* (*Gaeta*, 1990), 37–43, *Ann. Discrete Math.*, 52, *North-Holland, Amsterdam*, 1992. (*see* **93f:05003**) 05B99
Betten, J. Recent advances in applications of tensor functions in solid mechanics. (Russian summary) *Adv. in Mech.* **14** (1991), *no.* 1, 79–109. (A. J. M. Spencer) **93j:73003** 73B05 (73B40, 73E05, 73F05)
Bettess, Jacqueline A. (*with* Bettess, Peter) Infinite elements for dynamic problems. I, II. (English summary) *Engrg. Comput.* **8** (1991), *no.* 2, 99–124, 125–151. (Summary) **93g:76077** 76M10 (73K70, 73V05)
— (*with* Barbier, Christine; Bettess, Peter) Automatic generation of mapping functions for infinite elements using REDUCE. (English summary) *J. Symbolic Comput.* **14** (1992), *no.* 5, 523–534. 65-04 (65N30)
Bettess, Peter (*with* Bettess, Jacqueline A.) Infinite elements for dynamic problems. I, II. (English summary) *Engrg. Comput.* **8** (1991), *no.* 2, 99–124, 125–151. (Summary) **93g:76077** 76M10 (73K70, 73V05)
— (*with* Barbier, Christine; Bettess, Jacqueline A.) Automatic generation of mapping functions for infinite elements using REDUCE. (English summary) *J. Symbolic Comput.* **14** (1992), *no.* 5, 523–534. 65-04 (65N30)
Betti, Renato Sheaves in cocomplete categories. (English summary) *Category theory* 1991 (*Montreal, PQ*, 1991), 43–54, *CMS Conf. Proc.*, 13, *Amer. Math. Soc., Providence, RI*, 1992. (R. Gylys) **93j:18006** 18D20 (18B25)
— On internal topologies and the inverse image. V International Meeting on Topology in Italy (Italian) (Lecce, 1990/Otranto, 1990). *Rend. Circ. Mat. Palermo* (2) *Suppl. No.* 29 (1992), 339–352. (Hans-E. Porst) **93k:18009** 18B25 (18F10, 54B30)
Betyaev, S. K. Mathematical models in outflow problems. (Russian. English and Russian summaries) *Mat. Model.* **4** (1992), *no.* 3, 28–39. 76D10 (76D05)
Betz, C. (*with* Gzyl, Henryk; Jiménez, Raúl) Probabilistic approach to wave propagations problems. V. A collection of examples. (English summary) *Math. Comput. Modelling* **16** (1992), *no.* 10, 165–176. (Genowefa Majcher) **93k:35154** 35L05 (35A22)
Beukemann, A. (*with* Klee, W. E.) Minimal nets. (English summary) *Z. Krist.* **201** (1992), *no.* 1-2, 37–51. (Summary) **93d:05127** 05C75 (82D25)
Beulens, A. J. M. *see* **Optimization-based computer-aided modelling and design, 93a:68008**
Beutelspacher, Albrecht Applications of finite geometry to cryptography. *Geometries, codes and cryptography* (*Udine*, 1989), 161–186, *CISM Courses and Lectures*, 313, *Springer, Vienna*, 1990. (Franco Eugeni) **93i:51017** 51E22 (94A60)
— Linear spaces: history and theory. (English summary) Graphs, designs and combinatorial geometries (Catania, 1989). *Matematiche* (*Catania*) **45** (1990), *no.* 1, 25–38 (1991). (Luc Teirlinck) **93g:51004** 51A45 (05B25)
— A combinatorial characterization of geometric spreads. *Discrete Math.* **97** (1991), *no.* 1-3, 59–62. (Franco Eugeni) **93i:51021** 51E23 (05B25)
— (*with* Nicholson, Frederic) Linear spaces with a regularity condition. (English summary) *Ricerche Mat.* **40** (1991), *no.* 2, 275–290 (1992). (Luc Teirlinck) **93m:51014** 51E26
— The index of a blocking set in a projective space. (Italian. English summary) *Boll. Un. Mat. Ital. A* (7) **6** (1992), *no.* 2, 281–285. (Summary) **93g:51010** 51E21
Beux, François (*with* Dervieux, Alain) Exact-gradient shape optimization of a 2-D Euler flow. (English summary) *Finite Elem. Anal. Des.* **12** (1992), *no.* 3-4, 281–302. (Summary) **93j:76048** 76M30 (49Q10, 76G25, 76M25, 76N15)
Beveridge, Steve Least squares estimation of missing values in time series. (English summary) *Comm. Statist. Theory Methods* **21** (1992), *no.* 12, 3479–3496. 62M10
Bevis, Jean H. (*with* Hall, Frank J.) Nested range conditions for *LU* factorizations of integer matrices. Second NIU Conference on Linear Algebra, Numerical Linear Algebra and Applications (DeKalb, IL, 1991). *Linear Algebra Appl.* **172** (1992), 97–108. (Jeffrey Stuart) **93i:15014** 15A23 (15A36)
Beyer, R. P. (*with* LeVeque, Randall J.) Analysis of a one-dimensional model for the immersed boundary method. *SIAM J. Numer. Anal.* **29** (1992), *no.* 2, 332–364. (Dennis C. Jespersen) **93a:65123** 65M15 (76D05, 76M99, 76Z05)
Beyer, W. A. (*with* Swartz, Blair) Halfway points. (English summary) *SIAM J. Math. Anal.* **23** (1992), *no.* 5, 1332–1341. (Summary) **93h:28007** 28A75
Beyer, William H. *see* **CRC standard probability and statistics, 93f:62001**
Beylkin, Gregory (*with* Coifman, Ronald R.; Rokhlin, Vladimir V.) Wavelets in numerical analysis. *Wavelets and their applications*, 181–210, *Jones and Bartlett, Boston, MA*, 1992. (Fritz Keinert) **93j:65215** 65R10
— On the representation of operators in bases of compactly supported wavelets. (English summary) *SIAM J. Numer. Anal.* **29** (1992), *no.* 6, 1716–1740. (R. A. Lorentz) **93k:65019** 65D25 (65D30, 65R99)
— (*with* Alpert, Bradley K.; Coifman, Ronald R.; Rokhlin, Vladimir V.) Wavelet-like bases for the fast solution of second-kind integral equations. (English summary) *SIAM J. Sci. Comput.* **14** (1993), *no.* 1, 159–184. (Summary) **93i:65126** 65R20 (42C15, 45L05)
— *see also* **Wavelets and their applications, 93e:00031**
Bez, H. E. An analysis of symmetry for plane curves and plane curve algorithms. *Comput. Aided Geom. Design* **9** (1992), *no.* 2, 125–142. (Michael Kallay) **93e:65026** 65D17 (68U07)
Bezák, V. A modification of the Wiener process due to a Poisson random train of diffusion-enhancing pulses. (English summary) *J. Phys. A* **25** (1992), *no.* 22, 6027–6041. (Summary) **93g:60170** 60J65 (82D35)
Bézandry, Paul Hubert ★ Régularité et propriétés limites des fonctions aléatoires à trajectoires dans $D([0,1])$. (French) [Regularity and limit properties of random functions with trajectories in $D([0,1])$] Dissertation, Université Louis Pasteur (Strasbourg I), Strasbourg, 1991. Publication de l'Institut de Recherche Mathématique Avancée [Publication of the Institute of Advanced Mathematical Research], 452. *Université Louis Pasteur, Département de Mathématique, Institut de Recherche Mathématique Avancée, Strasbourg*, 1991. iv+46 *pp.* (Summary) **93k:60015** 60B12 (60G17)
— (*with* Fernique, Xavier) Sur la propriété de la limite centrale dans $\mathscr{D}[0,1]$. (English summary) [On the central limit property in $\mathscr{D}[0,1]$] *Ann. Inst. H. Poincaré Probab. Statist.* **28** (1992), *no.* 1, 31–46. (Evarist Giné) **93j:60004** 60B12 (60G17)
Bezanilla López, Arnoldo Asymptotic elements of L-entire functions on commutative Banach algebras and lower bounds for the order of such functions. (Spanish. English summary) *Cienc. Mat.* (*Havana*) **12** (1991), *no.* 1, 35–46. (Julià Cufí) **93a:46083** 46G20 (46J05)
Bézard, Max (*with* Beals, Michael) Équations de champs non linéaires: des solutions non nécessairement bornées. [Nonlinear field equations: some not necessarily bounded solutions] *Journées "Équations aux Dérivées Partielles"* (*Saint-Jean-de-Monts*, 1992), *Exp. No. XX*, 13 *pp.*, *École Polytech., Palaiseau*, 1992. (Vladimir Georgiev) **93m:35127** 35L70 (35B65, 35Q40, 81Q05)
Bezdek, James C. (*with* Pal, Nikhil R.; Hemasinha, Rohan) Uncertainty measures for evidential reasoning. I. A review. (English summary) *Internat. J. Approx. Reason.* **7** (1992), *no.* 3-4, 165–183. (Summary) **93j:68203a** 68T30
— (*with* Pal, Nikhil R.; Hemasinha, Rohan) Uncertainty measures for evidential reasoning. II. A new measure of total uncertainty. (English summary) *Internat. J. Approx. Reason.* **8** (1993), *no.* 1, 1–16. (Summary) **93j:68203b** 68T30
Bezdek, Károly On planar tilings with finitely many sorts of tiles. *Topics in combinatorics and graph theory* (*Oberwolfach*, 1990), 79–85, *Physica, Heidelberg*, 1990. (A. Florian (Zbl 717:52015)) **93b:05039** 05B45
— On certain translation covers. *Note Mat.* **10** (1990), *no.* 2, 279–286. (Robert Connelly) **93m:52002** 52A20 (52C07)
— Hadwiger's covering conjecture and its relatives. *Amer. Math. Monthly* **99** (1992), *no.* 10, 954–956. (Peter M. Gruber) **93i:52009** 52A35 (52A37)
— On the illumination of smooth convex bodies. *Arch. Math.* (*Basel*) **58** (1992), *no.* 6, 611–614. (Marilyn Breen) **93h:52005** 52A20
— A note on the illumination of convex bodies. (English summary) *Geom. Dedicata* **45** (1993), *no.* 1, 89–91. (G. D. Chakerian) **93m:52009** 52A37 (52A20)
Bezem, Marc Semantics and consistency of rule-based expert systems. *J. Logic Comput.* **1** (1991), *no.* 4, 477–495. (M. I. Dekhtyar) **93i:68165** 68T30 (03B25, 03B70, 03D15, 68Q25)
— Strong termination of logic programs. (English summary) *J. Logic Programming* **15** (1993), *no.* 1-2, 79–97. (Summary) **93h:68017** 68N17 (68T25)
Bezerra, Valdir B. Loop variables in three-dimensional gravity. (English summary) *J. J. Giambiagi Festschrift*, 39–54, *World Sci. Publishing, River Edge, NJ*, 1990. (Summary) **93e:83053** 83C99 (81V17)
— (*with* dos Santos, Ivonete B.) Topological effects due to a cosmic string. (French summary) *European J. Phys.* **13** (1992), *no.* 3, 122–124. (Summary) **93b:83029** 83C47 (83F05)
— (*with* dos Santos, Ivonete B.) Scalar and spinor solutions in the space-time of a domain wall. (English summary) *J. Math. Phys.* **33** (1992), *no.* 9, 3046–3049. (Dmitri V. Vassilevich) **93g:83013** 83C10 (83C20, 83C60)
Bezhaev, A. Yu. Methods of the variational theory of splines. (Russian) *Numerical methods and mathematical modeling* (*Russian*), 3–24, *Akad. Nauk SSSR Sibirsk. Otdel., Vychisl. Tsentr, Novosibirsk*, 1990. (*see* **93i:65007**) 65D07 (65J05)
— Reproducing mappings and vector spline-functions. *Soviet J. Numer. Anal. Math. Modelling* **5** (1990), *no.* 2, 91–109. (Introduction) **93c:41052** 41A65 (41A15, 46E22)
Béziau, Jean-Yves Calcul des sequents pour logique non-alèthique. [Sequent calculus for nonalethic logic] *Logique et Anal. (N.S.)* **32** (1989), *no.* 125-126, 143–155. (Itala M. L. D'Ottavianno) **93m:03048** 03B53 (03B60)
Bézivin, Jean-Paul Sur les propriétés arithmétiques du produit de Hadamard. (English and French summaries) [On the arithmetical properties of the Hadamard product] *Ann. Fac. Sci. Toulouse Math.* (5) **11** (1990), *no.* 1, 7–19. (Jean Guérindon) **93j:13029** 13J05
— Les suites q-récurrentes linéaires. [Linear q-recurrent sequences] *Compositio Math.* **80** (1991), *no.* 3, 285–307. (A. J. van der Poorten) **93d:11014** 11B37 (11K31)
— Sur les équations fonctionnelles aux q-différences. (English summary) [On functional q-difference equations] *Aequationes Math.* **43** (1992), *no.* 2-3, 159–176. (Summary) **93m:39006** 39B12 (39A10)
— Convergence des solutions formelles de certaines équations fonctionnelles. (English summary) [Convergence of the formal solutions of some functional equations] *Aequationes Math.* **44** (1992), *no.* 1, 84–99. (I. N. Baker) **93d:39011** 39B32
— (*with* Benzaghou, Benali) Propriétés algébriques de suites différentiellement finies. (English and French summaries) [Algebraic properties of differentially finite sequences] *Bull. Soc. Math. France* **120** (1992), *no.* 3, 327–346. (R. Cohn) **93m:12006** 12H10 (39A99)
Beznea, Lucian Potential type subordinations. Analyse complexe (Bucharest, 1989). *Rev. Roumaine Math. Pures Appl.* **36** (1991), *no.* 3-4, 115–135. (Hedi Ben Saad) **93e:31015** 31D05 (60J45)
— (*with* Boboc, Nicu) Balayages absorbants, paraboliques, elliptiques et quasi elliptiques dans la théorie du potentiel; relations avec la fonction de Green. (English and French summaries) [Absorbent, parabolic, elliptic and quasi-elliptic balayages in potential theory; relations with the Green function] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 6, 685–688. (Summary) **93g:31024** 31D05
Bezrukov, A. A. Application of quasimonotone difference schemes of the second order of approximation in the modeling of discontinuous gas dynamic flows. (Russian. Russian summary) *Model. Mekh.* **5** (1991), *no.* 5, 22–29. 76M20 (76N15)
Bezrukov, S. L. Two extremal problems for oriented lattices. (Russian. Russian summary) *Problemy Peredachi Informatsii* **28** (1992), *no.* 2, 109–111; *translation in Problems Inform. Transmission* **28** (1992), *no.* 2, 196–197. (Alexander M. Barg) **93g:05060** 05C20 (94B10)

Bezuglyĭ, S. I. (*with* Golodets, V. Ya.) Weak equivalence and the structures of cocycles of an ergodic automorphism. *Publ. Res. Inst. Math. Sci.* **27** (1991), *no.* 4, 577–625. (G. R. Goodson) **93a:28017** 28D15 (22D40)

Bezushchak, O. E. (*with* Sushchanskiĭ, V. I.) l-wreath products and isometries of generalized Baire metrics. (Russian. Ukrainian summary) *Ukrain. Mat. Zh.* **43** (1991), *no.* 7-8, 1031–1038; *translation in Ukrainian Math. J.* **43** (1991), *no.* 7-8, 964–971 (1992). (Summary) **93a:20042** 20E22

— (*with* Sushchanskiĭ, V. I.) Conjugacy in isometry groups of generalized Baire metrics. (Russian. Ukrainian summary) *Ukrain. Mat. Zh.* **43** (1991), *no.* 9, 1148–1155; *translation in Ukrainian Math. J.* **43** (1991), *no.* 9, 1077–1082 (1992). (Roman Pol) **93c:54025** 54E40 (20F38, 54H10)

Bezverkhniĭ, V. N. Solution of the occurrence problem in a class of groups. I. (Russian) *Problems in group theory and homological algebra (Russian)*, 40–53, *Matematika, Yaroslav. Gos. Univ., Yaroslavl'*, 1990. (From the introduction) **93c:20059** 20F10 (03B25)

Bezyaev, V. I. Linear optimal stochastic games. (Russian) *Analysis and design of dynamical systems under conditions of uncertainty (Russian)*, 24–29, *Moskov. Aviatsion. Inst., Moscow*, 1990. (*see* **93g:00022**) 49K45 (90D15, 93E05)

Bhadra, Syamali (*with* Chakrabarti, C. G.) Stochastic Gompertzian growth with periodic carrying capacity. (English summary) *Bull. Calcutta Math. Soc.* **83** (1991), *no.* 5, 469–474. 92D25

Bhaduri, R. K. (*with* Law, J.; Srivastava, M. K.; Khare, Avinash) Mott scattering of anyons: some exact results. *J. Phys. A* **25** (1992), *no.* 4, L183–L187. (Summary) **93b:81299** 81U05 (81S99)

— (*with* Murthy, M. V. N.; Law, J.; Date, G.) On a class of noninterpolating solutions of the many-anyon problem. (English summary) *J. Phys. A* **25** (1992), *no.* 23, 6163–6168. (Summary) **93k:81043** 81Q05 (81S05)

Bhagavan, C. S. K. Spectral class of processes. *Contributions to stochastics*, 120–130, *Wiley, New York*, 1992. (*see* **93m:60007**) 60G12

Bhagavatula, Ravi (*with* Grinstein, Geoffrey; He, Yu; Jayaprakash, C.) Algebraic correlations in conserving chaotic systems. (English summary) *Phys. Rev. Lett.* **69** (1992), *no.* 24, 3483–3486. (Summary) **93h:58094** 58F13

Bhagwat, Purnima (*with* Shrivastava, S. K.) On the $[Z^p, \lambda_m]$-summability of Fourier series and conjugate series. *Pure Appl. Math. Sci.* **35** (1992), *no.* 1-2, 41–57. 42A24

Bhakat, S. K. (*with* Das, Phullendu) q-similitudes and q-fuzzy partitions. (English summary) *Fuzzy Sets and Systems* **51** (1992), *no.* 2, 195–202. (Summary) **93f:04002** 04A72

— (*with* Das, Phullendu) On the definition of a fuzzy subgroup. (English summary) *Fuzzy Sets and Systems* **51** (1992), *no.* 2, 235–241. (Summary) **93h:20079** 20N25 (04A72)

— (*with* Das, Phullendu) Fuzzy subalgebras of a universal algebra. (English summary) *Bull. Calcutta Math. Soc.* **85** (1993), *no.* 1, 79–92. (Maria Scafati) **93m:08009** 08A99 (04A72)

Bhamathi, G. (*with* Chiu, Charles B.; Sudarshan, E. C. G.) Cascade model: a solvable field theory. (English summary) *Phys. Rev. D* (3) **46** (1992), *no.* 8, 3508–3528. (Summary) **93g:81076** 81T10 (81U99)

Bhandari, Ashwani K. (*with* Passi, I. B. S.) Residually Lie nilpotent group rings. *Arch. Math. (Basel)* **58** (1992), *no.* 1, 1–6. (Ian M. Musson) **93b:16046** 16S34

— (*with* Passi, I. B. S.) Lie-nilpotency indices of group algebras. *Bull. London Math. Soc.* **24** (1992), *no.* 1, 68–70. (D. A. R. Wallace) **93a:16023** 16S34 (20C07)

Bhandari, Dinabandhu (*with* Pal, Nikhil R.) On object background classification. (English summary) *Internat. J. Systems Sci.* **23** (1992), *no.* 11, 1903–1920. 68U10

— (*with* Pal, Nikhil R.) Some new information measures for fuzzy sets. (English summary) *Inform. Sci.* **67** (1993), *no.* 3, 209–228. (Summary) **93k:94002** 94A17 (03E72, 04A72, 68U10)

Bhandari, M. C. (*with* Garg, M. S.) Optimum codes of dimension 3 and 4 over GF(4). (English summary) *IEEE Trans. Inform. Theory* **38** (1992), *no.* 5, 1564–1567. (Piroska Lakatos) **93g:94031** 94B65 (94B05)

Bhandary, Subir Kumar (*with* Bose, Arup) Existence of unbiased estimates in sequential binomial experiments. (English summary) *Sankhyā Ser. A* **52** (1990), *no.* 1, 127–130. (Rasul A. Khan) **93g:62106** 62L12

— (*with* Ray Chaudhuri, Atasi) On two conjectures about two-stage selection procedures. (English summary) *Sankhyā Ser. A* **52** (1990), *no.* 1, 131–141. (Summary) **93f:62029** 62F07

— (*with* Purkayastha, Sumitra) Characterization of uniform distributions by inequalities of Chernoff-type. (English summary) *Sankhyā Ser. A* **52** (1990), *no.* 3, 376–382. (Summary) **93e:62043** 62E10

— (*with* Mukerjee, Rahul) Two- and multi-stage selection procedures for Weibull populations. *J. Statist. Plann. Inference* **30** (1992), *no.* 1, 73–81. (Thomas J. Santner) **93b:62030** 62F07

Bhandary, Madhusudan (*with* Bansal, Naveen K.) Bayes estimation of number of signals. *Ann. Inst. Statist. Math.* **43** (1991), *no.* 2, 227–243. (Yasunori Fujikoshi) **93a:62084** 62H12 (62F10, 62F15)

— Robust M-estimation of a dispersion matrix with a structure. *Ann. Inst. Statist. Math.* **43** (1991), *no.* 4, 689–705. (Khursheed Alam) **93d:62106** 62H12 (62F35)

— Detection of the numbers of outliers present in a data set using an information-theoretic criterion. (English summary) *Comm. Statist. Theory Methods* **21** (1992), *no.* 11, 3263–3274. (Summary) **93m:62044** 62F03

Bhansali, Vineer Helicity-chirality correlation and Weinberg's constraint in higher dimensions. (English summary) *Internat. J. Modern Phys. A* **7** (1992), *no.* 26, 6679–6689. (Summary) **93h:81038** 81R05 (22E70)

Bhapkar, V. P. Sufficiency, ancillarity, and information in estimating functions. *Estimating functions*, 241–254, *Oxford Statist. Sci. Ser.*, 7, *Oxford Univ. Press, New York*, 1991. (Summary) **93a:62006** 62B05 (62A99, 62B10)

vijaya Bharathi, L. *see* **Vijaya Bharathi, L.**

Bharati, R. (*with* Rajagopal, Rajalakshmi) Meromorphic functions and differential subordination. *New trends in geometric function theory and applications (Madras, 1990)*, 10–17, *World Sci. Publishing, River Edge, NJ*, 1991. (Paul Eenigenburg) **93e:30055** 30C80

Bhargava, Srinivasamurthy (*with* Adiga, Chandrashekar; Somashekara, D. D.) Some relations between infinite series and infinite products. *Proceedings of the Symposium on Algebra and Number Theory (Cochin, 1990)*, 23–29, *Publication*, 20, *Centre Math. Sci., Trivandrum*, 1990. (Christian Krattenthaler) **93i:33012** 33D20 (33D10)

— Some series inversions akin to Ramanujan's inversion formulas for the lemniscate function. *J. Indian Math. Soc. (N.S.)* **57** (1991), *no.* 1-4, 35–44. (D. C. Russell) **93h:33012** 33E05 (33B99, 40A05)

— (*with* Berndt, Bruce C.) A remarkable identity found in Ramanujan's third notebook. *Glasgow Math. J.* **34** (1992), *no.* 3, 341–345. (H. L. Abbott) **93h:11019** 11B65 (11A99)

Bhargava, Vijay K. (*with* Hasan, M. Anwarul; Wang, Muzhong) Modular construction of low complexity parallel multipliers for a class of finite fields GF(2^m). (English summary) *IEEE Trans. Comput.* **41** (1992), *no.* 8, 962–971. 68M07

— (*with* Hasan, M. Anwarul) Bit-serial systolic divider and multiplier for finite fields GF(2^m). (English summary) *IEEE Trans. Comput.* **41** (1992), *no.* 8, 972–980. 68M07

— (*with* Gulliver, T. Aaron) Nine good rate $(m-1)/pm$ quasi-cyclic codes. *IEEE Trans. Inform. Theory* **38** (1992), *no.* 4, 1366–1369. 94B15

— (*with* Gulliver, T. Aaron) Some best rate $1/p$ and rate $(p-1)/p$ systematic quasi-cyclic codes over GF(3) and GF(4). *IEEE Trans. Inform. Theory* **38** (1992), *no.* 4, 1369–1374. 94B15

— (*with* Gulliver, T. Aaron) A systematic (16, 8) code for correcting double errors and detecting triple-adjacent errors. (English summary) *IEEE Trans. Comput.* **42** (1993), *no.* 1, 109–112. (Summary) **93j:94030** 94B15

Bhaskar, T. Gnana (*with* Venkatesulu, M.) Green's matrices for a class of interface problems. (English summary) *Dynamic Systems Appl.* **2** (1993), *no.* 1, 101–120. (P. W. Eloe) **93m:34038** 34B27 (34B10)

Bhāskara I *see* **Hayashi, Takao, 93d:01012**

Bhaskaramurthi, T. L. (*with* Rao, Geetha S.) Nonexpansive mappings and proximinality in normed almost linear spaces. *Functional analysis and operator theory (New Delhi, 1990)*, 80–87, *Lecture Notes in Math.*, 1511, *Springer, Berlin*, 1992. (S. P. Singh) **93i:47083** 47H09 (47H10)

Bhaskara Murthy, V. S. Direct method of finding the inverse Laplace transforms. *Math. Ed. (Siwan)* **26** (1992), *no.* 2, 128–131. 44A10

Bhaskara Rao, K. P. S. *see* **Rao, K. P. S. Bhaskara**

Bhaskara Rao, M. *see* **Rao, M. Bhaskara**

Bhat, Avanindra N. Estimation in the linear regression model with errors in variables. (English summary) *Bayesian analysis in statistics and econometrics (Bangalore, 1988)*, 353–360, *Lecture Notes in Statist.*, 75, *Springer, New York*, 1992. (*see* **93e:62002**) 62J05

Bhat, B. R. (*with* Indira Devi, A.) Optimality of sequential probability ratio tests for a class of continuous parameter stochastic processes. *Sequential Anal.* **10** (1991), *no.* 3-4, 125–138. (Wolfgang Winkler) **93b:62113** 62L10

— (*with* Datta, Somnath) On the completeness of a family of conditional distributions. (English summary) *Statist. Probab. Lett.* **15** (1992), *no.* 1, 27–30. (Eberhard Siebert) **93k:62007** 62B05

Bhat, B. V. Rajarama (*with* Parthasarathy, Kalyanapuram Rangachari) Generalized harmonic oscillators in quantum probability. *Séminaire de Probabilités, XXV*, 39–51, *Lecture Notes in Math.*, 1485, *Springer, Berlin*, 1991. (Yun Gang Lu) **93k:81117** 81S25 (46N50, 60H05, 81P05)

Bhat, Jayadeva (*with* Chidambaram, M.; Madhavan, K. P.) Robust control of an unstable continuous bioreactor. (English summary) *Mathematical theory of control (Bombay, 1990)*, 21–27, *Lecture Notes in Pure and Appl. Math.*, 142, *Dekker, New York*, 1993. (*see* **93g:93003**) 93B36 (93C95)

Bhat, M. Seetharama (*with* Pradhan, Satyabrata) On the stabilizable dynamic output feedback controller. (English summary) *Mathematical theory of control (Bombay, 1990)*, 283–291, *Lecture Notes in Pure and Appl. Math.*, 142, *Dekker, New York*, 1993. (*see* **93g:93003**) 93D15 (93B52)

— (*with* Vittal, R. Vijaya) Terminal guidance for a launch vehicle. (English summary) *Mathematical theory of control (Bombay, 1990)*, 381–398, *Lecture Notes in Pure and Appl. Math.*, 142, *Dekker, New York*, 1993. (*see* **93g:93003**) 93C95 (70Q05)

— (*with* Pradhan, Satyabrata; Modi, V. J.) Relationship between the controllability Grammian and closed-loop eigenvalues: the single input case. (English summary) *Internat. J. Systems Sci.* **24** (1993), *no.* 6, 1133–1144. 93B05 (93B60)

Bhat, M. V. (*with* Habashi, W. G.; Liu, Joseph W. H.; Nguyen, V. N.; Peeters, M. F.) A note on nested dissection for rectangular grids. (English summary) *SIAM J. Matrix Anal. Appl.* **14** (1993), *no.* 1, 253–258. 65F50

Bhat, Mahadev G. (*with* Lenhart, Suzanne M.) Application of distributed parameter control model in wildlife damage management. (English summary) *Math. Models Methods Appl. Sci.* **2** (1992), *no.* 4, 423–439. (C. P. Ortlieb) **93j:92027** 92D25 (49K20, 49N55)

Bhat, U. Narayan *see* **Queueing and related models, 93i:60006**

Bhatia, Davinder (*with* Pandey, Shashi) Subgradient duality and duality for multiobjective fractional programming involving invex functions. *Cahiers Centre Études Rech. Opér.* **33** (1991), *no.* 3-4, 167–181. (Bruce D. Craven) **93b:90058** 90C20 (49N15, 90C32)

— (*with* Bector, C. R.; Aggarwal, Shashi) Multiobjective fractional programming duality: a nondifferentiable case. Proceedings of the Twenty-first Manitoba Conference on Numerical Mathematics and Computing (Winnipeg, MB, 1991). *Congr. Numer.* **87** (1992), 77–85. (Bruce D. Craven) **93c:90068** 90C29 (49J52, 49N15, 90C32)

Bhatia, P. K. (*with* Taneja, H. C.) On quantitative-qualitative measure of inaccuracy and reversible symmetry. (English summary) *Inform. Sci.* **67** (1993), *no.* 3, 277–282. (Summary) **93j:94007** 94A17

Bhatia, Rajendra On residual bounds for eigenvalues. (English summary) *Indian J. Pure Appl. Math.* **23** (1992), *no.* 12, 865–866. (Summary) **93k:15034** 15A42

— (*with* Kittaneh, Fuad) Approximation by positive operators. *Linear Algebra Appl.* **161** (1992), 1–9. (Richard Bouldin) **93a:47019** 47A58 (47B10)

Bhatnagar, Raj K. (*with* Kanal, Laveen N.) Reasoning by hypothesizing causal models. (English summary) *Analysis and management of uncertainty: theory and applications (College Park, MD, 1990)*, 93–106, *Mach. Intell. Pattern Recogn.*, 13, *North-Holland, Amsterdam*, 1992. (*see* **93f:68004**) 68T27

Bhat-Nayak, V. N. (*with* Sethuraman, G.) On necessary condition for packability of odd and even trees. *Utilitas Math.* **41** (1992), 240–248. (Summary) **93c:05091** 05C70 (05C05)

Bhatt, A. B. (*with* Ghosh, Dilip Kumar) Construction of orthogonal main effect plans. (English summary) *J. Statist. Res.* **23** (1989), *no.* 1-2, 5–11. 62K15

Bhatt, M. B. (*with* Patel, S. R.) Unbiased estimation in sampling from two two-truncation parameter families when both samples are type II censored. (English summary)

Proceedings of the Symposium on Distribution Theory (Kochi, 1991), 79–92, *Publication*, 22, *Centre Math. Sci., Trivandrum*, 1991. (Summary) **93h:62051** 62F10 (62F25, 62N05)
— (*with* Patel, S. R.) Unbiased estimation in doubly type II censored samples from two two-truncation parameter families. *Comm. Statist. Theory Methods* **20** (1991), *no.* 7, 2119–2148. (Ryszard Zieliński) **93c:62044** 62F10 (62F11, 62F25)
— (*with* Patel, S. R.) On unbiased estimation in two-truncation parameter density. (English and Italian summaries) *Metron* **49** (1991), *no.* 1-4, 297–308 (1992). 62F10
— (*with* Patel, S. R.) Unbiased estimation of parametric functions in sampling from one- and two-truncation parameter families. (English summary) *Austral. J. Statist.* **34** (1992), *no.* 1, 47–54. (Summary) **93g:62042** 62F10
— (*with* Patel, S. R.) Unbiased estimation of parametric functions in sampling from two two-truncation parameter families. *Comm. Statist. Theory Methods* **21** (1992), *no.* 3, 843–860. (Summary) **93e:62077** 62F10
Bhatt, R. K. P. Gradient based interpretation of two stochastic approximation methods and their modifications. (English summary) *Mathematical theory of control (Bombay, 1990)*, 29–39, *Lecture Notes in Pure and Appl. Math.*, 142, *Dekker, New York*, 1993. (*see* **93g:93003**) 93E12 (93C55)
Bhatt, Subhash J. Köthe sequence algebras. I. *J. Ramanujan Math. Soc.* **6** (1991), *no.* 1-2, 167–183. (A. Alexiewicz) **93a:46101** 46J05 (46A45, 46H05)
— (*with* Deheri, G. M.) Orthogonal bases in a topological algebra are Schauder bases. *Internat. J. Math. Math. Sci.* **15** (1992), *no.* 1, 203–204. (T. Husain) **93a:46087** 46H05 (46A35)
— Uniform seminorms on topological algebras. (English summary) *Math. Today* **10** (1992), 3–10. (Summary) **93m:46051** 46H05
— A seminorm with square property on a Banach algebra is submultiplicative. *Proc. Amer. Math. Soc.* **117** (1993), *no.* 2, 435–438. (W. Żelazko) **93d:46072** 46H05 (46J05)
— Automatic continuity of homomorphisms in topological algebras. *Proc. Amer. Math. Soc.* **119** (1993), *no.* 1, 135–139. (R. J. Loy) **93k:46042** 46H40 (46J40)
Bhattacharjee, A. (*with* Gjaja, Ivan M.) Asymptotics of reflectionless potentials. *Phys. Rev. Lett.* **68** (1992), *no.* 16, 2413–2416. (Summary) **93d:81043** 81Q15 (34E20, 34L25, 34L40, 70H05)
— (*with* Wang, Xiaogang) Finite-time vortex singularity in a model of three-dimensional Euler flows. (English summary) *Phys. Rev. Lett.* **69** (1992), *no.* 15, 2196–2199. (Oscar F. Orellana) **93g:76028** 76C05
Bhattacharjee, N. R. (*with* Bhattacharjee, T.) On the evaluation of zeta function $\zeta(2s)$. *Indian J. Pure Appl. Math.* **23** (1992), *no.* 1, 15–19. (Yasushi Matsuoka) **93b:11105** 11M06
Bhattacharjee, S. K. Tests of equality of parameters of two normal populations in Bayesian viewpoint. (English summary) *J. Inform. Optim. Sci.* **14** (1993), *no.* 2, 161–166. 60F15
Bhattacharjee, Somendra M. (*with* Rao, S. Suresh) Randomness in vertex models and directed walks. *J. Phys. A* **25** (1992), *no.* 14, L901–L905. (Summary) **93d:82044** 82B41
— Directed walks and vertex models: renormalization, multicriticality and beyond. (English summary) Statistical physics of disordered solids, polymers and glasses (Calcutta, 1991/1992). *Phys. A* **186** (1992), *no.* 1-2, 183–196. (Summary) **93f:82027** 82B41 (82B28, 82B44)
Bhattacharjee, T. (*with* Bhattacharjee, N. R.) On the evaluation of zeta function $\zeta(2s)$. *Indian J. Pure Appl. Math.* **23** (1992), *no.* 1, 15–19. (Yasushi Matsuoka) **93b:11105** 11M06
Bhattacharjya, M. (*with* Ratha, J.) On some generalisations of Legendre polynomials. *Pure Math. Manuscript* **8** (1989), 31–43. (J. P. Singhal) **93f:33008** 33C45
Bhattacharya, Binay (*with* Asano, Tetsuo; Keil, J. Mark; Yao, Foong Frances) Clustering algorithms based on minimum and maximum spanning trees. (English summary) *Proceedings of the Fourth Annual Symposium on Computational Geometry (Urbana, IL, 1988)*, 252–257, *ACM, New York*, 1988. (*see* **93k:68003**) 68R05 (68U05)
Bhattacharya, C. G. A note on the CFR inequality for sequential estimation. *Sequential Anal.* **10** (1991), *no.* 3-4, 199–200. (Peter Watts Jones) **93b:62115** 62L12
— (*with* Shah, K. R.) Combined estimate of a location parameter. *Comm. Statist. Theory Methods* **21** (1992), *no.* 7, 1929–1934. (Summary) **93c:62037** 62F10
Bhattacharya, D. K. (*with* Maity, A. K.) On Γ-topological divisors of zero. *Proceedings of the Symposium on Algebra and Number Theory (Cochin, 1990)*, 119–129, *Publication*, 20, *Centre Math. Sci., Trivandrum*, 1990. (M. Abel) **93b:46088** 46H05 (46H99)
— (*with* Maity, A. K.) On Γ-invertible elements of a Γ-semigroup. (English summary) *Bull. Calcutta Math. Soc.* **83** (1991), *no.* 4, 379–385. (Summary) **93j:20126** 20M10
Bhattacharya, Kaushik Self-accommodation in martensite. (English summary) *Arch. Rational Mech. Anal.* **120** (1992), *no.* 3, 201–244. (John M. Ball) **93g:73014** 73B30 (73C50)
Bhattacharya, Partha P. (*with* Ephremides, Anthony) Stochastic monotonicity properties of multiserver queues with impatient customers. *J. Appl. Probab.* **28** (1991), *no.* 3, 673–682. (Summary) **93d:60153** 60K25
Bhattacharya, Prabir (*with* Suraweera, Francis) An $O(\log m)$ parallel algorithm for the minimum spanning tree problem. (English summary) *Inform. Process. Lett.* **45** (1993), *no.* 3, 159–163. 68Q22 (68Q20, 68Q25, 68R10)
Bhattacharya, Rabi N. (*with* Ghosh, Jayanta K.) A class of U-statistics and asymptotic normality of the number k-clusters. (English summary) *J. Multivariate Anal.* **43** (1992), *no.* 2, 300–330. (N. C. Weber) **93m:60041** 60F05 (62E20)
Bhattacharya, S. K. *see* **Bhattacharya, Samir Kumar**
Bhattacharya, S. L. *see* **Khan, Iqbal Ahmad, 93i:33005**
Bhattacharya, Samir Kumar (*with* Tiwari, Ram C.; Zhang, Jie) Hierarchical Bayes approach to reliability analysis for the geometric life model. (English summary) *Rebrape* **5** (1991), *no.* 2, 149–168. 62N05
— (*with* Kumar, Santosh[2]; Tiwari, Ram C.; Tyagi, Ravinder K.) Pretest estimation for some discrete distributions. *Comm. Statist. Simulation Comput.* **21** (1992), *no.* 2, 405–421. 62F10
— (*with* Tyagi, Ravinder K.) Bayesian reliability analysis for the two-parameter exponential distribution. (English and Italian summaries) *Statistica (Bologna)* **52** (1992), *no.* 1, 75–83. 62N05 (62F15)
Bhattacharya, Tilak (*with* DiBenedetto, E.; Manfredi, Juan J.) Limits as $p \to \infty$ of $\Delta_p u_p = f$ and related extremal problems. Some topics in nonlinear PDEs (Turin, 1989). *Rend. Sem. Mat. Univ. Politec. Torino* **1989**, *Special Issue*, 15–68 (1991). (C. A. Swanson) **93a:35049** 35J65 (35J20)
— A note on the space charge problem. *IMA J. Appl. Math.* **48** (1992), *no.* 2, 117–124. (From the introduction) **93a:78004** 78A20 (35Q60)
Bhattacharya, U. (*with* Rao, J. R.; Tiwari, R. N.) Fuzzy multi-criteria facility location problem. (English summary) *Fuzzy Sets and Systems* **51** (1992), *no.* 3, 277–287. (Summary) **93g:90043** 90B80 (04A72, 90C70)
Bhattacharyya, A. On a geometrical representation of probability distributions and its use in statistical inference. *Calcutta Statist. Assoc. Bull.* **40** (1990/91), *no.* 157-160, 23–49. (M. Riedel) **93i:62014** 62E10 (60E05, 62B15, 62F03)
Bhattacharyya, B. B. (*with* Richardson, Gary D.) Parameter estimation in nonlinear regression. *Calcutta Statist. Assoc. Bull.* **40** (1990/91), *no.* 157-160, 103–108. (Summary) **93c:62111** 62J02 (62F12)
— (*with* Otsuka, Y.; Richardson, Gary D.) Strong consistency in nonlinear regression with multiplicative error. (English summary) *Comm. Statist. Theory Methods* **21** (1992), *no.* 10, 2825–2831. (Wilfried Grossmann) **93i:62056** 62J02 (62F12)
— (*with* Richardson, Gary D.) Strong consistency of a sieve estimator for the variance in nonlinear regression. *Statist. Probab. Lett.* **14** (1992), *no.* 2, 165–168. (Summary) **93g:62086** 62J02 (62F12)
Bhattacharyya, C. (*with* Bera, P. K.; Das, U.; Talukdar, B.) On integral representations of the Coulomb functions. *J. Math. Phys.* **33** (1992), *no.* 4, 1403–1407. (Giorgio Cattapan) **93d:81183** 81U05 (33C15, 81Q60)
— (*with* Talukdar, B.; Das, U.; Bera, P. K.) Phase-equivalent potentials from supersymmetric quantum mechanics. *J. Phys. A* **25** (1992), *no.* 14, 4073–4082. (Summary) **93d:81036** 81Q05 (81T60)
Bhattacharyya, Gouri K. (*with* Ghosh, Jayanta K.) Asymptotic properties of estimators in a binomial reliability growth model and its continuous-time analog. Reliability theory (Columbia, MO, 1988). *J. Statist. Plann. Inference* **29** (1991), *no.* 1-2, 43–53. (H. K. Hsieh) **93b:62043** 62F12 (62N05)
Bhattacharyya, Prodipeswar On the iteration of polynomials with complex coefficients. *Math. Student* **59** (1991), *no.* 1-4, 145–152. 30D05
— (*with* Vetrivel, V.; Veeramani, P.) Some extensions of Fan's best approximation theorem. (English summary) *Numer. Funct. Anal. Optim.* **13** (1992), *no.* 3-4, 397–402. (S. Venkata Ratnam Naidu) **93i:41027** 41A65 (47H04)
Bhattacharyya, S. *see* **Bhattacharyya, Sikha**
Bhattacharyya, S. N. (*with* Gupta, A. S.; Ganguly, Keshab) On the onset of thermal instability in fluid-filled porous spheres and spherical shells. *Stability Appl. Anal. Contin. Media* **1** (1991), *no.* 3, 213–241. (D. A. Nield) **93d:76025** 76E15 (76E20, 86A60)
Bhattacharyya, S. P. *see* **Bhattacharyya, Shankar Prashad**
Bhattacharyya, Saswati (*with* Chakrabarti, C. G.) On the dynamics of age-structured population. (English summary) *Bull. Calcutta Math. Soc.* **83** (1991), *no.* 3, 297–304. 92D25
Bhattacharyya, Shankar Prashad (*with* Chapellat, Hervé; Dahleh, Mohammed A.) Structure and optimality of multivariable periodic controllers. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, I (Kobe, 1991)*, 159–164, *Mita, Tokyo*, 1992. (*see* **93g:93005**) 49N20 (93B52)
— (*with* Keel, L. H.; Shaw, J.) Robust control of interval systems. (English summary) *Robust control (Tokyo, 1991)*, 24–31, *Lecture Notes in Control and Inform. Sci.*, 183, *Springer, Berlin*, 1992. (*see* **93f:93006**) 93D09
Bhattacharyya, Sikha (*with* Mukhopadhyay, Parimal) Estimating a finite population variance under some general linear models with exchangeable errors. *Calcutta Statist. Assoc. Bull.* **40** (1990/91), *no.* 157-160, 219–228. 62D05
Bhatwadekar, S. M. (*with* Varma, P. L. N.) Efficient generation of maximal ideals in polynomial rings. *Proceedings of the Symposium on Algebra and Number Theory (Cochin, 1990)*, 51–57, *Publication*, 20, *Centre Math. Sci., Trivandrum*, 1990. (David C. Lantz) **93e:13037** 13F20 (13E15, 13H05)
— (*with* Dutta, Amartya K.) On residual variables and stably polynomial algebras. (English summary) *Comm. Algebra* **21** (1993), *no.* 2, 635–645. (Jean-Luc Chabert) **93k:13028** 13F20 (13B25)
Bhaumik, R. N. (*with* Mukherjee, Anjan) Completely induced fuzzy topological spaces. *Fuzzy Sets and Systems* **47** (1992), *no.* 3, 387–390. (Summary) **93d:54011** 54A40 (04A72)
— (*with* Mukherjee, Anjan) Some more results on completely induced fuzzy topological spaces. (English summary) *Fuzzy Sets and Systems* **50** (1992), *no.* 1, 113–117. (Summary) **93g:54010** 54A40 (04A72)
— (*with* Mukherjee, Anjan) Completely lower semicontinuous functions. (English summary) *Math. Ed. (Siwan)* **26** (1992), *no.* 2, 66–69. 54C08
— (*with* Mukherjee, Anjan) Fuzzy completely continuous mappings. (English summary) *Fuzzy Sets and Systems* **56** (1993), *no.* 2, 243–246. 54A40 (04A72)
Bhave, S. V. The liar paradox and many-valued logic. *Philos. Quart.* **42** (1992), *no.* 169, 465–479. (Frans Voorbraak) **93m:03006** 03A05 (03B50)
Bhawal, Biplab (*with* Kar, Sayan) Lorentzian wormholes in Einstein-Gauss-Bonnet theory. (English summary) *Phys. Rev. D* (3) **46** (1992), *no.* 6, 2464–2468. (Summary) **93e:83062** 83E15 (83D05)
Bhimani, G. C. (*with* Ghosh, Dilip Kumar) Note on some new singular group divisible designs. (English summary) *Sankhya Ser. B* **52** (1990), *no.* 1, 128–129. 62K10
Bhimasankaram, P. (*with* Balasubramanian, Krishnaswami; Dey, A.) Diagonally range dominant matrices. (English summary) *Linear Algebra Appl.* **176** (1992), 45–60. (William Watkins) **93m:15004** 15A09 (15A23, 15A57)
— (*with* Mathew, Thomas[1]) On ordering properties of generalized inverses of nonnegative definite matrices. (English summary) *Linear Algebra Appl.* **183** (1993), 131–146. (Summary) **93m:15005** 15A09
Bhoj, Dinesh S. On the distribution of the weighted combination of independent probabilities. (English summary) *Statist. Probab. Lett.* **15** (1992), *no.* 1, 37–40. (Summary) **93j:62037** 62E15
— (*with* Ahsanullah, Mohammad) Testing equality of coefficients of variation of two populations. (English summary) *Biometrical J.* **35** (1993), *no.* 3, 355–359. 62F03
Bhola, P. K. (*with* Sharma, P. L.) Common fixed point theorem for three maps. *Bull. Calcutta Math. Soc.* **83** (1991), *no.* 4, 398–400. 54H25
— (*with* Sharma, P. L.) A common fixed point theorem for multivalued mapping in complete metric space. (English summary) *Math. Ed. (Siwan)* **26** (1992), *no.* 3, 172–173. 54H25 (54C60)

Bhoosnurmath, Subhas S. (*with* Swamy, S. R.) Rotaru starlike integral operators. *Tamkang J. Math.* **22** (1991), *no.* 3, 291–297. (F. W. Hartmann) **93d:30011** 30C45 (47B38)
— (*with* Swamy, S. R.) Modified Hadamard product of certain analytic functions. *Pure Appl. Math. Sci.* **35** (1992), *no.* 1-2, 71–77. 30C45
Bhosle, Usha N. Parabolic sheaves on higher-dimensional varieties. *Math. Ann.* **293** (1992), *no.* 1, 177–192. (Jean-Marc Drezet) **93f:14013** 14F05 (14J60)
— Generalized parabolic sheaves on an integral projective curve. *Proc. Indian Acad. Sci. Math. Sci.* **102** (1992), *no.* 1, 13–22. (P. E. Newstead) **93h:14007** 14D20 (14H60)
Bhowmik, S. K. (*with* Banerjee, Mihir B.) Salvaging the Thompson-Chandrasekhar criterion: a tribute to S. Chandrasekhar. *J. Math. Anal. Appl.* **167** (1992), *no.* 1, 57–65. (D. ter Haar) **93d:76073** 76W05 (76E25, 85A30)
Bhutani, O. P. (*with* Vijayakumar, K.) On the isogroups of the semilinear hyperbolic equation $u_{xt} = f(u)$ and its exact solutions for the case of the Liouville equation. *Internat. J. Engrg. Sci.* **30** (1992), *no.* 8, 1049–1059. (Summary) **93f:35146** 35L70 (58G16)
Bhuyan, K. C. (*with* Miah, A. B. M. A. S.) A group of randomized block designs with a heteroscedastic model. (English summary) *Sankhyā Ser. B* **51** (1989), *no.* 3, 429–433. 62K10
Bi, Jian Xing (*with* Shi, Wu Jie) A new characterization of the alternating groups. *Southeast Asian Bull. Math.* **16** (1992), *no.* 1, 81–90. (Martin W. Liebeck) **93j:20040** 20D06 (20B35)
Biacino, Loredana (*with* Lettieri, Ada) L-σ-algebras and L-measures. *Fuzzy Sets and Systems* **44** (1991), *no.* 2, 219–225. (Endre Pap) **93b:28050** 28E10 (04A72)
— (*with* Simonelli, M. R.) The internal rate of return of fuzzy cash flow. (English and Italian summaries) *Riv. Mat. Sci. Econom. Social.* **14** (1991), *no.* 2, 3–13. 90A09 (04A72)
— (*with* Simonelli, M. R.) The internal rate of return of fuzzy cash flows. (English summary) *Stochastica* **13** (1992), *no.* 1, 13–22. 90A09 (04A72)
Biagini, Francesco (*with* Ragni, Marcello) Rectangle functions and strong convergence in variation. (Italian) *Atti Sem. Mat. Fis. Univ. Modena* **39** (1991), *no.* 2, 377–401. (A. Kósa) **93m:49021** 49Q15 (26A45)
Biagioli, Mario New documents on Galileo. (Italian summary) *Nuncius Ann. Storia Sci.* **6** (1991), *no.* 2, 157–169. (William R. Shea) **93b:01036** 01A70 (01A45)
Biagioni, H. A. (*with* Oberguggenberger, M.) Generalized solutions to Burgers' equation. *J. Differential Equations* **97** (1992), *no.* 2, 263–287. (V. V. Kovrizhkin) **93j:35151** 35Q53 (35D05, 46F10)
— (*with* Oberguggenberger, M.) Generalized solutions to the Korteweg-de Vries and the regularized long-wave equations. *SIAM J. Math. Anal.* **23** (1992), *no.* 4, 923–940. (V. V. Kovrizhkin) **93j:35152** 35Q53 (35D05, 46F10, 76B15)
Bialecki, Bernard Sinc quadratures for Cauchy principal value integrals. (English summary) *Numerical integration (Bergen, 1991)*, 81–92, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 357, *Kluwer Acad. Publ., Dordrecht*, 1992. (Summary) **93m:65030** 65D32
— (*with* Yan, Yi) A rectangular quadrature method for logarithmically singular integral equations of the first kind. (English summary) *J. Integral Equations Appl.* **4** (1992), *no.* 3, 337–369. (M. Z. Nashed) **93j:65217** 65R20 (45E05)
— (*with* Fernandes, Ryan I.) Orthogonal spline collocation Laplace-modified and alternating-direction methods for parabolic problems on rectangles. (English summary) *Math. Comp.* **60** (1993), *no.* 202, 545–573. (Howard Swann) **93h:65142** 65N35 (65M12, 65M70, 65N12)
Bialecki, Ryszard (*with* Dallner, Rudolf; Kuhn, Günther) New application of hypersingular equations in the boundary element method. (English summary) *Comput. Methods Appl. Mech. Engrg.* **103** (1993), *no.* 3, 399–416. (Summary) **93m:73038** 73V10
— (*with* Kuhn, Günther) Boundary element solution of heat conduction problems in multizone bodies of nonlinear material. (English summary) *Internat. J. Numer. Methods Engrg.* **36** (1993), *no.* 5, 799–809. (Summary) **93k:80002** 80-08 (80A20)
Bialostocki, A. (*with* Barbut, E.) On regular r-tournaments. (English summary) *Ars Combin.* **34** (1992), 97–106. (Summary) **93m:05075** 05C20
Bialy, Misha (*with* Polterovich, L. V.) Hamiltonian diffeomorphisms and Lagrangian distributions. *Geom. Funct. Anal.* **2** (1992), *no.* 2, 173–210. (Nikolai K. Smolentsev) **93c:58066** 58F05 (53C23, 57R50)
— (*with* Polterovich, L. V.) Hamiltonian systems, Lagrangian tori and Birkhoff's theorem. *Math. Ann.* **292** (1992), *no.* 4, 619–627. (Jaroslav Stark) **93h:58049** 58F05 (58F27)
Białynicki-Birula, Andrzej (*with* Święcicka, Joanna) On complete orbit spaces of SL(2) actions. II. *Colloq. Math.* **63** (1992), *no.* 1, 9–20. (Dennis Snow) **93d:14067** 14L30
Bian, Bao Jun (*with* Dong, Guang Chang) The regularity of viscosity solutions for a class of fully nonlinear equations. *Sci. China Ser. A* **34** (1991), *no.* 12, 1448–1457. (Michael Wiegner) **93f:35078** 35J65 (35D10)
Bian, Fu Ping (*with* Mao, Yun Ying) An optimal control model with dynamic input and output. (Chinese) *Math. Practice Theory* **1992**, *no.* 1, 58–64. 93A30 (49K15)
— A bundle method for point-by-point maxima of convex nonsmooth functions. (Chinese. English and Chinese summaries) *J. Tianjin Univ.* **1993**, *no.* 1, 110–116. (Summary) **93m:90075** 90C30 (49J52)
Bianchi, Gabriele (*with* Egnell, Henrik) An ODE approach to the equation $\Delta u + Ku^{(n+2)/(n-2)} = 0$, in $\mathbf{R}^n$. *Math. Z.* **210** (1992), *no.* 1, 137–166. (Michael Wiegner) **93m:35069** 35J60 (35B45)
sassoli de Bianchi, M. *see* **Sassoli de Bianchi, M.**
Bianchi, Maria Grazia (*with* Gillio Berta Mauri, Anna; Hauck, Peter) Maximal supersoluble subgroups of symmetric groups. *Ann. Mat. Pura Appl.* (4) **159** (1991), 371–404. (Wolfgang Lempken) **93d:20007** 20B30 (20D10, 20E28)
— (*with* Chillag, David; Gillio Berta Mauri, Anna; Herzog, Marcel; Scoppola, Carlo M.) Applications of a graph related to conjugacy classes in finite groups. *Arch. Math. (Basel)* **58** (1992), *no.* 2, 126–132. (Wolfgang Willems) **93d:20061** 20E34 (20C15, 20D60)
— (*with* Gillio Berta Mauri, Anna; Verardi, Libero) Groups with small subgroup-permutability diameter. (Italian summary) *Boll. Un. Mat. Ital. B* (7) **6** (1992), *no.* 1, 229–239. (Summary) **93b:20044** 20D40
Bianchi, Massimo (*with* Pradisi, G.; Sagnotti, A.) Toroidal compactification and symmetry breaking in open-string theories. *Nuclear Phys. B* **376** (1992), *no.* 2, 365–386. (Alexander A. Zheltukhin) **93e:81090** 81T30 (81T40)
Bianchi, Monica Hölder regularity of the solution of an obstacle problem with respect to particular hypoelliptic operators. (Italian. Italian summary) *Riv. Mat. Univ. Parma* (4) **17** (1991), 181–190 (1992). (Maria Mascarello) **93h:35045** 35H05 (35J85, 49N60)
Bianchini, R. M. (*with* Stefani, G.) Time-optimal problem and time-optimal map. (English summary) *Rend. Sem. Mat. Univ. Politec. Torino* **48** (1990), *no.* 3, 401–429 (1992). (N. N. Petrov) **93m:49011** 49K40 (49J15, 49K15, 57R27, 93B05)
Bianco, Lucio (*with* Dell'Olmo, P.; Speranza, M. Grazia) A decomposition approach to a scheduling problem with multiple modes. *System modelling and optimization (Zurich, 1991)*, 875–884, *Lecture Notes in Control and Inform. Sci.*, 180, *Springer, Berlin*, 1992. (*see* **93e:90003**) 90B35
— (*with* Mingozzi, Aristide; Ricciardelli, Salvatore) The traveling salesman problem with cumulative costs. (English summary) *Networks* **23** (1993), *no.* 2, 81–91. (Summary) **93j:90081** 90C27 (05C35, 90B10)
Bianconi, M. Variable markup in a small open economy with inflation. (English summary) *Metroeconomica* **42** (1991), *no.* 2, 137–155. 90A58
Bianconi, Ricardo On sets ∀-definable from Pfaffian functions. *J. Symbolic Logic* **57** (1992), *no.* 2, 688–697. (J. M. Plotkin) **93c:03049** 03C65
Biane, Philippe Some properties of quantum Bernoulli random walks. *Quantum probability & related topics*, 193–203, *QP-PQ, VI, World Sci. Publishing, River Edge, NJ*, 1991. (Kalyanapuram R. Parthasarathy) **93b:81127** 81S25
— Quantum random walk on the dual of SU(n). *Probab. Theory Related Fields* **89** (1991), *no.* 1, 117–129. (Andrzej Luczak) **93a:46119** 46L50 (22E99, 46L60, 60J15, 81S25)
Bianucci, Marco (*with* Bonci, Luca; Trefan, Gyorgy; West, Bruce J.; Grigolini, Paolo) Brownian motion generated by a two-dimensional mapping. (English summary) *Phys. Lett. A* **174** (1993), *no.* 5-6, 377–383. (Summary) **93m:82030** 82C31
Biard, Joël ★ Logique et théorie du signe au XIVe siècle. (French) [Logic and theory of signs in the XIVth century] Études de Philosophie Médiévale [Studies in Medieval Philosophy], 64. *Librairie Philosophique J. Vrin, Paris*, 1989. 344 *pp. ISBN* 2-7116-0990-1 (From the preface) **93h:03001** 03–03 (01A35, 03A05)
de Biase, L. *see* **De Biase, L.**
Bibel, W. *see* **Brewka, Gerhard, 93b:68079**
Bibilo, P. N. Limited column convolution of programmed logic matrices. (Russian. English and Russian summaries) *Vestsī Akad. Navuk Belarusī Ser. Fiz. Mat. Navuk* **1992**, *no.* 2, 88–92, 127. 68M07
Bičák, Jiří (*with* Lynden-Bell, D.; Katz, Joseph) Relativistic disks as sources of static vacuum spacetimes. (English summary) *Phys. Rev. D* (3) **47** (1993), *no.* 10, 4334–4343. (Summary) **93m:83008** 83C15
Bican, Ladislav On a class of locally Butler groups. *Comment. Math. Univ. Carolin.* **32** (1991), *no.* 4, 597–600. (Manfred Dugas) **93c:20090** 20K20
— (*with* Torrecillas Jover, Blas) QTAG torsionfree modules. *Comment. Math. Univ. Carolin.* **33** (1992), *no.* 1, 1–20. (M. Teply) **93f:16033** 16S90 (16D70)
— (*with* Fuchs, László[1]) On abelian groups by which balanced extensions of a rational group split. *J. Pure Appl. Algebra* **78** (1992), *no.* 3, 221–238. (Ulrich Albrecht) **93d:20098** 20K20
— (*with* Torrecillas Jover, Blas) A relative Ulm's theorem. *Riv. Mat. Pura Appl. No.* 10 (1992), 39–66. (Manfred Dugas) **93c:16007** 16D70 (20K12)
Bicchieri, Cristina Knowledge-dependent games: backward induction. *Knowledge, belief, and strategic interaction (Castiglioncello, 1989)*, 327–343, *Cambridge Stud. Probab. Induc. Decis. Theory, Cambridge Univ. Press, Cambridge*, 1992. (Milan Mareš) **93k:90121** 90D40
— *see also* **Knowledge, belief, and strategic interaction, 93i:90006**
Bičevskis, Jānis (*with* Auziņš, Andrejs; Bārzdiņš, Jānis; Čerāns, Kārlis; Kalniņš, Audris) Automatic construction of test sets: theoretical approach. *Baltic computer science*, 286–359, *Lecture Notes in Comput. Sci.*, 502, *Springer, Berlin*, 1991. (Summary) **93h:68083** 68Q60
Bichara, Alessandro (*with* Innamorati, Stefano) Note on a characterization of Segre variety in PG(r, q). (English summary) *Combinatorics '90 (Gaeta, 1990)*, 45–47, *Ann. Discrete Math.*, 52, *North-Holland, Amsterdam*, 1992. (E. J. F. Primrose) **93k:51008** 51E20 (05B25)
— (*with* Misfeld, Jürgen; Zanella, Corrado) The flag space of a topological projective space. (English and Italian summaries) *Riv. Mat. Pura Appl. No.* 11 (1992), 63–72. (H. Salzmann) **93m:51019** 51H10 (51H05)
— *see also* **Combinatorics '90, 93f:05003**
Bick, T. A. ★ Elementary boundary value problems. Monographs and Textbooks in Pure and Applied Mathematics, 173. *Marcel Dekker, Inc., New York*, 1993. x+248 *pp. ISBN* 0-8247-8899-0 35–01 (34–01)
Bickel, Peter J. Theoretical comparison of different bootstrap t confidence bounds. (English summary) *Exploring the limits of bootstrap (East Lansing, MI, 1990)*, 65–76, *Wiley Ser. Probab. Math. Statist. Probab. Math. Statist., Wiley, New York*, 1992. (Jan Mielniczuk) **93k:62102** 62G09 (62F25)
— (*with* Nair, Vijayan N.; Wang, Paul C. C.) Nonparametric inference under biased sampling from a finite population. *Ann. Statist.* **20** (1992), *no.* 2, 853–878. (Jagdish Saran) **93h:62068** 62G05 (62D05, 62G20, 62P99)
— (*with* Zhang, Ping[1]) Variable selection in nonparametric regression with categorical covariates. *J. Amer. Statist. Assoc.* **87** (1992), *no.* 417, 90–97. (Sidney J. Yakowitz) **93d:62087** 62G10 (62–07)
— (*with* Millar, P. W.) Uniform convergence of probability measures on classes of functions. *Statist. Sinica* **2** (1992), *no.* 1, 1–15. (Evarist Giné) **93g:60005** 60B10 (60F05, 60F15)
Bicknell-Johnson, Marjorie Nearly isosceles triangles where the vertex angle is a multiple of the base angle. *Applications of Fibonacci numbers, Vol.* 4 (*Winston-Salem, NC*, 1990), 41–50, *Kluwer Acad. Publ., Dordrecht*, 1991. (Piero Filipponi) **93k:11016** 11B83 (33B10, 51M04)
Bicudo, Irineu Pythagorean triples: the long history of a problem. (Portuguese. English and Portuguese summaries) *Rev. Mat. Estatíst.* **9** (1991), 1–13. (J. S. Joel) **93h:01005** 01A17 (01A20, 01A45, 11–03)
Bidaut-Véron, Marie-Françoise (*with* Véron, Laurent) Nonlinear elliptic equations on compact Riemannian manifolds and asymptotics of Emden equations. *Invent. Math.* **106** (1991), *no.* 3, 489–539. (Robert McOwen) **93a:35045** 35J60 (58G99)
— Singularities of solutions of a class of quasilinear equations in divergence form. *Nonlinear diffusion equations and their equilibrium states*, 3 (*Gregynog*, 1989), 129–144, *Progr. Nonlinear Differential Equations Appl.*, 7, *Birkhäuser Boston, Boston, MA*, 1992. (Maria J. Esteban) **93f:35061** 35J60 (35A20)

Bidkham, M. (*with* Dewan, K. K.) Inequalities for a polynomial and its derivative. *J. Math. Anal. Appl.* **166** (1992), *no.* 2, 319–324. (N. K. Govil) **93e:30008** 30A10 (30C10, 41A17)

Bieberbach, Ludwig *see* **de Branges, Louis, 93d:01069b**

Biech, T. (*with* Das, Anadijiban) Collapse of a spherically symmetric anisotropic fluid in general relativity. *Proceedings of the 4th Canadian Conference on General Relativity and Relativistic Astrophysics (Winnipeg, MB, 1991)*, 86–89, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93c:83069** 83C55

Biedenharn, L. C. A q-boson realization of the quantum group $SU_q(2)$ and the theory of q-tensor operators. (English summary) *Quantum groups (Clausthal, 1989)*, 67–88, *Lecture Notes in Phys.*, 370, *Springer, Berlin*, 1990. (Summary) **93i:81089** 81R50 (17B37)

— (*with* Lohe, M. A.) Symmetries of quantum group coupling coefficients. (English summary) *Differential geometry, group representations, and quantization*, 193–206, *Lecture Notes in Phys.*, 379, *Springer, Berlin*, 1991. (*see* **93c:81004**) 81R50 (17B37)

— Resolving the problem posed by multiplicity in the unitary groups. (English summary) *Group theory and special symmetries in nuclear physics (Ann Arbor, MI, 1991)*, 38–48, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93e:81150**) 81R05 (22E70, 81V35)

— (*with* Lohe, M. A.) Induced representations and tensor operators for quantum groups. (English summary) *Quantum groups (Leningrad, 1990)*, 197–209, *Lecture Notes in Math.*, 1510, *Springer, Berlin*, 1992. (Andy R. Magid) **93j:17021** 17B37 (81R50)

— (*with* Bincer, A. M.; Lohe, M. A.; Louck, James D.) New relations and identities for generalized hypergeometric coefficients. *Adv. in Appl. Math.* **13** (1992), *no.* 1, 62–121. (Robert A. Gustafson) **93g:33009** 33C50 (22E70, 33C80)

— (*with* Lohe, M. A.) An extension of the Borel-Weil construction to the quantum group $U_q(n)$. *Comm. Math. Phys.* **146** (1992), *no.* 3, 483–504. (Andrew Pressley) **93h:17023** 17B37 (16W30, 81R50)

— (*with* Nomura, Masao) On the q-symplecton realization of the quantum group $SU_q(2)$. (English summary) *J. Math. Phys.* **33** (1992), *no.* 11, 3636–3648. (A. U. Klimyk) **93k:81104** 81R50 (17B37)

Bielak, Jacobo (*with* Zeng, Xiaogang; MacCamy, Richard C.) Unified symmetric finite element and boundary integral variational coupling methods for linear fluid-structure interaction. (English summary) *Numer. Methods Partial Differential Equations* **8** (1992), *no.* 5, 451–467. (Summary) **93d:76041** 76M10 (73K70, 73V05, 73V10, 76M15, 76M30, 76Q05)

— (*with* Zeng, Xiaogang; Kallivokas, L. F.) A symmetric variational finite element–boundary integral equation coupling method. (English summary) *Comput. & Structures* **46** (1993), *no.* 6, 995–1000. (Summary) **93k:73087** 73V25 (65N38, 73V05, 73V10, 80–08)

Bielawski, R. (*with* Górniewicz, Lech; Plaskacz, Sławomir) Topological approach to differential inclusions on closed subset of $\mathbf{R}^n$. *Dynamics reported: expositions in dynamical systems*, 225–250, *Dynam. Report. (N.S.)*, 1, *Springer, Berlin*, 1992. (A. Averna) **93c:34040** 34A60 (34C25, 49J24)

Bielecki, Tomasz R. (*with* Stettner, Lukasz) On limit control principle for singularly perturbed Markov processes. *Stochastic systems and optimization (Warsaw, 1988)*, 274–283, *Lecture Notes in Control and Inform. Sci.*, 136, *Springer, Berlin*, 1989. (*see* **93d:93009**) 49K45 (93E10)

— (*with* Abbad, Mohammed; Filar, Jerzy A.) Algorithms for singularly perturbed limiting average Markov control problems. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 9, 1421–1425. (Masami Yasuda) **93i:93128** 93E20 (90C40)

Bielefeld, Ben (*with* Fisher, Yuval; Hubbard, John) The classification of critically preperiodic polynomials as dynamical systems. *J. Amer. Math. Soc.* **5** (1992), *no.* 4, 721–762. (Feliks Przytycki) **93h:58128** 58F23 (30D05)

Biemer, Paul P. (*with* Forsman, Gösta) On the quality of reinterview data with application to the current population survey. (English summary) *J. Amer. Statist. Assoc.* **87** (1992), *no.* 420, 915–923. (Summary) **93j:62020** 62D05

Bien, Frédéric (*with* Borel, Armand) Sous-groupes épimorphiques de groupes linéaires algébriques. I. (English and French summaries) [Epimorphic subgroups of linear algebraic groups. I] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 6, 649–653. (Mark Reeder) **93i:20048** 20G05 (20G15, 22E10)

— (*with* Borel, Armand) Sous-groupes épimorphiques de groupes linéaires algébriques. II. (English and French summaries) [Epimorphic subgroups of linear algebraic groups. II] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 13, 1341–1346. (Mark Reeder) **93k:20063** 20G05 (20G15)

Bien, Zeungnam (*with* Kim, Jin-Hoon) Some bounds of the solution of the algebraic Riccati equation. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 8, *part I*, 1209–1210. (Summary) **93e:93039** 93B60 (93B40)

— (*with* Kim, Jin-Hoon) Comments on: "Stability analysis of a family of matrices" [IEEE Trans. Automat. Control **35** (1990), no. 11, 1257–1259; MR 91j:93069] by Y. K. Foo and Y. C. Soh. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 9, 1470–1472. (Summary) **93j:93107** 93D09 (15A42)

— (*with* Kim, Jin-Hoon) A robust stability bound of linear systems with structured uncertainty. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 10, 1549–1551. 93D09

Bienenstock, Elisa Jayne (*with* Bonacich, Phillip) Assignment games, chromatic number, and exchange theory. (English summary) *J. Math. Sociol.* **17** (1993), *no.* 4, 243–259. 90D40

Bieńkowska, Jadwiga (*with* Lu, H.) A note on $N = 2$ superstrings. (English summary) *Modern Phys. Lett. A* **7** (1992), *no.* 39, 3639–3646. (Jacek Pawełczyk) **93k:81167** 81T30

— The generalized no-ghost theorem for $N = 2$ SUSY critical strings. *Phys. Lett. B* **281** (1992), *no.* 1-2, 59–66. (Henrik Aratyn) **93d:81136** 81T30 (81R10, 81T60)

Bienstock, Daniel (*with* Dean, Nathaniel) On obstructions to small face covers in planar graphs. *J. Combin. Theory Ser. B* **55** (1992), *no.* 2, 163–189. (Michael O. Albertson) **93i:05096** 05C70 (05C10)

— (*with* Dean, Nathaniel) New results on rectilinear crossing numbers and plane embeddings. (English summary) *J. Graph Theory* **16** (1992), *no.* 5, 389–398. (D. S. Archdeacon) **93h:05061** 05C10

Bier, Martin A Transylvanian lineage. *Math. Intelligencer* **14** (1992), *no.* 2, 52–54. (Editors) **93c:01031** 01A70 (01A55)

Bier, V. M. Fuzzy set theory, probability theory, and truth functionality. (English summary) *Analysis and management of uncertainty: theory and applications (College Park, MD, 1990)*, 65–78, *Mach. Intell. Pattern Recogn.*, 13, *North-Holland, Amsterdam*, 1992. (*see* **93f:68004**) 04A72

Bierbrauer, Jürgen (*with* Tran Van Trung) Some highly symmetric authentication perpendicular arrays. *Des. Codes Cryptogr.* **1** (1991), *no.* 4, 307–319. (Douglas R. Stinson) **93h:05023** 05B15

— Monotypical uniformly homogeneous sets of permutations. *Arch. Math. (Basel)* **58** (1992), *no.* 4, 338–344. (J. E. Cigler) **93a:05003** 05A05 (20B99)

— Designs with block-size 6 in projective planes of characteristic 2. (English summary) *Graphs Combin.* **8** (1992), *no.* 3, 207–224. (M. J. Kallaher) **93i:05015** 05B05 (05B25, 51E05)

Bierhalter, Günter Von L. Boltzmann bis J. J. Thomson: die Versuche einer mechanischen Grundlegung der Thermodynamik (1866–1890). [From L. Boltzmann to J. J. Thomson: attempts at a mechanical foundation of thermodynamics (1866–1890)] *Arch. Hist. Exact Sci.* **44** (1992), *no.* 1, 25–75. (Peter M. Harman) **93d:01028** 01A55 (70–03, 80–03)

Bierlaire, M. (*with* Toint, Ph. L.; Tuyttens, D.) Errata: "On iterative algorithms for linear least squares problems with bound constraints" [Linear Algebra Appl. **143** (1991), 111–143; MR 91j:65109]. *Linear Algebra Appl.* **180** (1993), 2–3. (Editors) **93k:65053** 65K05 (65F10)

Bierlein, D. Measure extensions and measurable neighbours of a family of functions. Measure theory (Oberwolfach, 1990). *Rend. Circ. Mat. Palermo (2) Suppl. No.* 28 (1992), 43–48. (Rae M. Shortt) **93j:28013** 28A99 (28A33)

Biermann, Kurt-R. Aus der Gauß-Forschung. [More research on Gauss] *Gauss-Ges. Göttingen Mitt. No.* 29 (1992), 39–42. (C. J. Scriba) **93j:01008** 01A70

Biermann, S. Bettizahlen des Modulraumes der stabilen n-markierten Bäume projektiver Geraden. [Betti numbers of the moduli space of stable n-pointed trees of projective lines] *Indag. Math. (N.S.)* **2** (1991), *no.* 2, 171–178. (Bruce Hunt) **93d:14020** 14D20 (14D22, 14H10)

Biernat, Grzegorz On the sum of residues for a polynomial mapping. (Polish summary) *Bull. Soc. Sci. Lett. Łódź* **40** (1990), *no.* 11-20, 73–83. (Kamil Rusek) **93d:32038** 32H35 (32A30)

— La représentation paramétrique d'un résidu multidimensionnel. [The parametric representation of a multidimensional residue] Analyse complexe (Bucharest, 1989). *Rev. Roumaine Math. Pures Appl.* **36** (1991), *no.* 5-6, 207–211. (Alexandr M. Kytmanov) **93e:32003** 32A27 (32C30)

Bierstedt, Klaus-D. (*with* Bonet, José; Schmets, Jean) (DF)-spaces of type $CB(X, E)$ and $C\overline{V}(X, E)$. (English summary) Dedicated to the memory of Professor Gottfried Köthe. *Note Mat.* **10** (1990), *suppl.* 1, 127–148 (1992). (Andreas Defant) **93k:46024** 46E40 (46A04)

— (*with* Bonet, José) Biduality in Fréchet and (LB)-spaces. *Progress in functional analysis (Peñíscola, 1990)*, 113–133, *North-Holland Math. Stud.*, 170, *North-Holland, Amsterdam*, 1992. (Richard M. Aron) **93i:46010** 46A13 (46A08, 46E10, 46E50, 46G20)

Bierth, Karl-Josef ★ Durchschnittsgewinnkriterien in semi-Markoffschen Entscheidungsmodellen. (German) [Average reward criteria in semi-Markovian decision models] Dissertation, Rheinische Friedrich-Wilhelms-Universität Bonn, Bonn, 1990. Bonner Mathematische Schriften [Bonn Mathematical Publications], 210. *Universität Bonn, Mathematisches Institut, Bonn*, 1990. 181 *pp.* (Gerhard Hübner) **93b:90003** 90–02 (90C40, 93E20)

Biess, G. (*with* Bautz, M.) A heuristical polynomial algorithm for orbits of nondirected, connected finite digraphs with at least two vertices. (English summary) *Match No.* 28 (1992), 29–43. (R. C. Read) **93m:05076** 05C20 (05C85, 68R10)

de Bièvre, Stephan *see* **De Bièvre, Stephan**

Biezunski, Michel Inside the coconut: the Einstein-Cartan discussion on distant parallelism. *Einstein and the history of general relativity (North Andover, MA, 1986)*, 315–324, *Einstein Stud.*, 1, *Birkhäuser Boston, Boston, MA*, 1989. (*see* **93g:83001**) 01A60 (83–03)

teixidor i Bigas, Montserrat *see* **Teixidor i Bigas, Montserrat**

Bigelow, D. C. (*with* Colbourn, Charles J.) Faithful enclosing of triple systems: doubling the index. *Acta Math. Univ. Comenian. (N.S.)* **60** (1991), *no.* 1, 133–151. (A. Rosa) **93a:05039** 05B30 (05B07)

Bigelow, John (*with* Pargetter, Robert) ★ Science and necessity. Cambridge Studies in Philosophy. *Cambridge University Press, Cambridge*, 1990. x+410 *pp. ISBN* 0-521-39027-3 (R. B. Angell) **93a:00004** 00A30 (00A79, 03A05, 03B45)

Biggins, J. D. Uniform convergence of martingales in the one-dimensional branching random walk. (English summary) *Selected Proceedings of the Sheffield Symposium on Applied Probability (Sheffield, 1989)*, 159–173, *IMS Lecture Notes Monograph Ser.*, 18, *Inst. Math. Statist., Hayward, CA*, 1991. (Klaus Fleischmann) **93k:60211** 60J80 (60F17, 60G42)

— (*with* Bingham, N. H.) Near-constancy phenomena in branching processes. *Math. Proc. Cambridge Philos. Soc.* **110** (1991), *no.* 3, 545–558. (Martin I. Goldstein) **93d:60136** 60J80

— Uniform convergence of martingales in the branching random walk. *Ann. Probab.* **20** (1992), *no.* 1, 137–151. (Gail Ivanoff) **93b:60094** 60G42 (60F10, 60G55, 60J80)

— (*with* D'Souza, J. C.) The supercritical Galton-Watson process in varying environments. *Stochastic Process. Appl.* **42** (1992), *no.* 1, 39–47. (Tetsuo Nakagawa) **93g:60183** 60J80

bartholomew-Biggs, M. C. *see* **Bartholomew-Biggs, M. C.**

Biggs, Norman Some heuristics for graph colouring. *Graph colourings (Milton Keynes, 1988)*, 87–96, *Pitman Res. Notes Math. Ser.*, 218, *Longman Sci. Tech., Harlow*, 1990. (*see* **93k:05072**) 05C15

— (*with* Anthony, Martin) ★ Computational learning theory. An introduction. Cambridge Tracts in Theoretical Computer Science, 30. *Cambridge University Press, Cambridge*, 1992. xiv+157 *pp. ISBN* 0-521-41603-5 (Mark R. Jerrum) **93f:68078** 68T05 (68–02, 92B20)

— (*with* Brightwell, Graham R.; Tsoubelis, D.) Theoretical and practical studies of a competitive learning process. (English summary) *Network* **3** (1992), *no.* 3, 285–301. 68T05

— (*with* Shawe-Taylor, John; Anthony, Martin) Bounding sample size with the Vapnik-Chervonenkis dimension. (English summary) *Discrete Appl. Math.* **42** (1993), *no.* 1, 65–73. (Summary) **93j:68167** 68T05

Bigil'deev, S. I. On taking into account phase constraints in optimal control problems. (Russian) *Vestnik Chelyabinsk. Univ. Ser. Mat. Mekh. No.* 1 (1991), 117–121. 49K20

Bigolin, Bruno Observations concerning ideals of polynomials and differential forms. I. (Italian) *Geometry Seminars, 1988–1991 (Italian) (Bologna, 1988–1991)*, 21–25, *Univ. Stud. Bologna, Bologna*, 1991. (V. Oproiu) **93e:14001** 14A10 (14M10)

— (*with* Perelli Cippo, Claudio) Remarques sur les drapeaux intégraux des systèmes différentiels extérieurs (drapeaux caractéristiques). [Remarks on integral flags of exterior differential systems (characteristic flags)] *Bull. Soc. Sci. Lett. Łódź* **41** (1991), *no.* 1-10, 81–98. (G. R. Jensen) **93j:58003** 58A15

Bigoni, Davide (*with* Zaccaria, Daniele) Strong ellipticity of comparison solids in elastoplasticity with volumetric nonassociativity. *Internat. J. Solids Structures* **29** (1992), *no.* 17, 2123–2136. (Summary) **93c:73037** 73E05

— (*with* Zaccaria, Daniele) Loss of strong ellipticity in nonassociative elastoplasticity. (English summary) *J. Mech. Phys. Solids* **40** (1992), *no.* 6, 1313–1331. (Z. Mróz) **93j:73031** 73E05

Bigun, Ya. I. (*with* Fodchuk, V. I.) The averaging method and stability in a single-frequency system with delay. (Russian. Russian summary) *Asymptotic integration of nonlinear equations* (*Russian*), 32–35, *Akad. Nauk Ukrainy, Inst. Mat., Kiev*, 1992. (*see* **93m:00016**) 34K15

Biham, Eli (*with* Shamir, Adi) Differential cryptanalysis of DES-like cryptosystems. (English summary) *J. Cryptology* **4** (1991), *no.* 1, 3–72. (Summary) **93j:94020** 94A60

Biham, Ofer (*with* Kvale, Mark) Unstable periodic orbits in the stadium billiard. (English summary) *Phys. Rev. A* (3) **46** (1992), *no.* 10, 6334–6339. (András Krámli) **93k:58145** 58F13 (81Q50)

Bijak, B. *see* **Petykiewicz, Jan, 93g:78001**

Bijedić, N. (*with* Lalović, D.; Davidović, D. M.) Quantum mechanics in terms of nonnegative distribution functions. *Phys. A* **184** (1992), *no.* 1-2, 231–243. (Nicolaas P. Landsman) **93h:81071** 81S30

— (*with* Lalović, D.; Davidović, D. M.) Quantum mechanics in terms of a two-parameter generalized Wigner function. *Phys. Lett. A* **166** (1992), *no.* 2, 99–106. (Jules Beckers) **93g:81066** 81S30

— (*with* Lalović, D.; Davidović, D. M.) Quantum mechanics in terms of nonnegative smoothed Wigner functions. (English summary) *Phys. Rev. A* (3) **46** (1992), *no.* 3, 1206–1212. (Summary) **93g:81067** 81S30

van der Bijl, Jos (*with* van Mill, Jan) The compact extension property: the role of compactness. *Comment. Math. Univ. Carolin.* **32** (1991), *no.* 2, 369–375. (G. H. M. Thomas) **93b:57021** 57N20 (54C55, 55M15)

Bijma, Jelle (*with* Ott, Rolf; Hemleben, Christoph; Signes, Miguel) A computer method for estimating volumes and surface areas of complex structures consisting of overlapping spheres. (English summary) *Math. Comput. Modelling* **16** (1992), *no.* 12, 83–98. (Johann Linhart) **93j:52024** 52B55 (51–04, 51M25, 68U05)

Bijtebier, J. (*with* Broekaert, J.) The two-body plus potential problem between quantum field theory and relativistic quantum mechanics (spinless case). *Nuovo Cimento A* (11) **105** (1992), *no.* 3, 351–369. (Summary) **93b:81072** 81Q40

Bikbaev, R. F. (*with* Kuksin, S. B.) A periodic boundary value problem for the sine-Gordon equation, its small Hamiltonian perturbations, and KAM-deformations of finite-gap tori. (Russian. Russian summary) *Algebra i Analiz* **4** (1992), *no.* 3, 42–78; *translation in St. Petersburg Math. J.* **4** (1993), *no.* 3, 439–468. (Vladimir Mikhalev) **93k:35229** 35Q53 (58F07, 58F27)

— (*with* It·s, A. R.) Algebrogeometric solutions of a nonlinear boundary value problem on an interval for the sine-Gordon equation. (Russian. Russian summary) *Mat. Zametki* **52** (1992), *no.* 4, 19–28, 128; *translation in Math. Notes* **52** (1992), *no.* 3-4, 1005–1011 (1993). (Summary) **93k:35230** 35Q53 (34L40, 35L60, 58F07)

— Finite-gap attractors and transition processes of shock wave type in integrable systems. (Russian. English summary) *Zap. Nauchn. Sem. S.-Peterburg. Otdel. Mat. Inst. Steklov.* (*POMI*) **199** (1992), *Voprosy Kvant. Teor. Polya Statist. Fiz.* 11, 25–36, 184. (Victor V. Zharinov) **93d:35141** 35Q53 (35L67, 35Q55, 58F39, 58G17)

— The influence of viscosity on the structure of shock waves in the MKdV model. (Russian. English summary) *Zap. Nauchn. Sem. S.-Peterburg. Otdel. Mat. Inst. Steklov.* (*POMI*) **199** (1992), *Voprosy Kvant. Teor. Polya Statist. Fiz.* 11, 37–42, 184. (Summary) **93b:35124** 35Q53 (35B40)

— Integrable boundary value problems and nonlinear Fourier harmonics. (Russian. English summary) *Zap. Nauchn. Sem. S.-Peterburg. Otdel. Mat. Inst. Steklov.* (*POMI*) **199** (1992), *Voprosy Kvant. Teor. Polya Statist. Fiz.* 11, 43–50, 185. (Pavel Krejčí) **93f:35211** 35Q55

Bikhchandani, Sushil (*with* Segal, Uzi; Sharma, Sunil) Stochastic dominance under Bayesian learning. (English summary) *J. Econom. Theory* **56** (1992), *no.* 2, 352–377. (Monique Pontier) **93h:90024** 90A19 (90A60)

Biktashev, V. N. On the geometrical optics for nonlinear waves. (English summary) *Nonlinear dispersive wave systems* (*Orlando, FL*, 1991), 481–506, *World Sci. Publishing, River Edge, NJ*, 1992. (Fumioki Asakura) **93k:35248** 35Q60 (34C99, 35C20, 78A05)

Bilal, Adel (*with* Bergshoeff, E. A.; Stelle, K. S.) *W* symmetries: gauging and geometry. *Internat. J. Modern Phys. A* **6** (1991), *no.* 28, 4959–4983. (Katsushi Ito) **93b:81240** 81T40 (81R10)

— (*with* Fok, V. V.; Kogan, Ya. I.) On the origin of *W*-algebras. *Nuclear Phys. B* **359** (1991), *no.* 2-3, 635–672. (Vladimir A. Stukopin) **93b:81090** 81R10 (17B68, 81T40)

— All W_3 algebras from SL(3) Chern-Simons theory. *Phys. Lett. B* **279** (1992), *no.* 3-4, 308–318. (Summary) **93e:81036** 81R10 (17B68, 81T13)

— Remarks on the BRST cohomology for $c_M > 1$ matter coupled to "Liouville gravity". *Phys. Lett. B* **282** (1992), *no.* 3-4, 309–313. (Summary) **93d:81180** 81T70 (17B66)

Bilalov, B. T. Necessary and sufficient condition for the completeness of a system of functions. (Russian) *Differentsial'nye Uravneniya* **27** (1991), *no.* 1, 158–161, 183. (From the text) **93k:42006** 42A65

— Necessary and sufficient condition for completeness and minimality of a system of the form $\{A(t)\varphi^n(t); B(t)\overline{\varphi}^n(t)\}$. (Russian) *Dokl. Akad. Nauk* **322** (1992), *no.* 6, 1019–1021; *translation in Soviet Math. Dokl.* **45** (1992), *no.* 1, 211–214. (Yurii Lyubarskii) **93f:42022** 42A65

Bilardi, Gianfranco (*with* Kapur, Shyam) On uniform learnability of language families. *Inform. Process. Lett.* **44** (1992), *no.* 1, 35–38. (From the introduction) **93i:68109** 68Q45 (68T05)

Bilbao Arrese, Jesús Mario (*with* Díaz Madrigal, Santiago) Local completeness and series. *Simon Stevin* **65** (1991), *no.* 3-4, 331–335. (Cho Ho Chu) **93c:46008** 46A30 (46A03)

Bilchev, Svetoslav I. (*with* Velikova, Emiliya Angelova) On a certain triangle transformation and some of its applications. (English and Serbo-Croatian summaries) *Rad Jugoslav. Akad. Znan. Umjet. No.* 450 (1990), 69–76. (H. W. Guggenheimer) **93e:51030** 51M16 (51M25)

— (*with* Grammatikopoulos, Myron K.; Stavroulakis, I. P.) Oscillations of second-order neutral differential equations with deviating arguments. *Oscillation and dynamics in delay equations* (*San Francisco, CA*, 1991), 1–21, *Contemp. Math.*, 129, *Amer. Math. Soc., Providence, RI*, 1992. (Binggen Zhang) **93i:34127** 34K15 (34K40)

Bileka, B. D. (*with* Dyban, E. P.; Kabkov, V. Ja.) Local one-dimensional method for solving parabolic equations in thermal conductivity process modeling and boundary condition identification problems. (English summary) *Computational systems analysis* 1992 (*Berlin*, 1992), 411–415, *Elsevier, Amsterdam*, 1992. (*see* **93e:00021**) 65M06

Bilenko, V. I. Integro-approximational method for the modelling of certain class of nonlinear dynamic objects. *Mathematical modelling and scientific computations* (*Albena*, 1990), 145–158, *Bulgar. Acad. Sci., Sofia*, 1992. (*see* **93a:65004**) 65H10 (65M99, 65R20)

Biler, Piotr Time decay of solutions of semilinear strongly damped generalized wave equations. *Math. Methods Appl. Sci.* **14** (1991), *no.* 6, 427–443. (John C. Baez) **93c:35011** 35B40 (35L15, 35L30, 35L70)

— (*with* Dziubański, Jacek; Hebisch, Waldemar) Scattering of small solutions to generalized Benjamin-Bona-Mahony equation in several space dimensions. (English summary) *Comm. Partial Differential Equations* **17** (1992), *no.* 9-10, 1737–1758. (Alan Jeffrey) **93k:35209** 35Q35 (35L70)

— Long time behavior of solutions of the generalized Benjamin-Bona-Mahony equation in two space dimensions. *Differential Integral Equations* **5** (1992), *no.* 4, 891–901. (Summary) **93e:35085** 35Q35 (35B40, 76B15)

— Existence and asymptotics of solutions for a parabolic-elliptic system with nonlinear no-flux boundary conditions. *Nonlinear Anal.* **19** (1992), *no.* 12, 1121–1136. (Andreas Müller-Rettkowski) **93j:35116** 35M10 (35B40, 35D05)

Biles, Daniel C. Continuous dependence of nonmonotonic discontinuous differential equations. *Trans. Amer. Math. Soc.* **339** (1993), *no.* 2, 507–524. (Zvi Artstein) **93m:34011** 34A34

Bilge, Ayşe Hümeyra Integrability of seventh-order KdV-like evolution equations using formal symmetries and perturbations of conserved densities. (English summary) *J. Math. Phys.* **33** (1992), *no.* 9, 3025–3038. (Yun Bo Zeng) **93h:58066** 58F07 (35Q53)

Bilinski, Stanko *see* **Pavković, Boris J., 93c:01024**

Biliotti, Mauro (*with* Korchmáros, Gábor) Blocking sets which are preserved by transitive collineation groups. (English summary) *Forum Math.* **4** (1992), *no.* 6, 567–591. (Vikram Jha) **93m:51008** 51E21 (20B25, 51A35, 51A40)

— (*with* Micelli, Giuseppe) On the planar translation structures. (English summary) *Rend. Sem. Mat. Univ. Padova* **87** (1992), 1–17. (Norbert Knarr) **93j:51007** 51E26 (20D50, 51A15)

— (*with* Korchmáros, Gábor) Projective planes with nonabelian simple collineation group fixing an oval. *Arch. Math.* (*Basel*) **60** (1993), *no.* 3, 300–304. (T. G. Ostrom) **93j:51005** 51E15 (20B25, 51E21)

Billard, Lynne (*with* Mohamed, Fouad Y.) Estimation of the parameters of an EAR(p) process. *J. Time Ser. Anal.* **12** (1991), *no.* 3, 179–192. (B. G. Quinn) **93d:62157** 62M10

— (*with* Arghami, N. R.) A partial sequential t-test. *Sequential Anal.* **10** (1991), *no.* 3-4, 181–197. (Z. Govindarajulu) **93d:62145** 62L10

— (*with* Meshkani, M. R.) Empirical Bayes estimators for a finite Markov chain. *Biometrika* **79** (1992), *no.* 1, 185–193. (Marc Moore) **93d:62155** 62M05 (62C12)

— *see also* **Exploring the limits of bootstrap, 93f:62003**

Billeke G., J. (*with* Burgos Vega, Hernán; Wallace C., M.) Bifurcations of a weakly forced nonlinear cubic oscillator with quartic friction. (Spanish) *Proyecciones* **11** (1992), *no.* 1, 49–75. (Frank Hubbuch) **93h:34050** 34C15 (34C23, 34C29, 70K40)

Billera, Louis J. (*with* Sturmfels, Bernd) Fiber polytopes. *Ann. of Math.* (2) **135** (1992), *no.* 3, 527–549. (P. McMullen) **93e:52019** 52B05 (52B12, 52B35)

— (*with* Rose, Lauren L.) Modules of piecewise polynomials and their freeness. *Math. Z.* **209** (1992), *no.* 4, 485–497. (P. Schenzel) **93f:52017** 52B20 (13C13, 52B70, 65D07)

— (*with* Gel'fand, I. M.; Sturmfels, Bernd) Duality and minors of secondary polyhedra. (English summary) *J. Combin. Theory Ser. B* **57** (1993), *no.* 2, 258–268. (Margaret M. Bayer) **93m:52014** 52B05 (52B35, 52B40)

Billhardt, Bernd On inverse semigroups the closure of whose set of idempotents is a Clifford semigroup. *Semigroup Forum* **44** (1992), *no.* 3, 320–331. (P. Goralčík) **93b:20105** 20M18

— On a semigroup-theoretic generalization of the Kalužnin-Krasner theorem and normal extensions of inverse semigroups. *Semigroup Forum* **44** (1992), *no.* 3, 364–372. (P. Goralčík) **93b:20106** 20M18

— On a wreath product embedding and idempotent pure congruences on inverse semigroups. *Semigroup Forum* **45** (1992), *no.* 1, 45–54. (Francis Pastijn) **93c:20103** 20M18

— On a wreath product embedding for regular semigroups. *Semigroup Forum* **46** (1993), *no.* 1, 62–72. (Celia L. Adair) **93k:20092** 20M17 (20M19, 20M30)

Billiet, Yves (*with* Rekik, Mongi) Le coloriage des familles de positions équivalentes générales et spéciales dans les groupes d'espace bidimensionnels quadricolorés. (English summary) [The coloring of general and special sets of equivalent points in two-dimensional four-colored space groups] *Acta Cryst. Sect. A* **49** (1993), *no.* 1, 154–159. 20H15 (51F15, 82D25)

Billig, Yu. V. On the specialness of Lie algebras with identities of the sl_2 algebra. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* **1991**, *no.* 10, 15–18; *translation in Soviet Math.* (*Iz. VUZ*) **35** (1991), *no.* 10, 13–16. (From the text) **93g:17007** 17B01

Billingham, J. (*with* Needham, D. J.) The development of travelling waves in quadratic and cubic autocatalysis with unequal diffusion rates. II. An initial value problem with an immobilized or nearly immobilized autocatalyst. *Philos. Trans. Roy. Soc. London Ser. A* **336** (1991), *no.* 1644, 497–539. (P. Achuthan) **93a:80012** 80A32 (80–04, 92E20)

— (*with* Needham, D. J.) The development of travelling waves in quadratic and cubic autocatalysis with unequal diffusion rates. III. Large time development in quadratic autocatalysis. *Quart. Appl. Math.* **50** (1992), *no.* 2, 343–372. (P. Achuthan) **93c:92012** 92E20 (80A32)

Billings, S. A. (*with* Chen, Sheng[2]) Neural networks for nonlinear dynamic system modelling and identification. (English summary) *Internat. J. Control* **56** (1992), *no.* 2, 319–346. (Summary) **93f:93013** 93A30 (68T05, 92B20)

— (*with* Tsang, K. M.) Orthogonal estimation algorithm for complex number systems. *Internat. J. Systems Sci.* **23** (1992), *no.* 6, 1011–1018. (Summary) **93a:65029** 65E05

— (*with* Jones, G. N.) Orthogonal least-squares parameter estimation algorithms for nonlinear stochastic systems. (English summary) *Internat. J. Systems Sci.* **23** (1992),

no. 7, 1019–1032. 93E10 (93B40)
— (*with* Tsang, K. M.) A prediction-error estimation algorithm for the reconstruction of linear and nonlinear continuous time models from frequency response data. (English summary) *Internat. J. Systems Sci.* **23** (1992), *no.* 9, 1533–1538. 93E10 (93B40)
— (*with* Tsang, K. M.) Identification of multi-class linear and nonlinear systems. (English summary) *Internat. J. Systems Sci.* **23** (1992), *no.* 10, 1603–1636. 93B30 (93C05, 93C10)
Billington, Elizabeth J. (*with* Gower, Rebecca A. H.; Oates-Williams, Sheila; Donovan, Diane) The quasigroup variety arising from a 2-perfect 6-cycle system of order 13. *J. Combin. Math. Combin. Comput.* **10** (1991), 119–128. (Charles C. Lindner) **93b:05027** 05B30 (20N05)
— (*with* Hoffman, Dean G.) Pairs of simple balanced ternary designs with prescribed numbers of triples in common. *Australas. J. Combin.* **5** (1992), 59–71. (Summary) **93a:05015** 05B05
— (*with* Adams, Peter; Lindner, Charles C.) The spectrum for 3-perfect 9-cycle systems. *Australas. J. Combin.* **5** (1992), 103–108. (Summary) **93a:05076** 05C38 (05C70)
— (*with* Lindner, Charles C.) The spectrum for lambda-fold 2-perfect 6-cycle systems. *European J. Combin.* **13** (1992), *no.* 1, 5–14. (Ke Min Zhang) **93b:05128** 05C70 (05B07)
— (*with* Adams, Peter) Completing some spectra for 2-perfect cycle systems. (English summary) *Australas. J. Combin.* **7** (1993), 175–187. (Summary) **93k:05123** 05C70 (05B30)
— (*with* Kreher, Donald L.) Yet another characterization of the Petersen graph. *Bull. Inst. Combin. Appl.* **7** (1993), 73–77. 05C75
Billington, Nicholas Growth series of central amalgamations. (English summary) *Comm. Algebra* **21** (1993), *no.* 2, 371–397. (Victor M. Petrogradsky) **93k:20041** 20E06 (20F10)
Billionnet, Alain (*with* Costa, M.-C.; Sutter, Alain) An efficient algorithm for a task allocation problem. (English summary) *J. Assoc. Comput. Mach.* **39** (1992), *no.* 3, 502–518. (Summary) **93i:68026** 68M20
— (*with* Sutter, Alain) Persistency in quadratic 0-1 optimization. *Math. Programming* **54** (1992), *no.* 1, *Ser. A*, 115–119. (Béla Vizvári) **93b:90048** 90C09
— (*with* Sutter, Alain) An efficient algorithm for the 3-satisfiability problem. (English summary) *Oper. Res. Lett.* **12** (1992), *no.* 1, 29–36. (Summary) **93f:68039** 68Q25 (03B05, 03D15)
— (*with* Elloumi, S.) Placement de tâches dans un système distribué et dualité lagrangienne. (English summary) [Task allocation in a distributed system and Lagrangian duality] *RAIRO Rech. Opér.* **26** (1992), *no.* 1, 83–97. (S. Rudeanu) **93b:90047** 90C09
Billoire, A. Simulations Monte Carlo en physique théorique. (French summary) [Monte Carlo simulations in theoretical physics] *Probabilités numériques*, 145–162, *Collect. Didact.*, 10, *INRIA, Rocquencourt*, 1992. (*see* **93k:65002**) 65C20 (81T80)
Billot, Antoine (*with* Thisse, Jacques-François) Claude Ponsard (1927–1990): a biographical essay. *Fuzzy Sets and Systems* **49** (1992), *no.* 1, 3–8. (Editors) **93g:01059** 01A70 (90–03)
— From fuzzy set theory to nonadditive probabilities: how have economists reacted? (English summary) *Fuzzy Sets and Systems* **49** (1992), *no.* 1, 75–90. 90A43 (01A60, 04A72)
Bilobram, L. V. (*with* Zabolotskii, N. V.) Sufficient conditions for the slow growth of convex functions. (Ukrainian. Russian summary) *Visnik L'viv. Derzh. Univ. Ser. Mekh.-Mat. No.* 30 (1988), 25–27, 74. 26A51
Bilodeau, Martin Fourier smoother and additive models. (English and French summaries) *Canad. J. Statist.* **20** (1992), *no.* 3, 257–269. (Jacek Koronacki) **93k:62082** 62G05 (65D10)
— (*with* Srivastava, M. S.) Estimation of the eigenvalues of $\Sigma_1\Sigma_2^{-1}$. *J. Multivariate Anal.* **41** (1992), *no.* 1, 1–13. (Dipak K. Dey) **93b:62082** 62H12 (62C20)
Bilonoga, D. M. A study of (Δ, C)-equivalence of some numerical matrices. (Russian. Russian summary) *Mat. Metody i Fiz.-Mekh. Polya No.* 34 (1991), 25–29. (Anna Lee) **93m:15015** 15A21 (15A22)
Bilotskii, N. N. On Fatou's theorem. (Russian) *Teor. Funktsii Funktsional. Anal. i Prilozhen. No.* 55 (1991), 124–130. (From the text) **93m:30003a** 30B10 (40G99, 41A58)
— Concerning Fatou's theorem. *J. Soviet Math.* **59** (1992), *no.* 1, 674–678. (From the text) **93m:30003b** 30B10 (40G99, 41A58)
Bilotti-Aliaga, Martha Use of a side effect as a covariate in a problem of sequential analysis. (English summary) *J. Statist. Plann. Inference* **32** (1992), *no.* 3, 311–323. (Rasul A. Khan) **93k:62164** 62L10
Bilyalov, R. F. Conservation laws for spinor fields on a Riemannian space-time manifold. (Russian. English and Russian summaries) *Teoret. Mat. Fiz.* **90** (1992), *no.* 3, 369–379; *translation in Theoret. and Math. Phys.* **90** (1992), *no.* 3, 252–259. (Tomasz Przebinda) **93f:58252** 58G35 (53C50, 83C60)
Bilyeu, Russell G. (*with* Bator, Elizabeth M.; Lewis, Paul W.) The Vitali integral convergence theorem and uniform absolute continuity. *Canad. J. Math.* **43** (1991), *no.* 5, 939–947. (Constantin Dumitrescu) **93b:28014** 28A33 (46E40, 46G05, 58C20)
Bimenov, D. A. (*with* Kunitsyn, A. L.) Stability of a second-order nonlinear quasi-autonomous system. (Russian) *Problems in the mechanics of controllable motion (Russian)*, 65–72, *Perm. Gos. Univ., Perm'*, 1990. (From the text) **93a:34059** 34D05
Bimonte, G. (*with* Balachandran, A. P.; Gupta, K. S.; Stern, Allen Bruce) Conformal edge currents in Chern-Simons theories. (English summary) *Internat. J. Modern Phys. A* **7** (1992), *no.* 19, 4655–4670. (Pablo M. Llatas) **93i:81130** 81T13 (81R10)
— (*with* Balachandran, A. P.; Gupta, K. S.; Stern, Allen Bruce) The Chern-Simons source as a conformal family and its vertex operators. (English summary) *Internat. J. Modern Phys. A* **7** (1992), *no.* 23, 5855–5876. 81T40
— (*with* Salomonson, P.; Simoni, A.; Stern, Allen Bruce) Poisson bracket algebra for chiral group elements in the WZNW model. (English summary) *Internat. J. Modern Phys. A* **7** (1992), *no.* 24, 6159–6174. (Anni Koubek) **93k:81192** 81T40 (81R10)
Bincer, A. M. (*with* Biedenharn, L. C.; Lohe, M. A.; Louck, James D.) New relations and identities for generalized hypergeometric coefficients. *Adv. in Appl. Math.* **13** (1992), *no.* 1, 62–121. (Robert A. Gustafson) **93g:33009** 33C50 (22E70, 33C80)
Binder, A. On the numerical treatment of bulging of continuously cast slabs. (English and German summaries) *Computing* **49** (1992), *no.* 3, 265–278. 73E50 (73V20)
Binder, Christa Hilda Geiringer: ihre ersten Jahre in Amerika. [Hilda Geiringer: her first years in America] *Amphora*, 25–53, *Birkhäuser, Basel*, 1992. (D. J. Struik) **93k:01062** 01A70 (01A80)
Binder, Michael W. Irreducible induced representations of ICC-groups. *Math. Ann.* **294** (1992), *no.* 1, 37–47. (Nobuaki Obata) **93j:22005** 22D30 (20C32, 22D20)
— On induced representations of discrete groups. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 1, 301–309. (Nobuaki Obata) **93f:22005** 22D30 (22D10)
Binder, P. M. (*with* Twining, C. J.) Enumeration of limit cycles in noncylindrical cellular automata. *J. Statist. Phys.* **66** (1992), *no.* 1-2, 385–401. (Summary) **93a:58099** 58F08 (58F20)
— Limit cycles in a quadratic discrete iteration. *Phys. D* **57** (1992), *no.* 1-2, 31–38. (Summary) **93c:58099** 58F08
Binder, Zdenek (*with* Sidaoui, Assann; Perret, René) Double-loop-iterative-tracking-algorithm-based direct coordination for hierarchical steady-state control of interconnected systems. (English summary) *Internat. J. Systems Sci.* **23** (1992), *no.* 8, 1379–1385. 93A13
Binderman, Zbigniew Initial operators for generalized invertible operators. *Comment. Math. Prace Mat.* **31** (1991), 25–37. (M. Z. Nashed) **93d:47004** 47A05 (47A50, 47B99, 47G10)
— On some properties of complex R-shifts. *Demonstratio Math.* **25** (1992), *no.* 1-2, 207–217. (M. Z. Nashed) **93g:47003** 47A05 (47A50)
Binding, P. A. Indefinite Sturm-Liouville theory via examples of two-parameter eigencurves. *Ordinary and partial differential equations, Vol. III (Dundee*, 1990), 38–49, *Pitman Res. Notes Math. Ser.*, 254, *Longman Sci. Tech., Harlow*, 1991. (Björn Textorius) **93g:34041** 34B24 (34L05, 47B50, 47E05, 47N20)
— More on cross products. *Amer. Math. Monthly* **98** (1991), *no.* 9, 850–851. (Anna Lee) **93b:15015** 15A24
— (*with* Herzog, Walter) Predictions of antagonistic muscular activity using nonlinear optimization. (English summary) *Math. Biosci.* **111** (1992), *no.* 2, 217–229. 92C30 (90C90)
— (*with* Volkmer, Hans) On a problem of R. G. D. Richardson. (English summary) *Proc. Edinburgh Math. Soc.* (2) **35** (1992), *no.* 3, 337–348. (Lawrence Turyn) **93k:34181** 34L99 (34B24, 34L05, 47A13, 47N20)
— (*with* Browne, Patrick J.; Seddighi, K.) Two parameter asymptotic spectra. *Results Math.* **21** (1992), *no.* 1-2, 12–23. (Lawrence Turyn) **93b:47040** 47A75 (34L20, 47A10, 47A70, 47B15)
— (*with* Volkmer, Hans) On the geometry of degree conditions for multiparameter oscillation theorems. (English summary) *Differential Integral Equations* **6** (1993), *no.* 2, 277–290. (Thomas Bartsch) **93m:34036** 34B24 (34C10, 47A75, 49R05)
Bingener, Jürgen Ein Spaltungssatz für Čech-Komplexe. [A splitting theorem for Čech complexes] Analyse complexe (Bucharest, 1989). *Rev. Roumaine Math. Pures Appl.* **36** (1991), *no.* 5-6, 213–223. (Vasile Brînzănescu) **93c:32016** 32C35 (32H35)
Bingham, Christopher (*with* Chang, Theodore; Richards, Donald St. P.) Approximating the matrix Fisher and Bingham distributions: applications to spherical regression and Procrustes analysis. *J. Multivariate Anal.* **41** (1992), *no.* 2, 314–337. (A. L. Rukhin) **93f:62078** 62H10 (62E20, 86A60)
Bingham, Michael S. An approximate martingale convergence theorem on locally compact abelian groups. (English summary) *Probability measures on groups, X (Oberwolfach*, 1990), 11–17, *Plenum, New York*, 1991. (N. Sarapa) **93k:60020** 60B15 (60G48)
— Approximate martingale characterization of Wiener processes on locally compact abelian groups. *Math. Z.* **209** (1992), *no.* 4, 619–629. (Arnold Janssen) **93d:60013** 60B15 (60G48, 60J30)
— Convergence of approximate martingale arrays to mixtures of infinitely divisible distributions in locally compact abelian groups. (English summary) *J. Theoret. Probab.* **6** (1993), *no.* 1, 123–152. (Wilfried Hazod) **93m:60016** 60B10 (60B15, 60E07, 60G48)
Bingham, N. H. (*with* Rogers, L. C. G.) Summability methods and almost-sure convergence. *Almost everywhere convergence, II (Evanston, IL*, 1989), 69–83, *Academic Press, Boston, MA*, 1991. (Ulrich Stadtmüller) **93b:60062** 60F15 (60J65)
— (*with* Biggins, J. D.) Near-constancy phenomena in branching processes. *Math. Proc. Cambridge Philos. Soc.* **110** (1991), *no.* 3, 545–558. (Martin I. Goldstein) **93d:60136** 60J80
— The work of Alfréd Rényi: some aspects in probability and number theory. *Studia Sci. Math. Hungar.* **26** (1991), *no.* 2-3, 165–183. (U. Krengel) **93k:01063** 01A70 (01A60, 60–03)
— Obituary: G. E. H. Reuter. *J. Appl. Probab.* **29** (1992), *no.* 3, 754–757. (Editors) **93g:01060** 01A70
Bingham, Stuart Box-counting with base b^n numerals. *Phys. Lett. A* **163** (1992), *no.* 5-6, 419–424. (Summary) **93c:58061** 58F03 (11Z50, 58F13)
Bingulac, S. (*with* Cooper, D. L.) Identification of first-order hold continuous-time systems. (English summary) *Identification and system parameter estimation* 1991, *Vol.* 1,2 (*Budapest*, 1991), 293–298, *IFAC Sympos. Ser.*, 3, *Pergamon, Oxford*, 1992. (*see* **93b:93009**) 93B30 (93C60)
— (*with* VanLandingham, H. F.) A unified approach to the discretization and "continualization" of MIMO systems. (English summary) *Control Theory Adv. Tech.* **8** (1992), *no.* 3, 621–646. (A. Halanay) **93j:93088** 93C57 (93B40, 93B51)
Bini, Dario (*with* Di Benedetto, Fabio) An observation on certain spectral properties of Toeplitz matrices. (English summary) *Calcolo* **28** (1991), *no.* 1-2, 37–43 (1992). (M. Tismenetsky) **93h:47026** 47B35 (47A75)
— (*with* Pan, Victor) Practical improvement of the divide-and-conquer eigenvalue algorithms. (German summary) *Computing* **48** (1992), *no.* 1, 109–123. (Summary) **93a:65047** 65F15
— (*with* Gemignani, Luca) On the complexity of polynomial zeros. *SIAM J. Comput.* **21** (1992), *no.* 4, 781–799. (Summary) **93c:65066** 65H05 (65Y20, 68Q25)
Bin'ko, I. F. (*with* Kurochkin, G. F.; Nevinitsyn, È. L.; Reztsov, V. F.; Shevchuk, V. I.) Peculiarities of the propagation of electromagnetic waves in inhomogeneous media with nonideal conductivity. (Russian. English and Russian summaries) *Dokl. Akad. Nauk Ukrainy* **1992**, *no.* 1, 65–69, 178. 78A40
Binmore, Kenneth G. (*with* Shin, Hyun Song) Algorithmic knowledge and game theory. *Knowledge, belief, and strategic interaction (Castiglioncello*, 1989), 141–154, *Cambridge Stud. Probab. Induc. Decis. Theory, Cambridge Univ. Press, Cambridge*, 1992. (*see* **93i:90006**) 03B45 (90D35)
— (*with* Samuelson, Larry) Evolutionary stability in repeated games played by finite automata. (English summary) *J. Econom. Theory* **57** (1992), *no.* 2, 278–305. (Sylvain Sorin) **93g:90097** 90D20 (90D10)
Binning, P. (*with* Celia, M. A.) Multiphase models of unsaturated flow: approaches to the governing equations and numerical methods. (English summary) *Computational methods*

in water resources, IX, Vol. 2 (Denver, CO, 1992), 257–272, Comput. Mech., Southampton, 1992. (see **93g:76003**) 76T05 (76S05, 86–08)

Binz, E. Global differential geometric methods in elasticity and hydrodynamics. (English summary) *Differential geometry, group representations, and quantization, 3–29, Lecture Notes in Phys., 379, Springer, Berlin, 1991.* (Richard Montgomery) **93f:58057** 58E50 (73B99, 76A99, 76D05)

— Symmetry, constitutive laws of bounded smoothly deformable media and Neumann problems. *Symmetries in science, V (Lochau, 1990), 31–65, Plenum, New York, 1991.* (Themistocles M. Rassias) **93g:73004** 73B05 (58E50, 73B10)

Biquard, Olivier Fibrés paraboliques stables et connexions singulières plates. (English summary) [Stable parabolic fiber bundles and flat singular connections] *Bull. Soc. Math. France* **119** (1991), *no.* 2, 231–257. (N. J. Hitchin) **93a:58039** 58E15 (14D20, 32G13, 58D27)

— Prolongement d'un fibre holomorphe hermitien à courbure L^p sur une courbe ouverte. (English summary) [Extension of a Hermitian holomorphic bundle with L^p-curvature on an open curve] *Internat. J. Math.* **3** (1992), *no.* 4, 441–453. (Michael Thaddeus) **93k:32066** 32L05 (32L99)

eriksson-Bique, Sirkka-Liisa A. *see* **Eriksson-Bique, Sirkka-Liisa A.**

Biradar, R. S. (*with* Singh, Housila Prasad) A class of estimators for finite population correlation coefficient using auxiliary information. (English and Hindi summaries) *J. Indian Soc. Agricultural Statist.* **44** (1992), *no.* 3, 271–275, v. 62D05

Birch, B. J. Hecke actions on classes of ternary quadratic forms. *Computational number theory (Debrecen, 1989), 191–212, de Gruyter, Berlin, 1991.* (Rainer Schulze-Pillot) **93i:11047** 11E45 (11E20, 11F11, 11G05, 11Y35)

Bird, Gregory J. (*with* Loxton, J. H.; Khoo, David S. P.; Seberry, Jennifer) A cubic RSA code equivalent to factorization. *J. Cryptology* **5** (1992), *no.* 2, 139–150. (Summary) **93c:94004** 94A60

Bird, Richard S. Functional pearls: two greedy algorithms. *J. Funct. Programming* **2** (1992), *no.* 2, 237–244. 68Q60

— The smallest upravel. *Sci. Comput. Programming* **18** (1992), *no.* 3, 281–292. (Lajos Rónyai) **93f:68075** 68R15

Birge, John R. Stochastic programming: optimizing the uncertain. (English summary) *Optimization, Vol. 1, 2 (Singapore, 1992), 613–632, World Sci. Publishing, River Edge, NJ, 1992. (see* **93d:90005**) 90C15

— (*with* Freund, Robert M.; Vanderbei, Robert J.) Prior reduced fill-in in solving equations in interior point algorithms. (English summary) *Oper. Res. Lett.* **11** (1992), *no.* 4, 195–198. (Summary) **93e:90033** 90C05 (65K05)

— (*with* Ho, James K.) Optimal flows in stochastic dynamic networks with congestion. (English summary) *Oper. Res.* **41** (1993), *no.* 1, 203–216. (Summary) **93i:90044** 90B15

Birget, Jean-Camille The synthesis theorem. *Monoids and semigroups with applications (Berkeley, CA, 1989), 393–402, World Sci. Publishing, River Edge, NJ, 1991.* (Karsten Henckell) **93a:20093** 20M10

— Intersection and union of regular languages and state complexity. *Inform. Process. Lett.* **43** (1992), *no.* 4, 185–190. (From the text) **93k:68056** 68Q45 (68Q70)

— Positional simulation of two-way automata: proof of a conjecture of R. Kannan and generalizations. (English summary) Twenty-first Symposium on the Theory of Computing (Seattle, WA, 1989). *J. Comput. System Sci.* **45** (1992), *no.* 2, 154–179. (Howard Straubing) **93j:68141** 68Q70

Birk, Yitzhak (*with* Lotspiech, Jeffrey B.) On finding nonintersecting straightline connections of grid points to the boundary. (English summary) *J. Algorithms* **13** (1992), *no.* 4, 636–656. (Summary) **93h:68141** 68U10 (68Q35, 68R10)

Birkel, Thomas Laws of large numbers under dependence assumptions. (English summary) *Statist. Probab. Lett.* **14** (1992), *no.* 5, 355–362. (Eugeniusz Rychlik) **93k:60070** 60F15

Birkenhake, Ch. (*with* Lange, Herbert) Norm-endomorphisms of abelian subvarieties. *Classification of irregular varieties (Trento, 1990), 21–32, Lecture Notes in Math., 1515, Springer, Berlin, 1992.* (Wenchen Chi) **93g:14051** 14K05

Birkenmeier, Gary F. Decompositions of Baer-like rings. *Acta Math. Hungar.* **59** (1992), *no.* 3-4, 319–326. (S. S. Page) **93e:16019** 16E50 (16D70)

— (*with* Heatherly, Henry; Kepka, Tomáš) Rings with left self-distributive multiplication. *Acta Math. Hungar.* **60** (1992), *no.* 1-2, 107–114. (N. Divinsky) **93i:16044** 16U99

— (*with* Heatherly, Henry) Minimal ideals in near-rings and localized distributivity conditions. (English summary) *J. Austral. Math. Soc. Ser. A* **54** (1993), *no.* 2, 156–168. (Steve Ligh) **93k:16080** 16Y30

— (*with* Davis, C. Brad; Reeves, Kevin J.; Xiao, Sihai) Is a semidirect product of groups necessarily a group? *Proc. Amer. Math. Soc.* **118** (1993), *no.* 3, 689–692. (Orin Chein) **93i:20084** 20N05 (20E22)

Birkhoff, Garrett *see* **Festschrift: Birkhoff, Garrett, 93c:65004**

Birman, Alexander (*with* Kogan, Ya. A.) Asymptotic evaluation of closed queueing networks with many stations. (English summary) *Comm. Statist. Stochastic Models* **8** (1992), *no.* 3, 543–563. (Summary) **93e:60180** 60K25

Birman, Joan S. The work of Vaughan F. R. Jones. *Proceedings of the International Congress of Mathematicians, Vol. I, II (Kyoto, 1990), 9–18, Math. Soc. Japan, Tokyo, 1991.* (From the introduction) **93b:01035** 01A65 (01A70, 46–02, 57–02)

— A progress report on the study of links via closed braids. (English summary) Mathematische Wissenschaften gestern und heute. 300 Jahre Mathematische Gesellschaft in Hamburg, Teil 4 (Hamburg, 1990). *Mitt. Math. Ges. Hamburg* **12** (1991), *no.* 4, 869–895 (1992). (Yongwu Rong) **93f:57008** 57M25 (20F36)

— (*with* Menasco, William W.) A calculus on links in the 3-sphere. (English summary) *Knots 90 (Osaka, 1990), 625–631, de Gruyter, Berlin, 1992.* (Lorenzo Traldi) **93h:57008** 57M25

— On Shafarevich's essay *Russophobia*. Letter to the editor: "Listening to Igor Rostislavovich Shafarevich" [Math. Intelligencer **11** (1989), no. 2, 16–28; MR 90f:01057] by S. Zdravkovska. With a reply by Sheldon Axler. *Math. Intelligencer* **14** (1992), *no.* 2, 3–4. (Douglas E. Cameron) **93f:01029** 01A80

— (*with* Menasco, William W.) Studying links via closed braids. I. A finiteness theorem. *Pacific J. Math.* **154** (1992), *no.* 1, 17–36. (Mark E. Kidwell) **93f:57009** 57M25

— (*with* Menasco, William W.) Studying links via closed braids. VI. A nonfiniteness theorem. (English summary) *Pacific J. Math.* **156** (1992), *no.* 2, 265–285. (Hugh Reynolds Morton) **93m:57005** 57M25 (20F36)

Birman, Joseph L. Many-body Green functions of q-deformed oscillators. *Phys. Lett. A* **167** (1992), *no.* 4, 363–366. (Summary) **93c:81087** 81S05 (81V70)

Birman, M. Sh. (*with* Solomyak, M. Z.) ★ Spectral theory of selfadjoint operators in Hilbert space. Translated from the 1980 Russian original by S. Khrushchëv and V. Peller. Mathematics and its Applications (Soviet Series). *D. Reidel Publishing Co., Dordrecht, 1987.* xv+301 *pp. ISBN* 90-277-2179-3 (Editors) **93g:47001** 47–01 (47A10, 47B25)

— (*with* Solomyak, M. Z.) Schrödinger operator. Estimates for number of bound states as function-theoretical problem. *Spectral theory of operators (Novgorod, 1989), 1–54, Amer. Math. Soc. Transl. Ser. 2, 150, Amer. Math. Soc., Providence, RI, 1992.* (Hideo Tamura) **93j:35120** 35P15 (35J10, 46E35, 47A10, 47F05, 47N50)

Birmingham, Danny (*with* Gibbs, Richard L.; Mokhtari, Soussan) A Kallosh theorem for BF-type topological field theory. *Phys. Lett. B* **273** (1991), *no.* 1-2, 67–73. (Matthias Blau) **93a:81123** 81T13

— (*with* Blau, Matthias; Rakowski, Mark; Thompson, George) Topological field theory. *Phys. Rep.* **209** (1991), *no.* 4-5, 129–340. (Bogusław Broda) **93c:81003** 81–02 (57–02, 57M99, 57R99, 58D27, 58D29, 81T13, 81T40)

— (*with* Rakowski, Mark) A field-theoretic realization of a universal bundle for gravity. *Phys. Lett. B* **275** (1992), *no.* 3-4, 289–294. (Poul H. Damgaard) **93a:81196** 81T70 (81T40)

— (*with* Rakowski, Mark) Equivariance in topological gravity. (English summary) *Phys. Lett. B* **289** (1992), *no.* 3-4, 271–277. (Summary) **93h:81107** 81T40 (58D27, 58D29)

Birmiwal, Kailash (*with* Papantoni-Kazakos, P.; Kazakos, Dimitri) Predictive analog-to-digital conversion for resistance to data outliers. *Inform. and Comput.* **98** (1992), *no.* 1, 56–98. (Summary) **93a:94019** 94A29

Birnir, Björn (*with* Grauer, Rainer) The center manifold and bifurcations of damped and driven sine-Gordon breathers. *Phys. D* **56** (1992), *no.* 2-3, 165–184. (Summary) **93c:35139** 35Q53 (58F39)

Biró, Balázs Non-finite-axiomatizability results in algebraic logic. *J. Symbolic Logic* **57** (1992), *no.* 3, 832–843. (D. Monk) **93k:03062** 03G15 (03C05, 03C20)

Bíró, M. (*with* Hujter, M.; Tuza, Zsolt) Precoloring extension. I. Interval graphs. Special volume to mark the centennial of Julius Petersen's "Die Theorie der regulären Graphs", Part I. *Discrete Math.* **100** (1992), *no.* 1-3, 267–279. (Ruth Bari) **93d:05049** 05C15 (68Q25, 68R10)

Biroli, Marco (*with* Mosco, Umberto) Wiener criterion for degenerate elliptic obstacle problem. (Italian summary) *Atti Accad. Naz. Lincei Rend. Cl. Sci. Fis. Mat. Natur.* (8) **83** (1989), 63–67 (1990). (Gianfranco Bottaro) **93c:49010** 49J45 (35J85)

— (*with* Mosco, Umberto) Wiener criterion and potential estimates for obstacle problems relative to degenerate elliptic operators. (Italian summary) *Ann. Mat. Pura Appl.* (4) **159** (1991), 255–281. (Tero Kilpeläinen) **93a:35056** 35J70

— (*with* Mosco, Umberto) Formes de Dirichlet et estimations structurelles dans les milieux discontinus. (English summary) [Dirichlet forms and structural estimates in discontinuous media] *C. R. Acad. Sci. Paris Sér. I Math.* **313** (1991), *no.* 9, 593–598. (P. D. Panagiotopoulos) **93c:35028** 35J20 (35B05, 73C10)

— Wiener estimates at boundary points for parabolic degenerate equations. (Italian summary) *Rend. Accad. Naz. Sci. XL Mem. Mat.* (5) **15** (1991), 1–17. (Ying Guo Lei) **93c:35084** 35K65 (35B65)

— (*with* Mosco, Umberto) Discontinuous media and Dirichlet forms of diffusion type. (English summary) *Developments in partial differential equations and applications to mathematical physics (Ferrara, 1991), 15–25, Plenum, New York, 1992. (see* **93j:35004**) 31C25 (35J15, 73B40, 73C99)

— Local properties for local solutions relative to Dirichlet forms. (English summary) *Differential equations (Plovdiv, 1991), 43–57, World Sci. Publishing, River Edge, NJ, 1992.* (Summary) **93i:35028** 35B65 (31C25, 35J70)

— Local properties of solutions to equations involving square Hörmander's operators. *Potential theory (Nagoya, 1990), 147–154, de Gruyter, Berlin, 1992.* (Manfred W. Kracht) **93f:35032** 35D10

Birta, L. G. (*with* Yang, M.; Abou-Rabia, O.) An adaptive approach to stepsize control in ODE solvers. (English summary) *Math. Comput. Simulation* **35** (1993), *no.* 1, 63–78. (Summary) **93h:65088** 65L05 (65Y20)

białynicki-Birula, Andrzej *see* **Białynicki-Birula, Andrzej**

Biryukov, V. F. ★ Научные и терминологические аспекты теорий корректности, грубости и примыкающих к ним вопросов. (Russian. Russian summary) [Scientific and terminological aspects of the theories of well-posedness and robustness and of related problems] Препринт [Preprint], 91-1. *Akad. Nauk Ukrain. SSR, Inst. Kibernet., Kiev, 1991.* 21 *pp.* (Introduction) **93g:34099** 34H05 (34C99, 34D30, 93C70)

Bisbas, A. (*with* Karanikas, C.) On the entropy of certain stochastic measures. (English summary) *Probabilistic and stochastic methods in analysis, with applications (Il Ciocco, 1991), 663–668, NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci., 372, Kluwer Acad. Publ., Dordrecht, 1992.* (Summary) **93f:28007** 28A80 (28D20, 60J10, 60J50)

Biscari, P. (*with* Parisi, Giorgio) Finite-volume corrections to the mean-field solution of the SK model. (English summary) *J. Phys. A* **25** (1992), *no.* 18, 4787–4797. (Summary) **93h:82077** 82D30

Bisch, Dietmar Entropy of groups and subfactors. *J. Funct. Anal.* **103** (1992), *no.* 1, 190–208. (Claire Anantharaman-Delaroche) **93e:46076** 46L55 (28D20, 46L37, 60B15)

Bischof, Christian H. (*with* Tang, Ping Tak Peter) Generalizing incremental condition estimation. (English summary) *J. Numer. Linear Algebra Appl.* **1** (1992), *no.* 2, 149–163. (Summary) **93e:65068** 65F30

— (*with* Hansen, Per Christian) A block algorithm for computing rank-revealing QR factorizations. (English summary) *Numer. Algorithms* **2** (1992), *no.* 3-4, 371–391. (Summary) **93h:65054** 65F25 (65F20)

— (*with* Shroff, Gautam M.) Adaptive condition estimation for rank-one updates of QR factorizations. (English summary) *SIAM J. Matrix Anal. Appl.* **13** (1992), *no.* 4, 1264–1278. (Summary) **93e:65067** 65F25 (15A12, 15A23, 65F35)

— (*with* Pan, Ching-Tsuan; Tang, Ping Tak Peter) A Cholesky up- and downdating algorithm for systolic and SIMD architectures. (English summary) *SIAM J. Sci. Comput.* **14** (1993), *no.* 3, 670–676. 65F05 (68Q10)

Bischoff, Dieter Ernst (*with* Mahnken, R.; Stein, Erwin) A stabilization procedure by line-search computation for first order approximation strategies in structural optimization. (English summary) *Internat. J. Numer. Methods Engrg.* **35** (1992), *no.* 5, 1015–1029. (Summary) **93f:73074** 73K40 (73V20)

Bischoff, Wolfgang On exact D-optimal designs for regression models with correlated observations. (English summary) *Ann. Inst. Statist. Math.* **44** (1992), *no.* 2, 229–238. (William I. Notz) **93h:62127** 62K05 (62J05)

— (*with* Fieger, W.) Minimax estimators and Γ-minimax estimators for a bounded normal mean under the loss $l_p(\theta, d) = |\theta - d|^p$. *Metrika* **39** (1992), *no.* 3-4, 185–197. (Lionel Weiss) **93g:62016** 62C20 (62H12)

— Minimax and Γ-minimax estimation for functions of the bounded parameter of a scale parameter family under "L_p-loss". *Statist. Decisions* **10** (1992), *no.* 1-2, 45–61. (Khursheed Alam) **93f:62008** 62C20 (62F10)

Bishaev, A. M. (*with* Rykov, V. A.) Variational principles for the linear Boltzmann equation. (Russian. Russian summary) *Zh. Vychisl. Mat. i Mat. Fiz.* **32** (1992), *no.* 11, 1803–1813; *translation in Comput. Math. Math. Phys.* **32** (1992), *no.* 11, 1629–1639 (1993). (Summary) **93j:49046** 49S05 (76M30, 76P05, 82C40)

Bishop, Alan J. *see* **Freudenthal, Hans, 93j:00001**

Bishop, Alan R. (*with* Baez, John C.; Dandoloff, Rossen) On the Hopf term in a two-dimensional σ model for antiferromagnets. *Modern Phys. Lett. B* **5** (1991), *no.* 30, 2003–2005. (Ioan Bâldea) **93f:82017** 82B21 (82D40)

— (*with* Dandoloff, Rossen; Balakrishnan, Radha) Two-level systems: space curve formalism, Berry's phase and Gauss-Bonnet theorem. (English summary) *J. Phys. A* **25** (1992), *no.* 18, L1105–L1110. (Shinichi Tajima) **93i:81048** 81Q99

Bishop, Christopher J. A characterization of Poissonian domains. *Ark. Mat.* **29** (1991), *no.* 1, 1–24. (J. C. Taylor) **93a:31011** 31B20 (30C85, 31A15)

— Some questions concerning harmonic measure. *Partial differential equations with minimal smoothness and applications* (*Chicago, IL*, 1990), 89–97, *IMA Vol. Math. Appl.*, 42, *Springer, New York*, 1992. (T. J. Lyons) **93f:30023** 30C85 (30C35, 30C62, 31A15)

— Brownian motion in Denjoy domains. *Ann. Probab.* **20** (1992), *no.* 2, 631–651. (Krzysztof Burdzy) **93a:60125** 60J65 (31A20, 60G17)

Bishop, Errett *see* **Kushner, B. A., 93c:01045**

Bishop, Garner C. (*with* Smith, Judy) Scattering from a nondifferentiable periodic surface roughness: Neumann boundary conditions. (English summary) *Computational acoustics, Vol.* 1 (*Cambridge, MA*, 1991), 341–357, *North-Holland, Amsterdam*, 1993. (*see* **93j:76001**) 76Q05

Bishop, Richard L. (*with* Alexander, Stephanie B.; Berg, I. David) Geometric curvature bounds in Riemannian manifolds with boundary. *Trans. Amer. Math. Soc.* **339** (1993), *no.* 2, 703–716. (I. G. Nikolaev) **93m:53034** 53C21 (53C20)

Bishop, S. R. (*with* Koliopulos, P. K.; Stefanou, G. D.) Effect of variation of input bandwidth on the response of hardening Duffing oscillators. (English summary) *Comput. Mech.* **9** (1992), *no.* 6, 405–415. (Summary) **93f:70028** 70L05 (34C15, 34F05, 70K40)

— (*with* Foale, S.) Dynamical complexities of forced impacting systems. *Philos. Trans. Roy. Soc. London Ser. A* **338** (1992), *no.* 1651, 547–556. (Martin Kummer) **93i:70023** 70K50 (34C15, 58F13, 70K40)

Biskup, Joachim (*with* Convent, Bernhard) Relational chase procedures interpreted as resolution with paramodulation. *Fund. Inform.* **15** (1991), *no.* 2, 123–138. (Summary) **93a:68029** 68P15 (03B35)

Bismut, Jean-Michel (*with* Cheeger, Jeff) Remarks on the index theorem for families of Dirac operators on manifolds with boundary. *Differential geometry*, 59–83, *Pitman Monographs Surveys Pure Appl. Math.*, 52, *Longman Sci. Tech., Harlow*, 1991. (Jürgen Eichhorn) **93k:58211** 58G10

— (*with* Zhang, Wei Ping[1]) Métriques de Reidemeister et métriques de Ray-Singer sur le déterminant de la cohomologie d'un fibré plat: une extension d'un résultat de Cheeger et Müller. (English summary) [Reidemeister metrics and Ray-Singer metrics on the determinant of the cohomology of a flat bundle: an extension of a result of Cheeger and Müller] *C. R. Acad. Sci. Paris Sér. I Math.* **313** (1991), *no.* 11, 775–782. (Jürgen Eichhorn) **93a:58170** 58G26 (57Q10)

— (*with* Zhang, Wei Ping[1]) An extension of a theorem by Cheeger and Müller. (French summary) With an appendix by François Laudenbach. *Astérisque No.* 205 (1992), 235 *pp.* (Steven Rosenberg) **93j:58138** 58G26 (57Q10, 57R57, 58G11)

— *see also* **Members elected to the Academy in 1991: Jean-Michel Bismut, 93c:01048**

Bisquert, J. (*with* Aldaya, Víctor; Navarro-Salas, José; Loll, R.) Symmetry and quantization: higher-order polarization and anomalies. (English summary) *J. Math. Phys.* **33** (1992), *no.* 9, 3087–3097. (Alexander D. Popov) **93h:81037** 81R05 (22E70, 81S10)

Bisschop, J. J. (*with* Kuip, C. A. C.) Hierarchical sets in mathematical programming modeling languages. (English summary) *Comput. Optim. Appl.* **1** (1993), *no.* 4, 415–438. 68Q45 (68U20, 90C30)

Bisset, Edward J. (*with* Field, David A.; Meyer, W. Weston; Glander, Donn W.) An application of continued fractions in elastohydrodynamic lubrication. *Comm. Anal. Theory Contin. Fractions* **1** (1992), 32–34. 11A55

Bissu, S. K. (*with* Joshi, C. M.) Some inequalities of hypergeometric function of three variables. *Jñānabha* **21** (1991), 151–164. (H. M. Srivastava) **93c:33011** 33C70

Bist, Vikas Group rings with FC-nilpotent unit groups. (English summary) *Publ. Mat.* **35** (1991), *no.* 2, 461–463. (Ashwani Kumar Bhandari) **93k:20007** 20C05 (16S34, 16U60)

— (*with* Sharma, Rajendra Kumar) A note on Lie nilpotent group rings. *Bull. Austral. Math. Soc.* **45** (1992), *no.* 3, 503–506. (D. A. R. Wallace) **93g:20011** 20C07 (16S34)

— Group of units of group algebras. *Comm. Algebra* **20** (1992), *no.* 6, 1747–1761. (E. Jespers) **93i:16043** 16U60 (16S34, 20C07)

— Torsion units in group rings. (English summary) *Publ. Mat.* **36** (1992), *no.* 1, 47–50. (Summary) **93e:20007** 20C07 (16U60)

Biström, Peter A general exponential law for spaces of C^∞-functions. (English summary) *Kobe J. Math.* **9** (1992), *no.* 1, 23–32. (L. D. Nel) **93j:58017** 58D15 (46E50, 46G05, 46M15, 58C20)

— (*with* Bjon, Sten; Lindström, Mikael) Remarks on homomorphisms on certain subalgebras of $C(X)$. *Math. Japon.* **37** (1992), *no.* 1, 105–109. (Richard M. Aron) **93c:46059** 46E50 (46G99, 46J15)

Biswal, M. P. (*with* Bit, A. K.; Alam, S. S.) Fuzzy programming approach to multicriteria decision making transportation problem. (English summary) *Fuzzy Sets and Systems* **50** (1992), *no.* 2, 135–141. 90C70 (04A72)

— Fuzzy programming technique to solve multi-objective geometric programming problems. (English summary) *Fuzzy Sets and Systems* **51** (1992), *no.* 1, 67–71. 90C70 (04A72)

Biswas, Elias Uddin (*with* Ahmed, Mainuddin) Cosmic string in the NUT-Kerr-Newman spacetime. (English summary) *Internat. J. Theoret. Phys.* **32** (1993), *no.* 5, 813–818. (Summary) **93m:83007** 83C15 (83F05)

Biswas, G. (*with* Deb, T. K.; Karanjai, S.) Time-dependent scattering and transmission function in an anisotropic two-layered atmosphere. *Astrophys. Space Sci.* **189** (1992), *no.* 1, 95–117. (Masamichi Matsumoto) **93d:85001** 85A20

Biswas, Ranjit (*with* Roy, M. K.) I-v fuzzy relations and Sanchez's approach for medical diagnosis. *Fuzzy Sets and Systems* **47** (1992), *no.* 1, 35–38. 04A72

Biswas, Rupak (*with* Flaherty, Joseph E.; Arney, David C.) An adaptive mesh-moving and refinement procedure for one-dimensional conservation laws. (English summary) *Appl. Numer. Math.* **11** (1993), *no.* 4, 259–282. 65M50

Biswas, Somenath (*with* Agrawal, Manindra) On the complexity of a problem related to union of sets in NP. *National Seminar on Theoretical Computer Science* (*Madras*, 1991), 1–7, *IMS Rep.*, 115, *Inst. Math. Sci., Madras*, 199?. (John P. Helm) **93m:03066** 03D15 (03D25, 68Q15)

— (*with* Arvind, V.) Edge-deletion graph problems with first-order expressible subgraph properties. *Internat. J. Found. Comput. Sci.* **2** (1991), *no.* 2, 83–99. (Gerard J. Chang) **93e:68030** 68Q25 (03D15, 05C85, 68R10)

Biswas, Suddhendu ★ Topics in statistical methodology. With the editorial assistance of Vijay Kumar Sehgal. *John Wiley & Sons, Inc., New York*, 1991. xvi+611 *pp. ISBN* 0-470-21153-9 (Publisher's description) **93m:62001** 62-01 (60-01)

Bisztriczky, T. (*with* Lorimer, J. W.) On hyperplanes and free subspaces of affine Klingenberg spaces. (English summary) *Proceedings of the 3rd Congress of Geometry* (*Thessaloniki*, 1991), 69–78, *Aristotle Univ. Thessaloniki, Thessaloniki*, 1992. (Günter Törner) **93g:51006** 51C05

Bit, A. K. (*with* Biswal, M. P.; Alam, S. S.) Fuzzy programming approach to multicriteria decision making transportation problem. (English summary) *Fuzzy Sets and Systems* **50** (1992), *no.* 2, 135–141. 90C70 (04A72)

Bitan, Sara (*with* Zaks, Shmuel) Optimal linear broadcast. (English summary) *J. Algorithms* **14** (1993), *no.* 2, 288–315. (Summary) **93m:90035** 90B12 (90C35)

Bitar, Javier (*with* Goles Ch., Eric) Parallel chip firing games on graphs. *Theoret. Comput. Sci.* **92** (1992), *no.* 2, 291–300. (Summary) **93b:68068** 68R10 (05C99)

Bitis, G. On the existence of a unique harmonic or Killing tensor field. (English summary) *Bull. Calcutta Math. Soc.* **82** (1990), *no.* 6, 480–487. (V. Oproiu) **93i:53033** 53C20

Bitmead, Robert R. (*with* Gevers, Michel; Wertz, V.) Optimal control redesign of generalized predictive control. (English summary) *Adaptive systems in control and signal processing*, 1989 (*Glasgow*), 49–54, *IFAC Sympos. Ser.*, 1990, *No.* 1, *Pergamon, Oxford*, 1990. (*see* **93j:93007**) 93E20 (93E35)

— (*with* Kennedy, R. A.; Anderson, Brian D. O.) Stochastic dynamics of blind decision feedback equalizer adaptation. (English summary) *Adaptive systems in control and signal processing*, 1989 (*Glasgow*), 579–584, *IFAC Sympos. Ser.*, 1990, *No.* 1, *Pergamon, Oxford*, 1990. (*see* **93j:93007**) 93C40 (93B52)

— (*with* Anderson, Brian D. O.; Yan, Wei Yong) Trade-offs among conflicting objectives in robust control design. *Robust control system techniques and applications, Part* 1, 1–53, *Control Dyn. Syst. Adv. Theory Appl.*, 50, *Academic Press, San Diego, CA*, 1992. (Antonis I. G. Vardulakis) **93m:93041** 93B52 (93B36)

— (*with* Bastin, G.; Campion, Guy; Gevers, Michel) Identification of linearly-overparametrized nonlinear systems. *IEEE Trans. Automat. Control* **37** (1992), *no.* 7, 1073–1078. (P. Bertrand) **93g:93027** 93B30 (93C10)

— (*with* Yan, Wei Yong) Control of linear discrete-time periodic systems: a decentralized control approach. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 10, 1644–1648. (Summary) **93g:93009** 93A14 (93C55)

Bitran, Gabriel R. (*with* Dasu, Sriram) A review of open queueing network models of manufacturing systems. (English summary) *Queueing Systems Theory Appl.* **12** (1992), *no.* 1-2, 95–133. 90B22 (60K25)

Bitsadze, A. V. On the generalized Neumann problem. *Potential theory* (*Nagoya*, 1990), 155–160, *de Gruyter, Berlin*, 1992. (Manfred W. Kracht) **93f:35048** 35J25 (31B35)

Bitsadze, D. G. A remark on a process for approximating singular integrals with a Cauchy kernel over open integration contours. (Russian) *Trudy Inst. Vychisl. Mat. Akad. Nauk Gruzin. SSR* **29** (1990), *no.* 1, 3–11. (I. P. Mysovskikh) **93g:41024** 41A55 (65D30)

Bittanti, Sergio (*with* Bolzern, P.; De Nicolao, Giuseppe) Comments on: "Stabilizability and detectability of discrete-time time-varying systems" [IEEE Trans. Automat. Control **35** (1990), no. 4, 425–429] by J. C. Engwerda. (English summary) With a reply by Engwerda. *IEEE Trans. Automat. Control* **37** (1992), *no.* 8, *part I*, 1274–1275. 93D15 (93B07, 93C55)

— (*with* De Nicolao, Giuseppe) Spectral factorization of linear periodic systems with application to the optimal prediction of periodic ARMA models. (English summary) *Automatica J. IFAC* **29** (1993), *no.* 2, 517–522. 93C55 (93E11)

Bittel, Oliver ★ Ein tableaubasierter Theorembeweiser für die intuitionistische Logik. (German) [A tableau-based theorem prover for intuitionistic logic] Dissertation, Universität Fridericiana Karlsruhe, Karlsruhe, 1991. With a foreword by Stefan Jähnichen. Berichte der Gesellschaft für Mathematik und Datenverarbeitung [Reports of the Society for Mathematics and Data Processing], 198. *Gesellschaft für Mathematik und Datenverarbeitung mbH, St. Augustin*; *R. Oldenbourg Verlag, Munich*, 1991. 184 *pp. ISBN* 3-486-22143-4 (A. Tauts) **93h:03013** 03B35 (03B20, 68T15)

Bitterlin, M. Log-concavity of the principal eigenfunction of a linear periodic-parabolic eigenvalue problem. *Differential Integral Equations* **5** (1992), *no.* 5, 1041–1048. (V. S. Rabinovich) **93h:35143** 35P05 (35K20)

Bityutskaya, N. I. (*with* Pulatov, A. K.) Synthesis and complexity of graphs of 3-polytopes based on the gluing operation. (Russian) *Permanents: theory and applications* (*Russian*), 53–65, *Krasnoyarsk. Politekhn. Inst., Krasnoyarsk*, 1990. (E. Hertel) **93g:52007** 52B05 (05C35, 52B10)

Bivens, Irl C. When do orthogonal families of curves possess a complex potential? *Math. Mag.* **65** (1992), *no.* 4, 226–235. (Vladislav Goldberg) **93h:53003** 53A04 (30A99, 31A05)

Bixby, Robert E. (*with* Gregory, John W.; Lustig, Irvin J.; Marsten, Roy E.; Shanno, David F.) Very large-scale linear programming: a case study in combining interior point and simplex methods. (English summary) *Oper. Res.* **40** (1992), *no.* 5, 885–897. 90C06

— Implementing the simplex method: the initial basis. (English summary) *ORSA J. Comput.* **4** (1992), *no.* 3, 267–284. 90C05

Bizám, György "Aus dem Nichts habe ich eine neue, andere Welt erschaffen." Was ist die Bolyai-Lobatschewskische Geometrie? ["Out of nothing I created a new, different world." What is Bolyai-Lobachevskiĭ geometry?] *Große Augenblicke aus der Geschichte*

der Mathematik, 103–138, *Bibliographisches Inst., Mannheim*, 1990. (*see* **93g:01004**) 01A55

Bizhanova, G. I. Solution of an n-dimensional conjugation problem for the heat equation in a Hölder function space. (Russian. English, Russian and Kazakh summaries) *Izv. Akad. Nauk Kazakh. SSR Ser. Fiz.-Mat.* **1991**, *no.* 5, 21–27. (Summary) **93g:35055** 35K05

Bjambajav, D. (*with* Mogul'skiĭ, A. A.) Large deviations for the minimum point of a Gaussian random field. Siberian Advances in Mathematics. *Siberian Adv. Math.* **2** (1992), *no.* 1, 1–15. (J. Hüsler) **93d:60039** 60F10 (60G15, 60G60)

Bjerknes, C.-A. *see* **Abel, Niels Henrik**, **93i:01028b**

Bjon, Sten (*with* Biström, Peter; Lindström, Mikael) Remarks on homomorphisms on certain subalgebras of $C(X)$. *Math. Japon.* **37** (1992), *no.* 1, 105–109. (Richard M. Aron) **93c:46059** 46E50 (46G99, 46J15)

Björck, Å. Pivoting and stability in the augmented system method. *Numerical analysis* 1991 (*Dundee*, 1991), 1–16, *Pitman Res. Notes Math. Ser.*, 260, *Longman Sci. Tech., Harlow*, 1992. (*see* **93b:65005**) 65F05 (65K10)

— (*with* Paige, C. C.) Loss and recapture of orthogonality in the modified Gram-Schmidt algorithm. *SIAM J. Matrix Anal. Appl.* **13** (1992), *no.* 1, 176–190. (Alfonso Laratta) **93c:65056** 65F25 (65F05, 65G05)

Björk, Jan-Erik Derived categories. *Topics in invariant theory* (*Paris*, 1989/1990), 67–129, *Lecture Notes in Math.*, 1478, *Springer, Berlin*, 1991. (Summary) **93g:18015** 18E30

Björk, Tomas (*with* Johansson, Björn) Adaptive prediction and reverse martingales. (English summary) *Stochastic Process. Appl.* **43** (1992), *no.* 2, 191 –222. (M. M. Rao) **93m:60081** 60G35 (62M05, 62M20)

Björklund, M. (*with* Nihtilä, M. T.; Söderström, T.) An algorithm for identification of linear systems with varying time-delay. (English summary) *Identification and system parameter estimation* 1991, *Vol.* 1,2 (*Budapest*, 1991), 935–940, *IFAC Sympos. Ser.*, 3, *Pergamon, Oxford*, 1992. (*see* **93h:93009**) 93B30

Björkman, Gunnar Path following and critical points for contact problems. (English summary) *Comput. Mech.* **10** (1992), *no.* 3-4, 231–246. (Summary) **93f:73092** 73T05 (73G05, 73H99, 73V20)

— (*with* Klarbring, Anders) Solution of large displacement contact problems with friction using Newton's method for generalized equations. The Second World Congress of Computational Mechanics, Part I (Stuttgart, 1990). *Internat. J. Numer. Methods Engrg.* **34** (1992), *no.* 1, 249–269. (Summary) **93a:73073** 73T05 (73G05, 73V25)

Björner, Anders (*with* Kalai, Gil) Extended Euler-Poincaré relations for cell complexes. *Applied geometry and discrete mathematics*, 81–89, *DIMACS Ser. Discrete Math. Theoret. Comput. Sci.*, 4, *Amer. Math. Soc., Providence, RI*, 1991. (G. Ewald) **93e:57038** 57Q05 (52B05)

— (*with* Karlander, Johan; Lindström, Bernt) Communication complexity of two decision problems. (English summary) *Discrete Appl. Math.* **39** (1992), *no.* 2, 161–163. (Summary) **93f:94001** 94A05 (68Q25)

— (*with* Karlander, Johan) Invertibility of the base Radon transform of a matroid. (English summary) Topological, algebraical and combinatorial structures. Frolík's memorial volume. *Discrete Math.* **108** (1992), *no.* 1-3, 139–147. (Joseph Kung) **93i:05042** 05B35 (05B20, 15A03)

— (*with* Reutenauer, Christophe) Rationality of the Möbius function of subword order. Second Workshop on Algebraic and Computer-theoretic Aspects of Formal Power Series (Paris, 1990). *Theoret. Comput. Sci.* **98** (1992), *no.* 1, 53–63. (Jean-Yves Thibon) **93k:68081** 68R15 (16W60, 68Q45, 68Q70)

Bjørner, D. *see* **Images of programming**, **93i:68008**

Bjørstad, P. E. (*with* Skogen, M. D.) Domain decomposition algorithms of Schwarz type, designed for massively parallel computers. (English summary) *Fifth International Symposium on Domain Decomposition Methods for Partial Differential Equations* (*Norfolk, VA*, 1991), 362–375, *SIAM, Philadelphia, PA*, 1992. (*see* **93g:65009**) 65Y05 (65N55)

Black, D. W. (*with* Rothmayer, A. P.) On the temporal evolution of finite ensembles. (English summary) *Mathematika* **39** (1992), *no.* 2, 291–318. (Summary) **93i:76047** 76F99 (76D05, 76M35)

Black, Kelly Penalty method utilized for parabolic problems. (English summary) *Fifth International Symposium on Domain Decomposition Methods for Partial Differential Equations* (*Norfolk, VA*, 1991), 204–213, *SIAM, Philadelphia, PA*, 1992. (*see* **93g:65009**) 65M55

— Polynomial collocation using a domain decomposition solution to parabolic PDEs via the penalty method and explicit/implicit time marching. (English summary) *J. Sci. Comput.* **7** (1992), *no.* 4, 313–338. (Summary) **93k:65076** 65M55 (80–08, 80A20)

— Decoupled smooth interfaces for spectral-element approximations of parabolic or elliptic type. (English summary) *Numer. Methods Partial Differential Equations* **9** (1993), *no.* 4, 395–409. 65M99 (65N55)

Black, R. C. (*with* Satija, Indubala I.) Recurrence phenomenon in dissipative systems. (English summary) *Nuovo Cimento B* (11) **107** (1992), *no.* 5, 527–533. (Summary) **93e:58137** 58F14 (58F22, 70H05, 70K99)

Blackaby, Nicholas D. The inviscid instability of a nonlinear Görtler vortex state in a large Mach number boundary layer flow. (English summary) *Instability, transition, and turbulence* (*Hampton, VA*, 1991), 41–50, *ICASE/NASA LaRC Ser., Springer, New York*, 1992. (Summary) **93k:76046** 76E30 (76N20)

— (*with* Cowley, Stephen J.; Hall, Philip[2]) On the instability of hypersonic flow past a flat plate. (English summary) *J. Fluid Mech.* **247** (1993), 369–416. (Summary) **93m:76042** 76E99 (76K05, 76N20)

Blackadar, Bruce (*with* Dădârlat, Marius; Rørdam, Mikael) The real rank of inductive limit C^*-algebras. *Math. Scand.* **69** (1991), *no.* 2, 211–216 (1992). (Ronghui Ji) **93e:46067** 46L05 (46M40)

— (*with* Rørdam, Mikael) Extending states on preordered semigroups and the existence of quasitraces on C^*-algebras. (English summary) *J. Algebra* **152** (1992), *no.* 1, 240–247. (Hiroshi Takai) **93k:46049** 46L30 (46L80)

— (*with* Kumjian, Alexander; Rørdam, Mikael) Approximately central matrix units and the structure of noncommutative tori. (English summary) *K-Theory* **6** (1992), *no.* 3, 267–284. (Chi Wai Leung) **93k:46129** 46L87 (46L05)

— (*with* Bratteli, Ola; Elliott, George A.; Kumjian, Alexander) Reduction of real rank in inductive limits of C^*-algebras. *Math. Ann.* **292** (1992), *no.* 1, 111–126. (Cornel Pasnicu) **93a:46112** 46L05

Blackburn, James A. (*with* Smith, H. J. T.; Grønbech-Jensen, Niels) Stability and Hopf bifurcations in an inverted pendulum. (English summary) *Amer. J. Phys.* **60** (1992), *no.* 10, 903–908. (Summary) **93h:70014** 70K20 (34C15, 34C23)

— (*with* Smith, H. J. T.) Experimental study of an inverted pendulum. (English summary) *Amer. J. Phys.* **60** (1992), *no.* 10, 909–911. (Summary) **93h:70015** 70K20 (70–05)

Blackburn, James Kent (*with* Detweiler, Steven) Close black-hole binary systems. (English summary) *Phys. Rev. D* (3) **46** (1992), *no.* 6, 2318–2333. (Summary) **93e:83043** 83C57 (83C30)

Blackmore, Denis Topological characterization of isolated singularities of infinite-dimensional complex hypersurfaces. *General topology and applications* (*Staten Island, NY*, 1989), 1–17, *Lecture Notes in Pure and Appl. Math.*, 134, *Dekker, New York*, 1991. (Piotr Jaworski) **93c:58032** 58C27 (32S05, 32S15, 58B99)

Blackorby, Charles (*with* Schworm, William) The implications of additive community preferences in a multi-consumer economy. (English summary) *Rev. Econom. Stud.* **60** (1993), *no.* 1, 209–227. (Summary) **93h:90004** 90A07

Blackson, Thomas A. The stuff of conventionalism. *Philos. Stud.* **68** (1992), *no.* 1, 65–81. 03A05

Blackwell, C. C. Robustness analysis in the time domain and output space. *Mechanics and control* (*Los Angeles, CA*, 1990), 50–63, *Lecture Notes in Control and Inform. Sci.*, 151, *Springer, Berlin*, 1991. (Norihiko Adachi) **93a:93081** 93D09 (93D21)

Blackwell, Paul Convex hulls of selected subsets of a Poisson process. (English summary) *J. Appl. Probab.* **29** (1992), *no.* 4, 814–824. (Summary) **93h:60075** 60G55 (60D05)

Blæsild, P. (*with* Barndorff-Nielsen, Ole E.) Inversion and index notation. (English summary) *The art of statistical science*, 131–151, *Wiley Ser. Probab. Math. Statist. Probab. Math. Statist., Wiley, Chichester*, 1992. (Summary) **93d:62007** 62A99 (15A09, 53A99, 62F99)

— (*with* Barndorff-Nielsen, Ole E.; Carey, A. L.; Jupp, P. E.; Mora, Marianne; Murray, M. K.) Finite-dimensional algebraic representations of the infinite phylon group. (English summary) *Acta Appl. Math.* **28** (1992), *no.* 3, 219–252. (I. Kolář) **93k:58004** 58A20 (20G05, 53A55, 62B99)

— (*with* Barndorff-Nielsen, Ole E.; Seshadri, Vanamamalai) Multivariate distributions with generalized inverse Gaussian marginals, and associated Poisson mixtures. (English and French summaries) *Canad. J. Statist.* **20** (1992), *no.* 2, 109–120. 62H05

— (*with* Mora, Marianne) Differential strings: basic theory. (English summary) *Exposition. Math.* **10** (1992), *no.* 3, 249–273. (Josef Janyška) **93k:53020** 53A55 (53B05, 58A20)

— (*with* Barndorff-Nielsen, Ole E.) A type of second-order asymptotic independence. (English summary) *J. Roy. Statist. Soc. Ser. B* **54** (1992), *no.* 3, 897–901. (Summary) **93h:62026** 62E20

Blaga, Lucia On symmetric and asymmetric duality. II. *Seminar on Optimization Theory*, 1–12, *Preprint*, 89-8, *Univ. "Babeş-Bolyai", Cluj-Napoca*, 1989. (From the introduction) **93h:49055** 49N15 (90C30)

Blaga, Petru Spline approximation with preservation of moments and one point interpolation. *Mathematica (Cluj)* **34(57)** (1992), *no.* 1, 23–32. (B. Boyanov) **93m:41013** 41A15 (41A55)

Blagodat·skaya, E. B. (*with* Sidorov, N. A.) Differential equations with a Fredholm operator in the main differential expression. (Russian) *Dokl. Akad. Nauk SSSR* **319** (1991), *no.* 5, 1087–1090; *translation in Soviet Math. Dokl.* **44** (1992), *no.* 1, 302–305. (From the text) **93a:47054** 47F05 (35R20, 47A50, 47N20)

Blagodat·skikh, V. I. (*with* Arutyunov, A. V.) The maximum principle for differential inclusions with phase constraints. (Russian) *Trudy Mat. Inst. Steklov.* **200** (1991), 4–26; *translation in Proc. Steklov Inst. Math.* **1993**, *no.* 2, 3–25. (Halina Frankowska) **93e:49032** 49K24 (34A60, 34H05, 49N15)

Blagojević, M. (*with* Sazdović, B.; Vasilić, M.) Improved covariant quantization of the heterotic superstring. *Nuclear Phys. B* **365** (1991), *no.* 2, 467–498. (Jean-Pierre Ader) **93b:81285** 81T70 (81T30)

Blagoveshchenskaya, E. A. Decomposition of abelian torsion-free groups of finite rank into direct sums of indecomposable groups. (Russian. Russian summary) *Algebra i Analiz* **4** (1992), *no.* 2, 62–69; *translation in St. Petersburg Math. J.* **4** (1993), *no.* 2, 251–257. (Summary) **93f:20068** 20K15

Blagoveshchenskiĭ, A. S. An inverse axisymmetric Lamb problem. (Russian. English and Russian summaries) *Zap. Nauchn. Sem. S.-Peterburg. Otdel. Mat. Inst. Steklov.* (*POMI*) **203** (1992), *Mat. Voprosy Teor. Rasprostr. Voln.* 22, 51–67, 91, 174. (A. S. Berdyshev) **93k:35174** 35L67 (73D15)

Blaha, Kenneth D. An algebraic view of the Moebius graph. (English summary) Proceedings of the Twenty-third Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, FL, 1992). *Congr. Numer.* **88** (1992), 145–160. (Summary) **93j:05075** 05C25

— Minimum bases for permutation groups: the greedy approximation. *J. Algorithms* **13** (1992), *no.* 2, 297–306. (Mark R. Jerrum) **93d:20008** 20B40 (68Q15, 68Q20, 68Q40)

Blaha, R. (*with* Kuznetsov, Evgenii Alekseevich; Laedke, E. W.; Spatschek, K. H.) Collapsing solutions in Schrödinger- and KdV-systems. *Nonlinear world, Vol.* 1 (*Kiev*, 1989), 10–24, *World Sci. Publishing, River Edge, NJ*, 1990. (*see* **93b:00012**) 35Q53 (35Q55)

Blahut, Richard E. A note on binary cyclic codes of blocklength 63. (English summary) A collection of contributions in honour of Jack van Lint. *Discrete Math.* **106/107** (1992), 35–43. (Brian Mortimer) **93h:94023** 94B15

— *see also* **Radar and sonar**, **93m:00045**

Blain, Marie (*with* Marcotte, Patrice) A Stackelberg-Nash model for the design of deregulated transit system. *Dynamic games in economic analysis* (*Espoo*, 1990), 21–28, *Lecture Notes in Control and Inform. Sci.*, 157, *Springer, Berlin*, 1991. (*see* **93d:90003**) 90B10 (90A09)

Blair, David E. (*with* Baikoussis, Christos) Finite type integral submanifolds of the contact manifold $\mathbf{R}^{2n+1}(-3)$. *Bull. Inst. Math. Acad. Sinica* **19** (1991), *no.* 4, 327–350. (Sorin Dragomir) **93d:53067** 53C40 (53C25, 53C42)

— The "total scalar curvature" as a symplectic invariant and related results. *Proceedings of the 3rd Congress of Geometry* (*Thessaloniki*, 1991), 79–83, *Aristotle Univ. Thessaloniki, Thessaloniki*, 1992. (J. T. Davidov) **93m:58022** 58E11 (53C15)

— (*with* Perrone, D.) A variational characterization of contact metric manifolds with vanishing torsion. (English summary) *Canad. Math. Bull.* **35** (1992), *no.* 4, 455–462. (Zbigniew Olszak) **93j:53058** 53C25 (53C15, 58E11)

— (*with* Baikoussis, Christos) Integral surfaces of Sasakian space forms. *J. Geom.* **43** (1992), *no.* 1-2, 30–40. (Ion Mihai) **93c:53033** 53C25 (53C42)

— (*with* Koufogiorgos, Themis) Ruled surfaces with vanishing second Gaussian curvature. *Monatsh. Math.* **113** (1992), *no.* 3, 177–181. (Xue Shan Zhang) **93c:53001** 53A05 (53A10)

Blair, R. Clifford (*with* Thompson, G. L.) A distribution-free rank-like test for scale with unequal population locations. *Comm. Statist. Simulation Comput.* **21** (1992), *no.* 2, 353–371. 62G10

Blais, François Asymptotic expansions of rivers. *Dynamic bifurcations* (*Luminy*, 1990), 181–189, *Lecture Notes in Math.*, 1493, *Springer, Berlin*, 1991. (Summary) **93d:34095** 34E05 (03H05, 34C99, 34D99)

Blaive, B. (*with* Barut, Asim Orhan) On some mathematical problems in the evaluation of fields produced by currents which are generalized functions. *J. Math. Phys.* **33** (1992), *no.* 6, 2164–2168. (Baldev K. Sachdeva) **93i:78006** 78A25 (46F10)

Blaksley Bazterrica, Enrique J. Unified theory of motion: a new mechanics. *Bull. Number Theory Related Topics* **13** (1989), *Separata*, 23 *pp.* (J. Rosen) **93c:70003** 70A05 (70H40, 83A05)

Blamey, Stephen The soundness and completeness of axioms for CSP processes. *Topology and category theory in computer science* (*Oxford*, 1989), 29–56, *Oxford Sci. Publ., Oxford Univ. Press, New York*, 1991. (*see* **93h:68004**) 68M15 (68Q05)

Blanc, David (*with* Stover, Christopher) A generalized Grothendieck spectral sequence. *Adams Memorial Symposium on Algebraic Topology*, 1 (*Manchester*, 1990), 145–161, *London Math. Soc. Lecture Note Ser.*, 175, *Cambridge Univ. Press, Cambridge*, 1992. (Marek Golasiński) **93i:18013** 18G40 (18E25, 18G40, 55T99, 55U10)

— (*with* Notbohm, Dietrich) Mapping spaces of compact Lie groups and p-adic completion. *Proc. Amer. Math. Soc.* **117** (1993), *no.* 1, 251–258. (Donald M. Davis) **93c:55016** 55R35 (55P60)

Blanc, G. (*with* Bleuzen-Guernalec, N.) Algèbres effectives dans la programmation logique avec contraintes. (English summary) [Effective algebras in constraint logic programming] *RAIRO Inform. Théor. Appl.* **26** (1992), *no.* 3, 221–242. (D. Z. Spicer) **93j:68119** 68Q55 (68Q40)

Blanc, J. P. C. (*with* de Waal, Peter R.; Nain, Philippe; Towsley, Donald) Optimal control of admission to a multiserver queue with two arrival streams. *IEEE Trans. Automat. Control* **37** (1992), *no.* 6, 785–797. (Summary) **93c:90033** 90B22 (60K25)

Blanchard, Dominique (*with* Xiang, Yan) Clamped plates as limits of genuinely clamped plates in linear and nonlinear elasticity. *Asymptotic Anal.* **5** (1992), *no.* 6, 495–516. (R. Kodnár) **93d:73019** 73C02 (73C50, 73K10)

— (*with* Nicolas, Pierre) The dissipation as a tool to account for trapped internal variables in a convex set. *Free boundary problems involving solids* (*Montreal, PQ*, 1990), 7–13, *Pitman Res. Notes Math. Ser.*, 281, *Longman Sci. Tech., Harlow*, 1993. (*see* **93k:00037**) 73B30 (73B99)

Blanchard, Étienne Représentations de champs de C^*-algèbres. (English summary) [Representations of fields of C^*-algebras] *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 12, 911–914. (Robert S. Doran) **93f:46087** 46L05 (46M20)

Blanchard, F. Fully positive topological entropy and topological mixing. (English summary) *Symbolic dynamics and its applications* (*New Haven, CT*, 1991), 95–105, *Contemp. Math.*, 135, *Amer. Math. Soc., Providence, RI*, 1992. (Manfred Denker) **93k:58134** 58F11 (28D05, 54H20)

— (*with* Lacroix, Y.) Zero entropy factors of topological flows. *Proc. Amer. Math. Soc.* **119** (1993), *no.* 3, 985–992. (Mahesh Nerurkar) **93m:54066** 54H20 (28D20)

Blanchard, Philippe (*with* Krüger, Tyll) Isomorphism between epidemic dynamical processes on random graphs with rational transmission probability $\gamma < 1$ and transmission probability one. *Stochastic processes, physics and geometry* (*Ascona and Locarno*, 1988), 150–159, *World Sci. Publishing, Teaneck, NJ*, 1990. (Graham Brightwell) **93a:92014** 92D30 (00A69, 05C80, 60G99)

— (*with* Ma, Zhi Ming) Semigroup of Schrödinger operators with potentials given by Radon measures. *Stochastic processes, physics and geometry* (*Ascona and Locarno*, 1988), 160–195, *World Sci. Publishing, Teaneck, NJ*, 1990. (Paolo Acquistapace) **93a:35034** 35J10 (47D03, 47F05, 60J65)

— (*with* Albeverio, Sergio; Ma, Zhi Ming) Feynman-Kac semigroups in terms of signed smooth measures. (English summary) *Random partial differential equations* (*Oberwolfach*, 1989), 1–31, *Internat. Ser. Numer. Math.*, 102, *Birkhäuser, Basel*, 1991. (Yoichi Ōshima) **93i:60140** 60J45 (31C25, 47D07, 47N30)

— (*with* Albeverio, Sergio; Gandolfo, Daniel; Høegh-Krohn, Raphael; Mebkhout, Mohammed) Morphology and classification of galaxies. A stochastic model. (English summary) *Ideas and methods in quantum and statistical physics* (*Oslo*, 1988), 447–460, *Cambridge Univ. Press, Cambridge*, 1992. (Summary) **93g:85005** 85A35

— (*with* Combe, Ph.; Nencka, H.; Rodriguez, Roger) Stochastic dynamical models for synaptic connections. (English summary) *Probabilistic methods in mathematical physics* (*Siena*, 1991), 83–94, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93h:82041** 82C32 (92B20)

— (*with* Krüger, Tyll) Critical parameters and threshold properties for epidemic dynamical systems on random graphs. *Probabilistic methods in mathematical physics* (*Siena*, 1991), 95–107, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93g:81002**) 92C60 (82C20, 92D30)

— (*with* Combe, Ph.; Nencka, H.; Rodriguez, Roger) Stochastic dynamical aspects of neuronal activity. (English summary) *J. Math. Biol.* **31** (1993), *no.* 2, 189–198. (Summary) **93j:92010** 92C20 (60J15)

Blanchet, Luc A class of nonmetric couplings to gravity. *Phys. Rev. Lett.* **69** (1992), *no.* 4, 559–562. (Summary) **93d:83005** 83B05

Blanchet-Sadri, F. Games, equations and dot-depth two monoids. (English summary) *Discrete Appl. Math.* **39** (1992), *no.* 2, 99–111. (K. D. Magill, Jr.) **93h:20073** 20M35 (03D05, 68Q45)

Blanchini, Franco Constrained control for systems with unknown disturbances. *Robust control system techniques and applications, Part* 2, 129–182, *Control Dyn. Syst. Adv. Theory Appl.*, 51, *Academic Press, San Diego, CA*, 1992. (M. Krastanov) **93i:93078** 93C41 (93C73)

— (*with* Policastro, Mario) Bidiagonal realization for multivariable systems. *Internat. J. Systems Sci.* **23** (1992), *no.* 2, 249–262. (Summary) **93a:93026** 93B15

Blanco, Liliana (*with* Ruíz S., Carlos) On the Aleksandrov compactification. (Spanish) *Bol. Mat.* **20** (1986), *no.* 3, 163–172. 54D35

Blanco, R. On Barut's proposal for eliminating both the preacceleration and the runaway solution of the Lorentz-Dirac equation. (English summary) *Phys. Lett. A* **169** (1992), *no.* 1-2, 115–119. (Summary) **93m:81154** 81V10 (78A25)

abbott de Blanco, Rita *see* **Abbott de Blanco, Rita**

Blanco C., Liliana *see* **Blanco, Liliana**

Bland, John (*with* Kalka, Morris; Sharpe, Richard W.) Complete metrics of negative Ricci curvature on open 3-manifolds. *Differential geometry, global analysis, and topology* (*Halifax, NS*, 1990), 1–12, *CMS Conf. Proc.*, 12, *Amer. Math. Soc., Providence, RI*, 1991. (George M. Rassias) **93a:53028** 53C21 (57R70)

Blandford, George E. (*with* Chen, Hong) Work-increment-control method for nonlinear analysis. (English summary) *Internat. J. Numer. Methods Engrg.* **36** (1993), *no.* 6, 909–930. (Summary) **93k:73084** 73V20 (73G99)

Blandford, R. T. Gravitational lenses: theory and interpretation. *General relativity and gravitation*, 1989 (*Boulder, CO*, 1989), 133–152, *Cambridge Univ. Press, Cambridge*, 1990. (*see* **93b:83002**) 83C55

Blank, Albert A. (*with* Kress, Michael E.) Connections between adiabatic and low-resistivity magnetohydrodynamics. (English summary) *Phys. Fluids B* **4** (1992), *no.* 10, 3189–3198. (Summary) **93f:76100** 76W05 (82D99)

Blank, Brian E. (*with* Fan, Da Shan; Klein, David; Krantz, Steven G.; Ma, Dao Wei; Pang, Myung-Yull) The Kobayashi metric of a complex ellipsoid in $\mathbf{C}^2$. (English summary) *Experiment. Math.* **1** (1992), *no.* 1, 47–55. (Ian Graham) **93h:32032** 32H15

Blank, J. (*with* Havlíček, M.) On the tensor product of supersingleton representations of Lie superalgebras osp(1, 2n). *Selected topics in QFT and mathematical physics* (*Liblice*, 1989), 190–196, *World Sci. Publishing, Teaneck, NJ*, 1990. (Bani Mitra Södermark) **93a:17002** 17A70 (17B70, 81R05)

Blankenship, G. L. (*with* Akhrif, O.) Algebraic computations for design of nonlinear control systems. *Algebraic computing in control* (*Paris*, 1991), 129–155, *Lecture Notes in Control and Inform. Sci.*, 165, *Springer, Berlin*, 1991. (Jean-Pierre Barbot) **93f:93062** 93B51 (93B40)

Blanton, Earle L., Jr. (*with* Hurd, Spencer P.; McCranie, Judson S.) On a digraph defined by squaring modulo n. *Fibonacci Quart.* **30** (1992), *no.* 4, 322–334. (Kevin Lawrence McAvaney) **93j:05066** 05C20 (05C75, 11A07)

Blaquière, A. Sufficiency conditions for existence of an optimal feedback control in stochastic mechanics. *Mechanics and control* (*Los Angeles, CA*, 1990), 64–84, *Lecture Notes in Control and Inform. Sci.*, 151, *Springer, Berlin*, 1991. (Summary) **93f:93136** 93E20 (49K45, 49N35, 93B51)

— Controllability of a Fokker-Planck equation, the Schrödinger system, and a related stochastic optimal control (revised version). *Dynamics Control* **2** (1992), *no.* 3, 235–253. (Angelo Favini) **93j:93011** 93B05 (34F05, 93E20)

barreiro Blas, Antonio *see* **Barreiro Blas, Antonio**

ruiz Blasco, Francisco José *see* **Ruiz Blasco, Francisco José**

Blasco, José L. On K_0-functions and regular extension operators. *Arch. Math.* (*Basel*) **59** (1992), *no.* 3, 272–275. (J. van Mill) **93j:54005** 54C35

Blasco De La Cruz, Oscar (*with* Xu, Quan Hua) Interpolation between vector-valued Hardy spaces. *J. Funct. Anal.* **102** (1991), *no.* 2, 331–359. (Mario Milman) **93e:46042** 46E40 (42B30, 46M35)

— Operators on weighted Bergman spaces ($0 < p \leq 1$) and applications. *Duke Math. J.* **66** (1992), *no.* 3, 443–467. (P. Wojtaszczyk) **93h:47036** 47B38 (46E15)

Blasi, Alberto (*with* Collina, R.) The Chern-Simons model with boundary: a cohomological approach. *Internat. J. Modern Phys. A* **7** (1992), *no.* 13, 3083–3103. (Bogusław Broda) **93d:81110** 81T13 (81R10, 81T40, 81T50, 81T70)

— (*with* Maggiore, N.; Sorella, Silvio P.) Nonrenormalization properties of the Chern-Simons action coupled to matter. *Phys. Lett. B* **285** (1992), *no.* 1-2, 54–60. (Summary) **93d:81111** 81T13 (81T17, 81T50)

— (*with* Maggiore, N.) Infrared and ultraviolet finiteness of topological BF theory in two dimensions. (English summary) *Classical Quantum Gravity* **10** (1993), *no.* 1, 37–56. (Bogusław Broda) **93m:81145** 81T70 (81T15, 81T40, 81T50)

de Blasi, Francesco S. *see* **De Blasi, Francesco S.**

di Blasio, Gabriella *see* **Di Blasio, Gabriella**

Blasius, Don (*with* Rogawski, Jonathan D.) Fundamental lemmas for U(3) and related groups. *The zeta functions of Picard modular surfaces*, 363–394, *Univ. Montréal, Montreal, PQ*, 1992. (David Joyner) **93c:22031** 22E50 (11F70, 11R39, 11S37, 22E35)

— (*with* Rogawski, Jonathan D.) Tate classes and arithmetic quotients of the two-ball. *The zeta functions of Picard modular surfaces*, 421–444, *Univ. Montréal, Montreal, PQ*, 1992. (V. Kumar Murty) **93c:11040** 11G18 (11F55, 11F70, 11G40)

Blåsius, Karl-Hans *see* **Deduction systems in artificial intelligence, 93f:68085**

Blass, Andreas A game semantics for linear logic. *Ann. Pure Appl. Logic* **56** (1992), *no.* 1-3, 183–220. (Fangmin Song) **93e:03041** 03B70 (68Q55)

— (*with* Scedrov, Andre) Complete topoi representing models of set theory. *Ann. Pure Appl. Logic* **57** (1992), *no.* 1, 1–26. (R. Gylys) **93d:03056** 03E40 (03G30)

Blass, Joseph (*with* Padmaraj, Raj A.; Rohatgi, Vijay K.) The effect of truncation on the UMVUE of the Black-Scholes option price. (English summary) *Ulam Quart.* **1** (1992), *no.* 1, 36*ff.*, *approx.* 8 *pp.* (*electronic only*). (Summary) **93i:90014** 90A09

Blaszak, Maciej Symmetries on soliton manifold. *Nonlinear fields: classical, random, semiclassical* (*Karpacz*, 1991), 215–224, *World Sci. Publishing, River Edge, NJ*, 1991. (Marek Antonowicz) **93a:58074** 58F07 (58F37)

— (*with* Oevel, Gudrun) Action-angle representation of complex multisolitons. *Progr. Theoret. Phys.* **86** (1991), *no.* 1, 29–43. (Shen Qi Zhao) **93a:58075** 58F07 (35Q51)

Blatov, I. A. Estimates for elements of inverse matrices and modifications of the matrix sweep method. (Russian) *Sibirsk. Mat. Zh.* **33** (1992), *no.* 2, 10–21, 219; *translation in Siberian Math. J.* **33** (1992), *no.* 2, 183–194. (Israel Koltracht) **93j:65044** 65F05 (65N06)

— (*with* Terteryan, A. A.) Estimates for the elements of inverse matrices and incomplete block factorization methods based on matrix sweep. (Russian. Russian summary) *Zh. Vychisl. Mat. i Mat. Fiz.* **32** (1992), *no.* 11, 1683–1696; *translation in Comput. Math. Math. Phys.* **32** (1992), *no.* 11, 1509–1522 (1993). (Israel Koltracht) **93m:65056** 65F30

Blatt, Hans-Peter Verteilung der Nullstellen von Polynomen auf Jordanbögen. (German summary) [Distribution of zeros of polynomials on Jordan arcs] *Informatik*, 55–67,

Teubner-Texte Inform., 1, *Teubner, Stuttgart*, 1992. (E. J. Barbeau) **93k:30009** 30C15 (12D10, 26C10, 31A15)

— On the distribution of simple zeros of polynomials. *J. Approx. Theory* **69** (1992), *no.* 3, 250–268. (Martin Bartelt) **93h:41009** 41A10 (26C10)

Blatter, Christian Fraktale Geometrie. [Fractal geometry] *Elem. Math.* **47** (1992), *no.* 2, 62–75. (Christoph Bandt) **93g:28005** 28A80 (00–01, 58F13)

Blattner, Robert J. Some remarks on quantization. *Symplectic geometry and mathematical physics* (*Aix-en-Provence*, 1990), 37–47, *Progr. Math.*, 99, *Birkhäuser Boston, Boston, MA*, 1991. (Yihren Wu) **93a:58070** 58F06 (81S10)

Blau, Harvey I. On real and rational representations of finite groups. *J. Algebra* **150** (1992), *no.* 1, 57–72. (Henry S. Leonard, Jr.) **93i:20008** 20C20

Blau, Matthias (*with* Birmingham, Danny; Rakowski, Mark; Thompson, George) Topological field theory. *Phys. Rep.* **209** (1991), *no.* 4-5, 129–340. (Bogusław Broda) **93c:81003** 81–02 (57–02, 57M99, 57R99, 58D27, 58D29, 81T13, 81T40)

— (*with* Thompson, George) Quantum Yang-Mills theory on arbitrary surfaces. *Internat. J. Modern Phys. A* **7** (1992), *no.* 16, 3781–3806. (Sylvie Paycha) **93k:81193** 81T40 (58D30, 58Z05, 81S40, 81T13)

Blaum, Mario (*with* Bruck, Jehoshua) New techniques for constructing EC/AUED codes. (English summary) *IEEE Trans. Comput.* **41** (1992), *no.* 10, 1318–1324. 94B60 (94B35)

— (*with* Roth, Ron M.) New array codes for multiple phased burst correction. (English summary) *IEEE Trans. Inform. Theory* **39** (1993), *no.* 1, 66–77. 94B20

— (*with* Litsyn, S. N.; Buskens, Vincent; van Tilborg, Henk C. A.) Error-correcting codes with bounded running digital sum. (English summary) *IEEE Trans. Inform. Theory* **39** (1993), *no.* 1, 216–227. (Summary) **93m:94036** 94B50

Bławzdziewicz, J. (*with* Cichocki, B.; van Beijeren, H.) *H*-theorem for a linear kinetic theory. *J. Statist. Phys.* **66** (1992), *no.* 1-2, 607–633. (Carlo Cercignani) **93b:82062** 82C40

Blay, Michel Du fondement du calcul différentiel au fondement de la science du mouvement dans les *Éléments de la géométrie de l'infini* de Fontenelle. [From the foundation of differential calculus to the foundation of the science of motion in Fontenelle's *Elements of the geometry of the infinite*] *Der Ausbau des Calculus durch Leibniz und die Brüder Bernoulli* (*Basel*, 1987), 99–122, *Studia Leibnitiana Sonderheft*, 17, *Steiner, Wiesbaden*, 1989. (*see* **93e:01009**) 01A50 (01A45)

džonova-jerman-Blažič, B. *see* **Džonova-Jerman-Blažič, B.**

Blažić, Novica (*with* Bokan, Neda; Gilkey, Peter B.) Heat equation asymptotics of the form valued Laplacian for manifolds with boundary. *Proceedings of the* 3*rd Congress of Geometry* (*Thessaloniki*, 1991), 84–95, *Aristotle Univ. Thessaloniki, Thessaloniki*, 1992. (G. Tsagas) **93f:58226** 58G11 (58G18, 58G20, 58G25)

— (*with* Bokan, Neda; Gilkey, Peter B.) Spectral geometry of the form valued Laplacian for manifolds with boundary. *Indian J. Pure Appl. Math.* **23** (1992), *no.* 2, 103–120. (Friedbert Prüfer) **93e:58185** 58G25 (58G11, 58G18)

Blázquez, C. M. (*with* Llosa, J.) Classical spin particles: a kinematical approach. (English summary) *Rep. Math. Phys.* **30** (1991), *no.* 2, 131–148 (1992). (Akira Yoshioka) **93i:58049** 58F05 (70G99, 70H05)

— (*with* Tuma, E.) The stability of solutions in an initial-boundary reaction-diffusion system. (English summary) *Bull. Austral. Math. Soc.* **46** (1992), *no.* 3, 441–448. (Reinhard Redlinger) **93k:35035** 35B35 (35K57)

— (*with* Tuma, E.) The stability of travelling-wave-front solutions in an initial-boundary reaction-diffusion system. (English summary) *Quart. J. Mech. Appl. Math.* **45** (1992), *no.* 2, 245–261. (Hideo Ikeda) **93f:35117** 35K57 (35B35)

Blecher, David P. (*with* Paulsen, Vern I.) Tensor products of operator spaces. *J. Funct. Anal.* **99** (1991), *no.* 2, 262–292. (Robert J. Archbold) **93d:46095** 46L05 (46B28, 46M05, 47D25)

— Generalizing Grothendieck's program. *Function spaces* (*Edwardsville, IL*, 1990), 45–53, *Lecture Notes in Pure and Appl. Math.*, 136, *Dekker, New York*, 1992. (Robert J. Archbold) **93d:46125** 46M05 (46B28, 46E99, 46L99, 47D15)

— Tensor products of operator spaces. II. *Canad. J. Math.* **44** (1992), *no.* 1, 75–90. (Robert J. Archbold) **93e:46084** 46M05 (46L05, 47D15)

— (*with* Smith, Roger R.) The dual of the Haagerup tensor product. *J. London Math. Soc.* (2) **45** (1992), *no.* 1, 126–144. (Robert J. Archbold) **93h:46078** 46L05 (46M05)

— The standard dual of an operator space. *Pacific J. Math.* **153** (1992), *no.* 1, 15–30. (P. A. Fillmore) **93d:47083** 47D15 (46L05, 46M10)

Blecksmith, Richard (*with* Brillhart, John; Gerst, Irving) New proofs for two infinite product identities. *Rocky Mountain J. Math.* **22** (1992), *no.* 3, 819–823. (Liang-Cheng Zhang) **93h:11114** 11P83

Bleecker, David D. The supertrace of the steady asymptotic of the spinorial heat kernel. *J. Math. Phys.* **33** (1992), *no.* 6, 2053–2070. (Akira Asada) **93d:58153** 58G10 (58G11)

Bleher, Pavel M. (*with* Major, Péter) Renormalization of Dyson's vector-valued hierarchical model at low temperatures. *Probability theory and mathematical statistics, Vol. I* (*Vilnius*, 1989), 141–151, "*Mokslas*", *Vilnius*, 1990. (Tony C. Dorlas) **93k:82024** 82B26 (60F05, 82B28)

— Statistical properties of a particle moving in a periodic scattering billiard. *Stochastic methods in experimental sciences* (*Szklarska Poręba*, 1989), 43–58, *World Sci. Publishing, River Edge, NJ*, 1990. (Rita Giuliano Antonini) **93f:58131** 58F11 (28D05, 60F05)

— On the distribution of the number of lattice points inside a family of convex ovals. *Duke Math. J.* **67** (1992), *no.* 3, 461–481. (Hartmut Menzer) **93h:11110** 11P21 (11K70)

— Statistical properties of two-dimensional periodic Lorentz gas with infinite horizon. *J. Statist. Phys.* **66** (1992), *no.* 1-2, 315–373. (Min Ping Qian) **93b:82052** 82C21 (82C40)

— (*with* Jauslin, H. R.; Lebowitz, Joel L.) Floquet spectrum for two-level systems in quasiperiodic time-dependent fields. *J. Statist. Phys.* **68** (1992), *no.* 1-2, 271–310. (Summary) **93c:81046** 81Q50 (58F30)

Blei, Ron C. A basic view of stochastic integration. (English summary) *Probabilistic and stochastic methods in analysis, with applications* (*Il Ciocco*, 1991), 649–662, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 372, *Kluwer Acad. Publ., Dordrecht*, 1992. (Summary) **93f:60076** 60H05

Bleiler, Steven A. (*with* Hodgson, Craig D.) Spherical space forms and Dehn surgery. *Knots* 90 (*Osaka*, 1990), 425–433, *de Gruyter, Berlin*, 1992. (G. Burde) **93k:57008** 57M25 (57M50)

Blekher, P. M. *see* **Bleher, Pavel M.**

Blel, Mongi Sur le cône tangent à un courant positif fermé. (English summary) [Tangent cone associated with a closed positive current] *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 12, 887–890. (Salomon Ofman) **93d:32014** 32C30

Blencowe, Miles The consistent histories interpretation of quantum fields in curved spacetime. *Ann. Physics* **211** (1991), *no.* 1, 87–111. (Michael B. Mensky) **93i:81158** 81T20 (81P05, 83C47)

Blenk, Stefan (*with* Ehrentraut, Harald; Muschik, Wolfgang) Macroscopic constitutive equations for liquid crystals induced by their mesoscopic orientation distribution. *Internat. J. Engrg. Sci.* **30** (1992), *no.* 9, 1127–1143. 76A15 (73B05, 73S10)

Blennerhassett, P. (*with* Smith, F. T.) Nonlinear interaction of oblique three-dimensional Tollmien-Schlichting waves and longitudinal vortices, in channel flows and boundary layers. (English summary) *Proc. Roy. Soc. London Ser. A* **436** (1992), *no.* 1898, 585–602. (Summary) **93e:76035** 76E30 (76D10, 76D33)

Blessenohl, Dieter (*with* Laue, Hartmut) Note über Idempotente im Gruppenring symmetrischer Gruppen. [Note on idempotents in a group ring of symmetric groups] *Arch. Math.* (*Basel*) **59** (1992), *no.* 6, 545–549. (Peter Fleischmann) **93m:20019** 20C30 (05E10, 20C05)

Bless Ranero, Ibrahím (*with* Chacón Rebollo, Tomás) Numerical solution of two-dimensional Euler equations via a Lagrangian finite-element method using an adaptive mesh. (Spanish. Spanish summary) *Proceedings of the XII Congress on Differential Equations and Applications/II Congress on Applied Mathematics* (*Spanish*) (*Oviedo*, 1991), 399–404, *Univ. Oviedo, Oviedo*, 1991. (*see* **93j:00009**) 76M10 (65M60)

Bleuzen-Guernalec, N. (*with* Blanc, G.) Algèbres effectives dans la programmation logique avec contraintes. (English summary) [Effective algebras in constraint logic programming] *RAIRO Inform. Théor. Appl.* **26** (1992), *no.* 3, 221–242. (D. Z. Spicer) **93j:68119** 68Q55 (68Q40)

zamfir Bleyberg, Maria *see* **Zamfir Bleyberg, Maria**

Bleyer, U. (*with* Liebscher, D.-E.; Polnarev, A. G.) Kaluza-Klein models: from quantum state to observations. *Quantum gravity* (*Moscow*, 1990), 613–632, *World Sci. Publishing, River Edge, NJ*, 1991. (Summary) **93d:83062** 83E15 (83C45, 83F05)

Blezu, D. (*with* Drăghici, E.; Ovesea, H.; Pascu, Nicolae N.) Sufficient conditions for univalence of a large class of functions. (Romanian summary) *Studia Univ. Babeş-Bolyai Math.* **35** (1990), *no.* 4, 41–47 (1992). 30C45

Blidia, Mostafa (*with* Engel, Konrad) Perfectly orderable graphs and almost all perfect graphs are kernel *M*-solvable. *Graphs Combin.* **8** (1992), *no.* 2, 103–108. (Olivia M. Carducci) **93h:05131** 05C75 (90D43)

Blieberger, J. (*with* Schmid, Ulrich) Some investigations on FCFS scheduling in hard real time applications. (English summary) *J. Comput. System Sci.* **45** (1992), *no.* 3, 493–512. (Summary) **93h:90049** 90B35

— (*with* Schmid, Ulrich) Preemptive LCFS scheduling in hard real-time applications. (English summary) *Performance Evaluation* **15** (1992), *no.* 3, 203–215. (Summary) **93h:90046** 90B35

Bliedtner, Jürgen Applications of Choquet theory to potential theory. *Potential theory* (*Nagoya*, 1990), 17–24, *de Gruyter, Berlin*, 1992. (Thomas E. Armstrong) **93h:31014** 31D05 (46A55)

— (*with* Loeb, Peter A.) A reduction technique for limit theorems in analysis and probability theory. *Ark. Mat.* **30** (1992), *no.* 1, 25–43. (Albert E. Hurd) **93k:28005** 28A33 (03H05)

Bliev, N. K. (*with* Myrzakulov, R.; Tattibekov, K. S.) An integrable continuous OSp(2/1) Heisenberg model. (Russian. English and Kazakh summaries) *Izv. Akad. Nauk Kazakh. SSR Ser. Fiz.-Mat.* **1991**, *no.* 1, 23–28. (Gheorghe Nenciu) **93d:82026** 82B23 (35Q99)

van der Blij, F. (*with* van Asch, A. G.) ★ Hoeken en hun maat. (Dutch) [Angles and their size] CWI Syllabi, 29. *Stichting Mathematisch Centrum, Centrum voor Wiskunde en Informatica, Amsterdam*, 1992. iv+93 *pp. ISBN* 90-6196-407-5 (H. W. Guggenheimer) **93f:51001** 51–01

Blind, G. (*with* Blind, R.) Triangle-free polytopes with few facets. *Arch. Math.* (*Basel*) **58** (1992), *no.* 6, 599–605. (Margaret M. Bayer) **93c:52007** 52B05

Blind, R. (*with* Blind, G.) Triangle-free polytopes with few facets. *Arch. Math.* (*Basel*) **58** (1992), *no.* 6, 599–605. (Margaret M. Bayer) **93c:52007** 52B05

Blinovskii, V. M. List decoding. (English summary) A collection of contributions in honour of Jack van Lint. *Discrete Math.* **106/107** (1992), 45–51. (Summary) **93j:94033** 94B35

Blizorukov, M. G. (*with* Shimanov, S. N.) Stability of quasiharmonic systems of discrete equations. (Russian. Russian summary) *Avtomat. i Telemekh.* **1992**, *no.* 2, 30–36; *translation in Automat. Remote Control* **53** (1992), *no.* 2, *part* 1, 173–177. (Summary) **93m:39002** 39A10 (34D08, 34K20)

Bloch, Anthony M. (*with* Ratiu, Tudor S.) Convexity and integrability. *Symplectic geometry and mathematical physics* (*Aix-en-Provence*, 1990), 48–79, *Progr. Math.*, 99, *Birkhäuser Boston, Boston, MA*, 1991. (Galina G. Okuneva) **93a:58054** 58F05

— (*with* Krishnaprasad, P. S.; Marsden, Jerrold Eldon; Sánchez de Alvarez, G.) Stabilization of rigid body dynamics by internal and external torques. *Automatica J. IFAC* **28** (1992), *no.* 4, 745–756. 93D15 (70Q05)

— (*with* Brockett, Roger W.; Ratiu, Tudor S.) Completely integrable gradient flows. *Comm. Math. Phys.* **147** (1992), *no.* 1, 57–74. (L. E. Faybusovich) **93f:58094** 58F07 (22E46, 34C35, 58F05)

— (*with* Reyhanoglu, Mahmut; McClamroch, N. Harris) Control and stabilization of nonholonomic dynamic systems. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 11, 1746–1757. (P. C. Parks) **93j:93123** 93D15 (93B25, 93B27, 93C85, 93D20)

— (*with* Kodama, Yuji) Dispersive regularization of the Whitham equation for the Toda lattice. *SIAM J. Appl. Math.* **52** (1992), *no.* 4, 909–928. (Victor V. Zharinov) **93g:35123** 35Q53 (34A20, 35L67, 58F07, 70F99)

Bloch, Francis Nondictatorial social welfare functions with different discrimination structures. (English summary) *Theory and Decision* **34** (1993), *no.* 2, 161–176. (Summary) **93k:90010** 90A05

Bloch, Gérard (*with* Mielcarek, Didier; Loffler, Cristophe; Ragot, José) A comparative study of some recursive parameters estimation algorithms for multivariable systems. (English summary) *Mathematical and intelligent models in system simulation, I, II* (*Brussels*, 1990), 59–64, *IMACS Ann. Comput. Appl. Math.*, 10, 11, *Baltzer, Basel*, 1991. (*see* **93c:93005**) 93E10 (93C35)

Bloch, Spencer Recent work on motifs. A plenary address presented at the International Congress of Mathematicians held in Kyoto, August 1990. ICM-90. *Mathematical Society of Japan, Tokyo; distributed outside Asia by the American Mathematical Society,*

Providence, RI, 1990. 1 *videocassette* (*NTSC*; 1/2 *inch*; *VHS*) (60 *min.*); *sd., col. ISBN* 0-8218-8046-2 (Editors) **93a:11051** 11G09 (14H52)

— Algebraic K-theory, motives, and algebraic cycles. *Proceedings of the International Congress of Mathematicians, Vol. I, II (Kyoto*, 1990), 43–54, *Math. Soc. Japan, Tokyo*, 1991. (L. N. Vaserstein and Frank A. Arlinghaus) **93b:19004** 19E15 (11G09, 14C25)

— Function theory of polylogarithms. *Structural properties of polylogarithms*, 275–285, *Math. Surveys Monographs*, 37, *Amer. Math. Soc., Providence, RI*, 1991. (*see* **93b:11158**) 14C30 (11R42, 11R70, 19F27, 33B10)

— *see also* **Algebraic geometry, 93d:14004**

Block, Henry W. (*with* Chhetry, D.; Fang, Zhao Ben; Sampson, Allan R.) Partial orderings on permutations. (English summary) *Topics in statistical dependence* (*Somerset, PA*, 1987), 45–55, *IMS Lecture Notes Monograph Ser.*, 16, *Inst. Math. Statist., Hayward, CA*, 1990. (Summary) **93i:62015** 62E10

— (*with* Langberg, Naftali A.; Savits, Thomas H.) Comparisons for maintenance policies involving complete and minimal repair. (English summary) *Topics in statistical dependence* (*Somerset, PA*, 1987), 57–68, *IMS Lecture Notes Monograph Ser.*, 16, *Inst. Math. Statist., Hayward, CA*, 1990. (Summary) **93i:62078** 62M10

— (*with* Langberg, Naftali A.; Stoffer, David S.) Time series models for non-Gaussian processes. (English summary) *Topics in statistical dependence* (*Somerset, PA*, 1987), 69–83, *IMS Lecture Notes Monograph Ser.*, 16, *Inst. Math. Statist., Hayward, CA*, 1990. (Summary) **93i:62086** 62N05

— (*with* Chhetry, D.; Fang, Zhao Ben; Sampson, Allan R.) Some new partial orderings on S_n and $S_n \times S_n$. *J. Statist. Plann. Inference* **30** (1992), *no.* 3, 351–357. (Moshe Shaked) **93c:60020** 60E15 (05A05)

— (*with* Langberg, Naftali A.; Savits, Thomas H.) Repair replacement policies. (English summary) *J. Appl. Probab.* **30** (1993), *no.* 1, 194–206. (Summary) **93j:60129** 60K10 (60E15, 62N05, 90B25)

— *see also* **Topics in statistical dependence, 93f:62004**

Block, Jonathan (*with* Baum, Paul) Excess intersection in equivariant bivariant K-theory. (French summary) *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 5, 387–392. (G. A. Noskov) **93b:19005** 19K35 (55N33, 57S15)

— (*with* Weinberger, Shmuel) Aperiodic tilings, positive scalar curvature and amenability of spaces. *J. Amer. Math. Soc.* **5** (1992), *no.* 4, 907–918. (Christophe Bavard) **93d:53054** 53C23 (52C07, 53C21)

— (*with* Attie, Oliver; Weinberger, Shmuel) Characteristic classes and distortion of diffeomorphisms. *J. Amer. Math. Soc.* **5** (1992), *no.* 4, 919–921. (Christophe Bavard) **93a:53027** 53C21 (57R20)

Block, L. S. (*with* Coppel, W. A.) ★ Dynamics in one dimension. Lecture Notes in Mathematics, 1513. *Springer-Verlag, Berlin*, 1992. viii+249 *pp. ISBN* 3-540-55309-6 (Frederick R. Marotto) **93g:58091** 58F13 (26A18, 54H20, 58F03)

— (*with* Keesling, James) Computing the topological entropy of maps of the interval with three monotone pieces. *J. Statist. Phys.* **66** (1992), *no.* 3-4, 755–774. (Hu Yi Hu) **93f:58121** 58F08 (54C70, 58F11)

Blocki, Zbigniew A constant in pluripotential theory. *Ann. Polon. Math.* **56** (1992), *no.* 2, 213–217. (Ahmed Zeriahi) **93e:31011** 31C10 (32F05)

— Singular sets of separately analytic functions. *Ann. Polon. Math.* **56** (1992), *no.* 2, 219–225. (Jan Stankiewicz) **93f:32008** 32C07

Blok, B. (*with* Varchenko, A. N.) Topological conformal field theories and the flat coordinates. *Internat. J. Modern Phys. A* **7** (1992), *no.* 7, 1467–1490. (HoSeong La) **93d:81149** 81T40 (32S40, 58C27, 81T13)

— (*with* Wen, Xiao-Gang) Many-body systems with nonabelian statistics. *Nuclear Phys. B* **374** (1992), *no.* 3, 615–646. (Mehmet Koca) **93h:81108** 81T40 (81T70)

Blok, V. R. (*with* Kalyuzhnyi, B. I.; Panasov, S. N.) A model of the cold war and optimal response. (Russian. Russian summary) *Avtomat. i Telemekh.* **1992**, *no.* 3, 124–136; *translation in Automat. Remote Control* **53** (1992), *no.* 3, *part* 2, 430–441. 93A30

Blok, Wim J. (*with* Pigozzi, Don L.) Local deduction theorems in algebraic logic. *Algebraic logic* (*Budapest*, 1988), 75–109, *Colloq. Math. Soc. János Bolyai*, 54, *North-Holland, Amsterdam*, 1991. (Wojciech Dzik) **93g:03053** 03G25 (03B22, 03B45)

— *see also* **Algebraic logic**

Blokh, A. M. (*with* Lyubich, M. Yu.) Measurable dynamics of S-unimodal maps of the interval. *Ann. Sci. École Norm. Sup.* (4) **24** (1991), *no.* 5, 545–573. (Summary) **93f:58132** 58F11 (58F12, 58F13)

— The set of all iterates is nowhere dense in $C([0,1],[0,1])$. *Trans. Amer. Math. Soc.* **333** (1992), *no.* 2, 787–798. (M. Laczkovich) **93c:26003** 26A18 (58F08)

Blokhin, A. L. (*with* Filippov, G. F.) Effective Hamiltonian within the microscopic unitary nuclear model. I. Coherent-state restriction technique for microscopic Hamiltonian. *J. Math. Phys.* **32** (1991), *no.* 7, 1683–1695. (David J. Rowe) **93b:81309** 81V35 (22E70, 81R05)

— (*with* Avramenko, V. I.) Effective Hamiltonian within the microscopic unitary nuclear model. II. The study of sd nuclei with two valence particles. *J. Math. Phys.* **32** (1991), *no.* 7, 1696–1702. (David J. Rowe) **93b:81310** 81V35 (22E70, 81R05)

Blokhin, A. M. (*with* Tsimerman, V. R.) Investigation of some differential-difference models for a system of acoustic equations. (Russian. Russian summary) *Some applications of functional analysis to problems of mathematical physics* (*Russian*), 21–32, 143, *Akad. Nauk SSSR Sibirsk. Otdel., Inst. Mat., Novosibirsk*, 1988. (*see* **93b:00021**) 35R10 (76M20, 76Q05)

— (*with* Druzhinin, I. Yu.) On the stability of a fast magnetohydrodynamic shock wave for a weak magnetic field. (Russian) *Partial differential equations* (*Russian*), 15–32, 142, *Akad. Nauk SSSR Sibirsk. Otdel., Inst. Mat., Novosibirsk*, 1989. (Summary) **93j:76066** 76W05 (35Q99, 76E99, 76L05)

— (*with* Krymskikh, D. A.) Symmetrization of equations of magnetohydrodynamics with anisotropic pressure. (Russian. Russian summary) *Boundary value problems for partial differential equations* (*Russian*), 3–19, 138, *Akad. Nauk SSSR Sibirsk. Otdel., Inst. Mat., Novosibirsk*, 1990. (*see* **93d:35002**) 35Q99 (76W05)

— Investigation of the stability of strong discontinuities in continuum mechanics. (Russian) *Nonclassical equations and equations of mixed type* (*Russian*), 38–47, *Akad. Nauk SSSR Sibirsk. Otdel., Inst. Mat., Novosibirsk*, 1990. (*see* **93b:35002**) 35Q72 (73B99)

— (*with* Druzhinin, I. Yu.; Mishchenko, E. V.) Theory and computation of third order aberrations for cathode systems. I. (English summary) Siberian Advances in Mathematics. *Siberian Adv. Math.* **2** (1992), *no.* 3, 1–51. (Kotik K. Lee) **93m:78009** 78A35

Blokhuis, Aart (*with* Calderbank, A. R.; Metsch, Klaus; Seress, Ákos) An embedding theorem for partial linear spaces. *Advances in finite geometries and designs* (*Chelwood Gate*, 1990), 35–46, *Oxford Sci. Publ., Oxford Univ. Press, New York*, 1991. (F. D. Veldkamp) **93b:51010** 51E14 (05B25, 94B05)

— (*with* Brouwer, Andries; Wilbrink, H. A.) Hermitian unitals are code words. *Discrete Math.* **97** (1991), *no.* 1-3, 63–68. (Harold N. Ward) **93b:51017** 51E22 (05B10, 05B25, 51E20, 94B27)

— (*with* Seress, Ákos; Wilbrink, H. A.) Characterization of complete exterior sets of conics. (English summary) *Combinatorica* **12** (1992), *no.* 2, 143–147. (Tamás Szőnyi) **93i:51015** 51E21 (51E20)

— (*with* Calderbank, A. R.) Quasi-symmetric designs and the Smith normal form. *Des. Codes Cryptogr.* **2** (1992), *no.* 2, 189–206. (Vladimir D. Tonchev) **93e:05016** 05B30

— (*with* Wilbrink, H. A.) Alternative proof of Sine's theorem on the size of a regular polygon in $\mathbf{R}^n$ with the l_∞-metric. *Discrete Comput. Geom.* **7** (1992), *no.* 4, 433–434. (Béla Uhrin) **93b:52004** 52A37

— (*with* Brouwer, Andries) Locally $K_{3,3}$ or Petersen graphs. (English summary) A collection of contributions in honour of Jack van Lint. *Discrete Math.* **106/107** (1992), 53–60. (Daniel Ashlock) **93k:05143** 05C75 (05C70)

— (*with* Szőnyi, Tamás) Note on the structure of semiovals in finite projective planes. (English summary) A collection of contributions in honour of Jack van Lint. *Discrete Math.* **106/107** (1992), 61–65. (Giorgio Faina) **93i:51016** 51E21

— (*with* Thas, J. A.; Cameron, Peter J.) On a generalization of a theorem of B. Segre. (English summary) *Geom. Dedicata* **43** (1992), *no.* 3, 299–305. (Giorgio Faina) **93i:51003** 51A30

Blom, Gunnar (*with* Sandell, Dennis) Cover times for random walks on graphs. (English summary) *Math. Sci.* **17** (1992), *no.* 2, 111–119. (Summary) **93g:60146** 60J15

Blom, J. G. (*with* Zegeling, P. A.) An evaluation of the gradient-weighted moving-finite-element method in one space dimension. (English summary) *J. Comput. Phys.* **103** (1992), *no.* 2, 422–441. (Summary) **93j:65155** 65M60 (76M10)

Blom, Jos Metrical properties of best approximants. *J. Austral. Math. Soc. Ser. A* **53** (1992), *no.* 1, 78–91. (G. Ramharter) **93d:11081** 11K50 (11J70)

Blömer, Johannes Computing sums of radicals in polynomial time. (English summary) *32nd Annual Symposium on Foundations of Computer Science* (*San Juan, PR*, 1991), 670–677, *IEEE Comput. Soc. Press, Los Alamitos, CA*, 1991. (H. J. Godwin) **93g:11130** 11Y16 (68Q25, 68Q40)

Blondel, Corinne Uniqueness of Whittaker model for some supercuspidal representations of the metaplectic group. *Compositio Math.* **83** (1992), *no.* 1, 1–18. (David Manderscheid) **93i:22019** 22E50 (11F70, 22E55)

Blondel, Vincent (*with* Kinnaert, Michel) Discrete-time pole placement with stable controller. (English summary) *Automatica J. IFAC* **28** (1992), *no.* 5, 935–943. (Summary) **93e:93036** 93B55 (93C55)

— (*with* Zhang, Cishen) Simultaneous stabilization using an LTI compensator with a sampler and hold. (English summary) *Internat. J. Control* **57** (1993), *no.* 2, 293–308. (Vsevolod M. Kuntsevich) **93m:93086** 93D15

Blondia, C. Performance evaluation of an $M/1$-stage in an ATM switching element. *Performance Evaluation* **15** (1992), *no.* 1, 1–20. (Pavel P. Bocharov) **93i:68027** 68M20 (60K25, 90B22)

Bloom, Frederick (*with* Bellout, Hamid; Nečas, Jindřich) Global existence of weak solutions to the nonlinear transmission line problem. *Nonlinear Anal.* **17** (1991), *no.* 10, 903–921. (Michael Oberguggenberger) **93f:35137** 35L60 (35D05, 35L65, 35Q60)

— (*with* Bellout, Hamid; Nečas, Jindřich) A model of wave propagation in a nonlinear superconducting dielectric. *Differential Integral Equations* **5** (1992), *no.* 5, 1185–1199. (Kotik K. Lee) **93h:78010** 78A60 (35L70, 35Q60, 78A40)

— (*with* Bellout, Hamid; Nečas, Jindřich) Phenomenological behavior of multipolar viscous fluids. (English summary) *Quart. Appl. Math.* **50** (1992), *no.* 3, 559–583. (Giovanni P. Galdi) **93g:76006** 76A05 (35Q30, 76D05)

Bloom, Stephen L. (*with* Ésik, Zoltán) Floyd-Hoare logic in iteration theories. *J. Assoc. Comput. Mach.* **38** (1991), *no.* 4, 887–934. (G. Mirkowska) **93c:68064** 68Q60 (03B70)

Bloom, Steven (*with* Sampson, Gary) Weighted spherical restriction theorems for the Fourier transform. *Illinois J. Math.* **36** (1992), *no.* 1, 73–101. (Hans P. Heinig) **93b:42023** 42B10 (42B15)

Bloom, Thomas A multivariable version of the Müntz-Szász theorem. *The Madison Symposium on Complex Analysis* (*Madison, WI*, 1991), 85–92, *Contemp. Math.*, 137, *Amer. Math. Soc., Providence, RI*, 1992. (Lawrence Gruman) **93m:32004** 32A10 (32E30)

— (*with* Lubinsky, D. S.; Stahl, Herbert) Interpolatory integration rules and orthogonal polynomials with varying weights. (English summary) Extrapolation and rational approximation (Puerto de la Cruz, 1992). *Numer. Algorithms* **3** (1992), *no.* 1-4, 55–65. (Summary) **93h:65031** 65D30

— (*with* Bos, L. P.; Christensen, C.; Levenberg, N.) Polynomial interpolation of holomorphic functions in $\mathbf{C}$ and $\mathbf{C}^n$. *Rocky Mountain J. Math.* **22** (1992), *no.* 2, 441–470. (Ahmed Zeriahi) **93i:32016** 32E30 (30E05)

Bloom, Walter R. (*with* Walter, Martin E.) Isomorphisms of hypergroups. *J. Austral. Math. Soc. Ser. A* **52** (1992), *no.* 3, 383–400. (K. A. Ross) **93a:43004** 43A22

Bloomquist, Brett K. (*with* Barnhill, Robert E.; Worsey, Andrew J.) Adaptive contouring for triangular Bézier patches. *Geometry processing for design and manufacturing*, 125–135, *SIAM, Philadelphia, PA*, 1992. (*see* **93b:65035**) 65D17

Bloor, M. I. G. (*with* Wilson, Michael John) Free-form surfaces from partial differential equations. *Curve and surface design* (*Tempe, AZ*, 1989), 173–190, *Geom. Des. Publ., SIAM, Philadelphia, PA*, 1992. (*see* **93g:65027**) 65D17 (65M99)

Bloshanskii, I. L. Weyl multipliers and the growth of partial sums of multiple trigonometric Fourier series summable over rectangles. (Russian) *Dokl. Akad. Nauk SSSR* **321** (1991), *no.* 4, 653–656; *translation in Soviet Math. Dokl.* **44** (1992), *no.* 3, 749–752. (L. Gogoladze) **93g:42014** 42B99

— The relation between structure and geometry of sets of unbounded divergence and a method of summation of multiple Fourier series of a function from L_p, $p > 1$, equal to zero on a given set. (Russian) *Dokl. Akad. Nauk SSSR* **321** (1991), *no.* 6, 1133–1137; *translation in Soviet Math. Dokl.* **44** (1992), *no.* 3, 843–847. (S. Baron) **93f:42025** 42B05 (42A20)

— The exact Weyl multiplier for generalized localization on arbitrary open sets for three-dimensional Fourier series summable over rectangles. (Russian) *Dokl. Akad. Nauk*

322 (1992), *no.* 6, 1022–1027; *translation in Soviet Math. Dokl.* **45** (1992), *no.* 1, 215–220. (S. Baron) **93h:42013** 42B15 (42B05)

Blot, Joël Almost-periodic solutions of forced second order Hamiltonian systems. (English and French summaries) *Ann. Fac. Sci. Toulouse Math.* (5) **12** (1991), *no.* 3, 351–363. (Gabriella Tarantello) **93i:58129** 58F27 (58F05)

— Calculus of variations in mean and convex Lagrangians. IV. (English summary) *Ricerche Mat.* **40** (1991), *no.* 1, 3–18. (Anders Linnér) **93j:58023** 58E05 (49K05, 58E30)

Blount, Douglas Law of large numbers in the supremum norm for a chemical reaction with diffusion. *Ann. Appl. Probab.* **2** (1992), *no.* 1, 131–141. (Joël De Coninck) **93a:60037** 60F10

Blowey, J. F. (*with* Elliott, Charles M.) The Cahn-Hilliard gradient theory for phase separation with nonsmooth free energy. I. Mathematical analysis. *European J. Appl. Math.* **2** (1991), *no.* 3, 233–280. (Bishun Pandey) **93a:35025** 35D10 (35B40, 80A22)

— (*with* Elliott, Charles M.) The Cahn-Hilliard gradient theory for phase separation with nonsmooth free energy. II. Numerical analysis. *European J. Appl. Math.* **3** (1992), *no.* 2, 147–179. (Bishun Pandey) **93g:80007** 80A22 (35K85, 35Q99, 49M07, 65M60)

Bloznelis, M. On the distribution of the sup-norm for a stable motion and the rate of convergence. (English summary) *New trends in probability and statistics, Vol.* 1 (*Bakuriani*, 1990), 73–77, *VSP, Utrecht*, 1991. (Summary) **93h:60119** 60J30

— On the distribution of the norm for a multidimensional Brownian bridge. (Russian and Lithuanian summaries) *Litovsk. Mat. Sb.* **31** (1991), *no.* 1, 29–39; *reprinted in Lithuanian Math. J.* **31** (1991), *no.* 1, 19–27 (1992). (Xing Wu Zhuang) **93g:60171** 60J65 (60F05)

Bludov, V. V. (*with* Kleimenov, V. F.; Khlamov, E. V.) A counterexample to a problem of A. Yu. Ol'shanskiĭ. (Russian) *Algebra i Logika* **29** (1990), *no.* 2, 139–140, 260; *translation in Algebra and Logic* **29** (1990), *no.* 2, 95–96 (1991). (Vesselin Drensky) **93a:20053** 20F18 (20E25)

Blum, Alex A look at *Tractatus* 6.54. *Logique et Anal. (N.S.)* **31** (1988), *no.* 123-124, 219–221. 03A05

Blum, Avrim Rank-r decision trees are a subclass of r-decision lists. *Inform. Process. Lett.* **42** (1992), *no.* 4, 183–185. 68T05

Blum, Edward K. (*with* Wang, Xin) Discrete-time versus continuous-time models of neural networks. *J. Comput. System Sci.* **45** (1992), *no.* 1, 1–19. (J. J. Buckley) **93f:92010** 92B20

Blum, Heribert Defect correction schemes for mixed and nonconforming finite elements. (English summary) *Extrapolation and defect correction* (1990), 3–20, *Bonner Math. Schriften*, 228, *Univ. Bonn, Bonn*, 1991. (Summary) **93f:65072** 65M60 (65N30, 73V05, 76M10)

— (*with* Lisky, S.; Rannacher, Rolf) A domain splitting algorithm for parabolic problems. (English and German summaries) *Computing* **49** (1992), *no.* 1, 11–23. (Summary) **93f:65071** 65M55 (65M60, 65Y05)

Blum, Jacques (*with* Saramito, B.) Equilibrium, transport, and stability of a plasma in a tokamak. *Finite elements in fluids, Vol.* 8 (*Huntsville, AL*, 1989), 425–456, *Ser. Comput. Phys. Process. Mech. Thermal Sci., Hemisphere, Washington, DC*, 1992. (*see* **93e:76050**) 76W05

Blum, Manuel (*with* De Santis, Alfredo; Micali, Silvio; Persiano, Giuseppe) Noninteractive zero-knowledge. *SIAM J. Comput.* **20** (1991), *no.* 6, 1084–1118. (M. V. D. Burmester) **93c:68028** 68Q15 (68T15, 94A60)

Blum, Thomas (*with* Goldschmidt, Yadin Y.) Directed paths with random phases. (English summary) *Nuclear Phys. B* **380** (1992), *no.* 3, 588–600. (Summary) **93c:81094** 81S40 (81–04)

Bluman, George Linearization of PDEs. *Group theoretical methods in physics (Moscow*, 1990), 285–288, *Lecture Notes in Phys.*, 382, *Springer, Berlin*, 1991. (Niky Kamran) **93a:58178** 58G35 (35A30, 58G37, 58H05)

Blume, Janet A. On the form of the inverted stress-strain law for isotropic hyperelastic solids. *Internat. J. Non-Linear Mech.* **27** (1992), *no.* 3, 413–421. (Summary) **93b:73003** 73B05 (73G05)

— Reference configurations for homogeneous and inhomogeneous nonlinearly elastic materials. *J. Elasticity* **27** (1992), *no.* 3, 247–266. (Summary) **93d:73027** 73C50 (73B05)

Blume, Lawrence (*with* Easley, David) Evolution and market behavior. (English summary) *J. Econom. Theory* **58** (1992), *no.* 1, 9–40. (Summary) **93g:90026** 90A60

Blümel, Reinhold (*with* Mehl, J. B.) Quantum chaos. *J. Statist. Phys.* **68** (1992), *no.* 1-2, 311–319. (Summary) **93c:81047** 81Q50

— (*with* Lai, Ying-Cheng; Ott, Edward; Grebogi, Celso) Quantum manifestations of chaotic scattering. *Phys. Rev. Lett.* **68** (1992), *no.* 24, 3491–3494. (Summary) **93b:81074** 81Q50 (58F13, 81U99)

Blumen, Alexander *see* **Large-scale molecular systems, 93c:82001**

Blumenhagen, R. (*with* Flohr, M.; Kliem, A.; Nahm, Werner; Recknagel, A.; Varnhagen, R.) $\mathcal{W}$-algebras with two and three generators. *Nuclear Phys. B* **361** (1991), *no.* 1, 255–289. (Edward P. Osipov) **93a:81063** 81R10 (17B65, 17B81, 81T40)

— Covariant construction of $N = 1$ super W-algebras. (English summary) *Nuclear Phys. B* **381** (1992), *no.* 3, 641–669. (D. V. Yur'ev) **93m:81043** 81R10 (17B68, 17B81, 81T40)

Blumenthal, Robert M. ★ Excursions of Markov processes. Probability and its Applications. *Birkhäuser Boston, Inc., Boston, MA*, 1992. xii+275 *pp. ISBN* 0-8176-3575-0 (L. C. G. Rogers) **93b:60159** 60J25 (60G55, 60J55)

Blumenthal, Saul Population size estimation with truncated data: a survey. (English summary) *Bayesian analysis in statistics and econometrics* (*Bangalore*, 1988), 361–367, *Lecture Notes in Statist.*, 75, *Springer, New York*, 1992. (*see* **93e:62002**) 62D05 (62F10, 62F15)

— *see also* **Engelhardt, Max, 93d:62169** *and* **Gulati, S., (93b:62005)**

Blunck, Andrea Cross-ratios in Moufang-Klingenberg planes. *Geom. Dedicata* **43** (1992), *no.* 1, 93–107. (Rolfdieter Frank) **93f:51007** 51C05

— Chain geometries over local alternative algebras. *J. Geom.* **44** (1992), *no.* 1-2, 33–44. (H. Salzmann) **93f:51005** 51B05 (51C05)

Blunt, Martin (*with* Rubin, Barry) Implicit flux limiting schemes for petroleum reservoir simulation. (English summary) *J. Comput. Phys.* **102** (1992), *no.* 1, 194–210. (Summary) **93e:76051** 76M20 (76S05, 86–08, 86A99)

Blyagoz, Z. U. (*with* Teshev, V. A.) A frequency criterion for stability in the large of periodic solutions of nonlinear nonautonomous systems. (Russian. Russian summary) *Differentsial'nye Uravneniya* **28** (1992), *no.* 6, 925–930, 1100; *translation in Differential Equations* **28** (1992), *no.* 6, 737–741. (Jan Andres) **93j:34076** 34D20 (34C25)

Blyth, Colin R. Comments: "The 'closest' estimates of statistical parameters" by E. J. G. Pitman. Pitman's measure of closeness. *Comm. Statist. Theory Methods* **20** (1991), *no.* 11, 3445–3452. (Stavros Kourouklis) **93g:62043c** 62F10 (62F11)

Blyth, Russell D. (*with* Robinson, Derek J. S.) Insoluble groups with the rewriting property $\mathbf{P}_8$. *J. Pure Appl. Algebra* **72** (1991), *no.* 3, 251–263. (Mercede Maj) **93b:20055** 20E34

Blyth, T. S. (*with* Pinto, G. A.) Residuated regular semigroups. (English summary) *Proc. Edinburgh Math. Soc.* (2) **35** (1992), *no.* 3, 501–509. (Saraswathi Subbiah) **93j:20138** 20M99 (06F05)

— (*with* Giraldes, Emilia) Perfect elements in Dubreil-Jacotin regular semigroups. *Semigroup Forum* **45** (1992), *no.* 1, 55–62. (R. B. McFadden) **93b:06030** 06F05 (20M19, 20M99)

Blyth, W. F. (*with* Sloss, B. G.) A pseudospectral Walsh function method. *J. Franklin Inst.* **329** (1992), *no.* 4, 667–678. (D. M. Sloan) **93e:65123** 65M70

Blyumin, S. L. (*with* Pogodaev, A. K.) Block recursion-iteration procedures for solving a nonlinear problem by the least squares method. (Russian. Russian summary) *Zh. Vychisl. Mat. i Mat. Fiz.* **32** (1992), *no.* 8, 1180–1186; *translation in Comput. Math. Math. Phys.* **32** (1992), *no.* 8, 1059–1064. (Summary) **93g:65080** 65H99

Boals, Alfred J. (*with* Gupta, Ajay K.; Sherwani, Naveed A.; Hambrusch, Susanne E.) A lower bound on embedding large hypercubes into small hypercubes. Proceedings of the Twenty-first Southeastern Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, FL, 1990). *Congr. Numer.* **78** (1990), 141–151. (Giorgio Balconi) **93b:05048** 05C10

— (*with* Sherwani, Naveed A.) K_2-node expansion problems. *J. Combin. Math. Combin. Comput.* **11** (1992), 33–46. (Summary) **93a:05052** 05C10

Board, Raymond The online graph bandwidth problem. (English summary) *Inform. and Comput.* **100** (1992), *no.* 2, 178–201. (Itsuo Takanami) **93m:68131** 68R10 (05C85, 68Q25)

— (*with* Pitt, Leonard) On the necessity of Occam algorithms. *Theoret. Comput. Sci.* **100** (1992), *no.* 1, 157–184. (Summary) **93e:68109** 68T05

Boas, Harold P. (*with* Straube, Emil J.) On equality of line type and variety type of real hypersurfaces in $\mathbb{C}^n$. *J. Geom. Anal.* **2** (1992), *no.* 2, 95–98. (Jeffery D. McNeal) **93g:32024** 32F25

Boas, Ralph Philip, Jr. *see* **Fisher, Stephen D., 93m:01068** *and* **Gasper, George**

Boaventura, M. (*with* Cuminato, J. A.) Reductive quadrature rules for Volterra integral equations of the second kind. (Portuguese. English summary) *Bol. Soc. Paran. Mat.* (2) **11** (1990), *no.* 2, 57–71 (1992). (Summary) **93f:65095** 65R20 (45L05)

Bobenko, A. I. Integrable surfaces. *Nonlinear world, Vol.* 1 (*Kiev*, 1989), 36–55, *World Sci. Publishing, River Edge, NJ*, 1990. (*see* **93b:00012**) 53A10 (14K25, 35Q53, 58F07)

— Surfaces of constant mean curvature and integrable equations. (Russian) *Uspekhi Mat. Nauk* **46** (1991), *no.* 4(280), 3–42, 192; *translation in Russian Math. Surveys* **46** (1991), *no.* 4, 1–45. (P. E. Markov) **93b:53009** 53A10 (58F07)

Bobik, I. O. (*with* Ptashnik, B. I.) Boundary value problems for a non-strictly hyperbolic equation with constant coefficients. (Ukrainian) *Vtsnik L'vtv. Untv. Ser. Mekh. Mat. No.* 34 (1990), 36–42. 35L35

diaz-Bobillo, Ignacio J. *see* **Diaz-Bobillo, Ignacio J.**

Bobillo Guerrero, Pablo *see* **Papers in honor of Pablo Bobillo Guerrero, 93k:00042**

Bobisud, L. E. Steady-state turbulent flow with reaction. *Rocky Mountain J. Math.* **21** (1991), *no.* 3, 993–1007. (J. R. Ockendon) **93a:34026** 34B15 (76F99, 76S05)

— Existence of solutions to some nonlinear diffusion problems. *J. Math. Anal. Appl.* **168** (1992), *no.* 2, 413–424. (Nikolaĭ Kutev) **93h:34031** 34B15

Bobkov, S. G. Logarithmically concave measures and their application to random processes that are linearly generated by independent variables. (Russian. Russian summary) *Zap. Nauchn. Sem. S.-Peterburg. Otdel. Mat. Inst. Steklov.* (*POMI*) **194** (1992), *Problemy Teorii Veroyatnost. Raspred.* 12, 28–29, 176. (Summary) **93g:60025** 60E05 (60G70)

Bobkov, V. V. (*with* Bobkova, N. A.) On the construction of methods for the numerical solution of stiff systems. (Russian. Russian summary) *Vestnik Beloruss. Gos. Univ. Ser. I Fiz. Mat. Mekh.* **1992**, *no.* 3, 60–63, 80. (Summary) **93j:65100** 65L05

— (*with* Burakov, V. S.; Gaishun, I. V.; Yanovich, L. A.; Monastyrnyi, P. I.) Vladimir Ivanovich Krylov (on the occasion of his 90th birthday). (Russian) *Vestsi Akad. Navuk Belarusi Ser. Fīz. Mat. Navuk* **1992**, *no.* 5-6, 117–119. (Editors) **93m:01064** 01A70

Bobkova, N. A. (*with* Bobkov, V. V.) On the construction of methods for the numerical solution of stiff systems. (Russian. Russian summary) *Vestnik Beloruss. Gos. Univ. Ser. I Fiz. Mat. Mekh.* **1992**, *no.* 3, 60–63, 80. (Summary) **93j:65100** 65L05

Boboc, Nicu (*with* Bucur, Gh.) Green kernels on topological spaces. Analyse complexe (Bucharest, 1989). *Rev. Roumaine Math. Pures Appl.* **36** (1991), *no.* 1-2, 21–32. (Ursula Schirmeier) **93a:31017** 31D05

— (*with* Bucur, Gh.) Lattice properties in the set of resolvents and subordinations in excessive structures. Proceedings of the Colloquium on Complex Analysis and the Sixth Romanian-Finnish Seminar. *Rev. Roumaine Math. Pures Appl.* **36** (1991), *no.* 9-10, 595–634. (Hedi Ben Saad) **93h:31015** 31D05

— (*with* Beznea, Lucian) Balayages absorbants, paraboliques, elliptiques et quasi elliptiques dans la théorie du potentiel; relations avec la fonction de Green. (English and French summaries) [Absorbent, parabolic, elliptic and quasi-elliptic balayages in potential theory; relations with the Green function] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 6, 685–688. (Summary) **93g:31024** 31D05

— (*with* Bucur, Gh.) Subordinations in excessive structures. Compressions in H-cones. *Rev. Roumaine Math. Pures Appl.* **37** (1992), *no.* 1, 7–42. (Klaus Janssen) **93k:31010** 31D05 (60J45)

Bobochko, V. N. Asymptotic integration of a system of differential equations with a turning point. (Russian) *Differentsial'nye Uravneniya* **27** (1991), *no.* 9, 1505–1515, 1651; *translation in Differential Equations* **27** (1991), *no.* 9, 1061–1069 (1992). (Leonid Yu. Motylev) **93b:34069** 34E20

Bobok, Jozef (*with* Snoha, Ľubomír) Periodic points and little Fermat theorem. *Nieuw Arch. Wisk.* (4) **10** (1992), *no.* 1-2, 33–35. (Armel Mercier) **93i:11006** 11A25

Bobrik, R. V. An asymptotic expansion for the linear system with Gaussian parameter. *Probability theory and mathematical statistics* (*Kiev*, 1991), 5–9, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93k:60008**) 62H10

— Mean-square stability for a harmonic oscillator with a random parameter. (Ukrainian. Russian and Ukrainian summaries) *Ukraïn. Mat. Zh.* **44** (1992), *no.* 9, 1276–1278. (Summary) **93k:34129** 34F05 (34D99, 60H10)

Bobrovnikova, T. A. *see* **de Fermat, Pierre, 93m:01023**

Bobrovsky, Ben-Zion (*with* Zeitouni, Ofer) Some results on the problem of exit from a domain. *Stochastic Process. Appl.* **41** (1992), *no.* 2, 241–256. (George Yin) **93c:60115** 60J60 (60H10)

Bobrow, James E. (*with* Murray, Walter) An algorithm for RLS identification of parameters that vary quickly with time. (English summary) *IEEE Trans. Automat. Control* **38** (1993), *no.* 2, 351–354. 93B30 (93B40)

Bobrowski, Dobiesław Linear boundary value problem in Banach space with random element in two-point boundary condition. (English summary) *Arch. Math. (Brno)* **26** (1990), *no.* 4, 215–221. (G. N. Mil'shtein) **93i:34100** 34F05 (34B05, 34G10, 60H10)

— Probability of disconjugation of the second order random differential equation. (English summary) *Fasc. Math. No.* 22 (1991), 143–146 (1992). (From the text) **93d:34100** 34F05 (34C10)

Bobryk, R. V. *see* **Bobrik, R. V.**

Bobylëv, A. V. (*with* Toscani, G.) On the generalization of the Boltzmann H-theorem for a spatially homogeneous Maxwell gas. *J. Math. Phys.* **33** (1992), *no.* 7, 2578–2586. (Carlo Cercignani) **93c:82046** 82C40

Bobylëv, N. A. On Helly's intersection theorem. (Russian) *Mat. Zametki* **50** (1991), *no.* 4, 28–32, 157; *translation in Math. Notes* **50** (1991), *no.* 3-4, 1004–1007 (1992). (Nikolay V. Zhivkov) **93d:52007** 52A35 (49J52)

— (*with* Burman, Yu. M.; Shubin, A. B.) Control algorithms with a minimal number of switchings. (Russian. Russian summary) *Avtomat. i Telemekh.* **1992**, *no.* 5, 3–10; *translation in Automat. Remote Control* **53** (1992), *no.* 5, *part* 1, 619–626. (N. N. Petrov) **93h:93012** 93B05 (49K15, 57R27, 93B40, 93C15)

— (*with* Burman, Yu. M.; Korovin, S. K.) Error estimation for the harmonic balance method. (Russian. Russian summary) *Avtomat. i Telemekh.* **1992**, *no.* 6, 3–12; *translation in Automat. Remote Control* **53** (1992), *no.* 6, *part* 1, 785–793. (Introduction) **93f:34068** 34C25 (34A45, 34H05, 93C05)

— (*with* Burman, Yu. M.) Morse lemmas for multidimensional variational problems. *Nonlinear Anal.* **18** (1992), *no.* 6, 595–604. (Hubertus Th. Jongen) **93c:58042** 58E05 (35A15, 47H19, 49K10)

Boca, Florin (*with* Rădulescu, Florin) Singularity of radial subalgebras in II_1 factors associated with free products of groups. *J. Funct. Anal.* **103** (1992), *no.* 1, 138–159. (Marie Choda) **93d:46103** 46L35

Boccara, N. (*with* Roger, M.) Period-doubling route to chaos for a global variable of a probabilistic automata network. (English summary) *J. Phys. A* **25** (1992), *no.* 16, L1009–L1014. 82C32

Boccardo, Lucio (*with* Bénilan, Philippe; Herrero, Miguel A.) On the limit of solutions of $u_t = \Delta u^m$ as $m \to \infty$. Some topics in nonlinear PDEs (Turin, 1989). *Rend. Sem. Mat. Univ. Politec. Torino* **1989**, *Special Issue*, 1–13 (1991). (Zhen Chao Cao) **93c:35069** 35K57 (35B05)

— (*with* Gallouët, Thierry; Vázquez, Juan Luis) Some regularity results for some nonlinear parabolic equations in L^1. Some topics in nonlinear PDEs (Turin, 1989). *Rend. Sem. Mat. Univ. Politec. Torino* **1989**, *Special Issue*, 69–74 (1991). (Xiang Sheng Xu) **93d:35063** 35K55 (35B65)

— (*with* Murat, François) Homogenization of nonlinear unilateral problems. *Composite media and homogenization theory (Trieste*, 1990), 81–105, *Progr. Nonlinear Differential Equations Appl.*, 5, *Birkhäuser Boston, Boston, MA*, 1991. (Francesco Ferro) **93b:49008** 49J40 (35B27, 47H19)

— (*with* Bensoussan, Alain; Murat, François) Homogenization of a nonlinear partial differential equation with unbounded solution. *Progress in partial differential equations: calculus of variations, applications (Pont-à-Mousson*, 1991), 1–12, *Pitman Res. Notes Math. Ser.*, 267, *Longman Sci. Tech., Harlow*, 1992. (Taras A. Mel'nyk) **93m:35023** 35B27

— (*with* Bensoussan, Alain; Murat, François) H convergence for quasi-linear elliptic equations with quadratic growth. (English summary) *Appl. Math. Optim.* **26** (1992), *no.* 3, 253–272. (Józef Joachim Telega) **93j:35028** 35B27 (35J60, 49J40, 73B27)

— (*with* Bensoussan, Alain) On a quasi-linear elliptic PDE with noncoercive principal part. *Asymptotic Anal.* **5** (1992), *no.* 6, 473–480. (Mario M. Coclite) **93h:35069** 35J65 (35B20)

— (*with* Gallouët, Thierry; Murat, François) Unicité de la solution de certaines équations elliptiques non linéaires. (English and French summaries) [Uniqueness of the solution of some nonlinear elliptic equations] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 11, 1159–1164. (Nguyên-Phuong-Các) **93k:35085** 35J60 (35B30)

— (*with* Gallouët, Thierry) Strongly nonlinear elliptic equations having natural growth terms and L^1 data. *Nonlinear Anal.* **19** (1992), *no.* 6, 573–579. (Ya Zhe Chen) **93h:35060** 35J60

— (*with* Murat, François) Almost everywhere convergence of the gradients of solutions to elliptic and parabolic equations. *Nonlinear Anal.* **19** (1992), *no.* 6, 581–597. (Ya Zhe Chen) **93h:35061** 35J60 (35J65, 35K60)

— (*with* Murat, François; Puel, Jean-Pierre) L^∞ estimate for some nonlinear elliptic partial differential equations and application to an existence result. (French summary) *SIAM J. Math. Anal.* **23** (1992), *no.* 2, 326–333. (Summary) **93d:35049** 35J65 (35B45)

Bocharov, P. P. (*with* Pechinkin, A. V.) ★ Теория вероятностей. (Russian. Russian summary) [Probability theory] *Univ. Druzhby Narodov, Moscow*, 1990. 147 *pp. ISBN* 5-209-00316-7 60-01

Bocharov, V. Yu. (*with* Melikyan, A. A.) Guaranteed speed problem with target point search in a polygonal uncertainty domain. *Soviet J. Comput. Systems Sci.* **30** (1992), *no.* 1, 61–69; *translated from Izv. Akad. Nauk SSSR Tekhn. Kibernet.* **1991**, *no.* 1, 82–92 (*Russian*). (Summary) **93b:49006** 49J35 (90D25, 93C41)

Bocharova, I. E. (*with* Kudryashov, B. D.) Construction of a discrete mapping model for channels with fading. (Russian. Russian summary) *Problemy Peredachi Informatsii* **29** (1993), *no.* 1, 58–67; *translation in Problems Inform. Transmission* **29** (1993), *no.* 1, 50–57. (Summary) **93m:94016** 94A40

Bochenek, Jan Second order semilinear Volterra integrodifferential equation in Banach space. (English summary) *Ann. Polon. Math.* **57** (1992), *no.* 3, 231–241. (Curtis C. Travis) **93k:47067** 47N20 (34G10, 34K30, 45D05, 47D09)

— Correction to: "On some linear eigenvalue problems with an indefinite weight function" [Univ. Iagel. Acta Math. No. 27 (1988), 315–323; MR 90c:35051]. *Univ. Iagel. Acta Math. No.* 29 (1992), 61–63. (From the text) **93f:35040** 35J05 (35P15, 47F05)

Böcherer, Siegfried (*with* Satoh, Takakazu; Yamazaki, Tadashi) On the pullback of a differential operator and its application to vector valued Eisenstein series. *Comment. Math. Univ. St. Paul.* **41** (1992), *no.* 1, 1–22. (K.-B. Gundlach) **93e:11062** 11F46 (11F30)

— (*with* Schulze-Pillot, Rainer) The Dirichlet series of Koecher and Maass and modular forms of weight $\frac{3}{2}$. *Math. Z.* **209** (1992), *no.* 2, 273–287. (Solomon Friedberg) **93b:11053** 11F37 (11E45, 11F55, 11F66)

Bochillo, G. P. On the geometry of distributions on the manifold of all hyperplane elements of an n-dimensional projective space. (Russian) *Geometry and topology of homogeneous spaces (Russian)*, 12–23, *Altaĭsk. Gos. Univ., Barnaul*, 1988. (Vladislav Goldberg) **93d:53020** 53A20

Bochkarev, A. I. Trace identities and analytical evaluation of the functional determinants. (English summary) *Phys. Rev. D* (3) **46** (1992), *no.* 12, 5550–5556. (Summary) **93k:81052** 81Q20 (81T10)

Bochkarev, S. V. Rearrangements of periodic multiplicative orthogonal series. *Colloq. Math.* **60/61** (1990), *no.* 1, 291–299. (Wo-Sang Young) **93d:42031** 42C10 (42C20)

Bochkareva, D. M. (*with* Vyazgin, V. A.) Fuzzy information in design systems. (Russian. Russian summary) *Vestnik Moskov. Univ. Ser. XV Vychisl. Mat. Kibernet.* **1992**, *no.* 4, 52–58, 74; *translation in Moscow Univ. Comput. Math. Cybernet.* **47** (1992), *no.* 4, 47–51. 90C70

Bochkareva, O. V. On a solution, which has an exponential singularity on the lines of characteristic degeneration of a hyperbolic equation, of a boundary value problem in an unbounded domain. (Russian) *Boundary value problems for equations in mathematical physics (Russian)*, 16–19, *Kuĭbyshev. Gos. Ped. Inst., Kuybyshev*, 1991. (*see* **93f:35006**) 35L80

Bochmann, Gregor V. (*with* Luo, Gang; Das, Anindya; Wu, Cheng) Failure-equivalent transformation of transition systems to avoid internal actions. (English summary) *Inform. Process. Lett.* **44** (1992), *no.* 6, 333–343. (Summary) **93h:68088** 68Q60 (68Q90)

Bochnak, J. (*with* Huisman, J.) When is a complex elliptic curve the product of two real algebraic curves? *Math. Ann.* **293** (1992), *no.* 3, 469–474. (Robert Silhol) **93i:14028** 14H52 (11G05, 14G27, 14P05)

— (*with* Kucharz, Wojciech) Complex cycles on real algebraic models of a smooth manifold. *Proc. Amer. Math. Soc.* **114** (1992), *no.* 4, 1097–1104. (Henry C. King) **93g:57032** 57R19 (14C22, 14C25, 14P25)

— (*with* Kucharz, Wojciech) Algebraic cycles and approximation theorems in real algebraic geometry. *Trans. Amer. Math. Soc.* **337** (1993), *no.* 1, 463–472. (Henry C. King) **93g:57033** 57R19 (14C25, 14P25)

Bock, Igor Thickness optimization in viscoelastic plate bending. *Differential equations and control theory (Iași*, 1990), 44–50, *Pitman Res. Notes Math. Ser.*, 250, *Longman Sci. Tech., Harlow*, 1991. (Summary) **93a:49024** 49Q10 (73F15, 73K10, 73K40, 90C90)

— (*with* Lovíšek, Ján) An optimal control problem for a pseudoparabolic variational inequality. (Slovak summary) *Appl. Math.* **37** (1992), *no.* 1, 62–80. (Summary) **93f:49012** 49J40 (47H19, 73F15, 73K10, 73K40, 73V25)

Bock, M. E. *see* **Readings in econometric theory and practice, 93m:62006**

Bockstaele, Paul Adrianus Romanus and the trigonometric tables of Georg Joachim Rheticus. *Amphora*, 55–66, *Birkhäuser, Basel*, 1992. (William R. Shea) **93k:01017** 01A40

Boden, Margaret A. Has AI helped psychology? *The foundations of artificial intelligence*, 108–111, *Cambridge Univ. Press, Cambridge*, 1990. (*see* **93b:68073**) 68T01

Bodendiek, Rainer (*with* Wagner, Klaus[1]; Burosch, Gustav; Voss, Hans-Jürgen) ★ Graphentheorie. Band 1. (German) [Graph theory. Vol. 1] Anwendung auf Topologie, Gruppentheorie und Verbandstheorie. [Application to topology, group theory and lattice theory] *Bibliographisches Institut, Mannheim*, 1989. xvi+252 *pp. ISBN* 3-411-03226-X (Henry Martyn Mulder) **93g:05002** 05–01 (05C10, 05C25, 05C75, 06A06)

— (*with* Wagner, Klaus[1]; Burosch, Gustav; Širáň, Jozef; Walther, G.; Walther, Hansjoachim) ★ Graphentheorie. Band 2. (German) [Graph theory. Vol. 2] Weitere Methoden, Masse-Graphen, Planarität und minimale Graphen. [Further methods, mass graphs, planarity and minimal graphs] *Bibliographisches Institut, Mannheim*, 1990. x+356 *pp. ISBN* 3-411-14121-2 (B. Zelinka) **93g:05003** 05–01 (05C10, 05C78, 06A07)

— (*with* Wagner, Klaus[1]) Solution of König's embedding problem for bananas surfaces. Mathematische Wissenschaften gestern und heute. 300 Jahre Mathematische Gesellschaft in Hamburg, Teil 3 (Hamburg, 1990). *Mitt. Math. Ges. Hamburg* **12** (1991), *no.* 3, 749–765. (Jozef Širáň) **93c:05044** 05C10 (57M15)

— (*with* Burosch, Gustav) The class of all Egyptian graphs. *Bull. Inst. Combin. Appl.* **5** (1992), 100–101. (Nora Hartsfield) **93h:05139** 05C78

— (*with* Walther, G.) On infinite Egyptian graphs. (English summary) *Bull. Inst. Combin. Appl.* **8** (1993), 75–85. (Summary) **93m:05170** 05C78

Bodjanová, Slávka Some binary relations and operations on the set of fuzzy partitions. (English summary) *Fuzzy Sets and Systems* **53** (1993), *no.* 3, 305–317. (Summary) **93m:04008** 04A72

Bodlaender, Hans L. (*with* Kratsch, Dieter) The complexity of coloring games on perfect graphs. (English summary) *Theoret. Comput. Sci.* **106** (1992), *no.* 2, 309–326. (Summary) **93h:90126** 90D43 (05C15, 68Q25, 90D05)

Bodnar, D. Ĭ. Corresponding branched continued fractions with linear partial numerators for double power series. (Russian. Ukrainian summary) *Ukrain. Mat. Zh.* **43** (1991), *no.* 4, 474–482; *translation in Ukrainian Math. J.* **43** (1991), *no.* 4, 437–444. (Kh. Ĭ. Kuchmins'ka) **93a:40002** 40A15 (30B70)

Bodnar, O. Ya. Geometry of phyllotaxis. (Russian. English and Russian summaries) *Dokl. Akad. Nauk Ukrainy* **1992**, *no.* 9, 9–14, 168. (Summary) **93g:92006** 92C15 (51N20)

Bodnariu, Mircea Projective limits in stable categories. (Romanian. English summary) *Stud. Cerc. Mat.* **44** (1992), *no.* 1, 3–11. 18A30

Bodó, Z. How to add poly-log many numbers in constant depth. *Combinatorics (Eger*, 1987), 541–543, *Colloq. Math. Soc. János Bolyai*, 52, *North-Holland, Amsterdam*, 1988. (*see* **93m:05002**) 68Q15

Bodon, Elena (*with* Spedicato, Emilio) Solution of linear least squares via the ABS algorithm. (English summary) *Math. Programming* **58** (1993), *no.* 1, *Ser. A*, 111–136. (Summary) **93m:65055** 65F20 (65K05, 90C20)

Bodonyi, R. J. (*with* Duck, Peter W.) Boundary-layer receptivity due to a wall suction and control of Tollmien-Schlichting waves. *Phys. Fluids A* **4** (1992), *no.* 6, 1206–1214. (Summary) **93a:76029** 76D10 (76D33, 76E05)

Bodson, Marc (*with* Willner, Yosef; Heymann, Michael) Parameter convergence and uniqueness in nonminimal parameterizations for multivariable adaptive control. *SIAM J. Control Optim.* **30** (1992), *no.* 4, 800–815. (Edward Jezierski) **93g:93051** 93C40 (93B10, 93C35, 93D20)

Bodvarsson, Gudmundur S. (*with* Zimmerman, Robert W.) Integral method solutions to flow problems in unsaturated porous media. (English summary) *Modeling and analysis of diffusive and advective processes in geosciences*, 222–233, *SIAM, Philadelphia, PA*, 1992. (*see* **93b:86001**) 76S05

Bodyanskii, E. V. (*with* Boryachok, M. D.) Locally optimal pseudodual control of objects with unknown parameters. (Russian. Russian summary) *Avtomat. i Telemekh.* **1992**, *no.* 2, 90–97; *translation in Automat. Remote Control* **53** (1992), *no.* 2, *part* 1, 225–231. 93C40

Boe, Brian D. (*with* Collingwood, David H.) Enright-Shelton theory and Vogan's problem for generalized principal series. *Mem. Amer. Math. Soc.* **102** (1993), *no.* 486, viii+107 *pp.* (Brad Shelton) **93g:22014** 22E46 (22E47)

Boe, Warren J. (*with* Cheng, Chun Hung; Kusiak, Andrew) A branch-and-bound algorithm for solving the machine allocation problem. *Control and dynamic systems, Vol.* 47, 399–419, *Academic Press, San Diego, CA*, 1991. (Jacek Błażewicz) **93d:90029** 90B80 (90C27)

Boehler, J.-P. (*with* Adams, B. L.; Guidi, M.; Onat, E. T.) Group theory and representation of microstructure and mechanical behavior of polycrystals. *J. Mech. Phys. Solids* **40** (1992), *no.* 4, 723–737. (Summary) **93b:73002** 73B05 (70G05, 73B10, 73S10, 82D25)

Boehm, Wolfgang Geometrie im geometric Design. (German summary) [Geometry in geometric design] *Proceedings of the 3rd Congress of Geometry* (*Thessaloniki*, 1991), 97–102, *Aristotle Univ. Thessaloniki, Thessaloniki*, 1992. (Summary) **93f:65022** 65D17 (53A04)

Boehme, T. K. (*with* Preuss, W.; van der Wall, V.) On a simple numerical method for computing Stieltjes integrals in reliability theory. (English summary) *Probab. Engrg. Inform. Sci.* **5** (1991), *no.* 1, 113–128. (Summary) **93e:65035** 65D30

Boekee, D. E. (*with* Weber, J. H.; de Vroedt, Cornelis) Necessary and sufficient conditions on block codes correcting/detecting errors of various types. (English summary) *IEEE Trans. Comput.* **41** (1992), *no.* 9, 1189–1193. (Summary) **93g:94030** 94B60

Boender, C. G. E. (*with* Caron, R. J.; Rinnooy Kan, A. H. G.; et al.) Shake-and-bake algorithms for generating uniform points on the boundary of bounded polyhedra. *Oper. Res.* **39** (1991), *no.* 6, 945–954. (From the introduction) **93f:90106** 90C05 (65K05)

Boenkost, W. (*with* Constantinescu, Florin) Functional calculus of the Borel transform. *J. Math. Phys.* **33** (1992), *no.* 5, 1648–1651. (Ahmed I. Zayed) **93d:30003** 30B10 (30B30, 40G10, 44A10, 44A15)

Boente, Graciela (*with* Fraiman, Ricardo) Strong order of convergence and asymptotic distribution of nearest neighbor density estimates from dependent observations. (English summary) *Sankhyā Ser. A* **53** (1991), *no.* 2, 194–205. (Michael Falk) **93h:62069** 62G05

de Boer, Frank S. (*with* Kok, Joost N.; Palamidessi, Catuscia; Rutten, Jan J. M. M.) From failure to success: comparing a denotational and a declarative semantics for Horn clause logic. (English summary) Selected papers of the International BCS-FACS Workshop on Semantics for Concurrency (Leicester, 1990). *Theoret. Comput. Sci.* **101** (1992), *no.* 2, 239–263. (Summary) **93i:68116** 68Q55 (03B70)

— (*with* Kok, Joost N.; Palamidessi, Catuscia; Rutten, Jan J. M. M.) A paradigm for asynchronous communication and its application to concurrent constraint programming. (English summary) *Logic programming languages*, 82–114, *MIT Press, Cambridge, MA*, 1993. (*see* **93k:68020**) 68N17

de Boer, Jan (*with* Goeree, Jacob) Markov traces and II_1 factors in conformal field theory. *Comm. Math. Phys.* **139** (1991), *no.* 2, 267–304. (Summary) **93i:81211** 81T40 (46L60, 46N50)

— Multi-matrix models and the KP hierarchy. *Nuclear Phys. B* **366** (1991), *no.* 3, 602–628. (Olga Kravchenko) **93d:81150** 81T40 (17B68, 58F07)

— (*with* Goeree, Jacob) W-gravity from Chern-Simons theory. (English summary) *Nuclear Phys. B* **381** (1992), *no.* 1-2, 329–359. (From the introduction) **93j:81086** 81T40 (81T13)

— (*with* Goeree, Jacob) The covariant W_3 action. *Phys. Lett. B* **274** (1992), *no.* 3-4, 289–297. (From the introduction) **93a:81166** 81T40 (58D27, 81T13)

de Boer, Martin J. M. (*with* Lindenmayer, Aristid; Tuza, Zsolt) A periodic division pattern that cannot be generated by DOL systems. *Theoret. Comput. Sci.* **83** (1991), *no.* 2, *Algorithms Automat. Complexity Games*, 205–218. (K. G. Subramanian) **93a:68068** 68Q42 (68R10, 68U05)

— (*with* Fracchia, F. David; Prusinkiewicz, Przemysław) A model for cellular development in morphogenetic fields. (English summary) *Lindenmayer systems*, 351–370, *Springer, Berlin*, 1992. (*see* **93m:68004**) 92C15

Boersma, J. Uniform asymptotics of a Bessel-function series occurring in a transmission-line problem. *J. Comput. Appl. Math.* **37** (1991), *no.* 1-3, 143–159. (F. W. J. Olver) **93a:41057** 41A60 (33C10, 94A05)

Boesch, F. T. (*with* Li, Xiao Ming[1]; Stivaros, C.; Suffel, C.) Reliable graphs with unreliable nodes. *Graph theory, combinatorics, and applications, Vol.* 1 (*Kalamazoo, MI*, 1988), 159–177, *Wiley-Intersci. Publ., Wiley, New York*, 1991. (Summary) **93c:05107** 05C90

— (*with* Li, Xiao Ming[1]) Some new results in algebraic graph theory. (English and Chinese summaries) *Math. Appl.* **5** (1992), *no.* 2, 70–75. (Jing Zhong Mao) **93h:05115** 05C50

Boettcher, Stefan (*with* Bender, Carl M.; Lipatov, L. N.) Almost zero-dimensional quantum field theories. (English summary) *Phys. Rev. D* (3) **46** (1992), *no.* 12, 5557–5573. (Summary) **93k:81152** 81T16 (81–04)

crawley-Boevey, William *see* **Crawley-Boevey, William**

Boffa, Maurice Une remarque sur les systèmes complets d'identités rationnelles. (English summary) [A remark on complete systems of rational identities] *RAIRO Inform. Théor. Appl.* **24** (1990), *no.* 4, 419–423. (Summary) **93b:68041** 68Q45

— (*with* Point, Françoise) Identités de Engel généralisées. (English summary) [Generalized Engel identities] *C. R. Acad. Sci. Paris Sér. I Math.* **313** (1991), *no.* 13, 909–911. (R. M. Bryant) **93b:20049** 20E10 (20F18, 20F45)

— Décoration ensembliste de graphes par approximations. [Set-theoretic decoration of graphs by approximations] *L'anti-fondation en logique et en théorie des ensembles*, 45–50, *Cahiers Centre Logique*, 7, *Univ. Catholique Louvain, Louvain-la-Neuve*, 1992. (C. Ward Henson) **93i:03074** 03E70

— (*with* Point, Françoise) m-identités. (English summary) [m-identities] *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 12, 879–880. (From the introduction) **93c:20064** 20F19

Boffetta, G. (*with* Osborne, A. R.) Computation of the direct scattering transform for the nonlinear Schroedinger equation. (English summary) *J. Comput. Phys.* **102** (1992), *no.* 2, 252–264. 81U99 (81–08)

Boffi, Giandomenico Some remarks on plethysms. (Italian. English summary) *Atti Accad. Peloritana Pericolanti Cl. Sci. Fis. Mat. Natur.* **68** (1990), 89–100 (1992). (Summary) **93g:20085** 20G05

— (*with* Sánchez, Rafael) On the resolutions of the powers of the Pfaffian ideal. *J. Algebra* **152** (1992), *no.* 2, 463–491. (Mihalis Maliakas) **93j:14065** 14M12 (13D02)

— Universal filtration of Schur complexes. *Proc. Amer. Math. Soc.* **119** (1993), *no.* 2, 351–355. (Mihalis Maliakas) **93k:13023** 13D25 (20G05)

Boffi, V. C. (*with* Azmy, Y. Y.; Mandrekas, J.; Protopopescu, V.) Lie group analysis for a multispecies, spatially inhomogeneous, mutually interacting gas mixture. *Transport Theory Statist. Phys.* **21** (1992), *no.* 1-2, 119–131. (F. Oliveri) **93c:35003** 35A30 (58G35, 82B40, 82C22)

Bofill, F. (*with* Egozcue, J. J.; Griful, E.) Orthogonal decomposition of stationary processes into nondeterministic components. (Spanish) *Proceedings of the XII Congress on Differential Equations and Applications/II Congress on Applied Mathematics* (*Spanish*) (*Oviedo*, 1991), 601–606, *Univ. Oviedo, Oviedo*, 1991. (*see* **93j:00009**) 60G10

Bofinger, Eve Selecting "demonstrably best" or "demonstrably worst" exponential populations. *Austral. J. Statist.* **33** (1991), *no.* 2, 183–190. (S. Panchapakesan) **93b:62031** 62F07

— (*with* Lewis, Gwenda J.) Simultaneous comparisons with a control and with the best: two stage procedures. (English summary) With discussion. *The frontiers of modern statistical inference procedures, II* (*Sydney*, 1987), 25–45, *Amer. Sci. Press Ser. Math. Management Sci.*, 28, *Amer. Sci. Press, Columbus, OH*, 1992. (Summary) **93k:62039** 62F07 (62L10)

— Unconstrained and nonlinear confidence bounds for location parameters. (English summary) With discussion. *The frontiers of modern statistical inference procedures, II* (*Sydney*, 1987), 401–420, *Amer. Sci. Press Ser. Math. Management Sci.*, 28, *Amer. Sci. Press, Columbus, OH*, 1992. (S. Panchapakesan) **93k:62040** 62F07 (62F25)

— (*with* Lewis, Gwenda J.) Two-stage procedures for multiple comparisons with a control. (English summary) *Amer. J. Math. Management Sci.* **12** (1992), *no.* 4, 253–275. (Summary) **93k:62041** 62F07 (62J15)

— Comparisons and selection of two-parameter exponential populations. (English summary) *Austral. J. Statist.* **34** (1992), *no.* 1, 65–75. 62F07

— Multiple comparisons with "best" for multivariate normal populations. *Comm. Statist. Theory Methods* **21** (1992), *no.* 4, 915–941. (S. Panchapakesan) **93f:62030** 62F07 (62J15)

— *see also* **Frontiers of modern statistical inference procedures, 93g:62002**

Bogachev, K. Yu. Iterative methods for solving quasilinear elliptic problems in domains of complex shape. (Russian) *Dokl. Akad. Nauk* **322** (1992), *no.* 4, 641–645; *translation in Soviet Math. Dokl.* **45** (1992), *no.* 1, 152–156. (Jike Wu) **93g:65157** 65N99 (35A25, 35A35, 35J65)

— Iterative methods of solving main boundary value problems for second-order quasilinear elliptic equations in complexly shaped domains. (English summary) *Russian J. Numer. Anal. Math. Modelling* **7** (1992), *no.* 4, 281–298. (I. Norman Katz) **93j:65199** 65N55 (65N12)

Bogachev, L. V. (*with* Molchanov, S. A.; Pastur, L. A.) On the density of states of random band matrices. (Russian) *Mat. Zametki* **50** (1991), *no.* 6, 31–42, 157; *translation in Math. Notes* **50** (1991), *no.* 5-6, 1232–1242 (1992). (Krystyna Parczyk) **93b:82032** 82B44 (47N55, 60F20, 60K35)

Bogachev, V. I. Analytic functionals of stochastic processes and infinite-dimensional oscillatory integrals. *Probability theory and mathematical statistics, Vol. I* (*Vilnius*, 1989), 152–165, "*Mokslas*", *Vilnius*, 1990. (Denis R. Bell) **93b:60118** 60H07 (60J60)

— (*with* Röckner, Michael) Les capacités gaussiennes sont portées par des compacts métrisables. (English and French summaries) [Gaussian capacities are supported by metrizable compacts] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 2, 197–202. (Summary) **93i:60104** 60H07 (31C15, 60G15)

— Functionals of random processes and related infinite-dimensional oscillatory integrals. (Russian. Russian summary) *Izv. Ross. Akad. Nauk Ser. Mat.* **56** (1992), *no.* 2, 243–278; *translation in Russian Acad. Sci. Izv. Math.* **40** (1993), *no.* 2, 235–266. (A. Badrikian) **93m:60105** 60H05 (28C20, 46G12)

van Bogaert, Bruno *see* **Van Bogaert, Bruno**

Bogar, Gary A. Least-squares solutions of Fredholm integral equations of the second kind. (English summary) *Indust. Math.* **41** (1991), *no.* 1, 79–102 (1992). (Jose Cuminato) **93j:65218** 65R20

Bogart, Kenneth P. ★ Introductory combinatorics. Second edition. *Harcourt Brace Jovanovich, Publishers, San Diego, CA*, 1990. xviii+622 *pp. ISBN* 0-15-541576-X 05-01 (04-01, 06-01, 94B10)

Bogashov, F. A. Description of three-dimensional problems in elasticity theory by means of analytic functions of a Hamilton variable. II. (Russian) *Prikl. Problemy Proch. i Plast. No.* 44 (1990), 46–55. (Jian Ke Lu) **93f:73021** 73C02 (73V35)

Bogatyi, S. A. (*with* Babenko, I. K.) Behavior of the index of periodic points under iterations of a mapping. (Russian) *Izv. Akad. Nauk SSSR Ser. Mat.* **55** (1991), *no.* 1, 3–31; *translation in Math. USSR-Izv.* **38** (1992), *no.* 1, 1–26. (Georgii Osipenko) **93a:58139** 58F20 (55M20)

Bogatyrëv, A. V. Absorbed and nonabsorbed points of attainability sets of differential inclusions, and generalized Hamilton-Jacobi equations. (Russian) *Izv. Ross. Akad. Nauk Ser. Mat.* **56** (1992), *no.* 1, 215–228; *translation in Russian Acad. Sci. Izv. Math.* **40** (1993), *no.* 1, 213–224. (Corneliu Ursescu) **93i:34020** 34A60 (35F20, 49L20, 93B03)

Bogatyrev, S. V. (*with* Fridman, L. M.) Singular correction of the method of equivalent control. (Russian. Russian summary) *Differentsial'nye Uravneniya* **28** (1992), *no.* 6, 930–943, 1100; *translation in Differential Equations* **28** (1992), *no.* 6, 741–751. (Grigory M. Sklyar) **93k:34039** 34A99 (34C45, 34E15, 34H05, 93C15)

Bogdan, M. M. (*with* Barashenkov, I. V.; Zhanlav, T.) Instabilities and soliton structures in the driven nonlinear Schroedinger equation. *Nonlinear world, Vol.* 1 (*Kiev*, 1989), 3–9, *World Sci. Publishing, River Edge, NJ*, 1990. (*see* **93b:00012**) 35Q55

Bogdanov, A. V. (*with* Shapiro, D. A.) On the Kramers problem in the kinetic theory of a molecular gas. (Russian) *Dokl. Akad. Nauk SSSR* **320** (1991), *no.* 5, 1069–1072; *translation in Soviet Phys. Dokl.* **36** (1991), *no.* 10, 677–678 (1992). (Nina B. Maslova) **93e:82036** 82C40 (76P05)

Bogdanov, E. I. Quantization of Lagrange classical mechanics. (Russian. English and Russian summaries) *Teoret. Mat. Fiz.* **91** (1992), *no.* 3, 433–439; *translation in Theoret. and Math. Phys.* **91** (1992), *no.* 3, 629–633. (Galina G. Okuneva) **93h:58050** 58F05 (70E15, 70H05, 81S10)

Bogdanov, S. R. Closure of turbulence equations as a problem of analytic and scaling properties of spectral functions. (Russian) *Prikl. Mekh. Tekhn. Fiz.* **1991,** *no.* 6, 83–93; *translation in J. Appl. Mech. Tech. Phys.* **32** (1991), *no.* 6, 897–905 (1992). (From the text) **93a:76052** 76F10

Bogdanova, M. Yu. Singular Kneser solutions of two-dimensional differential systems. (Russian. Russian summary) *Boundary value problems* (*Russian*), 71–74, *Perm. Politekh. Inst., Perm'*, 1989. (*see* **93k:00022**) 34C99

Bogdanović, Stojan (*with* Ćirić, Miroslav) Sturdy bands of semigroups. *Collect. Math.* **41** (1990), *no.* 3, 189–195 (1992). (Summary) **93b:20111** 20M99

— (*with* Ćirić, Miroslav) U_{n+1}-semigroups. *Makedon. Akad. Nauk. Umet. Oddel. Mat.-Tehn. Nauk. Prilozi* **11** (1990), *no.* 1-2, 9–23 (1991). (P. M. Higgins) **93i:20074** 20M10

— (*with* Ćirić, Miroslav) Retractive nil-extensions of regular semigroups. I. (English summary) *Proc. Japan Acad. Ser. A Math. Sci.* **68** (1992), *no.* 5, 115–117. (Summary) **93h:20069a** 20M17

— (*with* Ćirić, Miroslav) Retractive nil-extensions of regular semigroups. II. (English summary) *Proc. Japan Acad. Ser. A Math. Sci.* **68** (1992), *no.* 6, 126–130. (Summary) **93h:20069b** 20M17

— (*with* Ćirić, Miroslav) Primitive π-regular semigroups. (English summary) *Proc. Japan Acad. Ser. A Math. Sci.* **68** (1992), *no.* 10, 334–337. (G. J. Lallement) **93m:20097** 20M17 (20M18)

— (*with* Ćirić, Miroslav) A note on π-regular rings. (English summary) *Pure Math. Appl. Ser. A* **3** (1992), *no.* 1-2, 39–42 (1993). (Summary) **93k:16019** 16E99

— (*with* Ćirić, Miroslav) Decompositions of semigroups induced by identities. (English summary) *Semigroup Forum* **46** (1993), *no.* 3, 329–346. (P. M. Higgins) **93m:20091** 20M07 (20M10)

Bogdanskiĭ, Yu. V. *see* **Daletskiĭ, Yu. L., 93c:46071**

Böge, S. Realisierung $(p-1)$-dimensionaler Darstellungen von PSL$(2,p)$. [Realization of $(p-1)$-dimensional representations of PSL$(2,p)$] *Arch. Math.* (*Basel*) **60** (1993), *no.* 2, 121–127. (Jürgen Ritter) **93k:20012** 20C15

Bogenschütz, Thomas (*with* Crauel, Hans) The Abramov-Rokhlin formula. (English summary) *Ergodic theory and related topics, III* (*Güstrow*, 1990), 32–35, *Lecture Notes in Math.*, 1514, *Springer, Berlin*, 1992. (Anzelm Iwanik) **93h:28033** 28D20

— Entropy, pressure, and a variational principle for random dynamical systems. (English summary) *Random Comput. Dynamics* **1** (1992/93), *no.* 1, 99–116. (Pawel Gora) **93k:28023** 28D20 (58F11)

— (*with* Gundlach, Volker Matthias) Symbolic dynamics for expanding random dynamical systems. (English summary) *Random Comput. Dynamics* **1** (1992/93), *no.* 2, 219–227. (Lan Wen) **93j:58042** 58F03 (58F15)

Bogley, William A. (*with* Gutiérrez, Mauricio A.) Mayer-Vietoris sequences in homotopy of 2-complexes and in homology of groups. *J. Pure Appl. Algebra* **77** (1992), *no.* 1, 39–65. (Johannes Huebschmann) **93e:20069** 20J05 (57M20)

— (*with* Pride, Stephen J.) Aspherical relative presentations. *Proc. Edinburgh Math. Soc.* (2) **35** (1992), *no.* 1, 1–39. (D. J. Collins) **93d:57004** 57M07 (20F32, 57M05)

Bogmér, A. (*with* Joó, István) A new approximation for the Fourier transform. I. *Ann. Univ. Sci. Budapest. Eötvös Sect. Math.* **33** (1990), 199–202 (1991). (B. P. Parashar) **93b:42014** 42A38 (65R10)

Bognár, Mátyás Cohomological pseudomanifolds. *Acta Math. Hungar.* **57** (1991), *no.* 1-2, 91–109. (R. A. Piccinini) **93b:57019** 57N15 (55N99)

— ★ Foundations of linking theory. Translated from the Hungarian. *Akadémiai Kiadó* (*Publishing House of the Hungarian Academy of Sciences*), *Budapest*, 1992. 164 *pp. ISBN* 963-05-6264-2 (Edgar H. Brown, Jr.) **93j:55010** 55N40 (55M05, 57Q45)

— On pseudomanifolds with boundary. I. *Acta Math. Hungar.* **59** (1992), *no.* 1-2, 227–244. (Dušan Repovš) **93e:57036** 57P99 (57N15)

Bognárová, Marta (*with* Rublík, František) Tables for a statistical quality control test. (English and Slovak summaries) *Appl. Math.* **37** (1992), *no.* 6, 459–468. (Summary) **93f:62137** 62N10 (62F03, 62Q05)

Bogoliubov, N. M. *see* **Bogolyubov, N. M.**

Bogolyubov, Alekseĭ Nikolaevich (*with* Kandelaki, T. L.) ★ Леонид Самуилович Лейбензон. 1879–1951. (Russian. Russian summary) [Leonid Samuilovich Leibenson. 1879–1951] With a preface by A. Yu. Ishlinskiĭ and V. N. Shchelkachev. Научно-Биографическая Литература. [Scientific-Biographic Literature] "*Nauka*", *Moscow*, 1991. 285 *pp. ISBN* 5-02-003477-0 (Peeter Müürsepp) **93k:01064** 01A70

— (*with* Yushkevich, A. P.) A study on the history of Russian mathematics. (Chinese) Translated from the Russian by Rui Zhi Du. *Collected research papers on the history of mathematics, Vol.* 2 (*Chinese*), 165–171, *Inner Mongolia Univ. Press, Hohhot*, 1991. (*see* **93i:01005**) 01A05

— A. P. Kotel'nikov and the theory of accelerations of higher orders. (Russian) *Ocherki Istor. Estestvoznan. Tekhn. No.* 39 (1991), 30–38. (Summary) **93c:01024** 01A60

Bogolyubov, M. M., Jr. *see* **Bogolyubov, N. N., Jr.**

Bogolyubov, N. M. (*with* Bullough, R. K.) A q-deformed completely integrable Bose gas model. *J. Phys. A* **25** (1992), *no.* 14, 4057–4071. (P. D. F. Ion) **93f:81164** 81V70 (81R50, 82C23)

— (*with* Bullough, R. K.) Completely integrable model of interacting q-bosons. (English summary) *Phys. Lett. A* **168** (1992), *no.* 4, 264–269. (Chang Pu Sun) **93i:82011** 82B20 (17B37, 81R30, 81R50)

Bogolyubov, N. N. (*with* Anikonov, Yu. E.; Ershov, Yu. L.; Zhizhchenko, A. B.; Mishchenko, E. F.; Romanov, V. G.) Mikhail Mikhailovich Lavrent'ev (on the occasion of his sixtieth birthday). (Russian) *Uspekhi Mat. Nauk* **47** (1992), *no.* 3(285), 183–185; *translation in Russian Math. Surveys* **47** (1992), *no.* 3, 197–200. (Editors) **93h:01034** 01A70

— *see also* **Mitropol'skiĭ, Yu. A., 93h:01043a; Vladimirov, V. S. et al., 93h:01043b; 93m:01088; Statistical mechanics and the theory of dynamical systems** *and* **Mitropol'skiĭ, Yu. A. et al.**

Bogolyubov, N. N., Jr. (*with* Prikarpat-skiĭ, A. K.; Samoĭlenko, V. Gr.) The Hamiltonian structure of hydrodynamical equations of Benney type and associated Boltzmann-Vlasov equations on the axis. (Russian) *Akad. Nauk Ukrain. SSR Inst. Mat. Preprint* **1991,** *no.* 25, 43 *pp.* (Summary) **93c:58081** 58F07 (35Q35, 76P05, 76R99)

— (*with* Samoĭlenko, V. Gr.; Prikarpat-skiĭ, A. K.) The Hamiltonian structure of Benney-type hydrodynamical systems and associated Boltzmann-Vlasov equations. (Ukrainian. English, Russian and Ukrainian summaries) *Ukraïn. Fiz. Zh.* **37** (1992), *no.* 1, 147–156. (Summary) **93h:58067** 58F07 (35Q58)

— (*with* Mitropol'skiĭ, Yu. A.; Samoĭlenko, A. M.; Vakarchuk, I. V.; Rudavskiĭ, Yu. K.; Prikarpat-skiĭ, A. K.) This issue is dedicated to the sacred memory of N. N. Bogolyubov. (Ukrainian) *Ukraïn. Mat. Zh.* **44** (1992), *no.* 9, 1155–1156. 01A70

Bogolyubov, Nikolaĭ Nikolaevich *see* **Bogolyubov, N. N.**

Bogomol'nyi, E. B. On dynamical zeta function. *Chaos* **2** (1992), *no.* 1, 5–13. (Viviane Baladi) **93f:58191** 58F20 (81Q50)

— Semiclassical quantization of multidimensional systems. *Nonlinearity* **5** (1992), *no.* 4, 805–866. (Dieter H. Mayer) **93k:81057** 81Q50 (58F13, 58F20, 81Q20)

— (*with* Georgeot, B.; Giannoni, M.-J.; Schmit, C.) Chaotic billiards generated by arithmetic groups. (English summary) *Phys. Rev. Lett.* **69** (1992), *no.* 10, 1477–1480. (Summary) **93g:81025** 81Q50 (20H15, 58F17, 82B05)

Bogomolov, F. A. Abelian subgroups of Galois groups. (Russian) *Izv. Akad. Nauk SSSR Ser. Mat.* **55** (1991), *no.* 1, 32–67; *translation in Math. USSR-Izv.* **38** (1992), *no.* 1, 27–67. (Summary) **93b:12007** 12F12 (11R58, 13A20)

— (*with* Braam, Peter J.) Instantons and mirror $K3$ surfaces. *Comm. Math. Phys.* **143** (1992), *no.* 3, 641–646. (Summary) **93h:32026** 32G13 (14J28, 32J81, 53C07, 53C25, 58D27)

Bogomolov, S. V. The particle method for the Burgers equation. (Russian. English summary) *Mat. Model.* **3** (1991), *no.* 12, 115–119 (1992). (Summary) **93b:76068** 76M99 (76N15)

Bogowski, Franciszek (*with* Burniak, Cz.) On the relationship between the majorization of functions and the majorization of derivatives in certain classes of holomorphic functions. (Polish summary) *Ann. Univ. Mariae Curie-Skłodowska Sect. A* **43** (1989), 1–8 (1991). (Summary) **93c:30015** 30C45

— (*with* Bucka, Czesława) The problems of majorization of derivatives. (Russian and Polish summaries) *Zeszyty Nauk. Politech. Rzeszowskiej Mat. Fiz. No.* 12 (1991), 5–15. (O. P. Ahuja) **93e:30021** 30C45

Bogoyavlenskiĭ, O. I. Overturning solitons. V. Hydrodynamic-type systems. (Russian) *Izv. Akad. Nauk SSSR Ser. Mat.* **55** (1991), *no.* 3, 451–465; *translation in Math. USSR-Izv.* **38** (1992), *no.* 3, 439–454. (Igor V. Barashenkov) **93b:35123** 35Q51 (35Q58, 58F07)

— Overturning solitons. VI. Extension of hydrodynamic-type systems. (Russian) *Izv. Akad. Nauk SSSR Ser. Mat.* **55** (1991), *no.* 5, 991–1006; *translation in Math. USSR-Izv.* **39** (1992), *no.* 2, 959–973. (Summary) **93g:35120** 35Q51 (35Q35, 58F07)

Bogush, A. A. ★ Очерки по истории физики микромира. (Russian) [Outlines in the history of the physics of the microcosm] "*Navuka i Tèkhnika*", *Minsk*, 1990. 223 *pp. ISBN* 5-343-00516-2 (H. Treder) **93a:01032** 01A60

— On the composition of the parameters of the quantum group $GL_q(2,\mathbf{C})$. (Russian. English and Russian summaries) *Dokl. Akad. Nauk Belarusi* **36** (1992), *no.* 5, 407–411, 477. (Summary) **93h:81055** 81R50 (17B37)

Boguslavskiĭ, I. A. (*with* Kalinina, O. L.) Recurrent filtering and identification of dynamical system parameters. *J. Comput. Systems Sci. Internat.* **30** (1992), *no.* 5, 51–59; *translated from Izv. Akad. Nauk SSSR Tekhn. Kibernet.* **1991,** *no.* 4, 60–69 (*Russian. Russian summary*). (L. Stettner) **93m:93088** 93E11 (93E12)

Boguslavskiĭ, L. B. (*with* Coffman, Edward G., Jr.; Gilbert, Edgar N.; Kreĭnin, A. Ya.) Scheduling checks and saves. (English summary) *ORSA J. Comput.* **4** (1992), *no.* 1, 60–69. 90B22

Boguslavskiy, I. A. *see* **Boguslavskiĭ, I. A.**

Boguslavsky, Josif A. Applied problems of recursive filtering and system identification. *Mathematical theory of control* (*Bombay*, 1990), 41–56, *Lecture Notes in Pure and Appl. Math.*, 142, *Dekker, New York*, 1993. (*see* **93g:93003**) 93E11 (93E12)

Boguslavsky, Leonid B. *see* **Boguslavskiĭ, L. B.**

Bogy, D. B. (*with* Chen, Jen-San) Effects of load parameters on the natural frequencies and stability of a flexible spinning disk with a stationary load system. (English summary) *Trans. ASME J. Appl. Mech.* **59** (1992), *no.* 2, *part* 2, 5230–5235. (Summary) **93c:73065** 73K12

Boh, Ivan Bradwardine's (?) critique of Ockham's modal logic. *Historia philosophiae medii aevi, Band I, II*, 55–70, *Grüner, Amsterdam*, 1991. (Woosuk Park) **93m:01016** 01A35 (03–03, 03B45)

Bohigas, Oriol (*with* Smilansky, Uzy; Tomsovic, Steven) Spectral fluctuations and transport in phase space. *J. Phys. A* **25** (1992), *no.* 11, 3261–3273. (Summary) **93b:81075** 81Q50

— (*with* Tomsovic, Steven; Ullmo, D.) Manifestations of classical phase space structures in quantum mechanics. (English summary) *Phys. Rep.* **223** (1993), *no.* 2, 43–133. (Summary) **93k:81058** 81Q50 (81Q20)

Bohl, P. *see* **Gaiduk, Yu. M., 93d:01067**

Bohlender, Gerd (*with* Wolff von Gudenberg, Jürgen) Accurate matrix multiplications on the array computer AMT/DAP. (English summary) *Computer arithmetic, scientific computation and mathematical modelling* (*Albena*, 1990), 133–150, *IMACS Ann. Comput. Appl. Math.*, 12, *Baltzer, Basel*, 1991. (*see* **93e:00022**) 65Y05 (65F99)

— Bibliography on enclosure methods and related topics. *Scientific computing with automatic result verification*, 571–608, *Math. Sci. Engrg.*, 189, *Academic Press, Boston, MA*, 1993. (*see* **93f:65009**) 65–00 (00A15)

Böhlert, Henning Vor fünfzig Jahren begann das Computerzeitalter. [Fifty years ago: beginning of the computer age] Am 12. Mai 1941 wurde erstmals ein voll funktionstüchtiger, freiprogrammierbarer digitaler Rechenautomat vorgeführt [12 May 1941: introduction of a fully operable, freely programmable digital computer. *Wiss. Z. Tech. Univ. Magdeburg* **35** (1991), *no.* 8, 99–102. (Summary) **93a:01033** 01A60

Bohm, Arno Symmetry groups and spectrum generating groups. (English summary) *Differential geometry, group representations, and quantization*, 207–226, *Lecture Notes in Phys.*, 379, *Springer, Berlin*, 1991. (*see* **93c:81004**) 81R05 (22E70)

— (*with* Kendrick, Brian; Loewe, Mark E.; Boya, Luis J.) The Berry connection and Born-Oppenheimer method. *J. Math. Phys.* **33** (1992), *no.* 3, 977–989. (Shinichi Tajima) **93d:81051** 81Q99 (81V55)

— (*with* Boya, Luis J.; Kendrick, Brian) On the uniqueness of the Berry connection. *J. Math. Phys.* **33** (1992), *no.* 7, 2528–2532. (Piotr Kosiński) **93d:81052** 81Q99 (81S99)

Bohm, David Joseph *see* **Dürr, Detlef et al.** *and* **Holland, P. R.**

Böhm, H.-P. Verborgene-Parameter-Theorien und ihr Wirklichkeitskonzept. [Hidden-parameter-theories and their concept of reality] *Mathematik und Wirklichkeit*, 42–46, *Akademie-Verlag, Berlin*, 1991. (*see* **93e:00008**) 00A30

Böhm, Johannes (*with* Im Hof, H.-C.) Flächeninhalt verallgemeinerter hyperbolischer Dreiecke. (Nepali summary) [Area of generalized hyperbolic triangles] *Geom. Dedicata* **42** (1992), *no.* 2, 223–233. (Cyril W. L. Garner) **93a:51014** 51M10 (51M25)

Böhm, Josef (*with* Kárný, Miroslav; Halousková, Alena) MIMO—a set of SISO? Multivariate system adaptively controlled as a set of single-input single-output models. (English summary) *Mutual impact of computing power and control theory* (*Prague*, 1992), 121–126, *Czech. Acad. Sci., Prague*, 1992. (Mikołaj Busłowicz) **93m:93055** 93C40 (93C35)

— (*with* Kovanic, Pavel) Robust PID control. (English summary) *Mutual impact of computing power and control theory* (*Prague*, 1992), 235–240, *Czech. Acad. Sci., Prague*, 1992. (*see* **93f:93005**) 93B36

Böhm, Michael On the Galerkin-method in intermediate spaces for the initial-boundary value problem of the Navier-Stokes equations in two dimensions. *Math. Nachr.* **153** (1991), 169–178. (Michael Fröhner) **93a:65126** 65M60 (47H17, 65J15, 76D05, 76M10)

— Remarks on interpolation of 2^N Banach spaces. (Italian summary) *Boll. Un. Mat. Ital. B* (7) **6** (1992), *no.* 3, 487–505. (Fernando Cobos) **93m:46094** 46M35

Böhme, Thomas On spatial representations of graphs. *Contemporary methods in graph theory*, 151–167, *Bibliographisches Inst., Mannheim*, 1990. (From the introduction) **93a:05053** 05C10

Böhmer, Klaus Difference solutions for linear least squares boundary value problems with asymptotic expansions. *Proceedings of the Second International Symposium on Numerical Analysis* (*Prague*, 1987), 120–124, *Teubner-Texte Math.*, 107, *Teubner, Leipzig*, 1988. (*see* **93b:65007**) 65L10 (65L12)

— (*with* Allgower, Eugene L.; Mei, Zhen) On a problem decomposition for semilinear nearly symmetric elliptic problems. *Parallel algorithms for partial differential equations* (*Kiel*, 1990), 1–17, *Notes Numer. Fluid Mech.*, 31, *Vieweg, Braunschweig*, 1991. (Summary) **93c:65152** 65N55 (35J65, 47H15, 58G28)

— (*with* Allgower, Eugene L.; Mei, Zhen) An extended equivariant branching theory. (English summary) *Math. Methods Appl. Sci.* **15** (1992), *no.* 6, 433–451. (H. J. Kuiper) **93h:58035** 58E09 (35B32, 35J65, 35P30, 47H15)

— (*with* Allgower, Eugene L.; Georg, Kurt; Miranda, Rick) Exploiting symmetry in boundary element methods. *SIAM J. Numer. Anal.* **29** (1992), *no.* 2, 534–552. (Johannes Elschner) **93b:65184** 65N38 (45L10, 65R20, 65Y20)

Bohne, Jochen A characterization of oriented matroids in terms of conformal sequences. *Bayreuth. Math. Schr. No.* 40 (1992), 1–5. (Summary) **93a:05045** 05B35

Bohnhorst, Guntram (*with* Spindler, Heinz) The stability of certain vector bundles on $\mathbf{P}^n$. *Complex algebraic varieties* (*Bayreuth*, 1990), 39–50, *Lecture Notes in Math.*, 1507, *Springer, Berlin*, 1992. (I. Dolgachev) **93i:14036** 14J60

Böhning, Dankmar Multinomial logistic regression algorithm. Supplement to: "Monotonicity of quadratic-approximation algorithms" [Ann. Inst. Statist. Math. **40** (1988), no. 4, 641–663; MR 90m:62045] by Böhning and B. G. Lindsay. *Ann. Inst. Statist. Math.* **44** (1992), *no.* 1, 197–200. (Summary) **93e:62048** 62E20 (62J99)

Bohnke, G. Treillis d'ondelettes associés aux groupes de Lorentz. (English summary) [Tight frames associated with Lorentz groups] *Ann. Inst. H. Poincaré Phys. Théor.* **54** (1991), *no.* 3, 245–259. (J.-P. Antoine) **93c:22020** 22E43 (22E45, 46N50, 81R30)

Bohr, Niels *see* **Beller, Mara**, **93d:01038** *and* **Zoubek, G.**, **93j:81002**

Bohr, Tomas Turbulent coupled map lattices. *The global geometry of turbulence* (*Rota*, 1990), 297–308, *NATO Adv. Sci. Inst. Ser. B Phys.*, 268, *Plenum, New York*, 1991. (Introduction) **93f:58146** 58F13 (58F40, 76F20)

Bohrer, Robert (*with* Yancey, T. A.) Risk and power for inequality pre-test estimators: general case in two dimensions. (English summary) *Readings in econometric theory and practice*, 33–55, *Contrib. Econom. Anal.*, 209, *North-Holland, Amsterdam*, 1992. (*see* **93m:62006**) 62J05 (62C99, 62F10)

Bohtem, Zvonimir Josip Plemelj (on the occasion of the 25th anniversary of his death). (Slovenian) *Obzornik Mat. Fiz.* **39** (1992), *no.* 3, 65–71. (Editors) **93g:01061** 01A70

Boi, Luciano The influence of the Erlangen Program on Italian geometry, 1880–1890: *n*-dimensional geometry in the works of D'Ovidio, Veronese, Segre and Fano. *Arch. Internat. Hist. Sci.* **40** (1990), *no.* 124, 30–75. (Dan Brânzei) **93d:01029** 01A55 (14–03, 51–03)

Boichenko, V. A. (*with* Leonov, G. A.) Estimates for the dimension of attractors and for the global stability of the generalized Lorenz system. (Russian. English summary) *Vestnik Leningrad. Univ. Mat. Mekh. Astronom.* **1990**, *vyp.* 2, 7–13, 120; *translation in Vestnik Leningrad Univ. Math.* **23** (1990), *no.* 2, 6–12. (A. Bacciotti (Zbl 732:34046)) **93e:58117** 58F12 (34D45, 34H05, 58F25)

— (*with* Leonov, G. A.) Lyapunov's direct method in the estimation of the Hausdorff dimension of attractors. *Acta Appl. Math.* **26** (1992), *no.* 1, 1–60. (Christian Beck) **93e:58132** 58F13 (34D45, 70E99, 76E30)

Boichuk, A. A. (*with* Zhuravlëv, V. F.) A generalized inverse operator to a Noether operator in a Banach space. (Russian. English summary) *Dokl. Akad. Nauk Ukrain. SSR* **1991**, *no.* 1, 5–8, 161. (S. Kurepa) **93b:47017** 47A53 (15A09, 47A05)

— (*with* Zhuravlëv, V. F.) Construction of solutions of linear operator equations in Banach spaces. (Russian. Ukrainian summary) *Ukrain. Mat. Zh.* **43** (1991), *no.* 10, 1343–1350; *translation in Ukrainian Math. J.* **43** (1991), *no.* 10, 1247–1254 (1992). (V. Šeda) **93b:34082** 34K10 (34G10, 47A50, 47A53, 47G20, 47N20)

— (*with* Chuiko, S. M.) Autonomous weakly nonlinear boundary value problems. (Russian. Russian summary) *Differentsial'nye Uravneniya* **28** (1992), *no.* 10, 1668–1674, 1837; *translation in Differential Equations* **28** (1992), *no.* 10, 1353–1358 (1993). (Summary) **93k:34040** 34B05 (34C15)

— (*with* Samoĭlenko, A. M.) Linear Noetherian boundary value problems for differential systems with impulse action. (Russian. Russian and Ukrainian summaries) *Ukraïn. Mat. Zh.* **44** (1992), *no.* 4, 564–568; *translation in Ukrainian Math. J.* **44** (1992), *no.* 4, 504–508. (Summary) **93e:34028** 34B05 (34A37, 34B27, 47N20)

Boichuk, L. M. Balance dynamical systems and investigation of their statistical stability and homeostatism based on solution of R. Bellman's problem. *Soviet J. Automat. Inform. Sci.* **24** (1991), *no.* 3, 49–60 (1992); *translated from Avtomatika* **1991**, *no.* 3, 50–61, 97 (*Russian. English summary*). 93C35 (93A14)

— The dynamic and static features of closed balance systems. *Soviet J. Automat. Inform. Sci.* **24** (1991), *no.* 4, 41–46 (1992); *translated from Avtomatika* **1991**, *no.* 4, 42–47, 95 (*Russian. English, Russian and Ukrainian summaries*). (Summary) **93f:93012** 93A30 (93C05)

— (*with* Savenkov, A. I.; Yakovlev, V. P.; Yatsenko, V. A.; Yaremenko, N. P.) Synthesizing an optimal control for a class of mechanical systems (rolling stock) and stabilizing its dynamics. *Soviet J. Automat. Inform. Sci.* **24** (1991), *no.* 5, 72–76 (1992); *translated from Avtomatika* **1991**, *no.* 5, 75–79, 97 (*Russian. English, Russian and Ukrainian summaries*). (Summary) **93f:93060** 93B50 (70Q05)

— An iterative optimization method in the presence of constraints using nonorthogonal projection operators. (Russian. Russian summary) *Kibernet. i Vychisl. Tekhn. No.* 89 (1991), 52–58. 90C30

— A method of optimization with constraints that uses projection operators in a non-Euclidean metric. (Russian. Russian summary) *Kibernet. i Vychisl. Tekhn. No.* 93 (1992), 34–40. 90C30

Boichuk, Z. G. G_4-estimates for traces of powers of covariance matrices. (Russian) *Vychisl. Prikl. Mat. (Kiev) No.* 71 (1990), 110–113. 62H12

Boieri, Paolo (*with* Bacciotti, Andrea) Stabilizability of oscillatory systems: a classical approach supported by symbolic computation. *Matematiche* (*Catania*) **45** (1990), *no.* 2, 319–335 (1991). (Michel Cotsaftis) **93b:93095** 93D15

Boik, Robert J. A comparison of three invariant tests of additivity in two-way classifications with no replications. (English summary) *Comput. Statist. Data Anal.* **15** (1993), *no.* 4, 411–424. 62J10

Boĭkov, I. V. (*with* Shchukina, V. E.) A projection method for solving inverse problems of gravimetry and electrical prospecting. (Russian. Russian summary) *Izv. Akad. Nauk SSSR Ser. Fiz. Zemli* **1992**, *no.* 2, 67–75. (Summary) **93g:86006** 86A22 (86A20)

Boileau, M. (*with* Collins, D. J.; Zieschang, H.) Genus 2 Heegaard decompositions of small Seifert manifolds. (French summary) *Ann. Inst. Fourier* (*Grenoble*) **41** (1991), *no.* 4, 1005–1024. (Tsuyoshi Kobayashi) **93d:57026** 57N10 (57M05, 57M50, 57N37)

Boillat, Guy Sur l'équation générale de Monge-Ampère d'ordre supérieur. (English and French summaries) [On the general Monge-Ampère equation of higher order] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 11, 1211–1214. (Philippe Delanoë) **93k:35176** 35L70

Boimatov, K. Kh. Asymptotic behavior of the Green function of parabolic equations and complex power kernels of the elliptic operator resolvent. (Russian) *Dokl. Akad. Nauk SSSR* **314** (1990), *no.* 5, 1036–1040; *translation in Soviet Math. Dokl.* **42** (1991), *no.* 2, 559–562. (Sergei Edelstein) **93e:35116** 35R20 (35B40, 35K25, 47F05)

— Asymptotic distribution of the eigenvalues of nonlinear pencils of pseudodifferential operators. (Russian) *Dokl. Akad. Nauk SSSR* **319** (1991), *no.* 4, 781–786; *translation in Soviet Math. Dokl.* **44** (1992), *no.* 1, 187–193. (Georgi E. Karadzhov) **93c:47066** 47G30 (35P20, 47A10, 47A56)

— Multiparametric spectral asymptotics for elliptic pseudodifferential operators on compact manifolds. (Russian) *Dokl. Akad. Nauk SSSR* **319** (1991), *no.* 5, 1048–1052; *translation in Soviet Math. Dokl.* **44** (1992), *no.* 1, 263–268. (Min You Qi) **93e:58183** 58G18 (35J30, 35S05, 58G15)

— Multiparametric spectral asymptotics for elliptic systems of differential operators in arbitrary domains of finite measure. (Russian) *Dokl. Akad. Nauk SSSR* **321** (1991), *no.* 6, 1138–1142; *translation in Soviet Math. Dokl.* **44** (1992), *no.* 3, 848–853. (Georgi E. Karadzhov) **93c:47054** 47F05 (35J45, 35P20)

— (*with* Kostyuchenko, A. G.) On a trace formula for polynomial operator pencils and its applications. (Russian) *Funktsional. Anal. i Prilozhen.* **25** (1991), *no.* 4, 90–92; *translation in Functional Anal. Appl.* **25** (1991), *no.* 4, 306–308 (1992). (Branko Najman) **93e:47019** 47A56 (35P20, 47A10, 47F05, 47N20)

— (*with* Sultanaev, Ya. T.) An estimate for the negative spectrum of a selfadjoint operator semibounded from below. (Russian) *Mat. Zametki* **50** (1991), *no.* 6, 142–145; *translation in Math. Notes* **50** (1991), *no.* 5-6, 1313–1315 (1992). (From the introduction) **93d:47045** 47B25 (47A10)

— Spectral asymptotics of pseudodifferential systems that are elliptic in the Douglis-Nirenberg sense. (Russian) *Uspekhi Mat. Nauk* **46** (1991), *no.* 5(281), 159–160; *translation in Russian Math. Surveys* **46** (1991), *no.* 5, 183–184. (Günter Berger) **93b:35102** 35P20 (35J99, 35S05, 47G30)

— Spectral asymptotics of *m*-sectorial operators. (Russian) *Dokl. Akad. Nauk SSSR* **322** (1992), *no.* 1, 11–15; *translation in Soviet Math. Dokl.* **45** (1992), *no.* 1, 1–6. (From the text) **93g:47028** 47B25 (35P20, 47A10, 47F05)

— Asymptotics of spectral projectors of pseudodifferential operators. (Russian) *Funktsional. Anal. i Prilozhen.* **26** (1992), *no.* 1, 54–56; *translation in Functional Anal. Appl.* **26** (1992), *no.* 1, 42–44. (From the text) **93a:47056** 47G30 (35P20, 35S05)

— Quasiclassical asymptotics of the eigenvalues of elliptic systems of differential operators on compact manifolds. (Russian) *Mat. Zametki* **51** (1992), *no.* 2, 146–148; *translation in Math. Notes* **51** (1992), *no.* 1-2, 210–212. (J. S. Joel) **93e:58186** 58G25 (35P20, 47F05, 58G18)

— Asymptotics of the spectrum of nonselfadjoint systems of second-order differential operators. (Russian) *Mat. Zametki* **51** (1992), *no.* 4, 8–16, 139; *translation in Math. Notes* **51** (1992), *no.* 3-4, 330–337. (R. C. Gilbert) **93k:34179** 34L20 (47E05)

du Bois, Philippe *see* **Du Bois, Philippe**

Boisen, Paul R. The representation theory of fully group-graded algebras. *J. Algebra* **151** (1992), *no.* 1, 160–179. (Christine Bessenrodt) **93i:20005** 20C05 (16G10, 16W50, 20C20)

Boisseau, Bruno (*with* Barrabès, Claude) Minimal surfaces in symmetric spaces and dynamics of membranes in nonabelian gauge fields. *Phys. Lett. B* **279** (1992), *no.* 3-4, 259–264. (Frans R. Klinkhamer) **93g:81121** 81T30 (53C42)

Boisson, H. C. (*with* Spiteri, P.) Subdomain predictor-corrector algorithms for solving the incompressible Navier-Stokes equation. (English summary) *Asymptotic and numerical methods for partial differential equations with critical parameters* (*Beaune*, 1992), 335–347, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 384, *Kluwer Acad. Publ., Dordrecht*, 1993. (Summary) **93m:65126** 65M06 (76D05, 76M25)

Boissonnat, Jean-Daniel (*with* Devillers, Olivier; Preparata, Franco P.) Computing the union of 3-colored triangles. (English summary) *System modelling and optimization* (*Zurich*, 1991), 85–93, *Lecture Notes in Control and Inform. Sci.*, 180, *Springer, Berlin*, 1992. (*see* **93e:90003**) 65Y25

— (*with* Yvinec, Mariette) Probing a scene of nonconvex polyhedra. (English summary) *Algorithmica* **8** (1992), *no.* 4, 321–342. (Summary) **93h:68138** 68U05

— (*with* Devillers, Olivier; Schott, René; Teillaud, Monique; Yvinec, Mariette) Applications of random sampling to on-line algorithms in computational geometry. *Discrete Comput. Geom.* **8** (1992), *no.* 1, 51–71. (Evangelos Kranakis) **93a:68148** 68U05 (52B55)

Boiten, Eerke A. Improving recursive functions by inverting the order of evaluation. *Sci. Comput. Programming* **18** (1992), *no.* 2, 139–179. (Peter Bachmann) **93c:68011** 68N05 (03D20, 68Q55, 68Q60)

Boiti, M. (*with* Leon, Jérôme Jp.; Pempinelli, F.) A new spectral transform for the Davey-Stewartson I and the Kadomtsev-Petviashvili I equations. *Lie theory, differential equations and representation theory* (*Montreal, PQ*, 1989), 101–117, *Univ. Montréal, Montreal, PQ*, 1990. (Vadim G. Bakurov) **93e:35099** 35Q55 (35Q15, 35Q53, 58F07, 58F19)

— (*with* Leon, Jérôme Jp.; Pempinelli, F.) Solitons and spectral transform for the DSI equation. *Nonlinear world, Vol.* 1 (*Kiev*, 1989), 56–64, *World Sci. Publishing, River Edge, NJ*, 1990. (*see* **93b:00012**) 35Q55

— (*with* Pempinelli, F.; Leon, Jérôme Jp.; Martina, L.) Exponentially localized solitons in $2+1$ dimensions. *Nonlinear world, Vol.* 1 (*Kiev*, 1989), 285–304, *World Sci. Publishing, River Edge, NJ*, 1990. (*see* **93b:00012**) 35Q51

— (*with* Martina, L.; Pashaev, O. K.; Pempinelli, F.) Dynamics of multidimensional solitons. *Phys. Lett. A* **160** (1991), *no.* 1, 55–63. (Shen Qi Zhao) **93a:35129** 35Q51 (58F07)

— (*with* Martina, L.; Pashaev, O. K.; Pempinelli, F.) Interaction of real and virtual multidimensional solitons. (English summary) *Nonlinear evolution equations and dynamical systems* (*Baia Verde*, 1991), 12–21, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93i:35116** 35Q51 (58F07)

— (*with* Pempinelli, F.; Pogrebkov, A. K.; Polivanov, M. K.) Resolvent approach for the nonstationary Schrödinger equation (standard case of rapidly decreasing potential). (English summary) *Nonlinear evolution equations and dynamical systems* (*Baia Verde*, 1991), 97–107, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93i:35038** 35J10

— (*with* Pempinelli, F.; Pogrebkov, A. K.; Polivanov, M. K.) Resolvent approach for the nonstationary Schrödinger equation. *Inverse Problems* **8** (1992), *no.* 3, 331–364. (Vladimir Stefanov Gerdjikov) **93m:35159** 35Q53 (34L25, 35Q35)

— (*with* Pempinelli, F.; Sabatier, Pierre C.) First and second order nonlinear evolution equations from an inverse spectral problem. (English summary) *Inverse Problems* **9** (1993), *no.* 1, 1–37. (Tuncay Aktosun) **93m:35172** 35Q58 (58F07)

— *see also* **Nonlinear evolution equations and dynamical systems, 93g:00028**

Boivin, André (*with* Dwilewicz, Roman) Holomorphic approximation of CR functions on tubular submanifolds of $\mathbf{C}^2$. Proceedings of the Tenth Conference on Analytic Functions (Szczyrk, 1990). *Ann. Polon. Math.* **55** (1991), 11–18. (Sergey Ivashkovich) **93b:32017** 32E30 (32F40)

— (*with* Verdera, Joan) Approximation par fonctions holomorphes dans les espaces L^p, Lip α et BMO. (English summary) [Approximation by holomorphic functions in L^p, Lip α and BMO spaces] *Indiana Univ. Math. J.* **40** (1991), *no.* 2, 393–418. (Anthony G. O'Farrell) **93f:30040** 30E10 (46E15, 46E30)

— (*with* Mateu, Joan; Verdera, Joan) Weighted L^p approximation by holomorphic functions. *Approximation by solutions of partial differential equations* (*Hanstholm*, 1991), 27–49, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 365, *Kluwer Acad. Publ., Dordrecht*, 1992. (N. A. Shirokov) **93g:30053** 30E10 (30C85)

Bojanić, Ranko (*with* Khan, Mohammad Kazim) Rate of convergence of some operators of functions with derivatives of bounded variation. *Atti Sem. Mat. Fis. Univ. Modena* **39** (1991), *no.* 2, 495–512. (Masaru Kamada) **93d:41021** 41A36 (44A45, 47B38)

— (*with* Chêng, Fu Hua) Rate of convergence of Hermite-Fejér polynomials for functions with derivatives of bounded variation. *Acta Math. Hungar.* **59** (1992), *no.* 1-2, 91–102. (M. W. Müller) **93e:41010** 41A10 (41A25)

Bojanov, B. *see* **Boyanov, Borislav D.**

Bojanov, Borislav *see* **Boyanov, Borislav D.**

Bojarski, Bogdan (*with* Sbordone, Carlo; Wik, Ingemar) The Muckenhoupt class $A_1(\mathbf{R})$. *Studia Math.* **101** (1992), *no.* 2, 155–163. (Luboš Pick) **93f:42039** 42B25

— (*with* Il'in, Vladimir Aleksandrovich; Nikol'skiĭ, S. M.; Usmanov, Z. D.) Abdukhamid Dzhuraevich Dzhuraev (on the occasion of his sixtieth birthday). (Russian) *Uspekhi Mat. Nauk* **47** (1992), *no.* 3(285), 187–190; *translation in Russian Math. Surveys* **47** (1992), *no.* 3, 201–204. (Editors) **93h:01041** 01A70

— *see also* **Partial differential equations, 93i:35003**

Bojdecki, Tomasz (*with* Jakubowski, Jacek) Stochastic integral with respect to a generalized Wiener process in a conuclear space. *Stochastic systems and optimization* (*Warsaw*, 1988), 161–168, *Lecture Notes in Control and Inform. Sci.*, 136, *Springer, Berlin*, 1989. (*see* **93d:93009**) 60H05 (46G12)

— (*with* Jakubowski, Jacek) The Girsanov theorem and weak solutions of stochastic differential equations in the dual of a nuclear space. *Stochastic Anal. Appl.* **9** (1991), *no.* 4, 401–428. (Víctor Pérez-Abreu) **93b:60127** 60H15 (60H20)

Boje, E. (*with* Eitelberg, E.) On identification of time delay via the approximation $e^{-Ts} \simeq (1 - sT/2)/(1 + sT/2)$. (English summary) *Identification and system parameter estimation* 1991, *Vol.* 1,2 (*Budapest*, 1991), 337–341, *IFAC Sympos. Ser.*, 3, *Pergamon, Oxford*, 1992. (*see* **93h:93009**) 93B30

Bojeldain, A. A. On the numerical solving of nonlinear Volterra integro-differential equations. *Ann. Univ. Sci. Budapest. Sect. Comput.* **11** (1991), 105–125. (M. S. Derakhshan) **93e:65150** 65R20 (45D05, 45L05)

Boju, Valentin (*with* Funar, Louis) Generalized Hadwiger numbers for symmetric ovals. *Proc. Amer. Math. Soc.* **119** (1993), *no.* 3, 931–934. (Peter M. Gruber) **93m:52019** 52C15 (52A10, 52C17)

Bokalo, B. M. On some properties of tangent topologies and of $\mathcal{P}$-scattered spaces. (Ukrainian) *Visnik L'viv. Derzh. Univ. Ser. Mekh.-Mat. No.* 32 (1989), 65–67. 54A10 (54D99)

Bokan, Neda On the complete decomposition of curvature tensors of Riemannian manifolds with symmetric connection. *Rend. Circ. Mat. Palermo* (2) **39** (1990), *no.* 3, 331–380 (1991). (Summary) **93c:53016** 53C05 (53B05)

— (*with* Gilkey, Peter B.) Asymptotics of Laplacians defined by symmetric connections. *Affine differential geometry* (*Oberwolfach*, 1991), 589–599, *Tech. Univ. Berlin, Berlin*, 1991. (*see* **93g:53001**) 58G25 (53A15, 58G11)

— (*with* Gilkey, Peter B.) Asymptotics of Laplacians defined by symmetric connections. Affine differential geometry (Oberwolfach, 1991). *Results Math.* **20** (1991), *no.* 3-4, 589–599. (Alejandro Uribe) **93d:58154** 58G11 (58G18, 58G25)

— (*with* Blažić, Novica; Gilkey, Peter B.) Heat equation asymptotics of the form valued Laplacian for manifolds with boundary. *Proceedings of the 3rd Congress of Geometry* (*Thessaloniki*, 1991), 84–95, *Aristotle Univ. Thessaloniki, Thessaloniki*, 1992. (G. Tsagas) **93f:58226** 58G11 (58G18, 58G20, 58G25)

— (*with* Blažić, Novica; Gilkey, Peter B.) Spectral geometry of the form valued Laplacian for manifolds with boundary. *Indian J. Pure Appl. Math.* **23** (1992), *no.* 2, 103–120. (Friedbert Prüfer) **93e:58185** 58G25 (58G11, 58G18)

Bokareva, T. A. (*with* Sviridyuk, G. A.) Deborah's number and a class of semilinear equations of Sobolev type. (Russian) *Dokl. Akad. Nauk SSSR* **319** (1991), *no.* 5, 1082–1086; *translation in Soviet Math. Dokl.* **44** (1992), *no.* 1, 297–301. (Florin Iacob) **93b:35063** 35K45 (34G10, 35K57, 47N20)

Bokhari, Ashfaque H. Cosmological model with heat flow. (English summary) *Internat. J. Theoret. Phys.* **31** (1992), *no.* 12, 2087–2089. 83C15

— Ricci tensor with six collineations. (English summary) *Internat. J. Theoret. Phys.* **31** (1992), *no.* 12, 2091–2094. (Andrzej Bucki) **93k:53024** 53B20 (53B50, 83C20)

— Homothetic cosmological solutions of Einstein's field equations with heat flow. (English summary) *Nuovo Cimento B* (11) **107** (1992), *no.* 7, 769–770. (S. Kichenassamy) **93j:83015** 83C15

— (*with* Ali, S. Tahir) Solutions of Einstein-Maxwell field equations. (English summary) *Nuovo Cimento B* (11) **107** (1992), *no.* 7, 777–783. (A. H. Taub) **93i:83030** 83C22

Bokhari, M. A. Extensions of certain results in Walsh-type equiconvergence. *Bull. Austral. Math. Soc.* **44** (1991), *no.* 3, 451–460. (T. J. Rivlin) **93d:30046** 30E10

— (*with* Sharma, Ambikeshwar) Equiconvergence of some sequences of rational functions. *Internat. J. Math. Math. Sci.* **15** (1992), *no.* 2, 221–228. (T. J. Rivlin) **93g:30050** 30E05 (41A05)

Bokor, Imre On mapping cones of suspension elements of finite order in the homotopy groups of a wedge of spheres. *Proc. Amer. Math. Soc.* **119** (1993), *no.* 3, 955–961. (Donald M. Davis) **93m:55010** 55P15

Bokor, J. (*with* Terdik, György; Várlaki, Peter M.) On problem of stochastic bilinear realization. *Computational systems analysis* 1992 (*Berlin*, 1992), 67–72, *Elsevier, Amsterdam*, 1992. (*see* **93e:00021**) 93E03 (93B18)

— (*with* Michelberger, P.; Keresztes, A.; Várlaki, Peter M.) Statistical identification of nonlinear vehicle vibrating structures. (English summary) *Identification and system parameter estimation* 1991, *Vol.* 1,2 (*Budapest*, 1991), 841–845, *IFAC Sympos. Ser.*, 3, *Pergamon, Oxford*, 1992. (*see* **93h:93009**) 93B30 (93C95)

Bokowski, Jürgen (*with* Kollewe, Wolfgang) On representing contexts in line arrangements. *Order* **8** (1991/92), *no.* 4, 393–403. (Ren Ding) **93g:52009** 52B40 (05B35)

— (*with* Eggert, Anselm) Toutes les réalisations du tore de Möbius avec sept sommets. [All realizations of Möbius' torus with seven vertices] *Structural Topology No.* 17 (1991), 59–78. (P. McMullen) **93b:52017** 52B70 (52B40, 57Q15)

— (*with* Richter-Gebert, Jürgen; Schindler, Werner) On the distribution of order types. *Comput. Geom.* **1** (1992), *no.* 3, 127–142. (Svatopluk Poljak) **93b:05031** 05B35 (65C99)

Bökstedt, Marcel *see* **Neeman, Amnon, 93h:18018**

Bokut', L. A. (*with* Makar-Limanov, L. G.) Basis of a free metabelian associative algebra. (Russian) *Sibirsk. Mat. Zh.* **32** (1991), *no.* 6, 12–18, 203; *translation in Siberian Math. J.* **32** (1991), *no.* 6, 910–915 (1992). (P. M. Cohn) **93e:16035** 16R10

— *see also* **Proceedings: Conference on Algebra, 93b:00029**; **93b:00030**; **93b:00031** *and* **Algebra and analysis, 93e:00020**

Boland, James W. (*with* Haynes, Teresa W.; Lawson, Linda M.) Observations regarding distance-n graphs. (English summary) Proceedings of the Twenty-third Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, FL, 1992). *Congr. Numer.* **89** (1992), 55–64. (Summary) **93j:05052** 05C12

Boland, N. L. A dual-active-set algorithm for positive semi-definite quadratic programming. (English summary) *Optimization, Vol.* 1, 2 (*Singapore*, 1992), 80–89, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93g:90056** 90C20 (90C30)

— (*with* Goh, C. J.; Mees, Alistair) An algorithm for solving quadratic cost network flow optimization problems. (English summary) *Optimization, Vol.* 1, 2 (*Singapore*, 1992), 284–293, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93d:90005**) 90C35

Boland, Philip J. (*with* Proschan, Frank; Tong, Yung Liang) Some majorization inequalities for functions of exchangeable random variables. (English summary) *Topics in statistical dependence* (*Somerset, PA*, 1987), 85–91, *IMS Lecture Notes Monograph Ser.*, 16, *Inst. Math. Statist., Hayward, CA*, 1990. (Summary) **93i:60033** 60E15 (62H99)

— (*with* El-Neweihi, Emad; Proschan, Frank) Redundancy importance and allocation of spares in coherent systems. Reliability theory (Columbia, MO, 1988). *J. Statist. Plann. Inference* **29** (1991), *no.* 1-2, 55–66. (Ramesh C. Gupta) **93a:62134** 62N05

— (*with* El-Neweihi, Emad; Proschan, Frank) Stochastic order for redundancy allocations in series and parallel systems. *Adv. in Appl. Probab.* **24** (1992), *no.* 1, 161–171. (Truc Nguyen) **93d:62166** 62N05 (90B05)

— (*with* Proschan, Frank; Tong, Yung Liang) A stochastic ordering of partial sums of independent random variables and of some random processes. *J. Appl. Probab.* **29** (1992), *no.* 3, 645–654. (E. Arjas) **93m:60035** 60E15 (60K30, 90B25)

Bolaños, M. Jorge (*with* de Campos Ibáñez, Luis Miguel) Characterization and comparison of Sugeno and Choquet integrals. (English summary) *Fuzzy Sets and Systems* **52** (1992), *no.* 1, 61–67. 28E10 (04A72)

Boldin, M. V. Testing hypotheses in linear control systems. (Russian) *Analysis and design of dynamical systems under conditions of uncertainty* (*Russian*), 56–60, *Moskov. Aviatsion. Inst., Moscow*, 1990. (*see* **93g:00022**) 93C05 (62J99, 93E03)

Boldin, V. P. (*with* Malanov, S. B.; Utkin, G. A.) Formulation of boundary value problems of the dynamics of two-dimensional systems with moving loads and fastenings. (Russian) *Prikl. Mat. Mekh.* **56** (1992), *no.* 1, 34–39; *translation in J. Appl. Math. Mech.* **56** (1992), *no.* 1, 30–35. (Summary) **93f:73064** 73K12 (73D99, 73T05, 73V25)

Boldrighini, C. (*with* Ignatyuk, I. A.; Malyshev, V. A.; Pellegrinotti, Alessandro) Random walk in dynamic environment with mutual influence. *Stochastic Process. Appl.* **41** (1992), *no.* 1, 157–177. (Thomas Polaski) **93b:60148** 60J15 (82C44)

— (*with* De Masi, Anna; Pellegrinotti, Alessandro) Nonequilibrium fluctuations in particle systems modelling reaction-diffusion equations. *Stochastic Process. Appl.* **42** (1992), *no.* 1, 1–30. (Mu Fa Chen) **93m:60196** 60K35 (35K57, 35R60, 82C22)

Boldrini, José Luiz Stationary spatially periodic compressible flows at high Mach number. *Rend. Sem. Mat. Univ. Padova* **84** (1990), 201–215 (1991). (Mariarosaria Padula) **93b:76070** 76N10

— (*with* Costa, M. I. S.; Bassanezi, Rodney C.) Optimal chemical control of populations developing drug resistance. (English summary) *IMA J. Math. Appl. Med. Biol.* **9** (1992), *no.* 3, 215–226. (Summary) **93j:92015** 92C50

Boldyrev, Yu. Ya. Periodic variational problem associated with the linear Reynolds equation. *Fluid Dynamics* **27** (1992), *no.* 2, 153–159; *translated from Izv. Ross. Akad. Nauk Mekh. Zhidk. Gaza* **1992**, *no.* 2, 3–10 (*Russian. Russian summary*). (F. Feuillebois) **93j:76026** 76D08 (49N20, 76M30, 76N15)

Boley, Bruno A. *see* **Symposium: Boley, Bruno A., 93c:00008; 93c:00009; Biography: Boley, Bruno A., 93e:01029a; List of doctoral students of Bruno A. Boley, 93e:01029b; Bibliography: Boley, Bruno A., 93e:01029c; Weiner, J. H., 93e:01029d; Rand, R. H., 93e:01030a** *and* **Keer, L. M., 93e:01030b**

Boley, Daniel L. (*with* Elhay, Sylvan; Golub, Gene H.; Gutknecht, Martin H.) Nonsymmetric Lanczos and finding orthogonal polynomials associated with indefinite weights. *Numer. Algorithms* **1** (1991), *no.* 1, 21–43. (Alexander S. Babanin) **93f:65033** 65F15 (65F30, 65F50, 65G05)

— (*with* Brent, Richard P.; Golub, Gene H.; Luk, Franklin T.) Algorithmic fault tolerance using the Lanczos method. *SIAM J. Matrix Anal. Appl.* **13** (1992), *no.* 1, 312–332. (Herbert J. Bernstein) **93f:65034** 65F15 (94B05)

Bolfarine, Heleno (*with* Zacks, Shelemyahu) Equivariant prediction of the population variance under location-scale superpopulation models. (English summary) *Sankhya Ser. B* **53** (1991), *no.* 3, 288–296. (Summary) **93e:62036** 62D05

— (*with* Leite, José Galvão; Rodrigues, Josemar) On the estimation of the size of a finite and closed population. (English summary) *Biometrical J.* **34** (1992), *no.* 5, 577–593. (Tadashi Nakamura) **93k:62064** 62F15

Bolgrabskaya, I. A. (*with* Savchenko, A. Ya.; Kononykhin, G. A.) ★ Устойчивость движения систем связанных твердых тел. (Russian) [Stability of motion of systems of coupled rigid bodies] "*Naukova Dumka*", *Kiev*, 1991. 167 *pp. ISBN* 5-12-002221-9 (Alexander Burov) **93d:70011** 70E15 (34D20, 70E99, 70F99, 70K20, 73K12)

— Equations of inertial motion of a system of n different Lagrange gyroscopes, and small oscillations of rotating inhomogeneous rod. (Russian. Russian summary) *Mekh. Tverd. Tela No.* 24 (1992), 75–80. (Summary) **93m:73020** 73K12 (70E05, 70E99)

Bolibrukh, A. A. Fuchsian systems with reducible monodromy and the Riemann-Hilbert problem. (Russian) *Nonlinear operators in global analysis* (*Russian*), 5–20, 161, *Novoe Global. Anal., Voronezh. Gos. Univ., Voronezh*, 1991. (From the introduction) **93d:14019** 14D05 (32G34, 34A20)

— Sufficient conditions for the positive solvability of the Riemann-Hilbert problem. (Russian) *Mat. Zametki* **51** (1992), *no.* 2, 9–19, 156; *translation in Math. Notes* **51** (1992), *no.* 1-2, 110–117. (Sergeĭ Grudskiĭ) **93g:34007** 34A20 (30E25)

ballester-Bolinches, A. *see* **Ballester-Bolinches, A.**

Boling, Guo *see* **Guo, Bo Ling**

Bolkvadze, G. R. Investigation of the convergence of recurrent dispersion identification algorithms. (Russian. English and Georgian summaries) *Soobshch. Akad. Nauk Gruzii* **144** (1991), *no.* 1, 21–24 (1992). 93E12

Boll, Ludwig *see* **Fichtenholz, G. M., 93h:26001**

Bollé, D. Schrödinger operators at threshold. (English summary) *Ideas and methods in quantum and statistical physics* (*Oslo*, 1988), 173–196, *Cambridge Univ. Press, Cambridge*, 1992. (H. Baumgärtel) **93k:81033** 81Q05 (35J10, 47F05, 47N50)

— (*with* Dupont, Patrick Jean; Vinck, B.) On the overlap dynamics of multi-state neural networks with a finite number of patterns. *J. Phys. A* **25** (1992), *no.* 10, 2859–2872. (J. Leo van Hemmen) **93h:82042** 82C32 (92B20)

— (*with* Vinck, B.; Zagrebnov, V. A.) On the parallel dynamics of the Q-state Potts and Q-Ising neural networks. (English summary) *J. Statist. Phys.* **70** (1993), *no.* 5-6, 1099–1119. (Summary) **93j:82055** 82C32 (92B20)

Bolle, Norman A. (*with* Koenig, Herbert A.) Nonlinear formulation for elastic rods in three-space. (English summary) *Internat. J. Non-Linear Mech.* **28** (1993), *no.* 3, 329–335. (Summary) **93k:73049** 73K05

Bollerslev, Tim (*with* Wooldridge, Jeffrey M.) Quasi-maximum likelihood estimation and inference in dynamic models with time-varying covariances. (English summary) *Econometric Rev.* **11** (1992), *no.* 2, 143–172. (B. L. S. Prakasa Rao) **93m:62192** 62M10

— (*with* Baillie, Richard T.) Prediction in dynamic models with time-dependent conditional variances. *J. Econometrics* **52** (1992), *no.* 1-2, 91–113. (A. L. Nagar) **93f:62146** 62P20 (62M10)

— (*with* Engle, Robert F.) Common persistence in conditional variances. (English summary) *Econometrica* **61** (1993), *no.* 1, 167–186. (Summary) **93i:62091** 62P20

Bolley, C. Modélisation du champ de retard à la condensation d'un supraconducteur par un problème de bifurcation. (English summary) [Modeling the delay field of condensation of a superconductor via a bifurcation problem] *RAIRO Modél. Math. Anal. Numér.* **26** (1992), *no.* 2, 235–287. (Ioan Bâldea) **93a:82066** 82D55 (82B26)

Bolley, Pierre (*with* Phạm The Lai) Propriétés d'indice en théorie hölderienne pour des opérateurs différentiels elliptiques dans $\mathbf{R}^n$. [Index properties in Hölder theory for elliptic differential operators in $\mathbf{R}^n$] *J. Math. Pures Appl.* (9) **72** (1993), *no.* 1, 105–119. (Robert McOwen) **93m:35062** 35J30 (35E99, 47F05, 58G03, 58G10)

Bölling, Reinhard Zur Biographie von Weierstraß. [On the biography of Weierstrass] Text in German and English. *J. Reine Angew. Math.* **429** (1992), i–iii. (Editors) **93e:01018** 01A70

— ... Deine Sonia: a reading from a burned letter. Translated from the German by David E. Rowe. *Math. Intelligencer* **14** (1992), *no.* 3, 24–30. (R. L. Cooke) **93f:01011** 01A55 (01A70)

Bollini, C. G. (*with* Oxman, L. E.) Fourth order wave equations with physical scattering data. *J. J. Giambiagi Festschrift*, 55–69, *World Sci. Publishing, River Edge, NJ*, 1990. (Summary) **93f:35133** 35L25 (35P25, 58G16)

— (*with* Oxman, L. E.) Propagator for complex-mass fields. (English summary) *Internat. J. Modern Phys. A* **7** (1992), *no.* 27, 6845–6855. (Summary) **93h:81142** 81T70

— (*with* Giambiagi, J. J.; Obregón, O.) Criteria to fix the dimensionality corresponding to some higher derivative Lagrangians. *Modern Phys. Lett. A* **7** (1992), *no.* 7, 593–599. (R. Schimming) **93a:35100** 35L30

Bollman, Dorothy Digit-index permutations. (English summary) Proceedings of the Twenty-third Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, FL, 1992). *Congr. Numer.* **91** (1992), 213–217. (Summary) **93k:05005** 05A05 (68Q22)

Bollobás, Béla Random graphs. *Probabilistic combinatorics and its applications* (*San Francisco, CA*, 1991), 1–20, *Proc. Sympos. Appl. Math.*, **44**, *Amer. Math. Soc., Providence, RI*, 1991. (Andrzej Ruciński) **93i:05114** 05C80 (60C05)

— (*with* Meir, Amram) A travelling salesman problem in the k-dimensional unit cube. *Oper. Res. Lett.* **11** (1992), *no.* 1, 19–21. (Summary) **93c:90046** 90C10 (90C27)

— The future of graph theory. (English summary) *Quo vadis, graph theory?*, 5–11, *Ann. Discrete Math.*, 55, *North-Holland, Amsterdam*, 1993. (*see* **93k:05003**) 05Cxx

Bolnăvescu, L. A nonconvergent line method for solving one-dimensional equations of heat propagation by conduction and convection. *Rev. Roumaine Sci. Tech. Sér. Méc. Appl.* **36** (1991), *no.* 5-6, 339–351. (Summary) **93c:65109** 65M20 (80–08)

— A nonconvergent line method for solving two-dimensional equations of heat propagation by conduction and convection. *Rev. Roumaine Sci. Tech. Sér. Méc. Appl.* **37** (1992), *no.* 1, 75–89. (Summary) **93c:65110** 65M20 (80–08)

Bologna, Salvatore Estimating the shape parameter of distributions with regular variation. (Italian. English and Italian summaries) *Statistica* (*Bologna*) **51** (1991), *no.* 3, 333–338 (1992). (Summary) **93j:62061** 62F10 (62G05)

Bolotin, S. V. Integrable billiards on surfaces of constant curvature. (Russian) *Mat. Zametki* **51** (1992), *no.* 2, 20–28, 156; *translation in Math. Notes* **51** (1992), *no.* 1-2, 117–123. (András Krámli) **93f:58186** 58F17 (58F07, 70H05)

— Variational methods for constructing chaotic motions in the dynamics of a rigid body. (Russian. Russian summary) *Prikl. Mat. Mekh.* **56** (1992), *no.* 2, 230–239; *translation in J. Appl. Math. Mech.* **56** (1992), *no.* 2, 198–205. (Summary) **93g:58025** 58E05 (34C99, 58F13, 70E15, 70H05, 70K50)

Bolotin, V. V. Dynamic propagation of cracks. (Russian) *Prikl. Mat. Mekh.* **56** (1992), *no.* 1, 150–162; *translation in J. Appl. Math. Mech.* **56** (1992), *no.* 1, 132–143. (From the text) **93f:73085** 73M25

Bolotnik, N. N. (*with* Gorbachëv, N. V.; Shukhov, A. G.) Combined suboptimal control of an electromechanical system. *J. Comput. Systems Sci. Internat.* **31** (1993), *no.* 1, 143–153; *translated from Izv. Akad. Nauk SSSR Tekhn. Kibernet.* **1991**, *no.* 6, 192–202 (*Russian. Russian summary*). 93C95

Bol'shakov, I. A. Global closures of varieties of semigroups. (Russian) *Semigroups and their homomorphisms* (*Russian*), 3–7, *Ross. Gos. Ped. Univ., Leningrad*, 1991. (P. Goralčík) **93e:20075** 20M07

Bol'shakov, Yu. I. The matrix equation $X^2 = A$. (Russian) *Problems in group theory and homological algebra* (*Russian*), 21–25, *Matematika, Yaroslav. Gos. Univ., Yaroslavl'*, 1990. (Anna Lee) **93d:15022** 15A24

Bolsinov, A. V. (*with* Fedorov, Yu. N.) Multidimensional integrable generalizations of Steklov-Lyapunov systems. (Russian) *Vestnik Moskov. Univ. Ser. I Mat. Mekh.* **1992**, *no.* 6, 53–56. (From the text) **93k:70023** 70H05 (58F07, 70E15)

Bolstad, John H. Following paths of symmetry-breaking bifurcation points. (English summary) *Internat. J. Bifur. Chaos Appl. Sci. Engrg.* **2** (1992), *no.* 3, 559–576. (Summary) **93h:58162** 58G28 (58E09, 76D05, 76E30)

Bolte, J. (*with* Steil, G.; Steiner, Frank) Arithmetical chaos and violation of universality in energy level statistics. (English summary) *Phys. Rev. Lett.* **69** (1992), *no.* 15, 2188–2191. (Summary) **93f:81039** 81Q50 (11F72)

Bolthausen, Erwin On directed polymers in a random environment. *Selected Proceedings of the Sheffield Symposium on Applied Probability* (*Sheffield*, 1989), 41–47, *IMS Lecture Notes Monograph Ser.*, 18, *Inst. Math. Statist., Hayward, CA*, 1991. (Summary) **93g:60147** 60J15 (60K35, 82D60)

Boltjanski, V. G. *see* **Boltyanskiĭ, V. G.**

Boltje, Robert (*with* Snaith, Victor P.; Symonds, Peter) Algebraicisation of explicit Brauer induction. *J. Algebra* **148** (1992), *no.* 2, 504–527. (Thomas R. Wolf) **93h:20004** 20C15

Bolton, J. (*with* Woodward, L. M.) Moduli spaces of harmonic 2-spheres. *Geometry and topology of submanifolds, IV* (*Leuven*, 1991), 143–151, *World Sci. Publishing, River Edge, NJ*, 1992. (Martin A. Guest) **93g:58035** 58E20 (58D27)

— (*with* Woodward, L. M.) Congruence theorems for harmonic maps from a Riemann surface into $\mathbf{CP}^n$ and S^n. *J. London Math. Soc.* (2) **45** (1992), *no.* 2, 363–376. (Liane Valere Bouche) **93k:58062** 58E20

— (*with* Woodward, L. M.) Minimal surfaces in $\mathbf{CP}^n$ with constant curvature and Kähler angle. *Math. Proc. Cambridge Philos. Soc.* **112** (1992), *no.* 2, 287–296. (John C. Wood) **93g:53083** 53C42

Boltyanskiĭ, V. G. (*with* Soltan, P. S.) A solution of Hadwiger's covering problem for zonoids. (English summary) *Combinatorica* **12** (1992), *no.* 4, 381–388. (W. J. Firey) **93j:52031** 52C17

— A new step in the solution of the Szökefalvi-Nagy problem. *Discrete Comput. Geom.* **8** (1992), *no.* 1, 27–49. (Marilyn Breen) **93b:52003** 52A35

Bolzmann, Ludwig Journey of a German professor to Eldorado. Translated from the German. *Transport Theory Statist. Phys.* **20** (1991), *no.* 5-6, 499–523. (From the preface) **93d:01056** 01A70 (01A75)

— *see also* **Nelson, Paul, Jr.** *and* **Eisenberg, Wolfgang, (93e:00008)**

Bolyai, Farkas *see* **Bier, Martin, 93c:01031**

Bolyai, János *see* **Bier, Martin, 93c:01031**

Bolzano, Bernard ★ Bernard Bolzano—Gesamtausgabe. Reihe I. Schriften. Band 13. Teil 2. (German) [Bernard Bolzano—Collected works. Series I. Writings. Vol. 13. Part 2] Wissenschaftslehre. §§307–348. [Theory of science. Sections 307–348] Edited and with an introduction by Jan Berg. *Friedrich Frommann Verlag Günther Holzboog GmbH & Co., Stuttgart*, 1990. 243 *pp. ISBN* 3-7728-0452-7 (Joseph W. Dauben) **93e:01032** 01A75 (00A30, 01A55, 03–03)

— ★ Bernard Bolzano—Gesamtausgabe. Reihe II. Nachlass B. Wissenschaftliche Tagebücher. Band 4. Teil 2. (German) [Bernard Bolzano—Collected works. Series II. Nachlass B. Scientific diaries. Vol. 4. Part 2] Miscellanea mathematica. 6. Edited and with a foreword by Bob van Rootselaar and Anna van der Lugt. With an introduction by van Rootselaar. *Friedrich Frommann Verlag Günther Holzboog GmbH & Co., Stuttgart*, 1991. 223 *pp. ISBN* 3-7728-0476-4 (Walter Purkert) **93e:01033** 01A75 (01A55)

— ★ Bernard Bolzano—Gesamtausgabe. Reihe I. Schriften. Band 13. Teil 3. (German) [Bernard Bolzano—Collected works. Series I. Writings. Vol. 13. Part 3] Wissenschaft-

slehre. §§349–391. [Theory of science. Sections 349–391] Edited and with an introduction by Jan Berg. *Friedrich Frommann Verlag Günther Holzboog GmbH & Co., Stuttgart*, 1992. 211 *pp.* *ISBN* 3-7728-0453-5 (Joseph W. Dauben) **93m:01100** 01A75 (01A55, 03–03, 03A05)

— *see also* **Spalt, Detlef D., 93c:01022; Sebestik, Jan, 93f:01013** *and* **Russ, Steve, 93j:01005**

Bolzern, P. (*with* Bittanti, Sergio; De Nicolao, Giuseppe) Comments on: "Stabilizability and detectability of discrete-time time-varying systems" [IEEE Trans. Automat. Control **35** (1990), no. 4, 425–429] by J. C. Engwerda. (English summary) With a reply by Engwerda. *IEEE Trans. Automat. Control* **37** (1992), *no.* 8, *part I*, 1274–1275. 93D15 (93B07, 93C55)

Boman, Jan Helgason's support theorem for Radon transforms—a new proof and a generalization. *Mathematical methods in tomography* (*Oberwolfach*, 1990), 1–5, *Lecture Notes in Math.*, 1497, *Springer, Berlin*, 1991. (*see* **93d:44001**) 58G15 (44A12)

— Holmgren's uniqueness theorem and support theorems for real analytic Radon transforms. *Geometric analysis* (*Philadelphia, PA*, 1991), 23–30, *Contemp. Math.*, 140, *Amer. Math. Soc., Providence, RI*, 1992. (Árpád Kurusa) **93k:44001** 44A12 (35A10, 35A27, 58G07)

— A local vanishing theorem for distributions. (English and French summaries) *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 12, 1231–1234. (Jongsik Kim) **93j:46044** 46F10 (35A20, 46F05)

— (*with* Quinto, Eric Todd) Support theorems for Radon transforms on real analytic line complexes in three-space. *Trans. Amer. Math. Soc.* **335** (1993), *no.* 2, 877–890. (Frank Richter) **93d:58160** 58G15 (44A12, 58G07)

Bomash, Gregory A Blaschke-type product and random zero sets for Bergman spaces. *Ark. Mat.* **30** (1992), *no.* 1, 45–60. (Charles Horowitz) **93g:30047** 30D55 (30C15, 30H05, 46E15)

Bombal, Fernando (*with* Cembranos, Pilar; Mendoza, José) On the surjective Dunford-Pettis property. *Math. Z.* **204** (1990), *no.* 3, 373–380. (James Hagler) **93c:46018** 46B20

— On some properties of Banach spaces. (Spanish) *Rev. Real Acad. Cienc. Exact. Fís. Natur. Madrid* **84** (1990), *no.* 1, 83–116. (Giovanni Emmanuele) **93d:46022** 46B03 (46B20, 47D30)

— On (V) and (V^*) sets in vector valued function spaces. *Function spaces* (*Poznań*, 1989), 80–89, *Teubner-Texte Math.*, 120, *Teubner, Stuttgart*, 1991. (S. Cobzaş) **93b:46062** 46E40 (46B20)

— Distinguished subsets in vector sequence spaces. *Progress in functional analysis* (*Peñíscola*, 1990), 293–306, *North-Holland Math. Stud.*, 170, *North-Holland, Amsterdam*, 1992. (Miguel Florencio Lora and Pedro J. Paúl) **93d:46036** 46B45 (46A45)

Bombelli, Luca (*with* Gunzig, Edgard; Nesteruk, A. V.) Renormalization, the trace anomaly and spacetime anisotropy. (English summary) *Classical Quantum Gravity* **9** (1992), *no.* 10, 2193–2202. (Summary) **93g:81102** 81T15 (81T20, 81T50, 83C47)

— (*with* Couch, W. E.; Torrence, R. J.) Solvable systems of wave equations and nonabelian Toda lattices. *J. Phys. A* **25** (1992), *no.* 5, 1309–1327. (A. Roy Chowdhury) **93a:35143** 35Q58 (58F07, 70K99)

Bombieri, Enrico (*with* Mueller, Julia H.) The generalized Fermat equation in function fields. *J. Number Theory* **39** (1991), *no.* 3, 339–350. (Andrew Bremner) **93a:11022** 11D41 (11G30, 11J99)

— (*with* Granville, Andrew; Pintz, János) Squares in arithmetic progressions. *Duke Math. J.* **66** (1992), *no.* 3, 369–385. (D. R. Heath-Brown) **93d:11106** 11N64 (11B25, 11G30)

— *see also* **Proceedings: Conference on Analytic Number Theory, 93m:11003**

Bomze, Immanuel M. (*with* Reschenhofer, E.) Length tests for goodness of fit. *Biometrika* **78** (1991), *no.* 1, 207–216. (S. Rao Jammalamadaka) **93a:62079** 62G30

— (*with* van Damme, Eric E. C.) A dynamical characterization of evolutionarily stable states. (English summary) Nonlinear methods in economic dynamics and optimal control (Vienna, 1990). *Ann. Oper. Res.* **37** (1992), *no.* 1-4, 229–244. (Summary) **93g:92014** 92D15

— Detecting all evolutionarily stable strategies. (English summary) *J. Optim. Theory Appl.* **75** (1992), *no.* 2, 313–329. (Summary) **93h:92022** 92D15 (90D40)

van Bon, John (*with* Weiss, Richard Mark) A characterization of the groups Fi_{22}, Fi_{23} and Fi_{24}. *Forum Math.* **4** (1992), *no.* 4, 425–432. (Summary) **93d:20035** 20D08

— (*with* Weiss, Richard Mark) An existence lemma for groups generated by 3-transpositions. *Invent. Math.* **109** (1992), *no.* 3, 519–534. (A. S. Kondrat'ev) **93g:20033** 20D08 (05C25)

— Affine distance-transitive graphs with quadratic forms. *Math. Proc. Cambridge Philos. Soc.* **112** (1992), *no.* 3, 507–517. (Arjeh M. Cohen) **93i:05135** 05E20 (11E57, 51A50)

Bona, Jerry L. (*with* Ponce, Gustavo; Saut, Jean-Claude; Tom, Michael M.) A model system for strong interaction between internal solitary waves. *Comm. Math. Phys.* **143** (1992), *no.* 2, 287–313. (Alan Jeffrey) **93e:35086** 35Q35 (76B25, 76V05)

Bóna, Miklós Sur l'énumération des cubes magiques. (English and French summaries) [On the number of magic cubes] *C. R. Acad. Sci. Paris Sér. I Math.* **316** (1993), *no.* 7, 633–636. (Summary) **93k:05010** 05A15 (05B15)

Bonacich, Phillip (*with* Bienenstock, Elisa Jayne) Assignment games, chromatic number, and exchange theory. (English summary) *J. Math. Sociol.* **17** (1993), *no.* 4, 243–259. 90D40

Bonacina, Giuseppe (*with* Martellini, Maurizio; Nelson, Jeanette) Generalized link-invariants on 3-manifolds $\Sigma_h \times [0,1]$ from Chern-Simons gauge and gravity theories. *Lett. Math. Phys.* **23** (1991), *no.* 4, 279–286. (Michael Kapovich) **93d:81112** 81T13 (57M25)

— (*with* Gamba, Andrea; Martellini, Maurizio) Interacting Euclidean three-dimensional quantum gravity. *Phys. Rev. D* (3) **45** (1992), *no.* 10, 3577–3583. (Michael O. Katanaev) **93f:83035** 83C45

Bonacina, Maria Paola (*with* Hsiang, Jieh) On rewrite programs: semantics and relationship with Prolog. (English summary) *J. Logic Programming* **14** (1992), *no.* 1-2, 155–180. (Summary) **93i:68126** 68Q60 (68N17, 68Q42, 68Q55)

Bonadies, Manuelita Barrelling and buckling instabilities of elastic rods. *Utilitas Math.* **41** (1992), 75–90. (Summary) **93a:73052** 73H05 (73K05)

Bonafede, Salvatore A generalized maximum principle for weak subsolutions of degenerate parabolic equations. (Italian. English summary) *Rend. Circ. Mat. Palermo* (2) **41** (1992), *no.* 1, 81–95. (Joachim von Below) **93f:35027** 35B50 (35K65, 35R05)

Bonahon, Francis Ensembles limites et applications. [Limit sets, and applications] *Proceedings of the International Congress of Mathematicians, Vol. I, II* (*Kyoto*, 1990), 599–608, *Math. Soc. Japan, Tokyo*, 1991. (Darryl McCullough) **93d:57020** 57M50 (20H10, 30F40, 30F60, 32G15, 57–02)

Bonami, Aline (*with* Sibony, Nessim) Sobolev embedding in $\mathbf{C}^n$ and the $\overline{\partial}$-equation. *J. Geom. Anal.* **1** (1991), *no.* 4, 307–327. (Frank Beatrous, Jr.) **93a:32024** 32F20 (32F15, 35N15, 46E35)

Bonan, Edmond Comparaison d'un corps convexe avec ses deux ellipsoïdes optimaux. (English and French summaries) [Comparison of a convex body with its two optimal ellipsoids] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 5, 557–560. (P. R. Goodey) **93j:52008** 52A38 (52A20, 52A40)

Bonan-Hamada, Catherine M. (*with* Jones, William B.; Magnus, Arne) Para-orthogonal Laurent polynomials. *Approximation theory* (*Memphis, TN*, 1991), 125–135, *Lecture Notes in Pure and Appl. Math.*, 138, *Dekker, New York*, 1992. (H. P. Dikshit) **93k:41009** 41A10

Bonanno, G. *see* **Bonanno, Giacomo**

Bonanno, Gabriele Two theorems on the Scorza Dragoni property for multifunctions. (Italian summary) *Atti Accad. Naz. Lincei Rend. Cl. Sci. Fis. Mat. Natur.* (8) **83** (1989), 51–56 (1990). (Zvi Artstein) **93b:28029** 28B20 (49J45, 54C60)

Bonanno, Giacomo Set-theoretic equivalence of extensive-form games. *Internat. J. Game Theory* **20** (1992), *no.* 4, 429–447. (E. Marchi) **93d:90081** 90D44 (90D10, 90D40)

— Players' information in extensive games. (English summary) *Math. Social Sci.* **24** (1992), *no.* 1, 35–48. (Akira Okada) **93h:90110** 90D06 (90D10, 90D40)

— Rational beliefs in extensive games. (English summary) *Theory and Decision* **33** (1992), *no.* 2, 153–176. (Summary) **93f:90212** 90D43

Bonanos, S. A generalization of the Kerr-Schild ansatz. *Classical Quantum Gravity* **9** (1992), *no.* 3, 697–711. (Shin-ichi Kitamura) **93c:83006** 83C05 (83C20)

Bonardi, M. T. (*with* Casazza, E.; Gallarati, D.) Introduction to conic fibrations. (Italian. English and French summaries) *Studies and research collection* (*Italian*), 3–54, *Coll. Studi Ricerche, VIII, IX, Accad. Ligure Sci. Lett., Genoa*, 1988. (Antonio Lanteri) **93e:14049** 14J40 (14E30, 14J45)

— Linear pencils of varieties with section surfaces of type $K3$. (Italian. English and French summaries) *Studies and research collection* (*Italian*), 57–81, *Coll. Studi Ricerche, VIII, IX, Accad. Ligure Sci. Lett., Genoa*, 1988. (Jean D'Almeida) **93e:14010** 14C21 (14J45)

Bonato, C. A. (*with* Malbouisson, A. P. C.; Thomaz, M. T.) The equivalent Schrödinger equation for the bounce solution. *J. Phys. A* **24** (1991), *no.* 4, 901–907. (From the introduction) **93d:81028** 81Q05 (35Q40)

Bonatsos, Dennis Quantum algebras in nuclear physics. (English summary) *Group theory and special symmetries in nuclear physics* (*Ann Arbor, MI*, 1991), 54–65, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93e:81150**) 81V35 (81R50)

— (*with* Daskaloyannis, C.; Kokkotas, K.) WKB equivalent potentials for q-deformed harmonic and anharmonic oscillators. (English summary) *J. Math. Phys.* **33** (1992), *no.* 9, 2958–2965. (Summary) **93f:81034** 81Q20 (81R50, 81S05)

— (*with* Faessler, Amand; Raïchev, P. P.; Roussev, R. P.; Smirnov, Yu. F.) An exactly soluble nuclear model with $SU_q(3) \supset SU_q(2) \supset SO_q(2)$ symmetry. *J. Phys. A* **25** (1992), *no.* 6, L267–L274. (A. Ventura) **93b:81105** 81R50 (81V35)

— (*with* Faessler, Amand; Raïchev, P. P.; Roussev, R. P.; Smirnov, Yu. F.) $B(E2)$ transition probabilities in the q-rotator model with $SU_q(2)$ symmetry. *J. Phys. A* **25** (1992), *no.* 11, 3275–3285. (Summary) **93b:81308** 81V35 (81R50)

— (*with* Daskaloyannis, C.; Kokkotas, K.) Classical potentials for q-deformed anharmonic oscillators. *Phys. Rev. A* (3) **45** (1992), *no.* 9, R6153–R6156. (Summary) **93b:81106** 81R50 (81Q05)

— (*with* Daskaloyannis, C.) Generalized deformed oscillators for vibrational spectra of diatomic molecules. *Phys. Rev. A* (3) **46** (1992), *no.* 1, 75–80. (Summary) **93d:81195** 81V55 (81R50)

Bonatti, Christian Champs de vecteurs analytiques commutants, en dimension 3 ou 4: existence de zéros communs. (English summary) [Commuting analytic vector fields in dimension 3 or 4: existence of common zeros] *Bol. Soc. Brasil. Mat.* (*N.S.*) **22** (1992), *no.* 2, 215–247. (P. Molino) **93h:57044** 57R25

— (*with* Kolev, Boris) Existence de points fixes enlacés à une orbite périodique d'un homéomorphisme du plan. (English and French summaries) [Existence of fixed points linked with a periodic orbit of a homeomorphism of the plane] *Ergodic Theory Dynamical Systems* **12** (1992), *no.* 4, 677–682. (Edward Slaminka) **93j:58112** 58F20

Bonazzola, S. (*with* Pérault, M.; Puget, J. L.; Heyvaerts, J.; Falgarone, E.; Panis, J. F.) Jeans collapse of turbulent gas clouds: tentative theory. (English summary) *J. Fluid Mech.* **245** (1992), 1–28. (Summary) **93i:85005** 85A30 (76E20, 76N15)

Bonci, Luca (*with* Roncaglia, Roberto; Grigolini, Paolo; West, Bruce J.) Chaos and quantum irreversibility. *J. Statist. Phys.* **68** (1992), *no.* 1-2, 321–343. (Summary) **93c:81281** 81V80 (81Q50, 81S30)

— (*with* Bianucci, Marco; Trefan, Gyorgy; West, Bruce J.; Grigolini, Paolo) Brownian motion generated by a two-dimensional mapping. (English summary) *Phys. Lett. A* **174** (1993), *no.* 5-6, 377–383. (Summary) **93m:82030** 82C31

Bond, R. A. B. (*with* Mika, Janusz R.) The implicit Euler method and singular perturbation theory. (English summary) *Computational and applied mathematics, II* (*Dublin*, 1991), 269–275, *North-Holland, Amsterdam*, 1992. (Summary) **93j:65101** 65L05

— (*with* Mika, Janusz R.) Method of approximate inverse for solving equations in Hilbert spaces. *Quaestiones Math.* **15** (1992), *no.* 1, 53–71. (Summary) **93b:47016** 47A50 (65J10)

Bond, Robert J. On the splitting of the Hilbert class field. (English summary) *J. Number Theory* **42** (1992), *no.* 3, 349–360. (Kiyoshi Nagata) **93j:11075** 11R37 (11R32)

Bondar', A. V. (*with* Luk'yanova, E. A.) Sets of σ-monogeneity and criteria for pseudo-analyticity of continuous functions. (Russian. Russian summary) *Akad. Nauk Ukrainy Inst. Mat. Preprint* **1992**, *no.* 7, 28 *pp.* (Summary) **93j:30050** 30G20

Bondar, James V. A Hunt-Stein theorem for amenable semigroups. *Probability measures on groups, X* (*Oberwolfach*, 1990), 39–43, *Plenum, New York*, 1991. (Summary) **93g:62007** 62A05 (62F03)

Bondar', V. A. (*with* Lagno, V. I.; Serov, N. I.) Invariant solutions of eikonal equation simulating process of corrosion. (Russian summary) *Dokl. Akad. Nauk Ukrainy* **1992**, *no.* 5, 24–27, 159. (Summary) **93f:82036** 82C24 (82D15)

Bondarenko, A. A. The structure of the adèle group of the product of algebraic groups. (Russian) *Mat. Zametki* **50** (1991), *no.* 4, 33–37, 157; *translation in Math. Notes* **50**

(1991), *no.* 3-4, 1008–1010 (1992). (Summary) **93f:11033** 11E57 (20G30)

Bondarenko, B. A. Analytic representation and a discrete algorithm for the construction of polynomial solutions of an equation of mixed type and its iterations. (Russian. Russian summary) *Voprosy Vychisl. i Prikl. Mat. (Tashkent) No.* 88 (1990), 20–31, 158–159. 35C10 (35M10)

Bondarenko, M. V. (*with* Poznyak, A. S.) Asymptotic normality and an estimate for the rate of convergence of algorithms for the identification of nonstationary objects. (Russian. Russian summary) *Avtomat. i Telemekh.* **1992**, *no.* 7, 44–55; *translation in Automat. Remote Control* **53** (1992), *no.* 7, *part* 1, 989–999. (Rudolf Kulhavý) **93i:93115** 93E10 (62M10)

— (*with* Tsypkin, Ya. Z.) An optimal algorithm for identification of rapidly time-varying systems. *IEEE Trans. Automat. Control* **37** (1992), *no.* 2, 237–239. (Summary) **93a:93037** 93B30 (93B40)

Bondarenko, N. P. Selfadjoint boundary value problems with a discrete spectrum for some operator-differential equations. (Russian. Russian summary) *Boundary value problems for operator-differential equations (Russian)*, 4–6, *Akad. Nauk Ukrainy, Inst. Mat., Kiev*, 1991. (Summary) **93f:34145** 34L40 (34B05, 34G10, 47E05, 47N20)

Bondarenko, V. A. Estimates for the complexity of combinatorial optimization problems in a class of algorithms. (Russian) *Dokl. Akad. Nauk* **328** (1993), *no.* 1, 22–24. 90C27 (68Q25)

Bondarenko, V. M. On representations of a generalized bundle of semichained sets. (Russian) *Complex analysis, algebra and topology (Russian)*, 9–19, *Akad. Nauk Ukrain. SSR, Inst. Mat., Kiev*, 1990. (L. Bokut') **93b:16020** 16G60

— (*with* Zavadskiĭ, A. G.) Posets with an equivalence relation of tame type and of finite growth. *Representations of finite-dimensional algebras (Tsukuba*, 1990), 67–88, *CMS Conf. Proc.*, 11, *Amer. Math. Soc., Providence, RI*, 1991. (Claudia Böttinger) **93c:16012** 16G20 (16G60)

— (*with* Zavadskiĭ, A. G.) Tame posets with equivalence relation. *Proceedings of the International Conference on Algebra, Part* 2 (*Novosibirsk*, 1989), 237–251, *Contemp. Math.*, 131, *Part* 2, *Amer. Math. Soc., Providence, RI*, 1992. (Claudia Böttinger) **93h:16017** 16G20 (16G60)

Bondarev, A. S. Normed spaces with disjunctive elements. (Russian) *Ordered sets and lattices, No.* 10 (*Russian*), 10–15, *Saratov. Gos. Univ., Saratov*, 1991. (A. V. Bukhvalov) **93f:46024** 46B40

Bondarev, B. V. Averaging in periodic environments with weakly dependent random actions. I. (Russian) *Teor. Veroyatnost. i Mat. Statist. No.* 45 (1991), 12–20; *translation in Theory Probab. Math. Statist. No.* 45 (1992), 9–15. (Summary) **93d:60101** 60H10

— An estimate for the nonlinearity parameter in initial-boundary value problems with Gaussian perturbations. (Russian) *Teor. Veroyatnost. i Primenen.* **36** (1991), *no.* 3, 553–560; *translation in Theory Probab. Appl.* **36** (1991), *no.* 3, 570–578 (1992). (G. A. Sokhadze) **93d:60107** 60H99 (35K60, 35R60)

— Quantum Markovian master equation theory of particle migration in a stochastic medium. *Phys. A* **183** (1992), *no.* 1-2, 159–174. (Summary) **93a:82052** 82C41

— Quantum lattice gas. Method of density matrix. *Phys. A* **184** (1992), *no.* 1-2, 205–230. (Summary) **93f:82005** 82B10

— Averaging in periodic environments with weakly dependent random influences. (Ukrainian. Russian and Ukrainian summaries) *Teor. Ĭmovir. ta Mat. Statist. No.* 46 (1992), 18–24. (Summary) **93k:60151** 60H15 (35R60)

— Averaging in hyperbolic systems that are subject to weakly dependent random disturbances. (Russian. Russian and Ukrainian summaries) *Ukraïn. Mat. Zh.* **44** (1992), *no.* 8, 1011–1020; *translation in Ukrainian Math. J.* **44** (1992), *no.* 8, 915–923 (1993). (Summary) **93h:35223** 35R60 (35L15, 35L20)

Bondarev, V. A. Variational formulation of a nonstationary heat-conduction problem. (English summary) *J. Engrg. Phys. Thermophys.* **62** (1992), *no.* 1, 106–114. (Summary) **93f:80004** 80A20

Bondareva, O. N. *see* **Rosenmüller, Joachim**, **93d:01075a** *and* **Kukushkin, N. S. et al.**, **93d:01075b**

Bondaros, Yu. G. (*with* Semenov, A. V.) Optimal control according to the H^∞-criterion for continuous and discrete systems. (Russian) *Dokl. Akad. Nauk* **328** (1993), *no.* 4, 434–436; *translation in Phys. Dokl.* **38** (1993), *no.* 2, 54–55. 93B36 (93C05)

Bondesson, Lennart A characterization of first passage time distributions for random walks. *Stochastic Process. Appl.* **39** (1991), *no.* 1, 81–88. (Endre Csáki) **93b:60149** 60J15

Bondi, André B. A study of a state-dependent job admission policy in a computer system with restricted memory partitions. (English summary) *Performance Evaluation* **15** (1992), *no.* 3, 133–153. (Summary) **93h:68010** 68M20 (90B22)

Bondi, Christine *see* **New applications of mathematics**, **93g:00019**

Bondi, Hermann Gravitation. (English summary) *European J. Phys.* **14** (1993), *no.* 1, 1–6. (Summary) **93i:83001** 83-01 (83B05)

gracia-Bondía, José M. *see* **Gracia-Bondía, José M.**

Bondioli, Cristiana Function spaces of Nikol'skiĭ type on compact manifolds. (English and Italian summaries) *Atti Accad. Naz. Lincei Cl. Sci. Fis. Mat. Natur. Rend. Lincei* (9) *Mat. Appl.* **3** (1992), *no.* 3, 185–194. (H. Triebel) **93k:46019** 46E35 (58D15)

Bondy, J. A. A graph reconstructor's manual. *Surveys in combinatorics*, 1991 (*Guildford*, 1991), 221–252, *London Math. Soc. Lecture Note Ser.*, 166, *Cambridge Univ. Press, Cambridge*, 1991. (B. Manvel) **93e:05071** 05C60

— (*with* Locke, S. C.) Triangle-free subgraphs of powers of cycles. *Graphs Combin.* **8** (1992), *no.* 2, 109–118. (Marko Razpet) **93e:05079** 05C75 (05C78)

Bonechi, F. (*with* Celeghini, E.; Giachetti, Riccardo; Sorace, E.; Tarlini, M.) Heisenberg XXZ model and quantum Galilei group. (English summary) *J. Phys. A* **25** (1992), *no.* 15, L939–L943. (Summary) **93f:82018** 82B23 (81R50)

Bones, P. J. (*with* Cree, M. J.) Algorithms to numerically evaluate the Hankel transform. (English summary) *Comput. Math. Appl.* **26** (1993), *no.* 1, 1–12. (Summary) **93m:65176** 65R10

Bonet, José (*with* Bierstedt, Klaus-D.; Schmets, Jean) (DF)-spaces of type $CB(X,E)$ and $C\overline{V}(X,E)$. (English summary) Dedicated to the memory of Professor Gottfried Köthe. *Note Mat.* **10** (1990), *suppl.* 1, 127–148 (1992). (Andreas Defant) **93k:46024** 46E40 (46A04)

— A question of Antosik and Burzyk on nonbornological barrelled spaces. (English summary) *Bull. Polish Acad. Sci. Math.* **39** (1991), *no.* 3-4, 175–176. (Summary) **93m:46001** 46A08

— (*with* Díaz Alcaide, Juan Carlos) On the weak quasinormability condition of Grothendieck. (Turkish summary) *Doğa Mat.* **15** (1991), *no.* 3, 154–164. (Paweł Domański) **93c:46012** 46A45 (46A04)

— (*with* Braun, R. W.; Meise, Reinhold; Taylor, B. A.) Whitney's extension theorem for nonquasianalytic classes of ultradifferentiable functions. *Studia Math.* **99** (1991), *no.* 2, 155–184. (Joaquim Bruna) **93e:46030** 46E10 (26E10)

— (*with* Meise, Reinhold; Taylor, B. A.) On the range of the Borel map for classes of nonquasianalytic functions. *Progress in functional analysis (Peñíscola*, 1990), 97–111, *North-Holland Math. Stud.*, 170, *North-Holland, Amsterdam*, 1992. (Fritz Haslinger) **93e:46044** 46F05 (46A04, 46E10, 46G99)

— (*with* Bierstedt, Klaus-D.) Biduality in Fréchet and (LB)-spaces. *Progress in functional analysis (Peñíscola*, 1990), 113–133, *North-Holland Math. Stud.*, 170, *North-Holland, Amsterdam*, 1992. (Richard M. Aron) **93i:46010** 46A13 (46A08, 46E10, 46E50, 46G20)

— (*with* Defant, Andreas; Galbis, Antonio) Tensor products of Fréchet or (DF)-spaces with a Banach space. *J. Math. Anal. Appl.* **166** (1992), *no.* 2, 305–318. (Klaus-Dieter Bierstedt) **93e:46006** 46A32 (46A08, 46B08, 46M05)

— (*with* Dierolf, S.; Fernández, Carmen) On two classes of LF-spaces. *Portugal. Math.* **49** (1992), *no.* 1, 109–130. (Paweł Domański) **93f:46002** 46A13

— (*with* Lindström, Mikael; Valdivia, Manuel) Two theorems of Josefson-Nissenzweig type for Fréchet spaces. *Proc. Amer. Math. Soc.* **117** (1993), *no.* 2, 363–364. (Aydın Aytuna) **93d:46005** 46A04

Bonetti, Flavio (*with* Rota, Gian-Carlo; Senato, Domenico; Venezia, Antonietta M.) On the foundation of combinatorial theory. X. A categorical setting for symmetric functions. *Stud. Appl. Math.* **86** (1992), *no.* 1, 1–29. (A. Kerber) **93h:05167** 05E05

chan khyu Bong *see* **Chan Khyu Bong**

Bongers, Peter M. M. On a new robust stability margin. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, I (Kobe*, 1991), 377–382, *Mita, Tokyo*, 1992. (*see* **93g:93005**) 93D09

— (*with* Bosgra, Okko H.) Normalized coprime factorizations for systems in generalized state-space form. (English summary) *IEEE Trans. Automat. Control* **38** (1993), *no.* 2, 348–350. (Summary) **93j:93033** 93B28 (93B40, 93C05)

Bongiorno, Benedetto (*with* Di Piazza, L.) Convergence theorems for generalized Riemann-Stieltjes integrals. *Real Anal. Exchange* **17** (1991/92), *no.* 1, 339–361. (Frank N. Huggins) **93a:26006** 26A42 (26A39)

— (*with* Giertz, Magnus; Pfeffer, Washek F.) Some nonabsolutely convergent integrals in the real line. (Italian summary) *Boll. Un. Mat. Ital. B* (7) **6** (1992), *no.* 2, 371–402. (J. Jarník) **93h:26017** 26A42 (26A39)

— (*with* Pfeffer, Washek F.) A concept of absolute continuity and a Riemann type integral. (English summary) *Comment. Math. Univ. Carolin.* **33** (1992), *no.* 2, 189–196. (T. Šalát) **93m:26025** 26B15

Bonikowski, Zbigniew A certain conception of the calculus of rough sets. (English summary) *Notre Dame J. Formal Logic* **33** (1992), *no.* 3, 412–421. (Wojciech Ziarko) **93j:06016** 06E15 (03E70, 03E72, 68T30)

lópez Bonilla, J. *see* **López Bonilla, J.**

zamora Bonilla, Jesús P. *see* **Zamora Bonilla, Jesús P.**

Bonilla, L. L. (*with* Guinea, F.) Collapse of the wave packet and chaos in a model with classical and quantum degrees of freedom. *Phys. Rev. A* (3) **45** (1992), *no.* 11, 7718–7728. (Summary) **93a:81030** 81Q05 (81P99, 81Q50)

Bŏning, Rolf Curvature surfaces of real hypersurfaces in a complex space form. *Geometry and topology of submanifolds, IV (Leuven*, 1991), 43–50, *World Sci. Publishing, River Edge, NJ*, 1992. (Bang-yen Chen) **93g:53073** 53C40 (53B25)

Bonisoli, Arrigo (*with* Faina, Giorgio) On the family of linear flocks of an absolutely irreducible hyperbolic quadric in a finite projective space. (Italian. English summary) *Atti Accad. Naz. Lincei Cl. Sci. Fis. Mat. Natur. Rend. Lincei* (9) *Mat. Appl.* **3** (1992), *no.* 2, 121–124. (From the text) **93f:51011** 51E20

— (*with* Korchmáros, Gábor) Flocks of hyperbolic quadrics and linear groups containing homologies. *Geom. Dedicata* **42** (1992), *no.* 3, 295–309. (Laura Bader) **93g:51008** 51E20 (05B25, 20B25)

Bonissone, Piero P. (*with* Dutta, Soumitra) Integrating case- and rule-based reasoning. (English summary) *Internat. J. Approx. Reason.* **8** (1993), *no.* 3, 163–203. 68T27

Bonizzoni, P. (*with* Mauri, Giancarlo; Pighizzini, G.; Sabadini, N.) Recognizing sets of labelled acyclic graphs. (English summary) *Tree automata and languages* (*Le Touquet*, 1990), 201–224, *Stud. Comput. Sci. Artif. Intell.*, 10, *North-Holland, Amsterdam*, 1992. (Summary) **93h:68042** 68Q10 (05C90, 68R10)

Bonk, Mario Distortion estimates for Bloch functions. *Bull. London Math. Soc.* **23** (1991), *no.* 5, 454–456. (Richard M. Timoney) **93b:30030** 30D45 (30C99)

— On the second part of Hilbert's fifth problem. *Math. Z.* **210** (1992), *no.* 3, 475–493. (A. Smajdor) **93f:39017** 39B32

Bonnans, Joseph Frédéric A review of some recent results in the perturbation theory of nonlinear programs. (English summary) *Proceedings of the XII Congress on Differential Equations and Applications/II Congress on Applied Mathematics* (*Spanish*) (*Oviedo*, 1991), 3–19, *Univ. Oviedo, Oviedo*, 1991. (Summary) **93j:90109** 90C31 (49K40, 65K05)

— The Pontryagin principle for the control of elliptic systems with state constraints. (Spanish) *Proceedings of the XII Congress on Differential Equations and Applications/II Congress on Applied Mathematics* (*Spanish*) (*Oviedo*, 1991), 297–300, *Univ. Oviedo, Oviedo*, 1991. (*see* **93j:00009**) 49K20 (35J65)

— (*with* Ioffe, Alexandre D.; Shapiro, Alexander) Développement de solutions exactes et approchées en programmation non linéaire. (English and French summaries) [Expansion of exact and approximate solutions in nonlinear programming] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 2, 119–123. 90C30 (49N15)

— Directional derivatives of optimal solutions in smooth nonlinear programming. *J. Optim. Theory Appl.* **73** (1992), *no.* 1, 27–45. (Jan Rückmann) **93c:90088** 90C31 (49J52)

— (*with* Shapiro, Alexander) Sensitivity analysis of parametrized programs under cone constraints. (English summary) *SIAM J. Control Optim.* **30** (1992), *no.* 6, 1409–1422. (D. Klatte) **93m:90086** 90C31 (49K40)

— (*with* Panier, Eliane R.; Tits, André L.; Zhou, Jian L.) Avoiding the Maratos effect by means of a nonmonotone line search. II. Inequality constrained problems—feasible iterates. *SIAM J. Numer. Anal.* **29** (1992), *no.* 4, 1187–1202. (John J. Dinkel) **93i:90087** 90C30 (65K10)

— *see also* **Optimization, optimal control and partial differential equations**, **93m:00044**

Bonnard, Bernard Feedback equivalence for nonlinear systems and the time optimal control problem. *SIAM J. Control Optim.* **29** (1991), *no.* 6, 1300–1321. (Kevin A. Grasse) **93b:93030** 93B29 (49K15, 93B52)

— (*with* Kupka, Ivan A. K.) Théorie des singularités de l'application entrée/sortie et optimalité des trajectoires singulières dans le problème du temps minimal. (English and French summaries) [Theory of the singularities of the input/output mapping and optimality of singular trajectories in the minimal-time problem] *Forum Math.* **5** (1993), *no.* 2, 111–159. (David L. Elliott) **93m:49009** 49K15 (93B27, 93C10)

vanden Bonne, J. *see* **Vanden Bonne, J.**

Bonneau, Philippe (*with* Flato, Moshé; Pinczon, Georges) A natural and rigid model of quantum groups. (English summary) *Lett. Math. Phys.* **25** (1992), *no.* 1, 75–84. (D. A. Jordan) **93k:17025** 17B37 (16W30, 81R50)

Bonner, R. F. (*with* Gandjbakhche, A. H.; Nossal, R.) Scaling relationships for anisotropic random walks. (English summary) *J. Statist. Phys.* **69** (1992), *no.* 1-2, 35–53. (Summary) **93h:82062** 82C41

Bonnet, Alexis Ondes progressives planes pour un modèle de flammes en chimie complexe. (English and French summaries) [Planar travelling waves in combustion with complex chemical networks] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 8, 913–917. (Summary) **93j:80004** 80A25 (76N15)

— Travelling waves for planar flames with complex chemistry reaction network. *Comm. Pure Appl. Math.* **45** (1992), *no.* 10, 1271–1302. (Graeme C. Wake) **93g:80011** 80A30 (35B99, 35Q80, 76N15)

Bonnet, Catherine (*with* Deniau, Claude) Réduction dans la base d'équilibre de systèmes linéaires à temps discret de dimension infinie: le cas des systèmes nucléaires. (English summary) [Reduction of infinite-dimensional discrete-time linear systems via balanced realization: the case of nuclear systems] *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 11, 871–874. (Summary) **93b:93023** 93B15 (47B35, 47N70)

— Réduction de systèmes linéaires discrets de dimension infinie: étude de filtres fractionnaires. (English and French summaries) [Approximation of infinite-dimensional systems: an application to fractional filters] *RAIRO Automat.-Prod. Inform. Ind.* **26** (1992), *no.* 5-6, 399–422. (A. Bultheel) **93k:93058** 93C25 (47N70, 93B28)

— Approximation of infinite-dimensional discrete time linear systems via balanced realizations and an application to fractional filters. (English summary) *Analysis and optimization of systems: state and frequency domain approaches for infinite-dimensional systems* (*Sophia-Antipolis*, 1992), 574–584, *Lecture Notes in Control and Inform. Sci.*, 185, *Springer, Berlin*, 1993. (*see* **93i:93005**) 93B15 (47N70, 93C25)

valderrama Bonnet, Mariano J. *see* **Valderrama Bonnet, Mariano J.**

Bonnet, Robert (*with* Rubin, Matatyahu) Elementary embedding between countable Boolean algebras. *J. Symbolic Logic* **56** (1991), *no.* 4, 1212–1229. (Michael Albert) **93h:03051** 03C65 (03C15, 03C52, 06E05)

— (*with* Bekkali, Mohamed; Rubin, Matatyahu) Compact interval spaces in which all closed subsets are homeomorphic to clopen ones. I. (English summary) *Order* **9** (1992), *no.* 1, 69–95. (Marcel Erné) **93k:54063a** 54E45 (04A10, 06B05, 06B30, 54F05)

— (*with* Bekkali, Mohamed; Rubin, Matatyahu) Compact interval spaces in which all closed subsets are homeomorphic to clopen ones. II. (English summary) *Order* **9** (1992), *no.* 2, 177–200. (Marcel Erné) **93k:54063b** 54E45 (04A10, 06B05, 06B30, 54F05)

Bonnier, Staffan (*with* Małuszyński, Jan; Boye, Johan; Kluźniak, Feliks; Kågedal, Andreas; Nilsson, Ulf) Logic programs with external procedures. (English summary) *Logic programming languages*, 21–48, *MIT Press, Cambridge, MA*, 1993. (*see* **93k:68020**) 68N17

Bonnington, C. P. (*with* Little, C. H. C.) The classification of combinatorial surfaces using 3-graphs. *Australas. J. Combin.* **5** (1992), 87–102. (Summary) **93a:05054** 05C10 (05C15)

— (*with* Archdeacon, Dan; Little, C. H. C.) Cycles, cocycles and diagonals: a characterization of planar graphs. (English summary) *Planar graphs* (*New Brunswick, NJ*, 1991), 1–3, *DIMACS Ser. Discrete Math. Theoret. Comput. Sci.*, 9, *Amer. Math. Soc., Providence, RI*, 1993. (*see* **93m:05005**) 05C10 (05C75)

Bonnisseau, Jean-Marc (*with* Cornet, Bernard) General equilibrium theory with increasing returns: the existence problem. *Equilibrium theory and applications* (*Louvain-la-Neuve*, 1989), 65–82, *Internat. Sympos. Econom. Theory Econometrics, Cambridge Univ. Press, Cambridge*, 1991. (Jeffrey L. Coles) **93d:90012** 90A14 (90A11)

— Existence of equilibria in the presence of increasing returns: a synthesis. (English summary) *J. Math. Econom.* **21** (1992), *no.* 5, 441–452. (Summary) **93f:90027** 90A14

Bonnor, W. B. (*with* Davidson, W.) Interpreting the Levi-Civita vacuum metric. (English summary) *Classical Quantum Gravity* **9** (1992), *no.* 9, 2065–2068. (M. A. J. Vandyck) **93g:83014** 83C15 (83C20)

Bonome, Agustín (*with* Castro, Regina; García-Río, Eduardo; Hervella, Luis M.) On the holomorphic sectional curvature on an indefinite Kähler manifold. (English and French summaries) *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 11, 1183–1187. (Demir N. Kupeli) **93j:53079** 53C50 (53B30, 53B35, 53C55)

Bonomi, Ernesto (*with* Brieger, Leesa) A stochastic lattice gas for Burgers' equation: a practical study. (English summary) *J. Statist. Phys.* **69** (1992), *no.* 3-4, 837–855. (Summary) **93j:82069** 82C80 (35Q53, 76M35)

Bonopera, Alain (*with* Gaujal, Bruno) Inference of reversible languages. (English summary) *Internat. J. Algebra Comput.* **2** (1992), *no.* 3, 327–349. (Sanjay Jain) **93j:68096** 68Q45 (68Q70, 68T05, 68T10)

Bonora, L. (*with* Rinaldi, Maurizio; Russo, Jorge G.) Algebras of the Virasoro, Neveu-Schwarz, and Ramond types on genus g Riemann surfaces. *Quantum mechanics of fundamental systems, 2* (*Santiago*, 1987), 33–42, *Ser. Cent. Estud. Cient. Santiago, Plenum, New York*, 1989. (*see* **93e:81005**) 81T40 (81R10, 81T70)

— (*with* Babelon, O.) Exchange algebra in the conformal affine sl_2 Toda field theory. *Differential geometric methods in theoretical physics* (*Rapallo*, 1990), 173–184, *Lecture Notes in Phys.*, 375, *Springer, Berlin*, 1991. (Olga Kravchenko) **93b:81239** 81T40 (58F07)

— (*with* Bregola, M.; D'Auria, R.; et al.) Some remarks on the supersymmetrization of the Lorentz Chern-Simons form in $D = 10$ $N = 1$ supergravity theories. *Phys. Lett. B* **277** (1992), *no.* 3, 306–312. (Mark D. Roberts) **93e:83068** 83E50

— (*with* Xiong, Chuan Sheng) An alternative approach to KP hierarchy in matrix models. *Phys. Lett. B* **285** (1992), *no.* 3, 191–198. (Yolanda Lozano) **93h:81109** 81T40 (58F07, 81T27)

Bonotto, Cinzia An adequacy theorem for the quasi-senses used in certain theories which are extensional, modal, or strongly intensional. *Istit. Veneto Sci. Lett. Arti Atti Cl. Sci. Fis. Mat. Natur.* **147** (1988/89), 31–39. (From the introduction) **93m:03023** 03B45

Bontoux, P. (*with* Chaouche, A.; Randriamampianina, A.) A collocation method based on the influence matrix technique for Navier-Stokes problems in annular domains. (English summary) *Spectral and high order methods for partial differential equations* (*Como*, 1989), 237–244, *North-Holland, Amsterdam*, 1990. (*see* **93d:65005**) 65N35 (76D05, 76M25)

Bontsema, Jan (*with* Curtain, Ruth F.) Robust stabilization of a flexible beam model using a normalized coprime factorization approach. (English summary) *Control of uncertain systems* (*Bremen*, 1989), 1–17, *Progr. Systems Control Theory*, 6, *Birkhäuser Boston, Boston, MA*, 1990. (Xiao Liang He) **93m:93082** 93D15 (93C20, 93D21)

— (*with* Curtain, Ruth F.; Kuiper, C. R.; Osinga, H. M.) Comparison of robustly stabilizing controllers for a flexible beam model with additive, multiplicative and stable factor perturbations. (English summary) *Analysis and optimization of systems: state and frequency domain approaches for infinite-dimensional systems* (*Sophia-Antipolis*, 1992), 388–400, *Lecture Notes in Control and Inform. Sci.*, 185, *Springer, Berlin*, 1993. (*see* **93i:93005**) 93D15 (73K05, 73K50, 93C20)

Bony, Jean-Michel Analyse microlocale des équations aux dérivées partielles non linéaires. [Microlocal analysis of nonlinear partial differential equations] *Microlocal analysis and applications* (*Montecatini Terme*, 1989), 1–45, *Lecture Notes in Math.*, 1495, *Springer, Berlin*, 1991. (Jean-Marc Delort) **93k:35282** 35S05 (35L70, 35S50, 58G17)

Bonzani, I. (*with* Bellomo, N.) Mathematical aspects of nonlinear shock waves propagation by the discrete Boltzmann equation. *Nonlinear waves and dissipative effects* (*Reggio di Calabria*, 1990), 172–181, *Pitman Res. Notes Math. Ser.*, 227, *Longman Sci. Tech., Harlow*, 1991. (Paul F. Zweifel) **93e:82037** 82C40 (35Q99, 45K05, 76L05, 76P05)

Book, Ronald V. (*with* Lutz, Jack H.) On languages with very high space-bounded Kolmogorov complexity. (English summary) *SIAM J. Comput.* **22** (1993), *no.* 2, 395–402. (Summary) **93m:68097** 68Q45 (03D15)

Boolos, George (*with* Sambin, Giovanni) Provability: the emergence of a mathematical modality. *Studia Logica* **50** (1991), *no.* 1, 1–23. (A. Yu. Muravitsky) **93d:03024** 03B45 (01A60, 03-03, 03F30, 03F40)

van den Boom, T. (*with* Klompstra, Martin H.; Damen, A.) System identification for H_∞-robust control design. (English summary) *Identification and system parameter estimation* 1991, *Vol.* 1,2 (*Budapest*, 1991), 971–976, *IFAC Sympos. Ser.*, 3, *Pergamon, Oxford*, 1992. (*see* **93h:93009**) 93B30 (93B36)

Boon, Jean-Pierre *see* **Workshop: Lattice Gas Automata, 93d:82002**

Boonstra, H. J. (*with* Bergshoeff, E. A.; de Roo, Mees) Realisations of W_3 symmetry. (English summary) *Phys. Lett. B* **292** (1992), *no.* 3-4, 307–314. (Katsushi Ito) **93i:81059** 81R10 (17B68, 81T40)

de Boor, Carl (*with* Höllig, Klaus) Box-spline tilings. *Amer. Math. Monthly* **98** (1991), *no.* 9, 793–802. (Marjorie Senechal) **93f:52024** 52C22 (52C20)

— (*with* Ron, Amos) On polynomial ideals of finite codimension with applications to box spline theory. *J. Math. Anal. Appl.* **158** (1991), *no.* 1, 168–193. (Summary) **93a:41014** 41A15 (13F20)

— On the error in multivariate polynomial interpolation. (English summary) A Festschrift to honor Professor Garrett Birkhoff on his eightieth birthday. *Appl. Numer. Math.* **10** (1992), *no.* 3-4, 297–305. (Mariano Gasca) **93j:65013** 65D05 (41A05, 41A63, 65G05)

— (*with* Ron, Amos) The least solution for the polynomial interpolation problem. *Math. Z.* **210** (1992), *no.* 3, 347–378. (Günther Nürnberger) **93f:41002** 41A05 (41A10, 41A63)

Boos, Dennis D. (*with* Monahan, John F.) Proper likelihoods for Bayesian analysis. (English summary) *Biometrika* **79** (1992), *no.* 2, 271–278. (Michael J. Evans) **93j:62006** 62A15 (62A10, 62F15)

— (*with* Zhang, Ji) Bootstrap critical values for testing homogeneity of covariance matrices. *J. Amer. Statist. Assoc.* **87** (1992), *no.* 418, 425–429. 62H15

— (*with* Zhang, Ji) Testing hypotheses about covariance matrices using bootstrap methods. (English summary) *Comm. Statist. Theory Methods* **22** (1993), *no.* 3, 723–739. 62G09 (62H15)

Boos, Johann (*with* Leiger, Toivo) Consistency theory for operator valued matrices. *Analysis* **11** (1991), *no.* 4, 279–292. (Robert DeVos) **93f:40012** 40H05 (40J05, 46A45, 47B37)

— (*with* Leiger, Toivo) Product and direct sum of L_Φ-$K(X)$-spaces and related $K(X)$-spaces. (Estonian summary) *Tartu Ül. Toimetised No.* 928 (1991), 29–40. (Jing Hui Qiu) **93d:46003** 46A03

— (*with* Tietz, Hubert) Convexity theorems for the circle methods of summability. *J. Comput. Appl. Math.* **40** (1992), *no.* 2, 151–155. (Tamotsu Tsuchikura) **93f:40010** 40G05 (40D99, 40G10)

Booth, Andrew S. (*with* Coleman, John P.) Analysis of a family of Chebyshev methods for $y'' = f(x, y)$. (English summary) *J. Comput. Appl. Math.* **44** (1992), *no.* 1, 95–114. (Summary) **93m:65087** 65L05

Booth, David Douglas Logical feedback. *Studia Logica* **50** (1991), *no.* 2, 225–239. (Henry Africk) **93h:94039** 94C10 (03B05, 03C75, 03E70, 05C05)

— The new zome primer. *Fivefold symmetry*, 221–233, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93i:52002**) 00A69

Booth, G. L. (*with* Groenewald, N. J.) Equiprime Γ-near-rings. *Quaestiones Math.* **14** (1991), *no.* 4, 411–417. (Günter Pilz) **93a:16036** 16Y30

— (*with* Groenewald, N. J.) On prime one-sided ideals, bi-ideals and quasi-ideals of a gamma ring. *J. Austral. Math. Soc. Ser. A* **53** (1992), *no.* 1, 55–63. (Shoji Kyuno) **93g:16061** 16Y99 (16D30)

— (*with* Groenewald, N. J.) Special radicals of near-rings. (English summary) *Math. Japon.* **37** (1992), *no.* 4, 701–706. (Günter Pilz) **93h:16073** 16Y30 (16N80)

— (*with* Groenewald, N. J.) Prime modules of a gamma ring. *Period. Math. Hungar.* **24** (1992), *no.* 1, 55–62. (Shoji Kyuno) **93g:16060** 16Y99 (16D30)

— (*with* Groenewald, N. J.) Special radicals of near-ring modules. (English summary) *Quaestiones Math.* **15** (1992), *no.* 2, 127–137. (Günter Pilz) **93i:16060** 16Y30 (16N80)

— A note on J_2-radicals of Γ-near-rings. (English summary) *Studia Sci. Math. Hungar.* **27** (1992), *no.* 1-2, 235–240. (Summary) **93k:16081** 16Y30

Booth, James G. (*with* Hall, Peter Gavin; Wood, Andrew T. A.) Bootstrap estimation of conditional distributions. (English summary) *Ann. Statist.* **20** (1992), *no.* 3, 1594–1610. (Hung Trung Nguyen) **93j:62116** 62G09

— A note on a one-compartment model with clustering. *J. Appl. Probab.* **29** (1992), *no.* 3, 535–542. (Peter Purdue) **93j:60138** 60K20 (60F05, 92C05)

— (*with* Butler, Ronald W.; Huzurbazar, S.) Saddlepoint approximations for tests of block independence, sphericity and equal variances and covariances. (English summary) *J. Roy. Statist. Soc. Ser. B* **55** (1993), *no.* 1, 171–183. 62E20 (62H10)

Booth, R. S. The Steiner ratio for five points. Topological network design (Copenhagen, 1989). *Ann. Oper. Res.* **33** (1991), *no.* 1-4, 419–436. (Summary) **93h:05054** 05C05 (90B10)

— (*with* Weng, Jia Feng) Steiner minimal trees for a class of zigzag lines. The Steiner problem. *Algorithmica* **7** (1992), *no.* 2-3, 231–246. (V. R. Kulli) **93a:05050** 05C05

Bopp, Nicole (*with* Harinck, Pascale) Formule de Plancherel pour $GL(n,\mathbf{C})/U(p,q)$. [The Plancherel formula for $GL(n,\mathbf{C})/U(p,q)$] *J. Reine Angew. Math.* **428** (1992), 45–95. (Alexander Isaakovich Shtern) **93g:22015** 22E46 (22E30, 43A85)

Boppana, Ravi (*with* Halldórsson, Magnús M.) Approximating maximum independent sets by excluding subgraphs. *BIT* **32** (1992), *no.* 2, 180–196. (Lajos Rónyai) **93g:68105** 68R10 (05C85)

Bor, Gil Yang-Mills fields which are not self-dual. *Comm. Math. Phys.* **145** (1992), *no.* 2, 393–410. (Jan Segert) **93e:58030** 58E15 (53C07, 58E40, 81T13)

Bor, Hüseyin A note on $|\overline{N},p_n|_k$ summability factors. *Bull. Calcutta Math. Soc.* **82** (1990), *no.* 4, 357–362. (Shri Nivas Bhatt) **93a:40007** 40F05

— On the absolute Cesàro summability factors. *Anal. Numér. Théor. Approx.* **20** (1991), *no.* 1-2, 11–14. 40G05

— Absolute Nörlund summability factors of power series and Fourier series. *Ann. Polon. Math.* **56** (1991), *no.* 1, 11–17. (Shri Nivas Bhatt) **93b:42012** 42A28 (40G05, 42A45)

— Absolute summability factors. *Atti Sem. Mat. Fis. Univ. Modena* **39** (1991), *no.* 2, 419–422. (Summary) **93a:40009** 40G05 (40F05)

— On absolute summability factors for $|\overline{N},p_n|_k$ summability. *Comment. Math. Univ. Carolin.* **32** (1991), *no.* 3, 435–439. (R. H. Cox) **93g:40003** 40D15 (40F05, 40G05)

— (*with* Sarıgöl, Mehmet Ali) Absolute summability factors of infinite series. *Math. Balkanica (N.S.)* **5** (1991), *no.* 4, 297–301 (1992). (S. Sridhar) **93d:40011** 40D15

— (*with* Thorpe, B.) A note on two absolute summability methods. *Analysis* **12** (1992), *no.* 1-2, 1–3. (R. H. Cox) **93g:40004** 40F05 (40D25)

— On the absolute summability factors of infinite series. *Demonstratio Math.* **25** (1992), *no.* 1-2, 187–192. 40F05

— On the local property of $|\overline{N},p_n|_k$ summability of factored Fourier series. *J. Math. Anal. Appl.* **163** (1992), *no.* 1, 220–226. (Shri Nivas Bhatt) **93b:42013** 42A28

— Absolute summability factors of infinite series. *Panamer. Math. J.* **2** (1992), *no.* 2, 33–38. (R. H. Cox) **93h:40003a** 40D15 (40F05)

— Errata to: "Absolute summability factors of infinite series". *Panamer. Math. J.* **2** (1992), *no.* 3, 91. (R. H. Cox) **93h:40003b** 40D15 (40F05)

Borairi, M. (*with* Porter, Brian) Genetic design of linear multivariable feedback control systems using eigenstructure assignment. (English summary) *Internat. J. Systems Sci.* **23** (1992), *no.* 8, 1387–1390. 93B51 (93B55)

Boral, Melih (*with* Söylemez, Hasan) On the respective terms of the derived and the polycentral series of a free Lie algebra and an ideal. (English summary) *Comm. Algebra* **20** (1992), *no.* 12, 3723–3728. (Summary) **93j:17008** 17B01

Boratav, O. N. (*with* Pelz, Richard B.; Zabusky, N. J.) Winding and reconnection mechanisms of closely interacting vortex tubes in three dimensions. *Vortex dynamics and vortex methods (Seattle, WA, 1990)*, 11–43, *Lectures in Appl. Math.*, **28**, *Amer. Math. Soc., Providence, RI*, 1991. (Summary) **93a:76019** 76C05

Borbély, Albert Construction of convex sets in negatively curved manifolds. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 1, 205–210. (Viktor Schroeder) **93f:53028** 53C20

Borcea, Veronica T. (*with* Neagu, Alexandru) Ellipsoids and regular mappings in Riemannian manifolds. (English and Romanian summaries) *Bul. Inst. Politehn. Iaşi Secţ. I* **36(40)** (1990), *no.* 1-4, 11–15. (Enrique Outerelo Domínguez) **93h:58008** 58B10 (58B20)

— (*with* Neagu, Alexandru) A class of homeomorphisms between the Riemannian manifolds. Analyse complexe (Bucharest, 1989). *Rev. Roumaine Math. Pures Appl.* **36** (1991), *no.* 7-8, 323–332. (Enrique Outerelo Domínguez) **93c:58016** 58B10 (30C65, 58B20)

Borceux, Francis (*with* Van den Bossche, Gilberte) A generic sheaf representation for rings. *Category theory (Como, 1990)*, 30–42, *Lecture Notes in Math.*, **1488**, *Springer, Berlin*, 1991. (Kimmo I. Rosenthal (Zbl 743:18002)) **93f:18010** 18B99

Borchardt, M. Ein modifiziertes klassisches Lagrange-Dualitätskonzept für Optimierungsprobleme mit Booleschen und stetigen Variablen. [A modified classical Lagrange duality concept for optimization problems with Boolean and continuous variables] *Wiss. Z. Tech. Hochsch. Ilmenau* **37** (1991), *no.* 3, 115–127. (S. Rudeanu) **93c:90048** 90C11 (49N15, 90C09)

Borcherds, R. E. *see* **Conway, J. H., 93h:11069**

Borchers, H.-J. Imitation of symmetries in local quantum field theory (on the interplay between locality and spectrum condition). *Symmetries in science, V (Lochau, 1990)*, 67–91, *Plenum, New York*, 1991. (I. Gottlieb) **93b:81138** 81T05 (46L55, 46L60, 47N50)

— (*with* Schumann, Rainer) A nuclearity condition for charged states. *Lett. Math. Phys.* **23** (1991), *no.* 1, 65–77. (Lech Jakóbczyk) **93a:81111** 81T05 (46L60, 46N50, 47N50)

— (*with* Yngvason, Jakob) From quantum fields to local von Neumann algebras. (English summary) Special issue dedicated to R. Haag on the occasion of his 70th birthday. *Rev. Math. Phys.* **1992**, *Special Issue*, 15–47. (H. Araki) **93m:81092** 81T05 (46L10, 46L60, 81-02)

— *see also* **Wiesbrock, Hans-Werner, 93h:81076**

Borchers, Wolfgang (*with* Miyakawa, Tetsuro) Algebraic L^2 decay for Navier-Stokes flows in exterior domains. II. *Hiroshima Math. J.* **21** (1991), *no.* 3, 621–640. (John Albert) **93g:35111** 35Q30 (35B05, 35D05, 76D05)

— (*with* Miyakawa, Tetsuro) L^2-decay for Navier-Stokes flows in unbounded domains, with application to exterior stationary flows. *Arch. Rational Mech. Anal.* **118** (1992), *no.* 3, 273–295. (From the introduction) **93i:35100** 35Q30 (76D05)

— (*with* Pileckas, Konstantin) Existence, uniqueness and asymptotics of steady jets. (English summary) *Arch. Rational Mech. Anal.* **120** (1992), *no.* 1, 1–49. (Paolo Maremonti) **93j:35129** 35Q30 (76D05, 76D07, 76D25)

Bordag, M. (*with* Hennig, D.; Robaschik, D.) Vacuum energy in quantum field theory with external potentials concentrated on planes. (English summary) *J. Phys. A* **25** (1992), *no.* 16, 4483–4498. (Summary) **93f:81157** 81V10

— (*with* Robaschik, D.; Wieczorek, Eberhard) Problems with the ζ-function method. (English summary) *Lett. Math. Phys.* **25** (1992), *no.* 1, 1–6. (Martin Leblanc) **93i:81147** 81T15

Bordalo, G. (*with* Priestley, H. A.) Negation operations definable on finite distributive lattices. *Portugal. Math.* **49** (1992), *no.* 1, 37–49. (Manuel Abad) **93e:06010** 06D05 (03G10)

Bordemann, Martin (*with* Hoppe, Jens; Schaller, Peter; Schlichenmaier, Martin) $gl(\infty)$ and geometric quantization. *Comm. Math. Phys.* **138** (1991), *no.* 2, 209–244. (Alan L. Carey) **93c:58077** 58F06 (17B65, 81S10)

— (*with* Medina, Alberto; Ouadfel, Ali) Le groupe affine comme variété symplectique. (English summary) [Affine groups as symplectic manifolds] *Séminaire Gaston Darboux de Géométrie et Topologie Différentielle, 1990–1991 (Montpellier, 1990–1991)*, iv, 107–117, *Univ. Montpellier II, Montpellier*, 1992. (Charles-Michel Marle) **93j:58047** 58F05 (53C15)

Border, Kim C. ★ Fixed point theorems with applications to economics and game theory. *Cambridge University Press, Cambridge*, 1989. viii+129 *pp. ISBN* 0-521-38808-2 (Editors) **93b:90004** 90-02 (47H10, 47N10, 54H25, 90Axx, 90Dxx)

Bordes, Georges (*with* Banks, Jeffrey S.; Le Breton, Michel) Covering relations, closest orderings and Hamiltonian bypaths in tournaments. *Soc. Choice Welf.* **8** (1991), *no.* 4, 355–363. (M. Vlach) **93b:90014** 90A08 (05C20, 05C45, 90A28)

— (*with* Le Breton, Michel; Salles, Maurice) Gillies and Miller's subrelations of a relation over an infinite set of alternatives: general results and applications to voting games. (English summary) *Math. Oper. Res.* **17** (1992), *no.* 3, 509–518. (Vladimir I. Vol'skiĭ) **93g:90011** 90A08 (90A28, 90D40)

Bordoni, Manlio An estimate for finite sums of eigenvalues of fiber spaces. (English and French summaries) *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 10, 1079–1083. (Haruo Kitahara) **93k:58219** 58G25

Bordunov, N. N. ★ Динамические оптимизационные модели в условиях неопределенности: многоэтапные задачи стохастического программирования (по материалам IIASA). (Russian. Russian summary) [Dynamical optimization models under conditions of uncertainty: multistage problems of stochastic programming (from IIASA reports)] *Akad. Nauk Ukrain. SSR, Inst. Kibernet., Kiev*, 1991. 17 *pp.* (Alexei Gaivoronski) **93i:90072** 90C15 (90-02)

Bordyug, B. A. (*with* Larin, V. B.) An algorithm for solving Riccati equations arising in H^∞-optimization problems. *Soviet J. Automat. Inform. Sci.* **24** (1991), *no.* 3, 40–48 (1992); *translated from Avtomatika* **1991**, *no.* 3, 42–49, 97 (*Russian. English summary*). (Morishige Kimura) **93i:93050** 93B40 (34A50, 93C55)

Boreale, M. (*with* Inverardi, P.; Nesi, M.) Complete sets of axioms for finite basic LOTOS behavioural equivalences. *Inform. Process. Lett.* **43** (1992), *no.* 3, 155–160. 68Q60

Boreĭsha, Yu. E. (*with* Litvin, I. N.) The stochastic Routh-Hurwitz problem. (Russian. English and Ukrainian summaries) *Kibernet. Sistem. Anal.* **1991**, *no.* 4, 61–70, 188; *translation in Cybernet. Systems Anal.* **27** (1991), *no.* 4, 527–534. (Zhao-Pan Zeng) **93a:93111** 93E15

Borel, Armand (*with* Prasad, Gopal) Addendum to: "Finiteness theorems for discrete subgroups of bounded covolume in semi-simple groups" [Inst. Hautes Études Sci. Publ. Math. No. 69 (1989), 119–171; MR 91c:22021]. *Inst. Hautes Études Sci. Publ. Math. No.* 71 (1990), 173–177. (From the text) **93a:22008** 22E40 (11E72, 20G30)

— (*with* Bien, Frédéric) Sous-groupes épimorphiques de groupes linéaires algébriques. I. (English and French summaries) [Epimorphic subgroups of linear algebraic groups. I] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 6, 649–653. (Mark Reeder) **93i:20048** 20G05 (20G15, 22E10)

— (*with* Bien, Frédéric) Sous-groupes épimorphiques de groupes linéaires algébriques. II. (English and French summaries) [Epimorphic subgroups of linear algebraic groups. II] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 13, 1341–1346. (Mark Reeder) **93k:20063** 20G05 (20G15)

— (*with* Prasad, Gopal) Values of isotropic quadratic forms at S-integral points. *Compositio Math.* **83** (1992), *no.* 3, 347–372. (O. H. Körner) **93j:11022** 11E16 (11H55, 22E40)

— Deane Montgomery (1909–1992). *Notices Amer. Math. Soc.* **39** (1992), *no.* 7, 684–686. (Editors) **93g:01062** 01A70

Borel, J.-P. (*with* Pagès, G.; Xiao, Yi-Jun) Suites à discrépance faible et intégration numérique. [Low-discrepancy sequences and numerical integration] *Probabilités numériques*, 7–22, *Collect. Didact.*, 10, *INRIA, Rocquencourt*, 1992. (*see* **93k:65002**) 65U05 (28D99, 65D30)

Borelli Forti, C. Solutions of an alternative functional equation on abelian groups. (Italian. English summary) *Rend. Sem. Mat. Univ. Politec. Torino* **48** (1990), *no.* 1, 45–56 (1992). (A. L. Rukhin) **93d:39014** 39B52 (39B22)

Borenshtein, O. Yu. (*with* Shul'man, V. S.) A minimax theorem. (Russian) *Mat. Zametki* **50** (1991), *no.* 1, 139–141; *translation in Math. Notes* **50** (1991), *no.* 1-2, 752–754 (1992). (V. Pták) **93f:47088** 47H99 (47A99, 49J35)

Borevich, Z. I. (*with* Ba, M. S.) Arrangements of intermediate subgroups. (Russian) *Rings and linear groups (Russian)*, 14–41, *Kuban. Gos. Univ., Krasnodar*, 1988. (*see* **93i:00023**) 20D30

— *see also* **Rings and linear groups, 93i:00023**

Borgardt, A. A. (*with* Karpenko, D. Ya.) Fundamental solutions of the wave equation. (Russian. English and Russian summaries) *Dokl. Akad. Nauk Ukrainy* **1992**, *no.* 2, 19–22, 169. (Summary) **93f:35129** 35L05 (35A08)

— (*with* Karpenko, D. Ya.) The Cauchy problem for the wave equation with a localized source. (Russian. Russian summary) *Mat. Fiz. Nelineĭn. Mekh. No.* 17(51) (1992), 89–95. (Summary) **93m:35115** 35L05

Börger, Reinhard (*with* Tholen, Walter) Strong, regular and dense generators. (French summary) *Cahiers Topologie Géom. Différentielle Catégoriques* **32** (1991), *no.* 3, 257–276. (H. Herrlich) **93b:18005** 18A40 (18A30, 18A35)

— Making factorizations compositive. *Comment. Math. Univ. Carolin.* **32** (1991), *no.* 4, 749–759. (Walter Tholen) **93d:18002** 18A32 (03E10, 18A20, 18A30)

— (*with* Tholen, Walter) Totality of colimit closures. *Comment. Math. Univ. Carolin.* **32** (1991), *no.* 4, 761–768. (S. B. Niefield) **93d:18003** 18A35 (18A30, 18A40, 18B99)

Börgers, Christoph (*with* Greengard, Claude; Thomann, Enrique) The diffusion limit of free molecular flow in thin plane channels. *SIAM J. Appl. Math.* **52** (1992), *no.* 4, 1057–1075. (Hans Babovsky) **93g:76101** 76P05 (76M35, 82C40)

Börgers, Tilman (*with* Samuelson, Larry) "Cautious" utility maximization and iterated weak dominance. (English summary) *Internat. J. Game Theory* **21** (1992), *no.* 1, 13–25. (Summary) **93e:90073** 90D10 (90D05)

— Pure strategy dominance. *Econometrica* **61** (1993), *no.* 2, 423–430. 90D40

Borges, Carlos R. A note on dominated spaces. *Acta Math. Hungar.* **58** (1991), *no.* 1-2, 13–16. (Jerzy Dydak) **93b:54027** 54D99 (54B15, 54D45)

— The sup metric on infinite products. *Bull. Austral. Math. Soc.* **44** (1991), *no.* 3, 461–466. (Summary) **93e:54020** 54E35 (54B10)

Borges, J. (*with* Rifà i Coma, Josep) A note about multidesigns and extended designs. (English summary) Graph theory and combinatorics (Marseille-Luminy, 1990). *Discrete Math.* **111** (1993), *no.* 1-3, 65–69. (Summary) **93j:05025** 05B30

Borghi, R. Turbulent combustion modelling: an overview of current methods related to the structure of nonpremixed flames. *Fluid dynamical aspects of combustion theory*, 87–112, *Pitman Res. Notes Math. Ser.*, 223, *Longman Sci. Tech., Harlow*, 1991. (From the introduction) **93i:80003** 80A25 (76F99, 76N15)

Borgida, Alex (*with* Cohen, William W.; Hirsh, Haym) Computing least common subsumers in description logics. (English summary) *AAAI-92. Proceedings, Tenth National Conference on Artificial Intelligence (San Jose, CA*, 1992), 754–760, *Amer. Assoc. Artif. Intell., Menlo Park, CA*, 1992. (Summary) **93j:68190** 68T27 (03B70, 68T30)

Borgiel, Włodzimierz (*with* Buchner, Klaus; Sasin, Wiesław) Locally finitely generated differential spaces of class C^r. Proceedings of the Winter School on Geometry and Physics (Srní, 1990). *Rend. Circ. Mat. Palermo* (2) *Suppl. No.* 26 (1991), 57–66. (W. Waliszewski) **93a:58006** 58A40

Borgioli, G. (*with* Monaco, Roberto; Toscani, G.) The semidiscrete Enskog equation. *Waves and stability in continuous media (Sorrento*, 1989), 34–40, *Ser. Adv. Math. Appl. Sci.*, 4, *World Sci. Publishing, River Edge, NJ*, 1991. (*see* **93g:00030**) 82C40

Borgohain, P. (*with* Krori, K. D.; Chaudhury, Tarakeswar; Das, Kanika; Mahanta, Chandra Rekha) Charged solutions in higher dimensions. (English and French summaries) *Canad. J. Phys.* **70** (1992), *no.* 9, 752–759. (Summary) **93j:83071** 83E15 (83C22)

— (*with* Krori, K. D.; Das, Dipali) Quantum effects near a charged black hole singularity. *Modern Phys. Lett. A* **7** (1992), *no.* 23, 2051–2057. (Summary) **93c:83075** 83C57 (83C47)

— (*with* Krori, K. D.; Das, Dipali) Quantum effects near the black hole singularity in Kruskal space-time. (English summary) *Modern Phys. Lett. A* **7** (1992), *no.* 24, 2153–2157. (Vladimir Soloviev) **93g:83065** 83C57 (83C47, 83C75)

Borgonovi, Fausto (*with* Guarneri, Italo) Irregular scattering and quantum transport fluctuations. *J. Phys. A* **25** (1992), *no.* 11, 3239–3259. (Summary) **93f:82050** 82C70

Borgs, Christian First order phase transitions in large N lattice Higgs models and Pirogov Sinaĭ theory. A short summary. *Constructive quantum field theory, II (Erice*, 1988), 333–335, *NATO Adv. Sci. Inst. Ser. B Phys.*, 234, *Plenum, New York*, 1990. (*see* **93g:81074**) 81T25 (81T10)

— (*with* Imbrie, John Z.) Finite-size scaling and surface tension from effective one-dimensional systems. *Comm. Math. Phys.* **145** (1992), *no.* 2, 235–280. (Klaus Ziegler) **93i:82040** 82B26 (81T27, 82B20)

— (*with* Imbrie, John Z.) Crossover finite-size scaling at first-order transitions. (English summary) *J. Statist. Phys.* **69** (1992), *no.* 3-4, 487–537. (Flora Koukiou) **93k:82025** 82B26 (82B20)

Borichev, A. A. Analytic quasi-analyticity and asymptotically holomorphic functions. (Russian. Russian summary) *Algebra i Analiz* **4** (1992), *no.* 2, 70–87; *translation in St. Petersburg Math. J.* **4** (1993), *no.* 2, 259–272. (Yuriĭ Lyubarskiĭ) **93h:30055** 30D60 (41A60)

Borie, Richard B. (*with* Parker, R. Gary; Tovey, Craig A.) Algorithms for recognition of regular properties and decomposition of recursive graph families. Topological network design (Copenhagen, 1989). *Ann. Oper. Res.* **33** (1991), *no.* 1-4, 127–149. (Summary) **93e:05090** 05C85 (68R10, 94C15)

— (*with* Parker, R. Gary; Tovey, Craig A.) Automatic generation of linear-time algorithms from predicate calculus descriptions of problems on recursively constructed graph families. *Algorithmica* **7** (1992), *no.* 5-6, 555–581. (Paul Klingsberg) **93d:03017** 03B20 (03D15, 05C85, 68Q25, 68R10)

Borino, G. (*with* Polizzotto, C.; Caddemi, S.; Fuschi, P.) Shakedown problems for material models with internal variables. *European J. Mech. A Solids* **10** (1991), *no.* 6, 621–639. (Z. Mróz) **93a:73031** 73E05 (73B30, 73E99)

Boris, J. P. (*with* Oran, E. S.) Numerical simulation of reacting flows. *Fluid dynamical aspects of combustion theory*, 268–304, *Pitman Res. Notes Math. Ser.*, 223, *Longman Sci. Tech., Harlow*, 1991. (From the introduction) **93j:80008** 80A32 (76M25, 76N99, 80–08)

Borisenko, A. A. (*with* Yampol'skiĭ, A. L.) Riemannian geometry of bundles. (Russian) *Uspekhi Mat. Nauk* **46** (1991), *no.* 6(282), 51–95, 240; *translation in Russian Math. Surveys* **46** (1991), *no.* 6, 55–106. (Georgi Kamberov) **93f:53001** 53–02 (53C05, 53C25)

— Unique determination of multidimensional submanifolds in a Euclidean space from the Grassmann image. (Russian) *Mat. Zametki* **51** (1992), *no.* 1, 8–15, 160; *translation in Math. Notes* **51** (1992), *no.* 1-2, 6–11. (Vladislav Goldberg) **93d:53017** 53A15

— On a Liouville-type theorem for the equation of special Lagrangian submanifolds. (Russian. Russian summary) *Mat. Zametki* **52** (1992), *no.* 5, 22–25, 140; *translation in Math. Notes* **52** (1992), *no.* 5-6, 1094–1096 (1993). (J. S. Joel) **93k:53055** 53C42 (35B05, 58G30)

Borisenko, A. D. On the limit behavior of the solution of an integro-differential equation. (Russian) *Teor. Veroyatnost. i Mat. Statist. No.* 44 (1991), 16–25; *translation in Theory Probab. Math. Statist. No.* 44 (1992), 15–22. (Summary) **93b:45008** 45K05 (45M05)

Borisenko, I. I. Synthesis of multidimensional stochastic system controls by means of decomposition. *Soviet J. Comput. Systems Sci.* **30** (1992), *no.* 1, 15–21; *translated from Izv. Akad. Nauk SSSR Tekhn. Kibernet.* **1990,** *no.* 6, 185–191 (*Russian*). (Zong Qian Luo) **93f:93008** 93A14 (93B50, 93E20)

— (*with* Kazakov, I. E.) Synthesis of control and data processing strategies on the basis of decomposition and reduction of multidimensional dynamical systems (a survey). *Soviet J. Comput. Systems Sci.* **30** (1992), *no.* 4, 51–75; *translated from Izv. Akad. Nauk SSSR Tekhn. Kibernet.* **1991,** *no.* 3, 198–225 (*Russian. Russian summary*). (Krzysztof Malinowski) **93i:93009** 93A14 (93B51, 93C83)

Borisenko, O. F. (*with* Minchenko, L. I.) ★ Дифференциальные свойства маргинальных функций и их приложения к задачам оптимизации. (Russian) [Differential properties of marginal functions and their applications to optimization problems] "*Navuka i Tèkhnika*", *Minsk*, 1992. 144 *pp. ISBN* 5-343-01060-1 (Dariusz Zagrodny) **93h:49002** 49–02 (34H05, 34K35, 49J52, 90C31)

— (*with* Minchenko, L. I.) Directional derivatives of the maximum function. (Russian. Ukrainian summary) *Kibernet. Sistem. Anal.* **1992,** *no.* 2, 171–173, 192; *translation in Cybernet. Systems Anal.* **28** (1992), *no.* 2, 309–312. (Jan Rückmann) **93k:49015** 49J52 (90C31, 90C48)

Borisenko, O. V. Small random disturbances in second-order oscillatory systems. (Russian. Russian and Ukrainian summaries) *Ukraïn. Mat. Zh.* **44** (1992), *no.* 1, 11–16; *translation in Ukrainian Math. J.* **44** (1992), *no.* 1, 7–12. (Arcady Ponosov) **93h:34095** 34F05 (34C15, 60H10)

Borisenko, V. I. Sufficient conditions for the equivalence of three-tape automata. (Russian. English and Ukrainian summaries) *Kibernetika (Kiev)* **1991,** *no.* 3, 17–22, 31, 133; *translation in Cybernetics* **27** (1991), *no.* 3, 332–339 (1992). (Summary) **93b:68053** 68Q70

Borisov, A. A. *see* **Borisov, Anatoliĭ Al.**

Borisov, A. B. (*with* Ionov, S. N.; Shagalov, A. G.) New types of vortices and the solutions of the boundary value problem for sine-Gordon equation by the inverse scattering transform. *Nonlinear world, Vol.* 1 (*Kiev*, 1989), 65–72, *World Sci. Publishing, River Edge, NJ*, 1990. (*see* **93b:00012**) 35Q53

— (*with* Kiselev, V. V.) Inverse spectral solution of elliptic sine-Gordon equation with nontrivial asymptotic behaviour. *Nonlinear world, Vol.* 1 (*Kiev*, 1989), 73–83, *World Sci. Publishing, River Edge, NJ*, 1990. (*see* **93b:00012**) 35Q53 (58F19)

Borisov, A. N. (*with* Slyadz', N. N.) Decision making based on fuzzy stochastic and statistical dominance. *Combining fuzzy imprecision with probabilistic uncertainty in decision making*, 197–214, *Lecture Notes in Econom. and Math. Systems*, 310, *Springer, Berlin*, 1988. (*see* **93c:90002**) 90A05 (04A72, 90C70)

Borisov, A. V. (*with* Sot·skiĭ, N. M.) A method for estimating the motion of a particle by means of two filters. (Russian) *Analysis and design of dynamical systems under conditions of uncertainty (Russian)*, 60–66, *Moskov. Aviatsion. Inst., Moscow*, 1990. (*see* **93g:00022**) 93E11 (70Q05)

— (*with* Pankov, A. R.; Sot·skiĭ, N. M.) Minimax estimation in linear differential indeterminate-stochastic systems. (Russian. Russian summary) *Avtomat. i Telemekh.* **1992,** *no.* 4, 57–63; *translation in Automat. Remote Control* **53** (1992), *no.* 4, *part* 1, 521–527. (Summary) **93e:93060** 93E10 (93E15)

Borisov, Adriyan V. Invariant densities of conics under the group of the similitudes of the second type in the Galilean plane. (English summary) *Proceedings of the 3rd Congress of Geometry (Thessaloniki*, 1991), 103–113, *Aristotle Univ. Thessaloniki, Thessaloniki*, 1992. (L. A. Santaló) **93h:51031** 51N25 (53C65)

Borisov, Anatoliĭ Al. (*with* Sharypov, O. V.) Formation of a bubbly detonation wave. (Russian. Russian summary) *Model. Mekh.* **4** (1990), *no.* 5, 26–31. (Summary) **93j:76042** 76L05 (80A25)

— (*with* Borisov, L. A.) Singular toric Fano three-folds. (Russian) *Mat. Sb.* **183** (1992), *no.* 2, 134–141; *translation in Russian Acad. Sci. Sb. Math.* **75** (1993), *no.* 1, 277–283. (Yuri G. Prokhorov) **93i:14034** 14J45 (14M25)

Borisov, I. S. Exponential inequalities for the distributions of von Mises and U-statistics. *Probability theory and mathematical statistics, Vol. I (Vilnius*, 1989), 166–178, "*Mokslas*", *Vilnius*, 1990. (Sándor Csörgő) **93d:60024** 60E15 (60F15, 62G20)

— Approximation of distributions of von Mises statistics with multidimensional kernels. (Russian) *Sibirsk. Mat. Zh.* **32** (1991), *no.* 4, 20–35, 227; *translation in Siberian Math. J.* **32** (1991), *no.* 4, 554–566 (1992). (Sándor Csörgő) **93b:60038** 60F05 (60F10, 62E20, 62G20)

— (*with* Solov'yov, E. A.) Second-order approximation for distributions of smooth functionals of sums of independent random variables in Banach spaces. (English summary) Siberian Advances in Mathematics. *Siberian Adv. Math.* **2** (1992), *no.* 2, 31–57. (Joseph E. Yukich) **93h:60008** 60B12

Borisov, L. A. (*with* Borisov, Anatoliĭ Al.) Singular toric Fano three-folds. (Russian) *Mat. Sb.* **183** (1992), *no.* 2, 134–141; *translation in Russian Acad. Sci. Sb. Math.* **75** (1993), *no.* 1, 277–283. (Yuri G. Prokhorov) **93i:14034** 14J45 (14M25)

Borisov, N. V. (*with* Il'inskiĭ, K. N.; Uzdin, V. M.) Quantum group particles and parastatistical excitations. (English summary) *Phys. Lett. A* **169** (1992), *no.* 6, 427–432. (Michael Schlieker) **93k:81090** 81R50 (81S05)

Borisov, V. M. (*with* Ivankov, A. A.) Calculation of the radiative energy transfer in hypersonic flow around blunt bodies by means of P_1- and P_2-approximations of the method of spherical harmonics. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **32** (1992), *no.* 6, 952–966; *translation in Comput. Math. Math. Phys.* **32** (1992), *no.* 6, 823–835. (Summary) **93d:76036** 76K05

Borisov, V. V. Asymptotics of the Green function of a singularly perturbed differential operator with integral boundary conditions. (Russian) *Mathematical methods in problems of control and data processing (Russian)*, 17–20, *Ryazan. Radiotekhn. Inst., Ryazan'*, 1990. (*see* **93m:00028**) 34E15 (34B27)

Borisov, Yu. F. (*with* Borovskiĭ, Yu. E.; Burago, Yu. D.; et al.) Obituary: Revol't Ivanovich Pimenov. (Russian) *Uspekhi Mat. Nauk* **47** (1992), *no.* 1(283), 203–204; *translation in Russian Math. Surveys* **47** (1992), *no.* 1, 253–254. (Editors) **93e:01019** 01A70

Borisova, E. A. Embedding of some classes of functions defined by sequences of best approximations with respect to the Walsh system. (Russian) *Mathematical methods in problems of control and data processing (Russian)*, 20–23, *Ryazan. Radiotekhn. Inst., Ryazan'*, 1990. (*see* **93m:00028**) 41A30

Borisova, O. V. Determination of the basic probabilistic characteristics of a process that describes the oscillations of the membrane potential of a neuron. (Russian) *Vychisl. Prikl. Mat. (Kiev) No.* 75 (1991), 115–120. (Summary) **93d:92008** 92C20

Borisovich, O. Yu. (*with* Byrdin, A. P.) The Fourier method for a boundary value problem on dynamic instability with a nonlinear integro-differential operator. I. (Russian) *Nonlinear operators in global analysis (Russian)*, 120–125, 163, *Novoe Global. Anal., Voronezh. Gos. Univ., Voronezh*, 1991. (Summary) **93c:65162** 65R20 (34K10, 65T10, 73F15, 73K12)

Borisovich, Yu. G. *see* **Problems in geometry, topology and mathematical physics, 93k:00026**

Borisyuk, G. N. (*with* Borisyuk, R. M.; Kazanovich, Ya. B.; Luzyanina, T. B.; Turova, T. S.; Tsymbalyuk, G. S.) Oscillatory neural networks. Mathematical results and applications. (Russian. English and Russian summaries) *Mat. Model.* **4** (1992), *no.* 1, 3–43. (Summary) **93h:92004** 92B20 (34C99, 58F40)

Borisyuk, M. N. (*with* Dubrovskiĭ, V. A.; Orlov, Yu. F.; Tirskikh, V. V.; Turbal, V. K.) A fluid dynamics problem concerning a catamaran. (Russian. Russian summary) *Asymptotic methods in the theory of systems (Russian)*, 52–73, 276, *Akad. Nauk SSSR Sibirsk. Otdel., Irkut·sk. Nauchn. Tsentr, Irkutsk*, 1989. (*see* **93d:00031**) 76B99

Borisyuk, R. M. (*with* Borisyuk, G. N.; Kazanovich, Ya. B.; Luzyanina, T. B.; Turova, T. S.; Tsymbalyuk, G. S.) Oscillatory neural networks. Mathematical results and applications. (Russian. English and Russian summaries) *Mat. Model.* **4** (1992), *no.* 1, 3–43. (Summary) **93h:92004** 92B20 (34C99, 58F40)

Borkar, Vivek S. Controlled Markov chains with constraints. (English summary) *Sadhana* **15** (1990), *no.* 4-5, 405–413. (Robert Kertz) **93f:93137** 93E20 (60J10, 90C40)

— Pathwise recurrence orders and simulated annealing. *J. Appl. Probab.* **29** (1992), *no.* 2, 472–476. (Summary) **93d:60111** 60J10 (90C15)

— (*with* Ghosh, Mrinal K.) Stochastic differential games: occupation measure based approach. *J. Optim. Theory Appl.* **73** (1992), *no.* 2, 359–385. (Masami Yasuda) **93g:93082** 93E05 (90D15, 90D25)

— (*with* Ghosh, Mrinal K.) Correction: "Ergodic and adaptive control of nearest-neighbor motions" [Math. Control Signals Systems **4** (1991), no. 1, 81–98; MR 92e:93026]. *Math. Control Signals Systems* **5** (1992), *no.* 4, 453. (From the text) **93i:93072** 93C40 (60J10, 93E20)

— A modified self-tuner for controlled diffusions with an unknown parameter. (English summary) *Mathematical theory of control* (*Bombay*, 1990), 57–67, *Lecture Notes in Pure and Appl. Math.*, 142, *Dekker, New York*, 1993. (*see* **93g:93003**) 93E35 (93C20)

Borkovskaya, I. M. (*with* Marchenko, Vladimir Matveevich) On modal control in systems with distributed delay. (Russian. English and Russian summaries) *Dokl. Akad. Nauk Belarusi* **36** (1992), *no.* 2, 107–110, 189. 93C20 (49K25)

Borm, P. E. M. (*with* Tijs, Stef H.) Strategic claim games corresponding to an NTU-game. *Games Econom. Behav.* **4** (1992), *no.* 1, 58–71. (Rajiv Vohra) **93a:90086** 90D10 (90D12)

— (*with* van den Nouweland, A.; Tijs, Stef H.) Allocation rules for hypergraph communication situations. *Internat. J. Game Theory* **20** (1992), *no.* 3, 255–268. (Jacques J. Thépot) **93a:90089** 90D12 (90B80, 90D06)

— On perfectness concepts for bimatrix games. (German summary) *OR Spektrum* **14** (1992), *no.* 1, 33–42. (Summary) **93c:90109** 90D06

— (*with* Owen, Guillermo; Tijs, Stef H.) On the position value for communication situations. *SIAM J. Discrete Math.* **5** (1992), *no.* 3, 305–320. (Summary) **93e:90080** 90D43 (94A05)

Borne, Pierre (*with* Radhy, Nour-Eddine) On some recent results in the field of constrained dynamical systems. (English summary) *Computational systems analysis* 1992 (*Berlin*, 1992), 29–38, *Elsevier, Amsterdam*, 1992. (*see* **93e:00021**) 93C10 (93D05)

— (*with* Richard, J.-P.; Radhy, Nour-Eddine; Perruquetti, W.) Estimation of attractors and stability regions for nonlinear dynamical systems: improved results. (English summary) *Computational systems analysis*, 107–131, *Elsevier, Amsterdam*, 1992. (D. N. Cheban) **93k:34115** 34D45 (34D05)

— (*with* Radhy, Nour-Eddine) Nonlinear continuous systems: synthesis under convex constraints. (English summary) *Mathematics of the analysis and design of process control* (*Dublin*, 1991/*Lille*, 1991), 323–336, *North-Holland, Amsterdam*, 1992. (*see* **93g:93004**) 93B50

— *see also* **Mathematics of the analysis and design of process control, 93g:93004**

Bornemann, Folkmar A. An adaptive multilevel approach to parabolic equations. III. 2D error estimation and multilevel preconditioning. *Impact Comput. Sci. Engrg.* **4** (1992), *no.* 1, 1–45. (Summary) **93g:65126** 65M99 (65J10, 65N30, 80–08, 92C50)

Börner, Ferdinand (*with* Pöschel, Reinhard) Clones of operations on binary relations. *Contributions to general algebra*, 7 (*Vienna*, 1990), 49–70, *Hölder-Pichler-Tempsky, Vienna*, 1991. (Ágnes Szendrei) **93b:08001** 08A02 (03G15, 08A40)

Bornstein, R. (*with* Bruckstein, Alfred) Finding the kernel of planar shapes. *Pattern Recognition* **24** (1991), *no.* 11, 1019–1035. (Summary) **93a:68149** 68U05

Borobia, Alberto (*with* Trias, Ujué R.) A geometric proof of the Perron-Frobenius theorem. (English summary) *Rev. Mat. Univ. Complut. Madrid* **5** (1992), *no.* 1, 57–63. (Summary) **93j:54029** 54H20 (15A48)

Borodenko, Yu. N. (*with* Zozulya, V. V.) A coupled problem on the contact of a cylindrical shell with a rigid body through a heat-conducting layer. (Russian. English summary) *Dokl. Akad. Nauk Ukrainy* **1992**, *no.* 4, 35–41, 166. (Summary) **93c:73093** 73T05 (73B30)

Borodich, F. M. (*with* Mosolov, A. B.) Fractal fracture of brittle bodies under compression. (Russian) *Dokl. Akad. Nauk* **324** (1992), *no.* 3, 546–549; *translation in Soviet Phys. Dokl.* **37** (1992), *no.* 5, 263–265. 73M25

Borodin, A. N. On the convergence of functionals of random walks to the local times of Bessel processes. *Gaussian random fields* (*Nagoya*, 1990), 129–143, *Ser. Probab. Statist.*, 1, *World Sci. Publishing, River Edge, NJ*, 1991. (Summary) **93a:60099** 60J15 (60F17)

— (*with* Baskakova, P. E.) Tables of distributions of functionals of the Brownian motion process. (Russian. Russian summary) *Zap. Nauchn. Sem. S.-Peterburg. Otdel. Mat. Inst. Steklov.* (*POMI*) **194** (1992), *Problemy Teorii Veroyatnost. Raspred.* 12, 8–20, 176. (Summary) **93g:60169** 60J65 (60J55)

— (*with* Samsonova, S. A.) On the distribution of functionals of Brownian motion stopped at a time that is inverse to local time. (Russian. Russian summary) *Zap. Nauchn. Sem. S.-Peterburg. Otdel. Mat. Inst. Steklov.* (*POMI*) **194** (1992), *Problemy Teorii Veroyatnost. Raspred.* 12, 30–43, 176–177. (Guang Lu Gong) **93j:60111** 60J55 (60J65)

Borodin, Allan (*with* Linial, Nathan; Saks, Michael E.) An optimal on-line algorithm for metrical task system. (English summary) *J. Assoc. Comput. Mach.* **39** (1992), *no.* 4, 745–763. (Summary) **93g:68008** 68M20 (68Q25, 90B35)

— (*with* Ruzzo, Walter L.; Tompa, Martin) Lower bounds on the length of universal traversal sequences. (English summary) Twenty-first Symposium on the Theory of Computing (Seattle, WA, 1989). *J. Comput. System Sci.* **45** (1992), *no.* 2, 180–203. (Italo José Dejter) **93j:68068** 68Q25 (05C35, 05C38, 68R10)

Borodin, O. V. Joint generalization of the theorems of Lebesgue and Kotzig on the combinatorics of planar maps. (Russian) *Diskret. Mat.* **3** (1991), *no.* 4, 24–27. (Summary) **93j:05044** 05C10

— Structural properties and colorings of plane graphs. (English summary) *Fourth Czechoslovakian Symposium on Combinatorics, Graphs and Complexity* (*Prachatice*, 1990), 31–37, *Ann. Discrete Math.*, 51, *North-Holland, Amsterdam*, 1992. (Summary) **93j:05053** 05C15

— Cyclic coloring of plane graphs. Special volume to mark the centennial of Julius Petersen's "Die Theorie der regulären Graphs", Part I. *Discrete Math.* **100** (1992), *no.* 1-3, 281–289. (C. L. Lucchesi) **93h:05070** 05C15

— Diagonal coloring of the vertices of triangulations. *Discrete Math.* **102** (1992), *no.* 1, 95–96. (Summary) **93b:05054** 05C15 (05C10)

— A structural theorem on planar graphs and its application to coloring. (Russian) *Diskret. Mat.* **4** (1992), *no.* 1, 60–65. (B. Zelinka) **93d:05050** 05C15 (05C10)

— Minimal weight of a face in planar triangulations without 4-vertices. (Russian) *Mat. Zametki* **51** (1992), *no.* 1, 16–19, 160; *translation in Math. Notes* **51** (1992), *no.* 1-2, 11–13. (E. Jucovič) **93d:05046** 05C10 (52B05)

— Precise lower bound for the number of edges of minor weight in planar maps. *Math. Slovaca* **42** (1992), *no.* 2, 129–142. (E. Jucovič) **93c:05058** 05C35

Borodyanskiĭ, N. I. (*with* Matveĭchuk, S. A.; Petunin, Yu. I.) Statistical criteria for the identification of a population. (Russian. English and Ukrainian summaries) *Kibernet. Sistem. Anal.* **1992**, *no.* 2, 148–153, 191; *translation in Cybernet. Systems Anal.* **28** (1992), *no.* 2, 287–291. 62F03 (62H30)

Borodyanskiĭ, Yu. M. (*with* Burgin, M. S.) Infinite processes and superrecursive algorithms. (Russian) *Dokl. Akad. Nauk SSSR* **321** (1991), *no.* 5, 876–879; *translation in Soviet Math. Dokl.* **44** (1992), *no.* 3, 800–803. (E. B. Kinber) **93c:03054** 03D10 (68Q05)

— Nonalgorithmizable discrete procedures. (Russian. English and Ukrainian summaries) *Kibernet. Sistem. Anal.* **1992**, *no.* 2, 3–12, 188; *translation in Cybernet. Systems Anal.* **28** (1992), *no.* 2, 163–170. 68T05

Boros, Endre (*with* Hammer, Peter L.; Shamir, Ron) A polynomial algorithm for balancing acyclic data flow graphs. (English summary) *IEEE Trans. Comput.* **41** (1992), *no.* 11, 1380–1385. (Summary) **93g:68003** 68M07

— (*with* Crama, Y.; Hammer, Peter L.) Chvátal cuts and odd cycle inequalities in quadratic 0-1 optimization. *SIAM J. Discrete Math.* **5** (1992), *no.* 2, 163–177. (Michael A. Trick) **93a:90043** 90C09 (90C27, 90C35)

Borovik, A. V. (*with* Paderin, E. V.) ★ Теоретико-групповой подход к синтезу систем дискретных частотных сигналов. (Russian. English and Russian summaries) [A group-theoretic approach to the synthesis of systems of discrete frequency signals] Препринт [Preprint], 934. *Akad. Nauk SSSR Sibirsk. Otdel., Vychisl. Tsentr, Novosibirsk*, 1991. 20 *pp.* (Summary) **93d:94004** 94A12 (20D99)

— Some remarks on the structure of finite subgroups of simple algebraic groups. (English summary) *Groups, combinatorics & geometry* (*Durham*, 1990), 287–291, *London Math. Soc. Lecture Note Ser.*, 165, *Cambridge Univ. Press, Cambridge*, 1992. (*see* **93g:20001**) 20D06

— A maximal subgroup in the simple finite group $E_8(q)$. *Proceedings of the International Conference on Algebra, Part* 1 (*Novosibirsk*, 1989), 67–79, *Contemp. Math.*, 131, *Part* 1, *Amer. Math. Soc., Providence, RI*, 1992. (Martin W. Liebeck) **93j:20039** 20D06 (20E28)

Borovik, P. P. (*with* Gaishun, I. V.) Stabilization of two-parametric differential-difference systems. (Russian. English and Russian summaries) *Dokl. Akad. Nauk Belarusi* **36** (1992), *no.* 5, 389–392, 476. (Summary) **93f:93112** 93D15 (34K35)

Borovikov, I. P. On the uniqueness of the solution of an inverse problem of diffraction. (Russian. Russian summary) *Differentsial'nye Uravneniya* **28** (1992), *no.* 5, 827–831, 918; *translation in Differential Equations* **28** (1992), *no.* 5, 673–676. (Plamen D. Stefanov) **93k:35269** 35R30 (35J05)

Borovikova, M. K. On the isometry of polygonal regions whose boundaries are locally isometric in relative metrics. (Russian. Russian summary) *Sibirsk. Mat. Zh.* **33** (1992), *no.* 4, 30–41, 220; *translation in Siberian Math. J.* **33** (1992), *no.* 4, 571–580 (1993). (Fulga Pop) **93i:52010** 52A37

Borovkov, A. A. Ergodicity and stability of Markov chains and of their generalizations. Multidimensional chains. *Probability theory and mathematical statistics, Vol. I* (*Vilnius*, 1989), 179–188, "*Mokslas*", *Vilnius*, 1990. (From the text) **93c:60094** 60J05

— Ergodicity conditions for Markov chains that are not connected with irreducibility in the sense of Harris. (Russian) *Sibirsk. Mat. Zh.* **32** (1991), *no.* 4, 6–19, 227; *translation in Siberian Math. J.* **32** (1991), *no.* 4, 543–554 (1992). (Serban Grigorescu) **93c:60095** 60J05

— Lyapunov functions and the ergodicity of multidimensional Markov chains. (Russian) *Teor. Veroyatnost. i Primenen.* **36** (1991), *no.* 1, 93–110; *translation in Theory Probab. Appl.* **36** (1991), *no.* 1, 1–18 (1992). (O. A. Voina) **93g:60136** 60J05

— (*with* Fayolle, G.; Korshunov, D. A.) Transient phenomena for Markov chains and applications. *Adv. in Appl. Probab.* **24** (1992), *no.* 2, 322–342. (Stig I. Rosenlund) **93f:60100** 60J10

— On the ergodicity of iterations of random Lipschitz transformations. (Russian) *Dokl. Akad. Nauk* **324** (1992), *no.* 2, 249–253; *translation in Russian Acad. Sci. Dokl. Math.* **45** (1992), *no.* 3, 551–555 (1993). (Volker Schmidt) **93m:60070** 60G10

— (*with* Foss, S. G.) Stochastically recursive sequences and their generalizations. Siberian Advances in Mathematics. *Siberian Adv. Math.* **2** (1992), *no.* 1, 16–81. (Esa Nummelin) **93f:60097** 60J05 (60G10)

— (*with* Mogul'skiĭ, A. A.) Large deviations and testing statistical hypotheses. I. Large deviations of sums of random vectors. (English summary) Siberian Advances in Mathematics. *Siberian Adv. Math.* **2** (1992), *no.* 3, 52–120. (Lin-Cheng Zhao) **93k:60066** 60F10 (62F05)

Borovkov, A. V. (*with* Gonchar, A. A.; Ibragimov, I. A.; Il'in, A. M.; Prokhorov, Yu. V.; Skorokhod, A. V.) Rafail Zalmanovich Khas'minskiĭ (on the occasion of his sixtieth birthday). (Russian) *Uspekhi Mat. Nauk* **47** (1992), *no.* 4(286), 223–225; *translation in Russian Math. Surveys* **47** (1992), *no.* 4, 243–246. (Editors) **93m:01059** 01A70

Borovkov, K. A. Approximation of branching processes, and random fields. (Russian) *Sibirsk. Mat. Zh.* **32** (1991), *no.* 4, 36–47, 227; *translation in Siberian Math. J.* **32** (1991), *no.* 4, 567–577 (1992). (I. Rakhimov) **93c:60128** 60J80 (60G60)

— On a new variant of the Monte Carlo method. (Russian) *Teor. Veroyatnost. i Primenen.* **36** (1991), *no.* 2, 342–346; *translation in Theory Probab. Appl.* **36** (1991), *no.* 2, 355–360 (1992). (B. L. Granovskiy) **93d:65006a** 65C05

— A stochastic search algorithm with an application to multidimensional integration. *Ann. Acad. Sci. Fenn. Ser. A I Math.* **17** (1992), *no.* 1, 5–10. (B. L. Granovskiy) **93d:65006b** 65C05

Borovoĭ, M. V. The group of points of a semisimple group over a totally real-closed field. (Russian) *Problems in group theory and homological algebra* (*Russian*), 142–149, *Matematika, Yaroslav. Gos. Univ., Yaroslavl'*, 1987. (*see* **93d:20002**) 20G20

— The Hasse principle for homogeneous spaces. *J. Reine Angew. Math.* **426** (1992), 179–192. (Peter Heinzner) **93k:14034** 14G05

Borovskiĭ, Yu. E. (*with* Borisov, Yu. F.; Burago, Yu. D.; et al.) Obituary: Revol't Ivanovich Pimenov. (Russian) *Uspekhi Mat. Nauk* **47** (1992), *no.* 1(283), 203–204; *translation in Russian Math. Surveys* **47** (1992), *no.* 1, 253–254. (Editors) **93e:01019** 01A70

Borovskikh, Yu. V. *UB*-statistics. (Russian) *Teor. Veroyatnost. i Primenen.* **36** (1991), *no.* 3, 417–433; *translation in Theory Probab. Appl.* **36** (1991), *no.* 3, 427–444 (1992). (De Li Li) **93b:60017** 60B12 (60E15, 60F05, 62G20)
— (*with* Korolyuk, V. S.) Weak convergence of distributions of *UH*-statistics to stable laws. (Russian) *Teor. Veroyatnost. i Primenen.* **36** (1991), *no.* 3, 577–580; *translation in Theory Probab. Appl.* **36** (1991), *no.* 3, 596–600 (1992). (De Li Li) **93a:60013** 60B12 (60F05, 62G05)
— (*with* Korolyuk, V. S.) Generating function of permanents of projection matrices. (Russian. English and Russian summaries) *Dokl. Akad. Nauk Ukrainy* **1992,** *no.* 7, 30–35, 178. (Jorma Kaarlo Merikoski) **93j:15008** 15A15
Borowczyk, Jacques Preuve et complexité des algorithmes de résolution numérique d'équations polynomiales d'al-Tusi et de Viète. (Arabic summary) [Proof and complexity of the algorithms of al-Ṭūsī and Viète for the numerical solution of polynomial equations] *Deuxième Colloque Maghrebin sur l'Histoire des Mathématiques Arabes* (*Tunis*, 1988), 27–52, A157–A158, *Maghreb, Tunis*, 19??. (Jan P. Hogendijk) **93d:01007** 01A30 (01A40)
Borowiak, D. S. (*with* de los Reyes, J. P.) Selection of the best in 2 × 2 factorial designs. (English summary) *Comm. Statist. Theory Methods* **21** (1992), *no.* 9, 2493–2500. (S. Panchapakesan) **93m:62049** 62F07 (62K15)
Borowiecki, Mieczysław (*with* Drgas-Burchardt, Ewa) Classes of chromatically unique graphs. (English summary) Graph theory and combinatorics (Marseille-Luminy, 1990). *Discrete Math.* **111** (1993), *no.* 1-3, 71–75. (Summary) **93j:05054** 05C15
Borrelli, Alessandra (*with* Patria, Maria Cristina) Induced discontinuities in thermoviscoelastic solids of integral type. (Italian summary) Memoirs of mathematical physics in honor of Giovanni Carini on his 70th birthday (Italian). *Atti Accad. Peloritana Pericolanti Cl. Sci. Fis. Mat. Natur.* **68** (1990), *suppl.* 1, 403–424 (1991). (Stan Chiriță) **93b:73022** 73F15 (73B30, 73D99)
Borrey, Sabine Weak c'-compactness in (strongly) polar Banach spaces over a non-Archimedean, densely valued field. *p-adic functional analysis* (*Laredo*, 1990), 31–46, *Lecture Notes in Pure and Appl. Math.*, 137, *Dekker, New York*, 1992. (S. Cobzaş) **93e:46092** 46S10 (46B99)
Borri, M. (*with* Bottasso, C.; Mantegazza, P.) A modified phase space formulation for constrained mechanical systems—differential approach. (English summary) *European J. Mech. A Solids* **11** (1992), *no.* 5, 701–727. (Summary) **93f:70004** 70E99 (70–08, 70F20, 70F25)
dimova-Borshukova, Stefka *see* **Dimova-Borshukova, Stefka**
Borsík, Ján On oscillation of limit functions. *Acta Math. Univ. Comenian.* (*N.S.*) **60** (1991), *no.* 2, 211–217. (Thomas W. Rishel) **93b:54002** 54A20
— Quasiuniform limits of quasicontinuous functions. (English summary) *Math. Slovaca* **42** (1992), *no.* 3, 269–274. (Zbigniew Grande) **93g:26002** 26A15
Borst, Piet On weakly infinite-dimensional subspaces. *Fund. Math.* **140** (1992), *no.* 3, 225–235. (Paul F. Duvall) **93i:54029** 54F45
Borst, S. C. (*with* Combé, M. B.) Letter to the editor: "Busy-period analysis of a correlated queue with exponential demand and service" [J. Appl. Probab. **24** (1987), no. 2, 476–485; MR 88g:60229] by C. Langaris. *J. Appl. Probab.* **29** (1992), *no.* 2, 482–483. (From the text) **93f:60134** 60K25
mankoč-Borštnik, N. *see* **Mankoč-Borštnik, N.**
Borsuk, Karol *see* **Eilenberg, Samuel** *and* **Granas, Andrzej**
Borsuk, M. V. Estimates for solutions of the Dirichlet problem for a second-order quasilinear elliptic equation of nondivergence type near a corner boundary point. (Russian) *Algebra i Analiz* **3** (1991), *no.* 6, 85–107 (1992); *translation in St. Petersburg Math. J.* **3** (1992), *no.* 6, 1281–1302. (Siegfried Carl) **93f:35074** 35J65 (35B45, 35B65)
— Sharp estimates for solutions of the Dirichlet problem for second-order linear elliptic equations of nondivergence type in a neighborhood of a conical point of the boundary. (Russian) *Mat. Sb.* **182** (1991), *no.* 10, 1446–1462; *translation in Math. USSR-Sb.* **74** (1993), *no.* 1, 185–201. (I. N. Tavkhelidze) **93c:35013** 35B45 (35J25)
— Behavior of solutions of the Dirichlet problem for a second-order quasilinear elliptic equation of general form near a corner point. (Russian. Russian and Ukrainian summaries) *Ukraïn. Mat. Zh.* **44** (1992), *no.* 2, 167–173; *translation in Ukrainian Math. J.* **44** (1992), *no.* 2, 149–155. (Summary) **93f:35075** 35J65 (35B05)
Borukhov, V. T. Controllable invariant flags in the theory of linear dynamical systems. (Russian. English and Russian summaries) *Dokl. Akad. Nauk Belarusi* **36** (1992), *no.* 5, 403–406, 476. (Summary) **93f:93017** 93B05 (93B27)
Borůvka, Otakar *see* **Birthday: Borůvka, Otakar, 93g:01091**
Borwankar, J. D. (*with* Chaudhuri, G.; Rao, P. R. K.) Bhattacharyya distance based linear discriminant function for stationary time series. *Comm. Statist. Theory Methods* **20** (1991), *no.* 7, 2195–2205. (Juan Carlos Abril) **93b:62124** 62M10 (62H30)
— (*with* Chaudhuri, G.; Rao, P. R. K.) Bhattacharyya distance-based linear discrimination. *J. Indian Statist. Assoc.* **29** (1991), *no.* 1, 47–55. (Zhi-Dong Bai) **93a:62091** 62H30 (62M10)
Borwein, David Tauberian theorems concerning power series with nonnegative coefficients. *Acta Math. Hungar.* **59** (1992), *no.* 1-2, 85–89. (G. U. Brauer) **93d:40013** 40E05 (40G10)
— A Tauberian theorem concerning Borel-type and Riesz summability methods. *Canad. Math. Bull.* **35** (1992), *no.* 1, 14–20. (John A. Fridy) **93d:40014** 40E05 (40G10)
— (*with* Markovich, Tom) Weighted means and summability by the circle and other methods. *J. Approx. Theory* **68** (1992), *no.* 1, 49–55. (S. Baron) **93d:40004** 40C05 (40C15, 40G05, 40G10)
Borwein, Jonathan Differentiability properties of convex, of Lipschitz, and of semicontinuous mappings on Banach spaces. *Optimization and nonlinear analysis* (*Haifa*, 1990), 39–52, *Pitman Res. Notes Math. Ser.*, 244, *Longman Sci. Tech., Harlow*, 1992. (Julian Revalski) **93i:49021** 49J50 (46B20, 46G05, 47H99)
— (*with* Borwein, Peter B.) Strange series and high precision fraud. *Amer. Math. Monthly* **99** (1992), *no.* 7, 622–640. (John A. Fridy) **93f:40001** 40–01 (40A05, 40A25)
— (*with* Lewis, Adrian S.) Decomposition of multivariate functions. (English summary) *Canad. J. Math.* **44** (1992), *no.* 3, 463–482. (Douglass L. Grant) **93k:54033** 54C05 (05C38, 08A45, 22C05, 26B40, 28A20)
— (*with* Reich, Simeon; Shafrir, Itai) Krasnosel'ski-Mann iterations in normed spaces. *Canad. Math. Bull.* **35** (1992), *no.* 1, 21–28. (Gregory B. Passty) **93e:47072** 47H09 (47H10, 47H17)
— (*with* Théra, Michel) Sandwich theorems for semicontinuous operators. (English and French summaries) *Canad. Math. Bull.* **35** (1992), *no.* 4, 463–474. (P. Maritz) **93k:54034** 54C08 (46A99, 54C60, 54C65, 54F05)
— (*with* Zucker, I. J.) Fast evaluation of the gamma function for small rational fractions using complete elliptic integrals of the first kind. (English summary) *IMA J. Numer. Anal.* **12** (1992), *no.* 4, 519–526. (Summary) **93g:65028** 65D20
— (*with* Lou, Shi Tuo) Asymptotics of a sequence of Witt vectors. *J. Approx. Theory* **69** (1992), *no.* 3, 326–337. (Jiang Zeng) **93f:05007** 05A16 (05E05, 05E10, 13K05)
— (*with* Lewis, Adrian S.) Partially finite convex programming. I. Quasi relative interiors and duality theory. *Math. Programming* **57** (1992), *no.* 1, *Ser. B*, 15–48. (M. Teboulle) **93e:90069a** 90C48 (49J15, 65K05, 90C25)
— (*with* Lewis, Adrian S.) Partially finite convex programming. II. Explicit lattice models. *Math. Programming* **57** (1992), *no.* 1, *Ser. B*, 49–83. (M. Teboulle) **93e:90069b** 90C48 (49N15, 65K05, 90C25)
— (*with* Zhuang, Deming Micheal) Super efficiency in vector optimization. *Trans. Amer. Math. Soc.* **338** (1993), *no.* 1, 105–122. (Bernard Lemaire) **93j:90085** 90C29 (52A41)
Borwein, Peter B. (*with* Erdélyi, Tamás) Notes on lacunary Müntz polynomials. (English summary) *Israel J. Math.* **76** (1991), *no.* 1-2, 183–192. (Wiesław Pleśniak) **93h:41014** 41A17 (26D07, 41A45)
— (*with* Borwein, Jonathan) Strange series and high precision fraud. *Amer. Math. Monthly* **99** (1992), *no.* 7, 622–640. (John A. Fridy) **93f:40001** 40–01 (40A05, 40A25)
— (*with* Xie, Ting Fan; Zhou, Song Ping) On approximation by trigonometric Lagrange interpolating polynomials. II. *Bull. Austral. Math. Soc.* **45** (1992), *no.* 2, 215–221. (Summary) **93d:42004** 42A10 (42A15)
— (*with* Erdélyi, Tamás) Remez-, Nikol'skiĭ-, and Markov-type inequalities for generalized nonnegative polynomials with restricted zeros. *Constr. Approx.* **8** (1992), *no.* 3, 343–362. (Wiesław Pleśniak) **93f:41021** 41A17 (30C10)
— On the irrationality of certain series. *Math. Proc. Cambridge Philos. Soc.* **112** (1992), *no.* 1, 141–146. (G. Ramharter) **93g:11074** 11J72
Boryachok, M. D. (*with* Bodyanskiĭ, E. V.) Locally optimal pseudodual control of objects with unknown parameters. (Russian. Russian summary) *Avtomat. i Telemekh.* **1992,** *no.* 2, 90–97; *translation in Automat. Remote Control* **53** (1992), *no.* 2, *part* 1, 225–231. 93C40
Bory Reyes, Juan On the Riemann boundary problem on open rectifiable Jordan curves. (Spanish. English and Spanish summaries) *Cienc. Mat.* (*Havana*) **11** (1990), *no.* 3, 211–220. (Summary) **93h:30058** 30E25
Borzdyko, V. I. Asymptotic stability of a periodic solution of a system of differential equations with retarded argument. (Russian. Tajiki summary) *Dokl. Akad. Nauk Tadzhik. SSR* **33** (1990), *no.* 10, 637–641 (1991). (Denis Khusainov) **93b:34098** 34K20
— Uniqueness conditions for differential equations with hysteresis nonlinearities. (Russian) *Dokl. Akad. Nauk* **324** (1992), *no.* 1, 56–59; *translation in Soviet Phys. Dokl.* **37** (1992), *no.* 5, 211–212. (Vladimir Chernorutskiĭ) **93m:34098** 34K05 (34A12)
Borzemski, Leszek File allocation in a distributed knowledge-based multistage decision making system. (English and Polish summaries) *Systems Sci.* **18** (1992), *no.* 1-2, 209–224 (1993). 90C05
von Borzeszkowski, Horst-Heino Uncertainty and equivalence principles in quantum general relativity. *Quantum gravity* (*Moscow*, 1990), 167–182, *World Sci. Publishing, River Edge, NJ*, 1991. (Summary) **93d:83029** 83C45 (83C47, 83E30)
— (*with* Wahsner, Renate) ★ Die Wirklichkeit der Physik. (German) [The reality of physics] Studien zu Idealität und Realität in einer messenden Wissenschaft. [Studies on the ideality and reality in a measuring science] Europäische Hochschulschriften. Reihe XX. Philosophie [European University Publications. Series XX. Philosophy], 374. *Verlag Peter D. Lang, Frankfurt am Main*, 1992. ii+357 *pp. ISBN* 3-631-44778-7 (Dennis Dieks) **93h:00012** 00A30 (00A79, 01A99, 81P05)
— Cut-off lengths and uncertainty relations in quantum general relativity. Application of statistical methods in theoretical physics and fluid mechanics (Calcutta, 1991). *Acta Appl. Math.* **26** (1992), *no.* 3, 249–255. (Claus Kiefer) **93f:83036** 83C45
— (*with* Roy, Sisir) Jordan-Fock type uncertainty relations and cut-off lengths in quantum general relativity. (English summary) *Found. Phys.* **22** (1992), *no.* 8, 1079–1087. (Yu. N. Obukhov) **93h:83022** 83C45 (81P15, 81V17, 83C22)
Borzí, A. E. (*with* Fonte, G.) On variational principles for nonlinear partial differential equations in complex spaces. *Nuovo Cimento B* (11) **107** (1992), *no.* 2, 189–201. (Jaime Muñoz Masqué) **93d:58041** 58E30 (35Q55, 46G99)
Bos, Henk J. M. Descartes, Pappus' problem and the Cartesian parabola: a conjecture. *The investigation of difficult things*, 71–96, *Cambridge Univ. Press, Cambridge*, 1992. (Massimo Galuzzi) **93m:01022** 01A45 (51–03)
Bos, Jurjen N. E. Provably unforgeable signatures. (English summary) *CWI Quarterly* **5** (1992), *no.* 3, 173–187. 94A60 (68P25)
Bos, L. P. (*with* Milman, P. D.) The equivalence of the usual and quotient topologies for $C^\infty(E)$ when $E \subset \mathbf{R}^n$ is Whitney p-regular. *Approximation theory, spline functions and applications* (*Maratea*, 1991), 279–292, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 356, *Kluwer Acad. Publ., Dordrecht*, 1992. (Y. Yomdin) **93k:58018** 58C25 (26D10, 46E10, 46F05)
— (*with* Šalkauskas, K.) Weighted splines based on piecewise polynomial weight functions. *Curve and surface design* (*Tempe, AZ*, 1989), 87–98, *Geom. Des. Publ., SIAM, Philadelphia, PA*, 1992. (*see* **93g:65027**) 65D07 (65D17)
— (*with* Bloom, Thomas; Christensen, C.; Levenberg, N.) Polynomial interpolation of holomorphic functions in $\mathbf{C}$ and $\mathbf{C}^n$. *Rocky Mountain J. Math.* **22** (1992), *no.* 2, 441–470. (Ahmed Zeriahi) **93i:32016** 32E30 (30E05)
— (*with* Šalkauskas, K.) Weighted splines as optimal interpolants. (English summary) *Rocky Mountain J. Math.* **22** (1992), *no.* 2, 705–717. (David R. Hill) **93g:65020** 65D07 (41A15)
Bös, S. (*with* Kühn, Reimer) Statistical mechanics for neural networks with continuous-time dynamics. (English summary) *J. Phys. A* **26** (1993), *no.* 4, 831–857. 82C32 (92B20)
Bosák, Miroslav (*with* Kučera, Milan) Bifurcation of periodic solutions to differential inequalities in $\mathbf{R}^3$. *Czechoslovak Math. J.* **42(117)** (1992), *no.* 2, 339–363. (Marco Degiovanni) **93h:34023** 34A47 (34A60, 34C25, 47H15)
Bosanquet, L. S. *see* **Hardy, Godfrey Harold, 93g:01100**
Bosch, Carlos (*with* Pérez Esteva, Salvador; Motos, Joaquín) The approximation property of some vector valued Sobolev-Slobodeckij spaces. *Internat. J. Math. Math. Sci.* **15** (1992), *no.* 3, 425–433. (A. V. Bukhvalov) **93f:46051** 46E40 (46B20, 46E35)

Bosch, Miquel (*with* Tatjer, J. C.) On the codimension two bifurcations in families of one- and two-dimensional maps. (English summary) *European Conference on Iteration Theory (Batschuns, 1989)*, 9–18, *World Sci. Publishing, River Edge, NJ*, 1991. (Summary) **93f:58164** 58F14 (58F36)

— (*with* Simó, Carles) Attractors in a Šil'nikov-Hopf scenario and a related one-dimensional map. (English summary) Homoclinic chaos (Brussels, 1991). *Phys. D* **62** (1993), *no.* 1-4, 217–229. (Summary) **93m:58068** 58F12 (58F03, 58F13)

van den Bosch, P. P. J. (*with* Soeterboek, A. R. M.; Verbruggen, H. B.) Implicit modeling of noise versus the use of a fixed noise model. (English summary) *Adaptive systems in control and signal processing*, 1989 (*Glasgow*), 223–228, *IFAC Sympos. Ser.*, 1990, *No.* 1, *Pergamon, Oxford*, 1990. (*see* **93j:93007**) 93E35

Bosch, Robert A. (*with* Anstreicher, Kurt M.) Long steps in an $O(n^3L)$ algorithm for linear programming. *Math. Programming* **54** (1992), *no.* 3, *Ser. A*, 251–265. (S. R. Arora) **93f:90104** 90C05

— (*with* Anstreicher, Kurt M.) On partial updating in a potential reduction linear programming algorithm of Kojima, Mizuno, and Yoshise. (English summary) *Algorithmica* **9** (1993), *no.* 2, 184–197. (A. G. Azpeitia) **93k:90046** 90C05

Boschi Filho, H. (*with* Natividade, C. P.) Chiral Schwinger model at finite temperature. (English summary) *Modern Phys. Lett. A* **7** (1992), *no.* 35, 3303–3308. 81T10

— (*with* Natividade, C. P.; Farina de Souza, Carlos) Heat-kernel expansion at finite temperature. *Phys. Rev. D* (3) **45** (1992), *no.* 2, 586–594. (Yi-Gao Liang) **93a:81132** 81T16 (58G11)

Bosco, B. (*with* Ricci, P.; Sacchi, M. T.) The Casimir theorem and the inversion problem in electrodynamics at first quantized level. (English summary) *J. Math. Phys.* **33** (1992), *no.* 12, 4116–4132. (K. Wódkiewicz) **93k:81256** 81V10

Boscovich, R. G. *see* **Bošković, Rudjer Josip**

Bose, A. *see* **Bose, Arup**

Bose, Anil K. (*with* Cover, Alan S.; Reneke, James A.) On point dissipative n-dimensional systems of differential equations with quadratic nonlinearity. (English summary) *Internat. J. Math. Math. Sci.* **16** (1993), *no.* 1, 139–148. (Summary) **93j:34074** 34D05 (34A34)

Bose, Arup (*with* Bhandari, Subir Kumar) Existence of unbiased estimates in sequential binomial experiments. (English summary) *Sankhyā Ser. A* **52** (1990), *no.* 1, 127–130. (Rasul A. Khan) **93g:62106** 62L12

— (*with* Basu, Arup; Ghosh, Jayanta K.) Sequential design and allocation rules. *Handbook of sequential analysis*, 475–501, *Statist. Textbooks Monographs*, 118, *Dekker, New York*, 1991. (*see* **93g:62102**) 62L05

Bose, Bella (*with* Al-Bassam, Sulaiman; Venkatesan, R.) Codes for detecting and correcting propagation errors. *Comput. Math. Appl.* **24** (1992), *no.* 4, 103–109. (Summary) **93b:94029** 94B50 (94A13)

— (*with* Al-Bassam, Sulaiman) Byte unidirectional error correcting and detecting codes. (English summary) *IEEE Trans. Comput.* **41** (1992), *no.* 12, 1601–1606. (Summary) **93m:94024** 94B05

— (*with* Al-Bassam, Sulaiman; El-Rewini, Hesham; Lewis, T. G.) Processor allocation for hypercubes. (English summary) *J. Parallel Distrib. Comput.* **16** (1992), *no.* 4, 394–401. 68M07

Bose, Indrani Quantum antiferromagnets with disordered ground states. (English summary) Statistical physics of disordered solids, polymers and glasses (Calcutta, 1991/1992). *Phys. A* **186** (1992), *no.* 1-2, 298–305. (Flora Koukiou) **93j:82004** 82B10 (82B44)

Bose, M. K. (*with* Ghosh, Bimalendu) Modified Cesàro-limit, continuity and derivative. *Soochow J. Math.* **18** (1992), *no.* 1, 9–27. (Karol Baron) **93b:26003** 26A15 (26A24)

Bose, Mausumi (*with* Mukerjee, Rahul) A combinatorial characterization for regularity in single replicate factorial designs. (English summary) *J. Combin. Inform. System Sci.* **17** (1992), *no.* 1-2, 139–147. (Summary) **93m:05025** 05B05

Bose, N. K. Directions in multidimensional systems research. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, II* (*Kobe*, 1991), 141–145, *Mita, Tokyo*, 1992. (*see* **93g:93006**) 93C35

Bose, R. C. *see* **Barlotti, Adriano, 93k:51007**

Bose, S. C. (*with* Ramaswamy, P. S.; Ram, Sudhakaran G.) Learning expert system for on-line control of manufacturing process. (English and Polish summaries) *Systems Sci.* **18** (1992), *no.* 4, 45–53 (1993). 93E35 (93C95)

Bose, S. K. *see* **Bose, Subir Kumar**

Bose, Samir Kumar On two-dimensional gravity. (English summary) *Modern Phys. Lett. A* **7** (1992), *no.* 37, 3521–3526. (Michael O. Katanaev) **93i:81212** 81T40

Bose, Subir Kumar Exact solution of the Schrödinger equation for the central nonpolynomial potential $V(r) = r^2 + \lambda r^2/(1 + gr^2)$ in N dimensions. (English summary) *J. Math. Phys. Sci.* **26** (1992), *no.* 2, 129–137. 81Q05

Bose, Sudip Some properties of posterior Pitman closeness. Pitman's measure of closeness. *Comm. Statist. Theory Methods* **20** (1991), *no.* 11, 3697–3712. (James M. Dickey) **93f:62032** 62F10

Boseck, Helmut Classical Lie supergroups. *Math. Nachr.* **148** (1990), 81–115. (Anargyros Fellouris) **93b:17075** 17B70 (17A70, 22E70, 58A50)

— Lie superalgebras and Lie supergroups. I. Seminar Sophus Lie (Darmstadt, 1991). *Sem. Sophus Lie* **1** (1991), *no.* 2, 109–122. (Anargyros Fellouris) **93e:17003** 17A70 (16W55, 17B70)

— Hopf algebras—an algebraic link between geometry and physics. *Proceedings of the 3rd Congress of Geometry (Thessaloniki, 1991)*, 115–121, *Aristotle Univ. Thessaloniki, Thessaloniki*, 1992. (E. J. Taft) **93d:16047** 16W30 (16W55, 17B37)

Bosgra, Okko H. (*with* Steinbuch, M.) Mixed H_2/H_∞ optimal control of a flexible mechanical servo system. (English summary) *Control '91, Vol.* 1, 2 (*Edinburgh*, 1991), 184–189, *IEE Conf. Publ. Ser.*, 332, *IEE, London*, 1991. (*see* **93h:93007**) 93B36

— (*with* Bongers, Peter M. M.) Normalized coprime factorizations for systems in generalized state-space form. (English summary) *IEEE Trans. Automat. Control* **38** (1993), *no.* 2, 348–350. (Summary) **93j:93033** 93B28 (93B40, 93C05)

Boshchenko, A. P. Pseudocompletions in a congruence lattice of unars. (Russian) *Algebraic systems (Russian)*, 23–36, *Volgograd. Gos. Ped. Inst., Volgograd*, 1989. (*see* **93m:00015**) 08A60 (06A23, 08A30)

Boshernitzan, Michael D. Billiards and rational periodic directions in polygons. *Amer. Math. Monthly* **99** (1992), *no.* 6, 522–529. (Valery Covachev) **93d:51043** 51M20 (58F22)

— A condition for unique ergodicity of minimal symbolic flows. (English summary) *Ergodic Theory Dynamical Systems* **12** (1992), *no.* 3, 425–428. (Mariusz Lemańczyk) **93j:58043** 58F03 (28D05, 58F11)

— Dense orbits of rationals. *Proc. Amer. Math. Soc.* **117** (1993), *no.* 4, 1201–1203. (Ladislav Andrey) **93e:58099** 58F08

Boshnakov, Georgi N. Innovations, sufficient statistics and maximum likelihood in ARMA models. (English summary) *Math. Balkanica (N.S.)* **6** (1992), *no.* 2, 119–123. (Summary) **93e:62229** 62M10

— *see also* **Halmos, Paul Richard, 93d:01040**

Boshuizen, Frans A. Multivariate prophet inequalities for negatively dependent random vectors. *Strategies for sequential search and selection in real time (Amherst, MA, 1990)*, 183–190, *Contemp. Math.*, 125, *Amer. Math. Soc., Providence, RI*, 1992. (Theodore P. Hill) **93g:60085** 60G40

— Minimax stopping times for i.i.d. random variables. (English summary) *Sequential Anal.* **11** (1992), *no.* 4, 327–337. (Peter Watts Jones) **93k:62169** 62L15 (60G40)

— (*with* Hill, Theodore P.) Moment-based minimax stopping functions for sequences of random variables. (English summary) *Stochastic Process. Appl.* **43** (1992), *no.* 2, 303–316. (S. M. Samuels) **93j:60056** 60G40 (62L15)

Bosinelli, Fabio C. M. Über Leibniz' Unendlichkeitstheorie. (English summary) [On Leibniz' theory of infinity] *Studia Leibnitiana* **23** (1991), *no.* 2, 151–169. (Eberhard Knobloch) **93g:01029** 01A45 (00A30)

Bošković, Rudjer Josip *see* **Baldini, Ugo**

Bosley, D. L. (*with* Kevorkian, J.) Adiabatic invariance and transient resonance in very slowly varying oscillatory Hamiltonian systems. *SIAM J. Appl. Math.* **52** (1992), *no.* 2, 494–527. (James A. Murdock) **93c:34081** 34C15 (70H05, 70K30)

Bosma, Wieb (*with* Cannon, John J.) Structural computation in finite permutation groups. *CWI Quarterly* **5** (1992), *no.* 2, 127–160. (D. F. Holt) **93i:20003** 20B40 (20-04, 68Q40)

Bosov, A. A. (*with* Zaĭtsev, V. G.) Optimal estimation in a problem of heat conduction. (Russian. Russian summary) *Differential equations and their applications in physics (Russian)*, 71–75, 106–107, *Dnepropetrovsk. Gos. Univ., Dnepropetrovsk*, 1990. (*see* **93k:00023**) 93E10 (35C99, 35K05, 80A20, 93C20)

— Construction of a smoothing operator. (Russian) *Vestnik Khar'kov. Univ. No.* 361, *Prikl. Mat. Mekh.* (1991), 63–67. 94A14

Bosq, Denis Nonparametric prediction for unbounded almost stationary processes. *Nonparametric functional estimation and related topics (Spetses*, 1990), 389–403, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 335, *Kluwer Acad. Publ., Dordrecht*, 1991. (Summary) **93a:62080** 62G99 (62M20)

— Modelization, nonparametric estimation and prediction for continuous time processes. *Nonparametric functional estimation and related topics (Spetses*, 1990), 509–529, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 335, *Kluwer Acad. Publ., Dordrecht*, 1991. (Summary) **93a:62124** 62M10 (62G05, 62M20)

— Prévision d'une fonction aléatoire. (English and Italian summaries) [Prediction of a random function] *Statistica (Bologna)* **51** (1991), *no.* 2, 153–164. (Summary) **93e:62244** 62M20 (62M10)

— (*with* Kutoyants, Yu. A.; Mourid, Tahar) Estimation paramétrique d'un processus de diffusion avec retards. (English summary) [Parametric estimation of a diffusion process with delay] *Ann. Inst. H. Poincaré Probab. Statist.* **28** (1992), *no.* 1, 95–106. (Summary) **93k:62173** 62M05 (60J60)

— Erreur quadratique asymptotique optimale pour les estimateurs à noyau de la densité et de la régression d'un processus mélangeant. (English and French summaries) [Optimal asymptotic mean square error for kernel density and regression estimates under mixing] *C. R. Acad. Sci. Paris Sér. I Math.* **316** (1993), *no.* 3, 293–295. (Summary) **93m:62064** 62G05

— Propriétés asymptotiques des processus autorégressifs banachiques. Applications. (English and French summaries) [Asymptotic properties of autoregressive processes in Banach spaces. Applications] *C. R. Acad. Sci. Paris Sér. I Math.* **316** (1993), *no.* 6, 607–610. (Summary) **93k:60081** 60G10 (60B12, 62M10)

Boss, Emmanuel (*with* Paldor, Nathan) Chaotic trajectories of tidally perturbed inertial oscillations. (English summary) *J. Atmospheric Sci.* **49** (1992), *no.* 23, 2306–2318. (Summary) **93h:86002** 86A10 (58F13, 58F27)

Bossanne, Denis (*with* Deza, François; Rakotopara, Daniel; Gauthier, Jean-Paul) Un résultat de stabilité du filtre de Kalman étendu pour une large classe de systèmes multi-sorties. (English summary) [A stability result on the extended Kalman filter for a large class of multi-output systems] *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 9, 683–685. (Introduction) **93d:93081** 93E11

— (*with* Deza, François; Busvelle, Éric; Gauthier, Jean-Paul; Rakotopara, Daniel) Exponential observers for nonlinear systems. (English summary) *IEEE Trans. Automat. Control* **38** (1993), *no.* 3, 482–484. 93B07

Bossart, Theodore C. (*with* Singh, Sahjendra N.) Exact feedback linearization and control of space station using CMG. (English summary) *IEEE Trans. Automat. Control* **38** (1993), *no.* 1, 184–187. (Ülle Kotta) **93m:93026** 93B18 (93B50, 93B52, 93C10, 93C95)

Bossavit, A. Mixed elements and a two-phase free-boundary problem in magnetostatics. (French summary) *EDF Bull. Direction Études Rech. Sér. C Math. Inform.* **1991**, *no.* 3, i, 1–10. (J. R. Kuttler) **93f:78009** 78A30 (35Q60, 49N55, 65N30, 78–08)

van den Bossche, Gilberte *see* **Van den Bossche, Gilberte**

Bossert, Walter Monotonic solutions for bargaining problems with claims. (English summary) *Econom. Lett.* **39** (1992), *no.* 4, 395–399. (Summary) **93g:90027** 90A60

— (*with* Storcken, Ton) Strategy-proofness of social welfare functions: the use of the Kemeny distance between preference orderings. (English summary) *Soc. Choice Welf.* **9** (1992), *no.* 4, 345–360. (Summary) **93g:90009** 90A06 (90A05, 90A07)

— Continuous choice functions and the strong axiom of revealed preference. (English summary) *Econom. Theory* **3** (1993), *no.* 2, 379–385. (Summary) **93m:90004** 90A06

— An alternative solution to bargaining problems with claims. (English summary) *Math. Social Sci.* **25** (1993), *no.* 3, 205–220. (Summary) **93k:90031** 90A60 (90D40)

— (*with* Weymark, John A.) Generalized median social welfare functions. (English summary) *Soc. Choice Welf.* **10** (1993), *no.* 1, 17–33. (Summary) **93j:90013** 90A08

Bossi, A. (*with* Gabbrielli, Maurizio; Levi, Giorgio; Meo, M. C.) Contributions to the semantics of open logic programs. (English summary) *Fifth generation computer systems, Vol.* 1, 2 (*Tokyo*, 1992), 570–580, *Ohm, Tokyo*, 1992. (*see* **93i:68007**) 68N17 (68Q55)

— (*with* Valentini, Silvio) An intuitionistic theory of types with assumptions of high-arity variables. *Ann. Pure Appl. Logic* **57** (1992), *no.* 2, 93–149. (Gerard R. Renardel de Lavalette) **93g:03008** 03B15 (03F05, 03F55, 68Q60)

Bost, Jean-Benoît Théorie de l'intersection et théorème de Riemann-Roch arithmétiques. [Arithmetic intersection theory and the arithmetic Riemann-Roch theorem] Séminaire Bourbaki, Vol. 1990/91. *Astérisque No.* 201-203 (1991), *Exp. No.* 731, 43–88 (1992). (I. Dolgachev) **93d:14038** 14G40

— (*with* Connes, Alain) Produits eulériens et facteurs de type III. (English and French summaries) [Euler products and type-III factors] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 3, 279–284. (H. Araki) **93m:46079** 46L55 (11M06, 46L35, 82B10)

Bostock, F. A. (*with* Baston, V. J.) On Washburn's deterministic graphical games. *Differential games—developments in modelling and computation* (*Espoo*, 1990), 164–170, *Lecture Notes in Control and Inform. Sci.*, 156, *Springer, Berlin*, 1991. (*see* **93c:90003**) 90D43

— (*with* Baston, V. J.) A basic searchlight game. *J. Optim. Theory Appl.* **71** (1991), *no.* 1, 47–66. (O. A. Malafeyev) **93g:90090** 90D05

Boston, Nigel Families of Galois representations—increasing the ramification. *Duke Math. J.* **66** (1992), *no.* 3, 357–367. (Jacques Tilouine) **93h:11053** 11F80 (11F33)

— (*with* Ullom, Stephen V.) Representations related to CM elliptic curves. *Math. Proc. Cambridge Philos. Soc.* **113** (1993), *no.* 1, 71–85. (Matthias Flach) **93i:11065** 11G05 (11F80)

Boström, Ola (*with* Bengtsson, Ingemar) Infinitely many cosmological constants. *Classical Quantum Gravity* **9** (1992), *no.* 4, L47–L51. (Jorge A. Pullin) **93c:83093** 83D05 (83C05)

— Degeneracy in loop variables; some further results. (English summary) *Classical Quantum Gravity* **9** (1992), *no.* 8, L83–L86. (Peter Peldán) **93i:83048** 83C45 (83C05)

Bosznay, Ádam P. On a problem concerning orthogonality in normed linear spaces. *Studia Sci. Math. Hungar.* **26** (1991), *no.* 1, 63–65. (Abdallah M. Al-Rashed) **93b:46043** 46C50 (46B20, 46C15)

Boţan, C. On the solution to the Riccati differential matrix equation. (English summary) *Computational systems analysis* 1992 (*Berlin*, 1992), 141–146, *Elsevier, Amsterdam*, 1992. (K. N. Murty) **93k:34023** 34A34 (34H05, 93B40)

Botashev, A. I. (*with* Talipova, L. A.) Two approaches to introducing the concept of an operator solution for Volterra integro-differential equations. (Russian. Russian summary) *Izv. Akad. Nauk Respub. Kyrgyzstan* **1991,** *no.* 1, 3–10, 79. 45D05

Botelho, Fernanda (*with* Garzon, Max) On dynamical properties of neural networks. *Complex Systems* **5** (1991), *no.* 4, 401–413. (Summary) **93h:68101** 68Q80 (58F40, 92B20)

— (*with* Chen, Liang[1]) Chain transitivity and rotation shadowing for annulus homeomorphisms. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 4, 1173–1177. (Jerzy Ombach) **93j:58100** 58F15 (54H20)

Botelho, Luiz C. L. The Wheeler-DeWitt equation as a functional diffusion equation. *J. J. Giambiagi Festschrift*, 70–79, *World Sci. Publishing, River Edge, NJ*, 1990. (*see* **93b:81004**) 83C47 (81V17)

Botez, Mihai Science and conscience: Octav Onicescu, as I have known him. *Libertas Math.* **12** (1992), 1–7. (Editors) **93m:01060** 01A70

Both, N. Independence and duality. *Mathematica* (*Cluj*) **33(56)** (1991), *no.* 1-2, 9–12. 06A15

Botha, S. G. (*with* Buys, A.) The annihilator in categories. *Chinese J. Math.* **19** (1991), *no.* 4, 295–308. (S. B. Niefield) **93b:18002** 18A05 (16U99, 18D35)

Bothe, Dieter Multivalued differential equations on graphs. *Nonlinear Anal.* **18** (1992), *no.* 3, 245–252. (Nikolaos S. Papageorgiou) **93b:34027** 34A60

Bothe, H. G. Expanding attractors with stable foliations of class C^0. *Ergodic theory and related topics, III* (*Güstrow*, 1990), 36–61, *Lecture Notes in Math.*, 1514, *Springer, Berlin*, 1992. (Shigenori Matsumoto) **93f:58176** 58F15 (58F12)

Botkin, N. D. (*with* Zhukov, S. P.; Krasov, A. I.) A combined method for the control of the landing of an aircraft. (Russian. Russian summary) *Control in dynamical systems* (*Russian*), 18–30, 124, *Akad. Nauk SSSR Ural. Otdel., Sverdlovsk*, 1990. (*see* **93f:93004**) 93C95 (70Q05)

— (*with* Zarkh, M. A.; Patsko, V. S.) Numerical solution of linear differential games. *Differential games—developments in modelling and computation* (*Espoo*, 1990), 226–234, *Lecture Notes in Control and Inform. Sci.*, 156, *Springer, Berlin*, 1991. (*see* **93c:90003**) 90D25

— A differential pursuit game with mixed constraints on the controls. (Russian. Russian summary) *Avtomat. i Telemekh.* **1992,** *no.* 6, 12–19; *translation in Automat. Remote Control* **53** (1992), *no.* 6, *part* 1, 793–800. (M. S. Shtil'man) **93j:90140** 90D26 (49K15, 90D25)

— Asymptotic behavior of solutions of differential games. Viability domains of differential inclusions. (Russian) *Dokl. Akad. Nauk* **325** (1992), *no.* 1, 16–19; *translation in Russian Acad. Sci. Dokl. Math.* **46** (1993), *no.* 1, 8–11. (From the introduction) **93m:90122** 90D25 (34A60, 34H05, 93B03)

Botrić, S. (*with* Ljolje, K.) On the self-interaction in classical electrodynamics. *Nuovo Cimento B* (11) **107** (1992), *no.* 1, 51–57. (Paul Urbach) **93f:78010** 78A35

Botsaris, C. A. (*with* Bacopoulos, A.) A new conic method for unconstrained minimization. *J. Math. Anal. Appl.* **167** (1992), *no.* 1, 12–31. (Vincenţiu Dumitru) **93c:90073** 90C30 (65K10)

Botsenyuk, A. N. Solvability of an initial-boundary value problem for a system of semilinear equations in magnetoelasticity. (Ukrainian. Russian and Ukrainian summaries) *Ukraïn. Mat. Zh.* **44** (1992), *no.* 9, 1181–1186. (From the text) **93m:35174** 35Q60 (73R05)

Botsko, Michael W. When is the product of two derivatives a derivative? *Math. Mag.* **65** (1992), *no.* 3, 186–187. (G. A. Heuer) **93f:26002** 26A24

picco Botta, Luciana *see* **Picco Botta, Luciana**

Botta, Robert F. (*with* Harris, Carl M.; Marchal, William G.) A note on generalized hyperexponential distributions. *Comm. Statist. Stochastic Models* **8** (1992), *no.* 1, 179–191. (Summary) **93b:60214** 60K25 (60–04, 60E10)

Bottacin, Francesco Jacobian varieties of spectral curves and theta functions. (Italian. English summary) *Rend. Accad. Naz. Sci. XL Mem. Mat.* (5) **15** (1991), 151–162. (Emma Previato) **93b:14049** 14H40 (14H42, 58F07)

— Group varieties related to the KP hierarchy. (English summary) *Ann. Mat. Pura Appl.* (4) **162** (1992), 215–226. (Emma Previato) **93m:14040** 14L10 (14K25, 58F07)

Bottaro Aruffo, Ada Properties of convexification. (Italian. English summary) *Rend. Sem. Mat. Univ. Padova* **85** (1991), 55–78. (Michele Carriero) **93b:49012** 49J45 (49K27)

Bottasso, C. (*with* Borri, M.; Mantegazza, P.) A modified phase space formulation for constrained mechanical systems—differential approach. (English summary) *European J. Mech. A Solids* **11** (1992), *no.* 5, 701–727. (Summary) **93f:70004** 70E99 (70–08, 70F20, 70F25)

Bottazzini, Umberto The influence of Weierstrass's analytical methods in Italy. *Amphora*, 67–90, *Birkhäuser, Basel*, 1992. (Burnett Meyer) **93k:01036** 01A55

Böttcher, Albrecht (*with* Silbermann, Bernd) Asymptotics of Toeplitz and Wiener-Hopf operators. *Proceedings of the* 9*th Conference on Problems and Methods in Mathematical Physics* (9.*TMP*) (*Karl-Marx-Stadt*, 1988), 27–35, *Teubner-Texte Math.*, 111, *Teubner, Leipzig*, 1989. (From the introduction) **93e:47030** 47B35

— (*with* Roch, Steffen; Silbermann, Bernd; Spitkovsky, Ilya M.) A Gohberg-Krupnik-Sarason symbol calculus for algebras of Toeplitz, Hankel, Cauchy, and Carleman operators. (English summary) *Topics in operator theory: Ernst D. Hellinger memorial volume*, 189–234, *Oper. Theory Adv. Appl.*, 48, *Birkhäuser, Basel*, 1990. (N. K. Karapetyants) **93m:47029** 47B35 (46L99, 47A53, 47D99, 47G10)

— Invertible values of elementary operators and projection methods for Toeplitz operators. (English summary) *Elementary operators and applications* (*Blaubeuren*, 1991), 157–161, *World Sci. Publishing, River Edge, NJ*, 1992. (From the text) **93g:47045** 47B47 (47B35)

— (*with* Heidler, Harald) Algebraic composition operators. *Integral Equations Operator Theory* **15** (1992), *no.* 3, 389–411. (Barbara D. MacCluer) **93b:47057** 47B38

— (*with* Wolf, Hartmut) Interpolation in the Bergman space, mean values of harmonic functions, and an inverse problem of potential theory. *Wiss. Z. Tech. Univ. Chemnitz* **34** (1992), *no.* 1, 31–35. (Oleg V. Ivanov) **93e:30078** 30E05 (30D99, 30H05, 46E20)

— *see also* **Analysis, 93d:00032b**

Bottcher, C. (*with* Werby, Michael F.; Broadhead, M. K.; Strayer, M. R.) Solution of the Helmholtz-Poincaré wave equation using the coupled boundary integral equations and optimal surface eigenfunctions. (English summary) *Boundary element technology, VII* (*Albuquerque, NM*, 1992), 245–258, *Comput. Mech., Southampton*, 1992. (*see* **93b:65002**) 76M15 (65N38, 76Q05, 78A45)

— (*with* Strayer, M. R.; Werby, Michael F.) Solution of a class of Sturm-Liouville problems using the Galerkin method with global basis functions. (English summary) *Boundary element technology, VII* (*Albuquerque, NM*, 1992), 775–786, *Comput. Mech., Southampton*, 1992. (*see* **93b:65002**) 65L60

— (*with* Strayer, M. R.) Spline methods for conservation equations. (English summary) *Computational acoustics, Vol.* 2 (*Cambridge, MA*, 1991), 317–338, *North-Holland, Amsterdam*, 1993. (Summary) **93m:65147** 65M70 (76M25)

Böttcher, Michael (*with* Knauer, Ulrich) Endomorphism spectra of graphs. (English summary) Algebraic graph theory (Leibnitz, 1989). *Discrete Math.* **109** (1992), *no.* 1-3, 45–57. (A. Pultr) **93m:05159** 05C75

Böttcher, Ralf (*with* Hecker, Hans-Dietrich) Weitere NP-schwere Probleme für minimale Polygonüberdeckungen. [More NP-hard problems for minimal polygon coverings] *Beiträge Algebra Geom. No.* 33 (1992), 71–76. (Peter Gritzmann) **93i:68169** 68U05 (52B55, 68Q25)

— (*with* Hecker, Hans-Dietrich) Streckensternförmigkeit—eine weitere Verallgemeinerung der Sternförmigkeit. [Segment star shapedness—another generalization of star shapedness] *Beiträge Algebra Geom. No.* 33 (1992), 109–114. (J. Böhm) **93f:52011** 52A30 (51M20, 52–04)

Bottesch, Martin Eigenschaften des Cauchy-Integrals mit einer Anwendung auf das Riemann-Integral. [Properties of the Cauchy integral with an application to the Riemann integral] *Seminar on Mathematical Analysis* (*Cluj-Napoca*, 1989–1990), 7–20, *Preprint*, 90-7, "*Babeş-Bolyai*" *Univ., Cluj-Napoca*, 1990. (J. Jarník) **93f:26005** 26A42

Böttinger, Claudia (*with* Göbel, Rüdiger) Endomorphism algebras of modules with distinguished partially ordered submodules over commutative rings. *J. Pure Appl. Algebra* **76** (1991), *no.* 2, 121–141. (Daniel Simson) **93c:16027** 16S50 (16G20)

Böttner, Michael Variable-free semantics for anaphora. *J. Philos. Logic* **21** (1992), *no.* 4, 375–390. (Marcus Kracht) **93i:03037** 03B65 (03G15)

— State transition semantics. (English summary) *Theoret. Linguist.* **18** (1992), *no.* 2-3, 239–286. (Marcus Kracht) **93k:03029** 03B65 (68S05)

Botvich, D. D. (*with* Malyshev, V. A.; Manita, A. D.) Translation invariant quantum master equation. *Helv. Phys. Acta* **64** (1991), *no.* 7, 1072–1092. (Guido A. Raggio) **93b:82042** 82C10 (46L60, 82C40)

Botvinnik, B. I. ★ Manifolds with singularities and the Adams-Novikov spectral sequence. London Mathematical Society Lecture Note Series, 170. *Cambridge University Press, Cambridge*, 1992. xvi+181 *pp. ISBN* 0-521-42608-1 (Donald M. Davis) **93h:55002** 55N22 (55T15, 57R90)

Bouajjani, A. (*with* Fernandez, J.-C.; Halbwachs, N.; Raymond, P.; Ratel, C.) Minimal state graph generation. *Sci. Comput. Programming* **18** (1992), *no.* 3, 247–269. (Summary) **93a:68091** 68Q60 (68R10)

Bouakiz, Mokrane (*with* Sobel, Matthew J.) Inventory control with an exponential utility criterion. (English summary) *Oper. Res.* **40** (1992), *no.* 3, 603–608. (Okitsugu Fujiwara) **93g:90030** 90B05

Boualem, Hassan Feuilletages riemanniens singuliers transversalement intégrables. (English summary) [Transversally integrable singular Riemannian foliations] *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 7, 547–550. (Andrzej Piatkowski) **93c:53019** 53C12 (57R30, 57S15)

— Théorème de décomposition d'un feuilletage riemannien singulier transversalement intégrable. (English and French summaries) [Decomposition theorem for transversally integrable singular Riemannian foliations] *C. R. Acad. Sci. Paris Sér. I Math.* **316** (1993), *no.* 1, 59–62. (Robert A. Blumenthal) **93m:53029** 53C12 (57R30)

Bouaziz, Abderrazak Intégrales orbitales sur les algèbres de Lie réductives. (English summary) [Orbital integrals on reductive Lie algebras] *C. R. Acad. Sci. Paris Sér. I Math.* **313** (1991), *no.* 13, 919–922. (D. Miličić) **93c:22022** 22E46 (17B99, 22E60)

— Fonctions indéfiniment différentiables invariantes sur les algèbres de Lie réductives. (English summary) [Invariant infinitely differentiable functions on reductive Lie algebras] *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 1, 9–12. (Alexander Isaakovich Shtern) **93f:22015** 22E46 (17B20)

Bouc, S. Exponentielle et modules de Steinberg. (French summary) [The exponential and Steinberg modules] *J. Algebra* **150** (1992), *no.* 1, 118–157. (Reinhard C. Laubenbacher) **93h:19002** 19A22 (20C99)

Bouchaffra, D. Theory and algorithms for analysing the consistent region in probabilistic logic. (English summary) *Comput. Math. Appl.* **25** (1993), *no.* 3, 13–25. (Summary) **93i:68161** 68T27

Bouchair, Mohamed Yacine On the relationship between k_n-uniform spacings and bandwidth selection in density estimation. (French summary) *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 7, 567–571. (Summary) **93b:62053** 62G05

Bouche, Thierry Sur les inégalités de Morse holomorphes lorsque la courbure du fibré en droites est dégénérée. [Holomorphic Morse inequalities when the curvature of the line bundle is degenerate] *Ann. Scuola Norm. Sup. Pisa Cl. Sci.* (4) **18** (1991), *no.* 4, 501–523. (Akira Asada) **93f:32032** 32L10 (58E05, 58G25)

— Noyau de la chaleur et inégalités de Morse holomorphes pour un fibré en droites à courbure dégénérée. (English summary) [Heat kernel and holomorphic Morse inequalities for a line bundle with degenerate curvature] *Bull. Sci. Math.* (2) **116** (1992), *no.* 2, 167–183. (Jürgen Eichhorn) **93k:32068** 32L10 (58G11)

Boucher, R. L. (*with* Bennighof, J. K.) Exact minimum-time control of a distributed system using a traveling wave formulation. *J. Optim. Theory Appl.* **73** (1992), *no.* 1, 149–167. (Ovidiu Cârjă) **93e:49007** 49J20 (49J30, 49K20, 49K30, 49M30)

Boucher, Wayne Global analysis of a two-allele mating system. (English summary) *J. Math. Biol.* **30** (1992), *no.* 8, 765–773. (Mark D. Roberts) **93h:92024** 92D25 (92D10)

— A deterministic analysis of self-incompatibility alleles. (English summary) *J. Math. Biol.* **31** (1993), *no.* 2, 149–155. 92D10

Boucherie, Richard J. A note on the transient behaviour of the Engset loss model. (English summary) *Comm. Statist. Stochastic Models* **9** (1993), *no.* 1, 145–156. (Summary) **93k:60223** 60K25

— (*with* van Dijk, Nico M.) A generalization of Norton's theorem for queueing networks. (English summary) *Queueing Systems Theory Appl.* **13** (1993), *no.* 1-3, 251–289. (Summary) **93m:60178** 60K25 (90B22)

Bouchet, André Matroid connectivity and fundamental graphs. Proceedings of the Twenty-second Southeastern Conference on Combinatorics, Graph Theory, and Computing (Baton Rouge, LA, 1991). *Congr. Numer.* **85** (1991), 81–88. (András Recski) **93b:05032** 05B35

— (*with* Dress, Andreas W. M.; Havel, Timothy F.) Δ-matroids and metroids. *Adv. Math.* **91** (1992), *no.* 1, 136–142. (Laura Bertani) **93e:05018** 05B35

— A characterization of unimodular orientations of simple graphs. *J. Combin. Theory Ser. B* **56** (1992), *no.* 1, 45–54. (Yousef Alavi) **93i:05092** 05C50

Bouchitté, Guy (*with* Valadier, Michel) Multifonctions s.c.i. et régularisée s.c.i. essentielle. [L.s.c. multifunctions and essentially l.s.c. regularization] *Analyse non linéaire* (*Perpignan*, 1987), 122–149, *Univ. Montréal, Montreal, PQ*, 1989. (*see* **93h:49003**) 49J45 (26B05)

— (*with* Suquet, Pierre) Homogenization, plasticity and yield design. *Composite media and homogenization theory* (*Trieste*, 1990), 107–133, *Progr. Nonlinear Differential Equations Appl.*, 5, *Birkhäuser Boston, Boston, MA*, 1991. (Alexander Belyaev) **93f:73008** 73B27 (49Q10, 73E05, 73K20, 73V25)

— (*with* Lidouh, Abdel; Suquet, Pierre) Homogénéisation de frontière pour la modélisation du contact entre un corps déformable non linéaire et un corps rigide. (English summary) [Boundary homogenization and modeling of friction between a nonlinear deformable body and a rigid body] *C. R. Acad. Sci. Paris Sér. I Math.* **313** (1991), *no.* 13, 967–972. (Andro Mikelić) **93c:73090** 73T05 (49J45, 73B27)

— (*with* Buttazzo, Giuseppe) Integral representation of nonconvex functionals defined on measures. (French summary) *Ann. Inst. H. Poincaré Anal. Non Linéaire* **9** (1992), *no.* 1, 101–117. (Richard Becker) **93e:46036** 46E27 (46G99, 49J45, 49Q20)

Bouchitte, Vincent (*with* Jegou, Roland; Rampon, Jean-Xavier) Ordres représentables par des translations de segments dans le plan. (English and French summaries) [Representing orders by translating line-segments in the plane] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 13, 1427–1430. (Summary) **93j:68218** 68U10

Bouchon, Bernadette Questionnaires with fuzzy and probabilistic elements. *Combining fuzzy imprecision with probabilistic uncertainty in decision making*, 322–330, *Lecture Notes in Econom. and Math. Systems*, 310, *Springer, Berlin*, 1988. (*see* **93c:90002**) 94A50 (04A72, 68T20)

— Inferences with inaccuracy and uncertainty in expert systems. *Fuzzy expert systems*, 43–54, *CRC, Boca Raton, FL*, 1992. (*see* **93g:68133**) 68T35 (03B52)

Bouchut, François Existence and uniqueness of a global smooth solution for the Vlasov-Poisson-Fokker-Planck system in three dimensions. (English summary) *J. Funct. Anal.* **111** (1993), *no.* 1, 239–258. (Klaus Dressler) **93m:82045** 82D10 (35Q99, 45K05, 82C31)

Boudet, Roger Les algèbres de Clifford et les transformations des multivecteurs. L'algèbre de Clifford de $\mathbf{R}(1, 3)$ et la constante de Planck. (English summary) [Clifford algebras and multivector transforms. The Clifford algebra in $\mathbf{R}(1, 3)$ and the Planck constant] *Clifford algebras and their applications in mathematical physics* (*Montpellier*, 1989), 343–352, *Fund. Theories Phys.*, 47, *Kluwer Acad. Publ., Dordrecht*, 1992. (Dominique Lambert) **93k:81085** 81R25 (15A66)

— *see also* **Clifford algebras and their applications in mathematical physics, 93f:00011**

Boudjellaba, Hafida (*with* Dufour, Jean-Marie; Roy, Roch) Testing causality between two vectors in multivariate autoregressive moving average models. (English summary) *J. Amer. Statist. Assoc.* **87** (1992), *no.* 420, 1082–1090. (Summary) **93m:62193** 62M10

Boudol, Gérard (*with* Berry, Gérard) The chemical abstract machine. Second Workshop on Concurrency and Compositionality (San Miniato, 1990). *Theoret. Comput. Sci.* **96** (1992), *no.* 1, 217–248. (David B. Benson) **93e:68018** 68Q10 (68Q05, 68Q55)

— (*with* Larsen, Kim G.) Graphical versus logical specifications. (English summary) Fifteenth Colloquium on Trees in Algebra and Programming (CAAP '90) (Copenhagen, 1990). *Theoret. Comput. Sci.* **106** (1992), *no.* 1, 3–20. (Summary) **93i:68127** 68Q60 (03B70, 68Q10)

Bougé, Luc (*with* Cosnard, Michel) Recouvrement d'une pièce trapézoïdale par des dominos. (English and French summaries) [Tiling a trapezoidal region with dominoes] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 2, 221–226. (Summary) **93j:05034** 05B45 (68U05)

Bougerol, Philippe Filtre de Kalman-Bucy et exposants de Lyapounov. (English and French summaries) [Kalman-Bucy filter and Lyapunov exponents] *Lyapunov exponents* (*Oberwolfach*, 1990), 112–122, *Lecture Notes in Math.*, 1486, *Springer, Berlin*, 1991. (Summary) **93f:93124** 93E11

— Some results on the filtering Riccati equation with random parameters. *Applied stochastic analysis* (*New Brunswick, NJ*, 1991), 30–37, *Lecture Notes in Control and Inform. Sci.*, 177, *Springer, Berlin*, 1992. (Akira Ichikawa) **93e:93061** 93E11

— (*with* Picard, Nico) Strict stationarity of generalized autoregressive processes. (English summary) *Ann. Probab.* **20** (1992), *no.* 4, 1714–1730. (Mohsen Pourahmadi) **93i:60071** 60G10 (62M10, 93E15)

— (*with* Picard, Nico) Stationarity of GARCH processes and of some nonnegative time series. *J. Econometrics* **52** (1992), *no.* 1-2, 115–127. (Peter M. Robinson) **93g:62115** 62M10 (60H99)

Boughattas, Sedki Résultats positifs et négatifs sur l'existence d'une partie entière dans les corps ordonnés. (English summary) [Ordered fields with and without an integer part] *C. R. Acad. Sci. Paris Sér. I Math.* **313** (1991), *no.* 11, 701–704. (Danielle Gondard-Cozette) **93c:03045** 03C60 (03C20, 12J15)

— L'arithmétique ouverte et ses modèles non-standards. [Open arithmetic and its nonstandard models] *J. Symbolic Logic* **56** (1991), *no.* 2, 700–714. (Peter Clote) **93a:03066** 03F30 (03H15)

Bougourzi, A. H. (*with* Ho-Kim, Q.; Kikuchi, Yukio; Lam, C. S.) Screening currents in free-field representations of Kac-Moody algebras. *Internat. J. Modern Phys. A* **6** (1991), *no.* 23, 4181–4208. (Alex Jay Feingold) **93a:17025** 17B67 (81R10, 81T40)

— Null states of the fractional $SL(2)_k$ current algebra via the free field approach. (English summary) *Phys. Lett. B* **286** (1992), *no.* 3-4, 279–284. (Summary) **93d:81066** 81R10 (81T40)

Bougourzi, H. A. (*with* Kikuchi, Yukio) Bernstein-Gel'fand-Gel'fand resolution of W_3 algebra in the lattice approach. *Internat. J. Modern Phys. A* **7** (1992), *no.* 10, 2219–2244. (Katsushi Ito) **93c:81063** 81R10 (17B10, 81T40)

Bouhaik, Mostafa (*with* Gallardo, Léonard) Un théorème limite central dans un hypergroupe bidimensionnel. (English summary) [A central limit theorem in a two-dimensional hypergroup] *Ann. Inst. H. Poincaré Probab. Statist.* **28** (1992), *no.* 1, 47–61. (H. Heyer) **93e:43001** 43A05 (43A62, 60B99, 60F05)

el Bouhtouri, A. *see* **El Bouhtouri, A.**

Boukas, Andreas An example of a quantum exponential process. *Monatsh. Math.* **112** (1991), *no.* 3, 209–215. (Robin Hudson) **93g:81061** 81S25 (47N50, 81S05)

Boukas, El-Kebir Techniques for flow control and preventive maintenance in manufacturing systems. *Control and dynamic systems, Vol.* 48, 327–366, *Academic Press, San Diego, CA*, 1991. (Onésimo Hernández Lerma) **93a:93011** 93A30 (90B25, 93E20)

— (*with* Haurie, Alain; van Delft, Ch.) A turnpike improvement algorithm for piecewise deterministic control. (English summary) *Optimal Control Appl. Methods* **12** (1991), *no.* 1, 1–18. 49M05

Boukraa, S. (*with* Maillard, J.-M.) Taxonomy of the sixteen-vertex models. (English summary) *Internat. J. Modern Phys. B* **6** (1992), *no.* 14, 2559–2574. (Peter J. Forrester) **93j:82018** 82B23

Boukricha, Abderrahman Perturbation par des mesures régulières. [Perturbation by regular measures] Analyse complexe (Bucharest, 1989). *Rev. Roumaine Math. Pures Appl.* **36** (1991), *no.* 1-2, 33–36. (Tadashi Murazawa) **93a:31018** 31D05 (60J35, 60J45)

— Principe de Picard pour les mesures invariantes par rotation et applications. [The Picard principle for rotation-invariant measures, and applications] *Potential theory* (*Nagoya*, 1990), 161–169, *de Gruyter, Berlin*, 1992. (Noriaki Suzuki) **93f:31012** 31C35 (35J10)

Boulanger, Ph. Propagation of small-amplitude waves in a deformed hemitropic dielectric. *Proc. Roy. Irish Acad. Sect. A* **90** (1990), *no.* 2, 139–163. (Gérard A. Maugin) **93a:73069** 73R05 (73D15, 78A99)

— (*with* Hayes, Michael A.; Rajagopal, K. R.) Some unsteady exact solutions in the Navier-Stokes and the second grade fluid theories. (English summary) *Stability Appl. Anal. Contin. Media* **1** (1991), *no.* 2, 185–204. (C. Fetecău) **93i:76022** 76D05 (76A05)

— (*with* Hayes, Michael A.) Shear, shear stress and shearing. (English summary) Elastic waves and related topics (Dublin, 1991). *J. Mech. Phys. Solids* **40** (1992), *no.* 7, 1449–1457. (Summary) **93h:73009** 73C02 (73G05)

— (*with* Hayes, Michael A.) Static and propagating exponential solutions of Maxwell's equations for crystals. (English summary) *Proc. Roy. Soc. London Ser. A* **438** (1992), *no.* 1904, 485–510. (Summary) **93g:78005** 78A25

Boulatov, D. V. *see* **Bulatov, D. V.**

Boulatov, Dmitri *see* **Bulatov, D. V.**

Bouleau, Nicolas (*with* Hirsch, Francis) ★ Dirichlet forms and analysis on Wiener space. de Gruyter Studies in Mathematics, 14. *Walter de Gruyter & Co., Berlin*, 1991. x+325 *pp. ISBN* 3-11-012919-1 (David Nualart) **93e:60107** 60H07 (31C25, 60G30, 60J45)

— On numerical integration by the shift and application to Wiener space. *Acta Appl. Math.* **25** (1991), *no.* 3, 201–220. (Michèle Mastrangelo-Dehen) **93f:60096** 60H99 (28C20, 28D05, 60F15, 65C05)

— Irregular and simulatable functionals on Wiener space. (English summary) *Probabilités numériques*, 39–53, *Collect. Didact.*, 10, *INRIA, Rocquencourt*, 1992. (*see* **93k:65002**) 65C20

— Suite de points d'un espace de Hilbert distribuée selon la promesure gaussienne canonique. (English and French summaries) [Sequence of points in a Hilbert space distributed according to the canonical cylindrical Gaussian measure] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 12, 1297–1300. (Summary) **93h:60005** 60B11 (28C20, 60H07)

— *see also* **Numerical probability, 93k:65002**

Boullart, L. (*with* Ramon, H.; De Baerdemaeker, J.) A generalized mathematical modelling technique for complex mechanical systems seen from the viewpoint of control engineering. (English summary) *Mathematical and intelligent models in system simulation, I, II* (*Brussels*, 1990), 3–9, *IMACS Ann. Comput. Appl. Math.*, 10, 11, *Baltzer, Basel*, 1991. (*see* **93c:93005**) 93C85

Boulmaarouf, Zineb The Laffey-West decomposition revisited. *Proc. Roy. Irish Acad. Sect. A* **90** (1990), *no.* 2, 227–234. (Harro Heuser) **93b:47018** 47A53

Boulton-Stone, J. M. A comparison of boundary integral methods for studying the motion of a two-dimensional bubble in an infinite fluid. (English summary) *Comput. Methods Appl. Mech. Engrg.* **102** (1993), *no.* 2, 213–234. (Summary) **93k:76007** 76B10 (76M15, 76M25)

— A two-dimensional bubble near a free surface. (English summary) *J. Engrg. Math.* **27** (1993), *no.* 1, 73–87. (Summary) **93i:76021** 76C99 (76B10)

Boulware, David G. Quantum field theory in spaces with closed timelike curves. (English summary) *Phys. Rev. D* (3) **46** (1992), *no.* 10, 4421–4441. (Michael B. Mensky) **93m:81107** 81T20 (81Q05, 81T40, 83C75)

Boumahdi, Rachid (*with* Thomas, Alban) Estimation des modèles à deux régimes avec des données de panel. (English and French summaries) [Estimation of models with two regimes and panel data] *Ann. Économ. Statist.* **1992,** *no.* 28, 125–142. 62P20

Bountis, Tassos C. What can complex time tell us about real time dynamics? (English summary) *Internat. J. Bifur. Chaos Appl. Sci. Engrg.* **2** (1992), *no.* 2, 217–232. (Ji-Fa Jiang) **93k:58165** 58F14 (34C35, 58F05)

— *see also* **Chaotic dynamics, 93i:58004**

Bouquet, S. (*with* Dewisme, A.) First integrals of Hamiltonian and non-Hamiltonian systems and chaos. (English summary) *Nonlinear evolution equations and dynamical systems (Baia Verde,* 1991), 395–403, *World Sci. Publishing, River Edge, NJ,* 1992. (Summary) **93h:58051** 58F05 (34C99, 58F13, 70H05, 70K50)

Bourbaki, Nicolas *see* **Corry, Leo, 93h:00007**

Bourdaud, Gérard Le calcul fonctionnel dans les espaces de Sobolev. [Functional calculus in Sobolev spaces] *Invent. Math.* **104** (1991), *no.* 2, 435–446. (A. V. Bukhvalov) **93b:46053** 46E35 (47B38)

— La trivialité du calcul fonctionnel dans l'espace $H^{3/2}(\mathbf{R}^4)$. (English summary) [The functional calculus is trivial on $H^{3/2}(\mathbf{R}^4)$] *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 3, 187–190. (P. Szeptycki) **93b:46054** 46E35

— (*with* El Djalil Kateb, Mohamed) Calcul fonctionnel dans l'espace de Sobolev fractionnaire. [Functional calculus in fractional Sobolev spaces] *Math. Z.* **210** (1992), *no.* 4, 607–613. (Takahide Kurokawa) **93i:46058** 46E35 (26B40, 47B38)

— Le calcul fonctionnel dans l'espace de Besov critique. [Functional calculus in the critical Besov space] *Proc. Amer. Math. Soc.* **116** (1992), *no.* 4, 983–986. (A. V. Bukhvalov) **93b:46052** 46E35 (47B38)

Bourdeau, Michelle Hilda (*with* Mlawer, Eli J.; Riggs, Harold; Schnitzer, Howard J.) Topological Landau-Ginzburg matter from $\mathrm{Sp}(N)_K$ fusion rings. *Modern Phys. Lett. A* **7** (1992), *no.* 8, 689–700. (Richard H. Capps) **93e:81037** 81R10 (81T40)

— (*with* Mlawer, Eli J.; Riggs, Harold; Schnitzer, Howard J.) The quasi-rational fusion structure of $\mathrm{SU}(m|n)$ Chern-Simons and WZW theories. *Nuclear Phys. B* **372** (1992), *no.* 1-2, 303–358. (Uwe Grimm) **93i:81267** 81T60 (17B37, 81R50, 81T40)

— (*with* Sorkin, R. D.) When can identical particles collide? *Phys. Rev. D* (3) **45** (1992), *no.* 2, 687–696. (Tuan W. Chen) **93c:81039** 81Q10 (81V35)

Bourdon, Paul S. (*with* Axler, Sheldon; Ramey, Wade) ★ Harmonic function theory. Graduate Texts in Mathematics, 137. *Springer-Verlag, New York,* 1992. xii+231 *pp. ISBN* 0-387-97875-5 (Christopher Bishop) **93f:31001** 31–01

— Invariant manifolds of hypercyclic vectors. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 3, 845–847. (Thomas Hoover) **93i:47002** 47A05

de la Bourdonnaye, Armel *see* **de La Bourdonnaye, Armel**

Bourgain, J. The Riesz-Raikov theorem for algebraic numbers. *Festschrift in honor of I. I. Piatetski-Shapiro on the occasion of his sixtieth birthday, Part II* (*Ramat Aviv,* 1989), 1–45, *Israel Math. Conf. Proc.,* 3, *Weizmann, Jerusalem,* 1990. (R. G. Stoneham) **93k:11070** 11K70 (11K55, 11R04)

— L^p-estimates for oscillatory integrals in several variables. *Geom. Funct. Anal.* **1** (1991), *no.* 4, 321–374. (Sundaram Thangavelu) **93e:42021** 42B10 (42B20, 47G10)

— A remark on Schrödinger operators. (English summary) *Israel J. Math.* **77** (1992), *no.* 1-2, 1–16. (Summary) **93k:35071** 35J10

Bourgat, Jean-François (*with* Le Tallec, Patrick; Tidriri, Driss; Qiu, Youchim) Numerical coupling of nonconservative or kinetic models with the conservative compressible Navier-Stokes equations. (English summary) *Fifth International Symposium on Domain Decomposition Methods for Partial Differential Equations* (*Norfolk, VA,* 1991), 420–440, *SIAM, Philadelphia, PA,* 1992. (*see* **93g:65009**) 76M25 (65M99, 76N10)

Bourgault, Y. (*with* Caussignac, P.) Ill-posedness of a shock-fitting problem for parabolized Navier-Stokes equations. *European J. Mech. B Fluids* **11** (1992), *no.* 3, 309–315. (Summary) **93c:76056** 76L05 (76J20)

Bourgeat, A. (*with* El Amri, Hassan; Tapiéro, R.) Existence d'une taille critique pour une fissure dans un milieu poreux. (English summary) [Existence of a critical ratio for a fissure in a porous medium] *Mathématiques appliquées aux sciences de l'ingénieur* (*Santiago,* 1989), 67–80, *Cépaduès, Toulouse,* 1991. (Zvonimir Tutek) **93c:76076** 76S05 (35Q30, 73B27, 73N20, 76D07)

Bourgeois, J. (*with* Chevalier, P.-A.; Picasso, M.; Rappaz, J.; Touzani, R.) Magnetohydrodynamic problem in the aluminum industry. *Finite elements in fluids, Vol.* 8 (*Huntsville, AL,* 1989), 479–508, *Ser. Comput. Phys. Process. Mech. Thermal Sci., Hemisphere, Washington, DC,* 1992. (*see* **93e:76050**) 76W05

Bourghawi, Suad M. (*with* Dash, S. P.; El-Amaari, Ali) Randomization analysis of incomplete data in some basic designs. (English summary) *Biometrical J.* **35** (1993), *no.* 1, 81–97. 62K15

Bourguignon, Jean-Pierre Stabilité par déformation non-linéaire de la métrique de Minkowski (d'après D. Christodoulou et S. Klainerman). [Stability of the Minkowski metric under nonlinear deformation (after D. Christodoulou and S. Klainerman)] Séminaire Bourbaki, Vol. 1990/91. *Astérisque No.* 201-203 (1991), *Exp. No.* 740, 321–358 (1992). (Philippe-A. Dionne) **93d:58164** 58G16 (58G17, 83C05)

— (*with* Gauduchon, Paul) Spineurs, opérateurs de Dirac et variations de métriques. (English summary) [Spinors, Dirac operators and variations of metrics] *Comm. Math. Phys.* **144** (1992), *no.* 3, 581–599. (Oussama Hijazi) **93h:58164** 58G30 (58G03, 58G25)

— Questions au Professeur Hirzebruch. (English) [Questions to Professor Hirzebruch] *Gaz. Math. No.* 53 (1992), 11–19. (Editors) **93h:01036** 01A70

Bourlard, Maryse (*with* Dauge, Monique; Lubuma, Mbaro-Saman; Nicaise, Serge) Coefficients of the singularities for elliptic boundary value problems on domains with conical points. III. Finite element methods on polygonal domains. *SIAM J. Numer. Anal.* **29** (1992), *no.* 1, 136–155. (Enrique Zuazua) **93a:65146** 65N30 (35A20, 35J05)

Bourn, Dominique Normalization equivalence, kernel equivalence and affine categories. *Category theory* (*Como,* 1990), 43–62, *Lecture Notes in Math.,* 1488, *Springer, Berlin,* 1991. (Walter Tholen) **93i:18011** 18E05 (18A20, 18A30, 18D30)

— Note on a submonadicity. (French summary) *Cahiers Topologie Géom. Différentielle Catégoriques* **33** (1992), *no.* 3, 199–206. (Summary) **93g:18011** 18C20

Bourne, J. P. (*with* Walton, J. R.) On a dynamically accelerating crack in an Achenbach-Chao viscoelastic solid. (English summary) *Internat. J. Engrg. Sci.* **31** (1993), *no.* 4, 569–581. (Summary) **93k:73069** 73M25 (73D99, 73F15)

Bourneuf, Éric La structure de la théorie physique et son contenu empirique. Le problème des idéalisations et des fictions. [The structure of physical theory and its empirical content. The problem of idealizations and fictions] *Dialogue* **30** (1991), *no.* 4, 447–472 (1992). 03B30 (00A30, 00A79)

Bourque, Keith (*with* Ligh, Steve) On GCD and LCM matrices. (English summary) *Linear Algebra Appl.* **174** (1992), 65–74. (Summary) **93h:15005** 15A09

Bourquin, Frédéric (*with* d'Hennezel, Frédéric) Application of domain decomposition techniques to modal synthesis for eigenvalue problems. (English summary) *Fifth International Symposium on Domain Decomposition Methods for Partial Differential Equations* (*Norfolk, VA,* 1991), 214–223, *SIAM, Philadelphia, PA,* 1992. (*see* **93g:65009**) 65N25 (65N55)

— (*with* Ciarlet, Philippe G.; Geymonat, Giuseppe; Raoult, Annie) Γ-convergence et analyse asymptotique des plaques minces. (English and French summaries) [Γ-convergence and asymptotic analysis of thin plates] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 9, 1017–1024. (Luis Trabucho) **93g:73008** 73B27 (49J45, 73K10, 73V25)

— (*with* d'Hennezel, Frédéric) Numerical study of an intrinsic component mode synthesis method. (English summary) *Comput. Methods Appl. Mech. Engrg.* **97** (1992), *no.* 1, 49–76. (Summary) **93g:73082** 73K12 (73D30, 73V20)

— (*with* d'Hennezel, Frédéric) Intrinsic component mode synthesis and plate vibrations. (English summary) Second World Congress of Computational Mechanics (Stuttgart, 1990). *Comput. & Structures* **44** (1992), *no.* 1-2, 315–324. (Summary) **93f:73065** 73K12 (73K10, 73V20)

— Component mode synthesis and eigenvalues of second order operators: discretization and algorithm. (French summary) *RAIRO Modél. Math. Anal. Numér.* **26** (1992), *no.* 3, 385–423. (Summary) **93a:65140** 65N25 (65N30, 65N55)

Boury, Pierre (*with* Adjamagbo, Kossivi) A resultant criterion and formula for the inversion of a rational map in two variables. *J. Pure Appl. Algebra* **79** (1992), *no.* 1, 1–13. (Summary) **93d:14024** 14E07

Bourzutschky, M. S. (*with* Cross, M. C.) Coupled map models for chaos in extended systems. *Chaos* **2** (1992), *no.* 2, 173–181. (Summary) **93c:58131** 58F13 (58F40, 76F20)

Bouslama, Faouzi (*with* Ichikawa, Akira) Fuzzy control rules and their natural control laws. *Fuzzy Sets and Systems* **48** (1992), *no.* 1, 65–86. (Summary) **93k:93063** 93C42 (04A72)

— (*with* Ichikawa, Akira) Application of limit fuzzy controllers to stability analysis. (English summary) *Fuzzy Sets and Systems* **49** (1992), *no.* 2, 103–120. 93C42 (04A72)

Bouslous, H. (*with* Doubabi, S.; El Bagdouri, M.) Étude numérique d'un problème de commande pour un système thermique non linéaire. (English and French summaries) [Numerical study of a control problem for a nonlinear thermal system] *RAIRO Automat.-Prod. Inform. Ind.* **26** (1992), *no.* 3, 193–208. 49M07 (49K20)

Bousquet-Mélou, Mireille The number of minimal word chains computing the Thue-Morse word. (English summary) *Inform. Process. Lett.* **44** (1992), *no.* 2, 57–64. (Anton Černý) **93m:68139** 68R15

— Convex polyominoes and heaps of segments. *J. Phys. A* **25** (1992), *no.* 7, 1925–1934. (Ren Ding) **93f:05030** 05B50 (05A15, 82D25, 82D60)

— Convex polyominoes and algebraic languages. *J. Phys. A* **25** (1992), *no.* 7, 1935–1944. (Ren Ding) **93f:05031** 05B50 (05A15, 68U05, 82D25, 82D60)

— Une bijection entre les polyominos convexes dirigés et les mots de Dyck bilatères. (English summary) [A bijection between convex directed polyominoes and bilateral Dyck words] *RAIRO Inform. Théor. Appl.* **26** (1992), *no.* 3, 205–219. (Summary) **93d:68056** 68R05 (05A15, 05B50, 68R15)

Boussejra, Abdelhamid (*with* Intissar, Ahmed) Caractérisation des intégrales de Poisson-Szegő de $L^2(\partial B^n)$ dans la boule de Bergman B^n, $n \geq 2$. (English and French summaries) [Characterization of the Poisson-Szegő integrals of $L^2(\partial B^n)$ in the Bergman ball B^n, $n \geq 2$] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 13, 1353–1357. (I. P. Ramadanov) **93k:32006** 32A37 (32A17, 32A25, 32A45)

Boustany, F. (*with* d'Andréa-Novel, B.; Conrad, Francis) Control of an overhead crane: stabilization of flexibilities. *Boundary control and boundary variation* (*Sophia-Antipolis,* 1990), 1–26, *Lecture Notes in Control and Inform. Sci.,* 178, *Springer, Berlin,* 1992. (*see* **93b:49001**) 93D15 (93C95)

Boutahar, Mohamed Distribution asymptotique de l'estimateur des moindres carrés. Cas des modèles ARX(p,s) instables. (English summary) [Asymptotic distribution of least-squares estimates in unstable ARX(p,s) models] *Stochastics Stochastics Rep.* **37** (1991), *no.* 1-2, 105–126. (N. Leonenko) **93e:62241** 62M15 (62F05, 62F12, 62M10)

— (*with* Deniau, Claude) Distribution limite de l'estimateur des moindres carrés dans un modèle autorégressif vectoriel stable avec signal exogène déterministe. (English summary) [Limiting distribution of least-squares estimates in a stable multivariate autoregressive model with deterministic exogenous signal] *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 4, 301–304. (Summary) **93a:62125** 62M10

— (*with* Deniau, Claude) Almost sure convergence of least squares estimates for regular multivariate ARX systems. (English summary) *Systems Control Lett.* **19** (1992), *no.* 2, 157–163. (Summary) **93f:62122** 62M10 (60F15, 93E24)

Boutayeb, M. (*with* Darouach, Mohamed) Recursive state and parameter estimation of linear multivariable singular systems. (English summary) *Internat. J. Systems Sci.* **23** (1992), *no.* 10, 1785–1791. 93E10

Boutefnouchet, Mahmoud L'analyse des éléments aux bords pour le problème aux limites mixte biharmonique. [Boundary-element analysis for a biharmonic mixed boundary value problem] *Demonstratio Math.* **25** (1992), *no.* 1-2, 79–105. (H. Marcinkowska) **93g:65150** 65N38

Boutet de Monvel, Anne *see* **Boutet de Monvel-Berthier, Anne-Marie**

Boutet de Monvel, L. Singularity of the Bergman kernel. *Complex geometry* (*Osaka,* 1990), 13–29, *Lecture Notes in Pure and Appl. Math.,* 143, *Dekker, New York,* 1993. (Zong Yuan Yao) **93k:32047** 32H10

Boutet de Monvel-Berthier, Anne-Marie On the eigenvalues of a perturbed harmonic oscillator. (English summary) *Recent developments in quantum mechanics* (*Poiana Braşov,* 1989), 209–222, *Math. Phys. Stud.,* 12, *Kluwer Acad. Publ., Dordrecht,* 1991. (H. Baumgärtel) **93m:81026** 81Q10 (35J10, 47A55, 47F05, 47N50)

— (*with* Georgescu, Vladimir; Purice, Radu) A boundary value problem related to the Ginzburg-Landau model. *Comm. Math. Phys.* **142** (1991), *no.* 1, 1–23. (Ioan Bâldea) **93a:82067** 82D55 (58E50)

— (*with* Manda, Dragos; Purice, Radu) The commutator method for form-relatively compact perturbations. *Lett. Math. Phys.* **22** (1991), *no.* 3, 211–223. (Takashi Ichinose) **93d:47143** 47N50 (35J10, 35P05, 47A55, 47F05, 81U10)

— *see also* **Recent developments in quantum mechanics, 93e:81007**

Boutilier, Craig A logic for revision and subjunctive queries. (English summary) *AAAI-92. Proceedings, Tenth National Conference on Artificial Intelligence (San Jose, CA, 1992)*, 609–615, *Amer. Assoc. Artif. Intell., Menlo Park, CA*, 1992. (Summary) **93j:68187** 68T27 (03B60, 03B70, 68T30)

Boutot, J.-F. (*with* Carayol, H.) Uniformisation *p*-adique des courbes de Shimura: les théorèmes de Čerednik et de Drinfel'd. (English summary) [*p*-adic uniformization of Shimura curves: the theorems of Cherednik and Drinfel'd] *Courbes modulaires et courbes de Shimura (Orsay, 1987/1988). Astérisque No.* 196-197 (1991), 7, 45–158 (1992). (Min Ho Lee) **93c:11041** 11G18 (14G20, 14G35)

Boutros, Y. Z. (*with* Abd-el-Malek, M. B.; Badran, N. A.) Group-theoretic approach for solving time-independent free-convective boundary layer flow on a nonisothermal vertical flat plate. (Russian and Polish summaries) *Arch. Mech. (Arch. Mech. Stos.)* **42** (1990), *no.* 3, 377–395 (1991). (From the summary) **93a:76030** 76D10 (76R10, 80A20)

Boutroux, Pierre ★ L'idéal scientifique des mathématiciens dans l'antiquité et dans les temps modernes. (French) [The scientific ideal of mathematicians in antiquity and in modern times] Reprint of the 1920 original. *Éditions Jacques Gabay, Sceaux*, 1992. iv+275 *pp. ISBN* 2-87647-084-5 (Pierre Crépel) **93h:01061** 01A75 (01A05)

Bouvier, Catherine (*with* Gonzalez-Sprinberg, Gerard) *G*-désingularisations de variétés toriques. (English and French summaries) [*G*-desingularizations of toric varieties] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 7, 817–820. (Summary) **93h:14038** 14M25

Bouwkamp, C. J. (*with* Duijvestijn, A. J. W.) ★ Catalogue of simple perfect squared squares of orders 21 through 25. EUT Report-WSK, 92-03. *Eindhoven University of Technology, Department of Mathematics and Computing Science, Eindhoven*, 1992. ii+207 *pp.* 05B15

— On some new simple perfect squared squares. (English summary) A collection of contributions in honour of Jack van Lint. *Discrete Math.* **106/107** (1992), 67–75. (Ren Ding) **93i:52023** 52B45 (05B45, 51M20)

Bouwknegt, Peter (*with* McCarthy, James G.; Pilch, Krzysztof) Fock space resolutions of the Virasoro highest weight modules with $c \leq 1$. *Lett. Math. Phys.* **23** (1991), *no.* 3, 193–204. (Yu Ting Jia) **93e:17039** 17B68 (17B81, 18G10, 81T40)

— (*with* McCarthy, James G.; Pilch, Krzysztof) BRST analysis of physical states for 2D gravity coupled to $c \leq 1$ matter. *Comm. Math. Phys.* **145** (1992), *no.* 3, 541–560. (Summary) **93h:81143** 81T70 (17B65, 81R10)

— (*with* McCarthy, James G.; Pilch, Krzysztof) Ground ring for the two-dimensional NSR string. *Nuclear Phys. B* **377** (1992), *no.* 3, 541–570. (Stanislav Z. Pakuliak) **93f:81127** 81T40 (17B56, 81T60, 81T70)

Bouyssou, Denis A note on the sum of differences choice function for fuzzy preference relations. *Fuzzy Sets and Systems* **47** (1992), *no.* 2, 197–202. (Summary) **93c:90005** 90A05 (04A72)

Bouza Herrera, Carlos Bounding the expected approximation error in stochastic linear programming with complete fixed recourse. *System modelling and optimization (Zurich*, 1991), 541–545, *Lecture Notes in Control and Inform. Sci.*, 180, *Springer, Berlin*, 1992. (*see* **93e:90003**) 90C15

Bouzraa, Habib (*with* Kaïdi, El Amin Mokhtar) Analogues du théorème de Skornyakov-San Soucie. [Analogues of the Skornyakov-San Soucie theorem] *Nonassociative algebraic models (Zaragoza*, 1989), 25–31, *Nova Sci. Publ., Commack, NY*, 1992. (Antonio Fernández López) **93g:17047** 17C65 (17A30, 17D05)

Bovbel', D. O. (*with* Kharisov, V. N.) Algorithms for filtering the parameters of signals on the basis of new approximation methods. *Soviet J. Comput. Systems Sci.* **30** (1992), *no.* 4, 98–107; *translated from Izv. Akad. Nauk SSSR Tekhn. Kibernet.* **1991,** *no.* 4, 70–80 (*Russian. Russian summary*). 93E11 (93B40)

Bovdi, A. A. (*with* Strojnowski, A.) On the multiplicative subgroup of a group ring. *Topics in algebra, Part* 1 (*Warsaw*, 1988), 13–16, *Banach Center Publ.*, 26, *Part* 1, *PWN, Warsaw*, 1990. (D. A. R. Wallace) **93f:16030** 16S34 (16U60, 20C07)

— On the existence of a normal complement of a group in the multiplicative group of its group ring. (Russian. Ukrainian summary) *Ukrain. Mat. Zh.* **43** (1991), *no.* 7-8, 884–889; *translation in Ukrainian Math. J.* **43** (1991), *no.* 7-8, 826–830 (1992). (Summary) **93b:16061** 16U60

— On group algebras with solvable unit groups. *Proceedings of the International Conference on Algebra, Part* 1 (*Novosibirsk*, 1989), 81–90, *Contemp. Math.*, 131, *Part* 1, *Amer. Math. Soc., Providence, RI*, 1992. (Wolfgang Willems) **93e:16040** 16S34 (16U60, 20F18)

— (*with* Sehgal, Sudarshan K.) Unitary subgroup of integral group rings. (English summary) *Manuscripta Math.* **76** (1992), *no.* 2, 213–222. (Burkhard Külshammer) **93e:16041** 16S34 (20C10)

— (*with* Sehgal, Sudarshan K.) Unitary subgroup of integral group rings. (English summary) *Publ. Mat.* **36** (1992), *no.* 1, 197–204. (Ashwani Kumar Bhandari) **93j:16020** 16U60 (16S34, 20C05)

Bove, Antonio (*with* Bernardi, Enrico; Nishitani, Tatsuo) Levi conditions for hyperbolic operators with a stratified multiple variety. *Proc. Japan Acad. Ser. A Math. Sci.* **68** (1992), *no.* 3, 49–52. (Vesselin M. Petkov) **93h:58153** 58G17 (35L99)

Bovet, Daniel P. (*with* Varricchio, Stefano) On the regularity of languages on a binary alphabet generated by copying systems. (English summary) *Inform. Process. Lett.* **44** (1992), *no.* 3, 119–123. (Summary) **93j:68097** 68Q45

Bovier, Anton (*with* Külske, Christof) Stability of hierarchical interfaces in a random field model. (English summary) *J. Statist. Phys.* **69** (1992), *no.* 1-2, 79–110. (Flora Koukiou) **93h:82022** 82B24 (82B28, 82B44)

— (*with* Gayrard, Véronique) Rigorous bounds on the storage capacity of the dilute Hopfield model. (English summary) *J. Statist. Phys.* **69** (1992), *no.* 3-4, 597–627. (Philippe De Wilde) **93k:82049** 82C32 (92B20)

— (*with* Bellissard, Jean; Ghez, Jean-Michel) Gap labelling theorems for one-dimensional discrete Schrödinger operators. *Rev. Math. Phys.* **4** (1992), *no.* 1, 1–37. (G. V. Rozenblyum) **93f:47090** 47N50 (19K33, 39A12, 46L99, 47B39, 81Q10)

Bow, Sing-Tze ★ Pattern recognition and image preprocessing. Electrical Engineering and Electronics, 77. *Marcel Dekker, Inc., New York*, 1992. xiv+558 *pp. ISBN* 0-8247-8583-5 (From the preface) **93g:68001** 68-01 (68U10)

Bowcock, P. (*with* Watts, G. M. T.) On the classification of quantum W-algebras. *Nuclear Phys. B* **379** (1992), *no.* 1-2, 63–95. (Alex Jay Feingold) **93k:17026** 17B37 (17B68, 81R10, 81T40)

— Exceptional superconformal algebras. (English summary) *Nuclear Phys. B* **381** (1992), *no.* 1-2, 415–430. (Katsushi Ito) **93h:81042** 81R10 (17B68)

Bowditch, Brian H. Notes on Gromov's hyperbolicity criterion for path-metric spaces. *Group theory from a geometrical viewpoint (Trieste*, 1990), 64–167, *World Sci. Publishing, River Edge, NJ*, 1991. (Tadeusz Januszkiewicz) **93h:57002** 57M07 (53C23)

— Singular Euclidean structures on surfaces. *J. London Math. Soc.* (2) **44** (1991), *no.* 3, 553–565. (F. E. A. Johnson) **93f:57014** 57M50 (57N05)

Bowen, Alan C. Euclid's *Sectio canonis* and the history of Pythagoreanism. *Science and philosophy in classical Greece*, 167–187, *Sources Stud. Hist. Philos. Class. Sci.*, 2, *Garland, New York*, 1991. (*see* **93g:01015**) 01A20

— (*with* Goldstein, Bernard R.) The introduction of dated observations and precise measurement in Greek astronomy. *Arch. Hist. Exact Sci.* **43** (1991), *no.* 2, 93–132. (Raymond Mercier) **93a:01008** 01A20

— *see also* **Science and philosophy in classical Greece, 93g:01015**

Bowen, H. Ferrel (*with* Sharafeddin, Omar A.; Kouri, Donald J.; Hoffman, David K.) Numerical evaluation of spherical Bessel transforms via fast Fourier transforms. *J. Comput. Phys.* **100** (1992), *no.* 2, 294–296. (From the introduction) **93c:65028** 65D20 (33C55, 44A15, 65T20)

Bowen, James (*with* Bahler, Dennis) Conditional existence of variables in generalized constraint networks. (English summary) *AAAI-91. Proceedings, Ninth National Conference on Artificial Intelligence, Vol.* 1, 2, 215–220, *AAAI Press, Menlo Park, CA*, 1991. (Summary) **93j:68188** 68T27

— (*with* Lai, Robert; Bahler, Dennis) Lexical imprecision in fuzzy constraint networks. (English summary) *AAAI-92. Proceedings, Tenth National Conference on Artificial Intelligence (San Jose, CA*, 1992), 616–621, *Amer. Assoc. Artif. Intell., Menlo Park, CA*, 1992. (Summary) **93j:68189** 68T27 (03B52)

Bower, James M. (*with* Nelson, Mark E.) Dynamics of neural excitability. (English summary) 1990 *lectures in complex systems (Santa Fe, NM*, 1990), 325–341, *Santa Fe Inst. Stud. Sci. Complexity Lectures, III, Addison-Wesley, Redwood City, CA*, 1991. (Summary) **93h:92015** 92C20 (92B20, 92C05)

Bowers, Kenneth L. (*with* Lund, John; Carlson, Timothy S.) Fully sinc-Galerkin computation for boundary feedback stabilization. *J. Math. Systems Estim. Control* **1** (1991), *no.* 2, 165–182. (Takao Nambu) **93b:65144** 65M60 (65M12, 93C20, 93D15)

— (*with* Lund, John) ★ Sinc methods for quadrature and differential equations. *Society for Industrial and Applied Mathematics (SIAM), Philadelphia, PA*, 1992. x+304 *pp. ISBN* 0-89871-298-X (Reinhard Scholz) **93i:65004** 65-02 (65L60, 65M60)

— (*with* McArthur, Kelly M.; Smith, Ralph C.; Lund, John) The sinc-Galerkin method for parameter-dependent selfadjoint problems. *Appl. Math. Comput.* **50** (1992), *no.* 2-3, 175–202. (Ian Gladwell) **93g:65104** 65L60 (65L10)

— (*with* Smith, Ralph C.) Sinc-Galerkin estimation of diffusivity in parabolic problems. (English summary) *Inverse Problems* **9** (1993), *no.* 1, 113–135. (Summary) **93m:65146** 65M60 (35K10)

Bowers, Philip L. (*with* Stephenson, Kenneth) The set of circle packing points in the Teichmüller space of a surface of finite conformal type is dense. *Math. Proc. Cambridge Philos. Soc.* **111** (1992), *no.* 3, 487–513. (Robert Brooks) **93a:30050** 30F60 (52C15)

Bowick, Mark J. Quantum statistical mechanics and multiplicative number theory. *Thermal field theories (Ibaraki*, 1990), 315–323, *North-Holland Delta Ser., North-Holland, Amsterdam*, 1991. (M. Mendès France) **93e:82002** 82B03 (11Z50, 81T99)

— (*with* Anagnostopoulos, Konstantinos N.; Schwarz, Albert) The solution space of the unitary matrix model string equation and the Sato Grassmannian. (English summary) *Comm. Math. Phys.* **148** (1992), *no.* 3, 469–485. (Jacek Szmigielski) **93m:58046** 58F07 (58B25, 81T27, 81T40)

— (*with* Marinari, Enzo) Quantum gravity, random geometry and critical phenomena. (English summary) *Gen. Relativity Gravitation* **24** (1992), *no.* 12, 1209–1221. (Claus Kiefer) **93i:83043** 83C45 (81T27, 81T30)

Bowler, Andrew Faithful orbits in symmetric designs. (English summary) *Combinatorics '90 (Gaeta*, 1990), 61–68, *Ann. Discrete Math.*, 52, *North-Holland, Amsterdam*, 1992. (Summary) **93g:05028** 05B30

Bowles, R. I. (*with* Walton, A. G.; Smith, F. T.) Vortex-wave interaction in a strong adverse pressure gradient. (English summary) *Instability, transition, and turbulence (Hampton, VA*, 1991), 79–91, *ICASE/NASA LaRC Ser., Springer, New York*, 1992. (Summary) **93k:76051** 76E30 (76D10, 76N20)

— (*with* Smith, F. T.) The standing hydraulic jump: theory, computations and comparisons with experiments. (English summary) *J. Fluid Mech.* **242** (1992), 145–168. (Summary) **93f:76038** 76D99 (76D10, 76D15, 76D45)

Bowman, K. O. (*with* Shenton, L. R.) Some exact expressions for the mean and higher moments of functions of sample moments. (English summary) *Ann. Inst. Statist. Math.* **44** (1992), *no.* 4, 781–798. 62E15

— (*with* Kastenbaum, Marvin A.; Shenton, L. R.) The negative hypergeometric distribution and estimation by moments. *Comm. Statist. Simulation Comput.* **21** (1992), *no.* 2, 301–332. 62E15

Box, George (*with* Kramer, Tim) Statistical process monitoring and feedback adjustment—a discussion. (English summary) With discussion and a reply by the authors. *Technometrics* **34** (1992), *no.* 3, 251–285. (Summary) **93e:62253** 62N10

Boxall, J. (*with* Bavencoffe, Edgard) Quelques propriétés arithmétiques des points de 3-division de la jacobienne de $y^2 = x^5 - 1$. (French summary) [Some arithmetical properties of the 3-torsion points of the Jacobian of $y^2 = x^5 - 1$] *Sém. Théor. Nombres Bordeaux* (2) **4** (1992), *no.* 1, 113–128. (David Grant) **93m:11051** 11G16 (11G30, 14H25)

Boxer, Laurence Finding congruent regions in parallel. (English summary) *Parallel Comput.* **18** (1992), *no.* 7, 807–810. 68R10 (68Q22)

Boxler, Petra How to construct stochastic center manifolds on the level of vector fields. (English summary) *Lyapunov exponents (Oberwolfach*, 1990), 141–158, *Lecture Notes in Math.*, 1486, *Springer, Berlin*, 1991. (Ludwig Arnold) **93i:34101** 34F05 (34C30, 34D08, 58F10, 70L05)

— (*with* Arnold, Ludwig) Additive noise turns a hyperbolic fixed point into a stationary solution. (English summary) *Lyapunov exponents (Oberwolfach*, 1990), 159–164, *Lecture Notes in Math.*, 1486, *Springer, Berlin*, 1991. (Ji Bin Li) **93g:58127** 58F30 (34C99, 34F05, 58F11, 58F15)

— (*with* Arnold, Ludwig) Stochastic bifurcation: instructive examples in dimension one. (English summary) *Diffusion processes and related problems in analysis, Vol. II (Charlotte, NC, 1990)*, 241–255, *Progr. Probab.*, 27, *Birkhäuser Boston, Boston, MA*, 1992. (Jacques Vauthier) **93i:58094** 58F11 (34C23, 34F05, 58F14, 60H10)

Boya, Luis J. The geometry of compact Lie groups. (English summary) *Rep. Math. Phys.* **30** (1991), *no.* 2, 149–162 (1992). (Summary) **93g:57048** 57T20 (22E10, 55Q52)

— (*with* Bohm, Arno; Kendrick, Brian; Loewe, Mark E.) The Berry connection and Born-Oppenheimer method. *J. Math. Phys.* **33** (1992), *no.* 3, 977–989. (Shinichi Tajima) **93d:81051** 81Q99 (81V55)

— (*with* Bohm, Arno; Kendrick, Brian) On the uniqueness of the Berry connection. *J. Math. Phys.* **33** (1992), *no.* 7, 2528–2532. (Piotr Kosiński) **93d:81052** 81Q99 (81S99)

— (*with* Casahorran, J.; Esteve, J. G.) Anomalous SUSY quantum mechanics, heterotic models and scattering states. (English summary) *Modern Phys. Lett. A* **7** (1992), *no.* 25, 2325–2331. (Summary) **93e:81027** 81Q60 (81T60)

Boyadjiev, L. I. *see* **Boyadzhiev, L. I.**

Boyadjiev, Lyubomir *see* **Boyadzhiev, L. I.**

Boyadjiev, Lyubomir I. *see* **Boyadzhiev, L. I.**

Boyadzhiev, Khristo N. Some inequalities for generalized commutators. *Publ. Res. Inst. Math. Sci.* **26** (1990), *no.* 3, 521–527. (Fuad Kittaneh) **93c:47009** 47A30 (47A60, 47A63, 47B15, 47B47)

— (*with* deLaubenfels, Ralph) Semigroups and resolvents of bounded variation, imaginary powers and H^∞ functional calculus. (English summary) *Semigroup Forum* **45** (1992), *no.* 3, 372–384. (Ioana Cioranescu) **93i:47018** 47A60 (47D03)

— (*with* deLaubenfels, Ralph) Boundary values of holomorphic semigroups. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 1, 113–118. (Alberto Guzman) **93f:47043** 47D03 (35J10, 47F05)

Boyadzhiev, L. I. On series in Laguerre and Hermite polynomials. *Analysis* **11** (1991), *no.* 2-3, 209–220. (A. K. Agarwal) **93c:30002** 30B50 (33C45)

— On series representation in Laguerre polynomials. *C. R. Acad. Bulgare Sci.* **45** (1992), *no.* 4, 13–15. 30B50 (30B60)

— On singularities of a class of holomorphic functions. *C. R. Acad. Bulgare Sci.* **45** (1992), *no.* 5, 13–15. 30B10 (30B30, 30B50, 33C45)

— About polynomials orthogonal on two symmetric intervals. *Yokohama Math. J.* **39** (1992), *no.* 2, 163–175. (Olav Njåstad) **93d:42023** 42C05 (42C15)

Boyanov, Borislav D. Elementary proof of the Remez inequality. *Amer. Math. Monthly* **100** (1993), *no.* 5, 483–485. 26D05 (33C45)

— *see also* **Optimal recovery, 93m:00043**

Boyanovsky, Daniel (*with* Holman, R.) Renormalized density of states in conformal field theories. *Thermal field theories (Ibaraki, 1990)*, 95–103, *North-Holland Delta Ser., North-Holland, Amsterdam*, 1991. (Summary) **93b:81177** 81T17 (81T40)

— Gauge invariance and broken symmetries in anyon superfluids. (English summary) *Internat. J. Modern Phys. A* **7** (1992), *no.* 24, 5917–5976. (Summary) **93g:82106** 82D50 (81–02, 81R40, 81V70)

— (*with* Willey, R.; Holman, R.) Quantum mechanical metastability: when and why? *Nuclear Phys. B* **376** (1992), *no.* 3, 599–634. (Summary) **93b:81066** 81Q20 (82C10)

Boyar, Joan (*with* Brassard, Gilles; Peralta, René) Subquadratic zero-knowledge. (English summary) *32nd Annual Symposium on Foundations of Computer Science (San Juan, PR, 1991)*, 69–78, *IEEE Comput. Soc. Press, Los Alamitos, CA*, 1991. (Summary) **93e:68031** 68Q25 (03D15)

— (*with* Friedl, Katalin; Lund, Carsten) Practical zero-knowledge proofs: giving hints and using deficiencies. (English summary) *J. Cryptology* **4** (1991), *no.* 3, 185–206. (Hans B. Sieburg) **93m:68144** 68T15 (94A60)

— (*with* Frandsen, Gudmund; Sturtivant, Carl) An arithmetic model of computation equivalent to threshold circuits. *Theoret. Comput. Sci.* **93** (1992), *no.* 2, 303–319. (Friedhelm Meyer auf der Heide) **93f:68023** 68Q05 (94C05)

Boyarintsev, Yu. E. ★ Methods of solving singular systems of ordinary differential equations. Translated from the 1988 Russian original by Vassily Michalkowski. Pure and Applied Mathematics. A Wiley-Interscience Publication. *John Wiley & Sons, Ltd., Chichester*, 1992. viii+163 *pp. ISBN* 0-471-93163-2 (Editors) **93f:34008** 34A09 (15A09, 34A05, 34A30, 65L12)

Boyarskii, B. V. *see* **Bojarski, Bogdan**

Boyarskii, Yu. I. (*with* Vodop'yanov, S. K.) Intrinsic metrics and boundary values of functions of Zygmund classes. (Russian) *Sibirsk. Mat. Zh.* **32** (1991), *no.* 2, 3–12, 211; *translation in Siberian Math. J.* **32** (1991), *no.* 2, 177–185. (From the introduction) **93m:46034** 46E35

Boyarsky, A. (*with* Góra, P.) Modelling and simulating higher-dimensional chaotic data. (English summary) *Comput. Math. Appl.* **24** (1992), *no.* 11, 101–105. (Hans-Peter Herzel) **93h:58097** 58F13

— (*with* Lou, Y.-S.) Matrix method for approximating fractal measures. *Internat. J. Bifur. Chaos Appl. Sci. Engrg.* **2** (1992), *no.* 1, 167–175. (Colleen D. Cutler) **93e:58105** 58F11 (28A80)

— (*with* Góra, P.) A dynamical system model for interference effects and the two-slit experiment of quantum physics. (English summary) *Phys. Lett. A* **168** (1992), *no.* 2, 103–112. (Summary) **93d:81015** 81P15 (58F99)

— (*with* Góra, P.) A matrix solution to the inverse Perron-Frobenius problem. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 2, 409–414. (Remo Badii) **93g:58079** 58F11 (28D05)

Boychuk, L. M. *see* **Boichuk, L. M.**

Boyd, A. V. Bounds for the Catalan numbers. *Fibonacci Quart.* **30** (1992), *no.* 2, 136–138. (F. T. Howard) **93d:11023** 11B65

Boyd, David W. *see* **Bertin, M.-J. et al., 93k:11095**

Boyd, E. Andrew A pseudopolynomial network flow formulation for exact knapsack separation. *Networks* **22** (1992), *no.* 5, 503–514. (Guntram Scheithauer) **93h:90099** 90C35 (90C05, 90C10)

Boyd, J. N. (*with* Raychowdhury, P. N.) A biased random walk with symmetry. *Math. Mag.* **65** (1992), *no.* 5, 330–333. 60J15

Boyd, John H., III (*with* Becker, Robert A.) Recursive utility and optimal capital accumulation. II. Sensitivity and duality theory. (English summary) *Econom. Theory* **2** (1992), *no.* 4, 547–563. (Peter Bod) **93i:90028** 90A16

— (*with* McKenzie, Lionel W.) The existence of competitive equilibrium over an infinite horizon with production and general consumption sets. (English summary) *Internat. Econom. Rev.* **34** (1993), *no.* 1, 1–20. (Summary) **93k:90021** 90A11 (90A14)

Boyd, John P. *see* **Boyd, John Philip**

Boyd, John Paul Relational homomorphisms. *Social Networks* **14** (1992), *no.* 1-2, 163–186. (Sandra L. Arlinghaus) **93c:92015** 92H10

Boyd, John Philip The energy spectrum of fronts: time evolution of shocks in Burgers' equation. *J. Atmospheric Sci.* **49** (1992), *no.* 2, 128–139. (Summary) **93a:76062** 76L05 (35Q35, 76C99, 86A05)

— Multipole expansions and pseudospectral cardinal functions: a new generalization of the fast Fourier transform. (English summary) *J. Comput. Phys.* **103** (1992), *no.* 1, 184–186. (Summary) **93h:65175** 65T20 (65D20)

— A fast algorithm for Chebyshev, Fourier, and sinc interpolation onto an irregular grid. (English summary) *J. Comput. Phys.* **103** (1992), *no.* 2, 243–257. (Summary) **93j:65014** 65D05

Boyd, S. *see* **Boyd, Stephen P.**

Boyd, Sarah (*with* Keswani, Navin; Raeburn, Iain) Faithful representations of crossed products by endomorphisms. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 2, 427–436. (John Quigg) **93g:46066** 46L55

Boyd, Stephen P. (*with* Balemi, S.; Balakrishnan, V.) Computation of the maximum H_∞-norm of parameter-dependent linear systems by a branch and bound algorithm. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, I (Kobe*, 1991), 305–310, *Mita, Tokyo*, 1992. (*see* **93g:93005**) 93B36 (93B40)

— (*with* Kosut, Robert L.; Lau, Ming K.) Set-membership identification of systems with parametric and nonparametric uncertainty. *IEEE Trans. Automat. Control* **37** (1992), *no.* 7, 929–941. (Rudolf Kulhavý) **93f:93042** 93B30 (93B36)

— (*with* Balakrishnan, V.) On computing the worst-case peak gain of linear systems. (English summary) *Systems Control Lett.* **19** (1992), *no.* 4, 265–269. (Summary) **93j:93085** 93C55 (93B36, 93C05, 93C45)

Boy de la Tour, Thierry An optimality result for clause form translation. (English summary) *J. Symbolic Comput.* **14** (1992), *no.* 4, 283–301. (Ralph W. Wilkerson) **93j:68172** 68T15 (03B35)

Boye, Johan (*with* Małuszyński, Jan; Bonnier, Staffan; Kluźniak, Feliks; Kågedal, Andreas; Nilsson, Ulf) Logic programs with external procedures. (English summary) *Logic programming languages*, 21–48, *MIT Press, Cambridge, MA*, 1993. (*see* **93k:68020**) 68N17

Boyer, Charles P. (*with* Mann, Benjamin M.) Instantons, quaternionic Lie algebras and hyper-Kähler geometry. *Lie theory, differential equations and representation theory (Montreal, PQ*, 1989), 119–136, *Univ. Montréal, Montreal, PQ*, 1990. (N. J. Hitchin) **93a:58031** 58D27 (53C25, 55P35, 58E15)

— (*with* Hurtubise, Jacques; Mann, Benjamin M.; Milgram, R. James) The Atiyah-Jones conjecture. *Bull. Amer. Math. Soc. (N.S.)* **26** (1992), *no.* 2, 317–321. (Martin A. Guest) **93c:55008** 55P35 (14D20, 32G13, 58D27)

Boyer, Jacqueline (*with* Guillemin, Fabrice; Dupuis, Alain) Burstiness in broadband integrated networks. (English summary) *Performance Evaluation* **15** (1992), *no.* 3, 163–176. 90B22

Boyer, Robert Méthode F.A.C. pour un problème de type "obstacle". (English and French summaries) [An FAC method for an "obstacle" problem] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 9, 1013–1016. (Introduction) **93g:90057** 90C25 (65J99, 65K05)

Boylan, Richard T. Laws of large numbers for dynamical systems with randomly matched individuals. (English summary) *J. Econom. Theory* **57** (1992), *no.* 2, 473–504. (Crăciun Iancu) **93g:92015** 92D15 (90A30, 90D15)

Boyland, Philip Rotation sets and monotone periodic orbits for annulus homeomorphisms. *Comment. Math. Helv.* **67** (1992), *no.* 2, 203–213. (Summary) **93k:58180** 58F20 (58F15)

Boyle, Ann K. (*with* Adams, William W.) Some results on Gröbner bases over commutative rings. *J. Symbolic Comput.* **13** (1992), *no.* 5, 473–484. (Ralf Fröberg) **93h:13025** 13P10 (68Q40)

Boyle, James M. (*with* Wos, Larry; Overbeek, Ross; Lusk, Ewing) ★ Automated reasoning. Introduction and applications. Second edition. With 1 IBM-PC floppy disk (5.25 inch). *McGraw-Hill, Inc., New York*, 1992. xvi+656 *pp. ISBN* 0-07-911251-X (Ralph W. Wilkerson) **93a:68129** 68T15 (03B35)

Boyle, Joseph M., Jr. Self-referential inconsistency, inevitable falsity and metaphysical argumentation. *Reflexivity*, 481–498, *North-Holland, Amsterdam*, 1992. (*see* **93g:03005**) 03A05

Boyle, Mike The stochastic shift equivalence conjecture is false. *Symbolic dynamics and its applications (New Haven, CT*, 1991), 107–110, *Contemp. Math.*, 135, *Amer. Math. Soc., Providence, RI*, 1992. (Selim Tuncel) **93i:28013** 28D05 (54H20, 58F03, 60J10)

— Almost flow equivalence for hyperbolic basic sets. *Topology* **31** (1992), *no.* 4, 857–864. (Fred W. Roush) **93k:58076** 58F03 (28D20, 54H20)

— (*with* Handelman, David) Algebraic shift equivalence and primitive matrices. *Trans. Amer. Math. Soc.* **336** (1993), *no.* 1, 121–149. (Fred W. Roush) **93e:58050** 58F03 (28D20, 46L99, 54H20)

Boys, Richard J. (*with* Glazebrook, Kevin D.) A robust design of a screen for a binary response. (English summary) *Biometrika* **79** (1992), *no.* 3, 643–650. (Rahul Mukerjee) **93j:62077** 62F15 (62K99)

— On a kernel approach to a screening problem. *J. Roy. Statist. Soc. Ser. B* **54** (1992), *no.* 1, 157–169. (Summary) **93b:62054** 62G05

Boyse, William E. (*with* Lynch, Daniel R.; Paulsen, Keith D.; Minerbo, Gerald N.) Nodal-based finite-element modeling of Maxwell's equations. *IEEE Trans. Antennas and Propagation* **40** (1992), *no.* 6, 642–651. (Summary) **93c:78002** 78–08 (78A25)

Boyvalenkov, Peter Nonexistence of certain symmetric spherical codes. (English summary) *Des. Codes Cryptogr.* **3** (1993), *no.* 1, 69–74. (Summary) **93m:94044** 94B65

Boza Cordero, Juan Algebras with square radical zero. (Spanish. English summary) *Cienc. Tecn.* **14** (1990), *no.* 1-2, 35–47 (1992). (Summary) **93e:16015** 16D90 (16E60)

— Stable equivalence of quivers with relations. (Spanish. English summary) *Cienc. Tecn.* **14** (1990), *no.* 1-2, 107–119 (1992). (Héctor A. Merklen) **93g:16018** 16G20 (16G10)

Bozapalidis, Symeon Alphabetic tree relations. *Theoret. Comput. Sci.* **99** (1992), *no.* 2, 177–211. (Kai Salomaa) **93g:68092** 68Q70 (68Q45, 68Q55)

Bozdogan, Hamparsum (*with* Atilgan, Taskin) Convergence properties of MLE's and asymptotic simultaneous confidence intervals in fitting cardinal B-splines for density es-

timation. *Statist. Probab. Lett.* **13** (1992), *no.* 2, 89–98. (M. Bertrand-Retali) **93d:62050** 62G05 (62G20)

Božejko, Marek A q-deformed probability, Nelson's inequality and central limit theorems. *Nonlinear fields: classical, random, semiclassical* (*Karpacz*, 1991), 312–335, *World Sci. Publishing, River Edge, NJ*, 1991. (Demetris P. K. Ghikas) **93a:81098** 81S25 (60A99, 60B99, 81P99, 81R50)

— (*with* Picardello, Massimo A.) Weakly amenable groups and amalgamated products. *Proc. Amer. Math. Soc.* **117** (1993), *no.* 4, 1039–1046. (George A. Willis) **93e:43005** 43A22 (20E06, 20E08, 43A07, 46J99)

Bożek, Bogusław (*with* Holly, Konstanty; Olajossy, Andrzej) Stationary Navier-Stokes equations: on qualitative and numerical aspects of the Galerkin method. (Polish summary) *Opuscula Math. No.* 11 (1991), 61 *pp.* (Summary) **93a:76074** 76M25 (65M60, 76D05)

Bozhilov, P. (*with* Stoilov, M.) Critical dimension for a restricted bosonic string. (English summary) *Phys. Lett. B* **293** (1992), *no.* 3-4, 335–338. (Alexander A. Zheltukhin) **93k:81168** 81T30

Bozhinov, N. S. *see* **Božinov, Nikolai S.**

Bozhko, V. O. (*with* Fedorenko, L. G.) Periodic solutions of singularly perturbed differential equations. (Russian. Russian summary) *Boundary value problems* (*Russian*), 200–206, *Perm. Politekh. Inst., Perm'*, 1990. (*see* **93g:00023**) 34C25 (34E15)

Bozhulich, S. S. On the boundedness of the time of first absorption. (Russian. Russian summary) *Methods for solving problems of nonlinear and discrete programming* (*Russian*), 73–78, *Akad. Nauk Ukrain. SSR, Inst. Kibernet., Kiev*, 1991. (*see* **93b:90010**) 90D25

Božin, A. S. (*with* Zarrop, M. B.) The convergence of a modified ELS algorithm. (English summary) *Adaptive systems in control and signal processing*, 1989 (*Glasgow*), 421–426, *IFAC Sympos. Ser.*, 1990, *No.* 1, *Pergamon, Oxford*, 1990. (*see* **93j:93007**) 93B30 (93C40)

Božinov, Nikolai S. On uniqueness and completeness theorems for expansion in eigen- and associated functions of a nonlocal Sturm-Liouville operator on a finite interval. (Russian) *Differentsial'nye Uravneniya* **26** (1990), *no.* 5, 741–753, 915; *translation in Differential Equations* **26** (1990), *no.* 5, 521–530. (Introduction) **93i:34149** 34L10 (34B24, 34L40, 47E05)

— Sufficient conditions for the basis property, convergence and summability of the root expansion of a nonlocal Sturm-Liouville problem. (Russian) *Dokl. Akad. Nauk SSSR* **319** (1991), *no.* 5, 1042–1047; *translation in Soviet Math. Dokl.* **44** (1992), *no.* 1, 257–262. (A. A. Shkalikov) **93e:34106** 34L10 (34B24, 47E05)

Bozis, George Two-dimensional integrable potentials with quartic invariants. *J. Phys. A* **25** (1992), *no.* 11, 3329–3351. (P. G. L. Leach) **93e:70008** 70H05 (34A05, 58F05, 58F07)

Božović, Nataša On some properties of universal groups. *Math. Balkanica* (*N.S.*) **5** (1991), *no.* 2, 156–161. (J. Wiegold) **93d:20052** 20E07 (20F05)

Braaksma, Barteld Phantom ducks and models of excitability. (English summary) *J. Dynamics Differential Equations* **4** (1992), *no.* 3, 485–513. (Bao Rong Tang) **93h:34089** 34E15 (34C99, 58F30)

Braaksma, Boele L. J. (*with* Immink, G. K.) A Borel-Ritt theorem with prescribed error bounds. *Équations différentielles dans le champ complexe, Vol. I* (*Strasbourg*, 1985), 1–33, *Publ. Inst. Rech. Math. Av., Univ. Louis Pasteur, Strasbourg*, 1988. (Pablo Martín) **93i:41021** 41A60 (30E15)

— (*with* Balser, Werner; Ramis, Jean-Pierre; Sibuya, Yasutaka) Multisummability of formal power series solutions of linear ordinary differential equations. *Asymptotic Anal.* **5** (1991), *no.* 1, 27–45. (Donald A. Lutz) **93f:34011** 34A20 (34E05)

— Multisummability and Stokes multipliers of linear meromorphic differential equations. *J. Differential Equations* **92** (1991), *no.* 1, 45–75. (Donald A. Lutz) **93c:34010** 34A20 (34A05, 34A30, 34E05, 40C99)

— Multisummability of formal power series solutions of nonlinear meromorphic differential equations. (English and French summaries) *Ann. Inst. Fourier* (*Grenoble*) **42** (1992), *no.* 3, 517–540. (Donald A. Lutz) **93j:34006** 34A20 (30B10, 30D60, 34E05, 40G10)

Braam, Peter J. (*with* Bogomolov, F. A.) Instantons and mirror $K3$ surfaces. *Comm. Math. Phys.* **143** (1992), *no.* 3, 641–646. (Summary) **93h:32026** 32G13 (14J28, 32J81, 53C07, 53C25, 58D27)

— (*with* Maciocia, Antony; Todorov, Andrei Nikolov) Instanton moduli as a novel map from tori to $K3$-surfaces. *Invent. Math.* **108** (1992), *no.* 2, 419–451. (I. Dolgachev) **93c:32028** 32G13 (14C34, 14J28, 53C07, 58D27)

Bracewell, Ronald N. ★ Преобразование Хартли. (Russian. Russian summary) [The Hartley transform] Теория и приложения. [Theory and applications] Translated from the English by A. I. Pankov. Translation edited and with a preface by I. S. Ryzhak. "*Mir*", *Moscow*, 1990. 176 *pp. ISBN* 5-03-001632-5 (Editors) **93j:44001** 44–02 (65R10, 65T20, 94A11)

Brachman, Ronald J. *see* **Knowledge representation, 93e:68003**

Bracho, Javier (*with* Montejano, Luis) The scorpions: examples in stable noncollapsibility and in geometric category theory. *Topology* **30** (1991), *no.* 4, 541–550. (C. L. Seebeck III) **93a:57027** 57Q99

— (*with* Arocha Pérez, Jorge Luis; Neumann Lara, Víctor) On the minimum size of tight hypergraphs. *J. Graph Theory* **16** (1992), *no.* 4, 319–326. (Ioan Tomescu) **93h:05119** 05C65 (05C10, 05C15, 05C35)

Brack-Bernsen, Lis (*with* Schmidt, Olaf) Bisectable trapezia in Babylonian mathematics. *Centaurus* **33** (1990), *no.* 1, 1–38. (Jens Høyrup (Zbl 722:01002)) **93b:01005** 01A17

Brackbill, J. U. (*with* Kothe, D. B.; Zemach, C.) A continuum method for modeling surface tension. *J. Comput. Phys.* **100** (1992), *no.* 2, 335–354. (Summary) **93c:76008** 76B45 (76M25)

— (*with* Burgess, D.; Sulsky, D.) Mass matrix formulation of the FLIP particle-in-cell method. (English summary) *J. Comput. Phys.* **103** (1992), *no.* 1, 1–15. (Summary) **93i:76063** 76M25 (73V20)

Bracken, Anthony J. (*with* Gould, M. D.; Zhang, R. B.) Generalized Gel'fand invariants and characteristic identities for quantum groups. *J. Math. Phys.* **32** (1991), *no.* 9, 2298–2303. (Summary) **93f:17022** 17B37 (81R50)

— (*with* Barut, Asim Orhan) Particle-like configurations of the electromagnetic field: an extension of de Broglie's ideas. (English summary) *Found. Phys.* **22** (1992), *no.* 10, 1267–1285. (Summary) **93j:78005** 78A25 (81P99)

— (*with* Gould, M. D.; Links, J. R.) Matrix elements and Wigner coefficients for $U_q[\mathrm{gl}(n)]$. *J. Math. Phys.* **33** (1992), *no.* 3, 1008–1022. (Chang Pu Sun) **93g:81049** 81R50 (16W30, 17B37, 81R05, 82B23)

— (*with* Tuckwell, Henry C.) Simple mathematical models for urban growth. *Proc. Roy. Soc. London Ser. A* **438** (1992), *no.* 1902, 171–181. 92H10 (92–08)

Bracken, Jerome (*with* Shubik, Martin) Crisis stability games. (English summary) *Naval Res. Logist.* **40** (1993), *no.* 3, 289–303. 90D40

Brackenridge, J. Bruce The critical role of curvature in Newton's developing dynamics. *The investigation of difficult things*, 231–260, *Cambridge Univ. Press, Cambridge*, 1992. (Peeter Müürsepp) **93k:01019** 01A45 (70–03)

Brackx, F. (*with* Van Acker, Nadine) H^p spaces of monogenic functions. (English summary) *Clifford algebras and their applications in mathematical physics* (*Montpellier*, 1989), 177–188, *Fund. Theories Phys.*, 47, *Kluwer Acad. Publ., Dordrecht*, 1992. (Toma V. Tonev) **93m:30054** 30G35 (30D55)

Bradberry, Brent A. A geometric view of some apportionment paradoxes. *Math. Mag.* **65** (1992), *no.* 1, 3–17. 90A28

Braden, Bart Calculating sums of infinite series. *Amer. Math. Monthly* **99** (1992), *no.* 7, 649–655. (John A. Fridy) **93f:40002** 40–01 (40A05, 40A25)

Braden, H. W. (*with* Corrigan, E.; Dorey, Patrick E.; Sasaki, Ryu) Aspects of perturbed conformal field theory, affine Toda field theory and exact S-matrices. *Differential geometric methods in theoretical physics* (*Davis, CA*, 1988), 169–182, *NATO Adv. Sci. Inst. Ser. B Phys.*, 245, *Plenum, New York*, 1990. (From the introduction) **93g:81139** 81T40

— (*with* Corrigan, E.; Dorey, Patrick E.; Sasaki, Ryu) Aspects of affine Toda field theory. Proceedings of the Winter School on Geometry and Physics (Srní, 1990). *Rend. Circ. Mat. Palermo* (2) *Suppl. No.* 26 (1991), 67–96. (Giuseppe Mussardo) **93e:81102** 81T40 (58F07)

— (*with* Corrigan, E.; Dorey, Patrick E.; Sasaki, Ryu) Aspects of affine Toda field theory. *Integrable systems and quantum groups* (*Pavia*, 1990), 99–124, *World Sci. Publishing, River Edge, NJ*, 1992. (Stanislav Z. Pakuliak) **93h:81110** 81T40 (81R10, 82B23)

— (*with* Corrigan, E.; Dorey, Patrick E.; Sasaki, Ryu) Affine Toda field theory: S-matrix vs. perturbation. *Quantum groups* (*Leningrad*, 1990), 210–220, *Lecture Notes in Math.*, 1510, *Springer, Berlin*, 1992. (Alexander Orlov) **93i:81148** 81T15 (81T18, 81T40, 81U20)

— A note on affine Toda couplings. *J. Phys. A* **25** (1992), *no.* 1, L15–L20. (Summary) **93a:81167** 81T40

— (*with* Sasaki, Ryu) Affine Toda perturbation theory. *Nuclear Phys. B* **379** (1992), *no.* 1-2, 377–428. (Summary) **93m:81125** 81T40 (58F07, 81U30)

Bradfield, Julian Charles ★ Verifying temporal properties of systems. Progress in Theoretical Computer Science. *Birkhäuser Boston, Inc., Boston, MA*, 1992. vi+113 *pp. ISBN* 0-8176-3625-0 (Ursula Martin) **93i:68128** 68Q60 (68–02)

— (*with* Stirling, Colin) Local model checking for infinite state spaces. Second Workshop on Concurrency and Compositionality (San Miniato, 1990). *Theoret. Comput. Sci.* **96** (1992), *no.* 1, 157–174. (Toader Jucan) **93e:68070** 68Q60 (03B70)

Bradford, I. D. R. (*with* England, A. H.; Rogers, T. G.) Finite deformations of a fibre-reinforced cantilever: point-force solutions. *Acta Mech.* **91** (1992), *no.* 1-2, 77–95. (From the introduction) **93a:73041** 73G05 (73H05, 73K05)

— (*with* Rogers, T. G.; England, A. H.) Finite plane deformations of highly anisotropic elastic-plastic plates and shells. (English summary) Elastic waves and related topics (Dublin, 1991). *J. Mech. Phys. Solids* **40** (1992), *no.* 7, 1595–1606. (Summary) **93i:73032** 73K10 (73B40, 73G05, 73K15, 73K20)

— (*with* England, A. H.; Rogers, T. G.) Finite deformations of a fibre-reinforced cantilever: distributed-load solutions. (English summary) *Quart. J. Mech. Appl. Math.* **45** (1992), *no.* 4, 711–732. (Summary) **93k:73039** 73G05 (73K05, 73K20)

Bradley, M. *see* **Bradley, Michael**

Bradley, M. E. Uniform stabilization of a nonlinearly perturbed Kirchoff plate. *Appl. Math. Optim.* **26** (1992), *no.* 1, 1–19. (Jike Wu) **93b:35043** 35J65 (73K10, 93D15)

Bradley, Michael (*with* de Felice, Fernando; Usseglio-Tomasset, Stefano) Singularities inside matter: the static case. *J. Math. Phys.* **33** (1992), *no.* 2, 712–720. (R. N. Tiwari) **93c:83085** 83C75 (83C15)

Bradley, N. J. (*with* Spencer, A. J. M.) Gravity flow of a granular material in compression between vertical walls and through a tapering vertical channel. (English summary) *Quart. J. Mech. Appl. Math.* **45** (1992), *no.* 4, 733–746. (Summary) **93k:76005** 76A99 (76E99)

Bradley, R. Mark (*with* Buchalter, B. J.) Orientational order in random packings of ellipses. (English summary) *Phys. Rev. A* (3) **46** (1992), *no.* 6, 3046–3056. (Summary) **93h:82033** 82B80 (65C05, 73B35)

Bradley, Richard C. On the spectral density and asymptotic normality of weakly dependent random fields. *J. Theoret. Probab.* **5** (1992), *no.* 2, 355–373. (Wlodzimierz Bryc) **93e:60094** 60G60 (60F05)

Bradlow, Steven B. (*with* Daskalopoulos, Georgios D.) Moduli of stable pairs for holomorphic bundles over Riemann surfaces. *Internat. J. Math.* **2** (1991), *no.* 5, 477–513. (N. J. Hitchin) **93b:58026** 58D27 (14D20, 14H60, 32G13, 58E15)

Bradshaw, W. S. Stochastic cocycles as a characterisation of quantum flows. (French summary) *Bull. Sci. Math.* (2) **116** (1992), *no.* 1, 1–34. (David Applebaum) **93c:46116** 46L50 (46L55, 81S25)

Brady, Bennett (*with* Singpurwalla, Nozer D.) Stochastically monotone dependence. (English summary) *Topics in statistical dependence* (*Somerset, PA*, 1987), 93–102, *IMS Lecture Notes Monograph Ser.*, 16, *Inst. Math. Statist., Hayward, CA*, 1990. (Summary) **93i:60160** 60K10 (62N05)

Brady, Patrick R. (*with* Anderson, Warren G.; Camporesi, Roberto) Vacuum polarization and the black hole singularity. (English summary) *Classical Quantum Gravity* **10** (1993), *no.* 3, 497–503. (Summary) **93k:83044** 83C57 (81T20, 83C47)

— (*with* Anderson, Warren G.; Israel, Werner; Morsink, Sharon M.) Quantum effects in black hole interiors. (English summary) *Phys. Rev. Lett.* **70** (1993), *no.* 8, 1041–1044. (Summary) **93j:83052** 83C57 (83C47)

Braess, Dietrich (*with* Rusak, V. N.) Best polynomial and rational approximations of function classes in the integral metric. (Russian. English and Russian summaries) *Dokl. Akad. Nauk Belarusi* **36** (1992), *no.* 3-4, 205–208, 284. (J. Németh) **93i:41004** 41A10 (41A20)

— (*with* Peisker, P.) Uniform convergence of mixed interpolated elements for Reissner-Mindlin plates. (English and French summaries) *RAIRO Modél. Math. Anal. Numér.* **26** (1992), *no.* 5, 557–574. (Juhani Pitkäranta) **93j:73070** 73V05 (65N12, 65N30, 73K10)

Bragin, O. B. Singular distributions of random variables defined by means of continued fractions. (Russian. Russian summary) *Random evolutions: theoretical and applied*

problems (*Russian*), 10–16, *Akad. Nauk Ukrainy, Inst. Mat., Kiev*, 1992. (*see* **93m:60009**) 60E05

Braglia, M. $M/M/1$ queuing model with ordinary maintenance and breakdowns. (English and French summaries) *RAIRO Rech. Opér.* **27** (1993), *no.* 1, 1–21. 60K25 (90B22)

Brah, Shaukat A. Complexity of the flow shop with multiple processors scheduling problem, and some dominance conditions. (English summary) *Optimization, Vol.* 1, 2 (*Singapore*, 1992), 538–545, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93d:90005**) 90B35

Braha, Daniel (*with* Maimon, Oded) A proof of the complexity of design. *Kybernetes* **21** (1992), *no.* 7, 59–62. 93A10

Brahe, Tychonis *see* **Margolis, Howard, 93a:01018** *and* **Kepler, Johannes**

Brahim-Otsmane, S. (*with* Francfort, G. A.; Murat, François) Correctors for the homogenization of the wave and heat equations. *J. Math. Pures Appl.* (9) **71** (1992), *no.* 3, 197–231. (Summary) **93d:35012** 35B27 (35K05, 35L05)

Brahm, Matthew V. Approximating maps of 2-manifolds with zero-dimensional nondegeneracy sets. *Topology Appl.* **45** (1992), *no.* 1, 25–38. (Dušan Repovš) **93i:57014** 57M30 (57M35, 57N35, 57Q55)

Brahmadathan, K. (*with* Ramarao, K. V. S.) On the design of replicated databases. *Inform. Sci.* **65** (1992), *no.* 1-2, 173–187. 68P15

Braichev, G. G. Some characteristics of analytic functions of logarithmic growth. (Russian) *Operator theory, subharmonic functions* (*Russian*), 12–24, "*Naukova Dumka*", *Kiev*, 1991. (A. Yu. Rashkovskiĭ) **93g:30037** 30D15

Braides, Andrea Correctors for the homogenization of almost periodic monotone operators. *Asymptotic Anal.* **5** (1991), *no.* 1, 47–74. (Reza Malek-Madani) **93c:35007** 35B27 (35B10, 35J60, 73B27)

Braiess, D. *see* **Braess, Dietrich**

Brăiloiu, G. (*with* Lipovan, O.) A criterion of probabilistic submeasurability for statistic space valued functions. (Romanian summary) *Inst. Politehn. "Traian Vuia" Timişoara Lucrăr. Sem. Mat. Fiz.* **1988,** *November*, 15–20. 28B20

Brailove, Adam A. The dynamics of two pulse-coupled relaxation oscillators. (English summary) *Internat. J. Bifur. Chaos Appl. Sci. Engrg.* **2** (1992), *no.* 2, 341–352. (Summary) **93f:92001** 92B05 (92C20)

Brailovsky, L. Structure of quasi-invariant sets. *Arch. Math.* (*Basel*) **59** (1992), *no.* 4, 322–326. (Peter Fleischmann) **93h:20016** 20C99

— A characterization of abelian groups. *Proc. Amer. Math. Soc.* **117** (1993), *no.* 3, 627–629. (Mercede Maj) **93g:20004** 20A05 (20K99)

Braithwaite, M. (*with* Farran, T.; Gladwell, Ian; et al.) A detonation problem posed as a differential/algebraic boundary value problem. *Math. Engrg. Indust.* **3** (1990), *no.* 1, 45–57. (Summary) **93c:80012** 80A25 (34A09, 34B15)

Braithwaite, R. B. *see* **Keynes, John Maynard, 93c:01050** *and* **Gödel, Kurt, 93d:01094**

Brak, R. (*with* Guttmann, A. J.; Whittington, S. G.) On the behaviour of collapsing linear and branched polymers. Mathematical chemistry and computation (Dubrovnik, 1990). *J. Math. Chem.* **8** (1991), *no.* 1-3, 255–267. (Muthiah Daniel) **93a:82070** 82D60 (82–04, 82B26)

— (*with* Guttmann, A. J.; Whittington, S. G.) A collapse transition in a directed walk model. *J. Phys. A* **25** (1992), *no.* 9, 2437–2446. (Summary) **93a:82025** 82B41 (82D60)

Brakhage, Karl-Heinz Numerical treatment of surface-surface intersection and contouring. *Mathematical methods in computer aided geometric design, II* (*Biri*, 1991), 19–28, *Academic Press, Boston, MA*, 1992. (*see* **93d:65022**) 65D17

Brakke, Kenneth A. The surface evolver. (English summary) *Experiment. Math.* **1** (1992), *no.* 2, 141–165. (Wolfgang Kühnel) **93k:53006** 53A10 (49Q05, 49Q10, 53–04, 53A05)

Bralić, Ninoslav Random walk quantization of scalar fields. (English summary) *J. J. Giambiagi Festschrift*, 80–96, *World Sci. Publishing, River Edge, NJ*, 1990. (*see* **93b:81004**) 81T99 (81S20)

Bramble, James H. (*with* Leyk, Zbigniew; Pasciak, Joseph E.) Iterative schemes for nonsymmetric and indefinite elliptic boundary value problems. *Math. Comp.* **60** (1993), *no.* 201, 1–22. (L. W. Ehrlich) **93d:65034** 65F10 (65N22)

Bramel, Julien (*with* Coffman, Edward G., Jr.; Shor, Peter W.; Simchi-Levi, David) Probabilistic analysis of the capacitated vehicle routing problem with unsplit demands. (English summary) *Oper. Res.* **40** (1992), *no.* 6, 1095–1106. (Summary) **93i:90041** 90B10

malliavin-Brameret, Marie-Paule *see* **Malliavin-Brameret, Marie-Paule**

Bramley, R. (*with* Saarinen, S.; Cybenko, G.) Ill-conditioning in neural network training problems. (English summary) *SIAM J. Sci. Comput.* **14** (1993), *no.* 3, 693–714. 92B20 (68T05)

Brams, Steven J. (*with* Fishburn, Peter C.) Coalition voting. (English summary) Formal theories of politics, II. *Math. Comput. Modelling* **16** (1992), *no.* 8-9, 15–26. (Summary) **93f:90043** 90A28 (90D12)

Bramson, B. D. Quantum-mechanical, gravitating Kerr-Newton particles. (English summary) *Proc. Roy. Soc. London Ser. A* **439** (1992), *no.* 1906, 271–278. (Peter R. Law) **93i:81299** 81V17

Bramson, Maury D. (*with* Gray, Lawrence) A useful renormalization argument. *Random walks, Brownian motion, and interacting particle systems*, 113–152, *Progr. Probab.*, 28, *Birkhäuser Boston, Boston, MA*, 1991. (T. M. Liggett) **93d:60162** 60K35 (82C28, 92D25)

— (*with* Griffeath, David) Capture problems for coupled random walks. *Random walks, Brownian motion, and interacting particle systems*, 153–188, *Progr. Probab.*, 28, *Birkhäuser Boston, Boston, MA*, 1991. (Terry R. McConnell) **93e:60192** 60K35 (60J15)

— (*with* Ney, Peter E.; Tao, J.) The population composition of a multitype branching random walk. (English summary) *Ann. Appl. Probab.* **2** (1992), *no.* 3, 575–596. (J. D. Biggins) **93h:60130** 60J80 (60F10)

Brancher, J.-P. (*with* Séro-Guillaume, O. E.) Hamiltonian formulation for shaping problems. *European J. Mech. B Fluids* **10** (1991), *no.* 5, 464–473. (Boris A. Khesin) **93b:76006** 76A99 (58F05, 58F40, 76B10, 76W05)

— (*with* Séro-Guillaume, O. E.; Zouaoui, D.; Bernardin, D.) The shape of a magnetic liquid drop. (English summary) *J. Fluid Mech.* **241** (1992), 215–232. (R. Finn) **93h:76080** 76W05 (76B45, 76E25)

Brand, Neal Almost all Steinhaus graphs have diameter 2. *J. Graph Theory* **16** (1992), *no.* 3, 213–219. (Wayne M. Dymacek) **93d:05048** 05C12 (05C50)

— (*with* Curran, Stephen J.; Das, Sajal K.; Jacob, Roy Thomas, Jr.) Probability of diameter two for Steinhaus graphs. (English summary) *Discrete Appl. Math.* **41** (1993), *no.* 2, 165–171. (Summary) **93m:05130** 05C50

Brand, Richard J. (*with* Kenley, Susan S.; Chiang, Chin Long) A two-state recurrent stochastic model with time-dependent transition rates. (English summary) *Math. Biosci.* **111** (1992), *no.* 2, 249–259. (Summary) **93e:92018** 92D30 (92C60)

Brandal, Willy Completions of commutative topological rings. (English summary) *Comm. Algebra* **20** (1992), *no.* 11, 3381–3391. (Douglass L. Grant) **93j:13030** 13J10 (13H05)

Brandeau, Margaret L. (*with* Chiu, Samuel S.) A center location problem with congestion. (English summary) Locational decisions (Fullerton, CA, 1990). *Ann. Oper. Res.* **40** (1992), *no.* 1-4, 17–32 (1993). (Summary) **93m:90043** 90B80 (90B10, 90B22, 90C35)

Brandenberger, Robert H. (*with* Laflamme, Raymond; Mijić, Milan) On the origin of classical density perturbations in the inflationary universe. *Quantum gravity* (*Moscow*, 1990), 659–677, *World Sci. Publishing, River Edge, NJ*, 1991. (*see* **93b:83004**) 83C45 (83F05)

— Cosmic strings and the large-scale structure of the Universe. The birth and early evolution of our Universe (Gräftåvallen, 1990). *Phys. Scripta* **1991,** *Vol.* T36, 114–126. (Summary) **93c:83123** 83F05

— (*with* Laflamme, Raymond; Mijić, Milan) Classical perturbations from decoherence of quantum fluctuations in the inflationary universe. The birth and early evolution of our Universe (Gräftåvallen, 1990). *Phys. Scripta* **1991,** *Vol.* T36, 265–268. (Summary) **93a:83039** 83F05 (83C45)

— (*with* Mukhanov, V. F.; Feldman, Hume A.) Theory of cosmological perturbations. *Phys. Rep.* **215** (1992), *no.* 5-6, 203–333. (Summary) **93d:83073** 83F05 (83C25)

Branders, Maria (*with* Piessens, Robert) On the computation of Fourier transforms of singular functions. (English summary) Orthogonal polynomials and numerical methods. *J. Comput. Appl. Math.* **43** (1992), *no.* 1-2, 159–169. (Summary) **93i:65028** 65D15 (42A38, 65R10)

Brandi, Primo (*with* Salvadori, Anna) A variational approach to problems of plastic deformation. *Developments in partial differential equations and applications to mathematical physics* (*Ferrara*, 1991), 219–226, *Plenum, New York*, 1992. (*see* **93j:35004**) 73E99 (49S05, 73V25)

— (*with* Cesari, Lamberto; Salvadori, Anna) Seminormality conditions in the calculus of variations for BV solutions. *Ann. Mat. Pura Appl.* (4) **162** (1992), 299–317. (Francesco Ferro) **93j:49003** 49J10 (49J45, 49Q15)

Brandl, Rolf Just nonhypercentral elements and the Bell-centre. *Arch. Math.* (*Basel*) **57** (1991), *no.* 4, 319–324. (From the text) **93e:20046** 20F12

— Posets of subgroups in p-groups. (English summary) *Comm. Algebra* **20** (1992), *no.* 10, 3043–3054. (Summary) **93e:20028** 20D15

— Conjugacy classes of subgroups in p-groups. (English summary) *J. Austral. Math. Soc. Ser. A* **53** (1992), *no.* 3, 294–303. (È. M. Pal'chik) **93k:20035** 20D15

— (*with* Caranti, A.; Scoppola, Carlo M.) Metabelian thin p-groups. *Quart. J. Math. Oxford Ser.* (2) **43** (1992), *no.* 170, 157–173. (G. Zappa) **93d:20041** 20D15

— (*with* Verardi, Libero) Finite groups with few conjugacy classes of subgroups. *Rend. Sem. Mat. Univ. Padova* **87** (1992), 267–280. (Gerhard Kowol) **93i:20026** 20D99 (20D30)

Brandmüller, Josef Fivefold symmetry in mathematics, physics, chemistry, biology, and beyond. *Fivefold symmetry*, 11–31, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93i:52002**) 51M20 (00A69, 11B39)

Brandolini, L. (*with* Bertocchi, Maria; Słomiński, Leon; Sobczynska, J.) A Monte-Carlo approach for 0-1 programming problems. (English and German summaries) *Computing* **48** (1992), *no.* 3-4, 259–274. (Béla Vizvári) **93i:90066** 90C09 (65C05, 65K05)

Brandon, D. (*with* Rogers, R. C.) The coercivity paradox and nonlocal ferromagnetism. *Contin. Mech. Thermodyn.* **4** (1992), *no.* 1, 1–21. (Darko Kapor) **93b:82085** 82D40 (49R99)

Brandon, J. A. (*with* Zhong, Bing Lin) A study of hybrid prediction models and their application in economic and social systems. (English summary) *Internat. J. Systems Sci.* **23** (1992), *no.* 12, 2377–2384. 90A19 (93A30)

Brandt, A. *see* **Brandt, Andreas**

Brandt, Achi (*with* Yavneh, I.) On multigrid solution of high-Reynolds incompressible entering flows. *J. Comput. Phys.* **101** (1992), *no.* 1, 151–164. (Summary) **93d:76046** 76M25 (65M55, 76D05, 76M20)

— (*with* Sidilkover, David) Multigrid solution to steady-state two-dimensional conservation laws. (English summary) *SIAM J. Numer. Anal.* **30** (1993), *no.* 1, 249–274. (Summary) **93i:65091** 65M55

Brandt, Andreas (*with* Sulanke, H.) A queueing network model for a communication system with channel allocation. (English summary) *Probab. Engrg. Inform. Sci.* **5** (1991), *no.* 2, 171–183. (Summary) **93f:90069** 90B22 (60K25, 68M10, 94A05)

Brandt, Howard E. Finsler-spacetime tangent bundle. *Found. Phys. Lett.* **5** (1992), *no.* 3, 221–248. (H. Rund) **93e:53025** 53B40 (83D05)

— Kähler spacetime tangent bundle. *Found. Phys. Lett.* **5** (1992), *no.* 4, 315–336. (H. Rund) **93e:53024** 53B35 (53B40)

Brandt, Robert D. (*with* Lin, Feng; Sun, Jing) Robust control of nonlinear systems: compensating for uncertainty. (English summary) *Internat. J. Control* **56** (1992), *no.* 6, 1453–1459. 93B36 (93C73)

Brandt, Siegmund (*with* Dahmen, H. D.) ★ Quantum mechanics on the personal computer. Second edition. With 1 IBM-PC floppy disk (3.5 inch; DD). *Springer-Verlag, Berlin*, 1992. xii+267 *pp. ISBN* 3-540-55722-9 (Editors) **93k:81002** 81–01 (81–04)

— ★ Datenanalyse. (German) [Data analysis] Mit statistischen Methoden und Computerprogrammen. [With statistical methods and computer programs] Third edition. *Bibliographisches Institut, Mannheim*, 1992. ii+651 *pp. ISBN* 3-411-03200-6 62–04 (62–07)

Brandwein, Ann Cohen (*with* Strawderman, William E.) Improved estimates of location in the presence of an unknown scale. *J. Multivariate Anal.* **39** (1991), *no.* 2, 305–314. (Dipak K. Dey) **93d:62017** 62C99 (62F10, 62H12)

de Branges, Louis Das mathematische Erbe von Ludwig Bieberbach (1886–1982). [The mathematical legacy of Ludwig Bieberbach (1886–1982)] *Nieuw Arch. Wisk.* (4) **9** (1991), *no.* 3, 366–370. (Heinrich Begehr) **93d:01069b** 01A70

— The convergence of Euler products. *J. Funct. Anal.* **107** (1992), *no.* 1, 122–210. (J. Rovnyak) **93f:46032** 46E15 (30D55, 30H05, 47A45)

— *see also* **Korevaar, Jacob, 93d:01069a; Chu, Yi, 93d:47068** *and* **Topics in operator theory: Ernst D. Hellinger memorial volume, 93k:47002**

Brans, Carl H. (*with* Randall, Duane) On splitting topological $\mathbf{R}^4$-bundles. *Topology Appl.* **43** (1992), *no.* 1, 37–45. (Laurence R. Taylor) **93d:57053** 57R20 (55R25, 57R19)

Branson, David An urn model and the coalescent in neutral infinite-alleles genetic processes. (English summary) *Selected Proceedings of the Sheffield Symposium on Applied Probability (Sheffield, 1989)*, 174–192, *IMS Lecture Notes Monograph Ser.*, 18, *Inst. Math. Statist., Hayward, CA*, 1991. (Summary) **93g:92013** 92D10 (60C05)

Branson, Thomas P. (*with* Ólafsson, Gestur) Equipartition of energy for waves in symmetric space. *J. Funct. Anal.* **97** (1991), *no.* 2, 403–416. (Summary) **93d:58165** 58G16 (53C35)

— (*with* Gilkey, Peter B.; Fulling, Stephen A.) Heat equation asymptotics of "nonminimal" operators on differential forms. *J. Math. Phys.* **32** (1991), *no.* 8, 2089–2091. (Summary) **93d:58156** 58G11

— (*with* Chang, Sun-Yung A.; Yang, Paul C.) Estimates and extremals for zeta function determinants on four-manifolds. (English summary) *Comm. Math. Phys.* **149** (1992), *no.* 2, 241–262. (Steven Rosenberg) **93m:58116** 58G26

— Harmonic analysis in vector bundles associated to the rotation and spin groups. *J. Funct. Anal.* **106** (1992), *no.* 2, 314–328. (Johan Tysk) **93h:58157** 58G25

— (*with* Gilkey, Peter B.) Residues of the eta function for an operator of Dirac type. *J. Funct. Anal.* **108** (1992), *no.* 1, 47–87. (Friedbert Prüfer) **93f:58234** 58G25 (58G11, 58G26)

Branstad, Dennis K. (*with* Smid, Miles E.) The data encryption standard: past and future. (English summary) *Contemporary cryptology*, 43–64, *IEEE, New York*, 1992. (*see* **93k:94009**) 68P25

Brasche, J. F. (*with* Teta, A.) Spectral analysis and scattering theory for Schrödinger operators with an interaction supported by a regular curve. (English summary) *Ideas and methods in quantum and statistical physics (Oslo, 1988)*, 197–211, *Cambridge Univ. Press, Cambridge*, 1992. (Helge Holden) **93m:81027** 81Q10 (47F05, 47N50, 81U05)

Brüsel, H. (*with* Kleinau, M.) On number problems for the open shop problem. (English summary) *System modelling and optimization (Zurich, 1991)*, 145–154, *Lecture Notes in Control and Inform. Sci.*, 180, *Springer, Berlin*, 1992. (*see* **93e:90003**) 90C27

Brasey, V. A half-explicit Runge-Kutta method of order 5 for solving constrained mechanical systems. (German summary) *Computing* **48** (1992), *no.* 2, 191–201. (Summary) **93c:65089** 65L06 (34–04, 34A09, 34A45, 70–08)

Brassard, Gilles (*with* Boyar, Joan; Peralta, René) Subquadratic zero-knowledge. (English summary) 32*nd Annual Symposium on Foundations of Computer Science (San Juan, PR, 1991)*, 69–78, *IEEE Comput. Soc. Press, Los Alamitos, CA*, 1991. (Summary) **93e:68031** 68Q25 (03D15)

Brasselet, Jean-Paul (*with* Goresky, R. Mark; MacPherson, Robert D.) Simplicial differential forms with poles. *Amer. J. Math.* **113** (1991), *no.* 6, 1019–1052. (Michael M. Kapranov) **93f:58002** 58A10 (55N33, 57Q99)

— (*with* Hector, Gilbert; Saralegi Aranguren, Martin) Théorème de de Rham pour les variétés stratifiées. [The de Rham theorem for stratified manifolds] *Ann. Global Anal. Geom.* **9** (1991), *no.* 3, 211–243. (A. A. Ranicki) **93g:55009** 55N33 (58A12, 58A35)

— (*with* Saralegi Aranguren, Martin) Variétés homologiques et homologie d'intersection. (English summary) [Homology manifolds and intersection homology] *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 11, 847–850. (Summary) **93e:57037** 57P99 (55N33)

— (*with* Barthel, Gottfried; Fieseler, Karl-Heinz) Classes de Chern des variétés toriques singulières. (English and French summaries) [Chern classes of singular toric varieties] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 2, 187–192. (G. K. Sankaran) **93k:14029** 14F32 (14M25)

— (*with* Hector, Gilbert; Saralegi Aranguren, Martin) $\mathscr{L}^2$-cohomologie des espaces stratifiés. (English summary) [$\mathscr{L}^2$-cohomology of stratified spaces] *Manuscripta Math.* **76** (1992), *no.* 1, 21–32. (Summary) **93i:58009** 58A35 (55N33)

Brassesco, Stella A note on planar Brownian motion. (English summary) *Ann. Probab.* **20** (1992), *no.* 3, 1498–1503. (Paul McGill) **93f:60119** 60J65 (60J35)

Brassinne, E. ★ Précis des œuvres mathématiques de P. Fermat et de l'*Arithmétique* de Diophante. (French) [Summary of the mathematical works of P. Fermat and of the *Arithmetica* of Diophantus] Reprint of the 1853 edition. *Éditions Jacques Gabay, Sceaux*, 1989. iv+165 *pp. ISBN* 2-87647-055-1 (Doru Ştefănescu) **93h:01062** 01A75 (01A20, 01A45, 11–03)

Bratchikov, A. V. Renormalization properties of two-dimensional homogeneous symplectic σ-models. (English summary) *Modern Phys. Lett. A* **7** (1992), *no.* 24, 2229–2233. (Summary) **93e:81103** 81T40 (81T13)

Bratiichuk, N. S. (*with* Pirdzhanov, B. P.) The busy period of the queueing system $GI|G|1$. (Russian. English summary) *Dokl. Akad. Nauk Ukrain. SSR* **1991**, *no.* 9, 50–53, 176. (Summary) **93c:60140** 60K25

— (*with* Pirdzhanov, B. P.) On a new approach in studying the busy period of system $GI/G/1$. *Probability theory and mathematical statistics (Kiev, 1991)*, 10–18, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93k:60008**) 60K25

— (*with* Tkebuchava, R. S.) Local limit theorems for integer random walks on a countable Markov chain. (Russian. Russian summary) *Dokl. Akad. Nauk Ukrainy* **1992**, *no.* 5, 45–46, 159. 60J10 (60J15)

Bratko, Ivan (*with* Urbančič, Tanja) Constructing control rules for a dynamic system: probabilistic qualitative models, lookahead and exaggeration. (English summary) *Internat. J. Systems Sci.* **24** (1993), *no.* 6, 1155–1164. 93A30

Bratteli, Ola (*with* Kishimoto, Akitaka) Noncommutative spheres. III. Irrational rotations. (English summary) *Comm. Math. Phys.* **147** (1992), *no.* 3, 605–624. (Palle E. T. Jørgensen) **93g:58008** 58B30 (19K14, 46L87)

— (*with* Blackadar, Bruce; Elliott, George A.; Kumjian, Alexander) Reduction of real rank in inductive limits of C^*-algebras. *Math. Ann.* **292** (1992), *no.* 1, 111–126. (Cornel Pasnicu) **93a:46112** 46L05

Brattkus, K. (*with* Merchant, Gregory J.; Braun, R. J.; Davis, S. H.) Pulsatile instability in rapid directional solidification: strongly-nonlinear analysis. (English summary) *SIAM J. Appl. Math.* **52** (1992), *no.* 5, 1279–1302. (Summary) **93h:35203** 35Q72 (35B25, 35R35, 73B30, 80A22)

— (*with* Meiron, D. I.) Numerical simulations of unsteady crystal growth. (English summary) *SIAM J. Appl. Math.* **52** (1992), *no.* 5, 1303–1320. (Summary) **93f:35245** 35R35 (65R20, 82D25)

Bratukhin, Yu. K. (*with* Makarov, S. O.) Secondary thermocapillary motions of soliton type. *Fluid Dynamics* **27** (1992), *no.* 4, 463–469 (1993); *translated from Izv. Ross. Akad. Nauk Mekh. Zhidk. Gaza* **1992**, *no.* 4, 20–27 (*Russian. Russian summary*). 76D33

Bratus', A. S. (*with* Myshkis, A. D.) On the effect of small velocity forces on the stability of the equilibrium of a linear nonconservative system. (Russian) *Conference on Differential Equations and Applications (Ruse, 1989)*, 27–34, *Tech. Univ., Ruse*, 1991. (*see* **93f:34004**) 34D99 (70J25)

— (*with* Myshkis, A. D.) Extremum problems for Laplacian eigenvalues with free boundary. *Nonlinear Anal.* **19** (1992), *no.* 9, 815–831. (Günter Berger) **93k:35195** 35P15 (35J20, 35P05, 35R35, 49R05)

— (*with* Myshkis, A. D.) On the ratio between the first and the second eigenfrequency of the oscillations of a membrane. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **32** (1992), *no.* 2, 320–325; *translation in Comput. Math. Math. Phys.* **32** (1992), *no.* 2, 264–269. (Summary) **93b:35030** 35J05 (35P05, 73D15, 73K12)

Bratvedt, Frode (*with* Bratvedt, Kyrre; Buchholz, Christian F.; et al.) Front tracking for petroleum reservoirs. (English summary) *Ideas and methods in mathematical analysis, stochastics, and applications (Oslo, 1988)*, 409–427, *Cambridge Univ. Press, Cambridge*, 1992. (Summary) **93h:76071** 76S05 (65C20, 76M25, 76T05, 86A99)

Bratvedt, Kyrre (*with* Bratvedt, Frode; Buchholz, Christian F.; et al.) Front tracking for petroleum reservoirs. (English summary) *Ideas and methods in mathematical analysis, stochastics, and applications (Oslo, 1988)*, 409–427, *Cambridge Univ. Press, Cambridge*, 1992. (Summary) **93h:76071** 76S05 (65C20, 76M25, 76T05, 86A99)

Brauer, Uwe (*with* Malec, Edward) Trapped surfaces due to spherical inhomogeneities in expanding open universes. *Classical Quantum Gravity* **9** (1992), *no.* 4, 905–920. (R. Beig) **93f:83067** 83C75 (83C57)

— An existence theorem for perturbed Newtonian cosmological models. *J. Math. Phys.* **33** (1992), *no.* 3, 1224–1233. (Philippe-A. Dionne) **93c:58214** 58G16 (83F05)

Braun, Amiram Power intersection in Noetherian P.I. rings. (English summary) *Abelian groups and noncommutative rings*, 81–88, *Contemp. Math.*, 130, *Amer. Math. Soc., Providence, RI*, 1992. (Plamen Koshlukov) **93e:16037** 16R20 (16P40, 16P50, 16R30, 16U20)

Braun, E. (*with* Aguilar, A.) The specific heat of a general two-dimensional Ising model. *Phys. A* **178** (1991), *no.* 3, 551–560. (H. N. V. Temperley) **93a:82016** 82B23 (82B20)

— (*with* Aguilar, A.) Exact magnetic transitions in the "union jack" model. *Phys. A* **184** (1992), *no.* 1-2, 244–275. (Ladislav Šamaj) **93e:82009** 82B20 (82B23)

Braun, Jaromír ★ Kombinatorické metody v analýze a modelování elektronických soustav. (Czech) [Combinatorial methods in the analysis and modeling of electronic systems] Studie ČSAV [Publications of ČSAV], 90-21. *Academia [Publishing House of the Czech Academy of Sciences], Prague*, 1990. 147 *pp. ISBN* 80-200-0318-5 (Christoph Meinel) **93a:94047** 94C15

Braun, M. A. (*with* Urbanowski, K.) On the description of multiple measurements of an unstable state. *Found. Phys.* **22** (1992), *no.* 4, 617–630. (Koichiro Matsuno) **93d:81016** 81P15

Braun, Martin ★ Differential equations and their applications. An introduction to applied mathematics. Fourth edition. Texts in Applied Mathematics, 11. *Springer-Verlag, New York*, 1993. xiv+578 *pp. ISBN* 0-387-97894-1 (From the preface) **93h:34001** 34–01 (00A06, 58–01)

Braun, Mathias (*with* Betten, Dieter) A tactical decomposition for incidence structures. *Combinatorics '90 (Gaeta, 1990)*, 37–43, *Ann. Discrete Math.*, 52, *North-Holland, Amsterdam*, 1992. (*see* **93f:05003**) 05B99

Braun, R. J. (*with* Merchant, Gregory J.; Brattkus, K.; Davis, S. H.) Pulsatile instability in rapid directional solidification: strongly-nonlinear analysis. (English summary) *SIAM J. Appl. Math.* **52** (1992), *no.* 5, 1279–1302. (Summary) **93h:35203** 35Q72 (35B25, 35R35, 73B30, 80A22)

Braun, R. W. (*with* Bonet, José; Meise, Reinhold; Taylor, B. A.) Whitney's extension theorem for nonquasianalytic classes of ultradifferentiable functions. *Studia Math.* **99** (1991), *no.* 2, 155–184. (Joaquim Bruna) **93e:46030** 46E10 (26E10)

Brauner, C.-M. (*with* Schmidt-Lainé, Cl.) Nonlinear mathematical analysis of some combustion problems. *Fluid dynamical aspects of combustion theory*, 61–77, *Pitman Res. Notes Math. Ser.*, 223, *Longman Sci. Tech., Harlow*, 1991. (Graeme C. Wake) **93k:80012** 80A25 (35K55, 35Q99, 80A32)

— (*with* Buckmaster, John; Dold, J. W.; Schmidt-Lainé, Cl.) On an evolution equation arising in detonation theory. *Fluid dynamical aspects of combustion theory*, 196–210, *Pitman Res. Notes Math. Ser.*, 223, *Longman Sci. Tech., Harlow*, 1991. (Graeme C. Wake) **93k:80011** 80A25 (35Q99, 76L05, 76N15)

— (*with* Fife, Paul C.; Namah, G.; Schmidt-Lainé, Cl.) Homogenization of propagative combustion processes. *Progress in partial differential equations: calculus of variations, applications (Pont-à-Mousson, 1991)*, 139–149, *Pitman Res. Notes Math. Ser.*, 267, *Longman Sci. Tech., Harlow*, 1992. (G. Namah) **93m:80011** 80A25 (35B27, 35R35, 73B27)

— (*with* Bandle, Catherine; Schmidt-Lainé, Cl.) A stability analysis for semilinear Neumann problems with concave nonlinearities. (English summary) *Math. Methods Appl. Sci.* **15** (1992), *no.* 8, 571–591. (Maura Ughi) **93k:35144** 35K60 (35B35)

— (*with* Lunardi, Alessandra; Schmidt-Lainé, Cl.) Stability of travelling waves with interface conditions. *Nonlinear Anal.* **19** (1992), *no.* 5, 455–474. (H. J. Kuiper) **93k:35145** 35K60 (34G20, 35R35, 47N20, 80A22)

Braunss, Hans-Andreas (*with* Junek, H.) On types of polynomials and holomorphic functions on Banach spaces. *Note Mat.* **10** (1990), *no.* 1, 47–58. (Miguel Caldas Cueva) **93g:46042** 46G20

— On holomorphic mappings of Schatten class type. *Arch. Math. (Basel)* **59** (1992), *no.* 5, 450–456. (G. M. Ustinov) **93i:46078** 46G20 (46E50, 47B10, 47H99)

Braunstein, Samuel L. How large a sample is needed for the maximum likelihood estimator to be approximately Gaussian? *J. Phys. A* **25** (1992), *no.* 13, 3813–3826. 62F12 (62E20)

— (*with* Mann, Ady; Revzen, M.) Maximal violation of Bell inequalities for mixed states. *Phys. Rev. Lett.* **68** (1992), *no.* 22, 3259–3261. (Summary) **93b:81008** 81P05

Brause, R. Optimal information distribution and performance in neighbourhood-conserving maps for robot control. (English summary) *Comput. Artificial Intelligence* **11** (1992), *no.* 2, 173–200. 68U05

Brave, Yitzhak (*with* Heymann, Michael) On optimal attraction in discrete-event processes. (English summary) *Inform. Sci.* **67** (1993), *no.* 3, 245–276. (Jing Yue Lin) **93j:93124** 93D15 (93B50, 93C30)

Braverman, M. È. (*with* Rozonoèr, L. I.) Robustness of linear dynamical systems. I. (Russian) *Avtomat. i Telemekh.* **1991**, *no.* 11, 17–23; *translation in Automat. Remote*

Control **52** (1991), *no.* 11, *part* 1, 1493–1498 (1992). (Andrzej Świerniak) **93f:93098** 93D09 (34H05, 93B35, 93C05, 93D25)

— (*with* Rozonoèr, L. I.) Robustness of linear dynamical systems. II. (Russian) *Avtomat. i Telemekh.* **1992**, *no.* 1, 41–52; *translation in Automat. Remote Control* **53** (1992), *no.* 1, *part* 1, 34–43. (Andrzej Świerniak) **93f:93099** 93D09 (34H05, 93B35, 93C05, 93D25)

Braverman, M. Sh. The Rosenthal inequality in symmetric spaces. (Russian) *Funktsional. Anal. i Prilozhen.* **25** (1991), *no.* 1, 58–60; *translation in Functional Anal. Appl.* **25** (1991), *no.* 1, 46–47. (Alexander Mekler) **93a:46046** 46E30 (60B11)

— Independent random variables in symmetric spaces. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* **1991**, *no.* 7, 8–14; *translation in Soviet Math. (Iz. VUZ)* **35** (1991), *no.* 7, 6–11. (De Li Li) **93h:60073** 60G50 (60E15)

— Sequences of independent stable random variables with different exponents. (Russian) *Teor. Veroyatnost. i Mat. Statist. No.* 44 (1991), 25–31; *translation in Theory Probab. Math. Statist. No.* 44 (1992), 23–28. (Gerd Christoph) **93h:60022** 60E07 (60F05)

ayala Bravo, Victor *see* **Ayala Bravo, Victor**

Bravo, Víctor Ayala *see* **Ayala Bravo, Victor**

Bravo Yuste, Santos "Cubication" of nonlinear oscillators using the principle of harmonic balance. *Internat. J. Non-Linear Mech.* **27** (1992), *no.* 3, 347–356. (Summary) **93c:70013** 70K05 (34C05, 34C15, 34C23, 73K12)

— Quasi-pure-cubic oscillators studied using a Krylov-Bogoliubov method. (English summary) *J. Sound Vibration* **158** (1992), *no.* 2, 267–275. (Summary) **93h:70020** 70K99 (34C15, 34C29)

— Generalized Bohr-Sommerfeld rule for quartic oscillators. (English summary) *Phys. Rev. A* (3) **46** (1992), *no.* 9, 5367–5374. (Summary) **93i:81023** 81Q05

Bravyĭ, E. I. On a choice of domain for a singular differential operation. (Russian. Russian summary) *Boundary value problems (Russian)*, 12–19, *Perm. Politekh. Inst., Permʹ*, 1991. (*see* **93m:00017**) 34B05

Brawer, Robert (*with* Pirovino, Magnus) The linear algebra of the Pascal matrix. (English summary) *Linear Algebra Appl.* **174** (1992), 13–23. (Wayne M. Dymacek) **93g:05005** 05A10 (05A19, 15A23, 15A36)

Brawley, Joel V. (*with* Brown, David D.) A note on iterated presentations of algebraic extensions of finite fields. Proceedings of the Twenty-second Southeastern Conference on Combinatorics, Graph Theory, and Computing (Baton Rouge, LA, 1991). *Congr. Numer.* **85** (1991), 3–7. (R. A. Mollin) **93c:12002** 12E20 (12F05)

— (*with* Mullen, Gary L.) Functions and polynomials over Galois rings. *J. Number Theory* **41** (1992), *no.* 2, 156–166. (Rudolf Lidl) **93d:11124** 11T06 (11T30)

— (*with* Mullen, Gary L.) Scalar polynomial functions on the nonsingular matrices over a finite field. (English summary) *Linear Algebra Appl.* **174** (1992), 1–12. (N. Popescu) **93i:15023** 15A33 (12E99)

— Polynomial functions on matrices over a finite field. (English summary) *Finite fields, coding theory, and advances in communications and computing (Las Vegas, NV, 1991)*, 15–31, *Lecture Notes in Pure and Appl. Math.*, 141, *Dekker, New York*, 1993. (S. D. Cohen) **93m:11127** 11T06 (11C20)

Brax, Ph. On the emergence of asymptotic localization for some random diffusion processes. *Acta Phys. Polon. B* **22** (1991), *no.* 11-12, 899–929. (Aernout C. D. van Enter) **93h:82076** 82D30 (60K35, 81V25, 82B44)

Bray, K. N. C. (*with* Libby, Paul A.) Premixed turbulent combustion. *Fluid dynamical aspects of combustion theory*, 113–140, *Pitman Res. Notes Math. Ser.*, 223, *Longman Sci. Tech., Harlow*, 1991. (From the introduction) **93i:80004** 80A25 (76F99, 76N15)

Bray, Marcel Univers magnétohydrodynamiques à symétrie plane. (English summary) [Magnetohydrodynamical universes with plane symmetry] *Mem. Accad. Sci. Torino Cl. Sci. Fis. Mat. Natur.* (5) **10** (1986), *no.* 4, 99–115 (1988). (Gh. Procopiuc) **93d:83041** 83C55 (83C20)

— Polytropes en magnetohydrodynamique. (English summary) [Polytropes in magneto-hydrodynamics] *Mem. Accad. Sci. Torino Cl. Sci. Fis. Mat. Natur.* (5) **12** (1988), *no.* 1, 24 *pp.* (Gh. Procopiuc) **93d:85004** 85A30 (76W05)

Brazier, J. Ph. (*with* Aupoix, B.; Cousteix, J.) Second-order effects in hypersonic laminar boundary layers. (English summary) *Computational methods in hypersonic aerodynamics*, 265–291, *Fluid Mech. Appl.*, 9, *Kluwer Acad. Publ., Dordrecht*, 1991. (*see* **93d:76001**) 76K05 (76N20)

Brdyś, M. A. (*with* Lok, K.) Fast integrated system optimization and parameter estimation algorithms. *Control '91, Vol.* 1, 2 (*Edinburgh*, 1991), 632–637, *IEE Conf. Publ. Ser.*, 332, *IEE, London*, 1991. (*see* **93h:93007**) 90C30 (93B40)

— An algorithm for optimal scheduling of a class of cascade water supply systems. (English summary) *Optimal Control Appl. Methods* **13** (1992), *no.* 4, 265–287. 49N55 (93C95)

Breakwell, J. V. (*with* Janssens, F. L.) On the traverse vibrations of a revolving tether. (English summary) *Celestial Mech. Dynam. Astronom.* **54** (1992), *no.* 4, 317–341. (Summary) **93h:70023** 70M20 (73K12)

Brebbia, C. A. (*with* Domínguez, José) ★ Boundary elements: an introductory course. Second edition. *Computational Mechanics Publications, Southampton; copublished with McGraw Hill Publishing Company, New York*, 1992. vi+314 *pp. ISBN* 1-85312-160-6 (Editors) **93d:73069** 73V10 (65N38, 73-04, 73V25)

— (*with* ElHarrouni, K.; Ouazar, D.; Wrobel, L. C.) Dual reciprocity boundary element method for heterogeneous porous media. (English summary) *Boundary element technology, VII (Albuquerque, NM*, 1992), 151–159, *Comput. Mech., Southampton*, 1992. (*see* **93b:65002**) 76M15 (65N38, 76S05)

— (*with* Partridge, P. W.) The dual reciprocity boundary element method for the diffusion convection equation. (English summary) *Computational methods in water resources, IX, Vol.* 1 (*Denver, CO*, 1992), 131–140, *Comput. Mech., Southampton*, 1992. (*see* **93g:76002**) 76M15 (76Rxx)

— *see also* **Boundary element technology, 93b:65002**; **Computational methods in viscous aerodynamics, 93e:76001**; **Computational methods in water resources, 93g:76002**; **93g:76003**; **Boundary elements in fluid dynamics, 93i:76003**; **Adaptive finite and boundary element methods, 93m:65005** *and* **Boundary element methods in acoustics**

Brechner, Eric L. General offset curves and surfaces. *Geometry processing for design and manufacturing*, 101–121, *SIAM, Philadelphia, PA*, 1992. (*see* **93b:65035**) 65D17

azevedo Breda, Ana M. R. *see* **Azevedo Breda, Ana M. R.**

Bredikhin, D. A. On relation algebras with general superpositions. *Algebraic logic (Budapest*, 1988), 111–124, *Colloq. Math. Soc. János Bolyai*, 54, *North-Holland, Amsterdam*, 1991. (Jānis Cīrulis) **93c:03078** 03G15 (08A40)

— Representation of ordered weakly restrictive semigroups by binary relations. (Russian) *Ordered sets and lattices, No.* 10 (*Russian*), 15–19, *Saratov. Gos. Univ., Saratov*, 1991. (From the text) **93c:20111** 20M99 (06F05)

Breedveld, P. C. (*with* Maschke, B. M.; van der Schaft, A. J.) An intrinsic Hamiltonian formulation of network dynamics: nonstandard Poisson structures and gyrators. (English summary) *J. Franklin Inst.* **329** (1992), *no.* 5, 923–966. (Galina G. Okuneva) **93k:70022** 70G99 (58F05, 70H99, 78A55)

Breen, Lawrence Théorie de Schreier supérieure. [Higher Schreier theory] *Ann. Sci. École Norm. Sup.* (4) **25** (1992), *no.* 5, 465–514. (Graham J. Ellis) **93k:18019** 18G50

Breen, Marilyn Staircase kernels in orthogonal polygons. *Arch. Math. (Basel)* **59** (1992), *no.* 6, 588–594. (Jürgen Eckhoff) **93j:52005** 52A30

— Illumination by translates of convex sets. *Geom. Dedicata* **42** (1992), *no.* 2, 215–222. (John D. Baildon) **93h:52006** 52A35 (52A30)

Breen, Michael Principal ideals in the semigroup of binary relations on a finite set: what happens when one element is added to the set. *Semigroup Forum* **44** (1992), *no.* 1, 129–132. (J. B. Kim) **93a:20094** 20M10

Brega, Alfredo (*with* Tirao, Juan A.) A transversality property of a derivation of the universal enveloping algebra $U(k)$, for $SO(n, 1)$ and $SU(n, 1)$. *Manuscripta Math.* **74** (1992), *no.* 2, 195–215. (H. de Vries) **93c:22023** 22E46

Breger, Herbert *see* **Leibniz, Gottfried Wilhelm, 93m:01102**

Bregman, Yu. H. (*with* Shapirovskiĭ, B. Ė.; Shostak, A. P.) On decomposition of a set into certain subsets and cl-cardinality of a topological space. (Russian and Latvian summaries) *Mathematics, I (Russian)*, 63–75, *Latv. Univ. Zināt. Raksti*, 552, *Latv. Univ., Riga*, 1990. (Hao Xuan Zhou) **93a:54002** 54A25 (54A35)

Bregola, M. (*with* Bonora, L.; D'Auria, R.; et al.) Some remarks on the supersymmetrization of the Lorentz Chern-Simons form in $D = 10$ $N = 1$ supergravity theories. *Phys. Lett. B* **277** (1992), *no.* 3, 306–312. (Mark D. Roberts) **93e:83068** 83E50

Brehm, Ulrich (*with* Altshuler, Amos) Neighborly maps with few vertices. *Discrete Comput. Geom.* **8** (1992), *no.* 1, 93–104. (Ren Ding) **93b:52016** 52B70 (05C85, 57M20)

— Nonuniqueness results for X-ray problems with point sources. *Discrete Comput. Geom.* **8** (1992), *no.* 2, 153–169. (Béla Uhrin) **93e:52007** 52A20

Breĭdo, I. V. Extremal estimates for the coefficients of a characteristic polynomial of arbitrary order in real and complex roots. (Russian. Russian summary) *Avtomat. i Telemekh.* **1992**, *no.* 4, 19–22; *translation in Automat. Remote Control* **53** (1992), *no.* 4, *part* 1, 486–489. (Summary) **93f:93056** 93B40 (93D09)

Breidt, F. J. (*with* Davis, Richard Alan) Time-reversibility, identifiability and independence of innovations for stationary time series. (English summary) *J. Time Ser. Anal.* **13** (1992), *no.* 5, 377–390. (Gy. Terdik) **93j:62219** 62M10

Breiman, Leo ★ Probability. Corrected reprint of the 1968 original. Classics in Applied Mathematics, 7. *Society for Industrial and Applied Mathematics (SIAM), Philadelphia, PA*, 1992. xiv+421 *pp. ISBN* 0-89871-296-3 (Editors) **93d:60001** 60-01

— The little bootstrap and other methods for dimensionality selection in regression: X-fixed prediction error. (English summary) *J. Amer. Statist. Assoc.* **87** (1992), *no.* 419, 738–754. (Summary) **93g:62089** 62J05 (62G09)

— Fitting additive models to regression data: diagnostics and alternative views. (English summary) *Comput. Statist. Data Anal.* **15** (1993), *no.* 1, 13–46. (Summary) **93h:62121** 62J05

Breĭsuèl, R. *see* **Bracewell, Ronald N.**

Breizman, B. N. (*with* Berk, H. L.; Ye, Huanchun) Map model for nonlinear alpha particle interaction with toroidal Alfvén waves. (English summary) *Phys. Fluids B* **5** (1993), *no.* 5, 1506–1515. 76X05

Brekhov, O. M. (*with* Moraru, V. A.) Determination of the limit throughput of a computer controlled by a data flow. (Russian. Russian summary) *Avtomat. i Telemekh.* **1992**, *no.* 6, 173–181; *translation in Automat. Remote Control* **53** (1992), *no.* 6, *part* 2, 936–943. 68M20

Brekhovskikh, L. M. (*with* Lysanov, Yu. P.) ★ Fundamentals of ocean acoustics. Second edition. Springer Series on Wave Phenomena, 8. *Springer-Verlag, Berlin*, 1991. xii+270 *pp. ISBN* 3-540-52976-4 (John S. Robertson) **93a:76086** 76Q05 (86A05)

Brekke, Lee (*with* Imbo, Tom D.) Statistics of 2D solitons. *Internat. J. Modern Phys. A* **7** (1992), *no.* 11, 2589–2600. (Krzysztof Galicki) **93h:81111** 81T40 (14H55, 35Q51)

— (*with* Dykstra, Hans; Hughes, Shane J.; Imbo, Tom D.) Knots and links of nonabelian string. (English summary) *Phys. Lett. B* **288** (1992), *no.* 3-4, 273–278. (Summary) **93g:81087** 81T13 (57M25, 81T30)

Brella, A. (*with* Du, X. C.; Longchamp, R.) Fast algorithm of Chandrasekhar type for ARMA model identification. (English summary) *Automatica J. IFAC* **28** (1992), *no.* 5, 927–934. 93B40 (93E10)

Brelle, A. (*with* Metzler, Wolfgang[2]; Schmidt, K.-D.) Nonanalytic dynamics for generating the Mandelbrot set: a tutorial. (English summary) *Internat. J. Bifur. Chaos Appl. Sci. Engrg.* **2** (1992), *no.* 2, 241–250. (Summary) **93d:58139** 58F23 (30D05)

Brémaud, Pierre Event and time averages: the stationary case and the nonstationary case. *Probability theory and mathematical statistics, Vol. I (Vilnius*, 1989), 189–196, "*Mokslas*", *Vilnius*, 1990. (Volker Schmidt) **93f:60135** 60K25

— An elementary proof of Sengupta's invariance relation and a remark on Miyazawa's conservation principle. *J. Appl. Probab.* **28** (1991), *no.* 4, 950–954. (Masakiyo Miyazawa) **93b:60101** 60G55 (60K25)

— (*with* Kannurpatti, Raghavan; Mazumdar, Ravi R.) Event and time averages: a review. *Adv. in Appl. Probab.* **24** (1992), *no.* 2, 377–411. (Masakiyo Miyazawa) **93i:60092** 60G55 (60G44, 60K25)

— (*with* Vázquez-Abad, Felisa J.) On the pathwise computation of derivatives with respect to the rate of a point process: the phantom RPA method. *Queueing Systems Theory Appl.* **10** (1992), *no.* 3, 249–269. (L. Y. Shi) **93d:60154** 60K25 (60G55, 90B22)

— Maximal coupling and rare perturbation sensitivity analysis. (English summary) *Queueing Systems Theory Appl.* **11** (1992), *no.* 4, 307–333. (Y. C. Ho) **93j:93039** 93B35 (93C55, 93E99)

Bremer, Birgit (*with* Wetwitschka, Karsten) Spezielle ebene Gitterpolygone. [Special plane lattice polygons] *Wiss. Z. Pädagog. Hochsch. Erfurt/Mühlhausen Math.-Natur. Reihe* **28** (1992), *no.* 1, 93–99. (Martin Henk) **93h:52022** 52C05

Bremner, Andrew (*with* Guy, Richard K.) Nu-configurations in tiling the square. *Math. Comp.* **59** (1992), *no.* 199, 195–202, *S1–S20*. (Joe P. Buhler) **93a:11019** 11D25 (11G05, 11Y50, 52C20)

— (*with* Buell, Duncan A.) Three points of great height on elliptic curves. (English summary) *Math. Comp.* **61** (1993), *no.* 203, 111–115. (Philippe Satgé) **93k:11052** 11G05 (11Y40)

— (*with* Guy, Richard K.; Nowakowski, Richard J.) Which integers are representable as the product of the sum of three integers with the sum of their reciprocals? (English summary) *Math. Comp.* **61** (1993), *no.* 203, 117–130. (Philippe Satgé) **93k:11021** 11D25 (11G05, 11G40)

Bremser, Priscilla S. (*with* Gomez-Calderon, Javier) Polynomials and primitive elements in Galois rings. *J. Number Theory* **41** (1992), *no.* 2, 172–177. (Gary L. Mullen) **93d:11129** 11T30

Brendle, Jörg (*with* Judah, Haim; Shelah, Saharon) Combinatorial properties of Hechler forcing. (English summary) *Ann. Pure Appl. Logic* **58** (1992), *no.* 3, 185–199. (Jakub Jasiński) **93k:03048** 03E40 (03E45)

Brenier, Y. Le problème du plus court chemin en hydrodynamique incompressible. [The problem of the shortest path in incompressible hydrodynamics] *Journées "Équations aux Dérivées Partielles" (Saint-Jean-de-Monts, 1992), Exp. No. VII, 10 pp., École Polytech., Palaiseau*, 1992. (Yu. E. Gliklikh) **93k:58039** 58D30 (35Q35, 58D05, 76C05)

Brennan, Joseph P. The restriction of the outer plethysm to a Young subgroup. (English summary) *Comm. Algebra* **21** (1993), *no.* 3, 1029–1036. (Stuart Martin) **93k:20024** 20C30 (05E10)

Brenner, A. V. (*with* Shubin, M. A.) The Atiyah-Bott-Lefschetz formula for elliptic complexes on a manifold with boundary. (Russian) Translated in J. Soviet Math. **64** (1993), no. 4, 1069–1111. *Current problems in mathematics. Newest results, Vol. 38 (Russian)*, 119–183, 186, *Itogi Nauki i Tekhniki, Akad. Nauk SSSR, Vsesoyuz. Inst. Nauchn. i Tekhn. Inform., Moscow*, 1990. (J. S. Joel) **93k:58212** 58G10 (58G20)

Brenner, Anastasios *see* **Duhem, Pierre-Maurice-Marie, 93k:01089**

Brenner, Holger Ein überabzählbares, über **Q** linear unabhängiges System reeller Zahlen. [A nondenumerable linearly independent system of real numbers over **Q**] *Math. Semesterber.* **39** (1992), *no.* 1, 89–93. (Summary) **93d:11011** 11B05 (15A03)

Brenner, J. L. (*with* Alzer, Horst) A note on Henrici's inequalities. *General inequalities*, 6 (*Oberwolfach*, 1990), 437–440, *Internat. Ser. Numer. Math.*, 103, *Birkhäuser, Basel*, 1992. (*see* **93k:26001**) 26D15

— (*with* Alzer, Horst) On a double-inequality of Schlömilch-Lemonnier. *J. Math. Anal. Appl.* **168** (1992), *no.* 2, 319–328. (P. S. Bullen) **93g:26026** 26D15

Brenner, S. *see* **Representations of algebras and related topics, 93j:16002**

Brenner, Susanne C. (*with* Sung, Li-Yeng) Linear finite element methods for planar linear elasticity. *Math. Comp.* **59** (1992), *no.* 200, 321–338. (N. Gass) **93a:73078** 73V05 (65N12, 65N30)

— A multigrid algorithm for the lowest-order Raviart-Thomas mixed triangular finite element method. *SIAM J. Numer. Anal.* **29** (1992), *no.* 3, 647–678. (Summary) **93j:65175** 65N30 (65F10, 65N55)

— A nonconforming mixed multigrid method for the pure displacement problem in planar linear elasticity. (English summary) *SIAM J. Numer. Anal.* **30** (1993), *no.* 1, 116–135. (I. N. Molchanov) **93m:65166** 65N55 (73C02, 73V15)

Brent, Richard P. (*with* Boley, Daniel L.; Golub, Gene H.; Luk, Franklin T.) Algorithmic fault tolerance using the Lanczos method. *SIAM J. Matrix Anal. Appl.* **13** (1992), *no.* 1, 312–332. (Herbert J. Bernstein) **93f:65034** 65F15 (94B05)

— On computing factors of cyclotomic polynomials. (English summary) *Math. Comp.* **61** (1993), *no.* 203, 131–149. (Peter Stevenhagen) **93m:11131** 11T22 (11Y05, 12Y05)

Brent, Ronald I. (*with* Fishman, Louis) Derivation of extended parabolic theories for vector and electromagnetic wave propagation. (English summary) *Invariant imbedding and inverse problems (Albuquerque, NM, 1990)*, 90–102, *SIAM, Philadelphia, PA*, 1992. (Summary) **93g:78006** 78A25 (35Q60)

Brentari, Eugenio ★ Asimmetria e misure di asimmetria. (Italian) [Asymmetry and measures of asymmetry] With an introduction by Michele Zenga. *G. Giappichelli Editore, Turin*, 1990. x+102 *pp. ISBN* 88-348-0579-8 (Marco Scarsini) **93c:62027** 62E99

Brenti, Francesco Log-concavity and combinatorial properties of Fibonacci lattices. *European J. Combin.* **12** (1991), *no.* 6, 459–476. (Bruce Sagan) **93b:05167** 05E25 (05A15, 06A07)

— Expansions of chromatic polynomials and log-concavity. *Trans. Amer. Math. Soc.* **332** (1992), *no.* 2, 729–756. (Summary) **93j:05055** 05C15

Brentjes, Sonja Der Ṯābit b. Qurra zugeschriebene Zusatz I, 46^2 zu Euklid I, 46 in MS Leiden 399, 1. [The addendum I, 46^2 to Euclid I, 46, attributed to Thābit ibn Qurra al-Ḥarrānī, in MS Leiden 399, 1] *Amphora*, 91–120, *Birkhäuser, Basel*, 1992. (Jan P. Hogendijk) **93k:01009** 01A30 (01A20, 01A35)

Breny, Henri Premières évaluations numériques pour une "loi des gaz". [The first numerical estimates for a "law of gases"] *Rev. Histoire Sci.* **45** (1992), *no.* 2-3, 345–359. (Peter M. Harman) **93k:01020** 01A45

Brešar, Matej (*with* Vukman, J.) Derivations of noncommutative Banach algebras. *Arch. Math. (Basel)* **59** (1992), *no.* 4, 363–370. (J. Peter McClure) **93i:46084** 46H40 (46H05)

— (*with* Zalar, Borut) On the structure of Jordan *-derivations. *Colloq. Math.* **63** (1992), *no.* 2, 163–171. (Jaroslav Zemánek) **93h:16067** 16W25 (46H40)

— On certain pairs of automorphisms of rings. (English summary) *J. Austral. Math. Soc. Ser. A* **54** (1993), *no.* 1, 29–38. (Howard E. Bell) **93k:16069** 16W20 (46L05)

— (*with* Šemrl, Peter) Linear transformations preserving potent matrices. *Proc. Amer. Math. Soc.* **119** (1993), *no.* 1, 81–86. (Jean H. Bevis) **93k:15003** 15A04

— Commuting traces of biadditive mappings, commutativity-preserving mappings and Lie mappings. *Trans. Amer. Math. Soc.* **335** (1993), *no.* 2, 525–546. (Howard E. Bell) **93d:16044** 16W25 (16N60, 16W10)

Bresinsky, Henrik (*with* Curtis, Frank) On generating sets and Gröbner bases for polynomial ideals. *Comm. Algebra* **20** (1992), *no.* 8, 2271–2287. (Ralf Fröberg) **93h:13026** 13P10

Breslauer, Dany An on-line string superprimitivity test. (English summary) *Inform. Process. Lett.* **44** (1992), *no.* 6, 345–347. (Summary) **93j:68160** 68R15 (68Q25, 68U15)

— (*with* Galil, Zvi) A lower bound for parallel string matching. (English summary) *SIAM J. Comput.* **21** (1992), *no.* 5, 856–862. (Summary) **93j:68064** 68Q22 (68Q25, 68U15)

Bresler, Yoram (*with* Yau, Sze Fong) A generalization of Bergstrom's inequality and some applications. *Linear Algebra Appl.* **161** (1992), 135–151. (J. L. Brenner) **93b:15021** 15A45 (26D99)

Bressan, Alberto On the set of trajectories for a nonconvex differential inclusion. (English summary) *Bull. Polish Acad. Sci. Math.* **39** (1991), *no.* 1-2, 111–115. (Stefan Miricâ) **93k:34036** 34A60 (34G20)

— Stable blow-up patterns. *J. Differential Equations* **98** (1992), *no.* 1, 57–75. (Summary) **93c:35041** 35J65 (35B05)

— Global solutions of systems of conservation laws by wave-front tracking. *J. Math. Anal. Appl.* **170** (1992), *no.* 2, 414–432. (Tie Hu Qin) **93k:35166** 35L65 (35L45)

— (*with* Colombo, Giovanni) Selections and representations of multifunctions in paracompact spaces. *Studia Math.* **102** (1992), *no.* 3, 209–216. (Summary) **93d:54032** 54C65 (47H04)

Bressan, Aldo On control theory and its applications to certain problems for Lagrangian systems. On hyper-impulsive motions for these. III. Strengthening of the characterizations performed in Parts I and II, for Lagrangian systems. An invariance property. (Italian summary) *Atti Accad. Naz. Lincei Rend. Cl. Sci. Fis. Mat. Natur.* (8) **82** (1988), *no.* 3, 461–471 (1990). (Vadim Komkov) **93a:93014** 93B05 (70Q05)

— Axiom system for the interpreted sense calculus SC_α^ν. With errata: "On the interpreted sense calculus SC_α^ν" [in *Foundations of logic and linguistics (Salzburg, 1983)*, 427–463, Plenum, New York, 1985; MR 87b:03030]. *Istit. Veneto Sci. Lett. Arti Atti Cl. Sci. Fis. Mat. Natur.* **147** (1988/89), 19–30. (From the introduction) **93m:03022** 03B45

— Hyper-impulsive motions and controllizable coordinates for Lagrangian systems. (Italian summary) *Atti Accad. Naz. Lincei Mem. Cl. Sci. Fis. Mat. Natur. Sez. Ia* (8) **19** (1989), *no.* 7, 195–246 (1991). (Florin Iacob) **93m:70021** 70H35 (34H05, 49N55, 70F20, 70Q05)

— (*with* Favretti, Marco) On motions with bursting characters for Lagrangian mechanical systems with a scalar control. I. Existence of a wide class of Lagrangian systems capable of motions with bursting characters. (Italian summary) *Atti Accad. Naz. Lincei Cl. Sci. Fis. Mat. Natur. Rend. Lincei* (9) *Mat. Appl.* **2** (1991), *no.* 4, 339–343. (Summary) **93b:93054** 93C15 (58F05, 70H35, 70Q05)

— (*with* Favretti, Marco) On motions with bursting characters for Lagrangian mechanical systems with a scalar control. II. A geodesic property of motions with bursting characters for Lagrangian systems. (Italian summary) *Atti Accad. Naz. Lincei Cl. Sci. Fis. Mat. Natur. Rend. Lincei* (9) *Mat. Appl.* **3** (1992), *no.* 1, 35–42. (Summary) **93d:93045** 93C15 (34H05, 70H35, 70Q05)

Bressan, Juan C. (*with* Toranzos, Fausto A.) Visibility cells and T-convexity spaces. (English summary) *Compositio Math.* **83** (1992), *no.* 3, 251–257. (Marilyn Breen) **93i:52003** 52A01 (52A30)

Bressan, Nicoletta (*with* Pavoni, Donatella) Truncation versus mapping in the spectral approximation to the Korteweg-de Vries equation. (English summary) *Spectral and high order methods for partial differential equations (Como, 1989)*, 443–450, *North-Holland, Amsterdam*, 1990. (*see* **93d:65005**) 65M70 (35Q53, 76B15, 76M25)

Bressloff, Paul C. (*with* Stark, Jaroslav) Analysis of associative reinforcement learning in neural networks using iterated function systems. (English summary) *IEEE Trans. Systems Man Cybernet.* **22** (1992), *no.* 6, 1348–1360. (Summary) **93m:92002** 92B20 (39B12)

— (*with* Taylor, John G.) Temporal sequence storage capacity of time-summating neural networks. *J. Phys. A* **25** (1992), *no.* 4, 833–842. (J. Leo van Hemmen) **93f:92005** 92B20 (82C32)

— (*with* Taylor, John G.) Perceptron-like learning in time-summating neural networks. (English summary) *J. Phys. A* **25** (1992), *no.* 16, 4373–4388. (Summary) **93h:92005** 92B20 (82C32)

Bressoud, David M. Why do we teach calculus? *Amer. Math. Monthly* **99** (1992), *no.* 7, 615–617. 00A35 (01A45, 26–01)

— Unimodality of Gaussian polynomials. *Discrete Math.* **99** (1992), *no.* 1-3, 17–24. (Bruce Sagan) **93e:11027** 11B65 (05A19, 05A30, 11B37)

— (*with* Wei, Shi-Yuan) Determinantal formulae for complete symmetric functions. *J. Combin. Theory Ser. A* **60** (1992), *no.* 2, 277–286. (Ira Gessel) **93h:05168** 05E05

— (*with* Knopp, Marvin I.; Sheingorn, Mark) In appreciation of Emil Grosswald. *A tribute to Emil Grosswald: number theory and related analysis*, 1–8, *Contemp. Math.*, 143, *Amer. Math. Soc., Providence, RI*, 1993. (*see* **93j:11002**) 01A70 (11–03)

le Breton, Alain *see* **Le Breton, Alain**

estévez-Bretón, Erika Sabrina *see* **Estévez-Bretón, Erika Sabrina**

estévez-Bretón, Gentil A. *see* **Estévez-Bretón, Gentil A.**

le Breton, Michel *see* **Le Breton, Michel**

Breton, Michèle (*with* L'Ecuyer, Pierre) Approximate solutions to continuous stochastic games. (English summary) *Differential games—developments in modelling and computation (Espoo, 1990)*, 257–264, *Lecture Notes in Control and Inform. Sci.*, 156, *Springer, Berlin*, 1991. (*see* **93c:90003**) 93E05

Bretthauer, G. (*with* Heckert, F.) A priori identifiability of closed loop subsystems for correlated outer signals. (English summary) *Identification and system parameter estimation 1991, Vol. 1,2 (Budapest, 1991)*, 1127–1132, *IFAC Sympos. Ser.*, 3, *Pergamon, Oxford*, 1992. (*see* **93h:93009**) 93B52

Breuer, H. P. (*with* Holthaus, M.) A semiclassical theory of quasienergies and Floquet wave functions. *Ann. Physics* **211** (1991), *no.* 2, 249–291. (H. Hogreve) **93f:81035** 81Q20 (81V45)

— (*with* Dietz, Klaus P.; Holthaus, M.) A remark on the Kramers-Henneberger transformation. (English summary) *Phys. Lett. A* **165** (1992), *no.* 4, 341–346. (Summary) **93f:81158** 81V10

— (*with* Petruccione, Francesco) A stochastic formulation of Burgers' equation. (English summary) *Phys. Lett. A* **172** (1992), *no.* 1-2, 49–55. (Summary) **93j:76028** 76D99 (76M25, 76M35, 82C80)

Breuer, Thomas Inaccurate experiments can only be described by a classical pointer. (English summary) *Phys. Lett. A* **168** (1992), *no.* 4, 233–235. (Summary) **93d:81017** 81P15

Brevdo, Leonid Three-dimensional absolute and convective instabilities, and spatially amplifying waves in parallel shear flows. *Z. Angew. Math. Phys.* **42** (1991), *no.* 6, 911–942. (Mariarosaria Padula) **93a:76053** 76F10 (76E15, 76E99)

— A note on the Gaster transformation. *Z. Angew. Math. Mech.* **72** (1992), *no.* 7, 305–306. 76E99

Brewer, Dennis W. (*with* Powers, Robert K.) Parameter estimation for a Volterra integro-differential equation. International Conference on the Numerical Solution of

Volterra and Delay Equations (Tempe, AZ, 1990). *Appl. Numer. Math.* **9** (1992), *no.* 3-5, 307–320. (Summary) **93a:65178** 65R20

Brewka, Gerhard ★ Nonmonotonic reasoning: logical foundations of commonsense. With a foreword by W. Bibel. Cambridge Tracts in Theoretical Computer Science, 12. *Cambridge University Press, Cambridge*, 1991. xiv+168 *pp. ISBN* 0-521-38394-3 (From the preface) **93b:68079** 68T27 (03B60, 03B70, 68–01)

— Cumulative default logic: in defense of nonmonotonic inference rules. *Artificial Intelligence* **50** (1991), *no.* 2, 183–205. (Giovanni Criscuolo) **93e:68118** 68T27 (03B60)

Brewster, Ben (*with* Yeh, George) Closed subclasses of M-groups. *J. Algebra* **146** (1992), *no.* 1, 18–29. (Martyn R. Dixon) **93d:20037** 20D10 (20F16, 20F17)

Brewster, M. E. Numerical bifurcation analysis of free-boundary problems. *Emerging applications in free boundary problems (Montreal, PQ*, 1990), 174–180, *Pitman Res. Notes Math. Ser.*, 280, *Longman Sci. Tech., Harlow*, 1993. (*see* **93k:00035**) 65M99 (35B32)

Breymann, Wolfgang (*with* Thomas, Harry) Linear response of two-dimensional area-preserving maps. *From phase transitions to chaos*, 335–345, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93c:58132** 58F13

Brézin, Édouard Introduction to critical phenomena and to the renormalization group. *Current trends in condensed matter, particle physics and cosmology (Kathmandu*, 1989), 1–102, *Kathmandu Summer School Lecture Notes*, 1, *World Sci. Publishing, River Edge, NJ*, 1990. (Tony C. Dorlas) **93e:82024** 82B28 (81T17, 82–01, 82B27)

— (*with* Hikami, Shinobu) A naive matrix-model approach to 2D quantum gravity coupled to matter of arbitrary central charge. *Phys. Lett. B* **283** (1992), *no.* 3-4, 203–208. (Summary) **93c:81194** 81T40 (81–04, 81T27)

— (*with* Zinn-Justin, Jean) Renormalization group approach to matrix models. (English summary) *Phys. Lett. B* **288** (1992), *no.* 1-2, 54–58. (Summary) **93f:81128** 81T40 (81T18)

Brezinski, Claude ★ Charles Hermite. (French) Père de l'analyse mathématique moderne. [The father of modern mathematical analysis] Cahiers d'Histoire et de Philosophie des Sciences. Nouvelle Série [Reports in the History and Philosophy of Science. New Series], 32. *Société Française d'Histoire des Sciences et des Techniques, Paris*, 1990. 83 *pp.* (D. J. Struik) **93h:01037** 01A70 (01A55)

— (*with* Redivo Zaglia, Michela) ★ Extrapolation methods. Theory and practice. With 1 IBM-PC floppy disk (5.25 inch). Studies in Computational Mathematics, 2. *North-Holland Publishing Co., Amsterdam*, 1991. x+464 *pp. ISBN* 0-444-88814-4 (Alan M. Cohen) **93d:65001** 65–02 (65Bxx)

— (*with* Redivo Zaglia, Michela) A new presentation of orthogonal polynomials with applications to their computation. *Numer. Algorithms* **1** (1991), *no.* 2, 207–221. (Summary) **93h:33004** 33C45 (42C05, 65D20)

— (*with* Sadok, H.) Some vector sequence transformations with applications to systems of equations. (English summary) Extrapolation and rational approximation (Puerto de la Cruz, 1992). *Numer. Algorithms* **3** (1992), *no.* 1-4, 75–80. (Summary) **93h:65003** 65B05 (65F30)

— (*with* Redivo Zaglia, Michela; Sadok, H.) A breakdown-free Lanczos type algorithm for solving linear systems. (English summary) *Numer. Math.* **63** (1992), *no.* 1, 29–38. (Summary) **93f:65028** 65F10 (65F25)

— *see also* **Extrapolation and rational approximation, 93g:00026** *and* **Computational and applied mathematics, 93j:00007**

Brézis, Haïm Uniform estimates for solutions of $-\Delta u = V(x)u^p$. *Partial differential equations and related subjects (Trento*, 1990), 38–52, *Pitman Res. Notes Math. Ser.*, 269, *Longman Sci. Tech., Harlow*, 1992. (Yoshihito Tomita) **93m:35078** 35J65 (35J60)

— On some variational problem with limiting Sobolev exponent. *Progress in variational methods in Hamiltonian systems and elliptic equations (L'Aquila*, 1990), 42–51, *Pitman Res. Notes Math. Ser.*, 243, *Longman Sci. Tech., Harlow*, 1992. (Jean-Pierre Raymond) **93h:49007** 49J10 (35J85)

— (*with* Bethuel, Fabrice; Coleman, Bernard D.; Hélein, Frédéric) Bifurcation analysis of minimizing harmonic maps describing the equilibrium of nematic phases between cylinders. *Arch. Rational Mech. Anal.* **118** (1992), *no.* 2, 149–168. (E. Acerbi) **93h:49059** 49Q10 (58E20, 76A15, 76M30)

— (*with* Bethuel, Fabrice; Hélein, Frédéric) Limite singulière pour la minimisation de fonctionnelles du type Ginzburg-Landau. (English summary) [Singular limit for the minimization of Ginzburg-Landau functionals] *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 12, 891–895. (Summary) **93d:58033** 58E12 (35Q55, 58E20)

— (*with* Kamin, Shoshana) Sublinear elliptic equations in $\mathbf{R}^n$. *Manuscripta Math.* **74** (1992), *no.* 1, 87–106. (C. A. Swanson) **93f:35062** 35J60 (35B05)

Brezzi, Franco (*with* Bathe, Klaus-Jürgen) Recent developments in the finite element approximation of Reissner-Mindlin plates. (Portuguese summary) *Mat. Apl. Comput.* **10** (1991), *no.* 2, 125–135. (Summary) **93f:73058** 73K10 (65N30, 73V05)

Brichau, F. (*with* Deconinck, J.) A numerical model coupling galvanic corrosion and ohmic voltage drop in buried pipelines. (English summary) *Boundary element technology, VII (Albuquerque, NM*, 1992), 389–403, *Comput. Mech., Southampton*, 1992. (*see* **93b:65002**) 65N38 (65N30, 78A55)

Bricher, S. (*with* Bebernes, J.) Final time blowup profiles for semilinear parabolic equations via center manifold theory. *SIAM J. Math. Anal.* **23** (1992), *no.* 4, 852–869. (Pierre A. Vuillermot) **93h:35091** 35K55 (34G20, 35B40, 58F39)

Brick, Stephen G. On Dehn functions and products of groups. *Trans. Amer. Math. Soc.* **335** (1993), *no.* 1, 369–384. (Athanase Papadopoulos) **93c:57003** 57M20 (20E06, 20F32)

Brickell, E. F. (*with* Odlyzko, Andrew M.) Cryptanalysis: a survey of recent results. (English summary) *Contemporary cryptology*, 501–540, *IEEE, New York*, 1992. (*see* **93k:94009**) 94A60 (68P25)

— (*with* Stinson, Douglas R.) Some improved bounds on the information rate of perfect secret sharing schemes. (English summary) *J. Cryptology* **5** (1992), *no.* 3, 153–166. (Summary) **93j:94021** 94A60 (68P25)

Bricmont, J. (*with* Kupiainen, Antti) Random walks in asymmetric random environments. *Comm. Math. Phys.* **142** (1991), *no.* 2, 345–420. (Pablo A. Ferrari) **93d:82045** 82B41 (60J15, 60K35)

Bridge, D. S. (*with* Shreve, Steven E.) Multidimensional finite-fuel singular stochastic control. *Applied stochastic analysis (New Brunswick, NJ*, 1991), 38–58, *Lecture Notes in Control and Inform. Sci.*, 177, *Springer, Berlin*, 1992. (Onésimo Hernández Lerma) **93c:93052** 93E20 (49L20)

Bridges, Douglas S. (*with* Richman, Fred) A recursive counterexample to Debreu's theorem on the existence of a utility function. *Math. Social Sci.* **21** (1991), *no.* 2, 179–182. (Summary) **93a:90006** 90A06

— (*with* Ishihara, Hajime) Locating the range of an operator on a Hilbert space. *Bull. London Math. Soc.* **24** (1992), *no.* 6, 599–605. (A. Kučera) **93i:47124** 47S30 (03F60, 46S30, 47A05)

— (*with* Richman, Fred; Julian, W. H.; Mines, Ray) Extensions and fixed points of contractive maps in $\mathbf{R}^n$. *J. Math. Anal. Appl.* **165** (1992), *no.* 2, 438–456. (Mark Mandelkern) **93g:54055** 54H25 (03F60, 26A18, 47H10)

— The construction of a continuous demand function for uniformly rotund preferences. *J. Math. Econom.* **21** (1992), *no.* 3, 217–227. (Hiroaki Osana) **93e:90019** 90A40 (90A05)

Bridges, Thomas J. Spatially-quasiperiodic states in shear flows. (English summary) *Instability, transition, and turbulence (Hampton, VA*, 1991), 137–145, *ICASE/NASA LaRC Ser., Springer, New York*, 1992. (Summary) **93k:76041** 76E05 (58F40)

— Hamiltonian bifurcations of the spatial structure for coupled nonlinear Schrödinger equations. (English summary) *Phys. D* **57** (1992), *no.* 3-4, 375–394. (Tuncay Aktosun) **93j:58121** 58F39 (35Q55, 58F14)

— Spatial Hamiltonian structure, energy flux and the water-wave problem. (English summary) *Proc. Roy. Soc. London Ser. A* **439** (1992), *no.* 1906, 297–315. (Jean Mawhin) **93k:58085** 58F05 (58F40, 76B15)

Bridgman, P. W. *see* **Moyer, Albert E., 93a:01037a** *and* **93a:01037b**

Briegel, H.-J. (*with* Englert, B.-G.; Michaelis, M.; Süssmann, G.) Über die Wurzel aus der Klein-Gordon-Gleichung als Schrödinger-Gleichung eines relativistischen Spin-0-Teilchens. (English summary) [On the square-root Klein-Gordon equation as Schrödinger equation for a relativistic spin-0 particle] *Z. Naturforsch. A* **46** (1991), *no.* 11, 925–932. (Brian DeFacio) **93a:81070** 81R20 (81Q05)

Brieger, Leesa (*with* Bonomi, Ernesto) A stochastic lattice gas for Burgers' equation: a practical study. (English summary) *J. Statist. Phys.* **69** (1992), *no.* 3-4, 837–855. (Summary) **93j:82069** 82C80 (35Q53, 76M35)

Briem, Eggert Operating functions and ultraseparating function spaces. *Function spaces (Edwardsville, IL*, 1990), 55–59, *Lecture Notes in Pure and Appl. Math.*, 136, *Dekker, New York*, 1992. (Christopher C. White) **93a:46040** 46E15 (46J10)

Brigaglia, Aldo Italian mathematics at the beginning of the century and its relations with other disciplines. (Italian. English summary) *Rend. Accad. Naz. Sci. XL Mem. Sci. Fis. Natur.* (5) **14** (1990), *no.* 2, *part II*, 393–407 (1992). (Burnett Meyer) **93f:01014** 01A60

le Brigand, Dominique *see* **Le Brigand, Dominique**

Briggs, Amy J. An efficient algorithm for one-step planar compliant motion planning with uncertainty. (English summary) *Algorithmica* **8** (1992), *no.* 3, 195–208. (Summary) **93i:68170** 68U05

Brigham, Robert C. (*with* Dutton, Ronald D.) Compatible committees. Proceedings of the Twenty-second Southeastern Conference on Combinatorics, Graph Theory, and Computing (Baton Rouge, LA, 1991). *Congr. Numer.* **83** (1991), 161–166. (Summary) **93a:92020** 92H99

— (*with* Dutton, Ronald D.) Edges in graphs with large girth. *Graphs Combin.* **7** (1991), *no.* 4, 315–321. (Samuel Stueckle) **93b:05075** 05C35 (05C75)

— (*with* Carrington, Julie R.) Global domination of simple factors. (English summary) Proceedings of the Twenty-third Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, FL, 1992). *Congr. Numer.* **88** (1992), 161–167. (Summary) **93j:05110** 05C70 (68Q25, 68R10)

— (*with* Dutton, Ronald D.; Deo, Narsingh) On Pascal graphs. Proceedings of the Twenty-third Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, FL, 1992). *Congr. Numer.* **90** (1992), 141–150. (Introduction) **93j:05125** 05C75

Brighi, B. (*with* Chipot, Michel) Approximation in nonconvex problems. *Progress in partial differential equations: calculus of variations, applications (Pont-à-Mousson*, 1991), 150–157, *Pitman Res. Notes Math. Ser.*, 267, *Longman Sci. Tech., Harlow*, 1992. (Gérard Lebourg) **93j:49011** 49J40 (49K05, 49M15, 65K10)

Brightwell, Graham R. (*with* Winkler, Peter M.) Counting linear extensions. *Order* **8** (1991), *no.* 3, 225–242. (Christoph Meinel) **93b:06002** 06A06 (68Q25)

— (*with* Biggs, Norman; Tsoubelis, D.) Theoretical and practical studies of a competitive learning process. (English summary) *Network* **3** (1992), *no.* 3, 285–301. 68T05

— (*with* Scheinerman, Edward R.) Fractional dimension of partial orders. (English summary) *Order* **9** (1992), *no.* 2, 139–158. (Gerhard Behrendt) **93m:06003** 06A06

Brignole, Diana (*with* Fidel, Manuel) Algebraic study of some nonclassical logics using product algebras. (Spanish) *Proceedings of the First "Dr. Antonio A. R. Monteiro" Congress on Mathematics (Spanish) (Bahía Blanca*, 1991), 23–38, *Univ. Nac. del Sur, Bahía Blanca*, 1991. (S. Rudeanu) **93j:06012** 06D30 (03G10)

Brihaye, Yves (*with* Maślanka, P.; Giler, S.; Kosiński, P.) Real representations of Clifford algebras. *J. Math. Phys.* **33** (1992), *no.* 5, 1579–1581. (Pierre Anglès) **93g:15017** 15A66

— (*with* Kunz, Jutta) Periodic solutions in spontaneously broken theories. *J. Math. Phys.* **33** (1992), *no.* 8, 2898–2902. (Summary) **93c:81070** 81R20 (81T99)

Brill, P. H. (*with* Harris, Carl M.) Waiting times for $M/G/1$ queues with service-time or delay-dependent server vacations. (English summary) *Naval Res. Logist.* **39** (1992), *no.* 6, 775–787. (Summary) **93g:60189** 60K25

Brilla, Jozef Error analysis for Laplace transform–boundary element solution of parabolic equations. *Proceedings of the Second International Symposium on Numerical Analysis (Prague*, 1987), 125–130, *Teubner-Texte Math.*, 107, *Teubner, Leipzig*, 1988. (*see* **93b:65007**) 65N38 (65N15)

Brillard, Alain Boundary homogenization and boundary shape optimization for a cylinder. *Boundary control and boundary variation (Sophia-Antipolis*, 1990), 37–49, *Lecture Notes in Control and Inform. Sci.*, 178, *Springer, Berlin*, 1992. (*see* **93b:49001**) 49Q10

Brillhart, John Derrick Henry Lehmer. *Acta Arith.* **62** (1992), *no.* 3, 207–213. (Editors) **93m:01061b** 01A70

— Derrick Henry Lehmer. *Bull. Inst. Combin. Appl.* **5** (1992), 58–59. (Editors) **93d:01057** 01A70

— (*with* Blecksmith, Richard; Gerst, Irving) New proofs for two infinite product identities. *Rocky Mountain J. Math.* **22** (1992), *no.* 3, 819–823. (Liang-Cheng Zhang) **93h:11114** 11P83

— Derrick Henry Lehmer (1905–1991). *Notices Amer. Math. Soc.* **40** (1993), *no.* 1, 31–32. (Editors) **93m:01061a** 01A70

Brillinger, David R. Some asymptotics of finite Fourier transforms of a stationary p-adic process. (English summary) *J. Combin. Inform. System Sci.* **16** (1991), *no.* 2-3, 155–169. (Summary) **93k:62193** 62M15

— The digital rainbow: some history and applications of numerical spectrum analysis. (English and French summaries) *Canad. J. Statist.* **21** (1993), *no.* 1, 1–19. 62M15 (01A60, 42-03, 60G12)

Brimberg, Jack (*with* Wesolowsky, George O.) Probabilistic l_p distances in location models. (English summary) Locational decisions (Fullerton, CA, 1990). *Ann. Oper. Res.* **40** (1992), *no.* 1-4, 67–75 (1993). (Summary) **93m:90050** 90B85

— (*with* Mehrez, A.) A note on the convexity of the expected queue length of the $M/M/s$ queue with respect to the arrival rate: a third proof. (English summary) *J. Appl. Math. Stochastic Anal.* **5** (1992), *no.* 4, 325–329. 60K25

Brink, Chris Multisets and the algebra of relevance logic. *J. Non-Classical Logic* **5** (1988), *no.* 1, 75–95. 03B46 (03G25)

— (*with* Rewitzky, I. M.; Schmidt, R. A.) Autodescriptivity: beware! *Comput. J.* **34** (1991), *no.* 4, 380–381. (Henry Africk) **93b:03033** 03B50

— (*with* Pretorius, Jan) Boolean circulants, groups, and relation algebras. *Amer. Math. Monthly* **99** (1992), *no.* 2, 146–152. (R. A. Brualdi) **93d:05029** 05B20 (03G15, 15A15, 20F99)

Brink, L. (*with* Hansson, T. H.; Vasil'ev, M. A.) Explicit solution to the N-body Calogero problem. (English summary) *Phys. Lett. B* **286** (1992), *no.* 1-2, 109–111. (Summary) **93d:81029** 81Q05 (81S05, 81U10)

Brinkhuis, Jan Unramified abelian extensions of CM-fields and their Galois module structure. *Bull. London Math. Soc.* **24** (1992), *no.* 3, 236–242. (M. E. Keating) **93f:11080** 11R33 (11R20)

— On the Galois module structure over CM-fields. *Manuscripta Math.* **75** (1992), *no.* 4, 333–347. (Vincent Fleckinger) **93d:11120** 11R33 (11R65, 11R80)

Brinkmann, Bernd Teichmüllerraum für total degenerierte Kurven. [Teichmüller space on totally degenerate curves] *J. Reine Angew. Math.* **422** (1991), 117–139. (Frank Herrlich) **93d:14040** 14H10 (14D20)

— (*with* Gerritzen, L.) The lowest term of the Schottky modular form. *Math. Ann.* **292** (1992), *no.* 2, 329–335. (Rolf Berndt) **93b:14050** 14H42 (11F30, 11F46, 14K25)

Brinkmann, Hans-Berndt Funktionenräume, kartesische Geschlossenheit und nonstandard Methoden. [Function spaces, Cartesian closedness and nonstandard methods] *Arch. Math. (Basel)* **59** (1992), *no.* 2, 146–156. (Harvey Wolff) **93h:18015** 18D15 (03H05, 54B30, 54C35)

Brînzănescu, Vasile Lagrange polynomials in the Riemann-Roch formalism. (English summary) *Rev. Roumaine Math. Pures Appl.* **37** (1992), *no.* 5, 369–370. (Summary) **93h:14006** 14C40

Brio, Moysey (*with* Hunter, John K.) Mach reflection for the two-dimensional Burgers equation. (English summary) Experimental mathematics: computational issues in nonlinear science (Los Alamos, NM, 1991). *Phys. D* **60** (1992), *no.* 1-4, 194–207. (Summary) **93i:35119** 35Q53 (76L05)

— (*with* Hunter, John K.) Asymptotic equations for conservation laws of mixed type. *Wave Motion* **16** (1992), *no.* 1, 57–64. (Alan Jeffrey) **93g:35093** 35L65 (76B99, 76L05)

Brion, Michel (*with* Dixmier, Jacques) Comportement asymptotique des dimensions des covariants. (English summary) [Asymptotic behavior of the dimensions of covariants] *Bull. Soc. Math. France* **119** (1991), *no.* 2, 217–230. (Summary) **93a:20068** 20G05 (13A50, 14L30, 22E46)

— Sur la géométrie des variétés sphériques. [On the geometry of spherical varieties] *Comment. Math. Helv.* **66** (1991), *no.* 2, 237–262. (From the introduction) **93a:14043** 14L30 (14D25, 14M17)

— Parametrization and embeddings of a class of homogeneous spaces. *Proceedings of the International Conference on Algebra, Part* 3 (*Novosibirsk*, 1989), 353–360, *Contemp. Math.*, 131, *Part* 3, *Amer. Math. Soc., Providence, RI*, 1992. (Lucy Moser-Jauslin) **93i:14049** 14M17 (14L30)

— A note on two-orbit varieties. (English summary) *Topology Hawaii* (*Honolulu, HI*, 1990), 35–40, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93e:14055** 14L30 (57S25)

Briozzo, Carlos B. (*with* Budde, Carlos E.; Osenda, Omar; Cáceres, Manuel O.) Exact and asymptotic properties of multistate random walks. *J. Statist. Phys.* **65** (1991), *no.* 1-2, 167–182. (Cheng Xun Wu) **93c:60101** 60J15 (60K35, 82C41)

le Bris, Claude *see* **Le Bris, Claude**

Briskin, M. (*with* Yomdin, Y.) Extremal and near-extremal trajectories of rank zero in nonlinear control problems. *Optimization and nonlinear analysis* (*Haifa*, 1990), 53–63, *Pitman Res. Notes Math. Ser.*, 244, *Longman Sci. Tech., Harlow*, 1992. (O. Hájek) **93k:93009** 93B03 (49K15)

— (*with* Yomdin, Y.) Critical and near-critical values in polynomial control problems. I. One-dimensional case. (English summary) *Israel J. Math.* **78** (1992), *no.* 2-3, 257–280. (Kevin A. Grasse) **93j:49020** 49K15 (58C20, 93B03, 93C10, 93C15)

Brisson, Erik (*with* Beame, Paul; Ladner, Richard) The complexity of computing symmetric functions using threshold circuits. *Theoret. Comput. Sci.* **100** (1992), *no.* 1, 253–265. (Summary) **93e:68024** 68Q20

— Representing geometric structures in d dimensions: topology and order. (English summary) *Discrete Comput. Geom.* **9** (1993), *no.* 4, 387–426. (Summary) **93m:68163** 68U05 (52B55)

Brisson, Luc (*with* Meyerstein, F. Walter) ★ Inventer l'univers. (French) [Inventing the universe] Le problème de la connaissance et les modèles cosmologiques. [The problem of knowledge and cosmological models] L'Âne d'Or. [The Golden Ass] *Les Belles Lettres, Paris*, 1991. 211 *pp. ISBN* 2-251-42000-1 (Pierre Kerszberg) **93g:00012** 00A30 (83F05)

Bristeau, Marie Odile (*with* Glowinski, Roland; Dutto, Laura C.; Périaux, Jacques; Rogé, G.) On recent numerical simulations of compressible Navier-Stokes flows. (English summary) *Numerical simulation of unsteady flows and transition to turbulence* (*Lausanne*, 1990), 443–472, *Cambridge Univ. Press, Cambridge*, 1992. (Summary) **93f:76074** 76M25 (76M10, 76M20, 76N10)

— (*with* Erhel, Jocelyne; Glowinski, Roland; Périaux, Jacques) A time dependent approach to the solution of the Helmholtz equation at high wave numbers. (English summary) *Parallel processing for scientific computing, Vol. I, II* (*Norfolk, VA*, 1993), 258–261, *SIAM, Philadelphia, PA*, 1993. (*see* **93k:65003**) 65P05 (76Q05)

Bristol, David R. (*with* Chen, Hubert J.; Mithongtae, Jirawan S.) Comparing exponential guarantee times with a control. (English summary) With discussion. *The frontiers of modern statistical inference procedures, II* (*Sydney*, 1987), 95–151, *Amer. Sci. Press Ser. Math. Management Sci.*, 28, *Amer. Sci. Press, Columbus, OH*, 1992. (Summary) **93h:62035** 62F07 (62N05)

Britals, Janis Canonical theory of perturbations using eccentric anomaly as independent variable. (English summary) *Celestial Mech. Dynam. Astronom.* **54** (1992), *no.* 4, 305–316. (Summary) **93h:70006** 70F15 (70H15)

Britikov, V. E. On the distribution of the maximum size of a tree in a random graph. (Russian) *Probabilistic processes and their applications* (*Russian*), 36–41, *Moskov. Inst. Èlektron. Mashinostroeniya, Moscow*, 1989. (*see* **93b:60003**) 05C80 (60C05)

de Brito, A. L. (*with* Baseia, B.) Squeezing in the Schrödinger picture: normal ordering technique to solve the mass-varying oscillator. (English summary) *Quantum Opt.* **4** (1992), *no.* 4, 201–207. (K. Wódkiewicz) **93g:81215** 81V80 (81R30)

Brito, Fabiano (*with* Sa Earp, Ricardo; Meeks, William H., III; Rosenberg, Harold) Structure theorems for constant mean curvature surfaces bounded by a planar curve. *Indiana Univ. Math. J.* **40** (1991), *no.* 1, 333–343. (João Lucas Marques Barbosa) **93e:53009** 53A10 (49Q05, 53C42)

Brito, Margarida (*with* Bacro, Jean-Noël) Comportement asymptotique presque sûr de la différence de statistiques d'ordre uniformes. (English summary) [Almost sure asymptotic behavior of the difference of uniform order statistics] *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 4, 317–320. (Summary) **93a:60044** 60F15 (60G70, 62G30)

Brito, R. (*with* van Velzen, G. A.; Ernst, M. H.) Stress-stress correlation functions in lattice gases beyond Boltzmann's approximation. (English summary) *J. Statist. Phys.* **70** (1993), *no.* 3-4, 811–832. 82C80

Britov, N. A. (*with* Prokhorov, I. G.) Investigation of the qualitative properties of three-component two-dimensional flows of a liquid metal in a magnetic field on the Navier-Stokes-Maxwell model. (Russian) *Modeling and diagnosis of control systems* (*Russian*), 24–35, "*Naukova Dumka*", *Kiev*, 1991. (From the text) **93c:76083** 76W05

Brittan, Gordon G. Algebra and intuition. *Kant's philosophy of mathematics*, 315–339, *Synthese Lib.*, 219, *Kluwer Acad. Publ., Dordrecht*, 1992. (*see* **93i:00007**) 00A30 (01A50)

Britton, J. L. *see* **Turing, A. M., 93k:01094**

Britton, John Phillips (*with* Walker, Christopher B. F.) A 4th century Babylonian model for Venus: B.M. 33552. *Centaurus* **34** (1991), *no.* 2, 97–118. (George Abraham) **93b:01006** 01A17

— ★ Models and precision: the quality of Ptolemy's observations and parameters. Sources and Studies in the History and Philosophy of Classical Science, 1. *Garland Publishing, Inc., New York*, 1992. xx+202 *pp. ISBN* 0-8153-0215-0 (R. Nadal) **93m:01009** 01A20 (85-03)

Britton, N. F. A new method for mass transport problems with an application to haemofilters. *SIAM J. Appl. Math.* **52** (1992), *no.* 3, 630–650. (Vasile M. Ionescu) **93a:76111** 76Z05 (35Q30, 76D07, 92C35)

Brivio, Sonia On projective manifolds admitting 3-gonal or 4-gonal curve sections. *Matematiche* (*Catania*) **44** (1989), *no.* 2, 163–172 (1990). (Elvira Laura Livorni) **93d:14013** 14C20

Brizard, Alain J. (*with* Cook, Daniel R.; Kaufman, Allan N.) Wave-action conservation for pseudo-Hermitian fields. (English summary) *Phys. Rev. Lett.* **70** (1993), *no.* 5, 521–524. (Summary) **93m:82046** 82D10 (76W05)

le Brizaut, Jean-Sébastien *see* **Le Brizaut, Jean-Sébastien**

Broadbridge, Philip (*with* Srivastava, Rajesh; Yeh, T.-C. Jim) Burgers' equation and layered media: exact solutions and applications to soil-water flow. (English summary) *Math. Comput. Modelling* **16** (1992), *no.* 11, 163–169. (Summary) **93h:35174** 35Q53 (35C05)

— (*with* Rogers, Colin) On a nonlinear reaction-diffusion boundary-value problem: application of a Lie-Bäcklund symmetry. (English summary) *J. Austral. Math. Soc. Ser. B* **34** (1993), *no.* 3, 318–332. (Summary) **93j:35093** 35K57 (35Q35, 58G37)

Broadhead, M. K. (*with* Werby, Michael F.; Strayer, M. R.; Bottcher, C.) Solution of the Helmholtz-Poincaré wave equation using the coupled boundary integral equations and optimal surface eigenfunctions. (English summary) *Boundary element technology, VII* (*Albuquerque, NM*, 1992), 245–258, *Comput. Mech., Southampton*, 1992. (*see* **93b:65002**) 76M15 (65N38, 76Q05, 78A45)

Brochet, J.-M. (*with* Pouzet, Maurice) Gallai-Milgram properties for infinite graphs. Directions in infinite graph theory and combinatorics (Cambridge, 1989). *Discrete Math.* **95** (1991), *no.* 1-3, 23–47. (Jaroslav Nešetřil) **93f:05065** 05C70

— Representation of the positive real numbers as sums of colored rational numbers. *J. Combin. Theory Ser. A* **60** (1992), *no.* 1, 140–142. (N. Hindman) **93a:05126** 05D10 (11A63)

Brock, Jeffrey F. (*with* Adams, Colin C.; Bugbee, John; et al.) Almost alternating links. (English summary) *Topology Appl.* **46** (1992), *no.* 2, 151–165. (Alan W. Reid) **93h:57005** 57M25

Brock, William A. (*with* Baek, Ehung G.) A nonparametric test for independence of a multivariate time series. *Statist. Sinica* **2** (1992), *no.* 1, 137–156. (Zuzana Prášková) **93d:62085** 62G10 (62M10)

Brőcker, Ludwig On basic semialgebraic sets. *Exposition. Math.* **9** (1991), *no.* 4, 289–334. (Jesús M. Ruiz) **93b:14085** 14P10

Brockett, Roger W. Pulse driven dynamical systems. *Systems, models and feedback: theory and applications* (*Capri*, 1992), 73–79, *Progr. Systems Control Theory*, 12, *Birkhäuser Boston, Boston, MA*, 1992. (*see* **93a:93006**) 93D25 (93C55)

— (*with* Bloch, Anthony M.; Ratiu, Tudor S.) Completely integrable gradient flows. *Comm. Math. Phys.* **147** (1992), *no.* 1, 57–74. (L. E. Faybusovich) **93f:58094** 58F07 (22E46, 34C35, 58F05)

Brockmann, M. (*with* Eichenauer-Herrmann, Jürgen) Gamma-minimax estimation of multinomial probabilities. (English summary) *Zastos. Mat.* **21** (1992), *no.* 3, 427–435. (A. L. Rukhin) **93f:62009** 62C20 (62F10)

Brockwell, Peter J. (*with* Liu, Jian^3) Estimating the noise parameters from observations of a linear process with stable innovations. (English summary) *J. Statist. Plann. Inference* **33** (1992), *no.* 2, 175–186. (Paul Embrechts) **93j:62220** 62M10 (62F12)

— (*with* Liu, Jian^3; Tweedie, Richard L.) On the existence of stationary threshold autoregressive moving-average processes. *J. Time Ser. Anal.* **13** (1992), *no.* 2, 95–107. (Summary) **93k:62180** 62M10

Brod, Miriam Spaces with no uncountable submetrisable subsets. Proceedings of the Symposium on General Topology and Applications (Oxford, 1989). *Topology Appl.* **44** (1992), *no.* 1-3, 45–56. (Summary) **93g:54038** 54D99 (54D15)

Broda, B. Skein relations for any representation of any Lie group. *Phys. Lett. B* **271** (1991), *no.* 1-2, 116–122. (Uwe Grimm) **93c:81118** 81T13 (22E70, 57M25)

— A topological-field-theory approach to the nonabelian Stokes theorem. *J. Math. Phys.* **33** (1992), *no.* 4, 1511–1514. (Danny Birmingham) **93b:81241** 81T40 (81T70)

— Quantum BF-theory is topological. *Phys. Lett. B* **280** (1992), *no.* 1-2, 47–51. (Pablo M. Llatas) **93h:81081** 81T13

— Higher-dimensional Chern-Simons theory and link invariants. *Phys. Lett. B* **280** (1992), *no.* 3-4, 213–218. (Pablo M. Llatas) **93i:57041** 57R57 (57M25, 57Q45, 81T13, 81T70)

Brodimas, G. (*with* Jannussis, A.; Mignani, R.) Bose realization of a noncanonical Heisenberg algebra. *J. Phys. A* **25** (1992), *no.* 7, L329–L334. (Ragavachariar Parthasarathy) **93b:81107** 81R50 (81S05)

Brodin, M. S. (*with* Bar'yakhtar, V. G.; Lisitsa, M. P.; et al.) Aleksandr Sergeevich Davydov (on the occasion of his eightieth birthday). (Russian) *Ukraïn. Fiz. Zh.* **37** (1992), *no.* 12, 1767–1769. 01A70

Brodmann, Markus Typical sheaves of generalized CM-modules. (English summary) *Manuscripta Math.* **76** (1992), *no.* 2, 181–192. (From the introduction) **93e:14023** 14F05 (14B15)

Brodskiĭ, G. M. (*with* Tsyaston, E. Yu.) Centers of graphs. (Russian) *Problems in group theory and homological algebra (Russian)*, 158–159, *Matematika, Yaroslav. Gos. Univ., Yaroslavl'*, 1988. (*see* **93b:00020**) 05C05

— (*with* Ĭelovich, A. A.) Mappings that associate with each graph its subgraph. (Russian) *Problems in group theory and homological algebra (Russian)*, 159–160, *Matematika, Yaroslav. Gos. Univ., Yaroslavl'*, 1988. (*see* **93b:00020**) 05C99

— On the least cogenerator as a module over its endomorphism ring. (Russian) *Problems in group theory and homological algebra (Russian)*, 132–135, *Matematika, Yaroslav. Gos. Univ., Yaroslavl'*, 1990. (Czesław Bagiński) **93k:16052** 16S50

Brodskiĭ, S. D. (*with* Kogalovskiĭ, S. R.) Limits with respect to ultrafilters as a bridge between topology and algebra. (Russian) *Theory of semigroups and its applications, No.* 10 (*Russian*), 42–71, *Saratov. Gos. Univ., Saratov*, 1991. (Jan Chvalina) **93k:08006** 08A65 (08C10, 08C15, 54A20)

— (*with* Howie, James) One-relator products of torsion-free groups. *Glasgow Math. J.* **35** (1993), *no.* 1, 99–104. (S. Andreadakis) **93k:20042** 20E06 (20F05)

Brodsky, St. J. (*with* Pauli, H.-Ch.) Light-cone quantization of quantum chromodynamics. (English summary) *Recent aspects of quantum fields (Schladming*, 1991), 51–121, *Lecture Notes in Phys.*, 396, *Springer, Berlin*, 1991. (*see* **93d:81005**) 81V05 (81T70)

Brodzki, Jacek Derivations, semidirect products and reduced cyclic cohomology. *J. Reine Angew. Math.* **436** (1993), 177–195. (C. Năstăsescu) **93m:19004** 19D55 (16W25, 18G60)

vanden-Broeck, Jean-Marc *see* **Vanden-Broeck, Jean-Marc**

Broekaert, J. (*with* Bijtebier, J.) The two-body plus potential problem between quantum field theory and relativistic quantum mechanics (spinless case). *Nuovo Cimento A* (11) **105** (1992), *no.* 3, 351–369. (Summary) **93b:81072** 81Q40

Broemeling, Lyle D. (*with* Cook, Peyton) Bayesian analysis of threshold autoregressions. (English summary) *Comm. Statist. Theory Methods* **21** (1992), *no.* 9, 2459–2482. 62M10

Broer, H. W. (*with* Dumortier, Freddy; van Strien, Sebastian; Takens, Floris) ★ Structures in dynamics. Finite-dimensional deterministic studies. Studies in Mathematical Physics, 2. *North-Holland Publishing Co., Amsterdam*, 1991. xii+309 *pp. ISBN* 0-444-89257-5; 0-444-89258-3 (Hans G. Bothe) **93b:58043** 58Fxx (58F05, 58F08, 58F13, 58F14)

— (*with* Simó, Carles; Roussarie, Robert) A numerical survey on the Takens-Bogdanov bifurcation for diffeomorphisms. (English summary) *European Conference on Iteration Theory (Batschuns*, 1989), 320–334, *World Sci. Publishing, River Edge, NJ*, 1991. (Summary) **93f:58172** 58F14

— *see also* **Geometry and analysis in nonlinear dynamics, 93b:58002**

Broere, Izak (*with* Frick, Marietjie) A characterization of the sequence of generalized chromatic numbers of a graph. *Graph theory, combinatorics, and applications, Vol.* 1 (*Kalamazoo, MI*, 1988), 179–186, *Wiley-Intersci. Publ., Wiley, New York*, 1991. (Summary) **93c:05048** 05C15

— (*with* Benadé, Gerhard) Chromatic relatedness of graphs. (English summary) *Ars Combin.* **34** (1992), 326–330. (Summary) **93m:05067** 05C15

Broggi, G. (*with* Badii, R.; Finardi, M.) Unfolding complexity and modelling asymptotic scaling behavior. (English summary) *Chaos, order, and patterns (Lake Como*, 1990), 259–275, *NATO Adv. Sci. Inst. Ser. B Phys.*, 280, *Plenum, New York*, 1991. (Summary) **93k:58075** 58F03

Brogi, Antonio (*with* Ciampolini, Anna; Lamma, Evelina; Mello, Paola) The implementation of a distributed model for logic programming based on multiple-headed clauses. (English summary) *Inform. Process. Lett.* **42** (1992), *no.* 6, 331–338. (Summary) **93e:68011** 68N17

Broglia, F. (*with* Acquistapace, F.) Signatures and flatness. *J. Reine Angew. Math.* **425** (1992), 61–70. (Michael Buchner) **93h:32011** 32C05 (14P15)

Brogliato, Bernard (*with* Trofino-Neto, Alexandre; Lozano Leal, Rogelio) Robust adaptive control of a class of nonlinear first order systems. *Automatica J. IFAC* **28** (1992), *no.* 4, 795–801. 93D21 (93C10)

— (*with* Lozano Leal, Rogelio; Landau, I. D.) Passivity and global stabilization of cascaded nonlinear systems. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 9, 1386–1388. (Mietek Brdyś) **93i:93107** 93D15

— (*with* Lozano Leal, Rogelio) Adaptive hybrid force-position control for redundant manipulators. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 10, 1501–1505. (Summary) **93g:93057** 93C85 (93C95)

de Broglie, Louis *see* **Duhem, Pierre-Maurice-Marie, 93a:01064; Colombo, Serge; Michel, M. Louis** *and* **Casimir, Hendrik**

Broglio, Annie (*with* Liardet, Pierre) Predictions with automata. (English summary) *Symbolic dynamics and its applications (New Haven, CT*, 1991), 111–124, *Contemp. Math.*, 135, *Amer. Math. Soc., Providence, RI*, 1992. (Hans B. Sieburg) **93k:68071** 68Q70 (11B85, 68Q30)

Broida, T. J. Kinematic and statistical models for data fusion using Kalman filtering. *Data fusion in robotics and machine intelligence*, 311–365, *Academic Press, Boston, MA*, 1992. (*see* **93g:68002**) 68T30 (68U05, 70B15, 70Q05, 93E11)

Broidioi, Marino (*with* Verbeure, André) Plasmon frequency for a spin-density wave model. *Helv. Phys. Acta* **64** (1991), *no.* 7, 1093–1112. (Flora Koukiou) **93b:82092** 82D99

— (*with* Nachtergaele, Bruno; Verbeure, André) The Overhauser model: equilibrium fluctuation dynamics. *J. Math. Phys.* **32** (1991), *no.* 10, 2929–2935. (Summary) **93m:82005** 82B21 (82B10)

Broise, M. (*with* Déniel, Y.; Derriennic, Y.) Maximal inequalities and ergodic theorems for Cesàro-α or weighted averages. *Almost everywhere convergence, II (Evanston, IL*, 1989), 93–107, *Academic Press, Boston, MA*, 1991. (R. E. Bradley) **93b:28040** 28D05 (47A35, 47B38)

siegemund-Broka, Stephan *see* **Siegemund-Broka, Stephan**

Brokate, Martin Optimal control of systems described by ordinary differential equations with nonlinear characteristics of hysteresis type. [II]. (Russian) *Avtomat. i Telemekh.* **1992**, *no.* 1, 3–40; *translation in Automat. Remote Control* **53** (1992), *no.* 1, *part* 1, 1–33. (Shuzi Zhou) **93e:49006** 49J15 (34H05, 47H30, 93B05)

— On the moving Preisach model. *Math. Methods Appl. Sci.* **15** (1992), *no.* 3, 145–157. (Pavel Krejčí) **93d:47130** 47H30 (34K99, 78A99)

Bromberg, S. *see* **Bromberg, Shirley**

Bromberg, Sara Results on a generalized elliptic integral. (Spanish. English summary) *Rev. Técn. Fac. Ingr. Univ. Zulia* **15** (1992), *no.* 1, 29–35. (M. E. Muldoon) **93j:33012** 33E20 (33E05, 65D20)

Bromberg, Shirley (*with* Suárez, R.) Stabilization of two-dimensional C^k control systems. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, II (Kobe*, 1991), 371–376, *Mita, Tokyo*, 1992. (Anna Maria Perdon) **93m:93083** 93D15 (93C10)

Bromek, T. (*with* Kowalczyk, T.) A decision approach to ordering stochastic dependence. (English summary) *Topics in statistical dependence (Somerset, PA*, 1987), 103–109, *IMS Lecture Notes Monograph Ser.*, 16, *Inst. Math. Statist., Hayward, CA*, 1990. (Summary) **93i:62051** 62H20 (62C99)

Brønn, Carl (*with* Whalen, Thomas) Essentials of decision making under generalized uncertainty. *Combining fuzzy imprecision with probabilistic uncertainty in decision making*, 26–47, *Lecture Notes in Econom. and Math. Systems*, 310, *Springer, Berlin*, 1988. (*see* **93c:90002**) 90A05

Bronnikov, A. V. Emission tomography for sources with self-absorption of radiation. (Russian) *Dokl. Akad. Nauk* **322** (1992), *no.* 5, 879–883; *translation in Soviet Phys. Dokl.* **37** (1992), *no.* 2, 76–78. 44A12 (65T99)

Bronnikov, K. A. Charged black holes and multidimensional gravity. (German summary) *Ann. Physik* (7) **48** (1991), *no.* 8, 527–534. (S. Kichenassamy) **93d:83063** 83E15 (83C57)

Brøns, Morten (*with* Sturis, Jeppe) Homoclinic bifurcation to infinity in a model of the economic long wave. *Internat. J. Bifur. Chaos Appl. Sci. Engrg.* **2** (1992), *no.* 1, 129–136. (Summary) **93c:58199** 58F40 (34C23, 58F14, 90A15)

Bronsard, Lia (*with* Hilhorst, Danielle) On the slow dynamics for the Cahn-Hilliard equation in one space dimension. (English summary) *Proc. Roy. Soc. London Ser. A* **439** (1992), *no.* 1907, 669–682. (Summary) **93k:35210** 35Q35 (35B40)

Bronshtein, E. M. On an iterative square root of a quadratic trinomial. (Russian) *Geometric problems in the theory of functions and sets (Russian)*, 24–27, *Kalinin. Gos. Univ., Kalinin*, 1989. (V. Totik) **93d:26003** 26A18 (12D10, 39B32)

Bronshtein, I. U. (*with* Kopanskiĭ, A. Ya.) Finitely smooth normal forms of vector fields in a neighborhood of a singular point. (Russian) *Nonlinear operators in global analysis (Russian)*, 21–33, 161, *Novoe Global. Anal., Voronezh. Gos. Univ., Voronezh*, 1991. (V. M. Zakalyukin) **93j:58120** 58F36 (34C20)

— (*with* Chernii, V. F.) A new class of linear extensions. (Russian) *Mat. Issled. No.* 124, *Funktsional. Metod. Teorii Differ. Uravn.* (1992), 15–35, 142. (From the text) **93j:34064** 34C35 (34A30, 58F25)

Bronshtein, M. D. (*with* Cherevatskiĭ, A. S.) A variational method for solving boundary value problems for ordinary differential equations. (Russian) *Dokl. Akad. Nauk SSSR* **317** (1991), *no.* 5, 1037–1041; *translation in Soviet Math. Dokl.* **43** (1991), *no.* 2, 572–575. (From the introduction) **93c:34049** 34B15

— Functionals containing idempotent integration and their applications to the estimation of the minimal eigenvalue of differential operators. (Russian) *Dokl. Akad. Nauk SSSR* **320** (1991), *no.* 2, 265–268; *translation in Soviet Math. Dokl.* **44** (1992), *no.* 2, 417–421. (Jana D. Madjarova) **93g:35039** 35J60 (49R05, 58G03)

— (*with* Samborskiĭ, S. N.) A multicriterial variational method for systems of nonlinear partial differential equations. (Russian) *Dokl. Akad. Nauk SSSR* **320** (1991), *no.* 6, 1289–1293; *translation in Soviet Math. Dokl.* **44** (1992), *no.* 2, 603–607. (Liviu I. Nicolaescu) **93b:58038** 58E17 (35A15, 35G20, 49J40)

— Functionals defined by the maximum of a Lagrangian and their applications to ordinary differential equations. (English summary) *Acta Appl. Math.* **27** (1992), *no.* 3, 225–267. (Stepan A. Terziyan) **93j:49018** 49K05 (34B15, 90C48)

Bronstein, Manuel On solutions of linear ordinary differential equations in their coefficient field. *J. Symbolic Comput.* **13** (1992), *no.* 4, 413–439. (Jean Moulin Ollagnier) **93e:68042** 68Q40 (34A05)

Brookes, C. J. Air drag correction for satellite orbits of low eccentricity. (English summary) *Proc. Roy. Soc. London Ser. A* **437** (1992), *no.* 1899, 175–183. (Summary) **93e:70011** 70M20 (70F05)

— Near-circular orbits within a rotating oblate atmosphere with a diurnal variation in density and variable density scale height. *Proc. Roy. Soc. London Ser. A* **437** (1992), *no.* 1900, 461–474. (Summary) **93b:70028** 70M20

Brookes, Stephen (*with* Geva, Shai) Towards a theory of parallel algorithms on concrete data structures. (English summary) Selected papers of the International BCS-FACS Workshop on Semantics for Concurrency (Leicester, 1990). *Theoret. Comput. Sci.* **101** (1992), *no.* 2, 177–221. (Siegmar Gerber) **93m:68063** 68Q22 (68P05, 68Q10)

Brookmeyer, Ron (*with* Wang, Mei-Cheng; Jewell, Nicholas P.) Statistical models for prevalent cohort data. (English and French summaries) *Biometrics* **49** (1993), *no.* 1, 1–11. (Summary) **93m:62218** 62P10

Brooks, J. *see* **Brooks, Jeff**

Brooks, James K. (*with* Dinculeanu, N.) Itô's formula for stochastic integration in Banach spaces. *Diffusion processes and related problems in analysis, Vol. I (Evanston, IL*, 1989), 349–397, *Progr. Probab.*, 22, *Birkhäuser Boston, Boston, MA*, 1990. (Ali Süleyman Üstünel) **93b:60109** 60H05 (46G12)

— (*with* Rao, Murali) Compactness and convergence of measures. (English summary) *Bull. Polish Acad. Sci. Math.* **38** (1990), *no.* 1-12, 229–234. (Summary) **93h:28004** 28A33

— (*with* Martellotti, Anna) On the De Giorgi-Letta integral in infinite dimensions. *Atti Sem. Mat. Fis. Univ. Modena* **40** (1992), *no.* 1, 285–302. (Lawrence H. Riddle) **93g:28008** 28B05 (46G10)

— (*with* Neal, David) A vector measure approach to the optional stochastic integral. *Ulam Quart.* **1** (1992), *no.* 1, 18*ff.*, *approx.* 10 *pp.* (*electronic only*). (M. P. Eršov) **93m:60106** 60H05 (28B05, 60G48)

Brooks, Jeff (*with* Banks, J.; Cairns, Grant; Davis, Gary Ernest; Stacey, P. J.) On Devaney's definition of chaos. *Amer. Math. Monthly* **99** (1992), *no.* 4, 332–334. (J. E. Keesling) **93d:54059** 54H20 (58F13)

— (*with* Strantzen, John) A chord-stretching map of a convex loop is an isometry. *Geom. Dedicata* **41** (1992), *no.* 1, 51–62. (G. T. Sallee) **93d:52004** 52A10

Brooks, Maria Mori (*with* Marron, J. Stephen) Asymptotic optimality of the least-squares cross-validation bandwidth for kernel estimates of intensity functions. *Stochastic Process. Appl.* **38** (1991), *no.* 1, 157–165. (Summary) **93d:62053** 62G05

Brooks, Michael J. (*with* Chojnacki, Wojciech; Kozera, Ryszard) Circularly symmetric eikonal equations and nonuniqueness in computer vision. *J. Math. Anal. Appl.* **165** (1992), *no.* 1, 192–215. (Benno Fuchssteiner) **93f:35225** 35Q60 (35F20, 78A55)

— (*with* Chojnacki, Wojciech; Kozera, Ryszard) Shading without shape. *Quart. Appl. Math.* **50** (1992), *no.* 1, 27–38. (Menachem Dishon) **93b:68091** 68U10 (35F10, 78A05)

Brooks, R. J. (*with* Stone, Mervyn) Corrigendum: "Continuum regression: cross-validated sequentially constructed prediction embracing ordinary least squares, partial least squares and principal components regression" [J. Roy. Statist. Soc. Ser. B **52** (1990), no. 2, 237–269; MR 92c:62042]. *J. Roy. Statist. Soc. Ser. B* **54** (1992), *no.* 3, 906–907. (Editors) **93h:62124** 62J05 (62H25, 62J10)

Brooks, R. L. (*with* Smith, C. A. B.; Stone, A. H.; Tutte, William T.) Determinants and current flows in electric networks. Special volume to mark the centennial of Julius Petersen's "Die Theorie der regulären Graphs", Part I. *Discrete Math.* **100** (1992), *no.* 1-3, 291–301. (Summary) **93c:94011** 94C05 (05C90)

Brooks, Robert Wolfe The continued fraction parameter in the deformation theory of classical Schottky groups. *Curves, Jacobians, and abelian varieties* (*Amherst, MA*, 1990), 41–54, *Contemp. Math.*, 136, *Amer. Math. Soc., Providence, RI*, 1992. (Oded Schramm) **93j:52029** 52C15 (30F99)

— Some relations between spectral geometry and number theory. *Topology* '90 (*Columbus, OH*, 1990), 61–75, *Ohio State Univ. Math. Res. Inst. Publ.*, 1, *de Gruyter, Berlin*, 1992. (Jonathan Huntley) **93j:58134** 58G25 (11F72, 20H05)

— (*with* Perry, Peter A.; Petersen, Peter, V) Compactness and finiteness theorems for isospectral manifolds. *J. Reine Angew. Math.* **426** (1992), 67–89. (Georgi Kamberov) **93f:53034** 53C23 (53C21, 58G25)

Brooks, Robin (*with* Wong, Peter Ngai-Sing) Corrections to: "On changing fixed points and coincidences to roots" [Proc. Amer. Math. Soc. **115** (1992), no. 2, 527–533; MR 92k:55002]. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 4, 1353–1354. (Robert Freeman Brown) **93j:55002** 55M20

Brooks, Roger Relating scattering amplitudes in bosonic and topological string theories. (English summary) *Phys. Lett. B* **289** (1992), *no.* 3-4, 317–320. (Summary) **93f:81103** 81T30 (81T40)

Brooksbank, Peter (*with* Bryant, Victor) Greedy algorithm compatibility and heavy-set structures. *European J. Combin.* **13** (1992), *no.* 2, 81–86. (J. E. Graver) **93b:05033** 05B35

Broome, John A cause of preference is not an object of preference. (English summary) *Soc. Choice Welf.* **10** (1993), *no.* 1, 57–68. 90A06

Broomhead, D. S. The geometry of dynamics. *The dynamics of numerics and the numerics of dynamics* (*Bristol*, 1990), 69–80, *Inst. Math. Appl. Conf. Ser. New Ser.*, 34, *Oxford Univ. Press, New York*, 1992. (Romeo F. Thomas) **93f:58177** 58F15 (58F10, 58F11)

— (*with* Huke, J. P.; Muldoon, M. R.) Linear filters and nonlinear systems. *J. Roy. Statist. Soc. Ser. B* **54** (1992), *no.* 2, 373–382. (Ye Ji Xu) **93h:93079** 93E11 (58F40)

— *see also* **Dynamics of numerics and the numerics of dynamics, 93b:65004**

Brorsen, B. Wade Approximation of Bayesian posterior densities in the heteroskedastic error regression model. *Econom. Lett.* **38** (1992), *no.* 1, 1–7. (Summary) **93a:62040** 62F15 (62J05)

Bros, J. Various aspects of the Bethe-Salpeter structure in quantum field theory. *Constructive quantum field theory, II* (*Erice*, 1988), 329–330, *NATO Adv. Sci. Inst. Ser. B Phys.*, 234, *Plenum, New York*, 1990. (*see* **93g:81074**) 81Q40 (81T99)

Brosowski, Bruno (*with* da Silva, Antonio R.) A general alternation theorem. *Approximation theory* (*Memphis, TN*, 1991), 137–150, *Lecture Notes in Pure and Appl. Math.*, 138, *Dekker, New York*, 1992. (F. Deutsch) **93h:41026** 41A50

Brostow, Witold (*with* Cook, Robert; Kubát, Josef) Molecular dynamics and Monte Carlo simulations of polymeric materials: chain relaxation dynamics. *Integral methods in science and engineering—90* (*Arlington, TX*, 1990), 22–34, *Ser. Comput. Phys. Process. Mech. Thermal Sci., Hemisphere, New York*, 1991. (*see* **93f:00014**) 65C05

Broto, Carlos (*with* Zarati, Saïd) On sub-$\mathscr{A}_p^*$-algebras of H^*V. *Algebraic topology* (*San Feliu de Guíxols*, 1990), 35–49, *Lecture Notes in Math.*, 1509, *Springer, Berlin*, 1992. (Don Shimamoto) **93i:55021** 55S10 (55P60)

Broucke, R. A. The effects of the J_3-harmonic (pear shape) on the orbits of a satellite. *Predictability, stability, and chaos in N-body dynamical systems* (*Cortina d'Ampezzo*, 1990), 311–335, *NATO Adv. Sci. Inst. Ser. B Phys.*, 272, *Plenum, New York*, 1991. (*see* **93i:70002**) 70F05 (70M20)

Broué, Michel (*with* Malle, Gunter) Théorèmes de Sylow génériques pour les groupes réductifs sur les corps finis. [Generic Sylow theorems for reductive groups over finite fields] *Math. Ann.* **292** (1992), *no.* 2, 241–262. (Bhama Srinivasan) **93a:20076** 20G40

Broughton, S. Allen Normalizers and centralizers of elementary abelian subgroups of the mapping class group. (English summary) *Topology* '90 (*Columbus, OH*, 1990), 77–89, *Ohio State Univ. Math. Res. Inst. Publ.*, 1, *de Gruyter, Berlin*, 1992. (Darren D. Long) **93m:57001** 57M07 (20F32)

Brout, R. (*with* Parentani, R.) Physical interpretation of black hole evaporation as a vacuum instability. (English summary) *Internat. J. Modern Phys. D* **1** (1992), *no.* 1, 169–191. (Summary) **93j:83056** 83C57 (83C47)

Brouwer, Andries (*with* Blokhuis, Aart; Wilbrink, H. A.) Hermitian unitals are code words. *Discrete Math.* **97** (1991), *no.* 1-3, 63–68. (Harold N. Ward) **93b:51017** 51E22 (05B10, 05B25, 51E20, 94B27)

— (*with* Bagchi, Bhaskar; Wilbrink, H. A.) Notes on binary codes related to the $O(5, q)$ generalized quadrangle for odd q. *Geom. Dedicata* **39** (1991), *no.* 3, 339–355. (Arrigo Bonisoli) **93e:51017** 51E22 (05B25, 51E12, 94B05, 94B25)

— (*with* Blokhuis, Aart) Locally $K_{3,3}$ or Petersen graphs. (English summary) A collection of contributions in honour of Jack van Lint. *Discrete Math.* **106/107** (1992), 53–60. (Daniel Ashlock) **93k:05143** 05C75 (05C70)

— (*with* Haemers, Willem H.) Structure and uniqueness of the (81, 20, 1, 6) strongly regular graph. (English summary) A collection of contributions in honour of Jack van Lint. *Discrete Math.* **106/107** (1992), 77–82. (Siu Lun Ma) **93g:05149** 05E30

— (*with* Wilbrink, H. A.; Haemers, Willem H.) Some 2-ranks. (English summary) A collection of contributions in honour of Jack van Lint. *Discrete Math.* **106/107** (1992), 83–92. (Vikram Jha) **93k:51006** 51E12 (51A50, 51E22, 94B25)

— (*with* Hemmeter, Joe) A new family of distance-regular graphs and the {0, 1, 2}-cliques in dual polar graphs. *European J. Combin.* **13** (1992), *no.* 2, 71–79. (Arjeh M. Cohen) **93c:05119** 05E30 (05C25)

Brouwer, H. H. On the use of the method of matched asymptotic expansions in propeller aerodynamics and acoustics. (English summary) *J. Fluid Mech.* **242** (1992), 117–143. (Summary) **93f:76061** 76G25 (76Q05)

Brouwer, Luitzen E. J. *see* **Detlefsen, Michael, 93a:03007** *and* **Pogoda, Zdzisław, 93k:01076**

Brouzet, Robert Systèmes bihamiltoniens et complète intégrabilité en dimension 4: étude géométrique semi-locale et contrexemples. [Bi-Hamiltonian systems and complete integrability in dimension 4: semilocal geometric study and counterexamples] *Séminaire Gaston Darboux de Géometrie et Topologie Différentielle*, 1989–1990 (*Montpellier*, 1989/1990), v–vi, 19–38, *Univ. Montpellier II, Montpellier*, 1991. (Summary) **93c:58082** 58F07 (58F05)

— (*with* Molino, Pierre; Turiel, Francisco-Javier) Systèmes bihamiltoniens. (English summary) [Bi-Hamiltonian systems] *Séminaire Gaston Darboux de Géométrie et Topologie Différentielle*, 1990–1991 (*Montpellier*, 1990–1991), iii, 1–44, *Univ. Montpellier II, Montpellier*, 1992. (Tudor S. Raţiu) **93k:58108** 58F07 (58F05)

Brovkin, L. Yu. Separation of the gauge-group volume, and the one-loop functional integral in quantum gravity. *Soviet J. Nuclear Phys.* **55** (1992), *no.* 9, 1427–1433; *translated from Yadernaya Fiz.* **55** (1992), *no.* 9, 2558–2570 (*Russian*). 83C45 (81T13, 81V17)

Browder, Felix E. *see* **American Mathematical Society centennial publications, 93d:01002** *and* **Nonlinear and global analysis, 93h:00024**

Browkin, Jerzy K-theory, cyclotomic equations, and Clausen's function. *Structural properties of polylogarithms*, 233–273, *Math. Surveys Monographs*, 37, *Amer. Math. Soc., Providence, RI*, 1991. (*see* **93b:11158**) 19F27 (11R70)

— On the p-rank of the tame kernel of algebraic number fields. *J. Reine Angew. Math.* **432** (1992), 135–149. (Thống Nguyễn-Quang-Đỗ) **93j:11077** 11R70 (19C99)

Brown, B. M. *see* **Brown, Bruce Maxwell**

Brown, B. Malcolm (*with* Evans, W. D.) On an extension of Copson's inequality for infinite series. *Proc. Roy. Soc. Edinburgh Sect. A* **121** (1992), *no.* 1-2, 169–183. (J. Sándor) **93e:26013** 26D15

— (*with* Evans, W. D.; Littlejohn, L. L.) Discrete inequalities, orthogonal polynomials and the spectral theory of difference operators. *Proc. Roy. Soc. London Ser. A* **437** (1992), *no.* 1900, 355–373. (David R. Masson) **93g:47043** 47B39 (33C45, 39A10, 47A10, 47A57)

— (*with* Kirby, V. G.; Evans, W. D.; Plum, Michael) Safe numerical bounds for the Titchmarsh-Weyl $m(\lambda)$-function. (English summary) *Math. Proc. Cambridge Philos. Soc.* **113** (1993), *no.* 3, 583–599. (J. K. Shaw) **93k:34052** 34B20 (34L40, 47E05)

Brown, Bruce Maxwell (*with* Williams, Evan J.) Conversations with Edwin J. G. Pitman. (English summary) *Austral. J. Statist.* **34** (1992), *no.* 3, 345–360. (From the summary) **93m:01062** 01A70

— (*with* Hettmansperger, Thomas P.; Nyblom, Jukka; Oja, Hannu) On certain bivariate sign tests and medians. *J. Amer. Statist. Assoc.* **87** (1992), *no.* 417, 127–135. (J. V. Deshpande) **93f:62065** 62G10 (62G20, 62G30)

Brown, Christopher (*with* Durrant-Whyte, H.; Leonard, J.; Rao, B. Y.; Steer, Brian) Distributed data fusion using Kalman filtering: a robotics application. *Data fusion in robotics and machine intelligence*, 267–309, *Academic Press, Boston, MA*, 1992. (*see* **93g:68002**) 68T30 (68U05, 70B15, 70Q05, 93E11)

heath-Brown, D. R. *see* **Heath-Brown, D. R.**

Brown, David D. (*with* Brawley, Joel V.) A note on iterated presentations of algebraic extensions of finite fields. Proceedings of the Twenty-second Southeastern Conference on Combinatorics, Graph Theory, and Computing (Baton Rouge, LA, 1991). *Congr. Numer.* **85** (1991), 3–7. (R. A. Mollin) **93c:12002** 12E20 (12F05)

Brown, David P. (*with* Back, Kerry) GMM, maximum likelihood, and nonparametric efficiency. (English summary) *Econom. Lett.* **39** (1992), *no.* 1, 23–28. (Summary) **93c:62035** 62F10 (62G20)

— Stability of n-order discrete systems with overflow arithmetic. *J. Franklin Inst.* **329** (1992), *no.* 1, 15–23. (A. S. C. Sinha) **93d:93058** 93D05 (93C55)

— Stability of n-order state space digital filters with integer arithmetic. (English summary) *J. Franklin Inst.* **329** (1992), *no.* 5, 893–905. (Summary) **93f:94003** 94A12

— n-order direct form digital filters with integer arithmetic. (English summary) *Circuits Systems Signal Process.* **12** (1993), *no.* 3, 441–452. (Summary) **93m:94005** 94A12

Brown, Donald E. (*with* Markert, Wendy J.) Uncertainty management with imprecise knowledge with application to design. (English summary) *J. Automat. Reason.* **9** (1992), *no.* 2, 217–230. (Summary) **93h:68130** 68T30

Brown, Edward F. (*with* Saleh, A. K. Md. Ehsanes; Hassanein, Khatab M.) Linear estimation and test of quantiles of Cauchy distribution based on selected order statistics. (English summary) *Soochow J. Math.* **18** (1992), *no.* 3, 301–312. 62G30 (62G20)

Brown, Ezra A. (*with* Landman, Bruce M.; Portier, Frederick J.) Partitions of bi-partite numbers into at most j parts. *Graphs Combin.* **8** (1992), *no.* 1, 65–73. (George E. Andrews) **93c:11088** 11P82

— Periodic seeded arrays and automorphisms of the shift. *Trans. Amer. Math. Soc.* **339** (1993), *no.* 1, 141–161. (Fred W. Roush) **93k:58077** 58F03 (28D20, 54H20)

Brown, Frank Markham ★ Boolean reasoning. The logic of Boolean equations. *Kluwer Academic Publishers, Boston, MA*, 1990. xx+273 *pp. ISBN* 0-7923-9121-7 (From the preface) **93c:03009** 03B05 (03G05, 06E05, 06E30, 94C10)

Brown, G. *see* **Brown, Gavin**

Brown, G. L. (*with* Lopez, Juan Manuel) Axisymmetric vortex breakdown. II. Physical mechanisms. *J. Fluid Mech.* **221** (1990), 553–576. (Summary) **93c:76041b** 76E99 (58F40, 76–05, 76F99)

Brown, Gavin (*with* Dooley, Anthony H.) Odometer actions on G-measures. *Ergodic Theory Dynamical Systems* **11** (1991), *no.* 2, 279–307. (William Moran) **93e:22010** 22D40 (43A05)

— (*with* Chandler, G. A.; Sloan, Ian H.; Wilson, David Charles) Properties of certain trigonometric series arising in numerical analysis. *J. Math. Anal. Appl.* **162** (1991), *no.* 2, 371–380. (H. P. Dikshit) **93a:42005** 42A32

— Some new applications of Riesz products. *Miniconference on probability and analysis (Sydney, 1991)*, 1–13, *Proc. Centre Math. Appl. Austral. Nat. Univ.*, 29, *Austral. Nat. Univ., Canberra*, 1992. (F. Schweiger) **93m:11069** 11K16 (28D05, 42A55)

— Normal numbers and dynamical systems. (English summary) *Probabilistic and stochastic methods in analysis, with applications (Il Ciocco, 1991)*, 207–216, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 372, *Kluwer Acad. Publ., Dordrecht*, 1992. (F. Schweiger) **93m:11070** 11K16 (28D05, 42A55, 58F11)

— (*with* Michon, G.; Peyrière, Jacques) On the multifractal analysis of measures. *J. Statist. Phys.* **66** (1992), *no.* 3-4, 775–790. (Colleen D. Cutler) **93c:58120** 58F12 (28A80, 58F13)

Brown, H. Benjamin, Jr. (*with* Feliu, Vincente; Rattan, Kuldip S.) Tip position control of flexible arms. (English and Polish summaries) *Systems Sci.* **18** (1992), *no.* 4, 55–63 (1993). 93C85

Brown, J. *see* **Brown, Johnny E.**

Brown, J. David (*with* York, James W., Jr.) Quasilocal energy in general relativity. (English summary) *Mathematical aspects of classical field theory (Seattle, WA, 1991)*, 129–142, *Contemp. Math.*, 132, *Amer. Math. Soc., Providence, RI*, 1992. (*see* **93d:58006**) 83C40

Brown, Jack B. Continuous-, derivative-, and differentiable-restrictions of measurable functions. (English summary) *Fund. Math.* **141** (1992), *no.* 1, 85–95. (A. M. Bruckner) **93g:28002** 28A05

Brown, Jason I. (*with* Watson, W. Stephen) Self-complementary topologies and preorders. *Order* **7** (1990/91), *no.* 4, 317–328. (Marcel Erné) **93a:06002** 06A07 (03C65, 06C15, 54A10)

— (*with* Corneil, Derek G.) Graph properties and hypergraph colourings. *Discrete Math.* **98** (1991), *no.* 2, 81–93. (H. L. Abbott) **93b:05055** 05C15 (05C65)

— A vertex critical graph without critical edges. *Discrete Math.* **102** (1992), *no.* 1, 99–101. (Summary) **93b:05056** 05C15

— (*with* Colbourn, Charles J.) Roots of the reliability polynomial. (English summary) *SIAM J. Discrete Math.* **5** (1992), *no.* 4, 571–585. (Summary) **93g:68005** 68M15 (05C40)

— (*with* Colbourn, Charles J.; Devitt, John S.) Network transformations and bounding network reliability. (English summary) *Networks* **23** (1993), *no.* 1, 1–17. (Wolfgang Feitscher) **93k:68012** 68M15 (05C05, 90B12)

Brown, John Wesley (*with* Cherry, Fred; Most, Lee; Most, Mel; Parker, E. T.; Wallis, Walter) Completion of the spectrum of orthogonal diagonal Latin squares. *Graphs, matrices, and designs*, 43–49, *Lecture Notes in Pure and Appl. Math.*, 139, *Dekker, New York*, 1993. (*see* **93i:05002**) 05B15

— (*with* Parker, E. T.) More on order 10 turn-squares. (English summary) *Ars Combin.* **35** (1993), 125–127. (Summary) **93m:05034** 05B15

Brown, Johnny E. (*with* Goldstein, Myron; McDonald, John N.) L_p-norms of polynomials with positive real part. *J. Math. Anal. Appl.* **156** (1991), *no.* 1, 150–153. (Z. Rubinstein) **93b:30004** 30C10

Brown, K. A. (*with* Lorenz, Martin) Colimits of functors, and Grothendieck groups of infinite group algebras. (English summary) *Abelian groups and noncommutative rings*, 89–109, *Contemp. Math.*, 130, *Amer. Math. Soc., Providence, RI*, 1992. (Reinhard C. Laubenbacher) **93h:16009** 16E20 (16S34, 19A31, 20C07)

Brown, K. J. (*with* Furter, J. E.) A singularity theory approach to a semilinear boundary value problem. *J. Math. Anal. Appl.* **166** (1992), *no.* 2, 485–506. (Jolanta Przybycin) **93d:34030** 34B15 (34A47, 47H15, 47N20, 58C27)

Brown, Kevin S. A note on recurrence relations for simulating ODEs. (English summary) *Comm. Appl. Numer. Methods* **8** (1992), *no.* 12, 849–855. 65L99

Brown, Larry Recursive cube-connected cube networks. (English summary) Proceedings of the Twenty-third Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, FL, 1992). *Congr. Numer.* **91** (1992), 71–78. (Summary) **93m:68012** 68M10

Brown, Laurie M. (*with* Rechenberg, Helmut) The development of the vector meson theory in Britain and Japan (1937–38). *British J. Hist. Sci.* **24** (1991), *no.* 83, *part* 4, 405–433. (Dennis Dieks) **93a:01034** 01A60 (81–03)

Brown, Lawrence D. (*with* Farrell, Roger H.) A lower bound for the risk in estimating the value of a probability density. *J. Amer. Statist. Assoc.* **85** (1990), *no.* 412, 1147–1153. (Wolfgang Wertz) **93e:62102** 62G05

— (*with* Greenshtein, Eitan) Two-sided sequential tests. *Ann. Statist.* **20** (1992), *no.* 1, 555–561. (A. A. Novikov) **93c:62133** 62L10 (62C99)

— (*with* Marden, John I.) Local admissibility and local unbiasedness in hypothesis testing problems. *Ann. Statist.* **20** (1992), *no.* 2, 832–852. (A. L. Rukhin) **93g:62032** 62F03 (62C15, 62F04, 62H15)

Brown, Lawrence G. Complements to various Stone-Weierstrass theorems for C^*-algebras and a theorem of Shultz. *Comm. Math. Phys.* **143** (1992), *no.* 2, 405–413. (Gottfried T. Rüttimann) **93c:46113** 46L30

— The rectifiable metric on the set of closed subspaces of Hilbert space. *Trans. Amer. Math. Soc.* **337** (1993), *no.* 1, 279–289. (Summary) **93g:46021** 46C99 (46L99, 47A05, 47A99, 47D99, 58B20)

Brown, Lawrence M. Semi-sequentially normal bitopological spaces. Proceedings of the Symposium on General Topology and Applications (Oxford, 1989). *Topology Appl.* **44** (1992), *no.* 1-3, 57–62. (Thomas E. Gantner) **93i:54023** 54E55

Brown, Lyndon J. (*with* Meyn, Sean P.) Model reference adaptive control of linear stochastic systems. (English summary) *Stochastic theory and adaptive control (Lawrence, KS, 1991)*, 330–345, *Lecture Notes in Control and Inform. Sci.*, 184, *Springer, Berlin*, 1992. (Han Fu Chen) **93k:93121** 93E35

Brown, M. L. *see* **Brown, Martin Lawrence**

Brown, Mark On a correlation inequality and its applications. (English summary) *Topics in statistical dependence (Somerset, PA, 1987)*, 111–119, *IMS Lecture Notes Monograph Ser.*, 16, *Inst. Math. Statist., Hayward, CA*, 1990. (Summary) **93i:60034** 60E15 (60G55)

— Spectral analysis, without eigenvectors, for Markov chains. (English summary) *Probab. Engrg. Inform. Sci.* **5** (1991), *no.* 2, 131–144. (James Allen Fill) **93m:60144** 60J10 (15A18, 60J27)

Brown, Mark A. Questions and quantifiers. *Theoria* **56** (1990), *no.* 1-2, 62–84. (N. C. A. da Costa) **93e:03039** 03B60 (03B65)

— Normal bimodal logics of ability and action. (English summary) Logic of action. *Studia Logica* **51** (1992), *no.* 3-4, 519–532. (Petr Jirků) **93m:03024** 03B45 (03B60)

Brown, Martin Lawrence Densité de points rationnels et de points entiers sur les variétés algébriques. (English summary) [Density of rational and integral points on algebraic varieties] *C. R. Acad. Sci. Paris Sér. I Math.* **313** (1991), *no.* 10, 657–662. (Marc Hindry) **93d:11062** 11G10 (14K99)

— Euclidean rings of affine curves. *Math. Z.* **208** (1991), *no.* 3, 467–488. (Marc Hindry) **93b:13032** 13F07 (14H05)

— Singular moduli and supersingular moduli of Drinfel'd modules. *Invent. Math.* **110** (1992), *no.* 2, 419–439. (David Goss) **93m:11048** 11G09 (11T55)

Brown, Peter N. (*with* Saad, Youcef) Projection methods for solving nonlinear systems of equations. (English summary) *Nematics (Orsay, 1990)*, 341–355, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 332, *Kluwer Acad. Publ., Dordrecht*, 1991. (H. R. Shen) **93g:65082** 65J15 (47H17, 65K10)

Brown, R. *see* **Brown, Reggie**

Brown, R. C. *see* **Brown, Richard C.**

Brown, Ray (*with* Chua, Leon O.; Popp, Becky) Is sensitive dependence on initial conditions nature's sensory device? *Internat. J. Bifur. Chaos Appl. Sci. Engrg.* **2** (1992), *no.* 1, 193–199. (Iuliana Oprea) **93d:58094** 58F13 (34A12, 34C99)

— (*with* Chua, Leon O.) Chaos or turbulence? (English summary) *Internat. J. Bifur. Chaos Appl. Sci. Engrg.* **2** (1992), *no.* 4, 1005–1009. (G. Ambika) **93m:58106** 58F40 (34C99, 58F13, 76F20)

Brown, Reggie (*with* Abarbanel, H. D. I.; Kennel, M. B.) Local Lyapunov exponents computed from observed data. (English summary) *J. Nonlinear Sci.* **2** (1992), *no.* 3, 343–365. (Summary) **93f:58140** 58F13 (58F40)

Brown, Richard A. Generalized group presentation and formal deformations of CW complexes. *Trans. Amer. Math. Soc.* **334** (1992), *no.* 2, 519–549. (W. Metzler) **93h:57001** 57M05 (20F05, 57Q05, 57Q10)

Brown, Richard C. (*with* Opic, Bohumír) Embeddings of weighted Sobolev spaces into spaces of continuous functions. (English summary) *Proc. Roy. Soc. London Ser. A* **439** (1992), *no.* 1906, 279–296. (Georgi E. Karadzhov) **93k:46020** 46E35

Brown, Robert F. (*with* Schirmer, Helga) Nielsen coincidence theory and coincidence-producing maps for manifolds with boundary. (English summary) *Topology Appl.* **46** (1992), *no.* 1, 65–79. (Ross Geoghegan) **93i:55001** 55M20 (57N99)

Brown, Robert W. (*with* Rains, Eric M.; Taylor, Cyrus C.) Harmonic analysis of the relativistic string in spinorial coordinates. *Classical Quantum Gravity* **8** (1991), *no.* 7, 1245–1253. (Summary) **93c:81162** 81T30

Brown, Ronald Computing homotopy types using crossed n-cubes of groups. *Adams Memorial Symposium on Algebraic Topology, 1 (Manchester, 1990)*, 187–210, *London Math. Soc. Lecture Note Ser.*, 175, *Cambridge Univ. Press, Cambridge*, 1992. (John F. Oprea) **93e:55010** 55P15 (55S45)

— (*with* Mackenzie, Kirill C. H.) Determination of a double Lie groupoid by its core diagram. *J. Pure Appl. Algebra* **80** (1992), *no.* 3, 237–272. (Š. Ungar) **93g:55022** 55U35 (18D05, 20N02, 22A22, 55Q05)

Brown, Russell M. (*with* Hislop, Peter D.; Martinez, André) Lower bounds on eigenfunctions and the first eigenvalue gap. (English summary) *Differential equations with applications to mathematical physics*, 33–49, *Math. Sci. Engrg.*, 192, *Academic Press, Boston, MA*, 1993. (Summary) **93k:35196** 35P15 (35J25)

— (*with* Shen, Zhong Wei) A note on boundary value problems for the heat equation in Lipschitz cylinders. *Proc. Amer. Math. Soc.* **119** (1993), *no.* 2, 585–594. (Nicolai N. Shopolov) **93k:35117** 35K05 (35A20, 35D05, 35K20)

— The trace of the heat kernel in Lipschitz domains. *Trans. Amer. Math. Soc.* **339** (1993), *no.* 2, 889–900. (Steven Rosenberg) **93m:58109** 58G11 (35P05, 58G18, 58G25)

Brown, Timothy C. (*with* Barbour, A. D.) The Stein-Chen method, point processes and compensators. (English summary) *Ann. Probab.* **20** (1992), *no.* 3, 1504–1527. (Yu. M. Kabanov) **93g:60100** 60G55 (60F99, 60J75)

— (*with* Barbour, A. D.) Stein's method and point process approximation. (English summary) *Stochastic Process. Appl.* **43** (1992), *no.* 1, 9–31. (Małgorzata Majsnerowska) **93k:60120** 60G55

Brown, Tom C. (*with* Shiue, Peter Jau-Shyong) A remark related to the Frobenius problem. *Fibonacci Quart.* **31** (1993), *no.* 1, 32–36. (H. L. Abbott) **93k:11018** 11D04 (11A99)

Brown, William C. ★ Matrices over commutative rings. Monographs and Textbooks in Pure and Applied Mathematics, 169. *Marcel Dekker, Inc., New York*, 1993. viii+281 *pp. ISBN* 0-8247-8755-2 (Peter Butkovič) **93k:15028** 15A33 (13–01)

Brownawell, W. Dale Distance to common zeros and lower bounds for polynomials. *Approximations diophantiennes et nombres transcendants (Luminy, 1990)*, 51–64, *de Gruyter, Berlin*, 1992. (Michel Waldschmidt) **93j:12001** 12D10 (11C08, 13F20)

Browne, Michael W. (*with* Shapiro, Alexander) Invariance of covariance structures under groups of transformations. *Metrika* **38** (1991), *no.* 6, 345–355. (N. Giri) **93c:62108** 62H20 (62A05)

— (*with* Cudeck, Robert) Constructing a covariance matrix that yields a specified minimizer and a specified minimum discrepancy function value. (English summary) *Psychometrika* **57** (1992), *no.* 3, 357–369. 62P15

Browne, Patrick J. (*with* Binding, P. A.; Seddighi, K.) Two parameter asymptotic spectra. *Results Math.* **21** (1992), *no.* 1-2, 12–23. (Lawrence Turyn) **93b:47040** 47A75 (34L20, 47A10, 47A70, 47B15)

Browne, Sid (*with* Weiss, Gideon) Dynamic priority rules when polling with multiple parallel servers. (English summary) *Oper. Res. Lett.* **12** (1992), *no.* 3, 129–137. (Summary) **93i:90049** 90B35

— (*with* Coffman, Edward G., Jr.; Gilbert, Edgar N.; Wright, Paul E.) The gated infinite-server queue: uniform service times. (English summary) *SIAM J. Appl. Math.* **52** (1992), *no.* 6, 1751–1762. (Summary) **93h:60146** 60K25 (90B22)

Brownstein, Alan (*with* Lee, Ronnie) Cohomology of the symplectic group $Sp_4(\mathbf{Z})$. I. The odd torsion case. *Trans. Amer. Math. Soc.* **334** (1992), *no.* 2, 575–596. (Avner Ash) **93b:11067** 11F75 (11F46, 32G15)

Brownstone, David Bootstrapping admissible linear model selection procedures. (English summary) *Exploring the limits of bootstrap (East Lansing, MI, 1990)*, 327–344, *Wiley Ser. Probab. Math. Statist. Probab. Math. Statist., Wiley, New York*, 1992. (*see* **93f:62003**) 62G09 (62J05)

Broy, Manfred Operational and denotational semantics with explicit concurrency. (English summary) *Fund. Inform.* **16** (1992), *no.* 3-4, 201–229. (Summary) **93e:68061** 68Q55

Broze, George (*with* Hussain, Fazle) Spatiotemporal dynamics in transitional jet flow. (English summary) *Nonlinear dynamics of structures (Vladimir Maiakovskii, 1990)*, 391–417, *World Sci. Publishing, River Edge, NJ*, 1991. (*see* **93g:76004**) 76F20 (58F40, 76D25, 76E99)

pawlikowska-Brożek, Zofia *see* **Pawlikowska-Brożek, Zofia**

Brožíková, Elena Universal identities over an orthogonal system of quasigroups. Universal algebra, quasigroups and related systems (Jadwisin, 1989). *Demonstratio Math.* **24** (1991), *no.* 1-2, 55–62. (Phullendu Das) **93a:20112** 20N05

Bru, Marie-France Wishart processes. *J. Theoret. Probab.* **4** (1991), *no.* 4, 725–751. (L. C. G. Rogers) **93b:60176** 60J60 (60J65)

Brú, Rafael (*with* Coll, C.; Hernández, Vicente G.) Realizations of rational matrices in discrete periodic linear systems. (Spanish) *Proceedings of the XII Congress on Differential Equations and Applications/II Congress on Applied Mathematics (Spanish) (Oviedo, 1991)*, 319–324, *Univ. Oviedo, Oviedo*, 1991. (*see* **93j:00009**) 93B15

— (*with* Sánchez, Elena; Hernández, Vicente G.) Minimal realizations for discrete-time linear periodic systems. Directions in matrix theory (Auburn, AL, 1990). *Linear Algebra Appl.* **162/164** (1992), 685–708. (Joseph D. Cole) **93a:93027** 93B15 (93B20, 93C55)

Brualdi, Richard A. (*with* Ryser, Herbert J.) ★ Combinatorial matrix theory. Encyclopedia of Mathematics and its Applications, 39. *Cambridge University Press, Cambridge*, 1991. x+367 *pp. ISBN* 0-521-32265-0 (S. K. Tharthare) **93a:05087** 05C50 (05B15, 05B20)

— Graphs and matrices and graphs. Proceedings of the Twenty-second Southeastern Conference on Combinatorics, Graph Theory, and Computing (Baton Rouge, LA, 1991). *Congr. Numer.* **83** (1991), 129–145. (Ernie S. Solheid) **93a:05088** 05C50 (05C20, 15A15)

— (*with* Shader, Bryan L.) Matrices of 0's and 1's with restricted permanental minors. *Discrete Math.* **96** (1991), *no.* 3, 161–174. (Jeffrey Stuart) **93f:15003** 15A15

— ★ Introductory combinatorics. Second edition. *North-Holland Publishing Co., New York*, 1992. xiv+618 *pp. ISBN* 0-444-01616-3 (Jerrold W. Grossman) **93g:05001** 05–01

— (*with* Cai, Ning; Pless, Vera S.) Orphan structure of the first-order Reed-Muller codes. *Discrete Math.* **102** (1992), *no.* 3, 239–247. (Summary) **93b:94021** 94B05

— The symbiotic relationship of combinatorics and matrix theory. Directions in matrix theory (Auburn, AL, 1990). *Linear Algebra Appl.* **162/164** (1992), 65–105. (D. Cvetković) **93a:01035** 01A60 (05C50, 15–03)

— (*with* Hwang, Geum-Sug) Generalized transitive tournaments and doubly stochastic matrices. Second NIU Conference on Linear Algebra, Numerical Linear Algebra and Applications (DeKalb, IL, 1991). *Linear Algebra Appl.* **172** (1992), 151–168. (Adolf Rhodius) **93g:15013** 15A51 (05C50)

— (*with* Jung, Hyung Chan) Maximum and minimum jump number of posets from matrices. Second NIU Conference on Linear Algebra, Numerical Linear Algebra and Applications (DeKalb, IL, 1991). *Linear Algebra Appl.* **172** (1992), 261–282. (Summary) **93c:06004** 06A07 (15A33, 15A36)

— (*with* Chavey, Keith L.) Sign-nonsingular matrix pairs. *SIAM J. Matrix Anal. Appl.* **13** (1992), *no.* 1, 36–40. (B. Levinger) **93c:15005** 15A15 (15A09, 15A23)

— Sign-nonsingular matrices and permanent conversion. *Proceedings of the First Estonian Conference on Graphs and Applications (Tartu-Käăriku, 1991)*, 45–46, *Tartu Univ., Tartu*, 1993. (*see* **93m:05006**) 15A15

— (*with* Chavey, Keith L.; Shader, Bryan L.) Conditional sign-solvability. (English summary) *Math. Comput. Modelling* **17** (1993), *no.* 1, 141–148. (Horst Hollatz) **93m:15003** 15A06 (65F99)

Bruce, J. W. (*with* Wilkinson, T. C.) Folding maps and focal sets. *Singularity theory and its applications, Part I (Coventry, 1988/1989)*, 63–72, *Lecture Notes in Math.*, 1462, *Springer, Berlin*, 1991. (Juan Margalef-Roig) **93d:58014** 58C27

— (*with* Giblin, P. J.) ★ Curves and singularities. A geometrical introduction to singularity theory. Second edition. *Cambridge University Press, Cambridge*, 1992. xviii+321 *pp. ISBN* 0-521-41985-9; 0-521-42999-4 (From the preface) **93k:58020** 58C27

— Lines, surfaces and duality. *Math. Proc. Cambridge Philos. Soc.* **112** (1992), *no.* 1, 53–61. (Maria Aparecida Soares Ruas) **93f:58018** 58C27

Bruce, Kim B. (*with* Di Cosmo, Roberto; Longo, Giuseppe[1]) Provable isomorphisms of types. International Conference on Symbolic Computation (Zurich, 1990). *Math. Structures Comput. Sci.* **2** (1992), *no.* 2, 231–247. (Summary) **93g:68072** 68Q55 (03B20, 03B40, 03B70, 68Q65)

Bruch, J. C., Jr. (*with* Wang, K.-P.) Studies of an interface relaxation domain decomposition technique using finite elements on a parallel computer. (English summary) *Numer. Methods Partial Differential Equations* **9** (1993), *no.* 4, 373–394. 65N55 (65Y05)

Bruck, Jehoshua (*with* Blaum, Mario) New techniques for constructing EC/AUED codes. (English summary) *IEEE Trans. Comput.* **41** (1992), *no.* 10, 1318–1324. 94B60 (94B35)

— (*with* Smolensky, Roman) Polynomial threshold functions, AC^0 functions, and spectral norms. *SIAM J. Comput.* **21** (1992), *no.* 1, 33–42. (From the summary) **93a:68053** 68Q25 (68M07, 94C10)

Brück, Rainer Lagrange interpolation of schlicht functions. *Mitt. Math. Sem. Giessen No.* 211 (1992), 25–26. (E. P. Merkes) **93h:30057** 30E10 (30C10)

Bruck, Ronald E. (*with* Baillon, Jean-Bernard) Ergodic theorems and the asymptotic behavior of contraction semigroups. (English summary) *Fixed point theory and applications (Halifax, NS, 1991)*, 12–26, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93i:47107** 47H20 (47A35, 47H09, 47N20)

— (*with* Baillon, Jean-Bernard) Optimal rates of asymptotic regularity for averaged nonexpansive mappings. (English summary) *Fixed point theory and applications (Halifax, NS, 1991)*, 27–66, *World Sci. Publishing, River Edge, NJ*, 1992. (A. G. Kartsatos) **93i:47082** 47H09 (47H15, 47H20)

— (*with* Goebel, Kazimierz) Bizarre fixed-point sets. (English summary) *Fixed point theory and applications (Halifax, NS, 1991)*, 67–70, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93h:47064** 47H09 (46B20, 47H10)

Brucker, P. (*with* Bein, Wolfgang W.; Stallmann, Matthias F. M.) A characterization of network representable polymatroids. (German summary) *Z. Oper. Res.* **35** (1991), *no.* 4, 267–272. (Summary) **93g:90082** 90C35 (90B10)

Bruckner, Andrew M. Three forms of chaos and their associated attractors. *Real Anal. Exchange* **17** (1991/92), *no.* 1, 431–438. (Frederick R. Marotto) **93a:58119** 58F13 (26A18, 58F03)

— (*with* Mařík, Jan; Weil, C. E.) Some aspects of products of derivatives. *Amer. Math. Monthly* **99** (1992), *no.* 2, 134–145. (G. Petruska) **93c:26006** 26A24

— (*with* Buczolich, Zoltán) Attractive properties via generalized derivatives of continuous functions. *Czechoslovak Math. J.* **42(117)** (1992), *no.* 2, 271–278. (F. Mirosław Filipczak) **93h:26004** 26A18

— (*with* Smítal, Jaroslav) The structure of ω-limit sets for continuous maps of the interval. (Czech summary) *Math. Bohem.* **117** (1992), *no.* 1, 42–47. (K. D. Magill, Jr.) **93a:26002** 26A18

— (*with* Ceder, J. G.) Chaos in terms of the map $x \to \omega(x, f)$. (English summary) *Pacific J. Math.* **156** (1992), *no.* 1, 63–96. (Remo Badii) **93g:58092** 58F13 (26A18, 58F03)

Brucks, Karen M. (*with* Otero-Espinar, Maria Victoria; Tresser, Charles) Homeomorphic restrictions of smooth endomorphisms of an interval. (English summary) *Ergodic Theory Dynamical Systems* **12** (1992), *no.* 3, 429–439. (Run Sheng Yang) **93g:58040** 58F03 (58F08)

Bruckstein, Alfred (*with* Lindenbaum, Michael) Reconstruction of polygonal sets by constrained and unconstrained double probing. *Ann. Math. Artificial Intelligence* **4** (1991), *no.* 3-4, 345–361. (Summary) **93a:68153** 68U05

— (*with* Bornstein, R.) Finding the kernel of planar shapes. *Pattern Recognition* **24** (1991), *no.* 11, 1019–1035. (Summary) **93a:68149** 68U05

— (*with* Lindenbaum, Michael) Parallel strategies for geometric probing. *J. Algorithms* **13** (1992), *no.* 2, 320–349. (W. A. Gruver) **93m:68171** 68U05

— (*with* Tannenbaum, Allen R.) Some mathematical problems in computer vision. (English summary) *Acta Appl. Math.* **30** (1993), *no.* 2, 125–157. (Summary) **93j:68219** 68U10 (00A69, 53A04)

Brüdern, J. (*with* Cook, Roger J.) On pairs of cubic Diophantine inequalities. *Mathematika* **38** (1991), *no.* 2, 250–263 (1992). (R. C. Baker) **93c:11020** 11D75 (11J25)

— (*with* Cook, Roger J.) On simultaneous diagonal equations and inequalities. *Acta Arith.* **62** (1992), *no.* 2, 125–149. (R. C. Baker) **93h:11036** 11D72 (11D75)

— (*with* Atkinson, O. D.; Cook, Roger J.) Simultaneous additive congruences to a large prime modulus. *Mathematika* **39** (1992), *no.* 1, 1–9. (D. R. Heath-Brown) **93g:11028** 11D79

— (*with* Baker, R. C.; Harman, Glyn) Simultaneous Diophantine approximation with square-free numbers. *Acta Arith.* **63** (1993), *no.* 1, 51–60. (R. J. Cook) **93m:11055** 11J13 (11L07)

— (*with* Baker, R. C.) Pairs of quadratic forms modulo one. *Glasgow Math. J.* **35** (1993), *no.* 1, 51–61. (D. R. Heath-Brown) **93j:11042** 11J25 (11D75, 11J71)

Brudnyĭ, A. Yu. Euclidean rings. (Russian) *Problems in group theory and homological algebra (Russian)*, 69–73, *Matematika, Yaroslav. Gos. Univ., Yaroslavl'*, 1987. (*see* **93d:20002**) 13F07

— Triangular systems of differential equations, and vector bundles on a compact Kähler manifold. (Russian) *Problems in group theory and homological algebra (Russian)*, 84–91, *Matematika, Yaroslav. Gos. Univ., Yaroslavl'*, 1990. (Mihai Putinar) **93c:32042** 32L05 (53C55)

Brudnyĭ, Yu. A. (*with* Kruglyak, N. Ya.) ★ Interpolation functors and interpolation spaces. Vol. I. Translated from the Russian by Natalie Wadhwa. With a preface by Jaak Peetre. North-Holland Mathematical Library, 47. *North-Holland Publishing Co., Amsterdam*, 1991. xvi+718 *pp. ISBN* 0-444-88001-1 (E. Gerlach) **93b:46141** 46M35 (46–02, 47–02)

— (*with* Irodova, I. P.) Nonlinear spline approximation of functions of several variables and B-spaces. (Russian. Russian summary) *Algebra i Analiz* **4** (1992), *no.* 4, 45–79. (Bl. Sendov) **93i:41023** 41A63 (41A50, 46E35)

Brueckner, Anthony Losing track of Nozick. *Ratio (N.S.)* **5** (1992), *no.* 2, 194–198. 03B45

Bruen, A. A. (*with* Fisher, J. Chris) The Jamison method in Galois geometries. *Des. Codes Cryptogr.* **1** (1991), *no.* 3, 199–205. (Norbert Knarr) **93a:51004** 51E20

— (*with* Fisher, J. Chris) An observation on certain point-line configurations in classical planes. (English summary) A collection of contributions in honour of Jack van Lint. *Discrete Math.* **106/107** (1992), 93–96. (J. W. P. Hirschfeld) **93k:51013** 51E21

— Polynomial multiplicities over finite fields and intersection sets. *J. Combin. Theory Ser. A* **60** (1992), *no.* 1, 19–33. (M. J. Kallaher) **93e:51012** 51E21 (05A20, 05B25, 51E20)

Brugé, F. Systolic calculation of pair interactions using the cell linked-lists method on multi-processor systems. *J. Comput. Phys.* **104** (1993), *no.* 1, 263–266. 82C80

Brüggemann, Franz Proof of a conjecture of Frank and Langley concerning zeros of meromorphic functions and linear differential polynomials. *Analysis* **12** (1992), *no.* 1-2, 5–30. (Ilpo Laine) **93e:30067** 30D35

— (*with* Jank, Gerhard; Volkmann, Lutz) A generalization of a theorem of Marcinkiewicz. *Complex Variables Theory Appl.* **18** (1992), *no.* 1-2, 79–84. (I. V. Ostrovskiĭ) **93e:30068** 30D35 (42A38, 60E10)

Brugia, Odoardo (*with* Filipponi, Piero; Mazzarella, Francesco) The ring of Fibonacci (Fibonacci "numbers" with matrix subscript). *Applications of Fibonacci numbers, Vol. 4 (Winston-Salem, NC, 1990)*, 51–62, *Kluwer Acad. Publ., Dordrecht*, 1991. (Mao Hua Le) **93i:11012** 11B39 (11C20)

— (*with* Filipponi, Piero; Horadam, Alwyn F.) A note on the improper use of a formula for Fibonacci numbers. (English summary) *Internat. J. Math. Ed. Sci. Tech.* **24** (1993), *no.* 1, 9–21. (Pentti Haukkanen) **93m:11013** 11B39 (11B65)

Brügmann, Bernd (*with* Gambini, Rodolfo; Pullin, Jorge) How the Jones polynomial gives rise to physical states of quantum general relativity. (English summary) *Gen. Relativity Gravitation* **25** (1993), *no.* 1, 1–6. (Peter Peldán) **93m:83027** 83C45 (57M25)

— Nonuniform measure in four-dimensional simplicial quantum gravity. (English summary) *Phys. Rev. D* (3) **47** (1993), *no.* 8, 3330–3338. (Summary) **93m:83021** 83C27 (83C45)

— (*with* Marinari, Enzo) 4D simplicial quantum gravity with a nontrivial measure. (English summary) *Phys. Rev. Lett.* **70** (1993), *no.* 13, 1908–1911. (Summary) **93k:83020** 83C27 (83C45)

Brugnano, L. Stability and spectral properties of some incomplete block factorizations. (English summary) *Calcolo* **28** (1991), *no.* 1-2, 1–20 (1992). (David R. Kincaid) **93j:65064** 65F35

— (*with* Trigiante, D.) Tridiagonal matrices: invertibility and conditioning. *Linear Algebra Appl.* **166** (1992), 131–150. (James Weldon Demmel) **93b:15007** 15A12 (65F35)

— (*with* Amodio, P.) Parallel factorizations and parallel solvers for tridiagonal linear systems. Second NIU Conference on Linear Algebra, Numerical Linear Algebra and Applications (DeKalb, IL, 1991). *Linear Algebra Appl.* **172** (1992), 347–364. (Summary) **93b:15014** 15A23 (65F05, 65Y05)

choquet-Bruhat, Yvonne *see* **Choquet-Bruhat, Yvonne**

lévy-Bruhl, Pierre *see* **Lévy-Bruhl, Pierre**

Bruhn, B. (*with* Koch, B. P.) Chaotic scattering in a near-integrable system. *J. Phys. A* **25** (1992), *no.* 14, 3945–3954. (Summary) **93d:70029** 70H05 (34C23, 58F13, 70D99, 70K50)

de Bruijn, N. G. Arithmetical medallions and friezes. *Nieuw Arch. Wisk.* (4) **9** (1991), *no.* 3, 339–350. (M. Mendès France) **93d:11028** 11B85 (11A99)

— Penrose patterns are almost entirely determined by two points. (English summary) A collection of contributions in honour of Jack van Lint. *Discrete Math.* **106/107** (1992), 97–104. (Marjorie Senechal) **93h:52027** 52C20

Bruin, H. Numerical determination of the continued fraction expansion of the rotation number. (English summary) *Phys. D* **59** (1992), *no.* 1-3, 158–168. (Henk Broer) **93m:58058** 58F08 (58F11, 65B99, 65Q05)

Bruins, Evert M. Ptolemaic and Islamic trigonometry, the problem of the qibla. (Arabic summary) *J. Hist. Arabic Sci.* **9** (1991), *no.* 1-2, 45–68, 129–127. (B. Rosenfeld) **93d:01008** 01A30 (01A20)

Bruinsma, Piet (*with* Alpay, Daniel; Dijksma, Aalt; de Snoo, Henk) A Hilbert space associated with a Nevanlinna function. *Signal processing, scattering and operator theory, and numerical methods* (*Amsterdam*, 1989), 115–122, *Progr. Systems Control Theory*, 5, *Birkhäuser Boston, Boston, MA*, 1990. (Vladimir Derkach) **93b:47013** 47A45 (46E22, 47B38, 47B99)

— (*with* Alpay, Daniel; Dijksma, Aalt; de Snoo, Henk) Interpolation problems, extensions of symmetric operators and reproducing kernel spaces. I. *Topics in matrix and operator theory* (*Rotterdam*, 1989), 35–82, *Oper. Theory Adv. Appl.*, 50, *Birkhäuser, Basel*, 1991. (Vladimir Derkach) **93k:47026a** 47A57 (30E05, 46E20, 47A20, 47B25)

— (*with* Alpay, Daniel; Dijksma, Aalt; de Snoo, Henk) Interpolation problems, extensions of symmetric operators and reproducing kernel spaces. II. *Integral Equations Operator Theory* **14** (1991), *no.* 4, 465–500. (Vladimir Derkach) **93k:47026b** 47A57 (30E05, 46E20, 47A20, 47B25)

— (*with* Alpay, Daniel; Dijksma, Aalt; de Snoo, Henk) Addendum: "Interpolation problems, extensions of symmetric operators and reproducing kernel spaces. II". *Integral Equations Operator Theory* **15** (1992), *no.* 3, 378–388. (Vladimir Derkach) **93k:47026c** 47A57 (30E05, 46E20, 47A20, 47B25)

Bruk, V. M. Boundary value problems associated with holomorphic families of operators. (Russian) *Functional analysis, No.* 29 (*Russian*), 32–42, *Ul'yanovsk. Gos. Ped. Inst., Ul'yanovsk*, 1989. (Vladimir Derkach) **93m:47014** 47A56 (47A99)

— On the spectrum of operators generated by abstract boundary value problems in a Banach space. (Russian) *Functional analysis, No.* 31 (*Russian*), 35–41, *Ul'yanovsk. Gos. Ped. Inst., Ul'yanovsk*, 1990. (From the text) **93k:47004** 47A10 (34B05, 47A50, 47N20)

— Holomorphic families of linear relations. (Russian) *Functional analysis, No.* 33 (*Russian*), 24–28, *Ul'yanovsk. Gos. Ped. Inst., Ul'yanovsk*, 1992. (From the text) **93h:47013** 47A56 (47A10)

Brüll, L. (*with* Pallaske, U.) On differential algebraic equations with discontinuities. (German summary) *Z. Angew. Math. Phys.* **43** (1992), *no.* 2, 319–327. (I. P. Martynov) **93g:34005** 34A09 (34A30)

Brumberg, V. A. (*with* Jupp, A. H.) Relativistic effects in the critical inclination problem in artificial satellite theory. *Celestial Mech. Dynam. Astronom.* **52** (1991), *no.* 4, 345–353. (C. Marchal) **93g:70019** 70H40 (70M20, 83B05)

— (*with* Soffel, Michael) Relativistic reference frames including time scales: questions and answers. *Celestial Mech. Dynam. Astronom.* **52** (1991), *no.* 4, 355–373. (C. Marchal) **93g:70020** 70H40 (83B05)

Brumer, Armand The average rank of elliptic curves. I. *Invent. Math.* **109** (1992), *no.* 3, 445–472. (John W. Jones) **93g:11057; EA 93m** 11G05 (11G40)

Brumfitt, P. J. MetaMorph—a formal methods toolkit with application to the design of digital hardware. (English summary) *J. Funct. Programming* **2** (1992), *no.* 4, 437–473. (Summary) **93j:68025** 68N05 (68Q60, 68T15)

van Brummelen, Glen *see* **Van Brummelen, Glen**

ten Brummelhuis, P. (*with* Bagchi, Arunabha) Parameter identification in hyperbolic systems with boundary noise. (English summary) *Identification and system parameter estimation* 1991, *Vol.* 1,2 (*Budapest*, 1991), 1151–1154, *IFAC Sympos. Ser.*, 3, *Pergamon, Oxford*, 1992. (*see* **93h:93009**) 93C20 (93B30)

Brummelhuis, Raymond (*with* Wiegerinck, Jan) Representing measures for the disc algebra and for the ball algebra. Proceedings of the Tenth Conference on Analytic Functions (Szczyrk, 1990). *Ann. Polon. Math.* **55** (1991), 19–35. (Alexander Izzo) **93b:46102** 46J15 (30H05, 32E25, 46J10)

— Exponential decay in the semiclassical limit for eigenfunctions of Schrödinger operators with magnetic fields and potentials which degenerate at infinity. *Comm. Partial Differential Equations* **16** (1991), *no.* 8-9, 1489–1502. (David Gurarie) **93b:35103** 35P20 (35J10, 47F05, 47N50, 81Q20)

Brümmer, G. C. L. (*with* Giuli, Eraldo; Herrlich, Horst) Epireflections which are completions. (French summary) *Cahiers Topologie Géom. Différentielle Catégoriques* **33** (1992), *no.* 1, 71–73. (H. L. Bentley) **93h:18004** 18A40 (18B30, 54B30, 54E15)

— (*with* Giuli, Eraldo) A categorical concept of completion of objects. *Comment. Math. Univ. Carolin.* **33** (1992), *no.* 1, 131–147. (Summary) **93c:18005** 18B30 (54B30)

Bruna, Joaquim (*with* Ortega, Joaquín Ma.) On A^∞ interpolating sets lying on curves. *The Madison Symposium on Complex Analysis* (*Madison, WI*, 1991), 93–104, *Contemp. Math.*, 137, *Amer. Math. Soc., Providence, RI*, 1992. (Thomas Bloom) **93k:32024** 32E30

— (*with* Dicks, Warren) Pere Menal i Brufal, 1951–1991. *Publ. Mat.* **36** (1992), *no.* 2A, 355–358 (1993). (Editors) **93m:01063** 01A70

Brunat, Josep M. A proof of the friendship theorem by elementary methods. (Catalan) *Butl. Soc. Catalana Mat. No.* 7 (1992), 75–80. 05C50

Brundu, Michela (*with* Stillman, Mike) Computing the equations of a variety. *Trans. Amer. Math. Soc.* **337** (1993), *no.* 2, 677–690. (Aron Simis) **93h:13027** 13P10 (13A30, 13D45, 14B15)

Brunel, N. (*with* Nadal, J.-P.; Toulouse, G.) Information capacity of a perceptron. (English summary) *J. Phys. A* **25** (1992), *no.* 19, 5017–5037. 82C32 (92B20)

Brunella, Marco Decomposition of Lagrangian intersections under symplectic isotopy. (Italian summary) *Boll. Un. Mat. Ital. A* (7) **5** (1991), *no.* 3, 353–361. (Summary) **93e:58055** 58F05 (58F36)

— On a theorem of Sikorav. *Enseign. Math.* (2) **37** (1991), *no.* 1-2, 83–87. (Luis A. Ibort) **93f:58069** 58F05 (53C15, 57R40)

— Sur les familles génératrices des sous-variétés legendriennes. (English summary) [On generating families of Legendre submanifolds] *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 13, 1049–1052. (L. S. Polyakova) **93k:58086** 58F05 (53C15, 58A20)

— On the topological equivalence between Anosov flows on three-manifolds. *Comment. Math. Helv.* **67** (1992), *no.* 3, 459–470. (John Cantwell) **93f:58178** 58F15 (57R30)

Brunelli, J. C. Stochastic quantization of fermionic theories: renormalization of the massive Thirring model. (English summary) *Internat. J. Modern Phys. A* **7** (1992), *no.* 32, 7943–7954. 81T10

Brunet, Jean-Philippe (*with* Sethian, James A.; Greenberg, Adam; Mesirov, Jill P.) Two-dimensional, viscous, incompressible flow in complex geometries on a massively parallel processor. *J. Comput. Phys.* **101** (1992), *no.* 1, 185–206. (Summary) **93d:76051** 76M25 (65Y05, 76D99)

Brunet, P. (*with* Vinacua, A.) Modeling closed surfaces: a comparison of existing methods. *Mathematical methods in computer aided geometric design, II* (*Biri*, 1991), 29–42, *Academic Press, Boston, MA*, 1992. (*see* **93d:65022**) 65D17

Brungs, H.-H. (*with* Gräter, Joachim) Value groups and distributivity. *Canad. J. Math.* **43** (1991), *no.* 6, 1150–1160. (Günter Törner) **93a:16016** 16L30 (16W60)

— Groups and invariant rings associated with valuation rings. *Proceedings of Asian Mathematical Conference*, 1990 (*Hong Kong*, 1990), 15–18, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93b:00022**) 12E15 (12J10)

— (*with* Gräter, Joachim) Noncommutative Prüfer and valuation rings. *Proceedings of the International Conference on Algebra, Part* 2 (*Novosibirsk*, 1989), 253–269, *Contemp. Math.*, 131, *Part* 2, *Amer. Math. Soc., Providence, RI*, 1992. (Patrick J. Morandi) **93f:16022** 16K20 (16H05, 16L30, 16W60)

— (*with* Törner, Günter) *I*-compactness and prime ideals. (English summary) *Publ. Math. Debrecen* **40** (1992), *no.* 3-4, 291–295. (Kenneth A. Brown) **93j:16033** 16W60 (13A18, 16D30)

Brunham, Robert C. (*with* Swinton, Jonathan; Garnett, Geoffrey P.; Anderson, Roy M.) Gonococcal infection, infertility, and population growth. I. Endemic states in behaviourally homogeneous growing populations. (English summary) *IMA J. Math. Appl. Med. Biol.* **9** (1992), *no.* 2, 107–126. 92C60 (92D30)

— (*with* Garnett, Geoffrey P.; Swinton, Jonathan; Anderson, Roy M.) Gonococcal infection, infertility, and population growth. II. The influence of heterogeneity in sexual behaviour. (English summary) *IMA J. Math. Appl. Med. Biol.* **9** (1992), *no.* 2, 127–144. 92C60

Bruni, C. (*with* Koch, Giorgio) Some results about two-mode stochastic compartmental models. *Stochastic systems and optimization* (*Warsaw*, 1988), 3–17, *Lecture Notes in Control and Inform. Sci.*, 136, *Springer, Berlin*, 1989. (*see* **93d:93009**) 60K99 (92D25)

Bruni, Marco (*with* Ellis, George F. R.; Dunsby, Peter K. S.) Gauge-invariant perturbations in a scalar field dominated universe. *Classical Quantum Gravity* **9** (1992), *no.* 4, 921–945. (Oscar J. P. Éboli) **93c:83124** 83F05

— Stability of open universes. (English summary) *Phys. Rev. D* (3) **47** (1993), *no.* 2, 738–742. (Summary) **93j:83080** 83F05 (83C25)

Brüning, Jochen (*with* Seeley, R.) The expansion of the resolvent near a singular stratum of conical type. *J. Funct. Anal.* **95** (1991), *no.* 2, 255–290. (From the text) **93g:58146** 58G18 (35P05, 47F05, 58G03)

— On L^2-index theorems for complete manifolds of rank-one-type. *Duke Math. J.* **66** (1992), *no.* 2, 257–309. (John Roe) **93i:58145** 58G10

— (*with* Moscovici, Henri) L^2-index for certain Dirac-Schrödinger operators. *Duke Math. J.* **66** (1992), *no.* 2, 311–336. (John Roe) **93g:58142** 58G12 (35Q40, 47F05)

— (*with* Lesch, Matthias) Hilbert complexes. *J. Funct. Anal.* **108** (1992), *no.* 1, 88–132. (Jürgen Eichhorn) **93k:58208** 58G05 (46M20, 47A53, 58A12, 58G20)

— (*with* Sunada, Toshikazu) On the spectrum of periodic elliptic operators. *Nagoya Math. J.* **126** (1992), 159–171. (Friedbert Prüfer) **93f:58235** 58G25 (35P05, 46L99, 47F05)

Brunk, H. D. Fully coherent inference. *Ann. Statist.* **19** (1991), *no.* 2, 830–849. (Summary) **93a:62005** 62A15 (60A05)

Brunner, A. M. Geometric quotients of link groups. (English summary) *Topology Appl.* **48** (1992), *no.* 3, 245–262. (Bruno Zimmermann) **93k:57009** 57M25 (20F36)

Brunner, Edgar (*with* Dette, Holger) Rank procedures for the two-factor mixed model. (English summary) *J. Amer. Statist. Assoc.* **87** (1992), *no.* 419, 884–888. (Joachim Krauth) **93j:62126** 62G10 (62J10)

Brunner, Hermann On implicitly linear and iterated collocation methods for Hammerstein integral equations. *J. Integral Equations Appl.* **3** (1991), *no.* 4, 475–488. (Johannes Elschner) **93b:65206** 65R20 (45L05, 47H30)

— Implicitly linear collocation methods for nonlinear Volterra equations. International Conference on the Numerical Solution of Volterra and Delay Equations (Tempe, AZ, 1990). *Appl. Numer. Math.* **9** (1992), *no.* 3-5, 235–247. (Jose Cuminato) **93c:65163** 65R20

— On discrete superconvergence properties of spline collocation methods for nonlinear Volterra integral equations. (English summary) *J. Comput. Math.* **10** (1992), *no.* 4, 348–357. (Baruch Cahlon) **93k:65107** 65R20

Brunner, Lawrence J. Bayesian nonparametric methods for data from a unimodal density. *Statist. Probab. Lett.* **14** (1992), *no.* 3, 195–199. (Summary) **93e:62085** 62F15 (62G05)

Brunner, Norbert Cardinality quantifiers and choice principles. (English summary) *Rep. Math. Logic No.* 25 (1991), 75–80. (Marion Scheepers) **93i:03069** 03E25 (03C80, 03E05, 04A25)

Brunnett, Guido H. Properties of minimal-energy splines. *Curve and surface design* (*Tempe, AZ*, 1989), 3–22, *Geom. Des. Publ., SIAM, Philadelphia, PA*, 1992. (*see* **93g:65027**) 65D17 (65D07)

— A new characterization of plane elastica. *Mathematical methods in computer aided geometric design, II* (*Biri*, 1991), 43–56, *Academic Press, Boston, MA*, 1992. (*see* **93d:65022**) 65D17 (65D10)

Bruno, A. D. *see* **Bryuno, A. D.**

Bruno, G. A Bayesian analysis for generators of pseudorandom numbers. I. (Italian. Italian summary) *Pubbl. Dip. Metod. Model. Mat. Sci. Appl. Univ. Stud. Roma No.* 1 (1989), 17 *pp.* 65C10 (62F15)

Bruno, Oscar P. Taylor expansions and bounds for the effective conductivity and the effective elastic moduli of multicomponent composites and polycrystals. *Asymptotic Anal.* **4** (1991), *no.* 4, 339–365. (John M. Ball) **93c:73072** 73K20 (73B27)

— (*with* Leo, Perry H.) On the stiffness of materials containing a disordered array of microscopic holes or hard inclusions. (English summary) *Arch. Rational Mech. Anal.* **121** (1992), *no.* 4, 303–338. (Andro Mikelić) **93k:73005** 73B27 (35B27, 35Q72, 73K20)

— (*with* Friedman, Avner; Reitich, Fernando) Asymptotic behavior for a coalescence problem. *Trans. Amer. Math. Soc.* **338** (1993), *no.* 1, 133–158. (Piotr Biler) **93j:35174** 35Q99 (35B40, 35R10, 82C99)

Bruno, R. (*with* Milman, Mark H.; Salama, M.; Scheid, R. E.; Gibson, J. S.) Combined control-structural optimization. *Comput. Mech.* **8** (1991), *no.* 1, 1–18. (Kurt Marti) **93g:73096** 73K50 (73K40)

Bruno, William J. (*with* Pearson, John E.) Pattern formation in an $N + Q$ component reaction-diffusion system. (English summary) *Chaos* **2** (1992), *no.* 4, 513–524. (Summary) **93i:92009** 92C15 (58F40)

Brunovský, Pavol Controlling the dynamics of scalar reaction diffusion equations by finite-dimensional controllers. *Modelling and inverse problems of control for distributed parameter systems* (*Laxenburg*, 1989), 22–27, *Lecture Notes in Control and Inform. Sci.*, 154, *Springer, Berlin*, 1991. (*see* **93d:93006**) 93C05 (93B52)

— (*with* Mora Giné, Xavier; Poláčik, P.; Solà-Morales, J.) Asymptotic behavior of solutions of semilinear elliptic equations on an unbounded strip. *Acta Math. Univ. Comenian. (N.S.)* **60** (1991), *no.* 2, 163–183. (Sadakazu Aizawa) **93f:35063** 35J60 (35B40)

— (*with* Poláčik, P.; Sandstede, Björn) Convergence in general periodic parabolic equations in one space dimension. *Nonlinear Anal.* **18** (1992), *no.* 3, 209–215. (Xiao Biao Lin) **93b:35064** 35K55 (35B10, 35B40)

Bruns, Günter (*with* Roddy, Michael Stewart) A finitely generated modular ortholattice. *Canad. Math. Bull.* **35** (1992), *no.* 1, 29–33. (Summary) **93d:06009** 06C15

Bruns, Winfried (*with* Vetter, Udo) Modules defined by generic symmetric and alternating maps. *Topics in algebra, Part* 2 (*Warsaw*, 1988), 31–38, *Banach Center Publ.*, 26, *Part* 2, *PWN, Warsaw*, 1990. (R. A. Wiegand) **93h:13013** 13C13 (13C40)

— (*with* Herzog, Jürgen) On the computation of a-invariants. (English summary) *Manuscripta Math.* **77** (1992), *no.* 2-3, 201–213. (Gert Naudé) **93k:13032** 13H10 (13F50)

van Brunschot, P. K. G. M. (*with* Klompstra, Margriet B.; Olsder, G. J.) The isopone method in optimal control. *Dynamics Control* **2** (1992), *no.* 3, 281–301. (M. Krastanov) **93c:49024** 49N55 (93B03, 93C95)

Brunvoll, J. (*with* Cyvin, Sven J.; Zhang, Fu Ji) Enumeration of perifusenes with one internal vertex: a complete mathematical solution. (English summary) *J. Math. Chem.* **11** (1992), *no.* 4, 283–292. (Summary) **93h:92040** 92E10 (05C30)

— (*with* Cyvin, B. N.; Cyvin, Sven J.) All-benzenoid systems with trigonal symmetry. (English summary) *Match No.* 28 (1992), 45–60. 92E10

Bruschi, Danilo Strong separations of the polynomial hierarchy with oracles: constructive separations by immune and simple sets. *Theoret. Comput. Sci.* **102** (1992), *no.* 2, 215–252. (Marius Zimand) **93i:68071** 68Q15 (03D15)

Bruschi, M. (*with* Santini, Paolo Maria; Ragnisco, Orlando) Integrable cellular automata. (English summary) *Phys. Lett. A* **169** (1992), *no.* 3, 151–160. (Summary) **93f:58122** 58F08 (68Q80, 82C32)

Brushlinskiĭ, K. V. (*with* Ryaben'kiĭ, V. S.; Tuzova, N. B.) Transfer of a boundary condition across a vacuum in axisymmetric problems. (Russian. Russian summary) *Zh. Vychisl. Mat. i Mat. Fiz.* **32** (1992), *no.* 12, 1929–1939; *translation in Comput. Math. Math. Phys.* **32** (1992), *no.* 12, 1757–1767 (1993). (Summary) **93k:35249** 35Q60 (78A25)

Bruss, F. Thomas Optimal selection, learning and machine implementation. *Strategies for sequential search and selection in real time* (*Amherst, MA*, 1990), 3–35, *Contemp. Math.*, 125, *Amer. Math. Soc., Providence, RI*, 1992. (S. M. Samuels) **93f:60056** 60G40 (68T20)

Brussee, R. (*with* Heckman, G. J.; Opdam, E. M.) Variation on a theme of MacDonald. *Math. Z.* **208** (1991), *no.* 1, 1–10. (René J. Beerends) **93a:33028** 33C80 (17B20, 22E30)

Brustein, Ram (*with* Ne'eman, Yuval; Sternberg, Shlomo) Conformal field theories and category theory. *Differential geometric methods in theoretical physics* (*Davis, CA*, 1988), 271–278, *NATO Adv. Sci. Inst. Ser. B Phys.*, 245, *Plenum, New York*, 1990. (Summary) **93g:81140** 81T40 (18D10)

— (*with* Roland, Kaj) Space-time versus world-sheet renormalization group equation in string theory. *Nuclear Phys. B* **372** (1992), *no.* 1-2, 201–217. (Mark D. Roberts) **93b:81178** 81T17 (81T30)

Brut, F. (*with* Meplan, O.; Gignoux, C.) Tangent map for classical billiards in magnetic fields. (English summary) *J. Phys. A* **26** (1993), *no.* 2, 237–246. (Summary) **93k:58155** 58F13 (58F05)

Brutyan, M. A. (*with* Krapivskiĭ, P. L.) Investigation of the stability of periodic flows of a viscous fluid. (Russian) *Prikl. Mat. Mekh.* **55** (1991), *no.* 6, 928–933; *translation in J. Appl. Math. Mech.* **55** (1991), *no.* 6, 805–811 (1992). (From the text) **93a:76040** 76E05 (76D05)

— (*with* Krapivskiĭ, P. L.) Analytical determination of critical Reynolds numbers for periodic viscous gas flows. (English summary) *European J. Mech. B Fluids* **11** (1992), *no.* 5, 587–598. (A. Pozzi) **93j:76030** 76E05 (76N15)

— (*with* Krapivskiĭ, P. L.) Bernoulli theorem generalized to rheologically complex viscous fluid flow. (English summary) *J. Engrg. Phys. Thermophys.* **63** (1992), *no.* 2, 826–828 (1993). 76A05

— (*with* Krapivskiĭ, P. L.) Intrinsic properties of some rheological models of a viscoelastic fluid. (Russian. Russian summary) *Prikl. Mat. Mekh.* **56** (1992), *no.* 2, 347–351; *translation in J. Appl. Math. Mech.* **56** (1992), *no.* 2, 298–302. (From the text) **93g:76008** 76A10 (35Q35, 73F15)

— (*with* Krapivskiĭ, P. L.) Unidirectional flows of viscoelastic fluids and their gasdynamic counterparts. (English summary) *Z. Angew. Math. Phys.* **43** (1992), *no.* 4, 715–725. (Summary) **93e:76005** 76A10 (73F15, 76N15)

— (*with* Krapivskiĭ, P. L.) Exact solution of Navier-Stokes equations describing the evolution of a vortex structure in a generalized shear flow. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **32** (1992), *no.* 2, 270–272. (Lech Slawik) **93f:76022** 76D05

Brutyan, V. Kh. (*with* Aleksandrov, A. G.) Optimization of the soft landing of a spacecraft on the surface of the moon. (Russian. Russian summary) *Applied problems in optimal control: models, methods and algorithms* (*Russian*), 41–48, 73–74, *Inst. Problem Upravlen., Moscow*, 1990. (*see* **93m:93004**) 70Q05

Bruyère, Véronique Completion of codes. *Words, languages and combinatorics* (*Kyoto*, 1990), 30–44, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93a:94026** 94Bxx (20M35, 94-01, 94A45)

— (*with* De Felice, Clelia) Synchronization and decomposability for a family of codes. (English summary) *Internat. J. Algebra Comput.* **2** (1992), *no.* 4, 367–393. (Dominique Perrin) **93i:94009** 94A45 (68Q45)

le Bruyn, Lieven *see* **Le Bruyn, Lieven**

Bruynooghe, Maurice (*with* De Schreye, Danny; Martens, Bern) A general criterion for avoiding infinite unfolding during partial deduction of logic programs. (English summary) *Logic programming* (*San Diego, CA*, 1991), 117–131, *MIT Press Ser. Logic Program., MIT Press, Cambridge, MA*, 1991. (*see* **93i:68009**) 68Q60

— (*with* Martens, Bern; De Schreye, Danny) Sound and complete partial deduction with unfolding based on well-founded measures. (English summary) *Fifth generation computer systems, Vol.* 1, 2 (*Tokyo*, 1992), 473–480, *Ohm, Tokyo*, 1992. (*see* **93i:68007**) 68Q60

Bruyns, Peter (*with* Naturman, Colin; Rose, Henry) Amalgamation in the pentagon variety. *Algebra Universalis* **29** (1992), *no.* 3, 303–322. (Joel Berman) **93i:08004** 08B25 (06B20, 08C10)

Bruzual, Ramón (*with* Marcantognini, S. A. M.) Local semigroups of isometries in Π_κ-spaces and related continuation problems for κ-indefinite Toeplitz kernels. *Integral Equations Operator Theory* **15** (1992), *no.* 4, 527–550. (Vladimir Derkach) **93f:47038** 47B50 (47A57, 47B35, 47D03)

Bruzzo, Ugo (*with* Bartocci, Claudio; Hernández Ruipérez, Daniel) Some results on line bundles over SUSY-curves. *Differential geometric methods in theoretical physics* (*Davis, CA*, 1988), 675–680, *NATO Adv. Sci. Inst. Ser. B Phys.*, 245, *Plenum, New York*, 1990. (Wataru Takahasi) **93k:14071** 14M30 (32C11, 32L05)

— (*with* Bartocci, Claudio; Hernández Ruipérez, Daniel) ★ The geometry of supermanifolds. Mathematics and its Applications, 71. *Kluwer Academic Publishers Group, Dordrecht*, 1991. xx+242 *pp. ISBN* 0-7923-1440-9 (Jaime Muñoz Masqué) **93h:58006** 58A50 (32C11, 58C50)

— Supermanifolds modelled over finite-dimensional exterior algebras. Les Journées Relativistes (Cargèse, 1991). *Classical Quantum Gravity* **9** (1992), *suppl.*, S13–S17. (Summary) **93b:58010** 58A50

Bryan, Kurt (*with* Vogelius, Michael) A uniqueness result concerning the identification of a collection of cracks from finitely many electrostatic boundary measurements. *SIAM J. Math. Anal.* **23** (1992), *no.* 4, 950–958. (V. S. Rabinovich) **93f:35238** 35R30 (35Q60, 78A30)

Bryans, Joan Substitution and the explanation of action. (English summary) *Erkenntnis* **37** (1992), *no.* 3, 365–376. 03B65 (03A05)

Bryant, Darryn E. Varieties of P-quasigroups. (English summary) *Australas. J. Combin.* **6** (1992), 229–243. (D. A. Robinson) **93k:05092** 05C38 (20N05)

— Varieties of quasigroups arising from 2-perfect m-cycle systems. *Des. Codes Cryptogr.* **2** (1992), *no.* 2, 159–168. (Charles C. Lindner) **93i:20085** 20N05 (05C38)

Bryant, G. F. (*with* Yeung, L. F.) The L-dominance concept and its applications to multivariable system designs. (English summary) *Internat. J. Control* **56** (1992), *no.* 5, 1079–1102. (Zong Qian Luo) **93i:93061** 93B52 (93B50, 93C35, 93D15)

Bryant, J. *see* **Bryant, John Logan**

Bryant, John G. A new interpretation of collisions in the N-body problem. *Predictability, stability, and chaos in N-body dynamical systems* (*Cortina d'Ampezzo*, 1990), 501–507, *NATO Adv. Sci. Inst. Ser. B Phys.*, 272, *Plenum, New York*, 1991. (Introduction) **93m:70011** 70F10 (70F35)

Bryant, John Logan (*with* Ferry, Steven C.; Mio, Washington; Weinberger, Shmuel) Topology of homology manifolds. (English summary) *Bull. Amer. Math. Soc.* (*N.S.*) **28** (1993), *no.* 2, 324–328. (A. A. Ranicki) **93h:57034** 57P10 (57N15, 57P05, 57R67)

Bryant, Peter J. Chaotic breakdown of a periodically forced, weakly damped pendulum. (English summary) *J. Austral. Math. Soc. Ser. B* **34** (1992), *no.* 2, 153–173. (Summary) **93f:70025** 70K50 (34C15, 58F13, 70K20, 70K40)

Bryant, Robert L. Two exotic holonomies in dimension four, path geometries, and twistor theory. *Complex geometry and Lie theory* (*Sundance, UT*, 1989), 33–88, *Proc. Sympos. Pure Math.*, 53, *Amer. Math. Soc., Providence, RI*, 1991. (S. M. Salamon) **93e:53030** 53C05 (32L25, 53A55, 53C15)

Bryant, Roger M. Characteristic subgroups of relatively free groups. (English summary) *Bull. Austral. Math. Soc.* **46** (1992), *no.* 3, 497–507. (Robert G. Burns) **93m:20045** 20F18 (20E10)

— (*with* Groves, J. R. J.) Automorphisms of free metabelian groups of infinite rank. *Comm. Algebra* **20** (1992), *no.* 3, 783–814. (S. Andreadakis) **93f:20039** 20E36 (20E10, 20F28)

Bryant, Victor (*with* Brooksbank, Peter) Greedy algorithm compatibility and heavy-set structures. *European J. Combin.* **13** (1992), *no.* 2, 81–86. (J. E. Graver) **93b:05033** 05B35

— Some card table permutations. (English summary) *Nieuw Arch. Wisk.* (4) **10** (1992), *no.* 1-2, 105–109. (Ian Anderson) **93j:05002** 05A05

— ★ Aspects of combinatorics. A wide-ranging introduction. *Cambridge University Press, Cambridge*, 1993. viii+266 *pp. ISBN* 0-521-41974-3; 0-521-42997-8 05–01 (90C27)

Bryc, Włodzimierz Large deviations by the asymptotic value method. *Diffusion processes and related problems in analysis, Vol. I* (*Evanston, IL*, 1989), 447–472, *Progr. Probab.*, 22, *Birkhäuser Boston, Boston, MA*, 1990. (Paolo Baldi) **93b:60055** 60F10

— (*with* Szablowski, Pawel J.) Some characteristic of normal distribution by conditional moments. (English summary) *Bull. Polish Acad. Sci. Math.* **38** (1990), *no.* 1-12, 209–218. (Summary) **93i:62016** 62E10

— On the large deviation principle for stationary weakly dependent random fields. *Ann. Probab.* **20** (1992), *no.* 2, 1004–1030. (Christian Maes) **93c:60031** 60F10 (60G60, 82C22)

— On a measure of symmetry for stationary random sequences. (English summary) *Rocky Mountain J. Math.* **22** (1992), *no.* 2, 471–476. (Xiang Chen Wang) **93m:60069** 60G09 (60G10)

— (*with* Peligrad, Magda) The central limit theorem for Tukey's 3R smoother. *Statist. Probab. Lett.* **13** (1992), *no.* 1, 29–37. (Dalibor Volný) **93a:60025** 60F05 (60G10)

— On large deviations for uniformly strong mixing sequences. *Stochastic Process. Appl.* **41** (1992), *no.* 2, 191–202. (George L. O'Brien) **93h:60037** 60F10 (60B12)

— (*with* Smoleński, W.) Moment conditions for almost sure convergence of weakly correlated random variables. *Proc. Amer. Math. Soc.* **119** (1993), *no.* 2, 629–635. (F. Móricz) **93k:60071** 60F15 (60E15)

Bryce, R. A. The Fitting class generated by a finite soluble group. (Italian summary) *Ann. Mat. Pura Appl.* (4) **159** (1991), 151–169. (Alexander N. Skiba) **93d:20038** 20D10
— (*with* Cossey, John) A note on Hamiltonian 2-groups. *Rend. Sem. Mat. Univ. Padova* **86** (1991), 175–182 (1992). (From the introduction) **93m:20034** 20E15 (20F22)
— (*with* Cossey, John; Ormerod, E. A.) A note on p-groups with power automorphisms. *Glasgow Math. J.* **34** (1992), *no.* 3, 327–332. (Carlo M. Scoppola) **93j:20046** 20D15
Brychkov, Yu. A. (*with* Prudnikov, A. P.; Marichev, O. I.) ★ Integrals and series. Vol. 4. Direct Laplace transforms. *Gordon and Breach Science Publishers, New York*, 1992. xx+619 *pp. ISBN* 2-88124-837-3 (J. M. H. Peters) **93c:44003** 44A10 (33–00, 44–00, 44A20, 44A35)
— (*with* Prudnikov, A. P.; Marichev, O. I.) ★ Integrals and series. Vol. 5. Inverse Laplace transforms. *Gordon and Breach Science Publishers, New York*, 1992. xx+595 *pp. ISBN* 2-88124-838-1 (J. M. H. Peters) **93i:44001** 44–00 (00A20, 26–00, 33–00, 44A35)
— (*with* Glaeske, Hans-Jürgen; Prudnikov, A. P.; Vũ Kim Tuấn) ★ Multidimensional integral transformations. *Gordon and Breach Science Publishers, Philadelphia, PA*, 1992. xiv+386 *pp. ISBN* 2-88124-839-X (Norbert Ortner) **93j:44002** 44–02 (42B10, 44A10, 44A30, 44A35, 47G10)
— (*with* Marichev, O. I.; Prudnikov, A. P.) ★ Tabellen unbestimmter Integrale. (German) [Tables of indefinite integrals] Translated from the 1986 Russian original by Gerhard Musiol. *Verlag Harri Deutsch, Thun*, 1992. 200 *pp. ISBN* 3-8171-1230-0 26–00 (00A20)
Bryden, D. J. Evidence from advertising for mathematical instrument making in London, 1556–1714. (English summary) *Ann. of Sci.* **49** (1992), *no.* 4, 301–336. (Summary) **93f:01009** 01A45 (01A40, 01A50)
Brydges, David (*with* Evans, Steven N.; Imbrie, John Z.) Self-avoiding walk on a hierarchical lattice in four dimensions. *Ann. Probab.* **20** (1992), *no.* 1, 82–124. (Massimo Campanino) **93b:60150** 60J15 (81T60, 82B41)
Brykalov, S. A. Second-order functional-differential equations with a discontinuous first derivative. (Russian. Russian summary) *Control in dynamical systems* (*Russian*), 31–46, 124–125, *Akad. Nauk SSSR Ural. Otdel., Sverdlovsk*, 1990. (V. Šeda) **93j:34094** 34K10 (47H15)
— Problems with monotone nonlinear boundary conditions. (Russian) *Dokl. Akad. Nauk* **325** (1992), *no.* 5, 897–900; *translation in Russian Acad. Sci. Dokl. Math.* **46** (1993), *no.* 1, 108–111. (Alexander I. Domoshnitsky) **93k:34151** 34K10 (34B15)
— *see also* **Control problems with guaranteed result, 93h:93008**
Brykina, I. G. (*with* Rusakov, V. V.; Shcherbak, V. G.) Approximate formulas for heat fluxes on the surface of three-dimensional bodies. (Russian. Russian summary) *Prikl. Mat. Mekh.* **56** (1992), *no.* 4, 658–662; *translation in J. Appl. Math. Mech.* **56** (1992), *no.* 4, 559–563. 80A20 (76K05)
Brylawski, Thomas (*with* Oxley, James G.) The Tutte polynomial and its applications. *Matroid applications*, 123–225, *Encyclopedia Math. Appl.*, 40, *Cambridge Univ. Press, Cambridge*, 1992. (W. T. Tutte) **93k:05060** 05C15 (05B35)
Brylinski, Jean-Luc (*with* Delorme, Patrick) Vecteurs distributions H-invariants pour les séries principales généralisées d'espaces symétriques réductifs et prolongement méromorphe d'intégrales d'Eisenstein. [H-invariant distribution vectors for the generalized principal series of reducible symmetric spaces and meromorphic extension of Eisenstein integrals] *Invent. Math.* **109** (1992), *no.* 3, 619–664. (D. Miličić) **93m:22016** 22E46
— Legendre polynomials and the elliptic genus. *J. Algebra* **145** (1992), *no.* 1, 83–93. (Andrew J. Baker) **93f:55008** 55N22 (11F11, 11G05, 22E45, 33C05, 33C45, 33C80, 57R20)
Bryson, Arthur E., Jr. (*with* El Ghaoui, Laurent; Carrier, Alain) Linear quadratic minimax controllers. *J. Guidance Control Dynamics* **15** (1992), *no.* 4, 953–961. (Zoran Gajic) **93f:93063** 93B51 (49N10, 93B36, 93B60)
— (*with* Mills, Raymond A.) Parameter-robust control design using a minimax method. (English summary) *J. Guidance Control Dynamics* **15** (1992), *no.* 5, 1068–1075. 93B50
Bryson, Noel A parametric programming methodology to solve the Lagrangian dual for network problems with multiple side-constraints. (English summary) *Comput. Oper. Res.* **20** (1993), *no.* 5, 541–552. 90C35
Bryson, Steve (*with* Freedman, Michael H.; He, Zheng-Xu; Wang, Zhenghan) Möbius invariance of knot energy. *Bull. Amer. Math. Soc. (N.S.)* **28** (1993), *no.* 1, 99–103. (Anders Linnér) **93d:57010** 57M25 (57N45, 58E10)
Brytschkow, Ju. A. *see* **Brychkov, Yu. A.**
Bryuno, A. D. ★ Ограниченная задача трех тел. (Russian) [The restricted three-body problem] Плоские периодические орбиты. [Plane periodic orbits] With an English summary. "*Nauka*", *Moscow*, 1990. 296 *pp. ISBN* 5-02-000683-1 (Andrei Iacob) **93g:70009** 70F07 (34C25, 58F05, 58F22, 58F40, 70F15, 70H05)
— (*with* Soleev, A.) The local uniformization of branches of an algebraic curve. *Proceedings of the International Conference on Algebra, Part* 3 (*Novosibirsk*, 1989), 361–378, *Contemp. Math.*, 131, *Part* 3, *Amer. Math. Soc., Providence, RI*, 1992. (Tomás Sánchez-Giralda) **93f:32036** 32S05 (14B05, 14H20)
— Nondegeneracy conditions in the Kolmogorov theorem. (Russian) *Dokl. Akad. Nauk* **322** (1992), *no.* 6, 1028–1032; *translation in Soviet Math. Dokl.* **45** (1992), *no.* 1, 221–225. (J. S. Joel) **93e:58056** 58F05 (34C27, 58F30, 70H05)
— Smooth linearization of differential equations. (Russian) *Dokl. Akad. Nauk SSSR* **322** (1992), *no.* 3, 446–450; *translation in Soviet Math. Dokl.* **45** (1992), *no.* 1, 105–109. (G. R. Belitskiĭ) **93g:34056** 34C20
Bryzgalin, G. I. Mean values of a function on products of linearly ordered spaces. (Russian) *Numerical methods for solving problems in elasticity and plasticity theory* (*Russian*) (*Volgograd*, 1989), 32–37, *Akad. Nauk SSSR Sibirsk. Otdel., Inst. Teoret. i Prikl. Mekh., Novosibirsk*, 1990. (Summary) **93k:65052** 65J99 (00A69, 65Q05)
Brzdęk, Janusz Subgroups of the group Z_n and a generalization of the Gołąb-Schinzel functional equation. *Aequationes Math.* **43** (1992), *no.* 1, 59–71. (P. Javor) **93b:39006** 39B52
Brzeskwiniewicz, H. Application of the Kronecker product to the construction of certain PBB designs. (Polish. English summary) *Mat. Stos.* **35** (1992), 121–129. 05B05
— On the basic contrasts in PBIB designs. (English summary) *Zastos. Mat.* **21** (1992), *no.* 3, 335–341. (Ashish Das) **93i:62065** 62K10
— Latent roots and off-diagonal elements of the association matrix in PBIB designs and the number of associate classes. (English summary) *Zastos. Mat.* **21** (1992), *no.* 3, 449–453. (K. R. Shah) **93h:62132** 62K10
Brzeziński, Juliusz (*with* Eichler, M.) On the imbeddings of imaginary quadratic orders in definite quaternion orders. *J. Reine Angew. Math.* **426** (1992), 91–105. (Rainer Schulze-Pillot) **93i:11136** 11R52 (11E20, 11R29)
Brzeziński, Tomasz (*with* Dąbrowski, H.; Rembieliński, Jakub) On the quantum differential calculus and the quantum holomorphicity. *J. Math. Phys.* **33** (1992), *no.* 1, 19–24. (Michael Ringe) **93c:58020** 58B30 (14A22, 17B37, 81R50)
— (*with* Rembieliński, Jakub) q-integrals on the quantum complex plane. *J. Phys. A* **25** (1992), *no.* 7, 1945–1952. (Michael Ringe) **93c:58021** 58B30 (28C99, 46L60, 81R50)
— (*with* Majid, Shahn) A class of bicovariant differential calculi on Hopf algebras. (English summary) *Lett. Math. Phys.* **26** (1992), *no.* 1, 67–78. (Roland Berger) **93k:58010** 58B30 (16W30, 17B37, 81R50)
Brzeźniak, Zdzisław (*with* Capiński, Marek; Flandoli, Franco) Approximation of white noise in stochastic partial differential equations. *Stochastic processes, physics and geometry* (*Ascona and Locarno*, 1988), 256–268, *World Sci. Publishing, Teaneck, NJ*, 1990. (Jan Ubøe) **93b:60128** 60H15 (35R60)
— (*with* Szafirski, Boleslaw) Asymptotic behaviour of L^1 norm of solutions to parabolic equations. (English summary) *Bull. Polish Acad. Sci. Math.* **39** (1991), *no.* 1-2, 1–10. (Victor A. Galaktionov) **93m:35089** 35K05 (35B40)
— (*with* Albeverio, Sergio) Infinite-dimensional oscillatory integrals: finite-dimensional approach and some applications. (English summary) *Probabilistic methods in mathematical physics* (*Siena*, 1991), 30–49, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93h:81072** 81S40 (58D30, 81–02)
— (*with* Capiński, Marek; Flandoli, Franco) Stochastic Navier-Stokes equations with multiplicative noise. (English summary) *Stochastic Anal. Appl.* **10** (1992), *no.* 5, 523–532. (Ana Bela Cruzeiro) **93m:35140** 35Q30 (35R60, 60H15, 76D05, 76M35)
— On smooth dependence of solutions of parabolic equations on coefficients. *Univ. Iagel. Acta Math. No.* 29 (1992), 7–17. (Siegfried Carl) **93f:35087** 35K20 (35B30)
Bshouty, Daoud (*with* Hengartner, Walter) Boundary correspondence of univalent harmonic mappings from the unit disc onto a Jordan domain. *Approximation by solutions of partial differential equations* (*Hanstholm*, 1991), 51–60, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 365, *Kluwer Acad. Publ., Dordrecht*, 1992. (P. Lappan) **93f:31004** 31A20 (30C20, 31A25)
— (*with* Bar-Lev, Shaul K.; Enis, Peter) On polynomial variance functions. (English summary) *Probab. Theory Related Fields* **94** (1992), *no.* 1, 69–82. (Paul Embrechts) **93i:62013** 62E10 (60J30)
— (*with* Bar-Lev, Shaul K.; Enis, Peter; Ohayon, Avital Y.) Compositions and products of infinitely divisible variance functions. *Scand. J. Statist.* **19** (1992), *no.* 1, 83–89. (Gérard Letac) **93h:60021** 60E07 (62E10)
— (*with* Bar-Lev, Shaul K.; Letac, Gérard) Natural exponential families and self-decomposability. *Statist. Probab. Lett.* **13** (1992), *no.* 2, 147–152. (Ryuei Nishii) **93c:60012** 60E05 (62E10)
Bshouty, Nader H. (*with* Cleve, Richard; Eberly, Wayne) Size-depth tradeoffs for algebraic formulae. (English summary) 32*nd Annual Symposium on Foundations of Computer Science* (*San Juan, PR*, 1991), 334–341, *IEEE Comput. Soc. Press, Los Alamitos, CA*, 1991. (Summary) **93e:68043** 68Q40
— A lower bound for the multiplication of polynomials modulo a polynomial. *Inform. Process. Lett.* **41** (1992), *no.* 6, 321–326. (Summary) **93j:68069** 68Q25 (68Q40)
— (*with* Averbuch, Amir; Kaminski, Michael) A classification of algorithms for multiplying polynomials of small degree over finite fields. (English summary) *J. Algorithms* **13** (1992), *no.* 4, 577–588. (Jacques Calmet) **93k:68051** 68Q40 (68Q25)
Bu, Qiyue On well-posedness of the forced nonlinear Schrödinger equation. *Appl. Anal.* **46** (1992), *no.* 3-4, 219–239. (Thierry Cazenave) **93e:35100** 35Q55 (35B30)
Bu, Shang Quan Deux remarques sur la propriété de Radon-Nikodým analytique. (English and French summaries) [Two remarks on the analytic Radon-Nikodým property] *Ann. Fac. Sci. Toulouse Math.* (5) **11** (1990), *no.* 2, 79–89. (Summary) **93g:46017** 46B22 (46E40)
— Existence of radial limits of harmonic functions in Banach spaces. A Chinese summary appears in Chinese Ann. Math. Ser. A **13** (1992), no. 1, 133. *Chinese Ann. Math. Ser. B* **13** (1992), *no.* 1, 110–117. (Summary) **93d:46028** 46B20 (30D40, 31A20, 46E40)
Bub, Jeffrey (*with* Hájek, Alan) EPR. *Found. Phys.* **22** (1992), *no.* 3, 313–332. (Emilio Santos) **93f:81012** 81P05 (01A60, 81–03)
— Quantum mechanics without the projection postulate. *Found. Phys.* **22** (1992), *no.* 5, 737–754. (S. Gudder) **93d:81012** 81P10 (81Q10)
— Quantum logical solution to the measurement problem of quantum mechanics. (English summary) Quantum logics, Part II (Gdańsk, 1990). *Internat. J. Theoret. Phys.* **31** (1992), *no.* 10, 1857–1871. (S. Gudder) **93i:81010** 81P10 (81P15)
Bubboloni, Daniela On the partitions of p-groups of order p^n with $n \leq 5$. (Italian. English summary) *Boll. Un. Mat. Ital. B* (7) **5** (1991), *no.* 4, 839–852. (F. Pérez Monasor) **93b:20046** 20D60
Buccella, Franco (*with* Esposito, Giampiero; Miele, Gennaro) Spontaneously broken SU(5) symmetries and 1-loop effects in the early universe. *Classical Quantum Gravity* **9** (1992), *no.* 6, 1499–1509. (Summary) **93b:81183** 81T20 (33E20, 81R05, 81T13, 83F05)
Bucci, Francesca A Dirichlet boundary control problem for the strongly damped wave equation. (English summary) *SIAM J. Control Optim.* **30** (1992), *no.* 5, 1092–1100. (Jan Sokołowski) **93h:49011** 49J20 (35L05, 49K20, 49L20)
Buceta, R. C. (*with* Tirapegui, Enrique) Effect of noise on a Hopf bifurcation. (English summary) *Instabilities and nonequilibrium structures, III* (*Valparaíso*, 1989), 171–176, *Math. Appl.*, 64, *Kluwer Acad. Publ., Dordrecht*, 1991. (Summary) **93g:34059** 34C23 (34F05, 58F14)
Buchalter, B. J. (*with* Bradley, R. Mark) Orientational order in random packings of ellipses. (English summary) *Phys. Rev. A* (3) **46** (1992), *no.* 6, 3046–3056. (Summary) **93h:82033** 82B80 (65C05, 73B35)
Buchanan, Thomas On the critical set for photogrammetric reconstruction using line tokens in $P_3(C)$. (English summary) *Geom. Dedicata* **44** (1992), *no.* 2, 223–232. (Árpád Kurusa) **93k:14073** 14N05 (51N35)
Buchberger, Bruno (*with* Elias, Juan) Using Gröbner bases for detecting polynomial identities: a case study on Fermat's ideal. *J. Number Theory* **41** (1992), *no.* 3, 272–279. (Gianfranco Niesi) **93h:13028** 13P10 (12E10)
Buchberger, Steven G. (*with* Song, Ruiguang; Deddens, James A.) Moments of variables summing to normal order statistics. (English summary) *Statist. Probab. Lett.* **15** (1992),

no. 3, 203–208. (Moshe Shaked) **93i:60029** 60E05

Buchbinder, I. L. *see* **Bukhbinder, I. L.**

Buchdahl, H. A. On gauge-invariant and phase-invariant spinor analysis. II. *J. Math. Phys.* **33** (1992), *no.* 1, 64–67. (Summary) **93b:53016** 53A50 (53C80)

Bucher, Christian G. Sample stability of multi-degree-of-freedom systems. (English summary) *Lyapunov exponents (Oberwolfach, 1990)*, 322–330, *Lecture Notes in Math., 1486, Springer, Berlin*, 1991. (Summary) **93f:70027** 70L05 (34D08, 34F05, 70K20)

Bucher, Martin (*with* Lo, Hoi-Kwong; Preskill, John) Topological approach to Alice electrodynamics. (English summary) *Nuclear Phys. B* **386** (1992), *no.* 1, 3–26. (Jacek Pawełczyk) **93k:81138** 81T13 (81R40, 81T30)

— (*with* Lee, Kai-Ming; Preskill, John) On detecting discrete Cheshire charge. (English summary) *Nuclear Phys. B* **386** (1992), *no.* 1, 27–42. (Jacek Pawełczyk) **93k:81139** 81T13 (81R40, 81T30)

Buchheim, Reinhard (*with* Manteuffel, Karl) Die Rechenmaschine von Johann Philipp Gruson. [The calculating machine of Johann Philipp Gruson] *Wiss. Z. Tech. Univ. Magdeburg* **36** (1992), *no.* 1, 102–105. (Summary) **93a:01025** 01A50 (68–03)

Buchholz, Christian F. (*with* Bratvedt, Frode; Bratvedt, Kyrre; et al.) Front tracking for petroleum reservoirs. (English summary) *Ideas and methods in mathematical analysis, stochastics, and applications (Oslo, 1988)*, 409–427, *Cambridge Univ. Press, Cambridge*, 1992. (Summary) **93h:76071** 76S05 (65C20, 76M25, 76T05, 86A99)

Buchholz, Detlev (*with* Mack, Gerhard; Todorov, Ivan T.) Localized automorphisms of the U(1)-current algebra on the circle: an instructive example. *The algebraic theory of superselection sectors (Palermo, 1989)*, 356–378, *World Sci. Publishing, River Edge, NJ*, 1990. (*see* **93i:81122**) 81T05 (81R10)

Buchholz, Peter A hierarchical view of GCSPNs and its impact on qualitative and quantitative analysis. *J. Parallel Distrib. Comput.* **15** (1992), *no.* 3, 207–224. 68Q90

Buchholz, Ralph Heiner Perfect pyramids. *Bull. Austral. Math. Soc.* **45** (1992), *no.* 3, 353–368. (E. J. F. Primrose) **93d:52014** 52B10 (52B11)

Buchmann, Johannes (*with* Düllmann, Stephan) Distributed class group computation. (English summary) *Informatik*, 69–79, *Teubner-Texte Inform.*, 1, *Teubner, Stuttgart*, 1992. (Summary) **93e:11153** 11Y40 (11R29)

— *see also* **Computer science, 93d:68002**

Buchner, Klaus Some aspects of d^r-spaces. Differential spaces and their applications (Pasierbiec, 1990). *Demonstratio Math.* **24** (1991), *no.* 3-4, 365–373. (Wiesław Sasin) **93b:58008** 58A40

— (*with* Borgiel, Włodzimierz; Sasin, Wiesław) Locally finitely generated differential spaces of class C^r. Proceedings of the Winter School on Geometry and Physics (Srní, 1990). *Rend. Circ. Mat. Palermo* (2) *Suppl. No.* 26 (1991), 57–66. (W. Waliszewski) **93a:58006** 58A40

— (*with* Goldberg, Vladislav V.; Roşca, Radu) Biconformal cosymplectic manifolds. (English summary) *Riv. Mat. Univ. Parma* (4) **17** (1991), 41–58 (1992). (Zbigniew Olszak) **93i:53046** 53C25 (53C15)

— Tangentialvektoren an Differentialräume. [Tangent vectors to differential spaces] *Proceedings of the 3rd Congress of Geometry (Thessaloniki, 1991)*, 123–129, *Aristotle Univ. Thessaloniki, Thessaloniki*, 1992. (Wiesław Sasin) **93f:58009** 58A40

— (*with* Miron, Radu; Roşca, Radu; Anastasiei, Mihai) New aspects of Lagrangian relativity. *Found. Phys. Lett.* **5** (1992), *no.* 2, 141–171. (L. Tamássy) **93b:53020** 53B40 (53B50, 83D05)

Buchner, M. (*with* Kucharz, Wojciech) Algebraic, rational, and homological equivalence of real cycles. *Manuscripta Math.* **77** (1992), *no.* 1, 105–111. (Thomas C. Craven) **93g:14008** 14C10 (14P25)

Buchwald, Jed Z. Why Stokes never wrote a treatise on optics. *The investigation of difficult things*, 451–476, *Cambridge Univ. Press, Cambridge*, 1992. (I. Grattan-Guinness) **93m:01031** 01A55

Bucka, Czesława (*with* Bogowski, Franciszek) The problems of majorization of derivatives. (Russian and Polish summaries) *Zeszyty Nauk. Politech. Rzeszowskiej Mat. Fiz. No.* 12 (1991), 5–15. (O. P. Ahuja) **93e:30021** 30C45

Buckdahn, Rainer Anticipating linear stochastic differential equations. (English summary) *Stochastic systems and optimization (Warsaw, 1988)*, 18–23, *Lecture Notes in Control and Inform. Sci.*, 136, *Springer, Berlin*, 1989. (Summary) **93f:60084** 60H10 (34F05)

— Linear Skorohod stochastic differential equations. *Probab. Theory Related Fields* **90** (1991), *no.* 2, 223–240. (Ali Süleyman Üstünel) **93b:60129** 60H15

— ★ Anticipative Girsanov transformations and Skorohod stochastic differential equations. Seminarberichte [Seminar Reports], 92-2. *Humboldt Universität, Fachbereich Mathematik, Berlin*, 1992. iv+88 *pp.* (Daniel Ocone) **93g:60127** 60H15

— Skorohod stochastic differential equations of diffusion type. (English summary) *Probab. Theory Related Fields* **93** (1992), *no.* 3, 297–323. (Daniel Ocone) **93g:60128** 60H15

Bucklew, James A. ★ Large deviation techniques in decision, simulation, and estimation. Wiley Series in Probability and Mathematical Statistics: Applied Probability and Statistics. A Wiley-Interscience Publication. *John Wiley & Sons, Inc., New York*, 1990. xvi+270 *pp. ISBN* 0-471-61856-X (From the preface) **93a:60038** 60F10 (62F12)

— (*with* Ney, Peter E.) Asymptotically optimal hypothesis testing with memory constraints. *Ann. Statist.* **19** (1991), *no.* 2, 982–998. (I. V. Basawa) **93b:62028** 62F05 (60F10, 62M02)

— (*with* Sadowsky, John S.) A contribution to the theory of Chernoff bounds. (English summary) *IEEE Trans. Inform. Theory* **39** (1993), *no.* 1, 249–254. (Summary) **93m:94001** 94A05 (60F10)

Buckley, James J. Universal fuzzy controllers. (English summary) *Automatica J. IFAC* **28** (1992), *no.* 6, 1245–1248. (Summary) **93j:93083** 93C42

— Solving fuzzy equations in economics and finance. (English summary) *Fuzzy Sets and Systems* **48** (1992), *no.* 3, 289–296. 90A14 (04A72)

— Fuzzy complex analysis. II. Integration. (English summary) *Fuzzy Sets and Systems* **49** (1992), *no.* 2, 171–179. 30A99 (04A72)

— A general theory of uncertainty based on t-conorms. (English summary) *Fuzzy Sets and Systems* **49** (1992), *no.* 3, 261–269. (Summary) **93g:04002** 04A72 (60A99)

— Solving fuzzy equations. (English summary) *Fuzzy Sets and Systems* **50** (1992), *no.* 1, 1–14. (Summary) **93f:04003** 04A72

— Theory of the fuzzy controller: an introduction. (English summary) *Fuzzy Sets and Systems* **51** (1992), *no.* 3, 249–258. (Summary) **93h:93045** 93C42 (04A72)

— Nonlinear fuzzy controller. *Inform. Sci.* **60** (1992), *no.* 3, 261–274. (Xiao Peng Cheng) **93a:93069** 93C42 (04A72)

— Controllable processes and the fuzzy controller. (English summary) *Fuzzy Sets and Systems* **53** (1993), *no.* 1, 27–31. 93C42 (04A72)

— (*with* Hayashi, Yoichi; Czogala, Ernest) On the equivalence of neural nets and fuzzy expert systems. (English summary) *Fuzzy Sets and Systems* **53** (1993), *no.* 2, 129–134. (Summary) **93m:68158** 68T35 (04A72, 92B20)

— Sugeno type controllers are universal controllers. (English summary) *Fuzzy Sets and Systems* **53** (1993), *no.* 3, 299–303. (Summary) **93m:90100** 90C42 (04A72)

Buckmaster, John (*with* Brauner, C.-M.; Dold, J. W.; Schmidt-Lainé, Cl.) On an evolution equation arising in detonation theory. *Fluid dynamical aspects of combustion theory*, 196–210, *Pitman Res. Notes Math. Ser.*, 223, *Longman Sci. Tech., Harlow*, 1991. (Graeme C. Wake) **93k:80011** 80A25 (35Q99, 76L05, 76N15)

— The structure and stability of laminar flames. *Annual review of fluid mechanics, Vol.* 25, 21–53, *Annual Reviews, Palo Alto, CA*, 1993. (Maria B. Zaturska) **93k:80013** 80A25 (80–02, 80A32)

Bucur, Gh. (*with* Boboc, Nicu) Green kernels on topological spaces. Analyse complexe (Bucharest, 1989). *Rev. Roumaine Math. Pures Appl.* **36** (1991), *no.* 1-2, 21–32. (Ursula Schirmeier) **93a:31017** 31D05

— (*with* Boboc, Nicu) Lattice properties in the set of resolvents and subordinations in excessive structures. Proceedings of the Colloquium on Complex Analysis and the Sixth Romanian-Finnish Seminar. *Rev. Roumaine Math. Pures Appl.* **36** (1991), *no.* 9-10, 595–634. (Hedi Ben Saad) **93h:31015** 31D05

— (*with* Boboc, Nicu) Subordinations in excessive structures. Compressions in H-cones. *Rev. Roumaine Math. Pures Appl.* **37** (1992), *no.* 1, 7–42. (Klaus Janssen) **93k:31010** 31D05 (60J45)

Buczolich, Zoltán A general Riemann complete integral in the plane. *Acta Math. Hungar.* **57** (1991), *no.* 3-4, 315–323. (Ralph Henstock) **93a:26008** 26B15 (26A39, 26A42, 26B20)

— Cantor type sets of positive measure and Lipschitz mappings. *Real Anal. Exchange* **17** (1991/92), *no.* 2, 702–705. (Pedro Jiménez Guerra) **93d:28004** 28A05

— A v-integrable function which is not Lebesgue integrable on any portion of the unit square. *Acta Math. Hungar.* **59** (1992), *no.* 3-4, 383–393. (Anna Salvadori) **93h:28016** 28A99

— (*with* Bruckner, Andrew M.) Attractive properties via generalized derivatives of continuous functions. *Czechoslovak Math. J.* **42(117)** (1992), *no.* 2, 271–278. (F. Miroslaw Filipczak) **93h:26004** 26A18

Budach, Lothar Recursive VLSI-design and fractals. (English summary) *Computational systems analysis*, 55–75, *Elsevier, Amsterdam*, 1992. (Juraj Hromkovič) **93j:68083** 68Q35 (68U07, 94C30)

Budaev, B. V. Diffraction of a plane electromagnetic wave by a wedge-like inclusion. (Russian) *Zap. Nauchn. Sem. Leningrad. Otdel. Mat. Inst. Steklov. (LOMI)* **195** (1991), *Mat. Vopr. Teor. Rasprostr. Voln.* 21, 29–39, 180; *translation in J. Soviet Math.* **62** (1992), *no.* 6, 3068–3075. (Sergej M. Zverev) **93g:78017** 78A45 (35Q60)

Budaev, V. D. A condition for the unconditional basis property for systems of eigen- and associated functions of ordinary differential operators. (Russian) *Dokl. Akad. Nauk SSSR* **314** (1990), *no.* 1, 25–28; *translation in Soviet Math. Dokl.* **42** (1991), *no.* 2, 252–255. (From the introduction) **93d:34136** 34L10 (47E05)

— Criteria for the Bessel property and the Riesz basis property of systems of root functions of differential operators. I. (Russian) *Differentsial'nye Uravneniya* **27** (1991), *no.* 12, 2033–2044, 2203; *translation in Differential Equations* **27** (1991), *no.* 12, 1421–1432 (1992). (Nikolai Bozhinov) **93a:34093** 34L10 (34L40, 47E05)

— A necessary condition for the Riesz basis property of systems of root functions of ordinary differential operators. (Russian) *Dokl. Akad. Nauk SSSR* **321** (1991), *no.* 5, 873–875; *translation in Soviet Math. Dokl.* **44** (1992), *no.* 3, 797–799. (From the introduction) **93b:47094** 47E05 (34L05)

— Some properties of root functions of higher-order ordinary differential operators. (Russian. Russian summary) *Differentsial'nye Uravneniya* **28** (1992), *no.* 8, 1454–1456, 1471–1472. (From the text) **93i:34150** 34L10 (47E05)

— The unconditional basis property of systems of root vector functions of differential operators with matrix coefficients. (Russian) *Dokl. Akad. Nauk* **323** (1992), *no.* 6, 999–1003; *translation in Russian Acad. Sci. Dokl. Math.* **45** (1992), *no.* 2, 454–458 (1993). (From the text) **93j:47066** 47E05 (34L10)

Budagov, A. A. Moduli of continuity of permutations, and multiplicative inequalities. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* **1991,** *no.* 11, 13–19 (1992); *translation in Soviet Math. (Iz. VUZ)* **35** (1991), *no.* 11, 12–17. (Jia-Ding Cao) **93i:41024** 41A63 (41A44)

Budak, A. B. (*with* Denisov, V. N.) Some properties of the spectral function for the Sturm-Liouville operator with discontinuous coefficients. (Russian) *Mat. Zametki* **49** (1991), *no.* 6, 19–28, 157; *translation in Math. Notes* **49** (1991), *no.* 5-6, 568–574. (Summary) **93a:34092** 34L05 (34B24, 47E05)

— (*with* Denisov, V. N.) Estimation of the closeness of partial sums of expansions in eigenfunctions of a Sturm-Liouville operator with discontinuous coefficients. (Russian. Russian summary) *Differentsial'nye Uravneniya* **28** (1992), *no.* 6, 943–956, 1100; *translation in Differential Equations* **28** (1992), *no.* 6, 752–762. (Summary) **93h:34144** 34L10 (34B24, 34L40)

Budayasa, K. (*with* Caccetta, L.; Vijayan, Kaipillil) The characterization of edge-maximal critically k-edge connected graphs. *Australas. J. Combin.* **5** (1992), 179–207. (Theodore C. Enns) **93c:05059** 05C35 (05C40, 05C75)

Budbaeva, S. P. (*with* Pyatnitsyn, B. N.) Once again on probability. (Russian) *Investigations in current inductive logic (Russian)*, 4–18, *Akad. Nauk SSSR, Inst. Filos., Moscow*, 1989. (*see* **93m:03039**) 03B48 (60A05)

— Current inductive logic and scientific knowledge. (Russian) *Investigations in current inductive logic (Russian)*, 35–50, *Akad. Nauk SSSR, Inst. Filos., Moscow*, 1989. (*see* **93m:03039**) 03B48

— *see also* **Investigations in current inductive logic, 93m:03039**

Budd, C. J. (*with* Knaap, M. C.; Peletier, L. A.) Asymptotic behavior of solutions of elliptic equations with critical exponents and Neumann boundary conditions. *Proc. Roy. Soc. Edinburgh Sect. A* **117** (1991), *no.* 3-4, 225–250. (Cornelius O. Horgan) **93b:35044** 35J65 (35B40)

— (*with* Murdoch, T.) Convergent and spurious solutions of nonlinear elliptic equations. (English summary) IMA Conference on Dynamics of Numerics and Numerics of

Dynamics (Bristol, 1990). *IMA J. Numer. Anal.* **12** (1992), *no.* 3, 365–386. (Weimin Han) **93g:65147** 65N30 (35J65)

Budde, Carlos E. (*with* Briozzo, Carlos B.; Osenda, Omar; Cáceres, Manuel O.) Exact and asymptotic properties of multistate random walks. *J. Statist. Phys.* **65** (1991), *no.* 1-2, 167–182. (Cheng Xun Wu) **93c:60101** 60J15 (60K35, 82C41)

Buddenhagen, Jim (*with* Ford, Charles; May, Mike) Nice cubic polynomials, Pythagorean triples, and the law of cosines. *Math. Mag.* **65** (1992), *no.* 4, 244–249. 11-01

Buddie, Scott A. (*with* Georgiou, Tryphon T.; Özgüner, Ümit; Smith, Malcolm Clive) Flexible structure experiments at JPL and WPAFB: H_∞ controller designs. (English summary) *Internat. J. Control* **58** (1993), *no.* 1, 1–19. 93C95 (93B36)

Budelli, Ruben (*with* Catsigeras, Elenora) Limit cycles of a bineuronal network model. *Phys. D* **56** (1992), *no.* 2-3, 235–252. (Ladislav Andrey) **93e:92003** 92B20 (58F21)

Budinčević, Mirko Oscillations and the asymptotic behaviour of certain second order neutral difference equations. (Serbo-Croatian summary) *Zb. Rad. Prirod.-Mat. Fak. Ser. Mat.* **21** (1991), *no.* 1, 165–172. (I. P. Stavroulakis) **93e:34093** 34K15 (34K40, 39A12)

Budkin, A. I. Independent axiomatizability of quasi-varieties of soluble groups. *Algebra and Logic* **30** (1991), *no.* 2, 81–100 (1992). (S. M. Vovsi) **93b:20050** 20E10 (08B05)

— Independent axiomatizability of quasivarieties of soluble groups [MR 93b:20050]. (Russian. Russian summary) The English translation has been reviewed. *Algebra i Logika* **30** (1991), *no.* 2, 125–153, 254. 20E10 (08B05)

Budnik, A. M. (*with* Polevikov, V. K.) Modeling of a free surface of annular magnetofluid seals by means of the boundary element method. (Russian. Russian summary) *Differentsial'nye Uravneniya* **28** (1992), *no.* 7, 1177–1181, 1285; *translation in Differential Equations* **28** (1992), *no.* 7, 940–944 (1993). (Summary) **93i:76057** 76M15 (65P05, 76D45, 76W05)

Budreck, David E. (*with* Rose, James H.) Elastodynamic completeness relations for scattered wavefields. *SIAM J. Appl. Math.* **51** (1991), *no.* 6, 1568–1584. (Alexander Alenitsyn) **93a:73023** 73D10 (35L05, 35P25, 73D25)

— (*with* Rose, James H.) A Newton-Marchenko equation and generalized optical theorem for elastodynamics. *J. Math. Phys.* **33** (1992), *no.* 8, 2903–2915. (Summary) **93h:73018** 73D25 (73D50)

Budylin, A. M. (*with* Buslaev, V. S.) Quasiclassical integral equations. (Russian) *Dokl. Akad. Nauk SSSR* **319** (1991), *no.* 3, 527–530; *translation in Soviet Math. Dokl.* **44** (1992), *no.* 1, 127–131. (From the text) **93b:47103** 47G10 (45E05, 47B35, 47N20)

Budzban, Greg (*with* Mukherjea, Arunava) Convolution products of nonidentical distributions on a topological semigroup. *J. Theoret. Probab.* **5** (1992), *no.* 2, 283–307. (Göran Högnäs) **93e:60023** 60B15 (43A05)

Buechler, Steven Vector spaces with a distinguished subgroup. (English summary) *Proceedings of the International Conference on Algebra, Part* 3 (*Novosibirsk*, 1989), 541–553, *Contemp. Math.*, 131, *Part* 3, *Amer. Math. Soc., Providence, RI*, 1992. (Carlo Toffalori) **93h:03041** 03C45 (03C60)

Buehler, David B. (*with* Sederberg, Thomas W.) Offsets of polynomial Bézier curves: Hermite approximation with error bounds. *Mathematical methods in computer aided geometric design, II* (*Biri*, 1991), 549–558, *Academic Press, Boston, MA*, 1992. (*see* **93d:65022**) 41A10 (65D17, 65G10)

Bueken, P. (*with* Vanhecke, Lieven) Rotations and harmonicity in contact geometry. (English and Italian summaries) *Rend. Mat. Appl.* (7) **12** (1992), *no.* 1, 127–141. (David Blair) **93j:53059** 53C25 (53C15)

Buekenhout, Francis Minimal flagtransitive geometries. *Combinatorics* '90 (*Gaeta*, 1990), 69–70, *Ann. Discrete Math.*, 52, *North-Holland, Amsterdam*, 1992. (*see* **93f:05003**) 51E25

Buell, Duncan A. (*with* Bremner, Andrew) Three points of great height on elliptic curves. (English summary) *Math. Comp.* **61** (1993), *no.* 203, 111–115. (Philippe Satgé) **93k:11052** 11G05 (11Y40)

Buendía, G. M. (*with* Trias, A.) Coherent states and other basic states of quantum electrodynamics formulated in the loop space. (English summary) *Phys. Rev. D* (3) **46** (1992), *no.* 8, 3649–3654. (Summary) **93g:81202** 81V10 (81R30)

Buenos Aires Cyclic Homology Group Cyclic homology of algebras with one generator. Jorge A. Guccione, Juan José Guccione, María Julia Redondo, Andrea Solotar and Orlando E. Villamayor participated in this research. *K-Theory* **5** (1991), *no.* 1, 51–69. (Ulrike Tillmann) **93b:19002** 19D55 (13D15, 18F25, 18G35)

— *see also* **Guccione, Jorge Alberto et al., 93i:19002**

Bueso, José Luis (*with* Torrecillas Jover, Blas; Verschoren, Alain) ★ Local cohomology and localization. Pitman Research Notes in Mathematics Series, 226. *Longman Scientific & Technical, Harlow; copublished in the United States with John Wiley & Sons, Inc., New York*, 1989. xiv+257 *pp. ISBN* 0-582-07767-2 (Luchezar L. Avramov) **93j:13022** 13D45 (13B30, 13D30, 18E40)

— (*with* Torrecillas Jover, Blas; Verschoren, Alain) Generalized local cohomology and quasicoherent sheaves. *J. Algebra* **138** (1991), *no.* 2, 298–312. (Freddy M. J. Van Oystaeyen) **93a:16019** 16P50 (14F05, 16D90, 16E30, 18E35)

Buevich, V. A. On τ-completeness in the class of determinate functions. (Russian) *Dokl. Akad. Nauk* **326** (1992), *no.* 3, 399–403. (From the text) **93j:68142** 68Q70 (03B50)

Buffet, E. (*with* Hannigan, P.) Directed random walks in random environments. *J. Statist. Phys.* **65** (1991), *no.* 3-4, 645–672. (Thomas Polaski) **93b:60151** 60J15 (60J25, 82C41)

Buffoni, B. (*with* Jeanjean, L.; Stuart, Charles A.) Existence of a nontrivial solution to a strongly indefinite semilinear equation. *Proc. Amer. Math. Soc.* **119** (1993), *no.* 1, 179–186. (Manfred W. Kracht) **93k:35086** 35J60 (35Q99, 45K05, 47H15, 47N20)

Bufler, Hans (*with* Sansour, Carlo) An exact finite rotation shell theory, its mixed variational formulation and its finite element implementation. The Second World Congress of Computational Mechanics, Part I (Stuttgart, 1990). *Internat. J. Numer. Methods Engrg.* **34** (1992), *no.* 1, 73–115. (L. P. Lebedev) **93c:73071** 73K15 (73V05, 73V25)

Buga, S. I. On an approximation of the characteristic function. (Russian) *Functional analysis, No.* 31 (*Russian*), 42–49, *Ul'yanovsk. Gos. Ped. Inst., Ul'yanovsk*, 1990. (From the text) **93k:47017** 47A45 (47A58, 47B25)

Bugaenko, V. O. Reflective unimodular hyperbolic quadratic forms. (Russian) *Problems in group theory and homological algebra* (*Russian*), 30–39, *Matematika, Yaroslav. Gos. Univ., Yaroslavl'*, 1987. (*see* **93d:20002**) 11E12

— Arithmetic crystallographic groups generated by reflections, and reflective hyperbolic lattices. *Lie groups, their discrete subgroups, and invariant theory*, 33–55, *Adv. Soviet Math.*, 8, *Amer. Math. Soc., Providence, RI*, 1992. (Mehmet Akbas) **93g:20094** 20H15 (51F15)

Bugajska, Krystyna M. Strings and Teichmueller space. *Differential geometric methods in theoretical physics* (*Davis, CA*, 1988), 465–474, *NATO Adv. Sci. Inst. Ser. B Phys.*, 245, *Plenum, New York*, 1990. (From the introduction) **93c:32031** 32G81 (32G15, 81T30)

— Some properties of *P*-lines. *Differential geometric methods in theoretical physics* (*Rapallo*, 1990), 185–197, *Lecture Notes in Phys.*, 375, *Springer, Berlin*, 1991. (From the text) **93i:81186** 81T30 (14H55, 32G81)

Bugata, Peter Trahtenbrot-Zykov problem and NP-completeness. (English summary) Topological, algebraical and combinatorial structures. Frolík's memorial volume. *Discrete Math.* **108** (1992), *no.* 1-3, 253–259. (Italo José Dejter) **93i:05105** 05C75 (05C85, 68Q15)

Bugbee, John (*with* Adams, Colin C.; Brock, Jeffrey F.; et al.) Almost alternating links. (English summary) *Topology Appl.* **46** (1992), *no.* 2, 151–165. (Alan W. Reid) **93h:57005** 57M25

Buggisch, H. (*with* Mazilu, P.; Weber, H.) Identifizierung des Zustandsparameters für viskoelastiche Materialien. I. (English summary) [Identification of the state parameter for viscoelastic materials. I] *Rev. Anal. Numér. Théor. Approx.* **21** (1992), *no.* 1, 15–29. (Michael Renardy) **93j:73033** 73F05 (73B05, 76A10)

Bugiel, Piotr Invariant measures of C^2-diffeomorphisms of Markov type in $\mathbf{R}^d$. *Monatsh. Math.* **113** (1992), *no.* 4, 255–263. (M. L. Blank) **93e:58106** 58F11 (28D05, 28D20)

Bugir, M. K. A connection between the nonvariability of solutions and ill-posed boundary value problems for fourth-order equations of elliptic type. (Russian) *Dokl. Akad. Nauk SSSR* **319** (1991), *no.* 5, 1053–1056; *translation in Soviet Math. Dokl.* **44** (1992), *no.* 1, 269–272. (Jiří Rákosník) **93c:35032** 35J40 (31B30)

— Stability and regularization of a boundary value problem for fourth-order partial differential equations. (Russian. English and Russian summaries) *Dokl. Akad. Nauk Ukrainy* **1992**, *no.* 5, 5–8, 158. (Summary) **93f:35053** 35J40 (35B35)

— Application of oscillation properties of solutions to problems in geometry. (Russian. English and Russian summaries) *Dokl. Akad. Nauk Ukrainy* **1992**, *no.* 9, 15–18, 168. (V. Oproiu) **93k:53042** 53C22 (34C10, 53C20)

— Investigation of the nonoscillation properties of solutions of partial differential equations by the method of separation of variables. (Russian. Russian and Ukrainian summaries) *Ukraïn. Mat. Zh.* **44** (1992), *no.* 3, 317–323; *translation in Ukrainian Math. J.* **44** (1992), *no.* 3, 278–283. (Summary) **93h:35014** 35B05 (35A25)

Bugrara, Khaled M. (*with* Purdom, Paul Walton, Jr.) Average time analysis of clause order backtracking. (English summary) *SIAM J. Comput.* **22** (1993), *no.* 2, 303–317. (Summary) **93m:68068** 68Q25 (68P10, 68T15)

Bugrii, A. I. (*with* Askeri, V. M.; Shadura, V. N.) The effect of boundary conditions on the operator content of the two-dimensional Ising model: the results of an exact solution. (Russian. English, Russian and Ukrainian summaries) *Ukrain. Fiz. Zh.* **36** (1991), *no.* 12, 1846–1857. (Summary) **93i:82010** 82B20 (81R10, 81T27)

Buhler, J. P. (*with* Crandall, Richard E.; Sompolski, R. W.) Irregular primes to one million. *Math. Comp.* **59** (1992), *no.* 200, 717–722. (Duncan A. Buell) **93a:11106** 11Y35 (11B68, 11D41, 65T20)

— (*with* Crandall, Richard E.; Ernvall, R.; Metsänkylä, T.) Irregular primes and cyclotomic invariants to four million. (English summary) *Math. Comp.* **61** (1993), *no.* 203, 151–153. (Harvey Cohn) **93k:11014** 11B68 (11D41, 11R29, 11Y35, 11Y40)

Bühlmann, H. Stochastic discounting. (English summary) *Insurance Math. Econom.* **11** (1992), *no.* 2, 113–127. 62P05

Buhmann, Martin D. (*with* Iserles, Arieh) Numerical analysis of functional equations with a variable delay. *Numerical analysis* 1991 (*Dundee*, 1991), 17–33, *Pitman Res. Notes Math. Ser.*, 260, *Longman Sci. Tech., Harlow*, 1992. (J. Gregor) **93g:65162** 65Q05 (34K05, 34K20, 65L20)

— (*with* Iserles, Arieh) On the dynamics of a discretized neutral equation. (English summary) IMA Conference on Dynamics of Numerics and Numerics of Dynamics (Bristol, 1990). *IMA J. Numer. Anal.* **12** (1992), *no.* 3, 339–363. (Summary) **93h:34142** 34K40 (58F32, 65L20)

— (*with* Micchelli, Charles A.) On radial basis approximation on periodic grids. *Math. Proc. Cambridge Philos. Soc.* **112** (1992), *no.* 2, 317–334. (Gheorghe Coman) **93h:41001** 41A05 (41A63)

— (*with* Micchelli, Charles A.) Spline prewavelets for nonuniform knots. *Numer. Math.* **61** (1992), *no.* 4, 455–474. (R. A. Lorentz) **93g:41021** 41A45 (41A15)

— (*with* Iserles, Arieh) Stability of the discretized pantograph differential equation. (English summary) *Math. Comp.* **60** (1993), *no.* 202, 575–589. (J. Švejda) **93h:65107** 65L20 (34K20)

Bühring, Wolfgang The characteristic exponent of second-order linear differential equations with two irregular singular points. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 3, 801–812. (Donald A. Lutz) **93j:34007** 34A20

Bui, Dat Duc (*with* Nelson, Paul, Jr.) Existence and uniqueness of an inverse problem for a hyperbolic system of lidar probing. (English summary) *Inverse Problems* **8** (1992), *no.* 6, 821–829. (Summary) **93j:35183** 35R30 (35L40, 86A22)

— Convergence of the F_N method for anisotropic scattering in plane geometry. *Transport Theory Statist. Phys.* **21** (1992), *no.* 1-2, 133–148. (Carl T. Kelley) **93d:85003** 85A25 (45L10, 65R20)

Bui, H. D. On the variational boundary integral equations in elastodynamics with the use of conjugate functions. (English summary) *J. Elasticity* **28** (1992), *no.* 3, 247–256. (L. Jentsch) **93g:73045** 73D30 (73V10, 73V25)

Bui, Thang Nguyen (*with* Jones, Curt) Finding good approximate vertex and edge partitions is NP-hard. *Inform. Process. Lett.* **42** (1992), *no.* 3, 153–159. (Etsuro Moriya) **93h:68111** 68R10 (05C85, 68Q15, 68Q25)

— (*with* Peck, Andrew) Partitioning planar graphs. *SIAM J. Comput.* **21** (1992), *no.* 2, 203–215. (Peter Mihók) **93a:05117** 05C85 (68Q20)

Bui, Tien Dai (*with* Li, Zi-Cai; Tang, Yuan Yan; Suen, Ching Yun) ★ Computer transformation of digital images and patterns. World Scientific Series in Computer Science, 17. *World Scientific Publishing Co., Inc., River Edge, NJ*, 1989. xiv+260 *pp. ISBN* 9971-50-951-2 (From the preface) **93i:68188** 68U10 (68-02, 68T10)

— (*with* Li, Zi-Cai) Penalty-combined method and applications in solving elliptic problems with singularities. *Comput. Methods Appl. Mech. Engrg.* **97** (1992), *no.* 3, 291–316. (Summary) **93a:65154** 65N30

Bùi Công Cu'ó'ng An intersection theorem and related problems. *Acta Math. Vietnam.* **16** (1991), *no.* 2, 121–132. (L. Górniewicz) **93e:54032** 54H25 (47H10)

Bui Dac Tac (*with* Nguyen Thu Nga) Oka-Weil theorem and plurisubharmonic functions of uniform type. *Acta Math. Vietnam.* **16** (1991), *no.* 2, 133–145. (Introduction) **93i:46079** 46G20 (32E30, 32K05)

Bùi Kho'i-Đàm On the strong law of large numbers for amarts. *Ann. Univ. Sci. Budapest. Eötvös Sect. Math.* **33** (1990), 139–142 (1991). (Xiang Chen Wang) **93b:60099** 60G48 (60F15, 60G42)

Buĭkis, A. A. *see* **Applied problems in mathematical physics: mathematical modeling, 93d:00030**

Bui Minh Phong Note on a theorem of J. L. Mauclaire and Leo Murata on multiplicative functions. *Ann. Univ. Sci. Budapest. Eötvös Sect. Math.* **33** (1990), 247–251 (1991). (Jean-Marie De Koninck) **93d:11006** 11A25 (11N64)

— Multiplicative functions satisfying a congruence property. II. *Ann. Univ. Sci. Budapest. Eötvös Sect. Math.* **33** (1990), 253–259 (1991). (Jean-Marie De Koninck) **93d:11007** 11A25

— (*with* Fehér, János) Note on multiplicative functions satisfying a congruence property. *Ann. Univ. Sci. Budapest. Eötvös Sect. Math.* **33** (1990), 261–265 (1991). (Jean-Marie De Koninck) **93d:11008** 11A25

— Multiplicative functions satisfying a congruence property. *Studia Sci. Math. Hungar.* **26** (1991), *no.* 1, 123–128. (Jean-Marie De Koninck) **93g:11008** 11A25

— Characterization of additive functions with values in a compact abelian group. *Publ. Math. Debrecen* **40** (1992), *no.* 3-4, 273–278. (Xiu Yuan Yu) **93i:11007** 11A25 (11N64)

— A note on multiplicative functions with regularity properties. *Publ. Math. Debrecen* **41** (1992), *no.* 1-2, 117–125. (From the introduction) **93g:11009** 11A25 (11N64)

Buium, Alexandru ★ Differential algebraic groups of finite dimension. Lecture Notes in Mathematics, 1506. *Springer-Verlag, Berlin*, 1992. xvi+145 *pp. ISBN* 3-540-55181-6 (G. Eisenreich) **93i:12010** 12H05 (14L17, 14L40)

— Intersections in jet spaces and a conjecture of S. Lang. *Ann. of Math.* (2) **136** (1992), *no.* 3, 557–567. (Fumio Hazama) **93j:14055** 14K05 (11G10, 14L15)

Bui Van Thanh Semi-continuous arbitrarily varying channels with general state constraints. *Acta Math. Vietnam.* **17** (1992), *no.* 1, 31–50. (Shlomo Shamai) **93h:94008** 94A15 (94A24, 94A40)

Bujalance, E. (*with* Costa, Antonio F.) A combinatorial approach to the symmetries of M and $M-1$ Riemann surfaces. *Discrete groups and geometry* (*Birmingham*, 1991), 16–25, *London Math. Soc. Lecture Note Ser.*, 173, *Cambridge Univ. Press, Cambridge*, 1992. (Gabino González Díez) **93k:30075** 30F50

Bukavina, R. Z. (*with* Grits'ko, Ė. G.; Gudz', R. V.) Numerical-analytical determination of a stationary solution for the transport equation in a locally nonhomogeneous domain. (Ukrainian. Russian summary) *Visnik L'vīv. Derzh. Univ. Ser. Mekh.-Mat. No.* 30 (1988), 43–46, 76. 65P05

Bukhalev, V. A. Recursion algorithms for recognition and estimation of the state of a dynamic object on the basis of information from measurers and indicators. I. Observation with lag. *J. Comput. Systems Sci. Internat.* **30** (1992), *no.* 5, 159–165; *translated from Izv. Akad. Nauk SSSR Tekhn. Kibernet.* **1991**, *no.* 6, 104–110 (*Russian. Russian summary*). (Keigo Watanabe) **93i:93116** 93E10 (93B40, 93E11)

— Optimal smoothing in systems with a randomly switching structure. (Russian. Russian summary) *Avtomat. i Telemekh.* **1992**, *no.* 6, 46–56; *translation in Automat. Remote Control* **53** (1992), *no.* 6, *part* 1, 823–831. (Eduard Eitelberg) **93i:93126** 93E14 (60G35, 62M20, 93E10)

— Recursion algorithms for recognition and estimation of the state of a dynamic object on the basis of information from measurers and indicators. II. Observation without lag. *J. Comput. Systems Sci. Internat.* **30** (1992), *no.* 6, 84–92; *translated from Izv. Ross. Akad. Nauk Tekhn. Kibernet.* **1992**, *no.* 1, 148–156 (*Russian. Russian summary*). (Keigo Watanabe) **93m:93087** 93E10 (93B40)

Bukhbinder, I. L. (*with* Odintsov, S. D.; Shapiro, I. L.) ★ Effective action in quantum gravity. *IOP Publishing, Ltd., Bristol*, 1992. x+413 *pp. ISBN* 0-7503-0122-8 (Helmut Rumpf) **93i:83044** 83C45 (81T17, 81T20, 83C47)

— (*with* Odintsov, S. D.; Fonarev, O. A.) Two-loop approach to the effective action in quantum gravity. *Internat. J. Modern Phys. A* **7** (1992), *no.* 14, 3203–3233. (Summary) **93d:83030** 83C45

— (*with* Bagrov, V. G.; Shapiro, I. L.) Possible experimental manifestations of a torsion field. (Russian. Russian summary) *Izv. Vyssh. Uchebn. Zaved. Fiz.* **35** (1992), *no.* 3, 5–12; *translation in Soviet Phys. J.* **35** (1992), *no.* 3, 208–213. (Summary) **93f:83006** 83B05 (83D05)

Bukhgeim, A. L. (*with* Bektemesov, M. A.) Stability of the problem of determining a boundary condition from the scattering data. (Russian. Russian summary) *Methods for solving inverse problems* (*Russian*), 55–60, 143, *Akad. Nauk SSSR Sibirsk. Otdel., Inst. Mat., Novosibirsk*, 1990. (Summary) **93j:35184** 35R30 (35J05)

— *see also* **Lavrent'ev, M. M., 93m:47001**

Bukhnikashvili, I. A. Optimal iterations for the solution of a linear operator equation with a spectrum on two segments. (Russian. English and Georgian summaries) *Soobshch. Akad. Nauk Gruzii* **142** (1991), *no.* 2, 273–276. 65J10

— Chebyshev iterations for the solution of a linear operator equation with a spectrum on two segments. (Russian. English and Georgian summaries) *Soobshch. Akad. Nauk Gruzii* **143** (1991), *no.* 2, 133–136 (1992). 65J10

Bukhvalov, A. V. On the analytic Radon-Nikodým property. *Function spaces* (*Poznań*, 1989), 211–228, *Teubner-Texte Math.*, 120, *Teubner, Stuttgart*, 1991. (Fernando Cobos) **93a:46033** 46B22 (46B70, 46M35, 47B38)

Bukiet, Bruce G. (*with* Menikoff, Ralph) Detonation waves and the front tracking method. (English summary) *Phys. Fluids A* **4** (1992), *no.* 9, 2070–2081. (Summary) **93f:80017** 80A25 (76L05, 80–08)

Bukov, V. N. (*with* Arkhipov, M. V.) Estimation in an adaptive optimal control system. (Russian. Russian summary) *Avtomat. i Telemekh.* **1992**, *no.* 5, 82–88; *translation in Automat. Remote Control* **53** (1992), *no.* 5, *part* 1, 695–701. (Summary) **93e:93042** 93C40 (49K45, 93E11)

Bukovský, Lev (*with* Reclaw, Ireneusz; Repický, Miroslav) Spaces not distinguishing pointwise and quasinormal convergence of real functions. *Topology Appl.* **41** (1991), *no.* 1-2, 25–40. (G. D. Dimov) **93b:54037** 54G99 (03E35, 54A35, 54C30)

Bula, W. (*with* Nikiel, Jacek; Tuncali, H. M.; Tymchatyn, E. D.) Continuous images of ordered compacta are regular supercompact. (English summary) Proceedings of the Tsukuba Topology Symposium (Tsukuba, 1990). *Topology Appl.* **45** (1992), *no.* 3, 203–221. (J. van Mill) **93i:54015** 54D35 (54F15)

Bulajich, R. (*with* Pérez-Pascual, R.) Fractal structure of boundaries in two bistable systems. *Nonlinear phenomena in fluids, solids and other complex systems* (*Santiago*, 1990), 435–446, *North-Holland Delta Ser., North-Holland, Amsterdam*, 1991. (Summary) **93a:58111** 58F12

Bulatov, D. V. (*with* Kazakov, Vladimir Aleksandrovich[1]) Vortex-antivortex sector of one-dimensional string theory via the upside-down matrix oscillator. Random surfaces and 2D quantum gravity (Barcelona, 1991). *Nuclear Phys. B Proc. Suppl.* **25A** (1992), 38–53. (Yolanda Lozano) **93k:81194** 81T40 (81T27)

— (*with* Kazakov, Vladimir Aleksandrovich[1]) One-dimensional string theory with vortices as the upside-down matrix oscillator. (English summary) *Internat. J. Modern Phys. A* **8** (1993), *no.* 5, 809–851. (David Sénéchal) **93k:81169** 81T30 (81Q99)

— Infinite-tension strings at $d > 1$. (English summary) *Modern Phys. Lett. A* **8** (1993), *no.* 6, 557–572. (Summary) **93k:81170** 81T30

Bulatov, V. P. (*with* Antsiferov, E. G.) On polynomial methods in convex programming. (Russian) *Optimization: models, methods, solutions* (*Russian*) (*Irkutsk*, 1989), 4–29, "*Nauka*" *Sibirsk. Otdel., Novosibirsk*, 1992. (*see* **93k:90002**) 90C25

— (*with* Khamisov, O. V.) The branch and bound method with cuts in E^{n+1} for solving concave programming problem. *System modelling and optimization* (*Zurich*, 1991), 273–281, *Lecture Notes in Control and Inform. Sci.*, 180, *Springer, Berlin*, 1992. (*see* **93e:90003**) 90C30

— *see also* **Optimization: models, methods, solutions, 93k:90002**

Bulatović, R. On the instability of the state of equilibrium for analytic conservative systems. *Z. Angew. Math. Mech.* **72** (1992), *no.* 11, 608–609. 70K20 (34D05)

Bulavskiĭ, V. A. (*with* Zvyagina, R. A.; Yakovleva, M. A.) Algorithms for choosing a nondegenerate block in matrices of a special type. (Russian) *Optimizatsiya No.* 49(66) (1991), 52–68. (W. Govaerts) **93c:65057** 65F30 (90C08)

Bulavskiĭ, Yu. V. A generalized scheme of constructing randomized methods for solving integral equations. (Russian) *Dokl. Akad. Nauk SSSR* **319** (1991), *no.* 2, 271–274; *translation in Soviet Math. Dokl.* **44** (1992), *no.* 1, 92–95. (Summary) **93e:65151** 65R20 (45L05)

Bulboacă, Teodor An extension of certain classes of univalent functions. *New trends in geometric function theory and applications* (*Madras*, 1990), 18–25, *World Sci. Publishing, River Edge, NJ*, 1991. (M. Reade) **93g:30012** 30C45 (30C80)

— On the radius of univalence of certain analytic functions. *Mathematica* (*Cluj*) **33(56)** (1991), *no.* 1-2, 13–16. (Albert E. Livingston) **93g:30013** 30C45

Bülbül, A. (*with* Warner, M. W.) Some good dilutions of fuzzy compactness. (English summary) *Fuzzy Sets and Systems* **51** (1992), *no.* 1, 111–115. 54A40 (04A72)

Buldygin, V. V. (*with* Zayats, V. V.) A limit theorem for an estimate for a correlation function under dual passage to the limit. (Russian. Russian summary) *Asymptotic methods in problems in the theory of random evolutions* (*Russian*), 12–18, *Akad. Nauk Ukrain. SSR, Inst. Mat., Kiev*, 1991. (*see* **93e:60002**) 60F05 (62M99)

— Semi-invariant conditions of weak convergence of random processes in the space of continuous functions. (English summary) *New trends in probability and statistics, Vol.* 1 (*Bakuriani*, 1990), 78–92, *VSP, Utrecht*, 1991. (Summary) **93m:60017** 60B10 (60F17, 60G15, 60G57)

— (*with* Dem'yanenko, O. O.) Pointwise properties of estimates for the mutual correlation function of Gaussian fields. (Russian. Russian summary) *Stochastic equations and boundary theorems* (*Russian*), 23–34, *Akad. Nauk Ukrainy, Inst. Mat., Kiev*, 1991. (Summary) **93j:62234** 62M40 (60G60)

— (*with* Mel'nik, V. N.) Lévy-Baxter theorems for stochastic integrals. (Russian. English summary) *Dokl. Akad. Nauk Ukrain. SSR* **1991**, *no.* 10, 37–40, 180. (Summary) **93b:60110** 60H05 (60F05)

— (*with* Kozachenko, Yu. V.) Exponential estimates for the distribution of the supremum of a class of random processes. (Russian. English and Russian summaries) *Dokl. Akad. Nauk Ukrainy* **1992**, *no.* 2, 31–34, 169. (Summary) **93g:60079** 60G17 (60G15)

Buldyrev, V. S. (*with* Lyalinov, M. A.) Asymptotic theory of the reflection of electromagnetic radiation by moderately- and well-conducting bodies. (Russian. English and Russian summaries) *Zap. Nauchn. Sem. S.-Peterburg. Otdel. Mat. Inst. Steklov.* (*POMI*) **203** (1992), *Mat. Voprosy Teor. Rasprostr. Voln.* 22, 68–82, 174. (D. Stanomir) **93j:78015** 78A45 (78A55)

Bulgac, Aurel (*with* Kusnezov, Dimitri) Canonical ensembles from chaos. II. Constrained dynamical systems. *Ann. Physics* **214** (1992), *no.* 1, 180–218. (Dieter H. Mayer) **93d:82051** 82C05 (17B81, 58F11, 58F13)

Bulgakov, A. I. Partial averaging of functional-differential inclusions with finite memory. (Russian. Russian summary) *Boundary value problems* (*Russian*), 85–89, *Perm. Politekh. Inst., Perm'*, 1989. (*see* **93k:00022**) 34K15 (34A60, 34C29)

— On averaging of functional-differential inclusions. (Russian. Russian summary) *Boundary value problems* (*Russian*), 87–94, *Perm. Politekh. Inst., Perm'*, 1990. (Summary) **93h:34120** 34K15 (34A60, 34C29)

— A functional-differential inclusion with a nonconvex-valued operator that is Volterra in the sense of A. N. Tikhonov. (Russian. Russian summary) *Functional-differential equations* (*Russian*), 93–104, *Perm. Politekh. Inst., Perm'*, 1990. (*see* **93m:00024**) 34K99 (34A60, 47N20)

— A functional-differential inclusion with a multivalued operator without the property of convexity with respect to switching images. (Russian. Russian summary) *Boundary value problems* (*Russian*), 20–24, *Perm. Politekh. Inst., Perm'*, 1991. (*see* **93m:00017**) 34K30 (34A60, 47H15, 47N20)

— Some problems of differential and integral inclusions with a nonconvex right-hand side. (Russian. Russian summary) *Functional-differential equations* (*Russian*), 28–57, *Perm. Politekh. Inst., Perm'*, 1991. (Michal Kisielewicz) **93i:34021** 34A60 (34K05)

Bulgakov, E. N. (*with* Berman, G. P.; Zaslavskiĭ, G. M.) Quantum chaos of atoms in a resonant cavity. *Chaos* **2** (1992), *no.* 2, 257–265. (Summary) **93d:81046** 81Q50 (81V10)

Bulinskaya, E. V. (*with* Lupanov, O. B.; Belyaev, Yu. K.; Solov'ev, A. D.; Afanas'eva, L. G.; Tyurin, Yu. N.) Boris Vladimirovich Gnedenko (on the occasion of his 80th birthday). (Russian) *Vestnik Moskov. Univ. Ser. I Mat. Mekh.* **1992**, *no.* 3, 86–89. 01A70

Bulinskiĭ, A. V. Markov dilatations and asymptotics for dynamical semigroups. (Russian) *Some questions of mathematics in problems of physics and mechanics* (*Russian*), 18–22, *Moskov. Fiz.-Tekhn. Inst., Moscow*, 1988. (*see* **93m:00036**) 47D03 (47N50, 82C10)
— (*with* Molchanov, S. A.) Asymptotic Gaussian property of the solution of the Burgers equation with random initial data. (Russian) *Teor. Veroyatnost. i Primenen.* **36** (1991), *no.* 2, 217–235; *translation in Theory Probab. Appl.* **36** (1991), *no.* 2, 217–236 (1992). (N. Leonenko (translated from RZhMat 1991:11 V23)) **93c:60090** 60H15 (60F05, 60K35)
— Central limit theorem for the solution of the multidimensional Burgers equation with random data. *Ann. Acad. Sci. Fenn. Ser. A I Math.* **17** (1992), *no.* 1, 11–22. (B. S. Nahapetian) **93f:60025** 60F05 (60G60)
Bulitko, V. K. Ways to characterize complete sets. (Russian) *Izv. Akad. Nauk SSSR Ser. Mat.* **55** (1991), *no.* 2, 227–253; *translation in Math. USSR-Izv.* **38** (1992), *no.* 2, 225–249. (Marat M. Arslanov) **93e:03060** 03D30
— On $1/n$-hereditary sets. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* **1991,** *no.* 6, 3–11; *translation in Soviet Math. (Iz. VUZ)* **35** (1991), *no.* 6, 1–9. (Yu. G. Ventsov) **93k:03040** 03D30
Bull, Shelley B. (*with* Donner, Allan) A characterization of the efficiency of individualized logistic regressions. (English and French summaries) *Canad. J. Statist.* **21** (1993), *no.* 1, 71–78. 62F12 (62P10)
Bulla, W. (*with* Gesztesy, F.; Unterkofler, K.) Holomorphy of the scattering matrix with respect to c^{-2} for Dirac operators and an explicit treatment of relativistic corrections. *Comm. Math. Phys.* **144** (1992), *no.* 2, 391–416. (Wolfgang Lücke) **93b:81302** 81U20 (47A40)
Bullen, P. S. An interesting double limit. (English and Malayan summaries) *Menemui Mat.* **14** (1992), *no.* 1, 1–14. (B. K. Lahiri) **93m:26009** 26A24 (26B05)
Buller, David J. (*with* Foster, Thomas R.) The new paradox of temporal transience. *Philos. Quart.* **42** (1992), *no.* 168, 357–366. (Steve Kuhn) **93k:03014** 03B45 (03A05)
Bullett, Shaun (*with* Mantica, Giorgio) Group theory of hyperbolic circle packings. (English summary) *Nonlinearity* **5** (1992), *no.* 5, 1085–1109. (Oded Schramm) **93j:30047** 30F40 (52C15, 58F08)
Bullough, R. K. (*with* Ólafsson, Sverrir; Chen, Yu-zhong; Timonen, J.) Integrability conditions: recent results in the theory of integrable models. *Differential geometric methods in theoretical physics* (*Davis, CA*, 1988), 47–69, *NATO Adv. Sci. Inst. Ser. B Phys.*, 245, *Plenum, New York*, 1990. (A. K. Prykarpat·skiĭ and Ihor V. Mykytiuk) **93e:58079** 58F07 (35Qxx)
— (*with* Chen, Yu-zhong; Timonen, J.) Soliton statistical mechanics—thermodynamic limits for quantum and classical integrable models. *Nonlinear world, Vol.* 2 (*Kiev*, 1989), 1377–1422, *World Sci. Publishing, River Edge, NJ*, 1990. (*see* **93b:00013**) 82C10 (35Q58, 58F07)
— (*with* Bogolyubov, N. M.) A q-deformed completely integrable Bose gas model. *J. Phys. A* **25** (1992), *no.* 14, 4057–4071. (P. D. F. Ion) **93f:81164** 81V70 (81R50, 82C23)
— (*with* Bogolyubov, N. M.) Completely integrable model of interacting q-bosons. (English summary) *Phys. Lett. A* **168** (1992), *no.* 4, 264–269. (Chang Pu Sun) **93i:82011** 82B20 (17B37, 81R30, 81R50)
Bulman-Fleming, Sydney (*with* Fleischer, Isidore) Amalgamation for direct systems. *Algebra Universalis* **28** (1991), *no.* 3, 377–388. (Ralph Freese) **93f:08009** 08B25 (06A12, 08C05)
— Pullback-flat acts are strongly flat. *Canad. Math. Bull.* **34** (1991), *no.* 4, 456–461. (Heinrich Seidel) **93d:20121** 20M50 (18A22)
— Flat and strongly flat S-systems. *Comm. Algebra* **20** (1992), *no.* 9, 2553–2567. (Tomáš Kepka) **93j:20137** 20M50
Bulsari, Abhay Training artificial neural networks for fuzzy logic. (English summary) *Complex Systems* **6** (1992), *no.* 5, 443–457. (Summary) **93m:92003** 92B20 (03B52, 68T05)
Bultheel, Adhemar (*with* Xu, Guo Liang) The problem of matrix Padé approximation. *Approximation, optimization and computing*, 217–220, *North-Holland, Amsterdam*, 1990. (Summary) **93e:41025** 41A21 (65D15)
— (*with* Xu, Guo Liang) Matrix Padé approximation: recursive computations. *J. Comput. Math.* **10** (1992), *no.* 3, 254–262. (Summary) **93e:41026** 41A21 (65D15)
— (*with* González-Vera, Pablo; Hendriksen, Erik; Njåstad, Olav) The computation of orthogonal rational functions and their interpolating properties. *Numer. Algorithms* **2** (1992), *no.* 1, 85–114. (Tiberiu Constantinescu) **93d:42024** 42C05
— (*with* Van Barel, Marc) A new formal approach to the rational interpolation problem. *Numer. Math.* **62** (1992), *no.* 1, 87–122. (Summary) **93g:65017** 65D05 (41A05, 41A20, 65D15)
— (*with* Van Barel, Marc) A parallel algorithm for discrete least squares rational approximation. (English summary) *Numer. Math.* **63** (1992), *no.* 1, 99–121. (Summary) **93f:65020** 65D15 (65Y05)
Bulychev, Yu. G. Methods for the numerical-analytic integration of differential equations. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **31** (1991), *no.* 9, 1305–1319; *translation in Comput. Math. Math. Phys.* **31** (1991), *no.* 9, 28–39 (1992). (A. M. Galperin) **93b:65120** 65L99 (65D05, 65M50, 82C31)
— (*with* Burlaĭ, I. V.; Pogonyshev, S. A.) A numerical-analytic method for the differentiation of functions with a bounded spectrum on the basis of Kotel'nikov's formula. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **32** (1992), *no.* 3, 396–407; *translation in Comput. Math. Math. Phys.* **32** (1992), *no.* 3, 331–342. (Summary) **93i:65034** 65D25
Bump, Daniel (*with* Friedberg, Solomon) The exterior square automorphic L-functions on GL(n). *Festschrift in honor of I. I. Piatetski-Shapiro on the occasion of his sixtieth birthday, Part II* (*Ramat Aviv*, 1989), 47–65, *Israel Math. Conf. Proc.*, 3, *Weizmann, Jerusalem*, 1990. (Dipendra Prasad) **93d:11050** 11F55 (11F70, 22E55)
— (*with* Ginzburg, David) Symmetric square L-functions on GL(r). *Ann. of Math.* (2) **136** (1992), *no.* 1, 137–205. (Stephen Gelbart) **93i:11058** 11F66 (11F27, 11F70)
— (*with* Duke, W.; Hoffstein, Jeffrey; Iwaniec, Henryk) An estimate for the Hecke eigenvalues of Maass forms. *Internat. Math. Res. Notices* **1992,** *no.* 4, 75–81. (M. Ram Murty) **93d:11047** 11F11 (11F37, 11F66, 11F70)
— (*with* Ginzburg, David) Spin L-functions on symplectic groups. *Internat. Math. Res. Notices* **1992,** *no.* 8, 153–160. (Stephen Gelbart) **93i:11060** 11F70 (11F66, 22E50, 22E55)
— (*with* Friedberg, Solomon; Ginzburg, David) Whittaker-orthogonal models, functoriality, and the Rankin-Selberg method. *Invent. Math.* **109** (1992), *no.* 1, 55–96. (David Joyner) **93e:11066** 11F70 (22E50, 22E55)
Bun′, R. A. (*with* Vasil′ev, E. D.; Semotyuk, V. N.) ★ Моделирование электрических цепей методом подсхем. (Russian. Russian summary) [Modeling electrical circuits by the subscheme method] "*Naukova Dumka*", *Kiev*, 1991. 174 *pp. ISBN* 5-12-002511-0 (Aleksander Urbaś) **93m:94050** 94C05 (65C20, 78A55, 94C30)
— (*with* Vasil′ev, E. D.) A numerical method for solving differential equations with an arbitrary order of derivatives. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **32** (1992), *no.* 3, 380–395; *translation in Comput. Math. Math. Phys.* **32** (1992), *no.* 3, 317–330. (Summary) **93b:65152** 65M99 (34A50)
Bunce, L. J. (*with* Wright, John David Maitland) Complex measures on projections in von Neumann algebras. *J. London Math. Soc.* (2) **46** (1992), *no.* 2, 269–279. (Sh. A. Ayupov) **93j:46069** 46L50
— (*with* Chu, Cho-Ho) Compact operations, multipliers and Radon-Nikodým property in JB*-triples. *Pacific J. Math.* **153** (1992), *no.* 2, 249–265. (P. J. Stacey) **93c:46125** 46L70 (46H70)
Bunch, James R. Matrix properties of the Levinson and Schur algorithms. (English summary) *J. Numer. Linear Algebra Appl.* **1** (1992), *no.* 2, 183–198. (Cs. J. Hegedüs) **93h:65040** 65F05 (65F30, 94A11)
Bunch, K. J. (*with* Grow, R. W.) A compact cubic spline algorithm for converging to function minimums. (English summary) *Appl. Math. Comput.* **56** (1993), *no.* 1, 29–34. 65K99 (65D99)
Bunchaft, Rosa (*with* Plácido, Hebe Q.; Santana, Ademir E.) On the quantization of generalized Hamiltonian dynamics. (English summary) *Hadronic J.* **15** (1992), *no.* 4, 225–238. 81S99
Bundaru, M. (*with* Angelescu, N.) A remark on the condensation in the hard-core lattice Bose gas. (English summary) *J. Statist. Phys.* **69** (1992), *no.* 3-4, 897–903. (Summary) **93i:82004** 82B10 (82B20)
Bunday, Brian D. ★ Statistical methods in reliability theory and practice. Ellis Horwood Series: Mathematics and its Applications. *Ellis Horwood, New York; distributed by Prentice Hall, Inc., Englewood Cliffs, NJ*, 1991. 252 *pp. ISBN* 0-13-853797-6 (From the preface) **93b:62132** 62N05 (60K10)
— (*with* Sztrik, János) An asymptotic approach to the multiple machine interference problem with Markovian environments. (English summary) *Publ. Math. Debrecen* **41** (1992), *no.* 3-4, 325–339. (Summary) **93g:60200** 60K25
— (*with* Sztrik, János) Asymptotic analysis of the heterogeneous machine interference problem with random environments. (English summary) *Appl. Math. Modelling* **17** (1993), *no.* 2, 105–110. 60K25 (90B22)
Bunde, Armin *see* **Fractals and disorder, 93f:00013**
Bunder, Martin W. Order of strength relations between formal systems with applications to mathematics. *J. Non-Classical Logic* **5** (1988), *no.* 1, 5–20. 03F25
— Corrections to some results for BCK logics and algebras. *Logique et Anal.* (*N.S.*) **31** (1988), *no.* 121-122, 115–122. (Djordje Vukomanović) **93d:03036** 03B60 (03B40, 03G25, 06F35)
— Overlapping types in higher order predicate calculus based on combinatory logic. (English summary) *J. Non-Classical Logic* **6** (1989), *no.* 1, 33–44. 03B40 (03B15)
— Some results in some subsystems and in an extension of C_n. (English summary) *J. Non-Classical Logic* **6** (1989), *no.* 1, 45–56. 03B53
— The logic of inconsistency. (English summary) *J. Non-Classical Logic* **6** (1989), *no.* 1, 57–62. 03B53
— (*with* Meyer, Robert K.; Powers, Lawrence) Implementing the "fool's model" of combinatory logic. Automated reasoning and nonclassical logics. *J. Automat. Reason.* **7** (1991), *no.* 4, 597–630. (R. P. Nederpelt) **93e:03021** 03B40 (03B20, 03B35)
— Zeckendorf representations using negative Fibonacci numbers. *Fibonacci Quart.* **30** (1992), *no.* 2, 111–115. (Shiro Ando) **93d:11018** 11B39 (11B34)
Bundschuh, Peter On the linear independence of certain algebraic numbers. *Seminar on Diophantine Approximation* (*Japanese*) (*Yokohama*, 1987), 11–30, *Sem. Math. Sci.*, 12, *Keio Univ., Yokohama*, 1988. (Alain Faisant) **93b:11090** 11J72 (11J82)
— A theorem of Gel'fond via Schneider's method. (English summary) *New trends in probability and statistics, Vol.* 2 (*Palanga*, 1991), 9–15, *VSP, Utrecht*, 1992. (Alain Faisant) **93m:11061** 11J81 (39B32)
Bundy, Alan (*with* Ohlsson, Stellan) The nature of AI principles: a debate in the AISB Quarterly. *The foundations of artificial intelligence*, 135–154, *Cambridge Univ. Press, Cambridge*, 1990. (*see* **93b:68073**) 68T01
— What kind of field is AI? *The foundations of artificial intelligence*, 215–222, *Cambridge Univ. Press, Cambridge*, 1990. (*see* **93b:68073**) 68T01
— (*with* Robertson, David; Muetzelfeldt, Robert; Haggith, Mandy; Uschold, Michael) ★ Eco-logic. Logic-based approaches to ecological modelling. MIT Press Series in Logic Programming. *MIT Press, Cambridge, MA*, 1991. xviii+246 *pp. ISBN* 0-262-18143-6 (Petr Jirků) **93m:68157** 68T30 (68T27, 68U20, 92D40)
Bunge, J. A. (*with* Nagaraja, H. N.) Exact distribution theory for some point process record models. *Adv. in Appl. Probab.* **24** (1992), *no.* 1, 20–44. (Dietmar Pfeifer) **93d:62025** 62E15 (60G55, 60G70, 60K15)
— (*with* Nagaraja, H. N.) Dependence structure of Poisson-paced records. *J. Appl. Probab.* **29** (1992), *no.* 3, 587–596. (Toshio Mori) **93m:60100** 60G70 (60F05, 60G55)
— (*with* Nagaraja, H. N.) Correction: "Exact distribution theory for some point process record models" [Adv. in Appl. Probab. **24** (1992), no. 1, 20–44; MR 93d:62025]. *Adv. in Appl. Probab.* **25** (1993), *no.* 1, 261. 62E15 (60G55, 60G70, 60K15)
Bunge, Marta Classifying toposes and fundamental localic groupoids. (English summary) *Category theory* 1991 (*Montreal, PQ*, 1991), 75–96, *CMS Conf. Proc.*, 13, *Amer. Math. Soc., Providence, RI*, 1992. (Anna Labella) **93j:18001** 18B25 (20L15)
— Universal covering localic toposes. (English summary) *C. R. Math. Rep. Acad. Sci. Canada* **14** (1992), *no.* 6, 245–250. (Summary) **93m:18007** 18B25 (54B30)
Buniakovsky, V. Ya. *see* **Bunyakovskiĭ, V. Ya.**
Bunimovich, L. A. On absolutely focusing mirrors. (English summary) *Ergodic theory and related topics, III* (*Güstrow*, 1990), 62–82, *Lecture Notes in Math.*, 1514, *Springer, Berlin*, 1992. (Valery Covachev) **93f:58212** 58F30 (58F11)
— Phase transitions in Lorentz-type gases. *From phase transitions to chaos*, 501–511, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93d:82057** 82C20 (58F40, 82–02, 82C40)
— (*with* Liverani, Carlangelo; Pellegrinotti, Alessandro; Sukhov, Yu. M.) Ergodic systems of n balls in a billiard table. *Comm. Math. Phys.* **146** (1992), *no.* 2, 357–396. (András

Krámli) **93e:58107** 58F11 (58F15)

kleine Büning, H. *see* **Kleine Büning, H.**

Bunke, Ulrich Relative index theory. *J. Funct. Anal.* **105** (1992), *no.* 1, 63–76. (John Roe) **93e:58175** 58G10 (47A40, 47N99)

Bunse-Gerstner, Angelika (*with* Mehrmann, Volker; Nichols, Nancy K.) Regularization of descriptor systems by derivative and proportional state feedback. *SIAM J. Matrix Anal. Appl.* **13** (1992), *no.* 1, 46–67. (K. Maciej Przyluski) **93a:93023** 93B10 (65K05, 93B05, 93B40, 93B52)

— (*with* Byers, Ralph; Mehrmann, Volker) A chart of numerical methods for structured eigenvalue problems. *SIAM J. Matrix Anal. Appl.* **13** (1992), *no.* 2, 419–453. (Summary) **93b:65063** 65F15 (15A18, 65H10, 93B40)

Buntinas, Martin Strong summability in Fréchet spaces with applications to Fourier series. *J. Approx. Theory* **68** (1992), *no.* 1, 56–73. (Robert DeVos) **93g:40005** 40F05 (42A24, 46A35, 46A45)

Buntrock, Gerhard (*with* Damm, Carsten; Hertrampf, Ulrich; Meinel, Christoph) Structure and importance of logspace-MOD class. *Math. Systems Theory* **25** (1992), *no.* 3, 223–237. (Summary) **93d:68029** 68Q25 (03D15)

— (*with* Hemachandra, Lane A.; Siefkes, Dirk) Using inductive counting to simulate nondeterministic computation. (English summary) *Inform. and Comput.* **102** (1993), *no.* 1, 102–117. (Summary) **93m:68052** 68Q15 (03D15)

Bunu, I. D. (*with* Goyan, I. M.; Tèbyrtsè, E. I.) On a lattice of torsions with a unique co-atom. (Russian) *Algebraic structures and geometry* (*Russian*), 29–30, 157, "*Shtiintsa*", *Kishinev*, 1991. (L. Bican) **93f:16034** 16S90

Bunyakovskiĭ, V. Ya. *see* **Sheinin, O. B., 93g:01041**

Buoncristiano, Sandro Homology manifolds, homology bundles and characteristic numbers. (Italian) Conference on Differential Geometry and Topology (Italian) (Lecce, 1989). *Note Mat.* **9** (1989), *suppl.*, 73–83. (Dušan Repovš) **93e:57035** 57P10 (55R40, 57R20)

— (*with* Veit, A. Barbara) The intrinsic stratification of a Schubert variety. *Adv. Math.* **91** (1992), *no.* 1, 1–26. (Piotr Pragacz) **93e:14060** 14M15 (57N80)

nguyễn Bu'ò'ng *see* **Nguyễn Bu'ò'ng**

Buoni, John J. (*with* Farrell, Paul A.; Ruttan, Arden) Parallel *LU* decomposition of upper Hessenberg matrices on a shared memory multiprocessor. (English summary) *Computational and applied mathematics, I* (*Dublin*, 1991), 61–69, *North-Holland, Amsterdam*, 1992. (*see* **93j:00007**) 65Y05 (65F30)

Buraggina, Antonella On the connectedness of the Hartshorne-Rao module of curves in $\mathbf{P}^3$. *Arch. Math.* (*Basel*) **60** (1993), *no.* 1, 96–102. (Gunnar Fløystad) **93j:14033** 14H50 (14M06)

Burago, D. Yu. Periodic metrics. *Representation theory and dynamical systems*, 205–210, *Adv. Soviet Math.*, 9, *Amer. Math. Soc., Providence, RI*, 1992. (Oguz C. Durumeric) **93c:53029** 53C23 (53C20)

— Flows with positive entropy. *Representation theory and dynamical systems*, 211–216, *Adv. Soviet Math.*, 9, *Amer. Math. Soc., Providence, RI*, 1992. (Valery Covachev) **93d:58122** 58F17 (58F11)

Burago, Yu. D. (*with* Borisov, Yu. F.; Borovskiĭ, Yu. E.; et al.) Obituary: Revol't Ivanovich Pimenov. (Russian) *Uspekhi Mat. Nauk* **47** (1992), *no.* 1(283), 203–204; *translation in Russian Math. Surveys* **47** (1992), *no.* 1, 253–254. (Editors) **93e:01019** 01A70

— (*with* Gromov, Mikhael L.; Perel'man, G. Ya.) A. D. Aleksandrov spaces with curvatures bounded below. (Russian. Russian summary) *Uspekhi Mat. Nauk* **47** (1992), *no.* 2(284), 3–51, 222; *translation in Russian Math. Surveys* **47** (1992), *no.* 2, 1–58. (Tadeusz Januszkiewicz) **93m:53035** 53C21 (53C23)

Burakov, V. S. (*with* Gaishun, I. V.; Yanovich, L. A.; Bobkov, V. V.; Monastyrnyi, P. I.) Vladimir Ivanovich Krylov (on the occasion of his 90th birthday). (Russian) *Vestsi Akad. Navuk Belarust Ser. Fiz. Mat. Navuk* **1992**, *no.* 5-6, 117–119. (Editors) **93m:01064** 01A70

Burbea, Jacob (*with* del Castillo Franquet, Joan) Geodesic submanifolds of statistical models with location parameters. (English summary) *Comput. Statist. Data Anal.* **14** (1992), *no.* 3, 301–313. (Bernard Prum) **93m:62043** 62E99 (53C22)

Burch, J. R. (*with* Clarke, E. M.; McMillan, K. L.; Dill, D. L.; Hwang, L. J.) Symbolic model checking: 10^{20} states and beyond. Selections from the 1990 IEEE Symposium on Logic in Computer Science. *Inform. and Comput.* **98** (1992), *no.* 2, 142–170. (Summary) **93c:68065** 68Q60

Burch, Robert W. ★ A Peircean reduction thesis. The foundations of topological logic. Philosophical Inquiries, 1. *Texas Tech University Press, Lubbock, TX*, 1991. xvi+152 *pp. ISBN* 0-89672-247-3 (Mohamed Amer) **93i:03090** 03G15 (01A55, 03-03, 03H05)

Burchard, Almut (*with* Deng, Bo; Lu, Kening) Smooth conjugacy of centre manifolds. *Proc. Roy. Soc. Edinburgh Sect. A* **120** (1992), *no.* 1-2, 61–77. (A. Vanderbauwhede) **93c:58197** 58F39 (34C45, 35K55, 58F25)

drgas-Burchardt, Ewa *see* **Drgas-Burchardt, Ewa**

Bürckert, Hans-Jürgen *see* **Deduction systems in artificial intelligence, 93f:68085**

Burdakov, S. F. Decentralized robot motion control with dynamical compensation and high gain. *J. Comput. Systems Sci. Internat.* **30** (1992), *no.* 6, 118–124; *translated from Izv. Ross. Akad. Nauk Tekhn. Kibernet.* **1992**, *no.* 1, 183–190 (*Russian. Russian summary*). 93C85 (70B15, 70Q05)

Burdakova, O. A. (*with* Yakhno, V. G.) A one-dimensional inverse problem of electroelasticity. (Russian. Russian summary) *Questions of well-posedness in problems of analysis* (*Russian*), 33–43, 181–182, *Akad. Nauk SSSR Sibirsk. Otdel., Inst. Mat., Novosibirsk*, 1989. (*see* **93e:00018**) 35R30 (73D50, 73R05)

Burde, Klaus Einige Dreieckssätze. [Some triangle theorems] *Math. Semesterber.* **39** (1992), *no.* 1, 29–35. (E. J. F. Primrose) **93c:51020** 51M04

Burdeau, Julien (*with* Barles, Guy; Romano, Marc; Samsœn, Nicolas) Estimation de la frontière libre des options américaines au voisinage de l'échéance. (English and French summaries) [Estimate on the free boundary of American puts near maturity] *C. R. Acad. Sci. Paris Sér. I Math.* **316** (1993), *no.* 2, 171–174. 90A09 (49K20)

Burdet, G. (*with* Perrin, Martine Jacqueline; Perroud, M.) Universal description of spinning test particles. *Gen. Relativity Gravitation* **24** (1992), *no.* 7, 773–781. (Robert J. Low) **93c:83012** 83C10

— (*with* Perrin, Martine Jacqueline) Gravitational waves without gravitons. (English summary) *Lett. Math. Phys.* **25** (1992), *no.* 1, 39–45. (J. B. Griffiths) **93f:83032** 83C30 (53C80, 83C35)

Burdick, Bruce S. A note on completeness of hyperspaces. *General topology and applications* (*Staten Island, NY*, 1989), 19–24, *Lecture Notes in Pure and Appl. Math.*, 134, *Dekker, New York*, 1991. (L. E. Ward, Jr.) **93a:54009** 54B20 (54E15)

Burdick, Donald S. (*with* Tu, Xin M.; Mitchell, B. C.) Nonparametric rank estimation using bootstrap resampling and canonical correlation analysis. (English summary) *Exploring the limits of bootstrap* (*East Lansing, MI*, 1990), 405–418, *Wiley Ser. Probab. Math. Statist. Probab. Math. Statist., Wiley, New York*, 1992. (*see* **93f:62003**) 62G09 (62H20)

— *see also* **Leurgans, Sue, 93e:62164**

Burdík, Č. (*with* Havlíček, M.; Vančura, A.) Irreducible highest weight representations of quantum groups $U_q(\mathrm{gl}(n, \mathbf{C}))$. (English summary) *Comm. Math. Phys.* **148** (1992), *no.* 2, 417–423. (Dmitriĭ I. Gurevich) **93i:17014** 17B37 (81R50)

— (*with* Bednář, M.; Couture, Michel Josaphat; Hlavatý, Ladislav) On the quantum symmetries associated with the two parameter free fermion model. *J. Phys. A* **25** (1992), *no.* 7, L341–L346. (Dmitriĭ I. Gurevich) **93c:17023** 17B37 (81R50, 82B23)

— (*with* Hellinger, Petr) The universal R-matrix and the Yang-Baxter equation with parameters. (English summary) *J. Phys. A* **25** (1992), *no.* 17, L1023–L1027. (Peter J. Forrester) **93j:82019** 82B23 (17B37, 81R50)

— (*with* Cummins, C. J.; Gaskell, R. W.; Sharp, R. T.) Complete branching rules generating function for $\mathrm{SO}(7) \supset \mathrm{SU}(2)^3$ and polynomial basis states. (English summary) *J. Phys. A* **25** (1992), *no.* 18, 4835–4846. (Hartmut Schlosser) **93j:22036** 22E70 (20C35, 81R05)

Burdo, O. S. (*with* Gorin, V. V.; Dargeĭko, M. M.) On the error estimation problem in determining location in inertial navigation problems. (Russian. Russian summary) *Kibernet. i Vychisl. Tekhn. No.* 95 (1992), 68–73. (Summary) **93k:70038** 70Q05 (70-08, 70D05)

Burdyuk, I. V. (*with* Burdyuk, V. Ya.) Discrete and continuous metric spaces. (Russian. English and Ukrainian summaries) *Kibernet. Sistem. Anal.* **1992**, *no.* 6, 172–174, 188. 54E35

Burdyuk, V. Ya. (*with* Burdyuk, I. V.) Discrete and continuous metric spaces. (Russian. English and Ukrainian summaries) *Kibernet. Sistem. Anal.* **1992**, *no.* 6, 172–174, 188. 54E35

Burdzy, Krzysztof (*with* Bass, Richard F.) Lifetimes of conditioned diffusions. *Probab. Theory Related Fields* **91** (1992), *no.* 3-4, 405–443. (Michael Cranston) **93e:60155** 60J45 (35K99, 60J65)

— (*with* Bass, Richard F.) The Martin boundary in non-Lipschitz domains. *Trans. Amer. Math. Soc.* **337** (1993), *no.* 1, 361–378. (Yehuda Pinchover) **93g:31019** 31C35 (60J45, 60J50)

Burenkov, V. I. (*with* Tuyakbaev, M. Sh.) Multipliers of the Fourier integral in weighted L_p-spaces with an exponential weight. (Russian) *Dokl. Akad. Nauk SSSR* **320** (1991), *no.* 1, 11–14; *translation in Soviet Math. Dokl.* **44** (1992), *no.* 2, 365–369. (Khanlar P. Rustamov) **93e:42026** 42B15 (46E35)

Bureš, Jarolím (*with* Souček, Vladimír) The Penrose transform and Clifford analysis. Proceedings of the Winter School on Geometry and Physics (Srní, 1990). *Rend. Circ. Mat. Palermo* (2) *Suppl. No.* 26 (1991), 97–104. (Salomon Ofman) **93b:32049** 32L25 (30G35, 32A25, 81R25)

— Twistor correspondence in higher even dimensions. (English summary) *Clifford algebras and their applications in mathematical physics* (*Montpellier*, 1989), 189–192, *Fund. Theories Phys.*, 47, *Kluwer Acad. Publ., Dordrecht*, 1992. (*see* **93f:00011**) 81R20

Burganskaya, L. I. Investigation of the stability of a multidimensional automatic control system. (Russian. Russian summary) *Differentsial'nye Uravneniya* **28** (1992), *no.* 5, 746–756, 916; *translation in Differential Equations* **28** (1992), *no.* 5, 593–601. (Summary) **93h:93048** 93D05 (34D20, 34H05)

Burgat, C. (*with* Tarbouriech, S.) Class of globally stable saturated state feedback regulators. (English summary) *Internat. J. Systems Sci.* **23** (1992), *no.* 11, 1965–1976. 93B52 (93D15)

Burge, Tyler Frege on knowing the third realm. *Mind* **101** (1992), *no.* 404, 633–650. 03-03 (01A55, 01A60, 03A05)

Burger, Edward B. Homogeneous Diophantine approximation in S-integers. *Pacific J. Math.* **152** (1992), *no.* 2, 211–253. (Jeffrey D. Vaaler) **93d:11069** 11J13 (11J25, 11R56)

Burger, H. U. Dispersion orderings with applications to nonparametric tests. (English summary) *Statist. Probab. Lett.* **16** (1993), *no.* 1, 1–9. (Summary) **93k:62106** 62G10

Burger, Jacques (*with* Le Brizaut, Jean-Sébastien; Pogu, Marc) Comparison of two methods for the calculation of the gradient and of the Hessian of cost functions associated with differential systems. (English summary) *Math. Comput. Simulation* **34** (1992), *no.* 6, 551–562. (Summary) **93i:49036** 49M07 (49M15, 65K10, 93B30, 93B40)

Bürger, Reinhard Unbounded one-parameter semigroups, Fréchet spaces, and applications. *Semigroup theory and evolution equations* (*Delft*, 1989), 77–91, *Lecture Notes in Pure and Appl. Math.*, 135, *Dekker, New York*, 1991. (Ioana Ciorănescu) **93i:47058** 47D06 (35R10, 46A04, 47D03, 47N20)

— An integro-differential equation from population genetics and perturbations of differentiable semigroups in Fréchet spaces. *Proc. Roy. Soc. Edinburgh Sect. A* **118** (1991), *no.* 1-2, 63–73. (V. N. Razzhevaikin) **93c:47045** 47D06 (45K05, 47G10, 92D10)

Burgess, D. (*with* Sulsky, D.; Brackbill, J. U.) Mass matrix formulation of the FLIP particle-in-cell method. (English summary) *J. Comput. Phys.* **103** (1992), *no.* 1, 1–15. (Summary) **93i:76063** 76M25 (73V20)

Burgess, D. A. Partial Gaussian sums. III. *Glasgow Math. J.* **34** (1992), *no.* 2, 253–261. (Matti Jutila) **93e:11093** 11L05 (11L40)

— On a set of congruences related to character sums. III. *J. London Math. Soc.* (2) **45** (1992), *no.* 2, 201–214. (Ronald J. Evans) **93h:11094** 11L40

Burgess, John (*with* Maitra, Ashok) Nonexistence of measurable optimal selections. *Proc. Amer. Math. Soc.* **116** (1992), *no.* 4, 1101–1106. (F. S. Van Vleck) **93b:28030** 28B20 (54C65, 90C39)

Burgess, W. D. (*with* Fuller, K. R.) Left almost serial rings and the Cartan determinant conjecture. (English summary) *Methods in module theory* (*Colorado Springs, CO*, 1991), 19–28, *Lecture Notes in Pure and Appl. Math.*, 140, *Dekker, New York*, 1993. (Mary H. Wright) **93k:16040** 16P20

Burgeth, B. A Schwarz lemma for harmonic and hyperbolic-harmonic functions in higher dimensions. *Manuscripta Math.* **77** (1992), *no.* 2-3, 283–291. (David A. Herron) **93j:31004** 31B05 (30C80)

Burghelea, D. (*with* Fiedorowicz, Z.; Gajda, W.) Adams operations in Hochschild and cyclic homology of de Rham algebra and free loop spaces. *K-Theory* **4** (1991), *no.* 3, 269–287. (Ulrike Tillmann) **93b:55025a** 55S25 (19D55, 55N91, 58B05)

— (*with* Fiedorowicz, Z.; Gajda, W.) Erratum: "Adams operations in Hochschild and cyclic homology of de Rham algebra and free loop space". *K-Theory* **5** (1991), *no.* 3, 293. (Ulrike Tillmann) **93b:55025b** 55S25 (19D55, 55N91, 58B05)
— (*with* Friedlander, Leonid; Kappeler, Thomas) Erratum: "On the determinant of elliptic differential and finite difference operators in vector bundles over S^1" [Comm. Math. Phys. **138** (1991), no. 1, 1–18, MR 92f:58193]. *Comm. Math. Phys.* **150** (1992), *no.* 2, 431. (Editors) **93k:58231** 58G26 (58G03)
— (*with* Friedlander, Leonid; Kappeler, Thomas) Meyer-Vietoris type formula for determinants of elliptic differential operators. *J. Funct. Anal.* **107** (1992), *no.* 1, 34–65. (Steven Rosenberg) **93f:58242** 58G26 (35S15, 58G20)
Burgin, M. S. Categories, semigroups and named sets. (Russian) *Theory of semigroups and its applications, No.* 10 (*Russian*), 7–16, *Saratov. Gos. Univ., Saratov*, 1991. (H.-J. Hoehnke) **93c:18003** 18A05 (18B40)
— (*with* Borodyanskii, Yu. M.) Infinite processes and superrecursive algorithms. (Russian) *Dokl. Akad. Nauk SSSR* **321** (1991), *no.* 5, 876–879; *translation in Soviet Math. Dokl.* **44** (1992), *no.* 3, 800–803. (E. B. Kinber) **93c:03054** 03D10 (68Q05)
— On the Banach-Hahn theorem for hyperfunctionals. (Russian. English summary) *Dokl. Akad. Nauk Ukrain. SSR* **1991,** *no.* 7, 9–14, 177. (From the text) **93a:46145** 46S20 (46A22)
— (*with* Kuznetsov, V. I.) The structure and development of mathematical theories. (Russian summary) *Modern Logic* **2** (1991), *no.* 1, 3–28. (Philip J. Scott) **93j:03008** 03A05 (00A30, 04–03, 18A15, 18C10)
— (*with* Kuznetsov, V. I.) ★ Мир теорий и могущество разума. (Russian. Russian summary) [The world of theories and the power of reason] "*Ukraïna*", *Kiev*, 1992. 232 *pp. ISBN* 5-319-00719-1 (Publisher's description) **93f:00004** 00A30
— Universal limit Turing machines. (Russian) *Dokl. Akad. Nauk* **325** (1992), *no.* 4, 654–658; *translation in Russian Acad. Sci. Dokl. Math.* **46** (1993), *no.* 1, 79–83. (Gerhard Lischke) **93m:03065** 03D10 (03D35, 68Q05)
— (*with* Kuznetsov, V. I.) Fuzzy sets as named sets. *Fuzzy Sets and Systems* **46** (1992), *no.* 2, 189–192. (Summary) **93b:03092** 03E72 (04A72)
— *see also* **Editor's note: Burgin and the theory of named sets, 93j:03007**
Bürgisser, Peter (*with* Karpiński, Marek; Lickteig, Thomas) Some computational problems in linear algebra as hard as matrix multiplication. *Comput. Complexity* **1** (1991), *no.* 2, 131–155. (D. Bini) **93d:68030** 68Q25 (68Q40)
— (*with* Lickteig, Thomas; Shub, Michael) Test complexity of generic polynomials. (English summary) *J. Complexity* **8** (1992), *no.* 3, 203–215. (Zhuo Jun Liu) **93j:68070** 68Q25
Burgmeier, Peter Controllability and interval mathematics. *Mathematical modelling and scientific computations* (*Albena*, 1990), 1–13, *Bulgar. Acad. Sci., Sofia*, 1992. (Summary) **93c:93012** 93B05 (65G10, 93B40)
gonzález Burgos, M. *see* **González Burgos, M.**
Burgos Vega, Hernán (*with* Billeke G., J.; Wallace C., M.) Bifurcations of a weakly forced nonlinear cubic oscillator with quartic friction. (Spanish) *Proyecciones* **11** (1992), *no.* 1, 49–75. (Frank Hubbuch) **93h:34050** 34C15 (34C23, 34C29, 70K40)
Burichenko, V. P. On a special loop, Dixon form and lattice connected with $O_7(3)$. (Russian) *Mat. Sb.* **182** (1991), *no.* 10, 1408–1429; *translation in Math. USSR-Sb.* **74** (1993), *no.* 1, 145–167. (R. L. Griess) **93k:20031** 20D08 (20N05)
Buriev, T. Some efficient algorithms for solving problems in nonstationary aero-elasticity. (Russian. Russian summary) *Voprosy Vychisl. i Prikl. Mat.* (*Tashkent*) *No.* 88 (1990), 32–48, 159. 73K70 (73V25)
Burimenko, Yu. I. Some problems in the investigation of controlled systems of objects of variable structure. (Russian. Russian summary) *Kibernet. i Vychisl. Tekhn. No.* 95 (1992), 80–85. 93B12
Burke, Dennis K. (*with* Balogh, Zoltán T.) A total ladder system space by ccc forcing. Proceedings of the Symposium on General Topology and Applications (Oxford, 1989). *Topology Appl.* **44** (1992), *no.* 1-3, 37–44. (Paul Bankston) **93g:54007** 54A35 (03E35, 03E75, 54G15, 54G20)
Burke, James V. (*with* Ferris, Michael C.; Qian, Maijian) On the Clarke subdifferential of the distance function of a closed set. *J. Math. Anal. Appl.* **166** (1992), *no.* 1, 199–213. (Lionel Thibault) **93f:49018** 49J52 (58C20)
— (*with* Overton, Michael L.) Stable perturbations of nonsymmetric matrices. *Linear Algebra Appl.* **171** (1992), 249–273. (James Weldon Demmel) **93c:47016** 47A55 (15A42, 65F15)
— (*with* Poliquin, René A.) Optimality conditions for non-finite valued convex composite functions. *Math. Programming* **57** (1992), *no.* 1, *Ser. B*, 103–120. (Michel Théra) **93g:90066** 90C30 (49J52, 49N15)
— A robust trust region method for constrained nonlinear programming problems. *SIAM J. Optim.* **2** (1992), *no.* 2, 325–347. (Pierre Loridan) **93c:90075** 90C30 (65K05)
Burke, M. D. (*with* Gombay, Edit) Tests of fit for Cox's regression model. (English summary) *Probab. Math. Statist.* **13** (1992), *no.* 1, 127–137. (S. N. Alam) **93m:62104** 62G10 (62G20)
Burke, Maxim R. Liftings and the property of Baire in locally compact groups. *Proc. Amer. Math. Soc.* **117** (1993), *no.* 4, 1075–1082. (Pedro Jiménez Guerra) **93e:28006** 28A51 (28C10, 46G15, 54H05)
Burkett, J. M. Parabolic trigonometry. *Texas J. Sci.* **44** (1992), *no.* 3, 364–366. (H. W. Guggenheimer) **93e:51036** 51N20 (26A06)
Burkhanov, Sh. A. (*with* Makarov, Vladimir Leonidovich; Guminskiĭ, V. V.) A scheme of the method of lines for the quasi-inversion problem. (Russian) *Vychisl. Prikl. Mat.* (*Kiev*) *No.* 71 (1990), 49–60. (Summary) **93b:65186** 65N40 (35R30)
Burkhardt, S. (*with* Drey, K.-D.) Massive parallel computers and their application in simulation. *Computational systems analysis* 1992 (*Berlin*, 1992), 299–306, *Elsevier, Amsterdam*, 1992. (*see* **93e:00021**) 65Y05
Burkhardt, T. W. (*with* Choi, Je-Young) Correlations of the energy density and conformal invariance in the the 2D Ising model with a defect line. *Nuclear Phys. B* **376** (1992), *no.* 3, 447–460. (Boris A. Khoruzhenko) **93h:82013** 82B23 (81T40, 82B26, 82B27)
Burkina, L. I. A frequency criterion for dissipativity of perturbed systems. (Russian) *Application of functional analysis in approximation theory* (*Russian*), 29–33, *Tver. Gos. Univ., Tver'*, 1990. (*see* **93k:00021**) 34D10
Burkinshaw, O. (*with* Abramovich, Yu. A.; Aliprantis, C. D.) Positive operators on Krein spaces. (English summary) Positive operators and semigroups on Banach lattices (Curaçao, 1990). *Acta Appl. Math.* **27** (1992), *no.* 1-2, 1–22. (Peter Meyer-Nieberg) **93h:47045** 47B60 (46C20)
Burkitt, A. N. (*with* Heermann, D. W.) ★ Parallel algorithms in computational science. Springer Series in Information Sciences, 24. *Springer-Verlag, Berlin*, 1991. xiv+183 *pp. ISBN* 3-540-53418-0 (From the preface) **93b:68030** 68Q22 (68–02, 68U20)
Burkov, V. N. (*with* Khokhlov, V. I.) Anti-expenditure taxation mechanisms. (Russian. Russian summary) *Avtomat. i Telemekh.* **1992,** *no.* 5, 89–97; *translation in Automat. Remote Control* **53** (1992), *no.* 5, *part* 2, 703–709. 90A70
— (*with* Rubinshtein, M. I.) Combinatorial methods for solving problems of optimal portional resource distribution. *Yugosl. J. Oper. Res.* **2** (1992), *no.* 1, 13–32. 90C27
Burlaĭ, I. V. (*with* Bulychev, Yu. G.; Pogonyshev, S. A.) A numerical-analytic method for the differentiation of functions with a bounded spectrum on the basis of Kotel'nikov's formula. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **32** (1992), *no.* 3, 396–407; *translation in Comput. Math. Math. Phys.* **32** (1992), *no.* 3, 331–342. (Summary) **93i:65034** 65D25
Burlak, Ė. M. (*with* Babaeva, R. A.; Vulpe, N. I.) On the number, multiplicity and types of singular points of a differential system. (Russian. English, Russian and Moldavian summaries) *Izv. Akad. Nauk Respub. Moldova Mat.* **1992,** *no.* 3, 3–8, 93. (Summary) **93k:34059** 34C05
Burlakov, M. V. ★ Ситуационное управление в системах массового обслуживания. (Russian) [Situational control in queueing systems] "*Naukova Dumka*", *Kiev*, 1991. 160 *pp. ISBN* 5-12-002481-5 (B. Dimitrov) **93e:90001** 90–02 (60K25, 90B22)
Burlakova, L. A. (*with* Banshchikov, A. V.; Irtegov, V. D.; Novikov, M. A.) Algorithms for the qualitative investigation of complex systems. (Russian. English and Ukrainian summaries) *Kibernet. Sistem. Anal.* **1992,** *no.* 1, 138–148, 190; *translation in Cybernet. Systems Anal.* **28** (1992), *no.* 1, 119–127. (From the text) **93g:70003** 70–08 (34–04, 70–04, 70E99, 70H35, 70K20)
Burlando, Laura On continuity of the spectrum function in Banach algebras with good ideal structure. *Riv. Mat. Pura Appl. No.* 9 (1991), 7–21. (Robin Harte) **93a:46088** 46H05
— Generalized semi-Fredholm operators that belong to the closure of the group of invertible operators. (English summary) *Math. Balkanica* (*N.S.*) **6** (1992), *no.* 3, 223–230. (Manuel González) **93h:47011** 47A53 (47D99)
Burman, Prabir Estimation of optimal transformations using v-fold cross validation and repeated learning-testing methods. (English summary) *Sankhyā Ser. A* **52** (1990), *no.* 3, 314–345. (Summary) **93f:62044** 62G05 (62G20, 62J02)
— (*with* Nolan, D.) Location-adaptive density estimation and nearest-neighbor distance. *J. Multivariate Anal.* **40** (1992), *no.* 1, 132–157. (Thomas W. Sager) **93k:62083** 62G05
— (*with* Nolan, D.) Data-dependent estimation of prediction functions. *J. Time Ser. Anal.* **13** (1992), *no.* 3, 189–207. (Onésimo Hernández Lerma) **93e:62103** 62G05
Burman, Yu. M. (*with* Bobylëv, N. A.; Shubin, A. B.) Control algorithms with a minimal number of switchings. (Russian. Russian summary) *Avtomat. i Telemekh.* **1992,** *no.* 5, 3–10; *translation in Automat. Remote Control* **53** (1992), *no.* 5, *part* 1, 619–626. (N. N. Petrov) **93h:93012** 93B05 (49K15, 57R27, 93B40, 93C15)
— (*with* Bobylëv, N. A.; Korovin, S. K.) Error estimation for the harmonic balance method. (Russian. Russian summary) *Avtomat. i Telemekh.* **1992,** *no.* 6, 3–12; *translation in Automat. Remote Control* **53** (1992), *no.* 6, *part* 1, 785–793. (Introduction) **93f:34068** 34C25 (34A45, 34H05, 93C05)
— (*with* Bobylëv, N. A.) Morse lemmas for multidimensional variational problems. *Nonlinear Anal.* **18** (1992), *no.* 6, 595–604. (Hubertus Th. Jongen) **93c:58042** 58E05 (35A15, 47H19, 49K10)
Burmeister, Peter (*with* Wojdyło, Bolesław) The meaning of basic category-theoretical notions in some categories of partial algebras. I. *Demonstratio Math.* **25** (1992), *no.* 3, 583–602. (Václav Koubek) **93m:08007** 08A55 (18A30)
Burmester, Mike An almost-constant round interactive zero-knowledge proof. *Inform. Process. Lett.* **42** (1992), *no.* 2, 81–87. 94A60 (68P25)
Burmistrova, A. B. Some existence theorems for solutions of resonance boundary value problems. (Russian. Russian summary) *Boundary value problems* (*Russian*), 7–13, *Perm. Politekh. Inst., Perm'*, 1990. (Summary) **93h:47070** 47H15 (34B15, 47N20)
— Classification of resonance boundary value problems by the linear part. (Russian) *Vestnik Chelyabinsk. Univ. Ser. Mat. Mekh. No.* 1 (1991), 20–29. (Pavel Drábek) **93i:47097** 47H15 (34B15, 47N20)
Burn, B. J. (*with* Sloan, Ian H.) An unconventional quadrature method for logarithmic-kernel integral equations on closed curves. *J. Integral Equations Appl.* **4** (1992), *no.* 1, 117–151. (G. F. Miller) **93d:65115** 65R20 (45L10)
Burn, Geoffrey ★ Lazy functional languages: abstract interpretation and compilation. Research Monographs in Parallel and Distributed Computing. *MIT Press, Cambridge, MA; Pitman Publishing, Ltd., London*, 1991. xiv+238 *pp. ISBN* 0-262-52160-1 (From the preface) **93b:68042** 68Q45 (68Q55)
Burn, R. P. Irrational numbers in English language textbooks, 1890–1915: constructions and postulates for the completeness of the real numbers. (German and Russian summaries) *Historia Math.* **19** (1992), *no.* 2, 158–176. (H.-J. Vollrath) **93d:01030** 01A55 (01A60, 26–03)
Burnat, M. (*with* Grundland, Alfred M.) Conical solutions of the autonomous partial differential systems. *Rep. Math. Phys.* **30** (1991), *no.* 1, 71–80 (1992). (Alan Jeffrey) **93f:35015** 35A30 (35B05, 35Q99)
Burnell, Stephen J. The value of money in an overlapping generations model: a note. (English summary) *J. Econom. Theory* **59** (1993), *no.* 1, 214–221. (Summary) **93k:90018** 90A09
Burnett, Gregory A. Linear-order stability of the gravitational plane-wave Cauchy horizons. (English summary) *Phys. Rev. D* (3) **46** (1992), *no.* 6, 2517–2521. (Piret Kuusk) **93g:83038** 83C35 (83C25)
Burnett, Richard (*with* Krewski, Daniel; Smythe, Robert T.; Fung, Karen Yuen) Conditional and unconditional tests with historical controls. (French summary) *Canad. J. Statist.* **19** (1991), *no.* 4, 407–423. (István Ratkó) **93g:62034** 62F03 (62P10)
Burnham, K. J. (*with* Warwick, Kevin) Filtered and predicted states for discrete-time adaptive control. (English summary) *Adaptive systems in control and signal processing*, 1989 (*Glasgow*), 129–134, *IFAC Sympos. Ser.*, 1990, *No.* 1, *Pergamon, Oxford*, 1990. (*see* **93j:93007**) 93E11 (93E35)
— (*with* Randall, Duane; James, D. J. G.) A study of Kalman filtering techniques for joint state and parameter estimation in self-tuning control. (Polish summary) *Systems Sci.* **17** (1991), *no.* 3, 31–43 (1992). 93E11

— (*with* Goodhart, S. G.; James, D. J. G.) Self-tuning control for industrial heating plant: a bilinear approach. (English and Polish summaries) *Systems Sci.* **18** (1992), *no.* 1-2, 129–139 (1993). 93C95

Burniak, Cz. (*with* Bogowski, Franciszek) On the relationship between the majorization of functions and the majorization of derivatives in certain classes of holomorphic functions. (Polish summary) *Ann. Univ. Mariae Curie-Sklodowska Sect. A* **43** (1989), 1–8 (1991). (Summary) **93c:30015** 30C45

Burnol, Jean-François Remarques sur la stabilité en arithmétique. [Remarks on stability in arithmetic] *Internat. Math. Res. Notices* **1992**, *no.* 6, 117–127. (From the text) **93e:14018** 14D25 (14G20)

— Weierstrass points on arithmetic surfaces. *Invent. Math.* **107** (1992), *no.* 2, 421–432. (Bruce Hunt) **93b:14040** 14G40 (14H25, 14H55)

Burns, D. *see* **Burns, David J.**

Burns, Daniel M. (*with* Epstein, Charles L.) Embeddability for three-dimensional CR-manifolds. *J. Amer. Math. Soc.* **3** (1990), *no.* 4, 809–841. (From the introduction) **93b:32024** 32F40 (32C16)

Burns, David J. On integral Stark conjectures (and multiplicative Galois module structures). *J. Reine Angew. Math.* **422** (1991), 141–163. (Ted Chinburg) **93b:11152** 11R33 (11G16, 11R27, 11R42)

Burns, John A. (*with* Kang, Sungkwon) A stabilization problem for Burgers' equation with unbounded control and observation. *Estimation and control of distributed parameter systems* (*Vorau*, 1990), 51–72, *Internat. Ser. Numer. Math.*, 100, *Birkhäuser, Basel*, 1991. (Summary) **93a:93091** 93D15 (35B37, 35Q53, 93C20)

Burns, John M. Homotopy of compact symmetric spaces. *Glasgow Math. J.* **34** (1992), *no.* 2, 221–228. (O. Kowalski) **93e:53057** 53C35 (55Q52, 57T20)

— Conjugate loci of totally geodesic submanifolds of symmetric spaces. *Trans. Amer. Math. Soc.* **337** (1993), *no.* 1, 411–425. (Y. Tashiro) **93g:53071** 53C35 (53C20, 53C40)

Buro, Michael On the maximum length of Huffman codes. (English summary) *Inform. Process. Lett.* **45** (1993), *no.* 5, 219–223. (Summary) **93m:94014** 94A29

Burosch, Gustav (*with* Wagner, Klaus[1]; Bodendiek, Rainer; Voss, Hans-Jürgen) ★ Graphentheorie. Band 1. (German) [Graph theory. Vol. 1] Anwendung auf Topologie, Gruppentheorie und Verbandstheorie. [Application to topology, group theory and lattice theory] *Bibliographisches Institut, Mannheim*, 1989. xvi+252 *pp. ISBN* 3-411-03226-X (Henry Martyn Mulder) **93g:05002** 05–01 (05C10, 05C25, 05C75, 06A06)

— (*with* Wagner, Klaus[1]; Bodendiek, Rainer; Širáň, Jozef; Walther, G.; Walther, Hansjoachim) ★ Graphentheorie. Band 2. (German) [Graph theory. Vol. 2] Weitere Methoden, Masse-Graphen, Planarität und minimale Graphen. [Further methods, mass graphs, planarity and minimal graphs] *Bibliographisches Institut, Mannheim*, 1990. x+356 *pp. ISBN* 3-411-14121-2 (B. Zelinka) **93g:05003** 05–01 (05C10, 05C78, 06A07)

— (*with* Ceccherini, Pier Vittorio) Cartesian dimensions of a graph. (English summary) *Fourth Czechoslovakian Symposium on Combinatorics, Graphs and Complexity* (*Prachatice*, 1990), 51–57, *Ann. Discrete Math.*, 51, *North-Holland, Amsterdam*, 1992. (*see* **93i:05004**) 05C10

— (*with* Bodendiek, Rainer) The class of all Egyptian graphs. *Bull. Inst. Combin. Appl.* **5** (1992), 100–101. (Nora Hartsfield) **93h:05139** 05C78

Burov, A. A. Invariant relations in dynamical systems. (Russian. Russian summary) *Problems in the investigation of the stability and stabilization of motion* (*Russian*), 3–6, *Akad. Nauk SSSR, Vychisl. Tsentr, Moscow*, 1991. (Summary) **93f:58070** 58F05 (34A99)

— On the motion of a rigid body interacting with a gas. (Russian) *Problems in the investigation of the stability and stabilization of motion* (*Russian*), 71–73, *Akad. Nauk SSSR, Vychisl. Tsentr, Moscow*, 1991. (*see* **93e:34004**) 70E15

Burov, V. A. (*with* Sergeev, S. N.) Current methods in perturbation theory for calculating hydro-acoustic fields. (Russian. Russian summary) *Vestnik Moskov. Univ. Ser. III Fiz. Astronom.* **33** (1992), *no.* 2, 49–56. 76Q05

Burq, Nicolas Contrôle de l'équation de Schrödinger en présence d'obstacles strictement convexes. [Control of the Schrödinger equation in the presence of strictly convex obstacles] *Journées "Équations aux Dérivées Partielles"* (*Saint Jean de Monts*, 1991), *Exp. No.* XIV, 11 *pp.*, *École Polytech., Palaiseau*, 1991. (Claudia Simionescu-Badea) **93a:35035** 35J10 (35B37, 93C20)

— (*with* Lebeau, Gilles) Micro-local approach to the control for the plates equation. (English summary) *Optimization, optimal control and partial differential equations* (*Iaşi*, 1992), 111–122, *Internat. Ser. Numer. Math.*, 107, *Birkhäuser, Basel*, 1992. (*see* **93m:00044**) 49K20 (35B37, 73K10, 73K50)

Burr, Stefan A. (*with* Erdős, Paul) Extremal non-Ramsey graphs. *Graph theory, combinatorics, algorithms, and applications* (*San Francisco, CA*, 1989), 42–66, *SIAM, Philadelphia, PA*, 1991. (R. H. Schelp) **93b:05118** 05C55 (05C35)

— On the automorphism group of a power of a hypercube. *Graph theory, combinatorics, and applications, Vol.* 1 (*Kalamazoo, MI*, 1988), 187–192, *Wiley-Intersci. Publ., Wiley, New York*, 1991. (Summary) **93b:05066** 05C25

— (*with* Erdős, Paul; Sós, Vera T.; Frankl, Peter; Graham, R. L.) Further results on maximal anti-Ramsey graphs. *Graph theory, combinatorics, and applications, Vol.* 1 (*Kalamazoo, MI*, 1988), 193–206, *Wiley-Intersci. Publ., Wiley, New York*, 1991. (Summary) **93i:05093** 05C55

— *see also* **Unreasonable effectiveness of number theory, 93f:11003**

Burrage, Kevin Parallel methods for initial value problems. (English summary) Parallel methods for ordinary differential equations (Grado, 1991). *Appl. Numer. Math.* **11** (1993), *no.* 1-3, 5–25. (Summary) **93i:65069** 65L05 (65Y05)

— The search for the Holy Grail, or: Predictor-corrector methods for solving ODEIVPs. Parallel methods for ordinary differential equations (Grado, 1991). *Appl. Numer. Math.* **11** (1993), *no.* 1-3, 125–141. (Ian Gladwell) **93k:65059** 65L05 (65L06, 65Y05)

— (*with* Chan, R. P. K.) On smoothing and order reduction effects for implicit Runge-Kutta formulae. (English summary) *J. Comput. Appl. Math.* **45** (1993), *no.* 1-2, 17–27. (Summary) **93j:65110** 65L06

— Efficient block predictor-corrector methods with a small number of corrections. (English summary) *J. Comput. Appl. Math.* **45** (1993), *no.* 1-2, 139–150. 65L06

Burri, Alex (*with* Balsiger, Franz) Sind die klassische Mechanik und die spezielle Relativitätstheorie kommensurabel? (English summary) [Are classical mechanics and the special theory of relativity compatible?] *J. Gen. Philos. Sci.* **21** (1990), *no.* 1, 157–162. (J. A. Lester) **93e:83005c** 83A05

Burris, Stanley (*with* Lawrence, John W.) Term rewrite rules for finite fields. *Internat. J. Algebra Comput.* **1** (1991), *no.* 3, 353–369. (Ralph W. Wilkerson) **93a:68069** 68Q42

— (*with* McKenzie, Ralph; Valeriote, Matthew A.) Decidable discriminator varieties from unary varieties. *J. Symbolic Logic* **56** (1991), *no.* 4, 1355–1368. (H. Peter Gumm) **93f:08006** 08A60 (03B25)

— (*with* Lee, Simon) Small models of the high school identities. (English summary) *Internat. J. Algebra Comput.* **2** (1992), *no.* 2, 139–178. (Fuxing Shen) **93h:03050** 03C62 (03C13, 08C10, 68Q40)

— Discriminator varieties and symbolic computation. *J. Symbolic Comput.* **13** (1992), *no.* 2, 175–207. (H.-J. Hoehnke) **93e:68044** 68Q40 (08B05, 68T15)

Burroni, A. (*with* Burroni, E.) Structures algébriques: thème et variations. (English summary) [Algebraic structures: theme and variations] *Cahiers Topologie Géom. Différentielle Catégoriques* **33** (1992), *no.* 3, 207–216. (Summary) **93f:18001** 18–02 (08–02)

Burroni, E. (*with* Burroni, A.) Structures algébriques: thème et variations. (English summary) [Algebraic structures: theme and variations] *Cahiers Topologie Géom. Différentielle Catégoriques* **33** (1992), *no.* 3, 207–216. (Summary) **93f:18001** 18–02 (08–02)

Burroughs, Nigel The quantum group methods of quantising the special linear group SL(2, **C**). *Physics, geometry, and topology* (*Banff, AB*, 1989), 513–539, *NATO Adv. Sci. Inst. Ser. B Phys.*, 238, *Plenum, New York*, 1990. (Vladimir A. Stukopin) **93a:17010** 17B37 (81R50)

— (*with* de Groot, Mark F.; Hollowood, Timothy J.; Miramontes, J. Luis) Generalized *W*-algebras and integrable hierarchies. *Phys. Lett. B* **277** (1992), *no.* 1-2, 89–94. (Summary) **93g:17044** 17B68 (58F07)

Burrows, B. L. (*with* Cohen, Maurice; Feldmann, Tova) Lower bounds for quartic anharmonic and double-well potentials. (English summary) *J. Math. Phys.* **34** (1993), *no.* 1, 1–11. (M. Znojil) **93k:81034** 81Q05 (65L99, 81–08)

Burrows, Simon P. (*with* Patel, Y.; Patton, Ron J.) Robust, low norm multirate control using eigenstructure assignment. *Control* '91, *Vol.* 1, 2 (*Edinburgh*, 1991), 1165–1170, *IEE Conf. Publ. Ser.*, 332, *IEE, London*, 1991. (*see* **93h:93007**) 93B55

— (*with* Patton, Ron J.) Design of a low-sensitivity, minimum norm and structurally constrained control law using eigenstructure assignment. (English summary) *Optimal Control Appl. Methods* **12** (1991), *no.* 3, 131–140. 93B55 (93B35)

Burrus, C. S. (*with* Gopinath, R. A.) Wavelet transforms and filter banks. *Wavelets*, 603–654, *Wavelet Anal. Appl.*, 2, *Academic Press, Boston, MA*, 1992. (A. Bultheel) **93a:94002** 94A11 (42C15, 94A05)

Burshtein, David (*with* Della Pietra, Vincent; Kanevsky, Dimitri; Nádas, Arthur) Minimum impurity partitions. (English summary) *Ann. Statist.* **20** (1992), *no.* 3, 1637–1646. (Summary) **93i:62054** 62H30 (62C05, 62C10, 62J02, 68T10)

Burskii, V. P. A commutative diagram connected with a differential operator in a domain. (Russian. Ukrainian summary) *Ukrain. Mat. Zh.* **43** (1991), *no.* 12, 1703–1709; *translation in Ukrainian Math. J.* **43** (1991), *no.* 12, 1588–1594 (1992). (Georgi Kamberov) **93f:35036** 35G05 (47F05)

— Solutions of the Dirichlet problem for elliptic systems in a disk. (Russian. Russian and Ukrainian summaries) *Ukraïn. Mat. Zh.* **44** (1992), *no.* 10, 1307–1313; *translation in Ukrainian Math. J.* **44** (1992), *no.* 10, 1197–1203 (1993). (Summary) **93k:35082** 35J55

Burstall, F. E. Minimal surfaces in quaternionic symmetric spaces. *Geometry of low-dimensional manifolds*, 1 (*Durham*, 1989), 231–235, *London Math. Soc. Lecture Note Ser.*, 150, *Cambridge Univ. Press, Cambridge*, 1990. (John C. Wood) **93i:53058** 53C42 (53C25, 58E20)

Burstall, Rod M. (*with* Goguen, Joseph A.) Institutions: abstract model theory for specification and programming. *J. Assoc. Comput. Mach.* **39** (1992), *no.* 1, 95–146. (Summary) **93h:03056** 03C95 (03B70, 68Q65, 68T15)

Burstein, G. (*with* Davis, M. H. A.) Random conservation laws and global solutions of nonlinear SPDE—application to the HJB SPDE of anticipative control. (English summary) *Stochastic partial differential equations and their applications* (*Charlotte, NC*, 1991), 43–53, *Lecture Notes in Control and Inform. Sci.*, 176, *Springer, Berlin*, 1992. (Krystyna Twardowska) **93h:60090** 60H15 (35R60, 93E03)

Burt, W. L. (*with* Butler, M. C. R.) Almost split sequences for bocses. *Representations of finite-dimensional algebras* (*Tsukuba*, 1990), 89–121, *CMS Conf. Proc.*, 11, *Amer. Math. Soc., Providence, RI*, 1991. (Peter Dräxler) **93d:16017** 16G70 (15A30, 16D90, 16E30, 16W30)

Burton, D. (*with* Toint, Ph. L.) On an instance of the inverse shortest paths problem. *Math. Programming* **53** (1992), *no.* 1, *Ser. A*, 45–61. (Peter Gritzmann) **93e:90063** 90C35 (90C20, 90C25)

Burton, F. Warren (*with* Page, Rex L.) Distributed random number generation. (English summary) *J. Funct. Programming* **2** (1992), *no.* 2, 203–212. (Summary) **93i:65009** 65C10

Burton, M. H. Completeness in fuzzy uniform spaces. (English summary) *Quaestiones Math.* **16** (1993), *no.* 1, 13–36. (Summary) **93m:54013** 54A40 (04A72, 54E15)

— Precompactness in fuzzy uniform spaces. (English summary) *Quaestiones Math.* **16** (1993), *no.* 1, 37–49. (Summary) **93m:54014** 54A40 (04A72, 54D20, 54E15)

Burton, Robert M., Jr. (*with* Keane, Michael S.) Topological and metric properties of infinite clusters in stationary two-dimensional site percolation. (English summary) *Israel J. Math.* **76** (1991), *no.* 3, 299–316. (B. M. Gurevich) **93i:60182** 60K35

— (*with* Dabrowski, André Robert) Positive dependence of exchangeable sequences. (English summary) *Canad. J. Math.* **44** (1992), *no.* 4, 774–783. (Yung L. Tong) **93g:60038** 60E15 (60K99)

— (*with* Keller, Gerhard) Stationary measures for randomly chosen maps. (English summary) *J. Theoret. Probab.* **6** (1993), *no.* 1, 1–16. (M. Iosifescu) **93m:60141** 60J05 (60K99)

Burton, T. A. (*with* Hutson, V. C. L.) Permanence for nonautonomous predator-prey systems. *Differential Integral Equations* **4** (1991), *no.* 6, 1269–1280. (H. I. Freedman) **93f:34019** 34A34 (34C35, 34D99, 92D40)

— The nonlinear wave equation as a Liénard equation. *Funkcial. Ekvac.* **34** (1991), *no.* 3, 529–545. (Daniel Tătaru) **93f:35147** 35L70

— Neural networks with memory. *J. Appl. Math. Stochastic Anal.* **4** (1991), *no.* 4, 313–332. (J. Leo van Hemmen) **93g:92002** 92B20 (34K25)

— (*with* Eloe, Paul W.; Islam, Muhammad Nurul) Nonlinear integrodifferential equations and a priori bounds on periodic solutions. (English summary) *Ann. Mat. Pura Appl.* (4) **161** (1992), 271–283. (Saber Elaydi) **93f:45011** 45J05 (34K15)

— (*with* Zhang, Bo[1]) A priori bounds and stability in the retarded nonlinear wave equation. *J. Math. Anal. Appl.* **166** (1992), *no.* 2, 456–484. (József Terjéki) **93c:35102** 35L70 (34K99, 35B40, 35R10)

Burtseva, M. N. A weighted algorithm for solving a system of nonlinear Boltzmann equations for a many-valley semiconductor. (Russian. English and Russian summaries) *Mat. Model.* **4** (1992), *no.* 1, 83–97. (From the text) **93h:82081** 82D99 (65P05, 78A55)

Burtseva, T. A. Almost complex structures on some surfaces of an octave plane. (Russian) *Trudy Geom. Sem. Kazan. Univ. No.* 21 (1991), 41–43. (Andrzej Bucki) **93j:53042** 53C15 (53A40)

Burwick, T. T. (*with* Chamseddine, A. H.) Classical and quantum considerations of two-dimensional gravity. (English summary) *Nuclear Phys. B* **384** (1992), *no.* 1-2, 411–428. (Summary) **93f:81129** 81T40

— (*with* Chamseddine, A. H.; Meissner, K. A.) Matter coupling and spontaneous symmetry breaking in topological gravity. *Phys. Lett. B* **284** (1992), *no.* 1-2, 11–16. (Summary) **93c:81195** 81T40 (81R20, 81T60, 81V17)

Buryachenko, V. A. (*with* Parton, V. Z.) Effective parameters of the strength of composites in joint physical-mechanical fields. (Russian) *Prikl. Mekh. Tekhn. Fiz.* **1992**, *no.* 4, 124–130; *translation in J. Appl. Mech. Tech. Phys.* **33** (1992), *no.* 4, 589–593 (1993). (Ekaterina Guibianskaya) **93j:73055** 73K20 (73B27, 73M25)

Buryak, D. V. Asymptotic behavior of solutions of a singular operator-differential system of second-order equations. (Russian. Russian summary) *Boundary value problems (Russian)*, 35–41, *Perm. Politekh. Inst., Perm'*, 1990. (Summary) **93i:34111** 34G20 (34C99, 34E99)

Burzlaff, J. (*with* McCarthy, Patrick J.) A study of a 90° vortex-vortex scattering process. *J. Math. Phys.* **32** (1991), *no.* 12, 3376–3380. (Summary) **93a:53062** 53C80 (58E15)

— (*with* Chakrabarti, Amitabha; Tchrakian, D. H.) Generalised self-dual Chern-Simons vortices. (English summary) *Phys. Lett. B* **293** (1992), *no.* 1-2, 127–131. (Summary) **93i:81131** 81T13

Busam, R. (*with* Freitag, E.; Karcher, W.) Ein Ring elliptischer Modulformen. [A ring of elliptic modular forms] *Arch. Math. (Basel)* **59** (1992), *no.* 2, 157–164. (Harvey Cohn) **93g:11036** 11F06 (11F11)

Busard, H. L. L. ★ Jordanus de Nemore, *De elementis arithmetice artis.* A medieval treatise on number theory. Part I. Text and paraphrase. Boethius: Texte und Abhandlungen zur Geschichte der Mathematik und der Naturwissenschaften [Boethius: Texts and Essays on the History of Mathematics and the Natural Sciences], XXII, I. *Franz Steiner Verlag Wiesbaden GmbH, Stuttgart*, 1991. 372 *pp. ISBN* 3-515-05214-3 (Edith D. Sylla) **93e:01004a** 01A35

— ★ Jordanus de Nemore, *De elementis arithmetice artis.* (Latin) A medieval treatise on number theory. Part II. Conspectus siglorum and critical apparatus. Boethius: Texte und Abhandlungen zur Geschichte der Mathematik und der Naturwissenschaften [Boethius: Texts and Essays on the History of Mathematics and the Natural Sciences], XXII, II. *Franz Steiner Verlag Wiesbaden GmbH, Stuttgart*, 1991. 188 *pp. ISBN* 3-515-05214-3 (Edith D. Sylla) **93e:01004b** 01A35

— The *Arithmetica* of Jordanus Nemorarius. *Amphora*, 121–132, *Birkhäuser, Basel*, 1992. (Richard L. Francis) **93i:01010** 01A35

— *see also* **Zaitsev, E. A.**

Busch, Paul (*with* Lahti, Pekka J.; Mittelstaedt, Peter) ★ The quantum theory of measurement. Lecture Notes in Physics. New Series m: Monographs, 2. *Springer-Verlag, Berlin*, 1991. xiv+165 *pp. ISBN* 3-540-54334-1 (Koichiro Matsuno) **93m:81014** 81P15 (00A30, 00A79, 01A60, 81–01)

— (*with* Lahti, Pekka J.; Mittelstaedt, Peter) Some important classes of quantum measurements and their information gain. *J. Math. Phys.* **32** (1991), *no.* 10, 2770–2775. (Andrzej Luczak) **93f:81020** 81P15 (46L50)

— (*with* Lahti, Pekka J.; Mittelstaedt, Peter) Weak objectification, joint probabilities, and Bell inequalities in quantum mechanics. (English summary) *Found. Phys.* **22** (1992), *no.* 7, 949–962. (Emilio Santos) **93k:81013** 81P10

Buschman, R. G. (*with* Nguyễn Thanh Hài) Reduction formulas for the H-functions of two variables. *J. Indian Acad. Math.* **13** (1991), *no.* 2, 104–109. (Harold Exton) **93c:33010** 33C60 (33C50)

— Two-dimensional convolution integral equations with polynomial power kernels. (English summary) *Ganita Sandesh* **6** (1992), *no.* 1, 26–28. (Summary) **93i:45003** 45E10

— (*with* Yakubovich, S. B.; Nguyễn Thanh Hài) Convolutions for H-function transformations. (English summary) *Indian J. Pure Appl. Math.* **23** (1992), *no.* 10, 743–752. (K. C. Gupta) **93i:44008** 44A35 (33C60, 44A15, 44A20)

Buse, A. The efficiency of GLS estimators in simultaneous equations models with autocorrelated errors. (English and Italian summaries) *Metron* **49** (1991), *no.* 1-4, 245–254 (1992). 62P20

Busenberg, Stavros N. (*with* van den Driessche, P.) Nonexistence of periodic solutions for a class of epidemiological models. (English summary) *Differential equations models in biology, epidemiology and ecology (Claremont, CA*, 1990), 70–79, *Lecture Notes in Biomath.*, 92, *Springer, Berlin*, 1991. (Summary) **93h:92032** 92D30 (34C25)

— (*with* Castillo-Chavez, Carlos) On the solution of the two-sex mixing problem. (English summary) *Differential equations models in biology, epidemiology and ecology (Claremont, CA*, 1990), 80–98, *Lecture Notes in Biomath.*, 92, *Springer, Berlin*, 1991. (Summary) **93h:92033** 92D30 (92C60)

— (*with* Castillo-Chavez, Carlos; Gerow, Ken) Pair formation in structured populations. *Differential equations with applications in biology, physics, and engineering (Leibnitz*, 1989), 47–65, *Lecture Notes in Pure and Appl. Math.*, 133, *Dekker, New York*, 1991. (Marc Artzrouni) **93c:92005** 92D25 (92–04, 92C60, 92D30)

— (*with* Iannelli, Mimmo; Thieme, Horst R.) Global behavior of an age-structured epidemic model. *SIAM J. Math. Anal.* **22** (1991), *no.* 4, 1065–1080. (J. Milota) **93a:92015** 92D30 (35L50, 35L60, 47H20, 47N20)

— Case studies in industrial mathematics. *Mathematical modelling of industrial processes (Bari*, 1990), 111–153, *Lecture Notes in Math.*, 1521, *Springer, Berlin*, 1992. (J. S. Joel) **93h:00015** 00A71 (00A69)

— (*with* Wu, Binghui) Convergence theorems for integrated semigroups. *Differential Integral Equations* **5** (1992), *no.* 3, 509–520. (Frank Neubrander) **93f:47044** 47D03 (34G10, 47D06)

— (*with* Martelli, Mario Umberto) Geometric inequalities in normed spaces. *Rocky Mountain J. Math.* **22** (1992), *no.* 2, 477–491. (Pando Georgiev) **93j:46015** 46B20 (52A05)

— (*with* Cooke, Kenneth L.) ★ Vertically transmitted diseases. (English. English summary) Models and dynamics. Biomathematics, 23. *Springer-Verlag, Berlin*, 1993. xii+248 *pp. ISBN* 3-540-52004-X (Wei-Min Liu) **93m:92020** 92D30 (34C15, 34C35, 34K15)

— (*with* Fang, Wei Fu; Ito, Kazufumi) Modeling and analysis of laser-beam-induced current images in semiconductors. (English summary) *SIAM J. Appl. Math.* **53** (1993), *no.* 1, 187–204. (Summary) **93j:35171** 35Q60

— *see also* **Differential equations models in biology, epidemiology and ecology, 93g:92001**

Buser, Peter ★ Geometry and spectra of compact Riemann surfaces. Progress in Mathematics, 106. *Birkhäuser Boston, Inc., Boston, MA*, 1992. xiv+454 *pp. ISBN* 0-8176-3406-1 (Robert Brooks) **93g:58149** 58G25 (30F99)

— (*with* Seppälä, Mika) Symmetric pants decompositions of Riemann surfaces. *Duke Math. J.* **67** (1992), *no.* 1, 39–55. (Colette Anné) **93i:32026** 32G15 (30F60, 58G25)

— (*with* Colbois, B.; Dodziuk, J.) Tubes and eigenvalues for negatively curved manifolds. (English summary) *J. Geom. Anal.* **3** (1993), *no.* 1, 1–26. (Robert Brooks) **93k:58220** 58G25

Busetto, Giorgio (*with* Napolitani, Franco) On the behaviour of normal subgroups under projectivities. *J. Algebra* **141** (1991), *no.* 1, 93–105. (From the introduction) **93k:20046** 20E15

— (*with* Napolitani, Franco) On some questions concerning permutable subgroups of finitely generated groups and projectivities of perfect groups. *Rend. Sem. Mat. Univ. Padova* **87** (1992), 303–305. (From the text) **93i:20030** 20E07

Bushell, P. J. (*with* Okrasiński, W.) Nonlinear Volterra integral equations and the Apéry identities. *Bull. London Math. Soc.* **24** (1992), *no.* 5, 478–484. (A. Corduneanu) **93f:45003** 45D05

— (*with* Okrasiński, W.) Nonlinear Volterra integral equations and the Apéry identities. *Differential equations with applications to mathematical physics*, 51–58, *Math. Sci. Engrg.*, 192, *Academic Press, Boston, MA*, 1993. (*see* **93i:00013**) 45D05

Bushenkov, V. A. (*with* Smirnov, G. V.) Regulation under conditions of uncertainty. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **32** (1992), *no.* 2, 217–229; *translation in Comput. Math. Math. Phys.* **32** (1992), *no.* 2, 181–190. (Summary) **93b:93041** 93B40 (34A60, 93C41)

Bushnell, Colin J. (*with* Kutzko, Philip C.) The admissible dual of GL_N via restriction to compact open subgroups. *Harmonic analysis on reductive groups (Brunswick, ME*, 1989), 89–99, *Progr. Math.*, 101, *Birkhäuser Boston, Boston, MA*, 1991. (David Joyner) **93h:22028** 22E50 (22–02)

Bushnell, Michael L. (*with* Chakradhar, Srimat T.) A solvable class of quadratic 0-1 programming. *Discrete Appl. Math.* **36** (1992), *no.* 3, 233–251. (Klaus Hofstedt) **93d:90041** 90C09 (90C20, 94C10)

Busigin, Anthony (*with* Phillips, Colin R.) Efficient Newton-Raphson and implicit Euler methods for solving the HNC equation. *Molecular Phys.* **76** (1992), *no.* 1, 89–101. (Summary) **93b:76065** 76M25 (65R20)

Buskens, Vincent (*with* Blaum, Mario; Litsyn, S. N.; van Tilborg, Henk C. A.) Error-correcting codes with bounded running digital sum. (English summary) *IEEE Trans. Inform. Theory* **39** (1993), *no.* 1, 216–227. (Summary) **93m:94036** 94B50

Buskes, G. J. H. M. (*with* van Rooij, Arnoud C. M.) Riesz spaces and the ultrafilter theorem. I. (English summary) *Compositio Math.* **83** (1992), *no.* 3, 311–327. (W. A. J. Luxemburg) **93g:46006** 46A40 (46A22)

Buskirk, R. D. (*with* Nikiel, Jacek; Tymchatyn, E. D.) Totally regular curves as inverse limits. (English summary) *Houston J. Math.* **18** (1992), *no.* 3, 319–327. (Summary) **93j:54020** 54F15 (54F50)

Buslaev, A. P. On the asymptotics of widths and of spectra of nonlinear differential equations. (Russian) *Algebra i Analiz* **3** (1991), *no.* 6, 108–118 (1992); *translation in St. Petersburg Math. J.* **3** (1992), *no.* 6, 1303–1312. (Pavol Marušiak) **93f:34139** 34L05 (34L20, 41A46)

— Bernstein-Nikol'skiĭ inequalities and widths of Sobolev classes of functions. (Russian) *Dokl. Akad. Nauk* **323** (1992), *no.* 2, 202–205; *translation in Russian Acad. Sci. Dokl. Math.* **45** (1992), *no.* 2, 272–275 (1993). (Hans-Jürgen Schmeisser) **93j:46036** 46E35 (26D20, 41A46)

Buslaev, V. S. Spectral properties of the operators $H\psi = -\psi_{xx} + p(x)\psi + v(\varepsilon x)\psi$, p is periodic. *Order, disorder and chaos in quantum systems (Dubna*, 1989), 85–107, *Oper. Theory Adv. Appl.*, 46, *Birkhäuser, Basel*, 1990. (Robert M. Kauffman) **93a:34096** 34L40 (47E05, 47N50, 81Q10)

— On spectral properties of adiabatically perturbed Schroedinger operators with periodic potentials. *Séminaire sur les Équations aux Dérivées Partielles*, 1990–1991, *Exp. No.* XXIII, 15 *pp., École Polytech., Palaiseau*, 1991. (David Gurarie) **93g:35103** 35P20 (35J10, 35P25, 81Q20)

— (*with* Budylin, A. M.) Quasiclassical integral equations. (Russian) *Dokl. Akad. Nauk SSSR* **319** (1991), *no.* 3, 527–530; *translation in Soviet Math. Dokl.* **44** (1992), *no.* 1, 127–131. (From the text) **93b:47103** 47G10 (45E05, 47B35, 47N20)

— (*with* Perel'man, G. S.) Nonlinear scattering: states that are close to a soliton. (Russian. English and Russian summaries) *Zap. Nauchn. Sem. S.-Peterburg. Otdel. Mat. Inst. Steklov. (POMI)* **200** (1992), *Kraev. Zadachi Mat. Fiz. Smezh. Voprosy Teor. Funktsii.* 24, 38–50, 70, 187. (J. S. Joel) **93k:35040** 35B40 (35P25, 35P30, 35Q55)

Buslov, V. A. (*with* Makarov, K. A.) Life spans and least eigenvalues of an operator of small diffusion. (Russian) *Mat. Zametki* **51** (1992), *no.* 1, 20–31, 160; *translation in Math. Notes* **51** (1992), *no.* 1-2, 14–21. (Summary) **93c:34161** 34L40 (34E15, 60J60, 65L15)

Busoni, Giorgio (*with* Frosali, Giovanni) Asymptotic behaviour for a charged particle transport problem with time-varying acceleration field. (English summary) Proceedings of the Fourth International Workshop on Mathematical Aspects of Fluid and Plasma Dynamics (Kyoto, 1991). *Transport Theory Statist. Phys.* **21** (1992), *no.* 4-6, 713–732. (Summary) **93k:82058** 82C70

Busse, F. H. (*with* Clever, R. M.) Three-dimensional convection in an inclined layer heated from below. *J. Engrg. Math.* **26** (1992), *no.* 1, 1–19. (Summary) **93a:76042** 76E15 (76D99, 76R10)

Bussemaker, F. C. (*with* Neumaier, Arnold) Exceptional graphs with smallest eigenvalue -2 and related problems. With microfiche supplement. *Math. Comp.* **59** (1992), *no.* 200,

583–608. (Wan Di Wei) **93a:05089** 05C50

Bust, R. I. (*with* Zucchini, W.) Rotation invariant bases for linear modelling of observations with a circular ordering. (English summary) *South African Statist. J.* **26** (1992), *no.* 1, 1–23. (Wanxi Chen) **93h:62107** 62H11

Bustamante González, Jorge Continuity to the boundary of the Cauchy integral. (Spanish. English summary) *Cienc. Mat. (Havana)* **12** (1991), *no.* 1, 73–91. (Summary) **93e:30083** 30E20

de Bustos, Eduardo The evolution of logic and the philosophy of language in Spanish philosophy since Ortega y Gasset. (Spanish) Theory, history and foundations of the formal sciences (Spanish). *Theoria (San Sebastián)* (2) **7** (1992), *no.* 16-18, *A*, 327–338. (N. C. A. da Costa) **93k:01047** 01A60 (03–03, 03A05)

Bustos, Oscar H. (*with* Frery, Alejandro C.) ★ Simulação estocástica: teoria e algoritmos. (Portuguese) [Stochastic simulation: theory and algorithms] Versão completa. [Complete version] Monografías de Matemática [Mathematical Monographs], 49. *Instituto de Matemática Pura e Aplicada, Rio de Janeiro*, 1992. viii+148 *pp. ISBN* 85-244-0053-6 (From the preface) **93f:65011** 65C20 (65–01)

— (*with* Frery, Alejandro C.) A contribution to the study of Markovian degraded images: an extension of a theorem by Geman and Geman. (English and Portuguese summaries) *Mat. Apl. Comput.* **11** (1992), *no.* 1, 17–29. (Summary) **93i:68187** 68U10 (60G10, 62F15, 62M40)

Busurulov, A. A. Solution of boundary value problems for *P*-harmonic functions by means of particular solutions of a special form. (Russian. Russian summary) *Differential equations and their applications in physics (Russian)*, 16–19, 106, *Dnepropetrovsk. Gos. Univ., Dnepropetrovsk*, 1989. (*see* **93g:00024**) 35J25

— Solution of boundary value problems by the method of *p*-analytic functions. (Russian. Russian summary) *Differential equations and their applications in physics (Russian)*, 13–19, 103, *Dnepropetrovsk. Gos. Univ., Dnepropetrovsk*, 1990. (*see* **93k:00023**) 35J05 (30G20, 35C99)

Busvelle, Éric (*with* Deza, François; Gauthier, Jean-Paul; Rakotopara, Daniel) Un résultat de stabilité des filtres de Kalman étendu continu-continu et continu-discret. (English summary) [A stability result for continuous-continuous and continuous-discrete extended Kalman filters] *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 4, 321–324. (Introduction) **93f:93126** 93E11

— (*with* Deza, François; Gauthier, Jean-Paul; Rakotopara, Daniel) High gain estimation for nonlinear systems. *Systems Control Lett.* **18** (1992), *no.* 4, 295–299. (Yuandong Ji) **93b:93106** 93E10 (93C10, 93E11)

— (*with* Deza, François; Bossanne, Denis; Gauthier, Jean-Paul; Rakotopara, Daniel) Exponential observers for nonlinear systems. (English summary) *IEEE Trans. Automat. Control* **38** (1993), *no.* 3, 482–484. 93B07

Butcher, J. C. The role of orthogonal polynomials in numerical ordinary differential equations. (English summary) Orthogonal polynomials and numerical methods. *J. Comput. Appl. Math.* **43** (1992), *no.* 1-2, 231–242. (Summary) **93i:65081** 65L99 (65L06)

— (*with* Keam, Ron) Garry John Tee. *New Zealand Math. Soc. Newslett. No.* 54 (1992), 20–21. (Editors) **93g:01063** 01A70

— (*with* Chan, R. P. K.) On symmetrizers for Gauss methods. *Numer. Math.* **60** (1992), *no.* 4, 465–476. (Masaharu Nakashima) **93c:65084** 65L05 (65L06, 65L20)

— Diagonally-implicit multi-stage integration methods. (English summary) *Appl. Numer. Math.* **11** (1993), *no.* 5, 347–363. (Summary) **93m:65084** 65L05

— (*with* Johnston, P. B.) Estimating local truncation errors for Runge-Kutta methods. (English summary) *J. Comput. Appl. Math.* **45** (1993), *no.* 1-2, 203–212. 65L06 (65L70)

Butcher, Jacqueline A. (*with* Madsen, Mark S.; Mimoso, José P.; Ellis, George F. R.) Evolution of the density parameter in inflationary cosmology reexamined. (English summary) *Phys. Rev. D* (3) **46** (1992), *no.* 4, 1399–1415. 83F05

Butenin, N. V. (*with* Fufaev, N. A.) ★ Введение в аналитическую механику. (Russian. English and Russian summaries) [Introduction to analytical mechanics] Second edition. "*Nauka*", *Moscow*, 1991. 256 *pp. ISBN* 5-02-014221-2 (Ll. G. Chambers) **93i:70001** 70–01 (70F25, 70G10, 70H35, 70Hxx)

Butenko, Yu. I. On conditions for the existence of damped solutions of a plane problem of elasticity theory. (Russian) *Issled. Teor. Plastin i Obolochek No.* 21 (1989), 15–25. (From the text) **93a:73015** 73C02

Butković, D. *see* **Functional analysis, 93m:60008**

Butkovič, P. (*with* Cuninghame-Green, R. A.) An $O(n^2)$ algorithm for the maximum cycle mean of an $n \times n$ bivalent matrix. *Discrete Appl. Math.* **35** (1992), *no.* 2, 157–162. (Summary) **93m:68069** 68Q25 (05C50)

Butler, H. (*with* Krijgsman, A. J.) Model reference adaptive control of coupled systems. (English summary) *Mathematics of the analysis and design of process control (Dublin, 1991/Lille, 1991)*, 423–433, *North-Holland, Amsterdam*, 1992. (*see* **93g:93004**) 93C40

Butler, M. C. R. (*with* Burt, W. L.) Almost split sequences for bocses. *Representations of finite-dimensional algebras (Tsukuba, 1990)*, 89–121, *CMS Conf. Proc.*, 11, *Amer. Math. Soc., Providence, RI*, 1991. (Peter Dräxler) **93d:16017** 16G70 (15A30, 16D90, 16E30, 16W30)

Butler, Philip H. (*with* Lienert, Cindy R.) Racah-Wigner algebra for *q*-deformed algebras. *J. Phys. A* **25** (1992), *no.* 5, 1223–1235. (G. Vanden Berghe) **93a:81083** 81R50 (17B37)

Butler, R. A. R. (*with* Hoffman, Dean G.) Intersections of group divisible triple systems. (English summary) *Ars Combin.* **34** (1992), 268–288. (Summary) **93i:05022** 05B07

Butler, Ronald W. (*with* Huzurbazar, S.; Booth, James G.) Saddlepoint approximations for tests of block independence, sphericity and equal variances and covariances. (English summary) *J. Roy. Statist. Soc. Ser. B* **55** (1993), *no.* 1, 171–183. 62E20 (62H10)

Butnariu, Dan (*with* Mehrez, Abraham) On a class of generalized gradient methods for solving locally Lipschitz feasibility problems. (English summary) *System modelling and optimization (Zurich, 1991)*, 282–291, *Lecture Notes in Control and Inform. Sci.*, 180, *Springer, Berlin*, 1992. (*see* **93e:90003**) 90C30 (65K05)

— (*with* Roventa, Eugene) A measure theoretical approach of the problem of computing production costs. (English summary) *Fuzzy Sets and Systems* **48** (1992), *no.* 3, 305–321. (Summary) **93f:90006** 90A05 (04A72, 28E10)

Butorina, M. G. Euler's use of Newton's polygon method. (Russian) *Voprosy Istor. Estestvoznan. i Tekhn.* **1992**, *no.* 2, 94–95. (Doru Ştefănescu) **93g:01033** 01A50 (01A45)

Butov, A. A. Some estimates for a one-dimensional birth and death process in a random environment. (Russian) *Teor. Veroyatnost. i Primenen.* **36** (1991), *no.* 3, 561–565; *translation in Theory Probab. Appl.* **36** (1991), *no.* 3, 578–583 (1992). (Kosto V. Mitov) **93a:60129** 60J80

Butris, Raad Noori Periodic solutions of nonlinear systems of operator-differential equations with impulse action. (Russian. Ukrainian summary) *Ukrain. Mat. Zh.* **43** (1991), *no.* 9, 1260–1264; *translation in Ukrainian Math. J.* **43** (1991), *no.* 9, 1174–1177 (1992). (Snezhana Khristova) **93a:34049** 34C25 (34A37, 34E05, 34G20, 34K15)

Buts, S. V. (*with* Korkina, M. P.) Penrose diagrams for Schwarzschild-Friedmann models in Kruskal coordinates. (Russian. Russian summary) *Izv. Vyssh. Uchebn. Zaved. Fiz.* **35** (1992), *no.* 7, 87–91; *translation in Russian Phys. J.* **35** (1992), *no.* 7, 658–661 (1993). (Piret Kuusk) **93k:83012** 83C15 (83C57)

Butsan, G. P. The mixed product of dependent operator stochastic systems without continuity and martingale conditions. (Russian) *Teor. Veroyatnost. i Primenen.* **36** (1991), *no.* 2, 236–246; *translation in Theory Probab. Appl.* **36** (1991), *no.* 2, 237–248 (1992). (I. Cuculescu) **93b:60137** 60H99

— *see also* **Analytic problems for stochastic systems, 93m:60006**

Butson, G. J. (*with* Jones, S. E.) On Abel's identity. I. Nonlinear differential equations. (English summary) *J. Sound Vibration* **160** (1993), *no.* 2, 243–249. (Summary) **93k:34026a** 34A34

— (*with* Jones, S. E.; Lemmers, P. L.) On Abel's identity. II. The integration of a nonlinear, nonconservative system. (English summary) *J. Sound Vibration* **160** (1993), *no.* 2, 251–257. (Summary) **93k:34026b** 34A34

Butt, R. (*with* Rubio, J. E.) Optimal shape design for a frictionless contact problem. *J. Comput. Appl. Math.* **40** (1992), *no.* 1, 1–17. (Vadim Komkov) **93d:73051** 73K40 (49Q10, 73T05, 73V05, 73V25)

— An existence theory for a minimum energy problem. *J. Comput. Appl. Math.* **40** (1992), *no.* 3, 253–257. (Summary) **93e:49011** 49J27 (49J40)

Buttazzo, Giuseppe (*with* Cavazzuti, E.) Limit problems in optimal control theory. *Analyse non linéaire (Perpignan, 1987)*, 150–160, *Univ. Montréal, Montreal, PQ*, 1989. (*see* **93h:49003**) 49J45 (49K45)

— Thin structures in elasticity: the variational method. (Italian summary) *Rend. Sem. Mat. Fis. Milano* **59** (1989), 149–159 (1992). (Summary) **93c:73056** 73Kxx (49R05, 73V25)

— (*with* Alberti, Giovanni) Integral representation of functionals defined on Sobolev spaces. *Composite media and homogenization theory (Trieste, 1990)*, 1–12, *Progr. Nonlinear Differential Equations Appl.*, 5, *Birkhäuser Boston, Boston, MA*, 1991. (Michele Mininni) **93e:49018** 49J45 (46E35, 46E50)

— (*with* Acerbi, Emilio; Percivale, Danilo) A variational definition of the strain energy for an elastic string. *J. Elasticity* **25** (1991), *no.* 2, 137–148. (Introduction) **93c:73025** 73C50 (49N99, 73B05, 73K03, 73V25)

— Relaxed formulation for a class of shape optimization problems. *Boundary control and boundary variation (Sophia-Antipolis, 1990)*, 50–59, *Lecture Notes in Control and Inform. Sci.*, 178, *Springer, Berlin*, 1992. (*see* **93b:49001**) 49Q10 (49J45)

— Integral representation theory for some classes of local functionals. *Optimization and nonlinear analysis (Haifa, 1990)*, 64–75, *Pitman Res. Notes Math. Ser.*, 244, *Longman Sci. Tech., Harlow*, 1992. (Michel Valadier) **93k:49012** 49J45 (49K10, 49Q15)

— (*with* Bouchitté, Guy) Integral representation of nonconvex functionals defined on measures. (French summary) *Ann. Inst. H. Poincaré Anal. Non Linéaire* **9** (1992), *no.* 1, 101–117. (Richard Becker) **93e:46036** 46E27 (46G99, 49J45, 49Q20)

— (*with* Mizel, Victor J.) Interpretation of the Lavrentiev phenomenon by relaxation. (English summary) *J. Funct. Anal.* **110** (1992), *no.* 2, 434–460. (T. Zolezzi) **93i:49004** 49J05 (49J45, 49K05)

— *see also* **Developments in partial differential equations and applications to mathematical physics, 93j:35004**

Buttell, L. (*with* Cox, J. T.; Durrett, Richard) Estimating the critical values of stochastic growth models. (English summary) *J. Appl. Probab.* **30** (1993), *no.* 2, 455–461. (Summary) **93k:60231** 60K35

Butterfield, Jeremy N. (*with* Clifton, Robert K.; Redhead, Michael L. G.) A second look at a recent algebraic proof of nonlocality. *Found. Phys. Lett.* **4** (1991), *no.* 4, 395–403. (Emilio Santos) **93b:81013** 81P05

— Bell's theorem: what it takes. *British J. Philos. Sci.* **43** (1992), *no.* 1, 41–83. (Emilio Santos) **93e:81009** 81P05

— David Lewis meets John Bell. *Philos. Sci.* **59** (1992), *no.* 1, 26–43. (Lawrence Sklar) **93b:81009** 81P05 (03B30)

Butterworth, William T. Abel summability of entire functions of exponential type. *Progress in approximation theory*, 117–139, *Academic Press, Boston, MA*, 1991. (Ralitza Kovacheva) **93c:30040** 30D10 (40G10)

Büttgenbach, B. (*with* Esser, Henning; Lüttgens, G.; Nessel, R. J.) A sharp error estimate for the numerical solution of a Dirichlet problem for the Poisson equation. (English summary) *J. Comput. Appl. Math.* **44** (1992), *no.* 3, 331–337. (J. Mikliček) **93m:65152** 65N06 (65N12)

Buttig, Ingolf (*with* Eichhorn, Jürgen) The heat kernel for *p*-forms on manifolds of bounded geometry. *Acta Sci. Math. (Szeged)* **55** (1991), *no.* 1-2, 33–51. (Introduction) **93e:58176** 58G11 (53C20, 58G25)

Buttke, Thomas F. Turbulence and vortices in superfluid helium. *Vortex methods and vortex motion*, 171–193, *SIAM, Philadelphia, PA*, 1991. (*see* **93f:76078**) 76F99 (76A99, 76C05, 82D50)

Büttner, H. (*with* Huber, H.) On a classical constrained system and its quantum mechanical counterpart. (English summary) *J. Phys. A* **25** (1992), *no.* 18, L1111–L1118. (Summary) **93e:81064** 81S99 (70H05)

Buttu, Anna On the evolution operator for a class of nonautonomous abstract parabolic equations. (English summary) *J. Math. Anal. Appl.* **170** (1992), *no.* 1, 115–137. (Alessandra Lunardi) **93i:34106** 34G10 (34A12, 35R20, 47D06, 47N20)

— Hölder regularity in nonautonomous degenerate abstract parabolic equations. (English summary) *Rend. Sem. Mat. Univ. Padova* **87** (1992), 169–207. (J. A. Goldstein) **93i:34107** 34G10 (34A12, 47N20)

Buturović, E. Kazama-Suzuki models as shifted bosonic lattices. (English summary) *Lett. Math. Phys.* **25** (1992), *no.* 2, 103–109. (Eric J. Raiten) **93i:81213** 81T40 (22E65)

Butuzov, V. F. (*with* Kalachëv, L. V.) Asymptotic derivation of the ambipolar diffusion equation and boundary conditions in the physics of semiconductors. (Russian. English and Russian summaries) *Mat. Model.* **4** (1992), *no.* 8, 66–74. (Summary) **93k:35250** 35Q60

Butyrin, A. A. Solution of some inverse problems for second-order differential equations in a Banach space. (Russian. Russian summary) *Boundary value problems for operator-differential equations (Russian)*, 7–14, *Akad. Nauk Ukrainy, Inst. Mat., Kiev*, 1991. (Ioana Cioránescu) **93i:34108** 34G10 (34A55, 47D06)

Butzer, Paul L. (*with* Jongmans, François) Eugène Catalan and the rise of Russian science. (French summary) *Acad. Roy. Belg. Bull. Cl. Sci.* (6) **2** (1991), *no.* 1-3, 59–90. (Jeremy Gray) **93g:01037** 01A55

— (*with* Hauss, M.) Riemann zeta function: rapidly converging series and integral representations. *Appl. Math. Lett.* **5** (1992), *no.* 2, 83–88. (Jacek Fabrykowski) **93b:11106** 11M06 (11B73)

— (*with* Hauss, M.) Integral and rapidly converging series representations of the Dirichlet L-functions $L_1(s)$ and $L_{-4}(s)$. *Atti Sem. Mat. Fis. Univ. Modena* **40** (1992), *no.* 1, 329–359. (Matti Jutila) **93h:11095** 11M06

— *see also* **Theory and applications of Gibbs derivatives, 93k:42001**

Butzmann, H.-P. (*with* Schroder, Mark) Spaces making continuous convergence and locally uniform convergence coincide, their very weak P-property, and their topological behaviour. *Math. Scand.* **67** (1990), *no.* 2, 227–254. (Paul Bankston) **93b:54001** 54A05 (54A20, 54B30, 54C30, 54D45, 54G10)

Buyalo, S. V. Homotopy invariance of some geometric properties of three-dimensional manifolds of nonpositive curvature. (Russian) *Algebra i Analiz* **3** (1991), *no.* 4, 93–112; *translation in St. Petersburg Math. J.* **3** (1992), *no.* 4, 791–808. (Summary) **93i:57021** 57N10 (53C21)

Buyarov, V. S. Logarithmic asymptotics of polynomials that are orthogonal on **R** with nonsymmetric weight. (Russian) *Mat. Zametki* **50** (1991), *no.* 2, 28–36, 160; *translation in Math. Notes* **50** (1991), *no.* 1-2, 789–795 (1992). (Nikolai Bozhinov) **93b:42044** 42C15

Buys, A. (*with* Botha, S. G.) The annihilator in categories. *Chinese J. Math.* **19** (1991), *no.* 4, 295–308. (S. B. Niefield) **93b:18002** 18A05 (16U99, 18D35)

Buyske, Steven G. An algebraic representation of the affine Bäcklund transformation. (English summary) *Geom. Dedicata* **44** (1992), *no.* 1, 7–16. (Marek Antonowicz) **93m:53010** 53A15 (53A10, 58G37)

Buyvolova, A. G. (*with* Kolmanovskiĭ, V. B.; Koroleva, N. I.) The time optimal control of predator-prey system with intraspecific struggle. (English summary) *Differential equations (Plovdiv*, 1991), 59–70, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93i:49048** 49N55 (34C99, 34H05, 92D25)

Buza, M. K. (*with* Kan Sen Cher) On a normalized rank-free system in a residue code. (Russian. Russian summary) *Vestnik Beloruss. Gos. Univ. Ser. I Fiz. Mat. Mekh.* **1992**, *no.* 1, 64–66, 79. 94B60

Buzacott, John A. (*with* Liu, Xiao-Gao) The reversibility of cyclic queues. (English summary) *Oper. Res. Lett.* **11** (1992), *no.* 4, 233–241. (Gunter Ritter) **93k:68014** 68M20 (60K25, 90B22)

— (*with* Shanthikumar, J. George) Design of manufacturing systems using queueing models. (English summary) *Queueing Systems Theory Appl.* **12** (1992), *no.* 1-2, 135–213. (Summary) **93h:90041** 90B22 (90B10)

Bužek, Vladimír The Jaynes-Cummings model with a q analogue of a coherent state. *J. Modern Opt.* **39** (1992), *no.* 5, 949–959. (Summary) **93b:81315** 81V80 (81R30, 81R50)

Buzug, Th. (*with* Enge, N.; Pfister, Gerd) Noise reduction on chaotic attractors. (English summary) *Phys. Lett. A* **175** (1993), *no.* 3-4, 178–186. (Summary) **93k:58148** 58F13 (58F40, 65Q05)

Buzulina, T. I. (*with* Pasynkov, B. A.) Mappings that are complete in the sense of Dieudonné. (Russian) *Geometry of embedded manifolds (Russian)*, 95–98, "*Prometeĭ*", *Moscow*, 1989. (*see* **93g:53003**) 54C10

Byar, David Peery *see* **Freedman, Laurence S.**

Byatt-Smith, J. G. B. Solutions of the perturbed Korteweg-de Vries equation. (English summary) *Nonlinear dispersive wave systems (Orlando, FL*, 1991), 157–179, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93i:35120** 35Q53

Bychkov, S. A. (*with* Yur'ev, D. V.) Fubini-Veneziano fields in quantum projective field theory. (Russian) *Uspekhi Mat. Nauk* **46** (1991), *no.* 5(281), 161–162; *translation in Russian Math. Surveys* **46** (1991), *no.* 5, 185–186. (Raiko Zaikov) **93i:81159** 81T20 (17B65, 22E65)

— (*with* Plotnikov, S. V.; Yur'ev, D. V.) A fold of Verma modules over the Lie sl(2, **C**) algebra and hidden sl(3, **C**)-symmetries in quantum projective field theory. (Russian) *Uspekhi Mat. Nauk* **47** (1992), *no.* 3(285), 153; *translation in Russian Math. Surveys* **47** (1992), *no.* 3, 169. 17B10 (17B81)

Byczkowski, Tomasz On the density of log concave seminorms on vector spaces. *Studia Math.* **99** (1991), *no.* 2, 101–108. (Z. G. Gorgadze) **93b:60013** 60B11 (46A16, 60G15)

— (*with* Rajput, Balram S.) Tail behavior for semigroups of measures on groups. (English summary) *J. Theoret. Probab.* **5** (1992), *no.* 3, 537–544. (Wilfried Hazod) **93m:60021** 60B15 (60B11, 60B12, 60J30)

Byelousova, S. L. (*with* Lyubimov, D. V.) Onset of homoclinic chaos due to degeneracy in the spectrum of the saddle. (English summary) Homoclinic chaos (Brussels, 1991). *Phys. D* **62** (1993), *no.* 1-4, 317–322. (Summary) **93k:58154** 58F13 (34C37)

Byers, R. E. (*with* Hansell, R. I. C.; Madras, Neal) Stability-like properties of population models. (English summary) *Theoret. Population Biol.* **42** (1992), *no.* 1, 10–34. (Summary) **93e:92009** 92D25 (58F40)

Byers, Ralph (*with* Bunse-Gerstner, Angelika; Mehrmann, Volker) A chart of numerical methods for structured eigenvalue problems. *SIAM J. Matrix Anal. Appl.* **13** (1992), *no.* 2, 419–453. (Summary) **93b:65063** 65F15 (15A18, 65H10, 93B40)

Bykov, A. A. (*with* Sveshnikov, A. G.; Trubetskov, M. K.) Application of the incomplete Galerkin method for calculating eigenwaves in open wave guides. (Russian) *Mat. Model.* **3** (1991), *no.* 7, 111–123. (Summary) **93a:78001** 78–08 (65M60, 78A50)

Bykov, N. A. Smoothly versal deformations of structurally stable vector fields on the circle. (Russian) *Mat. Zametki* **49** (1991), *no.* 5, 26–31, 157; *translation in Math. Notes* **49** (1991), *no.* 5-6, 459–462. (From the text) **93c:58156** 58F14

Bykov, S. I. Conditions for asymptotic normality of the statistics μ_r in a multinomial scheme. (Russian) *Probabilistic processes and their applications (Russian)*, 66–68, *Moskov. Inst. Èlektron. Mashinostroeniya, Moscow*, 1989. (*see* **93b:60003**) 60C05 (60F05, 62E20)

Bykov, V. I. (*with* Verbitskiĭ, V. I.; Gorban', A. N.) On an estimate for the solution of the Cauchy problem with inexactly specified initial data and right-hand side. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* **1991**, *no.* 12, 5–8; *translation in Soviet Math. (Iz. VUZ)* **35** (1991), *no.* 12, 4–7. (From the text) **93j:34004** 34A12 (34A45, 34D10)

Bykov, V. V. The bifurcations of separatrix contours and chaos. (English summary) Homoclinic chaos (Brussels, 1991). *Phys. D* **62** (1993), *no.* 1-4, 290–299. (Bei Ye Feng) **93m:58080** 58F14 (34C23, 34C37, 58F13)

Bykovskiĭ, V. A. (*with* Vinogradov, A. I.) The mean value of Hecke series of parabolic forms, twisted with quadratic characters, on the critical line. (Russian) *Trudy Mat. Inst. Steklov.* **200** (1991), 57–74; *translation in Proc. Steklov Inst. Math.* **1993**, *no.* 2, 61–81. (Alexey A. Panchishkin) **93g:11046** 11F66 (11F37, 11F67)

Bylander, Tom The qualitative difference resolution rule. (English summary) *AAAI-91. Proceedings, Ninth National Conference on Artificial Intelligence, Vol.* 1, 2, 824–829, *AAAI Press, Menlo Park, CA*, 1991. (Summary) **93m:68150** 68T20

— Complexity results for serial decomposability. (English summary) *AAAI-92. Proceedings, Tenth National Conference on Artificial Intelligence (San Jose, CA*, 1992), 729–734, *Amer. Assoc. Artif. Intell., Menlo Park, CA*, 1992. (Summary) **93k:68042** 68Q25 (68Q15)

Byott, N. P. Toroidal block decompositions for Hopf orders in group algebras. *Proc. London Math. Soc.* (3) **65** (1992), *no.* 3, 449–473. (Ernst Kleinert) **93i:16051** 16W30

— *see also* **Taylor, M. J., 93f:11082**

Byrd, Richard H. (*with* Tapia, Richard A.; Zhang, Yin[1]) An SQP augmented Lagrangian BFGS algorithm for constrained optimization. *SIAM J. Optim.* **2** (1992), *no.* 2, 210–241. (Robert W. Owens) **93d:90059** 90C30 (49M37, 65K05)

— (*with* Liu, Dong C.; Nocedal, Jorge) On the behavior of Broyden's class of quasi-Newton methods. (English summary) *SIAM J. Optim.* **2** (1992), *no.* 4, 533–557. (Andreas Griewank) **93m:90076** 90C30 (65K05)

— (*with* Zhang, Xiaodong[1]; Schnabel, Robert B.) Parallel methods for solving nonlinear block bordered systems of equations. *SIAM J. Sci. Statist. Comput.* **13** (1992), *no.* 4, 841–859. (Summary) **93b:65076** 65H10 (65Y05)

— (*with* Khalfan, H. Fayez; Schnabel, Robert B.) A theoretical and experimental study of the symmetric rank-one update. (English summary) *SIAM J. Optim.* **3** (1993), *no.* 1, 1–24. (Summary) **93h:65087** 65K05 (90C30)

Byrdin, A. P. (*with* Borisovich, O. Yu.) The Fourier method for a boundary value problem on dynamic instability with a nonlinear integro-differential operator. I. (Russian) *Nonlinear operators in global analysis (Russian)*, 120–125, 163, *Novoe Global. Anal., Voronezh. Gos. Univ., Voronezh*, 1991. (Summary) **93c:65162** 65R20 (34K10, 65T10, 73F15, 73K12)

Byrne, C. C. (*with* Vaserstein, L. N.) An improved algorithm for finding saddlepoints of two-person zero-sum games. *Internat. J. Game Theory* **20** (1991), *no.* 2, 149–159. (Andrzej Cegielski) **93b:90113** 90D05 (65K05)

Byrne, Charles L. Effects of modal phase errors on eigenvector and nonlinear methods for source localization in matched-field processing. (English summary) *J. Acoust. Soc. Amer.* **92** (1992), *no.* 4, *part* 1, 2159–2164. 94A13

— (*with* Haughton, Dominique; Jiang, Jyh-Ming) High-resolution inversion of the discrete Poisson and binomial transformations. (English summary) *Inverse Problems* **9** (1993), *no.* 1, 39–56. (Michael J. Evans) **93k:62048** 62F10 (65R10, 65U05)

Byrnes, Christopher I. (*with* Jhemi, Ali) Shock waves for Riccati partial differential equations arising in nonlinear optimal control. *Systems, models and feedback: theory and applications (Capri*, 1992), 211–227, *Progr. Systems Control Theory*, 12, *Birkhäuser Boston, Boston, MA*, 1992. (Angelo Favini) **93e:49026** 49K20 (35B37, 93C20)

— (*with* Frankowska, Halina) Unicité des solutions optimales et absence de chocs pour les équations d'Hamilton-Jacobi-Bellman et de Riccati. (English and French summaries) [Uniqueness of optimal trajectories and the nonexistence of shocks for Hamilton-Jacobi-Bellman and Riccati PDE] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 4, 427–431. (E. N. Barron) **93h:49042** 49K40 (49K15, 49L20)

— (*with* Hu, Xiao Ming) The zero dynamics algorithm for general nonlinear systems and its application in exact output tracking. (English summary) *J. Math. Systems Estim. Control* **3** (1993), *no.* 1, 51–72. (Vladimir Veliov) **93i:93063** 93C10 (49J52, 93B03)

— (*with* Wang, Xiaochang) The additive inverse eigenvalue problem for Lie perturbations. (English summary) *SIAM J. Matrix Anal. Appl.* **14** (1993), *no.* 1, 113–117. (Dao Sheng Zheng) **93m:15023** 15A30

Byrnes, J. S. *see* **Probabilistic and stochastic methods in analysis, with applications, 93e:00029**

Byrnes, Jennifer L. *see* **Probabilistic and stochastic methods in analysis, with applications, 93e:00029**

Byrns, Edward V., Jr. (*with* Calise, Anthony J.) Loop transfer recovery approach to H_∞ design for the coupled mass benchmark problem. (English summary) *J. Guidance Control Dynamics* **15** (1992), *no.* 5, 1118–1124. 93B36

Byron, Augusta Ada *see* **Toole, Betty A., 93k:01093**

Byron, Frederick W., Jr. (*with* Fuller, Robert W.) ★ Mathematics of classical and quantum physics. Corrected reprint of the 1969 (Vol. 1) and 1970 (Vol. 2) originals. *Dover Publications, Inc., New York*, 1992. x+661 *pp. ISBN* 0-486-67164-X (Editors) **93h:00001** 00A05 (00A06)

Bystrova, O. K. Calculation of an integral with special functions and its application to the solution of systems of integral equations. (Russian) *Boundary value problems for nonclassical equations in mathematical physics (Russian) (Novosibirsk*, 1989), 89–94, *Akad. Nauk SSSR Sibirsk. Otdel., Inst. Mat., Novosibirsk*, 1989. (*see* **93d:35001**) 45G15

— Boundary value problems for partial differential equations in which, on the lines of degeneracy, a derivative with a weight and one without a weight are simultaneously conjugate. (Russian) *Classical and nonclassical problems for differential equations (Russian)*, 76–89, *Kuĭbyshev. Gos. Ped. Inst., Kuĭbyshev*, 1989. (R. G. Airapetyan) **93j:35114** 35L80 (35M10)

— (*with* Volkodavov, V. F.) An estimate and a uniqueness theorem for the solution of the Tricomi problem for a class of equations with degeneration of type and order. (Russian) *Nonclassical equations and equations of mixed type (Russian)*, 47–52, *Akad. Nauk SSSR Sibirsk. Otdel., Inst. Mat., Novosibirsk*, 1990. (*see* **93b:35002**) 35J70 (35B45)

— Construction by certain operators of fundamental solutions and Riemann functions. (Russian) *Boundary value problems for equations in mathematical physics (Russian)*, 57–59, *Kuĭbyshev. Gos. Ped. Inst., Kuĭbyshev*, 1991. (*see* **93f:35006**) 35A08

Byszewski, Ludwik Impulsive degenerate nonlinear parabolic functional-differential inequalities. *J. Math. Anal. Appl.* **164** (1992), *no.* 2, 549–559. (J. Milota) **93c:35086** 35K85 (35K65, 35R10)

— Finite systems of strong nonlinear differential-functional degenerate-implicit inequalities with first order partial derivatives. *Univ. Iagel. Acta Math. No.* 29 (1992), 75–84. (Bao Tong Cui) **93k:35265** 35R10 (35R45)

Bytner, S. (*with* Gambin, B.) Homogenization of heterogeneous elastic conductor in a magnetic field. (English summary) *J. Tech. Phys.* **33** (1992), *no.* 2, 219–223. 73R05 (73B27, 73K20, 78A25)

Byts', V. V. (*with* Zulunov, R. M.) Specification of levels of description of data types. (Russian) *Issled. Operatsii i ASU No.* 37 (1991), 83–89. (Bernhard Thalheim) **93h:68090** 68Q65 (68P05)

— (*with* Zulunov, R. M.) Reductional determination of problems in matrix algebra. (Russian) *Vychisl. Prikl. Mat. (Kiev) No.* 73 (1992), 116–126. (Summary) **93b:68035** 68Q40 (15A99)

Bytsenko, A. A. (*with* Likhttsier, I. M.; Odintsov, S. D.) Thermodynamic properties of open noncritical string in external electromagnetic field. *Acta Phys. Polon. B* **22** (1991), *no.* 9, 761–770. (Helmut Rumpf) **93a:81155** 81T30

— (*with* Goncharov, Yu. P.) Topological Casimir effect for a class of hyperbolic four-dimensional Clifford-Klein spacetimes. *Classical Quantum Gravity* **8** (1991), *no.* 10, L211–L214. (Summary) **93c:81254** 81T99

— (*with* Goncharov, Yu. P.) Evaluation of a class of the Laplace operator determinants connected with quantum geometry of p-branes. *Modern Phys. Lett. A* **6** (1991), *no.* 8, 669–675. (Akira Asada) **93b:58163** 58G26 (11F72, 81T30)

— (*with* Zerbini, Sergio) The Casimir effect for a class of hyperbolic $(D+1)$-dimensional spacetimes. *Classical Quantum Gravity* **9** (1992), *no.* 5, 1365–1370. (Derek Raine) **93i:83053** 83C47 (81T20)

— (*with* Vanzo, Luciano; Zerbini, Sergio) Massless scalar Casimir effect in a class of hyperbolic Kaluza-Klein space-times. *Modern Phys. Lett. A* **7** (1992), *no.* 5, 397–409. (Summary) **93i:81161** 81T20 (58G26, 81T16, 83E15)

— (*with* Vanzo, Luciano; Zerbini, Sergio) Zeta-function regularization approach to finite temperature effects in Kaluza-Klein space-times. (English summary) *Modern Phys. Lett. A* **7** (1992), *no.* 29, 2669–2683. (Summary) **93i:81160** 81T20 (58G26, 81T16)

— (*with* Vanzo, Luciano; Zerbini, Sergio) Zeta-function regularization for Kaluza-Klein finite temperature theories with chemical potentials. (English summary) *Phys. Lett. B* **291** (1992), *no.* 1-2, 26–31. (Alfred Actor) **93i:81162** 81T20 (58G26)

— (*with* Elizalde, E.; Odintsov, S. D.; Zerbini, Sergio) A finite temperature periodic structure in (super)string theory. (English summary) *Modern Phys. Lett. A* **8** (1993), *no.* 12, 1131–1138. (Summary) **93m:81113** 81T30

Byun, Dae Gyu (*with* Kwon, Wook Hyun; Choi, Hanhong; Noh, Seonbong) Recursive solution of generalized predictive control and its equivalence to receding horizon tracking control. (English summary) *Automatica J. IFAC* **28** (1992), *no.* 6, 1235–1238. (Summary) **93i:93056** 93B51 (93B40, 93D05)

Byun, Du-Won Inversions of Hermite semigroup. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 2, 437–445. (Introduction) **93g:47051** 47D03 (33C45, 46E99, 46G99, 47B38)

Byval'tsev, P. M. (*with* Ivanov, M. Ya.) A fast method for calculating three-dimensional transonic potential flows in turbomachine blade passages. (Russian. Russian summary) *Zh. Vychisl. Mat. i Mat. Fiz.* **32** (1992), *no.* 7, 1093–1113; *translation in Comput. Math. Math. Phys.* **32** (1992), *no.* 7, 977–994. (Summary) **93h:76054** 76M25 (76H05)

–C–

Cabada, Alberto (*with* Nieto, Juan J.) Existence of a solution for an integro-differential problem. (Spanish. English summary) *Proceedings of the XII Congress on Differential Equations and Applications/II Congress on Applied Mathematics (Spanish)* (*Oviedo*, 1991), 105–110, *Univ. Oviedo, Oviedo*, 1991. (Summary) **93j:45004** 45J05

Cabaleiro, J. C. (*with* Rivera, F. F.; Plata, O. G.; Zapata, E. L.) A parallel algorithm for Householder's tridiagonalization of a symmetric matrix. *Cybernet. Systems* **23** (1992), *no.* 3-4, 345–357. 65F05 (65Y05)

Cabanes, Marc (*with* Picaronny, Claudine) Types of blocks with dihedral or quaternion defect groups. *J. Fac. Sci. Univ. Tokyo Sect. IA Math.* **39** (1992), *no.* 1, 141–161. (Karin Erdmann) **93f:20014** 20C20

Cabannes, Henri On the initial value problem in discrete kinetic theory. (English summary) *Discrete models of fluid dynamics* (*Figueira da Foz*, 1990), 60–71, *Ser. Adv. Math. Appl. Sci.*, 2, *World Sci. Publishing, River Edge, NJ*, 1991. (Carlo Cercignani) **93m:82036a** 82C40 (76P05)

— Global solution of the discrete Boltzmann equation with multiple collisions. (English summary) *European J. Mech. B Fluids* **11** (1992), *no.* 4, 415–437. (Hassan Emamirad) **93g:82081** 82C40 (76P05)

— Solution of a discrete Boltzmann equation with triple collisions, for partially negative initial data. (English summary) Proceedings of the Fourth International Workshop on Mathematical Aspects of Fluid and Plasma Dynamics (Kyoto, 1991). *Transport Theory Statist. Phys.* **21** (1992), *no.* 4-6, 437–450. (Carlo Cercignani) **93m:82036b** 82C40 (76P05)

Cabay, Stan (*with* Labahn, George; Beckermann, Bernhard) On the theory and computation of nonperfect Padé-Hermite approximants. *J. Comput. Appl. Math.* **39** (1992), *no.* 3, 295–313. (Summary) **93c:65020** 65D15 (41A21)

— (*with* Labahn, George) A superfast algorithm for multidimensional Padé systems. *Numer. Algorithms* **2** (1992), *no.* 2, 201–224. (Summary) **93c:65019** 65D15 (41A21, 65Y20)

Cabello Piñar, Juan Carlos Containing l_1 or c_0 and best approximation. *Collect. Math.* **41** (1990), *no.* 3, 233–241 (1992). (T. S. S. R. K. Rao) **93c:46019** 46B20 (41A65)

— Good renormings in c_0. (Spanish. English summary) *Proceedings of the XVth Portuguese-Spanish Conference on Mathematics, Vol. II* (*Portuguese*) (*Évora*, 1990), 215–220, *Univ. Évora, Évora*, 1991. (Summary) **93b:46027** 46B20

Cabo, A. J. An elementary proof of the Ambartzumian-Pleijel identity. *Math. Proc. Cambridge Philos. Soc.* **112** (1992), *no.* 3, 535–538. (G. D. Chakerian) **93f:52007** 52A22

Cabos, William D. (*with* Shishkin, G. V.) Dirac equation in external fields: separation of variables in nondiagonal metrics. *J. Math. Phys.* **33** (1992), *no.* 1, 297–303. (Summary) **93b:81050** 81Q05

Caboz, Régis (*with* Gavrilov, Ljubomir Nedjalkov; Ouazzani-Jamil, Mohammed) Bifurcations des tores de Liouville du potentiel de Kolossoff $U = \rho + (1/\rho) - k\cos\varphi$. (English and French summaries) [Bifurcations of the Liouville tori of the Kolossoff potential $U = \rho + (1/\rho) - k\cos\varphi$] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 3, 289–294. (Summary) **93f:58167** 58F14 (58F05, 70E15, 70H05)

Cabral, H. E. On a question of A. Wintner about Jacobi coordinates in the three-body problem. *Celestial Mech. Dynam. Astronom.* **52** (1991), *no.* 4, 375–379. (From the text) **93d:70020** 70F07

Cabral, Isabel (*with* Silva, Fernando C.) Similarity invariants of completions of submatrices. *Linear Algebra Appl.* **169** (1992), 151–161. (Harald K. Wimmer) **93d:15018** 15A21

Cabral, J. J. S. P. (*with* Wrobel, L. C.; Montenegro, A. A. A.) A case study of saltwater intrusion in a long and thin aquifer. (English summary) *Boundary element technology, VII* (*Albuquerque, NM*, 1992), 135–149, *Comput. Mech., Southampton*, 1992. (*see* **93b:65002**) 76M15 (65N38)

Cabrales, Antonio (*with* Sobel, Joel) On the limit points of discrete selection dynamics. (English summary) *J. Econom. Theory* **57** (1992), *no.* 2, 407–419. (Summary) **93g:90018** 90A16 (90D40)

Cabras, A. (*with* Canarutto, D.) The system of principal connections. *Rend. Mat. Appl.* (7) **11** (1991), *no.* 4, 849–871. (Jaime Muñoz Masqué) **93b:53021** 53C05 (58A20)

— (*with* Vinogradov, A. M.) Extensions of the Poisson bracket to differential forms and multi-vector fields. *J. Geom. Phys.* **9** (1992), *no.* 1, 75–100. (Summary) **93d:17035** 17B70 (58F05)

Cabrelli, Carlos A. (*with* Molter, Ursula M.) Density of fuzzy attractors: a step towards the solution of the inverse problem for fractals and other sets. (English summary) *Probabilistic and stochastic methods in analysis, with applications* (*Il Ciocco*, 1991), 163–173, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 372, *Kluwer Acad. Publ., Dordrecht*, 1992. (Summary) **93i:58096** 58F12 (04A72)

— (*with* Forte, Bruno; Molter, Ursula M.; Vrscay, Edward R.) Iterated fuzzy set systems: a new approach to the inverse problem for fractals and other sets. (English summary) *J. Math. Anal. Appl.* **171** (1992), *no.* 1, 79–100. (Summary) **93j:28010** 28A80 (00A69, 04A72)

— (*with* Barahona, Francisco; Molter, Ursula M.) Computing the Hutchinson distance by network flows. (English summary) *Random Comput. Dynamics* **1** (1992/93), *no.* 1, 117–129. 90B15

Cabrera, Eliseo Antonio (*with* López, Luis M.) Historical development of the calculator. (Spanish) *Rev. Mat. Dominicana No.* 1-2 (1986), 1–20. 01A05 (68–03)

martín Cabrera, Francisco *see* **Martín Cabrera, Francisco**

Cabrera García, Miguel (*with* Martínez-Moreno, Juan; Rodríguez-Palacios, Ángel) Hilbert modules over H^*-algebras in relation with Hilbert ternary rings. (English summary) *Nonassociative algebraic models* (*Zaragoza*, 1989), 33–44, *Nova Sci. Publ., Commack, NY*, 1992. (P. Saworotnow) **93m:46064** 46K70 (17A40, 46H25)

— (*with* Martínez-Moreno, Juan; Rodríguez-Palacios, Ángel) Structurable H^*-algebras. *J. Algebra* **147** (1992), *no.* 1, 19–62. (Khristo N. Boyadzhiev) **93c:46105** 46K70 (17A30, 17A60)

Cabrerizo, José L. (*with* Fernández, Luis M.; Fernandez Andrés, Manuel) A classification of totally f-umbilical submanifolds of an S-manifold. *Soochow J. Math.* **18** (1992), *no.* 2, 211–221. (Liviu Ornea) **93e:53059** 53C40 (53C25)

Cabuk, Serafettin (*with* Springer, Melvin D.) Distribution identification, analysis and approximation via Mellin transforms. (English summary) *Amer. J. Math. Management Sci.* **12** (1992), *no.* 4, 321–350. 62E15

nguyên phuong Các *see* **Nguyên Phuong Các**

Caccetta, L. (*with* Vijayan, Kaipillil) Long cycles in subgraphs with prescribed minimum degree. *Discrete Math.* **97** (1991), *no.* 1-3, 69–81. (Felix Lazebnik) **93g:05078** 05C38

— (*with* Achuthan, N. R.; Caccetta, P.; Geelen, J. F.) Algorithms for the minimum weight spanning tree with bounded diameter problem. (English summary) *Optimization, Vol.* 1, 2 (*Singapore*, 1992), 297–304, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93d:90005**) 90C35

— (*with* Purwanto) Deficiencies of connected regular triangle free graphs. *Australas. J. Combin.* **5** (1992), 73–85. (Summary) **93a:05072** 05C35

— (*with* Budayasa, K.; Vijayan, Kaipillil) The characterization of edge-maximal critically k-edge connected graphs. *Australas. J. Combin.* **5** (1992), 179–207. (Theodore C. Enns) **93c:05059** 05C35 (05C40, 05C75)

— (*with* Mardiyono, S.) Premature sets of one-factors. *Australas. J. Combin.* **5** (1992), 229–252. (Jozef Širáň) **93h:05121** 05C70

— (*with* Achuthan, N. R.) Minimum weight spanning trees with bounded diameter. *Australas. J. Combin.* **5** (1992), 261–276. (Summary) **93a:05049** 05C05 (05C35)

— (*with* Anunchuen, N.) On critically k-extendable graphs. (English summary) *Australas. J. Combin.* **6** (1992), 39–65. (Charles H. C. Little) **93k:05125** 05C70 (05C75)

— (*with* Ananchuen, W.) Graphs with a prescribed adjacency property. (English summary) *Australas. J. Combin.* **6** (1992), 155–175. (Brian Alspach) **93k:05141** 05C75

— (*with* Smyth, W. F.) Graphs of maximum diameter. *Discrete Math.* **102** (1992), *no.* 2, 121–141. (W. G. Brown) **93g:05049** 05C12 (05C35, 05C40)

— (*with* Purwanto) Vertex clique covering numbers of r-regular $(r-2)$-edge-connected graphs. (English summary) *J. Combin. Math. Combin. Comput.* **12** (1992), 161–173. (Summary) **93h:05122** 05C70

— (*with* Purwanto) Deficiencies and vertex clique covering numbers of cubic graphs. (English summary) *Graphs, matrices, and designs*, 51–72, *Lecture Notes in Pure and Appl. Math.*, 139, *Dekker, New York*, 1993. (Summary) **93m:05147** 05C70

Caccetta, P. (*with* Achuthan, N. R.; Caccetta, L.; Geelen, J. F.) Algorithms for the minimum weight spanning tree with bounded diameter problem. (English summary) *Optimization, Vol.* 1, 2 (*Singapore*, 1992), 297–304, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93d:90005**) 90C35

Cáceres, Manuel O. (*with* San Miguel, M.; Hernández-García, E.; Colet, P.; De Pasquale, F.) Passage time description of dynamical processes. (English summary) *Instabilities and nonequilibrium structures, III* (*Valparaíso*, 1989), 143–155, *Math. Appl.*, 64, *Kluwer Acad. Publ., Dordrecht*, 1991. (Summary) **93c:58190** 58F30 (58F14)

— (*with* Briozzo, Carlos B.; Budde, Carlos E.; Osenda, Omar) Exact and asymptotic properties of multistate random walks. *J. Statist. Phys.* **65** (1991), *no.* 1-2, 167–182. (Cheng Xun Wu) **93c:60101** 60J15 (60K35, 82C41)

Cachafeiro López, Ma. Alicia (*with* Marcellán, F.) Perturbations in Toeplitz matrices. II. Asymptotic properties. *J. Math. Anal. Appl.* **156** (1991), *no.* 1, 44–51. (Summary) **93d:42025** 42C05

pérez-Cacho, Santiago *see* **Pérez-Cacho, Santiago**

Cacoullos, Theophilos Two LDF characterizations of the normal as a spherical distribution. *J. Multivariate Anal.* **40** (1992), *no.* 2, 205–212. (D. N. Shanbhag) **93f:60018** 60E05 (62E10, 62H10)

— (*with* Papathanasiou, V.) Lower variance bounds and a new proof of the central limit theorem. (English summary) *J. Multivariate Anal.* **43** (1992), *no.* 2, 173–184. (M. Sreehari) **93k:60046** 60E15 (60F05, 62E10)

Cadarso Suárez, Carmen (*with* González Manteiga, Wenceslao) Nonparametric inference with censored data. (Spanish. English summary) *Estadíst. Española* **33** (1991), *no.* 127, 325–362. 62G05

Cadavid, A. C. (*with* Nakashima, Martin M.) The star exponential and path integrals on compact groups. *Lett. Math. Phys.* **23** (1991), *no.* 2, 111–115. (Summary) **93h:81074** 81S40 (22E70, 43A77, 81T70)

Caddemi, S. (*with* Polizzotto, C.; Borino, G.; Fuschi, P.) Shakedown problems for material models with internal variables. *European J. Mech. A Solids* **10** (1991), *no.* 6, 621–639. (Z. Mróz) **93a:73031** 73E05 (73B30, 73E99)

Cade, R. Electrohydrostatic equilibrium and field solutions under space-charge conditions. (English summary) *IMA J. Appl. Math.* **49** (1992), *no.* 1, 1–13. (Summary) **93f:78004** 78A20 (78A25)

Čadek, Martin A note to pointwise transformations of linear quasi-differential equations. (English summary) *Arch. Math. (Brno)* **26** (1990), *no.* 1, 27–35. (Sergei Mazanik) **93i:34015** 34A30 (34C20)

— Pointwise transformations of linear differential equations. (English summary) *Arch. Math. (Brno)* **26** (1990), *no.* 4, 187–200. (Introduction) **93h:34016** 34A30 (34A26, 39B99)

Čadek, Ondřej (*with* Martinec, Zdeněk; Matyska, Ctirad) Spectral variational approach to the non-Newtonian Stokes problem in a spherical shell. (English summary) *Comput. Phys. Comm.* **71** (1992), *no.* 1-2, 56–70. (Bruce A. Finlayson) **93f:76002** 76A05 (65K10, 76D07, 86A60)

cavazos-Cadena, Rolando *see* **Cavazos-Cadena, Rolando**

Cadet, Alain Une unification des tests du maximum de vraisemblance de la loi normale multidimensionnelle. (English and French summaries) [A unification of maximum likelihood tests for the multivariate normal laws] *Ann. Économ. Statist.* **1991**, *no.* 24, 89–119. (A. L. Rukhin) **93g:62033** 62F03 (62A05, 62H15)

Cadilhac, M. (*with* Petit, R.) On the diffraction problem in electromagnetic theory: a discussion based on concepts of functional analysis including an example of practical application. *Huygens' principle* 1690–1990: *theory and applications* (*The Hague and Scheveningen*, 1990), 249–272, *Stud. Math. Phys.*, 3, *North-Holland, Amsterdam*, 1992. (Summary) **93a:35117** 35P25 (35Q60, 78A45)

Cadoli, Marco (*with* Eiter, Thomas; Gottlob, Georg) An efficient method for eliminating varying predicates from a circumscription. *Artificial Intelligence* **54** (1992), *no.* 3, 397–410. (Gerard R. Renardel de Lavalette) **93g:68125** 68T27 (03B60)

Cadoni, Mariano *see* **Wiltshire, David L., 93k:83052**

Cadzow, James A. Direction finding: a signal subspace approach. (English summary) *IEEE Trans. Systems Man Cybernet.* **21** (1991), *no.* 5, 1115–1124. 94A13

de Caen, D. The ranks of tournament matrices. *Amer. Math. Monthly* **98** (1991), *no.* 9, 829–831. (L. W. Beineke) **93a:05090** 05C50 (05C20)

— (*with* Gregory, David A.; Henson, Teresa D.; Lundgren, J. Richard; Maybee, John S.) Real rank as a bound for nonnegative integer rank. *J. Combin. Math. Combin. Comput.* **11** (1992), 47–53. (J. Sedláček) **93f:05061** 05C50

— (*with* Gregory, David A.; Kirkland, Stephen; Pullman, Norman J.; Maybee, John S.) Algebraic multiplicity of the eigenvalues of a tournament matrix. *Linear Algebra Appl.* **169** (1992), 179–193. (Qiao Li) **93b:05115** 05C50 (15A18)

— (*with* Kreher, Donald L.) The 3-hypergraphical Steiner quadruple systems of order twenty. (English summary) *Graphs, matrices, and designs*, 85–92, *Lecture Notes in Pure and Appl. Math.*, 139, *Dekker, New York*, 1993. (Charles J. Colbourn) **93m:05043** 05B30

— (*with* Kreher, Donald L.; Hobart, S. A.; Kramer, Earl S.; Radziszowski, Stanisław P.) The parameters 4-(12, 6, 6) and related t-designs. (English summary) *Australas. J. Combin.* **7** (1993), 3–20. (Summary) **93k:05020** 05B05

Caenepeel, S. Computing the Brauer-Long group of a Hopf algebra. II. The Skolem-Noether theory. (English summary) *J. Pure Appl. Algebra* **84** (1993), *no.* 2, 107–144. (F. DeMeyer) **93m:16026** 16W30 (13A20, 16S40)

le Caër, G. *see* **Le Caër, G.**

Caetano, António M. Weyl numbers in sequence spaces and sections of unit balls. *J. Funct. Anal.* **106** (1992), *no.* 1, 1–17. (Hermann König) **93b:46034** 46B25 (46B07, 47B06)

Cafagna, Vittorio Topological results on Fredholm maps and application to a superlinear differential equation. *Variational methods* (*Paris*, 1988), 53–59, *Progr. Nonlinear Differential Equations Appl.*, 4, *Birkhäuser Boston, Boston, MA*, 1990. (Enrique Outerelo Domínguez) **93m:58019** 58E05 (34B15, 47H15, 47N20)

vergara-Caffarelli, Giorgio *see* **Vergara-Caffarelli, Giorgio**

Caffarelli, Luis A. Regularity of solutions and level surfaces of elliptic equations. *American Mathematical Society centennial publications, Vol. II* (*Providence, RI*, 1988), 7–13, *Amer. Math. Soc., Providence, RI*, 1992. (*see* **93d:01002**) 35B65 (35J99)

— The regularity of mappings with convex potentials. *Partial differential equations and related subjects* (*Trento*, 1990), 53–58, *Pitman Res. Notes Math. Ser.*, 269, *Longman Sci. Tech., Harlow*, 1992. (*see* **93e:35004**) 35B65 (35J60)

— Boundary regularity of maps with convex potentials. *Comm. Pure Appl. Math.* **45** (1992), *no.* 9, 1141–1151. (S. K. Vodop'yanov) **93k:35054** 35B65 (35J65)

Caflisch, Russel E. Singularities for complex hyperbolic equations. (English summary) 1990 *lectures in complex systems* (*Santa Fe, NM*, 1990), 471–479, *Santa Fe Inst. Stud. Sci. Complexity Lectures, III, Addison-Wesley, Redwood City, CA*, 1991. (Summary) **93h:35007** 35A20 (35L80, 35Q99)

— (*with* Li, Xiao-Fan) Lagrangian theory for 3D vortex sheets with axial or helical symmetry. (English summary) Proceedings of the Fourth International Workshop on Mathematical Aspects of Fluid and Plasma Dynamics (Kyoto, 1991). *Transport Theory Statist. Phys.* **21** (1992), *no.* 4-6, 559–578. (Summary) **93h:76014** 76C05

Caginalp, G. (*with* Chadam, John M.) Stability of interfaces with velocity correction term. Current directions in nonlinear partial differential equations (Provo, UT, 1987). *Rocky Mountain J. Math.* **21** (1991), *no.* 2, 617–629. (Vasilios Alexiades) **93a:35155** 35R35 (35B35, 35K05, 80A22)

— (*with* Xie, Wei Qing) The transition between unbounded and bounded velocities in sharp interface models. *Free boundary problems involving solids* (*Montreal, PQ*, 1990), 110–116, *Pitman Res. Notes Math. Ser.*, 281, *Longman Sci. Tech., Harlow*, 1993. (*see* **93k:00037**) 35B40 (35R35, 80A22)

Cagliari, Francesca (*with* Mantovani, Sandra) Preservation of topological properties under exponentiation. (English summary) *Topology Appl.* **47** (1992), *no.* 2, 149–159. (T. Thrivikraman) **93k:54030** 54B30 (18B30, 54C35)

Caglioti, E. (*with* Lions, Pierre-Louis; Marchioro, Carlo; Pulvirenti, Mario) A special class of stationary flows for two-dimensional Euler equations: a statistical mechanics description. *Comm. Math. Phys.* **143** (1992), *no.* 3, 501–525. (Boguslaw Zegarlinski) **93i:82060** 82C40 (35Q30, 76F99, 76M99, 82B40)

Cahen, Benjamin (*with* Arnal, Didier; Cahen, Michel; Gutt, Simone) Une classe d'orbites coadjointes qui sont symplectomorphes à un fibré cotangent. (English summary) [A class of coadjoint orbits that are symplectomorphic to a cotangent bundle] *C. R. Acad. Sci. Paris Sér. I Math.* **312** (1991), *no.* 1, 127–130. (Alberto Medina) **93e:22021** 22E45 (58F05)

Cahen, Michel (*with* Ohn, Ch.) Bialgebra structures on the Heisenberg algebra. *Acad. Roy. Belg. Bull. Cl. Sci.* (5) **75** (1989), *no.* 10, 315–321. (Plamen Koshlukov) **93d:16048** 16W30 (17B05)

— (*with* Arnal, Didier; Gutt, Simone; Zahir, H.) A Moyal type * product on Hermitian symmetric spaces. (English summary) *Acad. Roy. Belg. Bull. Cl. Sci.* (6) **2** (1991), *no.* 1-3, 91–103. (Akira Yoshioka) **93i:81052** 81R05 (22E99, 81S99)

— (*with* Arnal, Didier; Cahen, Benjamin; Gutt, Simone) Une classe d'orbites coadjointes qui sont symplectomorphes à un fibré cotangent. (English summary) [A class of coadjoint orbits that are symplectomorphic to a cotangent bundle] *C. R. Acad. Sci. Paris Sér. I Math.* **312** (1991), *no.* 1, 127–130. (Alberto Medina) **93e:22021** 22E45 (58F05)

— (*with* Gutt, Simone; Rawnsley, John) Nonlinearizability of the Iwasawa Poisson Lie structure. *Lett. Math. Phys.* **24** (1992), *no.* 1, 79–83. (Alberto Medina) **93i:58050** 58F05

— (*with* Gutt, Simone; Rawnsley, John) Quantization of Kähler manifolds. II. (English summary) *Trans. Amer. Math. Soc.* **337** (1993), *no.* 1, 73–98. (Ivailo M. Mladenov) **93i:58063** 58F06 (32C17, 53C55, 81S10)

Cahen, Paul-Jean (*with* Ayache, Ahmed) Anneaux vérifiant absolument l'inégalité ou la formule de la dimension. (Italian summary) [Rings that absolutely satisfy the dimension inequality or formula] *Boll. Un. Mat. Ital. B* (7) **6** (1992), *no.* 1, 39–65. (Summary) **93c:13006** 13B02 (13C15)

— Integer-valued polynomials on a subset. *Proc. Amer. Math. Soc.* **117** (1993), *no.* 4, 919–929. (Jean-Luc Chabert) **93e:13011** 13B25 (13F20, 13G05)

Cahit, I. A problem in connection with equi-areal planar graphs. *Bull. Inst. Combin. Appl.* **7** (1993), 57–59. 05C10

Cahlon, Baruch (*with* Deutz, A.) On the numerical stability of Volterra integro-differential and integral equations. (English summary) *Computational and applied mathematics, II* (*Dublin*, 1991), 277–286, *North-Holland, Amsterdam*, 1992. (Summary) **93m:65182** 65R20 (45L05)

— Numerical solutions for functional integral equations with state-dependent delay. International Conference on the Numerical Solution of Volterra and Delay Equations (Tempe, AZ, 1990). *Appl. Numer. Math.* **9** (1992), *no.* 3-5, 291–305. (G. F. Miller) **93b:65207** 65R20 (65Q05)

— (*with* Schmidt, Darrell) Numerical solutions for functional integral equations. (English summary) *IMA J. Numer. Anal.* **12** (1992), *no.* 4, 527–543. (H. Brunner) **93k:65108** 65R20 (45L05)

samuel-Cahn, Ester *see* **Samuel-Cahn, Ester**

Cai, Bing Heng (*with* Zhang, Xiao Hong) Ring converse algebra equivalent system of the general ring. *Proceedings of the First China-Japan International Symposium on Ring Theory* (*Guilin*, 1991), 14–15, *Okayama Univ., Okayama*, 1992. (*see* **93k:16001**) 16S99

Cai, Cheng Wu (*with* Yang, Zong Lian) Finding the dynamic response of infinite periodic chain structures by using Fourier series. (Chinese. English and Chinese summaries) *Acta Sci. Natur. Univ. Sunyatseni* **31** (1992), *no.* 2, 1–6. 73K12 (34L10, 34L40, 73D30)

Cai, Da Yong (*with* Chu, De Lin) A stable algorithm for computing controllability related to "descriptor" systems. (Chinese. English summary) *J. Numer. Methods Comput. Appl.* **13** (1992), *no.* 2, 145–151. (Shuping Chen) **93k:93013** 93B05 (93B40)

— (*with* Chu, De Lin) A stable computation for controllability and R-controllability related to generalized systems. (Chinese. English summary) *J. Numer. Methods Comput. Appl.* **13** (1992), *no.* 3, 189–196. (Summary) **93j:93012** 93B05 (93B40)

— (*with* Chu, De Lin) A new algorithm for block-diagonal decentralized control. (Chinese. English and Chinese summaries) *Math. Appl.* **5** (1992), *no.* 4, 1–5. 93A14 (93B40)

Cai, DongSheng (*with* Itoh, Toshiaki) Fractal dimension and convergence property of recursively generated symplectic integrators. (English summary) *Phys. Lett. A* **171** (1992), *no.* 3-4, 189–198. (Christoph Bandt) **93j:58050** 58F05 (28A80, 70H05)

Cai, Guo Qiang (*with* Lin, Y. K.; Elishakoff, Isaac) A new approximate solution technique for randomly excited nonlinear oscillators. II. (English summary) *Internat. J. Non-Linear Mech.* **27** (1992), *no.* 6, 969–979. (Summary) **93g:70028** 70L05 (70–08)

Cai, Hai Tao On the periodic fundamental problems of a half plane with anisotropic elasticity. *Hunan Ann. Math.* **10** (1990), *no.* 1-2, 46–56. (Steen Krenk) **93a:73016** 73C02 (73B40, 73V35)

Cai, Hui Jing (*with* Wang, Jian) The analytic theory of quasifinitely generated groups. I. (Chinese. English summary) *Natur. Sci. J. Xiangtan Univ.* **12** (1990), *no.* 1, 1–7. (Dingyi Pei) **93a:11033a** 11F06 (11F75, 20F32)

— (*with* Wang, Jian) The analytic theory of quasifinitely generated groups. II. (Chinese. English summary) *Natur. Sci. J. Xiangtan Univ.* **12** (1990), *no.* 2, 1–12. (Dingyi Pei) **93a:11033b** 11F06 (11F75, 20F32)

Cai, J. (*with* Prentice, Ross L.) Covariance and survivor function estimation using censored multivariate failure time data. (English summary) *Biometrika* **79** (1992), *no.* 3, 495–512. (Moshe Shaked) **93j:62239** 62N05

Cai, Jian Simple filling discs of meromorphic functions. (Chinese. English summary) *Xiamen Daxue Xuebao Ziran Kexue Ban* **31** (1992), *no.* 2, 137–140. 30D30

Cai, Jiazhen (*with* Paige, R.; Tarjan, Robert Endre) More efficient bottom-up multi-pattern matching in trees. (English summary) Fifteenth Colloquium on Trees in Algebra and

Programming (CAAP '90) (Copenhagen, 1990). *Theoret. Comput. Sci.* **106** (1992), *no.* 1, 21–60. (Summary) **93g:68054** 68Q25 (68Q42)

Cai, Jin-Yi (*with* Condon, Anne; Lipton, Richard J.) On games of incomplete information. 7th Annual Symposium on Theoretical Aspects of Computer Science (STACS 90) (Rouen, 1990). *Theoret. Comput. Sci.* **103** (1992), *no.* 1, 25–38. (Akira Okada) **93h:90108** 90D05 (68Q10, 90D12, 90D46)

Cai, Jing Qiu (*with* Zhang, Ke Jun) An expansive Cooper transformation. (Chinese. English and Chinese summaries) *Xiamen Daxue Xuebao Ziran Kexue Ban* **31** (1992), *no.* 5, 474–476. 68N05

Cai, Kai Yuan (*with* Wen, Chuan Yuan; Zhang, Ming Lian) Fuzzy variables as a basis for a theory of fuzzy reliability in the possibility context. *Fuzzy Sets and Systems* **42** (1991), *no.* 2, 145–172. (Summary) **93a:90024** 90B25 (04A72)

— Parameter estimations of normal fuzzy variables. (English summary) *Fuzzy Sets and Systems* **55** (1993), *no.* 2, 179–185. 62F10 (04A72)

Cai, Leizhen (*with* Corneil, Derek G.) Tree spanners: an overview. (English summary) Proceedings of the Twenty-third Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, FL, 1992). *Congr. Numer.* **88** (1992), 65–76. (Summary) **93j:05037** 05C05 (68M10, 90B12)

— (*with* Corneil, Derek G.) On cycle double covers of line graphs. *Discrete Math.* **102** (1992), *no.* 1, 103–106. (Summary) **93b:05129** 05C70 (05C38)

Cai, Man-ping (*with* Lee, E. Bruce) Identification of linear systems using rational approximation techniques. (English summary) *Stochastic theory and adaptive control* (*Lawrence, KS*, 1991), 69–82, *Lecture Notes in Control and Inform. Sci.*, 184, *Springer, Berlin*, 1992. (*see* **93g:93007**) 93B30 (93E12)

Cai, Mao Cheng Covering two digraphs with arborescences. (English summary) *Systems Sci. Math. Sci.* **3** (1990), *no.* 3, 273–277. (Gui Zhen Liu) **93g:05110** 05C70 (05C20)

— Packing and covering with arborescences. *Systems Sci. Math. Sci.* **4** (1991), *no.* 4, 362–367. (Gerard J. Chang) **93b:05130** 05C70 (05C20)

— A remark on the number of vertices of degree k in a minimally k-edge-connected graph. *Discrete Math.* **104** (1992), *no.* 3, 221–226. (Rong Si Chen) **93d:05090** 05C40

Cai, Ning (*with* Brualdi, Richard A.; Pless, Vera S.) Orphan structure of the first-order Reed-Muller codes. *Discrete Math.* **102** (1992), *no.* 3, 239–247. (Summary) **93b:94021** 94B05

Cai, Qing Yu (*with* Zhang, Bo Yan; Yuan, Zeng Ren) The study of a new method for tracking maneuvering targets. (English and Chinese summaries) *Control Theory Appl.* **9** (1992), *no.* 3, 215–223. 93E11

Cai, Sui Lin (*with* Tang, Heng Sheng) Bifurcations of a class of equations for biochemical reactions. (Chinese. English summary) *Gaoxiao Yingyong Shuxue Xuebao* **6** (1991), *no.* 1, 145–158. (Summary) **93d:92017** 92E20 (34C23, 58F14, 58F21)

— Periodic solutions to a class of nonlinear equations with a forcing term. (Chinese. English summary) *Zhejiang Daxue Xuebao Ziran Kexue Ban* **25** (1991), *no.* 6, 613–621. (Qinghua Zheng) **93e:34058** 34C25 (34C15)

— (*with* Guo, Guang Yuan) Saddle values and limit cycles generated by separatrix of quadratic systems. *Proceedings of Asian Mathematical Conference*, 1990 (*Hong Kong*, 1990), 25–31, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93b:00022**) 34C05 (58F21)

Cai, Tian Xin On the additive completion of sets of integers. *Northeast. Math. J.* **7** (1991), *no.* 4, 470–472. (H. L. Abbott) **93b:11022** 11B75

— An estimate for the upper bound of the sum of the differences between consecutive primes. (Chinese. English summary) *J. Hangzhou Univ. Natur. Sci. Ed.* **19** (1992), *no.* 1, 34–41. (Wen-Bin Zhang) **93f:11066** 11N05

Cai, Wei (*with* Gottlieb, David; Harten, Ami) Cell averaging Chebyshev methods for hyperbolic problems. *Comput. Math. Appl.* **24** (1992), *no.* 5-6, 37–49. (Summary) **93c:65118** 65M70

— (*with* Gottlieb, David; Shu, Chi-Wang) On one-sided filters for spectral Fourier approximations of discontinuous functions. *SIAM J. Numer. Anal.* **29** (1992), *no.* 4, 905–916. (Summary) **93e:65021** 65D15 (42A10, 65T10)

— (*with* Shu, Chi-Wang) Uniform high-order spectral methods for one- and two-dimensional Euler equations. (English summary) *J. Comput. Phys.* **104** (1993), *no.* 2, 427–443. (Summary) **93i:76064** 76M25 (76L05, 76N15)

Cai, Xiao-Chuan Additive Schwarz algorithms for parabolic convection-diffusion equations. *Numer. Math.* **60** (1991), *no.* 1, 41–61. (Murli M. Gupta) **93a:65127** 65M60 (65M55, 76M10, 76M25, 76Rxx)

— (*with* Gropp, William D.; Keyes, David E.) A comparison of some domain decomposition algorithms for nonsymmetric elliptic problems. (English summary) *Fifth International Symposium on Domain Decomposition Methods for Partial Differential Equations* (*Norfolk, VA*, 1991), 224–235, *SIAM, Philadelphia, PA*, 1992. (Summary) **93h:65149** 65N55 (65-04)

— (*with* Xu, Jinchao) A preconditioned GMRES method for nonsymmetric or indefinite problems. *Math. Comp.* **59** (1992), *no.* 200, 311–319. (Summary) **93a:65059** 65F30 (65F10, 65F35, 65N30)

— An optimal two-level overlapping domain decomposition method for elliptic problems in two and three dimensions. (English summary) *SIAM J. Sci. Comput.* **14** (1993), *no.* 1, 239–247. (Summary) **93h:65150** 65N55

Cai, Y. S. (*with* Hang, Chang Chieh) An experimental study of a dual-rate autotuned pole-placement controller. (English summary) *Intelligent tuning and adaptive control* (*Singapore*, 1991), 265–269, *IFAC Sympos. Ser.*, 1991, *No.* 7, *Pergamon, Oxford*, 1991. (*see* **93i:93007**) 93B55

Cai, Yang (*with* Kong, M. C.) Generating all maximal cliques and related problems for certain perfect graphs. (English summary) Proceedings of the Twenty-third Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, FL, 1992). *Congr. Numer.* **90** (1992), 33–55. (Summary) **93j:05142** 05C85 (05C35, 68R10)

Cai, Yu Lin (*with* Xue, Wei Min[2]) Strongly Noetherian modules and rings. *Kobe J. Math.* **9** (1992), *no.* 1, 33–37. (André Leroy) **93k:16042** 16P40 (16L30)

Cai, Z.-S. (*with* Chicone, Carmen; King, P. D.; Forker, E. L.) A parameter identification problem arising from a model of canalicular bile formation. (English summary) *J. Math. Biol.* **31** (1993), *no.* 3, 273–289. (Summary) **93m:92010** 92C30 (34B15, 34C99)

Cai, Zhi Qiang (*with* E, Weinan) Hierarchical method for elliptic problems using wavelet. (English summary) *Comm. Appl. Numer. Methods* **8** (1992), *no.* 11, 819–825. (Summary) **93g:65144** 65N30

Cai, Zong Wu Remarks on the strong convergence of weighted sums of random variables. (Chinese. English summary) *Gaoxiao Yingyong Shuxue Xuebao* **6** (1991), *no.* 1, 44–51. (Summary) **93a:60045** 60F15

— Strong approximation of partial sums of independent random variables and generalized Erdős-Rényi laws of large numbers. (Chinese. English and Chinese summaries) *J. Hangzhou Univ. Natur. Sci. Ed.* **19** (1992), *no.* 3, 240–246. (Summary) **93h:60045** 60F15

— (*with* Roussas, George G.) Uniform strong estimation under α-mixing, with rates. (English summary) *Statist. Probab. Lett.* **15** (1992), *no.* 1, 47–55. (Noël Veraverbeke) **93h:62070** 62G05 (62G20)

— On complete convergence of nonparametric regression M-quantiles. (English summary) *Systems Sci. Math. Sci.* **5** (1992), *no.* 3, 227–232. (Margaret P. Gessaman) **93j:62089** 62G05

Caianiello, Eduardo R. (*with* Ceccarelli, Michele; Marinaro, Maria) Can spurious states be useful? *Complex Systems* **6** (1992), *no.* 1, 1–12. (Summary) **93c:68086** 68T05 (92B20)

— Quasi-local measures for finite part integrals. (English summary) *Math. Japon.* **37** (1992), *no.* 5, 803–812. (Zbigniew Grande) **93m:26016** 26A39 (26A42)

— Quantum and other physics as systems theory. *Riv. Nuovo Cimento* (3) **15** (1992), *no.* 4, 65 *pp.* (Helmut Rumpf) **93j:81010** 81P99 (81V99)

— A remark on neural nets. (English summary) *Math. Japon.* **38** (1993), *no.* 3, 415–417. 92B20

Caicedo, Xavier Compactness and normality in abstract logics. (English summary) *Ann. Pure Appl. Logic* **59** (1993), *no.* 1, 33–43. (Ana Pasztor) **93m:03062** 03C95

Cain, Bryan E. The kernel of the composition of two operators. *J. Math. Anal. Appl.* **170** (1992), *no.* 2, 472–476. (John Duncan) **93j:47001** 47A05

— (*with* de Sá, Eduardo Marques) The inertia of certain Hermitian skew-triangular block matrices. *Linear Algebra Appl.* **160** (1992), 75–85. (Carl Riehm) **93b:15024** 15A57 (11E39)

— (*with* de Sá, Eduardo Marques) The inertia of Hermitian matrices with a prescribed 2×2 block decomposition. (English summary) *Linear and Multilinear Algebra* **31** (1992), *no.* 1-4, 119–130. (Richard D. Hill) **93m:15027** 15A42

— (*with* Zaballa, Ion) The multiplicative matrix commutator equation $(A, X) = B$. *Portugal. Math.* **49** (1992), *no.* 2, 169–178. (Aurelian Gheondea) **93m:15019** 15A24

Cain, James (*with* Damnjanovic, Zlatan) On the weak Kleene scheme in Kripke's theory of truth. *J. Symbolic Logic* **56** (1991), *no.* 4, 1452–1468. (Henry Africk) **93d:03049** 03D35 (03B50, 03C62, 03C80, 03F40)

Caines, Peter E. (*with* Meyn, Sean P.) Mean exit times and rates of convergence for stochastic systems with applications to adaptive control. (English summary) *Adaptive systems in control and signal processing*, 1989 (*Glasgow*), 177–182, *IFAC Sympos. Ser.*, 1990, *No.* 1, *Pergamon, Oxford*, 1990. (*see* **93j:93007**) 93C40

— (*with* Wang, Suning) Automated reasoning with function evaluation for COCOLOG. *Control theory, stochastic analysis and applications* (*Hangzhou*, 1991), 59–78, *World Sci. Publishing, River Edge, NJ*, 1991. (*see* **93a:93005**) 68T27 (93C83)

— (*with* Nassiri-Toussi, K.) On the adaptive stabilization and ergodic behaviour of stochastic systems with jump-Markov parameters via nonlinear filtering. (English summary) *Identification and system parameter estimation* 1991, *Vol.* 1,2 (*Budapest*, 1991), 85–92, *IFAC Sympos. Ser.*, 3, *Pergamon, Oxford*, 1992. (*see* **93h:93009**) 93E35

— (*with* Wang, Suning) On a conditional observer and controller logic (COCOLOG) for finite machines and its automatic reasoning methodology. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, II* (*Kobe*, 1991), 49–54, *Mita, Tokyo*, 1992. (*see* **93g:93006**) 93C83 (68Q55)

— (*with* Nassiri-Toussi, K.) Adaptive jump-Markov systems, nonlinear filtering and invariant measures. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, I* (*Kobe*, 1991), 613–618, *Mita, Tokyo*, 1992. (*see* **93g:93005**) 93E11

— Recent results in stochastic adaptive control: nonexplosion, ε-consistency and stability. (English summary) *Stochastic theory and adaptive control* (*Lawrence, KS*, 1991), 83–92, *Lecture Notes in Control and Inform. Sci.*, 184, *Springer, Berlin*, 1992. (Summary) **93j:93156** 93E35 (93E14, 93E24)

— Continuous time stochastic adaptive control: nonexplosion, ε-consistency and stability. (English summary) *Systems Control Lett.* **19** (1992), *no.* 3, 169–176. (Wolfgang Kliemann) **93f:93147** 93E35 (62M05, 93E15)

Caira, R. (*with* Costabile, Francesco) An explicit sixth-order three-stage method for the Cauchy problem. (Italian. English summary) *Calcolo* **28** (1991), *no.* 1-2, 93–110 (1992). (A. de Castro Brzezicki) **93g:65092** 65L06

Cairns, Grant (*with* Banks, J.; Brooks, Jeff; Davis, Gary Ernest; Stacey, P. J.) On Devaney's definition of chaos. *Amer. Math. Monthly* **99** (1992), *no.* 4, 332–334. (J. E. Keesling) **93d:54059** 54H20 (58F13)

— (*with* Özdemir, Mehmet; Tjaden, Ekkehard-H.) A counterexample to a conjecture of U. Pinkall. *Topology* **31** (1992), *no.* 3, 557–558. (Ivan Sterling) **93d:53004** 53A04

Cairó, L. (*with* Feix, M. R.) Families of invariants of the motion for the Lotka-Volterra equations: the linear polynomials family. *J. Math. Phys.* **33** (1992), *no.* 7, 2440–2455. (J. M. Cushing) **93e:92010** 92D25 (34C05, 34C99)

— (*with* Feix, M. R.) On the Hamiltonian structure of 2D ODE possessing an invariant. (English summary) *J. Phys. A* **25** (1992), *no.* 23, L1287–L1293. (Summary) **93i:34014** 34A26 (34C99, 58F05)

de la Cal, Jesús (*with* Luquín Martínez, Francisco) A note on limiting properties of some Bernstein-type operators. *J. Approx. Theory* **68** (1992), *no.* 3, 322–329. (Dinh Dung) **93a:41039** 41A36 (41A25)

Calabi, Eugenio (*with* Cao, Jian Guo) Simple closed geodesics on convex surfaces. (English summary) *J. Differential Geom.* **36** (1992), *no.* 3, 517–549. (Gudlaugur Thorbergsson) **93h:53039** 53C22 (58E10)

Calabrese, Philip G. Deduction and inference using conditional logic and probability. *Conditional logic in expert systems*, 71–100, *North-Holland, Amsterdam*, 1991. (Lawrence Sklar) **93a:03019** 03B48 (03B50, 68T27)

Calabria, R. (*with* Guida, M.; Pulcini, G.) Power bounds for a test of equality of trends in k independent power law processes. (English summary) *Comm. Statist. Theory Methods* **21** (1992), *no.* 11, 3275–3290. 62F03

— (*with* Pulcini, G.) Bayes probability intervals in a load-strength model. (English summary) *Comm. Statist. Theory Methods* **21** (1992), *no.* 12, 3393–3405. 62N05 (62F15)

Calahan, Rebecca (*with* Gardner, Robert B.) A special case of bicyclic Steiner triple systems. (English summary) Proceedings of the Twenty-third Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, FL, 1992). *Congr. Numer.* **88** (1992), 77–80. (Summary) **93j:05016** 05B07

Calamai, Paul H. (*with* Vicente, Luis N.; Júdice, Joaquím J.) Generation of disjointly constrained bilinear programming test problems. (English summary) *Comput. Optim. Appl.* **1** (1992), *no.* 3, 299–306. (R. Tichatschke) **93k:90088** 90C30 (90C20, 90C26)

Cala Rodriguez, Francisco (*with* Wallin, Hans) Padé-type approximants and a summability theorem by Eiermann. *J. Comput. Appl. Math.* **39** (1992), *no.* 1, 15–21. (H.-J. Runckel) **93f:30041** 30E10 (41A20, 41A21)

Calbeck, William S. L^p function decomposition on C^∞ totally real submanifolds of $\mathbf{C}^n$. *Proc. Amer. Math. Soc.* **117** (1993), *no.* 1, 187–194. (Andrei Iordan) **93c:32007** 32A40 (32D99)

Caldas Cueva, Miguel On a characterization of holomorphically σ^∞-barrelled spaces. *C. R. Acad. Bulgare Sci.* **45** (1992), *no.* 1, 11–12. (Richard M. Aron) **93i:46007** 46A08 (46G20)

Calderbank, A. R. (*with* Blokhuis, Aart; Metsch, Klaus; Seress, Ákos) An embedding theorem for partial linear spaces. *Advances in finite geometries and designs* (*Chelwood Gate*, 1990), 35–46, *Oxford Sci. Publ., Oxford Univ. Press, New York*, 1991. (F. D. Veldkamp) **93b:51010** 51E14 (05B25, 94B05)

— (*with* Blokhuis, Aart) Quasi-symmetric designs and the Smith normal form. *Des. Codes Cryptogr.* **2** (1992), *no.* 2, 189–206. (Vladimir D. Tonchev) **93e:05016** 05B30

— Covering machines. (English summary) A collection of contributions in honour of Jack van Lint. *Discrete Math.* **106/107** (1992), 105–110. (Summary) **93j:94027** 94B05 (94B15)

— (*with* Pottie, G. J.) Upper bounds for small trellis codes. (English summary) *IEEE Trans. Inform. Theory* **38** (1992), *no.* 6, 1791–1795. (Summary) **93g:94018** 94B12 (94B65)

— Covering bounds for codes. *J. Combin. Theory Ser. A* **60** (1992), *no.* 1, 117–122. (Summary) **93a:94040** 94B65

— (*with* Delsarte, Philippe) On error-correcting codes and invariant linear forms. (English summary) *SIAM J. Discrete Math.* **6** (1993), *no.* 1, 1–23. (Ian Blake) **93m:94025** 94B05 (05B05)

— (*with* Delsarte, Philippe) Extending the t-design concept. *Trans. Amer. Math. Soc.* **338** (1993), *no.* 2, 941–952. (Sylvia A. Hobart) **93j:05169** 05E30 (05B05, 33C45)

Calderer, Maria Carme On the mathematical modeling of textures in polymeric liquid crystals. (English summary) *Nematics* (*Orsay*, 1990), 25–36, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 332, *Kluwer Acad. Publ., Dordrecht*, 1991. (Summary) **93f:58058** 58E50 (58E12, 76A15, 82D30)

Caldero, Philippe Éléments ad-finis de certains groupes quantiques. (English and French summaries) [ad-finite elements of certain quantum groups] *C. R. Acad. Sci. Paris Sér. I Math.* **316** (1993), *no.* 4, 327–329. (Summary) **93m:17008** 17B37

Calderón, A. P. (*with* Stein, Elias M.) Antoni Zygmund: 1900–1992. *Notices Amer. Math. Soc.* **39** (1992), *no.* 8, 848–849. (Editors) **93g:01057b** 01A70

Calderón, C. *see* **Calderón, Catalina**

Calderón, Calixto P. (*with* Kwembe, Tor A.) Diverse ideas in modeling tumor growth. (English and Spanish summaries) *Acta Cient. Venezolana* **43** (1992), *no.* 2, 64–75. (Summary) **93h:92019** 92C50

— Initial values of solutions of the Navier-Stokes equations. *Proc. Amer. Math. Soc.* **117** (1993), *no.* 3, 761–766. (Michael Wiegner) **93d:35111** 35Q30

Calderón, Catalina Sums in arithmetical progressions for the functions $\Lambda^*_{k,t}$, $k, t \geq 1$. (Spanish) *Proceedings of the Congress on Number Theory* (*Spanish*) (*Zarauz*, 1984), 148–162, *Univ. País Vasco-Euskal Herriko Unib., Bilbao*, 1989. (Gérald Tenenbaum) **93m:11096** 11N37 (11N69)

— *see also* **Proceedings: Congress on Number Theory, 93h:11002**

gomez-Calderon, Javier *see* **Gomez-Calderon, Javier**

rzedowski Calderón, Martha *see* **Rzedowski Calderón, Martha**

Calderón García, Catalina *see* **Calderón, Catalina**

Caldi, D. G. Classical SU(2) invariance of quantum SU(2)-invariant Hamiltonians. (English summary) *Nonperturbative methods in low-dimensional quantum field theories* (*Debrecen*, 1990), 353–363, *World Sci. Publishing, River Edge, NJ*, 1991. (Summary) **93h:82006** 82B20 (17B37, 81R50, 82B23)

Caldwell, Chris A generalization of a result of Hurwitz and Mordell on the torsion subgroups of certain elliptic curves. *Rocky Mountain J. Math.* **22** (1992), *no.* 1, 93–108. (Philippe Satgé) **93e:11071** 11G05

Caldwell, James Variational-iterative schemes as applied to the nonlinear Burgers' equation. *Proceedings of Asian Mathematical Conference*, 1990 (*Hong Kong*, 1990), 32–39, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93b:00022**) 65K10 (65N99)

Cale, T. S. (*with* Merson, J. A.) Comparison of a direct method for inverting Fredholm equations of the first kind with the method of regularization. (English summary) *Integral methods in science and engineering*—90 (*Arlington, TX*, 1990), 147–157, *Ser. Comput. Phys. Process. Mech. Thermal Sci., Hemisphere, New York*, 1991. (*see* **93f:00014**) 65R20

hayek Calil, Nácere *see* **Hayek Calil, Nácere**

Calise, Anthony J. (*with* Byrns, Edward V., Jr.) Loop transfer recovery approach to H_∞ design for the coupled mass benchmark problem. (English summary) *J. Guidance Control Dynamics* **15** (1992), *no.* 5, 1118–1124. 93B36

Çalişkan, Ali The relation among Blaschke vectors of ruled surfaces on a line congruence and its consequences. (English and Turkish summaries) *Comm. Fac. Sci. Univ. Ankara Ser. A_1 Math. Statist.* **38** (1989), *no.* 1-2, 77–85 (1990). (Josef Vala) **93m:53014** 53A25

— Straight line congruence strip. (English summary) *Proceedings of the 3rd Congress of Geometry* (*Thessaloniki*, 1991), 130–135, *Aristotle Univ. Thessaloniki, Thessaloniki*, 1992. (Hellmuth Stachel) **93j:53015** 53A25

Çalışkan, Mustafa (*with* Hacısalihoğlu, H. Hilmi) On the pair of generalized ruled surfaces under the homothetic motions of E^n. (English summary) *Comm. Fac. Sci. Univ. Ankara Ser. A_1 Math. Statist.* **38** (1989), *no.* 1-2, 95–102 (1990). (Josef Vala) **93m:53015** 53A25

— (*with* Kuruoğlu, Nuri) On the pair of konoidal axoids. (English summary) *Pure Appl. Math. Sci.* **36** (1992), *no.* 1-2, 7–13. (Thomas Hasanis) **93j:53003** 53A07 (53A25)

Calisto, H. (*with* Cerda, E.; Tirapegui, Enrique) Comment on: "Noise and bifurcations" [J. Statist. Phys. **50** (1988), no. 1-2, 345–375; MR 89b:58156] by C. Meunier and A. D. Verga. (English summary) *J. Statist. Phys.* **69** (1992), *no.* 5-6, 1115–1122. (Summary) **93j:58095** 58F14 (58F13, 58F30, 70L05, 82C31)

Calkin, Neil J. (*with* Frieze, A. M.; McKay, Brendan D.) On subgraph sizes in random graphs. (English summary) *Combin. Probab. Comput.* **1** (1992), *no.* 2, 123–134. (E. M. Palmer) **93g:05122** 05C80

— (*with* Frieze, A. M.; Kučera, L.) On the expected performance of a parallel algorithm for finding maximal independent subsets of a random graph. *Random Structures Algorithms* **3** (1992), *no.* 2, 215–221. (Summary) **93d:68027** 68Q22 (05C80, 05C85, 68R10)

Callan, Curtis G., Jr. (*with* Harvey, Jeffrey A.; Strominger, Andrew) Worldbrane actions for string solitons. *Nuclear Phys. B* **367** (1991), *no.* 1, 60–82. (Raiko Zaikov) **93b:81205** 81T30

— (*with* Freed, Denise) Phase diagram of the dissipative Hofstadter model. *Nuclear Phys. B* **374** (1992), *no.* 3, 543–566. (Summary) **93e:81146** 81V10 (81T30)

Callaway, H. G. Logic acquisition, usage and semantic realism. *Erkenntnis* **37** (1992), *no.* 1, 65–92. (Dale Jacquette) **93i:03004** 03A05

Callier, Frank M. (*with* Winkin, J.) On the computation of an LQ-optimal gain by approximate spectral factorization. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, I* (*Kobe*, 1991), 133–138, *Mita, Tokyo*, 1992. (*see* **93g:93005**) 93C25 (49N10)

— (*with* Willems, Jacques L.) Divergence of the stationary Kalman filter for correct and for incorrect noise variances. (English summary) *IMA J. Math. Control Inform.* **9** (1992), *no.* 1, 47–54. (Michael Kohlmann) **93f:93130** 93E11

Calogero, Francesco Why are some systems of partial differential equations simultaneously broadly applicable and integrable? (Russian) *Integrability and kinetic equations for solitons* (*Russian*), 65–116, "*Naukova Dumka*", *Kiev*, 1990. (B. G. Konopel'chenko) **93e:35101** 35Q55 (35Q58, 58F07)

— (*with* Ji, Xiao Da) C-integrable nonlinear PDEs. II. *J. Math. Phys.* **32** (1991), *no.* 10, 2703–2717. (Theodosios Christodoulakis) **93b:58064** 58F07 (35Q58, 58F37)

— Some recent findings on nonlinear evolution equations and dynamical systems. (English summary) *Nonlinear evolution equations and dynamical systems* (*Baia Verde*, 1991), 253–259, *World Sci. Publishing, River Edge, NJ*, 1992. (Vadim G. Bakurov) **93m:58047** 58F07 (35Q58)

— (*with* Françoise, Jean-Pierre) Integrable dynamical systems obtained by duplication. (English and French summaries) *Ann. Inst. H. Poincaré Phys. Théor.* **57** (1992), *no.* 2, 167–181. (Tudor S. Raţiu) **93k:58109** 58F07 (70H05)

Caltagirone, Jean-Paul (*with* Angot, Philippe; Khadra, Khodor) Une méthode adaptative de raffinement local: la correction du flux à l'interface. (English and French summaries) [An adaptative method for local mesh refinement: the flux interface correction] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 6, 739–745. 65N55

Calucci, Giorgio Casimir effect for moving bodies. *J. Phys. A* **25** (1992), *no.* 13, 3873–3882. (Summary) **93c:81107** 81T10 (81V10)

Călugăreanu, Grigore G. Socle and radical as pure subgroups of abelian groups. *Mathematica* (*Cluj*) **33(56)** (1991), *no.* 1-2, 17–19. (From the text) **93f:20069** 20K27

Calvert, Bruce (*with* Fitzpatrick, Simon) Sets invariant under projections onto one-dimensional subspaces. *Comment. Math. Univ. Carolin.* **32** (1991), *no.* 2, 227–232. (A. G. Netrebin) **93e:46009a** 46A55 (52A07)

— (*with* Fitzpatrick, Simon) Sets invariant under projections onto two-dimensional subspaces. *Comment. Math. Univ. Carolin.* **32** (1991), *no.* 2, 233–239. (A. G. Netrebin) **93e:46010** 46A55 (46C15, 52A07)

— (*with* Fitzpatrick, Simon) Correction: "Sets invariant under projections onto one-dimensional subspaces". *Comment. Math. Univ. Carolin.* **33** (1992), *no.* 1, 182. (A. G. Netrebin) **93e:46009b** 46A55 (52A07)

Calvert, Randall L. (*with* Banks, Jeffrey S.) A battle-of-the-sexes game with incomplete information. *Games Econom. Behav.* **4** (1992), *no.* 3, 347–372. (Summary) **93c:90119** 90D40

Calvet, Jean-Paul (*with* Arkun, Yaman) Robust stabilization of input/output linearizable systems under uncertainty and disturbances. (English summary) *AIChE J.* **38** (1992), *no.* 8, 1145–1156. 93D15 (93B36)

Calvetti, Daniela Roundoff error for floating point representation of real data. *Comm. Statist. Theory Methods* **20** (1991), *no.* 8, 2687–2695. (Evdokia Xekalaki) **93d:62031** 62E99 (65C20)

— (*with* Reichel, Lothar) A Chebyshev-Vandermonde solver. Second NIU Conference on Linear Algebra, Numerical Linear Algebra and Applications (DeKalb, IL, 1991). *Linear Algebra Appl.* **172** (1992), 219–229. (Summary) **93c:65039** 65F05 (65Y10)

— A stochastic roundoff error analysis for the convolution. *Math. Comp.* **59** (1992), *no.* 200, 569–582. (Summary) **93a:65061** 65G05 (44A35, 65T20)

Calvin, James A. (*with* Dykstra, Richard L.) A note on maximizing a special concave function subject to simultaneous Loewner order constraints. (English summary) *Linear Algebra Appl.* **176** (1992), 37–44. (Summary) **93e:90057** 90C30 (62F30)

Calvo, C. (*with* Palacios, M.) Quaternions and numerical orbit computation. (English summary) *Rev. Acad. Cienc. Zaragoza* (2) **47** (1992), 169–181. 70F05 (70–08)

Calvo, Guillermo A. (*with* Guidotti, Pablo E.) Optimal maturity of nominal government debt: an infinite-horizon model. (English summary) *Internat. Econom. Rev.* **33** (1992), *no.* 4, 895–919. 90A53 (90A60)

Calvo, M. *see* **Calvo Pinilla, Manuel**

Calvo, M. P. *see* **Calvo Pinilla, Manuel**

Calvo, Tomasa On fuzzy similarity relations. *Fuzzy Sets and Systems* **47** (1992), *no.* 1, 121–123. 04A72

— On mixed De Morgan triplets. (English summary) *Fuzzy Sets and Systems* **50** (1992), *no.* 1, 47–50. (Summary) **93h:04002** 04A72

Calvo Pinilla, Manuel Characterization of symplectic Runge-Kutta-Nyström methods. (Spanish) *Proceedings of the XII Congress on Differential Equations and Applications/II Congress on Applied Mathematics* (*Spanish*) (*Oviedo*, 1991), 111–115, *Univ. Oviedo, Oviedo*, 1991. (Siegfried Filippi) **93m:65100** 65L06 (58F05, 70–08, 70H05)

— (*with* Sanz-Serna, J. M.) Variable steps for symplectic integrators. *Numerical analysis* 1991 (*Dundee*, 1991), 34–48, *Pitman Res. Notes Math. Ser.*, 260, *Longman Sci. Tech., Harlow*, 1992. (*see* **93b:65005**) 65L06 (58F05, 70–08, 70H05)

— (*with* Sanz-Serna, J. M.) Order conditions for canonical Runge-Kutta-Nyström methods. (English summary) *BIT* **32** (1992), *no.* 1, 131–142. (Siegfried Filippi) **93m:65101** 65L06 (58F05, 70–08, 70H05)

— (*with* Montijano, J. I.; Rández, L.) A_0-stability of variable stepsize BDF methods. (English summary) *J. Comput. Appl. Math.* **45** (1993), *no.* 1-2, 29–39. (Summary)

93j:65125 65L20
— (*with* Montijano, J. I.; Rández, L.) On the change of step size in multistep codes. (English summary) *Numer. Algorithms* **4** (1993), *no.* 3, 283–304. (Summary) **93m:65085** 65L05
herranz Calzada, J. *see* **Herranz Calzada, J.**
Calzada Canalejo, M. C. (*with* Cruz Soto, J. L.; Marín Beltrán, M.; Fernández Cara, Enrique) Positivity of k and ε in the k-ε turbulence model. (Spanish) *Proceedings of the XII Congress on Differential Equations and Applications/II Congress on Applied Mathematics (Spanish) (Oviedo,* 1991), 405–408, *Univ. Oviedo, Oviedo,* 1991. (*see* **93j:00009**) 76F05
— (*with* Cruz Soto, J. L.; Marín Beltrán, M.; Fernández Cara, Enrique) A parallel algorithm for solving the incompressible Navier-Stokes problem. (English summary) *Comput. Math. Appl.* **25** (1993), *no.* 9, 51–58. 65M99 (65Y05, 76D05, 76M25)
— (*with* Song, Yu) A numerical algorithm for flame advection and propagation. (English summary) *Math. Comput. Simulation* **35** (1993), *no.* 1, 79–92. (Summary) **93h:65125** 65M99 (80–08, 80A25)
Calzetta, Esteban A necessary and sufficient condition for convergence to equilibrium in Kolmogorov systems. *J. Math. Phys.* **32** (1991), *no.* 10, 2903–2906. (From the introduction) **93d:82050** 82C05
li Calzi, M. *see* **Li Calzi, M.**
Camacho, César Problems on limit sets of foliations on complex projective spaces. *Proceedings of the International Congress of Mathematicians, Vol. I, II (Kyoto,* 1990), 1235–1239, *Math. Soc. Japan, Tokyo,* 1991. (V. M. Zakalyukin) **93j:32039** 32L30
— (*with* Lins Neto, A.; Sad, P.) Foliations with algebraic limit sets. *Ann. of Math.* (2) **136** (1992), *no.* 2, 429–446. (Dominique Cerveau) **93i:32035** 32L30
Camacho, E. F. Constrained generalized predictive control. (English summary) *IEEE Trans. Automat. Control* **38** (1993), *no.* 2, 327–332. 93C05 (90C33, 93C30)
Camacho, M. *see* **Camacho Machín, M.**
Camacho, Maria Izabel Tavares Genericity of hyperbolic homogeneous vector fields in $\mathbf{R}^3$. *J. Differential Equations* **97** (1992), *no.* 2, 288–309. (V. M. Zakalyukin) **93i:58085** 58F09 (58F14)
Camacho Machín, M. (*with* González-Vera, Pablo; Pérez-Acosta, Francisco) Quadratures on the unit circle: algebraic aspects. (Spanish. English summary) *Rev. Acad. Canaria Cienc.* **1** (1990), 55–66. (Guillermo López Lagomasino) **93e:41039** 41A55 (65D32)
Camarda, Pietro (*with* Gerla, Mario) Design and analysis of fault-tolerant multibus interconnection networks. (English summary) *Discrete Appl. Math.* **37/38** (1992), 45–64. 94C12 (68M15)
Camargo, José Luíz Corrêa Some results on fixed points in a Cartesian product. *Nonlinear Anal.* **19** (1992), *no.* 3, 201–205. 54H25
Camargo, S. J. (*with* Tasso, H.) On the nonlinear stability of dissipative fluids. (English summary) *Nuovo Cimento B* (11) **107** (1992), *no.* 7, 733–740. (Summary) **93f:76049** 76E30 (76E25)
— (*with* Tasso, H.) Renormalization group in magnetohydrodynamic turbulence. *Phys. Fluids B* **4** (1992), *no.* 5, 1199–1212. (Summary) **93b:76047** 76F99 (76W05)
Camassa, Roberto Multiple stationary solutions for the forced KdV equation. *Engineering science, fluid dynamics (Pasadena, CA,* 1989), 45–58, *World Sci. Publishing, River Edge, NJ,* 1990. (Summary) **93a:76011** 76B15 (35Q35)
— (*with* Wu, Theodore Y.) Stability of forced steady solitary waves. *Philos. Trans. Roy. Soc. London Ser. A* **337** (1991), *no.* 1648, 429–466. (E. Infeld) **93a:76046** 76E99 (35Q53, 76–04, 76B25, 76E30)
— (*with* Forest, M. Gregory; Knapp, Robert) Enhancement of optical bistability by periodic layering. *Nonlinearity* **5** (1992), *no.* 3, 721–742. (Summary) **93b:78014** 78A60
— (*with* Holm, Darryl D.) Dispersive barotropic equations for stratified mesoscale ocean dynamics. (English summary) Experimental mathematics: computational issues in nonlinear science (Los Alamos, NM, 1991). *Phys. D* **60** (1992), *no.* 1-4, 1–15. (Radyadour Kh. Zeytounian) **93j:76061** 76U05 (76V05, 86A05)
Cambanis, Stamatis (*with* Miamee, A. G.) On prediction of harmonizable stable processes. (English summary) *Sankhyā Ser. A* **51** (1989), *no.* 3, 269–294. (Summary) **93c:60058** 60G25 (42A50, 60G10)
— Random filters which preserve the normality of nonstationary random inputs. (English summary) *Nonstationary stochastic processes and their applications (Hampton, VA,* 1991), 219–237, *World Sci. Publishing, River Edge, NJ,* 1992. (A. F. Gualtierotti) **93k:60103** 60G35
— (*with* Benhenni, Karim) Sampling designs for estimating integrals of stochastic processes. *Ann. Statist.* **20** (1992), *no.* 1, 161–194. (Summary) **93e:60074** 60G12 (62K05, 62M99, 65R20)
— (*with* Wu, Wei) Multiple regression on stable vectors. *J. Multivariate Anal.* **41** (1992), *no.* 2, 243–272. (Lin-Cheng Zhao) **93g:60032** 60E07 (60E10, 62J05)
Cambern, Michael Some extremum problems for spaces of weakly continuous functions. *Function spaces (Edwardsville, IL,* 1990), 61–65, *Lecture Notes in Pure and Appl. Math.,* 136, *Dekker, New York,* 1992. (Rajappa K. Asthagiri) **93c:46056** 46E40 (46B10)
Cambray Núñez, Rodrigo *see* **Garciadiego, Alejandro R., 93h:03003**
de Cambry, Olivier A new method for studying some statistical failure-detection algorithm. (English summary) *IEEE Trans. Automat. Control* **38** (1993), *no.* 1, 114–116. 94C12
la Camera, M. *see* **La Camera, M.**
Camera-Roda, G. (*with* Doghieri, F.; Ruggeri, Tommaso; Sarti, G. C.) Thermodynamically consistent rate-type constitutive equations for the diffusive mass flux. *Nonlinear waves and dissipative effects (Reggio di Calabria,* 1990), 182–195, *Pitman Res. Notes Math. Ser.,* 227, *Longman Sci. Tech., Harlow,* 1991. (V. Soundalgekar) **93b:76079** 76R50 (80A05)
Camerini, P. M. (*with* Trubian, M.) Polymatroids: construction and random algorithms. *Calcolo* **27** (1990), *no.* 3-4, 203–218 (1991). (Summary) **93b:90069** 90C27 (05B35)
— (*with* Galbiati, G.; Maffioli, F.) The image of weighted combinatorial problems. Topological network design (Copenhagen, 1989). *Ann. Oper. Res.* **33** (1991), *no.* 1-4, 181–197. (Gerald Hammer) **93b:90070** 90C27 (05B35)
— (*with* Galbiati, G.; Maffioli, F.) Random pseudo-polynomial algorithms for exact matroid problems. *J. Algorithms* **13** (1992), *no.* 2, 258–273. (Charles J. Colbourn) **93c:68034** 68Q20 (05B35, 68R05)
Cameron, Charles M. (*with* Rosendorff, B. Peter) A signaling theory of congressional oversight. (English summary) *Games Econom. Behav.* **5** (1993), *no.* 1, 44–70. (Summary) **93j:90145** 90D40 (90A05)
Cameron, Helen (*with* Wood, Derick) A note on the path length of red-black trees. *Inform. Process. Lett.* **42** (1992), *no.* 5, 287–292. (Summary) **93d:05066** 05C35 (05C05, 68R05)
Cameron, John (*with* Moncrief, Vincent) The reduction of Einstein's vacuum equations on spacetimes with spacelike U(1)-isometry groups. (English summary) *Mathematical aspects of classical field theory (Seattle, WA,* 1991), 143–169, *Contemp. Math.,* 132, *Amer. Math. Soc., Providence, RI,* 1992. (Philippe-A. Dionne) **93i:83006** 83C05 (58D19, 58G16)
Cameron, Kathie (*with* Edmonds, Jack) Coflow polyhedra. Special volume to mark the centennial of Julius Petersen's "Die Theorie der regulären Graphs", Part II. *Discrete Math.* **101** (1992), *no.* 1-3, 1–21. (Summary) **93d:90040** 90C08 (05C20, 90C35)
Cameron, Peter J. ★ Projective and polar spaces. QMW Maths Notes, 13. *Queen Mary and Westfield College, School of Mathematical Sciences, London,* 199?. viii+147 *pp.* (Vikram Jha) **93c:51011** 51E20 (51A50, 51E12, 51E22, 51E24)
— (*with* van Lint, J. H., Jr.) ★ Designs, graphs, codes and their links. London Mathematical Society Student Texts, 22. *Cambridge University Press, Cambridge,* 1991. x+240 *pp. ISBN* 0-521-41325-7; 0-521-42385-6 (E. F. Assmus, Jr.) **93c:05001** 05–01 (94B05)
— Infinite permutation groups in enumeration and model theory. *Proceedings of the International Congress of Mathematicians, Vol. I, II (Kyoto,* 1990), 1431–1441, *Math. Soc. Japan, Tokyo,* 1991. (John K. Truss) **93d:20004** 20B07 (03C60, 20B27)
— The age of a relational structure. Directions in infinite graph theory and combinatorics (Cambridge, 1989). *Discrete Math.* **95** (1991), *no.* 1-3, 49–67. (G. Fuhrken) **93d:03038** 03C15 (03C07, 08A05, 08A30, 08A35)
— (*with* van Tilborg, Henk C. A.) Foreword. A collection of contributions in honour of Jack van Lint. *Discrete Math.* **106/107** (1992), 1–2. (Editors) **93g:01064a** 01A70
— Almost all quasigroups have rank 2. (English summary) A collection of contributions in honour of Jack van Lint. *Discrete Math.* **106/107** (1992), 111–115. (From the introduction) **93f:20090** 20N05
— (*with* Cohen, Arjeh M.) On the number of fixed point free elements in a permutation group. (English summary) A collection of contributions in honour of Jack van Lint. *Discrete Math.* **106/107** (1992), 135–138. (From the text) **93f:20004** 20B05
— Infinite geometric groups of rank 4. *European J. Combin.* **13** (1992), *no.* 2, 87–88. (From the text) **93c:20006** 20B99
— (*with* Thas, J. A.; Blokhuis, Aart) On a generalization of a theorem of B. Segre. (English summary) *Geom. Dedicata* **43** (1992), *no.* 3, 299–305. (Giorgio Faina) **93i:51003** 51A30
— (*with* Kataoka, Toshitaka; Kiyota, Masao) Sharp characters of finite groups of type $\{-1, 1\}$. *J. Algebra* **152** (1992), *no.* 1, 248–258. (David Gluck) **93j:20017** 20C15
— (*with* Korchmáros, Gábor) One-factorizations of complete graphs with a doubly transitive automorphism group. (English summary) *Bull. London Math. Soc.* **25** (1993), *no.* 1, 1–6. (Brian Alspach) **93h:05087** 05C25 (05C70, 20B25)
— *see also* **Collection: Contributions in honour of Jack van Lint**
Cameron, R. G. On interaction indicators for multivariable systems. (English summary) *Internat. J. Control* **56** (1992), *no.* 3, 715–724. (Summary) **93d:93039** 93B51 (15A18)
Cameron, R. H. (*with* Storvick, D. A.) Feynman integral of variations of functionals. *Gaussian random fields (Nagoya,* 1990), 144–157, *Ser. Probab. Statist.,* 1, *World Sci. Publishing, River Edge, NJ,* 1991. (Summary) **93b:28035** 28C20 (46G12)
Camilleri, Juanito A conditional operator for CCS. *CONCUR '91 (Amsterdam,* 1991), 142–156, *Lecture Notes in Comput. Sci.,* 527, *Springer, Berlin,* 1991. (Summary) **93b:68009** 68N15 (68Q10)
Camion, Paul (*with* Courteau, Bernard; Montpetit, André) Weight distribution of cosets of 2-error-correcting binary BCH codes of length 15, 63, and 255. *IEEE Trans. Inform. Theory* **38** (1992), *no.* 4, 1353–1357. (Summary) **93b:94024** 94B15
Cammarota, Camillo On the temperature dependence in percolation. (English summary) *Probabilistic methods in mathematical physics (Siena,* 1991), 108–113, *World Sci. Publishing, River Edge, NJ,* 1992. (*see* **93g:81002**) 82B43
Cammaroto, F. (*with* Ielo, C.) On the invariance of complete regularity and metrizability. (Italian. English summary) *Rend. Istit. Mat. Univ. Trieste* **21** (1989), *no.* 1, 97–104 (1991). (Salvador Romaguera) **93a:54026** 54E30 (54E25, 54E35)
— (*with* Kočinac, Ljubiša D.; Bella, Angelo) Some results on splittability of topological spaces. *Atti Accad. Peloritana Pericolanti Cl. Sci. Fis. Mat. Natur.* **68** (1990), 41–60 (1992). (Summary) **93c:54001** 54A20 (54A25, 54C05, 54C10)
— (*with* Bella, Angelo) Characterizations of Urysohn-closed spaces. (Serbo-Croatian summary) *Mat. Vesnik* **42** (1990), *no.* 3-4, 131–138. (Michael Tkačenko) **93f:54031** 54D25 (54C08, 54D10)
— (*with* Noiri, Takashi) Functions with γ-closed graphs and R-compact spaces. (Serbo-Croatian summary) *Zb. Rad. No.* 5 (1991), 63–68. (Mila Mršević) **93d:54025** 54C08 (54D20)
Camp, W. J. (*with* Dunbar, Steven R.; Douglass, Rod W.) The divider dimension of the graph of a function. *J. Math. Anal. Appl.* **167** (1992), *no.* 2, 403–413. (Remo Badii) **93e:28012** 28A80 (28A75)
Campadelli, Paola (*with* Morpurgo, Anna) Learning classes of linearly separable Boolean functions from positive examples. *Internat. J. Found. Comput. Sci.* **3** (1992), *no.* 1, 41–54. (Michael Bauer) **93h:68119** 68T05 (68Q25)
Campana, F. Une version géométrique généralisée du théorème du produit de Nadel. (English summary) [A generalized geometric version of the Nadel product theorem] *Bull. Soc. Math. France* **119** (1991), *no.* 4, 479–493. (Vasile Brînzănescu) **93h:14029** 14J45 (14C20)
— The class $\mathscr{C}$ is not stable by small deformations. *Math. Ann.* **290** (1991), *no.* 1, 19–30. (From the introduction) **93d:32047** 32L25 (32G05)
— Connexité rationnelle des variétés de Fano. [Rational connectedness of Fano manifolds] *Ann. Sci. École Norm. Sup.* (4) **25** (1992), *no.* 5, 539–545. (Luciana Picco Botta) **93k:14050** 14J45
— An application of twistor theory to the nonhyperbolicity of certain compact symplectic Kähler manifolds. *J. Reine Angew. Math.* **425** (1992), 1–7. (S. M. Salamon) **93g:32036** 32H20 (32L25, 53C55)
Campanato, Sergio On the eigenvalues of an elliptic operator $a(x, H(u))$. (Italian summary) *Atti Accad. Naz. Lincei Cl. Sci. Fis. Mat. Natur. Rend. Lincei* (9) *Mat. Appl.* **3** (1992), *no.* 2, 107–110. (Srinivasan Kesavan) **93e:35028** 35J60 (35P30, 47F05)
Campanino, Massimo Ornstein-Zernike behavior for connectivities in the subcritical regime and the local limit theorem. (English summary) *Probabilistic methods in mathematical physics (Siena,* 1991), 114–126, *World Sci. Publishing, River Edge, NJ,* 1992. (*see* **93g:81002**) 82B43 (60K35)

Campbell, Bruce A. (*with* Kaloper, Nemanja; Olive, Keith A.) Classical hair for Kerr-Newman black holes in string gravity. *Phys. Lett. B* **285** (1992), *no.* 3, 199–205. (Gheorghe Zet) **93f:83082** 83E30 (81T30, 81V17, 83C57)

Campbell, Bruce W. (*with* Franceschetti, Donald R.; Jones, D. Wayne; Hanneken, John W.) Hamming sets, Ising sets, cellular automata, neural nets, and the random walk. (English summary) *Amer. J. Phys.* **61** (1993), *no.* 1, 50–53. 82C32 (68Q90, 82B20, 92B20)

Campbell, C. *see* **Campbell, Ian Colin Grant**

Campbell, C. E. (*with* Senger, G.; Ristig, M. L.; Clark, J. W.) Correlated density matrix theory of normal quantum fluids. (English summary) *Ann. Physics* **218** (1992), *no.* 1, 160–196. (Guang Shan Tian) **93i:81310** 81V70 (82B10, 82C22, 82D50)

Campbell, Colin M. (*with* Heggie, Patricia M.; Robertson, Edmund F.; Thomas, Richard M.) One-relator products of cyclic groups and Fibonacci-like sequences. *Applications of Fibonacci numbers, Vol.* 4 (*Winston-Salem, NC*, 1990), 63–68, *Kluwer Acad. Publ., Dordrecht*, 1991. (G. L. Alexanderson) **93k:11009** 11B39 (20K05)

— (*with* Heggie, Patricia M.; Robertson, Edmund F.; Thomas, Richard M.) Finite one-relator products of two cyclic groups with the relator of arbitrary length. (English summary) *J. Austral. Math. Soc. Ser. A* **53** (1992), *no.* 3, 352–368. (Stephan Rosebrock) **93i:20035** 20F05 (20F32)

— (*with* Heggie, Patricia M.; Robertson, Edmund F.; Thomas, Richard M.) Cyclically presented groups embedded in one-relator products of cyclic groups. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 2, 401–408. (Stephen J. Pride) **93g:20054** 20F05

— (*with* Robertson, Edmund F.; Thomas, Richard M.) On a class of semigroups with symmetric presentations. *Semigroup Forum* **46** (1993), *no.* 3, 286–306. (P. M. Higgins) **93m:20085** 20M05

Campbell, David K. (*with* Uherka, David J.; Tresser, Charles; Galeeva, R. F.) Solvable models for the quasi-periodic transition to chaos. (English summary) *Phys. Lett. A* **170** (1992), *no.* 3, 189–194. (Arkady S. Pikovsky) **93h:58106** 58F13 (58F14, 58F27)

Campbell, Donald E. The Arrow and Plott independence conditions. (English summary) *Econom. Lett.* **39** (1992), *no.* 2, 143–146. (Summary) **93e:90005** 90A08

— Transitive social choice in economic environments. *Internat. Econom. Rev.* **33** (1992), *no.* 2, 341–352. (Maurice Salles) **93f:90013** 90A08

— Implementation of social welfare functions. (English summary) *Internat. Econom. Rev.* **33** (1992), *no.* 3, 525–533. (Summary) **93d:90009** 90A08

— Quasitransitive intergenerational choice for economic environments. *J. Math. Econom.* **21** (1992), *no.* 3, 229–247. (Maurice Salles) **93f:90014** 90A08

— Public goods and Arrovian social choice. (English summary) *Soc. Choice Welf.* **9** (1992), *no.* 3, 173–183. (Sven Berg) **93h:90005** 90A08 (90A28)

Campbell, Geoffrey B. Multiplicative functions from Riemann zeta function products. (English summary) *J. Ramanujan Math. Soc.* **7** (1992), *no.* 1, 53–63. (Jean-Marie De Koninck) **93m:11083** 11M06 (11A25)

Campbell, Ian Colin Grant (*with* Wong, K. Y. M.) Competitive attraction in neural networks with sign-constrained weights. *J. Phys. A* **25** (1992), *no.* 8, 2227–2242. (Summary) **93b:82058** 82C32 (58F12, 58F40, 92B20)

Campbell, J. A. Three novelties of AI: theories, programs and rational reconstructions. *The foundations of artificial intelligence*, 237–246, *Cambridge Univ. Press, Cambridge*, 1990. (*see* **93b:68073**) 68T01

Campbell, James F. Location-allocation for distribution to a uniform demand with transshipments. *Naval Res. Logist.* **39** (1992), *no.* 5, 635–649. 90B80

— Selecting routes to minimize urban travel time. (English summary) *Transportation Res. Part B* **26** (1992), *no.* 4, 261–274. 90C35 (90B06)

Campbell, John Y. (*with* Perron, Pierre) Racines unitaires en macroéconomie: le cas multidimensionnel. (English and French summaries) [Unit roots in macroeconomics: the multidimensional case] *Ann. Économ. Statist.* **1992,** *no.* 27, 1–50. (Summary) **93h:62167** 62M10 (62P20)

Campbell, L. A. (*with* Wiberg, D. M.) A discrete-time convergent approximation of the optimal recursive parameter estimator. (English summary) *Identification and system parameter estimation* 1991, *Vol.* 1,2 (*Budapest*, 1991), 629–633, *IFAC Sympos. Ser.*, 3, *Pergamon, Oxford*, 1992. (*see* **93h:93009**) 93E10 (93C55)

Campbell, R. B. Half-sib mating structures. (English summary) *J. Math. Biol.* **31** (1993), *no.* 3, 241–252. 92D25

Campbell, S. R. (*with* Ellingham, M. N.; Royle, Gordon F.) A characterisation of well-covered cubic graphs. (English summary) *J. Combin. Math. Combin. Comput.* **13** (1993), 193–212. (Summary) **93m:05160** 05C75 (68R10)

Campbell, Stephen L. (*with* Leimkuhler, B.) Differentiation of constraints in differential-algebraic equations. *Mech. Structures Mach.* **19** (1991), *no.* 1, 19–39. (Kenneth D. Clark) **93b:65121** 65L99 (34A34)

— Least squares completions of nonlinear higher index Hessenberg DAEs. (English summary) *Computational and applied mathematics, II* (*Dublin*, 1991), 117–126, *North-Holland, Amsterdam*, 1992. (W. C. Rheinboldt) **93m:65086** 65L05 (34A09)

— Uniqueness of completions for linear time varying differential algebraic equations. *Linear Algebra Appl.* **161** (1992), 55–67. (Kenneth D. Clark) **93a:34005** 34A09 (34A30)

Campbell, Sue Ann (*with* Holmes, Philip J.) Heteroclinic cycles and modulated travelling waves in a system with D_4 symmetry. (English summary) *Phys. D* **59** (1992), *no.* 1-3, 52–78. (Alois Klíč) **93k:58166** 58F14 (34A20, 34C23, 34C37, 35Q99, 58F35)

Campi, Stefano Isoperimetric deficit and convex plane sets of maximum translative discrepancy. *Geom. Dedicata* **43** (1992), *no.* 1, 71–81. (G. D. Chakerian) **93d:52012** 52A40 (52A10)

Câmpian, Maria (*with* Câmpian, V.) n-topological n-groups. (Romanian summary) *Bul. Ştiinţ. Inst. Politehn. Cluj-Napoca Ser. Mat. Mec. Apl. Construc. Maş.* **32** (1989), 7–12. 20N15

Câmpian, V. (*with* Câmpian, Maria) n-topological n-groups. (Romanian summary) *Bul. Ştiinţ. Inst. Politehn. Cluj-Napoca Ser. Mat. Mec. Apl. Construc. Maş.* **32** (1989), 7–12. 20N15

— (*with* Raşa, Ion) Perturbed topologies. II. (Romanian. English summary) *Bul. Ştiinţ. Inst. Politehn. Cluj-Napoca Ser. Mat. Mec. Apl. Construc. Maş.* **32** (1989), 13–18. 54E99

Campigotto, C. (*with* Drăgănescu, Gh. E.; Kibler, Maurice) On a generalized Aharonov-Bohm plus Coulomb system. (English summary) *Phys. Lett. A* **170** (1992), *no.* 5, 339–343. (Nathalie Debergh) **93m:81054** 81R30 (22E70, 81R50)

Campillo, A. *see* **Campillo López, Antonio**

Campillo, Antonio *see* **Campillo López, Antonio**

Campillo, F. (*with* Pardoux, Étienne) Numerical methods in ergodic optimal stochastic control and application. *Applied stochastic analysis* (*New Brunswick, NJ*, 1991), 59–73, *Lecture Notes in Control and Inform. Sci.*, 177, *Springer, Berlin*, 1992. (Wilfried Grecksch) **93c:93053** 93E20 (93E23, 93E30)

Campillo López, Antonio (*with* Marijuán López, Carlos) Higher order relations for a numerical semigroup. *Sém. Théor. Nombres Bordeaux* (2) **3** (1991), *no.* 2, 249–260. (Philippe Carbonne) **93d:13027** 13D03 (13H10, 14H45)

— (*with* Gonzalez-Sprinberg, Gerard; Lejeune-Jalabert, Monique) Amas, idéaux à support fini et chaînes toriques. (English and French summaries) [Clusters, finitely supported ideals and toroidal chains] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 9, 987–990. (Summary) **93h:14001** 14B10 (14C20)

Campion, Guy (*with* Bastin, G.) Indirect adaptive control of linearly parametrized nonlinear systems. (English summary) *Adaptive systems in control and signal processing*, 1989 (*Glasgow*), 153–158, *IFAC Sympos. Ser.*, 1990, *No.* 1, *Pergamon, Oxford*, 1990. (*see* **93j:93007**) 93C40 (93C10)

— (*with* d'Andréa-Novel, B.; Bastin, G.) Controllability and state feedback stabilizability of nonholonomic mechanical systems. (English summary) *Advanced robot control* (*Grenoble*, 1990), 106–124, *Lecture Notes in Control and Inform. Sci.*, 162, *Springer, Berlin*, 1991. (Summary) **93f:70030** 70Q05 (70B15, 70F25, 93C85)

— (*with* Schwartz, Carla A.) Zero dynamics—another oxymoron? Or en route to adaptive control of nonlinear systems. *J. Math. Systems Estim. Control* **1** (1991), *no.* 1, 71–90. (Peter A. Cook) **93a:93061** 93C10 (93B18, 93C40, 93D15)

— (*with* Dasgupta, Soura; Gevers, Michel; Bastin, G.; Chen, L.) Identifiability of scalar linearly parametrized polynomial systems. (English summary) *Identification and system parameter estimation* 1991, *Vol.* 1,2 (*Budapest*, 1991), 835–839, *IFAC Sympos. Ser.*, 3, *Pergamon, Oxford*, 1992. (*see* **93h:93009**) 93C10 (93B30)

— (*with* Raucent, B.; Bastin, G.; Samin, J.-C.; Willems, P. Y.) Identification of the barycentric parameters of robot manipulators from external measurements. (English summary) *Automatica J. IFAC* **28** (1992), *no.* 5, 1011–1016. 93C85

— (*with* Bastin, G.; Bitmead, Robert R.; Gevers, Michel) Identification of linearly-overparametrized nonlinear systems. *IEEE Trans. Automat. Control* **37** (1992), *no.* 7, 1073–1078. (P. Bertrand) **93g:93027** 93B30 (93C10)

Campiti, Michele Approximation of continuous set-valued functions in Fréchet spaces. I, II. *Anal. Numér. Théor. Approx.* **20** (1991), *no.* 1-2, 15–23, 25–38. (Ion Badea) **93g:41016** 41A35 (46J99)

— (*with* Raşa, Ion) Sets of parabolic functions. *Atti Sem. Mat. Fis. Univ. Modena* **39** (1991), *no.* 2, 513–526. (Francesco Altomare) **93a:46041** 46E15 (41A36)

— Korovkin theorems for vector-valued continuous functions. *Approximation theory, spline functions and applications* (*Maratea*, 1991), 293–302, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 356, *Kluwer Acad. Publ., Dordrecht*, 1992. (Francesco Altomare) **93e:41047** 41A65 (41A35, 46E40)

— Limit semigroups of Stancu-Mühlbach operators associated with positive projections. *Ann. Scuola Norm. Sup. Pisa Cl. Sci.* (4) **19** (1992), *no.* 1, 51–67. (Toshihiko Nishishiraho) **93j:41016** 41A36 (41A63, 47B65, 47D03)

rivera-Campo, Eduardo *see* **Rivera-Campo, Eduardo**

gallarta Campo, Tomás *see* **Gallarta Campo, Tomás**

rapoport Campodónico, Diego Lucio *see* **Rapoport Campodónico, Diego Lucio**

a'Campo-Neuen, Annette *see* **A'Campo-Neuen, Annette**

Camporesi, Roberto The spinor heat kernel in maximally symmetric spaces. (English summary) *Comm. Math. Phys.* **148** (1992), *no.* 2, 283–308. (J. Alfredo Jiménez) **93g:58140** 58G11 (58G26)

— (*with* Higuchi, Atsushi) Stress-energy tensors in anti-de Sitter spacetime. *Phys. Rev. D* (3) **45** (1992), *no.* 10, 3591–3603. (Enric Verdaguer) **93f:83047** 83C47 (58G26, 81T20)

— (*with* Anderson, Warren G.; Brady, Patrick R.) Vacuum polarization and the black hole singularity. (English summary) *Classical Quantum Gravity* **10** (1993), *no.* 3, 497–503. (Summary) **93k:83044** 83C57 (81T20, 83C47)

Campos, A. (*with* Verdaguer, E.) Production of spin-$\frac{1}{2}$ particles in inhomogeneous cosmologies. *Phys. Rev. D* (3) **45** (1992), *no.* 12, 4428–4438. (Summary) **93c:83065** 83C47 (81T20, 81V17)

de faria Campos, Edison *see* **de Faria Campos, Edison**

sánchez Campos, Esperanza *see* **Sánchez Campos, Esperanza**

Campos, Javier (*with* Silva, Manuel; Colom, J. M.) Linear algebraic techniques for the analysis of Petri nets. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, II* (*Kobe*, 1991), 35–42, *Mita, Tokyo*, 1992. (Summary) **93h:68108** 68Q90

Campos, Lourdes (*with* González Muñoz, Antonio; Vila, Maria Amparo) On the use of the ranking function approach to solve fuzzy matrix games in a direct way. (English summary) *Fuzzy Sets and Systems* **49** (1992), *no.* 2, 193–203. 90C70 (04A72)

de Campos, Luis M. *see* **de Campos Ibáñez, Luis Miguel**

baptista de Campos, M. *see* **Baptista de Campos, M.**

de azeredo Campos, R. *see* **de Azeredo Campos, R.**

Campos, R. G. (*with* Juárez, L. Z.) A discretization of the continuous Fourier transform. *Nuovo Cimento B* (11) **107** (1992), *no.* 6, 703–711. (Summary) **93f:65097** 65T20 (33C90, 39A12, 81–04)

Campos, V. (*with* Benavent López, Enrique; Corberán, Á.; Mota, E.) The capacitated arc routing problem: lower bounds. (English summary) *Networks* **22** (1992), *no.* 7, 669–690. (Summary) **93h:90032** 90B10 (05C90, 68Q25, 68R10, 90C35)

de Campos Ibáñez, Luis Miguel (*with* Bolaños, M. Jorge) Characterization and comparison of Sugeno and Choquet integrals. (English summary) *Fuzzy Sets and Systems* **52** (1992), *no.* 1, 61–67. 28E10 (04A72)

Campostrini, Massimo (*with* Rossi, Paolo[1]) Dimensional regularization in the $1/N$ expansion. *Internat. J. Modern Phys. A* **7** (1992), *no.* 14, 3265–3289. (Summary) **93a:81133** 81T16

— (*with* Rossi, Paolo[1]) $\mathbf{CP}^{N-1}$ models in the $1/N$ expansion. *Phys. Rev. D* (3) **45** (1992), *no.* 2, 618–638. (Summary) **93b:81179** 81T17 (81T10, 81T15)

vigueras Campuzano, Antonio *see* **Vigueras Campuzano, Antonio**

ngô huy Can *see* **Ngô Huy Can**

Cañada, A. Variational methods in differential equations. (Spanish) *Papers in honor of Pablo Bobillo Guerrero* (*Spanish*), 203–211, *Univ. Granada, Granada*, 1992. (*see* **93k:00042**) 49R99 (35A15)

Čanak, Miloš Mathematical analysis of Pythagorean, diathonic and equal tempering tonal system in theory of music. (Serbo-Croatian summary) *The present past* (*Serbo-Croatian*), 137–143, *Istor. Mat. Mekh. Nauka*, 4, *Mat. Inst., Belgrade*, 1991. (J. S. Joel) **93a:01071** 01A99 (00A69)

— Über die α-Gleichungen. (English and Serbo-Croatian summaries) [On some α-equations] *Mat. Vesnik* **44** (1992), *no.* 1-2, 1–6. 30E25

— Hilbert's boundary value problem for the generalized analytic functions. (English summary) *Math. Balkanica* (*N.S.*) **6** (1992), *no.* 2, 109–117. 30G20 (30E25, 73K15, 73V35)

— Approximation von nichtanalytischen funktionen durch eine p-polyanalytische funktion. (English summary) [Approximation of nonanalytic functions by a p-polyanalytic function] *Publ. Inst. Math.* (*Beograd*) (*N.S.*) **51(65)** (1992), 55–61. 30G20

Canale, Anna A higher integrability theorem from reverse Hölder weighted inequalities with different supports. (Italian summary) *Boll. Un. Mat. Ital. A* (7) **5** (1991), *no.* 2, 137–146. (Summary) **93e:30051** 30C65

calzada Canalejo, M. C. *see* **Calzada Canalejo, M. C.**

Canalis-Durand, Mireille Formal expansion of van der Pol equation canard solutions are Gevrey. *Dynamic bifurcations* (*Luminy*, 1990), 29–39, *Lecture Notes in Math.*, 1493, *Springer, Berlin*, 1991. (Constantin D. Chirilă) **93f:34087** 34E15 (03H05, 34C15)

Canarutto, D. (*with* Cabras, A.) The system of principal connections. *Rend. Mat. Appl.* (7) **11** (1991), *no.* 4, 849–871. (Jaime Muñoz Masqué) **93b:53021** 53C05 (58A20)

— On the distance between connections. (English and Italian summaries) *Rend. Mat. Appl.* (7) **12** (1992), *no.* 1, 263–271. (I. Kolář) **93i:53022** 53C05

Canary, Richard D. On the Laplacian and the geometry of hyperbolic 3-manifolds. (English summary) *J. Differential Geom.* **36** (1992), *no.* 2, 349–367. (Darryl McCullough) **93g:57016** 57M50 (20H10, 30F40, 58G30)

— Ends of hyperbolic 3-manifolds. *J. Amer. Math. Soc.* **6** (1993), *no.* 1, 1–35. (Colin C. Adams) **93e:57019** 57M50 (30F40)

— Algebraic convergence of Schottky groups. *Trans. Amer. Math. Soc.* **337** (1993), *no.* 1, 235–258. (Frédéric Paulin) **93g:30062** 30F40 (30F60, 32G15, 57M07, 57S30)

Canciu, V. V. (*with* Negoita, Gh. M.) Fuzzy identification of systems: a new cybernetic method. *Kybernetes* **21** (1992), *no.* 4, 67–79. 93B30

Candeal, Juan Carlos (*with* Induráin Eraso, Esteban) Numerical representation of total orderings. (Spanish. English summary) *Rev. Real Acad. Cienc. Exact. Fís. Natur. Madrid* **84** (1990), *no.* 3, 415–428. (Summary) **93c:06001** 06A05

— (*with* Lai, Han Ch'ing) Multipliers in continuous vector-valued function spaces. (English summary) *Bull. Austral. Math. Soc.* **46** (1992), *no.* 2, 199–204. (James Bell Cooper) **93j:46041** 46E40 (46J10, 46M15, 47B38)

— (*with* Hervés, Carlos; Induráin Eraso, Esteban) Applications économiques des suites dans les espaces vectoriels topologiques. (English summary) [Applications in economics of sequences in topological vector spaces] *Rev. Acad. Cienc. Zaragoza* (2) **47** (1992), 89–102. (Summary) **93j:90024** 90A14 (46N10)

— (*with* Induráin Eraso, Esteban; Uriarte, José Ramón) Some issues related to the topological aggregation of preferences. (English summary) *Soc. Choice Welf.* **9** (1992), *no.* 3, 213–227. (Andrey V. Malishevski) **93i:90013** 90A07 (90A06)

Candela, Anna Maria Remarks on the number of positive solutions for a class of nonlinear elliptic problems. *Differential Integral Equations* **5** (1992), *no.* 3, 553–560. (V. Raghavendra) **93i:35053** 35J65 (35B05)

Candelas, Philip (*with* Green, Paul S.; Hübsch, Tristan) Rolling among Calabi-Yau vacua. *Mathematical physics* (*Islamabad*, 1989), 59–114, *World Sci. Publishing, River Edge, NJ*, 1990. (Bruce Hunt) **93d:32031a** 32G81 (14J30, 32J17, 32J81, 81T30, 83E30)

— (*with* Green, Paul S.; Hübsch, Tristan) Rolling among Calabi-Yau vacua. *Superstrings '89* (*Trieste*, 1989), 366–421, *World Sci. Publishing, River Edge, NJ*, 1990. (Bruce Hunt) **93d:32031b** 32G81 (14J30, 32J17, 32J81, 81T30, 83E30)

— (*with* de la Ossa, Xenia C.; Green, Paul S.; Parkes, Linda) A pair of Calabi-Yau manifolds as an exactly soluble superconformal theory. *Nuclear Phys. B* **359** (1991), *no.* 1, 21–74. (Bruce Hunt) **93b:32029** 32G20 (14J15, 14J30, 32G05, 32G81, 81T30, 81T40)

— (*with* de la Ossa, Xenia C.; Green, Paul S.; Parkes, Linda) An exactly soluble superconformal theory from a mirror pair of Calabi-Yau manifolds. *Phys. Lett. B* **258** (1991), *no.* 1-2, 118–126. (Bruce Hunt) **93b:32028** 32G20 (14J15, 14J30, 32G05, 32G81, 81T30, 81T40)

Candeloro, D. (*with* Martellotti, Anna) Geometric properties of the range of two-dimensional quasi-measures with respect to the Radon-Nikodým property. *Adv. Math.* **93** (1992), *no.* 1, 9–24. (Minos Petrakis) **93h:28003** 28A25 (28A15)

Cândido Ribeiro, M. A. (*with* Galetti, D.) A semiclassical description of nonlocal effects on barrier transmission. *Phys. Scripta* **45** (1992), *no.* 5, 417–421. (Summary) **93b:81068** 81Q20 (81S30, 81V35)

Canestrelli, Elio (*with* Giove, Silvio) Optimizing a quadratic function with fuzzy linear coefficients. (English, Russian and Polish summaries) *Control Cybernet.* **20** (1991), *no.* 3, 25–36. (Summary) **93h:90103** 90C70 (04A72, 90C20)

Canfield, E. Rodney (*with* Bender, Edward A.; McKay, Brendan D.) The asymptotic number of labelled weakly-connected digraphs with a given number of vertices and edges. (English summary) *Australas. J. Combin.* **6** (1992), 119–124. (Summary) **93h:05091** 05C30

— (*with* King, R. B.) Icosahedral symmetry and the quintic equation. *Comput. Math. Appl.* **24** (1992), *no.* 3, 13–28. (S. D. Cohen) **93g:12003** 12E05 (12F10, 68Q20)

— (*with* Jackson, D. M.) A D-finiteness result for products of permutations. *Discrete Math.* **99** (1992), *no.* 1-3, 25–30. (Wayne M. Dymacek) **93g:05010** 05A15 (05A05)

— (*with* McCormick, William P.) Asymptotic reliability of consecutive k-out-of-n systems. *J. Appl. Probab.* **29** (1992), *no.* 1, 142–155. (Frank K. Hwang) **93d:90023** 90B25 (60K10)

— (*with* Bender, Edward A.; McKay, Brendan D.) Asymptotic properties of labeled connected graphs. *Random Structures Algorithms* **3** (1992), *no.* 2, 183–202. (Ioan Tomescu) **93f:05085** 05C80 (05C40)

— (*with* Bender, Edward A.) Enumeration of degree restricted maps on the sphere. (English summary) *Planar graphs* (*New Brunswick, NJ*, 1991), 13–16, *DIMACS Ser. Discrete Math. Theoret. Comput. Sci.*, 9, *Amer. Math. Soc., Providence, RI*, 1993. (*see* **93m:05005**) 05A15 (05A16, 05C10)

Cangellaris, Andreas (*with* Lee, Robert) Numerical solution of the two-dimensional scalar Helmholtz equation using the bymoment method. *Integral methods in science and engineering—90* (*Arlington, TX*, 1990), 249–259, *Ser. Comput. Phys. Process. Mech. Thermal Sci., Hemisphere, New York*, 1991. (*see* **93f:00014**) 65M60

Cangemi, D. (*with* Lee, Choonkyu) Self-dual Chern-Simons solitons in $(2+1)$-dimensional Einstein gravity. (English summary) *Phys. Rev. D* (3) **46** (1992), *no.* 10, 4768–4771. (Summary) **93g:81088** 81T13 (81V17, 83C20)

— (*with* Jackiw, R.) Gauge-invariant formulations of lineal gravities. *Phys. Rev. Lett.* **69** (1992), *no.* 2, 233–236. (Summary) **93f:81130** 81T40 (83C99)

Canino, Annamaria Periodic solutions of quadratic Lagrangian systems on p-convex sets. (English and French summaries) *Ann. Fac. Sci. Toulouse Math.* (5) **12** (1991), *no.* 1, 37–60. (Marco Degiovanni) **93j:58115** 58F22 (34C25, 58E05, 58F05, 70H35)

Cannarsa, Piermarco (*with* Da Prato, Giuseppe) An existence and uniqueness result for Hamilton-Jacobi equations in Hilbert spaces. (Italian summary) *Atti Accad. Naz. Lincei Rend. Cl. Sci. Fis. Mat. Natur.* (8) **82** (1988), *no.* 4, 645–649 (1990). (A. I. Subbotin) **93c:49020** 49L25 (34G20)

— (*with* Da Prato, Giuseppe; Zolésio, Jean-Paul) Evolution equations in noncylindrical domains. (Italian summary) *Atti Accad. Naz. Lincei Rend. Cl. Sci. Fis. Mat. Natur.* (8) **83** (1989), 73–77 (1990). (Summary) **93c:35059** 35K22

— (*with* Da Prato, Giuseppe; Zolésio, Jean-Paul) Riccati equations in noncylindrical domains. *Stabilization of flexible structures* (*Montpellier*, 1989), 148–155, *Lecture Notes in Control and Inform. Sci.*, 147, *Springer, Berlin*, 1990. (*see* **93c:93006**) 93C20 (49N10, 93B40)

— (*with* Da Prato, Giuseppe) Some properties of the value function of a nonlinear control problem in infinite dimensions. *Stabilization of flexible structures* (*Montpellier*, 1989), 235–247, *Lecture Notes in Control and Inform. Sci.*, 147, *Springer, Berlin*, 1990. (Teodor Havârneanu) **93g:49022** 49L20 (49K27)

— (*with* Da Prato, Giuseppe) Second order Hamilton-Jacobi equations in infinite dimensions and stochastic optimal control problems. (English summary) *Probabilistic and stochastic methods in analysis, with applications* (*Il Ciocco*, 1991), 617–629, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 372, *Kluwer Acad. Publ., Dordrecht*, 1992. (*see* **93e:00029**) 93E20 (35R15)

— (*with* Frankowska, Halina) Value function and optimality conditions for semilinear control problems. *Appl. Math. Optim.* **26** (1992), *no.* 2, 139–169. (Philip D. Loewen) **93h:49040** 49K27 (34G20, 34H05, 47N70, 49J27, 49L25)

Cannata, F. (*with* Amado, R. D.; Dedonder, J. P.) Supersymmetric quantum mechanics, phase equivalence, and low energy scattering anomalies. *Phys. Rev. C* (3) **43** (1991), *no.* 5, 2077–2081. (Summary) **93b:81076** 81Q60 (81U05)

— (*with* Ioffe, M. V.) Coupled-channel scattering and separation of coupled differential equations by generalized Darboux transformations. (English summary) *J. Phys. A* **26** (1993), *no.* 3, L89–L92. (Summary) **93m:35010** 35A25 (34L25, 35C99, 81U99)

Canning, Andrew Saddle-point mean-field theory for long-range Ising spin models in terms of the eigenvalues and eigenvectors of the interaction matrix. (English summary) *J. Phys. A* **25** (1992), *no.* 18, 4723–4735. 82B20

Canning, David Rationality, computability, and Nash equilibrium. *Econometrica* **60** (1992), *no.* 4, 877–888. (Summary) **93c:90110** 90D10 (90D40)

— Average behavior in learning models. (English summary) *J. Econom. Theory* **57** (1992), *no.* 2, 442–472. (C. D. Aliprantis) **93i:90026** 90A15 (90A14, 90A35, 90C15, 90D40)

Cannings, C. (*with* Vickers, G. T.) The geneaology of patterns of ESSs. (English summary) *Selected Proceedings of the Sheffield Symposium on Applied Probability* (*Sheffield*, 1989), 193–204, *IMS Lecture Notes Monograph Ser.*, 18, *Inst. Math. Statist., Hayward, CA*, 1991. (*see* **93f:60003**) 92D10

— (*with* Haigh, John) Montreal solitaire. *J. Combin. Theory Ser. A* **60** (1992), *no.* 1, 50–66. (A. Pultr) **93d:90082** 90D46 (05A99)

Cannon, James W. The theory of negatively curved spaces and groups. *Ergodic theory, symbolic dynamics, and hyperbolic spaces* (*Trieste*, 1989), 315–369, *Oxford Sci. Publ., Oxford Univ. Press, New York*, 1991. (*see* **93e:58002**) 57S30 (20F32, 53C23, 57M07)

— (*with* Epstein, David B. A.; Holt, Derek F.; Levy, Silvio V. F.; Paterson, Michael S.; Thurston, William P.) ★ Word processing in groups. *Jones and Bartlett Publishers, Boston, MA*, 1992. xii+330 *pp. ISBN* 0-86720-244-0 (Richard M. Thomas) **93i:20036** 20F10 (03D40, 20–02, 68Q70)

— (*with* Wagreich, Philip) Growth functions of surface groups. *Math. Ann.* **293** (1992), *no.* 2, 239–257. (Martin A. Roller) **93j:20077** 20F32 (20F34, 20F55, 57M07)

Cannon, John J. (*with* Bosma, Wieb) Structural computation in finite permutation groups. *CWI Quarterly* **5** (1992), *no.* 2, 127–160. (D. F. Holt) **93i:20003** 20B40 (20–04, 68Q40)

Cannon, John R. (*with* Lin, Yan Ping) A remark on the solvability for nonlinear parabolic integro-differential equations in one-dimensional spaces. (Italian summary) *Boll. Un. Mat. Ital. B* (7) **5** (1991), *no.* 4, 853–874. (Narahari Parhi) **93b:45009** 45K05

— (*with* DuChateau, Paul; Moaveni, Saeed) An unknown ingredient inverse problem reduced to a functional-differential equation. (English summary) *Computational methods in geosciences*, 29–43, *SIAM, Philadelphia, PA*, 1992. (Giovanni Crosta) **93i:80002** 80A23 (35R30, 39B99, 76S05)

— (*with* Lin, Yan Ping; van der Hoek, John) Semi-linear heat equation subject to the specification of energy. (English summary) *Modeling and analysis of diffusive and advective processes in geosciences*, 40–51, *SIAM, Philadelphia, PA*, 1992. (Summary) **93f:35098** 35K55 (35B30)

— (*with* Matheson, Alec L.) A numerical procedure for diffusion subject to the specification of mass. (English summary) *Internat. J. Engrg. Sci.* **31** (1993), *no.* 3, 347–355. (Summary) **93k:65082** 65M99 (35B45, 35K10)

Canny, John F. (*with* Emiris, Ioannis) A general approach to removing degeneracies. (English summary) 32*nd Annual Symposium on Foundations of Computer Science* (*San Juan, PR*, 1991), 405–413, *IEEE Comput. Soc. Press, Los Alamitos, CA*, 1991. (*see* **93d:68005**) 68Q25

— (*with* Manocha, Dinesh) Detecting cusps and inflection points in curves. *Comput. Aided Geom. Design* **9** (1992), *no.* 1, 1–24. (Summary) **93b:65031** 65D17

— (*with* Manocha, Dinesh) Algorithm for implicitizing rational parametric surfaces. *Comput. Aided Geom. Design* **9** (1992), *no.* 1, 25–50. (Summary) **93b:65032** 65D17

— (*with* Manocha, Dinesh) Implicit representation of rational parametric surfaces. *J. Symbolic Comput.* **13** (1992), *no.* 5, 485–510. (Jean D'Almeida) **93d:14090** 14Q10 (68Q40, 68U05)

— (*with* Manocha, Dinesh) Multipolynomial resultant algorithms. (English summary) *J. Symbolic Comput.* **15** (1993), *no.* 2, 99–122. (Summary) **93m:68094** 68Q40

Cano, F. *see* **Cano Torres, Felipe**

rodríguez Cano, José Juan *see* **Rodríguez Cano, José Juan**

Canonero, Gabriella ★ La superficie di Veronese. (Italian) [Veronese surfaces] Collana di Monografie [Monograph Collection], VI. *Accademia Ligure di Scienze e Lettere, Genoa*, 1991. 109 *pp.* (Ciro Ciliberto) **93d:14053** 14J25
— Generalization of a known property of Veronese surfaces. (Italian. English and Italian summaries) *Atti Accad. Ligure Sci. Lett.* **48** (1991), 59–61 (1992). 14J25
Canot, E. (*with* Achard, J.-L.) An overview of boundary integral formulations for potential flows in fluid-fluid systems. *Arch. Mech.* (*Arch. Mech. Stos.*) **43** (1991), *no.* 4, 453–498 (1992). (Summary) **93d:76053** 76M99 (76E99, 76M15, 76T05)
Cano Torres, Felipe (*with* Cerveau, Dominique) Desingularization of nondicritical holomorphic foliations and existence of separatrices. *Acta Math.* **169** (1992), *no.* 1-2, 1–103. (Joan Girbau) **93k:32069** 32L30 (32S70)
— (*with* Mattei, J.-F.) Hypersurfaces intégrales des feuilletages holomorphes. (English summary) [Integral hypersurfaces of holomorphic foliations] *Ann. Inst. Fourier* (*Grenoble*) **42** (1992), *no.* 1-2, 49–72. (Dominique Cerveau) **93h:32043** 32L30
Canova, Fabio Modelling and forecasting exchange rates with a Bayesian time-varying coefficient model. (English summary) *J. Econom. Dynamics Control* **17** (1993), *no.* 1-2, 233–261. 62P20 (62F15)
Cantarelli, Giancarlo (*with* Risito, Corrado) Criteria of global existence and boundedness for scleronomic holonomic systems. (Italian. English summary) *Ann. Mat. Pura Appl.* (4) **162** (1992), 383–394. (Silvio Nocilla) **93m:34022** 34A99 (34A12, 34C11, 34D99, 70F20)
— Stabilization of the equilibrium of holonomic systems by means of time-dependent dissipative forces. (Italian. English summary) *Boll. Un. Mat. Ital. A* (7) **6** (1992), *no.* 2, 193–196. (Summary) **93f:70024** 70K20 (34D20, 70F20)
fernández-Canteli, A. *see* **Fernández-Canteli, A.**
Cantoni, V. (*with* Mistrangioli, L.) Three-point phase, symplectic measure, and Berry phase. *Internat. J. Theoret. Phys.* **31** (1992), *no.* 6, 937–943. (Shinichi Tajima) **93i:81102** 81S10
Cantor, Georg *see* **Purkert, Walter, 93d:01074** *and* **Fudali, Stanislaw, 93k:01066**
Cantrell, Robert Stephen Parameter ranges for the existence of solutions whose state components have specified nodal structure in coupled multiparameter systems of nonlinear Sturm-Liouville boundary value problems. *Proc. Roy. Soc. Edinburgh Sect. A* **119** (1991), *no.* 3-4, 347–365. (Yoshihiro Shibata) **93d:34031** 34B15 (34A47, 47H15, 47N20)
— A switch in nodal structure in coupled systems of nonlinear Sturm-Liouville boundary value problems. *Rocky Mountain J. Math.* **21** (1991), *no.* 3, 1009–1028. (Yoshihiro Shibata) **93d:34032** 34B15 (34A47, 34B24)
— On solutions to coupled multiparameter nonlinear Sturm-Liouville boundary value problems whose state components have a specified nodal structure. (English summary) *Results Math.* **22** (1992), *no.* 1-2, 470–488. (Tassilo Küpper) **93e:34029** 34B15 (34A47)
Cantrijn, F. (*with* de León, Manuel; Lacomba, Ernesto A.) Gradient vector fields on cosymplectic manifolds. *J. Phys. A* **25** (1992), *no.* 1, 175–188. (José F. Cariñena) **93e:58057** 58F05 (70H05)
Cantwell, Brian J. Exact solution of a restricted Euler equation for the velocity gradient tensor. *Phys. Fluids A* **4** (1992), *no.* 4, 782–793. (Summary) **93a:76057** 76F99 (76D05)
Cantwell, John (*with* Conlon, Lawrence) Markov minimal sets have hyperbolic leaves. *Ann. Global Anal. Geom.* **9** (1991), *no.* 1, 13–25. (Claude Lamoureux) **93a:57032** 57R30 (58F18)
— (*with* Conlon, Lawrence) Foliations of $E(5_2)$ and related knot complements. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 3, 953–962. (G. Burde) **93i:57037** 57R30 (57M25)
Canudas de Wit, Carlos (*with* Fixot, N.) Adaptive control of robot manipulators via velocity estimated feedback. (English summary) *Advanced robot control* (*Grenoble*, 1990), 69–82, *Lecture Notes in Control and Inform. Sci.*, 162, *Springer, Berlin*, 1991. (Summary) **93f:70031** 70Q05 (70B15, 93C85)
— (*with* Nielsen, Lars; Hagander, Per) Controllability issues of robots near singular configurations. (English summary) *Advanced robot control* (*Grenoble*, 1990), 307–314, *Lecture Notes in Control and Inform. Sci.*, 162, *Springer, Berlin*, 1991. (Summary) **93f:70035** 70Q05 (70B15, 93C85)
— Adaptive control of robot manipulators using only position feedback. *Control theory, stochastic analysis and applications* (*Hangzhou*, 1991), 203–213, *World Sci. Publishing, River Edge, NJ*, 1991. (*see* **93a:93005**) 93C85 (70B15, 70Q05, 93C40)
— (*with* Fixot, N.) Adaptive control of robot manipulators via velocity estimated feedback. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 8, *part I*, 1234–1237. 93C85
— (*with* Sørdalen, O. J.) Exponential stabilization of mobile robots with nonholonomic constraints. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 11, 1791–1797. (Summary) **93i:93086** 93C85 (93D15)
— (*with* Sørdalen, O. J.) Exponential stabilization of mobile robots with nonholonomic constraints. *MIC—Modeling Identification Control* **13** (1992), *no.* 1, 3–14. 93C85
— Robust control for servo-mechanisms under inexact friction compensation. (English summary) *Automatica J. IFAC* **29** (1993), *no.* 3, 757–761. 93C95 (93B36)
— *see also* **Advanced robot control, 93d:70002**
Canuto, Claudio (*with* Russo, Alessandro) A viscous-inviscid coupling under mixed boundary conditions. (English summary) *Math. Models Methods Appl. Sci.* **2** (1992), *no.* 4, 461–482. (Rodolfo Salvi) **93j:76024** 76D05 (35Q35, 76M15)
— (*with* Arina, Renzo) A self-adaptive domain decomposition for the viscous/inviscid coupling. I. Burgers equation. (English summary) *J. Comput. Phys.* **105** (1993), *no.* 2, 290–300. (Summary) **93m:76061** 76M25 (65M55, 65N55, 76D05)
— *see also* **Spectral and high order methods for partial differential equations, 93d:65005**
Cao, Ce Wen (*with* Geng, Xian Guo) Classical integrable systems generated through nonlinearization of eigenvalue problems. *Nonlinear physics* (*Shanghai*, 1989), 68–78, *Res. Rep. Phys., Springer, Berlin*, 1990. (Alexander P. Veselov) **93a:58137** 58F19 (58F07)
— (*with* Geng, Xian Guo) A Bargmann system and involutive representations of solutions to a class of evolution equations. (Chinese. Chinese summary) *Chinese Ann. Math. Ser. A* **13** (1992), *suppl.*, 92–98. (Guo Cheng Zhu) **93m:35173** 35Q58 (58F05, 58F07)
Cao, Cheng Xian (*with* Tian, Nai Shuo; Zhang, Da Qing) $M/G/1$ queue with controllable vacations and optimization of vacation policy. *Acta Math. Appl. Sinica* (*English Ser.*) 7 (1991), *no.* 4, 363–373. (Summary) **93a:60151** 60K25 (90B22)
Cao, Chong Guang Endomorphisms of two-dimensional linear groups and linear semigroups. (Chinese. English summary) *Heilongjiang Daxue Ziran Kexue Xuebao* **9** (1992), *no.* 1, 6–9. (Summary) **93c:20073** 20G15 (20M15)
— Partial isometry matrices over a division ring with the positive property. (Chinese. English summary) *J. Xinjiang Univ. Natur. Sci.* **9** (1992), *no.* 1, 33–37. (Shao Kuan Li) **93e:15007** 15A33
Cao, D. M. *see* **Cao, Dao Min**
Cao, Da Wei (*with* He, Hua Can; Zhang, Guo Qi) Similarity analysis of Lie group method applied to solving the partial differential equation of orthogonal anisotropic plates. (English summary) *Sci. China Ser. A* **35** (1992), *no.* 2, 211–222. (Summary) **93g:35004** 35–04 (35A30, 35E20, 73B40, 73C02, 73K10)
Cao, Da Zhu (*with* Li, Li Yuan) Optimal prediction of road traffic flow and optimal control of signals at intersections. (Chinese. English and Chinese summaries) *Control Theory Appl.* **10** (1993), *no.* 1, 67–72. 49N55 (90B06)
Cao, Dao Min Nontrivial solution of semilinear elliptic equation with critical exponent in $\mathbf{R}^2$. *Comm. Partial Differential Equations* **17** (1992), *no.* 3-4, 407–435. (Xi Ping Zhu) **93f:35076** 35J65 (35J20)
Cao, Guang Fu On Dash's open problems. *Northeast. Math. J.* **7** (1991), *no.* 2, 137–140. (Robin Harte) **93d:47009** 47A13
— (*with* Bao, Xiu) Joint spectrum and joint numerical range of a family of operators. (Chinese. English summary) *Heilongjiang Daxue Ziran Kexue Xuebao* **9** (1992), *no.* 1, 30–34. (Dian Zhou Zhang) **93k:47006** 47A13 (47A12, 47B20)
Cao, Hai Jun A general discussion on the cyclic problem for linear programming. (Chinese. Chinese summary) *Math. Practice Theory* **1992**, *no.* 3, 35–42. 90C05
Cao, Huai Dong On Harnack's inequalities for the Kähler-Ricci flow. *Invent. Math.* **109** (1992), *no.* 2, 247–263. (Dennis M. DeTurck) **93f:58227** 58G11 (35Q51, 53C21, 58G30)
Cao, Hui Zhong A problem in combinatorics. *Permanents: theory and applications* (*Russian*), 158–163, *Krasnoyarsk. Politekhn. Inst., Krasnoyarsk*, 1990. (*see* **93b:00018**) 05A15
— (*with* Gu, Tong Xin) On the enumeration function of multiplicative partitions. *Math. Balkanica* (*N.S.*) **4** (1990), *no.* 4, 325–328 (1991). (M. S. Cheema) **93d:05013** 05A17 (11B75)
— Enumeration functions of multiplicative partitions. (Chinese. English summary) *J. Math.* (*Wuhan*) **11** (1991), *no.* 2, 183–187. (Chao Hua Jia) **93a:11082** 11N56
— The asymptotic formulas related to exponents in factoring integers. *Math. Balkanica* (*N.S.*) **5** (1991), *no.* 2, 105–108. (Don Redmond) **93e:11107** 11N25 (11N37)
— On two sums related to the prime divisor functions. (English summary) *Math. Balkanica* (*N.S.*) **6** (1992), *no.* 2, 165–172. (Claudia A. Spiro-Silverman) **93i:11109** 11N37 (11N56, 11N60)
— The mean value of the multiplicative partition function. (Chinese. English and Chinese summaries) *Shandong Daxue Xuebao Ziran Kexue Ban* **27** (1992), *no.* 2, 135–138. (Ji Zhong) **93j:05006** 05A15 (05A17)
— Enumeration functions of multiplicative partitions. (Chinese. English and Chinese summaries) *Shandong Daxue Xuebao Ziran Kexue Ban* **27** (1992), *no.* 3, 358–361. 11N75
Cao, Jia Ding (*with* Gonska, Heinz H.) On Butzer's problem concerning approximation by algebraic polynomials. *Approximation theory* (*Memphis, TN*, 1991), 289–313, *Lecture Notes in Pure and Appl. Math.*, 138, *Dekker, New York*, 1992. (P. L. Butzer) **93f:41034** 41A36 (41A55)
— Some new analytic inequalities and practical uses of improvements of constants in inequalities. (Chinese) *Math. Appl.* **5** (1992), *no.* 4, 106–108. 26D05
Cao, Jian Guo (*with* Calabi, Eugenio) Simple closed geodesics on convex surfaces. (English summary) *J. Differential Geom.* **36** (1992), *no.* 3, 517–549. (Gudlaugur Thorbergsson) **93h:53039** 53C22 (58E10)
Cao, Jin Hua (*with* Wang, Yue Dong) The characterization problem for superpositions of two renewal processes. (Chinese. English and Chinese summaries) *Chinese J. Appl. Probab. Statist.* **8** (1992), *no.* 1, 88–93. (Summary) **93m:60174** 60K05
— (*with* Wang, Yue Dong) Correction: "The NBUC and NWUC classes of life distributions" [J. Appl. Probab. **28** (1991), no. 2, 473–479; MR 92h:62156]. *J. Appl. Probab.* **29** (1992), *no.* 3, 753. 62N05 (60E15)
Cao, L. *see* **Cao, Li²**
Cao, Li *see* **Cao, Li²**
Cao, Li¹ (*with* Ma, Song She; Wu, Da Jin) A unified description of internal and external noise in nonlinear models. (Chinese. English summary) *J. Huazhong Univ. Sci. Tech.* **18** (1990), *no.* 3, 19–24. (Summary) **93c:82038** 82C31
— (*with* Wu, Da Jin) Exact elimination and adiabatic approximation of fast relaxation variables for deterministic systems. (Chinese. English and Chinese summaries) *J. Huazhong Univ. Sci. Tech.* **20** (1992), *no.* 2, 115–120. 93E10
Cao, Li² (*with* Zheng, Yu Fan) Nonlinear inverse systems with minimal order. *Control theory, stochastic analysis and applications* (*Hangzhou*, 1991), 96–104, *World Sci. Publishing, River Edge, NJ*, 1991. (*see* **93a:93005**) 93B25
— (*with* Zheng, Yu Fan) The rankings and relevant invariants of control systems. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, II* (*Kobe*, 1991), 295–300, *Mita, Tokyo*, 1992. (*see* **93g:93006**) 93C10 (93B40)
— (*with* Zheng, Yu Fan) General construction of minimal compensators for nonlinear input-output decoupling. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, II* (*Kobe*, 1991), 345–350, *Mita, Tokyo*, 1992. (*see* **93g:93006**) 93B52
Cao, Li Qun (*with* Zhu, Qi Ding) Multilevel correction for the finite element method and the boundary element method. (Chinese. English and Chinese summaries) *Natur. Sci. J. Xiangtan Univ.* **14** (1992), *no.* 2, 1–5. (Summary) **93g:65105** 65L60 (65N38)
— (*with* Zhu, Qi Ding) A note on interpolating correction of biquadratic elements in a rectangular domain. (Chinese. English and Chinese summaries) *Natur. Sci. J. Xiangtan Univ.* **14** (1992), *no.* 2, 6–10. (Summary) **93i:65109** 65N30
Cao, Sergio S. The Henstock integral for Banach-valued functions. *Southeast Asian Bull. Math.* **16** (1992), *no.* 1, 35–40. (Ralph Henstock) **93i:26009** 26A39 (26E20, 28B05, 46G10)
Cao, W. *see* **Cao, Wei**
Cao, W.-M. *see* **Cao, Wei Ming**
Cao, Wei (*with* Sagher, Yoram; Slodkowski, Zbigniew) Fredholm properties and interpolation of families of Banach spaces. *Illinois J. Math.* **36** (1992), *no.* 2, 286–292. (N. Ya. Kruglyak) **93m:47010** 47A53 (46M35)
Cao, Wei Ming (*with* Guo, Ben Yu) Spectral-finite element method for solving three-dimensional vorticity equations. *Bull. Greek Math. Soc.* **32** (1991), 83–108. (Sum-

mary) **93b:65148** 65M70 (76C05, 76M10)

— (*with* Guo, Ben Yu) A pseudospectral method for solving Navier-Stokes equations. *J. Comput. Math.* **9** (1991), *no.* 3, 278–289. (Anders Szepessy) **93c:65119** 65M70 (76D05, 76M25)

— (*with* Guo, Ben Yu) Spectral-finite element method for compressible fluid flow. *Appl. Math. Mech. (English Ed.)* **13** (1992), *no.* 8, 701–717; *translated from Appl. Math. Mech.* **13** (1992), *no.* 8, 677–692 (*Chinese. English and Chinese summaries*). (Summary) **93j:65159** 65M70 (76M10, 76M25, 76N10)

— (*with* Guo, Ben Yu) A Fourier-Chebyshev spectral method for three-dimensional vorticity equations with unilateral periodic boundary conditions. (English summary) *Gaoxiao Yingyong Shuxue Xuebao* **7** (1992), *no.* 3, 350–366. (Summary) **93j:65157** 65M70 (76D05, 76M25)

— (*with* Guo, Ben Yu; Ma, He Ping; Huang, Hui) The Fourier-Chebyshev spectral method for solving two-dimensional unsteady vorticity equations. *J. Comput. Phys.* **101** (1992), *no.* 1, 207–217. (Summary) **93d:76048** 76M25 (65M06, 65M70, 76D99, 76M20)

— (*with* Guo, Ben Yu) A combined spectral-finite element method for solving two-dimensional unsteady Navier-Stokes equations. *J. Comput. Phys.* **101** (1992), *no.* 2, 375–385. (Timothy Nigel Phillips) **93g:76079** 76M10 (65M99, 76D05, 76M25)

— (*with* Guo, Ben Yu) Spectral-finite element method for compressible fluid flows. (French summary) *RAIRO Modél. Math. Anal. Numér.* **26** (1992), *no.* 4, 469–491. (G. W. Hedstrom) **93b:76072** 76N15 (65M60, 65M70, 76M10)

Cao, Wei Ping (*with* Ma, Ji Pu; Song, Guo Zhu) On the necessary and sufficient conditions of the continuity of M-P inverses $A_{\dagger}^{\dagger}$. (English summary) A Chinese summary appears in Chinese Ann. Math. Ser. A **13** (1992), no. 2, 280. *Chinese Ann. Math. Ser. B* **13** (1992), *no.* 2, 251–256. (Míchéal Ó Searcóid) **93j:47002** 47A05

Cao, Xi Hua (*with* Wang, Jian Pan) The research of modular representations of algebraic groups in China. *Advances in science of China. Mathematics, Vol.* 3, 1–28, *Science Press, Beijing*, 1990. (Summary) **93f:20056** 20G05

Cao, Xi-Ren A new method of performance sensitivity analysis for non-Markovian queueing networks. *Queueing Systems Theory Appl.* **10** (1992), *no.* 4, 313–350. (Jian Qiang Hu) **93d:60155** 60K25 (90B22)

Cao, Xin (*with* Liu, De Lin; Sheng, Zhao Han) Nonergodicity and transience of a class of nonlinear time series models. (Chinese. English and Chinese summaries) *J. Southeast Univ.* **22** (1992), *no.* 1, 73–77. 60J10 (62M10)

Cao, Xuân Chuân The separation of a coupled system of differential equations in quantum mechanics. *J. Phys. A* **25** (1992), *no.* 13, 3749–3761. (Summary) **93d:81030** 81Q05 (34A99)

Cao, Xue Nian (*with* Li, Shou Fo) The BH-algebraic stability of general multivalue methods. (Chinese. English summary) *Numer. Math. J. Chinese Univ.* **14** (1992), *no.* 1, 67–77. (Summary) **93e:65099** 65L05

Cao, Y. *see* **Cao, Yu Lin**

Cao, Yan Zhao (*with* Huang, Ming You) On finite element approximation for the bifurcation solution of free convection problem. *Numerical methods for partial differential equations (Tianjin, 1991)*, 3–14, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93b:65006**) 65M60 (76M10, 76R10)

Cao, Yu Lin The oscillation and exponential decay rate of solutions of differential delay equations. *Oscillation and dynamics in delay equations (San Francisco, CA, 1991)*, 43–54, *Contemp. Math.*, 129, *Amer. Math. Soc., Providence, RI*, 1992. (Anatolii Fedorovich Ivanov) **93f:34115** 34K15

— (*with* Fan, Jiangping; Gard, Thomas C.) The effects of state-dependent time delay on a stage-structured population growth model. *Nonlinear Anal.* **19** (1992), *no.* 2, 95–105. (Lai Fu Liu) **93g:92019** 92D25 (34K20, 92D40)

Cao, Yu Shu (*with* Huang, Long Xuan) On the Diophantine equation $x^3 \pm 8 = Dy^2$. (Chinese. English summary) *Heilongjiang Daxue Ziran Kexue Xuebao* **9** (1992), *no.* 2, 1–5. (Mao Hua Le) **93e:11036** 11D25

Cao, Z. *see* **Cao, Zhi Qiang**

Cao, Zhen Chao A local solution to the Cauchy problem for a porous medium equation. (Chinese. English summary) *Xiamen Daxue Xuebao Ziran Kexue Ban* **31** (1992), *no.* 3, 230–232. (Summary) **93d:35064** 35K55 (76S05)

Cao, Zhen Fu A system of inequalities of Fermat's equation and the first case of Fermat's equation. (Chinese. English summary) *Heilongjiang Daxue Ziran Kexue Xuebao* **8** (1991), *no.* 4, 7–12. (Mao Hua Le) **93b:11029** 11D41

— A generalization of the Schinzel-Sierpiński system of equations. (Chinese. English summary) *J. Harbin Inst. Tech.* **23** (1991), *no.* 5, 9–14. (Ming-Chit Liu) **93b:11026** 11D09 (11D72)

— Applications of a class of Diophantine equations to Lucas sequences. (Chinese. English summary) *J. Math. (Wuhan)* **11** (1991), *no.* 3, 267–274. (Mao Hua Le) **93j:11019** 11D61 (11B39)

— The Diophantine equation $cx^4 + dy^4 = z^p$. *C. R. Math. Rep. Acad. Sci. Canada* **14** (1992), *no.* 5, 231–234. (J. Wolfskill) **93i:11036** 11D41

Cao, Zhen Zhong A generalization and corollary of the necessary and sufficient theorem for almost periodic recurrent motions $f(p, t)$. (Chinese. English summary) *Nanjing Daxue Xuebao Ziran Kexue Ban* **28** (1992), *no.* 1, 19–25. (Summary) **93f:34069** 34C27 (34D20, 70K20)

Cao, Zhi Qiang (*with* Kandel, Abraham; Li, Lihong; Han, J.) The mechanism of fuzzy logic controllers. (English summary) *Analysis and management of uncertainty: theory and applications (College Park, MD, 1990)*, 199–208, *Mach. Intell. Pattern Recogn.*, 13, *North-Holland, Amsterdam*, 1992. (*see* **93f:68004**) 03B52

— (*with* Kandel, Abraham; Li, Lihong) Fuzzy inference and its applicability to control systems. *Fuzzy Sets and Systems* **48** (1992), *no.* 1, 99–111. 93C42 (04A72)

— (*with* Park, Daihee; Kandel, Abraham) Investigations on the applicability of fuzzy inference. (English summary) *Fuzzy Sets and Systems* **49** (1992), *no.* 2, 151–169. (Summary) **93e:03036** 03B52

Cao-Abad, R. Rate of convergence for the wild bootstrap in nonparametric regression. *Ann. Statist.* **19** (1991), *no.* 4, 2226–2231. (Michael Falk) **93b:62068** 62G09

dau the Cap *see* **Dau The Cap**

Cap, Andreas Natural operators between vector valued differential forms. Proceedings of the Winter School on Geometry and Physics (Srní, 1990). *Rend. Circ. Mat. Palermo* (2) *Suppl. No.* 26 (1991), 113–121. (Jan Slovák) **93b:58003** 58A10 (53A55, 58A20)

Çapar, Uluğ Empirical characteristic functional analysis and inference in sequence spaces. (English summary) *Probabilistic and stochastic methods in analysis, with applications (Il Ciocco, 1991)*, 517–534, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 372, *Kluwer Acad. Publ., Dordrecht*, 1992. (Summary) **93f:60006** 60B10 (60E10, 60G05, 62G10)

Capasso, V. *see* **Mathematical modelling of industrial processes, 93c:00007**

Čápek, V. (*with* Barvík, I.) Interpolation between the Grover-Silbey and the generalized stochastic Liouville equation theories. (English summary) *Phys. Rev. A* (3) **46** (1992), *no.* 12, 7431–7438. (Summary) **93m:82031** 82C31

Capel, Hans W. (*with* Post, Thijs) Windows in one-dimensional maps. *Phys. A* **178** (1991), *no.* 1, 62–100. (R. Dilão) **93c:58104** 58F08 (58F13)

— (*with* Kluiving, R.; Pasmanter, R. A.) The phase transition in the bungalow-tent map. *From phase transitions to chaos*, 413–433, *World Sci. Publishing, River Edge, NJ*, 1992. (Frederick R. Marotto) **93f:58061** 58F03 (28D20, 58F13)

— (*with* Nijhoff, F. W.; Papageorgiou, V. G.) Integrable time-discrete systems: lattices and mappings. *Quantum groups (Leningrad, 1990)*, 312–325, *Lecture Notes in Math.*, 1510, *Springer, Berlin*, 1992. (From the introduction) **93h:58076** 58F07 (81T27, 82B23)

— (*with* Nijhoff, F. W.; Papageorgiou, V. G.; Quispel, G. R. W.) The lattice Gel'fand-Dikiĭ hierarchy. (English summary) *Inverse Problems* **8** (1992), *no.* 4, 597–621. (Luen-Chau Li) **93h:58077** 58F07

— (*with* Kluiving, R.; Pasmanter, R. A.) Symbolic dynamics of fully developed chaos. I. Statistics and characteristics of two-symbol sequences. *Phys. A* **183** (1992), *no.* 1-2, 67–95. (Frederick R. Marotto) **93f:58062** 58F03 (28D20, 58F13)

— (*with* Kluiving, R.; Pasmanter, R. A.) Symbolic dynamics of fully developed chaos. II. Random and order-1 Markovian two-symbol sequences. *Phys. A* **183** (1992), *no.* 1-2, 96–129. (Frederick R. Marotto) **93f:58063** 58F03 (28D20, 58F13)

— (*with* Kluiving, R.; Pasmanter, R. A.) Symbolic dynamics of fully developed chaos. III. Infinite-memory sequences and phase transitions. (English summary) *Phys. A* **186** (1992), *no.* 3-4, 405–440. (Frederick R. Marotto) **93g:58043** 58F03 (28D20, 58F13, 82C26)

— (*with* Roberts, J. A. G.) Area preserving mappings that are not reversible. *Phys. Lett. A* **162** (1992), *no.* 3, 243–248. (Frederick R. Marotto) **93d:58113** 58F14 (39B12, 58F36, 70H05)

— (*with* Nijhoff, F. W.) Integrable quantum mappings and nonultralocal Yang-Baxter structures. *Phys. Lett. A* **163** (1992), *no.* 1-2, 49–56. (Paul A. Pearce) **93e:82014** 82B20 (58F07)

— (*with* Nijhoff, F. W.; Papageorgiou, V. G.) Integrable quantum mappings. (English summary) *Phys. Rev. A* (3) **46** (1992), *no.* 4, 2155–2158. (Summary) **93f:58107** 58F07 (39A12)

Capiński, Marek (*with* Brzeźniak, Zdzisław; Flandoli, Franco) Approximation of white noise in stochastic partial differential equations. *Stochastic processes, physics and geometry (Ascona and Locarno, 1988)*, 256–268, *World Sci. Publishing, Teaneck, NJ*, 1990. (Jan Ubøe) **93b:60128** 60H15 (35R60)

— (*with* Szafirski, Bolesław) Hopf equation for diffusion in random velocity field. (English summary) *Bull. Polish Acad. Sci. Math.* **38** (1990), *no.* 1-12, 93–97. (Introduction) **93g:35071** 35K57 (35R60, 76M35)

— (*with* Cutland, Nigel J.) Stochastic Navier-Stokes equations. *Acta Appl. Math.* **25** (1991), *no.* 1, 59–85. (Cun-Zheng Wang) **93b:35108** 35Q30 (03H05, 35R60, 60H15, 76D05, 76M35)

— (*with* Cutland, Nigel J.) A simple example of intrinsic turbulence. *J. Differential Equations* **98** (1992), *no.* 1, 19–33. (From the introduction) **93h:34077** 34C99 (03H05, 03H10, 34A34)

— (*with* Cutland, Nigel J.) A simple proof of existence of weak and statistical solutions of Navier-Stokes equations. (English summary) *Proc. Roy. Soc. London Ser. A* **436** (1992), *no.* 1896, 1–11. (Summary) **93h:35155** 35Q30 (03H05, 65N30, 76D05)

— (*with* Brzeźniak, Zdzisław; Flandoli, Franco) Stochastic Navier-Stokes equations with multiplicative noise. (English summary) *Stochastic Anal. Appl.* **10** (1992), *no.* 5, 523–532. (Ana Bela Cruzeiro) **93m:35140** 35Q30 (35R60, 60H15, 76D05, 76M35)

— (*with* Cutland, Nigel J.) Navier-Stokes equations with multiplicative noise. (English summary) *Nonlinearity* **6** (1993), *no.* 1, 71–78. (Summary) **93j:35130** 35Q30 (03H05, 26E35, 28E05, 60H15, 76D05, 76M35)

Capitani, Stefano Convergence of compact lattice scalar field theory to its continuum limit. *J. Math. Phys.* **32** (1991), *no.* 10, 2880–2885. (Summary) **93g:81114** 81T27

Capitanio, Antonella Algebraic considerations on the stationarity of autoregressive stochastic processes. (Italian. English and Italian summaries) *Statistica (Bologna)* **52** (1992), *no.* 1, 103–112. 62M10

Čapkovič, František A representation of rule-based types of reasoning by means of an abstract dynamic system development. (Polish summary) *Systems Sci.* **17** (1991), *no.* 4, 35–54 (1992). (Summary) **93e:68125** 68T30 (68Q90)

Capocasa, F. (*with* Catanese, Fabrizio) Periodic meromorphic functions and Lefschetz type theorems on quasi-abelian varieties. *International Symposium in Memory of Hua Loo Keng, Vol. II (Beijing, 1988)*, 19–38, *Springer, Berlin*, 1991. (José M. Muñoz Porras) **93d:32051** 32M05 (14L10, 32L10)

Capocelli, Renato M. (*with* Gargano, Luisa; Vaccaro, Ugo) Efficient q-ary immutable codes. Applied algebra, algebraic algorithms, and error-correcting codes (Toulouse, 1989). *Discrete Appl. Math.* **33** (1991), *no.* 1-3, 25–41. (Summary) **93a:68034** 68P25 (94A60)

— (*with* De Santis, Alfredo; Gargano, Luisa; Vaccaro, Ugo) On the construction of statistically synchronizable codes. *IEEE Trans. Inform. Theory* **38** (1992), *no.* 2, *part* 1, 407–414. (Summary) **93a:94037** 94B35 (94A45)

Capodanno, Pierre Quelques remarques sur un problème de G. Fubini. (English and Italian summaries) [Some remarks on a problem of G. Fubini] *Rend. Sem. Mat. Univ. Politec. Torino* **48** (1990), *no.* 1, 81–95 (1992). (Vladimír Janovský) **93j:73043** 73K05 (35J25)

— Sur les oscillations d'un système cylindrique de deux liquides non miscibles hors gravité. [On the oscillations of a cylindrical system of two immiscible fluids not subject to gravity] *Rev. Roumaine Sci. Tech. Sér. Méc. Appl.* **36** (1991), *no.* 1-2, 61–74. (L. Debnath) **93g:76054** 76E10 (76B45)

— Small oscillations of a liquid in a container of revolution under zero gravity. *European J. Mech. B Fluids* **11** (1992), *no.* 3, 291–308. (Oleg Limarchenko) **93m:76011** 76B45 (76B15)

— Sur le mouvement d'un pendule à suspension élastique contenant un liquide. [On the motion of an elastically suspended pendulum containing a fluid] *Mech. Res. Comm.* **19** (1992), *no.* 5, 475–481. (Introduction) **93f:73079** 73K70 (70E99, 73K12, 76B10)

— Sur la stabilité d'un mouvement particulier d'un solide se déplaçant dans un fluide et possédant une cavité partiellement remplie de liquide. (English summary) [On the stability of a particular motion in a fluid of a solid containing a cavity partially filled with liquid] *Rev. Roumaine Math. Pures Appl.* **37** (1992), *no.* 7, 545–562. (Summary) **93i:76018** 76B99 (70E99, 70K20, 76E99)
— Quelques problèmes de stabilité d'un système de trois tourbillons. [Some stability problems for a three-vortex system] *Rev. Roumaine Sci. Tech. Sér. Méc. Appl.* **37** (1992), *no.* 1, 29–38. (Radyadour Kh. Zeytounian) **93e:76022** 76E10 (76C05)
— Un exemple simple de problème non standard de vibration: oscillations d'un liquide hétérogène pesant dans un container. [A simple example of a nonstandard vibration problem: oscillations of a heavy heterogeneous fluid in a container] *Mech. Res. Comm.* **20** (1993), *no.* 3, 257–262. 76B15
Caponetti, Diana On an inequality of Edgar. *Rend. Circ. Mat. Palermo* (2) **40** (1991), *no.* 2, 241–250. (Jerzy Szulga) **93a:60006** 60B11 (46B09, 60G48)
Caponi, E. A. (*with* Caponi, M. Z.; Saffman, P. G.; Yuen, H. C.) A simple model for the effect of water shear on the generation of waves by wind. *Proc. Roy. Soc. London Ser. A* **438** (1992), *no.* 1902, 95–101. (Summary) **93d:76004** 76B15 (86A05)
Caponi, M. Z. (*with* Caponi, E. A.; Saffman, P. G.; Yuen, H. C.) A simple model for the effect of water shear on the generation of waves by wind. *Proc. Roy. Soc. London Ser. A* **438** (1992), *no.* 1902, 95–101. (Summary) **93d:76004** 76B15 (86A05)
Capovilla, Riccardo (*with* Dell, J.; Jacobson, Ted) Errata: "A pure spin-connection formulation of gravity" [Classical Quantum Gravity **8** (1991), no. 1, 59–73; MR 91m:83005]. *Classical Quantum Gravity* **9** (1992), *no.* 7, 1839–1840. (From the text) **93d:83006** 83C05 (83C60)
— (*with* Jacobson, Ted) Remarks on pure spin connection formulations of gravity. *Modern Phys. Lett. A* **7** (1992), *no.* 21, 1871–1877. (Summary) **93c:83080** 83C60 (83C05)
— Generally covariant gauge theories. *Nuclear Phys. B* **373** (1992), *no.* 1, 233–246. (Marc Henneaux) **93g:81089** 81T13 (83C05)
— Nonminimally coupled scalar field and Ashtekar variables. (English summary) *Phys. Rev. D* (3) **46** (1992), *no.* 4, 1450–1452. (Peter Peldán) **93g:83006** 83C05 (81V17)
— (*with* Plebański, Jerzy) Some exact solutions of the Einstein field equations in terms of the self-dual spin connection. (English summary) *J. Math. Phys.* **34** (1993), *no.* 1, 130–138. (Jörg Frauendiener) **93j:83016** 83C15 (53C80, 83C20)
Capoyleas, Vasilis (*with* Pach, János) A Turán-type theorem on chords of a convex polygon. (English summary) *J. Combin. Theory Ser. B* **56** (1992), *no.* 1, 9–15. (L. M. Kelly) **93g:52013** 52C10 (05C35)
Capparelli, Stefano On vertex operator algebras. (Italian summary) *Boll. Un. Mat. Ital. B* (7) **5** (1991), *no.* 4, 787–800. (Chong Ying Dong) **93b:17071** 17B67
— Elements of the annihilating ideal of a standard module. *J. Algebra* **145** (1992), *no.* 1, 32–54. (Chong Ying Dong) **93b:17072** 17B67
Cappelli, Andrea (*with* Ciafaloni, Marcello; Valtancoli, Paolo) Classical scattering in 2 + 1 gravity with N point sources. *Nuclear Phys. B* **369** (1992), *no.* 3, 669–706. (D. K. Sen) **93b:83050** 83C99 (81T13, 83C45)
— (*with* Latorre, José Ignacio; Vilasís-Cardona, Xavier) Renormalization group patterns and c-theorem in more than two dimensions. *Nuclear Phys. B* **376** (1992), *no.* 3, 510–538. (R. Delbourgo) **93e:81104** 81T40
— Classical dynamics of point particles in 2 + 1 gravity. (English summary) Random surfaces and 2D quantum gravity (Barcelona, 1991). *Nuclear Phys. B Proc. Suppl.* **25A** (1992), 54–68. (Summary) **93f:81079** 81T13 (81V17)
Cappiello, Luigi (*with* Abud, Mario; Ader, Jean-Pierre) Prepotentials and unconstrained BRST for Yang-Mills and p-forms. *Modern Phys. Lett. A* **7** (1992), *no.* 22, 2039–2049. (Summary) **93c:81115** 81T13 (81T70)
Capri, A. Z. (*with* Roy, S. M.) The definition of time and quantum vacuum in 1 + 1 dimensions. (English summary) *Modern Phys. Lett. A* **7** (1992), *no.* 25, 2317–2324. (Summary) **93e:81084** 81T20 (81P99, 81T40)
— (*with* Lamb, D. J.) The vacuum for an interacting scalar field. (English summary) *Nuovo Cimento B* (11) **107** (1992), *no.* 7, 799–804. (Summary) **93f:81153** 81T99
Caprioli, Luigi (*with* Nardini, Renato) Dario Graffi. (Italian) *Boll. Un. Mat. Ital. A* (7) **6** (1992), *no.* 2, 297–307. (Editors) **93d:01072** 01A70
Capursi, Mauro (*with* Dragomir, Sorin) Submanifolds of generalized Hopf manifolds, type numbers and the first Chern class of the normal bundle. *Ann. Mat. Pura Appl.* (4) **160** (1991), 1–18 (1992). (Bang-yen Chen) **93c:53042** 53C40
— (*with* Dragomir, Sorin) On Cauchy-Riemann submanifolds whose local geodesic symmetries preserve the fundamental form. (English summary) *Ann. Polon. Math.* **57** (1992), *no.* 2, 99–103. (Andrzej Bucki) **93g:53078** 53C40 (53C55)
Caputo, J. G. (*with* Flytzanis, N.) Collective coordinates by a variational approach: problems for sine-Gordon and φ^4 models. (English summary) *Nonlinear coherent structures in physics and biology* (*Dijon*, 1991), 343–350, *Lecture Notes in Phys.*, 393, *Springer, Berlin*, 1991. (*see* **93e:00025**) 35Q53 (81T10)
Caputo, Michael R. Fundamental symmetries and qualitative properties in the adjustment cost model of the firm. *J. Math. Econom.* **21** (1992), *no.* 2, 99–112. (Summary) **93b:90021** 90A16
— A primal-dual approach to comparative dynamics with time-dependent parameters in variational calculus. (English summary) *Optimal Control Appl. Methods* **13** (1992), *no.* 1, 73–86. 49N15 (49K10)
Capuzzo-Dolcetta, I. (*with* Falcone, M.) Discrete dynamic programming and viscosity solutions of the Bellman equation. (English summary) *Analyse non linéaire* (*Perpignan*, 1987), 161–183, *Univ. Montréal, Montreal, PQ*, 1989. (*see* **93h:49003**) 49L20 (35B37)
fernández Cara, Enrique *see* **Fernández Cara, Enrique**
Caraballo Garrido, Tomás Existence and uniqueness of solutions for nonlinear stochastic partial differential equations. (English summary) *Collect. Math.* **42** (1991), *no.* 1, 51–74. (P. Kotelenez) **93m:60129** 60H15 (35R60, 47N20, 47N30)
— Nonlinear stochastic partial differential equations with delays: existence and uniqueness of solutions. *Extracta Math.* **6** (1991), *no.* 2-3, 148–151. (Bohdan Maslowski) **93k:60152** 60H15
Carabineanu, Adrian (*with* Dragoş, Lazăr; Oprea, Iuliana) The linearized theory for submerged thin hydrofoil of infinite span. (English, Russian and Polish summaries) *Arch. Mech.* (*Arch. Mech. Stos.*) **43** (1991), *no.* 1, 29–39 (1992). (Summary) **93g:76017** 76B10 (76C05)
— A free boundary problem in porous media. (English summary) *Rev. Roumaine Math. Pures Appl.* **37** (1992), *no.* 7, 563–570. (Alberto Valli) **93i:76087** 76S05 (35R35)
— On subsonic steady flow past a circular obstacle. (Romanian. English and Romanian summaries) *Stud. Cerc. Mat.* **44** (1992), *no.* 3, 205–216. (Introduction) **93g:76073** 76G25
Caracciolo, Sergio (*with* Pelissetto, Andrea; Sokal, Alan D.) Join-and-cut algorithm for self-avoiding walks with variable length and free endpoints. *J. Statist. Phys.* **67** (1992), *no.* 1-2, 65–111. (Cheng Xun Wu) **93f:82031** 82B80 (65C05, 82B20, 82B27, 82B41)
Caragiu, Mihai Group representations by automorphisms of generalized metric spaces. (Romanian. English and Romanian summaries) *Stud. Cerc. Mat.* **44** (1992), *no.* 4, 285–288. (Summary) **93i:20004** 20B99 (54E35)
Carai, Eugen (*with* Andonie, Răzvan) Gaussian smoothing by optimal iterated uniform convolutions. (English summary) *Comput. Artificial Intelligence* **11** (1992), *no.* 4, 363–373. (Summary) **93h:68140** 68U10 (94A12)
Caraman, Petru About cluster sets in infinite-dimensional spaces. *An. Ştiinţ. Univ. "Al. I. Cuza" Iaşi Secţ. I a Mat. (N.S.)* **36** (1990), *no.* 3, 199–202. (Matti Vuorinen) **93e:30071** 30D40
— New cases of equality between p-module and p-capacity. Proceedings of the Tenth Conference on Analytic Functions (Szczyrk, 1990). *Ann. Polon. Math.* **55** (1991), 37–56. (Summary) **93e:31004** 31B15
— p-module and p-capacity of a topological cylinder. Analyse complexe (Bucharest, 1989). *Rev. Roumaine Math. Pures Appl.* **36** (1991), *no.* 7-8, 333–343. (Summary) **93e:31005** 31B15
— p-module and p-capacity in $\mathbf{R}^n$. Analyse complexe (Bucharest, 1989). *Rev. Roumaine Math. Pures Appl.* **36** (1991), *no.* 7-8, 345–353. (Summary) **93e:31006** 31B15
— *see also* **Mayer, Octav**, **93e:30005**
Caranti, A. (*with* Brandl, Rolf; Scoppola, Carlo M.) Metabelian thin p-groups. *Quart. J. Math. Oxford Ser.* (2) **43** (1992), *no.* 170, 157–173. (G. Zappa) **93d:20041** 20D15
Caraux, G. (*with* Gascuel, O.) Bounds on distribution functions of order statistics for dependent variates. *Statist. Probab. Lett.* **14** (1992), *no.* 2, 103–105. (Summary) **93e:62135** 62G30 (62E15)
— (*with* Gascuel, O.) Bounds on expectations of order statistics via extremal dependences. (English summary) *Statist. Probab. Lett.* **15** (1992), *no.* 2, 143–148. (Summary) **93m:62120** 62G30
Caravani, Paolo Regulation of linear quadratic games. (English summary) *Dynamic games in economic analysis* (*Espoo*, 1990), 283–298, *Lecture Notes in Control and Inform. Sci.*, 157, *Springer, Berlin*, 1991. (*see* **93d:90003**) 90D05 (49N10, 90D10)
Carayol, H. (*with* Boutot, J.-F.) Uniformisation p-adique des courbes de Shimura: les théorèmes de Čerednik et de Drinfel'd. (English summary) [p-adic uniformization of Shimura curves: the theorems of Cherednik and Drinfel'd] Courbes modulaires et courbes de Shimura (Orsay, 1987/1988). *Astérisque No.* 196-197 (1991), 7, 45–158 (1992). (Min Ho Lee) **93c:11041** 11G18 (14G20, 14G35)
hermoso Carazo, A. *see* **Hermoso Carazo, A.**
garrido Carballo, María Isabel *see* **Garrido Carballo, María Isabel**
Carbery, Anthony (*with* Torrea Hernández, José Luis; García-Cuerva, José; Duoandikoetxea, Javier) The work of José Luis Rubio de Francia. I, II, III, IV. Conference on Mathematical Analysis (El Escorial, 1989). *Publ. Mat.* **35** (1991), *no.* 1, 9–25, 27–63, 65–80, 81–93. (J. Horváth) **93b:01044** 01A70 (42-03, 43-03, 44-03, 46-03)
— (*with* Romera, Elena; Soria, Fernando) Radial weights and mixed norm inequalities for the disc multiplier. (English summary) *J. Funct. Anal.* **109** (1992), *no.* 1, 52–75. (Kenneth F. Andersen) **93j:42008** 42B15 (42B10, 42B20, 42B25)
— Restriction implies Bochner-Riesz for paraboloids. *Math. Proc. Cambridge Philos. Soc.* **111** (1992), *no.* 3, 525–529. (Sundaram Thangavelu) **93b:42024** 42B10 (42B15)
— (*with* Seeger, Andreas) H^p- and L^p-variants of multiparameter Calderón-Zygmund theory. *Trans. Amer. Math. Soc.* **334** (1992), *no.* 2, 719–747. (Steven George Krantz) **93b:42035** 42B30 (42B15, 42B20)
sanmartín Carbón, Esperanza *see* **Sanmartín Carbón, Esperanza**
Carbon, Steven L. (*with* Piard, Eric J.) Weight diagram construction of Lax operators. *J. Math. Phys.* **33** (1992), *no.* 8, 2664–2674. (I. S. Krasil'shchik) **93h:58068** 58F07 (17B10, 35Q53)
Carbonaro, Bruno The mathematical structure of the special theory of relativity. (Italian summary) *Boll. Un. Mat. Ital. B* (7) **6** (1992), *no.* 2, 403–424. (Kishin Mariwalla) **93f:83003** 83A05 (70H40)
Carbone, A. *see* **Carbone, Antonio**
Carbone, Alessandra Provable fixed points in $\mathrm{I}\Delta_0 + \Omega_1$. *Notre Dame J. Formal Logic* **32** (1991), *no.* 4, 562–572 (1992). (Alessandro Berarducci) **93c:03072** 03F30 (03B45, 03F40)
Carbone, Antonio (*with* Papini, Pier Luigi) Some inequalities in normed spaces. *Ann. Univ. Sci. Budapest. Eötvös Sect. Math.* **34** (1991), 39–46 (1992). (Summary) **93e:41048** 41A65 (46B20)
— A note on a theorem of Prolla. *Indian J. Pure Appl. Math.* **23** (1992), *no.* 4, 257–260. (S. P. Singh) **93d:47133** 47H99 (41A65, 47H10)
— An application of KKM-map principle. (English summary) *Internat. J. Math. Math. Sci.* **15** (1992), *no.* 4, 659–661. (Kok Keong Tan) **93i:47084** 47H10 (47N10)
Carbonez, A. (*with* Györfi, László; van der Meulen, Edward C.) Nonparametric entropy estimation based on randomly censored data. (Russian summary) *Problems Control Inform. Theory/Problemy Upravlen. Teor. Inform.* **20** (1991), *no.* 6, 441–451. (Summary) **93d:62054** 62G05
— (*with* Györfi, László; van der Meulen, Edward C.) Universal consistency of partitioning-estimates of a regression function for randomly missing data. (English summary) *Computational statistics, Vol.* 1 (*Neuchâtel*, 1992), 429–440, *Physica, Heidelberg*, 1992. (*see* **93k:62002**) 62G05 (62J02)
— (*with* Beirlant, Jan; van der Meulen, Edward C.) Long run proportional hazards models of random censorship. (English summary) *J. Statist. Plann. Inference* **32** (1992), *no.* 1, 25–44. (Mir Masoom Ali) **93h:62178** 62N05
Carboni, Aurelio (*with* Pedicchio, Maria Cristina; Pirovano, N.) Internal graphs and internal groupoids in Mal'cev categories. (English summary) *Category theory* 1991 (*Montreal, PQ*, 1991), 97–109, *CMS Conf. Proc.*, 13, *Amer. Math. Soc., Providence, RI*, 1992. (Graham J. Ellis) **93i:20066** 20L17 (08A05, 18G30)
— (*with* Lack, Stephen; Walters, R. F. C.) Introduction to extensive and distributive categories. (English summary) *J. Pure Appl. Algebra* **84** (1993), *no.* 2, 145–158. (R. H.

Street) **93k:18004** 18A30
— *see also* **Category theory, 93b:18001**
Carbou, Gilles Applications harmoniques à valeurs dans un cercle. (English summary) [Harmonic maps with values in a circle] *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 5, 359–362. (Giorgio Valli) **93c:31001** 31A05 (35J60, 58E20)
Carcassès, J.-P. (*with* Mira, Christian) On the "crossroad area–saddle area" and "crossroad area–spring area" transitions. *Internat. J. Bifur. Chaos Appl. Sci. Engrg.* **1** (1991), *no.* 3, 641–655. (Georgii Osipenko) **93b:58108** 58F14 (58C27)
Cardaliaguet, Pierre Conditions suffisantes de non-vacuité du noyau de viabilité. (English summary) [Sufficient conditions for nonemptiness of the viability kernel] *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 11, 797–800. (Summary) **93c:34041** 34A60 (49J24)
raggi Cárdenas, Francisco Federico *see* **Raggi Cárdenas, Francisco Federico**
Cardinali, T. (*with* Papalini, F.) On the existence of fixed points for multifunctions with weakly closed graph. (Italian. English summary) *Riv. Mat. Univ. Parma* (4) **17** (1991), 59–67 (1992). (Salvatore Sessa) **93g:47071** 47H10 (47H04, 54H25)
Cardona, A. (*with* Géradin, M.) A superelement formulation for mechanism analysis. (English summary) *Comput. Methods Appl. Mech. Engrg.* **100** (1992), *no.* 1, 1–29. (Summary) **93g:73108** 73V05 (73G05, 73K12)
vilasís-Cardona, Xavier *see* **Vilasís-Cardona, Xavier**
Cardoş, Vladimir General integral method in the study of supersonic flows past slender bodies. (English summary) *Rev. Roumaine Math. Pures Appl.* **37** (1992), *no.* 7, 571–577. (J. F. Clarke) **93m:76053** 76J20 (76M99)
Cardoso, Domingos M. (*with* Clímaco, João C. Namorado) The generalized simplex method. (English summary) *Oper. Res. Lett.* **12** (1992), *no.* 5, 337–348. (Georgi Khristov) **93i:90059** 90C05
Cardoso, Fernando (*with* Popov, Georgi) Rayleigh quasimodes in linear elasticity. (French summary) *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 10, 709–713. (Themistocles M. Rassias) **93f:58233** 58G18 (35Q99, 58F27, 73C02)
— (*with* Popov, Georgi) Rayleigh quasimodes in linear elasticity. *Comm. Partial Differential Equations* **17** (1992), *no.* 7-8, 1327–1367. (Günter Berger) **93i:35044** 35J25 (35P20, 35S15)
Cardoso, J. G. Generalized mass-scattering integrals for Dirac fields and their graphical representation. *Internat. J. Theoret. Phys.* **30** (1991), *no.* 12, 1565–1588. (Asghar Qadir) **93b:81099** 81R25 (83C60)
— Real wave equations for positive-frequency electromagnetic fields and their Green's function solutions. *J. Math. Phys.* **33** (1992), *no.* 6, 2169–2172. (Sergey Merkulov) **93e:81043** 81R20 (78A25, 81R25)
— Complexified theory of positive-frequency photons. (English summary) *Ann. Physics* **221** (1993), *no.* 2, 341–355. (Peter R. Law) **93m:81049** 81R25
Cardy, John L. Random initial conditions and nonlinear relaxation. *J. Phys. A* **25** (1992), *no.* 10, 2765–2790. (M. Lawrence Glasser) **93h:82066** 82C44 (35R60, 65M99)
Carey, A. L. (*with* Murray, M. K.) String structures and the path fibration of a group. *Comm. Math. Phys.* **141** (1991), *no.* 3, 441–452. (Dana S. Fine) **93a:58013** 58B05 (22E67, 55S35, 58B25, 81T30)
— (*with* Barndorff-Nielsen, Ole E.; Blæsild, P.; Jupp, P. E.; Mora, Marianne; Murray, M. K.) Finite-dimensional algebraic representations of the infinite phylon group. (English summary) *Acta Appl. Math.* **28** (1992), *no.* 3, 219–252. (I. Kolář) **93k:58004** 58A20 (20G05, 53A55, 62B99)
— (*with* Hannabuss, K. C.) Temperature states on gauge groups. (English and French summaries) *Ann. Inst. H. Poincaré Phys. Théor.* **57** (1992), *no.* 3, 219–257. (H. Araki) **93j:22034** 22E65 (17B67, 46L60, 81T13)
— (*with* Hume, L. R.) Multiple phases and return to equilibrium. (English summary) *J. Statist. Phys.* **68** (1992), *no.* 5-6, 787–828. (H. Araki) **93m:82024** 82C10 (46L60, 82B23)
Carey, Graham (*with* Barragy, E.) Bifurcation detection using the Lanczos method and imbedded subspaces. *Impact Comput. Sci. Engrg.* **3** (1991), *no.* 1, 76–92. (Summary) **93b:65082** 65J15 (65H17, 65N22)
— (*with* Stagg, A. K.) Asynchronous nonlinear iteration and domain decomposition. (English summary) *Parallel processing for scientific computing* (*Houston, TX*, 1991), 281–286, *SIAM, Philadelphia, PA*, 1992. (*see* **93g:65178**) 65H10 (65N55, 65Y05)
— (*with* Joubert, Wayne; Highnam, Peter) PCG/CM: a package for the iterative solution of large sparse linear systems on the connection machine. (English summary) *Parallel processing for scientific computing* (*Houston, TX*, 1991), 631–636, *SIAM, Philadelphia, PA*, 1992. (*see* **93g:65178**) 65F50 (65F10, 65Y05)
— (*with* Dinh, Hung T.) A grid anomaly in quadrilateral elements. (English summary) *SIAM Rev.* **35** (1993), *no.* 1, 130–134. 65N30 (65N50)
Carey, John Corning The Riemann hypothesis as a sequence of surface to volume ratios. *Linear Algebra Appl.* **165** (1992), 131–151. (Bruce C. Berndt) **93d:11089** 11M26
Carey, Malachy (*with* Srinivasan, Ashok) Externalities, average and marginal costs, and tolls on congested networks with time-varying flows. (English summary) *Oper. Res.* **41** (1993), *no.* 1, 217–231. 90B20
Carfagna D'Andrea, A. (*with* Romani, G.) Generalized 2-symmetric submanifolds. (English summary) *Ann. Mat. Pura Appl.* (4) **162** (1992), 237–252. (Philippos J. Xenos) **93m:53050** 53C35 (53B25)
Carfora, M. (*with* Marzuoli, A.) Probability measures on the space of Riemannian structures. *General relativity and gravitational physics* (*Cavalese*, 1988), 124–135, *World Sci. Publishing, Teaneck, NJ*, 1989. (Jacques Vauthier) **93c:58038** 58D20 (58D17)
— (*with* Marzuoli, A.) Bounded geometries and topology fluctuations in lattice quantum gravity. *Classical Quantum Gravity* **9** (1992), *no.* 3, 595–627. (Summary) **93g:83035** 83C27 (53C23, 53C80, 83C45)
— *see also* **Integrable systems and quantum groups, 93b:00028**
Cargile, James On a problem about probability and decision. *Analysis* (*Oxford*) **52** (1992), *no.* 4, 211–216. 03B48 (03A05)
Caride, A. O. (*with* Zanette, S. I.; Nogueira, S. R. A.) Maximal subgroups of solvable finite groups. *J. J. Giambiagi Festschrift*, 97–106, *World Sci. Publishing, River Edge, NJ*, 1990. (H. Bechtell) **93f:20038** 20E28
Cariello, F. (*with* Tabor, M.) Similarity reductions from extended Painlevé expansions for nonintegrable evolution equations. *Phys. D* **53** (1991), *no.* 1, 59–70. (David J. Kaup) **93b:58169** 58G37 (35Q55, 58F37, 58G35)
Carillo, Sandra Third order nonlinear Hamiltonian systems: some remarks on the action-angle transformation. *Differential geometric methods in theoretical physics* (*Rapallo*, 1990), 375–378, *Lecture Notes in Phys.*, 375, *Springer, Berlin*, 1991. (Alexander Burov) **93a:58151** 58F37 (35Q51, 58F07)
Cariñena, José F. (*with* del Olmo, Mariano A.; Winternitz, Pavel) Cohomology and symmetry of differential equations. *Group theoretical methods in physics* (*Moscow*, 1990), 272–276, *Lecture Notes in Phys.*, 382, *Springer, Berlin*, 1991. (From the text) **93d:58191** 58G35 (58H99)
— (*with* López Lacasta, Carlos; del Olmo, Mariano A.; Santander, Mariano) Conformal geometry of the Kepler orbit space. *Celestial Mech. Dynam. Astronom.* **52** (1991), *no.* 4, 307–343. (Galina G. Okuneva) **93d:70015** 70F05
— (*with* Gracia-Bondía, José M.; Ibort, Luis A.; López Lacasta, Carlos; Várilly, Joseph C.) Distinguished Hamiltonian theorem for homogeneous symplectic manifolds. *Lett. Math. Phys.* **23** (1991), *no.* 1, 35–44. (Summary) **93i:58051** 58F05 (58B20, 70H05, 70H15, 81S10)
— (*with* Rañada, Manuel F.) Hamiltonian formalism and time transformations in the extended phase space $T^*(Q \times \mathbf{R})$. *Rep. Math. Phys.* **30** (1991), *no.* 1, 89–106 (1992). (Richard C. Churchill) **93f:58071** 58F05 (70G25, 70H05)
— (*with* López Lacasta, Carlos) Geometric study of Hamilton's variational principle. *Rev. Math. Phys.* **3** (1991), *no.* 4, 379–401. (Manuel de León) **93a:58055** 58F05 (58E30, 70H05, 70H25, 70H35)
— (*with* Figueroa, H.) Moyal quantization and wave equations. (English summary) *Fortschr. Phys.* **40** (1992), *no.* 7, 615–630. (Nicolaas P. Landsman) **93k:81127** 81S30 (22E70, 81R20)
— (*with* López Lacasta, Carlos) The time-evolution operator for higher-order singular Lagrangians. *Internat. J. Modern Phys. A* **7** (1992), *no.* 11, 2447–2468. (Manuel de León) **93d:58049** 58F05 (70H05, 70H35, 81T99)
— (*with* Martínez, Eduardo; Sarlet, Willy) Geometric characterization of separable second-order differential equations. (English summary) *Math. Proc. Cambridge Philos. Soc.* **113** (1993), *no.* 1, 205–224. (Irl Bivens) **93m:58007** 58A30 (34A26, 58F05)
Carini, A. (*with* Diligenti, M.; Maier, Giulio) Boundary integral equation analysis in linear viscoelasticity: variational and saddle point formulations. (English summary) *Comput. Mech.* **8** (1991), *no.* 2, 87–98. (N. Gass) **93g:73062** 73F15 (65N30, 73V10, 73V25)
— (*with* De Donato, O.) Fundamental solutions for linear viscoelastic continua. (English summary) *Internat. J. Solids Structures* **29** (1992), *no.* 23, 2989–3009. (Summary) **93f:73051** 73F15 (73B05)
— Extremal formulations for the single finite time step analysis of elastoplastic continua. *Mech. Res. Comm.* **19** (1992), *no.* 3, 189–197. (Summary) **93b:73021** 73E99 (73V25)
Carini, Giovanni On the relation between Hamilton's principle and the principle of stationary action in the relativistic dynamics of a corpuscle. (Italian. English summary) *Rend. Circ. Mat. Palermo* (2) **41** (1992), *no.* 1, 123–150. 83A05
Carini, Luisa (*with* Drenski, Veselin S.) The Hilbert series of the polynomial identities for the tensor square of the Grassmann algebra. *Rend. Circ. Mat. Palermo* (2) **40** (1991), *no.* 3, 470–479. (E. Formanek) **93d:16026** 16R10
Carini, Paolo (*with* Jantzen, Robert T.) Understanding spacetime splittings and their relationships. (English summary) *Classical mechanics and relativity: relationship and consistency* (*Elba*, 1989), 185–241, *Monographs Textbooks Phys. Sci. Lecture Notes*, 20, *Bibliopolis, Naples*, 1991. (Alan D. Rendall) **93i:83072** 83C99
— (*with* Feng, Long Long; Li, Miao; Ruffini, Remo) Phase evolution of the photon in Kerr spacetime. (English summary) *Phys. Rev. D* (3) **46** (1992), *no.* 12, 5407–5413. (Summary) **93g:83028** 83C22 (83C57)
Cariño, Ricolindo (*with* Robinson, Ian; de Doncker-Kapenga, Elise) An algebraic study of the Levin transformation in numerical integration. (English summary) *Numerical integration* (*Bergen*, 1991), 175–186, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 357, *Kluwer Acad. Publ., Dordrecht*, 1992. (*see* **93f:65006**) 65D30
— (*with* Robinson, Ian; de Doncker-Kapenga, Elise) An algorithm for automatic integration of certain singular functions over a triangle. (English summary) *Numerical integration* (*Bergen*, 1991), 295–304, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 357, *Kluwer Acad. Publ., Dordrecht*, 1992. (*see* **93f:65006**) 65–04 (65D30)
Caristi, Gabriella (*with* Rybakowski, Krzysztof P.; Wessolek, T.) Persistence and spatial patterns in a one-predator–two-prey Lotka-Volterra model with diffusion. (Italian summary) *Ann. Mat. Pura Appl.* (4) **161** (1992), 345–377. (Kazuaki Narita) **93i:92012** 92D25 (35K57, 92D40)
— (*with* Mitidieri, Enzo) Blow-up of positive solutions of a noncooperative parabolic system. *Differential Integral Equations* **6** (1993), *no.* 1, 93–110. (Victor A. Galaktionov) **93m:35100** 35K55 (35B40)
Cârjă, O. The minimal time function for vibrating systems. *Differential equations and control theory* (*Iaşi*, 1990), 58–62, *Pitman Res. Notes Math. Ser.*, 250, *Longman Sci. Tech., Harlow*, 1991. (Radoslaw Pytlak) **93e:49037** 49K40 (34G10, 34H05, 47N70, 49K45)
Carl, Bernd (*with* Defant, Andreas) An inequality between the p- and $(p,1)$-summing norm of finite rank operators from $C(K)$-spaces. *Israel J. Math.* **74** (1991), *no.* 2-3, 323–335. (M. S. Ramanujan) **93c:47027** 47B10 (47A30, 47A80, 47B38)
— (*with* Hess, A.) Estimates of covering numbers. *J. Approx. Theory* **65** (1991), *no.* 2, 121–139. (Yehoram Gordon) **93d:47042** 47B06 (46B20)
Carl, Siegfried An existence result for discontinuous elliptic equations under discontinuous nonlinear flux conditions. *Progress in partial differential equations: elliptic and parabolic problems* (*Pont-à-Mousson*, 1991), 120–130, *Pitman Res. Notes Math. Ser.*, 266, *Longman Sci. Tech., Harlow*, 1992. (Michelangelo Franciosi) **93k:35096** 35J65
— (*with* Heikkilä, Seppo) On extremal solutions of an elliptic boundary value problem involving discontinuous nonlinearities. *Differential Integral Equations* **5** (1992), *no.* 3, 581–589. (Maurizio Chicco) **93b:35046** 35J65 (35R05)
— (*with* Heikkilä, Seppo; Kumpulainen, Martti) On a generalized iteration method with applications to fixed point theorems and elliptic systems involving discontinuities. *Nonlinear Anal.* **20** (1993), *no.* 2, 157–167. (Pavel Drábek) **93k:35083** 35J55 (47H10, 47N20)
Carlen, Eric A. (*with* Krée, Paul) On sharp L^p estimates for iterated stochastic integrals and some related topics. *White noise analysis* (*Bielefeld*, 1989), 43–48, *World Sci. Publishing, River Edge, NJ*, 1990. (Summary) **93b:60111** 60H05
— (*with* Carvalho, Maria Conceicaõ V.) The central limit theorem, entropy production and stability of the rate of convergence to equilibrium for the Boltzmann equation. (English summary) *Probabilistic methods in mathematical physics* (*Siena*, 1991), 140–154, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93g:81002**) 82C03

— (*with* Loss, M.) Competing symmetries, the logarithmic HLS inequality and Onofri's inequality on S^n. *Geom. Funct. Anal.* **2** (1992), *no.* 1, 90–104. (J. Alfredo Jiménez) **93b:58170** 58G40 (49J40, 58E15)

— (*with* Carvalho, Maria Conceicaõ V.) Strict entropy production bounds and stability of the rate of convergence to equilibrium for the Boltzmann equation. *J. Statist. Phys.* **67** (1992), *no.* 3-4, 575–608. (Carlo Cercignani) **93h:82049** 82C40 (76P05)

Carlenzoli, Claudio (*with* Quarteroni, Alfio; Valli, Alberto) Spectral domain decomposition methods for compressible Navier-Stokes equations. (English summary) *Fifth International Symposium on Domain Decomposition Methods for Partial Differential Equations (Norfolk, VA*, 1991), 441–450, *SIAM, Philadelphia, PA*, 1992. (Summary) **93h:65123** 65M70 (65M55, 76M25, 76N10)

— (*with* Gervasio, P.) Effective numerical algorithms for the solution of algebraic systems arising in spectral methods. *Appl. Numer. Math.* **10** (1992), *no.* 2, 87–113. (Summary) **93b:65220** 65Y10 (65N35, 65N55)

Carleson, Lennart The dynamics of non-uniformly hyperbolic systems in two variables. *Proceedings of the International Congress of Mathematicians, Vol. I, II (Kyoto*, 1990), 1241–1247, *Math. Soc. Japan, Tokyo*, 1991. (Ladislav Andrey) **93d:58116** 58F15

— (*with* Jones, Peter Wilcox) On coefficient problems for univalent functions and conformal dimension. *Duke Math. J.* **66** (1992), *no.* 2, 169–206. (Ch. Pommerenke) **93c:30022** 30C50 (30C85, 30D05)

— *see also* **Jones, Peter Wilcox**, **93m:01072**

Carlet, Claude The automorphism groups of the Kerdock codes. *J. Inform. Optim. Sci.* **12** (1991), *no.* 3, 387–400. (Petr Němec) **93f:94026** 94B60

— Les groupes d'automorphismes des codes de Delsarte-Goethals. (English and French summaries) [The automorphism groups of Delsarte-Goethals codes] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 4, 475–478. (Summary) **93f:94015** 94B05 (94B60)

— A general case of formal duality between binary nonlinear codes. (English summary) Graph theory and combinatorics (Marseille-Luminy, 1990). *Discrete Math.* **111** (1993), *no.* 1-3, 77–85. (Summary) **93m:94037** 94B60

Carlier, Jacques (*with* Dubois, Olivier) Probabilistic approach to the satisfiability problem. *Theoret. Comput. Sci.* **81** (1991), *no.* 1, (*Part A*), 65–75. (Summary) **93d:68032** 68Q25

Carlin, Bradley P. State space modeling of nonstandard actuarial time series. (English summary) *Insurance Math. Econom.* **11** (1992), *no.* 3, 209–222. 62P05

Carlini, A. (*with* Fucito, F.; Martellini, Maurizio) On the stability of a stringy black hole. (English summary) *Phys. Lett. B* **289** (1992), *no.* 1-2, 35–44. (Marc Henneaux) **93k:83045** 83C57 (81T40, 83E30)

Carlip, S. (*with* Gegenberg, J.) Gravitating topological matter. *Proceedings of the 4th Canadian Conference on General Relativity and Relativistic Astrophysics (Winnipeg, MB*, 1991), 71–75, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93c:81196** 81T40 (58D29, 81S10)

— Entropy versus action in the (2 + 1)-dimensional Hartle-Hawking wave function. (English summary) *Phys. Rev. D* (3) **46** (1992), *no.* 10, 4387–4395. (Claus Kiefer) **93k:83027** 83C45

di Carlo, Antonio *see* **Di Carlo, Antonio**

Carlson, David H. (*with* Hershkowitz, Daniel; Shasha, Dafna) Block diagonal semistability factors and Lyapunov semistability of block triangular matrices. Second NIU Conference on Linear Algebra, Numerical Linear Algebra and Applications (DeKalb, IL, 1991). *Linear Algebra Appl.* **172** (1992), 1–25. (George P. Barker) **93c:15010** 15A18 (15A57, 34D20)

Carlson, James A. (*with* Hernández, Luis) Harmonic maps from compact Kähler manifolds to exceptional hyperbolic spaces. *J. Geom. Anal.* **1** (1991), *no.* 4, 339–357. (John C. Wood) **93a:58046** 58E20 (32J27)

Carlson, Jon F. Cohomology and modules over group algebras. *Proceedings of the International Congress of Mathematicians, Vol. I, II (Kyoto*, 1990), 317–324, *Math. Soc. Japan, Tokyo*, 1991. (David Benson) **93e:20070** 20J06 (20C20)

— Projective resolutions and degree shifting for cohomology and group rings. *Representations of algebras and related topics (Kyoto*, 1990), 80–126, *London Math. Soc. Lecture Note Ser.*, 168, *Cambridge Univ. Press, Cambridge*, 1992. (David Benson) **93m:20071** 20J06 (20C20)

— (*with* Clark, Douglas N.) Ext for Hilbert modules. *The Madison Symposium on Complex Analysis (Madison, WI*, 1991), 113–118, *Contemp. Math.*, 137, *Amer. Math. Soc., Providence, RI*, 1992. (*see* **93e:32001**) 46M20 (47D25, 47D99)

— (*with* Benson, David John) The cohomology of extraspecial groups. *Bull. London Math. Soc.* **24** (1992), *no.* 3, 209–235. (J. L. Alperin) **93b:20087** 20J06 (20D15)

— (*with* Benson, David John) Products in negative cohomology. (English summary) *J. Pure Appl. Algebra* **82** (1992), *no.* 2, 107–129. (U. Stammbach) **93i:20058** 20J06

— (*with* Benson, David John) Periodic modules with large period. *Quart. J. Math. Oxford Ser.* (2) **43** (1992), *no.* 171, 283–296. (J. L. Alperin) **93e:20011** 20C20 (20J06)

— (*with* Happel, Dieter) Contravariantly finite subcategories and irreducible maps. *Proc. Amer. Math. Soc.* **117** (1993), *no.* 1, 61–65. (Zygmunt Pogorzały) **93c:16001** 16D10 (16D90, 16G60, 20C20)

— (*with* Avrunin, George S.) Nilpotency degree of cohomology rings in characteristic two. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 2, 339–343. (U. Stammbach) **93g:20098** 20J06

Carlson, Robert C. (*with* Kouvelis, Panagiotis) Total unimodularity applications in bi-objective discrete optimization. *Oper. Res. Lett.* **11** (1992), *no.* 1, 61–65. (Summary) **93b:90051** 90C10 (90C27, 90C29)

Carlson, Timothy S. (*with* Lund, John; Bowers, Kenneth L.) Fully sinc-Galerkin computation for boundary feedback stabilization. *J. Math. Systems Estim. Control* **1** (1991), *no.* 2, 165–182. (Takao Nambu) **93b:65144** 65M60 (65M12, 93C20, 93D15)

Carlsson, Gunnar A survey of equivariant stable homotopy theory. *Topology* **31** (1992), *no.* 1, 1–27. (J. P. C. Greenlees) **93d:55009** 55N91 (55P42, 55P91)

Carlsson, Hasse (*with* Andersson, Mats) Boundary convergence in non-nontangential and nonadmissible approach regions. *Math. Scand.* **70** (1992), *no.* 2, 293–301. (Manfred Stoll) **93j:31008** 31B25 (32F15)

Carlsson, Svante (*with* Chen, Jingsen) The complexity of heaps. *Proceedings of the Third Annual ACM-SIAM Symposium on Discrete Algorithms (Orlando, FL*, 1992), 393–402, *ACM, New York*, 1992. (Summary) **93d:68014** 68P05 (68P10)

— A note on HEAPSORT. (English summary) *Comput. J.* **35** (1992), *no.* 4, 410–411. 68P10

— (*with* de Berg, Mark T.; Overmars, Mark H.) A general approach to dominance in the plane. *J. Algorithms* **13** (1992), *no.* 2, 274–296. (Ratko Tošić) **93e:68127** 68U05 (68Q25)

Carlsson, T. (*with* Leslie, F. M.; Stewart, I. W.; Nakagawa, Masahiro) Equivalent smectic *C* liquid crystal energies. *Contin. Mech. Thermodyn.* **3** (1991), *no.* 4, 237–250. (Ralph Saxton) **93f:73005** 73B05 (76A15, 82D30)

— (*with* Leslie, F. M.; Laverty, J. S.) Continuum theory for biaxial nematic liquid crystals. (English summary) *Quart. J. Mech. Appl. Math.* **45** (1992), *no.* 4, 595–606. (Summary) **93m:76003** 76A15 (73B99, 82D30)

Carlstein, E. (*with* Krishnamoorthy, C.) Boundary estimation. *J. Amer. Statist. Assoc.* **87** (1992), *no.* 418, 430–438. (Summary) **93c:62064** 62G05

Carlstrom, Ian F. Foreground automata. (English summary) *J. Comput. System Sci.* **45** (1992), *no.* 3, 367–384. (Summary) **93j:68054** 68Q05 (68Q70)

Carmeli, M. (*with* Malin, Shimon) A new approach to quantum gravity. (English summary) *Comm. Theoret. Phys. (Allahabad)* **1** (1991), 41–58. (Claus Kiefer) **93k:83028** 83C45

Carmelo, J. M. P. (*with* Castro Neto, A. H.) Dynamical decoupling and Kac-Moody current representation in multicomponent integrable systems. (English summary) *Phys. Rev. Lett.* **70** (1993), *no.* 13, 1904–1907. (Summary) **93k:81076** 81R10 (82B23)

Carmichael, Richard D. Extensions of H^p functions. (English summary) *Progr. Math. (Varanasi)* **24** (1990), *no.* 1-2, 1–12. (Summary) **93j:32011** 32A45 (32A35, 46E15)

Carminati, John (*with* McLenaghan, R. G.) Algebraic invariants of the Riemann tensor in a four-dimensional Lorentzian space. *J. Math. Phys.* **32** (1991), *no.* 11, 3135–3140. (Garry Ludwig) **93c:83081** 83C60 (53C80, 83C20, 83C99)

— (*with* Cooperstock, F. I.) Herlt metrics and gravitational-electrostatic balance in general relativity. *Gen. Relativity Gravitation* **24** (1992), *no.* 8, 881–895. (Summary) **93b:83008** 83C15 (83C75)

— (*with* Czapor, S. R.; McLenaghan, R. G.) The automatic conversion of spinor equations to dyad form in MAPLE. (English summary) *Gen. Relativity Gravitation* **24** (1992), *no.* 9, 911–928. (Garry Ludwig) **93f:83001** 83–04 (83C60)

— (*with* Devitt, John S.; Fee, Greg J.) Isogroups of differential equations using algebraic computing. (English summary) *J. Symbolic Comput.* **14** (1992), *no.* 1, 103–120. (Summary) **93f:35004** 35–04 (35A30, 35Q99)

do Carmo, Manfredo *see* **Differential geometry, 93b:53001**

Carmody, S. (*with* Walters, R. F. C.) Computing quotients of actions of a free category. *Category theory (Como*, 1990), 63–78, *Lecture Notes in Math.*, 1488, *Springer, Berlin*, 1991. (Timothy Porter) **93g:18004** 18A30 (20B40, 20F05)

Carmona, Carlos (*with* Power, Henry; Villegas, Miguel) Nonlinear inertial effects on the instability of a single long wave of finite amplitude at the interface of two viscous fluids. *Z. Angew. Math. Phys.* **42** (1991), *no.* 5, 663–679. (Summary) **93c:76039** 76E30 (76D10, 76D33, 76E10)

Carmona, René A. (*with* Ahn, Ho S.; Molchanov, S. A.) Nonstationary Anderson model with Lévy potential. *Stochastic partial differential equations and their applications (Charlotte, NC*, 1991), 1–11, *Lecture Notes in Control and Inform. Sci.*, 176, *Springer, Berlin*, 1992. (Dimitri Petritis) **93h:82036** 82C20 (35R60, 60H25)

— (*with* Nualart, David) Traces of random variables on Wiener space and the Onsager-Machlup functional. *J. Funct. Anal.* **107** (1992), *no.* 2, 402–438. (L. A. Shepp) **93f:60081** 60H07

Carmona Alvárez, J. (*with* Domínguez Benavides, T.) Porosity and K-set contractions. (Italian summary) *Boll. Un. Mat. Ital. A* (7) **6** (1992), *no.* 2, 227–232. (Louis A. Talman) **93j:47079** 47H09 (47H10, 54E35, 54H25)

Carnahan, R. (*with* Young, G. W.; Hariharan, S. I.) Flow effects in a vertical CVD reactor. (English summary) *SIAM J. Appl. Math.* **52** (1992), *no.* 6, 1509–1532. (Summary) **93h:76064** 76N99 (76Rxx, 80A32)

Carnap, Rudolf *see* **Carnap: a centenary reappraisal, 93f:01001**

Carneiro, C. E. I. (*with* Henriques, V. B.; Tamashiro, M. N.; Salinas, S. R.) Spin-1 Ising ferromagnet in a random crystal field. *Nonlinear phenomena in fluids, solids and other complex systems (Santiago*, 1990), 351–359, *North-Holland Delta Ser., North-Holland, Amsterdam*, 1991. (Summary) **93a:82030** 82B44 (82D30)

Carneiro de Araújo, J. H. (*with* Ruas, V.) An improved method for the simulation of viscoelastic flow with quadrilateral finite elements. (Spanish. English summary) *Rev. Internac. Métod. Numér. Cálc. Diseñ. Ingr.* **8** (1992), *no.* 1, 77–85. (Summary) **93a:76068** 76M10 (76A10)

— (*with* Ruas, V.; Silva Ramos, M. A. M.) Approximation of the three-field Stokes system via optimized quadrilateral finite elements. (English and French summaries) *RAIRO Modél. Math. Anal. Numér.* **27** (1993), *no.* 1, 107–127. (Summary) **93j:65211** 65P05 (76D07, 76M10)

Carnevale, G. F. (*with* Kloosterziel, R. C.) Formal stability of circular vortices. (English summary) *J. Fluid Mech.* **242** (1992), 249–278. (Olec Troshkin) **93m:76041** 76E30 (76C05, 76E20, 86A05)

— (*with* McWilliams, James C.; Pomeau, Yves; Weiss, Jeffrey B.; Young, W. R.) Rates, pathways, and end states of nonlinear evolution in decaying two-dimensional turbulence: scaling theory versus selective decay. *Phys. Fluids A* **4** (1992), *no.* 6, 1314–1316. (Summary) **93a:76058** 76F99

Carney, J. F., III (*with* Hahn, G. D.; Ray, Malcolm H.) On the numerical evaluation of the unforced response of a Duffing oscillator. (English summary) *Trans. ASME J. Appl. Mech.* **59** (1992), *no.* 1, 228–230. (Summary) **93d:70003** 70–08 (34C15, 70K50)

Carnicer, Jésus Miguel (*with* Dahmen, Wolfgang) Convexity preserving interpolation and Powell-Sabin elements. (English summary) *Comput. Aided Geom. Design* **9** (1992), *no.* 4, 279–289. (Summary) **93g:65016** 65D05

— Dual Bézier curves and convexity preserving interpolation. (English summary) *Comput. Aided Geom. Design* **9** (1992), *no.* 6, 435–445. (Yu Yu Feng) **93k:65015** 65D17

Carnicer, R. S. (*with* Alliney, S.) A hybrid finite element model for multilayered plates. (English summary) *Comput. Mech.* **10** (1992), *no.* 5, 319–333. (Summary) **93g:73107** 73V05 (73K10, 73K20)

Carnot, Lazare *see* **Thiele, Rüdiger, 93m:01086** *and* **Barreau, Hervé, (93c:01002)**

de Caro, Liberato *see* **De Caro, Liberato**

Caro, Yair On zero-sum Turán numbers: stars and cycles. (English summary) *Ars Combin.* **33** (1992), 193–198. (Summary) **93i:05073** 05C35 (05C15)

— On q-divisible hypergraphs. (English summary) *Ars Combin.* **33** (1992), 321–328. (Summary) **93d:05113** 05C65

— On zero-sum Ramsey numbers—stars. *Discrete Math.* **104** (1992), *no.* 1, 1–6. (J. E. Graver) **93j:05107** 05C55

— On several variations of the Turán and Ramsey numbers. *J. Graph Theory* **16** (1992), *no.* 3, 257–266. (András Gyárfás) **93f:05063** 05C55 (05C35, 05D10)
— On zero sum Ramsey numbers—complete graphs. *Quart. J. Math. Oxford Ser.* (2) **43** (1992), *no.* 170, 175–181. (Daniel Turzík) **93e:05070** 05C55
— (*with* Tuza, Zsolt) Bounded degrees and prescribed distances in graphs. (English summary) Graph theory and combinatorics (Marseille-Luminy, 1990). *Discrete Math.* **111** (1993), *no.* 1-3, 87–93. (Summary) **93m:05094** 05C35 (05C12)
— (*with* Alon, Noga; Krasikov, I.) Bisection of trees and sequences. (English summary) Combinatorics and algorithms (Jerusalem, 1988). *Discrete Math.* **114** (1993), *no.* 1-3, 3–7. (Summary) **93m:05054** 05C05 (05C70)
Carocca, Angel *p*-supersolvability of factorized finite groups. *Hokkaido Math. J.* **21** (1992), *no.* 3, 395–403. (Franco Migliorini) **93m:20042** 20F16 (20F19)
huber-Carol, Catherine *see* **Huber-Carol, Catherine**
Caron, R. J. (*with* Boender, C. G. E.; Rinnooy Kan, A. H. G.; et al.) Shake-and-bake algorithms for generating uniform points on the boundary of bounded polyhedra. *Oper. Res.* **39** (1991), *no.* 6, 945–954. (From the introduction) **93f:90106** 90C05 (65K05)
— (*with* Hlynka, M.; McDonald, James Frederick) On the best case performance of hit and run methods for detecting necessary constraints. *Math. Programming* **54** (1992), *no.* 2, *Ser. A*, 233–249. (E. A. Nurminski) **93d:65062** 65K05 (90C15, 93E35)
Carot, J. (*with* Mas, Luis; Rago, H.; da Costa, José Manuel N.) Affine collineations in Einstein-Maxwell space-times. (English summary) *Gen. Relativity Gravitation* **24** (1992), *no.* 9, 959–972. (Birgitta Alertz) **93g:83029** 83C22 (83C20)
Carotenuto, L. (*with* Muraca, P.; Pugliese, P.; Raiconi, G.) Optimization of the output matrix for discrete time linear systems estimation. (English summary) *Computational systems analysis* 1992 (*Berlin*, 1992), 293–298, *Elsevier, Amsterdam*, 1992. (*see* **93e:00021**) 93E10
— (*with* Muraca, P.; Pugliese, P.) Optimization of input structure for discrete time linear systems with application to distributed parameter systems. (English summary) *Mathematics of the analysis and design of process control* (*Dublin*, 1991/*Lille*, 1991), 213–222, *North-Holland, Amsterdam*, 1992. (*see* **93g:93004**) 93C20 (49N55)
Carothers, David C. (*with* Feldman, William A.) Sums of homomorphisms on Banach lattices. *J. Operator Theory* **24** (1990), *no.* 2, 337–349. (C. D. Aliprantis) **93a:47039** 47B65 (46B42, 47B60)
— Liftings into countably complete Banach lattices. (English summary) *Houston J. Math.* **18** (1992), *no.* 3, 467–472. (C. D. Aliprantis) **93g:46018** 46B42 (46A40, 47B60, 47B65)
Carow-Watamura, Ursula (*with* Schlieker, Michael; Watamura, Satoshi; Weich, Wolfgang) Bicovariant differential calculus on quantum groups $SU_q(N)$ and $SO_q(N)$. *Comm. Math. Phys.* **142** (1991), *no.* 3, 605–641. (Vladimir A. Stukopin) **93c:58022** 58B30 (16W30, 17B37, 81R50)
— (*with* Schlieker, Michael; Scholl, Marcus; Watamura, Satoshi) A quantum Lorentz group. *Internat. J. Modern Phys. A* **6** (1991), *no.* 17, 3081–3108. (Ömer Oğuz) **93a:81081** 81R50 (17B37)
Carpenter, Amos J. (*with* Varga, Richard S.) Some numerical results on best uniform rational approximation of x^α on [0, 1]. *Numer. Algorithms* **2** (1992), *no.* 2, 171–185. (Summary) **93b:65024** 65D15 (41A20, 41A50)
— Asymptotics for the zeros of the generalized Bessel polynomials. *Numer. Math.* **62** (1992), *no.* 4, 465–482. (Summary) **93i:41008** 41A20 (33C10, 41A60)
Carpenter, Bob Typed feature structures: a generalization of first-order terms. (English summary) *Logic programming* (*San Diego, CA*, 1991), 187–201, *MIT Press Ser. Logic Program., MIT Press, Cambridge, MA*, 1991. (*see* **93i:68009**) 68Q65 (03B70, 68N17, 68Q50)
— ★ The logic of typed feature structures. With applications to unification grammars, logic programs and constraint resolution. Cambridge Tracts in Theoretical Computer Science, 32. *Cambridge University Press, Cambridge*, 1992. viii+270 *pp. ISBN* 0-521-41932-8 (Peter Bachmann) **93j:68001** 68–02 (68P05, 68Q55, 68Q60)
Carpenter, Jenna P. Finiteness theorems for forms over global fields. *Math. Z.* **209** (1992), *no.* 1, 153–166. (From the introduction) **93g:11031** 11E12 (11E81)
Carpenter, Mark (*with* Pal, Nabendu; Kushary, Debashis) Estimation of the smaller and larger of two exponential location parameters. *Comm. Statist. Theory Methods* **21** (1992), *no.* 4, 883–895. (A. C. Cohen) **93h:62041** 62F10 (62F07)
Carpio, Harry M. On the Fourier-Stieltjes transform of Cantor functions. *Proceedings of Asian Mathematical Conference*, 1990 (*Hong Kong*, 1990), 40–44, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93b:00022**) 44A15
Carpio Rodriguez, A. (*with* Comte, Myriam; Lewandowski, Roger) A nonexistence result for a nonlinear equation involving critical Sobolev exponent. (French summary) *Ann. Inst. H. Poincaré Anal. Non Linéaire* **9** (1992), *no.* 3, 243–261. (M. Biroli) **93d:35050** 35J65 (35D05)
Carr, B. J. Astrophysical and observational cosmology. *General relativity and gravitation*, 1989 (*Boulder, CO*, 1989), 263–269, *Cambridge Univ. Press, Cambridge*, 1990. (*see* **93b:83002**) 83B05
Carr, Edward C. (*with* Klerlein, Joseph B.) Hamiltonian cycles in $C_n \times_I C_m$. Proceedings of the Twenty-second Southeastern Conference on Combinatorics, Graph Theory, and Computing (Baton Rouge, LA, 1991). *Congr. Numer.* **83** (1991), 213–221. (Introduction) **93b:05100** 05C45
Carr, Jack Slowly varying solutions of a nonlinear partial differential equation. *The dynamics of numerics and the numerics of dynamics* (*Bristol*, 1990), 23–29, *Inst. Math. Appl. Conf. Ser. New Ser.*, 34, *Oxford Univ. Press, New York*, 1992. (*see* **93b:65004**) 35K57 (35B25)
— Asymptotic behaviour of solutions to the coagulation-fragmentation equations. I. The strong fragmentation case. (English summary) *Proc. Roy. Soc. Edinburgh Sect. A* **121** (1992), *no.* 3-4, 231–244. (Paul F. Zweifel) **93i:82072** 82C99 (34A34)
— (*with* Pego, Robert L.) Self-similarity in a coarsening model in one dimension. (English summary) *Proc. Roy. Soc. London Ser. A* **436** (1992), *no.* 1898, 569–583. (Summary) **93f:82032** 82C03
martínez Carracedo, Celso *see* **Martínez Carracedo, Celso**
lucio-Carrasco, Francisca *see* **Lucio-Carrasco, Francisca**
salinas Carrasco, Luis *see* **Salinas Carrasco, Luis**
Carrasco, P. (*with* Cegarra, Antonio M.) Group-theoretic algebraic models for homotopy types. *J. Pure Appl. Algebra* **75** (1991), *no.* 3, 195–235. (Timothy Porter) **93b:55026** 55U10 (18G30, 55P15)
Carraway, Robert L. (*with* Schmidt, Robert L.; Weatherford, Lawrence R.) An algorithm for maximizing target achievement in the stochastic knapsack problem with normal returns. (English summary) *Naval Res. Logist.* **40** (1993), *no.* 2, 161–173. 90C27 (90C15)
Carré, C. The rule of Littlewood-Richardson in a construction of Berenstein-Zelevinsky. *Internat. J. Algebra Comput.* **1** (1991), *no.* 4, 473–491. (Sergey V. Fomin) **93c:05116** 05E10 (05E05, 20C30)
Carreau, Michel The functional integral for a free particle on a half-plane. (English summary) *J. Math. Phys.* **33** (1992), *no.* 12, 4139–4147. (Takashi Miura) **93k:81129** 81S40 (58D30)
Carrell, James B. Some remarks on regular Weyl group orbits and the cohomology of Schubert varieties. *Kazhdan-Lusztig theory and related topics* (*Chicago, IL*, 1989), 33–41, *Contemp. Math.*, 139, *Amer. Math. Soc., Providence, RI*, 1992. (E. Akyıldız) **93k:14068** 14M15 (20G99)
Carrera, A. R. (*with* Martinez, M.; González, J. M.) Poisson approximation for independent Bernoulli summands using the semi-group operators theory. Proceedings of the Second International Mathematical Miniconference, Part II (Budapest, 1988). *Period. Polytech. Transportation Engrg.* **19** (1991), *no.* 1-2, 23–31. (Dietmar Pfeifer) **93g:60044** 60F05 (47D03, 47N30, 62E20)
Carrera, Jorge Methodological conceptualization of mathematical modelling. (English summary) *Math. Comput. Modelling* **16** (1992), *no.* 12, 19–28. 00A71
Carreras Escobar, Francesc Filtrations, values and voting discipline. *Internat. J. Game Theory* **20** (1992), *no.* 4, 357–376. (Summary) **93b:90114** 90D06 (90D12)
kindler-Carrère, Frédérique *see* **Kindler-Carrère, Frédérique**
Carrese, Rosalba (*with* Lazarow, Ewa) Strong density topologies with respect to measure and category. *Real Anal. Exchange* **17** (1991/92), *no.* 1, 322–338. (Zbigniew Grande) **93e:54001** 54A10 (26B05, 54H05)
Carrier, Alain (*with* El Ghaoui, Laurent; Bryson, Arthur E., Jr.) Linear quadratic minimax controllers. *J. Guidance Control Dynamics* **15** (1992), *no.* 4, 953–961. (Zoran Gajic) **93f:93063** 93B51 (49N10, 93B36, 93B60)
Carrière, A. (*with* Georges, D.; Merigot, J. C.) Commande avec rejet asymptotique de biais constants: l'approche d'état et l'approche polynômiale. (English and French summaries) [Control with asymptotic rejection of perturbations constant in time: the state approach and the polynomial approach] *RAIRO Automat.-Prod. Inform. Ind.* **26** (1992), *no.* 4, 295–313. 93C05 (93B51)
Carriere, Jacques (*with* Finster, Mark) Statistical theory for the ratio model of paired comparisons. (English summary) *J. Math. Psych.* **36** (1992), *no.* 3, 450–460. 92J45 (62J15, 62P15)
— Nonparametric tests for mixed Poisson distributions. (English summary) *Insurance Math. Econom.* **12** (1993), *no.* 1, 3–8. (Summary) **93m:62105** 62G10 (62P05)
Carrière, Keumhee Chough (*with* Reinsel, Gregory C.) Investigation of dual-balanced crossover designs for two treatments. (English and French summaries) *Biometrics* **48** (1992), *no.* 4, 1157–1164. 62K99 (62P10)
Carrillo, Angel (*with* Hugo, Arizmendi P.) On the extended spectral radius in B_0-algebras. *Funct. Approx. Comment. Math.* **19** (1990), 77–81. (Robin Harte) **93c:46084** 46H05
— (*with* Arizmendi Peimbert, Hugo) On the extended spectral radius in some classes of locally convex algebras. *Function spaces* (*Edwardsville, IL*, 1990), 25–29, *Lecture Notes in Pure and Appl. Math.*, 136, *Dekker, New York*, 1992. (Abdullah H. Al-Moajil) **93c:46080** 46H05
Carrillo, José (*with* Gilardi, Gianni) La vitesse de propagation dans le problème de la digue. (English and French summaries) [Rate of propagation in the dam problem] *Ann. Fac. Sci. Toulouse Math.* (5) **11** (1990), *no.* 3, 7–28. (Summary) **93g:35063** 35K55 (76S05)
díaz Carrillo, M. *see* **Díaz Carrillo, M.**
Carrillo-Gamboa, Olivia (*with* Gunst, Richard F.) Measurement-error-model collinearities. (English summary) *Technometrics* **34** (1992), *no.* 4, 454–464. 62J20
Carrington, Julie R. (*with* Brigham, Robert C.) Global domination of simple factors. (English summary) Proceedings of the Twenty-third Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, FL, 1992). *Congr. Numer.* **88** (1992), 161–167. (Summary) **93j:05110** 05C70 (68Q25, 68R10)
fernández Carrión, Antonio *see* **Fernández Carrión, Antonio**
Carriquiry, Alicia L. (*with* Harville, David A.) Classical and Bayesian prediction as applied to an unbalanced mixed linear model. (English and French summaries) *Biometrics* **48** (1992), *no.* 4, 987–1003. 62J05 (62F15, 62P10)
Carro, M. J. (*with* Cerdà, Joan) On the Lions-Schechter complex interpolation method. *Function spaces* (*Poznań*, 1989), 229–237, *Teubner-Texte Math.*, 120, *Teubner, Stuttgart*, 1991. (Irina U. Asekritova) **93b:46142** 46M35
Carroll, John Sufficient conditions for uniformly second-order convergent schemes for stiff initial value problems. (English summary) *Comput. Math. Appl.* **24** (1992), *no.* 10, 105–116. (Summary) **93e:65097** 65L05
— A matricial exponentially fitted scheme for the numerical solution of stiff initial-value problems. (English summary) *Comput. Math. Appl.* **26** (1993), *no.* 4, 57–64. 65L05
Carroll, John W. The indefinitely iterated prisoner's dilemma. Reply to N. C. Becker and A. E. Cudd: "Indefinitely repeated games: a response to Carroll: 'Indefinite terminating points and the iterated prisoner's dilemma' " [Theory and Decision **28** (1990), no. 2, 189–195; MR 91h:90128]. (English summary) *Theory and Decision* **34** (1993), *no.* 1, 63–72. 90D12
Carroll, Joseph E. (*with* Lamberson, Roland H.) The owl's odyssey. A continuous model for the dispersal of territorial species. (English summary) *SIAM J. Appl. Math.* **53** (1993), *no.* 1, 205–218. (Summary) **93m:92022** 92D40 (92D25)
Carroll, R. *see* **Carroll, Robert L.**
Carroll, Raymond J. (*with* van Rooij, Arnoud C. M.; Ruymgaart, Frits H.) Theoretical aspects of ill-posed problems in statistics. *Acta Appl. Math.* **24** (1991), *no.* 2, 113–140. (Summary) **93a:62049** 62G05 (65J10, 65U05)
— (*with* Hsing, Tailen) An asymptotic theory for sliced inverse regression. *Ann. Statist.* **20** (1992), *no.* 2, 1040–1061. (Keh-Wei Chen) **93h:62081** 62G05
— (*with* Simpson, Douglas G.; Ruppert, David) On one-step GM estimates and stability of inferences in linear regression. *J. Amer. Statist. Assoc.* **87** (1992), *no.* 418, 439–450. (Summary) **93e:62174** 62J05 (62F35)
— (*with* Spiegelman, C. H.) Diagnostics for nonlinearity and heteroscedasticity in errors-in-variables regression. *Technometrics* **34** (1992), *no.* 2, 186–196. 62J20

— (*with* Eltinge, John L.; Ruppert, David) Robust linear regression in replicated measurement error models. (English summary) *Statist. Probab. Lett.* **16** (1993), *no.* 3, 169–175. 62J05

Carroll, Robert L. (*with* Geng, Zheng; Jamshidi, M.; Kisner, R. A.) An adaptive learning control approach with application to water tank level control. (English summary) *Control Theory Adv. Tech.* **8** (1992), *no.* 3, 577–592. 93C95

Carroll, Robert W. ★ Topics in soliton theory. North-Holland Mathematics Studies, 167. *North-Holland Publishing Co., Amsterdam*, 1991. xii+428 *pp. ISBN* 0-444-88869-1 (From the preface) **93f:58095** 58F07 (34A55, 34L25, 35Q51, 46N20, 58–02)

Carroll, Sean M. (*with* Farhi, Edward; Guth, Alan H.) An obstacle to building a time machine. *Phys. Rev. Lett.* **68** (1992), *no.* 3, 263–266. (Laszlo B. Szabados) **93e:83048a** 83C75

— (*with* Farhi, Edward; Guth, Alan H.) Errata: "An obstacle to building a time machine". *Phys. Rev. Lett.* **68** (1992), *no.* 22, 3368. (Laszlo B. Szabados) **93e:83048b** 83C75

Carroll, T. L. (*with* Pecora, L. M.) A circuit for studying the synchronization of chaotic systems. (English summary) *Internat. J. Bifur. Chaos Appl. Sci. Engrg.* **2** (1992), *no.* 3, 659–667. (Summary) **93g:58093** 58F13 (34C15)

Carson, Andrew B. Self-injective regular algebras and function rings. *Algebra Universalis* **29** (1992), *no.* 3, 449–454. (K. Chandrasekhara Rao) **93h:54012** 54C40 (16E50)

Carstensen, Carsten (*with* Beckermann, Bernhard) A reliable modification of the cross rule for rational Hermite interpolation. (English summary) Extrapolation and rational approximation (Puerto de la Cruz, 1992). *Numer. Algorithms* **3** (1992), *no.* 1-4, 29–44. (Summary) **93k:65009** 65D05 (41A05)

— (*with* Wriggers, P.) On perturbation behaviour in nonlinear dynamics. (English summary) *Comm. Numer. Methods Engrg.* **9** (1993), *no.* 2, 165–175. (Summary) **93k:73056** 73K12 (34C15, 70K20)

— (*with* Reinders, Martin) On a class of higher-order methods for simultaneous root finding of generalized polynomials. (English summary) *Numer. Math.* **64** (1993), *no.* 1, 69–84. (John B. Kioustelidis) **93m:65065** 65H05

Carstoiu, F. (*with* Lombard, R. J.) A new method of evaluating folding type integrals. (English summary) *Ann. Physics* **217** (1992), *no.* 2, 279–303. (Summary) **93f:81165** 81V70 (65D30, 81–08, 81U99)

Cartan, Élie ★ Leçons sur la géométrie projective complexe. La théorie des groupes finis et continus et la géométrie différentielle traitées par la méthode du repère mobile. Leçons sur la théorie des espaces à connexion projective. (French) [Lessons on complex projective geometry. The theory of finite and continuous groups treated by the moving-frame method. Lessons on the theory of projectively connected spaces] Reprint of the editions of 1931, 1937 and 1937. Les Grands Classiques Gauthier-Villars. [Gauthier-Villars Great Classics] *Éditions Jacques Gabay, Sceaux*, 1992. vii+911 *pp. ISBN* 2-87647-015-2 (Editors) **93i:01030** 01A75 (53–03)

Cartan, Henri Quelques souvenirs. [Some memories] *Gaz. Math. No.* 53 (1992), 23–24. 01A60 (01A70)

Carter, Brandon Mechanical properties and cosmological implications of current carrying cosmic strings. *Quantum gravity (Moscow*, 1990), 494–505, *World Sci. Publishing, River Edge, NJ*, 1991. (Summary) **93d:83070** 83F05 (83E30)

— (*with* Khalatnikov, I. M.) Momentum, vorticity, and helicity in covariant superfluid dynamics. (English summary) *Ann. Physics* **219** (1992), *no.* 2, 243–265. (S. Kichenassamy) **93m:83046** 83C55 (76Y05, 82D50)

— Outer curvature and conformal geometry of an imbedding. *J. Geom. Phys.* **8** (1992), *no.* 1-4, 53–88. (Chun-Li Shen) **93k:53038** 53C21 (53A30)

— (*with* Khalatnikov, I. M.) Equivalence of convective and potential variational derivations of covariant superfluid dynamics. *Phys. Rev. D* (3) **45** (1992), *no.* 12, 4536–4544. (Summary) **93g:83061** 83C55

Carter, C. K. (*with* Eagleson, G. K.) A comparison of variance estimators in nonparametric regression. (English summary) *J. Roy. Statist. Soc. Ser. B* **54** (1992), *no.* 3, 773–780. (Summary) **93f:62045** 62G05 (62J02)

Carter, G. Enumeration results on linear complexity profiles. *Cryptography and coding, II (Cirencester*, 1989), 23–34, *Inst. Math. Appl. Conf. Ser. New Ser.*, 33, *Oxford Univ. Press, New York*, 1992. (Garegin S. Markarian) **93b:94018** 94A55 (94C15)

Carter, Ithiel (*with* Rodin, Burt) An inverse problem for circle packing and conformal mapping. *Trans. Amer. Math. Soc.* **334** (1992), *no.* 2, 861–875. (Darryl McCullough) **93b:52019** 52C15 (30C20, 30C30, 51M15)

Carter, J. Scott (*with* Saito, Masahiko) Syzygies among elementary string interactions in $2+1$ dimensions. *Lett. Math. Phys.* **23** (1991), *no.* 4, 287–300. (Louis H. Kauffman) **93e:57053** 57R52 (57Q37, 81T30)

— Extending immersed circles in the sphere to immersed disks in the ball. *Comment. Math. Helv.* **67** (1992), *no.* 3, 337–348. (Roger Fenn) **93g:57035** 57R42

— (*with* Saito, Masahiko) Planar generalizations of the Yang-Baxter equation and their skeins. *J. Knot Theory Ramifications* **1** (1992), *no.* 2, 207–217. (Uwe Grimm) **93g:20072** 20F36 (20F55, 57M25, 82B23)

— (*with* Saito, Masahiko) Canceling branch points on projections of surfaces in 4-space. *Proc. Amer. Math. Soc.* **116** (1992), *no.* 1, 229–237. (Summary) **93i:57029** 57Q35 (57Q45)

Carter, Randy L. (*with* Vonesh, Edward F.) Mixed-effects nonlinear regression for unbalanced repeated measures. (French summary) *Biometrics* **48** (1992), *no.* 1, 1–17. (Summary) **93a:62140** 62P10

Carter, Richard G. Numerical experience with a class of algorithms for nonlinear optimization using inexact function and gradient information. (English summary) *SIAM J. Sci. Comput.* **14** (1993), *no.* 2, 368–388. (K. Schittkowski) **93j:90095** 90C30 (65K05, 90–08)

Carter, Roger William Representation theory of finite groups of Lie type over an algebraically closed field of characteristic zero. (Russian) Translated from the English by N. A. Vavilov. *Algebra*, 9 (*Russian*), 5–143, 268, *Itogi Nauki i Tekhniki, Vsesoyuz. Inst. Nauchn. i Tekhn. Inform. (VINITI), Moscow*, 1992. (Andrzej Daszkiewicz) **93j:20034** 20C33 (20–02, 20G05)

— Kac-Moody groups and their automorphisms. *Groups, combinatorics & geometry (Durham*, 1990), 218–228, *London Math. Soc. Lecture Note Ser.*, 165, *Cambridge Univ. Press, Cambridge*, 1992. (Stephen Slebarski) **93k:17048** 17B67 (20E42, 20G15)

— Cuspidal matrix representations for $GL_2(q)$ and $GL_3(q)$. *Proc. London Math. Soc.* (3) **64** (1992), *no.* 3, 487–523. (From the introduction) **93h:20049** 20G05 (20C15, 22E55)

Carter, Sheila (*with* Ezentas, Ridvan) Immersions with totally reducible focal set. *J. Geom.* **45** (1992), *no.* 1-2, 1–7. (Steven G. Buyske) **93k:53056** 53C42

Cartier, Pierre Was sind und was sollen die Zahlen? (The nature and meaning of numbers) (1984 version). (French) *La mathématique non standard*, 331–353, *Fondem. Sci., CNRS, Paris*, 1989. (*see* **93c:01002**) 03H05 (03A05)

Cartmell, Matthew ★ Introduction to linear, parametric and nonlinear vibrations. *Chapman and Hall, Ltd., London*, 1990. xii+242 *pp. ISBN* 0-412-30730-8 (Richard Scott) **93b:70001** 70–01 (34C15, 70Jxx, 70K20, 70K28, 70K40, 73K12)

Carton-Lebrun, C. (*with* Heinig, H. P.) Weighted Fourier transform inequalities for radially decreasing functions. *SIAM J. Math. Anal.* **23** (1992), *no.* 3, 785–798. (Vladimir D. Stepanov) **93e:42012** 42A38 (42B10)

— Fourier inequalities with nonradial weights. *Trans. Amer. Math. Soc.* **333** (1992), *no.* 2, 751–767. (Javier Duoandikoetxea) **93b:42025** 42B10 (26D10, 47G10)

Cartwright, Donald I. Singularities of the Green function of a random walk on a discrete group. *Monatsh. Math.* **113** (1992), *no.* 3, 183–188. (Paolo M. Soardi) **93e:60137** 60J15

— (*with* Soardi, Paolo M.; Woess, Wolfgang) Martin and end compactifications for non-locally finite graphs. *Trans. Amer. Math. Soc.* **338** (1993), *no.* 2, 679–693. (Yves Derriennic) **93j:60096** 60J15 (60J50)

Cartwright, Julyan H. E. (*with* Piro, Oreste) The dynamics of Runge-Kutta methods. (English summary) *Internat. J. Bifur. Chaos Appl. Sci. Engrg.* **2** (1992), *no.* 3, 427–449. (Summary) **93j:65111** 65L06 (34A45, 58–04)

Cartwright, Nancy (*with* Chang, Hasok) Causality and realism in the EPR experiment. (English summary) *Erkenntnis* **38** (1993), *no.* 2, 169–190. 81P15

— *see also* **Needham, Paul**, **93e:01014**

Caruth, A. On the maximal condition in formal power series rings. *Colloq. Math.* **63** (1992), *no.* 1, 133–134. (Paul M. Eakin) **93e:16046** 16S36 (13J05, 16P40)

González-Carvajal, Clary C. *see* **González-Carvajal, Clary C.**

de Carvalho, Alexandre Nolasco *see* **De Carvalho, Alexandre Nolasco**

Carvalho, C. *see* **Carvalho, Maria Conceicaõ V.**

de Carvalho, Francisco J. Craveiro On collinearity, parallelism and sphericity for pairs of curves. *Note Mat.* **10** (1990), *no.* 1, 135–140. (Anders Linnér) **93e:53001** 53A04

Carvalho, J. L. (*with* Curran, J. H.) Two-dimensional Green's functions for elastic bi-materials. (English summary) *Trans. ASME J. Appl. Mech.* **59** (1992), *no.* 2, *part* 1, 321–327. (Summary) **93e:73008** 73C02 (73V10)

Carvalho, L. A. V. On the stability of discrete equations and ordinary differential equations. *Delay differential equations and dynamical systems (Claremont, CA*, 1990), 88–97, *Lecture Notes in Math.*, 1475, *Springer, Berlin*, 1991. (From the introduction) **93i:39003** 39A12 (34D20)

Carvalho, Maria Conceicaõ V. (*with* Carlen, Eric A.) The central limit theorem, entropy production and stability of the rate of convergence to equilibrium for the Boltzmann equation. (English summary) *Probabilistic methods in mathematical physics (Siena*, 1991), 140–154, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93g:81002**) 82C03

— (*with* Carlen, Eric A.) Strict entropy production bounds and stability of the rate of convergence to equilibrium for the Boltzmann equation. *J. Statist. Phys.* **67** (1992), *no.* 3-4, 575–608. (Carlo Cercignani) **93h:82049** 82C40 (76P05)

Carverhill, Andrew (*with* Pedit, Franz J.) Global solutions of the Navier-Stokes equation with strong viscosity. (English summary) *Ann. Global Anal. Geom.* **10** (1992), *no.* 3, 255–261. (Summary) **93i:35101** 35Q30 (58D05, 58D30)

Casacuberta, Carles (*with* Peschke, Georg; Pfenniger, Markus) On orthogonal pairs in categories and localisation. *Adams Memorial Symposium on Algebraic Topology*, 1 (*Manchester*, 1990), 211–223, *London Math. Soc. Lecture Note Ser.*, 175, *Cambridge Univ. Press, Cambridge*, 1992. (Richard John Steiner) **93f:18004** 18A40 (55P60)

— (*with* Hilton, Peter) A note on extensions of nilpotent groups. *Adams Memorial Symposium on Algebraic Topology*, 1 (*Manchester*, 1990), 225–234, *London Math. Soc. Lecture Note Ser.*, 175, *Cambridge Univ. Press, Cambridge*, 1992. (Zhi Rang Zhang) **93g:20065** 20F18 (20E22)

— (*with* Castellet, Manuel) Localization methods in the study of the homology of virtually nilpotent groups. *Math. Proc. Cambridge Philos. Soc.* **112** (1992), *no.* 3, 551–564. (İ. Ya. Subbotin) **93h:20036** 20F18 (20E22)

— (*with* Peschke, Georg) Localizing with respect to self-maps of the circle. *Trans. Amer. Math. Soc.* **339** (1993), *no.* 1, 117–140. (Richard John Steiner) **93k:55012** 55P60 (18G99, 20J05, 55N25, 55P10)

Casadio Tarabusi, Enrico (*with* Berenstein, Carlos A.) Inversion formulas for the k-dimensional Radon transform in real hyperbolic spaces. *Duke Math. J.* **62** (1991), *no.* 3, 613–631. (Introduction) **93b:53056** 53C65 (58G99)

— (*with* Berenstein, Carlos A.) On the Radon and Riesz transforms in real hyperbolic spaces. (English summary) *Geometric analysis (Philadelphia, PA*, 1991), 1–21, *Contemp. Math.*, 140, *Amer. Math. Soc., Providence, RI*, 1992. (Árpád Kurusa) **93j:44003** 44A12 (44A15, 53C65)

Casahorran, J. (*with* Boya, Luis J.; Esteve, J. G.) Anomalous SUSY quantum mechanics, heterotic models and scattering states. (English summary) *Modern Phys. Lett. A* **7** (1992), *no.* 25, 2325–2331. (Summary) **93e:81027** 81Q60 (81T60)

Casal, Alfonso C. (*with* Victoria Rodríguez, Susana) Functional-differential equations in traffic models. (Spanish) *Proceedings of the XII Congress on Differential Equations and Applications/II Congress on Applied Mathematics (Spanish) (Oviedo*, 1991), 409–414, *Univ. Oviedo, Oviedo*, 1991. (*see* **93j:00009**) 90B20 (34K05, 90B06)

Casali, Maria Rita A combinatorial characterization of 4-dimensional handlebodies. (Italian summary) *Forum Math.* **4** (1992), *no.* 2, 123–134. (Summary) **93e:57033** 57N13 (05C10, 57M15, 57Q15, 57R65)

Casalino, G. (*with* Ferrara, A.; Minciardi, Riccardo) On stability analysis of equilibrium points of variational adaptive control schemes. (English summary) *Adaptive systems in control and signal processing*, 1989 (*Glasgow*), 229–234, *IFAC Sympos. Ser.*, 1990, *No.* 1, *Pergamon, Oxford*, 1990. (*see* **93j:93007**) 93C40 (93B30)

— (*with* Minciardi, Riccardo) Further results on implicit models with application to LQ adaptive optimization. *Automatica J. IFAC* **28** (1992), *no.* 2, 407–410. (Summary) **93a:93035** 93B30 (49N10, 93E35)

— (*with* Aicardi, Michele; Minciardi, Riccardo; Zoppoli, R.) On the existence of stationary optimal receding-horizon strategies for dynamic teams with common past information structures. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 11, 1767–1771. 93A14 (93B55)

Casalis, Muriel Les familles exponentielles sur $\mathbb{R}^2$ de fonction-variance $V(m) = am \otimes m + B(m) + C$. (English summary) [Natural exponential families on $\mathbb{R}^2$ with variance-function $V(m) = am \otimes m + B(m) + C$] *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 8, 635–638. (Summary) **93c:62021** 62E10 (60E05)

Casal Piga, Alfonso C. *see* **Casal, Alfonso C.**

Casals, M. R. Bayesian testing of fuzzy parametric hypotheses from fuzzy information. (English and French summaries) *RAIRO Rech. Opér.* **27** (1993), *no.* 2, 189–199. 62F15 (04A72)

Casal Urcera, Gerardo (*with* Lafuente López, Javier) Asymptotic behavior of the incomplete geodesics of a Lorentzian oriented torus. (Spanish. English summary) *Proceedings of the XVth Portuguese-Spanish Conference on Mathematics, Vol. III (Portuguese)* (*Évora*, 1990), 161–166, *Univ. Évora, Évora*, 1991. (Summary) **93a:53057** 53C50 (53C22)

Casanova, Gaston Théorie relativiste du nucléon et du doublet Ξ. (English summary) [Relativistic theory of the nucleon and of the doublet Ξ] *Clifford algebras and their applications in mathematical physics* (*Montpellier*, 1989), 353–361, *Fund. Theories Phys.*, 47, *Kluwer Acad. Publ., Dordrecht*, 1992. (*see* **93f:00011**) 81V25 (81R25)

Casanova, M. A. (*with* Hemerly, A. S.; Guerreiro, R. A. de T.) Explaining SLDNF resolution with nonnormal defaults. (English summary) *IBM J. Res. Develop.* **36** (1992), *no.* 3, 347–359. (Summary) **93i:68037** 68N17 (68Q55)

— (*with* Guerreiro, R. A. de T.; Hemerly, A. S.) STORK and PENGUIN: logic programming systems using general clauses and defaults. (English summary) *IBM J. Res. Develop.* **36** (1992), *no.* 3, 361–374. 68N17

Casas, Eduardo *see* **Casas Rentería, Eduardo**

Casas, F. (*with* Oteo, J. A.; Ros, J.) Geometric factors in the adiabatic evolution of classical systems. *Phys. Lett. A* **163** (1992), *no.* 5-6, 359–363. (Holger Kantz) **93c:70012** 70H99 (70K99)

— (*with* Oteo, J. A.; Ros, J.) Variation of the action in the classical time-dependent harmonic oscillator: an exact result. (English summary) *J. Phys. A* **26** (1993), *no.* 6, L315–L318. (Summary) **93m:70017** 70H05 (70K99)

Casas, J. A. (*with* García-Bellido, Juan; Quirós, Mariano) Scalar-tensor theories of gravity with Φ-dependent masses. *Classical Quantum Gravity* **9** (1992), *no.* 5, 1371–1384. (Carl Brans) **93d:83054** 83D05 (83F05)

— (*with* Gómez Rodríguez, Faustino; Muñoz, Carlos) Complete structure of Z_n Yukawa couplings. (English summary) *Internat. J. Modern Phys. A* **8** (1993), *no.* 3, 455–505. (C. Gauthier) **93k:81171** 81T30 (32J81)

Casasayas, Josefina (*with* Nunes, Ana) Chaos in a restricted charged four-body problem. (English summary) *Predictability, stability, and chaos in N-body dynamical systems* (*Cortina d'Ampezzo*, 1990), 3–9, *NATO Adv. Sci. Inst. Ser. B Phys.*, 272, *Plenum, New York*, 1991. (*see* **93i:70002**) 58F13 (70F10, 78A35)

— (*with* Nunes, Ana; Llibre, Jaume) A perturbation of the relativistic Kepler problem. (English summary) *Predictability, stability, and chaos in N-body dynamical systems* (*Cortina d'Ampezzo*, 1990), 547–554, *NATO Adv. Sci. Inst. Ser. B Phys.*, 272, *Plenum, New York*, 1991. (Summary) **93k:70011** 70F05 (58F05, 58F40, 70H05, 70H40)

— (*with* Nunes, Ana) Global description of the solutions of a large class of nonintegrable Hamiltonians. *J. Differential Equations* **100** (1992), *no.* 2, 203–224. (Frans Cantrijn) **93j:58053** 58F05 (34C99, 70H05)

— (*with* Fontich, E.; Nunes, Ana) Invariant manifolds for a class of parabolic points. (English summary) *Nonlinearity* **5** (1992), *no.* 5, 1193–1210. (Richard C. Churchill) **93i:58052** 58F05 (34C30, 70F15)

Casas Miras, José Manuel ★ Invariantes de módulos cruzados en álgebras de Lie. (Spanish) [Invariants of crossed modules in Lie algebras] Álxebra [Algebra], 57. *Universidad de Santiago de Compostela, Departamento de Álgebra, Santiago de Compostela*, 1991. viii+173 *pp. ISBN* 84-604-0312-2 (J. Duskin) **93f:17031** 17B55

Casas Rentería, Eduardo (*with* Fernández, Luis Alberto) State-constrained control problems of quasilinear elliptic equations. *Optimal control of partial differential equations* (*Irsee*, 1990), 11–25, *Lecture Notes in Control and Inform. Sci.*, 149, *Springer, Berlin*, 1991. (Karsten Eppler) **93g:49014** 49K20 (49J20)

— Analysis of convergence in the numerical approximation of control problems with state constraints. (Spanish) *Proceedings of the XII Congress on Differential Equations and Applications/II Congress on Applied Mathematics (Spanish)* (*Oviedo*, 1991), 301–306, *Univ. Oviedo, Oviedo*, 1991. (*see* **93j:00009**) 49M25 (35J65, 65N12)

— (*with* Fernández, Luis Alberto) Optimal control of semilinear elliptic equations with pointwise constraints on the gradient of the state. (Spanish. Spanish summary) *Proceedings of the XII Congress on Differential Equations and Applications/II Congress on Applied Mathematics (Spanish)* (*Oviedo*, 1991), 307–312, *Univ. Oviedo, Oviedo*, 1991. (*see* **93j:00009**) 49K20 (35J65)

— Finite element approximations for some state-constrained optimal control problems. (English summary) *Mathematics of the analysis and design of process control* (*Dublin, 1991/Lille*, 1991), 293–301, *North-Holland, Amsterdam*, 1992. (Asen L. Dontchev) **93h:49049** 49M25 (49K20)

— (*with* Fernández, Luis Alberto) Choosing L^q controls to deal with pointwise state constraints. *System modelling and optimization* (*Zurich*, 1991), 490–499, *Lecture Notes in Control and Inform. Sci.*, 180, *Springer, Berlin*, 1992. (From the introduction) **93e:49027** 49K20 (49Q10)

— Optimal control in coefficients of elliptic equations with state constraints. *Appl. Math. Optim.* **26** (1992), *no.* 1, 21–37. (Jie Yang) **93b:49004** 49J20 (35B37, 35J25, 49K20, 49M25)

— (*with* Fernández, Luis Alberto) Optimal control of semilinear elliptic equations with pointwise constraints on the gradient of the state. (English summary) *Appl. Math. Optim.* **27** (1993), *no.* 1, 35–56. (H. O. Fattorini) **93h:49012** 49J20 (35B37, 35J60, 49K20)

Casasús Estelles, Trinidad (*with* Olmos, F.; Checa, E.; Chinesta, F.; Torres, R.) Qualitative and numerical study of the convection-diffusion equation and approximation of the solution on a polynomial-exponential basis. (Spanish. Spanish summary) *Proceedings of the XII Congress on Differential Equations and Applications/II Congress on Applied Mathematics (Spanish)* (*Oviedo*, 1991), 209–214, *Univ. Oviedo, Oviedo*, 1991. (*see* **93j:00009**) 76M25 (35J99, 65N99, 76Rxx)

Casasús Latorre, L. (*with* González-Vera, Pablo; González-Concepción, C.; Pérez-Acosta, Francisco) Quadrature formulas and convergence of two-point Padé approximants. *Pure Appl. Math. Sci.* **34** (1991), *no.* 1-2, 1–13. (A. J. Rodrigues) **93b:65047** 65D32 (41A21)

Casas-Vázquez, J. *see* **Rheological modelling: thermodynamical and statistical approaches, 93c:76002**

Casati, Giulio Quantum localization and fluctuations. *Chaos et physique quantique* (*Les Houches*, 1989), 761–770, *North-Holland, Amsterdam*, 1991. (*see* **93e:81003**) 81Q50 (81V35)

— (*with* Artuso, Roberto; Shepelyanskiĭ, D. L.) Breakdown of universality in renormalization dynamics for critical invariant torus. *Europhys. Lett.* **15** (1991), *no.* 4, 381–386. (Yong Nian Huang) **93a:58118** 58F13 (82C27, 82C28)

— *see also* **Chaos, order, and patterns, 93i:58003**

Casati, Paolo (*with* Magri, Franco; Pedroni, Marco) Bi-Hamiltonian manifolds and τ-function. (English summary) *Mathematical aspects of classical field theory* (*Seattle, WA*, 1991), 213–234, *Contemp. Math.*, 132, *Amer. Math. Soc., Providence, RI*, 1992. (I. S. Krasil'shchik) **93i:58068** 58F07 (35Q53)

— (*with* Pedroni, Marco) Drinfel'd-Sokolov reduction on a simple Lie algebra from the bi-Hamiltonian point of view. (English summary) *Lett. Math. Phys.* **25** (1992), *no.* 2, 89–101. (Tudor S. Raţiu) **93k:58087** 58F05 (58F07)

Casavola, Alessandro (*with* Mosca, Edoardo) H_∞ and H_2 simple controllers for robotic applications. *Internat. J. Control* **55** (1992), *no.* 2, 329–341. (Summary) **93g:93056** 93C85 (70B15, 70Q05, 93B36)

— Optimal H_2 and H_∞ LQ stochastic feedforward control. (English summary) *Internat. J. Control* **56** (1992), *no.* 3, 703–713. 93E20 (93B36)

— (*with* Mosca, Edoardo) Polynomial LQG regulator design for general system configurations. (English summary) *IEEE Trans. Automat. Control* **38** (1993), *no.* 2, 359–363. 93B51

Casazza, E. (*with* Bonardi, M. T.; Gallarati, D.) Introduction to conic fibrations. (Italian. English and French summaries) *Studies and research collection* (*Italian*), 3–54, *Coll. Studi Ricerche, VIII, IX, Accad. Ligure Sci. Lett., Genoa*, 1988. (Antonio Lanteri) **93e:14049** 14J40 (14E30, 14J45)

Casazza, Peter G. The norms of projections onto ideals in the disk algebra. (English summary) *Bull. London Math. Soc.* **24** (1992), *no.* 6, 552–558. (Benjamin A. Lotto) **93i:46089** 46J15 (30H05)

— Some questions arising from the homogeneous Banach space problem. (English summary) *Banach spaces* (*Mérida*, 1992), 35–52, *Contemp. Math.*, 144, *Amer. Math. Soc., Providence, RI*, 1993. (Summary) **93j:46016** 46B20

Casciaro, Biagio (*with* Amici, Oriella) Special Lagrange spaces and conservation laws. (Italian summary) *Mem. Secţ. Ştiinţ. Acad. Repub. Soc. România Ser. IV* **10** (1987), *no.* 1, 23–40 (1989). (Mihai Anastasie) **93c:53054** 53C60 (53B40)

lo Cascio, L. *see* **Lo Cascio, L.**

Casciola, C. M. (*with* Bassanini, P.; Lancia, M. R.; Piva, R.) A boundary integral formulation for the kinetic field in aerodynamics. I. Mathematical analysis. *European J. Mech. B Fluids* **10** (1991), *no.* 6, 605–627. (A. J. Meir) **93f:76060** 76G25 (31B10, 45E10, 76M15)

Cascon, Ana (*with* Koiller, Jair; Rezende, Sergio M.) Bifurcations of mode equations: spin waves. *Phys. D* **54** (1991), *no.* 1-2, 98–124. (Tatiana Bilgildeyeva) **93g:82100** 82D30 (34C23, 34L40, 58F14, 58F40)

Casdagli, Martin (*with* Sauer, Tim; Yorke, James A.) Embedology. *J. Statist. Phys.* **65** (1991), *no.* 3-4, 579–616. (Run Sheng Yang) **93c:58147** 58F13 (28A80, 57R40)

— (*with* Eubank, Stephen; Farmer, J. Doyne; Gibson, John F.) State space reconstruction in the presence of noise. Nonlinear science: the next decade (Los Alamos, NM, 1990). *Phys. D* **51** (1991), *no.* 1-3, 52–98. (C. Eugene Wayne) **93a:58112** 58F12 (34C35, 34D45, 58F13)

— (*with* Gibson, John F.; Farmer, J. Doyne; Eubank, Stephen) An analytic approach to practical state space reconstruction. *Phys. D* **57** (1992), *no.* 1-2, 1–30. (Summary) **93c:58200** 58F40 (58F13)

Case, John Effectivizing inseparability. *Z. Math. Logik Grundlag. Math.* **37** (1991), *no.* 2, 97–111. (A. Kučera) **93b:03070** 03D25 (03D20)

— (*with* Jain, Sanjay[1]; Sharma, Arun) On learning limiting programs. *Internat. J. Found. Comput. Sci.* **3** (1992), *no.* 1, 93–115. (Costică Cazacu) **93i:68148** 68T05 (03D20)

Casella, George (*with* Searle, Shayle R.; McCulloch, Charles E.) ★ Variance components. Wiley Series in Probability and Mathematical Statistics: Applied Probability and Statistics. A Wiley-Interscience Publication. *John Wiley & Sons, Inc., New York*, 1992. xxvi+501 *pp. ISBN* 0-471-62162-5 (J. Kleffe) **93m:62054** 62F10 (62J10)

— Conditional inference from confidence sets. (English summary) *Current issues in statistical inference: essays in honor of D. Basu*, 1–12, *IMS Lecture Notes Monograph Ser.*, 17, *Inst. Math. Statist., Hayward, CA*, 1992. (Summary) **93g:62008** 62A10 (62F25)

— (*with* George, Edward I.) Explaining the Gibbs sampler. (English summary) *Amer. Statist.* **46** (1992), *no.* 3, 167–174. 62G09 (62E25)

— (*with* Hwang, Jiunn Tzon; Robert, Christian P.; Wells, Martin T.; Farrell, Roger H.) Estimation of accuracy in testing. *Ann. Statist.* **20** (1992), *no.* 1, 490–509. (A. L. Rukhin) **93a:62020** 62F03 (62A99, 62C07, 62C15)

— (*with* Goutis, Constantinos) Increasing the confidence in Student's *t* interval. (English summary) *Ann. Statist.* **20** (1992), *no.* 3, 1501–1513. (G. K. Robinson) **93j:62083** 62F25 (62A99, 62C99)

Caselle, M. (*with* Ponzano, G.; Ravanini, F.) Towards a classification of fusion rule algebras in rational conformal field theories. (English summary) Topological and quantum group methods in field theory and condensed matter physics. *Internat. J. Modern Phys. B* **6** (1992), *no.* 11-12, 2075–2090. (C. Gauthier) **93j:81087** 81T40 (81R50)

— (*with* D'Adda, A.; Panzeri, S.) Exact solution of $D = 1$ Kazakov-Migdal induced gauge theory. (English summary) *Phys. Lett. B* **293** (1992), *no.* 1-2, 161–167. (Summary) **93i:81173** 81T25

Caselles, Antonio Structure and behavior in general systems theory. (English summary) *Cybernet. Systems* **23** (1992), *no.* 6, 549–560. (Summary) **93h:93010** 93A10

Caselles, V. Scalar conservation laws and Hamilton-Jacobi equations in one-space variable. *Nonlinear Anal.* **18** (1992), *no.* 5, 461–469. (S. Cinquini) **93b:35084** 35L65 (35D05, 35F25)

Casey, James The principle of rigidification. *Arch. Hist. Exact Sci.* **43** (1992), *no.* 4, 329–383. (Gérard A. Maugin) **93f:73004** 73A05 (01A55, 70-03, 73-03, 73B99)

— (*with* Naghdi, P. M.) A prescription for the identification of finite plastic strain. (English summary) The Eringen anniversary issue. *Internat. J. Engrg. Sci.* **30** (1992), *no.* 10, 1257–1278. (C. Fetecău) **93i:73029** 73G20 (73E05)

— On infinitesimal deformation measures. *J. Elasticity* **28** (1992), *no.* 3, 257–269. (Stan Chiriţă) **93g:73022** 73B99

Casey, Stephen D. The inclusion of classical families in the closure of the universal Teichmüller space. *Michigan Math. J.* **39** (1992), *no.* 2, 189–199. (Z. Lewandowski) **93f:30047** 30F60 (30C45, 30C62)

Cash, J. R. (*with* Semnani, S.) A new approach to solving nonstiff initial value problems. (English summary) *J. Comput. Appl. Math.* **45** (1993), *no.* 1-2, 41–46. 65L05

— (*with* Silva, H. H. M.) On the numerical solution of a class of singular two-point boundary value problems. (English summary) *J. Comput. Appl. Math.* **45** (1993), *no.* 1-2, 91–102. 65L10

Casher, A. (*with* Englert, F.) Entropy generation in quantum gravity. (English summary) *Classical Quantum Gravity* **9** (1992), *no.* 10, 2231–2248. (Orfeu Bertolami) **93g:83044** 83C45 (81V17)

Casiello, Francisco A. (*with* Tsai, Yweting A.; Loparo, Kenneth A.) Discrete-time entropy formulation of optimal and adaptive control problems. *IEEE Trans. Automat. Control* **37** (1992), *no.* 7, 1083–1088. (Summary) **93f:93082** 93C55 (49K45, 93E35)

Casimir, Hendrik La théorie fondamentale et ses applications: l'héritage de Louis de Broglie. [The basic theory and its applications: the legacy of Louis de Broglie] *C. R. Acad. Sci. Paris Sér. Gén. Vie Sci.* **9** (1992), *no.* 5, 341–343 (1993). 01A70

Casini, Emanuele (*with* Papini, Pier Luigi) Almost convex sets and best approximation. (English and Italian summaries) *Ricerche Mat.* **40** (1991), *no.* 2, 299–310 (1992). (Wolfgang Lusky) **93j:46017** 46B20 (41A65, 52A27)

— (*with* Papini, Pier Luigi) Different metrics and location problems. *Approximation theory, spline functions and applications* (*Maratea*, 1991), 243–253, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 356, *Kluwer Acad. Publ., Dordrecht*, 1992. (Summary) **93a:41046** 41A50 (90B85)

— (*with* Vignati, Marco) The uniform nonsquareness for the complex interpolation spaces. *J. Math. Anal. Appl.* **164** (1992), *no.* 2, 518–523. (Naum Zobin) **93g:46072** 46M35 (46B20, 46B70)

— Complex interpolation and l_n^1 property. *Math. Pannon.* **3** (1992), *no.* 1, 117–119. (L. İ. Nikolova) **93i:46024** 46B20 (46B70, 46M35)

— (*with* Papini, Pier Luigi) A counterexample to the infinity version of the Hyers and Ulam stability theorem. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 3, 885–890. (Anna Salvadori) **93i:26022** 26E15 (26B25, 46G99)

Casley, Ross (*with* Crew, Roger F.; Meseguer, José; Pratt, Vaughan) Temporal structures. *Math. Structures Comput. Sci.* **1** (1991), *no.* 2, 179–213. (Summary) **93i:68117** 68Q55 (68Q60)

Casolo, Carlo A criterion for nilpotence in groups. (Italian summary) *Istit. Veneto Sci. Lett. Arti Atti Cl. Sci. Fis. Mat. Natur.* **147** (1988/89), 13–18. (From the text) **93f:20047** 20F18

— On the subnormalizer of a p-subgroup. *J. Pure Appl. Algebra* **77** (1992), *no.* 3, 231–238. (S. E. Stonehewer) **93d:20044** 20D35

— Wielandt series and defects of subnormal subgroups in finite soluble groups. *Rend. Sem. Mat. Univ. Padova* **87** (1992), 93–104. (Jian Hua Huang) **93j:20043** 20D10 (20D35, 20F14)

Casorati, Felice *see* **Cinquini, Silvio, 93m:01065**

Casper, Jay (*with* Atkins, H. L.) A finite-volume high-order ENO scheme for two-dimensional hyperbolic systems. (English summary) *J. Comput. Phys.* **106** (1993), *no.* 1, 62–76. (Summary) **93m:65135** 65M20

Cass, David Sunspots and incomplete financial markets: the general case. *Econom. Theory* **2** (1992), *no.* 3, 341–358. (Udo Wagner) **93d:90010** 90A09 (90A12, 90A14, 90A56)

Cassa, Antonio A bridge between complex geometry and Riemannian geometry. *Proc. Amer. Math. Soc.* **119** (1993), *no.* 2, 621–628. (Henrik Pedersen) **93k:53073** 53C56 (32C10)

Cassam-Chenaï, P. A generalization of the Plücker relations. *Linear and Multilinear Algebra* **31** (1992), *no.* 1-4, 77–79. (Bo Ying Wang) **93m:15048** 15A75 (81V55)

Cassandras, Christos G. (*with* Wardi, Y.; Kallmes, M. H.; Gong, Wei Bo) Smoothed perturbation analysis algorithms for estimating the derivatives of occupancy-related functions in serial queueing networks. (English summary) *Ann. Oper. Res.* **39** (1992), *no.* 1-4, 269–293 (1993). (Summary) **93j:90042** 90B22 (60K25)

— (*with* Gong, Wei Bo; Yan, Anlu) The $M/G/1$ queue with queue-length dependent arrival rate. (English summary) *Comm. Statist. Stochastic Models* **8** (1992), *no.* 4, 733–741. (Summary) **93i:60172** 60K25

— (*with* Towsley, Donald; Sparaggis, Panayotis D.) Optimal routing and buffer allocation for a class of finite capacity queueing systems. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 9, 1446–1451. 90B22

— (*with* Sparaggis, Panayotis D.; Towsley, Donald) Extremal properties of the shortest/longest nonfull queue policies in finite-capacity systems with state-dependent service rates. (English summary) *J. Appl. Probab.* **30** (1993), *no.* 1, 223–236. (Summary) **93j:60150** 60K25 (90B22)

— (*with* Mohanty, Bibhu P.) Effect of model uncertainty on some optimal routing problems. (English summary) *J. Optim. Theory Appl.* **77** (1993), *no.* 2, 257–290. 90B22 (90C35)

serra Cassano, F. *see* **Serra Cassano, F.**

Cassell, J. S. The asymptotic integration of a class of linear differential systems. *Quart. J. Math. Oxford Ser.* (2) **43** (1992), *no.* 169, 9–22. (Donald A. Lutz) **93d:34008** 34A30 (34E05)

Cassels, J. W. S. Obituary: Kurt Mahler. *Bull. London Math. Soc.* **24** (1992), *no.* 4, 381–397. (F. Beukers) **93f:01016** 01A70

Cassi, D. (*with* Pesando, I.) A new supersymmetric model for self-avoiding polymers. *Modern Phys. Lett. B* **5** (1991), *no.* 29, 1939–1946. (Anton Bovier) **93c:82074** 82D60 (81T25, 82B41)

— (*with* Pesando, I.) Polymers and topological field theory. *Modern Phys. Lett. B* **6** (1992), *no.* 8, 485–491. (Pablo M. Llatas) **93i:82085** 82D60 (81T60)

— (*with* Regina, S.) Random walks on d-dimensional comb lattices. (English summary) *Modern Phys. Lett. B* **6** (1992), *no.* 22, 1397–1403. 82B41

Cassidy, Charles (*with* Laberge, Guy) Nilpotent groups acting on abelian groups. (English summary) *Proc. Amer. Math. Soc.* **119** (1993), *no.* 3, 697–700. (Ma. Jesús Iranzo) **93m:20007** 20C07

Cassidy, Phyllis (*with* Bass, Hyman) Ellis Kolchin (1916–1991). *Notices Amer. Math. Soc.* **39** (1992), *no.* 6, 599–600. (Editors) **93h:01035** 01A70

Cassidy, R. M. (*with* Stuckey, W. M.) The Hamiltonian for the Mixmaster vacuum universe with geometry $\mathbf{R} \times S^7$. *Proceedings of the 4th Canadian Conference on General Relativity and Relativistic Astrophysics* (*Winnipeg, MB*, 1991), 35–39, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93c:83109** 83E15

Cassier, Gilles Champs hilbertiens faiblement continus et champs ultrafaiblement continus d'algèbres duales. (English and French summaries) [Weakly continuous Hilbert fields and ultraweakly continuous fields of dual algebras] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 7, 773–776. (Alfredo Octavio) **93i:46136** 46M20 (47D27)

Cassorla, Mark Approximating compact inner metric spaces by surfaces. (English summary) *Indiana Univ. Math. J.* **41** (1992), *no.* 2, 505–513. (Christophe Bavard) **93i:53042** 53C23

Cassou-Noguès, Pierrette Courbes de semi-groupe donné. [Curves with given semigroup] *Rev. Mat. Univ. Complut. Madrid* **4** (1991), *no.* 1, 13–44. (A. Granja) **93d:14043** 14H20 (14B07, 14H15)

Castagnino, Mario A. The probabilistic time and the semiclassical approximation of quantum gravity. *Quantum mechanics in curved space-time* (*Erice*, 1989), 317–360, *NATO Adv. Sci. Inst. Ser. B Phys.*, 230, *Plenum, New York*, 1990. (*see* **93d:83003**) 83C47 (83C45)

— (*with* Gunzig, Edgard; Nardone, Pascal) On quantum gravity for homogeneous pure radiation universes. *Quantum mechanics in curved space-time* (*Erice*, 1989), 403–430, *NATO Adv. Sci. Inst. Ser. B Phys.*, 230, *Plenum, New York*, 1990. (*see* **93d:83003**) 83C45

— (*with* Ferraro, Rafael; Sztrajman, Jorge) Hamiltonian diagonalization in curved space. *Quantum gravity* (*Moscow*, 1990), 391–403, *World Sci. Publishing, River Edge, NJ*, 1991. (Michael B. Mensky) **93i:81163** 81T20 (83C47)

— (*with* Gunzig, Edgard; Nardone, Pascal) The problem of the wave function of the Universe in the radiation dominated case. *Quantum gravity* (*Moscow*, 1990), 600–612, *World Sci. Publishing, River Edge, NJ*, 1991. (Vladimir Soloviev) **93i:83045** 83C45 (83F05)

— (*with* Domenech, G.; Frolov, V. P.; Noriega, R. J.; Schifini, G.) Concomitants theory and renormalization in even dimensions. *J. Math. Phys.* **33** (1992), *no.* 3, 1097–1102. (R. J. McKellar) **93b:83030** 83C47 (81T16, 81T20)

Castagnoli, Erio (*with* Mazzoleni, Piera) From an oriental market to the European monetary systems: some fuzzy-sets-related ideas. *Combining fuzzy imprecision with probabilistic uncertainty in decision making*, 389–399, *Lecture Notes in Econom. and Math. Systems*, 310, *Springer, Berlin*, 1988. (*see* **93c:90002**) 90A60 (04A72, 90C70)

— (*with* Mazzoleni, Piera) Order preserving functions and generalized convexity. (English and Italian summaries) *Riv. Mat. Sci. Econom. Social.* **14** (1991), *no.* 1, 33–46. (Jean-Pierre Crouzeix) **93m:26027** 26B25 (90C30)

Castagnoli, Giuseppe (*with* Rasetti, Mario; Vincenzi, Antonio) Steady, simultaneous quantum computation: a paradigm for the investigation of nondeterministic and nonrecursive computation. (English summary) *Internat. J. Modern Phys. C* **3** (1992), *no.* 4, 661–689. (Sylvia Pulmannova) **93i:81020** 81P99 (68Q70)

Castañeda, Héctor-Neri Indexical reference and bodily causal diagrams in intentional action. (English summary) Logic of action. *Studia Logica* **51** (1992), *no.* 3-4, 439–462. (Editors) **93i:03032** 03B60

charris Castañeda, Jairo A. *see* **Charris Castañeda, Jairo A.**

ponte Castañeda, P. *see* **Ponte Castañeda, P.**

saorín Castaño, Manuel *see* **Saorín Castaño, Manuel**

Castaños, O. Recent developments in the pseudo-symplectic model. (English summary) *Group theory and special symmetries in nuclear physics* (*Ann Arbor, MI*, 1991), 66–79, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93e:81150**) 81V35 (81R05)

— (*with* Moshinsky, M.; Quesne, C.) Transformations from U(3) to pseudo U(3) basis. (English summary) *Group theory and special symmetries in nuclear physics* (*Ann Arbor, MI*, 1991), 80–100, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93e:81150**) 81V35 (81R05)

— (*with* Balantekin, A. B.; Moshinsky, M.) Relations between the nuclear shell model Hamiltonian and the orthosymplectic superalgebra Osp(1|2). *Phys. Lett. B* **284** (1992), *no.* 1-2, 1–5. (Summary) **93b:81307** 81V35 (81R05)

Castejón-Amenedo, J. (*with* Coley, Alan A.) Exact solutions with conformal Killing vector fields. (English summary) *Classical Quantum Gravity* **9** (1992), *no.* 10, 2203–2215. (Nora Bretón Báez) **93j:83017** 83C15 (82C20)

Castel, L. (*with* Destuynder, Philippe; Legrain, I.; Richard, N.) Piezoelectric wafers for reducing the structure vibrations. *Intelligent structural systems*, 243–284, *Solid Mech. Appl.*, 13, *Kluwer Acad. Publ., Dordrecht*, 1992. (*see* **93e:73030**) 73K50 (73K12)

Castelan, Eugênio B. (*with* Hennet, Jean-Claude) A unified framework for linear constrained regulation problems. (English summary) *Mathematics of the analysis and design of process control* (*Dublin*, 1991/*Lille*, 1991), 337–346, *North-Holland, Amsterdam*, 1992. (*see* **93g:93004**) 93B51

— (*with* Hennet, Jean-Claude) Eigenstructure assignment for state constrained linear continuous time systems. *Automatica J. IFAC* **28** (1992), *no.* 3, 605–611. (T. Kaczorek) **93a:93055** 93B55 (93C05)

de faget de Casteljau, Paul *see* **de Faget de Casteljau, Paul**

Castellani, Leonardo Group-geometric methods in supergravity and superstring theories. *Internat. J. Modern Phys. A* **7** (1992), *no.* 8, 1583–1625. (Summary) **93a:81150** 81T30 (81–02, 83E30, 83E50)

— Bicovariant differential calculus on the quantum $D = 2$ Poincaré group. *Phys. Lett. B* **279** (1992), *no.* 3-4, 291–298. (Michael Ringe) **93c:58023** 58B30 (16W30, 17B37, 81R50)

— Gauge theories of quantum groups. (English summary) *Phys. Lett. B* **292** (1992), *no.* 1-2, 93–98. (Summary) **93f:81080** 81T13 (81R50)

— (*with* Aschieri, Paolo) Bicovariant differential geometry of the quantum group $GL_q(3)$. (English summary) *Phys. Lett. B* **293** (1992), *no.* 3-4, 299–308. (Arne Schirrmacher) **93h:58009** 58B30 (17B37)

uribe de Castellanos, Inés *see* **Uribe De Castellanos, Inés**

Castellet, Manuel (*with* Casacuberta, Carles) Localization methods in the study of the homology of virtually nilpotent groups. *Math. Proc. Cambridge Philos. Soc.* **112** (1992), *no.* 3, 551–564. (İ. Ya. Subbotin) **93h:20036** 20F18 (20E22)

— *see also* **Algebraic topology, 93e:55002**

Castellini, Gabriele (*with* Koslowski, Jürgen; Strecker, George E.) Hereditary and modal closure operators. (English summary) *Category theory* 1991 (*Montreal, PQ*, 1991),

111–132, *CMS Conf. Proc.*, 13, *Amer. Math. Soc., Providence, RI*, 1992. (Ana Pasztor) **93k:18005** 18A32 (06A15, 18B30, 54B30)

— Regular closure operators and compactness. (French summary) *Cahiers Topologie Géom. Différentielle Catégoriques* **33** (1992), *no.* 1, 21–31. (Jürgen Koslowski) **93i:54013** 54D30 (18B30, 54B30, 54D65)

— (*with* Giuli, Eraldo) Hereditarity of closure operators and injectivity. *Comment. Math. Univ. Carolin.* **33** (1992), *no.* 1, 149–157. (Summary) **93e:18003** 18A32 (18A20, 18G05)

— (*with* Koslowski, Jürgen; Strecker, George E.) A factorization of Pumplün-Röhrl connection. Proceedings of the Symposium on General Topology and Applications (Oxford, 1989). *Topology Appl.* **44** (1992), *no.* 1-3, 69–76. (Walter Tholen) **93f:18007** 18A99 (06A15, 18A32)

Castellón Serrano, Alberto (*with* Cuenca Mira, José Antonio) Associative H^*-triple systems. (English summary) *Nonassociative algebraic models* (*Zaragoza*, 1989), 45–67, *Nova Sci. Publ., Commack, NY*, 1992. (P. Saworotnow) **93m:46062** 46K70 (17A40)

— (*with* Cuenca Mira, José Antonio) Isomorphisms of H^*-triple systems. *Ann. Scuola Norm. Sup. Pisa Cl. Sci.* (4) **19** (1992), *no.* 4, 507–514. (P. Saworotnow) **93m:46063** 46K70 (17A40)

— (*with* Cuenca Mira, José Antonio; Martín González, Cándido) Ternary H^*-algebras. (Italian summary) *Boll. Un. Mat. Ital. B* (7) **6** (1992), *no.* 1, 217–228. (Khristo N. Boyadzhiev) **93e:46066** 46K70 (17A40, 46H70)

— (*with* Cuenca Mira, José Antonio) Alternative H^*-triple systems. *Comm. Algebra* **20** (1992), *no.* 11, 3191–3206. (Antonio Fernández López) **93m:46065** 46K70 (17A40, 17C27, 17D05)

van Casteren, Jan A. W. (*with* Demuth, Michael) On differences of heat semigroups. *Ann. Sci. Univ. Clermont-Ferrand II Probab. Appl. No.* 8 (1989), 119–147 (1990). (Summary) **93f:47045** 47D03 (47D07, 47N20, 47N50, 58G11, 81Q10)

— On nonsymmetric generalized Schrödinger semigroups. *Stochastic Anal. Appl.* **8** (1990), *no.* 2, 225–262. (Summary) **93k:47052a** 47D07 (35J10, 35P05, 47D06, 47F05, 47N20)

— Correction to: "On nonsymmetric generalized Schrödinger semigroups". *Stochastic Anal. Appl.* **8** (1990), *no.* 4, 511 (1991). (Editors) **93k:47052b** 47D07 (35J10, 35P05, 47D06, 47F05, 47N20)

— (*with* Smits, Lieven) Semigroups defined by additive processes. *Semigroup theory and evolution equations* (*Delft*, 1989), 463–482, *Lecture Notes in Pure and Appl. Math.*, 135, *Dekker, New York*, 1991. (Kazuaki Taira) **93e:60154** 60J35 (47D07, 47N30)

— (*with* Demuth, Michael) Perturbations of generalized Schrödinger operators in stochastic spectral analysis. *Schrödinger operators* (*Aarhus*, 1991), 1–15, *Lecture Notes in Phys.*, 403, *Springer, Berlin*, 1992. (Summary) **93m:81028** 81Q10 (47D07, 47F05, 47N50, 60J35, 81U05)

— Sur des différences de semi-groupes de Feynman-Kac: une propriété de trace. (English summary) [On differences of Feynman-Kac semigroups: a trace class property] *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 13, 997–1002. (Ana Bela Cruzeiro) **93e:47046** 47D03 (47D07, 47N30, 47N50, 60J99)

— On martingales and Feller semigroups. *Results Math.* **21** (1992), *no.* 3-4, 274–288. (H.-J. Engelbert) **93h:60115** 60J25 (47D07, 60G44, 60J35)

Casti, John L. ★ Reality rules. I. Picturing the world in mathematics—the fundamentals. A Wiley-Interscience Publication. *John Wiley & Sons, Inc., New York*, 1992. xii+388 *pp. ISBN* 0-471-57021-4 (J. S. Joel) **93i:00010a** 00A71 (00A30, 58F40, 90–01, 92–01, 93–01)

— ★ Reality rules. II. Picturing the world in mathematics—the frontier. A Wiley-Interscience Publication. *John Wiley & Sons, Inc., New York*, 1992. xii+424 *pp. ISBN* 0-471-57798-7 (J. S. Joel) **93i:00010b** 00A71 (00A30, 58F40, 90–01, 92–01, 93–01)

Castillo, Enrique (*with* Arnold, Barry C.; Sarabia Alegría, José María) ★ Conditionally specified distributions. Lecture Notes in Statistics, 73. *Springer-Verlag, Berlin*, 1992. xiv+151 *pp. ISBN* 3-540-97794-5 (J. A. Melamed) **93h:60018** 60E05 (62E10)

— (*with* Ruiz Cobo, María Reyes) ★ Functional equations and modelling in science and engineering. Monographs and Textbooks in Pure and Applied Mathematics, 161. *Marcel Dekker, Inc., New York*, 1992. xvi+328 *pp. ISBN* 0-8247-8717-X (F. J. Papp) **93k:39006** 39Bxx (00A71, 39–01, 39–02, 39A10, 73–XX, 90Axx)

— (*with* Fernández-Canteli, A.; Ruiz Cobo, María Reyes) Design of statistical lifetime models by functional equations. *Probability theory and applications*, 279–287, *Math. Appl.*, 80, *Kluwer Acad. Publ., Dordrecht*, 1992. (*see* **93i:60005**) 62N05 (73K99, 73M25)

del Castillo, F. Algebraic discrete semidynamical systems. (English summary) *Rev. Acad. Canaria Cienc.* **3** (1991), *no.* 1, 87–102. (Summary) **93g:54050** 54H20 (06A99)

torres del Castillo, G. F. *see* **Torres del Castillo, G. F.**

Castillo, Jesús M. F. Appendix: a bit of history (of the Dunford-Pettis property). (Spanish) *Colloquium* 1988–1990 (*Badajoz*, 1988–1990), 24–26, *Publ. Dep. Mat. Univ. Extremadura*, 25, *Univ. Extremadura, Badajoz*, 1991. (Ioan Şerb) **93a:46002** 46–03 (01A60, 46Bxx)

— (*with* Simões, Marilda A.) Some problems for suggested thinking in Fréchet space theory. *Extracta Math.* **6** (1991), *no.* 2-3, 96–114. (M. S. Ramanujan) **93i:46005** 46A04

— (*with* González, Manuel) An approach to Schreier's space. *Extracta Math.* **6** (1991), *no.* 2-3, 166–169. (Mikhail Ostrovskiĭ) **93j:46018** 46B20

— (*with* Okrasiński, W.) Boyd index and nonlinear Volterra equations. *Extracta Math.* **6** (1991), *no.* 2-3, 170–172. 45D05 (47H30, 47N20)

— Factorization of entropy ideals: proportional case. *Portugal. Math.* **48** (1991), *no.* 1, 11–23. (Thomas Kühn) **93b:47092** 47D50 (47A68, 47B06)

del Castillo, Joan *see* **del Castillo Franquet, Joan**

Castillo-Chavez, Carlos (*with* Busenberg, Stavros N.) On the solution of the two-sex mixing problem. (English summary) *Differential equations models in biology, epidemiology and ecology* (*Claremont, CA*, 1990), 80–98, *Lecture Notes in Biomath.*, 92, *Springer, Berlin*, 1991. (Summary) **93h:92033** 92D30 (92C60)

— (*with* Busenberg, Stavros N.; Gerow, Ken) Pair formation in structured populations. *Differential equations with applications in biology, physics, and engineering* (*Leibnitz*, 1989), 47–65, *Lecture Notes in Pure and Appl. Math.*, 133, *Dekker, New York*, 1991. (Marc Artzrouni) **93c:92005** 92D25 (92–04, 92C60, 92D30)

— (*with* Huang, Wen Zhang; Cooke, Kenneth L.) Stability and bifurcation for a multiple-group model for the dynamics of HIV/AIDS transmission. *SIAM J. Appl. Math.* **52** (1992), *no.* 3, 835–854. (Pauline van den Driessche) **93d:92009** 92C60 (34K15, 34K20)

— (*with* Luo, Xiaolong) Limit behavior of pair formation for a large dissolution rate. (English summary) *J. Math. Systems Estim. Control* **3** (1993), *no.* 2, 247–264. (Summary) **93j:92031** 92D30

del Castillo Franquet, Joan (*with* Burbea, Jacob) Geodesic submanifolds of statistical models with location parameters. (English summary) *Comput. Statist. Data Anal.* **14** (1992), *no.* 3, 301–313. (Bernard Prum) **93m:62043** 62E99 (53C22)

del Castillo-Mussot, Marcelo (*with* Costa Dias, Roberta) Fuzzy sets and physics. (English and Spanish summaries) *Rev. Mexicana Fís.* **39** (1993), *no.* 2, 295–303. (Summary) **93m:04009** 04A72

Castrandas, E. On the local ergodic theorem for multifunctions. (English summary) *J. Inst. Math. Comput. Sci. Math. Ser.* **5** (1992), *no.* 1, 115–123. (Summary) **93j:28035** 28D99 (28B20, 47H04, 47H99)

Castrellón, Wilson Two simple applications of sequences of zeros and ones. (Spanish) *Bol. Mat.* **21** (1987), *no.* 1, 39–43. 04A10

Castrigiano, Domenico P. L. (*with* Stärk, Florian) Intrinsic clock as a tool for path integration: an example. *White noise analysis* (*Bielefeld*, 1989), 49–65, *World Sci. Publishing, River Edge, NJ*, 1990. (David Applebaum) **93b:81128** 81S25 (60G44, 60J65, 81Q05)

Castro, Alfonso (*with* Ali, Ismael; Shivaji, R.) Uniqueness and stability of nonnegative solutions for semipositone problems in a ball. *Proc. Amer. Math. Soc.* **117** (1993), *no.* 3, 775–782. (M. Biroli) **93d:35048** 35J65 (35B32, 35B35, 35P30)

bermúdez de Castro, Alfredo *see* **Bermúdez de Castro, Alfredo**

Castro, Carlos On Weyl geometry, random processes, and geometric quantum mechanics. *Found. Phys.* **22** (1992), *no.* 4, 569–615. (C. S. Sharma) **93e:81059** 81S10 (81V45)

— The spinning membrane, super-SU(∞)-gauge theories and Moyal brackets. *Internat. J. Modern Phys. A* **7** (1992), *no.* 3, 535–561. (W. Cox) **93d:81137** 81T30 (81R10)

— The self-dual supermembrane and the super-Toda molecule. (English summary) *Phys. Lett. B* **288** (1992), *no.* 3-4, 291–296. (Summary) **93f:81081** 81T13

— SU(∞) (super)gauge theories and self-dual (super)gravity. (English summary) *J. Math. Phys.* **34** (1993), *no.* 2, 681–689. (Ian A. B. Strachan) **93j:53034** 53C07 (58E15, 58F07, 81T13, 83C30)

Castro, E. A. (*with* Arteca, G. A.; Fernández, Francisco M.) ★ Large order perturbation theory and summation methods in quantum mechanics. Lecture Notes in Chemistry, 53. *Springer-Verlag, Berlin*, 1990. xii+644 *pp. ISBN* 3-540-52847-4 (K. Kumar) **93b:81003** 81–02 (81Q15, 81V45, 81V55)

Castro, Regina (*with* Tarrío, A.) Semi-invariant submanifolds of manifolds with an f-parastructure. (Spanish. English summary) *Proceedings of the XVth Portuguese-Spanish Conference on Mathematics, Vol. III* (*Portuguese*) (*Évora*, 1990), 125–130, *Univ. Évora, Évora*, 1991. (Summary) **93a:53018** 53C15 (53C40)

— (*with* Bonome, Agustín; García-Río, Eduardo; Hervella, Luis M.) On the holomorphic sectional curvature on an indefinite Kähler manifold. (English and French summaries) *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 11, 1183–1187. (Demir N. Kupeli) **93j:53079** 53C50 (53B30, 53B35, 53C55)

estivill-Castro, Vladimir *see* **Estivill-Castro, Vladimir**

Castro González, Nieves Analysis of the multilevel method with overcorrection by aggregation via an algebraic interpretation. (Spanish. English summary) *Proceedings of the XVth Portuguese-Spanish Conference on Mathematics, Vol. V* (*Portuguese*) (*Évora*, 1990), 73–78, *Univ. Évora, Évora*, 1991. (Summary) **93a:65031** 65F05 (65L10, 65L20)

Castro Neto, A. H. (*with* Carmelo, J. M. P.) Dynamical decoupling and Kac-Moody current representation in multicomponent integrable systems. (English summary) *Phys. Rev. Lett.* **70** (1993), *no.* 13, 1904–1907. (Summary) **93k:81076** 81R10 (82B23)

Catach, Laurent TABLEAUX: a general theorem prover for modal logics. Automated reasoning and nonclassical logics. *J. Automat. Reason.* **7** (1991), *no.* 4, 489–510. (Michael V. Zakharyashchev) **93d:03020** 03B35 (03B45, 68T15)

Catalan, Eugène *see* **Butzer, Paul L., 93g:01037**

de Cataldo, Mark Andrea *see* **De Cataldo, Mark Andrea**

Catalisano, Maria Virginia (*with* Greco, Silvio) Linear systems: developments of some results by F. Enriques and B. Segre. *Geometry and complex variables* (*Bologna*, 1988/1990), 41–57, *Lecture Notes in Pure and Appl. Math.*, 132, *Dekker, New York*, 1991. (Marino Palleschi) **93b:14015** 14C20 (14N99)

— "Fat" points on a conic. *Comm. Algebra* **19** (1991), *no.* 8, 2153–2168. (A. Hirschowitz) **93b:14016** 14C20

— Linear systems of plane curves through fixed "fat" points of $\mathbf{P}^2$. *J. Algebra* **142** (1991), *no.* 1, 81–100. (A. Hirschowitz) **93b:14017** 14C20

— (*with* Ngô Viêt Trung; Valla, Giuseppe) A sharp bound for the regularity index of fat points in general position. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 3, 717–724. (P. Schenzel) **93i:13021** 13H15 (14C25)

Catanese, Fabrizio Recent results on irregular surfaces and irregular Kaehler manifolds. *Geometry and complex variables* (*Bologna*, 1988/1990), 59–88, *Lecture Notes in Pure and Appl. Math.*, 132, *Dekker, New York*, 1991. (Summary) **93h:32038** 32J27 (14J29, 32J15, 32J25)

— (*with* Capocasa, F.) Periodic meromorphic functions and Lefschetz type theorems on quasi-abelian varieties. *International Symposium in Memory of Hua Loo Keng, Vol. II* (*Beijing*, 1988), 19–38, *Springer, Berlin*, 1991. (José M. Muñoz Porras) **93d:32051** 32M05 (14L10, 32L10)

— (*with* Paluszny, Marco) Polynomial-lemniscates, trees and braids. *Topology* **30** (1991), *no.* 4, 623–640. (Lee Rudolph) **93b:57014** 57M99 (20F36, 30C99)

— (*with* Wajnryb, Bronislaw) The fundamental group of generic polynomials. *Topology* **30** (1991), *no.* 4, 641–651. (Lee Rudolph) **93b:57015** 57M99 (20F36, 30C99)

— (*with* Ballico, Edoardo; Ciliberto, Ciro) Open problems. *Classification of irregular varieties* (*Trento*, 1990), 140–146, *Lecture Notes in Math.*, 1515, *Springer, Berlin*, 1992. (*see* **93d:14005**) 14–02

— (*with* Tovena, F.) Vector bundles, linear systems and extensions of π_1. *Complex algebraic varieties* (*Bayreuth*, 1990), 51–70, *Lecture Notes in Math.*, 1507, *Springer, Berlin*, 1992. (Marino Palleschi) **93h:14028** 14J29 (14C20)

— Chow varieties, Hilbert schemes and moduli spaces of surfaces of general type. (English summary) *J. Algebraic Geom.* **1** (1992), *no.* 4, 561–595. (Olav Arnfinn Laudal) **93j:14005** 14C05

— (*with* Schneider, Michael Hellmut) Bounds for stable bundles and degrees of Weierstrass schemes. *Math. Ann.* **293** (1992), *no.* 4, 579–594. (Jean-Marc Drezet) **93j:14051** 14J60 (14D20)

— *see also* **Classification of irregular varieties, 93d:14005**

Câteau, Hideyuki (*with* Saito, Satoru) From soliton theory to string theory. *Nonlinear physics* (*Shanghai*, 1989), 258–265, *Res. Rep. Phys., Springer, Berlin*, 1990. (Olga Kravchenko) **93b:58076** 58F07 (81T30)

— (*with* Saito, Satoru) Nonlinear equations from a string-theoretical point of view. *Nonlinear physics* (*Shanghai*, 1989), 266–272, *Res. Rep. Phys., Springer, Berlin*, 1990. (Olga Kravchenko) **93b:58077** 58F07 (81T30)

— (*with* Sumiyoshi, Kosuke) Thermal history of the string universe. (English summary) *Phys. Rev. D* (3) **46** (1992), *no.* 6, 2366–2380. (Summary) **93f:83084** 83F05

Cater, F. S. Real numbers with redundant representations. *Real Anal. Exchange* **17** (1991/92), *no.* 1, 282–290. (Summary) **93a:26003** 26A21

— Comparing the ranges of continuous functions. *Real Anal. Exchange* **17** (1991/92), *no.* 1, 426–430. (Rotraut Goubau Cahill) **93a:26001** 26A15

— (*with* Daily, John) Covering metric spaces with closed sets. *Rocky Mountain J. Math.* **22** (1992), *no.* 1, 109–115. (Philip L. Bowers) **93f:54041** 54E35 (46B99, 54D05, 54E50)

Caterino, Alessandro (*with* Vipera, Maria Cristina) Wallman-type compactifications and function lattices. (Italian summary) *Atti Accad. Naz. Lincei Rend. Cl. Sci. Fis. Mat. Natur.* (8) **82** (1988), *no.* 4, 679–683 (1990). (Donald Plank) **93g:54037** 54D35

— (*with* Faulkner, Gary D.; Vipera, Maria Cristina) Two applications of singular sets to the theory of compactifications. (Italian summary) *Rend. Istit. Mat. Univ. Trieste* **21** (1989), *no.* 2, 248–258 (1991). (Eric E. Robinson) **93f:54034** 54D35 (06B30, 54C40)

— (*with* Faulkner, Gary D.; Vipera, Maria Cristina) Construction of compactifications using essential semilattice homomorphisms. *Proc. Amer. Math. Soc.* **116** (1992), *no.* 3, 851–860. (Don A. Mattson) **93a:54023** 54D35 (54C10, 54D40)

Cathelineau, Jean-Louis Quelques aspects du troisième problème de Hilbert. [Some aspects of Hilbert's third problem] *Gaz. Math. No.* 52 (1992), 45–71. (J. S. Joel) **93g:52010** 52B45 (52–02)

Cathers, B. (*with* O'Connor, B. A.) Picard iteration convergence analysis in a Galerkin finite element approximation of the one-dimensional shallow water equations. (English summary) *Numer. Methods Partial Differential Equations* **9** (1993), *no.* 1, 77–92. (Summary) **93i:76053** 76M10 (76B15)

Cathey, Frederick W. (*with* Bell, Bradley M.) The iterated Kalman filter update as a Gauss-Newton method. (English summary) *IEEE Trans. Automat. Control* **38** (1993), *no.* 2, 294–297. 93E11

nguyen Cat Ho *see* **Nguyen Cat Ho**

Cat Ho, Nguyen *see* **Nguyen Cat Ho**

Caticha, Nestor (*with* Kinouchi, Osame) Optimal generalization in perceptrons. (English summary) *J. Phys. A* **25** (1992), *no.* 23, 6243–6250. 92B20 (82C32)

Catino, Francesco (*with* Migliorini, Franco) Magnifying elements in semigroups. *Semigroup Forum* **44** (1992), *no.* 3, 314–319. (Št. Schwarz) **93c:20112** 20M99

Catlin, David (*with* Lempert, László) A note on the instability of embeddings of Cauchy-Riemann manifolds. *J. Geom. Anal.* **2** (1992), *no.* 2, 99–104. (Zu Hong Han) **93g:32028** 32G07 (32F25, 32F40)

Catlin, Paul A. (*with* Lai, Hong-Jian) Spanning trails joining two given edges. *Graph theory, combinatorics, and applications, Vol.* 1 (*Kalamazoo, MI*, 1988), 207–222, *Wiley-Intersci. Publ., Wiley, New York*, 1991. (Summary) **93e:05052** 05C38

— Super-Eulerian graphs: a survey. *J. Graph Theory* **16** (1992), *no.* 2, 177–196. (W. T. Tutte) **93b:05101** 05C45

Catoni, Olivier Sharp large deviations estimates for simulated annealing algorithms. (French summary) *Ann. Inst. H. Poincaré Probab. Statist.* **27** (1991), *no.* 3, 291–383. (Dominique Lépingle) **93c:60032** 60F10 (60J10, 65C05, 90C27)

— Applications of sharp large deviations estimates to optimal cooling schedules. (French summary) *Ann. Inst. H. Poincaré Probab. Statist.* **27** (1991), *no.* 4, 463–518. (Tsu Shu Chiang) **93g:60057** 60F10 (60J10, 90B22)

— Exponential triangular cooling schedules for simulated annealing algorithms: a case study. *Applied stochastic analysis* (*New Brunswick, NJ*, 1991), 74–89, *Lecture Notes in Control and Inform. Sci.*, 177, *Springer, Berlin*, 1992. (*see* **93a:93100**) 60J05 (65K05)

— Rates of convergence for sequential annealing: a large deviation approach. *Simulated annealing*, 25–35, *Wiley-Intersci. Ser. Discrete Math., Wiley, New York*, 1992. (B. L. Granovskiy) **93k:65006** 65C05 (60F10, 60J10, 65Y99)

— (*with* Trouvé, Alain) Parallel annealing by multiple trials: a mathematical study. *Simulated annealing*, 129–143, *Wiley-Intersci. Ser. Discrete Math., Wiley, New York*, 1992. (B. L. Granovskiy) **93j:65006** 65C05 (60J27, 65U05)

— Image restoration by stochastic dichotomic reconstruction of contour lines. *Stochastic models, statistical methods, and algorithms in image analysis* (*Rome*, 1990), 101–116, *Lecture Notes in Statist.*, 74, *Springer, Berlin*, 1992. (*see* **93e:62005**) 68U10

— Rough large deviation estimates for simulated annealing: application to exponential schedules. (English summary) *Ann. Probab.* **20** (1992), *no.* 3, 1109–1146. (Dominique Lépingle) **93j:60092** 60J10 (60F10)

Ćatović, Z. (*with* Lukačević, I.) Nonstatic spherically symmetric space-times in Rosen's bimetric gravitation theory. *Gen. Relativity Gravitation* **24** (1992), *no.* 8, 827–834. (Summary) **93b:83057** 83D05

Catsigeras, Elenora (*with* Budelli, Ruben) Limit cycles of a bineuronal network model. *Phys. D* **56** (1992), *no.* 2-3, 235–252. (Ladislav Andrey) **93e:92003** 92B20 (58F21)

Cattabriga, L. *see* **Microlocal analysis and applications, 93b:35001**

Cattaneo, Carlo *see* **Classical mechanics and relativity: relationship and consistency, 93h:83001** *and* **Lichnerowicz, André, 93m:01075**

Cattaneo, Gianpiero Brouwer-Zadeh (fuzzy-intuitionistic) posets for unsharp quantum mechanics. (English summary) Quantum logics, Part I (Gdańsk, 1990). *Internat. J. Theoret. Phys.* **31** (1992), *no.* 9, 1573–1597. (Summary) **93g:81004** 81P05 (04A72, 06C15)

— (*with* Nisticò, Giuseppe) Physical content of preparation-question structures and Brouwer-Zadeh lattices. (English summary) Quantum logics, Part II (Gdańsk, 1990). *Internat. J. Theoret. Phys.* **31** (1992), *no.* 10, 1873–1898. (Mirko Navara) **93m:81009** 81P10 (03G12, 06C15)

Cattaneo Gasparini, I. Fundamental forms of mappings of manifolds. Generalized Gauss mappings and embedding problems. (Italian) Conference on Differential Geometry and Topology (Italian) (Lecce, 1989). *Note Mat.* **9** (1989), *suppl.*, 1–16. (Liviu Ornea) **93c:53050** 53C42 (58E20)

Cattani, Carlo (*with* De Maria, Michelangelo) Max Abraham and the reception of relativity in Italy: his 1912 and 1914 controversies with Einstein. *Einstein and the history of general relativity* (*North Andover, MA*, 1986), 160–174, *Einstein Stud.*, 1, *Birkhäuser Boston, Boston, MA*, 1989. (*see* **93g:83001**) 01A60 (83–03)

— (*with* De Maria, Michelangelo) The 1915 epistolary controversy between Einstein and Tullio Levi-Civita. *Einstein and the history of general relativity* (*North Andover, MA*, 1986), 175–200, *Einstein Stud.*, 1, *Birkhäuser Boston, Boston, MA*, 1989. (*see* **93g:83001**) 01A60 (83–03)

— (*with* Ferrarese, Giorgio) Intrinsic formulation of the Cauchy problem in general relativity: the case of the vacuum. (Italian) Memoirs of mathematical physics in honor of Giovanni Carini on his 70th birthday (Italian). *Atti Accad. Peloritana Pericolanti Cl. Sci. Fis. Mat. Natur.* **68** (1990), *suppl.* 1, 517–534 (1991). (Agostino Prástaro) **93h:83005** 83C05

Catté, Francine (*with* Lions, Pierre-Louis; Morel, Jean-Michel; Coll, Tomeu) Image selective smoothing and edge detection by nonlinear diffusion. *SIAM J. Numer. Anal.* **29** (1992), *no.* 1, 182–193. (Summary) **93a:94005** 94A12 (35K55, 68U10, 93D05)

Cattenius, Otto *see* **Krayer, Albert, 93b:01019**

Catterall, Simon M. (*with* Kogut, John B.; Renken, Ray L.) Numerical study of field theories coupled to 2D quantum gravity. (English summary) Random surfaces and 2D quantum gravity (Barcelona, 1991). *Nuclear Phys. B Proc. Suppl.* **25A** (1992), 69–86. (Summary) **93f:81149** 81T80 (81T40)

— (*with* Renken, Ray L.; Kogut, John B.) Three-dimensional quantum gravity coupled to Ising matter. (English summary) *Nuclear Phys. B* **389** (1993), *no.* 3, 601–610. (Summary) **93j:83043** 83C45 (83C27)

Cattiaux, Patrick Stochastic calculus and degenerate boundary value problems. (English and French summaries) *Ann. Inst. Fourier* (*Grenoble*) **42** (1992), *no.* 3, 541–624. (Kazuaki Taira) **93j:60090** 60H30 (35R60, 60J35, 60J60)

Catto, Isabelle On some vector-valued nonlinear variational problems: variations on the Skyrme-Hartree-Fock model in nuclear physics. (English summary) *Differential Integral Equations* **6** (1993), *no.* 2, 291–318. (I. A. Sakmar) **93m:81162** 81V35 (49Q20)

Catto, Sultan Instantons from supersymmetric conformal chiral scalar superfield theories. *Differential geometric methods in theoretical physics* (*Davis, CA*, 1988), 681–688, *NATO Adv. Sci. Inst. Ser. B Phys.*, 245, *Plenum, New York*, 1990. (Summary) **93b:81280** 81T60

— (*with* Gürsey, Yusuf) Instanton-like solutions in conformal chiral superfield theories. (English summary) *J. Math. Phys.* **33** (1992), *no.* 10, 3567–3573. (W. Cox) **93i:81268** 81T60 (58C50)

Cauchon, G. Séries de Mal'cev-Neumann sur le groupe libre et questions de rationalité. (English summary) [Mal'tsev-Neumann series on a free group and rationality questions] Second Workshop on Algebraic and Computer-theoretic Aspects of Formal Power Series (Paris, 1990). *Theoret. Comput. Sci.* **98** (1992), *no.* 1, 79–97. (Summary) **93d:20049** 20E05 (68Q45)

Cauchy, Augustin-Louis *see* **Studies on Cauchy, 93f:01003**

Caughey, T. K. (*with* Vakakis, Alexander F.) A theorem on the exact nonsimilar steady-state motions of a nonlinear oscillator. (English summary) *Trans. ASME J. Appl. Mech.* **59** (1992), *no.* 2, *part* 1, 418–424. (Summary) **93d:70040** 70K40 (34C15)

Caulkins, Jonathan P. (*with* Padman, Rema) Interdiction's impact on the structure and behavior of the export-import sector for illicit drugs. (English summary) *Z. Oper. Res.* **37** (1993), *no.* 2, 207–224. 90B70 (90B90)

Caurier, E. (*with* Drożdż, S.; Okołowicz, J.; Płoszajczak, M.) Geometrical quantization in dynamical variational approach. *Acta Phys. Polon. B* **22** (1991), *no.* 4, 389–396. (Ivailo M. Mladenov) **93a:81089** 81S10 (81–04, 81Q20, 81R30)

Causon, D. M. (*with* Clarke, N.; Saunders, Robert) A convenient entropy satisfying T.V.D. scheme for computational aerodynamics. *Proceedings of the Eighth GAMM-Conference on Numerical Methods in Fluid Mechanics* (*Delft*, 1989), 61–68, *Notes Numer. Fluid Mech.*, 29, *Vieweg, Braunschweig*, 1990. (*see* **93b:76002**) 76M25 (65M99, 76G25, 76M20)

Caussignac, P. (*with* Bourgault, Y.) Ill-posedness of a shock-fitting problem for parabolized Navier-Stokes equations. *European J. Mech. B Fluids* **11** (1992), *no.* 3, 309–315. (Summary) **93c:76056** 76L05 (76J20)

Cauty, Robert Caractérisation topologique de l'espace des fonctions dérivables. (English summary) [Topological characterization of the space of differentiable functions] *Fund. Math.* **138** (1991), *no.* 1, 35–58. (J. van Mill) **93g:54024** 54C35 (46E99, 54B20, 57N17)

— Les fonctions continues et les fonctions intégrables au sens de Riemann comme sous-espaces de $\mathscr{L}^1$. (English summary) [Continuous functions and Riemann-integrable functions as subspaces of $\mathscr{L}^1$] *Fund. Math.* **139** (1991), *no.* 1, 23–36. (Melvin Henriksen) **93g:54047** 54F65 (46E30, 54C05)

— Un exemple d'ensembles absorbants non équivalents. (English summary) [An example of nonequivalent absorbing sets] *Fund. Math.* **140** (1991), *no.* 1, 49–61. (E. Beckenstein) **93e:46011** 46A99 (54H99)

— Sur les ouverts des CW-complexes et les fibrés de Serre. [On open sets of CW-complexes and Serre fibrations] *Colloq. Math.* **63** (1992), *no.* 1, 1–7. (John Bryant) **93d:57039** 57Q05 (55R05, 57N05, 57N12)

— L'espace des plongements d'un arc dans une surface. (English summary) [The space of embeddings of an arc in a surface] *Trans. Amer. Math. Soc.* **338** (1993), *no.* 2, 599–614. (Ross Geoghegan) **93k:57048** 57N20 (54C35, 58D15)

Cavaccini, V. (*with* Lettieri, Ada) Some results on hyper-Archimedean MV-algebras. (English summary) *Combinatorics '90* (*Gaeta*, 1990), 71–79, *Ann. Discrete Math.*, 52, *North-Holland, Amsterdam*, 1992. (Summary) **93h:06022** 06D99 (03G25)

Cavaillès, Jean ★ Método axiomático y formalismo. (Spanish) [The axiomatic method and formalism] Translated from the French by Carlos Alvarez [Carlos Alvarez Jimenez] and Santiago Ramírez. With a preface by Ramírez. Mathema. *Universidad Nacional Autónoma de México, Departamento de Matemáticas, Facultad de Ciencias, México City*, 1992. 200 *pp. ISBN* 968-36-2307-7 (Ignacio Angelelli) **93i:00006** 00A30 (03–01, 03A05)

Cavaliere, M. P. (*with* Rossi, M. E.; Valla, Giuseppe) On the Green-Lazarsfeld conjecture and the minimal resolution conjecture for $n + 3$ points in $\mathbf{P}^n$. (English summary) *J. Pure Appl. Algebra* **85** (1993), *no.* 2, 105–117. (P. Schenzel) **93m:13005** 13D02 (14M05)

— (*with* Rossi, M. E.; Valla, Giuseppe) On the resolution of certain graded algebras. *Trans. Amer. Math. Soc.* **337** (1993), *no.* 1, 389–409. (P. Schenzel) **93m:13004** 13D02 (14M99)

Cavallaro, Joseph R. (*with* Deo, Arati S.; Walker, Ian D.) New real-time robot motion algorithms using parallel VLSI architectures. (English summary) *Parallel processing for scientific computing* (*Houston, TX*, 1991), 369–375, *SIAM, Philadelphia, PA*, 1992. (*see* **93g:65178**) 93C85 (65K05, 65Y05)

Cavalli, Enrico (*with* Bertocchi, Maria; Zambruno, Giovanni) Parallel and symbolic computation in finance. (English summary) *Parallel processing for scientific computing (Houston, TX, 1991)*, 199–204, *SIAM, Philadelphia, PA*, 1992. (*see* **93g:65178**) 90A09 (65Y05)

Cavalli, Simonetta (*with* Aquilanti, Vincenzo; Sevryuk, M. B.) Asymptotic (short-wave) equivalence of one-dimensional Schrödinger equations by formal canonical transformations and its generalizations. *J. Phys. A* **24** (1991), *no.* 19, 4475–4494. (Tuncay Aktosun) **93d:34139** 34L40 (34E20, 81Q20)

Cavaretta, A. S., Jr. (*with* Guo, Shun Sheng) On modified Bojanic-Shisha operators. *Approximation theory, spline functions and applications (Maratea, 1991)*, 303–310, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 356, *Kluwer Acad. Publ., Dordrecht*, 1992. (Tian Ping Chen) **93i:41013** 41A35 (41A25)

— (*with* Sharma, Ambikeshwar) Variation diminishing properties and convexity for the tensor product Bernstein operator. *Functional analysis and operator theory (New Delhi, 1990)*, 18–32, *Lecture Notes in Math.*, 1511, *Springer, Berlin*, 1992. (M. Lachance) **93k:41010** 41A10 (41A17)

— (*with* Micchelli, Charles A.) Pyramid patches provide potential polynomial paradigms. *Mathematical methods in computer aided geometric design, II (Biri, 1991)*, 69–100, *Academic Press, Boston, MA*, 1992. (Manfred Tasche) **93h:65023** 65D17 (65D15)

— (*with* Micchelli, Charles A.; Sharma, Ambikeshwar) Walsh equiconvergence theorem and optimal recovery. (English summary) *Analysis* **12** (1992), *no.* 3-4, 271–302. (Ying Guang Shi) **93m:41002** 41A05

— (*with* Sitharam, Meera) The total variation of the tensor product Bernstein-Bézier operator. (English summary) *J. Approx. Theory* **72** (1993), *no.* 1, 34–39. (Matthias Eck) **93m:65018** 65D15 (41A10, 65D17)

Cavas, J. A. (*with* Vigueras Campuzano, Antonio) Analytic integration of a particular case of the problem of the rotational motion of a gyrostat with a fixed point in a central Newtonian field. (Spanish. English summary) *Rev. Acad. Cienc. Zaragoza* (2) **47** (1992), 155–168. (Summary) **93k:70007** 70E15 (70M20)

Cavazos-Cadena, Rolando Average optimal stationary policies in Markov decision processes under weak stability conditions. *Bol. Soc. Mat. Mexicana* (2) **35** (1990), *no.* 1, 15–24. (M. Iosifescu) **93e:90066** 90C40 (90B22, 93E20)

— (*with* Hernández-Lerma, Onésimo) Adaptive policies for priority assignment in discrete time queues—discounted cost criterion. (Russian and Polish summaries) *Control Cybernet.* **19** (1990), *no.* 1-2, 149–177. (Summary) **93c:90034** 90B22 (60K25)

— (*with* Hernández-Lerma, Onésimo) Equivalence of Lyapunov stability criteria in a class of Markov decision processes. *Appl. Math. Optim.* **26** (1992), *no.* 2, 113–137. (Raimi Ajibola Kasumu) **93i:90108** 90C40 (93D05, 93E15)

— Existence of optimal stationary policies in average reward Markov decision processes with a recurrent state. *Appl. Math. Optim.* **26** (1992), *no.* 2, 171–194. (M. Iosifescu) **93e:90067** 90C40 (60K05, 93E20)

— (*with* Sennott, Linn I.) Comparing recent assumptions for the existence of average optimal stationary policies. *Oper. Res. Lett.* **11** (1992), *no.* 1, 33–37. (Silvia Vogel) **93c:90100** 90C40

Cavazzuti, E. (*with* Buttazzo, Giuseppe) Limit problems in optimal control theory. *Analyse non linéaire (Perpignan, 1987)*, 150–160, *Univ. Montréal, Montreal, PQ*, 1989. (*see* **93h:49003**) 49J45 (49K45)

Cavendish, James C. (*with* Marin, Samuel P.) A procedural feature-based approach for designing functional surfaces. *Topics in surface modeling*, 145–168, *Geom. Des. Publ., SIAM, Philadelphia, PA*, 1992. (*see* **93c:65026**) 65D17

Caves, Carlton M. (*with* Schack, Rüdiger) Information and entropy in the baker's map. (English summary) *Phys. Rev. Lett.* **69** (1992), *no.* 23, 3413–3416. (Summary) **93h:58047** 58F03 (58F13, 58F30, 82C03)

Cavicchioli, Alberto On the automorphism groups of coloured graphs arising from manifolds. Graphs, designs and combinatorial geometries (Catania, 1989). *J. Combin. Inform. System Sci.* **15** (1990), *no.* 1-4, 111–132. (Mario Pezzana) **93b:05067** 05C25 (05C10, 57M15)

— Möbius transformations and surface groups. (Italian summary) *Riv. Mat. Univ. Parma* (4) **17** (1991), 7–20 (1992). (Grzegorz Gromadzki) **93h:30062** 30F35 (20H10)

— (*with* Spaggiari, Fulvia) The classification of 3-manifolds with spines related to Fibonacci groups. (English summary) *Algebraic topology (San Feliu de Guíxols, 1990)*, 50–78, *Lecture Notes in Math.*, 1509, *Springer, Berlin*, 1992. (Sergej V. Matveev) **93m:57003** 57M20 (57N10)

— Neuwirth manifolds and colourings of graphs. (English summary) *Aequationes Math.* **44** (1992), *no.* 2-3, 168–187. (Jonathan L. Gross) **93g:57005** 57M15 (05C10, 05C15, 57N10, 57Q99)

— (*with* Meschiari, Mauro) Idempotent comultiplications on graded algebras. *Geom. Dedicata* **41** (1992), *no.* 3, 251–274. (Blas Torrecillas Jover) **93c:16037** 16W30 (16W50, 57R99)

— (*with* Hegenbarth, Friedrich) On the intersection forms of closed 4-manifolds. (English summary) *Publ. Mat.* **36** (1992), *no.* 1, 73–83. (Terry Lawson) **93f:57021** 57N13

Caviglia, G. (*with* Morro, Angelo) Rays and transport equation for pre-stressed solids. (Italian summary) Memoirs of mathematical physics in honor of Giovanni Carini on his 70th birthday (Italian). *Atti Accad. Peloritana Pericolanti Cl. Sci. Fis. Mat. Natur.* **68** (1990), *suppl.* 1, 261–275 (1991). (Summary) **93b:73018** 73D15 (73B40)

— (*with* Morro, Angelo) Energy flux in dissipative media. *Acta Mech.* **94** (1992), *no.* 1-2, 29–41. (Piotr Borejko) **93c:73015** 73B99 (73D99, 76A10, 76D33)

Cawley, Elise E. The Teichmüller space of the standard action of $SL(2, \mathbf{Z})$ on $\mathbf{T}^2$ is trivial. *Internat. Math. Res. Notices* **1992**, *no.* 7, 135–141. (Steven E. Hurder) **93h:58082** 58F10 (57S25, 58F15)

Cawley, Robert (*with* Mauldin, R. Daniel) Multifractal decompositions of Moran fractals. *Adv. Math.* **92** (1992), *no.* 2, 196–236. (Colleen D. Cutler) **93b:58085** 58F08 (28A80, 58F12, 58F13)

— (*with* Hsu, Guan-Hsong) Local-geometric-projection method for noise reduction in chaotic maps and flows. (English summary) *Phys. Rev. A* (3) **46** (1992), *no.* 6, 3057–3082. (Hans-Peter Herzel) **93g:58094** 58F13 (58F40)

andreian Cazacu, Cabiria *see* **Andreian Cazacu, Cabiria**

Căzănescu, Virgil Emil (*with* Mihăilă, George Andrei) Partial flowchart schemes. *Stud. Cerc. Mat.* **43** (1991), *no.* 1-2, 11–23. (Ana Pasztor) **93a:68019** 68N05 (18D10, 68Q10)

— (*with* Ştefănescu, Gheorghe) A general result on abstract flowchart schemes with applications to the study of accessibility, reduction and minimization. *Theoret. Comput. Sci.* **99** (1992), *no.* 1, 1–63. (Siegmar Gerber) **93g:68010** 68N05 (68Q55)

Cazenave, Thierry (*with* Weissler, Fred B.) Rapidly decaying solutions of the nonlinear Schrödinger equation. *Comm. Math. Phys.* **147** (1992), *no.* 1, 75–100. (Summary) **93d:35150** 35Q55 (35B40)

Cazzani, A. (*with* Atluri, S. N.) Four-noded mixed finite elements, using unsymmetric stresses, for linear analysis of membranes. (English summary) *Comput. Mech.* **11** (1993), *no.* 4, 229–251. (Summary) **93k:73077** 73V05 (73K10)

Cealera, Constantin Contributions to the study of dependent random variables. (Romanian. English and Romanian summaries) *Stud. Cerc. Mat.* **44** (1992), *no.* 1, 13–35. (Summary) **93g:60070** 60F25

Ceauşu, Traian (*with* Mihailov, Dobrinca) A connection between two interpolation functors. *An. Univ. Timişoara Ser. Ştiinţ. Mat.* **27** (1989), *no.* 1, 5–23. (N. Ya. Kruglyak) **93a:46138** 46M35 (46E30)

Ceballos, J. C. (*with* Labarca, R.) A note on modulus of stability for cycles of the complex type. *Phys. D* **55** (1992), *no.* 1-2, 37–44. (F. Visentin) **93e:58138** 58F14 (57R25)

Ceccarelli, Michele (*with* Caianiello, Eduardo R.; Marinaro, Maria) Can spurious states be useful? *Complex Systems* **6** (1992), *no.* 1, 1–12. (Summary) **93c:68086** 68T05 (92B20)

Ceccherini, Pier Vittorio (*with* Burosch, Gustav) Cartesian dimensions of a graph. (English summary) *Fourth Czechoslovakian Symposium on Combinatorics, Graphs and Complexity (Prachatice, 1990)*, 51–57, *Ann. Discrete Math.*, 51, *North-Holland, Amsterdam*, 1992. (*see* **93i:05004**) 05C10

— (*with* Hirschfeld, J. W. P.) The dimension of projective geometry codes. (English summary) A collection of contributions in honour of Jack van Lint. *Discrete Math.* **106/107** (1992), 117–126. (Vikram Jha) **93i:51018** 51E22 (94B05)

— *see also* **Combinatorics '90**, **93f:05003**

Ceccherini, Tullio (*with* Pinzari, Claudia) Simplicity of the fixed point algebra in $\mathcal{O}_\infty$ under special canonical action of a compact group. (Italian summary) *Boll. Un. Mat. Ital. A* (7) **5** (1991), *no.* 3, 333–338. (Masatoshi Enomoto) **93a:46126** 46L55

— (*with* Pinzari, Claudia) Canonical actions on O_∞. *J. Funct. Anal.* **103** (1992), *no.* 1, 26–39. (Judith A. Packer) **93f:46100** 46L55 (22D25, 46L05, 46L30)

Cecchi, G. A. (*with* González, D. L.; Magnasco, M. O.; Mindlin, Gabriel B.; Piro, Oreste; Santillan, A. J.) Periodically kicked hard oscillators. (English summary) *Chaos* **3** (1993), *no.* 1, 51–62. (Summary) **93k:58130** 58F10 (34C15, 58F30, 70K99)

morandi-Cecchi, M. *see* **Morandi-Cecchi, M.**

Cecchi, Mariella (*with* Marini, M.) On the continuability and boundedness of solutions of functional-differential equations. *Rend. Sem. Mat. Univ. Politec. Torino* **48** (1990), *no.* 2, 195–209 (1992). (John R. Graef) **93f:34116** 34K15

— (*with* Marini, M.; Villari, Gabriele) Integral criteria for a classification of solutions of linear differential equations. *J. Differential Equations* **99** (1992), *no.* 2, 381–397. (Uri Elias) **93i:34055** 34C10 (34A30)

— (*with* Marini, M.) Oscillatory and nonoscillatory behavior of a second order functional-differential equation. *Rocky Mountain J. Math.* **22** (1992), *no.* 4, 1259–1276. (J. S. W. Wong) **93k:34156** 34K15

— (*with* Marini, M.; Villari, Gabriele) On a nonlinear second order differential equation with oscillating coefficient. *Differential Integral Equations* **6** (1993), *no.* 1, 47–61. (John R. Graef) **93j:34040** 34C10 (34C15)

Cecchini, Carlo Fixed points subalgebras and invariant states for ω-conditional expectations. (Russian and Lithuanian summaries) *Litovsk. Mat. Sb.* **31** (1991), *no.* 3, 531–534; *reprinted in Lithuanian Math. J.* **31** (1991), *no.* 3, 367–369 (1992). (Jan Hamhalter) **93e:46073** 46L50

— Markovianity for states on von Neumann algebras. *Quantum probability & related topics*, 93–107, *QP-PQ, VII, World Sci. Publishing, River Edge, NJ*, 1992. (D. Petz) **93i:46105** 46L30 (46L10, 46L50)

Cecchini, Ronald (*with* Berque, David; Goldberg, Mark; Rivenburgh, Reid) The SetPlayer system for symbolic computation on power sets. (English summary) *J. Symbolic Comput.* **14** (1992), *no.* 6, 645–662. (Summary) **93m:68090** 68Q40 (04–04, 05C85, 68R05)

Cecconi, Jaurès Lamberto Cesari. (Italian) *Boll. Un. Mat. Ital. A* (7) **6** (1992), *no.* 1, 125–151. (Ll. G. Chambers) **93c:01032** 01A70

Cechlárová, Katarína Eigenvectors in bottleneck algebra. (English summary) *Linear Algebra Appl.* **175** (1992), 63–73. (Ronald L. Smith) **93i:15009** 15A18

Ceci, Claudia (*with* Mazliak, Laurent) Une propriété forte de branchements. (English and French summaries) [A strong branching property] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 7, 851–853. (Summary) **93i:60070** 60G07 (60G40, 60J25)

Cecotti, Sergio (*with* Girardello, L.; Pasquinucci, Andrea) Singularity-theory and $N = 2$ supersymmetry. *Internat. J. Modern Phys. A* **6** (1991), *no.* 14, 2427–2496. (Summary) **93a:32055** 32S40 (32G81, 32J81, 81T40, 81T60)

— (*with* Vafa, Cumrun) Topological–anti-topological fusion. *Nuclear Phys. B* **367** (1991), *no.* 2, 359–461. (Matthias Blau) **93a:81168** 81T40 (58F07, 81T60, 81T70)

— (*with* Vafa, Cumrun) Massive orbifolds. *Modern Phys. Lett. A* **7** (1992), *no.* 19, 1715–1723. (C. Gauthier) **93d:81138** 81T30 (32S45, 83C75, 83E30)

— (*with* Vafa, Cumrun) Exact results for supersymmetric σ models. *Phys. Rev. Lett.* **68** (1992), *no.* 7, 903–906. (Aleksandar R. Miković) **93b:81281** 81T60 (81T40)

Ceder, J. G. (*with* Agronsky, S.) What sets can be ω-limit sets in E^n? *Real Anal. Exchange* **17** (1991/92), *no.* 1, 97–109. (Beverly Diamond) **93b:26004a** 26A18 (26B99, 54H20)

— (*with* Agronsky, S.) Each Peano subspace of E^k is an ω-limit set. *Real Anal. Exchange* **17** (1991/92), *no.* 1, 371–378. (Beverly Diamond) **93b:26004b** 26A18 (26B99, 54H20)

— On the fixed points in an ω-limit set. (English summary) *Math. Bohem.* **117** (1992), *no.* 4, 349–364. (Michael Evans) **93m:26004** 26A18 (54C30, 54H25)

— (*with* Bruckner, Andrew M.) Chaos in terms of the map $x \to \omega(x, f)$. (English summary) *Pacific J. Math.* **156** (1992), *no.* 1, 63–96. (Remo Badii) **93g:58092** 58F13 (26A18, 58F03)

Cederbaum, Israel (*with* Koren, Israel; Wimer, Shmuel) Balanced block spacing for VLSI layout. (English summary) *Discrete Appl. Math.* **40** (1992), *no.* 3, 303–318. (Krzysztof Wawryn) **93m:68088** 68Q35 (68R10)

Cederbaum, L. S. (*with* Schmelcher, P.) On chaos in unbounded phase space. *Phys. Lett. A* **164** (1992), *no.* 3-4, 305–309. (Summary) **93a:58123** 58F13 (58F05)

majster-Cederbaum, Mila E. *see* **Majster-Cederbaum, Mila E.**

Cedó, Ferran (*with* Pitarch, Andreu) On rigid monoids and 2-fir monoid rings. *Comm. Algebra* **20** (1992), *no.* 8, 2295–2303. (Summary) **93e:20092** 20M25

Cegarra, Antonio M. (*with* Garzón, Antonio R.) A long exact sequence in nonabelian cohomology. *Category theory* (*Como*, 1990), 79–94, *Lecture Notes in Math.*, 1488, *Springer, Berlin*, 1991. (Graham J. Ellis) **93g:18018** 18G50
— (*with* Carrasco, P.) Group-theoretic algebraic models for homotopy types. *J. Pure Appl. Algebra* **75** (1991), *no.* 3, 195–235. (Timothy Porter) **93b:55026** 55U10 (18G30, 55P15)
Cegielski, Andrzej A subgradient projection method in matrix games. (English summary) *Discuss. Math.* **11** (1991), 143–149 (1992). 90D06 (90C25)
Cegielski, Patrick (*with* Richard, Denis) Indécidabilité de la théorie des entiers naturels munis d'une énumération des premiers et de la divisibilité. (English and French summaries) [Undecidability of the theory of natural numbers with an enumeration of the prime numbers and the divisibility relation] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 13, 1431–1434. (Summary) **93m:03076** 03D35
Cegrell, Urban (*with* Persson, Leif) The Dirichlet problem for the complex Monge-Ampère operator: stability in L^2. *Michigan Math. J.* **39** (1992), *no.* 1, 145–151. (A. Sadullaev) **93i:32019** 32F07 (35G30, 35J65)
Čekanavičius, Vydas An approximation of integer-valued measures by generalized Poisson measures. *Probability theory and mathematical statistics, Vol. I* (*Vilnius*, 1989), 228–237, "*Mokslas*", *Vilnius*, 1990. (H. Bergström) **93g:60045** 60F05
— Approximation of mixtures of distributions. (Russian. English and Lithuanian summaries) *Litovsk. Mat. Sb.* **31** (1991), *no.* 2, 351–368; *translation in Lithuanian Math. J.* **31** (1991), *no.* 2, 243–257 (1992). (Zuzana Prášková) **93d:60031** 60F05 (60E07)
Cel, Jarosław The Newton-Puiseux theorem for several variables. (Polish summary) *Bull. Soc. Sci. Lett. Łódź* **40** (1990), *no.* 11-20, 53–61. (Wiesław Pawłucki) **93f:32007** 32B10 (14B07, 32S45)
Celada, P. (*with* Lorenzi, Alfredo) An identification problem related to the bidimensional wave equation. (Italian summary) *Boll. Un. Mat. Ital. B* (7) **6** (1992), *no.* 1, 125–145. (Hideo Soga) **93g:35085** 35L20 (35L05, 35R30, 47N20)
Çelebi, A. Okay (*with* Bereketoğlu, Hüseyin) Some oscillation theorems for perturbed nonlinear differential equations. *Pure Appl. Math. Sci.* **33** (1991), *no.* 1-2, 47–53. (J. S. W. Wong) **93d:34055** 34C10
Celeghini, E. (*with* Rasetti, Mario; Vitiello, G.) Dissipation in quantum field theory. *Nonlinear coherent structures in physics and biology* (*Dijon*, 1991), 318–325, *Lecture Notes in Phys.*, 393, *Springer, Berlin*, 1991. (*see* **93e:00025**) 81Q05 (81T99, 81V80)
— Coherence and quantum groups. *Nonlinear coherent structures in physics and biology* (*Dijon*, 1991), 326–331, *Lecture Notes in Phys.*, 393, *Springer, Berlin*, 1991. (*see* **93e:00025**) 81R50 (17B37)
— (*with* Rasetti, Mario; Vitiello, G.) Damping and thermal quantum field theory. *Thermal field theories* (*Ibaraki*, 1990), 189–200, *North-Holland Delta Ser., North-Holland, Amsterdam*, 1991. (Summary) **93b:81100** 81R30 (81S05, 81T99)
— Nonsemisimple quantum algebras. *Nonlinear evolution equations and dynamical systems* (*Baia Verde*, 1991), 349–356, *World Sci. Publishing, River Edge, NJ*, 1992. (Branislav Jurčo) **93j:81041** 81R50 (17B37)
— (*with* Giachetti, Riccardo; Sorace, E.; Tarlini, M.) Contractions of quantum groups. *Quantum groups* (*Leningrad*, 1990), 221–244, *Lecture Notes in Math.*, 1510, *Springer, Berlin*, 1992. (Jörg Feldvoss) **93j:17022** 17B37 (81R50)
— (*with* Rasetti, Mario; Vitiello, G.) Quantum dissipation. *Ann. Physics* **215** (1992), *no.* 1, 156–170. (Summary) **93c:81253** 81T99 (81R30)
— (*with* Bonechi, F.; Giachetti, Riccardo; Sorace, E.; Tarlini, M.) Heisenberg XXZ model and quantum Galilei group. (English summary) *J. Phys. A* **25** (1992), *no.* 15, L939–L943. (Summary) **93f:82018** 82B23 (81R50)
— (*with* Graziano, E.; Nakamura, Koichi^2; Vitiello, G.) Finite temperature quantum field theory and gauge field. *Phys. Lett. B* **285** (1992), *no.* 1-2, 98–102. (Summary) **93d:81113** 81T13
Celentano, Giovanni (*with* De Maria, Giuseppe) Positive linear parametrization of polynomials with zeros in prescribed regions. (Polish summary) *Systems Sci.* **16** (1990), *no.* 4, 47–56 (1991). (Summary) **93b:93081** 93D09 (93B55)
— (*with* Garofalo, F.; Glielmo, Luigi) Stability robustness of interval matrices via Lyapunov quadratic forms. (English summary) *IEEE Trans. Automat. Control* **38** (1993), *no.* 2, 281–284. (Summary) **93j:93104** 93D09
Celeux, Gilles (*with* Govaert, Gérard) A classification EM algorithm for clustering and two stochastic versions. (English summary) *Comput. Statist. Data Anal.* **14** (1992), *no.* 3, 315–332. (H. Chernoff) **93k:62126** 62H30
— (*with* Robert, Christian P.; Diebolt, Jean) Bayesian estimation of hidden Markov chains: a stochastic implementation. (English summary) *Statist. Probab. Lett.* **16** (1993), *no.* 1, 77–83. (Summary) **93k:62174** 62M05 (62F15)
— *see also* **Discriminant analysis on continuous functions, 93d:62115**
Celia, M. A. (*with* Binning, P.) Multiphase models of unsaturated flow: approaches to the governing equations and numerical methods. (English summary) *Computational methods in water resources, IX, Vol.* 2 (*Denver, CO*, 1992), 257–272, *Comput. Mech., Southampton*, 1992. (*see* **93g:76003**) 76T05 (76S05, 86–08)
Čelikovský, Sergej On the global linearization of nonhomogeneous bilinear systems. (English summary) *Systems Control Lett.* **18** (1992), *no.* 5, 397–402. (Ülle Kotta) **93h:93017** 93B18 (93C10)
ullán de Celis, Antonio *see* **Ullán de Celis, Antonio**
Celletti, Alessandra Stability of satellites in spin-orbit resonances and capture probabilities. (English summary) *Predictability, stability, and chaos in N-body dynamical systems* (*Cortina d'Ampezzo*, 1990), 337–344, *NATO Adv. Sci. Inst. Ser. B Phys.*, 272, *Plenum, New York*, 1991. (*see* **93i:70002**) 70F15 (70H05, 70M20)
— (*with* Giorgilli, Antonio) On the stability of the Lagrangian points in the spatial restricted problem of three bodies. *Celestial Mech. Dynam. Astronom.* **50** (1991), *no.* 1, 31–58. (Summary) **93a:70007** 70F07 (70F15, 70K20)
— (*with* Falcolini, Corrado) Construction of invariant tori for the spin-orbit problem in the Mercury-Sun system. *Celestial Mech. Dynam. Astronom.* **53** (1992), *no.* 2, 113–127. (Summary) **93a:70011** 70F15 (58F05, 58F40, 70H05)
— (*with* Berretti, A.; Chierchia, L.; Falcolini, Corrado) Natural boundaries for area-preserving twist maps. *J. Statist. Phys.* **66** (1992), *no.* 5-6, 1613–1630. (Helmut Rüssmann) **93b:58121** 58F27 (58F05, 70K50)
— (*with* Laskar, Jacques; Froeschlé, Claude) The measure of chaos by the numerical analysis of the fundamental frequencies. Application to the standard mapping. *Phys. D* **56** (1992), *no.* 2-3, 253–269. (Summary) **93c:58140** 58F13
Cellier, Dominique (*with* Fourdrinier, Dominique) Estimation du paramètre de position d'une loi à symétrie sphérique: une condition générale de domination de l'estimateur des moindres carrés. (English and French summaries) [Estimation of the location parameter of a spherically symmetric distribution: a general condition of domination of the least-squares estimator] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 11, 1203–1206. (Summary) **93j:62151** 62H12 (62C15)
Cellina, Arrigo (*with* Mariconda, Carlo) Kuratowski's index of a decomposable set. (Russian summary) *Bull. Polish Acad. Sci. Math.* **37** (1989), *no.* 7-12, 679–685 (1990). (Longin Rybiński) **93a:47060** 47H09 (28B20, 46G12, 52A99)
— (*with* Colombo, R. M.) Some qualitative and quantitative results on a differential inclusion. *Rend. Sem. Mat. Univ. Politec. Torino* **48** (1990), *no.* 2, 105–124 (1992). (Manfred Goebel) **93d:34023** 34A60
— (*with* Fryszkowski, Andrzej; Rzeżuchowski, Tadeusz) Upper semicontinuity of Nemytskij operators. *Ann. Mat. Pura Appl.* (4) **160** (1991), 321–330 (1992). (From the introduction) **93d:47131** 47H30 (34A60, 47H04, 47N20)
— Convexity and the calculus of variations. (English summary) *Fixed point theory and applications* (*Halifax, NS*, 1991), 71–79, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93e:47002**) 49J05 (49N15)
— (*with* Flores, Fabián) Radially symmetric solutions of a class of problems of the calculus of variations without convexity assumptions. (English and French summaries) *Ann. Inst. H. Poincaré Anal. Non Linéaire* **9** (1992), *no.* 4, 465–477. (Françoise Berquier) **93i:49005** 49J10 (49Q20)
— (*with* Ornelas, Antônio) Representation of the attainable set for Lipschitzian differential inclusions. *Rocky Mountain J. Math.* **22** (1992), *no.* 1, 117–124. (M. Krastanov) **93b:34028** 34A60 (93B03)
Cembranos, Pilar (*with* Bombal, Fernando; Mendoza, José) On the surjective Dunford-Pettis property. *Math. Z.* **204** (1990), *no.* 3, 373–380. (James Hagler) **93c:46018** 46B20
Cen, Cheng De An interactive conservative optimal method for multi-objective decision making. (Chinese. English and Chinese summaries) *Acta Sci. Natur. Univ. Sunyatseni* **31** (1992), *no.* 2, 25–29. 90C29 (90B50)
Cen, Jian Miao Several special radicals. (Chinese. English and Chinese summaries) *J. Math.* (*Wuhan*) **12** (1992), *no.* 1, 107–112. 16N80
Cen, Yan Ming Some properties of a class of real germs with infinite-dimensional parameter space. (Chinese) *Acta Math. Sinica* **35** (1992), *no.* 1, 90–100. (Zhong-Hua Yang) **93f:58019** 58C27 (47H99)
Cen, Zhang Zhi (*with* Du, Qing Hua; Yao, Zhen Han) Eigenproblems by boundary element method using component mode synthesis. *Theory and applications of boundary element methods* (*Beijing*, 1991), 193–200, *Internat. Acad. Publ., Beijing*, 1991. (*see* **93b:65008**) 73V10 (65N38)
— (*with* Maier, Giulio; Tagliaferri, R.) Stability and its criteria analysis by boundary element method using cohesive-crack model. *Theory and applications of boundary element methods* (*Beijing*, 1991), 271–278, *Internat. Acad. Publ., Beijing*, 1991. (*see* **93b:65008**) 73V10 (65N38)
vázquez Cendón, Ma. Elena *see* **Vázquez Cendón, Ma. Elena**
Cendra, H. (*with* Itovich, G.; Salthú, R.; Torresi, A.) Determination of Hopf bifurcation points. (Spanish. Spanish summary) *Proceedings of the First "Dr. Antonio A. R. Monteiro" Congress on Mathematics* (*Spanish*) (*Bahía Blanca*, 1991), 39–50, *Univ. Nac. del Sur, Bahía Blanca*, 1991. (Summary) **93h:34053** 34C23 (58F14)
— (*with* Lacomba, Ernesto A.; Verdiell, Adriana) A new proof of Frobenius theorem and applications. (English summary) *Proceedings of the First "Dr. Antonio A. R. Monteiro" Congress on Mathematics* (*Spanish*) (*Bahía Blanca*, 1991), 51–80, *Univ. Nac. del Sur, Bahía Blanca*, 1991. (Wing-Sum Cheung) **93j:58005** 58A30
— (*with* Robledo, C.; Desages, Alfredo) On the distance to the instability border of Hurwitz polynomials with coefficients that depend affinely on m parameters and a particular convexity property of H^m. *Multidimens. Systems Signal Process.* **3** (1992), *no.* 1, 45–61. (Long Wang) **93b:93090** 93D09 (93C41, 93C73, 93D22)
Cenedese, P. (*with* Gratias, D.) Multicomponent formalism in the mean-field approximation: a geometric interpretation of Chebychev polynomials. *Phys. A* **179** (1991), *no.* 2, 277–287. (Guang Shan Tian) **93e:82048** 82D20 (82B99)
Cengiz, B. On order-preserving isomorphism of $C_0(X)$. (English and Italian summaries) *Rend. Mat. Appl.* (7) **12** (1992), *no.* 2, 299–304. (Oleg G. Okunev) **93j:46032** 46E25 (46B25)
Cenkl, Bohumil (*with* Hector, Gilbert; Saralegi Aranguren, Martin) Tame intersection cohomology. (Italian summary) *Rend. Mat. Appl.* (7) **11** (1991), *no.* 4, 931–944. (Summary) **93i:55006** 55N33
— Hochschild homology for a polynomial cochain algebra of a nilmanifold. (English summary) *Topology Hawaii* (*Honolulu, HI*, 1990), 41–52, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93g:55008** 55N25 (16E40, 18G35, 57T15)
Censor, Yair On variable block algebraic reconstruction techniques. (English summary) *Mathematical methods in tomography* (*Oberwolfach*, 1990), 133–140, *Lecture Notes in Math.*, 1497, *Springer, Berlin*, 1991. (*see* **93d:44001**) 65F10
— (*with* Zenios, Stavros A.) On the use of D-functions in primal-dual methods and in the proximal minimization algorithm. *Optimization and nonlinear analysis* (*Haifa*, 1990), 76–97, *Pitman Res. Notes Math. Ser.*, 244, *Longman Sci. Tech., Harlow*, 1992. (*see* **93d:49004**) 90C30
— (*with* Zenios, Stavros A.) Proximal minimization algorithm with D-functions. *J. Optim. Theory Appl.* **73** (1992), *no.* 3, 451–464. (G. M. Ostrovsky) **93g:90058** 90C25
Centeno, Lourdes An insight into the excess of loss retention limit. (English summary) *Scand. Actuar. J.* **1991**, *no.* 2, 97–102. (Summary) **93g:62128** 62P05
Centrella, Joan M. Numerical relativity. *General relativity and gravitation*, 1989 (*Boulder, CO*, 1989), 121–130, *Cambridge Univ. Press, Cambridge*, 1990. (*see* **93b:83002**) 83–08
Cenzer, Douglas (*with* Remmel, Jeffrey B.) Polynomial-time versus recursive models. *Ann. Pure Appl. Logic* **54** (1991), *no.* 1, 17–58. (Marat M. Arslanov) **93f:03022** 03C57 (03D15)
— (*with* Remmel, Jeffrey B.) Polynomial-time abelian groups. *Ann. Pure Appl. Logic* **56** (1992), *no.* 1-3, 313–363. (Decheng Ding) **93e:03063** 03D45 (03D15, 20K99)
— (*with* Remmel, Jeffrey B.) Recursively presented games and strategies. (English summary) *Math. Social Sci.* **24** (1992), *no.* 2-3, 117–139. (A. Aiello) **93m:03078** 03D45 (03D25, 03D35, 04A15, 90D44)

— (*with* Downey, Rodney; Jockusch, Carl; Shore, Richard A.) Countable thin Π^0_1 classes. (English summary) *Ann. Pure Appl. Logic* **59** (1993), *no.* 2, 79–139. (Marius Zimand) **93m:03075** 03D30 (03D25, 03D45)

Cepītis, Jānis (*with* Ungure, A. A.) Solvability of a boundary value problem for a class of systems of second-order ordinary differential equations with nonsummable singularities. (Russian. English, Russian and Latvian summaries) *Mathematics. Differential equations* (*Russian*), 24–34, ii–iii, *Latv. Univ. Zināt. Raksti*, 570, *Latv. Univ., Riga*, 1992. (S. A. Brykalov) **93i:34045** 34B15

Cerami, Giovanna (*with* Passaseo, Donato) Existence and multiplicity of positive solutions for nonlinear elliptic problems in exterior domains with "rich" topology. *Nonlinear Anal.* **18** (1992), *no.* 2, 109–119. (Gary M. Lieberman) **93a:35050** 35J65 (35J85)

Ceranka, Bronisław (*with* Katulska, Krystyna) Relations between optimum chemical balance weighing designs for v and $v+1$ objects. *Zastos. Mat.* **21** (1991), *no.* 2, 207–209. (Girdhar G. Agarwal) **93a:62102** 62K05

— (*with* Katulska, Krystyna) Optimum biased spring balance weighing designs with nonhomogeneity of the variances of errors. *J. Statist. Plann. Inference* **30** (1992), *no.* 2, 185–193. (Girdhar G. Agarwal) **93f:62102** 62K05 (62K15)

Čeršns, Kārlis (*with* Auziņš, Andrejs; Bārzdiņš, Jānis; Bičevskis, Jānis; Kalniņš, Audris) Automatic construction of test sets: theoretical approach. *Baltic computer science*, 286–359, *Lecture Notes in Comput. Sci.*, 502, *Springer, Berlin*, 1991. (Summary) **93h:68083** 68Q60

Cercignani, Carlo Boundary value problems in discrete kinetic theory. (Italian) Memoirs of mathematical physics in honor of Giovanni Carini on his 70th birthday (Italian). *Atti Accad. Peloritana Pericolanti Cl. Sci. Fis. Mat. Natur.* **68** (1990), *suppl.* 1, 277–290 (1991). (Giuseppe Toscani) **93e:82038** 82C40 (76P05)

— The trend to equilibrium in discrete and continuous kinetic theory: a comparison. (English summary) *Discrete models of fluid dynamics* (*Figueira da Foz*, 1990), 12–21, *Ser. Adv. Math. Appl. Sci.*, 2, *World Sci. Publishing, River Edge, NJ*, 1991. (Giuseppe Toscani) **93j:82057** 82C40 (76P05)

— Measure solutions of the steady Boltzmann equation in a slab. (English summary) *Probabilistic methods in mathematical physics* (*Siena*, 1991), 155–165, *World Sci. Publishing, River Edge, NJ*, 1992. (Giuseppe Toscani) **93j:82058** 82C40 (76P05)

— Dario Graffi (1905–1990). (Italian) *Ann. Mat. Pura Appl.* (4) **161** (1992), iii. 01A70

— (*with* Stefanov, S. K.) Monte Carlo simulation of Bénard's instability in a rarefied gas. (English summary) *European J. Mech. B Fluids* **11** (1992), *no.* 5, 543–553. 76M99 (76E15, 76P05)

— (*with* Sgarra, C.) Half-range completeness for the Fokker-Planck equation with an external force. *J. Statist. Phys.* **66** (1992), *no.* 5-6, 1575–1582. (Klaus Dressler) **93a:82042** 82C31

Cerdá, E. (*with* Calisto, H.; Tirapegui, Enrique) Comment on: "Noise and bifurcations" [J. Statist. Phys. **50** (1988), no. 1-2, 345–375; MR 89b:58156] by C. Meunier and A. D. Verga. (English summary) *J. Statist. Phys.* **69** (1992), *no.* 5-6, 1115–1122. (Summary) **93j:58095** 58F14 (58F13, 58F30, 70L05, 82C31)

Cerdà, Joan (*with* Carro, M. J.) On the Lions-Schechter complex interpolation method. *Function spaces* (*Poznań*, 1989), 229–237, *Teubner-Texte Math.*, 120, *Teubner, Stuttgart*, 1991. (Irina U. Asekritova) **93b:46142** 46M35

— (*with* Bernal, A.) Complex interpolation of quasi-Banach spaces with an A-convex containing space. *Ark. Mat.* **29** (1991), *no.* 2, 183–201. (N. Ya. Kruglyak) **93a:46137** 46M35

velilla Cerdán, Santiago *see* **Velilla Cerdán, Santiago**

Ceria, Sebastián (*with* Balas, Egon; Cornuéjols, Gérard) Solving mixed 0-1 programs by a lift-and-project method. (English summary) *Proceedings of the Fourth Annual ACM-SIAM Symposium on Discrete Algorithms* (*Austin, TX*, 1993), 232–242, *ACM, New York*, 1993. (*see* **93k:05002**) 90C09

Čerin, Zvonko Proximately universal limits of approximate mappings. *Math. Japon.* **37** (1992), *no.* 1, 131–148. (Summary) **93f:54017** 54B35 (54C10, 54H25, 55M20)

Cerioli, Maura (*with* Astesiano, Egidio) Partial higher-order specifications. Mathematical foundations of computer science '91 (Kazimierz Dolny, 1991). *Fund. Inform.* **16** (1992), *no.* 2, 101–126. (Chantal Berline) **93g:68053** 68Q25

Cerjan, Charles (*with* Tal-Ezer, Hillel; Kosloff, Ronnie) Low-order polynomial approximation of propagators for the time-dependent Schrödinger equation. *J. Comput. Phys.* **100** (1992), *no.* 1, 179–187. (Summary) **93b:81005** 81–08 (81Q05)

Čerkasov, I. D. *see* **Cherkasov, I. D.**

Černý, Ilja ★ Foundations of analysis in the complex domain. Translated from the Czech. Ellis Horwood Series: Mathematics and its Applications. *Ellis Horwood, New York*; *distributed by Prentice Hall, Inc., Englewood Cliffs, NJ*, 1992. 378 *pp. ISBN* 0-13-327024-6 (M. H. Heins) **93g:30001** 30–01

Černý, Ján (*with* Kluvánek, Pavol) ★ Základy matematickej teórie dopravy. (Slovak) [Foundations of the mathematical theory of transportation] With Russian and English summaries. *VEDA, Vydavatel'stvo Slovenskej Akadémie Vied, Bratislava*, 1991. 280 *pp. ISBN* 80-224-0099-8 (From the summary) **93a:90002** 90–02 (90B06, 90C08, 90C10, 90C35)

Černý, Martin The possibilities of fuzzy dialogue in interactive vector optimization. (English summary) *Fuzzy approach to reasoning and decision-making* (*Bechyně*, 1990), 141–146, *Theory Decis. Lib. Ser. D Syst. Theory Knowledge Engrg. Probl. Solving*, 8, *Kluwer Acad. Publ., Dordrecht*, 1992. (Summary) **93m:90104** 90C70 (04A72)

— *see also* **Fuzzy approach to reasoning and decision-making, 93m:68003**

Ceron, Suely do Carmo Siqueira (*with* Lopes, Orlando) α-contractions and attractors for dissipative semilinear hyperbolic equations and systems. *Ann. Mat. Pura Appl.* (4) **160** (1991), 193–206 (1992). (D. N. Cheban) **93f:34099** 34G20 (34C25, 34D45, 35L70, 35R20, 47H09, 47N20)

Cerone, V. Parameter bounds for linear models in the presence of bounded relative errors. *Control '91, Vol.* 1, 2 (*Edinburgh*, 1991), 1171–1176, *IEE Conf. Publ. Ser.*, 332, *IEE, London*, 1991. (*see* **93h:93007**) 93B36

— Parameter bounds for models with bounded errors in all variables. (English summary) *Identification and system parameter estimation* 1991, *Vol.* 1,2 (*Budapest*, 1991), 895–900, *IFAC Sympos. Ser.*, 3, *Pergamon, Oxford*, 1992. (*see* **93h:93009**) 93B30

— Parameter bounding in ARMAX models from records with bounded errors in variables. (English summary) *Identification and system parameter estimation* 1991, *Vol.* 1,2 (*Budapest*, 1991), 965–970, *IFAC Sympos. Ser.*, 3, *Pergamon, Oxford*, 1992. (*see* **93h:93009**) 93B30

— (*with* Tempo, Roberto) Robust stability: the computational complexity point of view. (English summary) *J. Complexity* **8** (1992), *no.* 3, 265–276. (Summary) **93g:93068** 93D09 (68Q25)

— Parameter bounds for ARMAX models from records with bounded errors in variables. (English summary) *Internat. J. Control* **57** (1993), *no.* 1, 225–235. (Summary) **93i:93117** 93E10 (93E20)

Cerutti, M. Cristina Integrability of reciprocals of the Green's function for elliptic operators: counterexamples. *Proc. Amer. Math. Soc.* **119** (1993), *no.* 1, 125–134. (Yehuda Pinchover) **93k:35075** 35J25 (35B65, 35C15)

Ceruzzi, Paul Electronics technology and computer science, 1940–1975: a coevolution. (English summary) *Ann. Hist. Comput.* **10** (1989), *no.* 4, 257–275. (Summary) **93m:01042** 01A60 (68–03, 94–03)

Cervantes-Cota, Jorge (*with* Chauvet, Pablo; Núñez Yépez, H. N.) Vacuum-analytic solutions in Bianchi-type universes. *Classical Quantum Gravity* **9** (1992), *no.* 8, 1923–1936. (R. N. Tiwari) **93k:83060** 83D05

Cerveau, Dominique (*with* Lins Neto, A.) Holomorphic foliations in $\mathbf{CP}(2)$ having an invariant algebraic curve. (French summary) *Ann. Inst. Fourier* (*Grenoble*) **41** (1991), *no.* 4, 883–903. (M. G. Soares) **93b:32050** 32L30 (34A20, 58F18)

— Déploiements non dicritiques des formes différentielles holomorphes $A\,dx + B\,dy$. (English summary) [Nondicritical unfoldings of the holomorphic differential forms $A\,dx + B\,dy$] *Bol. Soc. Brasil. Mat.* (*N.S.*) **22** (1991), *no.* 1, 39–62. (Yih-Nan David Gau) **93g:32046** 32L30 (32G07, 58A17)

— (*with* Cano Torres, Felipe) Desingularization of nondicritical holomorphic foliations and existence of separatrices. *Acta Math.* **169** (1992), *no.* 1-2, 1–103. (Joan Girbau) **93k:32069** 32L30 (32S70)

Cervera, Miguel (*with* Codina, Ramon; Oñate, Eugenio) A finite-element formulation for the analysis of incompressible viscous flow. (Spanish. Spanish summary) *Proceedings of the XII Congress on Differential Equations and Applications/II Congress on Applied Mathematics* (*Spanish*) (*Oviedo*, 1991), 415–420, *Univ. Oviedo, Oviedo*, 1991. (*see* **93j:00009**) 76M10 (65M60, 76D05)

Cervera Mateu, Vicente (*with* Mascaró, Francisca) Some decomposition lemmas of diffeomorphisms. (English summary) *Compositio Math.* **84** (1992), *no.* 1, 101–113. (B. Hajduk) **93k:57063** 57R50 (58D99)

Cesari, Lamberto (*with* Brandi, Primo; Salvadori, Anna) Seminormality conditions in the calculus of variations for BV solutions. *Ann. Mat. Pura Appl.* (4) **162** (1992), 299–317. (Francesco Ferro) **93j:49003** 49J10 (49J45, 49Q15)

— *see also* **Cecconi, Jaurès, 93c:01032**

Céspedes, J. (*with* Alvarez, Enrique; Verdaguer, E.) A new action for the gravitational interaction. (English summary) *Phys. Lett. B* **289** (1992), *no.* 1-2, 51–55. (Summary) **93g:83005** 83C05

Cessenat, Michel (*with* Artola, Michel) Diffraction d'une onde électromagnétique par une couche composite mince accolée à un corps conducteur épais. I. Cas des inclusions fortement conductrices. (English summary) [Scattering of an electromagnetic wave by a slender composite slab in contact with a thick perfect conductor. I. Inclusions with high conductivity] *C. R. Acad. Sci. Paris Sér. I Math.* **313** (1991), *no.* 5, 231–236. (Introduction) **93c:78009** 78A45

— (*with* Artola, Michel) Diffraction d'une onde électromagnétique par une couche composite mince accolée à un corps conducteur épais. II. Cas d'inclusions (ou d'une couche) de forte permitivité et de forte perméabilité. (English summary) [Scattering of an electromagnetic wave by a slender composite slab in contact with a thick perfect conductor. II. Inclusions (or coated material) with high conductivity and high permeability] *C. R. Acad. Sci. Paris Sér. I Math.* **313** (1991), *no.* 6, 381–385. (From the introduction) **93c:78010** 78A45

— (*with* Artola, Michel) Diffraction d'une onde électromagnétique par un obstacle borné à permittivité et perméabilité élevées. (English summary) [Diffraction of an electromagnetic wave by a bounded body with high permittivity and permeability] *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 5, 349–354. (Summary) **93m:78012** 78A45

Cessi, Paola (*with* Young, W. R.) Multiple equilibria in two-dimensional thermohaline circulation. (English summary) *J. Fluid Mech.* **241** (1992), 291–309. (Summary) **93f:76089** 76R05 (76E15, 76U05, 86A05)

Cetinkaya, Cetin (*with* Vakakis, Alexander F.) Mode localization in a class of multidegree-of-freedom nonlinear systems with cyclic symmetry. (English summary) *SIAM J. Appl. Math.* **53** (1993), *no.* 1, 265–282. (Peter Smith) **93m:34054** 34C15 (70K25)

goles Ch., Eric *see* **Goles Ch., Eric**

Cha, Jian Zhong (*with* Fang, Yun; Zhou, Ji[1]; Wang, Jian Hua[4]; Dai, Zuo) The discrete recursive quadratic programming with artificial intelligence strategy. (English summary) *Optimization, Vol.* 1, 2 (*Singapore*, 1992), 159–166, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93d:90005**) 90C20

Cha, Shin (*with* Chung, In Sang; Kwon, Yong Rae) Complexity measures for concurrent programs based on information-theoretic metrics. (English summary) *Inform. Process. Lett.* **46** (1993), *no.* 1, 43–50. 68Q30 (68Q10)

Chaatit, Fouad Twisted types and uniform stability. *Functional analysis* (*Austin, TX*, 1987/1989), 183–199, *Lecture Notes in Math.*, 1470, *Springer, Berlin*, 1991. (M. I. Kadets) **93e:46015** 46B20

Chaba, A. N. (*with* Souto, J. Hugo) Distribution of quantum states in enclosures of finite size. II. *Canad. J. Phys.* **69** (1991), *no.* 11, 1342–1361. (Summary) **93b:81051** 81Q05

Chaban, V. I. Newton's iterative formula for the 2-matrix argument. (Russian. Russian summary) *Mat. Metody i Fiz.-Mekh. Polya No.* 34 (1991), 99–100. 65H10

Chabanne, Hervé Permutation decoding of abelian codes. (English summary) *IEEE Trans. Inform. Theory* **38** (1992), *no.* 6, 1826–1829. 94B27

Chabard, J.-P. (*with* Métivet, Brigitte; Pot, G.; Thomas, B.) An efficient finite-element method for the computation of three-dimensional turbulent incompressible flows. *Finite elements in fluids, Vol.* 8 (*Huntsville, AL*, 1989), 239–293, *Ser. Comput. Phys. Process. Mech. Thermal Sci., Hemisphere, Washington, DC*, 1992. (Markku Lindroos) **93k:76076** 76M10 (76D05, 76F99)

Chabás, José (*with* Goldstein, Bernard R.) Nicholaus de Heybech and his table for finding true syzygy. (English, French and Spanish summaries) *Historia Math.* **19** (1992), *no.* 3, 265–289. (Anne Tihon) **93k:01013** 01A35 (85–03)

— (*with* Tihon, Anne) Verification of parallax in Ptolemy's *Handy tables*. *J. Hist. Astronom.* **24** (1993), *no.* 1-2, 123–141. 01A20

Chabert, Jean-Luc Le groupe de Picard de l'anneau des polynômes à valeurs entières. (English summary) [The Picard group of an integer-valued polynomial ring] *J. Algebra* **150** (1992), *no.* 1, 213–230. (Manuel Ojanguren) **93i:13008** 13C20 (13B25)

— Integer-valued polynomials, Prüfer domains, and localization. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 4, 1061–1073. (Marco Fontana) **93j:13025** 13F05 (13F20, 13G05)

Chabour, Rachid (*with* Ferfera, Abdelhak) Noninteracting control and disturbance decoupling with singularity for two-dimensional bilinear systems. *J. Math. Systems Estim. Control* **2** (1992), *no.* 4, 429–444. (Xiao Yun Lu) **93f:93110** 93D15 (93B17, 93B52, 93C10)

Chabrowski, Jan ★ The Dirichlet problem with L^2-boundary data for elliptic linear equations. Lecture Notes in Mathematics, 1482. *Springer-Verlag, Berlin*, 1991. vi+173 *pp. ISBN* 3-540-54486-0 (Gary M. Lieberman) **93i:35045** 35J25 (35–02)

— On compact embeddings of radial Sobolev spaces and their applications. *Comm. Partial Differential Equations* **17** (1992), *no.* 5-6, 941–952. (Josef Voldřich) **93h:46036** 46E35 (35J60, 58G30, 81T99)

— On nonlinear eigenvalue problems. *Forum Math.* **4** (1992), *no.* 4, 359–375. (Norman Dancer) **93f:58029** 58E05 (35J60, 35P30, 47H15, 47N20, 58C40)

— (*with* Zhang, Ke Wei[1]) Quasi-monotonicity and perturbated systems with critical growth. (English summary) *Indiana Univ. Math. J.* **41** (1992), *no.* 2, 483–504. (Xin Kang Guo) **93h:35017** 35B20 (35J65)

— Multiple solutions for a class of nonlocal problems for semilinear elliptic equations. *Publ. Res. Inst. Math. Sci.* **28** (1992), *no.* 1, 1–11. (Siegfried Carl) **93c:35042** 35J65 (35B30)

Chacha, D. (*with* Sánchez-Palencia, Enrique) Overall behavior of elastic plates with periodically distributed fissures. (French summary) *Asymptotic Anal.* **5** (1992), *no.* 5, 381–396. (Ján Lovišek) **93d:73046** 73K10 (73B27)

Chacko, E. (*with* Beatson, R. K.) Which cubic spline should one use? *SIAM J. Sci. Statist. Comput.* **13** (1992), *no.* 4, 1009–1024. (Summary) **93c:65015** 65D07 (41A15, 65D10)

Chacon, R. V. (*with* Fomenko, A. T.) Recursion formulas for the Lie integral. *Adv. Math.* **88** (1991), *no.* 2, 200–257. (Dominique Lambert) **93e:22013** 22E15 (17B10, 65D30)

Chacón Rebollo, Tomás (*with* Bless Ranero, Ibrahim) Numerical solution of two-dimensional Euler equations via a Lagrangian finite-element method using an adaptive mesh. (Spanish. Spanish summary) *Proceedings of the XII Congress on Differential Equations and Applications/II Congress on Applied Mathematics (Spanish) (Oviedo*, 1991), 399–404, *Univ. Oviedo, Oviedo*, 1991. (*see* **93j:00009**) 76M10 (65M60)

— (*with* Franco Coronil, D.; Ortegón, F.) An isotropic version of the MPP model of turbulence. (Spanish) *Proceedings of the XII Congress on Differential Equations and Applications/II Congress on Applied Mathematics (Spanish) (Oviedo*, 1991), 427–432, *Univ. Oviedo, Oviedo*, 1991. (*see* **93j:00009**) 76F05

Chacron, M. ★ Decomposing and ordering a certain crossed product. Carleton-Ottawa Mathematical Lecture Note Series, 13. *Carleton University, Ottawa, ON*, 1992. 54 *pp.* (Stefaan Caenepeel) **93h:16049** 16S35

Chadam, John M. (*with* Caginalp, G.) Stability of interfaces with velocity correction term. Current directions in nonlinear partial differential equations (Provo, UT, 1987). *Rocky Mountain J. Math.* **21** (1991), *no.* 2, 617–629. (Vasilios Alexiades) **93a:35155** 35R35 (35B35, 35K05, 80A22)

— (*with* Peirce, A.; Yin, Hong Ming) The blowup property of solutions to some diffusion equations with localized nonlinear reactions. (English summary) *J. Math. Anal. Appl.* **169** (1992), *no.* 2, 313–328. (Victor A. Galaktionov) **93h:35092** 35K55 (35B05)

— (*with* Yin, Hong Ming) The two-phase Stefan problem in materials with memory. (English summary) *Free boundary problems involving solids (Montreal, PQ*, 1990), 117–123, *Pitman Res. Notes Math. Ser.*, 281, *Longman Sci. Tech., Harlow*, 1993. (*see* **93k:00037**) 35R35 (73B30, 80A22)

— *see also* **Emerging applications in free boundary problems**, **93k:00035**; **Free boundary problems in fluid flow with applications**, **93k:00036** *and* **Free boundary problems involving solids**, **93k:00037**

Chadan, K. (*with* Kobayashi, Reido; Musette, M.) The inverse problem in the coupling constant for the Schrödinger equation. II. *Inverse Problems* **8** (1992), *no.* 1, 45–57. (R. G. Newton) **93c:34033** 34A55 (34L40, 81U20)

Chadha, S. S. Optimization of a quadratic fractional function. (English summary) *Cahiers Centre Études Rech. Opér.* **34** (1992), *no.* 1, 3–6. 90C30 (90C20, 90C32)

Chadœuf, J. (*with* Nandris, D.; Geiger, J. P.; Nicole, M.; Pierrat, J. C.) Modélisation spatio-temporelle d'une epidémie par un processus de Gibbs: estimation et tests. (English and French summaries) [Spatiotemporal modelling of an epidemic using a Gibbs process: estimation and tests] *Biometrics* **48** (1992), *no.* 4, 1165–1175. 62M40

Chadwick, Paul (*with* Barnett, D. M.; Lothe, J.) Addendum: "The behaviour of elastic surface waves polarized in a plane of material symmetry. I. General analysis" [Proc. Roy. Soc. London Ser. A **430** (1990), no. 1878, 213–240; MR 92c:73037] by Chadwick. *Proc. Roy. Soc. London Ser. A* **433** (1991), *no.* 1889, 699–710. (Bair V. Budaev) **93f:73037** 73D20 (73B40)

— (*with* Wilson, N. J.) The behaviour of elastic surface waves polarized in a plane of material symmetry. III. Orthorhombic and cubic media. *Proc. Roy. Soc. London Ser. A* **438** (1992), *no.* 1902, 225–247. (Summary) **93f:73038** 73D20 (73B10, 73B40)

Chadwick, Peter *see* **Elastic waves and related topics**, **93f:73003**; **Willis, J. R.**, **93m:01090a** *and* **93m:01090b**

Chądzyński, Jacek (*with* Krasiński, Tadeusz; Miodek, Andrzej) On radical complete intersections. (English summary) *Bull. Polish Acad. Sci. Math.* **38** (1990), *no.* 1-12, 193–198. (Introduction) **93g:32007** 32B05

— (*with* Krasiński, Tadeusz) Sur l'exposant de Łojasiewicz à l'infini pour les applications polynomiales de $\mathbf{C}^2$ dans $\mathbf{C}^2$ et les composantes des automorphismes polynomiaux de $\mathbf{C}^2$. (English and French summaries) [On the Łojasiewicz exponent at infinity for polynomial mappings from $\mathbf{C}^2$ to $\mathbf{C}^2$ and components of polynomial automorphisms of $\mathbf{C}^2$] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 13, 1399–1402. (Summary) **93h:14010** 14E07

Chae, Dongho On the ensemble average in the study of approximate inertial manifolds. *J. Math. Anal. Appl.* **160** (1991), *no.* 1, 236–249. (Paul G. Schmidt) **93c:35126a** 35Q30 (35B40, 76D05, 76F99)

— Remarks on the regularity of weak solutions of the Navier-Stokes equations. (English summary) *Comm. Partial Differential Equations* **17** (1992), *no.* 7-8, 1267–1285. (I. Aganović) **93i:35102** 35Q30 (35D10, 76D05)

— On the ensemble average in the study of approximate inertial manifolds. II. *J. Math. Anal. Appl.* **164** (1992), *no.* 2, 337–349. (Paul G. Schmidt) **93c:35126b** 35Q30 (35B40, 76D05, 76F99)

— Some a priori estimates for weak solutions of the 3-D Navier-Stokes equations. *J. Math. Anal. Appl.* **167** (1992), *no.* 1, 236–244. (Song Mu Zheng) **93d:35112** 35Q30 (35B45, 35D05, 76D05)

Chae, Seog (*with* Lee, Jihong) Analysis on function duplicating capabilities of fuzzy controllers. (English summary) *Fuzzy Sets and Systems* **56** (1993), *no.* 2, 127–143. 93C42 (04A72)

Chafle, Mangala R. (*with* Agashe, Nirmala S.) On submanifolds of a Riemannian manifold with semi-symmetric metric connection. *Tensor (N.S.)* **50** (1991), *no.* 3, 208–212. (Angel Ferrández) **93f:53043** 53C40 (53C05)

— (*with* Agashe, Nirmala S.) A semi-symmetric nonmetric connection on a Riemannian manifold. *Indian J. Pure Appl. Math.* **23** (1992), *no.* 6, 399–409. (Andrzej Bucki) **93e:53018** 53B05 (53B15)

— (*with* Agashe, Nirmala S.) On submanifolds of an almost product Riemannian manifold. *Tensor (N.S.)* **51** (1992), *no.* 2, 138–144. (Andrzej Bucki) **93m:53051** 53C40 (53C05, 53C15)

— (*with* Agashe, Nirmala S.) On submanifolds of a special paracontact Riemannian manifold. *Tensor (N.S.)* **51** (1992), *no.* 2, 145–155. (Andrzej Bucki) **93m:53052** 53C40 (53C15)

Chagrov, A. V. (*with* Chagrova, L. A.) First-order definability of intuitionistic formulas in the class of scales of height at most three. (Russian) *Constructions in algebra and logic (Russian)*, 117–119, *Tver. Gos. Univ., Tver'*, 1990. (*see* **93m:00021**) 03B20

— Undecidable properties of extensions of provability logic. II. (Russian) *Algebra i Logika* **29** (1990), *no.* 5, 613–623, 627; *translation in Algebra and Logic* **29** (1990), *no.* 5, 406–413 (1991). (Katalin Bimbó) **93b:03019** 03B45 (03D35, 03F30, 03F40)

— (*with* Zakhar'yashchev, M. V.) The disjunction property of intermediate propositional logics. *Studia Logica* **50** (1991), *no.* 2, 189–216. (V. V. Rybakov) **93b:03040** 03B55 (03B45)

— Continuality of the set of maximal superintuitionistic logics with the disjunction property. (Russian) *Mat. Zametki* **51** (1992), *no.* 2, 117–123, 159; *translation in Math. Notes* **51** (1992), *no.* 1-2, 188–193. (Piotr Wojtylak) **93d:03035** 03B55

— (*with* Zakhar'yashchev, M. V.) Modal companions of intermediate propositional logics. *Studia Logica* **51** (1992), *no.* 1, 49–82. (Stanisław J. Surma) **93k:03015** 03B45 (03B20, 03B55)

Chagrova, L. A. (*with* Chagrov, A. V.) First-order definability of intuitionistic formulas in the class of scales of height at most three. (Russian) *Constructions in algebra and logic (Russian)*, 117–119, *Tver. Gos. Univ., Tver'*, 1990. (*see* **93m:00021**) 03B20

— An undecidable problem in correspondence theory. *J. Symbolic Logic* **56** (1991), *no.* 4, 1261–1272. (Wojciech Dzik) **93b:03075** 03D35 (03B20)

Chai, Ching-Li A note on Manin's theorem of the kernel. *Amer. J. Math.* **113** (1991), *no.* 3, 387–389. (From the text) **93b:14036** 14G05

— Symmetric nilpotent matrices with maximal rank and a conjecture of Grothendieck-Koblitz. With an appendix by Michael Larsen. *Proc. Amer. Math. Soc.* **119** (1993), *no.* 1, 87–95. (Wenchen Chi) **93k:14058** 14K10 (14D10)

Chai, Gen Xiang (*with* Li, Zhu Yu; Tian, Hong) Consistent nonparametric estimation of error distributions in linear model. *Acta Math. Appl. Sinica (English Ser.)* **7** (1991), *no.* 3, 245–256. (M. Bertrand-Retali) **93b:62091** 62J05 (62G05, 62G20)

— (*with* Su, Yan; Shi, Sun Juan) A nonparametric approach to the estimation of error distributions in linear model. (English summary) *Probability and statistics (Tianjin*, 1988/1989), 1–11, *Nankai Ser. Pure Appl. Math. Theoret. Phys., World Sci. Publishing, River Edge, NJ*, 1992. (Ulrich Stadtmüller) **93h:62071** 62G05 (62J05)

— (*with* Zhao, Lin Cheng) Survey of Chinese work on nonparametric density estimation, regression and discrimination. *The development of statistics: recent contributions from China*, 199–217, *Pitman Res. Notes Math. Ser.*, 258, *Longman Sci. Tech., Harlow*, 1992. (*see* **93e:62004**) 62G05 (62H30, 62J02)

Chai, Tian You (*with* Zheng, Li Xin) A multivariable pole-placement controller with adaptive decoupling at dynamic states. (Chinese. English and Chinese summaries) *Inform. and Control (Shenyang)* **21** (1992), *no.* 1, 1–5, 54. 93B55

— A direct multivariable adaptive decoupling control algorithm. (Chinese. English and Chinese summaries) *Inform. and Control (Shenyang)* **21** (1992), *no.* 4, 193–200. (Summary) **93i:93133** 93E35 (93B40, 93C35)

Chai, Y. D. A topological characterization of compact n-manifolds with C^2-boundary in $\mathbf{R}^n$. *Topology Appl.* **43** (1992), *no.* 2, 83–89. (Louis Funar) **93d:57059** 57R45 (52A22)

Chaichian, M. (*with* Kulish, P. P.) Quantum superalgebras, q-oscillators and applications. *Nonperturbative methods in low-dimensional quantum field theories (Debrecen*, 1990), 213–236, *World Sci. Publishing, River Edge, NJ*, 1991. (Michael Schlieker) **93k:81091** 81R50 (17B37, 17B81, 81S05)

— (*with* Ellinas, D.; Prešnajder, Peter) Path integrals and supercoherent states. *J. Math. Phys.* **32** (1991), *no.* 12, 3381–3391. (Kishin Mariwalla) **93c:81074** 81R30 (81S40)

— (*with* Prešnajder, Peter) Sugawara construction and the q-deformation of Virasoro algebra. (English summary) *Quantum groups and related topics (Wrocław*, 1991), 3–12, *Math. Phys. Stud.*, 13, *Kluwer Acad. Publ., Dordrecht*, 1992. (J. F. Cornwell) **93k:17027** 17B37 (17B67, 17B68, 81R50)

— (*with* Prešnajder, Peter) Sugawara construction and the q-deformation of Virasoro (super)algebra. *Phys. Lett. B* **277** (1992), *no.* 1-2, 109–118. (Ladislav Hlavatý) **93d:17030** 17B68 (17A70, 17B37, 81R50)

— (*with* de Azcárraga, J. A.; Prešnajder, Peter; Ródenas, F.) Oscillator realization of the q-deformed anti-de Sitter algebra. (English summary) *Phys. Lett. B* **291** (1992), *no.* 4, 411–417. (A. U. Klimyk) **93i:81090** 81R50 (17B37)

Chaika, O. G. (*with* Girko, V. L.) Moments of spectral distribution functions of the distances between neighboring eigenvalues of random matrices. (Russian) *Vychisl. Prikl. Mat. (Kiev) No.* 71 (1990), 97–102. (Summary) **93d:60058** 60F99 (62H10, 81V35)

Chaikin, S. V. Relative equilibrium positions on a circular orbit of a flexible satellite and their stability. (Russian. Russian summary) *Prikl. Mat. Mekh.* **56** (1992), *no.* 4, 615–623; *translation in J. Appl. Math. Mech.* **56** (1992), *no.* 4, 518–526. (Summary) **93g:70030** 70M20 (70E99, 70K20, 73H10, 73K12)

Chair, Noureddine (*with* Zhu, Chuan Jie) Tetrahedra and polynomial equations in topological field theory. *Internat. J. Modern Phys. A* **6** (1991), *no.* 20, 3571–3598.

(Siddhartha Sen) **93b:81242** 81T40 (81R50)
— (*with* Dobrev, V. K.; Kanno, Hiroaki) SO(2, C) invariant ring structure of BRST cohomology and singular vectors in 2D gravity with $c < 1$ matter. *Phys. Lett. B* **283** (1992), *no.* 3-4, 194–202. (A. K. Raina) **93j:81100** 81T70 (17B68, 17B81, 81T40)
Chaïra, Abdellatif Équation des ondes et régularité sur un ouvert lipschitzien. (English and French summaries) [Wave equation and regularity on a Lipschitz domain] *C. R. Acad. Sci. Paris Sér. I Math.* **316** (1993), *no.* 1, 33–36. (Summary) **93k:35155** 35L05 (35B65)
Chait, Yossi (*with* Yaniv, Oded) Direct control design in sampled-data uncertain systems. (English summary) *Automatica J. IFAC* **29** (1993), *no.* 2, 365–372. 93C57 (93B36)
Chaitin, Gregory J. Zahlen und Zufall. Algorithmische Informationstheorie. Neueste Resultate über die Grundlagen der Mathematik. [Numbers and chance. Algorithmic information theory. Recent results on the foundations of mathematics] Translated from the English by Andreas Wenzl and Hans-Christian Reichel. *Naturwissenschaft und Weltbild*, 30–44, *Hölder-Pichler-Tempsky, Vienna*, 1992. (*see* **93b:00009**) 01A60
— LISP program-size complexity. (English summary) *Appl. Math. Comput.* **49** (1992), *no.* 1, 79–93. (From the introduction) **93m:68086a** 68Q30
— Information-theoretic incompleteness. (English summary) *Appl. Math. Comput.* **52** (1992), *no.* 1, 83–101. (Juraj Hromkovič) **93j:68078** 68Q30 (03D15)
— LISP program-size complexity. II, III, IV. (English summary) *Appl. Math. Comput.* **52** (1992), *no.* 1, 103–126, 127–139, 141–147. (Summary) **93m:68086b** 68Q30
Chajda, Ivan (*with* Haviar, Miroslav) Induced pseudo-orders. *Acta Univ. Palack. Olomuc. Fac. Rerum Natur. Math.* **30** (1991), 9–16. (Summary) **93b:04002** 04A05 (06A99)
— Permutability of congruences in varieties with idempotent operations. *Acta Univ. Palack. Olomuc. Fac. Rerum Natur. Math.* **30** (1991), 33–37. (Summary) **93c:08003** 08B05 (06B10, 08A30)
— Lattices in quasiordered sets. (English summary) *Acta Univ. Palack. Olomuc. Fac. Rerum Natur. Math.* **31** (1992), 6–12. (Summary) **93m:06010** 06A12 (06B05)
— A note on varieties with distributive subalgebra lattices. (English summary) *Acta Univ. Palack. Olomuc. Fac. Rerum Natur. Math.* **31** (1992), 25–28. (Summary) **93m:08004** 08A30 (08B05)
— Characterizations of Hamiltonian algebras. *Czechoslovak Math. J.* **42(117)** (1992), *no.* 3, 487–489. (Editors) **93f:08004** 08A40 (08A30)
— Varieties with modular and distributive lattices of symmetric or reflexive relations. *Czechoslovak Math. J.* **42(117)** (1992), *no.* 4, 623–630. (Manfred Armbrust) **93h:08011** 08B99 (06C99, 06D99)
— (*with* Czédli, Gábor) A note on representation of lattices by tolerances. *J. Algebra* **148** (1992), *no.* 1, 274–275. (From the text) **93c:06010** 06B15 (08A30)
Chaki, B. (*with* Chakrabarti, Purnima) On Chaki's pseudosymmetric manifolds. *Tensor (N.S.)* **50** (1991), *no.* 1, 32–34. (Megerdich Toomanian) **93i:53050** 53C35
Chakmazyan, A. V. (*with* Lumiste, Ülo) Covariant derivative and parallelism of the second fundamental form of a normalized submanifold in projective space. (Russian and Estonian summaries) *Eesti NSV Tead. Akad. Toimetised Füüs.-Mat.* **40** (1991), *no.* 1, 9–16, 62. (Summary) **93h:53057** 53C40
Chakrabarti, A. *see* **Chakrabarti, Amitabha**
Chakrabarti, Aloknath (*with* Bera, Rasajit Kumar) Cooling of a composite slab in a two-fluid medium. *Z. Angew. Math. Phys.* **42** (1991), *no.* 6, 943–959. (J. R. Ockendon) **93a:80002a** 80A20 (35J25, 35K05)
— (*with* Bera, Rasajit Kumar) Cooling of an infinite slab in a two-fluid medium. *J. Austral. Math. Soc. Ser. B* **33** (1992), *no.* 4, 474–485. (J. R. Ockendon) **93a:80002b** 80A20 (35J25, 35K05)
— (*with* Vijaya Bharathi, L.) A new approach to the problem of scattering of water waves by vertical barriers. (English, German and Russian summaries) *Z. Angew. Math. Mech.* **72** (1992), *no.* 9, 415–423. (F. G. Leppington) **93i:76008** 76B15
Chakrabarti, Amitabha (*with* Burzlaff, J.; Tchrakian, D. H.) Generalised self-dual Chern-Simons vortices. (English summary) *Phys. Lett. B* **293** (1992), *no.* 1-2, 127–131. (Summary) **93i:81131** 81T13
Chakrabarti, Amitabha (*with* Toral, Raúl) Generation of Gaussian distributed random numbers by using a numerical inversion method. (English summary) *Comput. Phys. Comm.* **74** (1993), *no.* 3, 327–334. (Summary) **93j:65012** 65C10
Chakrabarti, Bikas K. *see* **Statistical physics of disordered solids, polymers and glasses, 93c:82002**
Chakrabarti, C. G. (*with* Bhattacharyya, Saswati) On the dynamics of age-structured population. (English summary) *Bull. Calcutta Math. Soc.* **83** (1991), *no.* 3, 297–304. 92D25
— (*with* Bhadra, Syamali) Stochastic Gompertzian growth with periodic carrying capacity. (English summary) *Bull. Calcutta Math. Soc.* **83** (1991), *no.* 5, 469–474. 92D25
— (*with* Das, N. C.) Repeatable experiment and maximum-entropy principle. (English summary) *Bull. Calcutta Math. Soc.* **83** (1991), *no.* 5, 475–480. 94A17
— (*with* Ghosh, Sutapa) Stability of two competing species: thermodynamic approach. (English summary) *Bull. Calcutta Math. Soc.* **83** (1991), *no.* 6, 575–580. 92D40 (82C35, 92D25)
— (*with* Samanta, G. P.) Stochastic behaviour of a damped Volterra-Lotka system with time-dependent parameters. *J. Math. Phys. Sci.* **25** (1991), *no.* 4, 351–359. (From the introduction) **93c:92009** 92D25 (34F05)
— (*with* Sarkar, N. G.) Stochasticity and fluctuation in a bimolecular reaction-diffusion process. (English summary) *Bull. Calcutta Math. Soc.* **84** (1992), *no.* 1, 85–90. 80A32
— (*with* Ghosh, Sutapa) On entropy, H-theorem and statistical equilibrium. (English summary) *Bull. Calcutta Math. Soc.* **84** (1992), *no.* 1, 91–96. (Lamberto Rondoni) **93j:82038** 82C03 (82C35)
Chakrabarti, P. P. (*with* Sarkar, U. K.; Ghose, S.; De Sarkar, S. C.) A simple 0.5-bounded greedy algorithm for the 0/1 knapsack problem. *Inform. Process. Lett.* **42** (1992), *no.* 3, 173–177. 90C10 (68Q25)
— (*with* Ghose, S.) A general best first search algorithm in AND/OR graphs. *J. Algorithms* **13** (1992), *no.* 2, 177–187. (Italo José Dejter) **93i:68084** 68Q25 (05C85, 68R10, 68T20)
— *see also* **Das, P. P., 93g:68146**
Chakrabarti, Purnima (*with* Chaki, B.) On Chaki's pseudosymmetric manifolds. *Tensor (N.S.)* **50** (1991), *no.* 1, 32–34. (Megerdich Toomanian) **93i:53050** 53C35
Chakrabarti, Ranabir (*with* Jagannathan, Ramaswamy) On the representations of $GL_{p,q}(2)$, $GL_{p,q}(1|1)$ and noncommutative spaces. *J. Phys. A* **24** (1991), *no.* 24, 5683–5701. (Michael Ringe) **93a:17011** 17B37 (58B30, 81R50)
— (*with* Jagannathan, Ramaswamy) A (p, q)-deformed Virasoro algebra. *J. Phys. A* **25** (1992), *no.* 9, 2607–2614. (D. V. Yur'ev) **93e:17040** 17B68 (17B37, 81R10, 81R50)
— (*with* Jagannathan, Ramaswamy) A two-parameter deformation of the Jaynes-Cummings model: path integral representation. (English summary) *J. Phys. A* **25** (1992), *no.* 23, 6399–6408. (Nathalie Debergh) **93k:81092** 81R50 (81R30, 81S40, 81V80)
Chakrabarti, Sadasiv (*with* Lahiri, B. K.) Density topology. *Math. Student* **59** (1991), *no.* 1-4, 89–108. (Eliza Wajch) **93c:28001** 28-02 (26-02, 54-02, 54C99)
— (*with* Lahiri, B. K.) Transformation of sets in topological group. *Mathematica (Cluj)* **33(56)** (1991), *no.* 1-2, 21–29. (A. Precupanu) **93i:28009** 28C10 (22A05)
Chakrabarti, Subir K. Equilibrium in behavior strategies in infinite extensive form games with imperfect information. (English summary) *Econom. Theory* **2** (1992), *no.* 4, 481–494. (Summary) **93g:90096** 90D15 (93E05)
Chakrabarty, N. R. (*with* Chaudhuri, P. K.) Geometrical solution to some planar constrained minimax problems involving the weighted rectilinear metric. (English summary) *Asia-Pacific J. Oper. Res.* **9** (1992), *no.* 2, 135–144. 90C08 (49K35)
Chakrabarty, S. P. (*with* Chatterjea, S. K.) An extension of a bilateral generating function of Al-Salam. I. *Pure Math. Manuscript* **8** (1989), 117–121. (Summary) **93b:33006** 33C45
— An extension of a bilateral generating function of Al-Salam. II. *Pure Math. Manuscript* **8** (1989), 123–128. (Summary) **93b:33007** 33C45
— (*with* Chatterjea, S. K.) An extension of a bilateral generating function of Chatterjea. I. *Pure Math. Manuscript* **8** (1989), 129–133. (Summary) **93b:33008** 33C45
— An extension of a bilateral generating function of Chatterjea. II. *Pure Math. Manuscript* **8** (1989), 135–139. (Summary) **93b:33009** 33C45
— (*with* Chatterjea, S. K.) A unified group-theoretic method of obtaining a more general class of generating relations from a given class of quasibilateral (or quasibilinear) generating relations involving some special functions. *Pure Math. Manuscript* **8** (1989), 153–162. (From the text) **93a:33014** 33C45 (33C80)
— A unified group-theoretic method of obtaining a more general class of generating relations from a given class of semi-bilateral or (semi-bilinear) generating relations involving some special functions. *Pure Math. Manuscript* **8** (1989), 163–169. (From the text) **93a:33015** 33C45 (33C80)
Chakraborti, S. (*with* Gibbons, Jean D.) Nonparametric comparison of treatments with a standard in the one-way layout: some design considerations. (English summary) *Comm. Statist. Theory Methods* **22** (1993), *no.* 1, 1–14. 62J10
Chakraborty, Ashok Kr. Inflationary solution in higher dimensions. (English summary) *Astrophys. Space Sci.* **192** (1992), *no.* 2, 321–324. (Summary) **93d:83064** 83E15
— (*with* Chakraborty, Subenoy) String cosmology in spherically symmetric space-time. *J. Math. Phys.* **33** (1992), *no.* 6, 2336–2338. (Piret Kuusk) **93c:83112** 83E30 (83F05)
— (*with* Chakraborty, Subenoy) Inhomogeneous string cosmology in higher dimension. (English summary) *Modern Phys. Lett. A* **8** (1993), *no.* 10, 889–893. (Summary) **93k:83069** 83E15 (83F05)
Chakraborty, M. K. (*with* Banerjee, Mohua) A new category for fuzzy topological spaces. (English summary) *Fuzzy Sets and Systems* **51** (1992), *no.* 2, 227–233. 54A40 (04A72)
Chakraborty, N. D. (*with* Ali, Sk. Jaker) On Dunford and Gel'fand integrals in locally convex spaces. *Indian J. Pure Appl. Math.* **23** (1992), *no.* 3, 203–216. (Richard Becker) **93f:46066** 46G10 (28B05)
Chakraborty, Ranajit *see* **Statistical methods in biological and medical sciences, 93b:62141**
Chakraborty, Subenoy Higher-order gravity in an $\mathbf{R}^1 \times S^1 \times S^2$ space-time. *Astrophys. Space Sci.* **187** (1992), *no.* 1, 135–141. (Summary) **93a:83016** 83C45
— (*with* Nandy, Gopal Chandra) Cosmological studies in Bianchi II, VIII space-time. (English summary) *Astrophys. Space Sci.* **198** (1992), *no.* 2, 299–308 (1993). (Summary) **93i:83093** 83F05 (83C20)
— Inflationary solutions in higher-dimensional quantum cosmology. (English summary) *Gen. Relativity Gravitation* **24** (1992), *no.* 9, 1001–1010. (Summary) **93e:83063** 83E15 (83F05)
— (*with* Nandy, Gopal Chandra) Spatially homogeneous cosmological model in viscous fluid with heat flux and magnetic field. (English summary) *Internat. J. Modern Phys. D* **1** (1992), *no.* 1, 247–255. (Summary) **93e:83041** 83C55 (83C15)
— (*with* Chakraborty, Ashok Kr.) String cosmology in spherically symmetric space-time. *J. Math. Phys.* **33** (1992), *no.* 6, 2336–2338. (Piret Kuusk) **93c:83112** 83E30 (83F05)
— Wormhole solutions in $\mathbf{R}^1 \times S^1 \times S^2$ topological space. (English summary) *Modern Phys. Lett. A* **7** (1992), *no.* 27, 2463–2467. (Summary) **93e:83014** 83C15 (83E05)
— (*with* Chakraborty, Ashok Kr.) Inhomogeneous string cosmology in higher dimension. (English summary) *Modern Phys. Lett. A* **8** (1993), *no.* 10, 889–893. (Summary) **93k:83069** 83E15 (83F05)
Chakraborty, Tushar Kanti The determination of indifference quality level single sampling attribute plans with given relative slope. (English summary) *Sankhya Ser. B* **52** (1990), *no.* 2, 238–245. 62N10 (65K05)
— Stochastic parameter single sampling plans of given strength. (English summary) *Calcutta Statist. Assoc. Bull.* **41** (1991), *no.* 161-164, 117–126. (Masafumi Sasaki) **93j:62240** 62N10 (90B99)
— Single sampling LTPD plans as a stochastic programming problem. (English summary) *Sankhya Ser. B* **54** (1992), *no.* 2, 242–248. 62N10 (65K05, 90C15)
Chakradhar, Srimat T. (*with* Bushnell, Michael L.) A solvable class of quadratic 0-1 programming. *Discrete Appl. Math.* **36** (1992), *no.* 3, 233–251. (Klaus Hofstedt) **93d:90041** 90C09 (90C20, 94C10)
Chakravarti, I. M. Association schemes, orthogonal arrays and codes from nondegenerate quadrics and Hermitian varieties in finite projective geometries. *Calcutta Statist. Assoc. Bull.* **40** (1990/91), *no.* 157-160, 89–96. (Andrew Woldar) **93g:05150** 05E30 (51E20, 51E22)
Chakravarty, Sarbarish (*with* Mason, Lionel; Newman, Ezra T.) Canonical structures on anti-self-dual four-manifolds and the diffeomorphism group. *J. Math. Phys.* **32** (1991), *no.* 6, 1458–1464. (Ziemowit Popowicz) **93a:58173** 58G30 (53C07, 81T13)
— (*with* Chayes, L.; Kivelson, S. A.) Absence of pair binding in the $U = \infty$ Hubbard model. *Lett. Math. Phys.* **23** (1991), *no.* 4, 265–270. (N. N. Ganikhodzhaev) **93a:82005** 82B20
— (*with* Ablowitz, Mark J.; Takhtajan, L. A.) Self-dual Yang-Mills equation and new special functions in integrable systems. (English summary) *Nonlinear evolution equations and dynamical systems (Baia Verde, 1991)*, 3–11, *World Sci. Publishing, River Edge, NJ*, 1992. (R. S. Ward) **93i:58069** 58F07 (53C07, 81T13)

— (*with* Kent, Steven; Newman, Ezra T.) Diffeomorphism algebras and the Nahm and Ward equations. *J. Math. Phys.* **33** (1992), *no.* 1, 382–387. (Jan Segert) **93a:81124** 81T13 (17B68, 53C80, 58D05, 82B21)

Chakravorti, S. R. (*with* Chattopadhyay, A. K.) On testing homogeneity of variances of correlated variables with incomplete data. (English summary) *Calcutta Statist. Assoc. Bull.* **42** (1992), *no.* 165-166, 29–40. (Summary) **93m:62048** 62F04 (62F03)

Chak″ryan, Kerope B. (*with* Genchev, Ts. R.) Factorizations of simple groups of order up to 10^{12}. *C. R. Acad. Bulgare Sci.* **45** (1992), *no.* 2, 9–12. (Jian Hua Huang) **93i:20033** 20E32 (20D08)

Chalabi, Abdallah Stable upwind schemes for hyperbolic conservation laws with source terms. *IMA J. Numer. Anal.* **12** (1992), *no.* 2, 217–241. (Dennis C. Jespersen) **93c:65108** 65M12 (65M06, 76M25)

Chalasan, R. A problem of integer linear programming. (Russian) *Constructions in algebra and logic* (*Russian*), 120–123, *Tver. Gos. Univ., Tver′*, 1990. (*see* **93m:00021**) 90C10

Chalbaud, Eduardo (*with* Martín, Pablo) Two-point quasifractional approximant in physics: method improvement and application to $J_\nu(x)$. *J. Math. Phys.* **33** (1992), *no.* 7, 2483–2486. (Summary) **93a:65022** 65D20 (33C10)

Chalcraft, D. A. On the braid index of links with nested diagrams. *Math. Proc. Cambridge Philos. Soc.* **111** (1992), *no.* 2, 273–281. (Mark E. Kidwell) **93d:57011** 57M25

Chaleyat-Maurel, Mireille (*with* Nualart, David) The Onsager-Machlup functional for a class of anticipating processes. (English summary) *Probab. Theory Related Fields* **94** (1992), *no.* 2, 247–270. (L. A. Shepp) **93i:60105** 60H07 (60G30, 60H10, 60J65)

Chalifour, Alain (*with* Delfour, Michel C.) Optimal distribution of larvicide in running waters. *SIAM J. Optim.* **2** (1992), *no.* 2, 264–303. (Summary) **93b:92009** 92C60 (49N55, 90C90, 92–04, 92D40)

Chaljub-Simon, Alice (*with* Volkmann, Peter) Équations elliptiques dans les espaces de Banach ordonnés. (English and French summaries) [Elliptic equations in ordered Banach spaces] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 12, 1245–1248. (Summary) **93j:35179** 35R20 (35J15, 47N20)

— (*with* Volkmann, Peter) Sur l'existence d'une branche de solutions positives pour une équation différentielle sur **R**. [On the existence of a branch of positive solutions for a differential equation in **R**] *Funkcial. Ekvac.* **35** (1992), *no.* 1, 111–115. (From the text) **93d:34014** 34A34

Chalkley, Roger A formula giving the known relative invariants for homogeneous linear differential equations. *J. Differential Equations* **100** (1992), *no.* 2, 379–404. (F. Neuman) **93k:34018** 34A30 (34A25)

Challinger, Judy Interactive graphical exploration of multidimensional nonlinear dynamical systems. (English summary) *Internat. J. Bifur. Chaos Appl. Sci. Engrg.* **2** (1992), *no.* 2, 251–261. 65Y25

Chalmers, B. L. (*with* Pan, K. C.; Shekhtman, Boris) A strategy for proving extensions of the 4/3 conjecture. *Approximation theory* (*Memphis, TN*, 1991), 207–215, *Lecture Notes in Pure and Appl. Math.*, 138, *Dekker, New York*, 1992. (Wu Li) **93g:41027a** 41A65 (46B28, 47A99)

— (*with* Pan, K. C.; Shekhtman, Boris) When is the adjoint of a minimal projection also minimal. *Approximation theory* (*Memphis, TN*, 1991), 217–226, *Lecture Notes in Pure and Appl. Math.*, 138, *Dekker, New York*, 1992. (Wu Li) **93g:41027b** 41A65 (46B28, 47A99)

— (*with* Metcalf, F. T.) A simple formula showing L^1 is a maximal overspace for two-dimensional real spaces. *Ann. Polon. Math.* **56** (1992), *no.* 3, 303–309. (David Yost) **93c:46020** 46B20 (46B04, 46B25)

Chalmers, Thomas C. (*with* Mosteller, Frederick) Some progress and problems in meta-analysis of clinical trials. (English summary) *Statist. Sci.* **7** (1992), *no.* 2, 227–236. 62P10

Chalot, Frédéric L. (*with* Franca, Leopoldo P.; Harari, Isaac; et al.) Calculation of two-dimensional compressible Euler flows with a new Petrov-Galerkin finite element method. *Numerical simulation of compressible Euler flows* (*Rocquencourt*, 1986), 88–104, *Notes Numer. Fluid Mech.*, 26, *Vieweg, Braunschweig*, 1989. (*see* **93b:76056**) 76M10 (76N10)

— (*with* Hughes, Thomas J. R.) Analysis of hypersonic flows in thermochemical equilibrium by application of the Galerkin/least-squares formulation. *ICIAM* 91 (*Washington, DC*, 1991), 146–159, *SIAM, Philadelphia, PA*, 1992. (*see* **93b:00026**) 76K05 (65M60, 76M10, 76V05)

Chaltin, Hendrik Groupes de Coxeter à torsion. I. (English summary) [Skew Coxeter groups. I] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 1, 61–64. (Ruth Kellerhals) **93h:20043** 20F55 (20F32, 57M15, 57M20)

— Groupes de Coxeter à torsion. II. (English and French summaries) [Skew Coxeter groups. II] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 2, 175–178. (Ruth Kellerhals) **93m:57004** 57M20 (20F32, 20F55, 57M15)

Chalton, Derek O. (*with* Troskie, Cas G.) *Q* plots, a graphical aid for regression analysis. *Comm. Statist. Theory Methods* **21** (1992), *no.* 3, 625–636. 62J05 (62–09)

Chalyĭ, A. V. (*with* Tsekhmister, Ya. V.) Hopf bifurcation in fluctuation models of self-organization processes. (Russian. English, Russian and Ukrainian summaries) *Ukraïn. Fiz. Zh.* **37** (1992), *no.* 3, 457–464. (J. S. Joel) **93j:82052** 82C27 (34C23, 58F14, 82C35, 92C05)

Chalykh, O. A. (*with* Veselov, A. P.) Explicit formulas for spherical functions on symmetric spaces of type AII. (Russian) *Funktsional. Anal. i Prilozhen.* **26** (1992), *no.* 1, 74–76; *translation in Functional Anal. Appl.* **26** (1992), *no.* 1, 59–61. (A. L. Onishchik) **93f:43008** 43A90 (22E30)

Chamarie, M. (*with* Alev, J.) Dérivations et automorphismes de quelques algèbres quantiques. [Derivations and automorphisms of some quantum algebras] *Comm. Algebra* **20** (1992), *no.* 6, 1787–1802. (V. A. Artamonov) **93f:16036** 16S99

Chambat, Michèle (*with* Bayada, Guy) Conditions aux limites à l'interface d'un milieu poreux et d'un écoulement libre de faible épaisseur. (English and French summaries) [On boundary conditions at the interface between a thin film flow and a porous medium] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 4, 491–495. (Summary) **93f:76093** 76S05 (76D08)

— (*with* Jai, M.; Bayada, Guy) The L.P.D.E.M., a mixed finite difference method for elliptic problems. (English summary) *Numer. Math.* **63** (1992), *no.* 2, 195–211. (C. Wayne Mastin) **93g:65130** 65N06 (65N12, 65N30, 76D08, 76M20)

gispert-Chambaz, Hélène *see* **Gispert-Chambaz, Hélène**

Chamberlain, Gary Efficiency bounds for semiparametric regression. *Econometrica* **60** (1992), *no.* 3, 567–596. (Z. Govindarajulu) **93j:62134** 62G20 (62J05)

Chamberlain, P. G. Wave scattering over uneven depth using the mild-slope equation. (English summary) *Wave Motion* **17** (1993), *no.* 3, 267–285. 76B15

Chamberland, M. (*with* Gladwell, G. M. L.) On transforming three-dimensional inverse scattering problems to one dimension. (English summary) *Inverse Problems* **9** (1993), *no.* 2, 241–249. (Summary) **93k:35156** 35L05 (35R30)

Chamberlin, S. R. (*with* Barndorff-Nielsen, Ole E.) An ancillary invariant modification of the signed log likelihood ratio. *Scand. J. Statist.* **18** (1991), *no.* 4, 341–352. (Summary) **93c:62025** 62E20

Chambers, Ll. G. Solutions of the neutral differential-difference equation $\alpha x'(t) + \beta x'(t-r) + \gamma x(t) + \delta x(t-r) = f(t)$. (English summary) *Internat. J. Math. Math. Sci.* **15** (1992), *no.* 4, 773–780. (Elena M. Litsyna) **93i:34146** 34K40

Chambers, Marcus J. Discrete models for estimating general linear continuous time systems. *Econometric Theory* **7** (1991), *no.* 4, 531–542. (Baldev Raj) **93f:62147** 62P20 (62M10)

— A note on forecasting in co-integrated systems. (English summary) *Comput. Math. Appl.* **25** (1993), *no.* 2, 93–99. 65C20

Chambers, Raymond L. (*with* Dorfman, Alan H.; Hall, Peter Gavin) Properties of estimators of the finite population distribution function. (English summary) *Biometrika* **79** (1992), *no.* 3, 577–582. (Summary) **93j:62090** 62G05 (62D05)

— (*with* Dorfman, Alan H.; Wehrly, Thomas E.) Bias robust estimation in finite populations using nonparametric calibration. (English summary) *J. Amer. Statist. Assoc.* **88** (1993), *no.* 421, 268–277. (Summary) **93k:62021** 62D05

— (*with* Welsh, A. H.) Log-linear models for survey data with nonignorable nonresponse. (English summary) *J. Roy. Statist. Soc. Ser. B* **55** (1993), *no.* 1, 157–170. 62H17 (62D05)

Chambers, Robert G. (*with* Pope, Rulon D.) The two-index PIGL demand system. *Econom. Lett.* **38** (1992), *no.* 4, 411–416. (Summary) **93c:90026** 90A40

Chameni-Nembua, C. (*with* Monjardet, Bernard) Les treillis pseudocomplémentés finis. (English summary) [Finite pseudocomplemented lattices] *European J. Combin.* **13** (1992), *no.* 2, 89–107. (J. Karásek) **93d:06011** 06D15 (06C15)

Champier, S. (*with* Gallouët, Thierry) Convergence d'un schéma décentré amont sur un maillage triangulaire pour un problème hyperbolique linéaire. (English and French summaries) [Convergence of an upwind uncentered scheme on a triangular mesh for a linear hyperbolic problem] *RAIRO Modél. Math. Anal. Numér.* **26** (1992), *no.* 7, 835–853. (G. W. Hedstrom) **93m:65129** 65M12

Champneys, A. R. Homoclinic tangencies in the dynamics of articulated pipes conveying fluid. (English summary) Homoclinic chaos (Brussels, 1991). *Phys. D* **62** (1993), *no.* 1-4, 347–359. (Summary) **93k:76037** 76D99 (34C37, 58F40, 73K70)

Chamseddine, A. H. Topological gravity and supergravity in various dimensions. *Nuclear Phys. B* **346** (1990), *no.* 1, 213–234. (Marc Henneaux) **93e:83069** 83E50 (81T40, 81V17, 83C99)

— Topological gravity and supergravity. *Particles, strings and cosmology* (*Boston, MA*, 1990), 547–559, *World Sci. Publishing, River Edge, NJ*, 1991. (Summary) **93e:83034** 83C45 (53C80, 58Z05, 81T20, 81V17)

— (*with* Fröhlich, Jürg) Two-dimensional Lorentz-Weyl anomaly and gravitational Chern-Simons theory. (English summary) *Comm. Math. Phys.* **147** (1992), *no.* 3, 549–562. (Michael Ringe) **93g:81181** 81T50 (58Z05, 81T40)

— A study of noncritical strings in arbitrary dimensions. *Nuclear Phys. B* **368** (1992), *no.* 1, 98–120. (Raiko Zaikov) **93c:81163** 81T30

— (*with* Burwick, T. T.) Classical and quantum considerations of two-dimensional gravity. (English summary) *Nuclear Phys. B* **384** (1992), *no.* 1-2, 411–428. (Summary) **93f:81129** 81T40

— (*with* Burwick, T. T.; Meissner, K. A.) Matter coupling and spontaneous symmetry breaking in topological gravity. *Phys. Lett. B* **284** (1992), *no.* 1-2, 11–16. (Summary) **93c:81195** 81T40 (81R20, 81T60, 81V17)

Chan, A. H. (*with* Chew, C. K.) Asymptotic solution to the QCD-parton branching equation. (English summary) *J. Math. Phys.* **33** (1992), *no.* 9, 3209–3212. (Summary) **93g:81201** 81V05

Chan, Andrew H. C. (*with* Addison, P. S.; Ervine, D. A.; Williams, K. J.) Observations on numerical method dependent solutions of a modified duffing oscillator. (English summary) *Comm. Appl. Numer. Methods* **8** (1992), *no.* 8, 519–528. 65L05 (65L06)

Chan, C. Y. *see* **Chan, Chiu Yeung**

Chan, Chi Fai A remark on boundedness of the numerical range. *Tamkang J. Math.* **22** (1991), *no.* 3, 271–273. (Yik-Hoi Au-Yeung) **93b:15029** 15A60 (47A12)

Chan, Chin K'o (*with* Yu, Choung Dong) Yet another approach for secure broadcasting based upon single key concept. (English summary) *J. Inform. Process.* **15** (1992), *no.* 1, 25–28. 68P25

Chan, Chiu Yeung (*with* Wong, Benedict M.) Computational error analysis of periodic solutions for singular semilinear parabolic problems. *Appl. Math. Comput.* **50** (1992), *no.* 2-3, 279–306. (Summary) **93d:65078** 65M12 (35A35, 35K55)

— (*with* Fung, David T.) Dead cores and effectiveness of semilinear reaction-diffusion systems. *J. Math. Anal. Appl.* **171** (1992), *no.* 2, 498–515. (Chunqing Lu) **93k:35137** 35K57

Chan, Edward P. F. (*with* Hernández, Héctor J.) Independence-reducible database schemes. *J. Assoc. Comput. Mach.* **38** (1991), *no.* 4, 854–886. (Marc Gyssens) **93a:68030** 68P15

Chan, Fuk-Lok (*with* Lau, Kim-Ming; Finkelstein, Robert J.) Grassmannian Legendre functions. *J. Math. Phys.* **33** (1992), *no.* 8, 2688–2696. (Summary) **93f:33010** 33C50

Chan, Jor-Ting Operators with the disjoint support property. *J. Operator Theory* **24** (1990), *no.* 2, 383–391. (Yu. A. Abramovich) **93c:47035** 47B38 (47B07)

— A note on compact weighted composition operators on $L^p(\mu)$. *Acta Sci. Math.* (*Szeged*) **56** (1992), *no.* 1-2, 165–168. (Paul Bourdon) **93m:47035** 47B38 (47B07)

Chan, K. S. (*with* Pham Dinh Tuan; Tong, Howell) Strong consistency of the least squares estimator for a nonergodic threshold autoregressive model. *Statist. Sinica* **1** (1991), *no.* 2, 361–369. (B. G. Quinn) **93c:62150** 62M10

— Asymptotic behavior of the Gibbs sampler. (English summary) *J. Amer. Statist. Assoc.* **88** (1993), *no.* 421, 320–326. (Summary) **93k:60165** 60J10 (62F15)

Chan, Kwong-Yu (*with* Choi, Yung Sze) Fractional step algorithm for a model problem in electrochemistry. (English summary) *Math. Comput. Simulation* **34** (1992), *no.* 2,

101–112. (Summary) **93f:80025** 80A32 (65P05, 92E20)
— (*with* Choi, Yung Sze) A parabolic equation with nonlocal boundary conditions arising from electrochemistry. *Nonlinear Anal.* **18** (1992), *no.* 4, 317–331. (Ross Pinsky) **93b:35057** 35K20 (78A25, 92E20)
Chan, Ling-Yau *D*-optimal design for a quadratic log contrast model for experiments with mixtures. (English summary) *Comm. Statist. Theory Methods* **21** (1992), *no.* 10, 2909–2930. 62K05
Chan, M. W. *see* **Chan, Mui Wong Jonathan**
Chan, Mee Yee Embedding of grids into optimal hypercubes. *SIAM J. Comput.* **20** (1991), *no.* 5, 834–864. (Summary) **93c:68003** 68M07 (68R10, 94C10)
Chan, Mui Wong Jonathan (*with* Shum, Kar Ping) Homomorphisms of implicative semigroups. (English summary) *Semigroup Forum* **46** (1993), *no.* 1, 7–15. (Summary) **93g:20127** 20M99 (06F05)
Chan, Ngai Hang (*with* Tran, Lanh Tat) Nonparametric tests for serial dependence. *J. Time Ser. Anal.* **13** (1992), *no.* 1, 19–28. (Pham Dinh Tuan) **93e:62122** 62G10
Chan, Onn (*with* Chen, Chuan Chong) A characterization of Fibonacci trees. *Southeast Asian Bull. Math.* **16** (1992), *no.* 1, 7–15. (Summary) **93c:05037** 05C05 (05C30, 05C75)
Chan, P. S. (*with* Balakrishnan, Narayanaswamy; Ahsanullah, Mohammad) Relations for single and product moments of record values from Gumbel distribution. (English summary) *Statist. Probab. Lett.* **15** (1992), *no.* 3, 223–227. (Summary) **93j:62143** 62G30
Chan, R. *see* **Chan, Roberto**
Chan, R. P. K. (*with* Butcher, J. C.) On symmetrizers for Gauss methods. *Numer. Math.* **60** (1992), *no.* 4, 465–476. (Masaharu Nakashima) **93c:65084** 65L05 (65L06, 65L20)
— (*with* Burrage, Kevin) On smoothing and order reduction effects for implicit Runge-Kutta formulae. (English summary) *J. Comput. Appl. Math.* **45** (1993), *no.* 1-2, 17–27. (Summary) **93j:65110** 65L06
Chan, Raymond H. (*with* Jin, Xiao-Qing) Skew-circulant preconditioners for skew-Hermitian type Toeplitz systems. *Proceedings of Asian Mathematical Conference*, 1990 (*Hong Kong*, 1990), 45–50, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93b:00022**) 65F15 (65F35)
— (*with* Jin, Xiao-Qing) Circulant preconditioners for second order hyperbolic equations. (English summary) *BIT* **32** (1992), *no.* 4, 650–664. (Mark Ainsworth) **93j:65066** 65F35 (65M06)
— (*with* Yeung, Man-Chung) Jackson's theorem and circulant preconditioned Toeplitz systems. *J. Approx. Theory* **70** (1992), *no.* 2, 191–205. (Summary) **93c:65046** 65F10 (65F15, 65F35)
— (*with* Chan, Tony F. C.) Circulant preconditioners for elliptic problems. *J. Numer. Linear Algebra Appl.* **1** (1992), *no.* 1, 77–101. (Summary) **93c:65131** 65N22 (65F10, 65F35)
— (*with* Yeung, Man-Chung) Circulant preconditioners constructed from kernels. *SIAM J. Numer. Anal.* **29** (1992), *no.* 4, 1093–1103. (Cs. J. Hegedűs) **93f:65029** 65F10
— (*with* Jin, Xiao-Qing) A family of block preconditioners for block systems. (English summary) *SIAM J. Sci. Statist. Comput.* **13** (1992), *no.* 5, 1218–1235. (Summary) **93e:65050** 65F10 (65F15, 65F35)
— Numerical solutions for the inverse heat problems in $\mathbf{R}^N$. (English summary) *Southeast Asian Bull. Math.* **16** (1992), *no.* 2, 97–105. (Summary) **93m:65136** 65M20 (65F30)
Chan, Roberto (*with* Herrera, L.; Santos, N. O.) Dynamical instability in the collapse of anisotropic matter. (English summary) *Classical Quantum Gravity* **9** (1992), *no.* 10, L133–L135. (Summary) **93f:83054** 83C55
Chan, S. P. (*with* Yao, B.; Gao, Wei Bing; Cheng, Mian) VSC coordinated control of two manipulator arms in the presence of environmental constraints. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 11, 1806–1812. 93C85
Chan, Shih-Ping (*with* Lim, Chong-Hai) The Eisenstein ideal of a Fermat curve. (English summary) *J. Algebra* **153** (1992), *no.* 2, 458–467. (Henri Darmon) **93i:11070** 11G30 (14H40)
— Relative Lubin-Tate formal groups and Galois module structure. *Manuscripta Math.* **75** (1992), *no.* 1, 109–113. (Robert Gold) **93h:11131** 11S23 (11S31)
— (*with* Lang, Mong-Lung; Lim, Chong-Hai) Some modular functions associated to the Lie algebra E_8. *Math. Z.* **211** (1992), *no.* 2, 223–246. (Steven N. Kass) **93i:11052** 11F22 (17B15)
— (*with* Lim, Chong-Hai) Relative Galois module structure of rings of integers of cyclotomic fields. *J. Reine Angew. Math.* **434** (1993), 205–220. (Nigel Byott) **93i:11127** 11R33 (11R18)
Chan, Terence Indefinite quadratic functionals of Gaussian processes and least-action paths. (French summary) *Ann. Inst. H. Poincaré Probab. Statist.* **27** (1991), *no.* 2, 239–271. (Werner Linde) **93d:60063** 60G15 (60H10)
— The Wigner semi-circle law and eigenvalues of matrix-valued diffusions. (English summary) *Probab. Theory Related Fields* **93** (1992), *no.* 2, 249–272. (Igor N. Litvin) **93i:15032** 15A52 (15A18, 60H10, 60J60)
Chan, Tony F. C. (*with* Mathew, Tarek P.; Shao, Jian Ping) Fourier and probe variants of the vertex space domain decomposition algorithm. (English summary) *Fifth International Symposium on Domain Decomposition Methods for Partial Differential Equations* (*Norfolk, VA*, 1991), 236–249, *SIAM, Philadelphia, PA*, 1992. (Summary) **93h:65151** 65N55
— (*with* Mathew, Tarek P.) Some applications of the probing technique in domain decomposition. (English summary) *Proceedings of International Conference on Scientific Computation* (*Hangzhou*, 1991), 8–17, *Ser. Appl. Math.*, 1, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93d:65004**) 65N55
— (*with* Olkin, Julia A.; Cooley, Donald W.) Solving quadratically constrained least squares using black box solvers. (English summary) *BIT* **32** (1992), *no.* 3, 481–494. (Summary) **93e:65091** 65K10 (65F99, 90C20)
— (*with* Chan, Raymond H.) Circulant preconditioners for elliptic problems. *J. Numer. Linear Algebra Appl.* **1** (1992), *no.* 1, 77–101. (Summary) **93c:65131** 65N22 (65F10, 65F35)
— (*with* Hansen, Per Christian) A look-ahead Levinson algorithm for indefinite Toeplitz systems. *SIAM J. Matrix Anal. Appl.* **13** (1992), *no.* 2, 490–506. (Mark Ainsworth) **93a:65032** 65F05 (65F30, 65F35)
— (*with* Goovaerts, Danny) On the relationship between overlapping and nonoverlapping domain decomposition methods. *SIAM J. Matrix Anal. Appl.* **13** (1992), *no.* 2, 663–670. (Summary) **93a:65170** 65N55 (65F10)
— (*with* Hansen, Per Christian) Some applications of the rank revealing *QR* factorization. *SIAM J. Sci. Statist. Comput.* **13** (1992), *no.* 3, 727–741. (Summary) **93a:65057** 65F25 (65F20)
— *see also* **Proceedings: Conference on Scientific Computation, 93d:65004** *and* **Symposium: Domain Decomposition Methods for Partial Differential Equations, 93g:65009**
Chan, W. L. *see* **Chan, Wai Leung**
Chan, Wah Keung Solutions of a Mordell Diophantine equation. *J. Ramanujan Math. Soc.* **6** (1991), *no.* 1-2, 129–140. (Nikos Tzanakis) **93d:11033** 11D25
Chan, Wai (*with* Proschan, Frank; Sethuraman, Jayaram) Convex-ordering among functions, with applications to reliability and mathematical statistics. (English summary) *Topics in statistical dependence* (*Somerset, PA*, 1987), 121–134, *IMS Lecture Notes Monograph Ser.*, 16, *Inst. Math. Statist., Hayward, CA*, 1990. (Summary) **93i:60035** 60E15 (62N05)
Chan, Wai Leung (*with* Zheng, Yu Kun) Gauge and Bäcklund transformations for the generalized sine-Gordon equation and its η-dependent modified equation. *Internat. J. Theoret. Phys.* **31** (1992), *no.* 6, 1075–1091. (Ian M. Anderson) **93k:58201** 58F37 (35Q53)
— (*with* Guo, Bao Zhu) Controlled age-dependent population dynamics based on parity progression. *J. Math. Anal. Appl.* **166** (1992), *no.* 2, 442–455. (G. F. Webb) **93f:92021** 92D25 (47D03)
— (*with* Li, Kam-Shun; Li, Yi Shen) Line soliton interactions of a nonisospectral and variable-coefficient Kadomtsev-Petviashvili equation. (English summary) *J. Math. Phys.* **33** (1992), *no.* 11, 3759–3773. (Summary) **93h:35172** 35Q51 (35Q53)
— (*with* Zhou, Zi Xiang) Line soliton solutions for a generalized Davey-Stewartson equation with variable coefficients. (English summary) *Lett. Math. Phys.* **25** (1992), *no.* 4, 327–334. (From the text) **93k:35240** 35Q55
— (*with* Guo, Bao Zhu) Age-dependent population dynamics based on parity interval progression. *Math. Comput. Modelling* **16** (1992), *no.* 4, 57–68. (R. C. MacCamy) **93b:92010** 92D25 (47N60)
Chan, Wai-sum (*with* Wei, William W. S.) A comparison of some estimators of time series autocorrelations. (English summary) *Comput. Statist. Data Anal.* **14** (1992), *no.* 2, 149–163. 62M10
Chan, Wenyaw A sum for ratios of combinations in sequential sampling. *Texas J. Sci.* **44** (1992), *no.* 3, 362–363. 60C05
Chan, William M. (*with* Steger, Joseph L.) Enhancements of a three-dimensional hyperbolic grid generation scheme. (English summary) *Appl. Math. Comput.* **51** (1992), *no.* 2-3, 181–205. (Summary) **93f:65069** 65M50
Chanas, S. (*with* Delgado, Miguel; Verdegay, J. L.; Vila, Maria Amparo) Ranking fuzzy interval numbers in the setting of random sets. (English summary) *Inform. Sci.* **69** (1993), *no.* 3, 201–217. (Summary) **93k:03052** 03E72 (90A05)
Chand, Lal (*with* Singh, Housila Prasad; Katyar, N. P.) Estimation of inverse of population mean when the coefficient of variation is known. (English summary) *J. Indian Statist. Assoc.* **30** (1992), *no.* 1, 51–62. 62F10
Chand, Shubhag (*with* Gupta, Yash P.) Inventory system analysis by Markov renewal processes. (English summary) *Internat. J. Inform. Management Sci.* **2** (1991), *no.* 1, 129–137. (Summary) **93g:90031** 90B05 (60K20)
— (*with* Gupta, Yash P.) Markov renewal processes with random number of delays: an application to a conception and birth model. (English and Italian summaries) *Metron* **49** (1991), *no.* 1-4, 387–400 (1992). 60K15
Chand, Suresh (*with* Chhajed, Dilip) A single machine model for determination of optimal due dates and sequence. (English summary) *Oper. Res.* **40** (1992), *no.* 3, 596–602. 90B35
— (*with* McClurg, Tim; Ward, James E.) A single-machine replacement model with learning. (English summary) *Naval Res. Logist.* **40** (1993), *no.* 2, 175–192. 90B25
Chanda, Kamal C. (*with* Ruymgaart, Frits H.) Curve estimation for m_n-decomposable time series including bilinear processes. *J. Multivariate Anal.* **38** (1991), *no.* 1, 149–166. (Friedrich Liese) **93b:62055** 62G05 (62M10)
— Bahadur-Kiefer representation properties of intermediate order statistics. *Statist. Probab. Lett.* **14** (1992), *no.* 3, 175–178. (I. Vincze) **93k:62116** 62G30 (60F15)
singh Chandel, R. C. *see* **Singh Chandel, R. C.**
Chandel, R. C. Singh *see* **Singh Chandel, R. C.**
Chandler, Colston (*with* Gibson, A. G.; Waters, A. J.; Berthold, G. H.) A new $\mathscr{K}$-matrix approach to N-body scattering. *J. Math. Phys.* **32** (1991), *no.* 11, 3117–3124. (Giorgio Cattapan) **93a:81204** 81U10 (47A40, 47N50)
— (*with* Cohen, Leon; Lee, C.; Scully, M.; Wódkiewicz, K.) Quasi-probability distribution for spin-$\frac{1}{2}$ particles. (English summary) *Found. Phys.* **22** (1992), *no.* 7, 867–878. (Kalyanapuram R. Parthasarathy) **93i:81114** 81S30
— (*with* Gibson, A. G.) Erratum: "N-body quantum scattering theory in two Hilbert spaces. V. Computation strategy" [J. Math. Phys. **30** (1989), no. 7, 1533–1544; MR 90h:81198]. *J. Math. Phys.* **34** (1993), *no.* 2, 886. (Editors) **93k:81249** 81U10 (81Q15)
Chandler, G. A. (*with* Brown, Gavin; Sloan, Ian H.; Wilson, David Charles) Properties of certain trigonometric series arising in numerical analysis. *J. Math. Anal. Appl.* **162** (1991), *no.* 2, 371–380. (H. P. Dikshit) **93a:42005** 42A32
— Midpoint collocation for Cauchy singular integral equations. *Numer. Math.* **62** (1992), *no.* 4, 483–509. (Baldev K. Sachdeva) **93g:65165** 65R20 (45E05)
Chandler, Richard (*with* Levine, Jack) The two-message problem in the Hill cryptographic system with unknown cipher alphabet. (English summary) *Cryptologia* **17** (1993), *no.* 1, 1–30. (Summary) **93m:94019** 94A60
Chandler-Wilde, S. N. On the behavior at infinity of solutions of integral equations on the real line. *J. Integral Equations Appl.* **4** (1992), *no.* 2, 153–177. (Summary) **93c:45012** 45M05
Chandna, O. P. (*with* Labropulu, F.) Riabouchinsky flows in magnetohydrodynamics. *Quart. Appl. Math.* **50** (1992), *no.* 2, 273–289. (R. R. Gold) **93i:76099** 76W05
— (*with* Nguyen, P. V.) Hamel's problem for steady plane orthogonal MHD flows. (English summary) *Quart. Appl. Math.* **50** (1992), *no.* 4, 601–611. (Summary) **93i:76101** 76W05
— (*with* Nguyen, P. V.) Steady plane orthogonal MHD flows. (English, German and Russian summaries) *Z. Angew. Math. Mech.* **72** (1992), *no.* 12, 675–683. (Summary) **93k:76122** 76W05 (76M99)
Chandola, H. C. (*with* Negi, P. S.; Rajput, Balwant Singh) Fermionic fields in six-dimensional space-time. (English summary) *Indian J. Pure Appl. Phys.* **29** (1991), *no.* 6, 385–395. (Summary) **93h:81050** 81R20 (81Q05, 83A05)

harish-Chandra *see* **Harish-Chandra**
suresh Chandra, K. *see* **Suresh Chandra, K.**
Chandra, K. Suresh *see* **Suresh Chandra, K.**
Chandra, Ram (*with* Srivastava, Anil K.) Improved estimation of restricted regression model when disturbances are not necessarily normal. (English summary) *Sankhyā Ser. B* **53** (1991), *no.* 1, 119–133. (Summary) **93e:62179** 62J07 (62P20)
Chandra, Suresh (*with* Bector, C. R.; Husain, I.) Sufficient optimality conditions and duality for a continuous-time minmax programming problem. (English summary) *Asia-Pacific J. Oper. Res.* **9** (1992), *no.* 1, 55–76. (Bruce D. Craven) **93j:49028** 49K35 (49N15, 90C45)
— (*with* Bector, C. R.; Husain, I.) Generalized continuous fractional programming duality: a parametric approach. (English summary) *Utilitas Math.* **42** (1992), 39–60. (Alberto Cambini) **93k:90094** 90C32 (49N15, 90C45)
Chandra, Tapas K. Uniform integrability in the Cesàro sense and the weak law of large numbers. (English summary) *Sankhyā Ser. A* **51** (1989), *no.* 3, 309–317. (Summary) **93c:60047** 60F25
— On extensions of a result of S. W. Dharmadhikari. *Bull. Calcutta Math. Soc.* **82** (1990), *no.* 5, 431–434. (V. K. Rohatgi) **93a:60026** 60F05
— Extensions of Rajchman's strong law of large numbers. (English summary) *Sankhyā Ser. A* **53** (1991), *no.* 1, 118–121. (Eric Rieders) **93g:60062** 60F15
Chandran, Sharat (*with* Kim, Sung Kwon; Mount, David M.) Parallel computational geometry of rectangles. *Algorithmica* **7** (1992), *no.* 1, 25–49. (Peter Gritzmann) **93e:68128** 68U05 (52B55, 68U10)
— (*with* Mount, David M.) A parallel algorithm for enclosed and enclosing triangles. *Internat. J. Comput. Geom. Appl.* **2** (1992), *no.* 2, 191–214. (Mirko Křivánek) **93f:68092** 68U05 (52B55)
Chandrasekaran, B. What kind of information processing is intelligence? A perspective on AI paradigms and a proposal. *The foundations of artificial intelligence*, 14–46, *Cambridge Univ. Press, Cambridge*, 1990. (*see* **93b:68073**) 68T01
Chandrasekaran, R. (*with* Sridhar, S.) Integer solution to synthesis of communication networks. (English summary) *Math. Oper. Res.* **17** (1992), *no.* 3, 581–585. (Vanita Verma) **93j:90122** 90C35 (90B12, 90C10)
Chandrasekaran, V. M. (*with* Loganathan, M.) Regular semigroups with a split map. *Semigroup Forum* **44** (1992), *no.* 2, 199–212. (R. B. McFadden) **93b:20103** 20M17
Chandrasekhar, Subrahmanyan (*with* Ferrari, Valeria) On the nonradial oscillations of a star. III. A reconsideration of the axial modes. (English summary) *Proc. Roy. Soc. London Ser. A* **434** (1991), *no.* 1891, 449–457. (Summary) **93j:85001** 85A05
— ★ The mathematical theory of black holes. Revised reprint of the 1983 original. International Series of Monographs on Physics, 69. Oxford Science Publications. *The Clarendon Press, Oxford University Press, New York*, 1992. xxii+646 *pp. ISBN* 0-19-852050-6 (Editors) **93k:83046** 83C57 (83–02)
— (*with* Ferrari, Valeria) On the nonradial oscillations of a star. IV. An application of the theory of Regge poles. (English summary) *Proc. Roy. Soc. London Ser. A* **437** (1992), *no.* 1899, 133–149. (Summary) **93j:85002** 85A05
Chandrasekharaiah, D. S. (*with* Keshavan, H. R.) Thermoelastic effects due to a laser pulse in a half space. (English summary) *Panamer. Math. J.* **2** (1992), *no.* 4, 1–18. 73B30
— (*with* Murthy, H. Narasimha) Plane waves in anisotropic generalized thermoelasticity. (English summary) *Panamer. Math. J.* **2** (1992), *no.* 4, 33–50. (Ion Nistor) **93j:73005** 73B30 (73B40, 73D99)
Chandru, Vijaya (*with* Hooker, J. N.) Detecting embedded Horn structure in propositional logic. *Inform. Process. Lett.* **42** (1992), *no.* 2, 109–111. (Summary) **93c:68039** 68Q25 (03B05, 03D15)
— (*with* Rajan, V. T.; Swaminathan, R.) Monotone pieces of chains. (English summary) *ORSA J. Comput.* **4** (1992), *no.* 4, 439–446. 90C27
— (*with* Lee, Chung-Yee; Uzsoy, Reha) Minimizing total completion time on a batch processing machine with job families. (English summary) *Oper. Res. Lett.* **13** (1993), *no.* 2, 61–65. 90B35
Chan Fyong Zung Equivalance between a regular Ann-category and a strong Ann-category. (Russian) *Uspekhi Mat. Nauk* **47** (1992), *no.* 2(284), 207–208; *translation in Russian Math. Surveys* **47** (1992), *no.* 2, 213–214. (From the text) **93i:18007** 18B40
Chang, Bor Chin (*with* Yeh, Hsi-Han; Banda, Siva S.) Necessary and sufficient conditions for mixed H_2 and H_∞ optimal control. *IEEE Trans. Automat. Control* **37** (1992), *no.* 3, 355–358. (Summary) **93b:93040** 93B36
Chang, C. *see* **Chang, Ch'i**
Chang, C. C. *see* **Chang, Chên Ch'êng**
Chang, C. Y. (*with* Hui, P. M.; Yu, Kin Wah) Zero-temperature entropy of fully frustrated generalized Sierpiński gaskets. (English summary) *Phys. Lett. A* **172** (1993), *no.* 4, 219–223. (Summary) **93k:82011** 82B20 (82–04)
Chang, Chên Ch'êng (*with* Lin, H. F.; Chen, C. Y.) Optimality properties of the disc modulo allocation method for k-ary multiple key hashing files. (English summary) *Comput. J.* **35** (1992), *no.* 4, 390–394. (Summary) **93h:68036** 68P20
Chang, Chên Hua (*with* Li, Hai Yen; Li, Hsün Ming) Cordial labelings of graphs. (English summary) *Chinese J. Math.* **20** (1992), *no.* 3, 263–273. (Robert C. Brigham) **93h:05142** 05C78
— (*with* Li, Hsün Ming) Set to set broadcasting in communication networks. (English summary) *Discrete Appl. Math.* **40** (1992), *no.* 3, 411–421. (Summary) **93i:90043** 90B12 (05C90, 68M10, 68R10)
— Strong sum graphs. (English summary) *Bull. Inst. Combin. Appl.* **7** (1993), 47–52. (Summary) **93j:05136** 05C78
Chang, Cheng-Shang A new ordering for stochastic majorization: theory and applications. *Adv. in Appl. Probab.* **24** (1992), *no.* 3, 604–634. (Moshe Shaked) **93g:60039** 60E15 (60K25, 90B22)
— (*with* Chao, Xiuli; Pinedo, Michael; Weber, Richard R.) On the optimality of LEPT and $c\mu$ rules for machines in parallel. *J. Appl. Probab.* **29** (1992), *no.* 3, 667–681. (Summary) **93d:90025** 90B35
Chang, Ch'i (*with* Kan, Ching Yü) A note on the nucleolus. (English summary) *Chinese J. Math.* **20** (1992), *no.* 4, 307–311. (Suchan Chae) **93m:90116** 90D12
— (*with* Kan, Ching Yü) The kernel, the bargaining set and the reduced game. (English summary) *Internat. J. Game Theory* **21** (1992), *no.* 1, 75–83. (Roy Gardner) **93f:90190** 90D12
— (*with* Kan, Ching Yü) The bound of the kernel. (English summary) *Math. Social Sci.* **25** (1992), *no.* 1, 87–93. (Rajiv Vohra) **93k:90110** 90D12
— (*with* Hsiaq, Fu Chao) An example on quasi-zero-monotonic games. (English summary) *Games Econom. Behav.* **5** (1993), *no.* 2, 223–226. (Summary) **93m:90108** 90D06
— (*with* Lee, Yuh Jye) A non-weakly balanced game with nonempty bargaining set. (English summary) *J. Math. Econom.* **22** (1993), *no.* 2, 195–198. (Summary) **93m:90117** 90D12
Chang, Chien Cheng Potential flow and forces for incompressible viscous flow. *Proc. Roy. Soc. London Ser. A* **437** (1992), *no.* 1901, 517–525. (Summary) **93c:76024** 76D99 (76D05)
Chang, Chih *see* **Chang, Ch'i**
Chang, Chih Chung (*with* Yau, Horng-Tzer) Fluctuations of one-dimensional Ginzburg-Landau models in nonequilibrium. *Comm. Math. Phys.* **145** (1992), *no.* 2, 209–234. (Flora Koukiou) **93g:82069** 82C26 (82C20)
Chang, Chih Yung (*with* Sheu, Jang Ping; Chen, Yuh Shyan) Fault-tolerant sorting algorithm on hypercube multicomputers. (English summary) *J. Parallel Distrib. Comput.* **16** (1992), *no.* 2, 185–197. (Summary) **93i:68049** 68P10 (68M15, 68Q22)
Chang, Chin (*with* Georgiou, Tryphon T.) On a Schur-algorithm based approach to spectral factorization: connection with the Riccati equation. *Linear Algebra Appl.* **171** (1992), 233–247. (John Maroulas) **93k:15016** 15A23
Chang, Chin Fu (*with* Chen, Shyi Ming; Ke, Jyh Sheng) Fuzzy reasoning based on fuzzy Petri nets. *Internat. J. Inform. Management Sci.* **3** (1992), *no.* 1, 39–51. (Richard A. Alò) **93h:68128** 68T27 (03B52, 03E72, 68Q90)
— (*with* Chen, Shyi Ming; Ke, Jyh Sheng) An inexact reasoning algorithm based on fuzzy rule matrix transformations. *J. Automat. Reason.* **8** (1992), *no.* 1, 77–90. (Summary) **93a:68130** 68T27 (03B52)
— (*with* Harn, Ywh-Pyng) A discrete-time priority queue with two-class customers and bulk services. *Queueing Systems Theory Appl.* **10** (1992), *no.* 3, 185–211. (Summary) **93c:60141** 60K25 (90B22)
Chang, Ching Lung (*with* Fix, George J.) A mixed finite element method for Stokes problem—acceleration, pressure, formulation. (English summary) *Integral methods in science and engineering—90 (Arlington, TX*, 1990), 240–248, *Ser. Comput. Phys. Process. Mech. Thermal Sci., Hemisphere, New York*, 1991. (Summary) **93h:76046** 76M10 (65N30, 76D07)
Chang, Ch'iu Chêng On the unique expansion of entire functions. *Chinese J. Math.* **20** (1992), *no.* 2, 107–126. (Alexander Russakovskii) **93c:32002** 32A05 (30D10, 32A15)
Chang, Chun (*with* Hu, Jian Kun; Wang, Guang Xiong; Zhang, Guo Feng[2]; Yao, Yi Xin; Weng, Zheng Xin) A design of H_∞ controllers that fail to satisfy certain constraints. (Chinese. English and Chinese summaries) *J. Harbin Inst. Tech.* **25** (1993), *no.* 1, 43–47. 93B36
Chang, Chun Hsu (*with* Tung, Roh Suan; Chern, De Ching; Nester, James M.) Asymptotic anti-de Sitter conditions for Poincaré gauge theory. (English summary) *Progr. Theoret. Phys.* **88** (1992), *no.* 2, 291–305. (Metin Gürses) **93h:83033** 83D05
Chang, cun *see* **Chang, Chun**
Chang, D. *see* **Chang, Darwin**
Chang, D.-C. *see* **Chang, Der-Chen E.**
Chang, Da Yong (*with* Zhang, Li Li) Extent analysis and synthetic decision. (English summary) *Optimization, Vol.* 1, 2 (*Singapore*, 1992), 352–359, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93d:90005**) 90C70 (90A05)
Chang, Darwin (*with* Phillips, I.; Rozansky, L.) R-matrix approach to quantum superalgebras $su_q(m|n)$. (English summary) *J. Math. Phys.* **33** (1992), *no.* 11, 3710–3715. (J. F. Cornwell) **93i:81091** 81R50 (17B37, 81R10)
Chang, David Renpan (*with* Donald, Bruce Randall) On the complexity of computing the homology type of a triangulation. (English summary) 32*nd Annual Symposium on Foundations of Computer Science (San Juan, PR*, 1991), 650–661, *IEEE Comput. Soc. Press, Los Alamitos, CA*, 1991. (Hale F. Trotter) **93j:68086** 68Q40 (15A36, 55U15, 68Q25)
Chang, Der-Chen E. Nankai lecture in $\overline{\partial}$-Neumann problem. *Harmonic analysis (Tianjin*, 1988), 1–22, *Lecture Notes in Math.*, 1494, *Springer, Berlin*, 1991. (Makhlouf Derridj) **93j:32024** 32F20 (32F30)
— (*with* Krantz, Steven G.) Holomorphic Lipschitz functions and application to the $\overline{\partial}$-problem. *Colloq. Math.* **62** (1991), *no.* 2, 227–256. (Jeffery D. McNeal) **93c:32034** 32H15 (32A40, 32F20)
— (*with* Agranovskiĭ, M. L.; Berenstein, Carlos A.; Pascuas, Daniel) A Morera type theorem for L^2 functions in the Heisenberg group. (English summary) *J. Anal. Math.* **57** (1991), 282–296. (Gerald B. Folland) **93k:43012** 43A80 (22E30, 32C16)
— (*with* Nguyen, Tristan) Estimates for the Szegö and Henkin kernels in Hardy classes on certain unbounded weakly pseudo-convex domains. *J. Math. Anal. Appl.* **162** (1991), *no.* 2, 339–370. (From the introduction) **93h:32029** 32H10 (46E22)
— (*with* Berenstein, Carlos A.; Pascuas, Daniel; Zalcman, Lawrence A.) Variations on the theorem of Morera. (English summary) *The Madison Symposium on Complex Analysis (Madison, WI*, 1991), 63–78, *Contemp. Math.*, 137, *Amer. Math. Soc., Providence, RI*, 1992. (P. Agranovich) **93j:32007** 32A30 (30E99)
— (*with* Krantz, Steven G.; Stein, Elias M.) Hardy spaces and elliptic boundary value problems. *The Madison Symposium on Complex Analysis (Madison, WI*, 1991), 119–131, *Contemp. Math.*, 137, *Amer. Math. Soc., Providence, RI*, 1992. (*see* **93e:32001**) 42B30 (35J25)
— (*with* Nagel, Alexander; Stein, Elias M.) Estimates for the $\overline{\partial}$-Neumann problem in pseudoconvex domains of finite type in $\mathbf{C}^2$. *Acta Math.* **169** (1992), *no.* 3-4, 153–228. (Joachim Michel) **93k:32025** 32F15 (32A22, 32F20, 35N15)
— (*with* Agranovskiĭ, M. L.; Berenstein, Carlos A.; Pascuas, Daniel) Théorèmes de Morera et Pompeiu pour le groupe de Heisenberg. (English and French summaries) [Morera and Pompeiu theorems for the Heisenberg group] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 6, 655–658. (Summary) **93g:32026** 32F40 (22E25)
Chang, Derek K. A note on the distribution of the Wilcoxon rank sum statistic. (English summary) *Statist. Probab. Lett.* **13** (1992), *no.* 5, 343–349. (Summary) **93c:62081** 62G10
Chang, Fan Jên (*with* Lin, W. C.; Ch'ên, Hung Chou) Weierstrass decomposition by the standard form approach. *Control theory, stochastic analysis and applications (Hangzhou*, 1991), 260–268, *World Sci. Publishing, River Edge, NJ*, 1991. (Summary) **93d:93019** 93B11 (93B40)
— (*with* Ch'ên, Hung Chou) Cayley-Hamilton theorem for the standard form ($sE - A$). (English summary) *Recent advances in mathematical theory of systems, control,*

networks and signal processing, II (*Kobe*, 1991), 121–125, *Mita, Tokyo*, 1992. (Summary) **93j:93030** 93B25 (15A22)

— (*with* Wang, Chi Hui; Fang, Chün Hsiung; Wang, Shèng Tè) Solving the generalized Bezout identity by a state space approach. (English summary) *Control Theory Adv. Tech.* **8** (1992), *no.* 2, 269–287. (Summary) **93e:93008** 93B06 (93B25, 93B55, 93C05)

— (*with* Fang, Chün Hsiung; Huang, Wen Liang) Application of singular system feedback to polynomial matrices and system transformation. (English summary) *Control Theory Adv. Tech.* **8** (1992), *no.* 3, 677–686. 93B17

— (*with* Ch'ên, Hung Chou) The generalized Cayley-Hamilton theorem for standard pencils. *Systems Control Lett.* **18** (1992), *no.* 3, 179–182. (George E. Antoniou) **93a:93029** 93B25 (15A22)

— (*with* Liu, Chin Hsing; Chou, Yung Shan) Decoupling of continuous-time linear time-invariant systems using generalized sampled-data hold functions. *Systems Control Lett.* **19** (1992), *no.* 1, 61–69. 93C05 (93B11, 93C57)

Chang, Gerard J. *see* **Chang, Chên Hua**

Chang, Hai Ch'ao On equisingularity, analytical irreducibility and embedding line theorem. *Chinese J. Math.* **19** (1991), *no.* 4, 379–389. (Sherwood Washburn) **93b:14005** 14B05 (14H15)

— On Jacobian pair in $\mathbf{C}[x, y]$. *Chinese J. Math.* **20** (1992), *no.* 2, 127–136. (L. Andrew Campbell) **93g:14020** 14E07 (14E09, 14H99)

Chang, Hasok (*with* Cartwright, Nancy) Causality and realism in the EPR experiment. (English summary) *Erkenntnis* **38** (1993), *no.* 2, 169–190. 81P15

Chang, Hsiang (*with* Ch'ên, I Ch'ên) Output tracking design of affine nonlinear plant via variable structure system. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 11, 1823–1828. 93B51

Chang, I Lok (*with* Hallahan, Charles; Swamy, P. A. V. B.) Efficient computation of stochastic coefficients models. (English summary) *Computational economics and econometrics* (*Minneapolis, MN*, 1990), 43–53, *Adv. Stud. Theoret. Appl. Econometrics*, 22, *Kluwer Acad. Publ., Dordrecht*, 1992. (*see* **93b:90009**) 62P20

Chang, Jane Y. (*with* Hsu, Jason C.) Optimal designs for multiple comparisons with the best. *J. Statist. Plann. Inference* **30** (1992), *no.* 1, 45–62. (Summary) **93b:62099** 62K05 (62J15)

Chang, Jen-Tseh Characteristic cycles of holomorphic discrete series. *Trans. Amer. Math. Soc.* **334** (1992), *no.* 1, 213–227. (Brian E. Blank) **93a:22012** 22E46 (22E45)

— Remarks on localization and standard modules: the duality theorem on a generalized flag variety. *Proc. Amer. Math. Soc.* **117** (1993), *no.* 3, 585–591. (D. Miličić) **93d:22016** 22E46 (22E45)

Chang, Jian Ming (*with* Jin, Jia Liang) Composite factorization of a class of combinations of exponential functions. (Chinese. Chinese summary) *J. Math. Res. Exposition* **12** (1992), *no.* 4, 607–611. 30D05

Chang, Jin-Fu *see* **Chang, Chin Fu**

Chang, Joo Sup (*with* Park, Chull; Skoug, David) Fundamental theorem of Yeh-Wiener calculus. *Stochastic Anal. Appl.* **9** (1991), *no.* 3, 245–262. (Yuh-Jia Lee) **93g:60135** 60H99 (46G12)

Chang, Joseph T. On moments of the first ladder height of random walks with small drift. (English summary) *Ann. Appl. Probab.* **2** (1992), *no.* 3, 714–738. (Aart J. Stam) **93i:60130** 60J15 (60F99, 60K05, 62L10)

Chang, Jui Hsiung Single step graph search problem. *Inform. Process. Lett.* **40** (1991), *no.* 2, 107–111. (Summary) **93a:68054** 68Q25 (68R10)

— (*with* Hsiao, Ju Yuan; T'ang, Ch'uan I) An efficient algorithm for finding a maximum weight 2-independent set on interval graphs. *Inform. Process. Lett.* **43** (1992), *no.* 5, 229–235. (Summary) **93g:05130** 05C85 (68Q25, 68R10)

Chang, K. *see* **Zhang, Gong Qing**

Chang, K. W. (*with* Liu, Guang Xu) Boundary and angular layer behavior in singularly perturbed quasilinear systems. (English summary) *Recent trends in differential equations*, 71–81, *World Sci. Ser. Appl. Anal.*, 1, *World Sci. Publishing, River Edge, NJ*, 1992. (Vasiliy Pavlovich Yakovets) **93h:34090** 34E15

Chang, Kun Soo Wiener integrals and Feynman integrals. (Korean) *Collection of papers dedicated to Prof. Jong Geun Park on his sixtieth birthday* (*Korean*), 211–231, *Jeonbug, Seoul*, 1989. (Jae Moon Ahn) **93g:28010** 28C20 (46G12, 81S40)

— (*with* Ryu, Kun Sik) Stability theorems for the operator-valued function space integral. *Gaussian random fields* (*Nagoya*, 1990), 158–171, *Ser. Probab. Statist.*, 1, *World Sci. Publishing, River Edge, NJ*, 1991. (Z. G. Gorgadze) **93i:46076** 46G12 (28C20)

Chang, Kung-Ching *see* **Zhang, Gong Qing**

Chang, Lay-Nam (*with* Liang, Yi-Gao) A global theory of parametrized quantum mechanics. *Differential geometric methods in theoretical physics* (*Davis, CA*, 1988), 787–791, *NATO Adv. Sci. Inst. Ser. B Phys.*, 245, *Plenum, New York*, 1990. (Summary) **93b:81078** 81Q99

Chang, Maw Shang (*with* T'ang, Ch'uan I; Lee, R. C. T.) Solving the Euclidean bottleneck matching problem by k-relative neighborhood graphs. (English summary) *Algorithmica* **8** (1992), *no.* 3, 177–194. (Summary) **93d:68066** 68U05

— (*with* Wang, Fu Hsing) Efficient algorithms for the maximum weight clique and maximum weight independent set problems on permutation graphs. (English summary) *Inform. Process. Lett.* **43** (1992), *no.* 6, 293–295. 68R10 (05C85, 68Q25)

— (*with* Peng, Shen Lung) A simple linear time algorithm for the domatic partition problem on strongly chordal graphs. (English summary) *Inform. Process. Lett.* **43** (1992), *no.* 6, 297–300. (Summary) **93g:68108** 68R10 (05C85, 68Q25)

Chang, Mei-Chu On the hyperplane sections of certain codimension 2 subvarieties in $\mathbf{P}^n$. *Arch. Math. (Basel)* **58** (1992), *no.* 6, 547–550. (Mirella Manaresi) **93i:14045** 14M05

Chang, Myron N. Edgeworth expansion for the Kaplan-Meier estimator. *Comm. Statist. Theory Methods* **20** (1991), *no.* 8, 2479–2494. (Michael Falk) **93i:62027** 62G05 (62E17)

Chang, Peter (*with* Dowker, J. S.) Polyhedral cosmic strings. (English summary) *Phys. Rev. D* (3) **46** (1992), *no.* 8, 3458–3464. (André Burnel) **93j:83045** 83C47 (81T20)

Chang, Qian Shun (*with* Wong, Yau Shu; Li, Zheng Feng) New interpolation formulas of using geometric assumptions in the algebraic multigrid method. *Appl. Math. Comput.* **50** (1992), *no.* 2-3, 223–254. (Summary) **93d:65014** 65D05 (65F05)

Chang, R. C. *see* **Chang, Ruei Chuan**

Chang, Richard On the structure of bounded queries to arbitrary NP sets. *SIAM J. Comput.* **21** (1992), *no.* 4, 743–754. (Summary) **93f:68032** 68Q15 (03D15)

Chang, Ruay Shiung *see* **Chang, Jui Hsiung**

Chang, Ruei Chuan (*with* Hsu, F. R.; Lee, R. C. T.) Parallel algorithms for computing the minimum visible vertex distance between two polygons. (English summary) *Parallel computing '91* (*London*, 1991), 115–122, *Adv. Parallel Comput.*, **4**, *North-Holland, Amsterdam*, 1992. (Summary) **93i:68176** 68U05 (52B55, 68Q22)

— (*with* Hsu, F. R.; Lee, R. C. T.) Special subgraphs of weighted visibility graphs. *Inform. Process. Lett.* **43** (1992), *no.* 2, 69–75. (Summary) **93g:68137** 68U05 (68Q25, 68R10)

— (*with* Hsu, F. R.; Lee, R. C. T.) Parallel algorithms for computing the closest visible vertex pair between two polygons. *Internat. J. Comput. Geom. Appl.* **2** (1992), *no.* 2, 135–162. (Ivan Stojmenović) **93h:52020** 52B55 (68U05)

— (*with* Hwang, R. Z.; Lee, R. C. T.) The slab dividing approach to solve the Euclidean P-center problem. (English summary) *Algorithmica* **9** (1993), *no.* 1, 1–22. (Summary) **93k:68103** 68U05 (68Q25, 90B80)

— (*with* Hwang, R. Z.; Lee, R. C. T.) The searching over separators strategy to solve some NP-hard problems in subexponential time. (English summary) *Algorithmica* **9** (1993), *no.* 4, 398–423. (Summary) **93m:65189** 65U05 (68Q25)

Chang, S. C. (*with* Du, Min Wen) A model and a fast algorithm for multiple errors spelling correction. *Acta Inform.* **29** (1992), *no.* 3, 281–302. (Răzvan Andonie) **93f:68079** 68T10

Chang, S. Frank (*with* McCormick, S. Thomas) A hierarchical algorithm for making sparse matrices sparser. (English summary) *Math. Programming* **56** (1992), *no.* 1, *Ser. A*, 1–30. (Summary) **93d:65047** 65F50

Chang, San Chyi (*with* Huang, Wên T'ao) Estimations of survival function based on incomplete and missing data. *Internat. J. Inform. Management Sci.* **3** (1992), *no.* 1, 117–130. (Summary) **93h:62082** 62G05 (62N05)

Chang, Seung Jun (*with* Kang, Si-Ho) A sequential approach to conditional Wiener integrals. *Bull. Korean Math. Soc.* **29** (1992), *no.* 2, 301–314. (Chull Park) **93m:28016** 28C20 (60G15)

Chang, Sheldon S. L. A global view of analytical optimization methods. (English summary) *Integral methods in science and engineering—90* (*Arlington, TX*, 1990), 476–481, *Ser. Comput. Phys. Process. Mech. Thermal Sci., Hemisphere, New York*, 1991. (*see* **93f:00014**) 90C30

Chang, Shih-sen *see* **Zhang, Shi Sheng**

Chang, Shoe Jane (*with* Yu, Ming Shing; Tseng, Lin Yu) Sequential and parallel algorithms for the maximum-weight independent set problem on permutation graphs. (English summary) *Inform. Process. Lett.* **46** (1993), *no.* 1, 7–11. (Summary) **93m:05191** 05C85 (68Q22, 68R10)

Chang, Shyang *see* **Chang, Hsiang**

Chang, Sun-Yung A. (*with* Branson, Thomas P.; Yang, Paul C.) Estimates and extremals for zeta function determinants on four-manifolds. (English summary) *Comm. Math. Phys.* **149** (1992), *no.* 2, 241–262. (Steven Rosenberg) **93m:58116** 58G26

Chang, T. *see* **Chang, Theodore**

Chang, T. H. Characterizations and Baire measurable property of N-compact spaces. *Bull. Malaysian Math. Soc.* (2) **14** (1991), *no.* 2, 57–62. (Eliza Wajch) **93a:54024** 54D60 (54H05)

Chang, T. S. *see* **Chang, Tom**

Chang, Theodore (*with* Eaves, D. M.) Posterior mode estimation for the generalized linear model. (English summary) *Ann. Inst. Statist. Math.* **44** (1992), *no.* 3, 417–434. 62J05

— (*with* Eaves, D. M.) Priors for ordered conditional variance and vector partial correlation. *J. Multivariate Anal.* **41** (1992), *no.* 1, 43–55. (Jack C. Lee) **93e:62086** 62F15 (62H12)

— (*with* Bingham, Christopher; Richards, Donald St. P.) Approximating the matrix Fisher and Bingham distributions: applications to spherical regression and Procrustes analysis. *J. Multivariate Anal.* **41** (1992), *no.* 2, 314–337. (A. L. Rukhin) **93f:62078** 62H10 (62E20, 86A60)

Chang, Tom Path integrals, differential renormalization-group, and stochastic systems near criticality. (English summary) The Eringen anniversary issue. *Internat. J. Engrg. Sci.* **30** (1992), *no.* 10, 1401–1405. (Summary) **93g:82071** 82C28 (34F05, 58F13, 58F40, 82C31)

— (*with* Vvedensky, D. D.; Nicoll, J. F.) Differential renormalization-group generators for static and dynamic critical phenomena. (English summary) *Phys. Rep.* **217** (1992), *no.* 6, 279–360. (Summary) **93g:82046** 82B28

Chang, Tong *see* **Zhang, Tong**

Chang, Wei (*with* Kam, Moshe; Rorres, Chris) Systems of random mappings with a common fixed point. (English summary) *Internat. J. Systems Sci.* **23** (1992), *no.* 11, 2113–2119. (Shi Sheng Zhang) **93k:54077** 54H25 (60H25, 93D05)

Chang, Wen Jer (*with* Chung, Hung Yüan) Covariance control with variance constraints for continuous perturbed stochastic systems. (English summary) *Systems Control Lett.* **19** (1992), *no.* 5, 413–417. 93E03 (93B51)

— (*with* Chung, Hung Yüan) Upper bound covariance control of discrete perturbed systems. (English summary) *Systems Control Lett.* **19** (1992), *no.* 6, 493–498. (V. N. Fomin) **93j:93137** 93E03 (93B25, 93B50)

— (*with* Chung, Hung Yüan) A study of H_∞ norm and variance-constrained design using dynamic output feedback for linear discrete systems. (English summary) *Internat. J. Control* **57** (1993), *no.* 2, 473–483. (Summary) **93i:93040** 93B36 (93B51)

Chang, Xiao Wen (*with* Wang, Jia Song) The best approximation of symmetric positive semidefinite matrices with spectral constraints. (Chinese summary) *Numer. Math. J. Chinese Univ.* **14** (1992), *no.* 1, 78–86. (A. Bultheel) **93g:41028** 41A65 (15A18, 65F15)

Chang, Xue Jiang (*with* Chen, Min) Estimators of the parameters of an autoregressive process with disturbing noise and their asymptotic properties. (Chinese. English and Chinese summaries) *Chinese J. Appl. Probab. Statist.* **8** (1992), *no.* 2, 129–136. (Summary) **93j:62223** 62M10

Chang, Y. C. (*with* Charnes, Abraham; Semple, John Hartley) Semi-infinite relaxation of joint chance constraints in chance-constrained programming. I. Zero-order stochastic decision rules. (English summary) *Internat. J. Systems Sci.* **23** (1992), *no.* 7, 1051–1061. (Summary) **93k:90059** 90C15 (90C08)

Chang, Yan Xun Properties of primitive elements in finite fields. (Chinese. English summary) *Hebei Shifan Xueyuan Xuebao Ziran Kexue Ban* **1991**, *no.* 1, 9–13. (Jau-Shyong Shiue) **93b:11161** 11T06

— Verification of Golomb's conjecture (C). (Chinese. English summary) *J. Math. Res. Exposition* **11** (1991), *no.* 4, 545–547. (Qi Sun) **93d:11133** 11T99

— (*with* Kang, Qing De) A completion of the spectrum for large sets of disjoint transitive triple systems. *J. Combin. Theory Ser. A* **60** (1992), *no.* 2, 287–294. (Charles C. Lindner)

93i:05024 05B07

Chang, Yau-Zen (*with* Daniel, Ron W.) On the adaptive control of flexible joint robots. (English summary) *Automatica J. IFAC* **28** (1992), *no.* 5, 969–974. 93C40 (93C85)

Chang, Yih-Long (*with* Liu, Howard; Shen, Sheldon) Analysis of a CSMA/CD priority protocol. (English summary) *Internat. J. Inform. Management Sci.* **2** (1991), *no.* 2, 101–133. (Summary) **93f:90063** 90B12 (68M20)

Chang, Ying Xiang (*with* Chu, Yan Dong; Gu, Feng[2]) Binary grey relations and their characteristics. (Chinese. English and Chinese summaries) *J. Lanzhou Railway Inst.* **11** (1992), *no.* 3, 35–42. 04A72

Chang, Yow Yieh (*with* Cottle, Richard W.) Least-index resolution of degeneracy in linear complementarity problems with sufficient matrices. (English summary) *SIAM J. Matrix Anal. Appl.* **13** (1992), *no.* 4, 1131–1141. (Laura Martein) **93g:90075** 90C33

Chang, Yu Chi Adaptive sequential confidence intervals for a location parameter. (English summary) *Sequential Anal.* **11** (1992), *no.* 3, 257–272. (Masafumi Akahira) **93i:62069** 62L12 (62L10)

Chang, Yuan-chin Ivan (*with* Martinsek, Adam T.) Fixed size confidence regions for parameters of a logistic regression model. (English summary) *Ann. Statist.* **20** (1992), *no.* 4, 1953–1969. (Arup Bose) **93k:62168** 62L12 (62F25, 62J12)

Chang, Zhe Generalized Holstein-Primakoff realizations and quantum group-theoretic coherent states. (English summary) *J. Math. Phys.* **33** (1992), *no.* 9, 3172–3179. (A. U. Klimyk) **93h:81063** 81S05 (81R30, 81R50)

— (*with* Guo, Han Ying; Yan, Hong) The q-Hermite polynomial and the representations of Heisenberg and quantum Heisenberg algebras. *J. Phys. A* **25** (1992), *no.* 6, 1517–1525. (Aleksandr Panov) **93a:33032** 33D80 (17B10, 33D45, 81R50)

— The quantum multiboson algebra and generalized coherent states of $SU_q(1,1)$. *J. Phys. A* **25** (1992), *no.* 12, L707–L711. (Summary) **93c:81078** 81R50 (81R30)

— The quantum q-deformed symmetric top: an exactly solved model. *J. Phys. A* **25** (1992), *no.* 13, L781–L788. (Summary) **93c:81027** 81Q05 (81R50)

— Quantum group realized in a symmetric-top system. *Phys. Rev. A* (3) **45** (1992), *no.* 7, *part A*, 4303–4311. (Summary) **93b:81108** 81R50 (58F05, 70H05)

— Minimum-uncertainty states, a two-photon system, and quantum-group symmetry. (English summary) *Phys. Rev. A* (3) **46** (1992), *no.* 9, 5860–5864. (Summary) **93k:81273** 81V80 (81R50)

— Dynamics of generalized photonic fields interacting with atoms. (English summary) *Phys. Rev. A* (3) **46** (1992), *no.* 9, 5865–5873. (Summary) **93k:81274** 81V80 (81R50)

Changat, Manoj On order and metric convexities in $\mathbf{Z}^\infty$. *J. Math. Phys. Sci.* **25** (1991), *no.* 4, 421–426. (Gerard Sierksma) **93e:52014** 52A35

— (*with* Vijayakumar, Ambat) On order and metric convexities in $\mathbf{Z}^n$. *Compositio Math.* **82** (1992), *no.* 1, 57–65. (John R. Reay) **93d:52018** 52C07 (52A35)

Changchein, Jui-Tsan (*with* Tu, Shih T'ung) Extension of the Chebyshev's equation of order p to the higher order by fractional calculus method. *J. Fract. Calc.* **1** (1992), 53–59. (H. M. Srivastava) **93h:26014** 26A33 (33B15, 34A99)

Chani, A. S. Index of exponential growth of stochastic semigroups of triangular type. (Russian) *Teor. Veroyatnost. i Mat. Statist. No.* 45 (1991), 135–142; *translation in Theory Probab. Math. Statist. No.* 45 (1992), 129–135. (Shi Sheng Zhang) **93h:60098** 60H25

Chanillo, Sagun (*with* Wheeden, Richard L.) Poincaré inequalities for a class of non-A_p weights. (English summary) *Indiana Univ. Math. J.* **41** (1992), *no.* 3, 605–623. (M. Yu. Vasil'chik) **93m:46035** 46E35 (26D10, 42B99)

— (*with* Li, Yan Yan) Continuity of solutions of uniformly elliptic equations in $\mathbf{R}^2$. *Manuscripta Math.* **77** (1992), *no.* 4, 415–433. (Genowefa Majcher) **93k:35033** 35B35 (35B05, 35J25)

— (*with* Muckenhoupt, Benjamin) Weak type estimates for Cesàro sums of Jacobi polynomial series. *Mem. Amer. Math. Soc.* **102** (1993), *no.* 487, viii+90 *pp.* (Kenneth F. Andersen) **93g:42018** 42C10 (33C45, 40G05, 42A24, 42A50)

Chan Khyu Bong The Fredholm property of functional-differential operators. (Russian. Russian summary) *Akad. Nauk Ukrainy Inst. Mat. Preprint* **1992,** *no.* 17, 47 *pp.* (Summary) **93f:47066** 47G99 (47A53)

— On the Fredholm property of linear functional-differential operators. (Russian) *Dokl. Akad. Nauk* **324** (1992), *no.* 4, 757–759; *translation in Russian Acad. Sci. Dokl. Math.* **45** (1992), *no.* 3, 641–643 (1993). (From the text) **93i:47079** 47G99 (34G10, 47A53, 47E05)

Chan Min' Tien *see* **Tran Minh Tien**

Chanov, A. V. (*with* Lomonosova, I. V.) Numerical solution of problems in two-component sorption dynamics. (Russian. English and Russian summaries) *Mat. Model.* **4** (1992), *no.* 8, 75–84. (Summary) **93j:65165** 65N06

Chantelau, Klaus On the Born-Oppenheimer approximation for excited states of polyatomic Schrödinger operators. (English summary) *Lett. Math. Phys.* **25** (1992), *no.* 3, 227–238. (Summary) **93f:35044** 35J10 (47F05, 47N50, 81Q20, 81V55)

Chanturiya, T. A. On the existence of singular and unbounded oscillating solutions of differential equations of Emden-Fowler type. (Russian. Russian summary) *Differentsial'nye Uravneniya* **28** (1992), *no.* 6, 1009–1022, 1102; *translation in Differential Equations* **28** (1992), *no.* 6, 811–824. (Pavol Marušiak) **93k:34069** 34C10 (34C99)

Chao, Anne *see* **Chao, Lien Chū**

Chao, Chern Ching (*with* Liang, Wên Ch'i) Arranging n distinct numbers on a line or a circle to reach extreme total variations. (English summary) *European J. Combin.* **13** (1992), *no.* 5, 325–334. (Wayne M. Dymacek) **93g:05006** 05A10 (05A05)

Chao, Chi Chao (*with* McEliece, Robert J.; Swanson, Laif; Rodemich, Eugene R.) Performance of binary block codes at low signal-to-noise ratios. (English summary) *IEEE Trans. Inform. Theory* **38** (1992), *no.* 6, 1677–1687. (Garegin S. Markarian) **93h:94033** 94B70

Chao, Chong-Yun (*with* Han, Shao Cen) A note on the toughness of generalized Petersen graphs. *J. Math. Res. Exposition* **12** (1992), *no.* 2, 183–186. (Barry Piazza) **93h:05096** 05C35

Chao, Hong Yang (*with* Li, Yue Sheng) RS method for solving integral equations and its error estimate. *Approximation, optimization and computing*, 121–124, *North-Holland, Amsterdam*, 1990. (Summary) **93c:45002** 45B05 (45L10, 65R20)

— Error estimates of the finite-dimensional regularized method for solving ill-posed problems. (Chinese. English summary) *Numer. Math. J. Chinese Univ.* **13** (1991), *no.* 4, 368–377. (Summary) **93b:65087** 65J20

— Improved pulse-spectrum technique for solving the inverse problem of two-dimensional diffusive coefficient. (English summary) *Proceedings of International Conference on Scientific Computation* (*Hangzhou*, 1991), 167–171, *Ser. Appl. Math.*, 1, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93d:65004**) 65N35 (35R30)

— A note on the inverse problem for diffusion coefficients of convection-diffusion equations. (Chinese. English and Chinese summaries) *Acta Sci. Natur. Univ. Sunyatseni* **31** (1992), *no.* 1, 34–40. (Summary) **93f:35239** 35R30 (35K15)

Chao, J.-A. (*with* Long, Rui Lin) Martingale transforms and Hardy spaces. *Probab. Theory Related Fields* **91** (1992), *no.* 3-4, 399–404. (R. F. Gundy) **93d:60081** 60G42 (46E99, 60G46)

Chao, K. H. (*with* Liao, Ts'ung Ming) On the design of an optimal automatic generation controller for interconnected power systems. (English summary) *Internat. J. Control* **58** (1993), *no.* 1, 113–127. 93C95 (93B50)

Chao, Kung-Mei (*with* Wong, Chi Song) Applications of M-matrices to majorization. *Linear Algebra Appl.* **169** (1992), 31–40. (R. A. Brualdi) **93d:15033** 15A51

Chao, Lien Chū (*with* Li, Shên Ming) Estimating population size for continuous-time capture-recapture models via sample coverage. (English summary) *Biometrical J.* **35** (1993), *no.* 1, 29–45. 62P10

Chao, Liu (*with* Hou, Bo Yu) Conformally reduced WZNW theory, new extended chiral algebras and their associated Toda type integrable systems. (English summary) *Internat. J. Modern Phys. A* **7** (1992), *no.* 28, 7015–7043. (A. Hamid Bougourzi) **93k:81080** 81R10 (17B68, 17B81, 58F07, 81T40)

— (*with* Hou, Bo Yu) A_N W-algebras and classification. (English summary) *Modern Phys. Lett. A* **7** (1992), *no.* 36, 3419–3423. (Summary) **93i:17028** 17B68 (81R10)

— (*with* Hou, Bo Yu) Hamiltonian reductions of self-dual Yang-Mills theory. (English summary) *Phys. Lett. B* **298** (1993), *no.* 1-2, 103–110. (Alexander D. Popov) **93k:58115** 58F07 (58Z05, 81T13)

Chao, Lu A local solution to the initial value problem for a class of higher-order evolution equations and a property of it. (Chinese. English and Chinese summaries) *Nei Mongol Daxue Xuebao Ziran Kexue* **23** (1992), *no.* 4, 494–501. (Summary) **93i:35071** 35K55 (34G20, 35K30, 47H15, 47N20)

Chao, Min Te (*with* Fu, James C.) The reliability of a large series system under Markov structure. *Adv. in Appl. Probab.* **23** (1991), *no.* 4, 894–908. (Ross P. Kindermann) **93a:90025** 90B25 (60J20, 62N05)

— From animal trapping to type-token. *Statist. Sinica* **2** (1992), *no.* 1, 189–201. (J. Gani) **93a:60053** 60F99 (60K99, 62M99, 92B99)

Chao, Xiuli On the departure processes of $M/M/1/N$ and $GI/G/1/N$ queues. *Adv. in Appl. Probab.* **24** (1992), *no.* 3, 751–754. (Summary) **93f:60136** 60K25

— (*with* Chang, Cheng-Shang; Pinedo, Michael; Weber, Richard R.) On the optimality of LEPT and $c\mu$ rules for machines in parallel. *J. Appl. Probab.* **29** (1992), *no.* 3, 667–681. (Summary) **93d:90025** 90B35

— (*with* Pinedo, Michael) On reversibility of tandem queues with blocking. (English summary) *Naval Res. Logist.* **39** (1992), *no.* 7, 957–974. 90B22

Chaouche, A. (*with* Randriamampianina, A.; Bontoux, P.) A collocation method based on the influence matrix technique for Navier-Stokes problems in annular domains. (English summary) *Spectral and high order methods for partial differential equations* (*Como*, 1989), 237–244, *North-Holland, Amsterdam*, 1990. (*see* **93d:65005**) 65N35 (76D05, 76M25)

Chapellat, Hervé (*with* Dahleh, Mohammed A.; Bhattacharyya, Shankar Prashad) Structure and optimality of multivariable periodic controllers. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, I* (*Kobe*, 1991), 159–164, *Mita, Tokyo*, 1992. (*see* **93g:93005**) 49N20 (93B52)

— (*with* Dahleh, Mohammed A.) Analysis of time-varying control strategies for optimal disturbance rejection and robustness. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 11, 1734–1745. (Roberto Tempo) **93j:93075** 93C25 (93B36, 93B52, 93C50, 93D09)

Chaplain, M. A. J. (*with* Sleeman, B. D.) A mathematical model for the growth and classification of a solid tumor: a new approach via nonlinear elasticity theory using strain-energy functions. (English summary) *Math. Biosci.* **111** (1992), *no.* 2, 169–215. 92C50 (73C50)

rau-Chaplin, Andrew *see* **Rau-Chaplin, Andrew**

Chapline, George Quantum model for space-time. *Modern Phys. Lett. A* **7** (1992), *no.* 22, 1959–1965. (Ingemar Bengtsson) **93g:83045** 83C45 (81Q60, 81V17, 81V70, 82D55)

Chapman, Allan George Biddell Airy, F.R.S. (1801–1892): a centenary commemoration. *Notes and Records Roy. Soc. London* **46** (1992), *no.* 1, 103–110. (Peter M. Harman) **93a:01044** 01A70 (01A55, 01A80)

Chapman, C. J. The asymptotic theory of rapidly rotating sound fields. (English summary) *Proc. Roy. Soc. London Ser. A* **436** (1992), *no.* 1898, 511–526. (Summary) **93e:76063** 76Q05

— Time-domain asymptotics and the method of stationary phase. (English summary) *Proc. Roy. Soc. London Ser. A* **437** (1992), *no.* 1899, 25–40. (From the summary) **93e:49054** 49N55 (41A60, 94A12)

Chapman, G. Robert (*with* Kim, Peter T.) Group action on a lattice and an application to time series analysis. (English summary) *J. Statist. Plann. Inference* **34** (1993), *no.* 2, 183–195. (Summary) **93j:60042** 60G10 (62M15)

Chapman, Jonathan (*with* Rowbottom, Frederick) ★ Relative category theory and geometric morphisms. A logical approach. Oxford Logic Guides, 16. Oxford Science Publications. *The Clarendon Press, Oxford University Press, New York*, 1992. xii+263 *pp.* *ISBN* 0-19-853434-5 (Colin McLarty) **93i:18004** 18B25 (03G30)

Chapman, P. B. The transition through resonance of a nonlinear nonautonomous system. *J. Austral. Math. Soc. Ser. B* **34** (1992), *no.* 1, 81–111. (James A. Murdock) **93g:34052** 34C15 (34C29, 70K30)

Chapman, R. J. Kummer theory and Galois module structure in global function fields. *Math. Z.* **208** (1991), *no.* 3, 375–388. (Jean-François Jaulent) **93f:11081** 11R33 (11R37, 11R58)

— Classgroups of sheaves of locally free modules over global function fields. *The arithmetic of function fields* (*Columbus, OH*, 1991), 403–411, *Ohio State Univ. Math. Res. Inst. Publ.*, 2, *de Gruyter, Berlin*, 1992. (Ernst Kleinert) **93i:11128** 11R33 (11R37, 11R58)

Chapman, Scott T. A simple example of nonunique factorization in integral domains. *Amer. Math. Monthly* **99** (1992), *no.* 10, 943–945. 13F15

— (*with* Smith, William W.) On the HFD, CHFD, and k-HFD properties in Dedekind domains. *Comm. Algebra* **20** (1992), *no.* 7, 1955–1987. (Cornelia Naudé) **93e:13032** 13F05 (13F15)

— (*with* Smith, William W.) On the lengths of factorizations of elements in an algebraic number ring. (English summary) *J. Number Theory* **43** (1993), *no.* 1, 24–30. (Alfred Geroldinger) **93k:11098** 11R27 (13F05)

— (*with* Anderson, D. D.; Anderson, David F.; Smith, William W.) Rational elasticity of factorizations in Krull domains. *Proc. Amer. Math. Soc.* **117** (1993), *no.* 1, 37–43. (Liam O'Carroll) **93c:13014** 13F05 (13A05, 13F15, 13G05)

Chapovsky, Yuri *see* **Samoilenko, A. M., 93d:34050**

Chappell, M. J. (*with* Godfrey, K. R.) Structural identifiability of nonlinear systems: application to a batch reactor. (English summary) *Identification and system parameter estimation* 1991, *Vol.* 1,2 (*Budapest*, 1991), 865–870, *IFAC Sympos. Ser.*, **3**, *Pergamon, Oxford*, 1992. (*see* **93h:93009**) 93B30 (93C10, 93C95)

Chapuis, Olivier Variétés de groupes et *m*-identités. (English and French summaries) [Varieties of groups and *m*-identities] *C. R. Acad. Sci. Paris Sér. I Math.* **316** (1993), *no.* 1, 15–17. (Summary) **93i:20031** 20E10

Charafi, A. (*with* Wrobel, L. C.; Adey, R. A.) An approach to *h*-adaptive boundary element method using local reanalysis. (English summary) *Boundary element technology, VII* (*Albuquerque, NM*, 1992), 905–918, *Comput. Mech., Southampton*, 1992. (*see* **93b:65002**) 65N38

Charalambopoulos, Antonios (*with* Dassios, George) Inverse scattering via low-frequency moments. (English summary) *J. Math. Phys.* **33** (1992), *no.* 12, 4206–4216. (Summary) **93j:35051** 35J05 (35R30, 65P05, 76Q05)

— (*with* Kiriaki, Kiriakie) Characterization of functions as radiation patterns in linear elasticity. (English summary) *Math. Methods Appl. Sci.* **15** (1992), *no.* 8, 547–558. (B. Belinskiy) **93j:73030** 73D30 (35Q72, 73B40, 73D25)

Charalambous, H. (*with* Evans, E. G., Jr.) Problems on Betti numbers of finite length modules. *Free resolutions in commutative algebra and algebraic geometry* (*Sundance, UT*, 1990), 25–33, *Res. Notes Math.*, **2**, *Jones and Bartlett, Boston, MA*, 1992. (Şerban Bărcănescu) **93e:13018** 13D02 (13D25)

Charalambous, M. G. Approximate inverse systems of uniform spaces and an application of inverse systems. *Comment. Math. Univ. Carolin.* **32** (1991), *no.* 3, 551–565. (Stoyan Nedev) **93h:54009** 54B99 (54E15, 54F45)

— Further theory and applications of covering dimension of uniform spaces. *Czechoslovak Math. J.* **41(116)** (1991), *no.* 3, 378–394. (Stoyan Nedev) **93i:54030** 54F45 (54E15)

Charamza, Pavel Comparison of the stochastic approximation software. (English summary) *Computational aspects of model choice* (*Prague*, 1991), 163–176, *Contrib. Statist., Physica, Heidelberg*, 1993. (Summary) **93k:90007** 90–08 (90C15)

coimbra Charão, R. *see* **Coimbra Charão, R.**

Charatonik, Janusz J. On generalized homogeneity of locally connected plane continua. *Comment. Math. Univ. Carolin.* **32** (1991), *no.* 4, 769–774. (James T. Rogers, Jr.) **93f:54022** 54C10 (54F15, 54F50)

— Conditions related to selectibility. *Math. Balkanica (N.S.)* **5** (1991), *no.* 4, 359–372 (1992). (L. E. Ward, Jr.) **93g:54046** 54F15 (54C65)

— (*with* Lee, Taejin; Omiljanowski, K.) Interrelations between some noncontractibility conditions. (English summary) *Rend. Circ. Mat. Palermo* (2) **41** (1992), *no.* 1, 31–54. (Donald E. Bennett) **93i:54026** 54F15 (54F50)

— Mapping invariance of extremal continua. *Topology Appl.* **43** (1992), *no.* 3, 275–282. (Eric E. Robinson) **93d:54045** 54F15 (54C10, 54F55)

— Absolute end points of irreducible continua. (English summary) *Math. Bohem.* **118** (1993), *no.* 1, 19–28. (Jacek Nikiel) **93m:54055** 54F15 (54F50)

Charatonik, Włodzimierz J. Continua as positive Whitney levels. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 4, 1351–1352. (L. E. Ward, Jr.) **93j:54021** 54F15 (54B20)

Charbonnel, A.-M. Comportement semi-classique des systèmes ergodiques. (English summary) [Semiclassical behavior of ergodic systems] *Ann. Inst. H. Poincaré Phys. Théor.* **56** (1992), *no.* 2, 187–214. (J. S. Joel) **93e:58187** 58G25 (35P20, 58F17, 58G15, 81Q20)

Charef, A. (*with* Sun, H. H.; Tsao, Y.-Y.; Onaral, B.) Fractal system as represented by singularity function. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 9, 1465–1470. (Summary) **93g:58132** 58F40 (93C80)

Charfi, Abdelwaheb Représentation non linéaire du groupe affine complexe. (English and French summaries) [Nonlinear representation of the complex affine group] *Ann. Fac. Sci. Toulouse Math.* (5) **12** (1991), *no.* 1, 61–73. (From the text) **93m:22013** 22E45

— Nonlinear representations of the group: $(\mathbf{R}^+ \times SO(n)) \wedge \mathbf{R}^n$. *Lett. Math. Phys.* **23** (1991), *no.* 4, 307–317. (Yves Benoist) **93b:22021** 22E45

Chargy, D. (*with* Abgrall, Rémi; Fezoui, L.; Larrouturou, Bernard) Conservative numerical schemes for multicomponent inviscid flows. *Rech. Aérospat.* (*English Edition*) **1992**, *no.* 2, 61–80; *translated from Rech. Aérospat.* **1992**, *no.* 2, 61–80 (*French. English and French summaries*). (Summary) **93g:76083** 76M20

Chari, V. V. (*with* Kehoe, Patrick J.) Sustainable plans and mutual default. (English summary) *Rev. Econom. Stud.* **60** (1993), *no.* 1, 175–195. (Summary) **93h:90017** 90A14

Chari, Vyjayanthi (*with* Pressley, Andrew) Introduction to quantum groups. *Proceedings of the Hyderabad Conference on Algebraic Groups* (*Hyderabad*, 1989), 81–122, *Manoj Prakashan, Madras*, 1991. (Zhong Qi Ma) **93f:17019** 17B37 (16W30, 81R50)

— (*with* Pressley, Andrew) Quantum affine algebras. *Comm. Math. Phys.* **142** (1991), *no.* 2, 261–283. (Vladimir A. Stukopin) **93d:17017** 17B37

Charissiadis, Panos (*with* Nagel, Rainer) Positivity for operator matrices. *Differential equations with applications in biology, physics, and engineering* (*Leibnitz*, 1989), 67–78, *Lecture Notes in Pure and Appl. Math.*, 133, *Dekker, New York*, 1991. (Ioana Ciorănescu) **93d:47074** 47D03 (34G10, 34K05, 47B65, 47D06)

— On the modulus of semigroups generated by operator matrices. *Arch. Math.* (*Basel*) **58** (1992), *no.* 4, 345–353. (Ioana Ciorănescu) **93d:47075** 47D03 (35K57, 47B60, 47D06, 47N20)

de mora-Charles, Maria Sol *see* **de Mora-Charles, Maria Sol**

Charlier, Alphonse (*with* Bérard, Alain; Charlier, Marie-France; Fristot, Danièle) ★ Tensors and the Clifford algebra. Application to the physics of bosons and fermions. Monographs and Textbooks in Pure and Applied Mathematics, 163. *Marcel Dekker, Inc., New York*, 1992. x+323 *pp. ISBN* 0-8247-8666-1 (Dominique Lambert) **93g:15018** 15A66 (53A50, 81R05, 81R25)

Charlier, Marie-France (*with* Charlier, Alphonse; Bérard, Alain; Fristot, Danièle) ★ Tensors and the Clifford algebra. Application to the physics of bosons and fermions. Monographs and Textbooks in Pure and Applied Mathematics, 163. *Marcel Dekker, Inc., New York*, 1992. x+323 *pp. ISBN* 0-8247-8666-1 (Dominique Lambert) **93g:15018** 15A66 (53A50, 81R05, 81R25)

Charmichael, R. D. (*with* Pathak, R. S.) Asymptotic analysis of the *H*-function transform. (Serbo-Croatian summary) *Glas. Mat. Ser. III* **25(45)** (1990), *no.* 1, 103–127. (Summary) **93a:44004** 44A20 (46F12)

Charnes, Abraham (*with* Semple, John Hartley) Practical error bounds for a class of quadratic programming problems. (English, Russian and Lithuanian summaries) *Informatica* **2** (1991), *no.* 3, 352–366, 456, 463. (Summary) **93d:90048** 90C20

— (*with* Cooper, W. W.; Huang, Zhi Min; Sun, D. B.) Relations between half-space and finitely generated cones in polyhedral cone-ratio DEA models. *Internat. J. Systems Sci.* **22** (1991), *no.* 11, 2057–2077. (S. Dubuc) **93b:52013** 52B30 (52A20, 65D17)

— (*with* Haag, S.; Jaska, P.; Semple, John Hartley) Sensitivity of efficiency classifications in the additive model of data envelopment analysis. *Internat. J. Systems Sci.* **23** (1992), *no.* 5, 789–798. (Summary) **93a:90066** 90C31 (90C08)

— (*with* Chang, Y. C.; Semple, John Hartley) Semi-infinite relaxation of joint chance constraints in chance-constrained programming. I. Zero-order stochastic decision rules. (English summary) *Internat. J. Systems Sci.* **23** (1992), *no.* 7, 1051–1061. (Summary) **93k:90059** 90C15 (90C08)

— (*with* Rousseau, J. J.; Semple, John Hartley) Non-Archimedean infinitesimals, transcendentals and categorical inputs in linear programming and data envelopment analysis. (English summary) *Internat. J. Systems Sci.* **23** (1992), *no.* 12, 2401–2406. 90C05

Charney, Ruth Artin groups of finite type are biautomatic. *Math. Ann.* **292** (1992), *no.* 4, 671–683. (D. F. Holt) **93c:20067** 20F36 (20F10)

Charniak, Eugene (*with* Husain, Saadia) A new admissible heuristic for minimal-cost proofs. (English summary) *AAAI-91. Proceedings, Ninth National Conference on Artificial Intelligence, Vol.* 1, 2, 446–451, *AAAI Press, Menlo Park, CA*, 1991. (Summary) **93m:68153** 68T27

Charon-Fournier, Irène *see* **Fournier, Irène**

Charpentier, Ph. (*with* Dupain, Y.) Une estimation des coefficients tangents d'un courant postif fermé dans un domaine de $\mathbf{C}^3$. (English summary) [An estimate of the tangent coefficients of a closed positive current in a domain in $\mathbf{C}^3$] *Publ. Mat.* **36** (1992), *no.* 1, 319–349. (Harold P. Boas) **93h:32015** 32C30 (32F15)

Charpin, Pascale (*with* Berger, Thierry) Groupe d'automorphismes des codes de Reed et Muller *q*-aires. (English summary) [The automorphism group of *q*-ary Reed-Muller codes] *C. R. Acad. Sci. Paris Sér. I Math.* **313** (1991), *no.* 12, 883–886. (Brian Mortimer) **93a:94027** 94B05 (20B25)

— (*with* Augot, Daniel; Sendrier, Nicolas) Studying the locator polynomials of minimum weight codewords of BCH codes. *IEEE Trans. Inform. Theory* **38** (1992), *no.* 3, 960–973. (Summary) **93a:94030** 94B15

Charras, A. (*with* van Eeden, Constance) Bayes properties of estimators of location parameters in truncated parameter spaces. *Statist. Decisions* **10** (1992), *no.* 1-2, 81–86. (Marek Kałuszka) **93h:62006** 62C10 (62F15)

Charrier, Christian (*with* Hernando Pérez, Jesús) The sheaves of sets on a topological space form a topos. (Spanish) *Bol. Mat.* **20** (1986), *no.* 3, 173–196. 18F20 (54B30)

Charrier, P. (*with* Roman, J.) Study of an adaptive blocking for a parallel nested dissection algorithm. (English summary) *Parallel processing for scientific computing* (*Houston, TX*, 1991), 71–76, *SIAM, Philadelphia, PA*, 1992. (*see* **93g:65178**) 65F50 (65Y05)

Charris Castañeda, Jairo A. (*with* Ortíz, Carlos A.) Complex analysis and excision in the Artin homology. (Spanish. English and Spanish summaries) *Bol. Mat.* **21** (1987), *no.* 2-3, 53–98. 55N35

Chartier, P. (*with* Philippe, B.) *L*-stable parallel one-block methods for stiff ODEs. *Parallel processing for scientific computing, Vol. I, II* (*Norfolk, VA*, 1993), 743–746, *SIAM, Philadelphia, PA*, 1993. (*see* **93k:65003**) 65L05

Chartrand, Gary Frank Harary: the ambassador of graph theory. *J. Combin. Inform. System Sci.* **16** (1991), *no.* 1, 1–6. (Editors) **93g:01065** 01A70

— (*with* Johns, Garry L.; Novotny, Karen S.; Oellermann, Ortrud R.) Subgraph distance in graphs. (English summary) *J. Combin. Inform. System Sci.* **16** (1991), *no.* 1, 67–85. (Donald W. Vanderjagt) **93j:05050** 05C12

— (*with* Johns, Garry L.; Tian, Song Lin) Directed distance in digraphs: centers and peripheries. (English summary) Proceedings of the Twenty-third Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, FL, 1992). *Congr. Numer.* **89** (1992), 89–95. (Summary) **93j:05051** 05C12 (05C20)

— (*with* Hevia, Héctor; Wilson, Robin J.) The ubiquitous Petersen graph. Special volume to mark the centennial of Julius Petersen's "Die Theorie der regulären Graphs", Part I. *Discrete Math.* **100** (1992), *no.* 1-3, 303–311. (David M. Berman) **93h:05162** 05C99 (05–03)

— (*with* Harary, Frank; Hevia, Héctor; McKeon, Kathleen A.) On signed graphs with prescribed positive and negative graphs. (English summary) *Vishwa Internat. J. Graph Theory* **1** (1992), *no.* 1, 9–18. (H. Joseph Straight) **93m:05095** 05C35

— (*with* Oellermann, Ortrud R.) ★ Applied and algorithmic graph theory. (English. English summary) International Series in Pure and Applied Mathematics. *McGraw-Hill, Inc., New York*, 1993. xx+395 *pp. ISBN* 0-07-557101-3 05–01 (68Q22, 68R10)

— *see also* **Graph theory, combinatorics, and applications, 93b:05002** *and* **93b:05003**

Charzyński, Zygmunt (*with* Skibiński, Przemysław) Equation of the set of critical points of a polynomial mapping in two variables. (Polish summary) *Bull. Soc. Sci. Lett. Łódź* **40** (1990), *no.* 11-20, 5–13. (Kamil Rusek) **93f:32039** 32S20 (14E15)

Chase, Christopher (*with* Serrano, Joseph; Ramadge, Peter J.) Periodicity and chaos from switched flow systems: contrasting examples of discretely controlled continuous systems. (English summary) *IEEE Trans. Automat. Control* **38** (1993), *no.* 1, 70–83. (Summary) **93j:93068** 93C10 (93B52, 93C57)

Chaskelis, H. H. (*with* Delsanto, P. P.; Whitcombe, T.; Mignogna, R. B.) Connection Machine simulation of ultrasonic wave propagation in materials. I. The one-dimensional case. *Wave Motion* **16** (1992), *no.* 1, 65–80. 73D15 (73V99, 76Q05)

Chasovskikh, A. A. Completeness in the class of linear automata. (Russian) *Mathematical problems in cybernetics, No.* 3 (*Russian*), 140–166, "*Nauka*", *Moscow*, 1991. (Damian Niwiński) **93b:03063** 03D05 (03G05, 06E30, 68Q70, 94C10)

Chastang, Jean-Claude A. (*with* Farouki, Rida T.) Curves and surfaces in geometrical optics. *Mathematical methods in computer aided geometric design, II* (*Biri*, 1991), 239–260, *Academic Press, Boston, MA*, 1992. (Summary) **93f:78001** 78A05 (65D17)

Chastkofsky, Leonard On the Brauer complex of a finite group of Lie type. *J. Algebra* **149** (1992), *no.* 1, 262–273. (James E. Humphreys) **93d:20028** 20C33 (20G05, 20G40)
— On the Cartan invariants of a Chevalley group over GF(p^n). *J. Algebra* **150** (1992), *no.* 2, 388–401. (Thomas Weigel) **93h:20007** 20C20
Chaté, Hugues (*with* Manneville, Paul) Transition to turbulence via spatiotemporal intermittency: modeling and critical properties. *New trends in nonlinear dynamics and pattern-forming phenomena* (*Cargèse*, 1988), 199–214, *NATO Adv. Sci. Inst. Ser. B Phys.*, 237, *Plenum, New York*, 1990. (Ana Noronha da Costa) **93f:76055** 76F20 (58F40, 76M99)
— (*with* Manneville, Paul) Collective behaviors in coupled map lattices with local and nonlocal connections. (English summary) *Chaos* **2** (1992), *no.* 3, 307–313. (Summary) **93f:58147** 58F13
— (*with* Shraiman, B. I.; Pumir, Alain; van Saarloos, Wim; Hohenberg, P. C.; Holen, M.) Spatiotemporal chaos in the one-dimensional complex Ginzburg-Landau equation. (English summary) *Phys. D* **57** (1992), *no.* 3-4, 241–248. (Summary) **93e:58134** 58F13 (35Q55, 58F39)
Chatterjea, S. K. (*with* Chakrabarty, S. P.) An extension of a bilateral generating function of Al-Salam. I. *Pure Math. Manuscript* **8** (1989), 117–121. (Summary) **93b:33006** 33C45
— (*with* Chakrabarty, S. P.) An extension of a bilateral generating function of Chatterjea. I. *Pure Math. Manuscript* **8** (1989), 129–133. (Summary) **93b:33008** 33C45
— (*with* Chakrabarty, S. P.) A unified group-theoretic method of obtaining a more general class of generating relations from a given class of quasibilateral (or quasibilinear) generating relations involving some special functions. *Pure Math. Manuscript* **8** (1989), 153–162. (From the text) **93a:33014** 33C45 (33C80)
Chatterjee, A. *see* **Chatterjee, Aditya**
Chatterjee, A. K. *see* **Chatterjee, Arun Kumar**
Chatterjee, Aditya (*with* Mukherjee, S. P.) On some closure properties of dominance relations between life distributions based on reliability measures. *Calcutta Statist. Assoc. Bull.* **40** (1990/91), *no.* 157-160, 325–342. (William D. Ray) **93f:62135** 62N05 (90B25)
— (*with* Mukherjee, S. P.) On some properties of the multivariate aging classes. (English summary) *Probab. Engrg. Inform. Sci.* **5** (1991), *no.* 4, 523–534. (Summary) **93h:62181** 62N05
— (*with* Mukherjee, S. P.) Stochastic dominance of higher orders and its implications. *Comm. Statist. Theory Methods* **21** (1992), *no.* 7, 1977–1986. (Summary) **93e:62251** 62N05 (60E15, 62E15)
Chatterjee, Arun Kumar (*with* Singh, Maibam Ranjit) Fixed point theorems. (English summary) *Comm. Fac. Sci. Univ. Ankara Ser. A_1 Math. Statist.* **37** (1988), *no.* 1-2, 1–4 (1991). (Summary) **93k:54079** 54H25
Chatterjee, Ashoke K. (*with* Sreedhar, V. V.) Perturbed Chern-Simons theory, fractional statistics, and Yang-Baxter algebra. *Phys. Lett. B* **279** (1992), *no.* 1-2, 69–74. (Summary) **93b:81286** 81T70 (20F36, 81T13)
Chatterjee, Banibarna (*with* Das, Premadhis) Optimal design within the class of equal group incomplete orthogonal arrays. (English summary) *Calcutta Statist. Assoc. Bull.* **41** (1991), *no.* 161-164, 189–195. 62K05
Chatterjee, D. (*with* Banerjee, Narayan; Ghosh, Subir) Chiral bosons coupled to Liouville gravity in the Faddeev-Jackiw formalism. (English summary) *Phys. Rev. D* (3) **46** (1992), *no.* 12, 5590–5597. (Summary) **93i:81207** 81T40 (81T50)
Chatterjee, Kashinath Search designs for searching three-factor interaction effects in the general symmetric and asymmetric factorials. (English summary) *Sankhyā Ser. B* **53** (1991), *no.* 3, 304–326. (Bhagwandas) **93j:62198** 62K15
— (*with* Mukerjee, Rahul) Search designs for searching several three-factor interactions in general factorials. (English summary) *Utilitas Math.* **42** (1992), 181–191. (Summary) **93j:05026** 05B30
Chatterjee, S. *see* **Chatterjee, Sujit**
Chatterjee, S. K. H. K. Nandi's contributions to statistics—an appreciation. *Calcutta Statist. Assoc. Bull.* **40** (1990/91), *no.* 157-160, 1–22. (Editors) **93f:01017a** 01A70
Chatterjee, Sangit (*with* Narayanan, A.) A new approach to discrimination and classification using a Hausdorff type distance. (English summary) *Austral. J. Statist.* **34** (1992), *no.* 3, 391–406. 62H30
— (*with* Yilmaz, Mustafa R.) Chaos, fractals and statistics. *Statist. Sci.* **7** (1992), *no.* 1, 49–68. 58F13 (28A80, 58F40, 62M10)
Chatterjee, Santimay (*with* Sen, S. N.) A bibliography of physics, astronomy, astrophysics and geophysics in India: 1800–1950. I. Introduction. *Indian J. Hist. Sci.* **27** (1992), *no.* 4, suppl., 77 *pp.* 00A15
Chatterjee, Shoutir Kishore Two-stage and multistage procedures. *Handbook of sequential analysis*, 21–45, *Statist. Textbooks Monographs*, 118, *Dekker, New York*, 1991. (*see* **93g:62102**) 62L10 (62L12)
— (*with* Banerjee, Tathagata) Reinforced Mann-Whitney tests for the two-sample location problem. (English summary) *Calcutta Statist. Assoc. Bull.* **41** (1991), *no.* 161-164, 19–43. (S. Rao Jammalamadaka) **93i:62041** 62G10
— (*with* Samanta, Sisir Kumar) An alternative approach to variable selection for discrimination. (English summary) *Sankhyā Ser. B* **54** (1992), *no.* 1, 77–91. (Summary) **93g:62084** 62H30
— (*with* Bandyopadhyay, Uttam) On the change-point problem. *Sequential Anal.* **11** (1992), *no.* 2, 101–118. (Albrecht Irle) **93i:62068** 62L10
Chatterjee, Sujit A class of multidimensional cosmological models and its possible astrophysical consequences. (English summary) *Ann. Physics* **218** (1992), *no.* 1, 121–138. (Summary) **93f:83085** 83F05 (83E15)
— (*with* Banerjee, Asit Kumar; Dutta Choudhury, S. B.) Nonstatic perfect fluid sphere in higher-dimensional space-time. (English summary) *Gen. Relativity Gravitation* **24** (1992), *no.* 9, 991–999. (Summary) **93g:83060** 83C55 (83E15)
— (*with* Banerjee, Asit Kumar) Kaluza-Klein type of inhomogeneous cosmological model. (English summary) *Classical Quantum Gravity* **10** (1993), *no.* 1, L1–L5. (Summary) **93h:83034** 83E15
— (*with* Sil, A.) Extended inflation in higher-dimensional spacetime with a Brans-Dicke scalar field. (English summary) *Gen. Relativity Gravitation* **25** (1993), *no.* 3, 307–323. (Summary) **93j:83065** 83D05 (83F05)
Chatterji, B. N. (*with* Parthasarathy, Guturu) A quadratic classifier for high-dimensional, periodic-measurement pattern-recognition problems. *Inform. Sci.* **63** (1992), *no.* 1-2, 113–137. (Costică Cazacu) **93g:68116** 68T10
— *see also* **Das, P. P., 93g:68146**
Chatterji, S. D. A problem concerning limits. (English summary) *Ricerche Mat.* **40** (1991), *no.* 1, 65–74. (Aljoša Volčič) **93k:54006** 54A20 (26A03, 54D15)
— *see also* **Yearbook: Surveys on mathematics, 93j:00006**
Chatters, A. W. Matrices, idealisers, and integer quaternions. *J. Algebra* **150** (1992), *no.* 1, 45–56. (Lawrence S. Levy) **93h:16057** 16S50 (15A33)
— (*with* Gilchrist, M. P.; Wilson, D.) Unique factorisation rings. *Proc. Edinburgh Math. Soc.* (2) **35** (1992), *no.* 2, 255–269. (Kenneth A. Brown) **93j:16019** 16U30 (16P60, 16R99)
— (*with* Hajarnavis, C. R.; Lenagan, T. H.) Ideal arithmetic in affine PI rings. *Quart. J. Math. Oxford Ser.* (2) **43** (1992), *no.* 171, 297–302. (Amiram Braun) **93g:16037** 16R20 (16P99)
Chattopadhyay, A. K. (*with* Chakravorti, S. R.) On testing homogeneity of variances of correlated variables with incomplete data. (English summary) *Calcutta Statist. Assoc. Bull.* **42** (1992), *no.* 165-166, 29–40. (Summary) **93m:62048** 62F04 (62F03)
Chattopadhyay, K. C. (*with* Hazra, R. N.; Samanta, S. K.) Gradation of openness: fuzzy topology. (English summary) *Fuzzy Sets and Systems* **49** (1992), *no.* 2, 237–242. (Summary) **93f:54004** 54A40 (04A72)
— (*with* Samanta, S. K.) Fuzzy topology: fuzzy closure operator, fuzzy compactness and fuzzy connectedness. (English summary) *Fuzzy Sets and Systems* **54** (1993), *no.* 2, 207–212. (Summary) **93k:54016** 54A40 (04A72)
Chattopadhyay, S. (*with* Mukhopadhyay, Nitis) Sequential methodologies for comparing exponential mean survival times. *Sequential Anal.* **10** (1991), *no.* 3-4, 139–148. (K. F. Yu) **93c:62135** 62L12
Chaturvedi, A. *see* **Chaturvedi, Anoop**
Chaturvedi, Ajit (*with* Chaturvedi, Anoop) Further remarks on sequential point estimation of regression parameters. (Hindi summary) *J. Indian Soc. Agricultural Statist.* **43** (1991), *no.* 1, 40–48, ii. (M. Hušková) **93a:62110** 62L12 (62J05)
— (*with* Singh, R. Karan) A note on sequential estimation of the difference between location parameters of two negative exponential distributions. *J. Indian Statist. Assoc.* **29** (1991), *no.* 2, 107–114. (Summary) **93b:62117** 62L12
— (*with* Pandey, S. K.; Gupta, Manju) On a class of asymptotically risk-efficient sequential procedures. (English summary) *Scand. Actuar. J.* **1991**, *no.* 1, 87–96. (Albrecht Irle) **93i:62070** 62L12
— (*with* Shukla, N. D.; Shukla, Pramod S.) Fixed-width confidence intervals for contrasts in the means. *Ann. Inst. Statist. Math.* **44** (1992), *no.* 1, 157–167. (B. L. S. Prakasa Rao) **93f:62114** 62L12
Chaturvedi, Anoop (*with* Shukla, Govind) Stein rule estimation in linear model with nonscalar error covariance matrix. (English summary) *Sankhyā Ser. B* **52** (1990), *no.* 3, 293–304. (Summary) **93e:62178** 62J07
— (*with* Chaturvedi, Ajit) Further remarks on sequential point estimation of regression parameters. (Hindi summary) *J. Indian Soc. Agricultural Statist.* **43** (1991), *no.* 1, 40–48, ii. (M. Hušková) **93a:62110** 62L12 (62J05)
Chaturvedi, S. (*with* Shanta, P.; Kapoor, Ashok K.; Srinivasan, V.) Parastatistical systems at finite temperatures in thermofield dynamics. *Internat. J. Modern Phys. A* **7** (1992), *no.* 16, 3807–3816. (Lech Jakóbczyk) **93f:82007** 82B10 (81S05)
— (*with* Shanta, P.; Srinivasan, V.) A model which interpolates between the Jaynes-Cummings model and the Buck-Sukumar model. *J. Modern Opt.* **39** (1992), *no.* 6, 1301–1308. (Summary) **93b:81324** 81V80 (81R30, 81R50)
— (*with* Kumari, M. Krishna; Shanta, P.; Srinivasan, V.) On q-deformed para oscillators and para-q oscillators. (English summary) *Modern Phys. Lett. A* **7** (1992), *no.* 28, 2593–2600. (Summary) **93e:81051** 81R50 (81R30, 81S05)
Chatyrko, V. A. Compact spaces with noncoinciding dimensions. (Russian) *Trudy Moskov. Mat. Obshch.* **53** (1990), 192–228, 261; *translation in Trans. Moscow Math. Soc.* **1991**, 199–236. (Roman Pol) **93e:54025** 54F45 (54F99)
— Classification of metric compacta with property C. *Questions Answers Gen. Topology* **10** (1992), *no.* 1, 51–62. (Roman Pol) **93a:54033** 54F45 (54E45)
Chatzidakis, Zoé (*with* Pappas, Peter) Topological representations of abelian group rings. *Proc. London Math. Soc.* (3) **63** (1991), *no.* 3, 495–518. (Donald S. Passman) **93b:16047** 16S34 (16E50)
— (*with* Pappas, Peter) von Neumann regular group rings not representable as rings of continuous functions. *Algebra Universalis* **29** (1992), *no.* 3, 332–337. (Jaroslav Zemánek) **93i:16039** 16S34
— (*with* Pappas, Peter) On the splitting group basis problem for abelian group rings. *J. Pure Appl. Algebra* **78** (1992), *no.* 1, 15–26. (D. A. R. Wallace) **93b:20012** 20C07 (16S34, 16U60)
le khanh Chau *see* **Le Khanh Chau**
Chau, F. P. (*with* Eatock Taylor, R.) Second-order wave diffraction by a vertical cylinder. (English summary) *J. Fluid Mech.* **240** (1992), 571–599. (Summary) **93d:76005** 76B15
Chau, H. Lewis (*with* Parker, D. Stott) Narrowing grammar: theory, implementation, and applications. (English summary) *J. Logic Programming* **14** (1992), *no.* 3-4, 253–286. (Ranjan Chaudhuri) **93j:68107** 68Q50
Chau, Ling-Lie Nonlinear differential equations in physics and their geometrical integrability properties. *Differential geometric methods in theoretical physics* (*Davis, CA*, 1988), 71–77, *NATO Adv. Sci. Inst. Ser. B Phys.*, 245, *Plenum, New York*, 1990. (R. S. Ward) **93c:81237** 81T60 (58F07, 81–02, 81T13, 83E30)
— (*with* Yu, Yue) Unitary polynomials in normal matrix models and wave functions for the fractional quantum Hall effects. *Phys. Lett. A* **167** (1992), *no.* 5-6, 452–458. (Summary) **93d:81151** 81T40 (81V25, 82B20, 82D55)
— *see also* **Differential geometric methods in theoretical physics, 93a:00022**
Chaubey, Y. P. (*with* Tripathi, T. P.) Improved estimation of a finite population mean based on paired observations. (English summary) *Comm. Statist. Theory Methods* **21** (1992), *no.* 11, 3327–3333. (David Bellhouse) **93m:62033** 62D05
Chaudhary, M. S. (*with* John, J. K.) Generalized Weber transformation. *Gaṇita Sandesh* **5** (1991), *no.* 2, 96–98. (Richard D. Carmichael) **93b:46079** 46F12 (44A15)
— (*with* John, J. K.) On Bessel transformation and some Abelian theorems. *Sci. Phys. Sci.* **3** (1991), *no.* 2, 113–118. (Summary) **93b:44011** 44A20 (46F12, 47B38)
— (*with* John, J. K.) A new generalized Hankel transformation arising from orthonormal series expansion. (English summary) *Ultra Sci. Phys. Sci.* **4** (1992), *no.* 2, 102–105. (Summary) **93j:44007** 44A15 (46F12)
Chaudhary, Prakash (*with* Rajput, Balwant Singh) Role of six-current in six-space. (English summary) *Indian J. Pure Appl. Phys.* **29** (1991), *no.* 3, 153–156. (Summary)

93h:81049 81R20 (81V10, 83A05)

Chaudhary, Shobha (*with* Tuteja, R. K.) Order α-β weighted information energy. (English summary) *Inform. Sci.* **66** (1992), *no.* 1-2, 53–61. (Summary) **93f:94009** 94A17 (68Q30)

Chaudhry, M. A. *see* **Chaudhry, Muhammad Aslam**

Chaudhry, Maqsood A. (*with* Schinzinger, Roland) Numerical computation of the Schwarz-Christoffel transformation parameters for conformal mapping of arbitrarily shaped polygons with finite vertices. *COMPEL* **11** (1992), *no.* 2, 263–275. (Summary) **93c:65036** 65E05 (30C30)

— An extended Schwarz-Christoffel transformation for numerical mapping of polygons with curved segments. *COMPEL* **11** (1992), *no.* 2, 277–293. (Summary) **93c:65037** 65E05 (30C30)

Chaudhry, Mohan L. (*with* Gupta, U. C.; Madill, B. R.) Computational aspects of bulk-service queueing system with variable capacity and finite waiting space: $M/G^Y/1/N + B$. *J. Oper. Res. Soc. Japan* **34** (1991), *no.* 4, 404–421. (Summary) **93a:60142** 60K25 (90B22)

— (*with* Medhi, J.; Templeton, James G. C.) Single-arrival bulk-service queues with one server. *Contributions to stochastics*, 186–198, *Wiley, New York*, 1992. (*see* **93m:60007**) 60K25

— Computing stationary queueing-time distributions of $GI/D/1$ and $GI/D/c$ queues. (English summary) *Naval Res. Logist.* **39** (1992), *no.* 7, 975–996. (Summary) **93h:60147** 60K25

— Numerical issues in computing steady-state queueing-time distributions of single-server bulk-service queues: $M/G^b/1$ and $M/G^d/1$. (English summary) *ORSA J. Comput.* **4** (1992), *no.* 3, 300–310. (Summary) **93f:90070** 90B22 (60K25)

— (*with* Agarwal, Manju; Templeton, James G. C.) Exact and approximate numerical solutions of steady-state distributions arising in the queue $GI/G/1$. *Queueing Systems Theory Appl.* **10** (1992), *no.* 1-2, 105–152. (Summary) **93b:60207** 60K25 (65U05, 90B22)

— (*with* Agarwal, Manju; Templeton, James G. C.) Computing steady-state queueing-time distributions of single-server queues: $GI^X/M/1$. (English summary) *Z. Oper. Res.* **37** (1993), *no.* 1, 13–29. (Summary) **93m:90037** 90B22 (60K25)

Chaudhry, Muhammad Anwar Characterization of weakly positive implicative BCI-algebras. *J. Natur. Sci. Math.* **30** (1990), *no.* 2, 59–75. (James G. Raftery) **93a:06018** 06F35 (03G25)

Chaudhry, Muhammad Aslam (*with* Pandey, J. N.) The Hilbert problem—a distributional approach. *Canad. Math. Bull.* **34** (1991), *no.* 3, 321–328. (Om P. Singh) **93d:44007** 44A15 (46F20)

— (*with* Ahmad, Munir) On improper integrals of products of logarithmic, power and Bessel functions. *Bull. Austral. Math. Soc.* **45** (1992), *no.* 3, 395–398. (S. P. Goyal) **93h:33003** 33C10

Chaudhuri, A. *see* **Chaudhuri, Arijit Ray**

Chaudhuri, A. K. (*with* Das, Phullendu) Fuzzy connected sets in fuzzy topological spaces. (English summary) *Fuzzy Sets and Systems* **49** (1992), *no.* 2, 223–229. (Summary) **93f:54005** 54A40 (04A72)

Chaudhuri, Arijit Ray (*with* Mitra, Joydip) A note on two variance estimators for Rao-Hartley-Cochran estimator. (English summary) *Comm. Statist. Theory Methods* **21** (1992), *no.* 12, 3535–3543. (Summary) **93h:62013** 62D05

— Randomized response: estimating mean square errors of linear estimators and finding optimal unbiased strategies. (English summary) *Metrika* **39** (1992), *no.* 6, 341–357. (Summary) **93k:62022** 62D05

ray Chaudhuri, Atasi *see* **Ray Chaudhuri, Atasi**

ray-Chaudhuri, D. K. *see* **Ray-Chaudhuri, D. K.**

Chaudhuri, G. (*with* Borwankar, J. D.; Rao, P. R. K.) Bhattacharyya distance based linear discriminant function for stationary time series. *Comm. Statist. Theory Methods* **20** (1991), *no.* 7, 2195–2205. (Juan Carlos Abril) **93b:62124** 62M10 (62H30)

— (*with* Borwankar, J. D.; Rao, P. R. K.) Bhattacharyya distance-based linear discrimination. *J. Indian Statist. Assoc.* **29** (1991), *no.* 1, 47–55. (Zhi-Dong Bai) **93a:62091** 62H30 (62M10)

— Linear discriminant function for complex normal time series. (English summary) *Statist. Probab. Lett.* **15** (1992), *no.* 4, 277–279. (Summary) **93j:62221** 62M10

Chaudhuri, K. S. (*with* Ray, Sumita Saha) Bionomic exploitation of Lotka-Volterra prey-predator system. *Bull. Calcutta Math. Soc.* **83** (1991), *no.* 2, 175–186. (Guo Ren Dai) **93a:92017** 92D40 (34C05, 49K15)

pal Chaudhuri, P. *see* **Pal Chaudhuri, P.**

Chaudhuri, P. K. (*with* Chakrabarty, N. R.) Geometrical solution to some planar constrained minimax problems involving the weighted rectilinear metric. (English summary) *Asia-Pacific J. Oper. Res.* **9** (1992), *no.* 2, 135–144. 90C08 (49K35)

Chaudhuri, Probal Nonparametric estimates of regression quantiles and their local Bahadur representation. *Ann. Statist.* **19** (1991), *no.* 2, 760–777. (Thomas W. Sager) **93d:62055** 62G05 (62E20, 62G20)

— Global nonparametric estimation of conditional quantile functions and their derivatives. *J. Multivariate Anal.* **39** (1991), *no.* 2, 246–269. (Sh. A. Khashimov) **93d:62056** 62G05

— Generalized regression quantiles: forming a useful toolkit for robust linear regression. (English summary) *L_1-statistical analysis and related methods* (*Neuchâtel*, 1992), 169–185, *North-Holland, Amsterdam*, 1992. (Summary) **93m:62065** 62G05 (62F35, 62J02)

— Multivariate location estimation using extension of R-estimates through U-statistics type approach. *Ann. Statist.* **20** (1992), *no.* 2, 897–916. (A. K. Md. Ehsanes Saleh) **93h:62072** 62G05 (62E20, 62G20, 62H10, 62H12)

Chaudhury, Santanu (*with* Subramanian, S.; Parthasarathy, Guturu) Abductive formalism for two-dimensional object recognition. (English summary) *Inform. Sci.* **68** (1993), *no.* 1-2, 33–63. (Summary) **93j:68220** 68U10

Chaudhury, Tarakeswar (*with* Krori, K. D.; Borgohain, P.; Das, Kanika; Mahanta, Chandra Rekha) Charged solutions in higher dimensions. (English and French summaries) *Canad. J. Phys.* **70** (1992), *no.* 9, 752–759. (Summary) **93j:83071** 83E15 (83C22)

Chaumat, Jacques (*with* Chollet, Anne-Marie) Représentation intégrale de certaines classes de jets de Whitney. [Integral representation of certain classes of Whitney jets] *The Madison Symposium on Complex Analysis* (*Madison, WI*, 1991), 133–153, *Contemp. Math.*, 137, *Amer. Math. Soc., Providence, RI*, 1992. (Harold P. Boas) **93k:32004** 32A25 (32E30)

— (*with* Chollet, Anne-Marie) Théorème de Whitney dans des classes ultradifférentiables. (English and French summaries) [Whitney theorem in ultradifferentiable classes] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 8, 901–906. Wieslaw Pleśniak (Zbl 762:26014) **93m:58013** 58C05 (26E10)

Chaumette, François (*with* Espiau, Bernard) Some issues in the control of rigid robots in a sensory space. (English summary) *Advanced robot control* (*Grenoble*, 1990), 152–171, *Lecture Notes in Control and Inform. Sci.*, 162, *Springer, Berlin*, 1991. (*see* **93d:70002**) 70Q05 (70B15)

Chaunier, Claude (*with* Lygerōs, Nik) Progrès dans l'énumération des posets. (English summary) [Progress in the enumeration of posets] *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 10, 691–694. (Summary) **93b:06003** 06A07 (05A15)

— (*with* Lygerōs, Nik) The number of orders with thirteen elements. (English summary) *Order* **9** (1992), *no.* 3, 203–204. (Summary) **93m:06001** 06–04 (04A20, 05A15, 06A07)

Chaurasia, V. B. L. Application of the multivariable H-function in heat conduction in a rod under the Robin condition. *Jñānābha* **21** (1991), 77–82. (Summary) **93a:80003** 80A20 (33C60, 35K05)

— (*with* Lal, Girdhari) Use of the H-function of several complex variables and a general class of polynomials in heat conduction in a rod under the Robin condition. *Indian J. Pure Appl. Math.* **23** (1992), *no.* 7, 489–496. (Summary) **93f:33012** 33C60 (80A20)

Chaus, N. N. Density and flow of energy in nonrelativistic quantum mechanics. (Russian. Russian and Ukrainian summaries) *Ukraïn. Mat. Zh.* **44** (1992), *no.* 8, 1090–1095; *translation in Ukrainian Math. J.* **44** (1992), *no.* 8, 990–995 (1993). (K. Wódkiewicz) **93j:81011** 81Q05

Chauvat, Philippe (*with* Gatignol, Renée) Macroscopic variables in discrete kinetic theory. (English summary) *Discrete models of fluid dynamics* (*Figueira da Foz*, 1990), 1–11, *Ser. Adv. Math. Appl. Sci.*, 2, *World Sci. Publishing, River Edge, NJ*, 1991. (Giuseppe Toscani) **93j:82059** 82C40 (76P05)

— (*with* Gatignol, Renée) Euler and Navier-Stokes description for a class of discrete models of gases with different moduli. (English summary) Proceedings of the Fourth International Workshop on Mathematical Aspects of Fluid and Plasma Dynamics (Kyoto, 1991). *Transport Theory Statist. Phys.* **21** (1992), *no.* 4-6, 417–435. (Jian Ning Chen) **93m:82037** 82C40 (76N15, 76P05)

Chauvet, Pablo (*with* Cervantes-Cota, Jorge; Núñez Yépez, H. N.) Vacuum-analytic solutions in Bianchi-type universes. *Classical Quantum Gravity* **9** (1992), *no.* 8, 1923–1936. (R. N. Tiwari) **93k:83060** 83D05

— (*with* Pimentel, Luis O.) Cosmological models in the scalar-tetradic theory B. *Gen. Relativity Gravitation* **24** (1992), *no.* 3, 243–258. (V. B. Johri) **93a:83031** 83D05

Chauvin, Brigitte (*with* Olivares-Rieumont, P.; Rouault, Alain) Fluctuations of spatial branching processes with mean-field interaction. *Adv. in Appl. Probab.* **23** (1991), *no.* 4, 716–732. (Anton Wakolbinger) **93d:60137** 60J80 (35R60, 60G60, 60K35)

— Product martingales and stopping lines for branching Brownian motion. *Ann. Probab.* **19** (1991), *no.* 3, 1195–1205. (J. D. Biggins) **93b:60188** 60J80 (60G44)

— (*with* Rouault, Alain; Wakolbinger, Anton) Growing conditioned trees. *Stochastic Process. Appl.* **39** (1991), *no.* 1, 117–130. (Luis G. Gorostiza) **93d:60138** 60J80 (60G57)

— (*with* Rouault, Alain) Les méthodes particulaires de Sherman et Peskin et de McKean. [The Sherman-Peskin and McKean particle methods] *Probabilités numériques*, 83–89, *Collect. Didact.*, 10, *INRIA, Rocquencourt*, 1992. (*see* **93k:65002**) 35R60 (35Q99, 65P05)

Chaux C., Alba Leonor (*with* Muñoz Quevedo, José M.) The order topology of superdense sets. (Spanish. Spanish summary) *Bol. Mat.* **22** (1988), *no.* 1-3, 1–10 (1991). 54F05

— (*with* Muñoz Quevedo, José M.) Convexity in ordered topological spaces. (Spanish. Spanish summary) *Bol. Mat.* **22** (1988), *no.* 1-3, 23–36 (1991). 46A40

Chavel, Isaac (*with* Karp, Leon) Large time behavior of the heat kernel: the parabolic λ-potential alternative. *Comment. Math. Helv.* **66** (1991), *no.* 4, 541–556. (Robert Brooks) **93a:58160** 58G11

— (*with* Feldman, Edgar A.) Isoperimetric constants, the geometry of ends, and large time heat diffusion in Riemannian manifolds. *Proc. London Math. Soc.* (3) **62** (1991), *no.* 2, 427–448. (From the text) **93c:58209** 58G11 (58G18, 58G32)

Chaves, Lucas M. (*with* Rigas, A.) On a conjugate orbit of G_2. *Math. J. Okayama Univ.* **33** (1991), 155–161. (M. Mimura) **93d:57067** 57S15

— (*with* Derdziński, A.; Rigas, A.) A condition for positivity of curvature. (English summary) *Bol. Soc. Brasil. Mat.* (*N.S.*) **23** (1992), *no.* 1-2, 153–165. (Gerard Walschap) **93j:53050** 53C21 (53C20)

Chavey, Keith L. (*with* Brualdi, Richard A.) Sign-nonsingular matrix pairs. *SIAM J. Matrix Anal. Appl.* **13** (1992), *no.* 1, 36–40. (B. Levinger) **93c:15005** 15A15 (15A09, 15A23)

— (*with* Brualdi, Richard A.; Shader, Bryan L.) Conditional sign-solvability. (English summary) *Math. Comput. Modelling* **17** (1993), *no.* 1, 141–148. (Horst Hollatz) **93m:15003** 15A06 (65F99)

castillo-Chavez, Carlos *see* **Castillo-Chavez, Carlos**

Chawathe, P. D. (*with* Joshi, N. A.) On line-graphic degree-sequences. (English summary) *Proceedings of the Symposium on Graph Theory and Combinatorics* (*Cochin*, 1991), 25–39, *Publication*, 21, *Centre Math. Sci., Trivandrum*, 1991. (Summary) **93k:05144** 05C75

Chayes, J. T. (*with* Chayes, L.; Grannan, E.; Swindle, G.) Phase transitions in Mandelbrot's percolation process in three dimensions. *Probab. Theory Related Fields* **90** (1991), *no.* 3, 291–300. (F. M. Dekking) **93a:60156** 60K35 (60J80, 82B26, 82B43)

Chayes, L. On the critical behavior of the first passage time in $d \geq 3$. *Helv. Phys. Acta* **64** (1991), *no.* 7, 1055–1071. (John C. Wierman) **93e:60193** 60K35 (82C43)

— (*with* Chakravarty, Sarbarish; Kivelson, S. A.) Absence of pair binding in the $U = \infty$ Hubbard model. *Lett. Math. Phys.* **23** (1991), *no.* 4, 265–270. (N. N. Ganikhodzhaev) **93a:82005** 82B20

— (*with* Chayes, J. T.; Grannan, E.; Swindle, G.) Phase transitions in Mandelbrot's percolation process in three dimensions. *Probab. Theory Related Fields* **90** (1991), *no.* 3, 291–300. (F. M. Dekking) **93a:60156** 60K35 (60J80, 82B26, 82B43)

Chazelle, Bernard Triangulating a simple polygon in linear time. 31*st Annual Symposium on Foundations of Computer Science, Vol. I, II* (*St. Louis, MO*, 1990), 220–230, *IEEE Comput. Soc. Press, Los Alamitos, CA*, 1990. (Peter Gritzmann) **93e:68129** 68U05 (68Q25)

— (*with* Sharir, Micha; Welzl, Emo) Quasi-optimal upper bounds for simplex range searching and new zone theorems. (English summary) 1990 Computational Geometry

Symposium (Berkeley, CA, 1990). *Algorithmica* **8** (1992), *no.* 5-6, 407–429. (Summary) **93j:68209** 68U05 (68Q25)

— (*with* Edelsbrunner, Herbert; Guibas, Leonidas J.; et al.) Counting and cutting cycles of lines and rods in space. *Comput. Geom.* **1** (1992), *no.* 6, 305–323. (Henk Meijer) **93m:68164** 68U05 (65Y25, 68Q25, 68R05)

— (*with* Edelsbrunner, Herbert) An optimal algorithm for intersecting line segments in the plane. *J. Assoc. Comput. Mach.* **39** (1992), *no.* 1, 1–54. (Summary) **93h:68139** 68U05 (52B55, 68Q25)

— (*with* Matoušek, Jiří) On linear-time deterministic algorithms for optimization problems in fixed dimension. (English summary) *Proceedings of the Fourth Annual ACM-SIAM Symposium on Discrete Algorithms* (*Austin, TX*, 1993), 281–290, *ACM, New York*, 1993. (Summary) **93m:90051** 90C05

Che, Hao (*with* Lin, D. L.; Xia, Yu) Critical temperature of $(d+1)$-dimensional Ising films. (English summary) *Phys. Rev. A* (3) **46** (1992), *no.* 4, 1805–1809. (Summary) **93e:82013** 82B20 (82B26)

Cheah, P. K. (*with* Fraser, D. A. S.; Reid, N.; Tapia, A.) Third order asymptotics: connections among test quantities. (English summary) *Comm. Statist. Theory Methods* **21** (1992), *no.* 8, 2127–2133. (Summary) **93f:62022** 62E20

Chebakov, M. I. (*with* Lubyagin, I. A.; Pozharskiĭ, D. A.) Generalization of Boussinesq and Cerruti problems for the case of an elastic three-dimensional wedge. (Russian) *Dokl. Akad. Nauk SSSR* **321** (1991), *no.* 1, 58–62; *translation in Soviet Phys. Dokl.* **36** (1991), *no.* 11, 797–799 (1992). (From the text) **93b:73013** 73C02

— (*with* Lubyagin, I. A.; Pozharskiĭ, D. A.) Penetration of a stamp in the form of an elliptic paraboloid into an elastic three-dimensional wedge. (Russian. Russian summary) *Prikl. Mat. Mekh.* **56** (1992), *no.* 2, 286–295; *translation in J. Appl. Math. Mech.* **56** (1992), *no.* 2, 244–252. 73T05

Cheban, A. M. The Sushkevich postulates for distributive identities. (Russian) *Algebraic structures and geometry* (*Russian*), 152–155, 162, "*Shtiintsa*", *Kishinev*, 1991. (Ján Duplák) **93c:20113** 20N05

Cheban, D. N. Dissipative functional-differential equations. (Russian. English and Moldavian summaries) *Izv. Akad. Nauk Respub. Moldova Mat.* **1991,** *no.* 2, 3–12, 93. (A. Pelczar) **93h:34121** 34K15 (34K25)

— Some problems in the theory of dissipative dynamical systems. II. (Russian) *Mat. Issled. No.* 124, *Funktsional. Metod. Teorii Differ. Uravn.* (1992), 106–122, 144. (Helmut Ludescher) **93g:54051** 54H20 (34C35)

Cheban, V. G. A problem on the longitudinal impact of a rigid body on a bar. (Russian. English and Moldavian summaries) *Izv. Akad. Nauk Respub. Moldova Mat.* **1991,** *no.* 2, 49–57, 94. 73D05

Chebanu, V. M. (*with* Danilyuk, V. I.) Centro-affine-invariant canonical forms of a two-dimensional differential system with cubic nonlinearities. (Russian) *Mat. Issled. No.* 124, *Funktsional. Metod. Teorii Differ. Uravn.* (1992), 43–55, 143. (Summary) **93b:34049** 34C20 (34A34)

Chebotar', K. S. A practical approach to the solution of the circulatory problem for attribute grammars. (Russian. English and Moldavian summaries) *Izv. Akad. Nauk Respub. Moldova Mat.* **1991,** *no.* 2, 32–39, 93. (Karel Culik, II) **93f:68063** 68Q50 (68N20, 68Q60)

Chebotarëv, A. M. The theory of dynamical semigroups and its applications. *Probability theory and mathematical statistics, Vol. I* (*Vilnius*, 1989), 217–227, "*Mokslas*", *Vilnius*, 1990. (Robin Hudson) **93i:60139** 60J35 (46L55, 47D07, 47N30, 47N50, 81S99)

— Minimal solutions in classical and quantum stochastics. *Quantum probability & related topics*, 79–91, *QP-PQ, VII, World Sci. Publishing, River Edge, NJ*, 1992. (Kalyan B. Sinha) **93m:81079** 81S25 (46L55)

Chebotarev, A. N. Automata interaction. (Russian. English and Ukrainian summaries) *Kibernet. Sistem. Anal.* **1991,** *no.* 6, 17–29, 187; *translation in Cybernet. Systems Anal.* **27** (1991), *no.* 6, 810–819 (1992). (Summary) **93h:68099** 68Q75

Chebotarëv, A. Yu. Optimal control problems for plane flows of a viscous incompressible fluid. (Russian. Russian summary) *Dinamika Sploshn. Sredy No.* 97 (1990), 167–180, 215. (Erich Miersemann) **93f:76023** 76D05 (49K20, 76M99)

— Subdifferential boundary value problems for stationary Navier-Stokes equations. (Russian. Russian summary) *Differentsial'nye Uravneniya* **28** (1992), *no.* 8, 1443–1450, 1471; *translation in Differential Equations* **28** (1992), *no.* 8, 1189–1196 (1993). (Summary) **93k:35203** 35Q30 (76D05)

Cheb-Terrab, E. S. (*with* Barcelos-Neto, J.) Faddeev-Jackiw quantization in superspace. *Z. Phys. C* **54** (1992), *no.* 1, 133–138. (G. Vitiello) **93g:81184** 81T60 (81S10)

Checa, E. (*with* Casasús Estelles, Trinidad; Olmos, F.; Chinesta, F.; Torres, R.) Qualitative and numerical study of the convection-diffusion equation and approximation of the solution on a polynomial-exponential basis. (Spanish. Spanish summary) *Proceedings of the XII Congress on Differential Equations and Applications/II Congress on Applied Mathematics* (*Spanish*) (*Oviedo*, 1991), 209–214, *Univ. Oviedo, Oviedo*, 1991. (*see* **93j:00009**) 76M25 (35J99, 65N99, 76Rxx)

Chechkin, A. V. ★ Математическая информатика. (Russian) [Mathematical information science] With an English summary. "*Nauka*", *Moscow*, 1991. 414 *pp. ISBN* 5-02-014136-4 (Zbigniew Banaszak) **93a:68144** 68T35

— (*with* Tur, A. V.; Yanovskiĭ, V. V.) Negative viscosity and generation of dissipative solitons and zonal dissipative structures by drift waves. (English summary) *Phys. Fluids B* **4** (1992), *no.* 11, 3513–3523. (Summary) **93i:76103** 76X05 (76E25, 76E30, 82D10)

Chechkin, G. A. Spectral properties of an elliptic problem with rapidly oscillating boundary conditions. (Russian) *Boundary value problems for nonclassical equations in mathematical physics* (*Russian*) (*Novosibirsk*, 1989), 197–200, *Akad. Nauk SSSR Sibirsk. Otdel., Inst. Mat., Novosibirsk*, 1989. (*see* **93d:35001**) 35J25 (35P05)

Chee, P. S. (*with* Seah, S. W.; Tan, K. T.) The Malaysian Mathematical Society, 1970–1991. (Malayan summary) *Menemui Mat.* **13** (1991), *no.* 3, 89–120. (From the introduction) **93b:01046** 01A74

Chee, Yeow Meng Graphical t-designs with block sizes three and four. *Discrete Math.* **91** (1991), *no.* 2, 201–206. (From the text) **93c:05020** 05B05 (05C99)

— (*with* Lim, Andrew) The algorithmic complexity of colour switching. (English summary) *Inform. Process. Lett.* **43** (1992), *no.* 2, 63–68. (Summary) **93g:68106** 68R10 (05C85, 68Q25)

— On graphical quintuple systems. (English summary) *J. Symbolic Comput.* **13** (1992), *no.* 6, 677–681. (Summary) **93d:05019** 05B05

— (*with* Royle, Gordon F.) Enumeration of small nonisomorphic 1-rotational twofold triple systems. With microfiche supplement. *Math. Comp.* **59** (1992), *no.* 200, 609–612. (K. T. Phelps) **93a:05025** 05B07

Cheeger, Jeff (*with* Bismut, Jean-Michel) Remarks on the index theorem for families of Dirac operators on manifolds with boundary. *Differential geometry*, 59–83, *Pitman Monographs Surveys Pure Appl. Math.*, 52, *Longman Sci. Tech., Harlow*, 1991. (Jürgen Eichhorn) **93k:58211** 58G10

— (*with* Gromov, Mikhael L.) Chopping Riemannian manifolds. *Differential geometry*, 85–94, *Pitman Monographs Surveys Pure Appl. Math.*, 52, *Longman Sci. Tech., Harlow*, 1991. (Y. Mutô) **93k:53034** 53C20 (53C23)

— (*with* Fukaya, Kenji; Gromov, Mikhael L.) Nilpotent structures and invariant metrics on collapsed manifolds. *J. Amer. Math. Soc.* **5** (1992), *no.* 2, 327–372. (Viktor Schroeder) **93a:53036** 53C23 (53C20)

— (*with* Anderson, Michael T.) C^α-compactness for manifolds with Ricci curvature and injectivity radius bounded below. *J. Differential Geom.* **35** (1992), *no.* 2, 265–281. (Xiao Wei Peng) **93c:53028** 53C23 (53C21)

Cheema, M. S. Some aspects of Professor Hansraj Gupta's work. *J. Indian Math. Soc.* (*N.S.*) **57** (1991), *no.* 1-4, 17–21. (Gloria Olive) **93d:01061** 01A70 (05-03)

— (*with* Lomont, J. S.) Generalizations of the Kermack-McCrea identity. *J. Indian Math. Soc.* (*N.S.*) **57** (1991), *no.* 1-4, 79–93. (Khristo N. Boyadzhiev) **93i:47044** 47B47

Cheer, A. Y. (*with* Saleem, M.; Pulliam, Thomas H.) Acceleration of convergence and spectrum transformation of implicit finite difference operators associated with Navier-Stokes equations. (English summary) *J. Comput. Phys.* **104** (1993), *no.* 1, 1–13. (From the summary) **93g:76089** 76M20

— (*with* Goldston, D. A.) Simple zeros of the Riemann zeta-function. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 2, 365–372. (Aleksandar Ivić) **93g:11092** 11M26

— *see also* **Fluid dynamics in biology, 93j:76003**

Chegis, I. A. Solution of a problem on the distribution of vortex flows. (Russian. Russian summary) *Zh. Vychisl. Mat. i Mat. Fiz.* **32** (1992), *no.* 7, 1046–1056; *translation in Comput. Math. Math. Phys.* **32** (1992), *no.* 7, 929–939. (From the summary) **93m:78004** 78A25 (35Q60)

Chegis, R. Yu. *see* **Čiegis, Raimondas**

Chegis, Raim. Yu. *see* **Čiegis, Raimondas**

Chegis, Raimondas *see* **Čiegis, Raimondas**

Chegis, Rem. Yu. *see* **Čiegis, Rem.**

Chehab, Y. *see* **Mori, Takehiro, 93j:93110** *and* **Chen, Jie, 93k:93079**

Chein, O. Examples and methods of construction. *Quasigroups and loops: theory and applications*, 27–93, *Sigma Ser. Pure Math.*, 8, *Heldermann, Berlin*, 1990. (*see* **93g:20133**) 20N05

— *see also* **Quasigroups and loops: theory and applications, 93g:20133**

Chekanov, S. G. Broad subgroups of some sporadic groups. (Russian) *Algebra i Logika* **29** (1990), *no.* 1, 82–101, 130; *translation in Algebra and Logic* **29** (1990), *no.* 1, 60–74 (1991). (V. D. Mazurov) **93b:20029** 20D08

Chekanu, G. P. Algebraicity of algebras of finite special rank. (Russian. English, Russian and Moldavian summaries) *Izv. Akad. Nauk Respub. Moldova Mat.* **1991,** *no.* 3, 78–80, 93. (Summary) **93f:08002** 08A05

Chekashkin, Yu. V. (*with* Babadzhanyants, L. K.) An analytic method for calculating perturbations in the coordinates of planets. (Russian. English summary) *Vestnik Leningrad. Univ. Mat. Mekh. Astronom.* **1990,** *vyp.* 3, 101–107, 128. (Summary) **93b:70011** 70F15

Chekhlov, A. R. Torsion-free abelian CS-groups. (Russian. Russian summary) *Abelian groups and modules, No.* 7 (*Russian*), 131–147, 160, *Tomsk. Gos. Univ., Tomsk*, 1988. (Gheorghe Ivan) **93m:20076** 20K15

— Quasipure injective torsion-free abelian groups. (Russian. Russian summary) *Abelian groups and modules, No.* 8 (*Russian*), 139–153, 176, *Tomsk. Gos. Univ., Tomsk*, 1989. (Gheorghe Ivan) **93m:20078** 20K20 (20K15)

— Torsion-free abelian rings of finite p-rank with complemented closed pure subgroups. (Russian. English and Russian summaries) *Abelian groups and modules, No.* 10 (*Russian*), 157–178, 187, 193, *Tomsk. Gos. Univ., Tomsk*, 1991. (Summary) **93j:20107** 20K15

Chekhlov, V. I. A connection between problems on internal and surface waves. (Russian) *Some questions of mathematics in problems of physics and mechanics* (*Russian*), 111–114, *Moskov. Fiz.-Tekhn. Inst., Moscow*, 1988. (*see* **93m:00036**) 76B15 (76C10)

Chekhov, L. A matrix model for the classical nonlinear Schrödinger equation. *Internat. J. Modern Phys. A* **7** (1992), *no.* 13, 2981–2996. (Claude Itzykson) **93c:81197** 81T40 (35Q55)

— (*with* Makeenko, Yu. M.) The multicritical Kontsevich-Penner model. *Modern Phys. Lett. A* **7** (1992), *no.* 14, 1223–1236. (Andrei D. Mironov) **93i:81176** 81T27 (81R10, 81T40)

— (*with* Makeenko, Yu. M.) A hint on the external field problem for matrix models. *Phys. Lett. B* **278** (1992), *no.* 3, 271–278. (Summary) **93a:81169** 81T40

— (*with* Ambjørn, Jan; Makeenko, Yu. M.) Higher genus correlators from the Hermitian one-matrix model. *Phys. Lett. B* **282** (1992), *no.* 3-4, 341–348. (Summary) **93c:81190** 81T40

Chellappa, Rama *see* **Markov random fields, 93j:68224**

Chelliah, Thivvianesan Invariant distribution of Chow statistics. (English summary) *Statist. Probab. Lett.* **15** (1992), *no.* 5, 401–402. (Summary) **93g:62077** 62H15 (62H10)

Chemeris, V. S. On the construction of the Cauchy integral for a class of nonanalytic functions of a complex variable. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* **1991,** *no.* 9, 86–88; *translation in Soviet Math. (Iz. VUZ)* **35** (1991), *no.* 9, 85–87. 30G20

Chemeris, V. V. (*with* Kisilevich, A. V.) Integrable Hamiltonian systems on orbits of the coadjoint representation of a loop algebra. (Russian. English and Russian summaries) *Dokl. Akad. Nauk Ukrainy* **1992,** *no.* 12, 53–57, 171. (J. S. Joel) **93k:58116** 58F07 (22E67, 58F06)

Chemin, Jean-Yves Existence globale pour le problème des poches de tourbillon. (English summary) [Global existence for the vortex-patch problem] *C. R. Acad. Sci. Paris Sér. I Math.* **312** (1991), *no.* 11, 803–806. (S. S. Titov) **93c:35127** 35Q30 (76C05)

— Remarques sur l'existence globale pour le système de Navier-Stokes incompressible. (English summary) [Remarks on global existence for the incompressible Navier-Stokes system] *SIAM J. Math. Anal.* **23** (1992), *no.* 1, 20–28. (Piotr Biler) **93a:35118** 35Q30 (76D05)

Chemla, Karine Adolf Andrei Pavlovitch Youschkevitch. *NTM Schr. Geschichte Natur. Tech. Medizin* **28** (1991), *no.* 1, 1–11. (R. L. Cooke) **93a:01045** 01A70
— Des nombres irrationnels en Chine entre le premier et le troisième siècle. [Irrational numbers in China between the first and third centuries] Études sur Cauchy (1789–1857). *Rev. Histoire Sci.* **45** (1992), *no.* 1, 135–140. (Catherine Jami) **93m:01013** 01A25
Chen, An Yue (*with* Zhang, Han Jun) The existence problem for reversible Q-processes with a single instantaneous state. (Chinese. English and Chinese summaries) *Chinese J. Appl. Probab. Statist.* **8** (1992), *no.* 3, 234–241. (Summary) **93k:60187** 60J27
— (*with* Renshaw, Eric) The Gillis-Domb-Fisher correlated random walk. (English summary) *J. Appl. Probab.* **29** (1992), *no.* 4, 792–813. (J. Gillis) **93m:60148** 60J15
— (*with* Renshaw, Eric) Existence and uniqueness criteria for conservative uni-instantaneous denumerable Markov processes. (English summary) *Probab. Theory Related Fields* **94** (1993), *no.* 4, 427–456. (Xiang Qun Yang) **93m:60153** 60J27 (60J35)
Chen, Arbee L. P. (*with* Tseng, Frank S. C.; Yang, Wei Pang) Finding a complete matching with the maximum product on weighted bipartite graphs. (English summary) *Comput. Math. Appl.* **25** (1993), *no.* 5, 65–71. (Summary) **93j:90123** 90C35 (05C70)
Chen, B. M. *see* **Chen, Ben M.**
Chen, Bang-Yen (*with* Song, Hong Zao) Null 2-type surfaces in Minkowski space-time. II. *Atti Accad. Peloritana Pericolanti Cl. Sci. Fis. Mat. Natur.* **67** (1989), 421–432 (1991). (Martin A. Magid) **93c:53053** 53C50 (53C40)
— (*with* Tazawa, Yoshihiko) Slant surfaces of codimension two. (English and French summaries) *Ann. Fac. Sci. Toulouse Math.* (5) **11** (1990), *no.* 3, 29–43. (Lieven Vanhecke) **93g:53074** 53C40 (53C15)
— (*with* Deprez, J.; Verheyen, Paul) A note on the centroid set of compact symmetric spaces of rank one. *Geometry and topology of submanifolds, IV* (*Leuven*, 1991), 3–10, *World Sci. Publishing, River Edge, NJ*, 1992. (O. Kowalski) **93k:53050** 53C35 (53C42)
— (*with* Deprez, J.; Verheyen, Paul) Immersions with geodesics of 2-type. *Geometry and topology of submanifolds, IV* (*Leuven*, 1991), 87–110, *World Sci. Publishing, River Edge, NJ*, 1992. (Yi Hong) **93h:53053** 53C35 (53C22)
— (*with* Petrovic, Mira) Spectral decomposition of submanifolds. *Geometry and topology of submanifolds, IV* (*Leuven*, 1991), 207–213, *World Sci. Publishing, River Edge, NJ*, 1992. (Franki Dillen) **93j:53067** 53C40
— (*with* Baikoussis, Christos; Verstraelen, Leopold) Surfaces with finite type Gauss maps. *Geometry and topology of submanifolds, IV* (*Leuven*, 1991), 214–216, *World Sci. Publishing, River Edge, NJ*, 1992. (Introduction) **93h:53056** 53C40
— (*with* Morvan, Jean-Marie) Cohomologie des sous-variétés α-obliques. (English summary) [Cohomology of α-slant submanifolds] *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 12, 931–934. (Chuan Yu Ma) **93g:53043** 53C15 (53C55)
— Submanifolds of finite type in hyperbolic spaces. *Chinese J. Math.* **20** (1992), *no.* 1, 5–21. (Lovejoy S. K. Das) **93d:53068** 53C40 (53C50)
— (*with* Dillen, Franki; Song, Hong Zao) Quadric hypersurfaces of finite type. *Colloq. Math.* **63** (1992), *no.* 2, 145–152. (Florentino García Santos) **93g:53010** 53A07
Chen, Bao Yao (*with* Mai, Zhi Ben) Regularity of weak solutions to a class of elliptic systems in triangular form with quadratic natural growth. (Chinese) *Acta Math. Sci.* (*Chinese*) **11** (1991), *no.* 2, 154–163. (Summary) **93h:35041** 35D10 (35J60)
— Regularity of weak solutions for a class of degenerate elliptic systems in diagonal form. *Proceedings of Asian Mathematical Conference*, 1990 (*Hong Kong*, 1990), 51–54, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93b:00022**) 35J70 (35D10, 46E35)
— (*with* Feng, Yan Fa) Everywhere regularity of weak solutions to degenerate triangular variational inequalities. (Chinese. Chinese summary) *Chinese Ann. Math. Ser. A* **13** (1992), *no.* 5, 555–565. (Jie Yang) **93k:49006** 49J40
Chen, Ben M. (*with* Saberi, Ali; Sannuti, Peddapullaiah) Necessary and sufficient conditions for a non-minimum phase plant to have a recoverable target loop—a stable compensator design for LTR. *Automatica J. IFAC* **28** (1992), *no.* 3, 493–507. (Summary) **93d:93040** 93B51 (93D15)
— (*with* Saberi, Ali; Sannuti, Peddapullaiah) On blocking zeros and strong stabilizability of linear multivariable systems. (English summary) *Automatica J. IFAC* **28** (1992), *no.* 5, 1051–1055. (Summary) **93f:93111** 93D15 (93C35)
— (*with* Saberi, Ali; Ly, Uy-Loi) Exact computation of the infimum in H_∞-optimization via state feedback. *Control Theory Adv. Tech.* **8** (1992), *no.* 1, 17–35. (Kazuhiko Terashima) **93d:93036** 93B40 (93B36)
— (*with* Saberi, Ali; Sannuti, Peddapullaiah) Loop transfer recovery for general nonminimum phase non-strictly proper systems. I. Analysis. *Control Theory Adv. Tech.* **8** (1992), *no.* 1, 59–100. (Kathryn E. Lenz) **93e:93032** 93B51 (93B36, 93B55)
— (*with* Saberi, Ali; Sannuti, Peddapullaiah) Loop transfer recovery for general nonminimum phase non-strictly proper systems. II. Design. *Control Theory Adv. Tech.* **8** (1992), *no.* 1, 101–144. (Kathryn E. Lenz) **93e:93033** 93B51 (93B36, 93B55)
— (*with* Saberi, Ali; Ly, Uy-Loi) A noniterative method for computing the infimum in H_∞-optimization. (English summary) *Internat. J. Control* **56** (1992), *no.* 6, 1399–1418. (Petko Petkov) **93k:93036** 93B36
— (*with* Saberi, Ali; Sannuti, Peddapullaiah; Shamash, Yacov) Construction and parameterization of all static and dynamic H_2-optimal state feedback solutions, optimal fixed modes, and fixed decoupling zeros. (English summary) *IEEE Trans. Automat. Control* **38** (1993), *no.* 2, 248–261. (Dieter Franke) **93k:93048** 93B52 (49N10, 93B55, 93C05)
Chen, Bin (*with* Hong, Xiao) How small are the increments of partial sums of sequences of independent random variables with different distributions? (Chinese. English summary) *J. Hangzhou Univ. Natur. Sci. Ed.* **18** (1991), *no.* 4, 383–389. (Summary) **93a:60047** 60F15 (60G50)
— The maximum of a Wiener process and its location. (Chinese. English summary) *J. Hangzhou Univ. Natur. Sci. Ed.* **19** (1992), *no.* 2, 125–128. (Summary) **93c:60122** 60J65 (60G17)
Chen, Bing (*with* Wen, He Ning) A study on state estimation by the method of reduced rank approximation. (Chinese. English summary) *J. Chengdu Univ. Sci. Tech.* **1991**, *no.* 3, 75–80, 92. 93E10
Chen, Bo (*with* Liu, Zi Cheng; Hu, Xiao Dong; Du, Ding Zhu) A note on Rosen's algorithm. (Chinese. English summary) *J. Systems Sci. Math. Sci.* **12** (1992), *no.* 1, 94–96. 90C08
Chen, Bo Liang *see* **Ch'ên, Po Liang**
Chen, Bo Shan Nonoscillation theorems for second-order nonlinear differential equations. (English summary) *Ann. Differential Equations* **8** (1992), *no.* 3, 269–275. (V. B. Headley) **93i:34056** 34C10
Chen, Bor-Liang *see* **Ch'ên, Po Liang**
Chen, Bor-Sen *see* **Ch'ên, Po Hsien**
Chen, C. *see* **Chen, Chuan Miao**
Chen, C. C. *see* **Chen, Chuan Chong**
Chen, C. H. (*with* Lin, S. F.; Sheu, W. Y.) A linear model tracker using adaptive indirect D-step-ahead control with saturating input. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, II* (*Kobe*, 1991), 425–430, *Mita, Tokyo*, 1992. (*see* **93g:93006**) 93C40
Chen, C.-K. *see* **Chen, Cha'o Kuang**
Chen, C.-L. *see* **Chen, Chieh Li**
Chen, C. M. *see* **Ch'ên, Ch'un Ming**
Chen, C.-S. *see* **Chen, Chin Shaw**
Chen, C. Y. (*with* Chang, Chên Ch'êng; Lin, H. F.) Optimality properties of the disc modulo allocation method for k-ary multiple key hashing files. (English summary) *Comput. J.* **35** (1992), *no.* 4, 390–394. (Summary) **93h:68036** 68P20
Chen, Calvin C.-Y. (*with* Das, Sajal K.) Breadth-first traversal of trees and integer sorting in parallel. *Inform. Process. Lett.* **41** (1992), *no.* 1, 39–49. (Summary) **93b:68013** 68P10 (68Q25)
Chen, Cao Yu The Connes spectrum of finite-dimensional Hopf algebra. A Chinese summary appears in Chinese Ann. Math. Ser. A **12** (1991), no. 5, 645. *Chinese Ann. Math. Ser. B* **12** (1991), *no.* 4, 520–524. (From the summary) **93b:16065** 16W30
— Primeness of smash products for Hopf algebras. *Proceedings of the First China-Japan International Symposium on Ring Theory* (*Guilin*, 1991), 19–21, *Okayama Univ., Okayama*, 1992. (*see* **93k:16001**) 16S40
Chen, Cathy W. S. Bayesian inferences and forecasting in bilinear time series models. *Comm. Statist. Theory Methods* **21** (1992), *no.* 6, 1725–1743. 62M10 (62F15, 62M20)
— Bayesian analysis of bilinear time series models: a Gibbs sampling approach. (English summary) *Comm. Statist. Theory Methods* **21** (1992), *no.* 12, 3407–3425. 62M10 (62E25, 62F10)
Chen, Chang Nan (*with* Zhu, Bin) Conditions for a ring $R\{H\}$ to be a simple ring, a prime ring or a prime essential ring. (Chinese. English summary) *Hunan Jiaoyu Xueyuan Xuebao* (*Ziran Kexue*) **10** (1992), *no.* 2, 23–25, 53. (Summary) **93b:16031** 16N60
Ch'ên, Chang P'ao (*with* Chuang, Yü Wên) L^1-convergence of double Fourier series. *Chinese J. Math.* **19** (1991), *no.* 4, 391–410. (B. L. Gupta) **93e:42017** 42B05 (42B08)
— The Riemann hypothesis and gamma conditions. (English summary) *J. Math. Anal. Appl.* **173** (1993), *no.* 1, 258–275. (Robert J. Anderson) **93m:11086** 11M26
Chen, Cha'o Kuang (*with* Chen, Chieh Li; Yang, Shyi Kae) On determining the root locations of an interval system. (English summary) *Control Theory Adv. Tech.* **8** (1992), *no.* 4, 789–802. 93D09 (93B55)
Chen, Chao-Nien Some existence and bifurcation results for solutions of nonlinear Sturm-Liouville eigenvalue problems. *Math. Z.* **208** (1991), *no.* 2, 177–192. (Tassilo Küpper) **93f:34037** 34B15 (34A47, 35P30, 47H15)
— Multiple solutions for a nonlinear elliptic equation on $\mathbf{R}^N$ with nonlinear dependence on the gradient. (English summary) *Differential Integral Equations* **6** (1993), *no.* 2, 241–257. (Xi Ping Zhu) **93m:35070** 35J60 (34A34, 35B32)
Chen, Cheng Hsiang (*with* Lai, Han Ch'ing) Some properties of Fourier transform for operators on homogeneous Banach spaces. *Hokkaido Math. J.* **21** (1992), *no.* 2, 259–271. (U. B. Tewari) **93h:43004** 43A32 (43A22, 47B38)
Chen, Chieh Li (*with* Yang, Shyi Kae; Chen, Cha'o Kuang) On determining the root locations of an interval system. (English summary) *Control Theory Adv. Tech.* **8** (1992), *no.* 4, 789–802. 93D09 (93B55)
Ch'ên, Chien Hui (*with* Yu, Chang Wu) The weighted maximum independent set problem in permutation graphs. (English summary) *BIT* **32** (1992), *no.* 4, 609–618. (Summary) **93g:68110** 68R10 (05C85, 68Q22, 68Q25)
— (*with* Jang, Jin Hwang) An improved parallel algorithm for 0/1 knapsack problem. (English summary) *Parallel Comput.* **18** (1992), *no.* 7, 811–821. 90C10
— (*with* Hung, Yung Chen) Distributed algorithms for the quickest path problem. (English summary) *Parallel Comput.* **18** (1992), *no.* 7, 823–834. 68R10 (68Q22)
Ch'ên, Chih Jung (*with* Yao, Ching Hsing) A-optimal estimation for $2^d \times 3^m$ factorial experiment utilizing the 2^n or 3^n orthogonal design. *Chinese J. Math.* **20** (1992), *no.* 1, 31–53. (Summary) **93b:62100** 62K05
Chen, Chin Shaw (*with* Wang, Wên Chün; Kao, Chien Chung) Stabilization, estimation and robustness for large scale time-delay systems. *Control Theory Adv. Tech.* **7** (1991), *no.* 4, 569–585. (Andrzej Sosnowski) **93b:93058** 93C30 (93D15)
Chen, Ching Shyang (*with* Wan, Da Qing; Shiue, Peter Jau-Shyong) Value sets of polynomials over finite fields. *Proc. Amer. Math. Soc.* **119** (1993), *no.* 3, 711–717. (Rudolf Lidl) **93m:11130** 11T06 (11T55)
Chen, Chuan Chong (*with* Peng, Yee-Hock; Koh, Khee Meng) On edge-disjoint spanning forests of multigraphs. *Soochow J. Math.* **17** (1991), *no.* 2, 317–326. (L. W. Beineke) **93b:05045** 05C05 (05C70)
— (*with* Koh, Khee Meng) ★ Principles and techniques in combinatorics. *World Scientific Publishing Co., Inc., River Edge, NJ*, 1992. xii+298 *pp. ISBN* 981-02-1114-7; 981-02-1139-2 (Peter Kirschenhofer) **93h:05001** 05–01
— (*with* Peng, Yee-Hock; Koh, Khee Meng) On the existence of balanced graphs with given edge-toughness and edge-connectivity. (English summary) *Ars Combin.* **33** (1992), 129–143. (Summary) **93d:05082** 05C35
— (*with* Liu, Jiping; Yu, Qing Lin) On the classification of 2-extendable Cayley graphs on dihedral groups. (English summary) *Australas. J. Combin.* **6** (1992), 209–219. (Summary) **93i:05071** 05C25
— (*with* Chan, Onn) A characterization of Fibonacci trees. *Southeast Asian Bull. Math.* **16** (1992), *no.* 1, 7–15. (Summary) **93c:05037** 05C05 (05C30, 05C75)
— (*with* Koh, Khee Meng; Peng, Yee-Hock) On the higher-order edge toughness of a graph. (English summary) Graph theory and combinatorics (Marseille-Luminy, 1990). *Discrete Math.* **111** (1993), *no.* 1-3, 113–123. (Summary) **93m:05114** 05C40
Chen, Chuan Dan Stability criteria of multiple nesting grid difference methods for hyperbolic initial-boundary value problems. (English summary) *Proceedings of International Conference on Scientific Computation* (*Hangzhou*, 1991), 172–176, *Ser. Appl. Math.*, 1, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93d:65004**) 65M06 (65M12, 65M50)

— (*with* Lin, Qun) The Lax equivalence theorem for nonlinear multilevel difference schemes. (Chinese. English summary) *Xiamen Daxue Xuebao Ziran Kexue Ban* **31** (1992), *no.* 2, 121–125. (Wei Zhong Dai) **93d:65075** 65M06

— Stability of multiple nesting grid difference methods for hyperbolic partial differential equations. (Chinese. English and Chinese summaries) *Xiamen Daxue Xuebao Ziran Kexue Ban* **31** (1992), *no.* 4, 334–338. (Summary) **93h:65115** 65M12 (65M06)

Chen, Chuan Hong The setting of space groups and transformations of symmetry elements. (Chinese. English summary) *Xiamen Daxue Xuebao Ziran Kexue Ban* **31** (1992), *no.* 3, 241–246. (Summary) **93d:20089** 20H15 (82D25)

Chen, Chuan Miao (*with* Xie, Zi Qing) Finite elements for nonlinear parabolic integro-differential equations. (Chinese. English summary) *Natur. Sci. J. Xiangtan Univ.* **13** (1991), *no.* 4, 4–11. (Summary) **93b:65138** 65M60

— (*with* Thomée, V.; Wahlbin, L. B.) Finite element approximation of a parabolic integro-differential equation with a weakly singular kernel. *Math. Comp.* **58** (1992), *no.* 198, 587–602. (From the text) **93g:65120** 65M60 (65R20)

Ch'ên, Ch'un Ming (*with* Shi, Y. Q.; Yen, K. K.) Two necessary conditions for a complex polynomial to be strictly Hurwitz and their applications in robust stability analysis. (English summary) *IEEE Trans. Automat. Control* **38** (1993), *no.* 1, 125–128. (K. B. Datta) **93m:93076** 93D09

Chen, Ci Ping (*with* Kano, Mikio) Odd and even factors with given properties. (Chinese summary) *Chinese Quart. J. Math.* **7** (1992), *no.* 1, 65–71. (Samuel Stueckle) **93g:05111** 05C70

— (*with* Liu, Gui Zhen) Toughness of graphs and $[a, b]$-factors with prescribed properties. (English summary) *J. Combin. Math. Combin. Comput.* **12** (1992), 215–221. (Summary) **93i:05097** 05C70

— Neighborhood conditions for factors in graphs. (English and Chinese summaries) *Math. Appl.* **5** (1992), *no.* 3, 47–52. (Summary) **93j:05111** 05C70

— Remarks on the binding number for $[a, b]$-factors. (English summary) *Systems Sci. Math. Sci.* **5** (1992), *no.* 2, 141–145. (Gui Zhen Liu) **93j:05112** 05C70

Chen, D. *see* **Chen, De Meng**

Chen, D.-P. (*with* Barcilon, Victor; Eisenberg, R. S.) Ion flow through narrow membrane channels. II. (English summary) *SIAM J. Appl. Math.* **52** (1992), *no.* 5, 1405–1425. (Brian D. Sleeman) **93m:92008** 92C05 (78A99)

Chen, Da Rong A lubrication solution to the Prandtl-Eyring constitutive equation. (Chinese. English and Chinese summaries) *J. Tsinghua Univ.* **32** (1992), *no.* 2, 108–116. (Summary) **93i:76028** 76D08 (76A10)

Chen, Da Yue (*with* Liggett, Thomas M.) Finite reversible nearest particle systems in inhomogeneous and random environments. *Ann. Probab.* **20** (1992), *no.* 1, 152–173. (H. Kesten) **93b:60225** 60K35

Chen, Danny Z. (*with* Atallah, Mikhail J.) Parallel rectilinear shortest paths with rectangular obstacles. *Comput. Geom.* **1** (1991), *no.* 2, 79–113. (Summary) **93h:68136** 68U05 (68P05, 68P20)

Chen, Dao Qi The CG method for image reconstruction from projections. (English summary) *Proceedings of International Conference on Scientific Computation (Hangzhou, 1991)*, 177–181, *Ser. Appl. Math.*, 1, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93d:65004**) 65R10 (65D15)

— A new algorithm for ball-constrained quadratic minimization problems. (English summary) *Gaoxiao Yingyong Shuxue Xuebao* **7** (1992), *no.* 3, 443–451. (Paul H. Calamai) **93i:90076** 90C20 (65K05)

Chen, De Meng (*with* Stanton, R. G.; Stinson, Douglas R.) Disjoint packings on $6k + 5$ points. *Utilitas Math.* **40** (1991), 129–138. (Luc Teirlinck) **93b:05013** 05B05 (05B40, 94A60)

— (*with* Stinson, Douglas R.) On the construction of large sets of disjoint group-divisible designs. (English summary) *Ars Combin.* **35** (1993), 103–115. (Summary) **93m:05020** 05B05

Chen, Degang (*with* Meressi, Tesfay; Paden, Brad) Application of Kharitonov's theorem to mechanical systems. (English summary) *IEEE Trans. Automat. Control* **38** (1993), *no.* 3, 488–491. 93D09

Chen, Di[1] Selection of IVs based on the orthogonal regression design. (English and Chinese summaries) *Shanghai Shifan Daxue Xuebao Ziran Kexue Ban* **21** (1992), *no.* 3, 10–15. 62J05 (62J20)

Chen, Di Rong (*with* Sun, Yong Sheng) Hardy-Littlewood-Pólya inequality for a linear differential operator and some related optimal problems. (English summary) *Approx. Theory Appl.* **8** (1992), *no.* 1, 50–58. (Sever S. Dragomir) **93j:41010** 41A15 (26D10, 34A55, 47E05)

— n-widths of some classes of periodic functions. *Sci. China Ser. A* **35** (1992), *no.* 1, 42–54. (Summary) **93i:46050** 46E30 (41A46)

Chen, Dong Ostrowski-Traub nonlinear iterative methods are not optimal in the sense of S-order of convergence. *Appl. Math. Lett.* **5** (1992), *no.* 3, 51–52. (Summary) **93a:65063** 65H05

Chen, Dong Ching A uniform central limit theorem for nonuniform φ-mixing random fields. *Ann. Probab.* **19** (1991), *no.* 2, 636–649. (Summary) **93a:60050** 60F17 (60B10, 60K35)

Chen, Dong Jian A note on basic sequences in Banach spaces with the PCA property. (Chinese. English summary) *J. South China Normal Univ. Natur. Sci. Ed.* **1990**, *Special Issue*, 144–146. (Xi Tang Zhang) **93a:46020** 46B15

— (*with* Hu, Zhibao; Lin, Bor-Luh) Balls intersection properties of Banach spaces. *Bull. Austral. Math. Soc.* **45** (1992), *no.* 2, 333–342. (T. S. S. R. K. Rao) **93c:46021; EA 93m** 46B20 (46B10, 46B22)

Chen, Dong Ling (*with* Yan, Chun Gang; Yao, Yu Zhi) The characteristic matrix of a Hamiltonian graph. (Chinese. English and Chinese summaries) *Qufu Shifan Daxue Xuebao Ziran Kexue Ban* **18** (1992), *no.* 4, 36–38. (From the summary) **93m:05131** 05C50 (05C45)

Chen, F. Determination of velocity distribution of an incompressible fluid in an elliptical pipe by boundary elements. (English summary) *Boundary element technology, VII (Albuquerque, NM, 1992)*, 185–192, *Comput. Mech., Southampton*, 1992. (*see* **93b:65002**) 76M15 (65N38)

Chen, Fangruo (*with* Zheng, Yu-Sheng) Waiting time distribution in (T, S) inventory systems. (English summary) *Oper. Res. Lett.* **12** (1992), *no.* 3, 145–151. (Luiz F. A. M. Gomes) **93h:90031** 90B05 (60K30)

Chen, Fei Wu (*with* Chen, Zhi Rong; Yuan, Hui; et al.) Chaotic dimensions of the forced Oregonator oscillator and cubic mappings. (Chinese. English and Chinese summaries) *Acta Phys. Sinica* **41** (1992), *no.* 7, 1081–1086. 58F13 (34C05, 34C15, 58F40)

Chen, Feng Hankel operators in some concrete C^*-algebras. (English summary) *Lecture notes in contemporary mathematics*, 1989, 10–16, *Science Press, Beijing*, 1990. (Sheldon Axler) **93f:47024** 47B35 (46L99, 47C15)

Chen, Feng Xiao (*with* Yin, Jing Yao) Geometric identities relating two simplices and their application. (Chinese. English summary) *Adv. in Math. (China)* **21** (1992), *no.* 3, 325–328. (Summary) **93i:51046** 51M25 (51M16)

Chen, Fu Chuang (*with* Khalil, Hassan K.) Adaptive control of nonlinear systems using neural networks. *Internat. J. Control* **55** (1992), *no.* 6, 1299–1317. (Ventseslav G. Rumchev) **93f:93074** 93C40 (68T05, 92D20, 93D15)

— (*with* Khalil, Hassan K.) H_∞ control of two-time-scale systems. *Systems Control Lett.* **19** (1992), *no.* 1, 35–42. 93B36 (93C70)

Chen, Fu Yuan (*with* Ma, He Cheng; Wu, Ya Zhou) Pseudo-ideals and imaginary ideals of rings. (Chinese. English and Chinese summaries) *Natur. Sci. J. Harbin Normal Univ.* **8** (1992), *no.* 1, 23–26. 16D99

Chen, G. *see* **Chen, Guantao**

Chen, G. Q. *see* **Chen, Guo Qian**

Chen, G. Y. *see* **Chen, Guang Ya**

Chen, Gemai Some specific contiguous alternatives to the normal error assumption in linear models. (English summary) *Statist. Probab. Lett.* **16** (1993), *no.* 3, 239–247. (Summary) **93k:62135** 62J05

Chen, Gen-Huey *see* **Ch'ên, Chien Hui**

Chen, Goong (*with* Zhou, Jian-Xin) ★ Boundary element methods. Computational Mathematics and Applications. *Academic Press, Ltd., London*, 1992. xx+646 *pp. ISBN* 0-12-170940-X (G. T. Symm) **93e:65143** 65N38 (65–02, 73C02, 73K10, 73V10)

— (*with* Zhou, Jian-Xin) Some boundary control problems and computation for the linear elastostatic Kirchhoff plate on an exterior domain. *Boundary control and boundary variation (Sophia-Antipolis, 1990)*, 82–117, *Lecture Notes in Control and Inform. Sci.*, 178, *Springer, Berlin*, 1992. (*see* **93b:49001**) 93C20 (35B37, 65N38)

— (*with* Huang, Fa Lun; Lin, Chin Yuan) "More boundary energy dissipation" does not necessarily imply larger asymptotic decay rates. (English summary) *Asymptotic Anal.* **6** (1992), *no.* 2, 191–203. (Summary) **93j:35105** 35L05 (35B30)

Chen, Guan Rong Optimal recovery of certain nonlinear analytic mappings. *Optimal recovery (Varna, 1989)*, 141–144, *Nova Sci. Publ., Commack, NY*, 1992. (*see* **93m:00043**) 65J20 (65Y20)

— (*with* Dong, Xiaoning) On feedback control of chaotic nonlinear dynamic systems. (English summary) *Internat. J. Bifur. Chaos Appl. Sci. Engrg.* **2** (1992), *no.* 2, 407–411. (Boris G. Zaslavskiĭ) **93g:93046** 93C10 (58F13, 93B52, 93C55)

— (*with* Chui, Charles K.; Yu, Yao Qi) Optimal Hankel-norm approximation approach to model reduction of large-scale Markov chains. (English summary) *Internat. J. Systems Sci.* **23** (1992), *no.* 8, 1289–1297. (Summary) **93f:93028** 93B11 (93B27, 93E03)

— Optimal interpolation of scattered data on a circular domain with boundary conditions. (English summary) *J. Comput. Math.* **10** (1992), *no.* 4, 339–347. (Weimin Han) **93i:65015** 65D05 (65N99)

— (*with* Öğmen, Haluk) Modified extended Kalman filtering for supervised learning. (English summary) *Internat. J. Systems Sci.* **24** (1993), *no.* 6, 1207–1214. 93E11 (93E35)

— (*with* Koç, Çetin Kaya) A fast algorithm for scalar Nevanlinna-Pick interpolation. (English summary) *Numer. Math.* **64** (1993), *no.* 1, 115–126. (A. Bultheel) **93k:65011** 65D05 (30E05, 65Y20)

Chen, Guang Jun Fixed point theorems for set-valued mappings. (Chinese summary) *J. Math. Res. Exposition* **12** (1992), *no.* 3, 349–360. (Kok Keong Tan) **93i:47085** 47H10 (47H04, 54C60, 54H25)

— (*with* Xiu, Nai Hua) Optimality of updating matrices of Abaffy-Broyden-Spedicato algorithms. (Chinese. English and Chinese summaries) *Qufu Shifan Daxue Xuebao Ziran Kexue Ban* **18** (1992), *suppl.*, 21–24. (Min Sun) **93m:65041** 65F05 (65F35, 90C06)

Chen, Guang Qing (*with* Liang, Zhao Jun) Affine classification for the quadratic vector fields without the critical points at infinity. (English summary) *J. Math. Anal. Appl.* **172** (1993), *no.* 1, 62–72. (Robert Roussarie) **93m:58087** 58F21 (34C05)

Chen, Guang Shu The relation between probability spaces and set-valued probability spaces. (Chinese. English and Chinese summaries) *Huaihua Shizhuan Xuebao* **11** (1992), *no.* 2, 72–75. 28B15

Chen, Guang Ya (*with* Yang, Xiao Qi) A class of nonconvex functions and pre-variational inequalities. (English summary) *J. Math. Anal. Appl.* **169** (1992), *no.* 2, 359–373. (Sever S. Dragomir) **93h:49024** 49J40

— Existence of solutions for a vector variational inequality: an extension of the Hartmann-Stampacchia theorem. (English summary) *J. Optim. Theory Appl.* **74** (1992), *no.* 3, 445–456. (Xie Ping Ding) **93h:49018** 49J40 (47H19, 90C29)

Chen, Guang Yi (*with* Xue, Yan Cai) A cubically convergent algorithm for solving the nonlinear eigenvalue problem for symmetric matrices. (Chinese. English summary) *J. Numer. Methods Comput. Appl.* **13** (1992), *no.* 2, 99–106. (Summary) **93i:65057** 65H10 (65Y20)

Chen, Guantao (*with* Schelp, Richard H.; Shreve, W. E.) On k-girth graphs. (English summary) Proceedings of the Twenty-third Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, FL, 1992). *Congr. Numer.* **89** (1992), 193–207. (Summary) **93j:05091** 05C38 (05C35)

— (*with* Schelp, Richard H.) Hamiltonian graphs involving distances. *J. Graph Theory* **16** (1992), *no.* 2, 121–129. (S. F. Kapoor) **93b:05102** 05C45

— (*with* Gould, Ronald J.; Jacobson, Michael S.; Schelp, Richard H.; West, Douglas B.) A characterization of influence graphs of a prescribed graph. (English summary) *Vishwa Internat. J. Graph Theory* **1** (1992), *no.* 1, 77–81. (W. G. Brown) **93k:05056** 05C12

Chen, Gui Jing (*with* Zhao, Lin Cheng) Some contributions of Chinese statisticians to the asymptotic theory of inferences in linear models. *The development of statistics: recent contributions from China*, 63–78, *Pitman Res. Notes Math. Ser.*, 258, *Longman Sci. Tech., Harlow*, 1992. (*see* **93e:62004**) 62J05 (62E20, 62F35)

— (*with* Hu, Shu He; Zhou, Wei Xin) Asymptotic sufficiency of rank statistics. (Chinese. English and Chinese summaries) *Chinese J. Appl. Probab. Statist.* **8** (1992), *no.* 1, 17–26. (Summary) **93j:62130** 62G10 (62B05)

Chen, Gui Qiang Global solutions to the compressible Navier-Stokes equations for a reacting mixture. *SIAM J. Math. Anal.* **23** (1992), *no.* 3, 609–634. (V. L. Roytburd) **93h:76060** 76N10 (35Q30, 80A32)

Chen, Gui Yun Finite groups with Schmidt group as automorphism group. A Chinese summary appears in Chinese Ann. Math. Ser. A **13** (1992), no. 1, 133. *Chinese Ann. Math. Ser. B* **13** (1992), *no.* 1, 105–109. (Hartmut Laue) **93h:20037** 20F28 (20D45)

— Finite groups with automorphism group having all Sylow subgroups cyclic. *Proc. Roy. Irish Acad. Sect. A* **92** (1992), *no.* 1, 37–40. (W. E. Deskins) **93d:20047** 20D45 (20F28)

Chen, Guo Qian (*with* Yang, Zhi Feng) The compact second-order upwind finite difference schemes for the convection-diffusion equations. (English summary) *J. Hydrodyn. Ser. B (English Ed.)* **4** (1992), *no.* 4, 32–42. 76M20 (76Rxx)

— (*with* Gao, Zhi; Yang, Zhi Feng) A perturbational h^4 exponential finite difference scheme for the convective diffusion equation. (English summary) *J. Comput. Phys.* **104** (1993), *no.* 1, 129–139. (Summary) **93g:76084** 76M20 (76Rxx)

— (*with* Yang, Zhi Feng) A perturbational fourth-order upwind finite difference scheme for the convection-diffusion equation. (English summary) *J. Hydrodyn. Ser. B (English Ed.)* **5** (1993), *no.* 1, 82–97. 76M20 (76Rxx)

Chen, Guo Qing (*with* Feng, En Min; Teng, Hong Fei) A study on optimal models of geometric layouts with behavioral constraints. (Chinese. English and Chinese summaries) *J. Dalian Univ. Tech.* **32** (1992), *no.* 4, 378–384. 90C90 (65K05)

Chen, Guo Wang Initial value problem for a class of nonlinear parabolic system of fourth order. *Acta Math. Sci. (English Ed.)* **11** (1991), *no.* 4, 393–400. (Summary) **93e:35049** 35K30 (35K45)

Chen, Guo Wei The E_7^1 system with two invariant conjugate imaginary lines. *Ann. Differential Equations* **7** (1991), *no.* 4, 385–401. (Summary) **93i:34049** 34C05

Chen, Guo Zhi An elementary proof of Bonnesen's isoperimetric inequality. (Chinese. Chinese summary) *Math. Practice Theory* **1992**, *no.* 3, 82–85. (Jingzhong Zhang) **93m:51024** 51M16 (52A40)

Chen, H. C. *see* **Ch'ên, Hung Chou**

Chen, H. F. *see* **Chen, Han Fu**

Chen, H. J. (*with* Ng, C. K.; Lam, Kin) Multiple comparison of exponential location parameters with the best under type II censoring. (English summary) *Amer. J. Math. Management Sci.* **12** (1992), *no.* 4, 383–402. (Summary) **93k:62206** 62N05 (62F07, 62J15)

Chen, H. L. *see* **Chen, Han Lin**

Chen, Haiwen Pointwise $\frac{1}{4}$-pinched 4-manifolds. *Ann. Global Anal. Geom.* **9** (1991), *no.* 2, 161–176. (Eugene Dmitrievich Rodionov) **93b:53028** 53C20

Chen, Han Feng (*with* Loh, Wei-Yin) Bounds on AREs of tests following Box-Cox transformations. (English summary) *Ann. Statist.* **20** (1992), *no.* 3, 1485–1500. (Z. Šidák) **93j:62135** 62G20 (62G10)

Chen, Han Fu (*with* Zhang, Ji Feng) Convergence analysis for adaptive control systems with unknown orders, delay and coefficients. (Polish summary) *Systems Sci.* **16** (1990), *no.* 4, 27–46 (1991). (Summary) **93b:93115** 93E35 (93C40, 93C73)

— (*with* Zhang, Ji Feng) Adaptive stabilization. *Control theory, stochastic analysis and applications (Hangzhou,* 1991), 1–13, *World Sci. Publishing, River Edge, NJ,* 1991. (Wolfgang Kliemann) **93c:93045** 93D21 (93C80)

— (*with* Guo, Lei; Zhang, Ji Feng) Identification and adaptive control for ARMAX systems. *Topics in stochastic systems: modelling, estimation and adaptive control,* 216–241, *Lecture Notes in Control and Inform. Sci.*, 161, *Springer, Berlin,* 1991. (Leopoldo Jetto) **93a:93002** 93–02 (62M10, 93C40, 93E12)

— (*with* Zhang, Ji Feng) Adaptive regulation for deterministic systems. *Acta Math. Appl. Sinica (English Ser.)* **7** (1991), *no.* 4, 332–343. (Xiao Ping Liu) **93a:93066** 93C40 (93B30, 93D20, 93E12)

— (*with* Guo, Lei) The Astrom-Wittenmark self-tuning tracker. (English summary) *Identification and system parameter estimation* 1991, *Vol.* 1,2 (*Budapest,* 1991), 97–102, *IFAC Sympos. Ser.*, 3, *Pergamon, Oxford,* 1992. (*see* **93h:93009**) 93E10

— (*with* Guo, Lei; Zhang, Ji Feng) Estimating time-varying parameters in regression models. (English summary) *Identification and system parameter estimation* 1991, *Vol.* 1,2 (*Budapest,* 1991), 121–126, *IFAC Sympos. Ser.*, 3, *Pergamon, Oxford,* 1992. (*see* **93h:93009**) 93E10

— (*with* Guo, Lei) Parameter identification in stochastic adaptive tracking systems. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, I (Kobe,* 1991), 671–676, *Mita, Tokyo,* 1992. (*see* **93g:93005**) 93E12 (93E35)

— Stochastic adaptive control. (English summary) *Stochastic theory and adaptive control (Lawrence, KS,* 1991), 93–120, *Lecture Notes in Control and Inform. Sci.*, 184, *Springer, Berlin,* 1992. (Vladimir G. Sragovich) **93j:93005** 93–02 (93B40, 93E23, 93E24, 93E35)

— (*with* Gao, Ai Jun; Zhu, Yun Min) Improved results on the robustness of stochastic approximation algorithms. (English summary) *Acta Math. Appl. Sinica (English Ser.)* **8** (1992), *no.* 2, 124–130. (Summary) **93m:62186** 62L20

— (*with* Deniau, Claude) Robustesse de l'estimateur des moindres carrés généralisés, vis-à-vis d'une erreur de modèle, pour des processus ARMA. (English and French summaries) [Robustness of the extended-least-squares estimator with respect to the model error in ARMA processes] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 10, 1103–1106. (Summary) **93j:62222** 62M10

— (*with* Zhang, Ji Feng) On identifiability for multidimensional ARMAX model. (English summary) *Acta Math. Appl. Sinica (English Ser.)* **9** (1993), *no.* 1, 1–8. (Summary) **93m:93093** 93E12 (62M10)

Chen, Han Lin (*with* Li, Chun[3]) The estimation of n-widths of certain periodic function classes. *Approximation, optimization and computing,* 49–52, *North-Holland, Amsterdam,* 1990. (Summary) **93c:41041** 41A46

— (*with* Li, Chun[3]) Exact and asymptotic estimates for n-widths of some classes of periodic functions. *Constr. Approx.* **8** (1992), *no.* 3, 289–307. (Dinh Dung) **93h:41024** 41A46 (41A15)

— Properties of complex harmonic splines. (English summary) *Numer. Funct. Anal. Optim.* **13** (1992), *no.* 3-4, 233–242. (Zygmunt Wronicz) **93j:30041** 30E10 (41A15, 65D07)

Chen, Han-lin (*with* Schempp, Walter) The uncertainty inequality in quantum holography, Bohr's indeterminacy principle, and synchronized neural networks. (English summary) *General inequalities,* 6 (*Oberwolfach,* 1990), 411–422, *Internat. Ser. Numer. Math.*, 103, *Birkhäuser, Basel,* 1992. (*see* **93k:26001**) 78A99 (81P99, 92B20)

Chen, Hang (*with* Goddard, Wayne D.; McCanna, Joseph; Poh, Roger K. S.) Path chromatic sequences of graphs. (English summary) *Bull. Inst. Combin. Appl.* **7** (1993), 33–35. (Summary) **93j:05056** 05C15

Chen, Hanxiong (*with* Xu, Yu; Yamaguchi, Kazunori; Kitagawa, Hiroyuki; Ohbo, Nobuo; Fujiwara, Yuzuru) Decomposition—an approach for optimizing queries including ADT functions. *Inform. Process. Lett.* **43** (1992), *no.* 6, 327–333. 68P15

Chen, Hao[2] The absence of algebraic subbundles of a stable bundle is an algebraic condition. (Chinese) *Chinese Ann. Math. Ser. A* **13** (1992), *no.* 1, 1–4. (Xiao Jiang Tan) **93d:14021** 14D20

Chen, He Ping c^1 continuity and a matrix representation for the surface piece in a triangular domain. (Chinese. English summary) *J. Huazhong Univ. Sci. Tech.* **19** (1991), *no.* 6, 103–108. 65Y25

Chen, Hong Decision-making with a fuzzy satisfaction relation. (Chinese. English and Chinese summaries) *Dianzi Keji Daxue Xuebao* **20** (1991), *no.* 4, 445–450. 90A05 (04A72)

Chen, Hong (*with* Blandford, George E.) Work-increment-control method for nonlinear analysis. (English summary) *Internat. J. Numer. Methods Engrg.* **36** (1993), *no.* 6, 909–930. (Summary) **93k:73084** 73V20 (73G99)

Chen, Hong[3] (*with* Mandelbaum, Avi) Stochastic discrete flow networks: diffusion approximations and bottlenecks. *Ann. Probab.* **19** (1991), *no.* 4, 1463–1519. (Keigo Yamada) **93a:60143** 60K25 (60F17, 60J65, 90B15)

— (*with* Xu, Susan H.) On the asymptote of the optimal routing policy for two service stations. (English summary) *IEEE Trans. Automat. Control* **38** (1993), *no.* 1, 187–189. (Summary) **93m:93100** 93E20 (90B15)

Chen, Hong Andy (*with* Chu, Po Hsiang) What is a Gabriel topology over a graded ring? (English summary) *Category theory* 1991 (*Montreal, PQ,* 1991), 133–139, *CMS Conf. Proc.*, 13, *Amer. Math. Soc., Providence, RI,* 1992. (Stefaan Caenepeel) **93k:16077** 16W50 (16S90)

Chen, Hong Jian The unbiased estimation theory for exponential family. (English summary) *Systems Sci. Math. Sci.* **3** (1990), *no.* 4, 341–355. (J. Sarangi) **93j:62071** 62F11 (62F10)

Chen, Hong Sen (*with* Lin, Qun) A high accuracy analysis of the mixed finite element method for biharmonic equations. (English summary) *Systems Sci. Math. Sci.* **5** (1992), *no.* 4, 352–364. (Georges A. Lebaud) **93k:65091** 65N30

Chen, Hou Yao *see* **Li, Pei Ye, (93i:01006)**

Chen, Hsin-Chu Circulative matrices of degree θ. (English summary) *SIAM J. Matrix Anal. Appl.* **13** (1992), *no.* 4, 1172–1188. (Ronald L. Smith) **93h:15001** 15A03 (15A18, 20C30)

Ch'ên, Hsing Hsia (*with* Hsü, I Jung) On Redheffer's type theorems in differential inequalities on manifolds. *Bull. Inst. Math. Acad. Sinica* **19** (1991), *no.* 1, 1–10. (From the text) **93e:58194** 58G30

Chen, Hua An analytic model for S^3-equivariant cohomology. (English summary) *Topology Hawaii (Honolulu, HI,* 1990), 53–61, *World Sci. Publishing, River Edge, NJ,* 1992. (Summary) **93e:55009** 55N91 (57R19)

Chen, Hua Hao A nonparametric method for estimating the density of animal populations. (Chinese. Chinese summary) *Math. Practice Theory* **1993**, *no.* 1, 8–15. 92D25

Chen, Hua Ling (*with* Dai, De Pei) Using the theory of Volterra series to analyze the transfer functions of a hysteresis nonlinear system. (Chinese. English and Chinese summaries) *Xi'an Jiaotong Daxue Xuebao* **26** (1992), *suppl.*, 143–146, 166. 93C10 (93B25)

Chen, Huai Hui (*with* Lappan, Peter) An integral bound for the spherical derivative. (English summary) *Analysis* **12** (1992), *no.* 3-4, 233–247. (David Minda) **93h:30052** 30D45

— (*with* Gauthier, Paul M.) A maximum principle for subharmonic and plurisubharmonic functions. *Canad. Math. Bull.* **35** (1992), *no.* 1, 34–39. (A. Yu. Rashkovskii) **93a:31013** 31C10 (31C05, 58C05)

Chen, Huai Peng The products of k-spaces with point-countable closed k-networks. *Topology Proc.* **15** (1990), 63–82. (Gary Gruenhage) **93i:54018** 54D55 (54A35, 54B10)

Chen, Huai Tang On the problem of ascending subgraph decompositions into matchings. (English summary) *Utilitas Math.* **42** (1992), 177–180. (Summary) **93j:05113** 05C70

Chen, Huann Sheng (*with* Huang, Wên T'ao) Estimation of the exponential mean under type I censored sampling. (English summary) *J. Statist. Plann. Inference* **33** (1992), *no.* 2, 187–196. (Joaquin Diaz Saiz) **93j:62064** 62F10

Chen, Hubert J. (*with* Bristol, David R.; Mithongtae, Jirawan S.) Comparing exponential guarantee times with a control. (English summary) With discussion. *The frontiers of modern statistical inference procedures, II (Sydney,* 1987), 95–151, *Amer. Sci. Press Ser. Math. Management Sci.*, 28, *Amer. Sci. Press, Columbus, OH,* 1992. (Summary) **93h:62035** 62F07 (62N05)

— (*with* Dudewicz, Edward J.) Subset selection with expected subset size control. (English summary) With discussion. *The frontiers of modern statistical inference procedures, II (Sydney,* 1987), 177–222, *Amer. Sci. Press Ser. Math. Management Sci.*, 28, *Amer. Sci. Press, Columbus, OH,* 1992. (*see* **93g:62002**) 62F07

Chen, Hudong Invariant two-dimensional structures of vorticity field in nonviscous fluid. (English summary) *Phys. Fluids A* **4** (1992), *no.* 9, 2027–2036. (Radyadour Kh. Zeytounian) **93h:76015** 76C05

Chen, Hui (*with* Chen, Zhao Kuan; Zhang, Yan Ping) A study on the controllable region of a discrete linear system with a constraint on the control fuel. (Chinese. English and Chinese summaries) *Control Theory Appl.* **9** (1992), *no.* 3, 224–231. (Summary) **93h:93013** 93B05 (93C55)

Chen, Hung (*with* Chen, Keh-Wei) Selection of the splined variables and convergence rates in a partial spline model. (French summary) *Canad. J. Statist.* **19** (1991), *no.* 3, 323–339. (Ewaryst Rafajłowicz) **93d:62057** 62G05

Ch'ên, Hung Chou (*with* Chang, Fan Jên; Lin, W. C.) Weierstrass decomposition by the standard form approach. *Control theory, stochastic analysis and applications (Hangzhou,* 1991), 260–268, *World Sci. Publishing, River Edge, NJ,* 1991. (Summary) **93d:93019** 93B11 (93B40)

— (*with* Chang, Fan Jên) Cayley-Hamilton theorem for the standard form $(sE - A)$. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, II (Kobe,* 1991), 121–125, *Mita, Tokyo,* 1992. (Summary) **93j:93030** 93B25 (15A22)

— (*with* Chang, Fan Jên) The generalized Cayley-Hamilton theorem for standard pencils. *Systems Control Lett.* **18** (1992), *no.* 3, 179–182. (George E. Antoniou) **93a:93029** 93B25

(15A22)

Chen, Huo Kun (*with* Zhou, Xi Reng; Feng, Hai Bo) The least criterion error principle on Laplace numerical inversion transformation. *Theory and applications of boundary element methods (Beijing, 1991)*, 129–134, *Internat. Acad. Publ., Beijing*, 1991. (*see* **93b:65008**) 65R10

Chen, Hwa-Nien On the stability of a population growth model with sexual reproduction on Z^2. *Ann. Probab.* **20** (1992), *no.* 1, 232–285. (G. R. Grimmett) **93c:60156** 60K35

Ch'ên, I Ch'ên (*with* Chang, Hsiang) Output tracking design of affine nonlinear plant via variable structure system. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 11, 1823–1828. 93B51

Chen, Infon *see* **Chen, Ying Fang**

Chen, J. (*with* Owsley, P.) A burst-error-correcting algorithm for Reed-Solomon codes. (English summary) *IEEE Trans. Inform. Theory* **38** (1992), *no.* 6, 1807–1812. (Summary) **93i:94016** 94B15 (94B20)

Chen, J. S. (*with* Chen, Ye-Hwa) Adaptive robust control of uncertain systems. *Robust control system techniques and applications, Part* 1, 175–222, *Control Dyn. Syst. Adv. Theory Appl.*, 50, *Academic Press, San Diego, CA*, 1992. (Han Sheng Wu) **93h:93070** 93D21 (93B36, 93B51, 93C40, 93D09)

Chen, Jen-San (*with* Bogy, D. B.) Effects of load parameters on the natural frequencies and stability of a flexible spinning disk with a stationary load system. (English summary) *Trans. ASME J. Appl. Mech.* **59** (1992), *no.* 2, *part* 2, 5230–5235. (Summary) **93c:73065** 73K12

Chen, Ji (*with* Wang, Zhen[1]) Generalization of Ky Fan inequality. *Math. Balkanica (N.S.)* **5** (1991), *no.* 4, 373–380 (1992). (I. Gavrea) **93g:26030** 26D15

Chen, Ji Cheng (*with* Lai, Meng Xia) A theory of multiple pole assignment by output feedback and its algorithm. (Chinese. English summary) *Gaoxiao Yingyong Shuxue Xuebao* **6** (1991), *no.* 3, 392–400. (Zheng Zhi Han) **93a:93056** 93B55 (93B05, 93B10)

Chen, Ji Xiang A note on chain homotopy pushouts. (Chinese) *Acta Math. Sinica* **34** (1991), *no.* 4, 508–516. (Jin Kun Lin) **93b:55009** 55P05 (18G35, 55U15)

Chen, Ji Yin (*with* Shen, Guang Xian; Xiao, Hong) The boundary element method to contact problems in 3-D elasticity with friction. *Theory and applications of boundary element methods (Beijing, 1991)*, 421–426, *Internat. Acad. Publ., Beijing*, 1991. (*see* **93b:65008**) 73V10 (65N38)

Chen, Jia Hua (*with* Wu, C.-F. J.) Some results on s^{n-k} fractional factorial designs with minimum aberration or optimal moments. *Ann. Statist.* **19** (1991), *no.* 2, 1028–1041. (Summary) **93a:62108** 62K15 (62K05)

— Some results on 2^{n-k} fractional factorial designs and search for minimum aberration designs. (English summary) *Ann. Statist.* **20** (1992), *no.* 4, 2124–2141. (Damaraju Raghavarao) **93m:62177** 62K15 (62K05)

Chen, Jia Nai Co-Frobenius extensions of co-algebras and their homological properties. (Chinese) *Chinese Ann. Math. Ser. A* **12** (1991), *no.* 5, 603–607. (George Szeto) **93d:16049** 16W30 (16E10)

Chen, Jia Xin The Bayesian estimation of the order of an AR model under the squared-error loss function. (Chinese. English and Chinese summaries) *Chinese J. Appl. Probab. Statist.* **7** (1991), *no.* 2, 113–124. 62M10 (62F15)

Chen, Jia Yuan (*with* Hu, Xiao Dong) A direct method for higher-dimensional constrained nonlinear optimum problems and its application. (Chinese. English and Chinese summaries) *J. Chengdu Univ. Sci. Tech.* **1992**, *no.* 4, 65–72, 92. 90C30 (90C90)

Chen, Jian Bao (*with* Zhan, Jin Long) Admissibility of linear estimators of regression coefficients with constraints. (Chinese. English summary) *Gaoxiao Yingyong Shuxue Xuebao* **6** (1991), *no.* 1, 20–30. (Summary) **93b:62014** 62C15 (62J05)

— Some results on admissibility of simultaneous estimates of regression coefficients and error variance under a matrix loss function. (Chinese. English and Chinese summaries) *Chinese J. Appl. Probab. Statist.* **8** (1992), *no.* 1, 75–82. (Summary) **93m:62024** 62C15 (62J05)

Chen, Jian Gong *see* **Tang, Ting You** *and* **Luo, Zu Ying, (93i:01005)**

Chen, Jian Long On left A-injective rings. (Chinese. English summary) *Chinese Quart. J. Math.* **7** (1992), *no.* 1, 25–31. (From the summary) **93b:16006** 16D50

— Some characterizations of FP-injective rings and IF rings. (Chinese. English and Chinese summaries) *J. Math. Res. Exposition* **12** (1992), *no.* 3, 395–400. (Summary) **93h:16003** 16D50

— (*with* Zhang, Ju Le) Some studies on P-injective rings. (Chinese. English and Chinese summaries) *J. Math. (Wuhan)* **12** (1992), *no.* 2, 141–145. 16D50

— (*with* Tang, Huai Ding; Yang, Tong Hai) Flat modules and ML modules relative to a hereditary torsion theory. (Chinese. English and Chinese summaries) *J. Math. (Wuhan)* **12** (1992), *no.* 2, 213–220. 16S90

— Group inverses and Drazin inverses of matrices over rings. (Chinese. English summary) *J. Xinjiang Univ. Natur. Sci.* **9** (1992), *no.* 1, 44–49. (Summary) **93a:15004** 15A09

— (*with* Huang, Jun Min) Generalized pseudo-ideals of strongly regular rings. (Chinese. English summary) *Nanjing Daxue Xuebao Shuxue Bannian Kan* **9** (1992), *no.* 1, 52–57. (From the summary) **93j:16005** 16D99

— (*with* Ding, Nan Qing) The flat dimensions of injective modules. (English summary) *Manuscripta Math.* **78** (1993), *no.* 2, 165–177. (Ellen E. Kirkman) **93k:16013** 16E10 (16D50, 16E50)

Chen, Jian Sheng Some theorems on spectra of graphs. (Chinese. English and Chinese summaries) *J. Huazhong Univ. Sci. Tech.* **20** (1992), *no.* 2, 159–163. (Summary) **93k:05114** 05C50

Chen, Jian Xin (*with* Yao, Zong Yuan) Integral representation of smooth functions on bounded domains in C^n. (Chinese. English summary) *Xiamen Daxue Xuebao Ziran Kexue Ban* **30** (1991), *no.* 2, 130–136. (Yan Da Zhao) **93c:32005** 32A25

Chen, Jianer (*with* Gross, Jonathan L.) Limit points for average genus. I. 3-connected and 2-connected simplicial graphs. *J. Combin. Theory Ser. B* **55** (1992), *no.* 1, 83–103. (Saul Stahl) **93a:05055** 05C10

— (*with* Gross, Jonathan L.) Limit points for average genus. II. 2-connected nonsimplicial graphs. (English summary) *J. Combin. Theory Ser. B* **56** (1992), *no.* 1, 108–129. (Saul Stahl) **93k:05050** 05C10

Chen, Jianhua (*with* Zheng, Si-Qing; Kwon, Kyung Hee) Finding a shortest path in twisted hypercubes. Proceedings of the Twenty-second Southeastern Conference on Combinatorics, Graph Theory, and Computing (Baton Rouge, LA, 1991). *Congr. Numer.* **83** (1991), 75–90. (From the introduction) **93h:05104** 05C35 (05C38, 05C85)

Chen, Jiann Lin (*with* Jeng, Yih Nen) Truncation error analysis of the finite volume method for a model steady convective equation. *J. Comput. Phys.* **100** (1992), *no.* 1, 64–76. (Summary) **93c:76067** 76M25 (76R99)

Chen, Jie A supplemental note to: "Bounds on the three-block structured singular value" [Control Theory Adv. Tech. **6** (1990), no. 3, 473–481] by Chen and J. S. Freudenberg. (English summary) *Control Theory Adv. Tech.* **8** (1992), *no.* 2, 367–371. 93D09

— Comments on: "A necessary and sufficient condition for the stability of nonnegative interval discrete systems" [IEEE Trans. Automat. Control **36** (1991), no. 6, 742–746; MR 92f:93092] by B. Shafai, K. Perev, D. Cowley and Y. Chehab. (English summary) *IEEE Trans. Automat. Control* **38** (1993), *no.* 1, 189. (Summary) **93k:93079** 93D09

Chen, Jie[1] (*with* Zhang, H. G.; Zhang, Hong Yue) A recursive identification algorithm for estimating abrupt parameter changes. *Control '91, Vol.* 1, 2 (*Edinburgh*, 1991), 220–222, *IEE Conf. Publ. Ser.*, 332, *IEE, London*, 1991. (*see* **93h:93007**) 93B30 (93B40)

Chen, Jie Cheng (*with* Luo, Cheng) Duality of H^1 and BMO on positively curved manifolds and their characterizations. (English summary) *Harmonic analysis (Tianjin, 1988)*, 23–38, *Lecture Notes in Math.*, 1494, *Springer, Berlin*, 1991. (Margaret A. M. Murray) **93j:42010** 42B30 (46E30)

— (*with* Xu, Han) Some notes on $T(1)$-theorem. *Northeast. Math. J.* **7** (1991), *no.* 2, 221–228. (Aleš Založnik) **93f:42037** 42B20

— Weak type $(1,1)$ boundedness of Riesz transform on positively curved manifolds. A Chinese summary appears in Chinese Ann. Math. Ser. A **13** (1992), no. 1, 131. *Chinese Ann. Math. Ser. B* **13** (1992), *no.* 1, 1–5. (From the introduction) **93m:58120** 58G30 (42B20, 47D03, 47F05)

— Comparison between maximal and square functions of 1-forms and its applications. (English summary) A Chinese summary appears in Chinese Ann. Math. Ser. A **13** (1992), no. 4, 517. *Chinese Ann. Math. Ser. B* **13** (1992), *no.* 3, 374–383. (Friedbert Prüfer) **93i:58154** 58G25

— A note on Riesz potentials and the first eigenvalue. *Proc. Amer. Math. Soc.* **117** (1993), *no.* 3, 683–685. (Johan Tysk) **93d:58155** 58G11 (35P15, 46E35, 58G25)

Chen, Jin Jiang (*with* Yang, Fu Wen; Tu, Jian) An H^∞ optimal design for a four-block problem. (Chinese. English and Chinese summaries) *J. Huazhong Univ. Sci. Tech.* **20** (1992), *no.* 1, 21–25. 93B36

Chen, Jin Quan (*with* Pan, Feng) Symmetric irreducible representations of $SU(3)_q$ in the $SU(2)_q \times U(1)$ basis and some extensions to $SU(N)_q \supset SU(N-1)_q \times U(1)$. *J. Phys. A* **25** (1992), *no.* 14, 4017–4024. (Chang Pu Sun) **93g:17030** 17B37 (81R50, 82B20)

Chen, Jing Fa (*with* Wang, Jian Fang; Li, Yu Qiang) The isomorphic factorizations of a class of 2-circulant graphs. *Graph theory, combinatorics, and applications, Vol.* 1 (*Kalamazoo, MI*, 1988), 223–231, *Wiley-Intersci. Publ., Wiley, New York*, 1991. (Summary) **93e:05074** 05C70

Chen, Jingsen (*with* Carlsson, Svante) The complexity of heaps. *Proceedings of the Third Annual ACM-SIAM Symposium on Discrete Algorithms (Orlando, FL*, 1992), 393–402, *ACM, New York*, 1992. (Summary) **93d:68014** 68P05 (68P10)

Chen, Jixiu (*with* Reich, Edgar) Extensions with bounded $\overline{\partial}$-derivative. *Ann. Acad. Sci. Fenn. Ser. A I Math.* **16** (1991), *no.* 2, 377–389. (K. Strebel) **93b:30018** 30C62

Chen, Jonq Chyuan (*with* Wang, Shun Hsiang) A fault detecting DCT architecture. (English summary) *Internat. J. Electron.* **73** (1992), *no.* 2, 247–262. 94C12

Chen, Jun (*with* Yang, Shu Kong) Periodic bifurcation and chaotic behavior of UJT forced oscillation circuits. (Chinese. English and Chinese summaries) *Hunan Daxue Xuebao* **19** (1992), *no.* 2, 1–7, 26. 58F13 (34C15, 94C05)

Chen, K. S. (*with* Fung, A. K.) A comparison between a frequency domain method and the standard moment method in surface scattering. (English summary) *Integral methods in science and engineering—90 (Arlington, TX*, 1990), 411–422, *Ser. Comput. Phys. Process. Mech. Thermal Sci., Hemisphere, New York*, 1991. (*see* **93f:00014**) 78–08 (78A45)

Chen, K. W. *see* **Chen, Keh-Wei**

Chen, Kai Zhou (*with* Jiao, Yong Chang) A new method for large scale sparse linear programming. *Approximation, optimization and computing*, 249–252, *North-Holland, Amsterdam*, 1990. (*see* **93a:41001**) 90C06

— (*with* Xu, Ya Ping) The necessary and sufficient condition of H-graph and the optimizing models of minimum H-circuit. (English summary) *Sci. China Ser. A* **35** (1992), *no.* 5, 513–520. (Summary) **93f:90121** 90C10 (05C45, 90C35)

Chen, Kailai (*with* Shapiro, Jacob; Waxman, Jerry) Near-point heuristics for rank constrained level graphs. (English summary) Proceedings of the Twenty-third Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, FL, 1992). *Congr. Numer.* **89** (1992), 15–32. (Summary) **93k:05176** 05C85

Chen, Kan (*with* Xu, Huang-Jian; Bergersen, Birger) Self-organized ruptures in an elastic medium: a possible model for earthquakes. (English summary) *J. Phys. A* **25** (1992), *no.* 22, L1251–L1256. (Summary) **93h:86004** 86A17 (73N20)

Chen, Ke (*with* Amini, S.) Numerical analysis of boundary integral solution of the Helmholtz equation in domains with nonsmooth boundaries. (English summary) *IMA J. Numer. Anal.* **13** (1993), *no.* 1, 43–66. (Summary) **93i:65115** 65N38 (65R20, 76M15, 76Q05)

Chen, Ke An Lifting of mappings defined on a class of product spaces. (Chinese. English summary) *Natur. Sci. J. Xiangtan Univ.* **13** (1991), *no.* 3, 17–19. (Summary) **93b:55017** 55R05

Chen, Keh-Wei (*with* Chen, Hung) Selection of the splined variables and convergence rates in a partial spline model. (French summary) *Canad. J. Statist.* **19** (1991), *no.* 3, 323–339. (Ewaryst Rafajłowicz) **93d:62057** 62G05

— (*with* Zheng, Zhong Guo) A class of tests using L-statistic for constant relative failure rate against monotone relative failure rate. (English summary) *Systems Sci. Math. Sci.* **5** (1992), *no.* 1, 19–26. (Summary) **93g:62121** 62N05 (62F03)

Chen, Kuang Shu *see* **Chen, Guang Shu**

Ch'ên, Kuang Wu On relative M-groups. (English summary) *Chinese J. Math.* **21** (1993), *no.* 1, 1–12. (Roderick Gow) **93m:20013** 20C15

Chen, L. (*with* Dasgupta, Soura; Gevers, Michel; Bastin, G.; Campion, Guy) Identifiability of scalar linearly parametrized polynomial systems. (English summary) *Identification and system parameter estimation* 1991, *Vol.* 1,2 (*Budapest*, 1991), 835–839, *IFAC Sympos. Ser.*, 3, *Pergamon, Oxford*, 1992. (*see* **93h:93009**) 93C10 (93B30)

Chen, L. W. (*with* Tsai, Mi Ching) A numerical algorithm for inner-outer factorizations of real-rational matrices. (English summary) *Systems Control Lett.* **20** (1993), *no.* 3, 209–217. (Petko Petkov) **93m:93035** 93B40 (93B25, 93B36)

Chen, Lai Jiu (*with* Zhang, Hua Guang) A fuzzy identification approach and its application to generating unit load systems. (Chinese. English and Chinese summaries) *J. Southeast Univ.* **22** (1992), *no.* 2, 1–9. 93B30 (04A72)

Chen, Lan Xiang Minimax estimation of the variance of a normal distribution in restricted parameter spaces. (Chinese. English and Chinese summaries) *Chinese J. Appl. Probab. Statist.* **8** (1992), *no.* 3, 242–246. (Summary) **93m:62028** 62C20 (62F10)

Chen, Li Hua (*with* Jia, Ya) A nonlinear relaxation time theory for transient stochastic dynamics. (Chinese. English and Chinese summaries) *J. Central China Normal Univ. Natur. Sci.* **26** (1992), *no.* 2, 165–167. 82C99

Chen, Li Peng (*with* Xu, Ning Shou; Wu, Zhang Lei) A learning modified generalized predictive controller. (English summary) *Intelligent tuning and adaptive control (Singapore, 1991)*, 139–144, *IFAC Sympos. Ser.*, 1991, *No.* 7, *Pergamon, Oxford*, 1991. (*see* **93i:93007**) 93E35

Chen, Li Qun (*with* Wang, Tie Guang) A generalized MacMillan equation for controllable variable-mass mechanical systems. (Chinese. English summary) *J. Northeast Univ. Tech.* **13** (1992), *no.* 1, 62–68. (Summary) **93c:70018** 70Q05 (70H30, 70P05)

Chen, Li Rong (*with* Li, Shou Fo) Parallel algorithms of iterated defect correction methods. (English summary) *Proceedings of International Conference on Scientific Computation (Hangzhou, 1991)*, 202–206, *Ser. Appl. Math.*, 1, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93d:65004**) 65L05 (65Y05)

Chen, Lian Jun Extraneous multipliers of addition sets. (Chinese. English summary) *Sichuan Daxue Xuebao* **28** (1991), *no.* 4, 421–426. (Siu Lun Ma) **93b:05021** 05B10

Chen, Liang[1] (*with* Botelho, Fernanda) Chain transitivity and rotation shadowing for annulus homeomorphisms. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 4, 1173–1177. (Jerzy Ombach) **93j:58100** 58F15 (54H20)

Chen, Liao-Yuan (*with* Su, Zhao Bing; Yu, Lu) Closed time path Green's function and its applications in transport theory. *Thermal field theories (Ibaraki, 1990)*, 107–121, *North-Holland Delta Ser., North-Holland, Amsterdam*, 1991. (Summary) **93b:82076** 82C70

Chen, Lin *see* **Chen, Lin[4]**

Chen, Lin[2] Optimal parallel time bounds for the maximum clique problem on intervals. *Inform. Process. Lett.* **42** (1992), *no.* 4, 197–201. (John Michael Robson) **93h:68047** 68Q15 (68Q10, 68Q22, 68Q25)

— Efficient parallel recognition of some circular arc graphs. I. (English summary) *Algorithmica* **9** (1993), *no.* 3, 217–238. (Mirko Křivánek) **93m:05161** 05C75 (68Q22)

— (*with* Yesha, Yaacov) Efficient parallel algorithms for bipartite permutation graphs. (English summary) *Networks* **23** (1993), *no.* 1, 29–39. (Summary) **93j:05143** 05C85 (68Q22, 68R10)

Chen, Lin[3] (*with* Gao, Long; Fan, Yu Shun; Ma, Hai Wu) A nonlinear control design for power systems. (English summary) *Automatica J. IFAC* **28** (1992), *no.* 5, 975–979. 93C95

Chen, Lin[4] (*with* Tang, Gong You; Huang, Xiao Han) A new conclusion on the parameter stability domain of linear time-invariant large-scale systems. (English and Chinese summaries) *Control Theory Appl.* **9** (1992), *no.* 4, 410–415. (Takehiro Mori) **93i:93090** 93D05 (34D20, 93A15, 93C05, 93C15, 93D30)

Chen, Lin Jue (*with* Sun, Yan Chen) Everywhere Hölder continuity of weak solutions to a class of second-order nonlinear parabolic systems of equations. (Chinese. English summary) *Heilongjiang Daxue Ziran Kexue Xuebao* **9** (1992), *no.* 2, 17–25, 51. (Summary) **93c:35061** 35K40 (35D10, 35K55)

— (*with* Xia, Mao Hui) The hyperbolic isometric transformation in the half-space H^3. (Chinese. English and Chinese summaries) *Heilongjiang Daxue Ziran Kexue Xuebao* **9** (1992), *no.* 3, 14–18. (Jingzhong Zhang) **93k:51026** 51M10

Chen, Ling (*with* Wong, Chi Song) Inequalities for singular values and traces. *Linear Algebra Appl.* **171** (1992), 109–120. (Mihail Voicu) **93d:15014** 15A18 (15A45)

Chen, Louis H. Y. (*with* Barbour, A. D.; Loh, Wei-Liem) Compound Poisson approximation for nonnegative random variables via Stein's method. (English summary) *Ann. Probab.* **20** (1992), *no.* 4, 1843–1866. (Dietmar Pfeifer) **93k:60044** 60E15 (60J10)

— (*with* Choi, Kwok Pui) Some asymptotic and large deviation results in Poisson approximation. (English summary) *Ann. Probab.* **20** (1992), *no.* 4, 1867–1876. (Andrew D. Barbour) **93k:60067** 60F10 (60F05, 62E17)

— (*with* Barbour, A. D.) On the binary expansion of a random integer. *Statist. Probab. Lett.* **14** (1992), *no.* 3, 235–241. (Peter Schatte) **93g:11084** 11K16 (60E05)

— *see also* **Probability theory, 93e:60005**

Chen, Lung-Kee (*with* Solmon, Donald C.) Asymptotic estimates for the Fourier transform on $\mathbf{R}^n$, $n \geq 2$. *J. Math. Anal. Appl.* **155** (1991), *no.* 2, 312–321. (Michael J. Wilson) **93d:42012** 42B10 (33C10, 33C55)

— (*with* Wang, Xi) A class of singular integrals. *J. Math. Anal. Appl.* **164** (1992), *no.* 1, 1–8. (Javier Duoandikoetxea) **93c:42016** 42B20

— (*with* Yang, Xue Shan) Stability of discrete bilinear systems with time-delayed feedback functions. (English summary) *IEEE Trans. Automat. Control* **38** (1993), *no.* 1, 158–163. (M. G. Frost) **93k:93099** 93D15 (93D05)

Chen, M. S. *see* **Chen, Ming Shyan**

Chen, Meng A result on the birational map between two normal 3-folds. A Chinese summary appears in Chinese Ann. Math. Ser. A **12** (1991), no. 5, 645. *Chinese Ann. Math. Ser. B* **12** (1991), *no.* 4, 464–467. (Peter Nielsen) **93d:14028** 14E30

Chen, Mian Yun A grey system method of overall urban planning. (Chinese. English summary) *J. Huazhong Univ. Sci. Tech.* **18** (1990), *no.* 3, 1–7. 90C90 (04A72)

Ch'ên, Miao Shêng (*with* Lai, Kwei Kwei) A monopoly agent's optimal control on inventory and prices over a given selling planning horizon. (English summary) *Internat. J. Inform. Management Sci.* **3** (1992), *no.* 2, 69–77. 49N55 (90B05)

Chen, Min New parameters of Teichmüller spaces of Riemann surfaces of genus two. (English summary) *Ann. Acad. Sci. Fenn. Ser. A I Math.* **17** (1992), *no.* 2, 307–314. (Tuomas Sorvali) **93k:32041** 32G15 (20H10, 30F35)

Chen, Min (*with* Chang, Xue Jiang) Estimators of the parameters of an autoregressive process with disturbing noise and their asymptotic properties. (Chinese. English and Chinese summaries) *Chinese J. Appl. Probab. Statist.* **8** (1992), *no.* 2, 129–136. (Summary) **93j:62223** 62M10

— A further discussion on asymptotic properties of autoregressive estimates of the inverse autocorrelation function. I. The rate of strong convergence. (Chinese. English summary) *Gaoxiao Yingyong Shuxue Xuebao* **7** (1992), *no.* 2, 216–227. (Summary) **93d:62158** 62M10

Ch'ên, Ming Po (*with* Owa, Shigeyoshi) Distortion theorems for alpha-starlike functions. *Kyungpook Math. J.* **31** (1991), *no.* 2, 155–159. (M. Reade) **93c:30016** 30C45

— (*with* Srivastava, Hari M.) Some unified presentations of the Voigt functions. *Astrophys. Space Sci.* **192** (1992), *no.* 1, 63–74. (Summary) **93e:33005** 33E20 (85A99)

— (*with* Nee, Jan Pou) An existence theorem for some high order elliptic equations. *Nonlinear Anal.* **19** (1992), *no.* 5, 403–407. (Tadeusz Pruszko) **93h:35056** 35J40 (35J65, 47H11, 47H20)

— (*with* Zhang, Bing Gen) The existence of the bounded positive solutions of delay difference equations. (English summary) *Panamer. Math. J.* **3** (1993), *no.* 1, 79–94. (Summary) **93k:39001** 39A10

Chen, Ming Shyan (*with* Tsai, Jason S. H.; K'ung, Fan Chü) Optimal design and optimal digital redesign for continuous-time input time-delay systems. (English summary) *Control Theory Adv. Tech.* **8** (1992), *no.* 2, 315–340. (Summary) **93g:93039** 93B50 (49K25, 93C60, 93C62)

— (*with* Tsai, Jason S. H.; K'ung, Fan Chü) Optimal servodesign of the SISO estimator-based control system. (English summary) *J. Franklin Inst.* **329** (1992), *no.* 5, 829–841. 93B52

Chen, Mu Fa Exponential L^2-convergence and L^2-spectral gap for Markov processes. A Chinese summary appears in Acta Math. Sinica **35** (1992), no. 2, 286. *Acta Math. Sinica (N.S.)* **7** (1991), *no.* 1, 19–37. (Richard Holley) **93a:60128** 60J75 (47D07, 47N30)

— On coupling of jump processes. A Chinese summary appears in Chinese Ann. Math. Ser. A **12** (1991), no. 5, 644. *Chinese Ann. Math. Ser. B* **12** (1991), *no.* 4, 385–399. (Hermann Thorisson) **93g:60156** 60J25

— Uniqueness of reaction diffusion processes. *Chinese Sci. Bull.* **36** (1991), *no.* 12, 969–973. (Ralf Manthey) **93b:60170** 60J35 (60J27)

— On three classical problems for Markov chains with continuous time parameters. *J. Appl. Probab.* **28** (1991), *no.* 2, 305–320. (Uwe Rösler) **93a:60109a** 60J27

— Stochastic processes from Yang-Mills lattice field. (English summary) *Probability and statistics (Tianjin, 1988/1989)*, 12–22, *Nankai Ser. Pure Appl. Math. Theoret. Phys., World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93k:60232** 60K35

— (*with* Huang, Li Ping[2]; Xu, Xian Jin) Continuum limit for reaction diffusion processes with several species. (English summary) *Probability and statistics (Tianjin, 1988/1989)*, 23–31, *Nankai Ser. Pure Appl. Math. Theoret. Phys., World Sci. Publishing, River Edge, NJ*, 1992. (Ingemar Kaj) **93i:60183** 60K35 (60J25, 60J60)

— Stochastic models of economic optimization. I. (Chinese. English and Chinese summaries) *Chinese J. Appl. Probab. Statist.* **8** (1992), *no.* 3, 289–294. 90A15 (90A19, 90C90)

— Stochastic models of economic optimization. II. (Chinese. English and Chinese summaries) *Chinese J. Appl. Probab. Statist.* **8** (1992), *no.* 4, 374–377. 90A15 (90A19, 90C90)

— Acknowledgement: "On three classical problems for Markov chains with continuous time parameters". *J. Appl. Probab.* **29** (1992), *no.* 1, 245. (Uwe Rösler) **93a:60109b** 60J27

Chen, Nan Xian Unified expression for Fermi and Bose distributions. (English summary) *Phys. Rev. A* (3) **46** (1992), *no.* 6, 3538–3539. (Summary) **93g:82003** 82B03

Chen, Nian Shing (*with* Huang, Shing Tsaan) A self-stabilizing algorithm for constructing breadth-first trees. *Inform. Process. Lett.* **41** (1992), *no.* 2, 109–117. (Summary) **93a:68017** 68M15

Chen, Ning (*with* Wang, Jia Song) The l_∞ norm minimization solution to underdetermined systems of linear equations. (Chinese. English summary) *Numer. Math. J. Chinese Univ.* **14** (1992), *no.* 2, 151–157. 90C20 (65K05)

Chen, Pei De Multi-parameter stochastic processes. *Probability theory and its applications in China*, 59–78, *Contemp. Math.*, 118, *Amer. Math. Soc., Providence, RI*, 1991. (Summary) **93a:60054** 60G07 (60G17, 60G60, 60H05, 60H20)

— L^1-theory of approximation by ridge functions. *Chinese Sci. Bull.* **36** (1991), *no.* 21, 1761–1764. (Summary) **93m:62140** 62H40 (46N30)

Chen, Pei-Li Qualitative analysis of myelinated nerve fibers with point-node FitzHugh-Nagumo dynamic system. *SIAM J. Math. Anal.* **23** (1992), *no.* 1, 81–98. (Brian D. Sleeman) **93c:92001** 92C20 (35B05, 35K40)

Chen, Pengyuan A lower bound for the dimension of the message space of the decentralized mechanisms realizing a given goal. *J. Math. Econom.* **21** (1992), *no.* 3, 249–270. (Dave Furth) **93c:90006** 90A05 (34C45, 58A99)

Chen, Ping[2] Nonparametric estimation of survival functions from incomplete observations. (Chinese. English and Chinese summaries) *Chinese J. Appl. Probab. Statist.* **8** (1992), *no.* 4, 337–342. 62G05 (62N05)

— Random window size kernel estimators of regression functions with censored data. (Chinese. English and Chinese summaries) *J. Southeast Univ.* **22** (1992), *no.* 1, 89–95. 62G05

— Nonparametric estimation of bivariate survival functions under the competing risks case. (Chinese. English and Chinese summaries) *J. Southeast Univ.* **22** (1992), *no.* 2, 64–72. 62G05 (62N05)

— Product limit estimation of bivariate survival functions in the case of competing risks. (Chinese. English and Chinese summaries) *J. Southeast Univ.* **22** (1992), *no.* 6, 51–57. 62G05 (62N05)

— Kernel estimators of regression functions under random censorship and strong consistency. (Chinese. English summary) *J. Systems Sci. Math. Sci.* **12** (1992), *no.* 4, 350–355. 62G05 (62J02)

Chen, Pinyuen (*with* Bechhofer, Robert E.) A note on a curtailed sequential procedure for subset selection of multinomial cells. (English summary) Modern sequential analysis (SSA), Vol. II (Syracuse, NY, 1989). *Amer. J. Math. Management Sci.* **11** (1991), *no.* 3-4, 309–324. (Summary) **93k:62163** 62L10 (62F07)

— (*with* Sobel, Marc; Sobel, Milton) A two-stage procedure for selecting the largest mean based on conditional probability analysis. (English summary) Modern sequential analysis (SSA), Vol. II (Syracuse, NY, 1989). *Amer. J. Math. Management Sci.* **11** (1991), *no.* 3-4, 325–350. (Summary) **93e:62205** 62L10 (62F07)

— (*with* Hsu, Lifang) Partitioning multinomial cells. (English summary) With discussion. *The frontiers of modern statistical inference procedures, II (Sydney, 1987)*, 239–253, *Amer. Sci. Press Ser. Math. Management Sci.*, 28, *Amer. Sci. Press, Columbus, OH*, 1992. (Summary) **93h:62036** 62F07 (62L10)

— Truncated selection procedures for the most probable event and the least probable event. (English summary) *Ann. Inst. Statist. Math.* **44** (1992), *no.* 4, 613–622. (Mir Masoom Ali) **93m:62050** 62F07 (62L15)

Ch'èn, Po Hsien (*with* Lin, Chün Liang) On the design of stabilizing controllers for singularly perturbed systems. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 11, 1828–1834. (V. A. Sobolev) **93k:93095** 93D15 (34D15, 34H05, 93C73)

— (*with* P'èng, Hua Chieh) A robust discrete-time adaptive control with control input constraints. (English and Chinese summaries) *J. Chinese Inst. Engrs.* **16** (1993), *no.* 1, 1–11. (Summary) **93j:93079** 93C40 (93B36)

Ch'èn, Po Liang (*with* Fu, Hêng Lin) Total colorings of graphs of order $2n$ having maximum degree $2n-2$. *Graphs Combin.* **8** (1992), *no.* 2, 119–123. (Gary MacGillivray) **93h:05071** 05C15

— (*with* Zhang, Zhong Fu; Zhang, Jian Xun; Wang, Jian Fang) Relations among arboricity, total independence numbers and total covering numbers. (Chinese. English and Chinese summaries) *Qufu Shifan Daxue Xuebao Ziran Kexue Ban* **18** (1992), *no.* 4, 9–14. (Gui Zhen Liu) **93m:05157** 05C70 (05C35)

Chen, Po-Shu (*with* Farhat, Charbel; Roux, François-Xavier) The dual Schur complement method with well-posed local Neumann problems: regularization with a perturbed Lagrangian formulation. (English summary) *SIAM J. Sci. Comput.* **14** (1993), *no.* 3, 752–759. 65N55 (65Y05)

Chen, Q. (*with* Xin, Yuan Long) A generalized maximum principle and its applications in geometry. *Amer. J. Math.* **114** (1992), *no.* 2, 355–366. (Introduction) **93g:53054** 53C21 (53A10, 58E15)

Chen, Q. X. *see* **Chen, Qing Xin**

Chen, Qi Keith (*with* Yu, Lei; Ott, Edward) Fractal distribution of floaters on a fluid surface and the transition to chaos for random maps. *Phys. D* **53** (1991), *no.* 1, 102–124. (Arkady S. Pikovsky) **93g:58101** 58F13 (58F40, 76E99, 76F20)

Chen, Qing[2] (*with* Xu, Sen Lin) Rigidity of compact minimal submanifolds in a unit sphere. (English summary) *Geom. Dedicata* **45** (1993), *no.* 1, 83–88. (Reiko Miyaoka) **93k:53057** 53C42 (53C20)

Chen, Qing Hua[2] (*with* Su, Xi Lu) Some results on the indeterminate equation $\sum_{j=0}^{h}(x+j)^n=(x+h+1)^n$. (Chinese. English summary) *Fujian Shifan Daxue Xuebao Ziran Kexue Ban* **6** (1990), *no.* 4, 34–38. (Editors) **93b:11033** 11D41

Chen, Qing Ming Submanifolds minimally immersed in a sphere. (Chinese. English summary) *J. Northeast Univ. Tech.* **13** (1992), *no.* 1, 74–78. (Bang-yen Chen) **93b:53047** 53C42 (53C40)

Chen, Qing Xin (*with* Wan, Bai Wu) Asymptotic normality analysis of the estimation error of steady-state models for industrial processes: SISO case. (English summary) *Internat. J. Systems Sci.* **23** (1992), *no.* 11, 2003–2023. (Summary) **93h:93073** 93E10 (93C95)

Chen, Qiu Gui (*with* Lü, Bi Hu; Yin, Bao Qun; Yang, Xiao Xian) Transfer functions of nonlinear integro-differential equations. (Chinese. English and Chinese summaries) *J. China Univ. Sci. Tech.* **22** (1992), *no.* 2, 188–194. (Yubo Chen) **93k:45001** 45J05 (93C80)

Chen, Robert W. (*with* Zame, Alan) An urn model with some applications. *Soochow J. Math.* **18** (1992), *no.* 2, 223–227. (Lyuben R. Mutafchiev) **93h:60015** 60C05 (90A28, 92C60)

Chen, Rong (*with* Tsay, Ruey S.) On the ergodicity of TAR(1) processes. *Ann. Appl. Probab.* **1** (1991), *no.* 4, 613–634. (Eric V. Slud) **93d:60108** 60J05 (62M10, 93E03)

— (*with* Tsay, Ruey S.) Functional-coefficient autoregressive models. (English summary) *J. Amer. Statist. Assoc.* **88** (1993), *no.* 421, 298–308. (Summary) **93k:62181** 62M10

Chen, Rong Hua (*with* Feng, De Yi; Lin, Ming Zhou; Jiang, Chun) Application of fuzzy statistical decision making in countermeasures against great earthquakes. *Combining fuzzy imprecision with probabilistic uncertainty in decision making*, 374–388, *Lecture Notes in Econom. and Math. Systems*, 310, *Springer, Berlin*, 1988. (*see* **93c:90002**) 90A05 (04A72, 90C70)

Chen, Rong Jaye (*with* Hou, Yu Song) Nonassociative parallel prefix computation. (English summary) *Inform. Process. Lett.* **44** (1992), *no.* 2, 91–94. (Summary) **93i:68099** 68Q40 (08A02, 68Q70)

— (*with* Wu, Jer Shyan) The Towers of Hanoi problem with parallel moves. (English summary) *Inform. Process. Lett.* **44** (1992), *no.* 5, 241–243. (Summary) **93k:68041** 68Q22

— (*with* Chien, Been Chian; Yang, Wei Pang) Analysis of the multigroup method for manipulating multiple stacks. (English summary) *Comput. Math. Appl.* **25** (1993), *no.* 3, 43–57. (From the summary) **93i:68060** 68P20 (68P05)

Chen, Rong Qiu (*with* Xiong, Ya Zhou) Criteria for $n/1/\overline{F}+\overline{T}+\overline{E}$ problems. (Chinese. English and Chinese summaries) *J. Huazhong Univ. Sci. Tech.* **20** (1992), *no.* 3, 83–87. 90B35

Chen, Rong Sheng Effect of λ^{-1}-integrability on boundary division. (Chinese. English summary) *Math. Appl.* **4** (1991), *no.* 2, 97–100. (Zhen Chao Cao) **93a:35028** 35G15

Chen, Rong Si (*with* Zhang, Fu Ji; Guo, Xiao Feng; Gutman, Ivan) Benzenoid systems whose (x,y,z)-invariants have $x=1$ and $x=2$. *Match No.* 26 (1991), 229–241. (Zhibo Chen) **93b:92024** 92E10 (05C70, 05C90)

— (*with* Huang, Hai Yan; Lin, Ke Rong) Realization of k-coverable coronoid systems. (Chinese summary) *J. Xinjiang Univ. Natur. Sci.* **9** (1992), *no.* 1, 16–21. (N. Trinajstić) **93e:92019** 92E10

— (*with* Cyvin, Sven J.) The number of Kekulé structures for rectangle-shaped benzenoids. XI. (English and Chinese summaries) *J. Xinjiang Univ. Natur. Sci.* **9** (1992), *no.* 2, 1–5. 92E10

Chen, Rui Yuan Lindquester's conjecture on Hamiltonian paths of 2-connected graphs. (Chinese. English summary) *Fujian Shifan Daxue Xuebao Ziran Kexue Ban* **7** (1991), *no.* 4, 1–4. (Yong Bing Shi) **93b:05103** 05C45 (05C38)

Chen, S. *see* **Chen, Sheng**[2]

Chen, Seng Chi (*with* Tung, Pi Cheng) Experimental and analytical studies of the sinusoidal dither signal in a DC motor system. (English summary) *Dynamics Control* **3** (1993), *no.* 1, 53–69. 93C95

Chen, Shan Ben An optimal output feedback problem under the linear quadratic index. (Chinese. English and Chinese summaries) *Control Theory Appl.* **10** (1993), *no.* 1, 93–98. 49N10 (93B52)

Chen, Shao Chun (*with* Shi, Zhong Ci) Convergence of a nine-parameter generalized conforming element. *Chinese J. Numer. Math. Appl.* **13** (1991), *no.* 3, 75–85. (Summary) **93b:65179** 65N30 (65N12, 73V05)

— (*with* Shi, Zhong Ci) On the free formation of constructing stiffness matrices. (English summary) *Proceedings of International Conference on Scientific Computation* (*Hangzhou*, 1991), 18–27, *Ser. Appl. Math.*, 1, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93d:65004**) 65N30 (65F99)

Chen, Shao Zhu (*with* Erbe, Lynn H.; Krawcewicz, W.) Some existence results for solutions of differential inclusions with retardations. *Ann. Polon. Math.* **54** (1991), *no.* 3, 227–239. (Summary) **93e:34025** 34A60 (34B15, 34K10)

— Asymptotic integration of the principal solution of a second-order differential equation. *Bull. London Math. Soc.* **23** (1991), *no.* 5, 457–464. (M. Cecchi) **93e:34043** 34C10 (34C11)

— (*with* Huang, Qing Guang) On a conjecture of Hunt and Yorke. *J. Math. Anal. Appl.* **159** (1991), *no.* 2, 469–484. (Ovide Arino) **93a:34082** 34K15

— Riccati techniques and asymptotic integrations of differential equations. (English and Chinese summaries) *Math. Appl.* **5** (1992), *no.* 3, 38–46. (Jarosław Morchało) **93k:34003** 34A05 (34A30, 34C99)

— Generalized Riccati transformations and second-order linear oscillations. (Chinese. English and Chinese summaries) *Shandong Daxue Xuebao Ziran Kexue Ban* **27** (1992), *no.* 3, 274–283. (Ju Rang Yan) **93m:34042** 34C10 (34A30)

Chen, Shen (*with* Jiang, Jing Ping; Yuan, Hui Gen) Nonlinear self-adaptive control of a CSTR. (Chinese. Chinese summary) *Inform. and Control* (*Shenyang*) **21** (1992), *no.* 2, 124–128. 93C40

Chen, Sheng Constructing isospectral but nonisometric Riemannian manifolds. (English summary) *Canad. Math. Bull.* **35** (1992), *no.* 3, 303–310. (Ruishi Kuwabara) **93h:58158** 58G25 (11R52, 53C20)

— (*with* Gu, Weizhen) Exact order of subsets of asymptotic bases. *J. Number Theory* **41** (1992), *no.* 1, 15–21. (Georges Grekos) **93f:11012b** 11B13 (20D60)

Chen, Sheng[2] (*with* Billings, S. A.) Neural networks for nonlinear dynamic system modelling and identification. (English summary) *Internat. J. Control* **56** (1992), *no.* 2, 319–346. (Summary) **93f:93013** 93A30 (68T05, 92B20)

Chen, Sheng Min (*with* Shen, Xin Yao) On the action of Steenrod powers on polynomial algebras. *Algebraic topology* (*San Feliu de Guíxols*, 1990), 326–330, *Lecture Notes in Math.*, 1509, *Springer, Berlin*, 1992. (Kohhei Yamaguchi) **93i:55022** 55S10

Chen, Sheng Shen *see* **Chern, Shiing Shen**

Chen, Shi Ji (*with* Zeng, Zhi Bin) Generalized multivariate ridge regression estimate and criteria $Q(c)$ for choosing matrix K. *Appl. Math. Mech.* (*English Ed.*) **14** (1993), *no.* 1, 73–84; *translated from Appl. Math. Mech.* **14** (1993), *no.* 1, 69–78 (*Chinese. English and Chinese summaries*). (Summary) **93k:62142** 62J07

Chen, Shou Yu (*with* Zhao, Ying Qi) Fuzzy optimum selection theory and models. (Chinese. English and Chinese summaries) *Math. Appl.* **6** (1993), *no.* 1, 1–6. 93C42 (04A72)

Chen, Shu Jin *see* **Yao, Zong Yuan, 93b:32005**

Chen, Shu Ping The existence of solutions to the infinite-dimensional algebraic Riccati equations with indefinite coefficients. *Control theory of distributed parameter systems and applications* (*Shanghai*, 1990), 43–50, *Lecture Notes in Control and Inform. Sci.*, 159, *Springer, Berlin*, 1991. (Vladimir B. Larin) **93a:93064** 93C25 (93B36)

— (*with* Li, Xun Jing; Peng, Shi Ge; Yong, Jiong Min) H^∞ type optimal control problems, algebraic Riccati equations and differential games. *Control theory, stochastic analysis and applications* (*Hangzhou*, 1991), 79–95, *World Sci. Publishing, River Edge, NJ*, 1991. (Antonis I. G. Vardulakis) **93e:93023** 93B36 (49N10, 90D25)

— (*with* Peng, Shi Ge) Positivity-preserving mapping and its application. *Control theory, stochastic analysis and applications* (*Hangzhou*, 1991), 279–289, *World Sci. Publishing, River Edge, NJ*, 1991. (John W. Lee) **93f:34108** 34H05 (34A34, 34F05, 49M10, 93E15)

— Necessary and sufficient conditions for the existence of positive solutions to algebraic Riccati equations with indefinite quadratic term. *Appl. Math. Optim.* **26** (1992), *no.* 1, 95–110. (Vladimir B. Larin) **93c:93023** 93B40 (15A06, 65K10, 93D15)

— (*with* Lasiecka, Irena) Feedback exact null controllability for unbounded control problems in Hilbert space. *J. Optim. Theory Appl.* **74** (1992), *no.* 2, 191–219. (Vera Winitzky de Spinadel) **93c:93013** 93B05 (47N70)

— *see also* **Control theory, stochastic analysis and applications, 93a:93005**

Chen, Shu Tao (*with* Duan, Yan Zheng) Normal structure and weakly normal structure of Orlicz spaces. *Comment. Math. Univ. Carolin.* **32** (1991), *no.* 2, 219–225. (Mikhail Ostrovskiĭ) **93c:46042** 46E30 (46B20)

— (*with* Lü, Yan Ming; Wang, Bao Xiang) On property (WM), (CLUR) and (LKR) of Orlicz sequence spaces. (English summary) *Fasc. Math. No.* 22 (1991), 19–25 (1992). (O. P. Kapoor) **93i:46038** 46B45 (46A45, 46B20, 46E30)

— (*with* Hudzik, Henryk) On some properties of Musielak-Orlicz spaces and their subspaces of order continuous elements. (English summary) *Period. Math. Hungar.* **25** (1992), *no.* 1, 13–20. (Summary) **93m:46022** 46E30

Chen, Shu Xing Interaction of shock and sound wave for system of gas dynamics. *Proceedings of Asian Mathematical Conference*, 1990 (*Hong Kong*, 1990), 55–60, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93b:00022**) 76N15 (35L67, 76L05, 76Q05)

— Existence of local solution to supersonic flow past a three-dimensional wing. (French) *Adv. in Appl. Math.* **13** (1992), *no.* 3, 273–304. (L. Hsiao) **93h:35156** 35Q30 (76J20)

— (*with* Wang, Ya Guang) The Cauchy problem for gas dynamic systems in multi-dimensional space with weakly singular data. (English summary) A Chinese summary appears in Chinese Ann. Math. Ser. A **13** (1992), no. 4, 516. *Chinese Ann. Math. Ser. B* **13** (1992), *no.* 3, 298–314. (Benoit Perthame) **93j:35108** 35L45 (35L67, 35Q35, 76N15)

Chen, Shui Li Almost F-compactness in L-fuzzy topological spaces. *Northeast. Math. J.* **7** (1991), *no.* 4, 428–432. (Summary) **93e:54003** 54A40 (04A72)

— Theory of L-fuzzy H-sets. (English summary) *Fuzzy Sets and Systems* **51** (1992), *no.* 1, 89–94. 54A40 (04A72)

Chen, Shyi Ming A new approach to inexact reasoning for rule-based systems. (English summary) *Cybernet. Systems* **23** (1992), *no.* 6, 561–582. (Summary) **93h:68127** 68T27 (03B52, 90A05)

— (*with* Ke, Jyh Sheng; Chang, Chin Fu) Fuzzy reasoning based on fuzzy Petri nets. *Internat. J. Inform. Management Sci.* **3** (1992), *no.* 1, 39–51. (Richard A. Alò) **93h:68128** 68T27 (03B52, 03E72, 68Q90)

— (*with* Ke, Jyh Sheng; Chang, Chin Fu) An inexact reasoning algorithm based on fuzzy rule matrix transformations. *J. Automat. Reason.* **8** (1992), *no.* 1, 77–90. (Summary) **93a:68130** 68T27 (03B52)

Chen, So-Chin Global regularity of the $\overline{\partial}$-Neumann problem: a sufficient condition. *Bull. Inst. Math. Acad. Sinica* **19** (1991), *no.* 3, 191–205. (Der-Chen E. Chang) **93c:32023**

32F20 (35N15)
— Characterization of automorphisms on the Barrett and the Diederich-Fornæss worm domains. *Trans. Amer. Math. Soc.* **338** (1993), *no.* 1, 431–440. (Harold P. Boas) **93j:32032** 32H40 (32A07, 32H10)
Chen, Su Huan (*with* Liu, Han Bing) Shape design-sensitivity analysis for structural dynamic character using BEM. *Theory and applications of boundary element methods* (*Beijing*, 1991), 407–412, *Internat. Acad. Publ., Beijing*, 1991. (*see* **93b:65008**) 73V10 (65K10, 65N38)
— (*with* Liu, Zhong Sheng; Xu, Tao) A new method for solving nonlinear eigenproblems of vibrations. (English summary) *Comput. & Structures* **46** (1993), *no.* 2, 339–342. (Summary) **93m:73021** 73K12 (73V05)
Chen, T. Some remarks on the solutions of a concentrated torque and double forces on an elastic half-space. *Trans. ASME J. Appl. Mech.* **59** (1992), *no.* 3, 690–692. (Alekseĭ Balyunov) **93g:73028** 73C02
Chen, T. H. (*with* Lee, Der Tsai; Yang, Chung-Do) Shortest rectilinear paths among weighted obstacles. *Internat. J. Comput. Geom. Appl.* **1** (1991), *no.* 2, 109–124. (Summary) **93c:68102** 68U05
Chen, T. W. *see* **Ch'ên, T'ien Wên**
Chen, Tian Professor Z. L. Zhou. (Chinese) *Acta Sci. Natur. Univ. Sunyatseni* **31** (1992), *no.* 2, iv. 01A70
Chen, Tian Ping (*with* Zhang, De Zhi) Oscillatory integral with polynomial phase. (English summary) *Harmonic analysis* (*Tianjin*, 1988), 39–45, *Lecture Notes in Math.*, 1494, *Springer, Berlin*, 1991. (From the summary) **93g:42011** 42B10
— (*with* Zhang, De Zhi) Resolution of singularity and oscillatory integral. I. (English summary) A Chinese summary appears in Chinese Ann. Math. Ser. A **13** (1992), no. 4, 516. *Chinese Ann. Math. Ser. B* **13** (1992), *no.* 3, 289–297. (J. S. Joel) **93j:32042** 32S30 (41A60, 58C27, 58G15)
Ch'ên, T'ien Wên (*with* Sheen, Wen Jinn) On the regression function estimation by first kind Tchebichef polynomial. (English summary) *Internat. J. Inform. Management Sci.* **2** (1991), *no.* 1, 153–163. (Summary) **93f:62046** 62G05
Chen, Ting (*with* Meng, Bo) The FSWT method for multi-objective decision-making on the basis of fuzzy reasoning. (Chinese. English and Chinese summaries) *J. Huazhong Univ. Sci. Tech.* **20** (1992), *no.* 1, 7–12. 90C29 (04A72, 90C70)
Chen, Tongwen (*with* Francis, Bruce Allen) Linear time-varying $\mathcal{H}_2$-optimal control of sampled-data systems. *Automatica J. IFAC* **27** (1991), *no.* 6, 963–974. (Fikret A. Aliev) **93a:93040** 93B36 (93B51, 93C57)
— A simple derivation of the $\mathcal{H}_2$-optimal sampled-data controllers. (English summary) *Systems Control Lett.* **20** (1993), *no.* 1, 49–56. (Lin Huang) **93j:93089** 93C57 (93B35, 93B36, 93C55)
Chen, Tsu-Fen Semidiscrete least squares methods for linear convection-diffusion problem. (English summary) *Comput. Math. Appl.* **24** (1992), *no.* 11, 29–44. (Summary) **93h:65121** 65M60 (76M25, 76Rxx)
— Semidiscrete least squares methods for linear hyperbolic systems. (English summary) *Numer. Methods Partial Differential Equations* **8** (1992), *no.* 5, 423–442. (J. W. Jerome) **93f:65073** 65M60 (35L45)
Chen, Tung Shou (*with* Yang, Wei Pang; Lee, R. C. T.) Amortized analysis of some disk scheduling algorithms: SSTF, SCAN, and *N*-StepSCAN. (English summary) *BIT* **32** (1992), *no.* 4, 546–558. 68Q25
Chen, Tung Yang Interfacial discontinuities in thermal conductions. (English summary) *Internat. J. Engrg. Sci.* **31** (1993), *no.* 3, 425–434. (J. Ignaczak) **93k:73008** 73B30 (80A20)
— Green's functions and the nonuniform transformation problem in a piezoelectric medium. *Mech. Res. Comm.* **20** (1993), *no.* 3, 271–278. 73R05 (73C02)
Chen, Tzer Ming A modified hybrid Laplace transform/finite element method for transient heat conduction problems. (English summary) *Comput. Methods Appl. Mech. Engrg.* **98** (1992), *no.* 2, 261–272. (Summary) **93g:80001** 80–08 (80A20)
Chen, W. *see* **Chen, Weiyu**
Chen, Wei (*with* Semenoff, Gordon W.; Wu, Yong Shi[1]) Two-loop analysis of nonabelian Chern-Simons theory. (English summary) *Phys. Rev. D* (3) **46** (1992), *no.* 12, 5521–5539. (Summary) **93i:81132** 81T13
Chen, Wei Huan Isometric embedding of complex Grassmann manifolds in a sphere. (Chinese. Chinese summary) *J. Math.* (*Wuhan*) **11** (1991), *no.* 3, 301–310. (Bang-yen Chen) **93k:53058** 53C42 (58E20)
Chen, Wei Tian (*with* Chu, Xue Dao) A new adaptive pole placement algorithm for nonminimum phase stochastic systems. (Chinese. English and Chinese summaries) *Qufu Shifan Daxue Xuebao Ziran Kexue Ban* **18** (1992), *suppl.*, 64–70. 93B55 (93E03)
— A result on the roots of a real polynomial. (Chinese. English and Chinese summaries) *Qufu Shifan Daxue Xuebao Ziran Kexue Ban* **18** (1992), *suppl.*, 87–89. 93D09 (26C10)
Chen, Wei Yu (*with* Yang, Jian Qing; Xu, Nan Rong) A study of a road network traffic system model and its characteristics. (Chinese. English and Chinese summaries) *J. Southeast Univ.* **22** (1992), *no.* 1, 51–55. 90B20
Chen, Weiyu (*with* Ditzian, Z.) Best polynomial and Durrmeyer approximation in $L_p(S)$. *Indag. Math.* (*N.S.*) **2** (1991), *no.* 4, 437–452. (Summary) **93c:41011** 41A10 (41A35)
Chen, Wen Cheng (*with* Zhang, Ping Guang) Uniqueness of limit cycles of a quadratic system with a weak focus of order 2. (Chinese. English summary) *J. Systems Sci. Math. Sci.* **11** (1991), *no.* 3, 217–226. (Sui Lin Cai) **93e:34036** 34C05
Chen, Wen Chin (*with* Chung, Kuo Liang; Lin, Fêng Ch'ing) On the complexity of search algorithms. (English summary) *IEEE Trans. Comput.* **41** (1992), *no.* 9, 1172–1176. (Summary) **93g:68018** 68P10
Chen, Wen De (*with* Qi, Xiang Dong; Deng, Shu Hui) The eigen-problem and period analysis of the discrete-event system. (English summary) *Systems Sci. Math. Sci.* **3** (1990), *no.* 3, 243–260. (Summary) **93m:93058** 93C55 (93B55)
— (*with* Kløve, Torleiv) Lower bounds on multiple difference sets. *Discrete Math.* **98** (1991), *no.* 1, 9–21. (Otokar Grošek) **93a:05028** 05B10
— (*with* Qi, Xiang Dong) Output feedback and period assignment of discrete-event dynamic systems. (English and Chinese summaries) *Control Theory Appl.* **9** (1992), *no.* 6, 655–659. 93B52 (93B55)
— (*with* Qi, Xiang Dong) Theory and algorithms on period assignment of discrete-event dynamic systems. *Cybernet. Systems* **23** (1992), *no.* 3-4, 379–388. (Summary) **93d:93053** 93C57 (93B51)
Chen, Wen Hao (*with* Wang, Shu Jun) A statistical analysis of a system reliability growth model. (Chinese. Chinese summary) *Math. Practice Theory* **1992**, *no.* 2, 19–28. 62N05
Chen, Wen Hu Some fixed-point theorems for generalized *R*-mappings. (Chinese. English and Chinese summaries) *Hunan Jiaoyu Xueyuan Xuebao* (*Ziran Kexue*) **10** (1992), *no.* 5, 105–109. 54H25
Chen, Wen Hua (*with* Gu, Xing Yuan; Yuan, Xin) Robust state estimation for linear systems with uncertain dynamics. (Chinese. English and Chinese summaries) *Control Theory Appl.* **9** (1992), *no.* 5, 523–528. 93E12
Chen, Wen Hui (*with* Yong, Xue Rong; Zhang, Zhi Nan) On the "DNICP" property of the "butterfly" graph. (English and Chinese summaries) *J. Xinjiang Univ. Natur. Sci.* **9** (1992), *no.* 2, 46–49. (Yuan Hong) **93j:05105** 05C50 (15A48)
— An algorithm for solving numerical approximations of partial differential equations. (Chinese. English and Chinese summaries) *J. Xinjiang Univ. Natur. Sci.* **9** (1992), *no.* 3, 33–40. 65N99
Chen, Wen Pu (*with* Ding, Hui Liang; Sun, Xian Xue; Long, Qi Hao; Pan, Bing Chen) YIDOYU—an optimization program system for wing structures. *Approximation, optimization and computing*, 381–384, *North-Holland, Amsterdam*, 1990. (*see* **93a:41001**) 90–08 (90C30)
Chen, Wen Tsuen (*with* Hsieh, Kuen Rong) A neural sorting network with $O(1)$ time complexity. *Inform. Process. Lett.* **45** (1993), *no.* 6, 309–313. 68T05 (92B20)
Chen, Wen Xiong (*with* Li, Congming) Classification of solutions of some nonlinear elliptic equations. *Duke Math. J.* **63** (1991), *no.* 3, 615–622. (From the introduction) **93e:35009** 35B05 (35J60)
Chen, Wen Yi Weighted modulus estimates for pseudodifferential operators and the conjecture of Chanillo-Torchinsky. (Chinese) *Chinese Ann. Math. Ser. A* **12** (1991), *suppl.*, 6–11. (Li Zhong Peng) **93e:47069** 47G30 (35S05)
Chen, Wen Zhong (*with* Wu, Zi Li) Approximation theorems for linear operators in two-variable function spaces. (Chinese. English summary) *Math. Appl.* **4** (1991), *no.* 4, 36–43. (Sen-Yen Shaw) **93b:41031** 41A36 (47B38)
— (*with* Wu, Zi Li) Global approximation theorems for exponential operators on two-variable function spaces. (Chinese. English summary) *Xiamen Daxue Xuebao Ziran Kexue Ban* **31** (1992), *no.* 1, 6–11. (Ying Guang Shi) **93a:41059** 41A63 (41A35)
— (*with* Zeng, Xiao Ming[2]) Approximation properties of Trotter-Feller-type operators. (Chinese. English summary) *Xiamen Daxue Xuebao Ziran Kexue Ban* **31** (1992), *no.* 2, 116–120. (Sen-Yen Shaw) **93i:41016** 41A36 (41A25)
— (*with* Wu, Zi Li) A direct theorem on approximation of two-dimensional exponential-type operators on $(C, A)_\alpha$. (Chinese. English summary) *Xiamen Daxue Xuebao Ziran Kexue Ban* **31** (1992), *no.* 3, 215–219. (Jie Tian) **93f:41049** 41A65
— (*with* Zeng, Xiao Ming[2]) A local saturation theorem for the Feller-Trotter operator. (Chinese. English and Chinese summaries) *Xiamen Daxue Xuebao Ziran Kexue Ban* **31** (1992), *no.* 5, 455–459. 60F05 (47D07)
Chen, Wenhan Approximate inertial manifolds for 2D Navier-Stokes equations. *J. Math. Anal. Appl.* **165** (1992), *no.* 2, 399–418. (I. Aganović) **93a:35119** 35Q30 (35A35, 58F39, 76D05)
Chen, William Y. C. (*with* Rota, Gian-Carlo) q-analogs of the inclusion-exclusion principle and permutations with restricted position. *Discrete Math.* **104** (1992), *no.* 1, 7–22. (Ira Gessel) **93h:05012** 05A30 (05A15, 06A07)
Chen, Wu Hua (*with* Zheng, Bu Nan; Luo, Gui Lie) Convergence and stability of solutions of certain differential equations with distributed delay. *Ann. Differential Equations* **8** (1992), *no.* 1, 129–138. (Summary) **93d:34134** 34K20
Chen, X. *see* **Chen, Xinfu**
Chen, X. L. *see* **Chen, Xiao Liang**
Chen, Xi Ru (*with* Tao, Bo) Corrected proof of a theorem concerning a conjecture of Singh. (English summary) *Systems Sci. Math. Sci.* **3** (1990), *no.* 4, 337–340. (Summary) **93e:62023** 62C12
— (*with* Zhao, Lin Cheng) Asymptotic behavior of *M*-test statistics in linear models. (English summary) *J. Combin. Inform. System Sci.* **16** (1991), *no.* 2-3, 234–248. (K. C. Chanda) **93m:62163** 62J05 (62F05, 62G05)
— (*with* Bai, Zhi Dong; Krishnaiah, P. R.; Wu, Yue Hua; Zhao, Lin Cheng) Strong consistency of maximum likelihood parameter estimation of superimposed exponential signals in noise. *Teor. Veroyatnost. i Primenen.* **36** (1991), *no.* 2, 392–397; *reprinted in Theory Probab. Appl.* **36** (1991), *no.* 2, 349–355 (1992). (A. Ya. Dorogovtsev) **93b:62042** 62F12
— (*with* Wu, Yue Hua) On consistency of minimum L_1 norm estimates in linear models. *Probability and statistics* (*Tianjin*, 1988/1989), 33–38, *Nankai Ser. Pure Appl. Math. Theoret. Phys., World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93b:60004**) 62J07 (62F12)
— (*with* Wang, Shou Ren; Fang, Kai Tai) Statistics in China: a brief account of the past and present. *The development of statistics: recent contributions from China*, 1–5, *Pitman Res. Notes Math. Ser.*, 258, *Longman Sci. Tech., Harlow*, 1992. (*see* **93e:62004**) 62–03
— On a problem of existence of consistent estimate. *The development of statistics: recent contributions from China*, 237–248, *Pitman Res. Notes Math. Ser.*, 258, *Longman Sci. Tech., Harlow*, 1992. (K. C. Chanda) **93m:62147** 62J05 (62F12)
— (*with* Bai, Zhi Dong; Zhao, Lin Cheng; Wu, Yue Hua) Consistency of minimum L_1-norm estimates in linear models. *The development of statistics: recent contributions from China*, 249–260, *Pitman Res. Notes Math. Ser.*, 258, *Longman Sci. Tech., Harlow*, 1992. (K. C. Chanda) **93m:62148** 62J05 (60F15, 62F12)
— *see also* **Development of statistics: recent contributions from China, 93e:62004**
Chen, Xia Moderate deviations of independent random vectors in a Banach space. (Chinese. English and Chinese summaries) *Chinese J. Appl. Probab. Statist.* **7** (1991), *no.* 1, 24–32. (Summary) **93m:60020** 60B12 (60F10)
Chen, Xian Zhen A unified *N*-dimensional field equation and its application. (Chinese. English summary) *J. Huazhong Univ. Sci. Tech.* **19** (1991), *no.* 3, 63–68. (Summary) **93b:70016** 70G50 (78A25)
Chen, Xiang Dong On the local connectedness of frames. *J. Pure Appl. Algebra* **79** (1992), *no.* 1, 35–43. (Jiří Rosický) **93g:54030** 54D05 (54B30)
Chen, Xiao Jun (*with* Yamamoto, Tetsuro) On the convergence of some quasi-Newton methods for nonlinear equations with nondifferentiable operators. (English and German summaries) *Computing* **49** (1992), *no.* 1, 87–94. (Summary) **93f:65045** 65H10 (65G10)
Chen, Xiao Liang (*with* Morrison, P. J.) Nonlinear interactions of tearing modes in the presence of shear flow. *Phys. Fluids B* **4** (1992), *no.* 4, 845–854. (Summary) **93c:76038**

76E25 (76W05)

Chen, Xiao Man (*with* Yan, Shao Zong) Contractions on π_k spaces. *Chinese Sci. Bull.* **35** (1990), *no.* 20, 1673–1675. 47B50 (47A20, 47D03)

— (*with* Douglas, Ronald G.) Rigidity of Hardy submodules on the unit ball. *Houston J. Math.* **18** (1992), *no.* 1, 117–125. (Mihai Putinar) **93e:47009** 47A15 (32A35, 46J10, 46M20, 47B38)

— (*with* Douglas, Ronald G.) Localization of Hilbert modules. *Michigan Math. J.* **39** (1992), *no.* 3, 443–454. (F.-H. Vasilescu) **93h:46105** 46M20 (46H25, 46M05, 47A99)

Chen, Xiao Song D-radical classes and D-module classes. (Chinese. English summary) *Hunan Jiaoyu Xueyuan Xuebao (Ziran Kexue)* **10** (1992), *no.* 2, 19–22. (Summary) **93b:16034** 16N80

— (*with* Yin, Zhi Yun) A commutativity theorem for semiprime rings. (Chinese. English and Chinese summaries) *Hunan Jiaoyu Xueyuan Xuebao (Ziran Kexue)* **10** (1992), *no.* 5, 191. 16U80

Chen, Xiao Xing A generalization of Hartman's linearization theorem. (English summary) *Ann. Differential Equations* **8** (1992), *no.* 2, 164–174. (Ivan N. Grod) **93j:34008** 34A30 (34C20)

Chen, Xie Bin Optimal fault-tolerant extensions of a class of networks. (Chinese. English and Chinese summaries) *Zhangzhou Shiyuan Xuebao (Ziran Kexue Ban)* **6** (1992), *no.* 2, 28–32. (Summary) **93h:94041** 94C15 (05C90, 68M10, 94C12)

Chen, Xin Hai (*with* Zhou, De Yun; Tong, Ming An) A model-following generalized predictive robust self-adaptive controller. (Chinese. English and Chinese summaries) *Inform. and Control (Shenyang)* **21** (1992), *no.* 2, 65–73. 93B35 (93C40)

Chen, Xinfu Generation and propagation of interfaces in reaction-diffusion systems. *Trans. Amer. Math. Soc.* **334** (1992), *no.* 2, 877–913. (Summary) **93b:35137** 35R35 (35K57)

— Collision of two jets of compressible fluid. *Free boundary problems in fluid flow with applications (Montreal, PQ, 1990)*, 2–7, *Pitman Res. Notes Math. Ser.*, 282, *Longman Sci. Tech., Harlow*, 1993. (*see* **93k:00036**) 76N10

— (*with* Friedman, Avner) The thermistor problem for conductivity which vanishes at large temperature. (English summary) *Quart. Appl. Math.* **51** (1993), *no.* 1, 101–115. (Graeme C. Wake) **93m:35188** 35R35 (35J45, 80A20)

Chen, Xiong The path uniqueness of the solution of the two-parameter Poisson type stochatsic differential equation. *Chinese Sci. Bull.* **34** (1989), *no.* 19, 1590–1594. 60H10

— A property of sample paths of the N-parameter d-dimensional Ornstein-Uhlenbeck process. (Chinese. English and Chinese summaries) *Chinese J. Appl. Probab. Statist.* **7** (1991), *no.* 1, 9–13. (Summary) **93m:60097** 60G60 (60G15, 60G17)

— (*with* Xia, Pan) On Lévy-Baxter theorem for general two-parameter Gaussian processes. (English summary) *Studia Sci. Math. Hungar.* **26** (1991), *no.* 2-3, 401–410. (O. O. Kurchenko) **93i:60094** 60G60 (60G15)

— Hölder continuous for local times of the two-parameter Ornstein-Uhlenbeck process. *Probability and statistics (Tianjin, 1988/1989)*, 39–45, *Nankai Ser. Pure Appl. Math. Theoret. Phys., World Sci. Publishing, River Edge, NJ*, 1992. (Simeon M. Berman) **93i:60143** 60J55 (60F15)

Chen, Xu Dong Letter to the editor: "On robust empirical Bayes analysis of means and variances from stratified samples" [Comm. Statist. Theory Methods **18** (1989), no. 3, 913–926; MR 90m:62032] by R. C. Tiwari and P. Lahiri. With a reply by Tiwari and Lahiri. *Comm. Statist. Theory Methods* **21** (1992), *no.* 12, 3627–3630. (Editors) **93m:62030** 62D05 (62C12)

Chen, Xue (*with* Yao, Hui Neng) The Lovász conjecture for outerplanar graphs. (Chinese. English and Chinese summaries) *J. Hangzhou Univ. Natur. Sci. Ed.* **19** (1992), *no.* 3, 273–277. 05C10

Chen, Xuemin (*with* Reed, Irving S.; Truong, T. K.; Yin, Xiaowei) The algebraic decoding of the (41, 21, 9) quadratic residue code. *IEEE Trans. Inform. Theory* **38** (1992), *no.* 3, 974–986. (Stefan Dodunekov) **93h:94031** 94B35 (11T71)

Chen, Y. (*with* Rokhlin, Vladimir V.) On the inverse scattering problem for the Helmholtz equation in one dimension. *Inverse Problems* **8** (1992), *no.* 3, 365–391. (Summary) **93c:34034** 34A55 (34L25, 65L99)

Chen, Y. H. *see* **Chen, Ye-Hwa**

Chen, Y. I. Robust umbrella tests for a generalized Behrens-Fisher problem. *Biometrical J.* **34** (1992), *no.* 3, 347–357. 62F03

Chen, Y. L. *see* **Ch'ên, Yen Liang**

Chen, Y. Y. *see* **Chen, Yuan Yan**

Chen, Ya Hua (*with* Luo, Zu Hua) A class of joint best approximations by function pairs. (Chinese. English summary) *J. Math. Res. Exposition* **11** (1991), *no.* 4, 501–505. (Summary) **93a:41032** 41A28

Chen, Ya Ling Continuity of modified H_∞-optimal sensitivity. (Chinese. English and Chinese summaries) *Control Theory Appl.* **9** (1992), *no.* 5, 529–532. 93B36

Chen, Ya Zhe (*with* DiBenedetto, E.) Hölder estimates of solutions of singular parabolic equations with measurable coefficients. *Arch. Rational Mech. Anal.* **118** (1992), *no.* 3, 257–271. (Jesús Hernández) **93a:35092** 35K65 (35D10, 35K55, 35K60)

— A note on $C^{1,\alpha}$ estimates for solutions of fully nonlinear elliptic equations and obstacle problems. (English summary) *J. Partial Differential Equations* **5** (1992), *no.* 4, 1–12. (Summary) **93j:35033** 35B35 (35J60)

Chen, Yan[2] Conditions for quasisimilarity of quasinormal operators. (Chinese. English summary) *Fujian Shifan Daxue Xuebao Ziran Kexue Ban* **7** (1991), *no.* 3, 27–34. (Summary) **93c:47029** 47B20 (47A99)

Chen, Yan Ping Asymptotic expansion and extrapolation of finite element solutions to singular two-point boundary value problems. (Chinese. English and Chinese summaries) *Natur. Sci. J. Xiangtan Univ.* **14** (1992), *no.* 1, 8–15. (Summary) **93e:65110** 65L60

Chen, Yan Sheng (*with* Zhou, Qing Fu) Fourth order evolution equations with slowly varying depth and current and stability of Stokes waves. *J. Hydrodyn. Ser. B (English Ed.)* **3** (1991), *no.* 4, 21–33. (Summary) **93d:76010** 76B15 (76E99)

Chen, Yao-Chon Solving robot trajectory planning problems with uniform cubic B-splines. (English summary) *Optimal Control Appl. Methods* **12** (1991), *no.* 4, 247–262. 93C83

Chen, Yao Song (*with* Wu, Jian Hua[1]) A remark on the radiation conditions. *J. Hydrodyn. Ser. B (English Ed.)* **3** (1991), *no.* 4, 43–48. (Summary) **93a:76014** 76B15

Chen, Yaobin Structure of the time-optimal control law for multiple arms handling a common object along specified paths. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 10, 1648–1652. (Sauro Longhi) **93k:93069** 93C85 (49N35, 70B15, 70Q05, 93C35)

— (*with* Chien, Stanley Y.-P.; Desrochers, Alan A.) General structure of time-optimal control of robotic manipulators moving along prescribed paths. (English summary) *Internat. J. Control* **56** (1992), *no.* 4, 767–782. (Clementina D. Mladenova) **93f:93089** 93C85 (49N55, 70B15, 70Q05)

— (*with* Desrochers, Alan A.) Minimum-time control laws for robotic manipulators. (English summary) *Internat. J. Control* **57** (1993), *no.* 1, 1–27. (Clementina D. Mladenova) **93k:93070** 93C85 (70B15, 70Q05)

Chen, Yat-Chen *see* **Ch'ên, I Ch'ên**

Chen, Ye-Hwa (*with* Han, M. C.) Decentralized robust control of nonlinear systems with bounded time-varying uncertainties. *Control Theory Adv. Tech.* **7** (1991), *no.* 4, 609–628. (Mietek Brdyś) **93c:93011** 93A14 (93B35)

— A revisit to the student learning problem. (English summary) *Optimal Control Appl. Methods* **12** (1991), *no.* 4, 263–272. 49N55

— (*with* Chen, J. S.) Adaptive robust control of uncertain systems. *Robust control system techniques and applications, Part* 1, 175–222, *Control Dyn. Syst. Adv. Theory Appl.*, 50, *Academic Press, San Diego, CA*, 1992. (Han Sheng Wu) **93h:93070** 93D21 (93B36, 93B51, 93C40, 93D09)

— Adaptive robust control of uncertain systems with measurement noise. *Automatica J. IFAC* **28** (1992), *no.* 4, 715–728. (Takashi Yahagi) **93g:93079** 93D21 (93B36, 93B52, 93C40)

— (*with* Han, M. C.) Polynomial robust control design for uncertain systems. *Automatica J. IFAC* **28** (1992), *no.* 4, 809–814. (Summary) **93a:93048** 93B51 (93B12, 93B35, 93C10)

Ch'ên, Yen Liang An algorithm for finding the k quickest paths in a network. (English summary) *Comput. Oper. Res.* **20** (1993), *no.* 1, 59–65. (Summary) **93h:68112** 68R10 (68Q25, 90B12)

Chen, Yen Ping *see* **Chen, Yan Ping**

Chen, Yi-Chao (*with* MacSithigh, Gearoid P.) Bifurcation and stability of an incompressible elastic body under homogeneous dead loads with symmetry. I. General isotropic materials. (English summary) *Quart. J. Mech. Appl. Math.* **45** (1992), *no.* 2, 277–291. (Stan Chiriţă) **93g:73068** 73G05 (73H05, 73V25)

— (*with* MacSithigh, Gearoid P.) Bifurcation and stability of an incompressible elastic body under homogeneous dead loads with symmetry. II. Mooney-Rivlin materials. (English summary) *Quart. J. Mech. Appl. Math.* **45** (1992), *no.* 2, 293–313. (Stan Chiriţă) **93g:73069** 73G05 (73H05, 73V25)

Chen, Yi Cheng A study on Cauchy's principal value for generalized integrals with poles of arbitrary order. (Chinese. English and Chinese summaries) *J. Central China Normal Univ. Natur. Sci.* **26** (1992), *no.* 2, 168–171. 30E20

Chen, Yi-Feng *see* **Myszkorowski, Piotr**

Chen, Yi Xin (*with* Gao, Hong Bo) Classical exchange algebra in Liouville theory on a Riemann surface. *J. Phys. A* **25** (1992), *no.* 1, 123–133. (V. V. Chueshev) **93e:32025** 32G15 (14H42, 30F10, 32G81, 34A20, 81R10, 81T40)

Chen, Yi-Ying (*with* Berger, M. S.) Forced quasiperiodic and almost periodic oscillations of nonlinear Duffing equations. *Nonlinear Anal.* **19** (1992), *no.* 3, 249–257. (Joël Blot) **93j:34062** 34C27 (70K99)

Chen, Yi Yuan[1] P-vectorfields on two-manifolds. A Chinese summary appears in Chinese Ann. Math. Ser. A **13** (1992), no. 1, 131. *Chinese Ann. Math. Ser. B* **13** (1992), *no.* 1, 6–15. (Miklós Farkas) **93i:58125** 58F21 (57R25)

Chen, Yin Kernels of generalized derivation operators. (Chinese. Chinese summary) *Chinese Ann. Math. Ser. A* **13** (1992), *no.* 5, 580–588. (Shan Li Sun) **93m:47040** 47B47 (47A05)

Chen, Yin Hua (*with* Zhu, Dong Pei; Shi, Ming Jun) A method for finding the quantum ground state. (Chinese. English and Chinese summaries) *Acta Phys. Sinica* **41** (1992), *no.* 4, 535–542. (Summary) **93f:81030** 81Q05

Chen, Ying Fang Atoms of lattices of stable radicals and of linear semiprime $(p:q)$ radicals. (Chinese. English summary) *Acta Sci. Natur. Univ. Norm. Hunan.* **15** (1992), *no.* 2, 116–119. 16N80 (06B99)

Chen, Yong Cong Kubo-Einstein relation for quantum Brownian motion in a periodic potential. *J. Statist. Phys.* **65** (1991), *no.* 3-4, 761–771. (Yu. P. Virchenko) **93e:82041** 82C70

Chen, Yong Gao On a conjecture in Diophantine approximations. III. *J. Number Theory* **39** (1991), *no.* 1, 91–103. (Jian Hua Ren) **93d:11070** 11J13 (11J25)

Chen, Yong Nian Anti-fuzzy vector spaces. (Chinese. English and Chinese summaries) *J. Xinjiang Univ. Natur. Sci.* **9** (1992), *no.* 3, 46–49. (Xiaodong Liu) **93m:15049** 15A99 (04A72)

Chen, Yong Shao Existence of nonoscillatory solutions of nth order neutral delay differential equations. *Funkcial. Ekvac.* **35** (1992), *no.* 3, 557–570. (Yiannis Sficas) **93k:34157** 34K15 (34K40)

— Oscillation of higher-order neutral functional-differential equations. (Chinese. English summary) *Gaoxiao Yingyong Shuxue Xuebao* **7** (1992), *no.* 2, 294–302. (Binggen Zhang) **93h:34122** 34K15 (34K40)

— The existence of periodic solutions for a class of neutral differential-difference equations. *J. Austral. Math. Soc. Ser. B* **33** (1992), *no.* 4, 508–516. (Anatolii Fedorovich Ivanov) **93d:34118** 34K15 (34K40)

Chen, Yong Yi Approximate reasoning using the implication of standard sequence logic. (Chinese. English and Chinese summaries) Fuzzy information processing and machine intelligence (Chinese). *Mohu Xitong yu Shuxue* **6** (1992), *no.* 2, 49–56, 48. (Summary) **93m:68154** 68T27 (03B52)

Chen, You Qin (*with* Yao, Hong Bing; Xu, Shu Rong) An algorithm for nonnegative solutions to compatible equations in linear programming problems. (Chinese. English and Chinese summaries) *Gaoxiao Yingyong Shuxue Xuebao* **7** (1992), *no.* 4, 484–488. 90C05

— (*with* Xu, Shu Rong; Yao, Hong Bing) An improved Karmarkar algorithm for linear programming and its numerical test. (Chinese. English summary) *Math. Appl.* **5** (1992), *no.* 1, 14–21. (Cheng En Yang) **93d:90038** 90C05 (65K05)

Ch'ên, Yü I (*with* Hsu, J. R.-C.) Frequency modulations between two intersecting waves in deep water. (English summary) *Nonlinear dispersive wave systems (Orlando, FL, 1991)*, 299–328, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93i:76010** 76B15

— (*with* Wang, Ch'ing An) On existence of similarity solutions for laminar flow in a channel with one porous wall. (English summary) *Bull. Inst. Math. Acad. Sinica* **20** (1992), *no.* 4, 299–320. (Summary) **93m:34034** 34B15 (65L10, 76D05)

Chen, Yu Qing (*with* Zhang, Shi Sheng; Guo, Jin Li) Ekeland's variational principle and Caristi's fixed point theorem in probabilistic metric space. *Acta Math. Appl. Sinica (English Ser.)* **7** (1991), *no.* 3, 217–228. (Pando Georgiev) **93b:49021** 49J45 (47H10, 47S50, 54E70)

— (*with* Zhang, Shi Sheng) Approximation solvability of coincidence problems. (Chinese. English summary) *Sichuan Daxue Xuebao* **28** (1991), *no.* 4, 409–420. (Yi Hong Du) **93a:47066** 47H15 (34A60, 47H10, 47H17, 54H25, 65J15)

Chen, Yu Qun (*with* Zhang, Mou Cheng) The centralizer of semigroup rings. *Proceedings of Asian Mathematical Conference*, 1990 (*Hong Kong*, 1990), 554–559, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93b:00022**) 16S36

— (*with* Zhang, Mou Cheng) Some results of semigroup rings. *Words, languages and combinatorics* (*Kyoto*, 1990), 564–574, *World Sci. Publishing, River Edge, NJ*, 1992. (From the text) **93f:20085** 20M25 (16S36)

Chen, Yu Zhang (*with* Lou, Yu Tong) A generalization of Chebyshev's inequalities. (Chinese. English and Chinese summaries) *Qufu Shifan Daxue Xuebao Ziran Kexue Ban* **18** (1992), *no.* 4, 49–54. (Summary) **93m:26041** 26D15

Chen, Yu-zhong (*with* Bullough, R. K.; Ólafsson, Sverrir; Timonen, J.) Integrability conditions: recent results in the theory of integrable models. *Differential geometric methods in theoretical physics* (*Davis, CA*, 1988), 47–69, *NATO Adv. Sci. Inst. Ser. B Phys.*, 245, *Plenum, New York*, 1990. (A. K. Prykarpat·skiĭ and Ihor V. Mykytiuk) **93e:58079** 58F07 (35Qxx)

— (*with* Bullough, R. K.; Timonen, J.) Soliton statistical mechanics—thermodynamic limits for quantum and classical integrable models. *Nonlinear world, Vol.* 2 (*Kiev*, 1989), 1377–1422, *World Sci. Publishing, River Edge, NJ*, 1990. (*see* **93b:00013**) 82C10 (35Q58, 58F07)

Chen, Yuan Yan Belief logic systems. (English summary) *Analysis and management of uncertainty: theory and applications* (*College Park, MD*, 1990), 55–64, *Mach. Intell. Pattern Recogn.*, 13, *North-Holland, Amsterdam*, 1992. (*see* **93f:68004**) 68T27 (03B45)

Chen, Yuan Zhi A uniqueness theorem for the electrostatic potential. (Chinese. English summary) *J. South China Normal Univ. Natur. Sci. Ed.* **1990**, *Special Issue*, 194–199. (Kotik K. Lee) **93a:78011** 78A30

Chen, Yuh Shyan (*with* Sheu, Jang Ping; Chang, Chih Yung) Fault-tolerant sorting algorithm on hypercube multicomputers. (English summary) *J. Parallel Distrib. Comput.* **16** (1992), *no.* 2, 185–197. (Summary) **93i:68049** 68P10 (68M15, 68Q22)

Chen, Yuh Yih *see* **Ch'ên, Yü I**

Chen, Yun Gang (*with* Giga, Yoshikazu; Goto, Shun'ichi) Analysis toward snow crystal growth. *Functional analysis & related topics* (*Sapporo*, 1990), 43–57, *World Sci. Publishing, River Edge, NJ*, 1991. (Claudia Simionescu-Badea) **93c:35164** 35R35 (35D05, 80A23)

— (*with* Giga, Yoshikazu; Goto, Shun'ichi) Uniqueness and existence of viscosity solutions of generalized mean curvature flow equations. *J. Differential Geom.* **33** (1991), *no.* 3, 749–786. (Ioan I. Vrabie) **93a:35093** 35K65 (35D05, 53C21, 58E12)

— (*with* Giga, Yoshikazu; Goto, Shun'ichi) Remarks on viscosity solutions for evolution equations. *Proc. Japan Acad. Ser. A Math. Sci.* **67** (1991), *no.* 10, 323–328. (Bruno Franchi) **93b:35076** 35K65 (35D05)

Chen, Yun Mei (*with* Ding, Wei Yue) Blow-up analysis for heat flow of harmonic maps. (English summary) *Nematics* (*Orsay*, 1990), 49–64, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 332, *Kluwer Acad. Publ., Dordrecht*, 1991. (Caio J. C. Negreiros) **93k:58063** 58E20 (58G11)

— (*with* Li, Da Qian) ★ Global classical solutions for nonlinear evolution equations. Pitman Monographs and Surveys in Pure and Applied Mathematics, 45. *Longman Scientific & Technical, Harlow; copublished in the United States with John Wiley & Sons, Inc., New York*, 1992. xiv+209 *pp. ISBN* 0-582-05588-1 (Ioan I. Vrabie) **93g:35002** 35–02 (35K22, 35K55, 35L70, 35Q55)

Chen, Yun Min (*with* Feng, Wei; Wu, Shi Ming) Bump response of an elastic half-space by time-domain BEM. *Theory and applications of boundary element methods* (*Beijing*, 1991), 247–252, *Internat. Acad. Publ., Beijing*, 1991. (*see* **93b:65008**) 73V10 (65N38)

Chen, Yung Ming (*with* Zhu, Jian-Ping[2]) On the application of supercomputers for history matching multiphase oil reservoir models. (English summary) *Parallel processing for scientific computing* (*Houston, TX*, 1991), 353–359, *SIAM, Philadelphia, PA*, 1992. (*see* **93g:65178**) 65N22 (65Y05, 76M20, 76S05)

— (*with* Zhu, Jian-Ping[2]) Multilevel grid method for history matching multidimensional multiphase reservoir models. *Appl. Numer. Math.* **10** (1992), *no.* 2, 159–174. (Summary) **93b:65192** 65N55 (76M25, 76S05)

— (*with* Zhu, Jian-Ping[2]) Parameter estimation for multiphase reservoir models on hypercubes. *Impact Comput. Sci. Engrg.* **4** (1992), *no.* 2, 97–123. 76M25 (65Y05, 76T05)

Chen, Z. (*with* Bennavail, J.-C.; Singh, Madan G.) Judgemental calibration of multivariable constant elasticity models: scenario generation. (English summary) *Inform. Decision Tech.* **18** (1993), *no.* 6, 415–425. 90A05 (90B50)

Chen, Z. L. (*with* Li, Chung-Lun; Cheng, T. C. E.) A note on one-processor scheduling with asymmetric earliness and tardiness penalties. (English summary) *Oper. Res. Lett.* **13** (1993), *no.* 1, 45–48. (Summary) **93k:90044** 90B35

Chen, Ze Hua Interaction spline models and their convergence rates. *Ann. Statist.* **19** (1991), *no.* 4, 1855–1868. (Sidney J. Yakowitz) **93a:62050** 62G05 (62H12)

Chen, Zhang Xing (*with* Douglas, Jim, Jr.) Approximation of coefficients in hybrid and mixed methods for nonlinear parabolic problems. (Portuguese summary) *Mat. Apl. Comput.* **10** (1991), *no.* 2, 137–160. (Peter B. Monk) **93d:65097** 65N30

— A quasi-projection analysis for elastic wave propagation in fluid-saturated porous media. (English summary) *J. Comput. Math.* **10** (1992), *no.* 4, 366–375. (N. Gass) **93g:65121** 65M60 (73D15, 76S05)

— Projection finite element methods for semiconductor device equations. (English summary) *Comput. Math. Appl.* **25** (1993), *no.* 8, 81–88. (Summary) **93k:65092** 65N30

Chen, Zhao Jiang A fixed point theorem for mappings on products of SST-PM spaces and topological spaces. (Chinese. Chinese summary) *J. Math.* (*Wuhan*) **12** (1992), *no.* 1, 99–102. 54H25 (54E70)

Chen, Zhao Kuan (*with* Chen, Hui; Zhang, Yan Ping) A study on the controllable region of a discrete linear system with a constraint on the control fuel. (Chinese. English and Chinese summaries) *Control Theory Appl.* **9** (1992), *no.* 3, 224–231. (Summary) **93h:93013** 93B05 (93C55)

Chen, Zhao Mu (*with* Huang, Yi Sheng[2]) Some equivalent conditions for ideals in implicative BCK-algebras with condition (S). (Chinese. English and Chinese summaries) *Qufu Shifan Daxue Xuebao Ziran Kexue Ban* **18** (1992), *no.* 4, 31–34. 06F35 (03G25)

Chen, Zhen Qing On reflected Dirichlet spaces. (English summary) *Probab. Theory Related Fields* **94** (1992), *no.* 2, 135–162. (Michael Röckner) **93m:31014** 31C25 (60G44, 60J25, 60J40)

Chen, Zhen Xiang (*with* Guo, Dong Hui; Liu, Rui Tang; Wu, Bo Xi) A modified Hopfield model of neural networks. (Chinese. English and Chinese summaries) *Xiamen Daxue Xuebao Ziran Kexue Ban* **32** (1993), *no.* 1, 33–38. (Summary) **93m:92004** 92B20

Chen, Zhenhua Local real analytic boundary regularity of an integral solution operator of the $\overline{\partial}$-equation on convex domains. (English summary) *Pacific J. Math.* **156** (1992), *no.* 1, 97–105. (Makhlouf Derridj) **93j:32006** 32A25 (32F15, 32F20)

Chen, Zhi[3] (*with* Jin, Fan) A practical method for constructing ARBIBD($x^2, x(x+1), x+1, x, 1$). (Chinese. English summary) *Gaoxiao Yingyong Shuxue Xuebao* **6** (1991), *no.* 1, 52–56. (Summary) **93c:05021** 05B05

Chen, Zhi Da (*with* Gao, Jian[2]) Theory of nonlocal asymmetric elastic solids. *Appl. Math. Mech. (English Ed.)* **13** (1992), *no.* 9, 793–804; *translated from Appl. Math. Mech.* **13** (1992), *no.* 9, 765–774 (*Chinese. English and Chinese summaries*). (E. S. Şuhubi) **93k:73004** 73B18 (73B25)

Chen, Zhi-Hong On Hamiltonian line graphs. (English summary) *Ars Combin.* **33** (1992), 289–294. (Summary) **93d:05099** 05C45

Chen, Zhi Hua (*with* Lu, Zhi Qin) Essential spectrum of complete Riemannian manifolds. (English summary) *Sci. China Ser. A* **35** (1992), *no.* 3, 276–282. (Jeffrey M. Lee) **93k:58221** 58G25

Chen, Zhi Min A specifically fully nonlinear perturbation of the heat equations in exterior domains. *Nonlinear Anal.* **19** (1992), *no.* 5, 475–485. (Yoshihito Tomita) **93i:35083** 35K60 (34G20, 47H20, 47N20)

Chen, Zhi Ming (*with* Hoffmann, Karl-Heinz[1]) Numerical solutions of the optimal control problem governed by a phase field model. *Estimation and control of distributed parameter systems* (*Vorau*, 1990), 79–97, *Internat. Ser. Numer. Math.*, 100, *Birkhäuser, Basel*, 1991. (Fredi Tröltzsch) **93e:49047** 49M25 (49J20, 49M30, 65K10)

Chen, Zhi Ping (*with* Xu, Cheng Xian) A dual gradient method for solving a class of two-stage stochastic programming problems with recourse. (Chinese) *Xi'an Jiaotong Daxue Xuebao* **26** (1992), *no.* 2, 123–125. 90C15

Chen, Zhi Rong (*with* Chen, Fei Wu; Yuan, Hui; et al.) Chaotic dimensions of the forced Oregonator oscillator and cubic mappings. (Chinese. English and Chinese summaries) *Acta Phys. Sinica* **41** (1992), *no.* 7, 1081–1086. 58F13 (34C05, 34C15, 58F40)

Chen, Zhi Xiong (*with* Xiang, Long Wan) A study on preservation of the Painlevé property of partial differential equations. (Chinese. English and Chinese summaries) *J. Shanghai Jiaotong Univ.* **26** (1992), *no.* 1, 110–116. (Yun Bo Zeng) **93f:35199** 35Q53 (58F07)

Chen, Zhi Zeng A proof of the gracefulness of a class of graphs. (Chinese. English and Chinese summaries) *J. Math.* (*Wuhan*) **11** (1991), *no.* 4, 436–444. (Jing Zhong Mao) **93k:05161** 05C78

Chen, Zhi-Zhong *see* **Chen, Zhi Zhong[2]**

Chen, Zhi Zhong[1] On extending direct injective modules. *Proceedings of the First China-Japan International Symposium on Ring Theory* (*Guilin*, 1991), 25–27, *Okayama Univ., Okayama*, 1992. (*see* **93k:16001**) 16D50

Chen, Zhi Zhong[2] (*with* Toda, Seinosuke) On the complexity of computing optimal solutions. *Internat. J. Found. Comput. Sci.* **2** (1991), *no.* 3, 207–220. (Summary) **93a:68055** 68Q25

— A simple parallel algorithm for computing the diameters of all vertices in a tree and its application. (English summary) *Inform. Process. Lett.* **42** (1992), *no.* 5, 243–248. (Summary) **93e:68096** 68R10 (05C85, 68Q25)

— A fast and efficient parallel algorithm for finding a satisfying truth assignment to a 2-CNF formula. (English summary) *Inform. Process. Lett.* **43** (1992), *no.* 4, 191–193. (Summary) **93h:68054** 68Q22 (03B05, 03D15, 68Q25)

Chen, Zhizhong *see* **Chen, Zhi Zhong[1]**

Chen, Zhong He A class of incompressible surfaces in 3-manifolds fibering over S^1. *Chinese Sci. Bull.* **36** (1991), *no.* 19, 1590–1594. (Tsuyoshi Kobayashi) **93e:57002** 57M10 (57N10)

Chen, Zhong Hu A note on restricted roots of simple algebraic groups over p-adic fields. (Chinese summary) *Natur. Sci. J. Xiangtan Univ.* **11** (1989), *no.* 4, 94–102. (Mohammad Hailat) **93b:17028** 17B20 (17B45, 20G25)

— A note on the composition factors of the principal series representations of the group F_4^2. II. (Chinese summary) *Hunan Ann. Math.* **10** (1990), *no.* 1-2, 62–65. (Dao Ji Meng) **93b:22025** 22E46

— A note on the composition factors of the principal series representations of the group F_4^2. I. (Chinese summary) *Natur. Sci. J. Xiangtan Univ.* **12** (1990), *no.* 4, 119–133, 141. (Dao Ji Meng) **93c:22024** 22E46

— On sufficient condition for reducibility of a principal series representation of the group F_4^2. (English and Chinese summaries) *Natur. Sci. J. Xiangtan Univ.* **14** (1992), *no.* 1, 134–137. (Samuel Evens) **93j:22026** 22E46 (22D30)

Chen, Zhong Wen (*with* Wang, Jia Song) An algorithm for solving large l_1 norm minimization. (Chinese. English summary) *Nanjing Daxue Xuebao Shuxue Bannian Kan* **8** (1991), *no.* 2, 122–130. (Tian Xiong Han) **93b:65070** 65F30 (65K10, 90C30)

Chen, Zhong Ying The error estimate of generalized difference method of 3rd-order Hermite type for elliptic partial differential equations. (English summary) *Northeast. Math. J.* **8** (1992), *no.* 2, 127–135. (Summary) **93e:65125** 65N06 (65N15)

Chen, Zi Li Domination properties of operators on Banach lattices. (Chinese. Chinese summary) *Chinese Ann. Math. Ser. A* **13** (1992), *suppl.*, 76–79. (Da Jun Guo) **93j:47055** 47B60 (47B07)

Chen, Zi Qi (*with* Xue, Yao Fang) Extendable cycles in N_2-locally connected claw-free graphs. (Chinese. English summary) *Nanjing Daxue Xuebao Ziran Kexue Ban* **27** (1991), *Special Issue*, 38–42. (Summary) **93c:05073** 05C38

— (*with* Xue, Yao Fang) Hamiltonian cycles in domination-critical graphs. (Chinese summary) *Nanjing Daxue Xuebao Ziran Kexue Ban* **27** (1991), *Special Issue*, 58–62. (Summary) **93b:05112** 05C45

— (*with* Xue, Yao Fang) Dominating trails and pancyclicity of linear graphs. (Chinese summary) *Nei Mongol Daxue Xuebao Ziran Kexue* **23** (1992), *no.* 2, 166–173. (Summary) **93a:05080** 05C38

Chen, Zong Xuan (*with* Gao, Zong Sheng) Complex oscillation of solutions to nonhomogeneous linear differential equations. (Chinese. Chinese summary) *Acta Math. Sinica* **35** (1992), *no.* 2, 196–203. (Shu Pei Wang) **93i:34010** 34A20 (30D35, 34C10)
— (*with* Gao, Shi An) On the complex oscillation of nonhomogeneous linear differential equations with meromorphic coefficients. *Kodai Math. J.* **15** (1992), *no.* 1, 65–78. (Günter Frank) **93c:34011** 34A20 (30D35)
Chen, Zong Yun (*with* Huang, Nian Ning; Liu, Zhong Zhu; Xiao, Yi) An explicit expression of the dark *N*-soliton solution of the MKdV equation by means of the Darboux transformation. (English summary) *J. Phys. A* **26** (1993), *no.* 6, 1365–1374. (Summary) **93k:35231** 35Q53 (58F37)
Chen, Zu Chi Spectrum estimate for system of polyharmonic operators. (Chinese summary) *J. China Univ. Sci. Tech.* **21** (1991), *no.* 1, 1–9. (From the introduction) **93b:35099** 35P15 (31B30, 35J30)
— Dirichlet problem for degenerate quasilinear elliptic equations suggested by the anisotropic permeation. *J. Partial Differential Equations* **4** (1991), *no.* 4, 41–50. (Gaston E. Hernandez) **93a:35051** 35J65 (35D05, 35J70)
cassam-Chenaï, P. *see* **Cassam-Chenaï, P.**
Chenais, D. (*with* Habbal, Abderrahmane) Deterioration of a finite element method for arch structures when the thickness goes to zero. *Numer. Math.* **62** (1992), *no.* 3, 321–341. (Claude Surry) **93f:73099** 73V05 (65N30, 73K99)
Chendesh, T. *see* **Csendes, Tibor**
Cheney, E. W. (*with* Light, W. A.; Xu, Yuan) On kernels and approximation orders. *Approximation theory* (*Memphis, TN*, 1991), 227–242, *Lecture Notes in Pure and Appl. Math.*, 138, *Dekker, New York*, 1992. (From the introduction) **93d:41020** 41A35 (41A63)
— Approximation by functions of nonclassical form. *Approximation theory, spline functions and applications* (*Maratea*, 1991), 1–18, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 356, *Kluwer Acad. Publ., Dordrecht*, 1992. (Summary) **93b:41025** 41A30
— (*with* Sun, Xingping) The fundamentality of sets of ridge functions. (English summary) *Aequationes Math.* **44** (1992), *no.* 2-3, 226–235. (Charles K. Chui) **93m:41023** 41A30 (41A63, 65D15)
— (*with* Light, W. A.) Quasi-interpolation with translates of a function having noncompact support. *Constr. Approx.* **8** (1992), *no.* 1, 35–48. (D. Leviatan) **93a:41027** 41A25
— (*with* Light, W. A.; von Golitschek, M.) Approximation with monotone norms in tensor product spaces. *J. Approx. Theory* **68** (1992), *no.* 2, 183–205. (Dirk Werner) **93b:46139** 46M05 (41A65, 46B28, 46E40)
— (*with* Light, W. A.) Interpolation by periodic radial basis functions. *J. Math. Anal. Appl.* **168** (1992), *no.* 1, 111–130. (Dietrich Braess) **93f:41039** 41A46 (41A05)
— (*with* Xu, Yuan) Strictly positive definite functions on spheres. *Proc. Amer. Math. Soc.* **116** (1992), *no.* 4, 977–981. (R. A. Askey) **93b:43005** 43A35
— *see also* **Approximation theory, 93j:41001**
Cheney, Margaret (*with* Somersalo, Erkki) Estimates for wave propagation in inhomogeneous acoustic media. *J. Math. Anal. Appl.* **162** (1991), *no.* 2, 410–429. (Hideo Soga) **93a:35099** 35L05 (35P25, 76Q05)
— (*with* Isaacson, David) Invariant imbedding, layer-stripping, and impedance imaging. *Invariant imbedding and inverse problems* (*Albuquerque, NM*, 1990), 42–50, *SIAM, Philadelphia, PA*, 1992. (*see* **93e:00023**) 92C55 (65R10, 78A55, 78A70)
— (*with* Somersalo, Erkki; Isaacson, David) A linearized inverse boundary value problem for Maxwell's equations. (English summary) *J. Comput. Appl. Math.* **42** (1992), *no.* 1, 123–136. (Summary) **93f:35242** 35R30 (35Q60)
— (*with* Somersalo, Erkki; Isaacson, David) Existence and uniqueness for electrode models for electric current computed tomography. *SIAM J. Appl. Math.* **52** (1992), *no.* 4, 1023–1040. (Summary) **93f:35052** 35J25 (35Q99, 78A70)
Cheng, A. H.-D. (*with* Cui, L.) Green's function for axisymmetric poroelasticity and coupled thermoelasticity. (English summary) *Boundary element technology, VII* (*Albuquerque, NM*, 1992), 91–104, *Comput. Mech., Southampton*, 1992. (*see* **93b:65002**) 73V10 (65N38, 73N20, 76M15)
— (*with* Abousleiman, Y.; Roegiers, J. C.) Boundary element method for viscoporoelasticity with rock mechanics applications. (English summary) *Boundary element technology, VII* (*Albuquerque, NM*, 1992), 173–183, *Comput. Mech., Southampton*, 1992. (*see* **93b:65002**) 76M15 (65N38, 73Q05, 76S05)
Cheng, Ai Jie A finite element method for displacement problems involving compressible miscible fluids. (Chinese. English and Chinese summaries) *Shandong Daxue Xuebao Ziran Kexue Ban* **27** (1992), *no.* 2, 168–179. (Summary) **93h:76047** 76M10 (76N10, 76S05)
Cheng, Benny N. 4500 digits of π on a microcomputer. *Matimyás Mat.* **14** (1991), *no.* 1-2, 12–15. 11Y60
— On fractional derivatives. *Matimyás Mat.* **14** (1991), *no.* 1-2, 34–36. 26A33
— Random walks in the plane. *Matimyás Mat.* **14** (1991), *no.* 3, 75–83. 60J15
— A generalization of an example of a family of special Lagrangian cones of Harvey-Lawson. *Southeast Asian Bull. Math.* **16** (1992), *no.* 1, 47–48. (Timothy Murdoch) **93e:53066** 53C42 (53C40, 58E40)
Cheng, Biao Grey spectrum of grey system. (English summary) *J. Grey System* **4** (1992), *no.* 1, 31–40. 93C42 (04A72)
— Complementarity grey number and dispelling superfluity control. (English summary) *J. Grey System* **4** (1992), *no.* 2, 121–133. 93C45
Cheng, Bin Numerical simulation of the Korteweg-de Vries equation with the Petrov-Galerkin finite element method. (Chinese. English summary) *J. Numer. Methods Comput. Appl.* **13** (1992), *no.* 1, 73–80. (Summary) **93c:65114** 65M60 (76B15, 76M10)
Cheng, Bing Existence, uniqueness and Fréchet differentiability of ψ-estimates of parameters in stationary observation. (English summary) *Statist. Probab. Lett.* **15** (1992), *no.* 5, 339–343. (Summary) **93j:62224** 62M10 (62F35)
Cheng, Bing (*with* Kay, J. W.) Multiresolution reconstruction of a corrupted image using the wavelet transform. (English summary) *Computational statistics, Vol.* 2 (*Neuchâtel*, 1992), 293–298, *Physica, Heidelberg*, 1992. (*see* **93k:62003**) 68U10 (94A11)
Cheng, Bo (*with* Liu, Bo Lian) A conjecture on the exponents of nearly decomposable matrices. (Chinese. English and Chinese summaries) *Gaoxiao Yingyong Shuxue Xuebao* **7** (1992), *no.* 4, 615–617. (Summary) **93k:15030** 15A36
Cheng, C. K. *see* **Cheng, Chung-Kuan**
Cheng, C. Z. (*with* Sigmar, D. J.; Hsu, C. T.; White, Roscoe Beryl) Alpha-particle losses from toroidicity-induced Alfvén eigenmodes. II. Monte Carlo simulations and anomalous alpha-loss processes. *Phys. Fluids B* **4** (1992), *no.* 6, 1506–1516. (Summary) **93d:76078** 76X05 (76M25)
Cheng, Cao Zong (*with* Lin, You Hao) A generalization of minimax theorems of fixed-point type. (Chinese) *Acta Math. Sinica* **34** (1991), *no.* 4, 502–507. (Bor-Luh Lin) **93c:49008** 49J35 (47H99, 49J45)
Cheng, Chang Jun (*with* Yang, Xiao) The existence of buckled states on a perforated thin plate. *Appl. Math. Mech.* (*English Ed.*) **13** (1992), *no.* 8, 725–736; *translated from Appl. Math. Mech.* **13** (1992), *no.* 8, 699–709 (*Chinese. English and Chinese summaries*). 73K10 (73H05)
Cheng, Charles Ching-an DCC categories of cohomological dimension one. *J. Pure Appl. Algebra* **80** (1992), *no.* 2, 107–116. (Lillian Hupert) **93m:18003** 18A32
Cheng, Che-Man Independence of eigenvalues and independence of singular values of submatrices. *Linear Algebra Appl.* **166** (1992), 115–129. (Summary) **93i:15010** 15A18
— Cases of equality for a singular value inequality for the Hadamard product. (English summary) *Linear Algebra Appl.* **177** (1992), 209–231. (Chi-Kwong Li) **93m:15028** 15A42 (15A18)
Cheng, Cheng (*with* Kaigh, W. D.) Subsampling quantile estimators and uniformity criteria. *Comm. Statist. Theory Methods* **20** (1991), *no.* 2, 539–560. (A. J. van Es) **93b:62061** 62G05 (62G30)
Cheng, Chi Lun (*with* Van Ness, John W.) Generalized *M*-estimators for errors-in-variables regression. *Ann. Statist.* **20** (1992), *no.* 1, 385–397. (Jan Ámos Víšek) **93h:62063** 62F35 (62J05, 62P20)
— Robust linear regression via bounded influence *M*-estimators. *J. Multivariate Anal.* **40** (1992), *no.* 1, 158–171. (Jan Ámos Víšek) **93g:62087** 62J02 (62F35, 62J05)
Cheng, Ching-Shui (*with* Bailey, R. A.; Kipnis, Patricia) Construction of trend-resistant factorial designs. (English summary) *Statist. Sinica* **2** (1992), *no.* 2, 393–411. (Bhagwandas) **93j:62197** 62K15
Cheng, Chiu Pin (*with* Li, Tzuu Hseng S.; Sun, Yü I) Model-following control of linear proper nonminimum-phase systems. (English summary) *Internat. J. Systems Sci.* **23** (1992), *no.* 10, 1657–1665. 93B50 (93C05)
— (*with* Li, Tzuu Hseng S.; Sun, Yü I) Stability margins of singularly perturbed discrete-time systems based on state feedback and linear quadratic optimal control. (English summary) *Optimal Control Appl. Methods* **13** (1992), *no.* 3, 227–245. (Summary) **93j:93095** 93D05 (49N10, 93C55, 93C70)
Cheng, Chon Hu *see* **Chen, Zhong Hu**
Cheng, Chong Qing (*with* Sun, Yi Sui) Metamorphoses of phase portraits of vector field in the case of symmetry of order 4. *J. Differential Equations* **95** (1992), *no.* 1, 130–139. (Tassos Bountis) **93a:58144** 58F21 (34C05)
Cheng, Chonhu *see* **Chen, Zhong Hu**
Cheng, Chu Shu The Lebesgue integral and Riemann integral of measurable functions. (Chinese. English and Chinese summaries) *Huaihua Shizhuan Xuebao* **11** (1992), *no.* 2, 87–90. 28A25
Cheng, Chun Hung (*with* Kusiak, Andrew; Boe, Warren J.) A branch-and-bound algorithm for solving the machine allocation problem. *Control and dynamic systems, Vol.* 47, 399–419, *Academic Press, San Diego, CA*, 1991. (Jacek Błażewicz) **93d:90029** 90B80 (90C27)
Cheng, Chung-Kuan (*with* Hu, Te Chiang) Maximum concurrent flows and minimum cuts. (English summary) *Algorithmica* **8** (1992), *no.* 3, 233–249. (Wilfried Grossmann) **93h:90034** 90B10 (90C35)
— The optimal partitioning of networks. *Networks* **22** (1992), *no.* 3, 297–315. (Edward Minieka) **93b:90099** 90C35 (05C85)
Cheng, Dai Zhan State feedback stabilization of plane systems. (English summary) *Systems Sci. Math. Sci.* **3** (1990), *no.* 4, 375–380. (Summary) **93e:93049** 93D15 (34D20, 34H05)
— (*with* Hong, Y.) Stability of ideal sliding dynamics. *Control theory, stochastic analysis and applications* (*Hangzhou*, 1991), 105–118, *World Sci. Publishing, River Edge, NJ*, 1991. (Vadim Komkov) **93d:93020** 93B12
— Design of zero dynamics for a class of nonlinear systems. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, II* (*Kobe*, 1991), 247–252, *Mita, Tokyo*, 1992. (*see* **93g:93006**) 93C10 (93B52)
— (*with* Martin, Clyde Franklin; Tarn, Tzyh Jong) On Morgan's problem for a class of nonlinear systems. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, II* (*Kobe*, 1991), 301–306, *Mita, Tokyo*, 1992. (*see* **93g:93006**) 93B20 (93C10)
Cheng, De Lin (*with* Xu, Ming Tian; Zhou, Xue Sheng) The integral equation method for solving the vibration problems of beams with elastical supports. *Theory and applications of boundary element methods* (*Beijing*, 1991), 241–246, *Internat. Acad. Publ., Beijing*, 1991. (*see* **93b:65008**) 73K05 (65R20)
Cheng, Dinah W. Second order properties in a tandem queue with general blocking. (English summary) *Oper. Res. Lett.* **12** (1992), *no.* 3, 139–144. (Summary) **93f:90071** 90B22 (60K25)
— Analysis of a tandem queue with state-dependent general blocking: a GSMP perspective. (English summary) *Performance Evaluation* **17** (1993), *no.* 3, 169–176. 90B22 (60K25)
Cheng, F. *see* **Chêng, Fu Hua**
Cheng, Fu Chang (*with* Xu, Jin Zhong) On homological dimensions over noncommutative semilocal rings. *Proceedings of the First China-Japan International Symposium on Ring Theory* (*Guilin*, 1991), 28–30, *Okayama Univ., Okayama*, 1992. (*see* **93k:16001**) 16E10
— (*with* Zhao, Yi Cai) On the structure of commutative coherent rings. *Proceedings of the First China-Japan International Symposium on Ring Theory* (*Guilin*, 1991), 31–33, *Okayama Univ., Okayama*, 1992. (*see* **93k:16001**) 13F99
Chêng, Fu Hua (*with* Bojanić, Ranko) Rate of convergence of Hermite-Fejér polynomials for functions with derivatives of bounded variation. *Acta Math. Hungar.* **59** (1992), *no.* 1-2, 91–102. (M. W. Müller) **93e:41010** 41A10 (41A25)
Cheng, Geng Dong (*with* Zhong, Wan Xie) Regularization of singular control and a stiffness shifting method. (Chinese. English summary) *Inform. and Control* (*Shenyang*) **20** (1991), *no.* 4, 21–26. 93B17
Cheng, H. K. Perspectives on hypersonic viscous flow research. *Annual review of fluid mechanics, Vol.* 25, 455–484, *Annual Reviews, Palo Alto, CA*, 1993. (*see* **93h:76003**) 76K05
Cheng, He Ping *see* **Cheng, He Ping[2]**
Cheng, He Ping[1] The Sugeno integral of fuzzy-valued functions. (Chinese. English summary) *Sichuan Shifan Daxue Xuebao Ziran Kexue Ban* **14** (1991), *no.* 3, 125–131.

(Ming Ma) **93d:28031** 28E10 (04A72)

Cheng, He Ping[2] Convergence of sequences of fuzzy random variables. (Chinese. English summary) *Sichuan Shifan Daxue Xuebao Ziran Kexue Ban* **14** (1991), *no.* 4, 101–107. 60F99 (04A72)

Cheng, Hong (*with* Liang, Zhi Yuan) The one-phase Stefan problem of energy integral type. (Chinese. English summary) *J. Harbin Inst. Tech.* **23** (1991), *no.* 6, 15–22. (Summary) **93a:35156** 35R35 (35K05)

— (*with* Liang, Zhi Yuan) A class of free boundary problems with two boundaries arising in combustion of solids. (Chinese. English and Chinese summaries) *J. Harbin Inst. Tech.* **24** (1992), *no.* 2, 1–6. (Summary) **93e:35121** 35R35

Cheng, Jian Hua (*with* Zhu, Qing) The numbers of jump layers of boundary value problems in quasilinear differential equations. *Appl. Math. Mech.* (*English Ed.*) **13** (1992), *no.* 4, 387–391; *translated from Appl. Math. Mech.* **13** (1992), *no.* 4, 367–371 (*Chinese. English summary*). 34B15 (34E15)

Cheng, Jin[2] The interior transmission problem for two-dimensional Schrödinger equations. (Chinese. Chinese summary) *Chinese Ann. Math. Ser. A* **13** (1992), *no.* 2, 161–167. (Summary) **93d:35029** 35J10 (35P25)

Cheng, Jiu Heng (*with* Wu, Lin Xiang) Configurations of singularities of three-dimensional magnetic fields and their stability. (Chinese. English and Chinese summaries) *Beijing Daxue Xuebao* **26** (1990), *no.* 5, 633–640. (Summary) **93k:78002** 78A25

Cheng, Jun Mo Optimal transitive matrices of antisymmetric matrices in the sense of well-distributed optimization. (Chinese. English and Chinese summaries) *Qufu Shifan Daxue Xuebao Ziran Kexue Ban* **18** (1992), *suppl.*, 43–48. 90C30 (90C06)

Cheng, K. F. *see* **Chêng, Kuang Fu**

Cheng, K. M. (*with* Fung, P. C. W.) Certain properties of Berry's phases in supersymmetric quantum mechanics. *J. Phys. A* **25** (1992), *no.* 6, 1745–1756. (Nathalie Debergh) **93a:81052** 81Q60

— (*with* Fung, P. C. W.) Certain properties of Berry's phases in supersymmetric quantum mechanics. II. (English summary) *J. Phys. A* **25** (1992), *no.* 16, 4471–4481. (Nathalie Debergh) **93m:81038** 81Q60 (81V99)

Cheng, Kai Nah (*with* Deaconescu, M.; Lang, Mong-Lung; Shi, Wu Jie) Corrigendum and addendum to: "Classification of finite groups with all elements of prime order" [Proc. Amer. Math. Soc. **106** (1989), no. 3, 625–629; MR 89k:20038] by Deaconescu. *Proc. Amer. Math. Soc.* **117** (1993), *no.* 4, 1205–1207. (Summary) **93e:20031** 20D20

Cheng, Kam-Hoi (*with* Li, Keqin) Heuristic algorithms for on-line packing in three dimensions. (English summary) *J. Algorithms* **13** (1992), *no.* 4, 589–605. (Summary) **93h:68059** 68Q25 (52B55)

Cheng, Kan (*with* Ma, Ben Cheng) Characterizations of exponential distributions in life distribution classes. (Chinese. English and Chinese summaries) *Chinese J. Appl. Probab. Statist.* **7** (1991), *no.* 1, 82–90. 62N05 (62E10)

— Some recent advances on reliability theory in China. *The development of statistics: recent contributions from China*, 79–105, *Pitman Res. Notes Math. Ser.*, 258, *Longman Sci. Tech., Harlow*, 1992. (Ross P. Kindermann) **93i:60161** 60K10 (62N05, 90B25)

— (*with* Ma, Ben Cheng) Characterizations of geometric distributions based on moments. (English summary) *Acta Math. Appl. Sinica* (*English Ser.*) **8** (1992), *no.* 2, 168–181. 62E10 (62N05)

— (*with* He, Zong Fu) A study on life distribution classes. (Chinese. English and Chinese summaries) *Chinese J. Appl. Probab. Statist.* **8** (1992), *no.* 3, 312–323. 62N05

Chêng, Kuang Fu (*with* Wu, J. W.) Estimation of exponential regression parameters using binary data. (English summary) *Comm. Statist. Theory Methods* **21** (1992), *no.* 8, 2203–2214. 62F10

Chêng, Kuo Shun (*with* Ni, Wei-Ming) On the structure of the conformal scalar curvature equation on $\mathbf{R}^n$. *Indiana Univ. Math. J.* **41** (1992), *no.* 1, 261–278. (Philippe Delanoë) **93g:35040** 35J60 (34C11, 35B05, 35B40, 53C21)

— (*with* Chern, Jann Long) Existence of positive entire solutions of some semilinear elliptic equations. *J. Differential Equations* **98** (1992), *no.* 1, 169–180. (Adel N. Boules) **93f:35064** 35J60

— (*with* Hsü, Shih Pi; Huang, Hsin Fêng) On the singular behavior of the solution of $v''(x) + x \sin v(x) = 0$. *J. Math. Anal. Appl.* **163** (1992), *no.* 1, 20–37. (P. K. Palamides) **93b:34011** 34A12 (34B99, 73K05)

— (*with* Smoller, Joel A.) Conformal metrics with prescribed Gaussian curvature on S^2. *Trans. Amer. Math. Soc.* **336** (1993), *no.* 1, 219–251. (Valentin Boju) **93e:53044** 53C21 (35A30, 53A30, 58G30)

Cheng, Li Jun (*with* Pan, Shen Tian) An optimal method for fuzzy cluster analysis. (Chinese. English and Chinese summaries) *Heilongjiang Daxue Ziran Kexue Xuebao* **9** (1992), *no.* 4, 42–45, 27. 68T10 (04A72)

Cheng, Lin Zhi (*with* Li, Cheng Kuan) Convolution of generalized functions. (Chinese) *Math. Appl.* **5** (1992), *no.* 4, 103–105. 46F10

Cheng, Liping (*with* Ding, Fong-Yuen) A simple sequencing algorithm for mixed-model assembly lines in just-in-time production systems. (English summary) *Oper. Res. Lett.* **13** (1993), *no.* 1, 27–36. 90B35 (90B30)

Cheng, M. *see* **Cheng, Mian**

Cheng, M. C. A new dual simplex algorithm for transportation problem. (English summary) *Bull. Malaysian Math. Soc.* (2) **15** (1992), *no.* 1, 9–16. (Summary) **93h:90065** 90C08

Cheng, M.-T. *see* **Harmonic analysis, 93d:42002**

Cheng, Mian (*with* Zheng, Feng; Gao, Wei Bing) Variable structure control of nonlinear systems and its implementation. (Chinese. English and Chinese summaries) *Control Theory Appl.* **9** (1992), *no.* 6, 617–624. 93B12

— (*with* Yao, B.; Gao, Wei Bing; Chan, S. P.) VSC coordinated control of two manipulator arms in the presence of environmental constraints. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 11, 1806–1812. 93C85

— (*with* Jia, Ying Min; Gao, Wei Bing) Robust strict positive real stabilization criteria for SISO uncertain systems. (English summary) *Systems Control Lett.* **19** (1992), *no.* 2, 111–117. (Jacob Hammer) **93g:93074** 93D15 (93D09, 93D21)

— (*with* Song, Yong Duan; Gao, Wei Bing) Asymptotically stabilizing strategy for a class of disturbed-uncertain linear systems. (English and Polish summaries) *Systems Sci.* **18** (1992), *no.* 1-2, 51–60 (1993). 93D15 (93C20)

Cheng, Ping[1] (*with* Xu, Wen Yuan) Estimation of parameters of singular points and its applications to semiparametric models. (Chinese. English and Chinese summaries) *Chinese J. Appl. Probab. Statist.* **7** (1991), *no.* 1, 42–51. 62F10 (62G05)

— (*with* Zhu, Li Xing) The tail probability inequalities for the PP type Cramér-von Mises statistics. (English summary) *Probability and statistics* (*Tianjin*, 1988/1989), 46–55, *Nankai Ser. Pure Appl. Math. Theoret. Phys., World Sci. Publishing, River Edge, NJ*, 1992. (P. Laurie Davies) **93h:62093** 62G10 (62E20, 62H40)

— (*with* Wu, Chuan Yi; Tao, Bo) Research on some problems of parameter estimation in China. *The development of statistics: recent contributions from China*, 157–177, *Pitman Res. Notes Math. Ser.*, 258, *Longman Sci. Tech., Harlow*, 1992. (*see* **93e:62004**) 62F10 (62C12, 62F12)

— (*with* Li, Guo Ying[1]) Some recent developments in projection pursuit in China. (English summary) *Statist. Sinica* **3** (1993), *no.* 1, 35–51. (Summary) **93m:62141** 62H40

— *see also* **Probability and statistics, 93b:60004**

Cheng, Qian Sheng Rank of a class of autocorrelation matrixes in spectral estimation. *Chinese Sci. Bull.* **36** (1991), *no.* 1, 72–74. (Pham Dinh Tuan) **93a:62126** 62M10

— On the unique representation of non-Gaussian linear processes. *Ann. Statist.* **20** (1992), *no.* 2, 1143–1145. (Joseph D. Petruccelli) **93d:60059** 60G10 (62M10)

Cheng, Qing Ming (*with* Sun, Hua Fei) Submanifolds with parallel mean curvature vector in a sphere. (Chinese. English and Chinese summaries) *J. Northeast Univ. Tech.* **13** (1992), *no.* 2, 193–199. (Chuan Yu Ma) **93j:53046** 53C20 (53C40)

— (*with* Wang, Xi Xun) Estimates of eigenvalues of elliptic operators. (Chinese. English and Chinese summaries) *J. Northeast Univ. Tech.* **13** (1992), *no.* 3, 306–312. (Summary) **93m:35134** 35P15 (65N25)

— (*with* Aiyama, Reiko) Complete space-like hypersurfaces with constant mean curvature in a Lorentz space form of dimension 4. (English summary) *Kodai Math. J.* **15** (1992), *no.* 3, 375–386. (Toru Ishihara) **93i:53063** 53C50 (53C40)

— Complete totally real minimal submanifolds in a complex projective space. *Mem. Fac. Sci. Kyushu Univ. Ser. A* **46** (1992), *no.* 1, 93–103. (Yi Bing Shen) **93e:53067** 53C42 (53C40)

— (*with* Wu, Bao Qiang) The generalized maximum principle and conformally flat spaces. *Northeast. Math. J.* **8** (1992), *no.* 1, 54–56. (Y. Mutô) **93g:53052** 53C20

Cheng, Qing Ping (*with* Yao, Zheng An; Song, Shu Gang) Orlicz-Lorentz sequence spaces. (Chinese. Chinese summary) *Chinese Ann. Math. Ser. A* **13** (1992), *suppl.*, 80–91. (Ting Fu Wang) **93m:46017** 46B45 (46A45)

Cheng, Raymond On the prediction error for two-parameter stationary random fields. *Bull. Austral. Math. Soc.* **46** (1992), *no.* 1, 167–175. (Mohsen Pourahmadi) **93h:60063** 60G25

— Hölder classes of vector-valued functions and convergence of the best predictor. (English summary) *J. Multivariate Anal.* **42** (1992), *no.* 1, 110–129. (Mohsen Pourahmadi) **93h:60064** 60G25

— Rational spectral densities and strong mixing. (English summary) *J. Multivariate Anal.* **42** (1992), *no.* 2, 267–283. (Mohsen Pourahmadi) **93i:60095** 60G60 (60G25)

— Weakly and strongly outer functions on the bidisc. *Michigan Math. J.* **39** (1992), *no.* 1, 99–109. (Introduction) **93e:32004** 32A35 (32A30, 60G25)

— A strong mixing condition for second-order stationary random fields. *Studia Math.* **101** (1992), *no.* 2, 139–153. (H. Salehi) **93e:60068** 60G10 (60G60)

— On the rate of strong mixing in stationary Gaussian random fields. *Studia Math.* **101** (1992), *no.* 2, 183–191. (H. Salehi) **93e:60069** 60G10 (60G60)

Cheng, Shi Jun Ditroids and transversals. (Chinese. English summary) *Chinese Quart. J. Math.* **7** (1992), *no.* 1, 1–4. (Shaocen Han) **93e:05019** 05B35

Cheng, Shi Xin (*with* You, Xiao Hu) On minimum-error-probability channel equalization and its realizations using k-nearest neighbor rule and neural nets. (English summary) *J. Southeast Univ.* (*English Ed.*) **7** (1991), *no.* 2, 15–24. 94A40 (92B20)

Cheng, Shi Xue Pure jump shock models in discrete time case. *Systems Sci. Math. Sci.* **4** (1991), *no.* 4, 309–320. (Moshe Shaked) **93b:60198** 60K05 (60J75)

— Characterization for binomial sequences among renewal sequences. *Gaoxiao Yingyong Shuxue Xuebao* **7** (1992), *no.* 1, 114–128. (D. N. Shanbhag) **93f:60019** 60E05 (62E10)

Cheng, Siu Wing (*with* Janardan, Ravi) Algorithms for ray-shooting and intersection searching. (English summary) *J. Algorithms* **13** (1992), *no.* 4, 670–692. (Summary) **93g:68134** 68U05

— (*with* Janardan, Ravi) Efficient distributed algorithms for single-source shortest paths and related problems on plane networks. *Math. Systems Theory* **25** (1992), *no.* 2, 93–122. (Ventseslav G. Rumchev) **93a:68118** 68R10 (68M10, 68Q22, 90B12, 90C35)

— (*with* Janardan, Ravi) New results on dynamic planar point location. (English summary) *SIAM J. Comput.* **21** (1992), *no.* 5, 972–999. (Ruth Silverman) **93k:68099** 68U05 (68Q25)

Chêng, Sui Shêng Lyapunov inequalities for differential and difference equations. (English summary) Third International Seminar on Ordinary Differential Equations (Poznań, 1990). *Fasc. Math. No.* 23 (1991), 25–41 (1992). (**Bhagat Singh**) **93f:34031** 34A99 (34C10, 39A12)

Cheng, T. C. E. (*with* Kahlbacher, H. G.) The parallel-machine common due-date assignment and scheduling problem is NP-hard. (English summary) *Asia-Pacific J. Oper. Res.* **9** (1992), *no.* 2, 235–238. (Summary) **93m:90041** 90B35

— (*with* Li, Chung-Lun; Chen, Z. L.) A note on one-processor scheduling with asymmetric earliness and tardiness penalties. (English summary) *Oper. Res. Lett.* **13** (1993), *no.* 1, 45–48. (Summary) **93k:90044** 90B35

Cheng, Xi Yu Structural reliability design for a location scale family of distributions. (Chinese. English and Chinese summaries) *Chinese J. Appl. Probab. Statist.* **8** (1992), *no.* 3, 269–273. 62N05

Cheng, Xiao Liang (*with* Jiang, Jin Sheng) An additional remark on L^2-norm error estimates for p-type finite element methods. (Chinese. English summary) *Gaoxiao Yingyong Shuxue Xuebao* **6** (1991), *no.* 1, 38–43. (Summary) **93a:65105** 65L60

— (*with* Jiang, Jin Sheng) The velocity-pressure Q_2-Q_1 finite element. (Chinese. English summary) *Gaoxiao Yingyong Shuxue Xuebao* **6** (1991), *no.* 4, 467–473. (Zhimin Zhang) **93d:76038** 76M10 (65M15, 65M60, 76D07)

— An answer to the conjecture of I. Babuška and T. Janik: "The h-p version of the finite element method for parabolic equations. I. The p-version in time" [Numer. Methods Partial Differential Equations **5** (1989), no. 4, 363–399; MR 92d:65160]. *J. Comput. Math.* **9** (1991), *no.* 2, 105–110. (Martin Stynes) **93c:65115** 65M60

— (*with* Jiang, Jin Sheng) On the stability of biquadratic-bilinear velocity-pressure finite elements. *J. Comput. Math.* **10** (1992), *no.* 2, 167–170. (From the summary) **93b:65141** 65M60 (76D07, 76M10)

Cheng, Xin Yue Characteristics of the hypersphere in Euclidean space. (Chinese. English summary) *Sichuan Shifan Daxue Xuebao Ziran Kexue Ban* **14** (1991), *no.* 5, 27–30. (C.-C. Hsiung) **93e:53082** 53C65 (53C40)

Cheng, Xu (*with* Zhou, De Tang) The asymptotic behavior of solutions to semilinear elliptic equations. (Chinese) *J. Math. Res. Exposition* **12** (1992), *no.* 1, 13–20. (Qi Xiao Ye) **93f:35072** 35J60 (35B40)

Cheng, Y. *see* **Cheng, Yizong**

Cheng, Yi[1] (*with* Li, Yi Shen; Zeng, Yun Bo) A Lie algebraic structure of G.J. and its gauge equivalent Yang hierarchies. *Nonlinear physics (Shanghai*, 1989), 47–52, *Res. Rep. Phys., Springer, Berlin*, 1990. (Summary) **93d:58074** 58F07 (17B65, 35Q99)

— (*with* Tang, Guo Xiong) The Miura transformation between higher-order Kadomtsev-Petviashvili equations and higher-order modified Kadomtsev-Petviashvili equations and the Bäcklund transformation for higher-order Kadomtsev-Petviashvili equations. (Chinese. English and Chinese summaries) *J. China Univ. Sci. Tech.* **22** (1992), *no.* 2, 255–264. (Hong You Wu) **93m:58103** 58F37 (35Q53, 58F07)

— (*with* Ge, Mo Lin; Liu, Guang Chun; Xue, Kang) New solutions of Yang-Baxter equation and new link polynomials. *J. Knot Theory Ramifications* **1** (1992), *no.* 1, 31–46. (Summary) **93d:57012** 57M25 (20F36, 82B23)

— Constraints of the Kadomtsev-Petviashvili hierarchy. (English summary) *J. Math. Phys.* **33** (1992), *no.* 11, 3774–3782. (Vladimir Mikhalev) **93i:58070** 58F07 (35Q58)

Cheng, Yi Min (*with* Guo, Li[2]; Jin, Da Sheng) Design and implementation of discrete-time neural networks. (Chinese. English and Chinese summaries) *J. China Univ. Sci. Tech.* **22** (1992), *no.* 2, 165–173. 68T05 (92B20)

Cheng, Yi Ming Coefficients of the best linear unbiased estimators under the Weibull distribution when $n > 25$. (Chinese. English and Chinese summaries) *Chinese J. Appl. Probab. Statist.* **8** (1992), *no.* 4, 420–428. 62F10 (62N05)

Cheng, Yi Xin A closed formulation of loop equations for the two-matrix model. *Phys. Lett. B* **284** (1992), *no.* 3-4, 253–259. (Summary) **93c:81198** 81T40

— Schwinger-Dyson loop equations for the multi-matrix chain model at finite N. (English summary) *Phys. Lett. B* **289** (1992), *no.* 3-4, 327–334. (Summary) **93f:81131** 81T40 (81R10)

Cheng, Ying (*with* Hwang, F. K.; Akyildiz, I. F.; Hsu, D. Frank) Routing algorithms for double loop networks. (English summary) *Internat. J. Found. Comput. Sci.* **3** (1992), *no.* 3, 323–331. (Summary) **93m:68013** 68M10 (68Q25)

Cheng, Yizong (*with* Kashyap, R. L.) Recursive fusion operators: desirable properties and illustrations. *Data fusion in robotics and machine intelligence*, 245–265, *Academic Press, Boston, MA*, 1992. (*see* **93g:68002**) 68T30

Cheng, Yu Huai (*with* Liu, Fang You; Su, Bu Qing; Chern, Shiing Shen) In memory of Dr. J. Z. Zeng. (Chinese) *Collected research papers on the history of mathematics, Vol.* 3 (*Chinese*), 1–5, *Inner Mongolia Univ. Press, Hohhot*, 1992. (*see* **93i:01006**) 01A70 (01A25)

Cheng, Yuan Ji Oscillation in linear differential equations with continuous distribution of time lag. *Math. Nachr.* **153** (1991), 217–229. (Summary) **93e:34094** 34K15

Cheng, Z. *see* **Cheng, Zheming**

Cheng, Zai Shu (*with* Wan, Hong Hui) A note on the graphs of class one. *Math. Appl.* **4** (1991), *no.* 4, 128–129. (T. T. Raghunathan) **93a:05063** 05C15 (05C70)

Cheng, Zhao *see* **Zhao, Cheng**

Cheng, Zheming (*with* Lebowitz, Joel L.; Speer, Eugene R.) Microscopic shock structure in model particle systems: the Boghosian-Levermore cellular automaton revisited. *Comm. Pure Appl. Math.* **44** (1991), *no.* 8-9, 971–979. (T. M. Liggett) **93b:60226** 60K35 (82C22)

— (*with* Alexander, Francis J.; Janowsky, Steven A.; Lebowitz, Joel L.) Shock fluctuations in the two-dimensional asymmetric simple exclusion process. (English summary) *J. Statist. Phys.* **68** (1992), *no.* 5-6, 761–785. (Summary) **93g:82066** 82C22 (60K35, 82-04, 82C24)

Chéniot, Denis Topologie du complémentaire d'un ensemble algébrique projectif. [Topology of the complement of a projective algebraic set] *Enseign. Math.* (2) **37** (1991), *no.* 3-4, 293–402. (From the introduction) **93h:14014** 14F25

Chentsov, A. G. (*with* Zudikhin, L. V.) Compactification of a control problem in a class of finitely additive measures. II. (Russian. Russian summary) *Functional-differential equations (Russian)*, 104–111, *Perm. Politekh. Inst., Perm'*, 1990. (*see* **93m:00024**) 49Q15 (49K15)

— (*with* Yafrakov, M. F.) Programmed approach and evasion problems in discrete systems with combined constraints. (Russian. English and Ukrainian summaries) *Kibernetika (Kiev)* **1991**, *no.* 3, 123–126, 136. (Ivan Ginchev) **93c:90117** 90D26 (49K99, 93C55)

— Relaxations of some extremal problems with integral constraints. (Russian) *Vestnik Chelyabinsk. Univ. Ser. Mat. Mekh. No.* 1 (1991), 37–47. (From the introduction) **93f:49015** 49J45 (49Q20)

— Stability of some nonlinear extremal problems with actions of an impulse nature. (Russian. Russian summary) *Avtomat. i Telemekh.* **1992**, *no.* 5, 30–41; *translation in Automat. Remote Control* **53** (1992), *no.* 5, *part* 1, 646–655. (Vladimir Veliov) **93h:49043** 49K40 (49N25)

— Relaxations of admissible sets, and constructions of extensions. (Russian. English and Ukrainian summaries) *Kibernet. Sistem. Anal.* **1992**, *no.* 4, 78–87, 188; *translation in Cybernet. Systems Anal.* **28** (1992), *no.* 4, 554–561 (1993). (Vladimir Veliov) **93m:93007** 93B03 (49K40, 93B35, 93C73)

Cheon, Gi-Sang (*with* Hwang, Suk Geun) Maximization of a matrix function related to the Dittert conjecture. *Linear Algebra Appl.* **165** (1992), 153–165. (Peter M. Gibson) **93c:15006** 15A15

Cheong, Chae-Cheon (*with* Choi, Seung-Bok; Park, Dong-Won) Moving switching surfaces for robust control of second-order variable structure systems. (English summary) *Internat. J. Control* **58** (1993), *no.* 1, 229–245. 93B12

Cheong, Pui Hung (*with* Fribourg, Laurent) Implementation of narrowing: the Prolog-based approach. (English summary) *Logic programming languages*, 1–20, *MIT Press, Cambridge, MA*, 1993. (*see* **93k:68020**) 68N17

Chepilko, N. M. Conservation laws in quantum mechanics on a Riemannian manifold. *Soviet J. Nuclear Phys.* **55** (1992), *no.* 1, 152–154; *translated from Yadernaya Fiz.* **55** (1992), *no.* 1, 273–277 (*Russian*). (Summary) **93a:81105** 81S99

Chepoi, V. D. (*with* Dragan, F. F.) The median problem on pseudomedian graphs. (Russian) *Issled. Operatsii i ASU No.* 35 (1991), 47–56. (From the introduction) **93c:90096** 90C35 (05C35)

— (*with* Dragan, F. F.) Properties of pseudomodular graphs. (Russian) *Issled. Operatsii i ASU No.* 37 (1991), 47–54. (Valentin E. Brimkov) **93e:05098** 05C99

— (*with* Yushmanov, S. V.) A general method for the estimation of metric graph characteristics concerned with eccentricity. (English summary) *Proceedings of the First Estonian Conference on Graphs and Applications (Tartu-Kääriku*, 1991), 113–120, *Tartu Univ., Tartu*, 1993. (*see* **93m:05006**) 05C12

Chepyzhov, V. V. (*with* Goritskiĭ, A. Yu.) Unbounded attractors of evolution equations. *Properties of global attractors of partial differential equations*, 85–128, *Adv. Soviet Math.*, 10, *Amer. Math. Soc., Providence, RI*, 1992. (*see* **93i:58102**) 58F12 (34G20, 35K22, 58F39)

— (*with* Smeets, Ben J. M.; Zigangirov, K. Sh.) The free distance of fixed convolutional rate 2/4 codes meets the Costello bound. *IEEE Trans. Inform. Theory* **38** (1992), *no.* 4, 1360–1366. (Summary) **93d:94019** 94B10

— (*with* Vishik, M. I.) Attractors of nonautonomous dynamical systems and an estimate for their dimension. (Russian) *Mat. Zametki* **51** (1992), *no.* 6, 141–143; *translation in Math. Notes* **51** (1992), *no.* 5-6, 622–624. (Igor D. Chueshov) **93k:58203** 58F39 (35B40, 35K57, 35Q30, 58F12)

— New lower bounds for the minimal distance of linear quasicyclic and almost linear cyclic codes. (Russian) *Problemy Peredachi Informatsii* **28** (1992), *no.* 1, 39–51; *translation in Problems Inform. Transmission* **28** (1992), *no.* 1, 33–44. (Summary) **93d:94015** 94B05 (94B15)

— (*with* Vishik, M. I.) Attractors for nonautonomous evolution equations with almost periodic symbols. (English and French summaries) *C. R. Acad. Sci. Paris Sér. I Math.* **316** (1993), *no.* 4, 357–361. (Piotr Biler) **93m:34094** 34G20 (34D45, 35K55, 35L70, 47H20, 47N20)

kan sen Cher *see* **Kan Sen Cher**

Cherdak, V. B. Invariant ideals of majorized operators. (Russian) *Optimizatsiya No.* 47(64) (1990), 137–140. (Irina Popa) **93b:47074** 47B60

Cherdantsev, I. Yu. Inversion of Miura transformations and asymptotic solutions of integrable equations of KdV type. (Russian) *Asymptotic properties of solutions of differential equations (Russian)*, 115–123, *Akad. Nauk SSSR Ural. Otdel., Bashkir. Nauchn. Tsentr, Ufa*, 1988. (*see* **93m:35033**) 35Q53 (58F37)

Cherednik, I. V. Solutions of the trigonometric Knizhnik-Zamolodchikov equation. (Russian) *Funktsional. Anal. i Prilozhen.* **25** (1991), *no.* 4, 69–71; *translation in Functional Anal. Appl.* **25** (1991), *no.* 4, 287–289 (1992). (J. S. Joel) **93f:17037** 17B67 (32A25, 33C80, 58F40, 81T40)

— A unification of Knizhnik-Zamolodchikov and Dunkl operators via affine Hecke algebras. *Invent. Math.* **106** (1991), *no.* 2, 411–431. (V. A. Golubeva) **93b:17040** 17B37 (16W30, 17B20, 20F36)

— Monodromy representations for generalized Knizhnik-Zamolodchikov equations and Hecke algebras. *Publ. Res. Inst. Math. Sci.* **27** (1991), *no.* 5, 711–726. (V. A. Golubeva) **93k:20060** 20F36 (20C99, 32S40, 81T40)

— Integral solutions of trigonometric Knizhnik-Zamolodchikov equations and Kac-Moody algebras. *Publ. Res. Inst. Math. Sci.* **27** (1991), *no.* 5, 727–744. (V. A. Golubeva) **93h:17058** 17B67 (33D80)

Cheremshantsev, S. E. Theory of scattering by a Brownian particle. (Russian) Translated in Proc. Steklov Inst. Math. **1991**, no. 2, 1–115. Theory of operators with a random potential and some problems in statistical physics (Russian). *Trudy Mat. Inst. Steklov.* **184** (1990), 5–104. (Hagen Neidhardt) **93a:47082** 47N55 (47A40)

— Hamiltonians with zero-range interactions supported by a Brownian path. (French summary) *Ann. Inst. H. Poincaré Phys. Théor.* **56** (1992), *no.* 1, 1–25. (Kalyan B. Sinha) **93d:81040** 81Q10 (35J10, 35P05, 47F05, 47N50)

Cherenack, Paul The exactness of the sequence of relative homotopy groups in unirational homotopy theory. *Chinese J. Math.* **19** (1991), *no.* 4, 331–353. (Summary) **93g:14030** 14F35 (55Q70, 55U35)

Cherep, A. A. (*with* Alekseenko, S. V.) Formation of spiral waves under circular motion of a source in a dispersive medium. (Russian) *Dokl. Akad. Nauk* **327** (1992), *no.* 3, 306–310; *translation in Soviet Phys. Dokl.* **37** (1992), *no.* 11, 537–539 (1993). 76C05

Cherepennikov, V. B. Approximate integration of linear systems of functional-differential equations in the space of a function parameter. (Russian. Russian summary) *Asymptotic methods in the theory of systems (Russian)*, 85–90, 277, *Akad. Nauk SSSR Sibirsk. Otdel., Irkut-sk. Nauchn. Tsentr, Irkutsk*, 1989. (*see* **93d:00031**) 34K05

Cherepnin, A. A. Estimates for the regularity of recognition and classification problems. (Russian. Russian summary) *Zh. Vychisl. Mat. i Mat. Fiz.* **33** (1993), *no.* 1, 155–159; *translation in Comput. Math. Math. Phys.* **33** (1993), *no.* 1, 141–144. 68T10

Cherevatskiĭ, A. S. (*with* Bronshtein, M. D.) A variational method for solving boundary value problems for ordinary differential equations. (Russian) *Dokl. Akad. Nauk SSSR* **317** (1991), *no.* 5, 1037–1041; *translation in Soviet Math. Dokl.* **43** (1991), *no.* 2, 572–575. (From the introduction) **93c:34049** 34B15

Cherevko, I. M. (*with* Fodchuk, V. I.) Investigation of singularly perturbed functional-differential equations by the method of integral manifolds. (Russian. Russian summary) *Asymptotic integration of nonlinear equations (Russian)*, 124–127, *Akad. Nauk Ukrainy, Inst. Mat., Kiev*, 1992. (*see* **93m:00016**) 34K15

Cherlet, Ferroudja Investigations of back and forth bisimulations on prime event structures. (English summary) *Comput. Artificial Intelligence* **11** (1992), *no.* 5, 481–496. (From the summary) **93i:68118** 68Q55 (68Q10)

Chérif, A. A. (*with* Arino, Ovide) On the existence of periodic solutions for a class of nonlinearly forced systems. *Funkcial. Ekvac.* **35** (1992), *no.* 3, 485–503. (Raul F. Manasevich) **93k:34089** 34C25 (34C23)

Cheriyan, Joseph (*with* Reif, John H.) Directed s-t numberings, rubber bands, and testing digraph k-vertex connectivity. *Proceedings of the Third Annual ACM-SIAM Symposium on Discrete Algorithms (Orlando, FL*, 1992), 335–344, *ACM, New York*, 1992. (Tomaž Pisanski) **93h:05149** 05C85 (05C40, 68R10)

Cherkaev, A. V. (*with* Gibiansky, L. V.) The exact coupled bounds for effective tensors of electrical and magnetic properties of two-component two-dimensional composites. (English summary) *Proc. Roy. Soc. Edinburgh Sect. A* **122** (1992), *no.* 1-2, 93–125. (Serguei M. Kozlov) **93k:73006** 73B27 (73K20, 73R05, 73V25, 78A30)

— (*with* Lur'e, K. A.; Milton, Graeme W.) Invariant properties of the stress in plane elasticity and equivalence classes of composites. (English summary) *Proc. Roy. Soc. London Ser. A* **438** (1992), *no.* 1904, 519–529. (Summary) **93g:73009** 73B27 (73C99, 73K20)

Cherkasov, I. D. Transformation of a one-dimensional diffusion process into a Wiener process by means of random change of phase space. *Math. Balkanica (N.S.)* **5** (1991),

no. 2, 162–175. (Guang Lu Gong) **93a:60121** 60J60

Cherkasov, M. A. Application of local interpolation in determining the eigenvalues of a matrix. (Russian) *Analytic and numerical methods for studying mechanical systems (Russian)*, 62–65, *Moskov. Aviatsion. Inst., Moscow*, 1989. (*see* **93e:00015**) 15A18 (65F15)

Cherkasova, E. V. Definition of transformation group in De Morgan's book *On the foundation of algebra.* (Russian) *Voprosy Istor. Estestvoznan. i Tekhn.* **1992,** *no.* 1, 90–92. (Dan Brânzei) **93d:01031** 01A55

Cherkasova, L. A. (*with* Ustimenko, A. P.) ★ Алгебра параллельных недетерминированных процессов: денотационная и операционная семантики. (Russian) [Algebra of parallel nondeterministic processes: denotational and operational semantics] With an English summary. Препринт [Preprint], 903. *Akad. Nauk SSSR Sibirsk. Otdel., Vychisl. Tsentr, Novosibirsk*, 1990. 39 *pp.* 68Q10

Cherlin, Gregory L. Combinatorial problems connected with finite homogeneity. (English summary) *Proceedings of the International Conference on Algebra, Part 3 (Novosibirsk*, 1989), 3–30, *Contemp. Math.*, 131, *Part* 3, *Amer. Math. Soc., Providence, RI*, 1992. (V. K. Bulitko) **93m:03054** 03C10 (03C13, 03C35, 03C45, 03C50)

Chermyanin, S. I. A new type of solution of the Schwarzschild problem for a point-source. (English summary) *Astrophys. Space Sci.* **197** (1992), *no.* 2, 233–235. (Ciprian Dariescu) **93m:83009** 83C15 (83C57)

Chern, De Ching (*with* Nester, James M.; Yo, Hwei-Jang) Positive energy test of Poincaré gauge theory. *Internat. J. Modern Phys. A* **7** (1992), *no.* 9, 1993–2003. (Carl Brans) **93c:83094** 83D05 (83E99)

— (*with* Tung, Roh Suan; Chang, Chun Hsu; Nester, James M.) Asymptotic anti-de Sitter conditions for Poincaré gauge theory. (English summary) *Progr. Theoret. Phys.* **88** (1992), *no.* 2, 291–305. (Metin Gürses) **93h:83033** 83D05

Chern, I-Liang (*with* Foster, Ian) Parallel implementation of a control volume method for solving PDEs on the sphere. (English summary) *Parallel processing for scientific computing (Houston, TX*, 1991), 301–306, *SIAM, Philadelphia, PA*, 1992. (*see* **93g:65178**) 65N22 (65Y05, 76M25, 86A10)

— (*with* Colin, Thierry; Kaper, Hans G.) Classical solutions of the nondivergent barotropic equations on the sphere. (English summary) *Comm. Partial Differential Equations* **17** (1992), *no.* 5-6, 1001–1019. (J. Thomas Beale) **93g:76109** 76U05 (35A05, 35Q99, 76C15, 86A10)

Chern, Jann Long (*with* Chêng, Kuo Shun) Existence of positive entire solutions of some semilinear elliptic equations. *J. Differential Equations* **98** (1992), *no.* 1, 169–180. (Adel N. Boules) **93f:35064** 35J60

Chern, Maw Sheng On the computational complexity of reliability redundancy allocation in a series system. (English summary) *Oper. Res. Lett.* **11** (1992), *no.* 5, 309–315. (Summary) **93f:90079** 90B25 (68Q25, 90C60)

— (*with* Lin, Kao Chêng) The most vital edges in the minimum spanning tree problem. (English summary) *Inform. Process. Lett.* **45** (1993), *no.* 1, 25–31. (Summary) **93m:68136** 68R10 (05C85, 68Q25, 90B25)

Chern, Shiing Shen An introduction to Dupin submanifolds. *Differential geometry*, 95–102, *Pitman Monographs Surveys Pure Appl. Math.*, 52, *Longman Sci. Tech., Harlow*, 1991. (Steven G. Buyske) **93g:53084** 53C42 (53A07)

— Characteristic classes and characteristic forms. *Paul Halmos*, 169–177, *Springer, New York*, 1991. (Elmer G. Rees) **93a:57029** 57R20 (32H30, 58A10)

— (*with* Liu, Fang You; Su, Bu Qing; Cheng, Yu Huai) In memory of Dr. J. Z. Zeng. (Chinese) *Collected research papers on the history of mathematics, Vol.* 3 (*Chinese*), 1–5, *Inner Mongolia Univ. Press, Hohhot*, 1992. (*see* **93i:01006**) 01A70 (01A25)

— Mathematics of the twenty-first century. (Chinese) *Adv. in Math.* (*China*) **21** (1992), *no.* 4, 385–389. (Dian Zhou Zhang) **93k:01061** 01A67 (00A30)

— On Finsler geometry. (French summary) *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 10, 757–761. (Andrzej Bucki) **93e:53019** 53B15 (53B40)

Chern, T. C. (*with* Shih, Wei Kuan; Hsu, Wen-Lian) An $O(n^2 \log n)$ algorithm for the Hamiltonian cycle problem on circular-arc graphs. (English summary) *SIAM J. Comput.* **21** (1992), *no.* 6, 1026–1046. (Summary) **93h:05158** 05C85 (05C45, 68Q25, 68R10)

Chern, T. Y. Peter Value distribution of analytic functions with slow growth the open unit disk. *Proceedings of Asian Mathematical Conference*, 1990 (*Hong Kong*, 1990), 69–72, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93b:00022**) 30D35

Chernega, N. Ya. (*with* Eremeev, V. A.; Zubov, L. M.; Karyakin, M. I.) Cavitation in non-linearly elastic bodies with dislocations and disclinations. (Russian) *Dokl. Akad. Nauk* **326** (1992), *no.* 6, 968–971; *translation in Soviet Phys. Dokl.* **37** (1992), *no.* 10, 518–520 (1993). (From the text) **93j:73018** 73C50 (73G05, 73S10)

Chernenko, I. V. (*with* Chernousenko, V. M.; Chernyshenko, S. V.) Drift vortices in continuous media. *Nonlinear world, Vol.* 1 (*Kiev*, 1989), 399–419, *World Sci. Publishing, River Edge, NJ*, 1990. (*see* **93b:00012**) 76C05 (76X05)

Chernick, Michael R. (*with* Hsing, Tailen; McCormick, William P.) Calculating the extremal index for a class of stationary sequences. *Adv. in Appl. Probab.* **23** (1991), *no.* 4, 835–850. (Georg Lindgren) **93c:60073** 60G70

Chernii, V. F. (*with* Bronshtein, I. U.) A new class of linear extensions. (Russian) *Mat. Issled. No.* 124, *Funktsional. Metod. Teorii Differ. Uravn.* (1992), 15–35, 142. (From the text) **93j:34064** 34C35 (34A30, 58F25)

Chernik, B. P. On the synchronous approximation of a family of functions. (Russian) *Application of functional analysis in approximation theory (Russian)*, 147–152, *Tver. Gos. Univ., Tver'*, 1990. (*see* **93k:00021**) 41A28 (41A50)

Chernikov, Aleksandr Antonovich (*with* Zaslavskiĭ, G. M.; Sagdeev, R. Z.; Usikov, D. A.) ★ Слабый хаос и квазирегулярные структуры. (Russian) [Weak chaos and quasiregular patterns] With an English summary. "*Nauka*", *Moscow*, 1991. 238 *pp. ISBN* 5-02-014741-9 (James D. Meiss) **93a:58127a** 58F13 (70H05, 70K50, 76F20)

— (*with* Zaslavskiĭ, G. M.; Sagdeev, R. Z.; Usikov, D. A.) ★ Weak chaos and quasi-regular patterns. Translated from the Russian by A. R. Sagdeeva. Cambridge Nonlinear Science Series, 1. *Cambridge University Press, Cambridge*, 1991. xii+253 *pp. ISBN* 0-521-37317-4 (James D. Meiss) **93a:58127b** 58F13 (58F27, 70H05, 70K50, 76F20)

— (*with* Neĭshtadt, A. I.; Rogal'skiĭ, A. V.; Yakhnin, V. Z.) Adiabatic chaotic advection in nonstationary 2D flows. (English summary) *Nonlinear dynamics of structures (Vladimir Maiakovskiĭ*, 1990), 337–345, *World Sci. Publishing, River Edge, NJ*, 1991. (Summary) **93h:76041** 76F20 (58F13, 58F40, 76R50)

— (*with* Neĭshtadt, A. I.; Rogal'skiĭ, A. V.; Yakhnin, V. Z.) Lagrangian turbulence in nonstationary 2-D flows. *Chaos* **1** (1991), *no.* 2, 206–211. (Summary) **93f:76056** 76F20 (58F13, 58F40)

— (*with* Schmidt, George) Chaotic streamlines in convective cells. (English summary) *Phys. Lett. A* **169** (1992), *no.* 1-2, 51–56. (Summary) **93f:76042** 76E15 (58F13, 58F40, 76F20)

Chernikov, N. A. ★ Уравнения тяготения в пространстве Лобачевского. (Russian. English and Russian summaries) [Gravity equations in a Lobachevskiĭ space] Сообщения Объединенного Института Ядерных Исследований. Дубна [Communications of the Joint Institute for Nuclear Research. Dubna], R2-92-192. *Joint Inst. Nuclear Res., Dubna*, 1992. 21 *pp.* (Jan Novotný) **93g:83083** 83D05 (51P05)

— The Kepler problem in the Lobachevsky space and its solution. (English summary) *Acta Phys. Polon. B* **23** (1992), *no.* 2, 115–122. 70F05 (70-03)

Chernikov, N. S. Locally finite groups that possess a normal system with linearizable factors. (Russian) *Complex analysis, algebra and topology (Russian)*, 100–110, *Akad. Nauk Ukrain. SSR, Inst. Mat., Kiev*, 1990. (Summary) **93a:20059** 20F50

— Factorization of groups by permutable periodic subgroups without elements of the same prime orders. (Russian. Ukrainian summary) *Ukrain. Mat. Zh.* **43** (1991), *no.* 10, 1429–1436; *translation in Ukrainian Math. J.* **43** (1991), *no.* 10, 1327–1333 (1992). (M. J. Tomkinson) **93c:20053** 20E25

— (*with* Chernikov, S. N.) A criterion for the complementability of a periodic almost solvable subgroup in the group that contains it. (Russian. Russian and Ukrainian summaries) *Ukraïn. Mat. Zh.* **44** (1992), *no.* 6, 822–826; *translation in Ukrainian Math. J.* **44** (1992), *no.* 6, 741–745 (1993). (A. I. Budkin) **93j:20084** 20F50

Chernikov, P. V. On a theorem of N. N. Luzin. (Russian) *Sibirsk. Mat. Zh.* **33** (1992), *no.* 1, 212–215, 222; *translation in Siberian Math. J.* **33** (1992), *no.* 1, 174–176. (Roman Pol) **93m:54031** 54C55 (54C20)

— On a characterization of absolute retracts. (Russian) *Sibirsk. Mat. Zh.* **33** (1992), *no.* 2, 215–217, 224; *translation in Siberian Math. J.* **33** (1992), *no.* 2, 367–368. (K. Sieklucki) **93j:54007** 54C55 (55M15)

Chernikov, S. N. (*with* Levishchenko, S. S.) Constructive description of finite nondispersive groups in which all subgroups of nonprimary index are abelian. (Russian. Russian and Ukrainian summaries) *Ukraïn. Mat. Zh.* **44** (1992), *no.* 6, 818–822; *translation in Ukrainian Math. J.* **44** (1992), *no.* 6, 738–741 (1993). (L. A. Kurdachenko) **93j:20050** 20D99

— (*with* Chernikov, N. S.) A criterion for the complementability of a periodic almost solvable subgroup in the group that contains it. (Russian. Russian and Ukrainian summaries) *Ukraïn. Mat. Zh.* **44** (1992), *no.* 6, 822–826; *translation in Ukrainian Math. J.* **44** (1992), *no.* 6, 741–745 (1993). (A. I. Budkin) **93j:20084** 20F50

— *see also* **Anniversary: Birth of Chernikov, S. N.**

Chernitskiĭ, A. A. Long-range interaction of four-vector field solitons in the Minkowski space. (Russian. English and Russian summaries) *Teoret. Mat. Fiz.* **90** (1992), *no.* 3, 380–387; *translation in Theoret. and Math. Phys.* **90** (1992), *no.* 3, 260–264. (Summary) **93g:81029** 81Q99 (35Q51)

Chernoff, Paul R. A simple proof of Tychonoff's theorem via nets. *Amer. Math. Monthly* **99** (1992), *no.* 10, 932–934. (Thomas W. Rishel) **93m:54042** 54D30 (54-01, 54B10)

Chernopazov, S. A. (*with* Nyashin, Yu. I.) Variational methods for solving some contact problems of elastoplasticity. (Russian. Russian summary) *Boundary value problems (Russian)*, 115–122, *Perm. Politekh. Inst., Perm'*, 1989. (*see* **93k:00022**) 73T05 (73E99, 73V25)

— (*with* Pechenov, V. S.) On the formulation of a contact problem taking into account the forces of friction. (Russian. Russian summary) *Boundary value problems (Russian)*, 139–145, *Perm. Politekh. Inst., Perm'*, 1991. (*see* **93m:00017**) 73T05 (73V25)

Chernorutskiĭ, V. V. (*with* Krasnosel'skiĭ, M. A.) Hysteresis systems with variable characteristics. *Nonlinear Anal.* **18** (1992), *no.* 6, 543–557. (Martin Brokate) **93c:47091** 47N99 (47H30, 49K20, 73E05)

Chernousenko, V. M. (*with* Kuklin, V. M.; Panchenko, I. P.) Structures in nonequilibrium media. (Russian) *Integrability and kinetic equations for solitons (Russian)*, 333–416, "*Naukova Dumka*", *Kiev*, 1990. (A. D. Khon'kin) **93g:82061** 82C10 (35Q99, 76C05, 76X05, 82D10)

— (*with* Chernenko, I. V.; Chernyshenko, S. V.) Drift vortices in continuous media. *Nonlinear world, Vol.* 1 (*Kiev*, 1989), 399–419, *World Sci. Publishing, River Edge, NJ*, 1990. (*see* **93b:00012**) 76C05 (76X05)

— (*with* Zadorozhnyĭ, V. F.; Tsvily, B. P.) Evolution and stability of vortex structures in continuum media. *Nonlinear world, Vol.* 1 (*Kiev*, 1989), 420–443, *World Sci. Publishing, River Edge, NJ*, 1990. (*see* **93b:00012**) 76D05 (35Q30, 35Q72, 76C05, 76E30)

— (*with* Kuklin, V. M.; Panchenko, I. P.; Vorob'yov, V. M.) Space dissipative structures. *Nonlinear world, Vol.* 2 (*Kiev*, 1989), 776–803, *World Sci. Publishing, River Edge, NJ*, 1990. (*see* **93b:00013**) 35P05 (76B15)

— *see also* **Nonlinear world, 93b:00012** *and* **93b:00013**

Chernous'ko, F. L. Decomposition and synthesis of control in dynamical systems. *Soviet J. Comput. Systems Sci.* **29** (1991), *no.* 5, 126–144 (1992); *translated from Izv. Akad. Nauk SSSR Tekhn. Kibernet.* **1990,** *no.* 6, 64–82 (*Russian*). (Summary) **93a:93024** 93B11

— Design of a control of a nonlinear dynamical system. (Russian. Russian summary) *Prikl. Mat. Mekh.* **56** (1992), *no.* 2, 179–191; *translation in J. Appl. Math. Mech.* **56** (1992), *no.* 2, 157–166. (Clementina D. Mladenova) **93h:93028** 93B50 (70Q05)

Chernov, N. I. A new proof of the Sinai formula for computing the entropy of hyperbolic billiards. Application to a Lorentz gas and to the Bunimovich stadium. (Russian) *Funktsional. Anal. i Prilozhen.* **25** (1991), *no.* 3, 50–69, 95; *translation in Functional Anal. Appl.* **25** (1991), *no.* 3, 204–219 (1992). (Valery Covachev) **93c:58110** 58F11 (58F15)

— Ergodicity of a Hamiltonian system of two particles in an external field. (Russian) *Uspekhi Mat. Nauk* **46** (1991), *no.* 5(281), 179–180; *translation in Russian Math. Surveys* **46** (1991), *no.* 5, 187–188. (J. S. Joel) **93d:58050** 58F05 (70H05)

— (*with* Ososkov, G. A.; Pronzato, L.) 3-dimensional multivertex reconstruction from 2-dimensional tracks observations using likelihood inference. (English summary) *Appl. Math.* **37** (1992), *no.* 6, 437–452. (Summary) **93f:62103** 62K05 (62F10, 62J02)

Chernov, V. G. On the Fourier transform of the Hamming norm. (Russian. Russian and Ukrainian summaries) *Ukraïn. Mat. Zh.* **44** (1992), *no.* 8, 1095–1102; *translation in Ukrainian Math. J.* **44** (1992), *no.* 8, 995–1002 (1993). (Summary) **93h:94020** 94B05 (43A99)

Chernov, Yu. K. Boundary properties of a class of homeomorphisms. (Russian. Russian summary) *Dinamika Sploshn. Sredy No.* 98 (1990), 80–97, 116. (S. K. Vodop'yanov) **93g:30029** 30C65

Chernova, N. I. Ergodicity conditions for a class of queueing systems. (Russian) *Mathematical analysis and differential equations* (*Russian*), 94–98, *Novosibirsk. Gos. Univ., Novosibirsk*, 1991. (*see* **93m:00026**) 60K25 (90B22)

Chernova, S. S. (*with* Bernshtein, A. V.) Probabilistic models of processes for the exchange of housekeeping information in data transmission networks. (Russian) *Probabilistic processes and their applications* (*Russian*), 32–36, *Moskov. Inst. Élektron. Mashinostroeniya, Moscow*, 1989. (*see* **93b:60003**) 94A40 (68M10)

Chernyaev, A. P. Anisotropic spaces of generalized functions in problems of mechanics for a generalized axisymmetric equation. (Russian) *Some questions of mathematics in problems of physics and mechanics* (*Russian*), 101–110, *Moskov. Fiz.-Tekhn. Inst., Moscow*, 1988. (*see* **93m:00036**) 35J15 (46F05, 76S05)

— Exact fundamental solutions of generalized axisymmetric equations. (Russian. Russian summary) *Differentsial'nye Uravneniya* **27** (1991), *no.* 11, 1998–2001, 2024. (Summary) **93j:35007** 35A08 (35G05)

— A problem of an axially symmetric jet flow. (Russian) *Dokl. Akad. Nauk SSSR* **317** (1991), *no.* 5, 1070–1075; *translation in Soviet Phys. Dokl.* **36** (1991), *no.* 4, 310–312. (E. G. Broadbent) **93a:76020** 76C05

Chernyak, V. Ya. (*with* Grigorishin, K. I.; Ogievetskiĭ, E. I.) Triangle equation and quantum algebra representations. *Phys. Lett. A* **158** (1991), *no.* 6-7, 291–294. (Summary) **93g:81047** 81R50 (17B37, 22E70, 81U99, 82B23)

— The most general representation of spin operators via boson operators. *Phys. Lett. A* **163** (1992), *no.* 1-2, 117–120. (A. Ventura) **93b:81101** 81R30 (81S05, 82D20)

— (*with* Grigorishin, K. I.; Ogievetskiĭ, E. I.) Universal *R*-matrix and representation theory for quantum groups. *Phys. Lett. A* **164** (1992), *no.* 5-6, 389–397. (L. L. Vaksman) **93e:17013** 17B37 (81R50)

— (*with* Grigorishin, K. I.; Ogievetskiĭ, E. I.) Quantum group bootstrap approach and infinite-dimensional factorized scattering matrices. *Phys. Lett. A* **164** (1992), *no.* 5-6, 398–407. (L. L. Vaksman) **93e:17014** 17B37 (81R50)

— (*with* Grigorishin, K. I.; Ogievetskiĭ, E. I.) Quantum group bootstrap approach. Application to the extended Heisenberg group. *Phys. Lett. A* **164** (1992), *no.* 5-6, 408–415. (L. L. Vaksman) **93e:17015** 17B37 (81R50)

Chernyatin, V. A. ★ Обоснование метода Фурье в смешанной задаче для уравнений в частных производных. (Russian. Russian summary) [Justification of the Fourier method in a mixed problem for partial differential equations] *Moskov. Gos. Univ., Moscow*, 1991. 112 *pp. ISBN* 5-211-01579-7 (B. A. Bondarenko) **93h:35003** 35–02 (35A25, 35C10)

Chernyavskaya, N. A. (*with* Shuster, L. A.) A representation of solutions of the Sturm-Liouville equation and its applications. (Russian. Russian summary) *Differentsial'nye Uravneniya* **28** (1992), *no.* 3, 537–540, 552. (Summary) **93f:34088** 34E20 (34B24, 34B27, 34L40)

Chernyavskiĭ, I. Ya. (*with* Izrailevich, V. L.) A metric approach to Khinchin convergence. (Russian) *Differential equations and function theory, No.* 8 (*Russian*), 17–24, *Saratov. Gos. Univ., Saratov*, 1989. (*see* **93b:00016**) 60B10

Chernyavskiĭ, V. M. (*with* Shtemler, Yu. M.) Stability of Couette flow between free cylinders with allowance for self-gravitation. *Fluid Dynamics* **26** (1991), *no.* 5, 729–737 (1992); *translated from Izv. Akad. Nauk SSSR Mekh. Zhidk. Gaza* **1991,** *no.* 5, 110–119 (*Russian*). (Summary) **93b:76034** 76E10 (73H99)

Chernyĭ, D. E. (*with* Spivak, M. A.) Simple unconditional experiments with two-input automata. (Russian) *Theory of semigroups and its applications, No.* 10 (*Russian*), 107–114, *Saratov. Gos. Univ., Saratov*, 1991. (E. B. Kinber) **93e:68084** 68Q70

Chernyĭ, G. G. The asymptotic method in problems on the motion of bodies in a melting medium. (Russian. Russian summary) *Prikl. Mat. Mekh.* **56** (1992), *no.* 3, 368–385; *translation in J. Appl. Math. Mech.* **56** (1992), *no.* 3, 303–318. (Summary) **93m:80009** 80A22 (73B30, 73T05)

Chernyĭ, N. I. (*with* Lyashko, I. I.) A numerical method for solving problems of nonstationary filtration. (Russian. English and Russian summaries) *Dokl. Akad. Nauk Ukrainy* **1992,** *no.* 10, 73–77, 172. (Summary) **93h:76072** 76S05 (65P05, 76M10, 76M30)

Chernyshenko, S. V. (*with* Chernousenko, V. M.; Chernenko, I. V.) Drift vortices in continuous media. *Nonlinear world, Vol.* 1 (*Kiev*, 1989), 399–419, *World Sci. Publishing, River Edge, NJ*, 1990. (*see* **93b:00012**) 76C05 (76X05)

Chernyshev, K. R. (*with* Pashchenko, F. F.) Application of the method of functional transformations in the identification of nonlinear systems. (Russian. Russian summary) *Avtomat. i Telemekh.* **1992,** *no.* 4, 77–85; *translation in Automat. Remote Control* **53** (1992), *no.* 4, *part* 1, 539–546. (Summary) **93e:93021** 93B30 (93C10, 93E12)

Chernyshev, S. A. (*with* Kop'ev, V. F.) Small disturbances of steady vortices. *Fluid Dynamics* **26** (1991), *no.* 5, 719–729 (1992); *translated from Izv. Akad. Nauk SSSR Mekh. Zhidk. Gaza* **1991,** *no.* 5, 99–109 (*Russian*). (E. G. Broadbent) **93c:76011** 76C05

Chernyshov, K. I. Asymptotic expansions of solutions of linear singularly perturbed differential equations. (Russian) *Zap. Nauchn. Sem. Leningrad. Otdel. Mat. Inst. Steklov.* (*LOMI*) **195** (1991), *Mat. Vopr. Teor. Rasprostr. Volna.* 21, 161–178, 183; *translation in J. Soviet Math.* **62** (1992), *no.* 6, 3153–3164. (From the introduction) **93g:34082** 34E15 (34A30, 34E05)

— Asymptotic expansions of a solution of the Cauchy problem for a linear differential equation. (Russian. Russian summary) *Differentsial'nye Uravneniya* **28** (1992), *no.* 5, 765–779, 916; *translation in Differential Equations* **28** (1992), *no.* 5, 609–624. (Vasiliy Pavlovich Yakovets) **93k:34121** 34E15 (34A12)

Chernyshov, S. L. (*with* Zakharchuk, V. T.; Savenkova, N. P.) On an approach to the solution of the Orr-Sommerfeld equation. (Russian. Russian summary) *Direct and inverse problems in mathematical physics* (*Russian*), 77–84, 261, *Moskov. Gos. Univ., Moscow*, 1991. (*see* **93f:00006**) 65L10 (76E05, 76M20)

Cherrier, Pascal (*with* Milani, Albert J.) Equations of von Kármán's type on compact Kähler manifolds. (English and French summaries) *Bull. Sci. Math.* (2) **116** (1992), *no.* 3, 325–352. (Dennis M. DeTurck) **93f:58244** 58G30 (35J40, 47H15, 47N20, 58G20)

Cherry, Fred (*with* Brown, John Wesley; Most, Lee; Most, Mel; Parker, E. T.; Wallis, Walter) Completion of the spectrum of orthogonal diagonal Latin squares. *Graphs, matrices, and designs*, 43–49, *Lecture Notes in Pure and Appl. Math.*, 139, *Dekker, New York*, 1993. (*see* **93i:05002**) 05B15

Chersi, Franco (*with* Volčič, Aljoša) λ-equidistributed sequences of partitions and a theorem of the de Bruijn-Post type. (English summary) *Ann. Mat. Pura Appl.* (4) **162** (1992), 23–32. (Harald Niederreiter) **93m:11073** 11K41

Chertoritskiĭ, Yu. N. (*with* Yablonskiĭ, A. I.) Movable singularities of a cyclic system of differential equations. (Russian) *Differentsial'nye Uravneniya* **27** (1991), *no.* 10, 1720–1724, 1835–1836; *translation in Differential Equations* **27** (1991), *no.* 10, 1214–1217 (1992). (J. Rausen) **93e:34014** 34A20

Cherubini, Alessandra (*with* Petrich, Mario) Characterizations of linear congruences on a free monoid. (English summary) *Proc. Amer. Math. Soc.* **119** (1993), *no.* 3, 719–726. (Yves Metivier) **93m:20086** 20M05

Cheshankov, B. (*with* Józefczyk, J.; Martowski, K.; Slavkova, M.) A control algorithm for the manipulator of the industrial robot IRb-6. (Polish summary) *Systems Sci.* **17** (1991), *no.* 3, 53–62 (1992). 93C85

Cheshkova, M. A. On the geometry of degenerate mappings in a Euclidean space. (Russian) *Geometry and topology of homogeneous spaces* (*Russian*), 91–98, *Altaĭsk. Gos. Univ., Barnaul*, 1988. (Vladislav Goldberg) **93b:53006** 53A07

— On the geometry of a normalized surface. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* **1991,** *no.* 9, 67–68; *translation in Soviet Math. (Iz. VUZ)* **35** (1991), *no.* 9, 66. (P. E. Markov) **93h:53018** 53B05

Chesla, S. (*with* Kassab, A. J.) CVBEM solution of nonlinear heat conduction problems. (English summary) *Boundary element technology, VII* (*Albuquerque, NM*, 1992), 457–471, *Comput. Mech., Southampton*, 1992. (*see* **93b:65002**) 80–08 (65N38, 80A20)

Chesneaux, Jean-Marie Stochastic arithmetic properties. *Computational and applied mathematics, I* (*Dublin*, 1991), 81–91, *North-Holland, Amsterdam*, 1992. (*see* **93j:00007**) 65G99

Chesnokov, I. Yu. On the structure of a generalized function with support on a subspace. (Russian) *Dokl. Akad. Nauk SSSR* **320** (1991), *no.* 1, 54–57; *translation in Soviet Math. Dokl.* **44** (1992), *no.* 2, 412–416. (Peter Wagner) **93b:46069** 46F10 (35J30)

Che Soler, Justo (*with* López, Martín) On the anisotropic continuity of solutions of second-order linear elliptic equations. (Spanish. English and Spanish summaries) *Cienc. Mat.* (*Havana*) **11** (1990), *no.* 3, 197–210. (Summary) **93h:35052** 35J15 (35B65)

— Interior estimates in general anisotropic Hölder norms for solutions of parabolic equations. (Spanish. English and Spanish summaries) *Cienc. Mat.* (*Havana*) **11** (1990), *no.* 3, 257–269. (Summary) **93j:35085** 35K10 (35B45)

Chester, W. The forces on a body moving through a viscous fluid. (English summary) *Proc. Roy. Soc. London Ser. A* **437** (1992), *no.* 1899, 185–193. (Summary) **93f:76039** 76D99 (76D05)

— The matching condition for two-dimensional flow at low Reynolds number: with application to the motion of an elliptic cylinder. (English summary) *Proc. Roy. Soc. London Ser. A* **437** (1992), *no.* 1899, 195–198. (Summary) **93f:76040** 76D99 (76D07, 76D30)

Chetouani, L. (*with* Guechi, L.; Hammann, T. F.) Algebraic treatment of a general noncentral potential. (English summary) *J. Math. Phys.* **33** (1992), *no.* 10, 3410–3418. (Martin Kummer) **93k:81035** 81Q05

Chetwynd, Amanda Total colourings of graphs. *Graph colourings* (*Milton Keynes*, 1988), 65–77, *Pitman Res. Notes Math. Ser.*, 218, *Longman Sci. Tech., Harlow*, 1990. (*see* **93k:05072**) 05C15

— Total colourings of graphs—a progress report. *Graph theory, combinatorics, and applications, Vol.* 1 (*Kalamazoo, MI*, 1988), 233–244, *Wiley-Intersci. Publ., Wiley, New York*, 1991. (*see* **93b:05002**) 05C15

— (*with* Hilton, A. J. W.) Outline symmetric Latin squares. *Discrete Math.* **97** (1991), *no.* 1-3, 101–117. (Katherine Heinrich) **93a:05031** 05B15

— (*with* Hilton, A. J. W.) Alternating Hamiltonian cycles in two-colored complete bipartite graphs. *J. Graph Theory* **16** (1992), *no.* 2, 153–158. (Prabir Das) **93g:05092** 05C45 (05C15, 05C38)

— (*with* Häggkvist, Roland) Some upper bounds on the total and list chromatic numbers of multigraphs. (English summary) *J. Graph Theory* **16** (1992), *no.* 5, 503–516. (Hugh Hind) **93i:05060** 05C15

Cheung, Chi-Keung (*with* Wu, Hung Hsi) Some new domains with complete Kähler metrics of negative curvature. *J. Geom. Anal.* **2** (1992), *no.* 1, 37–78. (Mark A. Chinak) **93b:32010** 32C17 (53C55)

— Chern forms, Chern numbers and curvature conditions on a Kähler-Einstein surface. *J. Geom. Anal.* **2** (1992), *no.* 2, 105–119. (Steven B. Bradlow) **93b:32045** 32L07 (32J27, 53C25)

— On some properties of exhaustion maps between bounded domains. (English summary) *Pacific J. Math.* **156** (1992), *no.* 1, 107–117. (John Bland) **93k:32044** 32H02 (32F15)

Cheung, Leung-Fu ★ Geometric properties of stable noncompact constant mean curvature surfaces. Dissertation, Rheinische Friedrich-Wilhelms-Universität Bonn, Bonn, 1990. Bonner Mathematische Schriften [Bonn Mathematical Publications], 220. *Universität Bonn, Mathematisches Institut, Bonn*, 1991. iv+65 *pp.* (Ivan Sterling) **93e:53006** 53A10

Cheung, Steven (*with* Lau, Francis C. M.) Mesh permutation routing with locality. (English summary) *Inform. Process. Lett.* **43** (1992), *no.* 2, 101–105. (Summary) **93h:68006** 68M10

— (*with* Lau, Francis C. M.) A lower bound for permutation routing on two-dimensional bused meshes. (English summary) *Inform. Process. Lett.* **45** (1993), *no.* 5, 225–228. (Summary) **93k:68007** 68M10

Cheung, Wing Sum (*with* Wong, Bun) An integral inequality of an intrinsic measure on bounded domains in $\mathbf{C}^n$. *Rocky Mountain J. Math.* **22** (1992), *no.* 3, 825–836. (Ian Graham) **93h:32033** 32H15

— On Poincaré type integral inequalities. *Proc. Amer. Math. Soc.* **119** (1993), *no.* 3, 857–863. (Jiří Rákosník) **93m:26035** 26D10

Cheung, Y. K. *see* **Zhang, You Qi**

Chevalier, Georges (*with* Pulmannová, Sylvia) Compositions of Sasaki projections. (English summary) Quantum logics, Part I (Gdańsk, 1990). *Internat. J. Theoret. Phys.* **31** (1992), *no.* 9, 1599–1614. (Summary) **93g:81006** 81P10 (06C15, 81P15)

Chevalier, P.-A. (*with* Bourgeois, J.; Picasso, M.; Rappaz, J.; Touzani, R.) Magnetohydrodynamic problem in the aluminum industry. *Finite elements in fluids, Vol.* 8 (*Huntsville, AL*, 1989), 479–508, *Ser. Comput. Phys. Process. Mech. Thermal Sci., Hemisphere, Washington, DC*, 1992. (*see* **93e:76050**) 76W05

Chevallier, Nicolas Un théorème ergodique stochastique pour certaines moyennes non décroissantes. (English summary) [A stochastic ergodic theorem for some nondecreasing averages] *C. R. Acad. Sci. Paris Sér. I Math.* **313** (1991), *no.* 12, 841–844. (Yves Derriennic) **93d:28020** 28D05 (47A35, 60G10)

— A note on lower limit of series and potential theory. (English summary) *Proc. Roy. Soc. Edinburgh Sect. A* **121** (1992), *no.* 3-4, 273–277. (J. C. Taylor) **93j:31010** 31C20 (31C35, 31C40)

Cheverda, V. A. (*with* Alekseev, A. S.; Avdeev, A. V.; Fat'yanov, A. G.) A closed cycle of the mathematical modeling of wave processes in vertically inhomogeneous media (direct and inverse problems). (Russian. English summary) *Mat. Model.* **3** (1991), *no.* 10, 80–94. (Summary) **93b:86003** 86A15 (73D50)

Chevet, Simone Sur les espaces de Sobolev en dimension infinie. [On infinite-dimensional Sobolev spaces] *Séminaire d'Analyse*, 1988–89 (*Clermont-Ferrand*, 1988/1989), *Exp. No.* 12, 26 *pp.*, *Univ. Clermont-Ferrand II*, *Clermont-Ferrand*, 199?. (Vladimir I. Bogachëv) **93a:46070** 46E50 (46E35, 60H07)

Chevreau, B. A survey of recent reflexivity results. *Operator algebras and operator theory* (*Craiova*, 1989), 46–61, *Pitman Res. Notes Math. Ser.*, 271, *Longman Sci. Tech.*, *Harlow*, 1992. (Warren R. Wogen) **93i:47066** 47D27 (47A15, 47A65)

Chévrier, P. (*with* Galley, H.) A van Leer finite volume scheme for the Euler equations on unstructured meshes. (English and French summaries) *RAIRO Modél. Math. Anal. Numér.* **27** (1993), *no.* 2, 183–201. (Summary) **93k:76080** 76M20 (65M99, 76N15)

Chew, C. K. (*with* Chan, A. H.) Asymptotic solution to the QCD-parton branching equation. (English summary) *J. Math. Phys.* **33** (1992), *no.* 9, 3209–3212. (Summary) **93g:81201** 81V05

Chew, K. H. (*with* Yap, H. P.) Total chromatic number of graphs of high degree. II. (English summary) *J. Austral. Math. Soc. Ser. A* **53** (1992), *no.* 2, 219–228. (Mirko Horňák) **93i:05065** 05C15

— (*with* Yap, H. P.) Total chromatic number of complete r-partite graphs. (English summary) *J. Graph Theory* **16** (1992), *no.* 6, 629–634. (András Gyárfás) **93h:05072** 05C15 (05C35)

Chew, Soo Hong (*with* Nishimura, Naoko) Differentiability, comparative statics, and nonexpected utility preferences. (English summary) *J. Econom. Theory* **56** (1992), *no.* 2, 294–312. (Summary) **93f:90040** 90A19 (90A10, 90A53)

Chew, Steven Boon-Wei (*with* Phua, Paul Kang Hoh) Symmetric rank-one update and quasi-Newton methods. (English summary) *Optimization*, *Vol.* 1, 2 (*Singapore*, 1992), 52–63, *World Sci. Publishing*, *River Edge*, *NJ*, 1992. (*see* **93d:90005**) 90C30

Chew, Tuan Seng (*with* Lee, Peng Yee) Integration of highly oscillatory functions in the plane. *Proceedings of Asian Mathematical Conference*, 1990 (*Hong Kong*, 1990), 276–279, *World Sci. Publishing*, *River Edge*, *NJ*, 1992. (*see* **93b:00022**) 26A39 (28A25)

Cheze, Nathalie Régression non paramétrique pour un processus à temps continu. (English and French summaries) [Nonparametric regression for a continuous-time process] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 9, 1009–1012. (Summary) **93g:62052** 62G05 (62J02)

Chhajed, Dilip (*with* Chand, Suresh) A single machine model for determination of optimal due dates and sequence. (English summary) *Oper. Res.* **40** (1992), *no.* 3, 596–602. 90B35

Chhajlany, S. C. Some polynomial perturbation problems and the rotating displaced oscillator. (English summary) *Phys. Lett. A* **173** (1993), *no.* 3, 215–220. (Summary) **93k:81036** 81Q05

Chhetry, D. (*with* Block, Henry W.; Fang, Zhao Ben; Sampson, Allan R.) Partial orderings on permutations. (English summary) *Topics in statistical dependence* (*Somerset*, *PA*, 1987), 45–55, *IMS Lecture Notes Monograph Ser.*, 16, *Inst. Math. Statist.*, *Hayward*, *CA*, 1990. (Summary) **93i:62015** 62E10

— (*with* Block, Henry W.; Fang, Zhao Ben; Sampson, Allan R.) Some new partial orderings on S_n and $S_n \times S_n$. *J. Statist. Plann. Inference* **30** (1992), *no.* 3, 351–357. (Moshe Shaked) **93c:60020** 60E15 (05A05)

Chhikara, R. S. (*with* Deng, Lih-Yuan) Robustness of some nonuniform random variate generators. (English summary) *Statist. Neerlandica* **46** (1992), *no.* 2-3, 195–207. (Summary) **93e:65009** 65C10

Chi, Dong Pyo (*with* Choi, Sung Kyu; Park, Jong Suh) Structurally stable flows. *Bull. Austral. Math. Soc.* **45** (1992), *no.* 1, 79–90. (Romeo F. Thomas) **93a:58101** 58F10 (58F15)

— (*with* Kim, Jin Hong) On the estimate of the first eigenvalue of the Laplacian on a compact Riemannian manifold. *J. Korean Math. Soc.* **29** (1992), *no.* 1, 55–62. (Novica Blažić) **93d:58172** 58G25 (58G20)

— (*with* Park, Gie Hyun) Weak-stability of $x/\|x\|$ and symmetries of liquid crystals. *J. Korean Math. Soc.* **29** (1992), *no.* 2, 251–260. (Martin Fuchs) **93h:58036** 58E12 (76A15)

Chi, G. Y. H. (*with* Hung, Hsien Ming; Lipicky, R. J.) Testing for the existence of a desirable dose combination. (English and French summaries) *Biometrics* **49** (1993), *no.* 1, 85–94. (Summary) **93m:62215** 62P10

Chi, Hong Qin Bifurcation values of logistic mappings. (Chinese. English and Chinese summaries) *Shanghai Shifan Daxue Xuebao Ziran Kexue Ban* **21** (1992), *no.* 2, 77–81. (Summary) **93k:58078** 58F03 (26A18, 54H20, 58F14)

Chi, Quo-Shin Twistor theory and Blaschke manifolds. *Ann. Global Anal. Geom.* **9** (1991), *no.* 3, 197–204. (S. M. Salamon) **93e:53053** 53C25 (32L25, 53C35, 57R20)

— (*with* Mo, Xiaokang) Rigidity of superminimal surfaces in complex projective spaces. *Tôhoku Math. J.* (2) **44** (1992), *no.* 1, 83–101. (John C. Wood) **93c:58052** 58E20 (53C42)

Chi, Rui Dong (*with* He, Yu Quan; He, Nai Wen) Lyapunov exponents of the circle map in human hearts. (English summary) *Phys. Lett. A* **170** (1992), *no.* 1, 29–32. 92C30 (58F13, 92-04)

Chi, Wèn Chên l-adic and λ-adic representations associated to abelian varieties defined over number fields. *Amer. J. Math.* **114** (1992), *no.* 2, 315–353. (Kenneth A. Ribet) **93c:11038** 11G10 (11F80, 11S20)

— Twists of matrix algebras and some subgroups of Brauer groups. *Bull. Austral. Math. Soc.* **45** (1992), *no.* 3, 377–383. (F. DeMeyer) **93f:12010** 12G05 (13A20)

Chia, T. T. (*with* Tan, B. L.) Periodic orbits of order three in the tent map. *Phys. Scripta* **45** (1992), *no.* 5, 422–424. (Frederick R. Marotto) **93e:58051** 58F03 (26A18, 58F13, 58F20)

Chiadò Piat, V. (*with* Acerbi, Emilio; Dal Maso, Gianni; Percivale, Danilo) An extension theorem from connected sets, and homogenization in general periodic domains. *Nonlinear Anal.* **18** (1992), *no.* 5, 481–496. (Alexander Belyaev) **93a:35014** 35B27 (35A15, 46E35)

Chiang, Chiang Cheng Decentralized variable-structure adaptive controller synthesis of large-scale systems subjected to bounded disturbances. (English summary) *Internat. J. Systems Sci.* **24** (1993), *no.* 6, 1101–1111. 93A14 (93C40)

Chiang, Chin Long (*with* Kenley, Susan S.; Brand, Richard J.) A two-state recurrent stochastic model with time-dependent transition rates. (English summary) *Math. Biosci.* **111** (1992), *no.* 2, 249–259. (Summary) **93e:92018** 92D30 (92C60)

Chiang, Hsiao-Dong (*with* Lu, Jin; Thorp, James S.) Eigenstructure assignment by decentralized feedback control. (English summary) *IEEE Trans. Automat. Control* **38** (1993), *no.* 4, 587–594. (Summary) **93m:93043** 93B55

Chiang, Huann Keng (*with* Tsai, Jason S. H.) Transformations for a class of nonlinear time-varying multivariable systems and their applications. (English summary) *IMA J. Math. Control Inform.* **9** (1992), *no.* 1, 61–87. (T. Kaczorek) **93f:93033** 93B17

— (*with* Tsai, Jason S. H.; Sun, Yü I) Pole-placement designs via novel block canonical forms for multivariable control systems. (English summary) *J. Franklin Inst.* **329** (1992), *no.* 5, 843–857. 93B55

Chiang, Jen-Shiun (*with* Lu, Mi) A novel division algorithm for the residue number system. (English summary) *IEEE Trans. Comput.* **41** (1992), *no.* 8, 1026–1032. (Summary) **93i:68012** 68M07

Chiang, Nam Po (*with* Fu, Hêng Lin) On the achromatic number of the Cartesian product $G_1 \times G_2$. (English summary) *Australas. J. Combin.* **6** (1992), 111–117. (Summary) **93h:05073** 05C15

Chiang, R. C. (*with* Shieh, S. Y.) Generalization of Jacobi's decomposition theorem to the rotation and translation of a solid in a fluid. (English summary) *J. Math. Phys.* **33** (1992), *no.* 12, 4053–4065. (Introduction) **93h:70002** 70E15 (70B10)

Chiang, R. Y. (*with* Safonov, Michael G.) H^∞ synthesis using a bilinear pole shifting transform. (English summary) *J. Guidance Control Dynamics* **15** (1992), *no.* 5, 1111–1117. 93B36

— (*with* Safonov, Michael G.; Haiges, K.; Madden, K.; Tekawy, Jonathan A.) A fixed H^∞ controller for a supermaneuverable fighter performing the Herbst maneuver. (English summary) *Automatica J. IFAC* **29** (1993), *no.* 1, 111–127. 93B36 (93C90)

Chiang, Tsu Shu (*with* Chou, Yün Hsiung) A comparison of simulated annealing of Gibbs sampler and Metropolis algorithms. (English summary) *Stochastic models, statistical methods, and algorithms in image analysis* (*Rome*, 1990), 117–124, *Lecture Notes in Statist.*, 74, *Springer*, *Berlin*, 1992. (*see* **93e:62005**) 60J99

— (*with* Chou, Yün Hsiung; Hsieh, Chung) Some limit theorems on simulated annealing. *Stochastic models, statistical methods, and algorithms in image analysis* (*Rome*, 1990), 125–131, *Lecture Notes in Statist.*, 74, *Springer*, *Berlin*, 1992. (*see* **93e:62005**) 60F99

Chiang, Y.-J. *see* **Chiang, Yuan-Jen**

Chiang, Yi-Jen (*with* Tamassia, Roberto) Dynamization of the trapezoid method for planar point location in monotone subdivisions. (English summary) *Internat. J. Comput. Geom. Appl.* **2** (1992), *no.* 3, 311–333. (Summary) **93j:68210** 68U05 (52B55, 68Q25)

— (*with* Preparata, Franco P.; Tamassia, Roberto) A unified approach to dynamic point location, ray shooting, and shortest paths in planar maps. (English summary) *Proceedings of the Fourth Annual ACM-SIAM Symposium on Discrete Algorithms* (*Austin*, *TX*, 1993), 44–53, *ACM*, *New York*, 1993. (*see* **93k:05002**) 68U05 (68P05, 68Q25)

Chiang, Yi-Ling An error approximation. *Approximation, optimization and computing*, 53–58, *North-Holland*, *Amsterdam*, 1990. (Summary) **93d:65084** 65M15

Chiang, Yuan-Jen (*with* Ratto, Andrea) Harmonic maps on spaces with conical singularities. (French summary) *Bull. Soc. Math. France* **120** (1992), *no.* 2, 251–262. (Giorgio Valli) **93h:58040** 58E20 (58G11)

Chiantini, Luca Plane sections of curves of low genus. *Algebraic K-theory, commutative algebra, and algebraic geometry* (*Santa Margherita Ligure*, 1989), 9–19, *Contemp. Math.*, 126, *Amer. Math. Soc.*, *Providence*, *RI*, 1992. (Raquel Mallavibarrena) **93e:14035** 14H45 (14C20, 14N05)

— (*with* Ballico, Edoardo) Some properties of stable rank 2 bundles on algebraic surfaces. *Forum Math.* **4** (1992), *no.* 4, 417–424. (Jean-Marc Drezet) **93g:14049** 14J60 (14F05)

Chiappa, Raúl A. A characterization of k-derived graphs lacking sources and sinks. (Spanish) *Proceedings of the First "Dr. Antonio A. R. Monteiro" Congress on Mathematics* (*Spanish*) (*Bahía Blanca*, 1991), 85–101, *Univ. Nac. del Sur*, *Bahía Blanca*, 1991. (*see* **93f:00010**) 05C75

— (*with* Maccari, Alicia; Ziliani, Alicia) A relation between total multigraphs and total multidigraphs. (English and Italian summaries) *Rend. Mat. Appl.* (7) **12** (1992), *no.* 1, 1–11. (G. Chartrand) **93j:05124** 05C75

Chiappinelli, R. (*with* Mawhin, Jean; Nugari, Rita) Bifurcation from infinity and multiple solutions for some Dirichlet problems with unbounded nonlinearities. *Nonlinear Anal.* **18** (1992), *no.* 12, 1099–1112. (Frank Benkert) **93k:35097** 35J65 (35B32, 47H11, 47H15, 47N20)

Chiappori, Pierre-André (*with* Geoffard, Pierre-Yves; Guesnerie, Roger) Sunspot fluctuations around a steady state: the case of multidimensional, one-step forward looking economic models. (English summary) *Econometrica* **60** (1992), *no.* 5, 1097–1126. (Summary) **93e:90016** 90A16 (90A14)

dalla Chiara, Maria Luisa *see* **Dalla Chiara, Maria Luisa**

Chiarella, C. The birth of limit cycles in Cournot oligopoly models with time delays. *Pure Math. Appl. Ser. B* **2** (1991), *no.* 2-3, 81–92. (Summary) **93a:90017** 90A53 (34K15, 90A14, 90A56)

Chiarellotto, Bruno (*with* Baldassarri, Francesco) On Christol's theorem. A generalization to systems of PDEs with logarithmic singularities depending upon parameters. *p-adic methods in number theory and algebraic geometry*, 1–24, *Contemp. Math.*, 133, *Amer. Math. Soc.*, *Providence*, *RI*, 1992. (Takashi Harase) **93j:12006** 12H25 (12J27)

— (*with* Baldassarri, Francesco) On André's transfer theorem. *p-adic methods in number theory and algebraic geometry*, 25–37, *Contemp. Math.*, 133, *Amer. Math. Soc.*, *Providence*, *RI*, 1992. (Alain Escassut) **93k:12016** 12H25

Chiarenza, Filippo (*with* Frasca, Michele; Longo, Placido) Interior $W^{2,p}$ estimates for nondivergence elliptic equations with discontinuous coefficients. (English summary) *Ricerche Mat.* **40** (1991), *no.* 1, 149–168. (Michelangelo Franciosi) **93k:35051** 35B45 (35J30, 35R05)

— (*with* Franciosi, Michelangelo) A generalization of a theorem by C. Miranda. (English summary) *Ann. Mat. Pura Appl.* (4) **161** (1992), 285–297. (Rafael Ortega) **93e:35024** 35J25 (46E35)

— (*with* Frasca, Michele; Longo, Placido) $W^{2,p}$-solvability of the Dirichlet problem for nondivergence elliptic equations with VMO coefficients. *Trans. Amer. Math. Soc.* **336** (1993), *no.* 2, 841–853. (Ya. A. Roĭtberg) **93f:35232** 35R05 (35J25)

Chiarli, Nadia Deficiency of linear series on the normalization of a projective surface. *Proceedings of the* 21*st. Annual Iranian Mathematics Conference* (*Isfahan*, 1990),

101–106, *Univ. Isfahan, Isfahan*, 199?. (Marino Palleschi) **93b:14018** 14C20 (14J99, 14M10)

Chiaverini, Stefano (*with* Sciavicco, Lorenzo; Siciliano, Bruno) Control of robotic systems through singularities. (English summary) *Advanced robot control (Grenoble, 1990)*, 284–295, *Lecture Notes in Control and Inform. Sci.*, 162, *Springer, Berlin*, 1991. (Summary) **93f:70032** 70Q05 (70B15, 93C85)

Chib, Siddhartha Bayes inference in the Tobit censored regression model. *J. Econometrics* **51** (1992), *no.* 1-2, 79–99. (Summary) **93a:62142** 62P20

Chiba, Keiko The submetacompactness of σ-products. *Math. Japon.* **36** (1991), *no.* 4, 711–715. (Summary) **93f:54011** 54B10 (54D20)

— *$\delta\theta$-refinability in products. Questions Answers Gen. Topology* **10** (1992), *no.* 2, 173–179. (Peter Vojtáš) **93i:54012** 54D20 (54B10)

— Normality of σ-products. *Proc. Amer. Math. Soc.* **119** (1993), *no.* 3, 999–1003. (O. T. Alas) **93m:54019** 54B05 (54B10, 54D20)

Chiba, Marta (*with* Smith, Gordon C.; Radvansky, Susan) ★ History of mathematics and related sciences: an annotated bibliography of sources held by Monash University Library. Edited and with an introduction by John N. Crossley. *Monash University, Department of Mathematics, Clayton*; *Monash University, Library, Clayton*, 1992. xx+138 *pp. ISBN* 0-7326-0276-9 (From the introduction) **93d:01001** 01–00 (00A15)

Chibi, Ahmed-Salah (*with* Moore, Gerald) Defect correction and Galerkin's method for second-order boundary value problems. (English summary) *Numer. Methods Partial Differential Equations* **8** (1992), *no.* 5, 469–491. (Summary) **93c:65141** 65N30

Chichurin, A. V. Solutions of systems with given limit properties in particular classes of normal differential systems with rational right-hand sides. (Russian. Russian summary) *Vestnik Beloruss. Gos. Univ. Ser. I Fiz. Mat. Mekh.* **1992,** *no.* 2, 62–66, i. (Victor N. Gorbuzov) **93k:34007** 34A20 (34A05, 34A99)

Chicone, Carmen Bifurcations of nonlinear oscillations and frequency entrainment near resonance. (English summary) *SIAM J. Math. Anal.* **23** (1992), *no.* 6, 1577–1608. (Bo Hua Yu) **93h:58109** 58F14 (34C05, 34C15, 34C23, 58F21, 58F22, 70K30)

— (*with* Cai, Z.-S.; King, P. D.; Forker, E. L.) A parameter identification problem arising from a model of canalicular bile formation. (English summary) *J. Math. Biol.* **31** (1993), *no.* 3, 273–289. (Summary) **93m:92010** 92C30 (34B15, 34C99)

Chidambara, C. (*with* Kiranagi, B. S.; Prema, G.) Rigidity theorem for Lie algebra bundles. *Comm. Algebra* **20** (1992), *no.* 6, 1549–1556. (Yu Cai Su) **93f:17032** 17B55 (17B20)

Chidambaram, M. (*with* Bhat, Jayadeva; Madhavan, K. P.) Robust control of an unstable continuous bioreactor. (English summary) *Mathematical theory of control (Bombay, 1990)*, 21–27, *Lecture Notes in Pure and Appl. Math.*, 142, *Dekker, New York*, 1993. (*see* **93g:93003**) 93B36 (93C95)

Chidume, C. E. Iterative methods for nonlinear set-valued operators of the monotone type with applications to operator equations. *J. Nigerian Math. Soc.* **9** (1990), 7–20. (Gérard Lebourg) **93e:65083** 65J15 (47H06, 47H17)

tran quoc Chien *see* **Tran Quoc Chien**

Chien, Been Chian (*with* Yang, Wei Pang) The worst case analysis of algorithm on multiple stacks manipulation. *Inform. Process. Lett.* **44** (1992), *no.* 2, 107–111. 68P10 (68Q25)

— (*with* Chen, Rong Jaye; Yang, Wei Pang) Analysis of the multigroup method for manipulating multiple stacks. (English summary) *Comput. Math. Appl.* **25** (1993), *no.* 3, 43–57. (From the summary) **93i:68060** 68P20 (68P05)

Chien, C. C. (*with* Rajiyah, H.; Atluri, S. N.) On the evaluation of hyper-singular integrals arising in the boundary element method for linear elasticity. (English summary) *Comput. Mech.* **8** (1991), *no.* 1, 57–70. (Summary) **93f:73108** 73V10 (73C02)

Chien, Mao Ting Erratum: "Boundedness of the numerical range" [Linear Algebra Appl. **134** (1990), 25–30; MR 91d:15052]. *Linear Algebra Appl.* **180** (1993), 4. (Editors) **93k:15040** 15A60

Chien, Stanley Y.-P. (*with* Chen, Yaobin; Desrochers, Alan A.) General structure of time-optimal control of robotic manipulators moving along prescribed paths. (English summary) *Internat. J. Control* **56** (1992), *no.* 4, 767–782. (Clementina D. Mladenova) **93f:93089** 93C85 (49N55, 70B15, 70Q05)

— (*with* Xue, Qing) Configuration space approach for planning feasible collision-free path of coordinated planar robots. (English and Polish summaries) *Systems Sci.* **18** (1992), *no.* 4, 65–76 (1993). 93C85

Chierchia, L. (*with* Berretti, A.; Celletti, Alessandra; Falcolini, Corrado) Natural boundaries for area-preserving twist maps. *J. Statist. Phys.* **66** (1992), *no.* 5-6, 1613–1630. (Helmut Rüssmann) **93b:58121** 58F27 (58F05, 70K50)

jaquet-Chiffelle, David-Olivier *see* **Jaquet-Chiffelle, David-Olivier**

Chigogidze, A. Classification theorem for Menger manifolds. *Proc. Amer. Math. Soc.* **116** (1992), *no.* 3, 825–832. (John J. Walsh) **93a:55004** 55P15 (54F35, 57N20)

Chihara, Charles S. ★ Constructibility and mathematical existence. *The Clarendon Press, Oxford University Press, New York*, 1991. xvi+282 *pp. ISBN* 0-19-823975-0 (Pierre Kerszberg) **93k:03004** 03A05 (00A30)

Chihara, T. S. The three term recurrence relation and spectral properties of orthogonal polynomials. *Orthogonal polynomials (Columbus, OH, 1989)*, 99–114, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 294, *Kluwer Acad. Publ., Dordrecht*, 1990. (Walter Van Assche) **93d:42026** 42C05 (33C45)

Chikalov, V. (*with* Pashnev, A.) Twistor-like type II superstring and bosonic string. (English summary) *Modern Phys. Lett. A* **8** (1993), *no.* 3, 285–293. (Sergey Merkulov) **93m:81114** 81T30 (81R25)

Chikhi, Jamel Sur la réflexion des oscillations pour un système à deux vitesses. (English summary) [On oscillation reflection for a two-speed system] *C. R. Acad. Sci. Paris Sér. I Math.* **313** (1991), *no.* 10, 675–678. (Michel Rascle) **93d:35094** 35L50

Chikkala, Raghu (*with* Baisnab, A. P.) An analogue of Caristi-fixed-point theorem in a quasi-metric space. *Proc. Nat. Acad. Sci. India Sect. A* **61** (1991), *no.* 2, 237–243. 54H25

Chikrii, A. A. (*with* Vetchinova, L. I.) A positional problem of group pursuit. (Russian) *Some questions of mathematics in problems of physics and mechanics (Russian)*, 123–130, *Moskov. Fiz.-Tekhn. Inst., Moscow*, 1988. (*see* **93m:00036**) 90D26

— (*with* Pilipenko, Yu. V.) Conflict-controlled processes with periodic Pontryagin condition. *Soviet J. Automat. Inform. Sci.* **24** (1991), *no.* 4, 67–76 (1992); *translated from Avtomatika* **1991,** *no.* 4, 67–77, 95 (*Russian. English, Russian and Ukrainian summaries*). (A. M. Tarasyev) **93i:90125** 90D26 (90D25)

— (*with* Rappoport, İ. S.) Group pursuit for controlled objects with different time lags. (Russian) *Dokl. Akad. Nauk SSSR* **321** (1991), *no.* 3, 486–490; *translation in Soviet Math. Dokl.* **44** (1992), *no.* 3, 739–743. (From the introduction) **93h:90127** 90D46 (90D12)

— (*with* Gritsevskiĭ, A. È.; Klimenko, E. V.) Stochastic models for conflict-control systems with discrete time. (Russian. Russian summary) *Kibernet. i Vychisl. Tekhn. No.* 89 (1991), 47–52. (Summary) **93c:90116** 90D25 (49K45)

— (*with* Rappoport, İ. S.) The first Pontryagin method in a group pursuit problem for objects with different time lag. (Russian. English and Russian summaries) *Dokl. Akad. Nauk Ukrainy* **1992,** *no.* 2, 12–15, 168. (M. S. Shtil'man) **93j:90141** 90D26 (49K15, 90D25)

— (*with* Chikrii, G. Ts.) Conflict-controllability of quasilinear processes. (Russian summary) *Dokl. Akad. Nauk Ukrainy* **1992,** *no.* 9, 43–46, 169. (Summary) **93g:90101** 90D25 (93B05)

Chikrii, G. Ts. On the search for controlled objects. (Russian) *Some questions of mathematics in problems of physics and mechanics (Russian)*, 115–122, *Moskov. Fiz.-Tekhn. Inst., Moscow*, 1988. (*see* **93m:00036**) 90D26

— On a search problem. (Russian. Russian summary) *Methods for solving problems of nonlinear and discrete programming (Russian)*, 41–46, *Akad. Nauk Ukrain. SSR, Inst. Kibernet., Kiev*, 1991. (*see* **93b:90010**) 90D26

— (*with* Chikrii, A. A.) Conflict-controllability of quasilinear processes. (Russian summary) *Dokl. Akad. Nauk Ukrainy* **1992,** *no.* 9, 43–46, 169. (Summary) **93g:90101** 90D25 (93B05)

Chikriy, A. A. *see* **Chikrii, A. A.**

Chikry, A. A. *see* **Chikrii, A. A.**

Chikry, G. T. *see* **Chikrii, G. Ts.**

Chikuse, Yasuko Asymptotic expansions for distributions of the large sample matrix resultant and related statistics on the Stiefel manifold. *J. Multivariate Anal.* **39** (1991), *no.* 2, 270–283. (Tõnu Kollo) **93d:62103** 62H10 (62E20)

— Properties of Hermite and Laguerre polynomials in matrix argument and their applications. (English summary) *Linear Algebra Appl.* **176** (1992), 237–260. (Donald Richards) **93j:33003** 33C50 (33C45, 62E20, 62H15)

— Generalized Hermite and Laguerre polynomials in multiple symmetric matrix arguments and their applications. (English summary) *Linear Algebra Appl.* **176** (1992), 261–287. (Donald Richards) **93j:33004** 33C50 (33C45, 62E20, 62H15)

Chikwendu, S. C. (*with* Easwaran, C. V.) Multiple-scale solution of initial-boundary value problems for weakly nonlinear wave equations on the semi-infinite line. *SIAM J. Appl. Math.* **52** (1992), *no.* 4, 946–958. (Hidetoshi Tahara) **93f:35148** 35L70 (35B20, 35C20)

Chilakamarri, Kiran B. (*with* Hamburger, Peter) A note on packing paths into complete bipartite graphs. *Bull. Inst. Combin. Appl.* **4** (1992), 32–34. (H. Joseph Straight) **93h:05123** 05C70 (05C38)

Chilakapati, A. (*with* Arbogast, Todd; Wheeler, Mary Fanett) A characteristic-mixed method for contaminant transport and miscible displacement. (English summary) *Computational methods in water resources, IX, Vol. 1 (Denver, CO, 1992)*, 77–84, *Comput. Mech., Southampton*, 1992. (*see* **93g:76002**) 86–08 (76M25, 76R50)

Chilin, V. I. (*with* Krygin, A. V.; Sukochev, F. A.) Uniform convexity and local uniform convexity of symmetric spaces of measurable operators. (Russian) *Dokl. Akad. Nauk SSSR* **317** (1991), *no.* 3, 555–558; *translation in Soviet Math. Dokl.* **43** (1991), *no.* 2, 445–448. (Alexander Isaakovich Shtern) **93b:46123** 46L50 (46E30, 47D40)

— (*with* Masharipova, S. Sh.) Density theorems for symmetric algebras of operators in a Pontryagin space of type Π_1. (Russian) *Dokl. Akad. Nauk UzSSR* **1991,** *no.* 4, 8–10. (Aurelian Gheondea) **93i:47050** 47B50 (46L99, 47D25)

— (*with* Krygin, A. V.; Sukochev, F. A.) Extreme points of convex fully symmetric sets of measurable operators. *Integral Equations Operator Theory* **15** (1992), *no.* 2, 186–226. (Subhash J. Bhatt) **93g:46065** 46L50 (46L10, 47D40)

— (*with* Krygin, A. V.; Sukochev, F. A.) Local uniform and uniform convexity of noncommutative symmetric spaces of measurable operators. *Math. Proc. Cambridge Philos. Soc.* **111** (1992), *no.* 2, 355–368. (Alexander Isaakovich Shtern) **93b:46124** 46L50 (46E30, 47D40)

Chillag, David (*with* Mann, Avinoam; Manz, Olaf) The co-degrees of irreducible characters. *Israel J. Math.* **73** (1991), *no.* 2, 207–223. (Wolfgang Willems) **93a:20014** 20C15

— (*with* Bianchi, Maria Grazia; Gillio Berta Mauri, Anna; Herzog, Marcel; Scoppola, Carlo M.) Applications of a graph related to conjugacy classes in finite groups. *Arch. Math. (Basel)* **58** (1992), *no.* 2, 126–132. (Wolfgang Willems) **93d:20061** 20E34 (20C15, 20D60)

Chilton, J. H. (*with* Norris, L. K.) Variational principle for the $P(4)$ affine theory of gravitation and electromagnetism. *Internat. J. Theoret. Phys.* **31** (1992), *no.* 7, 1267–1282. (Agostino Pràstaro) **93j:83078** 83E99 (58E30, 83D05)

Chimento, Luis P. (*with* Cossarini, Adriana E.) Self-consistent solution to the back-reaction problem for vector fields in two dimensions. *Nuclear Phys. B* **373** (1992), *no.* 2, 438–452. (Michael B. Mensky) **93b:81184** 81T20 (81T40)

Chimev, K. N. On the separable pairs of a class of functions. (Bulgarian. English and Russian summaries) *Godishnik Vissh. Uchebn. Zaved. Prilozhna Mat.* **23** (1987), *no.* 3, 167–174 (1989). (Slavcho Shtrakov) **93d:03031** 03B50 (11B75)

yue Chi Ming, Roger *see* **Yue Chi Ming, Roger**

Chin, Andrew Permutations on the block PRAM. (English summary) *Inform. Process. Lett.* **45** (1993), *no.* 2, 69–73. 68M10 (68M07)

Chin, I Ming (*with* Wu, Chia Lin) A novel correlation-based FFT algorithm. (English and Chinese summaries) *J. Chinese Inst. Engrs.* **15** (1992), *no.* 5, 549–557. (Summary) **93k:65114** 65T20 (11Y16)

Chin, P. (*with* D'Azevedo, E. F.; Forsyth, P. A.; Tang, Wei Pai) Preconditioned conjugate gradient methods for the incompressible Navier-Stokes equations. *Internat. J. Numer. Methods Fluids* **15** (1992), *no.* 3, 273–295. 76D05 (65N22, 76M25)

Chin, Raymond C. Y. (*with* Liu, Wei Min) Domain decomposition method and slow passage through a Hopf bifurcation. (English summary) *Fifth International Symposium on Domain Decomposition Methods for Partial Differential Equations (Norfolk, VA, 1991)*, 250–257, *SIAM, Philadelphia, PA*, 1992. (*see* **93g:65009**) 65L99 (34A50, 34C23, 58F14)

— A domain decomposition method for generating orthogonal polynomials for a Gaussian weight on a finite interval. *J. Comput. Phys.* **99** (1992), *no.* 2, 321–336. (Walter Gautschi) **93a:33016** 33C45 (65D20, 65D32)

Chin, William (*with* Quinn, Declan) Actions of divided power Hopf algebras. *J. Algebra* **144** (1991), *no.* 2, 371–389. (Frédéric Patras) **93g:16045** 16S40 (16W30)

— Actions of solvable algebraic groups on noncommutative rings. *Azumaya algebras, actions, and modules (Bloomington, IN, 1990)*, 29–38, *Contemp. Math.*, 124, *Amer. Math.*

Soc., Providence, RI, 1992. (Bodo Pareigis) **93d:16032** 16S40 (16D30, 16W30, 20G05)

Chinburg, Ted Capacity theory on varieties. *Compositio Math.* **80** (1991), *no.* 1, 75–84. (Joseph H. Silverman) **93d:14039** 14G40 (11G35, 14G25)

Chinea, Domingo (*with* de León, Manuel; Marrero, Juan C.) The constraint algorithm for degenerate nonautonomous Lagrangian systems. *Proceedings of the Workshop on Recent Topics in Differential Geometry (Puerto de la Cruz, 1990)*, 13–29, *Informes*, 32, *Univ. La Laguna, La Laguna*, 1991. (From the introduction) **93e:58058** 58F05

— (*with* Marrero, Juan C.) Classification of almost contact metric structures. *Rev. Roumaine Math. Pures Appl.* **37** (1992), *no.* 3, 199–211. (José A. Oubiña) **93g:53044** 53C15

Chinesta, F. (*with* Casasús Estelles, Trinidad; Olmos, F.; Checa, E.; Torres, R.) Qualitative and numerical study of the convection-diffusion equation and approximation of the solution on a polynomial-exponential basis. (Spanish. Spanish summary) *Proceedings of the XII Congress on Differential Equations and Applications/II Congress on Applied Mathematics (Spanish) (Oviedo, 1991)*, 209–214, *Univ. Oviedo, Oviedo*, 1991. (*see* **93j:00009**) 76M25 (35J99, 65N99, 76Rxx)

Ching, E. S. C. (*with* Amick, C. J.; Kadanoff, Leo P.; Rom-Kedar, Vered) Beyond all orders: singular perturbations in a mapping. *J. Nonlinear Sci.* **2** (1992), *no.* 1, 9–67. (Jürgen Scheurle) **93c:58185** 58F30 (58F15)

Ching, Stephen A simple characterization of the uniform rule. (English summary) *Econom. Lett.* **40** (1992), *no.* 1, 57–60. (Summary) **93m:90005** 90A06

Ching, Yu Tai (*with* Ko, M. T.) Linear time algorithms for the weighted tailored 2-partition problem and the weighted 2-center problem under l_∞-distance. (English summary) *Discrete Appl. Math.* **40** (1992), *no.* 3, 397–410. (András Faragó) **93m:90062** 90C27 (05D05, 90B80)

pham duc Chinh *see* **Pham Duc Chinh**

Chinh, Pham Duc *see* **Pham Duc Chinh**

Chinn, Phyllis Zweig (*with* Lin, Yi Xun) Decomposing graphs into primary graphs. *Graph theory, combinatorics, algorithms, and applications (San Francisco, CA, 1989)*, 125–139, *SIAM, Philadelphia, PA*, 1991. (H. Joseph Straight) **93b:05131** 05C70

— (*with* Lin, Yi Xun; Yuan, Jin Jiang) The bandwidth of the corona of two graphs. Proceedings of the Twenty-third Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, FL, 1992). *Congr. Numer.* **91** (1992), 141–152. (From the text) **93m:05171** 05C78

Chinnadurai, V. (*with* Meenakshi, A. R.) Some remarks on the covariance of the Moore-Penrose inverse. *Houston J. Math.* **18** (1992), *no.* 2, 167–174. (Summary) **93e:15001** 15A09

Chinosi, C. (*with* Sacchi Landriani, Giovanni; Scapolla, T.) A hierarchic family of conforming finite elements for the solution of plate bending problems. (English summary) *Spectral and high order methods for partial differential equations (Como, 1989)*, 327–336, *North-Holland, Amsterdam*, 1990. (*see* **93d:65005**) 73V05 (65N30, 73K05)

— (*with* Scapolla, T.; Sacchi Landriani, Giovanni) A hierarchic family of C^1 finite elements for 4th order elliptic problems. (English summary) *Comput. Mech.* **8** (1991), *no.* 3, 181–191. (Summary) **93f:73098** 73V05 (73K10)

Chintagunta, Pradeep (*with* Jain, Dipak) A study of manufacturer-retailer marketing strategies: a differential game approach. (English summary) *Dynamic games in economic analysis (Espoo, 1990)*, 1–10, *Lecture Notes in Control and Inform. Sci.*, **157**, *Springer, Berlin*, 1991. (*see* **93d:90003**) 90A80 (90D25)

Chionh, Eng-Wee (*with* Goldman, Ronald N.) Implicitizing rational surfaces with base points by applying perturbations and the factors of zero theorem. *Mathematical methods in computer aided geometric design, II (Biri, 1991)*, 101–110, *Academic Press, Boston, MA*, 1992. (*see* **93d:65022**) 65D17

— (*with* Goldman, Ronald N.) Degree, multiplicity, and inversion formulas for rational surfaces using u-resultants. *Comput. Aided Geom. Design* **9** (1992), *no.* 2, 93–108. (Summary) **93b:65025** 65D17

Chiorescu, Gh. Symmetries in the linear thermoelasticity of the directed rods. (Romanian summary) *Bul. Inst. Politehn. Iaşi Secţ. I* **36(40)** (1990), *no.* 1-4, 63–69. 73B30 (73B10, 73C99, 73K05)

Chiou, B. J. Y. (*with* Sheu, T. W. H.; Lee, S.-M.; Yang, K. O.) A nonoscillating solution technique for skew upwind and QUICK-family schemes. (English summary) *Comput. Mech.* **8** (1991), *no.* 6, 365–382. 76M25

Chiou, J. C. (*with* Park, K.-C.) A discrete momentum-conserving explicit algorithm for rigid body dynamics analysis. (English summary) *Internat. J. Numer. Methods Engrg.* **36** (1993), *no.* 7, 1071–1083. (Summary) **93m:70001** 70–08 (70E15, 70F20)

Chiou, Paul Shrinkage estimation of reliability in the exponential distribution. *Comm. Statist. Theory Methods* **21** (1992), *no.* 6, 1745–1758. 62N05

Chiou-Lahanas, C. (*with* Kapella-Economou, A.; Lahanas, A. B.; Maintas, X. N.) Gravitational radiative corrections in $N = 1$ supergravity. *Phys. Rev. D* (3) **45** (1992), *no.* 2, 534–544. (Nguyen Anh Ky) **93c:83118** 83E50 (81T20, 81T60)

Chip, M. M. Methods for constructing generalized moment images of polynomial type. (Ukrainian. Russian and Ukrainian summaries) *Ukraïn. Mat. Zh.* **44** (1992), *no.* 7, 995–997; *translation in Ukrainian Math. J.* **44** (1992), *no.* 7, 900–902 (1993). (Summary) **93g:44017** 44A60

Chipchakov, I. D. On the valuations of algebraic division rings over global fields. *Proceedings of the International Conference on Algebra, Part 2 (Novosibirsk, 1989)*, 567–574, *Contemp. Math.*, 131, *Part 2, Amer. Math. Soc., Providence, RI*, 1992. (Holger P. Petersson) **93i:16028** 16K20 (16K40, 17A35, 17A80)

Chipot, Michel On a class of nonlinear elliptic equations. *Partial differential equations, Part 1, 2 (Warsaw, 1990)*, 75–80, *Banach Center Publ.*, 27, *Part 1, 2, Polish Acad. Sci., Warsaw*, 1992. (P. W. Bates) **93m:35079** 35J65 (34C10, 35B05, 35J70)

— (*with* Brighi, B.) Approximation in nonconvex problems. *Progress in partial differential equations: calculus of variations, applications (Pont-à-Mousson, 1991)*, 150–157, *Pitman Res. Notes Math. Ser.*, 267, *Longman Sci. Tech., Harlow*, 1992. (Gérard Lebourg) **93j:49011** 49J40 (49K05, 49M15, 65K10)

— (*with* Dal Maso, Gianni) Relaxed shape optimization: the case of nonnegative data for the Dirichlet problem. *Adv. Math. Sci. Appl.* **1** (1992), *no.* 1, 47–81. (Bernard Rousselet) **93d:49046** 49Q10 (73K40, 73V99)

— (*with* Antontsev, S. N.) Existence, stability and blowup of the solution of the thermistor problem. (Russian) *Dokl. Akad. Nauk* **324** (1992), *no.* 2, 309–313; *translation in Soviet Phys. Dokl.* **37** (1992), *no.* 5, 229–231. (Summary) **93k:35247** 35Q60 (35Q72, 73B30, 73R05, 78A99, 80A20)

— (*with* Rodrigues, José-Francisco) On a class of nonlocal nonlinear elliptic problems. (French summary) *RAIRO Modél. Math. Anal. Numér.* **26** (1992), *no.* 3, 447–467. (Igor Bock) **93h:35070** 35J65 (35J85, 47H15, 73V25, 92D25)

— (*with* Collins, Charles) Numerical approximations in variational problems with potential wells. *SIAM J. Numer. Anal.* **29** (1992), *no.* 4, 1002–1019. (Charles I. Goldstein) **93j:65171** 65N15 (35J20, 65K10)

— *see also* **Progress in partial differential equations: elliptic and parabolic problems, 93f:35007** *and* **Progress in partial differential equations: calculus of variations, applications, 93f:35008**

Chiralt Monleón, Cristina (*with* Martínez Alfaro, J.) Knotted periodic orbits in nonsingular Morse-Smale systems. (Spanish) *Proceedings of the XII Congress on Differential Equations and Applications/II Congress on Applied Mathematics (Spanish) (Oviedo, 1991)*, 117–122, *Univ. Oviedo, Oviedo*, 1991. (Rafael Ortega) **93m:58062** 58F09 (34C25, 58F22)

Chiranov, M. Thermal states with variances smaller than vacuum variances. *Quantum aspects of optical communications (Paris, 1990)*, 315–324, *Lecture Notes in Phys.*, 378, *Springer, Berlin*, 1991. (*see* **93e:81158**) 81R30

Chirehdast, M. (*with* Papalambros, P. Y.) A note on automated detection of mobility of skeletal structures. (English summary) *Comput. & Structures* **45** (1992), *no.* 1, 197–207. (Summary) **93g:73072** 73K05 (73K20, 73K40)

Chirikalov, V. A. Calculation of a differentiating matrix for Hermite interpolation polynomials. (Russian) *Vychisl. Prikl. Mat. (Kiev) No.* 71 (1990), 43–49. (Summary) **93b:65037** 65D25 (65D05)

— Calculation of differentiating matrices for classical orthogonal polynomials of continuous and discrete arguments. (Russian) *Vychisl. Prikl. Mat. (Kiev) No.* 73 (1992), 19–24. (Summary) **93b:65038** 65D25

Chirikov, B. V. (*with* Vecheslavov, V. V.) The structure of a weakly nonlinear resonance. *From phase transitions to chaos*, 273–289, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93c:58186** 58F30 (58F05, 70H05)

Chiriţă, S. Saint-Venant's problem and semi-inverse solutions in linear viscoelasticity. *Acta Mech.* **94** (1992), *no.* 3-4, 221–232. (Kenneth Kuttler) **93g:73063** 73F15 (73C99, 73K99)

Chirka, E. M. Cauchy-Riemann manifolds. Fundamental definitions and some results. (Russian. Russian summary) *Complex analysis and mathematical physics (Russian) (Divnogorsk, 1987)*, 125–144, 160, *Akad. Nauk SSSR Sibirsk. Otdel., Inst. Fiz., Krasnoyarsk*, 1988. (*see* **93b:32001**) 32C16

— (*with* Smirnov, M. M.) Polynomial convexity of some sets in $\mathbf{C}^n$. (Russian) *Mat. Zametki* **50** (1991), *no.* 5, 81–89; *translation in Math. Notes* **50** (1991), *no.* 5-6, 1151–1157 (1992). (G. Khudaĭberganov) **93d:32020** 32E20

— On the extension of pluripolar singular sets. (Russian) *Trudy Mat. Inst. Steklov.* **200** (1991), 336–340; *translation in Proc. Steklov Inst. Math.* **1993**, *no.* 2, 369–373. (J. Siciak) **93a:32015** 32D10 (32D15)

Chirkov, M. K. On matrix methods for optimization of generalized automata. *Ann. Univ. Sci. Budapest. Sect. Comput.* **11** (1991), 175–191. (Wit Foryś) **93e:68078** 68Q70

Chiroiu, Veturia (*with* Nicolae, V.) Study of the small deformations of a viscoelastic body in finite rototranslatory motion. (Romanian) *Stud. Cerc. Mec. Apl.* **51** (1992), *no.* 2, 141–150. 73G25 (73B05, 73F99)

Chirollet, Jean-Claude Le continu mathématique "du troisième ordre" chez Henri Poincaré. [The mathematical continuum "of third order" according to Henri Poincaré] *La mathématique non standard*, 83–116, *Fondem. Sci., CNRS, Paris*, 1989. (*see* **93c:01002**) 01A55 (01A60, 03H05)

Chirskiĭ, V. G. Global relations and hypergeometric series. (Russian) *Uspekhi Mat. Nauk* **46** (1991), *no.* 6(282), 221–222; *translation in Russian Math. Surveys* **46** (1991), *no.* 6, 217–218. (Guang Shan Xu) **93g:11083** 11J91 (33C20)

— Algebraic relations in non-Archimedean valuation fields. (Russian) *Funktsional. Anal. i Prilozhen.* **26** (1992), *no.* 2, 41–50, 96; *translation in Functional Anal. Appl.* **26** (1992), *no.* 2, 108–115. (Jusuf Alajbegović) **93k:12018** 12J25 (11J91, 13J10, 34A99)

— Arithmetic properties of values of hypergeometric functions. (Russian. Russian summary) *Mat. Zametki* **52** (1992), *no.* 5, 125–131, 144; *translation in Math. Notes* **52** (1992), *no.* 5-6, 1160–1165 (1993). (Guang Shan Xu) **93m:11065** 11J91

Chiş, Mihai Another characterization of the commutator subgroup. (English summary) *Comm. Algebra* **20** (1992), *no.* 12, 3781–3784. (From the text) **93i:20037** 20F12

Chisala, Busiso P. (*with* Mawanda, Mbila-Mambu) Counting measure for Kuratowski finite parts and decidability. (French summary) *Cahiers Topologie Géom. Différentielle Catégoriques* **32** (1991), *no.* 4, 345–353. (Anna Labella) **93f:03044** 03G30 (03B25)

Chisci, L. (*with* Zappa, Giovanni) A generalized SRIF algorithm for systolic implementation. (English summary) *Identification and system parameter estimation* 1991, *Vol.* 1,2 *(Budapest, 1991)*, 1049–1054, *IFAC Sympos. Ser.*, 3, *Pergamon, Oxford*, 1992. (*see* **93h:93009**) 93E11

— (*with* Mosca, Edoardo; Giarré, L.) Sidestepping the certainty equivalence in 2-DOF adaptive control via multiple implicit identifiers. (English summary) *Mutual impact of computing power and control theory (Prague, 1992)*, 25–36, *Czech. Acad. Sci., Prague*, 1992. (Summary) **93i:93071** 93C30 (93B30, 93C85, 93C90)

— (*with* Zappa, Giovanni) Mapping LQ control design on fixed-size array processors. (English summary) *Mutual impact of computing power and control theory (Prague, 1992)*, 109–114, *Czech. Acad. Sci., Prague*, 1992. (*see* **93f:93005**) 93C83 (93B52)

— (*with* Mosca, Edoardo) Polynomial MMSE deconvolution and its duality with LQGR. *Systems, models and feedback: theory and applications (Capri, 1992)*, 81–94, *Progr. Systems Control Theory*, 12, *Birkhäuser Boston, Boston, MA*, 1992. (*see* **93a:93006**) 93E10

— (*with* Zappa, Giovanni) Square-root Kalman filtering of descriptor systems. (English summary) *Systems Control Lett.* **19** (1992), *no.* 4, 325–334. (Summary) **93f:93125** 93E11

Chisholm, J. S. R. (*with* Farwell, R. S.) Tetrahedral structure of idempotents of the Clifford algebra $C_{3,1}$. *Clifford algebras and their applications in mathematical physics (Montpellier, 1989)*, 27–32, *Fund. Theories Phys.*, 47, *Kluwer Acad. Publ., Dordrecht*, 1992. (*see* **93f:00011**) 81R25 (15A66)

— (*with* Farwell, R. S.) Unified spin gauge theories of the four fundamental forces. *Clifford algebras and their applications in mathematical physics (Montpellier, 1989)*, 363–370, *Fund. Theories Phys.*, 47, *Kluwer Acad. Publ., Dordrecht*, 1992. (*see* **93f:00011**) 81V22

Chisholm, Roderick M. An intentional explication of universals. (English and German summaries) *Conceptus* **25** (1991), *no.* 66, 45–48. 03A05

Chislenko, J. (*with* Fan, C. Kenneth) On representations of graphs of type *A*. (English summary) *Proc. Roy. Soc. London Ser. A* **439** (1992), *no.* 1907, 687–690. (Summary) **93k:16022** 16G20

Chissom, Brad S. (*with* Song, Qiang) Fuzzy time series and its models. (English summary) *Fuzzy Sets and Systems* **54** (1993), *no.* 3, 269–277. 62M10 (04A72)

Chistiakov, Y. E. *see* **Chistyakov, Yu. E.**

Chistov, A. L. Efficient factoring polynomials over local fields and its applications. *Proceedings of the International Congress of Mathematicians, Vol. I, II* (*Kyoto*, 1990), 1509–1519, *Math. Soc. Japan, Tokyo*, 1991. (Andreas Guthmann) **93e:11152** 11Y16 (03D15, 11S05, 11Y40, 68Q25)

Chistyakov, A. V. (*with* Ivchenko, G. I.; Medvedev, Yu. I.) ★ Problems in mathematical statistics. Translated from the 1989 Russian original by Elena Troshneva and revised by the authors. "*Mir*", *Moscow*, 1991. 279 *pp. ISBN* 5-03-001538-8 (Editors) **93h:62001** 62–01

Chistyakov, Aleksandr Vladimirovich Integral representation of solutions of a linear boundary value problem. (Russian. Russian summary) *Boundary value problems* (*Russian*), 42–47, *Perm. Politekh. Inst., Perm'*, 1989. (*see* **93k:00022**) 34B10 (34G10)

— (*with* Simonov, P. M.) Theorems on the uniform exponential stability of equations with aftereffect. (Russian. Russian summary) *Functional-differential equations* (*Russian*), 83–95, *Perm. Politekh. Inst., Perm'*, 1991. (Tibor Krisztin) **93i:34143** 34K20 (34D20, 34K05, 34K40)

— Spectral properties of operators of inner superposition that are generated by stochastic systems. (Russian. Russian summary) *Functional-differential equations* (*Russian*), 101–112, *Perm. Politekh. Inst., Perm'*, 1991. (Wojciech Bartoszek) **93j:47043** 47B38 (34F05, 47A10, 47N20, 60H10)

— (*with* Azbelev, N. V.; Berezanskiĭ, L. M.; Simonov, P. M.) The stability of linear systems with aftereffect. III. (Russian) *Differentsial'nye Uravneniya* **27** (1991), *no.* 10, 1659–1668, 1834; *translation in Differential Equations* **27** (1991), *no.* 10, 1165–1172 (1992). (D. N. Cheban) **93e:34101** 34K20 (47N20)

Chistyakov, G. P. Approach of *n*-fold convolutions of distributions to infinitely divisible distributions. (Russian) *Dokl. Akad. Nauk SSSR* **316** (1991), *no.* 6, 1330–1333; *translation in Soviet Math. Dokl.* **43** (1991), *no.* 1, 297–299. (Werner Wolf and Gerhard Siegel) **93b:60039** 60F05 (60E07)

— (*with* Golinskiĭ, L. B.) On stability estimates in the Marcinkiewicz theorem and its generalization. *Entire and subharmonic functions*, 243–250, *Adv. Soviet Math.*, 11, *Amer. Math. Soc., Providence, RI*, 1992. (Gabriele Laue) **93k:60042** 60E10

Chistyakov, S. F. (*with* Sukachëva, T. G.) Calculation of necessary center conditions on a computer. (Russian) *Partial differential equations* (*Russian*), 130–135, "*Obrazovanie*", *St. Petersburg*, 1992. (*see* **93m:00035**) 34C05 (34–04)

Chistyakov, S. V. Programmed iterations and universal ε-optimal strategies in a positional differential game. (Russian) *Dokl. Akad. Nauk SSSR* **319** (1991), *no.* 6, 1333–1335; *translation in Soviet Math. Dokl.* **44** (1992), *no.* 1, 354–357. (Anatoliĭ F. Kleimenov) **93b:90122** 90D25

Chistyakov, V. A. (*with* Artyushin, L. M.) Optimal control on the basis of the method of inverse problems of dynamics in man-machine systems. (Russian) *Kibernet. i Vychisl. Tekhn. No.* 92 (1991), 11–15. 49N55

— (*with* Artyushin, L. M.) Optimal control of nonlinear systems based on the solution of an inverse problem of dynamics. (Russian. Russian summary) *Kibernet. i Vychisl. Tekhn. No.* 96 (1992), 36–43. (Summary) **93k:49027** 49M30 (49N55)

Chistyakov, V. V. On properties of solutions of semilinear second-order parabolic equations. (English summary) *J. Soviet Math.* **60** (1992), *no.* 5, 1694–1724. (Qi Xiao Ye) **93i:35072** 35K55 (35B05, 35B40, 35J60)

Chistyakov, Yu. E. (*with* Kononenko, A. F.; Krutov, B. P.) Dynamic hierarchical *N*-person games theory with coalitions. *Dynamic games in economic analysis* (*Espoo*, 1990), 231–238, *Lecture Notes in Control and Inform. Sci.*, 157, *Springer, Berlin*, 1991. (*see* **93d:90003**) 90D06 (93A13)

Chistyakova, E. V. (*with* Perevozchikov, A. G.) Study of the practical convergence of a global optimization algorithm. (Russian. Russian summary) *Zh. Vychisl. Mat. i Mat. Fiz.* **33** (1993), *no.* 2, 309–313; *translation in Comput. Math. Math. Phys.* **33** (1993), *no.* 2, 275–279. 90C30 (65K10)

Chistyakova, I. V. On the functor Hom$(-, R)$. (Russian) *Semigroups and their homomorphisms* (*Russian*), 106–117, *Ross. Gos. Ped. Univ., Leningrad*, 1991. (Mária B. Szendrei) **93e:20096** 20M50 (20M18)

Chistyakova, N. V. (*with* Belyaev, Yu. K.; Dugina, T. N.) Estimation of the reliability of a system with multiple failures on the basis of incomplete data. (Russian. Russian summary) *Avtomat. i Telemekh.* **1992**, *no.* 2, 181–189; *translation in Automat. Remote Control* **53** (1992), *no.* 2, *part* 2, 299–305. 62N05 (90B25)

Chiswell, I. M. Nontrivial group actions on Λ-trees. *Bull. London Math. Soc.* **24** (1992), *no.* 3, 277–280. (Frédéric Paulin) **93d:20053** 20E08 (03H05, 57M07)

— (*with* Kropholler, P. H.) Soluble right orderable groups are locally indicable. (English summary) *Canad. Math. Bull.* **36** (1993), *no.* 1, 22–29. (Summary) **93j:20088** 20F60 (20F16)

Chitra, R. (*with* Kumar, C. Nagraj; Sen, Diptiman) Supersymmetry in the two-anyon problem. *Modern Phys. Lett. A* **7** (1992), *no.* 10, 855–863. (Summary) **93a:81189** 81T60 (81Q60)

Chiu, C. *see* **Chiu, Chichia**

Chiu, Charles B. (*with* Sudarshan, E. C. G.; Bhamathi, G.) Cascade model: a solvable field theory. (English summary) *Phys. Rev. D* (3) **46** (1992), *no.* 8, 3508–3528. (Summary) **93g:81076** 81T10 (81U99)

Chiu, Chichia (*with* Du, Qiang; Li, Tien-Yien) Error estimates of the Markov finite approximation of the Frobenius-Perron operator. *Nonlinear Anal.* **19** (1992), *no.* 4, 291–308. (Wojciech Bartoszek) **93f:28014** 28D05 (47A35, 47A50, 47B38)

— (*with* Kopriva, David A.) An optimal Runge-Kutta method for steady-state solutions of hyperbolic systems. *SIAM J. Numer. Anal.* **29** (1992), *no.* 2, 425–438. (Bernard Bialecki) **93a:65139** 65N22 (65L06, 65N35)

Chiu, Kuang Ping (*with* Yang, Jinn Chuang) Use of characteristics methods with cubic interpolation for unsteady-flow computation. (English summary) *Internat. J. Numer. Methods Fluids* **16** (1993), *no.* 4, 329–345. (Summary) **93k:76094** 76M25

Chiu, Min-Sen (*with* Arkun, Yaman) A methodology for sequential design of robust decentralized control systems. (English summary) *Automatica J. IFAC* **28** (1992), *no.* 5, 997–1001. 93A14 (93B35, 93B52)

Chiu, Patrick Transforms, finite fields, and fast multiplication. *Math. Mag.* **63** (1990), *no.* 5, 330–336. (Harald Niederreiter) **93c:11113** 11Y16 (68Q25)

— Cubic Ramanujan graphs. (English summary) *Combinatorica* **12** (1992), *no.* 3, 275–285. (Daniel Rockmore) **93k:05083** 05C35 (05C75)

Chiu, Samuel S. (*with* Brandeau, Margaret L.) A center location problem with congestion. (English summary) Locational decisions (Fullerton, CA, 1990). *Ann. Oper. Res.* **40** (1992), *no.* 1-4, 17–32 (1993). (Summary) **93m:90043** 90B80 (90B10, 90B22, 90C35)

Chiu, Sen *see* **Qiu, Sen**

Chiu, Shao-Hsuan (*with* Gray, Robert W.; Nelson, Charles A.) The q-analogue quantized radiation field and its uncertainty relations. *Phys. Lett. A* **164** (1992), *no.* 3-4, 237–242. (Summary) **93b:81316** 81V80 (81S05)

Chiu, Shean-Tsong Bandwidth selection for kernel density estimation. *Ann. Statist.* **19** (1991), *no.* 4, 1883-1905. (E. F. Schuster) **93a:62051** 62G05 (62E20, 62F12)

— A linear estimation procedure for the parameters of autoregressive moving-average processes. *J. Time Ser. Anal.* **12** (1991), *no.* 4, 315–327. (Sat Narain Gupta) **93b:62125** 62M10

— An automatic bandwidth selector for kernel density estimation. (English summary) *Biometrika* **79** (1992), *no.* 4, 771–782. (Summary) **93m:62066** 62G05

Chiu, Tai Yih (*with* Lin, C. A.) Model reduction via frequency weighted balanced realization. (English summary) *Control Theory Adv. Tech.* **8** (1992), *no.* 2, 341–351. (Summary) **93f:93031** 93B15 (93C70)

Chiu, Ying Nan (*with* Lai, Shan Tao) Exact computation of the 9-*j* symbols. *Comput. Phys. Comm.* **70** (1992), *no.* 3, 544–556. (Summary) **93d:81061** 81R05 (22E70, 81–04)

Chiu, Yu Tsung (*with* Wu, Kuang Chong; Hwu, Zhong Her) A new boundary integral equation formulation for linear elastic solids. (English summary) *Trans. ASME J. Appl. Mech.* **59** (1992), *no.* 2, *part* 1, 344–348. (Summary) **93c:73100** 73V10 (73C02)

Chiujdea, Cornelia (*with* Georgescu, Adelina; Florea, Răzvan) Linear stability of a turbulent flow of Maxwell fluids in pipes. (English summary) *Rev. Roumaine Math. Pures Appl.* **37** (1992), *no.* 7, 579–586. (Summary) **93h:76039** 76E99 (76A10)

Chivilikhin, S. A. Calculation of the spectrum of an ordinary differential operator with constant coefficients. (Russian) *Partial differential equations* (*Russian*), 98–103, *Leningrad. Gos. Ped. Inst., Leningrad*, 1990. (From the text) **93b:34105** 34L15 (65L15)

Chizeck, Howard Jay (*with* Ji, Yuandong; Feng, Xiangbo; Loparo, Kenneth A.) Stability and control of discrete-time jump linear systems. *Control Theory Adv. Tech.* **7** (1991), *no.* 2, 247–270. (Summary) **93a:93071** 93C55 (93D05)

— (*with* Feng, Xiangbo; Loparo, Kenneth A.; Ji, Yuandong) Stochastic stability properties of jump linear systems. *IEEE Trans. Automat. Control* **37** (1992), *no.* 1, 38–53. (Summary) **93a:93110** 93E15

— (*with* Ji, Yuandong) Jump linear quadratic Gaussian control in continuous time. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 12, 1884–1892. (William D. Ray) **93m:93098** 93E20 (60G15, 60J75)

Chizhek, Irzhi *see* **Čížek, Jiří**

Chkhartishvili, A. G. A geometric property of the tracking domain in a search problem. (Russian. Russian summary) *Vestnik Moskov. Univ. Ser. I Mat. Mekh.* **1992**, *no.* 3, 7–10, 94; *translation in Moscow Univ. Math. Bull.* **47** (1992), *no.* 3, 8–10. (Summary) **93m:90127** 90D26 (90B40)

Chladni, Ernst *see* **Bell, James F., 93d:01025**

Chmielowski, J. Determining sets for analytic functions in finite- and infinite-dimensional spaces. *Geometric function theory and applications of complex analysis to mechanics: studies in complex analysis and its applications to partial differential equations*, 2 (*Halle*, 1988), 85–99, *Pitman Res. Notes Math. Ser.*, 257, *Longman Sci. Tech., Harlow*, 1991. (J. Siciak) **93a:32008** 32A99 (46G20)

Chmielowski, Piotr Matching and junction conditions in the Poincaré gauge theory of gravity with quadratic Lagrangian. (English summary) *Progr. Theoret. Phys.* **88** (1992), *no.* 4, 691–702. (A. D. Popova) **93m:83047** 83C55 (83D05)

Cho, Byung Yup A distribution with maximum entropy. (English summary) *Collection of papers dedicated to Prof. Jong Geun Park on his sixtieth birthday* (*Korean*), 45–50, *Jeonbug, Seoul*, 1989. (Summary) **93e:62038** 62E10 (62B10)

Cho, Cheng-Hong (*with* Lee, Yung-Chia) Flexible view update. *Inform. Sci.* **63** (1992), *no.* 1-2, 87–112. (Summary) **93c:68020** 68P15

Cho, Chong-Man Remarks on M-ideals of compact operators. *Collection of papers dedicated to Prof. Jong Geun Park on his sixtieth birthday* (*Korean*), 117–127, *Jeonbug, Seoul*, 1989. (Dirk Werner) **93g:47055** 47D15 (46B28, 46M05)

— Operators in $L(X, Y)$ in which $K(X, Y)$ is a semi-M-ideal. *Bull. Korean Math. Soc.* **29** (1992), *no.* 2, 257–264. (Jan H. Fourie) **93h:47053** 47D15 (46B28, 47B07)

— Spaces of compact operators which are M-ideals in $L(X, Y)$. *Internat. J. Math. Math. Sci.* **15** (1992), *no.* 3, 617–620. (T. S. S. R. K. Rao) **93h:47054** 47D15 (46A32, 46B28, 47B07)

Cho, Choong Yun *see* **Miyadera, Isao, 93j:47093**

Cho, Chung Je Rotational extended triple systems. *Kyungpook Math. J.* **31** (1991), *no.* 2, 219–234. (K. T. Phelps) **93a:05026** 05B07

— Regular extended triple systems. *Kyungpook Math. J.* **32** (1992), *no.* 1, 115–124. (Chris Rodger) **93h:05035** 05B30 (05B07)

Cho, Chung Ki (*with* Han, Chong-Kyu) The Gauss equations and ellipticity of isometric embeddings. *J. Korean Math. Soc.* **29** (1992), *no.* 1, 165–174. (Dennis M. DeTurck) **93a:53053** 53C42 (35J45, 58G30)

Cho, H. S. (*with* Kim, J. D.; Koh, In Gyu) D_5 affine Toda field theory. *J. Math. Phys.* **33** (1992), *no.* 8, 2889–2897. (Summary) **93d:81105** 81T10 (58F07)

Cho, Hyang Kam (*with* Woo, Moo Ha) A relative mod K Nielsen number. *J. Korean Math. Soc.* **29** (1992), *no.* 2, 409–422. (Ross Geoghegan) **93j:55003** 55M20

Cho, Jin-Ho (*with* Chung, Won-Sang; Lee, Jungjai) Quaternion solutions of four-dimensional Liouville and sine-Gordon equations. (English summary) *Modern Phys. Lett. A* **7** (1992), *no.* 27, 2527–2533. (Nicolae Anghel) **93h:81020** 81Q05 (30G35, 35Q53)

Cho, Jong-Ki (*with* Lee, Sung-Baik; Kim, Nam-Gil) Real hypersurfaces with infinitesimal invariant Ricci tensor of a complex projective space. *Honam Math. J.* **13** (1991), *no.* 1, 15–20. (F. Urbano) **93a:53045** 53C40

Cho, Jung Wan (*with* Kim, Byeong Man; Lee, Sang-Ho; Maeng, Seung Ryoul) A new algorithm for subsumption test. (English summary) *Fifth generation computer systems*,

Vol. 1, 2 (*Tokyo*, 1992), 643–649, *Ohm, Tokyo*, 1992. (Summary) **93j:68177** 68T15
— (*with* Kim, Byeong Man) A new subsumption method in the connection graph proof procedure. (English summary) *Theoret. Comput. Sci.* **103** (1992), *no.* 2, 283–309. (Summary) **93j:68178** 68T15 (03B35)
Cho, K. H. *see* **Cho, Kyung-Hyun**
Cho, Kwan-Ho (*with* Pak, Jin Suk; Kwon, Jung-Hwan) Transverse conformal mappings of complete foliated Riemannian manifolds with harmonic foliation. (English summary) *Math. J. Toyama Univ.* **15** (1992), 43–58. (James J. Hebda) **93j:53039** 53C12 (53A30)
Cho, Kyung-Hyun (*with* Rim, Chaiho; Soh, D. S.) Exact wavefunctions for free anyons: ladder operator approach. *Phys. Lett. A* **164** (1992), *no.* 1, 65–69. (Günter Braunss) **93c:81088** 81S05 (81Q99, 81V70)
Chō, M. *see* **Chō, Muneo**
Cho, Min Hyung (*with* Li, Rong Lu; Chu, Lan Ying) An equivalence theorem on infinite matrices. *Northeast. Math. J.* **7** (1991), *no.* 3, 253–255. 15A99
— (*with* Li, Rong Lu) Bounded multiplier convergent series and its applications. *Bull. Korean Math. Soc.* **29** (1992), *no.* 2, 215–220. (C. W. Swartz) **93g:46005** 46A35
Chō, Muneo (*with* Huruya, Tadasi) On the joint spectral radius. *Proc. Roy. Irish Acad. Sect. A* **91** (1991), *no.* 1, 39–44. (Summary) **93d:47010** 47A13 (15A18)
— (*with* Huruya, Tadasi) A note on the joint operator norm of Hermitian operators on Banach spaces. *Glasgow Math. J.* **34** (1992), *no.* 2, 219–220. (Robin Harte) **93e:47008** 47A13 (15A57, 47B20)
— (*with* Żelazko, Wiesław) On geometric spectral radius of commuting n-tuples of operators. *Hokkaido Math. J.* **21** (1992), *no.* 2, 251–258. (Summary) **93c:47006** 47A13
— (*with* Huruya, Tadasi; Wrobel, Volker) On the joint spectral radius. II. *Proc. Amer. Math. Soc.* **116** (1992), *no.* 4, 987–989. (Summary) **93b:47008** 47A13
Cho, Nak Eun (*with* Kwon, Ohsang; Owa, Shigeyoshi) Notes on the Ruscheweyh derivatives. *Bull. Calcutta Math. Soc.* **83** (1991), *no.* 1, 35–39. (Summary) **93f:30008** 30C45
— (*with* Owa, Shigeyoshi; Altıntaş, Osman) Linear combinations of starlike and convex functions of order α. (English summary) *J. Fac. Sci. Tech. Kinki Univ. No.* **28** (1992), 23–30. (S. Bhargava) **93m:30017** 30C45
— (*with* Kim, Hyun Jeong) On certain classes of multivalent functions with negative coefficients. (English summary) *J. Inst. Math. Comput. Sci. Math. Ser.* **5** (1992), *no.* 2, 271–282. (Summary) **93m:30011** 30C45
— (*with* Kwon, Ohsang) Meromorphic univalent functions with positive and fixed second coefficients. *Math. Japon.* **37** (1992), *no.* 2, 301–306. (K. S. Padmanabhan) **93e:30022** 30C45
— (*with* Owa, Shigeyoshi) Certain differential operators for meromorphically p-valent convex functions. *Proc. Japan Acad. Ser. A Math. Sci.* **68** (1992), *no.* 1, 28–31. (John G. Milcetich) **93f:30009** 30C45
Cho, S. C. *see* **Cho, Seong-Cheol**
Cho, Sang (*with* Huỳnh, Dũng T.) The parallel complexity of coarsest set partition problems. *Inform. Process. Lett.* **42** (1992), *no.* 2, 89–94. 68Q25
Cho, Sanghyun A lower bound on the Kobayashi metric near a point of finite type in $\mathbf{C}^n$. *J. Geom. Anal.* **2** (1992), *no.* 4, 317–325. (Ian Graham) **93f:32026** 32H15
Cho, Seong-Cheol (*with* Kim, Sehun) Average shadow prices in mathematical programming. *J. Optim. Theory Appl.* **74** (1992), *no.* 1, 57–74. (Summary) **93b:49039** 49N15 (90C11, 90C25, 90C30)
Cho, Seongwon (*with* Ersoy, Okan K.; Lehto, Mark) An algorithm to compute the degree of match in fuzzy systems. (English summary) *Fuzzy Sets and Systems* **49** (1992), *no.* 3, 285–299. 68P20 (68T35)
Cho, Sinsup (*with* Ahn, Sung K.) Some tests for unit roots in seasonal time series with deterministic trends. (English summary) *Statist. Probab. Lett.* **16** (1993), *no.* 2, 85–95. (Summary) **93k:62177** 62M10
Cho, Sung Je (*with* Kye, Seung-Hyeok; Lee, Sa Ge) Generalized Choi maps in three-dimensional matrix algebra. *Linear Algebra Appl.* **171** (1992), 213–224. (John Phillips) **93g:46053** 46L05 (15A30)
Cho, Sunggoo The superconformal structures of super Riemann surfaces. *Progr. Theoret. Phys.* **86** (1991), *no.* 5, 959–962. (Sergey Merkulov) **93a:58012** 58A50 (14M30, 32C11)
— Errata: "The superconformal structures of super Riemann surfaces" [Progr. Theoret. Phys. **86** (1991), no. 5, 959–962; MR 93a:58012]. *Progr. Theoret. Phys.* **88** (1992), *no.* 2, 453. (Editors) **93i:58010** 58A50 (14M30, 32C11)
Cho, Y. J. *see* **Cho, Yeol Je**
Cho, Y. M. Gauge theory of the Virasoro group. *Phys. Rev. Lett.* **67** (1991), *no.* 25, 3469–3472. (Summary) **93h:81043** 81R10 (17B68, 81V05)
— (*with* Park, D. H.) Cosmic anyons with causality. (English summary) *Physics in (2+1)-dimension (Sorak Mountain Resort, 1991)*, 219–233, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93f:81006**) 83C45
— (*with* Soh, Kwang Sup; Yoon, Jaihan; Park, Q-Han) Gravitation as gauge theory of the diffeomorphism group. (English summary) *Phys. Lett. B* **286** (1992), *no.* 3-4, 251–255. (W. Cox) **93i:83082** 83E15 (58Z05, 81T13)
— (*with* Zoh, S. W.) Gauge theory of Virasoro-Kac-Moody group. (English summary) *Phys. Lett. B* **292** (1992), *no.* 1-2, 55–59. (Summary) **93g:81035** 81R10 (17B67, 17B81, 81R40, 81T13, 81T30)
— (*with* Kim, Jewan; Park, D. H.) Fermionic vortex solutions in Chern-Simons electrodynamics. *Phys. Rev. D* (3) **45** (1992), *no.* 10, 3802–3806. (Summary) **93a:81125** 81T13 (81T99, 81V10)
— (*with* Park, D. H.) Causally spanning anyonic cosmic string. (English summary) *Phys. Rev. D* (3) **46** (1992), *no.* 4, R1219–R1222. (Summary) **93g:83015** 83C15 (81T13, 83F05)
— (*with* Zoh, S. W.) Explicit construction of massive spin-two fields in Kaluza-Klein theory. (English summary) *Phys. Rev. D* (3) **46** (1992), *no.* 6, R2290–R2294. (Summary) **93f:81095** 81T20 (81R10, 81V22, 83E15)
— (*with* Zoh, S. W.) Virasoro invariance and theory of internal string. (English summary) *Phys. Rev. D* (3) **46** (1992), *no.* 8, 3483–3502. (C. Gauthier) **93j:81029** 81R10 (17B68, 81R40, 81T13)
— *see also* **Physics in (2 + 1)-dimension, 93f:81006**
Cho, Yeol Je (*with* Freese, R. W.; Kim, S. S.) Strictly 2-convex linear 2-normed spaces. *J. Korean Math. Soc.* **29** (1992), *no.* 2, 391–400. (Wolfgang Lusky) **93h:46010** 46A99 (15A03, 46B20, 52A07)
Cho, Yong-Hwan On taut rings. *Collection of papers dedicated to Prof. Jong Geun Park on his sixtieth birthday (Korean)*, 205–210, *Jeonbug, Seoul*, 1989. (R. K. Markanda) **93h:13020** 13F99
Cho, Yong-Sik (*with* Liu, Philip L.-F.; Yoon, Sung B.) Shoaling of wave groups in shallow water. (English summary) *Nonlinear dispersive wave systems (Orlando, FL, 1991)*, 41–56, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93f:00015**) 76B15
Cho, Young-Hyun (*with* Moon, Myung In) Tight closures and infinite integral extensions. *Bull. Korean Math. Soc.* **29** (1992), *no.* 1, 65–72. (Andrew Kustin) **93e:13009** 13B02 (13H10)
Choa, Jun Soo Note on the space BMOA. *Canad. Math. Bull.* **35** (1992), *no.* 1, 40–45. (David J. Hallenbeck) **93e:30075** 30D55
Choban, M. M. (*with* Ipate, D. M.) The Stone-Weierstrass theorem and approximation of convex-valued continuous multivalued mappings. (Russian. English and Moldavian summaries) *Izv. Akad. Nauk Respub. Moldova Mat.* **1991,** *no.* 2, 13–18, 93. (P. S. Kenderov) **93h:41030** 41A65 (46N10, 47H04)
— (*with* Arkhangel′skiĭ, A. V.) On the functional equivalence of Tikhonov spaces. (Russian. English, Russian and Moldavian summaries) *Izv. Akad. Nauk Respub. Moldova Mat.* **1991,** *no.* 3, 43–51, 92. (Roman Pol) **93k:54039** 54C35 (46E10)
— (*with* Ipate, D. M.) Approximation of multivalued mappings by continuous mappings. (Russian) *Serdica* **17** (1991), *no.* 2-3, 127–136 (1992). (Janina Ewert) **93d:54030** 54C60 (49J45, 54C65)
— (*with* Arkhangel′skiĭ, A. V.) Extenders of Kuratowski-van Douwen and classes of spaces. *C. R. Acad. Bulgare Sci.* **45** (1992), *no.* 1, 5–7. 54D35
— The open mappings and spaces. (English summary) V International Meeting on Topology in Italy (Italian) (Lecce, 1990/Otranto, 1990). *Rend. Circ. Mat. Palermo* (2) *Suppl. No.* 29 (1992), 51–104. (Józef Chaber) **93m:54026** 54C10 (54D20, 54E18, 54E50)
Chobanov, Georgi Iv. (*with* Chobanov, Ivan) Affine and rigid motions in complex standard vector spaces. *Math. Balkanica (N.S.)* **5** (1991), *no.* 4, 308–340 (1992). (Hans Sachs) **93d:70005** 70B10 (53A17, 70A05)
— (*with* Chobanov, Ivan) Fundamental identities of Lagrangean formalism for holonomic mass-point and rigid body systems. (English and Bulgarian summaries) *J. Theoret. Appl. Mech.* **23** (1992), *no.* 3, 4, 20–35. (I. A. Galiullin) **93m:70022** 70H35 (70–03, 70E99, 70F20)
— (*with* Chobanov, Ivan) Rigid motions in the real standard vector space. *Math. Balkanica (N.S.)* **6** (1992), *no.* 1, 41–74. (Hans Sachs) **93g:53018** 53A17 (70B10)
Chobanov, Ivan Introduction to an algebraic theory of arrows. II. (English and Russian summaries) *Annuaire Univ. Sofia Fac. Math. Inform.* **82** (1988), 63–117 (1991). (B. D. Jovanović) **93k:70003** 70A05 (15A72, 70B99, 70C20)
— Introduction to an algebraic theory of arrows. III. (English and Russian summaries) *Annuaire Univ. Sofia Fac. Math. Inform.* **82** (1988), 127–172 (1991). (B. D. Jovanović) **93k:70004** 70A05 (15A72, 70B99, 70C20)
— Three hundred years after the *Principia mathematica*—two hundred years after the *Méchanique analitique*. I. Newton's mechanics. (Bulgarian) *Fiz.-Mat. Spis. B"lgar. Akad. Nauk.* **33(66)** (1991), *no.* 3-4, 173–196 (1992). 70–03
— (*with* Chobanov, Georgi Iv.) Affine and rigid motions in complex standard vector spaces. *Math. Balkanica (N.S.)* **5** (1991), *no.* 4, 308–340 (1992). (Hans Sachs) **93d:70005** 70B10 (53A17, 70A05)
— Si licet parva componere magnis. (English. English and Bulgarian summaries) *J. Theoret. Appl. Mech.* **23** (1992), *no.* 1, 3, 10–25. (Editors) **93k:01028** 01A50
— (*with* Chobanov, Georgi Iv.) Fundamental identities of Lagrangean formalism for holonomic mass-point and rigid body systems. (English and Bulgarian summaries) *J. Theoret. Appl. Mech.* **23** (1992), *no.* 3, 4, 20–35. (I. A. Galiullin) **93m:70022** 70H35 (70–03, 70E99, 70F20)
— (*with* Chobanov, Georgi Iv.) Rigid motions in the real standard vector space. *Math. Balkanica (N.S.)* **6** (1992), *no.* 1, 41–74. (Hans Sachs) **93g:53018** 53A17 (70B10)
— *see also* **Gutzwiller, Martin C., 93f:01004**
Chocholatý, Pavol A method of inversion of the Laplace transform. *Math. Slovaca* **42** (1992), *no.* 2, 239–246. (Mohammad Iqbal) **93e:65148** 65R10
Chockalingam, T. (*with* Arun-Kumar, S.) Genetic search algorithms and their randomized operators. (English summary) *Comput. Math. Appl.* **25** (1993), *no.* 5, 91–100. (Summary) **93h:68034** 68P20 (65K99, 65Y20)
Choczewski, Bogdan From the editor. Text in English and Polish. *Opuscula Math.* **1991,** *no.* 10, 7–13. (Editors) **93d:01058a** 01A70
Choda, H. *see* **Current topics in operator algebras, 93g:46002**
Choda, Marie (*with* Hiai, Fumio) Entropy for canonical shifts. II. *Publ. Res. Inst. Math. Sci.* **27** (1991), *no.* 3, 461–489. (D. Petz) **93a:46127** 46L55 (28D20)
— Entropy for canonical shifts. *Trans. Amer. Math. Soc.* **334** (1992), *no.* 2, 827–849. (Summary) **93k:46054** 46L55 (46L35)
Choe, Boo Rim The essential norms of composition operators. *Glasgow Math. J.* **34** (1992), *no.* 2, 143–155. (John N. McDonald) **93h:47037** 47B38 (32A35, 42B30, 47A30)
Choe, Hi Jun A regularity theory for a more general class of quasilinear parabolic partial differential equations and variational inequalities. *Differential Integral Equations* **5** (1992), *no.* 4, 915–944. (Jean-Michel Rakotoson) **93c:35065** 35K55 (35K85, 49J40, 49N45)
— Regularity for certain degenerate elliptic double obstacle problems. *J. Math. Anal. Appl.* **169** (1992), *no.* 1, 111–126. (M. Biroli) **93h:35077** 35J85 (35B65, 49J40)
— Interior behaviour of minimizers for certain functionals with nonstandard growth. *Nonlinear Anal.* **19** (1992), *no.* 10, 933–945. (Elvira Mascolo) **93k:49002** 49J10 (35J85, 49N60)
Choe, Jaigyoung (*with* Gulliver, Robert) The sharp isoperimetric inequality for minimal surfaces with radially connected boundary in hyperbolic space. *Invent. Math.* **109** (1992), *no.* 3, 495–503. (Cun-Jin Sun) **93m:53005** 53A10
— (*with* Gulliver, Robert) Isoperimetric inequalities on minimal submanifolds of space forms. (English summary) *Manuscripta Math.* **77** (1992), *no.* 2-3, 169–189. (Takehiro Itoh) **93k:53059** 53C42 (53C40)
— On the analytic reflection of a minimal surface. (English summary) *Pacific J. Math.* **157** (1993), *no.* 1, 29–36. (Xue Shan Zhang) **93k:53007** 53A10 (30F15)
Choe, Tae Ho (*with* Greechie, Richard J.) Profinite orthomodular lattices. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 4, 1053–1060. (S. S. Holland, Jr.) **93j:06008** 06C15 (06B30)
Choe, Yeon-Wook (*with* Araki, Mituhiko) Control of serial sampling systems. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 8, *part I*, 1202–1205. (Dieter Franke) **93f:93083** 93C57 (93B07, 93B52, 93C05)

Choffrut, C. *see* **Symposium: Theoretical Aspects of Computer Science, 93c:68002** *and* **93k:68005**

Choi, Bong Dae (*with* Shin, Yang Woo) Approximation analysis of time-dependent queue size distribution for $GI/G/m$ system using diffusion process. *Analysis and geometry* 1991 (*Taejŏn*, 1991), 225–242, *Korea Adv. Inst. Sci. Tech., Taejŏn*, 1991. (*see* **93k:00029**) 60K25 (65U05)

— (*with* Shin, Yang Woo) Transient diffusion approximation for $M/G/m$ system. *J. Oper. Res. Soc. Japan* **34** (1991), *no.* 3, 306–328. (Summary) **93c:60142** 60K25 (90B22)

— (*with* Kulkarni, V. G.) Feedback retrial queueing systems. (English summary) *Queueing and related models*, 93–105, *Oxford Statist. Sci. Ser.*, 9, *Oxford Univ. Press, New York*, 1992. (Summary) **93m:60179** 60K25

— (*with* Park, Kwang Kyu) The $M^k/M/\infty$ queue with heterogeneous customers in a batch. *J. Appl. Probab.* **29** (1992), *no.* 2, 477–481. (Summary) **93b:60208** 60K25 (90B22)

— (*with* Shin, Yang Woo; Ahn, Wi Chong) Retrial queues with collision arising from unslotted CMSA/CD protocol. (English summary) *Queueing Systems Theory Appl.* **11** (1992), *no.* 4, 335–356. (Summary) **93h:68011** 68M20 (60K25, 90B22)

— (*with* Han, Dong Hwan; Falin, G. I.) On the virtual waiting time for an $M/G/1$ retrial queue with two types of calls. (English summary) *J. Appl. Math. Stochastic Anal.* **6** (1993), *no.* 1, 11–23. (Summary) **93m:60180** 60K25 (60J20, 90B22)

— *see also* **Analysis and geometry, 93k:00029**

Choi, Byoung K. (*with* Shin, Ha-yong; Yoo, Woo S.) Visually smooth composite surfaces for an unevenly spaced 3D data array. (English summary) *Comput. Aided Geom. Design* **10** (1993), *no.* 2, 157–171. 65Y25 (65D17)

Choi, Byoung Seon The asymptotic joint distribution of the correlation determinant estimates of an ARMA process. *Comm. Statist. Theory Methods* **20** (1991), *no.* 9, 2823–2835. (Robert V. Foutz) **93c:62144** 62M10 (62E20)

— On the asymptotic distributions of the R and S arrays for identifying an ARMA process. *Comm. Statist. Theory Methods* **20** (1991), *no.* 10, 3187–3206. (Summary) **93i:62079** 62M10

— On the conditional probability density functions of multivariate uniform random vectors and multivariate normal random vectors. *J. Multivariate Anal.* **38** (1991), *no.* 2, 241–244. (Truc Nguyen) **93a:62013** 62E10 (60F10, 62H05)

— A maximum likelihood proof of the Hadamard inequality. *Math. Sci.* **17** (1992), *no.* 1, 68. 15A45 (62H10)

Choi, C.-Y. (*with* Hsieh, Chung Kuo; Kassab, A. J.) Solution of Stefan problems by a boundary element method. (English summary) *Boundary element technology, VII* (*Albuquerque, NM*, 1992), 473–490, *Comput. Mech., Southampton*, 1992. (*see* **93b:65002**) 80A22 (65N38, 80–08)

Choi, Chang Woo (*with* Kim, Eun Sup) On multiplication modules. *Kyungpook Math. J.* **32** (1992), *no.* 1, 97–102. (Kalathoor Varadarajan) **93g:13008** 13C13 (13E15)

Choi, Chun In (*with* Lee, Woo Young) Almost regular operators. *J. Korean Math. Soc.* **29** (1992), *no.* 2, 401–407. (R. W. Cross) **93h:47004** 47A05 (47A53)

Choi, D.-I. (*with* Isichenko, M. B.; Horton, Claude Wendell, Jr.; Kim, D. E.; Heo, E. G.) Stochastic diffusion and Kolmogorov entropy in regular and random Hamiltonians. (English summary) *Phys. Fluids B* **4** (1992), *no.* 12, 3973–3980. (Summary) **93h:76082** 76X05 (58F40, 76F20)

Choi, Gyunghyun (*with* Sherali, Hanif D.) Finding the closest point to the origin in the convex hull of a discrete set of points. (English summary) *Comput. Oper. Res.* **20** (1993), *no.* 4, 363–370. (Gábor Hegedüs) **93k:90068** 90C20 (90C05, 90C25)

Choi, Han Sik (*with* Kim, Chi Yong; Kim, Woo Chul; Jeon, Jong Woo) A strong large deviations theorem for the ratio of independent random variables. *J. Korean Math. Soc.* **29** (1992), *no.* 1, 153–163. (V. K. Rohatgi) **93e:60050** 60F10

Choi, Hanhong (*with* Kwon, Wook Hyun; Byun, Dae Gyu; Noh, Seonbong) Recursive solution of generalized predictive control and its equivalence to receding horizon tracking control. (English summary) *Automatica J. IFAC* **28** (1992), *no.* 6, 1235–1238. (Summary) **93i:93056** 93B51 (93B40, 93D05)

Choi, Hyeong-Ah (*with* Esfahanian, Abdol-Hossein; Houck, Bradley C.) Optimal communication trees with application to hypercube multicomputers. *Graph theory, combinatorics, and applications, Vol. 1* (*Kalamazoo, MI*, 1988), 245–264, *Wiley-Intersci. Publ., Wiley, New York*, 1991. (Summary) **93b:05156** 05C90 (05C05)

— (*with* Han, Yijie; Narahari, Bhagirath) Mapping a chain task to chained processors. (English summary) *Inform. Process. Lett.* **44** (1992), *no.* 3, 141–148. (Summary) **93j:68022** 68M20 (68M10, 68Q25)

— (*with* Esfahanian, Abdol-Hossein) A message-routing strategy for multicomputer systems. (English summary) *Networks* **22** (1992), *no.* 7, 627–646. 68M10 (68Q25, 68R10)

— (*with* Park, Ju-Young Lee; Lee, Sang-Kyu) Fault-tolerant broadcasting in circuit-switched mesh. (English summary) *Parallel processing for scientific computing, Vol. I, II* (*Norfolk, VA*, 1993), 887–890, *SIAM, Philadelphia, PA*, 1993. (*see* **93k:65003**) 65Y99

Choi, In Asymptotic normality of the instrumental variable estimates for ARIMA(p, m, q) processes. (English summary) *Econom. Lett.* **40** (1992), *no.* 2, 147–153 (1993). 62M10 (62E20)

— (*with* Phillips, Peter C. B.) Asymptotic and finite sample distribution theory for IV estimators and tests in partially identified structural equations. *J. Econometrics* **51** (1992), *no.* 1-2, 113–150. (Peter M. Robinson) **93e:62080** 62F11 (62F12, 62P20)

Choi, Jae Rong (*with* Lee, Bu Young; Park, Jin Han) On fuzzy θ-continuous mappings. (English summary) *Fuzzy Sets and Systems* **54** (1993), *no.* 1, 107–113. (Summary) **93k:54017** 54A40 (04A72)

Choi, Je-Young (*with* Burkhardt, T. W.) Correlations of the energy density and conformal invariance in the the 2D Ising model with a defect line. *Nuclear Phys. B* **376** (1992), *no.* 3, 447–460. (Boris A. Khoruzhenko) **93h:82013** 82B23 (81T40, 82B26, 82B27)

Choi, Jong-Suk (*with* Lee, Suk-Hoon; Park, Nae Hyun) Bayesian ration estimation in finite populations. (Korean. English and Korean summaries) *Korean J. Appl. Statist.* **5** (1992), *no.* 1, 9–17. (Summary) **93e:62029** 62D05

Choi, Junesang On a generalization of the Hurwitz zeta function $\zeta(s, a)$. *Indian J. Pure Appl. Math.* **23** (1992), *no.* 2, 83–91. (Shigeru Kanemitsu) **93k:11078** 11M35 (58G26)

— (*with* Quine, J. R.) E. W. Barnes' approach of the multiple gamma functions. *J. Korean Math. Soc.* **29** (1992), *no.* 1, 127–140. (C. L. Koul) **93a:33002** 33B15

Choi, Ki-Heon Asymptotic density of quadratic forms. (Korean summary) *Korean J. Appl. Statist.* **4** (1991), *no.* 2, 149–156. (Introduction) **93b:60040** 60F05 (60E05)

Choi, Kwok-Kwong (*with* Liu, Ming Chit; Tsang, Kai Man) Conditional bounds for small prime solutions of linear equations. *Manuscripta Math.* **74** (1992), *no.* 3, 321–340. (D. R. Heath-Brown) **93a:11084** 11P32 (11M26)

Choi, Kwok Pui (*with* Chen, Louis H. Y.) Some asymptotic and large deviation results in Poisson approximation. (English summary) *Ann. Probab.* **20** (1992), *no.* 4, 1867–1876. (Andrew D. Barbour) **93k:60067** 60F10 (60F05, 62E17)

— *see also* **Probability theory, 93e:60005**

Choi, Kyung K. (*with* Twu, Sung-Ling) Configuration design sensitivity analysis of built-up structures. I. Theory. (English summary) *Internat. J. Numer. Methods Engrg.* **35** (1992), *no.* 5, 1127–1150. (Summary) **93f:73075** 73K40 (73V25)

Choi, Sangki Exponential growth of Betti numbers. *J. Algebra* **152** (1992), *no.* 1, 20–29. (Ralf Fröberg) **93i:13010** 13D03

Choi, Seung-Bok (*with* Cheong, Chae-Cheon; Park, Dong-Won) Moving switching surfaces for robust control of second-order variable structure systems. (English summary) *Internat. J. Control* **58** (1993), *no.* 1, 229–245. 93B12

Choi, Soon Meen 3-dimensional space-like submanifolds with parallel mean curvature vector of an indefinite space form. *Kodai Math. J.* **15** (1992), *no.* 2, 279–295. (Bang-yen Chen) **93g:53075** 53C40 (53C50)

Choi, Suhyoung (*with* Goldman, William M.) Convex real projective structures on closed surfaces are closed. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 2, 657–661. (Michael Kapovich) **93g:57017** 57M50 (14P05, 53C15, 58D27)

Choi, Sung Kyu (*with* Chu, Chinku; Park, Jong Suh) Flows of strong characteristic 0^+. *Bull. Inst. Math. Acad. Sinica* **19** (1991), *no.* 1, 53–67. (Valéry Miškin) **93j:54030** 54H20 (34C35, 34D20)

— (*with* Chi, Dong Pyo; Park, Jong Suh) Structurally stable flows. *Bull. Austral. Math. Soc.* **45** (1992), *no.* 1, 79–90. (Romeo F. Thomas) **93a:58101** 58F10 (58F15)

— (*with* Koo, Ki-Shik; Lee, Keon Hee) Lipschitz stability and exponential asymptotic stability in perturbed systems. *J. Korean Math. Soc.* **29** (1992), *no.* 1, 175–190. (Zhivko S. Athanassov) **93f:34081** 34D10 (34D05)

Choi, Y.-H. (*with* Merkle, C. L.) The application of preconditioning in viscous flows. (English summary) *J. Comput. Phys.* **105** (1993), *no.* 2, 207–223. (Summary) **93k:76083** 76M25

Choi, Yung Sze (*with* Chan, Kwong-Yu) Fractional step algorithm for a model problem in electrochemistry. (English summary) *Math. Comput. Simulation* **34** (1992), *no.* 2, 101–112. (Summary) **93f:80025** 80A32 (65P05, 92E20)

— (*with* Chan, Kwong-Yu) A parabolic equation with nonlocal boundary conditions arising from electrochemistry. *Nonlinear Anal.* **18** (1992), *no.* 4, 317–331. (Ross Pinsky) **93b:35057** 35K20 (78A25, 92E20)

Chojnacki, Wojciech On the Bergman metric tensor. (English summary) *Bull. Polish Acad. Sci. Math.* **39** (1991), *no.* 3-4, 147–150. (Marek Jarnicki) **93i:32031** 32H10

— A generalized spectral duality theorem. *Comm. Math. Phys.* **143** (1992), *no.* 3, 527–544. (Sze-Kai Tsui) **93b:46127** 46L55 (22D25)

— (*with* Brooks, Michael J.; Kozera, Ryszard) Circularly symmetric eikonal equations and nonuniqueness in computer vision. *J. Math. Anal. Appl.* **165** (1992), *no.* 1, 192–215. (Benno Fuchssteiner) **93f:35225** 35Q60 (35F20, 78A55)

— (*with* Brooks, Michael J.; Kozera, Ryszard) Shading without shape. *Quart. Appl. Math.* **50** (1992), *no.* 1, 27–38. (Menachem Dishon) **93b:68091** 68U10 (35F10, 78A05)

Chojnowska-Michalik, Anna Periodic linear equations with general additive noise in Hilbert spaces. *Stochastic systems and optimization* (*Warsaw*, 1988), 169–183, *Lecture Notes in Control and Inform. Sci.*, 136, *Springer, Berlin*, 1989. (*see* **93d:93009**) 60H10 (47N30)

— Periodic distributions for linear equations with general additive noise. (English summary) *Bull. Polish Acad. Sci. Math.* **38** (1990), *no.* 1-12, 23–33. (Summary) **93i:60109** 60H10

— (*with* Duncan, Tyrone E.; Pasik-Duncan, Bożenna) Uniform operator continuity of the stationary Riccati equation in Hilbert space. *Appl. Math. Optim.* **25** (1992), *no.* 2, 171–187. (H. J. Kuiper) **93f:93036** 93B25 (47N70, 49N10)

Chokbowornpaishand, V. (*with* Longani, V.) Lower bounds for some Ramsey numbers. *Southeast Asian Bull. Math.* **15** (1991), *no.* 2, 105–107. (Jerrold W. Grossman) **93b:05119** 05C55

sánchez Chóliz, Julio *see* **Sánchez Chóliz, Julio**

Chollet, Anne-Marie (*with* Chaumat, Jacques) Représentation intégrale de certaines classes de jets de Whitney. [Integral representation of certain classes of Whitney jets] *The Madison Symposium on Complex Analysis* (*Madison, WI*, 1991), 133–153, *Contemp. Math.*, 137, *Amer. Math. Soc., Providence, RI*, 1992. (Harold P. Boas) **93k:32004** 32A25 (32E30)

— (*with* Chaumat, Jacques) Théorème de Whitney dans des classes ultradifférentiables. (English and French summaries) [Whitney theorem in ultradifferentiable classes] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 8, 901–906. Wiesław Pleśniak (Zbl 762:26014) **93m:58013** 58C05 (26E10)

Chomaz, J.-M. Absolute and convective instabilities in nonlinear systems. (English summary) *Phys. Rev. Lett.* **69** (1992), *no.* 13, 1931–1934. (Summary) **93f:76043** 76E15 (58F40, 76E30)

Chonavel, Thierry (*with* Loubaton, Philippe) Le problème des moments trigonométriques sur un intervalle. (English summary) [The trigonometric moment problem on an interval] *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 1, 41–44. (Summary) **93c:42009** 42A70 (44A60)

Chong, C. T. Theory of computation and complex analytic dynamics. *Proceedings of Asian Mathematical Conference*, 1990 (*Hong Kong*, 1990), 73–79, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93b:00022**) 03D80 (03D25, 26A18, 58F08, 68Q05)

— (*with* Mourad, K. J.) Σ_n definable sets without Σ_n induction. *Trans. Amer. Math. Soc.* **334** (1992), *no.* 1, 349–363. (Thomas McLaughlin) **93a:03044** 03D25 (03C62, 03F30)

Chongdar, A. K. (*with* Sharma, R.) Some generating functions of Laguerre polynomials from the Lie group viewpoint. (English summary) *Bull. Calcutta Math. Soc.* **82** (1990), *no.* 6, 527–532. (Summary) **93m:33013** 33C80

Choo, E. U. (*with* Warburton, A. R.; Pronovost, D.) A parametric model for staff scheduling problems with flexible demand constraints. (English summary) *Optimization, Vol.* 1, 2 (*Singapore*, 1992), 555–564, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93d:90005**) 90B35

Choo, Joshua Y. (*with* Schultz, David H.) A stable high-order method for the heated cavity problem. (English summary) *Internat. J. Numer. Methods Fluids* **15** (1992), *no.* 11, 1313–1332. (Summary) **93g:76085** 76M20

— (*with* Schultz, David H.) Stable high order methods for differential equations with small coefficients for the second order terms. (English summary) *Comput. Math. Appl.* **25** (1993), *no.* 1, 105–123. (Summary) **93j:65209** 65P05 (65L10, 76D05, 76M20, 76Rxx)

Choo, Yung K. (*with* Eiseman, Peter R.; Smith, Robert E.) Algebraic grid generation with control points. *Finite elements in fluids, Vol.* 8 (*Huntsville, AL*, 1989), 97–116, *Ser. Comput. Phys. Process. Mech. Thermal Sci., Hemisphere, Washington, DC*, 1992. (*see* **93e:76050**) 76M25 (65M60)

Chopra, D. V. Further investigations on balanced arrays. *Comput. Statist. Data Anal.* **12** (1991), *no.* 2, 231–237. (Bhagwandas) **93e:62190** 62K10

— Some results on the constraints of binary balanced arrays. Proceedings of the Twenty-third Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, FL, 1992). *Congr. Numer.* **88** (1992), 45–50. (Summary) **93j:05018** 05B15

— Some necessary existence conditions for certain arrays. (English summary) *J. Combin. Math. Combin. Comput.* **12** (1992), 17–21. (Summary) **93f:05021** 05B15

Chopra, S. D. Hansraj Gupta 1902–1988: a biographical sketch. *J. Indian Math. Soc. (N.S.)* **57** (1991), *no.* 1-4, 1–10. (Gloria Olive) **93d:01059** 01A70 (05–03)

Chopra, Sunil Polyhedra of the equivalent subgraph problem and some edge connectivity problems. *SIAM J. Discrete Math.* **5** (1992), *no.* 3, 321–337. (Richard D. Ringeisen) **93k:05099** 05C40 (90B12, 90C27)

— The equivalent subgraph and directed cut polyhedra on series-parallel graphs. (English summary) *SIAM J. Discrete Math.* **5** (1992), *no.* 4, 475–490. (Rainer Burkard) **93j:90119** 90C35 (05C20)

Choquard, Philippe ★ Mécanique analytique. Vol. 1. (French) [Analytical mechanics. Vol. 1] Cahiers Mathématiques de l'École Polytechnique Fédérale de Lausanne [Mathematical Papers of the École Polytechnique Fédérale de Lausanne], 2. *Presses Polytechniques et Universitaires Romandes, Lausanne*, 1992. viii+309 *pp. ISBN* 2-88074-235-8 (J. E. Marsden) **93k:70001a** 70–01 (58F05, 70Fxx, 70Hxx)

— ★ Mécanique analytique. Vol. 2. (French) [Analytical mechanics. Vol. 2] Solutions des problèmes et exercices. [Solutions of problems and exercises] Cahiers Mathématiques de l'École Polytechnique Fédérale de Lausanne [Mathematical Papers of the École Polytechnique Fédérale de Lausanne], 2. *Presses Polytechniques et Universitaires Romandes, Lausanne*, 1992. vi+257 *pp. ISBN* 2-88074-236-6 (J. E. Marsden) **93k:70001b** 70–01 (58F05, 70Fxx, 70Hxx)

Choquet, Gustave *see* **Seminar: Introduction to Analysis, 93d:00039**; **Rokyta, Mirko, 93f:01025** *and* **Seminar: Introduction to Analysis, 93k:00039**

Choquet-Bruhat, Yvonne (*with* Noutchegueme, N.) Yang-Mills Vlasov systems. (English summary) *Nonlinear hyperbolic equations and field theory* (*Lake Como*, 1990), 52–71, *Pitman Res. Notes Math. Ser.*, 253, *Longman Sci. Tech., Harlow*, 1992. (Philippe-A. Dionne) **93i:81133** 81T13 (58G16, 81V35)

— (*with* Isenberg, James; Moncrief, Vincent) Solutions of constraints for Einstein equations. (English and French summaries) *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 3, 349–355. (Philippe-A. Dionne) **93h:58151** 58G16 (83C05)

— Cosmological Yang-Mills hydrodynamics. *J. Math. Phys.* **33** (1992), *no.* 5, 1782–1785. (Alan D. Rendall) **93a:83024** 83C55 (81T13, 83C05)

Chor, Benny (*with* Ben-David, Shai; Goldreich, Oded; Luby, Michael) On the theory of average case complexity. *J. Comput. System Sci.* **44** (1992), *no.* 2, 193–219. (Helmut Alt) **93d:68020** 68Q15 (03D15, 68Q10)

— (*with* Kushilevitz, Eyal) A communication-privacy tradeoff for modular addition. (English summary) *Inform. Process. Lett.* **45** (1993), *no.* 4, 205–210. (Summary) **93m:68070** 68Q25 (68M10, 94A60)

Chorbachi, Wasma'a K. (*with* Loeb, Arthur L.) An Islamic pentagonal seal (from scientific manuscripts of the geometry of design). *Fivefold symmetry*, 283–305, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93i:52002**) 01A30

Chorin, Alexandre Joel Vortices, turbulence, and statistical mechanics. *Vortex methods and vortex motion*, 195–210, *SIAM, Philadelphia, PA*, 1991. (*see* **93f:76078**) 76F99 (35Q30, 76C05, 76D05, 76E99, 82C99)

— Equilibrium statistics of a vortex filament with applications. *Comm. Math. Phys.* **141** (1991), *no.* 3, 619–631. (Ioan Bâldea) **93j:76041** 76F99 (76M35, 82B43, 82D50)

— A vortex model with superfluid and turbulent percolation. (English summary) *J. Statist. Phys.* **69** (1992), *no.* 1-2, 67–78. (Summary) **93j:82075** 82D50 (82–04, 82C43)

Chornyi, V. Z. Periodic solutions of second-order wave integro-differential and difference equations. (Russian. Russian summary) *Akad. Nauk Ukrainy Inst. Mat. Preprint* **1991**, *no.* 46, 31 *pp.* (Summary) **93g:45009** 45J05 (39A12)

Chossat, Pascal Branching of rotating waves in a one-parameter problem of steady-state bifurcation with spherical symmetry. *Nonlinearity* **4** (1991), *no.* 4, 1123–1129. (Ian Melbourne) **93a:58128** 58F14 (34C35, 76E10)

— (*with* Scheel, Arnd) Bifurcation d'orbites périodiques à partir d'un cycle homocline symétrique. (English summary) [Bifurcation of periodic orbits from a symmetric homoclinic cycle] *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 1, 49–54. (Summary) **93b:34050** 34C23 (34C25, 58F14)

— (*with* Nouri, A.) Shock waves of small amplitude in elastoplastic solids. (English summary) *European J. Mech. A Solids* **12** (1993), *no.* 1, 95–124. (M. Shearer) **93k:73035** 73E70 (35L67)

Chotai, A. (*with* Young, P. C.; Tych, W.) Adaptive true digital control (TDC) of continuous-time systems using δ operator models. (English summary) *Identification and system parameter estimation* 1991, *Vol.* 1,2 (*Budapest*, 1991), 273–280, *IFAC Sympos. Ser.*, 3, *Pergamon, Oxford*, 1992. (*see* **93h:93009**) 93C40

Chou, Chihong Generalized quantum statistics. (English summary) *Modern Phys. Lett. A* **7** (1992), *no.* 29, 2685–2694. (Summary) **93f:81056** 81S05

Chou, Ch'ing Sung La formule d'intégration par parties de l'intégration stochastiques non monotones avec paramètre du type Itô. (English summary) [An integration-by-parts formula for Itô-type nonmonotonic stochastic integration with parameter] *Chinese J. Math.* **20** (1992), *no.* 3, 205–215. (V. Mackevičius) **93h:60085** 60H05 (60G44)

Chou, Huan Wen *see* **Zhou, Huan Wen**

Chou, Hui-Hsien (*with* Reggia, James A.; Armentrout, Steven L.; Peng, Yun) Simple systems that exhibit self-directed replication. (English summary) *Science* **259** (1993), *no.* 5099, 1282–1287. 68Q80 (92B05)

Chou, I-Shang (*with* Lii, Keh-Shin) Spectral analysis of random fields with random sampling. (English summary) *Probabilistic and stochastic methods in analysis, with applications* (*Il Ciocco*, 1991), 343–368, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 372, *Kluwer Acad. Publ., Dordrecht*, 1992. (*see* **93e:00029**) 62M15 (62M40)

Chou, J.-H. *see* **Chou, Jyh Horng**

Chou, Jo Chên Unbiasedness of some tests in the Langevin distribution. (English summary) *Sankhyā Ser. B* **52** (1990), *no.* 3, 256–260. (Summary) **93e:62060** 62F05 (62H15)

Chou, Jyh Horng (*with* Ho, Shinn Jang; Horng, Ing Rong) Robustness of disk-stability for perturbed large-scale systems. (English summary) *Automatica J. IFAC* **28** (1992), *no.* 5, 1063–1066. 93D09 (93A15, 93B55)

— Feedback control for uncertain saturating systems. *Control Theory Adv. Tech.* **8** (1992), *no.* 1, 177–185. (Jacob Hammer) **93b:93048** 93B52 (93C10, 93D09)

— (*with* Horng, Huey Yang; Horng, Ing Rong) Robustness of eigenvalue clustering in various regions of the complex plane for perturbed systems. (English summary) *Internat. J. Control* **57** (1993), *no.* 6, 1469–1484. (Summary) **93m:93070** 93D09 (93B60)

— (*with* Horng, Ing Rong; Horng, Huey Yang) Eigenvalue clustering in subregions of the complex plane for interval dynamic systems. (English summary) *Internat. J. Systems Sci.* **24** (1993), *no.* 5, 901–914. (Summary) **93k:93053** 93B55 (93D09)

Chou, Kai Seng *see* **Tso, Kaising**

Chou, Mo Hong An efficient scheme for unsteady flow past an object with boundary conformal to a circle. *SIAM J. Sci. Statist. Comput.* **13** (1992), *no.* 4, 860–873. (Summary) **93b:65053** 65F10 (65M06, 76D05, 76M20)

Chou, Rouh-Jane *see* **Chou, Jo Chên**

Chou, Shang-Ching (*with* Gao, Xiao Shan) Implicitization of rational parametric equations. (English summary) *J. Symbolic Comput.* **14** (1992), *no.* 5, 459–470. (Summary) **93h:68065** 68Q40

Chou, So-Hsiang (*with* Li, Qian) Error estimates for mixed finite element methods for nonlinear parabolic problems. *Numer. Methods Partial Differential Equations* **8** (1992), *no.* 4, 395–404. (Peter B. Monk) **93e:65133** 65N30 (65N15)

Chou, Wun Seng Formulas for counting chains in multisets. *Utilitas Math.* **40** (1991), 3–12. (L. Bruce Richmond) **93b:05004** 05A05 (05A15)

— (*with* Mullen, Gary L.) Generating linear spans over finite fields. *Acta Arith.* **61** (1992), *no.* 2, 183–191. (Rudolf Lidl) **93d:11125** 11T06 (12E20)

— Set-complete mappings on finite fields. *Finite fields, coding theory, and advances in communications and computing* (*Las Vegas, NV*, 1991), 33–41, *Lecture Notes in Pure and Appl. Math.*, 141, *Dekker, New York*, 1993. (Da Qing Wan) **93m:11128** 11T06

Chou, Youn-Min A bivariate noncentral t-distribution with applications. (English summary) *Comm. Statist. Theory Methods* **21** (1992), *no.* 12, 3427–3462. (Summary) **93h:62109** 62H12 (62E15)

Chou, Yün Hsiung (*with* Chiang, Tsu Shu) A comparison of simulated annealing of Gibbs sampler and Metropolis algorithms. (English summary) *Stochastic models, statistical methods, and algorithms in image analysis* (*Rome*, 1990), 117–124, *Lecture Notes in Statist.*, 74, *Springer, Berlin*, 1992. (*see* **93e:62005**) 60J99

— (*with* Chiang, Tsu Shu; Hsieh, Chung) Some limit theorems on simulated annealing. *Stochastic models, statistical methods, and algorithms in image analysis* (*Rome*, 1990), 125–131, *Lecture Notes in Statist.*, 74, *Springer, Berlin*, 1992. (*see* **93e:62005**) 60F99

— (*with* Hsieh, Chung) On occupation times of annealing processes. *Bull. Inst. Math. Acad. Sinica* **20** (1992), *no.* 1, 19–26. (Summary) **93m:60154** 60J27 (60F15, 90C15)

Chou, Yung Shan (*with* Liu, Chin Hsing; Chang, Fan Jên) Decoupling of continuous-time linear time-invariant systems using generalized sampled-data hold functions. *Systems Control Lett.* **19** (1992), *no.* 1, 61–69. 93C05 (93B11, 93C57)

Choubey, J. On ideal and nonideal solutions of the Tarry-Escott problem. *Math. Ed. (Siwan)* **25** (1991), *no.* 4, 246–250. (Nikos Tzanakis) **93h:11037** 11D72 (11D09)

Choudary, A. D. R. (*with* Nica, Mircea) Stolz-Cesàro theorem in Banach algebras of continuous functions. *Stud. Cerc. Mat.* **44** (1992), *no.* 2, 127–133. (Christopher C. White) **93h:46070** 46J10 (40A30)

Choudhari, Meelan (*with* Hall, Philip[2]) On the nonlinear evolution of large wavelength Görtler vortices. (English summary) *Instability, transition, and turbulence* (*Hampton, VA*, 1991), 61–78, *ICASE/NASA LaRC Ser., Springer, New York*, 1992. (Summary) **93k:76047** 76E30 (76D10, 76N20)

Choudhary, B. ★ The elements of complex analysis. (English. English summary) Second edition. *Wiley Eastern Ltd., New Delhi*, 1992. xii+333 *pp. ISBN* 81-224-0399-9 (From the preface) **93k:30001** 30–01

Choudhry, Ajai The Diophantine system $\sum_1^4 x_i^r = \sum_1^4 y_i^r$, $r = 1, 3, 5$. *Bull. Calcutta Math. Soc.* **83** (1991), *no.* 1, 85–86. (Nikos Tzanakis) **93b:11041** 11D99 (11D72)

Choudhury, A. L. Wormholes created by a scalar field interacting with the gravitational axion. (English summary) *Hadronic J. Suppl.* **7** (1992), *no.* 2, 133–174. (Summary) **93j:83036** 83C45

Choudhury, Ajit K. (*with* Ruan, Mifang) Steady-state optimal controller with actuator noise variance linearly related to actuator signal variance. (English summary) *IEEE Trans. Automat. Control* **38** (1993), *no.* 1, 133–135. 93E20

Choudhury, D. Roy (*with* Das, M. N.) Use of combinatorics for unique detection of unknown numbers of outliers using group tests. (English summary) *Sankhyā Ser. B* **54** (1992), *no.* 1, 92–99. (Summary) **93j:62049** 62F03

Choudhury, P. K. (*with* Khastgir, P.; Ojha, S. P.) A mathematically rigorous cutoff analysis of parabolic cylindrical waveguides. (English summary) *J. Phys. Soc. Japan* **61** (1992), *no.* 11, 3874–3877. (Summary) **93j:78019** 78A50

roy Choudhury, S. *see* **Roy Choudhury, S.**

dutta Choudhury, S. B. *see* **Dutta Choudhury, S. B.**

Choudhury, S. Roy *see* **Roy Choudhury, S.**

Choudum, S. A. A report on edge-colourings of graphs. (English summary) *Proceedings of the Symposium on Graph Theory and Combinatorics* (*Cochin*, 1991), 41–55, *Publication*, 21, *Centre Math. Sci., Trivandrum*, 1991. (Summary) **93k:05061** 05C15

Choudury, Gilbert (*with* Lasiecka, Irena) Optimal convergence rates for semidiscrete approximations of parabolic problems with nonsmooth boundary data. *Numer. Funct. Anal. Optim.* **12** (1991), *no.* 5-6, 469–485 (1992). (Dietmar Kröner) **93e:65134** 65N30 (65N12)

— (*with* Korman, Philip) On computation of solutions of fully nonlinear elliptic problems. (English summary) *J. Comput. Appl. Math.* **41** (1992), *no.* 3, 301–311. (Bernd Heinrich) **93j:65166** 65N06 (65N22)

Chouigui, N. (*with* Grzech, A.; Kasprzak, A.) The new expression for blocking probability for route in integrated services digital networks. (English summary) *Computational*

systems analysis 1992 (*Berlin*, 1992), 313–318, *Elsevier, Amsterdam*, 1992. (*see* **93e:00021**) 90B22

Choukri, T. The transient blocking probabilities in $M/M/N$ loss systems via large deviations. (English summary) *Adv. in Appl. Probab.* **25** (1993), *no.* 2, 483–486. 60K25

Choulli, Mourad Un problème inverse pour l'équation du transport. (English summary) [An inverse problem for the transport equation] *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 12, 897–900. (Summary) **93c:45010** 45J05 (35Q99, 35R30, 82C70)

— (*with* Zeghal, Ahmed) Un résultat d'unicité pour un problème inverse parabolique semi-linéaire. (English and French summaries) [A uniqueness result for a semilinear parabolic inverse problem] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 10, 1051–1053. (Charles Bu) **93j:35185** 35R30 (35K55)

— Determination of the spatially-dependent scattering function for overspecified boundary conditions. (English summary) *Transport Theory Statist. Phys.* **22** (1993), *no.* 1, 97–107. (Luisa Arlotti) **93k:82059** 82C70 (47N55)

Chow, Bennett On Harnack's inequality and entropy for the Gaussian curvature flow. *Comm. Pure Appl. Math.* **44** (1991), *no.* 4, 469–483. (A. Morimoto (Zbl 734:53035)) **93e:58032** 58E15 (53C45, 58G30)

— The Yamabe flow on locally conformally flat manifolds with positive Ricci curvature. *Comm. Pure Appl. Math.* **45** (1992), *no.* 8, 1003–1014. (Dennis M. DeTurck) **93d:53045** 53C21 (58E11, 58G11, 58G30)

Chow, C. L. (*with* Sze, K. Y.) Efficient hybrid/mixed elements using admissible matrix formulation. (English summary) *Comput. Methods Appl. Mech. Engrg.* **99** (1992), *no.* 1, 1–26. (Summary) **93g:73110** 73V05 (73K10)

Chow, Carson C. (*with* Bers, A.; Ram, A. K.) Spatiotemporal chaos in the nonlinear three-wave interaction. *Phys. Rev. Lett.* **68** (1992), *no.* 23, 3379–3382. (Summary) **93b:58133** 58F40 (58F13)

Chow, Chen Yu ★ System identification for a double porosity medium system. (English. English summary) Shuli Kexue [Mathematical Sciences. Research Reports IMS], 45. *Academia Sinica, Institute of Mathematical Sciences, Chengdu*, 1992. 10 *pp.* (Jakub Siemek) **93i:76088** 76S05

Chow, Joe H. (*with* Date, Ranjit A.) A parametrization approach to optimal H_2 and H_∞ decentralized control problems. (English summary) *Automatica J. IFAC* **29** (1993), *no.* 2, 457–463. 93B36

Chow, Kwang-Nan (*with* Protas, David) Boundary conditions for a finite Dirichlet integral in the upper half plane. *Arch. Math. (Basel)* **57** (1991), *no.* 5, 479–484. (A. È. Djrbashian) **93m:30043** 30D40

Chow, Mo Suk (*with* Bai, Zhi Dong) Inadmissibility of the maximum likelihood estimator in the sequential estimation of the size of a population. *Biometrika* **78** (1991), *no.* 4, 817–823. (Summary) **93k:62167** 62L12 (62C15)

— (*with* Fong, Duncan K. H.) Simultaneous estimation of the Hardy-Weinberg proportions. (English and French summaries) *Canad. J. Statist.* **20** (1992), *no.* 3, 291–296. (Summary) **93h:62042** 62F10 (62C15)

Chow, Pao Liu Exponential estimates of large deviation type for Itô processes in Hilbert spaces. *White noise analysis (Bielefeld*, 1989), 66–72, *World Sci. Publishing, River Edge, NJ*, 1990. (Summary) **93c:60033** 60F10 (60H05, 60H10)

— (*with* Jiang, Jing-Lin) Almost sure convergence of some approximate solutions for random parabolic equations. (English summary) *Random partial differential equations (Oberwolfach*, 1989), 45–54, *Internat. Ser. Numer. Math.*, 102, *Birkhäuser, Basel*, 1991. (Ralf Manthey) **93j:60082** 60H15 (35R60)

— Large deviation problem for some parabolic Itô equations. *Comm. Pure Appl. Math.* **45** (1992), *no.* 1, 97–120. (Wlodzimierz Smolenski) **93e:60051** 60F10 (60H15)

— (*with* Jiang, Jing-Lin) Almost sure convergence of stochastic integrals in Hilbert spaces. (English summary) *Stochastic Anal. Appl.* **10** (1992), *no.* 5, 533–543. (Summary) **93j:60068** 60H05

Chow, S.-S. Finite element error estimates for a blast furnace gas flow problem. *SIAM J. Numer. Anal.* **29** (1992), *no.* 3, 769–780. (Summary) **93a:65147** 65N30 (65N15, 80–08)

Chow, Shui-Nee (*with* Huang, Wen Zhang) Transition layers for a singularly perturbed 2-dimensional system of differential-difference equations. *Oscillation and dynamics in delay equations (San Francisco, CA*, 1991), 55–71, *Contemp. Math.*, 129, *Amer. Math. Soc., Providence, RI*, 1992. (Anatolii Fedorovich Ivanov) **93f:34117** 34K15 (34E15, 34K40, 47N20)

— (*with* Huang, Wen Zhang) Singular perturbation for a system of differential-difference equations. *Recent trends in differential equations*, 83–110, *World Sci. Ser. Appl. Anal.*, 1, *World Sci. Publishing, River Edge, NJ*, 1992. (Anatolii Fedorovich Ivanov) **93i:34128** 34K15 (34E15)

— (*with* Palmer, Kenneth J.) On the numerical computation of orbits of dynamical systems: the higher-dimensional case. (English summary) *J. Complexity* **8** (1992), *no.* 4, 398–423. (Urs Kirchgraber) **93k:65118** 65Y20 (58F03, 65Q05)

— (*with* Ashkenazi, Max; Drachman, Byron) Symbolic computation of normal forms for nonlinear Hamiltonian systems (Algorithm 34). *J. Comput. Appl. Math.* **39** (1992), *no.* 3, 363–378. (Summary) **93c:65103** 65L99 (34–04, 34C20, 58F36, 70–04, 70H05)

— (*with* Hale, Jack K.; Huang, Wen Zhang) From sine waves to square waves in delay equations. *Proc. Roy. Soc. Edinburgh Sect. A* **120** (1992), *no.* 3-4, 223–229. (John G. Milton) **93b:34085** 34K15 (34C23)

— (*with* Van Vleck, Erik S.) A shadowing lemma for random diffeomorphisms. (English summary) *Random Comput. Dynamics* **1** (1992/93), *no.* 2, 197–218. (Lan Wen) **93j:58101** 58F15 (28D10)

Chow, Y. *see* **Chou, Yün Hsiung**

Chow, Yuan Shih On the law of iterated logarithm and the central limit theorem for the numbers of runs. (English summary) *Chinese J. Math.* **20** (1992), *no.* 3, 217–221. (Endre Csáki) **93i:60038** 60F05 (60F15)

Chow, Yunshyong *see* **Chou, Yün Hsiung**

Chow, Yutze On enumeration of spanning subgraphs with a preassigned cyclomatic number in a graph. *Acta Math. Hungar.* **60** (1992), *no.* 1-2, 81–91. (P. N. Rathie) **93g:05070** 05C30

roy Chowdhury, A. *see* **Roy Chowdhury, A.**

Chowdhury, A. Roy *see* **Roy Chowdhury, A.**

Chowdhury, M. R. W. H. Young at Aberystwyth. (French and German summaries) *Historia Math.* **19** (1992), *no.* 1, 71–75. (F. Smithies) **93c:01033** 01A70

Chrastina, Jan On the equivalence of variational problems. I. *J. Differential Equations* **98** (1992), *no.* 1, 76–90. (Niky Kamran) **93e:58043** 58E30 (58H05, 70H35)

Chrestenson, Hubert E. *see* **Century of calculus, 93h:00023a**

Christ, Michael Precise analysis of $\overline{\partial}_b$ and $\overline{\partial}$ on domains of finite type in $\mathbf{C}^2$. *Proceedings of the International Congress of Mathematicians, Vol. I, II (Kyoto*, 1990), 859–877, *Math. Soc. Japan, Tokyo*, 1991. (Der-Chen E. Chang) **93b:32021** 32F20 (42B20)

— A class of hypoelliptic PDE admitting nonanalytic solutions. (English summary) *The Madison Symposium on Complex Analysis (Madison, WI*, 1991), 155–167, *Contemp. Math.*, 137, *Amer. Math. Soc., Providence, RI*, 1992. (Summary) **93j:35048** 35H05

— (*with* Geller, Daryl) Counterexamples to analytic hypoellipticity for domains of finite type. *Ann. of Math.* (2) **135** (1992), *no.* 3, 551–566. (Makhlouf Derridj) **93i:35034** 35H05

Christakos, George Some applications of the Bayesian, maximum-entropy concept in geostatistics. *Maximum entropy and Bayesian methods (Laramie, WY*, 1990), 215–229, *Fund. Theories Phys.*, 43, *Kluwer Acad. Publ., Dordrecht*, 1991. (*see* **93b:00011**) 86A32

— Certain results on spatiotemporal random fields and their applications in environmental research. (English summary) *Probabilistic and stochastic methods in analysis, with applications (Il Ciocco*, 1991), 287–322, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 372, *Kluwer Acad. Publ., Dordrecht*, 1992. (*see* **93e:00029**) 60G60 (62M30, 62M40, 92B05)

Christe, Philippe S matrices of the tricritical Ising model and Toda systems. *Differential geometric methods in theoretical physics (Davis, CA*, 1988), 213–222, *NATO Adv. Sci. Inst. Ser. B Phys.*, 245, *Plenum, New York*, 1990. (Introduction) **93g:82015** 82B20 (81T40)

Christensen, Bent Jesper (*with* Kiefer, Nicholas M.) The exact likelihood function for an empirical job search model. *Econometric Theory* **7** (1991), *no.* 4, 464–486. (Manfred Kraft) **93c:62168** 62P20 (62A10, 90A19)

Christensen, C. (*with* Bloom, Thomas; Bos, L. P.; Levenberg, N.) Polynomial interpolation of holomorphic functions in $\mathbf{C}$ and $\mathbf{C}^n$. *Rocky Mountain J. Math.* **22** (1992), *no.* 2, 441–470. (Ahmed Zeriahi) **93i:32016** 32E30 (30E05)

Christensen, Dan (*with* Mann, Robert B.) The exact structure of two-dimensional spacetimes. *Classical Quantum Gravity* **9** (1992), *no.* 7, 1769–1786. (Mark D. Roberts) **93f:81096** 81T20 (81T40, 83C57)

mollo-Christensen, E. *see* **Mollo-Christensen, E.**

thoft-Christensen, P. *see* **Thoft-Christensen, P.**

Christensen, Ronald (*with* Utts, Jessica) Bayesian resolution of the "exchange paradox". (English summary) *Amer. Statist.* **46** (1992), *no.* 4, 274–276. 62F15

— (*with* Utts, Jessica) Testing for nonadditivity in log-linear and logit models. (English summary) *J. Statist. Plann. Inference* **33** (1992), *no.* 3, 333–343. (I. Guttman) **93m:62164** 62J12 (62F03)

Christer, A. H. (*with* Jack, N.) An integral-equation approach for replacement modelling over finite time horizons. *IMA J. Math. Appl. Bus. Indust.* **3** (1991), *no.* 1, 31–44. (Summary) **93c:90035** 90B25

Christian, Curt C. Eine Bemerkung zum Hausdorffschen Maximalprinzip. [A remark on the Hausdorff maximal principle] *Anz. Österreich. Akad. Wiss. Math.-Natur. Kl.* **128** (1991), 9–16 (1992). (Yehuda Rav) **93i:03070** 03E25 (04A25)

Christian, Jim Flatterms, discrimination nets, and fast term rewriting. (English summary) *J. Automat. Reason.* **10** (1993), *no.* 1, 95–113. 68T15 (03B35)

Christian, Ulrich Über eine arithmetische Aufspaltung der logarithmischen Ableitung Selbergscher Zetafunktionen. [On an arithmetic decomposition of the logarithmic derivative of Selberg's zeta functions] *Acta Arith.* **59** (1991), *no.* 4, 309–315. (Daniel Bump) **93b:11064** 11F72

— Arithmetische Eigenschaften hyperbolischer Klassen elliptischer Modulgruppen. [Arithmetic properties of hyperbolic classes of elliptic modular groups] *Math. Z.* **207** (1991), *no.* 4, 597–617. (Summary) **93d:11046** 11F06 (11R11, 11R27)

Christiano, P. L. (*with* Moreira, J. V.) The infinite-range Ashkin-Teller spin glass. *Phys. Lett. A* **162** (1992), *no.* 2, 149–154. (Summary) **93b:82083** 82D30 (82B44)

Christiansen, Bo (*with* Alstrøm, Preben; Levinsen, Mogens T.) Collective dynamics of coupled modulated oscillators with random pinning. *Phys. D* **56** (1992), *no.* 1, 23–35. (Summary) **93b:34047** 34C15 (70K99, 70L05)

Christiansen, H. Dalgas Decanal star tables for lunar houses in Egypt? (English summary) *Centaurus* **35** (1992), *no.* 1, 1–27. 01A16

Christiansen, Margit (*with* Lützen, Jesper; Sabidussi, Gert; Toft, Bjarne) Julius Petersen annotated bibliography. Special volume to mark the centennial of Julius Petersen's "Die Theorie der regulären Graphs", Part I. *Discrete Math.* **100** (1992), *no.* 1-3, 83–97. (E. Keith Lloyd) **93k:01073** 01A70 (05–03)

Christiansen, Peter L. (*with* Rionero, Salvatore; Lomdahl, Peter S.; Muto, Virginia) Stability of a solitary wave solution to a set of coupled Boussinesq-like equations. (English summary) *Waves and stability in continuous media (Sorrento*, 1989), 49–59, *Ser. Adv. Math. Appl. Sci.*, 4, *World Sci. Publishing, River Edge, NJ*, 1991. (*see* **93g:00030**) 35Q53 (82C20, 92D20)

— (*with* Muto, Virginia; Scott, A. C.; Lomdahl, Peter S.) Nonlinear discrete models for DNA dynamics. (English summary) *Waves and stability in continuous media (Sorrento*, 1989), 60–65, *Ser. Adv. Math. Appl. Sci.*, 4, *World Sci. Publishing, River Edge, NJ*, 1991. (*see* **93g:00030**) 92D20 (82C20)

— (*with* Jørgensen, Michael F.; De Lillo, Silvana; Cruzeiro-Hansson, Leonor) Note on a complex Eckhaus equation. (English summary) *Chaotic dynamics (Patras*, 1991), 71–73, *NATO Adv. Sci. Inst. Ser. B Phys.*, 298, *Plenum, New York*, 1992. (*see* **93i:58004**) 35Q55

— (*with* Abrarov, R. M.; Darmanyan, S. A.; Scott, A. C.; Soerensen, M. P.) Soliton propagation in three coupled nonlinear Schrödinger equations. (English summary) *Phys. Lett. A* **171** (1992), *no.* 5-6, 298–302. (Summary) **93k:35238** 35Q55 (35Q51)

Christianson, Bruce Relative width of sublattices. *Math. Chronicle* **20** (1991), 75–78. (Introduction) **93f:46005** 46A40 (46B40)

— Automatic Hessians by reverse accumulation. *IMA J. Numer. Anal.* **12** (1992), *no.* 2, 135–150. (Summary) **93b:65039** 65D25

Christman, Mary C. (*with* Nayak, Tapan K.) Effect of unequal catchability on estimates of the number of classes in a population. (English summary) *Scand. J. Statist.* **19** (1992), *no.* 3, 281–287. 62F10

Christodoulakis, T. (*with* Korfiatis, E.) Quantum mechanics of the general spatially homogeneous geometry coupled to a scalar field. *J. Math. Phys.* **33** (1992), *no.* 8, 2863–2876. (Annalisa Marzuoli) **93i:83046** 83C45 (81T20)

Christodoulou, Demetrios The stability of Minkowski spacetime. *Proceedings of the International Congress of Mathematicians, Vol. I, II (Kyoto, 1990)*, 1113–1121, *Math. Soc. Japan, Tokyo*, 1991. (Philippe-A. Dionne) **93c:83007** 83C05 (53C50, 58G16)

Christodoulou, Manolis A. Neural networks in control. (English summary) *Mutual impact of computing power and control theory (Prague, 1992)*, 169–174, *Czech. Acad. Sci., Prague*, 1992. (*see* **93f:93005**) 93C83 (92B20)

— (*with* Rovithakis, G. A.) Noninteracting control of unknown plants using dynamical neural networks. (English summary) *Mutual impact of computing power and control theory (Prague, 1992)*, 203–208, *Czech. Acad. Sci., Prague*, 1992. (*see* **93f:93005**) 93C83

Christodoulou, Stavros Some topologies over a cardinal. *Questions Answers Gen. Topology* **10** (1992), *no.* 2, 143–148. (Judith Roitman) **93g:54005** 54A25 (03E35, 54A10, 54A35)

Christofides, Tasos C. A strong law of large numbers for U-statistics. *J. Statist. Plann. Inference* **31** (1992), *no.* 2, 133–145. (N. C. Weber) **93k:60072** 60F15 (60G42)

Christol, G. (*with* Dwork, Bernard M.) Effective p-adic bounds at regular singular points. *Duke Math. J.* **62** (1991), *no.* 3, 689–720. (From the introduction) **93c:12009** 12H25

— (*with* Dwork, Bernard M.) Differential modules of bounded spectral norm. *p-adic methods in number theory and algebraic geometry*, 39–58, *Contemp. Math.*, 133, *Amer. Math. Soc., Providence, RI*, 1992. (Takashi Harase) **93m:12007** 12H25 (12J27)

Christoph, Gerd (*with* Wolf, Werner) ★ Convergence theorems with a stable limit law. (English. English and German summaries) Mathematical Research, 70. *Akademie-Verlag, Berlin*, 1992. 200 *pp. ISBN* 3-05-501416-2 (J. L. Mijnheer) **93m:60032** 60E07 (60E15, 60F05, 60F10)

Christopher, Peter R. Highly irregular asymmetric graphs. (English summary) Proceedings of the Twenty-third Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, FL, 1992). *Congr. Numer.* **91** (1992), 93–97. (Summary) **93j:05076** 05C25 (05C05)

Christophersen, Jan Arthur (*with* Behnke, Kurt) Obstructions and hypersurface sections (minimally elliptic singularities). *Trans. Amer. Math. Soc.* **335** (1993), *no.* 1, 175–193. (Jonathan M. Wahl) **93c:14034** 14J17 (14B07)

Christov, Christo Ivanov (*with* Todorov, Mikhail) Application of a model of inviscid separation in the study of the flow around airfoils. (Russian. English and Russian summaries) *Annuaire Univ. Sofia Fac. Math. Inform.* **82** (1988), *no.* 2, 193–217 (1992). (Summary) **93m:76005** 76B05

— (*with* Nartov, V. P.) ★ Точечные случайные функции и крупномасштабная турбулентность. (Russian. Russian summary) [Pointwise random functions and large-scale turbulence] *"Nauka" Sibirsk. Otdel., Novosibirsk*, 1992. 160 *pp. ISBN* 5-02-029914-6 (Olec Troshkin) **93m:76046** 76Fxx (76M35, 76M99)

— (*with* Markov, Konstantin Z.) On the problem of heat conduction for random dispersions of spheres allowed to overlap. (English summary) *Math. Models Methods Appl. Sci.* **2** (1992), *no.* 3, 249–269. (Dimitri Petritis) **93h:82070** 82C70 (73B30, 82C35)

Christov, O. Perturbations of a mechanical system with two degrees of freedom. (English and Bulgarian summaries) *J. Theoret. Appl. Mech.* **23** (1992), *no.* 3, 5, 36–49. (Urs Kirchgraber) **93m:58041** 58F05 (58F30, 70H05)

Christy, Joe Immersing branched surfaces in dimension three. *Proc. Amer. Math. Soc.* **115** (1992), *no.* 3, 853–861. (Summary) **93d:57008** 57M20 (57N10, 57N35)

— Branched surfaces and attractors. I. Dynamic branched surfaces. *Trans. Amer. Math. Soc.* **336** (1993), *no.* 2, 759–784. (Darryl McCullough) **93f:58135** 58F12 (57M50, 57N10, 58F15)

Chrobak, Marek (*with* Eppstein, David) Planar orientations with low out-degree and compaction of adjacency matrices. *Theoret. Comput. Sci.* **86** (1991), *no.* 2, 243–266. (G. P. Bhattacharjee) **93a:68114** 68R10 (05C20, 05C85, 68Q25)

— (*with* Larmore, Lawrence L.) The server problem and on-line games. *On-line algorithms (New Brunswick, NJ, 1991)*, 11–64, *DIMACS Ser. Discrete Math. Theoret. Comput. Sci.*, 7, *Amer. Math. Soc., Providence, RI*, 1992. (Yuri Nazarovich Sotskov) **93f:68040** 68Q25 (90D80)

— (*with* Larmore, Lawrence L.) Generosity helps, or an 11-competitive algorithm for three servers. *Proceedings of the Third Annual ACM-SIAM Symposium on Discrete Algorithms (Orlando, FL, 1992)*, 196–202, *ACM, New York*, 1992. (*see* **93b:68005**) 90B22 (68Q20)

Chronopoulos, Anthony T. (*with* Zlatev, Zahari) Iterative methods for nonlinear operator equations. *Approximation theory (Memphis, TN, 1991)*, 243–256, *Lecture Notes in Pure and Appl. Math.*, 138, *Dekker, New York*, 1992. (W. C. Rheinboldt) **93g:65083** 65J15 (47H17)

— (*with* Pernice, Michael) Vector preconditioned s-step methods on the IBM 3090/600S/6VF. (English summary) *Parallel processing for scientific computing (Houston, TX, 1991)*, 130–137, *SIAM, Philadelphia, PA*, 1992. (*see* **93g:65178**) 65N22 (65F10, 65Y05)

— (*with* Zlatev, Zahari) Iterative methods for nonlinear operator equations. (English summary) *Appl. Math. Comput.* **51** (1992), *no.* 2-3, 167–180. (Summary) **93f:65050** 65J15 (47H17)

— Nonlinear CG-like iterative methods. *J. Comput. Appl. Math.* **40** (1992), *no.* 1, 73–89. (Summary) **93a:65067** 65H10

— (*with* Kim, Sung Kwon) An efficient nonsymmetric Lanczos method on parallel vector computers. (English summary) *J. Comput. Appl. Math.* **42** (1992), *no.* 3, 357–374. (Ming Kui Chen) **93h:65050** 65F15 (65F50, 65Y05)

Chronowski, Antoni On a certain type of Pexider equations. *Ann. Math. Sil. No.* 5 (1991), 75–82. (V. Sathyabhama) **93d:39015** 39B52

— On extensions of homomorphisms and homotopies of commutative n-adic groups. (English summary) *Arch. Math. (Brno)* **27B** (1991), 139–148. (Summary) **93i:20088** 20N15

Chróścielewski, J. (*with* Makowski, J.; Stumpf, Helmut) Genuinely resultant shell finite elements accounting for geometric and material nonlinearity. *Internat. J. Numer. Methods Engrg.* **35** (1992), *no.* 1, 63–94. (Summary) **93a:73079** 73V05 (73K15)

Chruściel, Piotr T. Asymptotic estimates in weighted Hölder spaces for a class of elliptic scale-covariant second order operators. (English and French summaries) *Ann. Fac. Sci. Toulouse Math.* (5) **11** (1990), *no.* 1, 21–37. (Summary) **93h:35031** 35B45 (35J15, 35P20, 47F05)

— ★ On uniqueness in the large of solutions of Einstein's equations ("strong cosmic censorship"). Proceedings of the Centre for Mathematics and its Applications, Australian National University, 27. *Australian National University, Centre for Mathematics and its Applications, Canberra*, 1991. 130 *pp. ISBN* 0-7315-0443-7 (J. K. Beem) **93c:83008** 83C05 (53C50, 53C80, 83C75)

— On uniqueness in the large of solutions of Einstein's equations ("strong cosmic censorship"). (English summary) *Mathematical aspects of classical field theory (Seattle, WA, 1991)*, 235–273, *Contemp. Math.*, 132, *Amer. Math. Soc., Providence, RI*, 1992. (Summary) **93g:83078** 83C75 (53C80, 83C05)

— (*with* Singleton, David B.) Nonsmoothness of event horizons of Robinson-Trautman black holes. *Comm. Math. Phys.* **147** (1992), *no.* 1, 137–162. (Philippe-A. Dionne) **93i:83059** 83C57 (83C15)

— (*with* Andersson, Lars Åke; Friedrich, Helmut) On the regularity of solutions to the Yamabe equation and the existence of smooth hyperboloidal initial data for Einstein's field equations. (English summary) *Comm. Math. Phys.* **149** (1992), *no.* 3, 587–612. (Robert McOwen) **93i:53040** 53C21 (58G16, 58G30, 83C05)

— On the global structure of Robinson-Trautman space-times. (English summary) *Proc. Roy. Soc. London Ser. A* **436** (1992), *no.* 1897, 299–316. (Francis Cagnac) **93g:83037** 83C30 (83C20, 83C75)

Chruściński, Dariusz Symplectic structure of the von Neumann equation. *Rep. Math. Phys.* **29** (1991), *no.* 1, 95–99. (Jens Gamst) **93b:58050** 58F05 (22E70)

— (*with* Staszewski, P.) On the asymptotic solutions of Belavkin's stochastic wave equation. *Phys. Scripta* **45** (1992), *no.* 3, 193–199. (Andrzej Luczak) **93d:81018** 81P15 (81S25)

Chryssomalakos, Chryss (*with* Drabant, Bernhard; Schlieker, Michael; Weich, Wolfgang; Zumino, Bruno) Vector fields on complex quantum groups. (English summary) *Comm. Math. Phys.* **147** (1992), *no.* 3, 635–646. (Nicolás Andruskiewitsch) **93j:17023** 17B37 (81R50)

— Coproduct of vector fields on the quantum Lorentz group. (English summary) *Modern Phys. Lett. A* **7** (1992), *no.* 30, 2851–2855. (A. Hamid Bougourzi) **93k:81093** 81R50 (17B37, 58B30)

Chrzęszczyk, Andrzej Initial-boundary value problems for nonlinear equations of generalized thermoelasticity and elasticity. (English summary) *Math. Methods Appl. Sci.* **16** (1993), *no.* 1, 49–60. (Reinhard Racke) **93m:73002** 73B30 (35Q72)

Chu, C. I. (*with* Lee, Yu Lee; Miao, L. C.) On iterated manifolds of maps. *Soochow J. Math.* **17** (1991), *no.* 2, 189–192. (Liliana Maxim-Răileanu) **93b:58024** 58D15

Chu, C. K. *see* **Chu, Chih Kang**

Chu, Chengbin A branch-and-bound algorithm to minimize total flow time with unequal release dates. (English summary) *Naval Res. Logist.* **39** (1992), *no.* 6, 859–875. (Summary) **93e:90031** 90B35 (90C35)

— Efficient heuristics to minimize total flow time with release dates. (English summary) *Oper. Res. Lett.* **12** (1992), *no.* 5, 321–330. 90B35 (90B10)

Chu, Ch'i P'ing (*with* Wang, Huai Ch'üan) Symmetry properties of positive solutions of elliptic equations in an infinite sectorial cone. (English summary) *Proc. Roy. Soc. Edinburgh Sect. A* **122** (1992), *no.* 1-2, 137–160. (Xi Ting Liang) **93m:35014** 35B05 (35J65)

Chu, Chih Kang (*with* Marron, J. Stephen) Comparison of two bandwidth selectors with dependent errors. *Ann. Statist.* **19** (1991), *no.* 4, 1906–1918. (Ulrich Stadtmüller) **93f:62047** 62G05 (62G20)

— Double smoothing bandwidth selection with dependent errors. (English summary) *Chinese J. Math.* **20** (1992), *no.* 3, 223–240. (Michael Falk) **93j:62091** 62G05

Chu, Chinku (*with* Choi, Sung Kyu; Park, Jong Suh) Flows of strong characteristic 0^+. *Bull. Inst. Math. Acad. Sinica* **19** (1991), *no.* 1, 53–67. (Valéry Miškin) **93j:54030** 54H20 (34C35, 34D20)

— (*with* Kim, Myung-Sun; Lee, Keon Hee) Lipschitz stability and Lyapunov stability in dynamical systems. *Nonlinear Anal.* **19** (1992), *no.* 10, 901–909. (Frank Hubbuch) **93i:58086** 58F10 (34C35, 34D20)

Chu, Cho-Ho (*with* Iochum, Bruno; Watanabe, Seiji) C^*-algebras with the Dunford-Pettis property. *Function spaces (Edwardsville, IL, 1990)*, 67–70, *Lecture Notes in Pure and Appl. Math.*, 136, *Dekker, New York*, 1992. (Steve Wright) **93d:46096** 46L05

— Remarks on the classification of von Neumann algebras. (English summary) *Operator algebras and operator theory (Craiova, 1989)*, 62–68, *Pitman Res. Notes Math. Ser.*, 271, *Longman Sci. Tech., Harlow*, 1992. (V. S. Sunder) **93m:46069** 46L10 (46L35)

— (*with* Bunce, L. J.) Compact operations, multipliers and Radon-Nikodým property in JB^*-triples. *Pacific J. Math.* **153** (1992), *no.* 2, 249–265. (P. J. Stacey) **93c:46125** 46L70 (46H70)

— (*with* Cohen, Henry B.) Isomorphisms of spaces of continuous affine functions. *Pacific J. Math.* **155** (1992), *no.* 1, 71–85. (Ehrhard Behrends) **93i:46041** 46E15 (46A55, 46J10)

Chu, David P. T. Exact distribution of random volume from beta type-2 random points. *Comm. Statist. Theory Methods* **21** (1992), *no.* 3, 589–597. (Summary) **93e:62045** 62E15 (60D05)

Chu, De Lin (*with* Hu, Xian Cheng) A preconditioner for solving elliptic problems based on domain decomposition. (Chinese. English summary) *J. Tsinghua Univ.* **31** (1991), *no.* 6, 12–19. (Summary) **93d:65107** 65N55

— A stable algorithm for computing controllability. (Chinese. English summary) *J. Numer. Methods Comput. Appl.* **13** (1992), *no.* 1, 1–6. 93B05 (93B40)

— (*with* Cai, Da Yong) A stable algorithm for computing controllability related to "descriptor" systems. (Chinese. English summary) *J. Numer. Methods Comput. Appl.* **13** (1992), *no.* 2, 145–151. (Shuping Chen) **93k:93013** 93B05 (93B40)

— (*with* Cai, Da Yong) A stable computation for controllability and R-controllability related to generalized systems. (Chinese. English summary) *J. Numer. Methods Comput. Appl.* **13** (1992), *no.* 3, 189–196. (Summary) **93j:93012** 93B05 (93B40)

— (*with* Cai, Da Yong) A new algorithm for block-diagonal decentralized control. (Chinese. English and Chinese summaries) *Math. Appl.* **5** (1992), *no.* 4, 1–5. 93A14 (93B40)

Chu, Eleanor (*with* George, Alan) Parallel algorithms and subcube embedding on a hypercube. (English summary) *SIAM J. Sci. Comput.* **14** (1993), *no.* 1, 81–94. (Summary) **93i:65133** 65Y05 (65F99)

Chu, G. (*with* José, Jorge V.) The semiclassical limit of a quantum Fermi accelerator. *J. Statist. Phys.* **68** (1992), *no.* 1-2, 153–174. (Summary) **93d:81047** 81Q50 (81S30)

Chu, In-Sun (*with* Shirahata, Shingo) Integrated squared error of kernel-type estimator of distribution function. (English summary) *Ann. Inst. Statist. Math.* **44** (1992), *no.* 3, 579–591. (Sh. A. Khashimov) **93k:62097** 62G05

Chu, Jeff Optimal algorithm for the nearest common dominator problem. (English summary) *J. Algorithms* **13** (1992), *no.* 4, 693–697. (Summary) **93h:05150** 05C85

(05C35, 68R10)

Chu, Jian (*with* Hu, Xie He) A design of a reduced-order robust observer for a nonlinear system. (Chinese. English summary) *Zhejiang Daxue Xuebao Ziran Kexue Ban* **26** (1992), *no.* 2, 179–185. 93B07

Chu, K.-w. Eric (*with* Andrew, Alan L.; Lancaster, Peter) Sensitivities of eigenvalues and eigenvectors of problems nonlinear in the eigenparameter. *Appl. Math. Lett.* **5** (1992), *no.* 3, 69–72. (Anna Lee) **93d:15013** 15A18 (15A54, 73K40)

Chu, Lan Ying (*with* Li, Rong Lu; Cho, Min Hyung) An equivalence theorem on infinite matrices. *Northeast. Math. J.* **7** (1991), *no.* 3, 253–255. 15A99

— (*with* Sun, Gui Lan; Bao, Xiu) A construction method for numerical partial derivatives. (Chinese. English and Chinese summaries) *J. Harbin Inst. Tech.* **24** (1992), *no.* 6, 12–17. 65D25

Chu, Meifang (*with* Goddard, Peter; Halliday, Ian; Olive, David; Schwimmer, Adam) Quantization of the Wess-Zumino-Witten model on a circle. *Phys. Lett. B* **266** (1991), *no.* 1-2, 71–81. (Summary) **93c:81199** 81T40 (81R10, 81T70)

Chu, Moody T. Matrix differential equations: a continuous realization process for linear algebra problems. *Nonlinear Anal.* **18** (1992), *no.* 12, 1125–1146. (Zheng You Zhu) **93g:65079** 65H20 (34A50, 65F15, 65L05)

— Numerical methods for inverse singular value problems. *SIAM J. Numer. Anal.* **29** (1992), *no.* 3, 885–903. (Summary) **93a:65048** 65F15 (49M07, 65H17)

Chu, Po Hsiang (*with* Chen, Hong Andy) What is a Gabriel topology over a graded ring? (English summary) *Category theory* 1991 (*Montreal, PQ*, 1991), 133–139, *CMS Conf. Proc.*, 13, *Amer. Math. Soc., Providence, RI*, 1992. (Stefaan Caenepeel) **93k:16077** 16W50 (16S90)

Chu, Tian Guang (*with* Zhang, Zong Da) Practical stability of Volterra integro-differential systems. (Chinese. English and Chinese summaries) *J. Harbin Inst. Tech.* **24** (1992), *no.* 4, 13–18. (Summary) **93i:45008** 45J05 (34K20, 45M10)

Chu, Wen Chang Dominance method for plane partitions: skew plane partitions and skew tableaux. (Italian summary) *Rend. Mat. Appl.* (7) **11** (1991), *no.* 4, 873–881. (Christian Krattenthaler) **93b:05163** 05E10 (05A15, 05E05)

— Three combinatorial sequences derivable from the lattice path counting. (English summary) *Combinatorics '90* (*Gaeta*, 1990), 81–92, *Ann. Discrete Math.*, 52, *North-Holland, Amsterdam*, 1992. (Louis Shapiro) **93j:05005** 05A10

Chu, Xue Dao (*with* Wang, Jian) A self-adaptive control algorithm based on correcting the predictive output of a system. (Chinese. English summary) *Inform. and Control* (*Shenyang*) **20** (1991), *no.* 6, 13–19. 93C40

— (*with* Liu, Wan Quan) Feedback control of singular decentralized control systems with direct feedthrough. (English and Chinese summaries) *Qufu Shifan Daxue Xuebao Ziran Kexue Ban* **18** (1992), *suppl.*, 57–63. 93A14 (93B05)

— (*with* Chen, Wei Tian) A new adaptive pole placement algorithm for nonminimum phase stochastic systems. (Chinese. English and Chinese summaries) *Qufu Shifan Daxue Xuebao Ziran Kexue Ban* **18** (1992), *suppl.*, 64–70. 93B55 (93E03)

Chu, Y. P. *see* **Chu, Yen Ping**

Chu, Yan Dong (*with* Chang, Ying Xiang; Gu, Feng[2]) Binary grey relations and their characteristics. (Chinese. English and Chinese summaries) *J. Lanzhou Railway Inst.* **11** (1992), *no.* 3, 35–42. 04A72

Chu, Yen Ping (*with* Hsieh, C. M.) An artificial neural network model with modified perceptron algorithm. (English summary) *Parallel Comput.* **18** (1992), *no.* 9, 983–996. (Summary) **93h:68120** 68T05 (92B20)

— A neural-based Boolean function generator. (English summary) *Internat. J. Electron.* **74** (1993), *no.* 1, 21–34. (Summary) **93k:92001** 92B20 (68T05)

Chu, Yi A note on L. de Branges' paper: "Complementation in Krein spaces" [Trans. Amer. Math. Soc. **305** (1988), no. 1, 277–291; MR 89c:46034]. *Northeast. Math. J.* **8** (1992), *no.* 1, 65–68. (Summary) **93d:47068** 47B50 (46C20)

Chu, Yu Ming Quasidisks and relative concepts. (Chinese. English and Chinese summaries) *Hunan Daxue Xuebao* **19** (1992), *no.* 6, 133–138. 30C65

Chu, Zhong Wu (*with* Han, Bo) Existence of zeros of decomposable mappings and its applications. (Chinese. English summary) *J. Harbin Inst. Tech.* **24** (1992), *no.* 1, 8–11. (T. Y. Li) **93d:65053** 65H20

Chua, Leon O. (*with* Shi, Bertram E.) Multiple layer cellular networks—a tutorial. *Algorithms and parallel VLSI architectures, Vol. A* (*Pont-à-Mousson*, 1990), 137–168, *Elsevier, Amsterdam*, 1991. (Summary) **93f:92006** 92B20 (68U10)

— (*with* Brown, Ray; Popp, Becky) Is sensitive dependence on initial conditions nature's sensory device? *Internat. J. Bifur. Chaos Appl. Sci. Engrg.* **2** (1992), *no.* 1, 193–199. (Iuliana Oprea) **93d:58094** 58F13 (34A12, 34C99)

— (*with* Feely, Orla) Nonlinear dynamics of a class of analog-to-digital converters. (English summary) *Internat. J. Bifur. Chaos Appl. Sci. Engrg.* **2** (1992), *no.* 2, 325–340. 94C10

— (*with* Anishchenko, V. S.; Safonova, M. A.) Stochastic resonance in Chua's circuit. (English summary) *Internat. J. Bifur. Chaos Appl. Sci. Engrg.* **2** (1992), *no.* 2, 397–401. 94C05 (58F13)

— (*with* Pérez-Muñuzuri, V.; Pérez-Villar, V.) Propagation failure in linear arrays of Chua's circuits. (English summary) *Internat. J. Bifur. Chaos Appl. Sci. Engrg.* **2** (1992), *no.* 2, 403–406. 94C05

— (*with* Brown, Ray) Chaos or turbulence? (English summary) *Internat. J. Bifur. Chaos Appl. Sci. Engrg.* **2** (1992), *no.* 4, 1005–1009. (G. Ambika) **93m:58106** 58F40 (34C99, 58F13, 76F20)

Chua, Seng-Kee (*with* Yap, Leonard Y. H.) Convolution and factorization of vector-valued functions. *Functional analysis & related topics* (*Sapporo*, 1990), 179–205, *World Sci. Publishing, River Edge, NJ*, 1991. (Olusola Akinyele) **93a:43002** 43A15 (43A20, 46G10)

— Restriction theorems on weighted Sobolev spaces of mixed norm. *Real Anal. Exchange* **17** (1991/92), *no.* 2, 633–651. (Josef Voldřich) **93d:46049** 46E35

— Weighted Sobolev inequalities on domains satisfying the chain condition. *Proc. Amer. Math. Soc.* **117** (1993), *no.* 2, 449–457. (Josef Voldřich) **93d:46050** 46E35 (26D10)

Chuan, Wai-fong *see* **Kuo, Hui Fang**

Chuang, Alice (*with* Abraham, Bovas) Expectation-maximization algorithms and the estimation of time series models in the presence of outliers. (English summary) *J. Time Ser. Anal.* **14** (1993), *no.* 3, 221–234. (Summary) **93m:62191** 62M10

Chuang, Chen-Lian *see* **Chuang, Chêng Liang**

Chuang, Chêng I Multivariable generalization of Ackermann's formula. (English and Chinese summaries) *J. Chinese Inst. Engrs.* **15** (1992), *no.* 5, 593–604. (Srinivasu Maka) **93m:93059** 93C55 (93B10, 93B11, 93C35, 93C45)

Chuang, Chêng Liang Differential identities with automorphisms and antiautomorphisms. I. *J. Algebra* **149** (1992), *no.* 2, 371–404. (Charles Lanski) **93j:16027** 16W25 (16N60, 16W20)

— (*with* Lin, Chê Hsiung) Rings with nil and power central kth commutators. (English summary) *Rend. Circ. Mat. Palermo* (2) **41** (1992), *no.* 1, 62–68. (A. Yaqub) **93j:16022** 16U80 (16N60)

Chuang, Chi Tai *see* **Zhuang, Qi Tai**

Chuang, Yü Wên (*with* Ch'ên, Chang P'ao) L^1-convergence of double Fourier series. *Chinese J. Math.* **19** (1991), *no.* 4, 391–410. (B. L. Gupta) **93e:42017** 42B05 (42B08)

Chuaqui, Rolando ★ Truth, possibility and probability. New logical foundations of probability and statistical inference. North-Holland Mathematics Studies, 166. *North-Holland Publishing Co., Amsterdam*, 1991. xviii+484 *pp. ISBN* 0-444-88840-3 (Henry E. Kyburg, Jr.) **93h:03021** 03B48 (03H05, 60A05, 62A99)

Chubarova, E. I. On a characterization of layer-finite p-groups. (Russian) *Some questions of mathematics in problems of physics and mechanics* (*Russian*), 131–135, *Moskov. Fiz.-Tekhn. Inst., Moscow*, 1988. (*see* **93m:00036**) 20D15

Chuburin, Yu. P. A Schrödinger operator with small potential in a case of a crystal film. (Russian. Russian summary) *Mat. Zametki* **52** (1992), *no.* 2, 138–143, 158; *translation in Math. Notes* **52** (1992), *no.* 1-2, 852–856 (1993). (Summary) **93i:35039** 35J10 (81Q10)

Chudinovich, I. Yu. Boundary equations in problems of the dynamics of elastic media with boundary conditions of mixed type. (Russian. English and Russian summaries) *Dokl. Akad. Nauk Ukrainy* **1992**, *no.* 11, 24–26, 170. (Summary) **93i:73016** 73C35 (35Q72, 73D99)

— Boundary equations in problems of the dynamics of piecewise-homogeneous elastic media. (Russian) *Mat. Zametki* **51** (1992), *no.* 2, 124–128, 159; *translation in Math. Notes* **51** (1992), *no.* 1-2, 193–195. (Summary) **93g:73029** 73C02 (35Q72, 73B27, 73D15)

— Boundary equations in problems of nonstationary diffraction of elastic waves by spatial cracks. (Russian) *Mat. Zametki* **51** (1992), *no.* 4, 119–123, 143; *translation in Math. Notes* **51** (1992), *no.* 3-4, 408–411. (Peter Wagner) **93g:73044** 73D25 (35Q72, 65N38)

— A remark on the smoothness of solutions of nonstationary boundary equations. (Russian. Russian summary) *Mat. Zametki* **52** (1992), *no.* 5, 132–135, 144; *translation in Math. Notes* **52** (1992), *no.* 5-6, 1165–1167 (1993). (Summary) **93j:35038** 35B65 (35Q35)

Chudnovsky, David Volfovich (*with* Chudnovsky, Gregory Volfovich) Classical constants and functions: computations and continued fraction expansions. *Number theory* (*New York*, 1989/1990), 13–74, *Springer, New York*, 1991. (From the introduction) **93c:11118** 11Y60 (11–02, 11A55, 11Y65)

— *see also* **Preston, Richard, 93h:01047**

Chudnovsky, Gregory Volfovich (*with* Chudnovsky, David Volfovich) Classical constants and functions: computations and continued fraction expansions. *Number theory* (*New York*, 1989/1990), 13–74, *Springer, New York*, 1991. (From the introduction) **93c:11118** 11Y60 (11–02, 11A55, 11Y65)

— *see also* **Preston, Richard, 93h:01047**

Chueshov, I. D. Construction of solutions in a problem of the oscillations of a shell in a potential subsonic flow. (Russian) *Operator theory, subharmonic functions* (*Russian*), 147–154, "*Naukova Dumka*", *Kiev*, 1991. (Summary) **93c:73078** 73K70 (73K12, 73K15, 76G25)

Chugainova, A. P. Steady quasitransversal ordinary and shock waves in a weakly anisotropic nonlinearly elastic medium. (Russian) *Prikl. Mat. Mekh.* **55** (1991), *no.* 3, 486–492; *translation in J. Appl. Math. Mech.* **55** (1991), *no.* 3, 396–401 (1992). (Ivan Andronov) **93b:73016** 73D05 (73B40, 73D35)

Chui, Charles K. (*with* Ron, Amos) On the convolution of a box spline with a compactly supported distribution: linear independence for the integer translates. *Canad. J. Math.* **43** (1991), *no.* 1, 19–33. (Rong Qing Jia) **93a:41060** 41A63 (41A15, 46F10)

— ★ An introduction to wavelets. Wavelet Analysis and its Applications, 1. *Academic Press, Inc., Boston, MA*, 1992. x+264 *pp. ISBN* 0-12-174584-8 (Gilbert Walter) **93f:42055** 42C15 (41A15, 42C10, 44A15)

— Wavelets—with emphasis on spline-wavelets and applications to signal analysis. *Approximation theory, spline functions and applications* (*Maratea*, 1991), 19–39, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 356, *Kluwer Acad. Publ., Dordrecht*, 1992. (Summary) **93e:41016** 41A15 (42C15, 94A12)

— (*with* Shi, Xian Liang) Wavelets and multiscale interpolation. *Mathematical methods in computer aided geometric design, II* (*Biri*, 1991), 111–133, *Academic Press, Boston, MA*, 1992. (Summary) **93e:42043** 42C15 (65D05, 65D17)

— On cardinal spline-wavelets. *Wavelets and their applications*, 419–438, *Jones and Bartlett, Boston, MA*, 1992. (R. A. Lorentz) **93k:65112** 65T20 (41A15, 65D07)

— (*with* Li, Xie Zhang; Ward, Joseph D.) On the convergence rate of s-numbers of compact Hankel operators. *Circuits Systems Signal Process.* **11** (1992), *no.* 2, 353–362. (Summary) **93d:47052** 47B35 (47B10, 47N70, 93B25)

— (*with* Ward, Joseph D.; Jetter, K.) Cardinal interpolation with differences of tempered functions. (English summary) Advances in the theory and applications of radial basis functions. *Comput. Math. Appl.* **24** (1992), *no.* 12, 35–48. (Antonio López-Carmona) **93i:65016** 65D05 (41A05)

— (*with* Chen, Guan Rong; Yu, Yao Qi) Optimal Hankel-norm approximation approach to model reduction of large-scale Markov chains. (English summary) *Internat. J. Systems Sci.* **23** (1992), *no.* 8, 1289–1297. (Summary) **93f:93028** 93B11 (93B27, 93E03)

— (*with* Li, Xin) Approximation by ridge functions and neural networks with one hidden layer. *J. Approx. Theory* **70** (1992), *no.* 2, 131–141. (Summary) **93d:41018** 41A30 (92B20)

— (*with* Deutsch, Frank; Ward, Joseph D.) Constrained best approximation in Hilbert space. II. (English summary) *J. Approx. Theory* **71** (1992), *no.* 2, 213–238. (C. Dierieck) **93k:41019** 41A29 (41A50, 41A65)

— (*with* Mhaskar, H. N.) On multivariate robust stability. (English summary) *SIAM J. Control Optim.* **30** (1992), *no.* 5, 1190–1199. (Hong Zhang) **93h:93053** 93D09 (93D20, 93D25)

— (*with* Shen, Xie Chang; Zhong, Le Fan) On Lagrange interpolation at disturbed roots of unity. *Trans. Amer. Math. Soc.* **336** (1993), *no.* 2, 817–830. (Ambikeswar Sharma) **93f:30038** 30E05 (41A05, 41A10)

— *see also* **Approximation theory, 93j:41001**

Chui, Jing An *see* **Cui, Jing An**

Chuĭko, S. M. (*with* Boĭchuk, A. A.) Autonomous weakly nonlinear boundary value problems. (Russian. Russian summary) *Differentsial'nye Uravneniya* **28** (1992), *no.* 10, 1668–1674, 1837; *translation in Differential Equations* **28** (1992), *no.* 10, 1353–1358 (1993). (Summary) **93k:34040** 34B05 (34C15)

Chukbar, K. V. Pole-soliton dynamics for an exactly integrable equation. *J. Moscow Phys. Soc.* **2** (1992), *no.* 1, 1–5. (Summary) **93e:35006** 35A20 (35Q58)

Chukova, S. (*with* Dimitrov, B.) On distributions having the almost-lack-of-memory property. *J. Appl. Probab.* **29** (1992), *no.* 3, 691–698. (Kuo Tung Lin) **93k:62026** 62E10 (60E05, 60K25)

Chukwu, E. N. ★ Stability and time-optimal control of hereditary systems. Mathematics in Science and Engineering, 188. *Academic Press, Inc., Boston, MA*, 1992. xii+508 *pp. ISBN* 0-12-174560-0 (B. Mordukhovich) **93d:49003** 49–02 (34K35, 49K25, 93–02)

— (*with* Underwood, Robert G.; Kovari, Louis D.) Global constrained null-controllability of nonlinear neutral systems. *Appl. Math. Comput.* **49** (1992), *no.* 1, 95–110. (Jerzy Klamka) **93b:93014** 93B05 (34K35, 34K40, 93C10)

— Mathematical controllability theory of capital growth of nations. (English summary) *Appl. Math. Comput.* **52** (1992), *no.* 2-3, 317–344. (Caro Lucas) **93k:93014** 93B05 (90A15, 93C95)

Chulik, I. I. (*with* Kuzik, A. M.) Construction and investigation of locally one-dimensional difference schemes in a class of generalized functions. (Ukrainian. Russian summary) *Visnik L'viv. Derzh. Univ. Ser. Mekh.-Mat. No.* 29 (1988), 23–29, 63. 65M06

— (*with* Korkuna, M. D.; Kuzik, A. M.) Application of the method of summary approximation for the solution of a nonlinear problem of heat conduction. (Ukrainian) *Visnik L'viv. Derzh. Univ. Ser. Mekh.-Mat. No.* 31 (1989), 8–11. 65M99

— (*with* Korkuna, M. D.; Kuzik, A. M.) Investigation of the convergence rate of the summary approximation method in the class $W_2^{1,0}(Q_T)$. (Ukrainian) *Visnik L'viv. Derzh. Univ. Ser. Mekh.-Mat. No.* 33 (1990), 37–39. 65M99

Chumac, V. P. Asymptotics of the moments of the busy period of the priority system $\vec{M}_2|\vec{G}_2|1|\infty$ with orientation under critical load conditions. (Russian. English and Moldavian summaries) *Izv. Akad. Nauk Respub. Moldova Mat.* **1991**, *no.* 2, 71–81, 94. 60K25

— (*with* Mishkoĭ, G. K.) Asymptotics of the queue length of the $\vec{M}_r|\vec{G}_r|1|\infty$ priority queuing system with orientation. *Probability theory and mathematical statistics (Kiev*, 1991), 47–51, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93k:60008**) 60K25

Chumakov, S. M. (*with* Kozerovskiĭ, M. G.) Exactly solvable Dicke models and radiation capture. (Russian. Russian summary) *Trudy Fiz. Inst. Lebedev.* **191** (1989), 150–170, 247. (K. Wódkiewicz) **93e:81155** 81V80

Chumakov, V. V. Multistage decision making problems with noncoincident player interests under conditions of subjective uncertainty. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **32** (1992), *no.* 2, 230–246; *translation in Comput. Math. Math. Phys.* **32** (1992), *no.* 2, 191–204. (Summary) **93b:90077** 90C29 (90A05, 90B50, 90D06)

Chun, Dae Shik The Jiang subgroup of a self-map. *Collection of papers dedicated to Prof. Jong Geun Park on his sixtieth birthday (Korean)*, 167–172, *Jeonbug, Seoul*, 1989. (J. Matkowski) **93f:55003** 55M20 (55Q99)

Chun, Yoo Bong (*with* Ko, Hyoung J.) Certain exact complexes associated to the Pieri type skew Young diagrams. *Bull. Korean Math. Soc.* **29** (1992), *no.* 2, 265–275. (Mihalis Maliakas) **93i:20049** 20G05 (05E10)

Chun, Young W. Two-dimensional heat transfer problem using the boundary integral equation. (English summary) *J. Franklin Inst.* **329** (1992), *no.* 6, 1147–1152. (P. M. Gupta) **93k:80007** 80A20 (45K05, 80–08)

Chun, Youngsub (*with* Thomson, William L.) Bargaining problems with claims. (English summary) *Math. Social Sci.* **24** (1992), *no.* 1, 19–33. (Summary) **93d:90073** 90D12 (90A60)

Chunaeva, M. S. (*with* Vernik, A. N.) Characteristic functions of the closures of a linear relation in a space with indefinite metric. (Russian) *Functional analysis, No.* 31 (*Russian*), 50–61, *Ul'yanovsk. Gos. Ped. Inst., Ul'yanovsk*, 1990. (T. Ando) **93k:47046** 47B50 (47A45)

Chung, Chi Ming (*with* Pai, Wen C.) A family of testing path selecting criteria. (English summary) *Internat. J. Inform. Management Sci.* **2** (1991), *no.* 1, 81–93. 68M15 (94C12)

Chung, Dong Myung Conditional Feynman integrals for the Fresnel class of functions on abstract Wiener spaces. *Gaussian random fields (Nagoya*, 1990), 172–186, *Ser. Probab. Statist.*, 1, *World Sci. Publishing, River Edge, NJ*, 1991. (Summary) **93c:28013** 28C20 (46G12, 60H05, 81S40)

Chung, Fan R. K. Labelings of graphs. *Selected topics in graph theory*, 3, 151–168, *Academic Press, San Diego, CA*, 1988. (*see* **93b:05003**) 05C78

— Quasi-random classes of hypergraphs. *Random Structures Algorithms* **1** (1990), *no.* 4, 363–382. (A. G. Thomason) **93b:05126** 05C65 (05C80)

— Improved separators for planar graphs. *Graph theory, combinatorics, and applications, Vol.* 1 (*Kalamazoo, MI*, 1988), 265–270, *Wiley-Intersci. Publ., Wiley, New York*, 1991. (Summary) **93b:05152** 05C85

— (*with* Graham, R. L.) Maximum cuts and quasirandom graphs. *Random graphs, Vol.* 2 (*Poznań*, 1989), 23–33, *Wiley-Intersci. Publ., Wiley, New York*, 1992. (E. M. Palmer) **93b:05149** 05C80

— Graphs with small diameter after edge deletion. (English summary) *Discrete Appl. Math.* **37/38** (1992), 73–94. (L. Caccetta) **93k:05084** 05C35

— (*with* Diaconis, Persi; Graham, R. L.) Universal cycles for combinatorial structures. (English summary) *Discrete Math.* **110** (1992), *no.* 1-3, 43–59. (Giuseppe Pellegrino) **93m:05018** 05A99 (05C20)

— (*with* Salehi, Jawad A.; Wei, Victor K.) Correction to: "Optical orthogonal codes: design, analysis, and applications" [IEEE Trans. Inform. Theory **35** (1989), no. 3, 595–604; MR 91g:94032]. *IEEE Trans. Inform. Theory* **38** (1992), *no.* 4, 1429. 94B60 (94B27)

— Subgraphs of a hypercube containing no small even cycles. *J. Graph Theory* **16** (1992), *no.* 3, 273–286. (R. C. Entringer) **93g:05073** 05C35 (05C55)

— (*with* Sternberg, Shlomo) Laplacian and vibrational spectra for homogeneous graphs. (English summary) *J. Graph Theory* **16** (1992), *no.* 6, 605–627. (Robert Brooks) **93j:58135** 58G25 (05C25, 05C50, 92E10)

— (*with* Graham, R. L.) Cohomological aspects of hypergraphs. *Trans. Amer. Math. Soc.* **334** (1992), *no.* 1, 365–388. (G. Ewald) **93a:05097** 05C65 (18G99, 55N99, 57Q99, 60C05)

— (*with* Mumford, David) Chordal completions of grids and planar graphs. (English summary) *Planar graphs (New Brunswick, NJ*, 1991), 37–40, *DIMACS Ser. Discrete Math. Theoret. Comput. Sci.*, 9, *Amer. Math. Soc., Providence, RI*, 1993. (*see* **93m:05005**) 05C85

— (*with* Cleve, Richard; Dagum, Paul) A note on constructive lower bounds for the Ramsey numbers $R(3, t)$. (English summary) *J. Combin. Theory Ser. B* **57** (1993), *no.* 1, 150–155. (Summary) **93m:05135** 05C55

— (*with* Tetali, Prasad) Communication complexity and quasi randomness. (English summary) *SIAM J. Discrete Math.* **6** (1993), *no.* 1, 110–123. (Summary) **93k:05181** 05D05 (05C65, 68M10, 68Q30)

Chung, H. J. (*with* Koh, In Gyu) Solutions to the quantum Yang-Baxter equation for the exceptional Lie algebras with a spectral parameter. *J. Math. Phys.* **32** (1991), *no.* 9, 2406–2408. (Summary) **93f:82019** 82B23 (17B37)

Chung, Han Yeong (*with* Lee, Kee-Won) On the model selection criteria in normal distributions. (English summary) *J. Korean Statist. Soc.* **21** (1992), *no.* 2, 93–110. (Summary) **93m:62061** 62F99

Chung, Hung Yüan (*with* Chang, Wen Jer) Covariance control with variance constraints for continuous perturbed stochastic systems. (English summary) *Systems Control Lett.* **19** (1992), *no.* 5, 413–417. 93E03 (93B51)

— (*with* Chang, Wen Jer) Upper bound covariance control of discrete perturbed systems. (English summary) *Systems Control Lett.* **19** (1992), *no.* 6, 493–498. (V. N. Fomin) **93j:93137** 93E03 (93B25, 93B50)

— (*with* Chang, Wen Jer) A study of H_∞ norm and variance-constrained design using dynamic output feedback for linear discrete systems. (English summary) *Internat. J. Control* **57** (1993), *no.* 2, 473–483. (Summary) **93i:93040** 93B36 (93B51)

Chung, In Jae (*with* Koh, Sung Eun) A note on totally geodesic maps. *Bull. Korean Math. Soc.* **29** (1992), *no.* 2, 233–236. (Xiao Wei Peng) **93j:58031** 58E20 (53C40)

Chung, In Sang (*with* Cha, Shin; Kwon, Yong Rae) Complexity measures for concurrent programs based on information-theoretic metrics. (English summary) *Inform. Process. Lett.* **46** (1993), *no.* 1, 43–50. 68Q30 (68Q10)

Chung, Jae Myung (*with* Kim, Myung-Hwan[1]) A correspondence between Hecke rings $\mathscr{L}_0^n(q)$ and $\mathscr{D}^n$. *Bull. Korean Math. Soc.* **29** (1992), *no.* 1, 101–116. (From the introduction) **93g:11045** 11F60 (11F46)

Chung, Jaeyoung (*with* Chung, Soon-Yeong; Kim, Dohan) Une caractérisation de l'espace $\mathscr{S}$ de Schwartz. (English and French summaries) [A characterization of the Schwartz space $\mathscr{S}$] *C. R. Acad. Sci. Paris Sér. I Math.* **316** (1993), *no.* 1, 23–25. (Summary) **93m:46040** 46F05

Chung, Jin Myung (*with* Rim, Joong Kyu; Ahn, Seung Ho; Kim, Dong Soo) A proof of the Peter-Weyl theorem by Laplacian. *Collection of papers dedicated to Prof. Jong Geun Park on his sixtieth birthday (Korean)*, 29–44, *Jeonbug, Seoul*, 1989. (Stig I. Andersson) **93g:58134** 58G03 (22E30)

Chung, K. L. *see* **Chung, Kai Lai**

Chung, K. W. (*with* Lam, James) Error bounds for Padé approximations of e^{-z} on the imaginary axis. *J. Approx. Theory* **69** (1992), *no.* 2, 222–230. (H. Wallin) **93d:41014** 41A21

Chung, Kai Lai *see* **Seminar: Stochastic Processes, 93b:60005**

Chung, Kin Yan Subspaces and graphs. *Proc. Amer. Math. Soc.* **119** (1993), *no.* 1, 141–146. (Gustavo Corach) **93k:47003** 47A05 (46C99, 46M99, 58B10)

Chung, Kuo Liang (*with* Chen, Wen Chin; Lin, Fêng Ch'ing) On the complexity of search algorithms. (English summary) *IEEE Trans. Comput.* **41** (1992), *no.* 9, 1172–1176. (Summary) **93g:68018** 68P10

Chung, Ming Hui (*with* Lin, Ts'ung Wu; Huang, Chin T'ien) Solving optimization problems by searching along a curve. (English and Chinese summaries) *J. Chinese Inst. Engrs.* **15** (1992), *no.* 4, 427–434. 65K10

Chung, Myung-Hoon Generalized models with exponential interactions: the triangle model. *Internat. J. Modern Phys. A* **7** (1992), *no.* 9, 1953–1976. (Summary) **93k:81195** 81T40

— Space-time fluctuations coupled to primary fields. (English summary) *Modern Phys. Lett. A* **7** (1992), *no.* 36, 3391–3396. (Summary) **93g:81141** 81T40

Chung, Myung S. (*with* West, Douglas B.) Large P_4-free graphs with bounded degree. (English summary) *J. Graph Theory* **17** (1993), *no.* 1, 109–116. (András Gyárfás) **93m:05096** 05C35

Chung, S. L. (*with* Hanson, F. B.; Xu, H. H.) Parallel stochastic dynamic programming: finite element methods. Second NIU Conference on Linear Algebra, Numerical Linear Algebra and Applications (DeKalb, IL, 1991). *Linear Algebra Appl.* **172** (1992), 197–218. (Summary) **93c:90049** 90C15 (65K05, 65Y05, 90C39)

Chung, S.-T. (*with* Grizzle, J. W.) Internally exponentially stable nonlinear discrete-time noninteracting control via static feedback. *Internat. J. Control* **55** (1992), *no.* 5, 1071–1092. (Summary) **93b:93096** 93D15 (93C10, 93C55)

Chung, Shu (*with* Haug, Edward J.) A hybrid variational method for multibody dynamics. (English summary) *Internat. J. Numer. Methods Engrg.* **36** (1993), *no.* 1, 87–109. (Summary) **93j:70002** 70–08 (70B15, 70E99)

Chung, Soon-Yeong (*with* Kim, Dohan; Kim, Sung Ki) Equivalence of the spaces of ultradifferentiable functions and its applications to Whitney extension theorem. (English and Italian summaries) *Rend. Mat. Appl.* (7) **12** (1992), *no.* 2, 365–380. (Michael Langenbruch) **93k:46030** 46F05 (26A24, 46E10)

— (*with* Chung, Jaeyoung; Kim, Dohan) Une caractérisation de l'espace $\mathscr{S}$ de Schwartz. (English and French summaries) [A characterization of the Schwartz space $\mathscr{S}$] *C. R. Acad. Sci. Paris Sér. I Math.* **316** (1993), *no.* 1, 23–25. (Summary) **93m:46040** 46F05

— (*with* Kim, Dohan) Equivalence of the defining sequences for ultradistributions. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 1, 93–94. (J. Horváth) **93f:46057** 46F05 (26E10)

Chung, Stephen-wei (*with* Ahn, Changrim; Tye, S.-H. Henry) New parafermion, SU(2) coset and $N = 2$ superconformal field theories. *Nuclear Phys. B* **365** (1991), *no.* 1, 191–240. (Jean-Pierre Ader) **93a:81162** 81T40 (17B81, 81R10, 81T60, 81T70)

— (*with* Lyman, Edwin; Tye, S.-H. Henry) Fractional supersymmetry and minimal coset models in conformal field theory. *Internat. J. Modern Phys. A* **7** (1992), *no.* 14, 3339–3377. (Stanislav Z. Pakuliak) **93d:81152** 81T40 (81R10, 81T70)

Chung, Sung S. (*with* Park, Byeong U.; Seog, Kyung H.) An empirical investigation of the shifted power transformation method in density estimation. (English summary) *Comput. Statist. Data Anal.* **14** (1992), *no.* 2, 183–191. 62G05

Chung, T. J. (*with* Kim, Y. M.) Analysis of turbulent reacting flows in combustion. *Finite elements in fluids, Vol.* 8 (*Huntsville, AL*, 1989), 333–354, *Ser. Comput. Phys. Process. Mech. Thermal Sci., Hemisphere, Washington, DC*, 1992. (*see* **93e:76050**) 80A25 (76F99, 76N15)

— *see also* **Finite elements in fluids, 93e:76050**

Chung, Tae-Sang (*with* Wu, Chia Ju) A computationally efficient numerical algorithm for the minimum-time control problem of continuous systems. *Automatica J. IFAC* **28** (1992), *no.* 4, 841–847. 49M05 (93B40)

Chung, Won-Sang (*with* Lee, Jungjai; Cho, Jin-Ho) Quaternion solutions of four-dimensional Liouville and sine-Gordon equations. (English summary) *Modern Phys. Lett. A* **7** (1992), *no.* 27, 2527–2533. (Nicolae Anghel) **93h:81020** 81Q05 (30G35, 35Q53)

— Canonical formalism of two-dimensional induced supergravity. (English summary) *Modern Phys. Lett. A* **7** (1992), *no.* 33, 3109–3117. (W. Cox) **93k:81237** 81T70

— The chiral version of the super Liouville action from the OSp(1|2) Chern-Simons theory. (English summary) *Phys. Lett. B* **292** (1992), *no.* 3-4, 290–294. (C. Gauthier) **93k:81196** 81T40 (81T60)

Chung, Younshik (*with* Dey, Dipak K.) Compound Poisson distributions: properties and estimation. (English summary) *Comm. Statist. Theory Methods* **21** (1992), *no.* 11, 3097–3121. (A. Balogh) **93m:62037** 62E15 (62F10, 62F15)

Chuprina, V. E. Controllability of a linear time-independent discrete system on a subspace with retention. (Russian) *Vestnik Khar'kov. Univ. No.* 361, *Prikl. Mat. Mekh.* (1991), 71–78. (Mikołaj Busłowicz) **93j:93013** 93B05 (93B27, 93C45, 93C55)

Chuprunov, A. N. Limit theorems for stable laws in Banach spaces. (English summary) *New trends in probability and statistics, Vol.* 1 (*Bakuriani*, 1990), 106–110, *VSP, Utrecht*, 1991. (Summary) **93h:60009** 60B12

— Spaces connected with sequences of independent random elements. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* **1991,** *no.* 9, 68–74; *translation in Soviet Math. (Iz. VUZ)* **35** (1991), *no.* 9, 67–72. (From the introduction) **93c:46043** 46E30 (60B11)

— Spaces of sequences in a Banach space that are connected with a sequence of independent random variables. (Russian) *Teor. Veroyatnost. i Primenen.* **36** (1991), *no.* 1, 186–191; *translation in Theory Probab. Appl.* **36** (1991), *no.* 1, 143–149 (1992). (From the text) **93e:60010** 60B11

— Generalization of spaces of stable and Rademacher types p. (Russian) *Teor. Veroyatnost. i Primenen.* **36** (1991), *no.* 3, 521–534; *translation in Theory Probab. Appl.* **36** (1991), *no.* 3, 445–458 (1992). (Jerzy Szulga) **93a:46026** 46B20 (46E30, 60B11)

Churbanov, Yu. D. Some classes of homogeneous Φ-spaces of order 5. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* **1992,** *no.* 2, 88–90. (O. Kowalski) **93m:53045** 53C30

Church, P. T. (*with* Timourian, J. G.) Global fold maps in differential and integral equations. *Nonlinear Anal.* **18** (1992), *no.* 8, 743–758. (Jacobo Pejsachowicz) **93b:58021** 58C27 (47H99, 47N20, 58E07)

— (*with* Dancer, E. N.; Timourian, J. G.) The structure of a nonlinear elliptic operator. *Trans. Amer. Math. Soc.* **338** (1993), *no.* 1, 1–42. (P. P. Zabreiko) **93j:35076** 35J65 (47H15, 47N20, 58C27)

Church, Richard (*with* Current, John) Maximal covering tree problems. (English summary) *Naval Res. Logist.* **40** (1993), *no.* 1, 129–142. 90C35

Churchland, Paul M. Representation and high-speed computation in neural networks. *The foundations of artificial intelligence*, 337–359, *Cambridge Univ. Press, Cambridge*, 1990. (*see* **93b:68073**) 68T05 (68T30, 92B20)

Churilov, A. N. A frequency criterion for the stability of nonlinear impulse systems with an even pulsation law. (Russian. Russian summary) *Avtomat. i Telemekh.* **1992,** *no.* 4, 93–100; *translation in Automat. Remote Control* **53** (1992), *no.* 4, *part* 2, 554–560. (Summary) **93f:93093** 93D05

Churilov, S. M. (*with* Shukhman, I. G.) Weakly nonlinear theory of the alternation of modes in a circular shear flow. (English summary) *J. Fluid Mech.* **243** (1992), 155–169. (Summary) **93g:76060** 76E30 (76U05)

Churkina, N. I. Periodic Poincaré solutions of Hamiltonian systems with one and a half degrees of freedom. (Russian) *Analytic and numerical methods for studying mechanical systems* (*Russian*), 38–40, *Moskov. Aviatsion. Inst., Moscow*, 1989. (*see* **93e:00015**) 58F22 (58F05, 70H05)

Chvála, František On the linear Boltzmann kinetic equation involving external forces. *Acta Tech. ČSAV* **36** (1991), *no.* 2, 231–253. (Carlo Cercignani) **93c:82047** 82C40 (35Q99, 47N55, 76P05)

— Corrigenda: "On the linear Boltzmann kinetic equation involving external forces" [Acta Tech. ČSAV **36** (1991), no. 2, 231–253; MR 93b:82047]. *Acta Tech. ČSAV* **36** (1991), *no.* 6, 769. (Carlo Cercignani) **93c:82048** 82C40 (35Q99, 47N55, 76P05)

— Spatially homogeneous linear Boltzmann equation with external forces in Lebesgue spaces involving exponential weights. (English summary) *Acta Tech. ČSAV* **37** (1992), *no.* 2, 129–148. (Carlo Cercignani) **93i:82061** 82C40 (35Q99, 45H05, 76P05)

Chvátal, V. (*with* McDiarmid, Colin J. H.) Small transversals in hypergraphs. *Combinatorica* **12** (1992), *no.* 1, 19–26. (E. Olaru) **93i:05095** 05C65

Chvosta, P. (*with* Aslangul, C.; Pottier, N.; Saint-James, D.; Skála, L.) Random-random walk on an asymmetric chain with a trapping attractive center. (English summary) *J. Statist. Phys.* **69** (1992), *no.* 1-2, 17–34. (Summary) **93g:82086** 82C41

Chwa, Kyung Yong (*with* Doh, Jeong-In) An algorithm for determining visibility of a simple polygon from an internal line segment. (English summary) *J. Algorithms* **14** (1993), *no.* 1, 139–168. (Nikolaj M. Korneenko) **93k:68101** 68U05 (52B55)

Chwang, Allen T. (*with* Hwang, Wei-Shien) The swirling round laminar jet. *J. Engrg. Math.* **26** (1992), *no.* 2, 339–348. (Summary) **93f:76035** 76D25

Chyakanavichyus, V. *see* **Čekanavičius, Vydas**

Chyung, Dong H. (*with* Bai, Er Wei) Improving delay estimates derived from least-square algorithms and Padé approximations. (English summary) *Internat. J. Systems Sci.* **24** (1993), *no.* 4, 745–756. (Summary) **93j:93036** 93B30 (93B40)

Chyupaila, R. Yu. *see* **Čiupaila, Regimantas J.**

Chzhou, Shchan'yui *see* **Zhou, Xiang Yu**

Ciafaloni, Marcello (*with* Cappelli, Andrea; Valtancoli, Paolo) Classical scattering in 2 + 1 gravity with N point sources. *Nuclear Phys. B* **369** (1992), *no.* 3, 669–706. (D. K. Sen) **93b:83050** 83C99 (81T13, 83C45)

Cialdea, Alberto The simple layer potential for the biharmonic equation in n variables. (Italian summary) *Atti Accad. Naz. Lincei Cl. Sci. Fis. Mat. Natur. Rend. Lincei* (9) *Mat. Appl.* **2** (1991), *no.* 2, 115–127. (D. G. Natroshvili) **93e:31009** 31B30 (35J40)

— The multiple layer potential for the biharmonic equation in n variables. (English and Italian summaries) *Atti Accad. Naz. Lincei Cl. Sci. Fis. Mat. Natur. Rend. Lincei* (9) *Mat. Appl.* **3** (1992), *no.* 4, 241–259. (Summary) **93m:35038** 35C15 (31B30, 35J30)

Cialdea, Marta Resolution for some first-order modal systems. *Theoret. Comput. Sci.* **85** (1991), *no.* 2, 213–229. (Michael V. Zakharyashchev) **93e:03018** 03B35 (03B45, 68Q55, 68T15)

Cialkowski, M. J. (*with* Grysa, K.; Jankowski, J.) Inverse problems of the linear nonstationary heat transfer equation. Bericht über die Wissenschaftliche Jahrestagung der GAMM (Kraków, 1991). *Z. Angew. Math. Mech.* **72** (1992), *no.* 6, T611–T614. (Ulrich Tautenhahn) **93f:80014** 80A23 (35R30, 65M60, 80–08)

Ciampi, Antonio (*with* Abrahamowicz, Michal; Ramsay, James O.) Nonparametric density estimation for censored survival data: regression-spline approach. (English and French summaries) *Canad. J. Statist.* **20** (1992), *no.* 2, 171–185. (Summary) **93e:62099** 62G05

— Constructing prediction trees from data: the RECPAM approach. (English summary) *Computational aspects of model choice* (*Prague*, 1991), 105–152, *Contrib. Statist., Physica, Heidelberg*, 1993. (*see* **93k:62001**) 62H30 (62P99)

Ciampolini, Anna (*with* Brogi, Antonio; Lamma, Evelina; Mello, Paola) The implementation of a distributed model for logic programming based on multiple-headed clauses. (English summary) *Inform. Process. Lett.* **42** (1992), *no.* 6, 331–338. (Summary) **93e:68011** 68N17

dezani-Ciancaglini, Mariangiola *see* **Dezani-Ciancaglini, Mariangiola**

Cianchi, Andrea Maximizing the L^∞ norm of the gradient of solutions to the Poisson equation. (English summary) *J. Geom. Anal.* **2** (1992), *no.* 6, 499–515. (W. P. Ziemer) **93k:35070** 35J05 (35B45, 35B50)

— Local minimizers and rearrangements. (English summary) *Appl. Math. Optim.* **27** (1993), *no.* 3, 261–274. (Françoise Berquier) **93j:49019** 49K10 (35B45, 49N60)

Cianci, Roberto *see* **Joly, G. C. et al., 93a:83007**

Ciancio, Vincenzo (*with* Verhás, József) On heat conduction in media with isotropic microstructure. Memoirs of mathematical physics in honor of Giovanni Carini on his 70th birthday (Italian). *Atti Accad. Peloritana Pericolanti Cl. Sci. Fis. Mat. Natur.* **68** (1990), *suppl.* 1, 41–53 (1991). (Summary) **93a:80004** 80A20 (73B30, 73S10)

— Thermodynamic theory for heat radiation. *Nonlinear waves and dissipative effects* (*Reggio di Calabria*, 1990), 196–203, *Pitman Res. Notes Math. Ser.*, 227, *Longman Sci. Tech., Harlow*, 1991. (Summary) **93c:80003** 80A20 (86A10)

— On the generalization of the Onsager-Casimir reciprocal relations. (English summary) Proceedings of the Taormina Conference on Thermodynamics (Taormina, 1991). *Atti Accad. Peloritana Pericolanti Cl. Sci. Fis. Mat. Natur.* **70** (1992), *suppl.* 1, 233–242. (Summary) **93m:80002** 80A05

Ciapessoni, Emanuele (*with* Montanari, Angelo; Maim, Enrico; Ratto, Elena) Dealing with time granularity in the event calculus. (English summary) *Fifth generation computer systems, Vol.* 1, 2 (*Tokyo*, 1992), 702–712, *Ohm, Tokyo*, 1992. (*see* **93i:68007**) 03B70 (68T27)

Ciarlet, Philippe G. The method of asymptotic expansions for a non-linearly elastic clamped plate. *Nonlinear partial differential equations and their applications. Collège de France Seminar, Vol. X* (*Paris*, 1987–1988), 146–190, *Pitman Res. Notes Math. Ser.*, 220, *Longman Sci. Tech., Harlow*, 1991. (Patrick J. Rabier) **93a:73020** 73C99 (35C20, 35Q72, 73C50, 73K10)

— Échange de limites en théorie asymptotique de coques. I. En premier lieu, "la coque devient une plaque". (English summary) [Interchanging limits in asymptotic shell theory. I. First, "the shell becomes a plate"] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 1, 107–111. (Christoph Schwab) **93f:73069** 73K15 (35C20, 73K10)

— Échange de limites en théorie asymptotique de coques. II. En premier lieu, l'épaisseur tend vers zéro. (English and French summaries) [Interchanging limits in asymptotic shell theory. II. First, the thickness approaches zero] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 2, 227–233. (Christoph Schwab) **93k:73061** 73K15 (73C99)

— (*with* Bourquin, Frédéric; Geymonat, Giuseppe; Raoult, Annie) Γ-convergence et analyse asymptotique des plaques minces. (English and French summaries) [Γ-convergence and asymptotic analysis of thin plates] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 9, 1017–1024. (Luis Trabucho) **93g:73008** 73B27 (49J45, 73K10, 73V25)

— (*with* Miara, Bernadette) Justification of the two-dimensional equations of a linearly elastic shallow shell. *Comm. Pure Appl. Math.* **45** (1992), *no.* 3, 327–360. (Christoph Schwab) **93e:73023** 73K15 (35Q72, 73C99)

— (*with* Miara, Bernadette) On the ellipticity of linear shell models. *Z. Angew. Math. Phys.* **43** (1992), *no.* 2, 243–253. (Introduction) **93c:73022** 73C02 (73K15)

Ciarletta, M. (*with* Scarpetta, E.) On existence and uniqueness for viscoelastic compressible fluids. (English summary) *Riv. Mat. Univ. Parma* (4) **17** (1991), 159–169 (1992). (J. A. Nohel) **93g:76009** 76A10 (35Q35, 45K05, 73F05, 73F15)

Cibils, M. B. (*with* Gisin, Nicolas) Quantum diffusions, quantum dissipation and spin relaxation. (English summary) *J. Phys. A* **25** (1992), *no.* 19, 5165–5176. (Kalyan B. Sinha) **93j:81055** 81S20 (81P20)

Cibula, Július von Kármán equations. III. Solvability of the von Kármán equations with conditions for geometry of the boundary of the domain. (Slovak summary) *Appl. Math.* **36** (1991), *no.* 5, 368–379. (L. P. Lebedev) **93a:73055** 73K10 (35D05, 35G30, 35Q99)

Cibulis, Andris A theorem on the invariant of an abstract game and its application in the analysis of mathematical puzzles. (Russian. English, Russian and Latvian summaries) *Mathematics* (*Russian*), 151–160, *Latv. Univ. Zināt. Raksti*, 562, *Latv. Univ., Riga*, 1991. (*see* **93f:00009**) 90D40

Ciccarella, G. (*with* Dalla Mora, M.; Germani, Alfredo) A Luenberger-like observer for nonlinear systems. (English summary) *Internat. J. Control* **57** (1993), *no.* 3, 537–556. (Xiao Ping Liu) **93k:93019** 93B07 (93C10, 93E10)

Cicci, David A. Implementation of ridge-type estimation methods using orthogonal transformations. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 11, 1834–1837. 93E10

Ciccoli, M. C. (*with* Fezoui, L.; Désidéri, J.-A.) Efficient methods for inviscid nonequilibrium hypersonic flow fields. *Rech. Aérospat.* (*English Edition*) **1992,** *no.* 1, 37–52; *translated from Rech. Aérospat.* **1992,** *no.* 1, 37–52 (*French. English and French summaries*). (Summary) **93f:76066** 76M10 (76K05, 80–08, 80A32)

Cichocki, B. (*with* Blawzdziewicz, J.; van Beijeren, H.) H-theorem for a linear kinetic theory. *J. Statist. Phys.* **66** (1992), *no.* 1-2, 607–633. (Carlo Cercignani) **93b:82062** 82C40

Cichoń, J. (*with* Kharazishvili, A. B.; Węglorz, B.) On sets of Vitali's type. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 4, 1243–1250. (Endre Pap) **93j:28015** 28B20 (03C62, 03E35, 54C65)

Cichoń, Mieczysław Multivalued differential equations with noncontinuous right-hand side. (English summary) Third International Seminar on Ordinary Differential Equations (Poznań, 1990). *Fasc. Math. No.* 23 (1991), 43–50 (1992). (Manfred Goebel) **93f:34026** 34A60 (34A12)

— Multivalued perturbations of m-accretive differential inclusions in a nonseparable Banach space. (English summary) *Comment. Math. Prace Mat.* **32** (1992), 11–17. (Ioan I. Vrabie) **93m:34019** 34A60 (34G20, 47N20)

Cicogna, G. (*with* Gaeta, Giuseppe) Lie-point symmetries in bifurcation problems. (English and French summaries) *Ann. Inst. H. Poincaré Phys. Théor.* **56** (1992), *no.* 4, 375–414. (A. Vanderbauwhede) **93i:58134** 58F35 (58F14)

— (*with* Gaeta, Giuseppe) Lie point-symmetries for autonomous systems and resonance. *J. Phys. A* **25** (1992), *no.* 6, 1535–1538. (Wen Xiu Ma) **93c:58193** 58F35

— (*with* Gaeta, Giuseppe) Nonlinear Lie symmetries in bifurcation theory. (English summary) *Phys. Lett. A* **172** (1993), *no.* 5, 361–364. (Summary) **93i:58113** 58F14 (34C23, 34C35)

Cid, R. (*with* Longás, C.) Correction of orbits of visual binary stars via Fourier series of the mean anomaly. (Spanish. English summary) *Rev. Acad. Cienc. Zaragoza* (2) **47** (1992), 129–135. (Summary) **93j:85003** 85A05 (85–08)

Čiegis, Raimondas (*with* Bayarunas, Ėitvidas) Adaptive difference schemes for nonstationary one-dimensional problems. (Russian. English and Lithuanian summaries) *Differentsial'nye Uravneniya i Primenen. No.* 46 (1991), 25–41. (Summary) **93b:65123** 65M06 (65K10)

— (*with* Čiegis, Rem.) A study of spectral stability for efficient difference schemes. (Russian. English and Lithuanian summaries) *Differentsial'nye Uravneniya i Primenen. No.* 46 (1991), 90–97. (Summary) **93b:65132** 65M12 (65M06)

— On the difference schemes for problems with nonlocal boundary conditions. (Russian and Lithuanian summaries) *Informatica* **2** (1991), *no.* 2, 155–170, 311, 319. (Summary) **93a:65134** 65N06 (65N12)

— (*with* Čiupaila, Regimantas J.) The conditional minimization method for the numerical solution of a nonstationary problem with free boundaries. (Russian. English and Lithuanian summaries) *Litovsk. Mat. Sb.* **31** (1991), *no.* 2, 369–381; *translation in Lithuanian Math. J.* **31** (1991), *no.* 2, 257–267 (1992). (Summary) **93b:65089** 65K10 (35R35, 65N99, 76M20, 76W05)

— (*with* Čiegis, Rem.) Asymptotic stability of efficient difference schemes. (Russian. English and Lithuanian summaries) *Litovsk. Mat. Sb.* **31** (1991), *no.* 3, 535–548; *translation in Lithuanian Math. J.* **31** (1991), *no.* 3, 370–380 (1992). (Erwin Schechter) **93b:65154** 65N06 (65N12)

— (*with* Norvaišas, Saulius) Mathematical modeling of metal heating by a laser. The dynamic problem. (Russian. English and Lithuanian summaries) *Litovsk. Mat. Sb.* **31** (1991), *no.* 4, 687–699; *translation in Lithuanian Math. J.* **31** (1991), *no.* 4, 481–491 (1992). (Summary) **93b:80005** 80A20 (35Q99, 65P05, 80–08, 80A30)

— (*with* Čiegis, Rem.) Mathematical modeling of metal heating by a laser. The three-dimensional problem. (Russian. English and Lithuanian summaries) *Litovsk. Mat. Sb.* **31** (1991), *no.* 4, 700–707; *translation in Lithuanian Math. J.* **31** (1991), *no.* 4, 491–497 (1992). (Summary) **93b:80006** 80A20 (35Q99, 65P05, 80–08, 80A30)

— Convergence in the C-norm of solutions of difference schemes for a nonlinear nonstationary problem of diffusion-reaction type. (Russian. Russian summary) *Differentsial'nye Uravneniya* **28** (1992), *no.* 7, 1261–1271, 1287; *translation in Differential Equations* **28** (1992), *no.* 7, 1024–1033 (1993). (Reinhard Redlinger) **93m:65130** 65M12 (65M06)

— A study of difference schemes for a class of models of excitability. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **32** (1992), *no.* 6, 878–889; *translation in Comput. Math. Math. Phys.* **32** (1992), *no.* 6, 757–767. (Summary) **93d:65076** 65M06

Čiegis, Rem. (*with* Čiegis, Raimondas) A study of spectral stability for efficient difference schemes. (Russian. English and Lithuanian summaries) *Differentsial'nye Uravneniya i Primenen. No.* 46 (1991), 90–97. (Summary) **93b:65132** 65M12 (65M06)

— (*with* Čiegis, Raimondas) Asymptotic stability of efficient difference schemes. (Russian. English and Lithuanian summaries) *Litovsk. Mat. Sb.* **31** (1991), *no.* 3, 535–548; *translation in Lithuanian Math. J.* **31** (1991), *no.* 3, 370–380 (1992). (Erwin Schechter) **93b:65154** 65N06 (65N12)

— (*with* Čiegis, Raimondas) Mathematical modeling of metal heating by a laser. The three-dimensional problem. (Russian. English and Lithuanian summaries) *Litovsk. Mat. Sb.* **31** (1991), *no.* 4, 700–707; *translation in Lithuanian Math. J.* **31** (1991), *no.* 4, 491–497 (1992). (Summary) **93b:80006** 80A20 (35Q99, 65P05, 80–08, 80A30)

Ciesielski, Krzysztof Density-to-deep-$\mathcal{I}$-density continuous functions. *Real Anal. Exchange* **17** (1991/92), *no.* 1, 171–182. (Władysław Wilczyński) **93b:26005** 26A21 (54C05, 54C30)

— (*with* Larson, Lee M.) Various continuities with the density, $\mathcal{I}$-density and ordinary topologies on $\mathbf{R}$. *Real Anal. Exchange* **17** (1991/92), *no.* 1, 183–210. (Władysław Wilczyński) **93b:26006** 26A21 (54C05, 54C30)

— (*with* Larson, Lee M.) The Peano curve and $\mathcal{I}$-approximate differentiability. *Real Anal. Exchange* **17** (1991/92), *no.* 2, 608–621. (Władysław Wilczyński) **93g:26003** 26A15 (26A24, 26A30)

— (*with* Pogoda, Zdzisław) Polish topology in the first decades of the 20th century. (Polish) *Mathematics at the turn of the twentieth century (Polish)* (*Jaworze*, 1988), 163–172, *Prace Nauk. Univ. Śląsk. Katowic.*, 1253, *Univ. Śląski, Katowice*, 1992. (Roman Duda) **93k:01086** 01A72 (01A60, 54–03)

— (*with* Larson, Lee M.) Level sets of density continuous functions. *Proc. Amer. Math. Soc.* **116** (1992), *no.* 4, 963–969. (From the introduction) **93d:26004** 26A21

— Remarks about connected spaces. (English summary) *Questions Answers Gen. Topology* **10** (1992), *no.* 2, 181–185. (Summary) **93g:54031** 54D05

— (*with* Larson, Lee M.; Ostaszewski, Krzysztof) Semigroups of $\mathcal{I}$-density continuous functions. *Semigroup Forum* **45** (1992), *no.* 2, 191–204. (Władysław Wilczyński) **93i:26004** 26A24 (20M20, 26A15, 54C35)

— Linear subspace of $\mathbf{R}^{\mathbf{I}}$ without dense totally disconnected subsets. (English summary) *Fund. Math.* **142** (1993), *no.* 1, 85–88. (Klaas Pieter Hart) **93k:54010** 54A35 (04A30, 54D15)

— (*with* Larson, Lee M.) Refinements of the density and $\mathcal{I}$-density topologies. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 2, 547–553. (William Eames) **93g:26018** 26A99 (54H99)

Ciesielski, Zbigniew Asymptotic nonparametric spline density estimation in the Sobolev norm in several variables. *Stochastic methods in experimental sciences (Szklarska Poręba*, 1989), 59–78, *World Sci. Publishing, River Edge, NJ*, 1990. (E. F. Schuster) **93j:62092** 62G05 (41A15, 62G20)

— Asymptotic nonparametric spline density estimation. *Probab. Math. Statist.* **12** (1991), *no.* 1, 1–24 (1992). (Girdhar G. Agarwal) **93d:62058** 62G05 (41A15)

— On the A. A. Markov inequality for polynomials in the L^p case. *Approximation theory (Memphis, TN*, 1991), 257–262, *Lecture Notes in Pure and Appl. Math.*, 138, *Dekker, New York*, 1992. (B. Boyanov) **93h:41015** 41A17

Cieślak, Waldemar (*with* Miernowski, Andrzej; Mozgawa, Witold) Isoptics of a closed strictly convex curve. *Global differential geometry and global analysis* (*Berlin*, 1990), 28–35, *Lecture Notes in Math.*, 1481, *Springer, Berlin*, 1991. (G. D. Chakerian) **93f:52003** 52A10 (52A22)

Cieslik, Dietmar The Steiner-ratio in Banach-Minkowski planes. *Contemporary methods in graph theory*, 231–247, *Bibliographisches Inst., Mannheim*, 1990. (Ding Zhu Du) **93b:05043** 05C05 (51M05)

— The Steiner minimal tree problem in L_p^2. (English summary) *Fourth Czechoslovakian Symposium on Combinatorics, Graphs and Complexity* (*Prachatice*, 1990), 59–62, *Ann. Discrete Math.*, 51, *North-Holland, Amsterdam*, 1992. (*see* **93i:05004**) 05C05

Cieśliński, Jan An effective method to compute N-fold Darboux matrix and N-soliton surfaces. *J. Math. Phys.* **32** (1991), *no.* 9, 2395–2399. (David J. Kaup) **93b:58130** 58F37 (35Q51)

— Lie symmetries as a tool to isolate integrable geometries. (English summary) *Nonlinear evolution equations and dynamical systems* (*Baia Verde*, 1991), 260–268, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93h:58140** 58F37 (58F35)

Cifoletti, Giovanna Cleonice ★ La méthode de Fermat: son statut et sa diffusion. (French) [Fermat's method: its status and diffusion] Algèbre et comparaison de figures dans l'histoire de la méthode de Fermat. [Algebra and comparison of figures in the history of Fermat's method] With an English summary. Cahiers d'Histoire et de Philosophie des Sciences. Nouvelle Série [Reports in the History and Philosophy of Science. New Series], 33. *Société Française d'Histoire des Sciences et des Techniques, Paris*, 1990. viii+244 *pp.* (Massimo Galuzzi) **93e:01005** 01A45

Çiftçi, Süleyman On 6-figures in Moufang projective planes. (English summary) *Comm. Fac. Sci. Univ. Ankara Ser. A_1 Math. Statist.* **38** (1989), *no.* 1-2, 21–28 (1990). (Joseph C. Ferrar) **93k:51002** 51A35

Cigler, Johann ★ Grundideen der Mathematik. (German) [Fundamental ideas of mathematics] Mathematische Texte [Mathematical Texts], 5. *Bibliographisches Institut, Mannheim*, 1992. x+268 *pp. ISBN* 3-411-15381-4 (Detlef Laugwitz) **93g:00003** 00A05 (03E70, 03H05, 04–01, 11–01)

Cignoli, Roberto Distributive lattice congruences and Priestley spaces. *Proceedings of the First "Dr. Antonio A. R. Monteiro" Congress on Mathematics* (*Spanish*) (*Bahía Blanca*, 1991), 81–84, *Univ. Nac. del Sur, Bahía Blanca*, 1991. (Shu Hao Sun) **93k:06014** 06B10 (06D05, 54F05)

— (*with* Lafalce, S.; Petrovich, A.) Remarks on Priestley duality for distributive lattices. *Order* **8** (1991), *no.* 3, 299–315. (H. A. Priestley) **93b:06023** 06D05 (03G10)

— (*with* Di Nola, Antonio; Lettieri, Ada) Priestley duality and quotient lattices of many-valued algebras. (Italian summary) *Rend. Circ. Mat. Palermo* (2) **40** (1991), *no.* 3, 371–384. (Introduction) **93f:06014** 06D99

— Complete and atomic algebras of the infinite valued Lukasiewicz logic. Algebraic logic. *Studia Logica* **50** (1991), *no.* 3-4, 375–384. (Jerzy Kotas) **93g:03021** 03B50 (03G25, 06D30)

Cikánek, Petr Matrices of the Stickelberger ideals mod L for all primes up to 125,000. (English summary) *Arch. Math. (Brno)* **27A** (1991), 3–6. (Samuel S. Wagstaff, Jr.) **93i:11149** 11Y40

Ciliberto, Ciro Jacobian endomorphisms. (Italian. English summary) *Rend. Sem. Mat. Fis. Milano* **59** (1989), 213–242 (1992). (Enric Nart) **93d:14002** 14–02 (14H40, 14K10)

— A few comments on some aspects of the mathematical work of F. Enriques. *Geometry and complex variables* (*Bologna*, 1988/1990), 89–109, *Lecture Notes in Pure and Appl. Math.*, 132, *Dekker, New York*, 1991. (I. Dolgachev) **93c:14002** 14–03 (01A70, 14J29)

— (*with* van der Geer, Gerard) On the Jacobian of a hyperplane section of a surface. *Classification of irregular varieties* (*Trento*, 1990), 33–40, *Lecture Notes in Math.*, 1515, *Springer, Berlin*, 1992. (From the introduction) **93f:14015** 14H40 (14J70)

— (*with* Harris, Joseph Daniel; Teixidor i Bigas, Montserrat) On the endomorphisms of $\mathrm{Jac}(W_d^1(C))$ when $\rho = 1$ and C has general moduli. *Classification of irregular varieties* (*Trento*, 1990), 41–67, *Lecture Notes in Math.*, 1515, *Springer, Berlin*, 1992. (John B. Little) **93i:14023** 14H40 (14C22, 14H10)

— (*with* Ballico, Edoardo; Catanese, Fabrizio) Open problems. *Classification of irregular varieties* (*Trento*, 1990), 140–146, *Lecture Notes in Math.*, 1515, *Springer, Berlin*, 1992. (*see* **93d:14005**) 14–02

— (*with* Miranda, Rick) Gaussian maps for certain families of canonical curves. *Complex projective geometry* (*Trieste*, 1989/*Bergen*, 1989), 106–127, *London Math. Soc. Lecture Note Ser.*, 179, *Cambridge Univ. Press, Cambridge*, 1992. (Francesco Bottacin) **93m:14028** 14H45

— (*with* van der Geer, Gerard) Subvarieties of the moduli space of curves parametrizing Jacobians with nontrivial endomorphisms. *Amer. J. Math.* **114** (1992), *no.* 3, 551–570. (H. Lange) **93d:14044** 14H40 (14H10)

— (*with* van der Geer, Gerard; Teixidor i Bigas, Montserrat) On the number of parameters of curves whose Jacobians possess nontrivial endomorphisms. *J. Algebraic Geom.* **1** (1992), *no.* 2, 215–229. (H. Lange) **93c:14025** 14H10 (14H40)

— (*with* Franchetta, Anna) The Gauss mapping for trivalent graphs. (Italian. English and Italian summaries) *Rend. Mat. Appl.* (7) **12** (1992), *no.* 1, 165–196. (Luca Chiantini) **93k:14074** 14N10

— *see also* **Classification of irregular varieties, 93d:14005** *and* **de Franchis, Michele, 93i:01031**

Ciliz, M. Kemal Equilibrium point basins of analog neural networks. (English summary) *Phys. Lett. A* **173** (1993), *no.* 1, 25–29. (Summary) **93i:92005** 92B20 (82C32)

Cilleruelo, Javier (*with* Córdoba, Antonio) $B_2[\infty]$-sequences of square numbers. *Acta Arith.* **61** (1992), *no.* 3, 265–270. (Andrew Granville) **93g:11014** 11B13 (11N64)

Cima, Anna (*with* Gasull, Armengol; Mañosas, Francesc) Some applications of the Euler-Jacobi formula to differential equations. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 1, 151–163. (Carmen Chicone) **93f:58199** 58F21 (34C05)

Cima, Joseph A. (*with* Derrick, William R.) Some solutions of the Beltrami equation with $\|\mu\|_\infty = 1$. *Several complex variables and complex geometry, Part 1* (*Santa Cruz, CA*, 1989), 41–44, *Proc. Sympos. Pure Math.*, 52, *Part 1*, *Amer. Math. Soc., Providence, RI*, 1991. (Juan J. Manfredi) **93b:30017** 30C62 (35J60)

— (*with* Derrick, William R.) Normal solutions of the Beltrami equation for bounded analytic functions. (English summary) *J. Integral Equations Appl.* **4** (1992), *no.* 3, 371–375. (Guo Chun Wen) **93h:30028** 30C62

Cimatti, Giovanni On two problems of electrical heating of conductors. *Quart. Appl. Math.* **49** (1991), *no.* 4, 729–740. (Sam D. Howison) **93c:78005** 78A25 (35Q60, 80A20)

— Note on the theory of temperature dependent resistors. (English summary) *Riv. Mat. Univ. Parma* (4) **17** (1991), 69–82 (1992). (I. Kay) **93g:78026** 78A55 (34B15, 80A20)

— Existence of weak solutions for the nonstationary problem of the joule heating of a conductor. (English summary) *Ann. Mat. Pura Appl.* (4) **162** (1992), 33–42. (Summary) **93i:35073** 35K55 (35D10, 80A20)

Cimikowski, Robert J. Graph planarization and skewness. (English summary) Proceedings of the Twenty-third Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, FL, 1992). *Congr. Numer.* **88** (1992), 21–32. (Summary) **93m:05180** 05C85 (68Q25)

Cimmelli, Vito Antonio (*with* Kosiński, Witold) Evolution hyperbolic equations for heat conduction. *Thermodynamics and kinetic theory* (*Mądralin*, 1990), 11–22, *Ser. Adv. Math. Appl. Sci.*, 12, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93d:73007** 73B30 (80A20)

— Structured adsorbing interface in phase transition of classical fluid mixtures. (English summary) Proceedings of the Fourth International Workshop on Mathematical Aspects of Fluid and Plasma Dynamics (Kyoto, 1991). *Transport Theory Statist. Phys.* **21** (1992), *no.* 4-6, 625–642. (Summary) **93j:82029** 82B24 (73B99, 76A02, 80A15, 82B26)

Cimmino, Gianfranco On some identities involving spherical means. (Italian summary) *Atti Accad. Naz. Lincei Rend. Cl. Sci. Fis. Mat. Natur.* (8) **83** (1989), 69–72 (1990). (Summary) **93d:15023** 15A24

— *see also* **Scorza Dragoni, Giuseppe, 93g:01082**

Cini, Marcello (*with* Serva, Maurizio) Phase space representation of quantum mechanics in terms of coherent states. (English summary) *Nuovo Cimento B* (11) **107** (1992), *no.* 7, 825–833. (Summary) **93f:81048** 81R30 (81S30)

— (*with* Serva, Maurizio) Measurement in quantum mechanics and classical statistical mechanics. *Phys. Lett. A* **167** (1992), *no.* 4, 319–325. (Michael B. Mensky) **93h:81015** 81P15 (81S30)

Çınlar, Erhan Sunset over Brownistan. *Stochastic Process. Appl.* **40** (1992), *no.* 1, 45–53. (John P. Lehoczky) **93f:60120** 60J65 (60K25, 90B22)

— (*with* Bassan, Bruno; Scarsini, Marco) Stochastic comparisons of Itô processes. (English summary) *Stochastic Process. Appl.* **45** (1993), *no.* 1, 1–11. (Youssef Ouknine) **93m:60161** 60J60 (60G44, 60H10, 60J75)

— *see also* **Seminar: Stochastic Processes, 93b:60005**

Cinnella, P. (*with* Grossman, Bernard) Flux-split algorithms for hypersonic flows. (English summary) *Computational methods in hypersonic aerodynamics*, 153–202, *Fluid Mech. Appl.*, 9, *Kluwer Acad. Publ., Dordrecht*, 1991. (Summary) **93i:76065** 76M25 (76K05, 80–08, 80A32)

Cinquegrani, Maria Grazia Certain curves of maximum genus in $\mathbf{P}^3$. (Italian. English summary) *Matematiche* (*Catania*) **45** (1990), *no.* 2, 301–317 (1991). (Ovidiu Păsărescu) **93b:14055** 14H50 (14H10, 14H45)

Cinquini, Silvio (*with* Gherardelli, Francesco) ★ In memoria di Felice Casorati (1890–1990). (Italian) [In memory of Felice Casorati (1890–1990)] With an introduction by Gianni Gilardi and Emilio Gabba. Fonti e Studi per la Storia dell'Università di Pavia [Sources and Studies in the History of the University of Pavia], 17. *Cisalpino—Istituto Editoriale Universitario S.r.l., Milan*, 1992. 84 *pp. ISBN* 88-205-0693-9 (F. Smithies) **93m:01065** 01A70 (01A60, 30–03, 34–03)

Ciolfi, John (*with* Djaferis, T. E.) Representations of robustly stabilizing controllers for systems with parameter uncertainty. *Internat. J. Control* **56** (1992), *no.* 1, 35–49. 93D21

Cioranescu, Doïna (*with* Saint Jean Paulin, J.) Mathematical study of large space structures. *Stabilization of flexible structures* (*Montpellier*, 1989), 6–16, *Lecture Notes in Control and Inform. Sci.*, 147, *Springer, Berlin*, 1990. (Luis Trabucho) **93f:73009** 73B27 (73K05, 73K20)

— (*with* Donato, Patrizia; Zuazua, Enrike) Strong convergence on the exact boundary controllability of the wave equation in perforated domains. *Estimation and control of distributed parameter systems* (*Vorau*, 1990), 99–113, *Internat. Ser. Numer. Math.*, 100, *Birkhäuser, Basel*, 1991. (Jerzy Klamka) **93b:93015** 93B05 (35L15, 93C20, 93C45)

— (*with* Saint Jean Paulin, J.) Particules déformables en suspension dans un fluide visqueux. (English summary) [Suspensions of deformable particles in a viscous fluid] *EDF Bull. Direction Études Rech. Sér. C Math. Inform.* **1991**, *no.* 1, i, 53–76. (Andro Mikelić) **93b:76029** 76D99 (35Q30, 73B27, 76D05, 76M99)

— (*with* Donato, Patrizia; Zuazua, Enrike) Approximate controllability for the wave equation with oscillating coefficients. *Boundary control and boundary variation* (*Sophia-Antipolis*, 1990), 118–124, *Lecture Notes in Control and Inform. Sci.*, 178, *Springer, Berlin*, 1992. (*see* **93b:49001**) 93C05 (93C20)

— (*with* Saint Jean Paulin, J.) Truss structures: Fourier conditions and eigenvalue problem. *Boundary control and boundary variation* (*Sophia-Antipolis*, 1990), 125–141, *Lecture Notes in Control and Inform. Sci.*, 178, *Springer, Berlin*, 1992. (Summary) **93g:35027** 35J05 (35B27, 35P05)

— (*with* Donato, Patrizia; Zuazua, Enrike) Exact boundary controllability for the wave equation in domains with small holes. (English and French summaries) *J. Math. Pures Appl.* (9) **71** (1992), *no.* 4, 343–377. (Florin Iacob) **93k:35037** 35B37 (35L05, 93B05, 93C05)

Cipkowski, W. (*with* Kwiesielewicz, M.; Stolc, L.) Multilevel-multihorizon control of production system in uncertain conditions. (Polish summary) *Systems Sci.* **17** (1991), *no.* 2, 79–92 (1992). (Summary) **93c:93010** 93A13 (93C95)

Cipolatti, Rolci On the existence of standing waves for a Davey-Stewartson system. (English summary) *Comm. Partial Differential Equations* **17** (1992), *no.* 5-6, 967–988. (Thierry Cazenave) **93h:35188** 35Q55 (35J60)

perelli Cippo, Claudio *see* **Perelli Cippo, Claudio**

Cipra, Tomáš (*with* Rubio, Asunción; Trujillo, J.) Time series analysis: recursive methods and their modifications for time series with outliers and missing observations. (English summary) *Extracta Math.* **6** (1991), *no.* 2-3, 64–95. 62M10 (60G35, 62F15)

— (*with* Romera Ayllón, Ma. Rosario) Robust Kalman filter and its application in time series analysis. *Kybernetika* (*Prague*) **27** (1991), *no.* 6, 481–494. (Seihaku Higuchi) **93b:93108** 93E11

— (*with* Romera Ayllón, Ma. Rosario) Recursive time series methods in L_1-norm. (English summary) *L_1-statistical analysis and related methods* (*Neuchâtel*, 1992), 233–243, *North-Holland, Amsterdam*, 1992. (Summary) **93m:62194** 62M10

Ćirić, D. (*with* Mijajlović, Ž.) Class spaces. *Math. Balkanica* (*N.S.*) **6** (1992), *no.* 1, 91–98. (Robert A. Herrmann) **93g:54002** 54A05 (03E70)

Ćirić, Ljubomir On some nonexpansive type mappings and fixed points. (English summary) *Indian J. Pure Appl. Math.* **24** (1993), *no.* 3, 145–149. 54H25

Ćirić, Miroslav (*with* Bogdanović, Stojan) Sturdy bands of semigroups. *Collect. Math.* **41** (1990), *no.* 3, 189–195 (1992). (Summary) **93b:20111** 20M99

— (*with* Bogdanović, Stojan) U_{n+1}-semigroups. *Makedon. Akad. Nauk. Umet. Oddel. Mat.-Tehn. Nauk. Prilozi* **11** (1990), *no.* 1-2, 9–23 (1991). (P. M. Higgins) **93i:20074** 20M10

— (*with* Bogdanović, Stojan) Retractive nil-extensions of regular semigroups. I. (English summary) *Proc. Japan Acad. Ser. A Math. Sci.* **68** (1992), *no.* 5, 115–117. (Summary) **93h:20069a** 20M17

— (*with* Bogdanović, Stojan) Retractive nil-extensions of regular semigroups. II. (English summary) *Proc. Japan Acad. Ser. A Math. Sci.* **68** (1992), *no.* 6, 126–130. (Summary) **93h:20069b** 20M17

— (*with* Bogdanović, Stojan) Primitive π-regular semigroups. (English summary) *Proc. Japan Acad. Ser. A Math. Sci.* **68** (1992), *no.* 10, 334–337. (G. J. Lallement) **93m:20097** 20M17 (20M18)

— (*with* Bogdanović, Stojan) A note on π-regular rings. (English summary) *Pure Math. Appl. Ser. A* **3** (1992), *no.* 1-2, 39–42 (1993). (Summary) **93k:16019** 16E99

— (*with* Bogdanović, Stojan) Decompositions of semigroups induced by identities. (English summary) *Semigroup Forum* **46** (1993), *no.* 3, 329–346. (P. M. Higgins) **93m:20091** 20M07 (20M10)

Ciskowski, R. D. *see* **Boundary element methods in acoustics**

Ciubotariu, Corneliu D. Linear interaction of gravitational waves. (English summary) *Rev. Roumaine Phys.* **37** (1992), *no.* 3, 243–252. (Summary) **93f:83033** 83C35

Čiupaila, Regimantas J. (*with* Čiegis, Raimondas) The conditional minimization method for the numerical solution of a nonstationary problem with free boundaries. (Russian. English and Lithuanian summaries) *Litovsk. Mat. Sb.* **31** (1991), *no.* 2, 369–381; *translation in Lithuanian Math. J.* **31** (1991), *no.* 2, 257–267 (1992). (Summary) **93b:65089** 65K10 (35R35, 65N99, 76M20, 76W05)

Ciurea, E. Un algorithme et un programme pour plus court chemins entre toutes paires de sommets. (Romanian summary) [An algorithm and a program for shortest paths between all pairs of vertices] *Bull. Transylv. Univ. Braşov Ser. C* **34** (1992), 117–124 (1993). 68R10

Civan, Faruk Finite analytic method for numerical solution of mathematical models. (English summary) *Integral methods in science and engineering—90* (*Arlington, TX*, 1990), 270–281, *Ser. Comput. Phys. Process. Mech. Thermal Sci., Hemisphere, New York*, 1991. (*see* **93f:00014**) 65L99 (65N99)

— Quadrature and cubature methods for numerical solution of integro-differential equations. (English summary) *Integral methods in science and engineering—90* (*Arlington, TX*, 1990), 282–297, *Ser. Comput. Phys. Process. Mech. Thermal Sci., Hemisphere, New York*, 1991. (*see* **93f:00014**) 65R20

Čížek, J. *see* **Čížek, Jiří Karel**

Čížek, Jiří Algebraic independence of the values of some E-functions. II. (Russian. English and Czech summaries) *Math. Bohem.* **116** (1991), *no.* 4, 360–365. (John H. Loxton) **93a:11062** 11J85 (11J91)

Čížek, Jiří Karel (*with* Vinette, Francine) Upper and lower bounds of the ground state energy of anharmonic oscillators using renormalized inner projection. *J. Math. Phys.* **32** (1991), *no.* 12, 3392–3404. (Summary) **93m:81024** 81Q05

— (*with* Weniger, Ernst Joachim; Vinette, Francine) The summation of the ordinary and renormalized perturbation series for the ground state energy of the quartic, sextic, and octic anharmonic oscillators using nonlinear sequence transformations. (English summary) *J. Math. Phys.* **34** (1993), *no.* 2, 571–609. (V. I. Yukalov) **93j:81018** 81Q15 (40A05, 41A21, 81–08)

Claasen, H. L. (*with* Goldbach, R. W.) A field-like property of finite rings. *Indag. Math.* (*N.S.*) **3** (1992), *no.* 1, 11–26. (William H. Gustafson) **93b:16038** 16P10 (11T99, 13M05)

Clack, R. (*with* Defrise, M.; Townsend, Douglas W.) Solution to the three-dimensional image reconstruction problem from two-dimensional parallel projections. (English summary) *J. Opt. Soc. Amer. A* **10** (1993), *no.* 5, 869–877. (Summary) **93k:78016** 78A55 (44A12)

Cladis, P. E. Taylor-Couette instability in nematic liquid crystals. (English summary) *Nematics* (*Orsay*, 1990), 65–91, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 332, *Kluwer Acad. Publ., Dordrecht*, 1991. (*see* **93d:58007**) 76E10 (76A15)

Clapham, C. R. J. (*with* Sheehan, John) All trees with n vertices are $(n-2)$-free. *Graph theory, combinatorics, algorithms, and applications* (*San Francisco, CA*, 1989), 469–471, *SIAM, Philadelphia, PA*, 1991. (William L. Kocay) **93g:05106** 05C60 (05C05)

— (*with* Sheehan, John) These are the two-free trees. (English summary) *Fourth Czechoslovakian Symposium on Combinatorics, Graphs and Complexity* (*Prachatice*, 1990), 309–313, *Ann. Discrete Math.*, 51, *North-Holland, Amsterdam*, 1992. (Summary) **93j:05042** 05C05 (05C60)

— (*with* Sheehan, John) Super-free graphs. (English summary) *Ars Combin.* **33** (1992), 245–252. (Wendy J. Myrvold) **93m:05139** 05C60 (05C05, 05C38)

Clapp, Mónica (*with* Bartsch, Thomas; Puppe, Dieter) A mountain pass theorem for actions of compact Lie groups. *J. Reine Angew. Math.* **419** (1991), 55–66. (Annamaria Canino) **93d:58023** 58E05 (55P91, 57S99, 58B05, 58E40)

— (*with* Bartsch, Thomas) The compact category and multiple periodic solutions of Hamiltonian systems on symmetric starshaped energy surfaces. *Math. Ann.* **293** (1992), *no.* 3, 523–542. (Gabriella Tarantello) **93f:58028** 58E05 (34C25, 58F05, 58F22)

Clark, Bradd (*with* Clay, Ellen; Schneider, Victor P.) Semicontinuous groups and separation properties. *Internat. J. Math. Math. Sci.* **15** (1992), *no.* 3, 621–623. (I. I. Guran) **93m:54062** 54H11 (22A05, 54B15)

Clark, D. S. (*with* Suryanarayan, E. R.) Quasiperiodic tilings with low-order rotational symmetry. *Acta Cryst. Sect. A* **47** (1991), *no.* 5, 498–502. (Ren Ding) **93b:52021a** 52C20 (05B45, 82D25)

— (*with* Suryanarayan, E. R.) Erratum: "Quasiperiodic tilings with low-order rotational symmetry". *Acta Cryst. Sect. A* **47** (1991), *no.* 6, 852. (Ren Ding) **93b:52021b** 52C20 (05B45, 82D25)

Clark, Douglas N. The Krein space $(\varphi H^2)^\perp$ and coefficients of analytic functions. *Linear operators in function spaces* (*Timişoara*, 1988), 131–140, *Oper. Theory Adv. Appl.*, **43**, *Birkhäuser, Basel*, 1990. (J. A. Ball (Zbl 732:47036)) **93b:46047** 46E20 (47B50)

— Perturbation and similarity of Toeplitz operators. (English summary) *Topics in operator theory: Ernst D. Hellinger memorial volume*, 235–243, *Oper. Theory Adv. Appl.*, **48**, *Birkhäuser, Basel*, 1990. (Benjamin A. Lotto) **93m:47030** 47B35 (47A55)

— (*with* Carlson, Jon F.) Ext for Hilbert modules. *The Madison Symposium on Complex Analysis* (*Madison, WI*, 1991), 113–118, *Contemp. Math.*, 137, *Amer. Math. Soc., Providence, RI*, 1992. (*see* **93e:32001**) 46M20 (47D25, 47D99)

Clark, J. W. (*with* Senger, G.; Ristig, M. L.; Campbell, C. E.) Correlated density matrix theory of normal quantum fluids. (English summary) *Ann. Physics* **218** (1992), *no.* 1, 160–196. (Guang Shan Tian) **93i:81310** 81V70 (82B10, 82C22, 82D50)

Clark, Kenneth D. Decomposition of Hessenberg DAE systems to state space form. Second NIU Conference on Linear Algebra, Numerical Linear Algebra and Applications (DeKalb, IL, 1991). *Linear Algebra Appl.* **172** (1992), 33–55. (Michael Hanke) **93i:34005** 34A09 (34A30)

Clark, L. H. (*with* Barefoot, C. A.; Douthett, Jack; Entringer, R. C.; Fellows, Michael R.) Cycles of length 0 modulo 3 in graphs. *Graph theory, combinatorics, and applications, Vol. 1* (*Kalamazoo, MI*, 1988), 87–101, *Wiley-Intersci. Publ., Wiley, New York*, 1991. (Summary) **93c:05067** 05C38

— (*with* Entringer, R. C.; Székely, László A.) Threshold functions for local properties of graphs: triangles. Combinatorics and theoretical computer science (Washington, DC, 1989). *Discrete Appl. Math.* **34** (1991), *no.* 1-3, 83–105. (Andrzej Ruciński) **93a:05112** 05C80

— (*with* Székely, László A.; Entringer, R. C.) An inequality for degree sequences. *Discrete Math.* **103** (1992), *no.* 3, 293–300. (Prabir Das) **93g:05139** 05C99

— (*with* Shahrokhi, Farhad; Székely, László A.) A linear time algorithm for graph partition problems. *Inform. Process. Lett.* **42** (1992), *no.* 1, 19–24. (From the introduction) **93b:68069** 68R10 (68Q25)

— The minimum number of subgraphs in a graph and its complement. (English summary) *J. Graph Theory* **16** (1992), *no.* 5, 451–458. (A. G. Thomason) **93g:05099** 05C55 (05C35)

Clark, Stephen A. The representative agent model of probabilistic social choice. *Math. Social Sci.* **23** (1992), *no.* 1, 45–66. (Yew-Kwang Ng) **93b:90015** 90A08

— Revealed preference and linear utility. (English summary) *Theory and Decision* **34** (1993), *no.* 1, 21–45. (Summary) **93k:90011** 90A05 (90A06, 90A10)

Clark, T. D. (*with* Spiller, T. P.; Spencer, P. S.; et al.) Adding dissipation to the Schrödinger equation from the quantum-potential viewpoint. *Found. Phys. Lett.* **4** (1991), *no.* 6, 507–521. (Bing Hong Wang) **93c:81012** 81P05

Clark, W. Edwin (*with* Dunning, Larry A.) Partial partitions of vector spaces arising from the construction of byte error control codes. (English summary) *Ars Combin.* **33** (1992), 161–177. (J. J. Stiffler) **93g:94012** 94B05 (94B15)

— Matching subspaces with complements in finite vector spaces. (English summary) *Bull. Inst. Combin. Appl.* **6** (1992), 33–38. (Summary) **93g:05112** 05C70

— (*with* Pedersen, John) Sum-free sets in vector spaces over GF(2). (English summary) *J. Combin. Theory Ser. A* **61** (1992), *no.* 2, 222–229. (W. A. Webb) **93h:11139** 11T99 (05B10, 11B13)

— (*with* McColm, Gregory L.; Stark, W. Richard) On the complexity of deadlock-free programs on a ring of processors. (English summary) *J. Parallel Distrib. Comput.* **16** (1992), *no.* 1, 67–71. 68M10

Clarke, Andrew S. (*with* Shizgal, Bernie) On the generation of orthogonal polynomials using asymptotic methods for recurrence coefficients. (English summary) *J. Comput. Phys.* **104** (1993), *no.* 1, 140–149. (Jesús S. Dehesa) **93m:33003** 33C45 (41A55, 42C05)

Clarke, Brenton R. The selection functional. *Probab. Math. Statist.* **11** (1990), *no.* 2, 149–156 (1991). (Summary) **93d:62034** 62F10 (62H12)

— (*with* Godolphin, E. J.) Uncorrelated residuals and an exact test for two variance components in experimental design. (English summary) *Comm. Statist. Theory Methods* **21** (1992), *no.* 9, 2501–2526. (Shahariar Huda) **93i:62058** 62J05 (62J10)

Clarke, E. M. (*with* Burch, J. R.; McMillan, K. L.; Dill, D. L.; Hwang, L. J.) Symbolic model checking: 10^{20} states and beyond. Selections from the 1990 IEEE Symposium on Logic in Computer Science. *Inform. and Comput.* **98** (1992), *no.* 2, 142–170. (Summary) **93c:68065** 68Q60

Clarke, Francis The Gray code function. *p-adic methods and their applications*, 1–7, *Oxford Sci. Publ., Oxford Univ. Press, New York*, 1992. (Md. Fazlee Hossain) **93i:11143** 11S85 (11T71, 94B60)

Clarke, Frank H. (*with* Loewen, P. D.) Variational problems with Lipschitzian minimizers. (English summary) *Analyse non linéaire* (*Perpignan*, 1987), 184–209, *Univ. Montréal, Montreal, PQ*, 1989. (*see* **93h:49003**) 49N60

— (*with* Wolenski, Peter R.) Estimating the effect of perturbing the time delay in optimal control problems. *Optimization and nonlinear analysis* (*Haifa*, 1990), 98–105, *Pitman Res. Notes Math. Ser.*, 244, *Longman Sci. Tech., Harlow*, 1992. (*see* **93d:49004**) 49K40 (34K35)

— (*with* Redheffer, R. M.) The proximal subgradient and constancy. (English summary) *Canad. Math. Bull.* **36** (1993), *no.* 1, 30–32. (Summary) **93m:28004** 28A15

— An indirect method in the calculus of variations. *Trans. Amer. Math. Soc.* **336** (1993), *no.* 2, 655–673. (Philip D. Loewen) **93f:49002** 49J05 (49J52, 49N60)

— *see also* **Nonlinear analysis, 93h:49003**

Clarke, N. (*with* Saunders, Robert; Causon, D. M.) A convenient entropy satisfying T.V.D. scheme for computational aerodynamics. *Proceedings of the Eighth GAMM-Conference on Numerical Methods in Fluid Mechanics* (*Delft*, 1989), 61–68, *Notes Numer. Fluid Mech.*, 29, *Vieweg, Braunschweig*, 1990. (*see* **93b:76002**) 76M25 (65M99, 76G25, 76M20)

Clarke, Robert John A note on the cycle index polynomial of the symmetric group. Combinatorial mathematics and combinatorial computing, Vol. 1 (Brisbane, 1989). *Australas. J. Combin.* **1** (1990), 49–51. (Ira Gessel) **93b:05010** 05A19 (05A15)

Clarkson, Kenneth L. Applications of random sampling in computational geometry. II. (Extended abstract). (English summary) *Proceedings of the Fourth Annual Symposium on Computational Geometry* (*Urbana, IL*, 1988), 1–11, *ACM, New York*, 1988. (*see* **93k:68003**) 68U05

— (*with* Shor, Peter W.) Algorithms for diametral pairs and convex hulls that are optimal, randomized, and incremental. (English summary) *Proceedings of the Fourth Annual Symposium on Computational Geometry* (*Urbana, IL*, 1988), 12–17, *ACM, New York*, 1988. (*see* **93k:68003**) 68U05

— (*with* Tarjan, Robert Endre; Van Wyk, Christopher J.) A fast Las Vegas algorithm for triangulating a simple polygon. (English summary) *Proceedings of the Fourth Annual Symposium on Computational Geometry* (*Urbana, IL*, 1988), 18–22, *ACM, New York*, 1988. (*see* **93k:68003**) 68U05

— (*with* Cole, Richard John; Tarjan, Robert Endre) Randomized parallel algorithms for trapezoidal diagrams. *Internat. J. Comput. Geom. Appl.* **2** (1992), *no.* 2, 117–133. (Ivan Stojmenović) **93k:68100a** 68U05 (52B55)

— (*with* Cole, Richard John; Tarjan, Robert Endre) Erratum: "Randomized parallel algorithms for trapezoidal diagrams". *Internat. J. Comput. Geom. Appl.* **2** (1992), *no.* 3, 341–343. (Ivan Stojmenović) **93k:68100b** 68U05 (52B55)

— (*with* Bentley, Jon Louis; Levine, David B.) Fast linear expected-time algorithms for computing maxima and convex hulls. (English summary) *Algorithmica* **9** (1993), *no.* 2, 168–183. (Summary) **93m:68161** 68U05 (68Q25)

Clarkson, Peter A. (*with* Ablowitz, Mark J.) ★ Solitons, nonlinear evolution equations and inverse scattering. London Mathematical Society Lecture Note Series, 149. *Cambridge University Press, Cambridge*, 1991. xii+516 *pp. ISBN* 0-521-38730-2 (Walter Oevel) **93g:35108** 35Qxx (35–02, 35P25, 58F07, 81T13)

— (*with* Hood, Simon) Nonclassical symmetry reductions and exact solutions of the Zabolotskaya-Khokhlov equation. (English summary) *European J. Appl. Math.* **3** (1992), *no.* 4, 381–414. (Naruyoshi Asano) **93k:35056** 35C05 (35N10, 35Q30, 58F37)

— Dimensional reductions and exact solutions of a generalized nonlinear Schrödinger equation. *Nonlinearity* **5** (1992), *no.* 2, 453–472. (B. M. Herbst) **93f:35212** 35Q55 (35A25, 78A99)

— (*with* Nucci, Maria Clara) The nonclassical method is more general than the direct method for symmetry reductions. An example of the FitzHugh-Nagumo equation. *Phys. Lett. A* **164** (1992), *no.* 1, 49–56. (Summary) **93d:35009** 35A30 (35C05, 35K55, 92C20)

— (*with* Bassom, Andrew P.; Hicks, A. C.; McLeod, J. Bryce) Integral equations and exact solutions for the fourth Painlevé equation. (English summary) *Proc. Roy. Soc. London Ser. A* **437** (1992), *no.* 1899, 1–24. (Mehmet Can) **93h:34020** 34A34 (34A20, 35Q55, 45P05, 58F37)

— (*with* Hood, Simon) Symmetry reductions of a generalized, cylindrical nonlinear Schrödinger equation. (English summary) *J. Phys. A* **26** (1993), *no.* 1, 133–150. (Summary) **93m:35167** 35Q55 (34A99, 81Q05)

Claude, C. (*with* Latifi, A.; Leon, Jérôme Jp.) Nonlinear resonant scattering and plasma instability: an integrable model. *J. Math. Phys.* **32** (1991), *no.* 12, 3321–3330. (Muthiah Daniel) **93g:35128** 35Q55 (58F40, 76E25, 76X05)

Claudio, Dalcidio Moraes (*with* de Oliveira, Joao Batista S.) A user directed approach to finding roots of polynomials. (English summary) *Computer arithmetic, scientific computation and mathematical modelling* (*Albena*, 1990), 351–366, *IMACS Ann. Comput. Appl. Math.*, 12, *Baltzer, Basel*, 1991. (*see* **93c:00022**) 65H05

Claus, G. (*with* Gerbi, S.) An asymptotic model for a detonation in ducts. *Computational and applied mathematics, II* (*Dublin*, 1991), 127–130, *North-Holland, Amsterdam*, 1992. (*see* **93j:00008**) 80A25

Claus, Volker Complexity measures on permutations. (English summary) *Informatik*, 81–94, *Teubner-Texte Inform.*, 1, *Teubner, Stuttgart*, 1992. (Summary) **93m:68071** 68Q25 (05A05, 65Y20, 68P10)

Clausen, Michael (*with* Dress, Andreas W. M.; Grabmeier, Johannes; Karpiński, Marek) On zero-testing and interpolation of k-sparse multivariate polynomials over finite fields. *Theoret. Comput. Sci.* **84** (1991), *no.* 2, *Algorithms Automat. Complexity Games*, 151–164. (B. David Saunders) **93e:68045** 68Q40 (12Y05, 41A05)

— Almost all Boolean functions have no linear symmetries. *Inform. Process. Lett.* **41** (1992), *no.* 6, 291–292. (Summary) **93d:68022** 68Q20 (03G05, 06E30, 94C10)

Clausius, Rudolf *see* **Tarsitani, Carlo, 93b:01028**

Clavelli, Massimo New developments concerning universality, superuniversality, pseudomodels, pseudo-universal relations and elementary techniques. (Italian. English summary) *Rend. Sem. Fac. Sci. Univ. Cagliari* **60** (1990), *no.* 2, 133–160. (Summary) **93g:03045** 03E30

Clavero Gracia, Carmelo (*with* Jorge, J. C.; Lisbona, F.) Exponential-fitting and alternating-directions schemes for multidimensional stationary convection-diffusion problems. (Spanish. English summary) *Proceedings of the XII Congress on Differential Equations and Applications/II Congress on Applied Mathematics* (*Spanish*) (*Oviedo*, 1991), 215–220, *Univ. Oviedo, Oviedo*, 1991. (*see* **93j:00009**) 65N06

benito Clavijo, M. Pilar *see* **Benito Clavijo, M. Pilar**

Clavin, P. Turbulent flame propagation. *Fluid dynamical aspects of combustion theory*, 43–60, *Pitman Res. Notes Math. Ser.*, 223, *Longman Sci. Tech., Harlow*, 1991. (Introduction) **93j:80005** 80A25 (76F99, 76N15)

Clay, Ellen (*with* Clark, Bradd; Schneider, Victor P.) Semicontinuous groups and separation properties. *Internat. J. Math. Math. Sci.* **15** (1992), *no.* 3, 621–623. (I. I. Guran) **93m:54062** 54H11 (22A05, 54B15)

Clay, J. R. Convolution rings of multiplications of an abelian group. *Acta Math. Hungar.* **58** (1991), *no.* 3-4, 297–309. (Manfred Dugas) **93f:20070** 20K99 (16S99, 46J99)

— (*with* Fong, Yuen) On syntactic nearrings of even dihedral groups. *Results Math.* **23** (1993), *no.* 1-2, 23–44. (Gary L. Peterson) **93k:16082** 16Y30 (20M35, 68Q70)

Cleary, John Gerald (*with* Li, Xining; Unger, Brian) Virtual time and virtual space. (English summary) *Internat. J. Parallel Programming* **21** (1992), *no.* 2, 123–150. 68U20

Cleave, John P. ★ A study of logics. Oxford Logic Guides, 18. Oxford Science Publications. *The Clarendon Press, Oxford University Press, New York*, 1991. xiv+417 *pp. ISBN* 0-19-853211-3 (Ignacio Angelelli) **93c:03001** 03–01 (03Bxx)

Cleaver, Gerald B. (*with* Lewellen, David C.) On modular invariant partition functions for tensor product of conformal field theories. (English summary) *Phys. Lett. B* **300** (1993), *no.* 4, 354–360. (Summary) **93m:81126** 81T40 (11F22, 81R10)

Cleja-Ţigoiu, Sanda (*with* Soós, E.) Elastic range and relaxed configurations in rate-independent elastoplasticity. I. Basical [Basic] assumptions. *Rev. Roumaine Sci. Tech. Sér. Méc. Appl.* **36** (1991), *no.* 3-4, 153–170. (Miroslav Šilhavý) **93g:73056a** 73E50 (73B99, 73E05)

— (*with* Soós, E.) Elastic range and relaxed configurations in rate-independent elastoplasticity. II. Connection between the two models. *Rev. Roumaine Sci. Tech. Sér. Méc. Appl.* **36** (1991), *no.* 5-6, 317–327. (Miroslav Šilhavý) **93g:73056b** 73E50 (73B99, 73E05)

Clemence, Dominic P. Some layer-stripping formulae for the Schrödinger equation with a periodic potential. (English summary) *Inverse Problems* **8** (1992), *no.* 5, 751–755. (Summary) **93h:35150** 35P25 (35J10, 81Q05, 81U40, 82D25)

Clément, Philippe (*with* de Pagter, Ben) Some remarks on the Banach space valued Hilbert transform. *Indag. Math. (N.S.)* **2** (1991), *no.* 4, 453–460. (From the text) **93b:47058** 47B38 (42B20, 46E40, 47G10)

— (*with* de Figueiredo, Djairo G.; Mitidieri, Enzo) Positive solutions of semilinear elliptic systems. (English summary) *Comm. Partial Differential Equations* **17** (1992), *no.* 5-6, 923–940. (A. P. Soldatov) **93i:35054** 35J65 (35B05, 35B45)

— (*with* Prüss, Jan) Global existence for a semilinear parabolic Volterra equation. *Math. Z.* **209** (1992), *no.* 1, 17–26. (Hans Engler) **93a:35085** 35K60 (35R10, 45K05, 73B30)

— (*with* van Duijn, C. J.; Li, Shuanhu) On a nonlinear elliptic-parabolic partial differential equation system in a two-dimensional groundwater flow problem. *SIAM J. Math. Anal.* **23** (1992), *no.* 4, 836–851. (Themistocles M. Rassias) **93h:35089** 35K50 (47H15, 47N20)

laliena Clemente, Jesús A. *see* **Laliena Clemente, Jesús A.**

Clementino, Maria Manuel Weakly hereditary regular closure operators. (English summary) *Topology Appl.* **49** (1993), *no.* 2, 129–139. (Summary) **93m:18004** 18A32 (18A40, 18B30, 54B30)

Clements, David J. (*with* Wang, Yue Yun; Frank, Paul M.) The robustness properties of the linear quadratic regulators for singular systems. (English summary) *IEEE Trans. Automat. Control* **38** (1993), *no.* 1, 96–100. (Summary) **93j:93048** 93B36 (49N10, 93C05)

Clements, G. F. On existence of sets of distinct representatives for families of subsets of a multiset. (English summary) *Period. Math. Hungar.* **25** (1992), *no.* 2, 119–126. (Shaocen Han) **93k:05006** 05A05

Clements, John C. A convexity-preserving C^2 parametric rational cubic interpolation. (English summary) *Numer. Math.* **63** (1992), *no.* 2, 165–171. (Summary) **93h:65011** 65D05 (65D10)

Clemhout, Simone (*with* Wan, Henry, Jr.) Environmental problem as a common-property resource game. (English summary) *Dynamic games in economic analysis (Espoo, 1990)*, 132–154, *Lecture Notes in Control and Inform. Sci.*, 157, *Springer, Berlin*, 1991. (*see* **93d:90003**) 90A30

Clerbout, M. (*with* Roos, Y.) Semicommutations and algebraic languages. (English summary) 7th Annual Symposium on Theoretical Aspects of Computer Science (STACS 90) (Rouen, 1990). *Theoret. Comput. Sci.* **103** (1992), *no.* 1, 39–49. (Summary) **93j:68098** 68Q45

Clerc, Jean-Louis Représentation d'une algèbre de Jordan, polynômes invariants et harmoniques de Stiefel. [Jordan algebra representation, Stiefel harmonic and invariant polynomials] *J. Reine Angew. Math.* **423** (1992), 47–71. (Jacques Faraut) **93d:17043** 17C99 (13A50)

Clerc, R.-L. (*with* Hartmann, Christian) Normal forms and asymptotic methods for dynamical systems. (English summary) *European Conference on Iteration Theory (Batschuns, 1989)*, 55–70, *World Sci. Publishing, River Edge, NJ*, 1991. (Richard C. Churchill) **93g:58129** 58F36 (34C20, 34C35, 34C37, 34E10, 58F25)

de Clerck, F. *see* **De Clerck, F.**

Clercx, H. J. H. (*with* Schram, P. P. J. M.) Brownian particles in shear flow and harmonic potentials: a study of long-time tails. (English summary) *Phys. Rev. A* (3) **46** (1992), *no.* 4, 1942–1950. (Summary) **93e:82042** 82C70 (76D05, 76M35)

Cléroux, Robert (*with* Léger, Christian) Nonparametric age replacement: bootstrap confidence intervals for the optimal cost. (English summary) *Oper. Res.* **40** (1992), *no.* 6, 1062–1073. 62N05

— (*with* Lazraq, Aziz; Kiers, Henk A. L.) Mesures de liaison vectorielle et généralisation de l'analyse canonique. (English summary) [Vector measures of association and a generalization of the canonical analysis] *Rev. Statist. Appl.* **40** (1992), *no.* 1, 23–35. 62H20

Cleve, Richard (*with* Bshouty, Nader H.; Eberly, Wayne) Size-depth tradeoffs for algebraic formulae. (English summary) *32nd Annual Symposium on Foundations of Computer Science (San Juan, PR, 1991)*, 334–341, *IEEE Comput. Soc. Press, Los Alamitos, CA*, 1991. (Summary) **93e:68043** 68Q40

— (*with* Chung, Fan R. K.; Dagum, Paul) A note on constructive lower bounds for the Ramsey numbers $R(3,t)$. (English summary) *J. Combin. Theory Ser. B* **57** (1993), *no.* 1, 150–155. (Summary) **93m:05135** 05C55

Cleveland, William S. *see* **Tukey, John W., 93a:01068**

Clever, R. M. (*with* Busse, F. H.) Three-dimensional convection in an inclined layer heated from below. *J. Engrg. Math.* **26** (1992), *no.* 1, 1–19. (Summary) **93a:76042** 76E15 (76D99, 76R10)

Cliff, Gerald (*with* Harris, Morton E.; Weiss, Alfred) Relative projectivity of representations of group-graded rings. *Arch. Math. (Basel)* **56** (1991), *no.* 6, 533–538. (Piotr Grzeszczuk) **93d:16058** 16W50 (16G99)

— (*with* Ritter, Jürgen; Weiss, Alfred) Group representations and integrality. *J. Reine Angew. Math.* **426** (1992), 193–202. (Lawrence Washington) **93f:20011** 20C10

Clifford, Alfred Hoblitzelle *see* **Obituary: Clifford, Alfred Hoblitzelle**

Clifton, Robert K. (*with* Redhead, Michael L. G.; Butterfield, Jeremy N.) A second look at a recent algebraic proof of nonlocality. *Found. Phys. Lett.* **4** (1991), *no.* 4, 395–403. (Emilio Santos) **93b:81013** 81P05

— (*with* Niemann, Peter) Locality, Lorentz invariance, and linear algebra: Hardy's theorem for two entangled spin-s particles. *Phys. Lett. A* **166** (1992), *no.* 3-4, 177–184. (Emilio Santos) **93j:81004** 81P05

— (*with* Pagonis, Constantine) Hardy's nonlocality theorem for n spin-$\frac{1}{2}$ particles. (English summary) *Phys. Lett. A* **168** (1992), *no.* 2, 100–102. (Dennis Dieks) **93h:81009** 81P05 (81P15)

Clímaco, João C. Namorado (*with* Antunes, Carlos Henggeler) Sensitivity analysis in MCDM using the weight space. (English summary) *Oper. Res. Lett.* **12** (1992), *no.* 3, 187–196. (Summary) **93f:90140** 90C29 (90C05, 90C31)

— (*with* Cardoso, Domingos M.) The generalized simplex method. (English summary) *Oper. Res. Lett.* **12** (1992), *no.* 5, 337–348. (Georgi Khristov) **93i:90059** 90C05

Cline, Daren B. H. Regularly varying rates of decrease for moduli of continuity and Fourier transforms of functions on $\mathbf{R}^d$. *J. Math. Anal. Appl.* **159** (1991), *no.* 2, 507–519. (Muharrem Berisha) **93i:42015** 42B99 (42A61)

— (*with* Resnick, Sidney I.) Multivariate subexponential distributions. *Stochastic Process. Appl.* **42** (1992), *no.* 1, 49–72. (E. Omey) **93i:60022** 60E05 (60F99, 60G55)

Cline, Edward (*with* Parshall, Brian J.; Scott, Leonard L.) Infinitesimal Kazhdan-Lusztig theories. (English summary) *Kazhdan-Lusztig theory and related topics (Chicago, IL, 1989)*, 43–73, *Contemp. Math.*, 139, *Amer. Math. Soc., Providence, RI*, 1992. (William M. McGovern) **93j:20089** 20G05 (22E47)

Cload, B. (*with* Drury, S. W.) On the determinantal conjecture of Marcus and de Oliveira. (English summary) *Linear Algebra Appl.* **177** (1992), 105–109. (Natalia Bebiano) **93k:15008** 15A15 (15A60)

Clocchiatti, A. (*with* Maronna, Ricardo A.; Feinstein, C.) Optimal estimation of Stokes' parameters. (English summary) *Astronom. and Astrophys.* **260** (1992), *no.* 1-2, 525–532. (Summary) **93f:78003** 78A10

Cloot, A. (*with* Weideman, J. A. C.) Spectral methods and mappings for evolution equations on the infinite line. (English summary) *Spectral and high order methods for partial differential equations (Como, 1989)*, 467–481, *North-Holland, Amsterdam*, 1990. (*see* **93d:65005**) 65M70 (65M12)

— (*with* Weideman, J. A. C.) An adaptive algorithm for spectral computations on unbounded domains. (English summary) *J. Comput. Phys.* **102** (1992), *no.* 2, 398–406. (Summary) **93h:65124** 65M70 (65T99)

Clote, P. (*with* Takeuti, Gaisi) Bounded arithmetic for NC, ALogTIME, L and NL. *Ann. Pure Appl. Logic* **56** (1992), *no.* 1-3, 73–117. (Shih Ping Tung) **93f:03027** 03D15 (03F35, 68Q15)

— A time-space hierarchy between polynomial time and polynomial space. *Math. Systems Theory* **25** (1992), *no.* 2, 77–92. (John Michael Robson) **93d:68021** 68Q15 (03D15, 93A13)

william of saint-Cloud *see* **William of Saint-Cloud**

Clozel, Laurent Invariant harmonic analysis on the Schwartz space of a reductive p-adic group. *Harmonic analysis on reductive groups (Brunswick, ME, 1989)*, 101–121, *Progr. Math.*, 101, *Birkhäuser Boston, Boston, MA*, 1991. (David Manderscheid) **93h:22020** 22E35 (22E50)

— Produits dans la cohomologie holomorphe des variétés de Shimura. [Products in the holomorphic cohomology of Shimura varieties] *J. Reine Angew. Math.* **430** (1992), 69–83. (Rolf Berndt) **93i:14017** 14G35 (11G18)

Clunie, J. G. Convergence of polynomials with restricted zeros. *Functional analysis and operator theory (New Delhi, 1990)*, 100–105, *Lecture Notes in Math.*, 1511, *Springer, Berlin*, 1992. (George L. Csordas) **93k:30037** 30D15 (30C10)

— (*with* Rahman, Q. I.) Extension of a theorem of J. H. Grace to transcendental entire functions. *Math. Proc. Cambridge Philos. Soc.* **112** (1992), *no.* 3, 565–573. (W. H. J. Fuchs) **93h:30046** 30D35

Clüver, Detleff *see* **Mancosu, Paolo, 93a:01017**

Clyde, Merlise (*with* Strauss, David) Logistic regression for spatial pair-potential models. (English summary) *Spatial statistics and imaging (Brunswick, ME, 1988)*, 14–30, *IMS Lecture Notes Monograph Ser.*, 20, *Inst. Math. Statist., Hayward, CA*, 1991. (*see* **93g:62004**) 62M30

Ćmiel, Adam (*with* Szkutnik, Zbigniew) On the distribution of a useful maximal invariant. *Probab. Math. Statist.* **12** (1991), *no.* 1, 57–65 (1992). (Yasuko Chikuse) **93g:62072** 62H10 (62A05, 62E15)

Cnops, J. The relation between the dual and the adjoint Radon transforms. Proceedings of the Winter School on Geometry and Physics (Srní, 1990). *Rend. Circ. Mat. Palermo* (2) *Suppl. No.* 26 (1991), 135–142. (Fritz Keinert) **93b:44003** 44A12 (47B38, 53C65)

— The spectrum of the Dirac operator on the sphere. *Simon Stevin* **65** (1991), *no.* 3-4, 283–291. (Summary) **93b:47099** 47F05 (30G35)

— Orthogonal polynomials associated with the Dirac operator in Euclidean space. A Chinese summary appears in Chinese Ann. Math. Ser. A **13** (1992), no. 1, 132. *Chinese Ann. Math. Ser. B* **13** (1992), *no.* 1, 68–79. (S. M. Sitnik) **93j:33005** 33C55 (35Q40, 47F05, 81Q05)

— (*with* Delanghe, Richard) A generalised Christoffel-Darboux formula and reproducing kernels in spaces of polymonogenic and polyharmonic functions. (English summary) *Results Math.* **22** (1992), *no.* 3-4, 667–678. (Summary) **93i:46046** 46E22 (30G35, 33C99)

Coad, D. S. Some results on estimation for two-stage clinical trials. (English summary) *Sequential Anal.* **11** (1992), *no.* 4, 299–311. 62P10

Coan, Brian A. (*with* Lundelius Welch, Jennifer) Modular construction of a Byzantine agreement protocol with optimal message bit complexity. *Inform. and Comput.* **97** (1992), *no.* 1, 61–85. (Summary) **93a:68012** 68M10 (68M15, 68Q25)

— (*with* Lundelius Welch, Jennifer) Modular construction of an efficient 1-bit Byzantine agreement protocol. (English summary) *Math. Systems Theory* **26** (1993), *no.* 1, 131–154. (Summary) **93i:68018** 68M10

Coandă, Iustin On Barth's restriction theorem. *J. Reine Angew. Math.* **428** (1992), 97–110. (Jean-Marc Drezet) **93g:14028** 14F05 (14J60)

Coates, John Motivic p-adic L-functions. *L-functions and arithmetic (Durham, 1989)*, 141–172, *London Math. Soc. Lecture Note Ser.*, 153, *Cambridge Univ. Press, Cambridge*, 1991. (Glenn Stevens) **93b:11082** 11G40 (11G09, 11R23, 11S40, 14G10)

Čoban, M. M. *see* **Choban, M. M.**

Çoban, Mitrofan M. *see* **Choban, M. M.**

Cobb, Shannon S. Quenching of a parabolic system with a nonlinear boundary condition. (English summary) *Dynamic Systems Appl.* **1** (1992), *no.* 3, 251–256. (Summary) **93f:35099** 35K55 (35B40)

ruiz Cobo, María Reyes *see* **Ruiz Cobo, María Reyes**

muñoz-Cobo González, José Luis *see* **Muñoz-Cobo González, José Luis**

Cobos, Fernando (*with* Kühn, Thomas) Some remarks on a limit class of approximation ideals. *Progress in functional analysis (Peñíscola, 1990)*, 393–403, *North-Holland Math. Stud.*, 170, *North-Holland, Amsterdam*, 1992. (N. Tiţa) **93g:47057** 47D50 (47B06, 47B10)

— (*with* Kühn, Thomas; Schonbek, Tomas) One-sided compactness results for Aronszajn-Gagliardo functors. *J. Funct. Anal.* **106** (1992), *no.* 2, 274–313. (N. Ya. Kruglyak) **93c:46135** 46M35 (47B07)

— (*with* Fernandez-Martinez, Pedro) Reiteration and a Wolff theorem for interpolation methods defined by means of polygons. *Studia Math.* **102** (1992), *no.* 3, 239–256. (L. Î. Nikolova) **93i:46140** 46M35 (46B70)

Coburn, L. A. Deformation estimates for the Berezin-Toeplitz quantization. (English summary) *Comm. Math. Phys.* **149** (1992), *no.* 2, 415–424. (Albert Jeu-Liang Sheu) **93j:47038** 47B35 (46L60, 47C15, 47N50, 81S05)

Cobzaş, Ş. On a theorem of V. N. Nikolski on characterization of best approximation for convex sets. *Anal. Numér. Théor. Approx.* **19** (1990), *no.* 1, 7–13. (F. Deutsch) **93c:41053** 41A65 (46B99)

Cocârlan, Paul (*with* Roşculeţ, Marcel) ★ Serii trigonometrice şi aplicaţii. (Romanian) [Trigonometric series and applications] With an English summary. *Editura Academiei Române, Bucharest*, 1991. 287 *pp. ISBN* 973-27-0160-9 (From the summary) **93d:42001** 42-01 (73V99)

Cocchiarella, Nino B. Cantor's power-set theorem versus Frege's double-correlation thesis. (English summary) *Hist. Philos. Logic* **13** (1992), *no.* 2, 179–201. (Charles F. Kielkopf) **93d:03005** 03A05 (01A60, 03–03, 03B15)

— Conceptual realism versus Quine on classes and higher-order logic. *Synthese* **90** (1992), *no.* 3, 379–436. (J. Corcoran) **93c:03004** 03A05 (00A30, 03B15, 03E70)

Cochand, M. (*with* Gaillard, A.; Gröflin, H.) Lattice matrices, intersection of ring families and dicuts. (English summary) *Discrete Math.* **110** (1992), *no.* 1-3, 61–80. (Joseph Zaks) **93j:90060** 90C08 (90C10, 90C27, 90C35)

Cochran, William G. (*with* Cox, Gertrude M.) ★ Experimental designs. Reprint of the second edition. Wiley Classics Library. A Wiley-Interscience Publication. *John Wiley & Sons, Inc., New York*, 1992. xvi+617 *pp. ISBN* 0-471-54567-8 (Editors) **93c:62126** 62Kxx

Cockayne, E. J. (*with* Mynhardt, Christina M.) Domination sequences of graphs. (English summary) *Ars Combin.* **33** (1992), 257–275. (Summary) **93d:05067** 05C35

Cockburn, Bernardo (*with* Triandaf, Ioana) Convergence of a finite element method for the drift-diffusion semiconductor device equations: the zero diffusion case. *Math. Comp.* **59** (1992), *no.* 200, 383–401, S29–S46. (Charles I. Goldstein) **93f:65080** 65N30 (35Q60, 65N12, 78A55, 82D99)

Cockett, J. R. B. (*with* Seely, R. A. G.) Weakly distributive categories. (English summary) *Applications of categories in computer science (Durham*, 1991), 45–65, *London Math. Soc. Lecture Note Ser.*, 177, *Cambridge Univ. Press, Cambridge*, 1992. (*see* **93d:68001**) 68Q55 (18D99)

— Categories with finite limits and stable binary coproducts can be subdirectly decomposed. *J. Pure Appl. Algebra* **78** (1992), *no.* 2, 131–138. (Philip J. Scott) **93f:18002** 18A35

Cocks, J. A. (*with* Wu, Shi Yu; Jayanthi, C. S.) An accelerated inversion algorithm using the resolvent matrix method. (English summary) *Comput. Phys. Comm.* **71** (1992), *no.* 1-2, 125–133. (Summary) **93e:65049** 65F05 (65Y10)

Coclite, Mario Michele On singular nonlinear Dirichlet problem. II. (Italian summary) *Boll. Un. Mat. Ital. B* (7) **5** (1991), *no.* 4, 955–975. (Walter G. Kelley) **93e:35032** 35J65

Codenotti, B. (*with* Leoncini, Mauro) Matrix inversion in RNC^1. *J. Complexity* **7** (1991), *no.* 3, 282–295. (Summary) **93f:68041** 68Q25

Codina, Ramon (*with* Cervera, Miguel; Oñate, Eugenio) A finite-element formulation for the analysis of incompressible viscous flow. (Spanish. Spanish summary) *Proceedings of the XII Congress on Differential Equations and Applications/II Congress on Applied Mathematics (Spanish) (Oviedo*, 1991), 415–420, *Univ. Oviedo, Oviedo*, 1991. (*see* **93j:00009**) 76M10 (65M60, 76D05)

Codriansky, Simón $SU(2)_q$ in a Hilbert space of analytic functions. *Internat. J. Theoret. Phys.* **31** (1992), *no.* 6, 907–924. (A. M. Gavrilik) **93h:81056** 81R50 (17B37, 33D80)

Coelho, Sônia P. (*with* Polcino Milies, César) Finite conjugacy in group rings. *Comm. Algebra* **19** (1991), *no.* 3, 981–995. (Jan Okniński) **93b:16048** 16S34 (16U60, 20C07)

— (*with* Polcino Milies, César) Derivations of upper triangular matrix rings. (English summary) *Linear Algebra Appl.* **187** (1993), 263–267. (Summary) **93m:16025** 16W25

Coen, Salvatore Preface. *Geometry and complex variables (Bologna*, 1988/1990), iii–vii, *Lecture Notes in Pure and Appl. Math.*, 132, *Dekker, New York*, 1991. (Umberto Bottazzini) **93d:01088** 01A73

— Geometry and complex variables in the work of Beppo Levi. (Italian summary) *Geometry and complex variables (Bologna*, 1988/1990), 111–139, *Lecture Notes in Pure and Appl. Math.*, 132, *Dekker, New York*, 1991. (Summary) **93b:30002** 30–03 (01A70, 32–03)

Coetzee, M. A. (*with* Baart, M. L.) Review of geometric continuity, with application to the construction of G^2 continuous curves. (English summary) 17th South African Symposium on Numerical Mathematics (Umhlanga, 1991). *Quaestiones Math.* **15** (1992), *no.* 3, 279–298. (Zong Min Wu) **93m:65021** 65D17 (51N05, 65Y25, 68U05)

Coffey, Mark W. Phase space analysis for the direct algebraic method for nonlinear evolution and wave equations. *SIAM J. Appl. Math.* **52** (1992), *no.* 4, 929–945. (Summary) **93d:35142** 35Q53 (34A05, 34C99)

Coffman, Charles V. (*with* Duffin, Richard J.) On the fundamental eigenfunctions of a clamped punctured disk. *Adv. in Appl. Math.* **13** (1992), *no.* 2, 142–151. (R. Kodnár) **93c:35113** 35P05 (35J40, 73K10)

Coffman, Edward G., Jr. (*with* Pukhal'skii, A. A.; Reiman, Martin I.) Storage-limited queues in heavy traffic. (English summary) *Probab. Engrg. Inform. Sci.* **5** (1991), *no.* 4, 499–522. (Summary) **93g:60190** 60K25

— (*with* Bramel, Julien; Shor, Peter W.; Simchi-Levi, David) Probabilistic analysis of the capacitated vehicle routing problem with unsplit demands. (English summary) *Oper. Res.* **40** (1992), *no.* 6, 1095–1106. (Summary) **93i:90041** 90B10

— (*with* Boguslavskii, L. B.; Gilbert, Edgar N.; Kreĭnin, A. Ya.) Scheduling checks and saves. (English summary) *ORSA J. Comput.* **4** (1992), *no.* 1, 60–69. 90B22

— (*with* Browne, Sid; Gilbert, Edgar N.; Wright, Paul E.) The gated infinite-server queue: uniform service times. (English summary) *SIAM J. Appl. Math.* **52** (1992), *no.* 6, 1751–1762. (Summary) **93h:60146** 60K25 (90B22)

— (*with* Shor, Peter W.) Packings in two dimensions: asymptotic average-case analysis of algorithms. (English summary) *Algorithmica* **9** (1993), *no.* 3, 253–277. (Ding Zhu Du) **93m:68072** 68Q25 (90C27)

— (*with* Flatto, Leopold; Wright, Paul E.) Optimal stochastic allocation of machines under waiting-time constraints. (English summary) *SIAM J. Comput.* **22** (1993), *no.* 2, 332–348. (Summary) **93k:90040** 90B35

— *see also* **Computing, 93i:90038**

Cogburn, R. (*with* Ellison, J. A.) A stochastic theory of adiabatic invariance. (English summary) *Comm. Math. Phys.* **149** (1992), *no.* 1, 97–126. (Gershon Wolansky) **93j:34083** 34F05 (34C29, 60F05, 60H10)

Cogdell, J. (*with* Li, Jian-Shu; Piatetski-Shapiro, Ilya Iosifovitch; Sarnak, Peter C.) Poincaré series for $SO(n, 1)$. *Acta Math.* **167** (1991), *no.* 3-4, 229–285. (J. Elstrodt (Zbl 743:11028)) **93h:11050** 11F72 (11L05, 11M41)

Coggeshall, S. V. Analytic solutions of hydrodynamics equations. (English summary) *Phys. Fluids A* **3** (1991), *no.* 5, *part* 1, 757–769. (Summary) **93k:76097** 76N15

— (*with* Meyer-ter-Vehn, J.) Group-invariant solutions and optimal systems for multidimensional hydrodynamics. (English summary) *J. Math. Phys.* **33** (1992), *no.* 10, 3585–3601. (G. A. Nariboli) **93h:58169** 58G35 (35A30, 76M99, 76N15)

Coghlan, Leslie (*with* Itokawa, Yoe; Kosecki, Roman) On the solutions to certain Laplace inequalities with applications to geometry of submanifolds. *J. Geom. Anal.* **2** (1992), *no.* 3, 195–211. (Johan Tysk) **93d:58186** 58G30 (53C42, 58G25)

Cognola, Guido (*with* Vanzo, Luciano; Zerbini, Sergio) Regularization dependence of vacuum energy in arbitrarily shaped cavities. *J. Math. Phys.* **33** (1992), *no.* 1, 222–228. (Philippe Spindel) **93c:81143** 81T16 (81T20)

— (*with* Vanzo, Luciano) Thermodynamic potential for scalar fields in space-time with hyperbolic spatial part. (English summary) *Modern Phys. Lett. A* **7** (1992), *no.* 39, 3677–3688. (Martin Leblanc) **93k:81154** 81T20 (58G11, 58G26, 81T15)

Cohen, A. *see* **Cohen, Albert**

Cohen, A. Clifford ★ Truncated and censored samples. Theory and applications. Statistics: Textbooks and Monographs, 119. *Marcel Dekker, Inc., New York*, 1991. xvi+312 *pp. ISBN* 0-8247-8447-2 (H. L. Harter) **93e:62070** 62F10 (62G30)

Cohen, Albert Ondelettes, analyses multirésolutions et filtres miroirs en quadrature. (English summary) [Wavelets, multiresolution analysis and quadrature mirror filters] *Ann. Inst. H. Poincaré Anal. Non Linéaire* **7** (1990), *no.* 5, 439–459. (Karlheinz Gröchenig) **93b:42045** 42C15

— Biorthogonal wavelets. *Wavelets*, 123–152, *Wavelet Anal. Appl.*, 2, *Academic Press, Boston, MA*, 1992. (Summary) **93c:42032** 42C15 (94A11, 94A12)

— Wavelets and digital signal processing. *Wavelets and their applications*, 105–121, *Jones and Bartlett, Boston, MA*, 1992. (Karlheinz Gröchenig) **93j:94002** 94A12 (42C15)

— (*with* Daubechies, Ingrid; Feauveau, Jean-Christophe) Biorthogonal bases of compactly supported wavelets. *Comm. Pure Appl. Math.* **45** (1992), *no.* 5, 485–560. (W. R. Madych) **93e:42044** 42C15 (94A12)

Cohen, Amy (*with* Kappeler, Thomas) Solutions to the cubic Schrödinger equation by the inverse scattering method. *SIAM J. Math. Anal.* **23** (1992), *no.* 4, 900–922. (Vadim G. Bakurov) **93f:35213** 35Q55 (34A55, 34L25)

Cohen, Arjeh M. (*with* Cameron, Peter J.) On the number of fixed point free elements in a permutation group. (English summary) A collection of contributions in honour of Jack van Lint. *Discrete Math.* **106/107** (1992), 135–138. (From the text) **93f:20004** 20B05

— (*with* Cooperstein, Bruce N.) Generalized hexagons of even order. (English summary) A collection of contributions in honour of Jack van Lint. *Discrete Math.* **106/107** (1992), 139–146. (Norbert Knarr) **93i:51009** 51E12

Cohen, Arthur (*with* Perlman, Michael D.; Sackrowitz, Harold B.) Unbiasedness of tests of homogeneity when alternatives are ordered. (English summary) *Topics in statistical dependence (Somerset, PA*, 1987), 135–145, *IMS Lecture Notes Monograph Ser.*, 16, *Inst. Math. Statist., Hayward, CA*, 1990. (Summary) **93i:62018** 62F03 (62F30)

— (*with* Kushary, Debashis) Estimation of ordered Poisson parameters. (English summary) *Sankhyā Ser. A* **53** (1991), *no.* 3, 334–356. (Khursheed Alam) **93j:62066** 62F10 (62C15)

— (*with* Sackrowitz, Harold B.) An evaluation of some tests of trend in contingency tables. *J. Amer. Statist. Assoc.* **87** (1992), *no.* 418, 470–475. 62H17

— (*with* Zhang, Zhiyi) Recovery of information in BIBDs with interaction. *J. Statist. Plann. Inference* **31** (1992), *no.* 3, 373–386. (C. H. Kapadia) **93h:62138** 62K10

— (*with* Kariya, Takeaki) On the invariance structure of the one-sided testing problem for a multivariate normal mean. *Statist. Sinica* **2** (1992), *no.* 1, 221–236. (Jack C. Lee) **93g:62078a** 62H15

— (*with* Kariya, Takeaki) Corrigenda: "On the invariance structure of the one-sided testing problem for a multivariate normal mean". *Statist. Sinica* **2** (1992), *no.* 2, 619. (Jack C. Lee) **93g:62078b** 62H15

Cohen, D. A. (*with* Scott, E. A.) Rationality of division orderings. (English summary) *Inform. Process. Lett.* **44** (1992), *no.* 6, 307–311. (Ursula Martin) **93k:68082** 68R15

Cohen, Daniel E. Isodiametric and isoperimetric inequalities for group presentations. *Internat. J. Algebra Comput.* **1** (1991), *no.* 3, 315–320. (Stephen J. Pride) **93d:20065** 20F05 (20E05, 57M07)

— A monoid which is right FP_∞ but not left FP_1. *Bull. London Math. Soc.* **24** (1992), *no.* 4, 340–342. (From the introduction) **93c:20109** 20M50

Cohen, Daniel I. A. ★ Introduction to computer theory. Revised edition. *John Wiley & Sons, Inc., New York*, 1991. xii+838 *pp. ISBN* 0-471-51010-6 (Editors) **93i:68003** 68–02 (68Q05, 68Q45, 68Q70)

Cohen, E. *see* **Cohen, Elaine**

Cohen, E. G. D. Kinetic theory: understanding nature through collisions. (English summary) *Amer. J. Phys.* **61** (1993), *no.* 6, 524–533. 82C40

Cohen, Elaine (*with* Elber, G.) Offset approximation improvement by control point perturbation. *Mathematical methods in computer aided geometric design, II (Biri*, 1991), 229–237, *Academic Press, Boston, MA*, 1992. (*see* **93d:65022**) 65D17

Cohen, Eyal (*with* Kluberg-Stern, H.; Navelet, H.) Regulated propagator on the flat torus and its Weyl properties. (English summary) *J. Math. Phys.* **33** (1992), *no.* 9, 3150–3158. (Enric Verdaguer) **93j:81070** 81T16 (58G26)

Cohen, F. R. Remarks on the homotopy theory associated to perfect groups. *Algebraic topology (San Feliu de Guíxols*, 1990), 95–103, *Lecture Notes in Math.*, 1509, *Springer, Berlin*, 1992. (Donald M. Davis) **93h:55007** 55R35 (19D06)

— *see also* **Algebraic topology, 93e:55002**

Cohen, G. *see* **Cohen, Gérard Denis**

Cohen, Gary (*with* Joly, Patrick) Fourth order schemes for the heterogeneous acoustics equation. *Spectral and high order methods for partial differential equations (Como*, 1989), 397–407, *North-Holland, Amsterdam*, 1990. (*see* **93d:65005**) 65M06 (76M20, 76Q05)

Cohen, Gérard Denis (*with* Barthélémy, Jean-Pierre; Lobstein, Antoine-C.) ★ Complexité algorithmique et problèmes de communications. (French) [Algorithmic complexity and communications problems] With a preface by M. Minoux. Collection Technique

et Scientifique des Télécommunications. [Scientific and Technical Collection on Telecommunications] *Masson, Paris*, 1992. xxviii+228 *pp. ISBN* 2-225-82672-2 (Cristian Calude) **93h:68046** 68Q15 (68-02, 68Q25, 94-02)

— (*with* Zémor, Gilles) Application of coding theory to interconnection networks. (English summary) *Discrete Appl. Math.* **37/38** (1992), 553–562. (Zhao Zhi Zhang) **93h:68115** 68R10 (68M20, 94B65)

— (*with* Litsyn, S. N.) On the covering radius of Reed-Muller codes. (English summary) A collection of contributions in honour of Jack van Lint. *Discrete Math.* **106/107** (1992), 147–155. (Summary) **93e:94016** 94B27 (94B05)

Cohen, Harley On wave propagation and evolution in rods. *Rend. Sem. Mat. Univ. Politec. Torino* **47** (1989), *no.* 2, 97–124 (1992). (Richard Scott) **93e:73021** 73K05 (73D40)

— (*with* Wang, Chao Chen) Some equilibrium problems for compressible, anisotropic, laminated nonlinearly elastic bodies. *Arch. Rational Mech. Anal.* **119** (1992), *no.* 1, 1–34. (D. Ieşan) **93e:73011** 73C50 (73B40, 73G05, 73K20)

— (*with* MacSithigh, Gearoid P.) Symmetric and asymmetric roto-deformations of a symmetrical, isotropic, elastic pseudo-rigid body. (English summary) *Internat. J. Non-Linear Mech.* **27** (1992), *no.* 4, 519–526. (From the introduction) **93g:73023** 73B99 (73G05, 73H99)

— (*with* Sun, Q.-X.) A further work on directed rods. *J. Elasticity* **28** (1992), *no.* 2, 123–142. (Summary) **93c:73058** 73K05 (73B99)

Cohen, Harvey Ian (*with* Thylwe, Karl-Erik) Exact steady-state responses in undamped driven nonlinear oscillators. (English summary) *Theory & control of dynamical systems* (*Huddinge*, 1991), 231–241, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93d:34068** 34C15 (34A05, 70K40)

Cohen, Henri (*with* Diaz y Diaz, Francisco) A polynomial reduction algorithm. (French summary) *Sém. Théor. Nombres Bordeaux* (2) **3** (1991), *no.* 2, 351–360. (Duncan A. Buell) **93a:11107** 11Y40 (11R04)

— (*with* Olivier, Michel) Calcul des valeurs de la fonction zêta de Riemann en multiprécision. (English summary) [Algorithm for computing the values of the Riemann zeta function] *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 6, 427–430. (Herman J. J. te Riele) **93g:11134** 11Y70 (11M06, 65D20)

— (*with* Lewin, Leonard; Zagier, Don) A sixteenth-order polylogarithm ladder. (English summary) *Experiment. Math.* **1** (1992), *no.* 1, 25–34. (J. Browkin) **93i:11150** 11Y40 (11Y60, 33E20)

Cohen, Henry B. (*with* Chu, Cho-Ho) Isomorphisms of spaces of continuous affine functions. *Pacific J. Math.* **155** (1992), *no.* 1, 71–85. (Ehrhard Behrends) **93i:46041** 46E15 (46A55, 46J10)

Cohen, I. Bernard Babbage and Aiken: with notes on Henry Babbage's gift to Harvard, and to other institutions, of a portion of his father's difference engine. (English summary) *Ann. Hist. Comput.* **10** (1988), *no.* 3, 171–193. 01A55 (68–03)

— Newton's description of the reflecting telescope. *Notes and Records Roy. Soc. London* **47** (1993), *no.* 1, 1–9. 01A45

Cohen, I. M. (*with* Ramakrishna, K.; Ayyaswamy, P. S.) Numerical methods for two-dimensional analysis of electrical breakdown in a nonuniform gap. (English summary) *J. Comput. Phys.* **104** (1993), *no.* 1, 173–184. (Summary) **93i:78002** 78–08

Cohen, Ian *see* **Cohen, Harvey Ian**

Cohen, J. W. On the random walk with zero drifts in the first quadrant of $\mathbf{R}_2$. (English summary) *Comm. Statist. Stochastic Models* **8** (1992), *no.* 3, 359–374. (Arthur O. Pittenger) **93i:60131** 60J15 (60G40)

Cohen, Jack (*with* Stewart, Ian N.) Chaos, contingency, and convergence. *Nonlinear Sci. Today* **1** (1991), *no.* 2, 9–13. (Frederick R. Marotto) **93e:58124** 58F13 (58F40, 92D15)

Cohen, Jeffrey M. (*with* Kuharetz, Boris) Energy level degeneracy. (English summary) *J. Math. Phys.* **34** (1993), *no.* 1, 12–22. (A. Ventura) **93k:81037** 81Q05

Cohen, Jeffrey Marshal (*with* Mustafa, Errol) Weak field limit and tests of a relativistic theory of gravity. (English summary) *Astrophys. Space Sci.* **193** (1992), *no.* 1, 1–7. 83D05

Cohen, Joel E. (*with* Luczak, Tomasz) Giant components in three-parameter random directed graphs. (English summary) *Adv. in Appl. Probab.* **24** (1992), *no.* 4, 845–857. (G. N. Bagaev) **93m:05176** 05C80

— Supermultiplicative inequalities for the permanent of nonnegative matrices. *Math. Mag.* **65** (1992), *no.* 1, 41–44. (Peter M. Gibson) **93d:15009** 15A15

— (*with* Liggett, Thomas M.) Random arithmetic-geometric means and random pi: observations and conjectures. *Stochastic Process. Appl.* **41** (1992), *no.* 2, 261–271. (M. Iosifescu) **93f:60098** 60J05 (65D20, 65U05)

— (*with* Iwasa, Yoh; Râuţu, Gh.; Ruskai, Mary Beth; Seneta, Eugene; Zbăganu, Gh.) Relative entropy under mappings by stochastic matrices. (English summary) *Linear Algebra Appl.* **179** (1993), 211–235. (Adolf Rhodius) **93m:60145** 60J10 (15A51)

— *see also* **Jagers, Peter, 93b:60193**

Cohen, Jonathan (*with* Ash, J. Marshall; Freiling, Chris; Gatto, A. E.; Rinne, Dan) Generalized derivatives. *Partial differential equations with minimal smoothness and applications* (*Chicago, IL*, 1990), 25–32, *IMA Vol. Math. Appl.*, 42, *Springer, New York*, 1992. (G. Petruska) **93c:26009** 26B05 (35J99, 42B05)

— (*with* Ash, J. Marshall; Freiling, Chris; Rinne, Dan) Generalizations of the wave equation. *Trans. Amer. Math. Soc.* **338** (1993), *no.* 1, 57–75. (Summary) **93j:35104** 35L05 (26B40, 42B99)

Cohen, L. *see* **Cohen, Leon**

Cohen, L. Jonathan ★ An introduction to the philosophy of induction and probability. *The Clarendon Press, Oxford University Press, New York*, 1989. x+217 *pp. ISBN* 0-19-875079-X; 0-19-875078-1 (From the preface) **93j:03014** 03B48

— Mr. O'Connor's "pragmatic paradoxes". *Reflexivity*, 175–177, *North-Holland, Amsterdam*, 1992. (*see* **93g:03005**) 03A05

Cohen, Leon (*with* Park, James L.) Henry Margenau: physicist-philosopher. *Found. Phys.* **22** (1992), *no.* 5, 653–656. (Editors) **93d:01063** 01A70

— Multipart wave functions. *Found. Phys.* **22** (1992), *no.* 5, 691–711. (Lawrence P. Horwitz) **93m:81086** 81S30 (81Q20)

— (*with* Chandler, Colston; Lee, C.; Scully, M.; Wódkiewicz, K.) Quasi-probability distribution for spin-$\frac{1}{2}$ particles. (English summary) *Found. Phys.* **22** (1992), *no.* 7, 867–878. (Kalyanapuram R. Parthasarathy) **93i:81114** 81S30

Cohen, M. *see* **Cohen, Maurice**

Cohen, M. E. (*with* Hudson, D. L.) The role of approximate reasoning in a medical expert system. *Fuzzy expert systems*, 165–179, *CRC, Boca Raton, FL*, 1992. (*see* **93g:68133**) 68T35 (03B52)

— (*with* Hudson, D. L.) Medical decision making using pattern classification techniques for establishment of knowledge bases. *Fuzzy expert systems*, 225–236, *CRC, Boca Raton, FL*, 1992. (*see* **93g:68133**) 68T35 (03B52)

Cohen, Maurice (*with* Burrows, B. L.; Feldmann, Tova) Lower bounds for quartic anharmonic and double-well potentials. (English summary) *J. Math. Phys.* **34** (1993), *no.* 1, 1–11. (M. Znojil) **93k:81034** 81Q05 (65L99, 81–08)

Cohen, Michael A. Necessary and sufficient conditions for existence and uniqueness of weak qualitative probability structures. *J. Math. Psych.* **35** (1991), *no.* 2, 242–259. (Summary) **93d:60004** 60A10 (60B10, 92J99)

Cohen, Michèle Security level, potential level, expected utility: a three-criteria decision model under risk. (English summary) *Theory and Decision* **33** (1992), *no.* 2, 101–134. (Reinhard Suck) **93h:90002** 90A05 (90A10)

Cohen, Miriam Hopf algebra actions—revisited. *Deformation theory and quantum groups with applications to mathematical physics* (*Amherst, MA*, 1990), 1–18, *Contemp. Math.*, 134, *Amer. Math. Soc., Providence, RI*, 1992. (Cao Yu Chen) **93g:16052** 16W30

— (*with* Fischman, Davida) Semisimple extensions and elements of trace 1. *J. Algebra* **149** (1992), *no.* 2, 419–437. (E. J. Taft) **93c:16038** 16W30

Cohen, Nir (*with* Ball, Joseph A.) de Branges-Rovnyak operator models and systems theory: a survey. *Topics in matrix and operator theory* (*Rotterdam*, 1989), 93–136, *Oper. Theory Adv. Appl.*, 50, *Birkhäuser, Basel*, 1991. (E. R. Tsekanovs'kiĭ) **93a:47011** 47A45 (47–02, 47A56, 47B99, 47N70, 93A30)

Cohen, Paula *see* **Cohen, Paula M. S.**

Cohen, Paula Beazley (*with* Wolfart, Jürgen) Dessins de Grothendieck et variétés de Shimura. (English and French summaries) [Grothendieck sketches and Shimura varieties] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 10, 1025–1028. (Summary) **93h:14017** 14G35 (11G18)

Cohen, Paula M. S. (*with* Wolfart, Jürgen) Monodromie des fonctions d'Appell, variétés abéliennes et plongement modulaire. (English summary) [Monodromy of Appell functions, abelian varieties and modular embedding] Journées Arithmétiques, 1989 (Luminy, 1989). *Astérisque No.* 198-200 (1991), 6, 97–105 (1992). (Min Ho Lee) **93b:14024** 14D05 (14K22, 33C80)

Cohen, Ralph L. (*with* Jones, John D. S.) Representations of braid groups and operators coupled to monopoles. *Geometry of low-dimensional manifolds*, 1 (*Durham*, 1989), 191–205, *London Math. Soc. Lecture Note Ser.*, 150, *Cambridge Univ. Press, Cambridge*, 1990. (Michael Murray) **93g:20073** 20F36 (55N15, 57R50)

— (*with* Shimamoto, Don H.) Rational functions, labelled configurations, and Hilbert schemes. *J. London Math. Soc.* (2) **43** (1991), *no.* 3, 509–528. (Summary) **93c:55009** 55P35 (58D27, 58D29)

Cohen, Regina B. Optimal Steiner points. *Math. Mag.* **65** (1992), *no.* 5, 323–329. (Jan van de Craats) **93i:51043** 51M16 (51B20)

Cohen, Robert Adam (*with* Luskin, Mitchell) Field-induced instabilities in nematic liquid crystals. (English summary) *Nematics* (*Orsay*, 1990), 261–278, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 332, *Kluwer Acad. Publ., Dordrecht*, 1991. (Helmut Kaul) **93k:58055** 58E12 (49J45, 76A15, 76E99)

Cohen, Ron Chiral algebras—two examples. *Internat. J. Modern Phys. A* **6** (1991), *no.* 30, 5481–5494. (Raiko Zaikov) **93b:81091** 81R10 (17B65, 81T13)

Cohen, Serge Géométrie différentielle stochastique avec sauts. (English summary) [Stochastic differential geometry with jumps] *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 10, 767–770. (Summary) **93a:60078** 60H05 (60G44)

Cohen, Stephen D. The explicit construction of irreducible polynomials over finite fields. *Des. Codes Cryptogr.* **2** (1992), *no.* 2, 169–174. (Summary) **93f:11093** 11T06

— Primitive elements and polynomials: existence results. *Finite fields, coding theory, and advances in communications and computing* (*Las Vegas, NV*, 1991), 43–55, *Lecture Notes in Pure and Appl. Math.*, 141, *Dekker, New York*, 1993. (Gary L. Mullen) **93k:11113** 11T30 (11T06, 11T23)

Cohen, William W. (*with* Borgida, Alex; Hirsh, Haym) Computing least common subsumers in description logics. (English summary) *AAAI-92. Proceedings, Tenth National Conference on Artificial Intelligence* (*San Jose, CA*, 1992), 754–760, *Amer. Assoc. Artif. Intell., Menlo Park, CA*, 1992. (Summary) **93j:68190** 68T27 (03B70, 68T30)

Cohn, Harvey Computation of singular moduli by multi-valued modular equations. *Computational number theory* (*Debrecen*, 1989), 213–225, *de Gruyter, Berlin*, 1991. (YoungJu Choie) **93e:11059** 11F03

— Orbital modular equations. (English summary) *A tribute to Emil Grosswald: number theory and related analysis*, 163–178, *Contemp. Math.*, 143, *Amer. Math. Soc., Providence, RI*, 1993. (Marvin I. Knopp) **93m:11033** 11F06

— How branching properties determine modular equations. (English summary) *Math. Comp.* **61** (1993), *no.* 203, 155–170. (Marvin I. Knopp) **93k:11036** 11F11 (11Y16)

Cohn, J. D. (*with* Periwal, Vipul) $c \leq 25$ noncritical strings. *Phys. Lett. B* **270** (1991), *no.* 1, 18–20. (Summary) **93b:81206** 81T30 (81T40)

— (*with* de Alwis, S. P.) String field theory for $d \leq 1$ matrix models. *Nuclear Phys. B* **368** (1992), *no.* 1, 79–97. (Yolanda Lozano) **93c:81200** 81T40 (81T27)

Cohn, J. H. E. The Diophantine equation $x^2 + 19 = y^n$. *Acta Arith.* **61** (1992), *no.* 2, 193–197. (Nikos Tzanakis) **93e:11041** 11D61 (11D41)

— The Diophantine equation $x^2 + 2^k = y^n$. *Arch. Math.* (*Basel*) **59** (1992), *no.* 4, 341–344. (From the introduction) **93f:11030** 11D61

Cohn, P. M. ★ Algebraic numbers and algebraic functions. Chapman and Hall Mathematics Series. *Chapman & Hall, London*, 1991. xii+192 *pp. ISBN* 0-412-36190-6 (Boris Datskovsky) **93e:11001** 11–01 (11R04, 11R58, 14H05)

— Euclid's algorithm—since Euclid. *Math. Medley* **19** (1991), *no.* 2, 65–72. (H. L. Abbott) **93a:11001** 11–03 (01A05, 11A05, 13F15)

— Modules over hereditary rings. (English summary) *Abelian groups and noncommutative rings*, 111–119, *Contemp. Math.*, 130, *Amer. Math. Soc., Providence, RI*, 1992. (Søren Jøndrup) **93e:16021** 16E60 (16D70)

— Rank functions on projective modules over rings. *Proceedings of the International Conference on Algebra, Part 2* (*Novosibirsk*, 1989), 271–277, *Contemp. Math.*, 131, *Part 2, Amer. Math. Soc., Providence, RI*, 1992. (*see* **93b:00030**) 16D40

— A brief history of infinite-dimensional skew fields. *Math. Sci.* **17** (1992), *no.* 1, 1–14. (Summary) **93a:16002** 16–03 (16K40)

— A remark on power series rings. (English summary) *Publ. Mat.* **36** (1992), *no.* 2*A*, 481–484 (1993). (Summary) **93k:16049** 16S10 (16K20)

Cohn, Steve Resonance and long time existence for the quadratic semilinear Schrödinger equation. *Comm. Pure Appl. Math.* **45** (1992), *no.* 8, 973–1001. (B. M. Herbst) **93k:35241** 35Q55

Cohn, William S. (*with* Berman, Robert D.) Littlewood theorems for limits and growth of potentials along level sets of Hölder continuous functions. *Amer. J. Math.* **114** (1992), *no.* 1, 185–227. (Tom Carroll) **93c:31006** 31B15 (26B99, 31B25)

— (*with* Ahern, Patrick) Besov spaces, Sobolev spaces, and Cauchy integrals. *Michigan Math. J.* **39** (1992), *no.* 2, 239–261. (Steven George Krantz) **93d:32005** 32A35 (32A37, 46E35, 47G10)

Coïc, A. (*with* Richalet, J.; Abu el Ata-Doss, S.) Global identification and optimal input design. (English summary) *Identification and system parameter estimation* 1991, *Vol.* 1,2 (*Budapest*, 1991), 1121–1126, *IFAC Sympos. Ser.*, 3, *Pergamon, Oxford*, 1992. (*see* **93h:93009**) 93B30

— (*with* Abu el Ata-Doss, S.; Fliess, Michel) Nonlinear predictive control by inversion: discontinuities for critical behaviour. *Internat. J. Control* **55** (1992), *no.* 6, 1521–1533. 93B25 (93C10)

Coiera, Enrico W. Qualitative superposition. (English summary) *Artificial Intelligence* **56** (1992), *no.* 2-3, 171–196. 93A30

Coifman, Ronald R. (*with* Meyer, Yves F.) ★ Ondelettes et opérateurs. III. (French) [Wavelets and operators. III] Opérateurs multilinéaires. [Multilinear operators] Actualités Mathématiques. [Current Mathematical Topics] *Hermann, Paris*, 1991. *pp.* i–xii *and* 383–538. *ISBN* 2-7056-6127-1 (Gerald B. Folland) **93i:42004** 42–02 (30D55, 31B10, 35B65, 35S50, 42Bxx, 42C15, 47–XX)

— (*with* Meyer, Yves F.; Wickerhauser, Mladen Victor) Adapted wave form analysis, wavelet-packets and applications. *ICIAM* 91 (*Washington, DC*, 1991), 41–50, *SIAM, Philadelphia, PA*, 1992. (*see* **93b:00026**) 94A12

— (*with* Meyer, Yves F.; Wickerhauser, Mladen Victor) Wavelet analysis and signal processing. *Wavelets and their applications*, 153–178, *Jones and Bartlett, Boston, MA*, 1992. (*see* **93e:00031**) 94A12

— (*with* Beylkin, Gregory; Rokhlin, Vladimir V.) Wavelets in numerical analysis. *Wavelets and their applications*, 181–210, *Jones and Bartlett, Boston, MA*, 1992. (Fritz Keinert) **93j:65215** 65R10

— (*with* Meyer, Yves F.) Analyse de Fourier adaptée à une partition par des cubes de Whitney. [Fourier analysis adapted to a partition by Whitney cubes] *Colloq. Math.* **63** (1992), *no.* 1, 111–117. (Gerald B. Folland) **93g:42016** 42C05 (42B05, 42C15)

— (*with* Grafakos, Loukas) Hardy space estimates for multilinear operators. I. (English summary) *Rev. Mat. Iberoamericana* **8** (1992), *no.* 1, 45–67. (Aleš Založnik) **93j:42011** 42B30 (42B20)

— (*with* Alpert, Bradley K.; Beylkin, Gregory; Rokhlin, Vladimir V.) Wavelet-like bases for the fast solution of second-kind integral equations. (English summary) *SIAM J. Sci. Comput.* **14** (1993), *no.* 1, 159–184. (Summary) **93i:65126** 65R20 (42C15, 45L05)

— *see also* **Wavelets and their applications, 93e:00031**

Coimbra Charão, R. (*with* Perla Menzala, G.) On Huygens' principle and perturbed elastic waves. *Differential Integral Equations* **5** (1992), *no.* 3, 631–646. (K. S. Harinath) **93d:35095** 35L55 (35B05, 73D20, 73K15)

Coker, David A. Use of projectors for integrable models of quantum field theory. (English summary) *Internat. J. Modern Phys. B* **6** (1992), *no.* 17, 2893–2911. (Kornél Szlachányi) **93i:81177** 81T27 (81T25, 82B20)

Çolak, Rıfat On some sequence spaces and their γ-duals. (English summary) *J. Inst. Math. Comput. Sci. Math. Ser.* **5** (1992), *no.* 1, 105–108. (Manjul Gupta) **93i:46019** 46A45 (46A20, 46B45)

Colaneri, P. (*with* Scattolini, Riccardo; Schiavoni, Nicola) Stabilization and regulation of multirate sampled-data systems. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, I* (*Kobe*, 1991), 511–516, *Mita, Tokyo*, 1992. (*see* **93g:93005**) 93C57 (93B52, 93D15)

Colbois, B. (*with* Buser, Peter; Dodziuk, J.) Tubes and eigenvalues for negatively curved manifolds. (English summary) *J. Geom. Anal.* **3** (1993), *no.* 1, 1–26. (Robert Brooks) **93k:58220** 58G25

Colbourn, Charles J. (*with* Royle, Gordon F.) Supports of $(v, 4, 2)$ designs. (English summary) Graphs, designs and combinatorial geometries (Catania, 1989). *Matematiche* (*Catania*) **45** (1990), *no.* 1, 39–59 (1991). (Douglas R. Stinson) **93h:05015** 05B05

— (*with* Bigelow, D. C.) Faithful enclosing of triple systems: doubling the index. *Acta Math. Univ. Comenian.* (*N.S.*) **60** (1991), *no.* 1, 133–151. (A. Rosa) **93a:05039** 05B30 (05B07)

— (*with* Hoffman, Dean G.; Phelps, Kevin T.; Rödl, Vojtěch; Winkler, Peter M.) The number of t-wise balanced designs. *Combinatorica* **11** (1991), *no.* 3, 207–218. (Summary) **93b:05014** 05B05

— (*with* Jungnickel, Dieter; Rosa, Alexander) Preface. *Discrete Math.* **97** (1991), *no.* 1-3, 1. (Robin J. Wilson) **93c:01034** 01A70 (05–03)

— (*with* Hartman, Alan) Intersections and supports of quadruple systems. *Discrete Math.* **97** (1991), *no.* 1-3, 119–137. (M. J. Grannell) **93a:05016** 05B05

— (*with* Hoffman, Dean G.; Rodger, Chris A.) Directed star decompositions of directed multigraphs. *Discrete Math.* **97** (1991), *no.* 1-3, 139–148. (Ian Anderson) **93b:05138** 05C75 (05C20)

— (*with* Lomonosov, M. V.) Renewal networks: connectivity and reachability on a time interval. (English summary) *Probab. Engrg. Inform. Sci.* **5** (1991), *no.* 3, 361–368. (Summary) **93f:68016** 68M15 (05C40)

— (*with* Hoffman, Dean G.; Lindner, Charles C.) Intersections of $S(2, 4, v)$ designs. (English summary) *Ars Combin.* **33** (1992), 97–111. (Jozef Širáň) **93h:05016** 05B05

— (*with* Simpson, R. Jamie) A note on bounds on the minimum area of convex lattice polygons. *Bull. Austral. Math. Soc.* **45** (1992), *no.* 2, 237–240. (Béla Uhrin) **93d:52010** 52A38 (52A40, 52B20)

— Separations of Steiner triple systems: some questions. *Bull. Inst. Combin. Appl.* **6** (1992), 53–56. (K. T. Phelps) **93i:05023** 05B07

— (*with* Mendelsohn, Eric; Praeger, Cheryl E.; Tonchev, Vladimir D.) Concerning multiplier automorphisms of cyclic Steiner triple systems. (English summary) *Des. Codes Cryptogr.* **2** (1992), *no.* 3, 237–251. (Ian Blake) **93g:05020** 05B07

— (*with* Stinson, Douglas R.; Teirlinck, Luc) A parallelization of Miller's $n^{\log n}$ isomorphism technique. *Inform. Process. Lett.* **42** (1992), *no.* 4, 223–228. (Julian Padget) **93f:68037** 68Q22 (05B07, 68Q20, 68Q40)

— (*with* Hoffman, Dean G.; Rees, Rolf Stephen) A new class of group divisible designs with block size three. *J. Combin. Theory Ser. A* **59** (1992), *no.* 1, 73–89. (David E. Woolbright) **93f:05015** 05B05

— (*with* Heinrich, Katherine) Conflict-free access to parallel memories. *J. Parallel Distrib. Comput.* **14** (1992), *no.* 2, 193–200. (Shinsei Tazawa) **93a:05032** 05B15 (68P05, 68P20)

— (*with* El-Mallah, Ehab S.) Series-parallel subgraphs of planar graphs. (English summary) *Networks* **22** (1992), *no.* 6, 607–614. (Summary) **93d:05091** 05C40 (05C05)

— (*with* Brown, Jason I.) Roots of the reliability polynomial. (English summary) *SIAM J. Discrete Math.* **5** (1992), *no.* 4, 571–585. (Summary) **93g:68005** 68M15 (05C40)

— (*with* Harms, Daryl D.; Myrvold, Wendy J.) Reliability polynomials can cross twice. (English summary) *J. Franklin Inst.* **330** (1993), *no.* 3, 629–633. (Summary) **93m:94053** 94C12 (68M15, 90B25)

— (*with* Brown, Jason I.; Devitt, John S.) Network transformations and bounding network reliability. (English summary) *Networks* **23** (1993), *no.* 1, 1–17. (Wolfgang Feitscher) **93k:68012** 68M15 (05C05, 90B12)

— *see also* **Designs and graphs**

Coldwell, Jo (*with* Wrightson, Graham) A truncation technique for clausal analytic tableaux. *Inform. Process. Lett.* **42** (1992), *no.* 5, 273–281. 68T15

Cole, B. J. (*with* Lewis, Keith; Wermer, John) Pick conditions on a uniform algebra and von Neumann inequalities. *J. Funct. Anal.* **107** (1992), *no.* 2, 235–254. (Keiji Izuchi) **93e:46059** 46J10 (47A63)

— (*with* Gamelin, T. W.; Johnson, William B.) Analytic disks in fibers over the unit ball of a Banach space. *Michigan Math. J.* **39** (1992), *no.* 3, 551–569. (Richard M. Aron) **93i:46090** 46J15 (46B20, 46G20, 46M20)

Cole, Julian D. (*with* Cook, L. Pamela) Asymptotic theory of the transonic area rule. *Mathematical approaches in hydrodynamics*, 481–490, *SIAM, Philadelphia, PA*, 1991. (A. R. Manwell) **93f:76062** 76H05

— (*with* Pimbley, J. M.) Charge carrier dynamics in alpha particle tracks. *SIAM J. Appl. Math.* **52** (1992), *no.* 3, 691–698. (Summary) **93f:78005** 78A20 (78–08, 82D99)

Cole, K. D. (*with* Beck, J. V.; Haji-Sheikh, A.; Litkouhi, B.) ★ Heat conduction using Green's functions. Series in Computational and Physical Processes in Mechanics and Thermal Sciences. *Hemisphere Publishing Corp., London*, 1992. xxviii+523 *pp. ISBN* 1-56032-096-6 (P. M. Gupta) **93g:80005** 80A20 (35–01, 35C15, 35K05, 80–01)

Cole, R. *see* **Cole, Richard John**

Cole, R. E. (*with* Goodrich, R. K.) L_p-spectral estimation with an L_∞-upper bound. (English summary) *J. Optim. Theory Appl.* **76** (1993), *no.* 2, 321–355. (N. C. Mohanty) **93m:90101** 90C45 (94A11, 94A12)

Cole, Richard John (*with* Clarkson, Kenneth L.; Tarjan, Robert Endre) Randomized parallel algorithms for trapezoidal diagrams. *Internat. J. Comput. Geom. Appl.* **2** (1992), *no.* 2, 117–133. (Ivan Stojmenović) **93k:68100a** 68U05 (52B55)

— (*with* Clarkson, Kenneth L.; Tarjan, Robert Endre) Erratum: "Randomized parallel algorithms for trapezoidal diagrams". *Internat. J. Comput. Geom. Appl.* **2** (1992), *no.* 3, 341–343. (Ivan Stojmenović) **93k:68100b** 68U05 (52B55)

Cole, S. L. (*with* Wilder, J. W.) Gas phase decomposition by the Lindemann mechanism. *SIAM J. Appl. Math.* **51** (1991), *no.* 6, 1489–1497. (Summary) **93a:92019** 92E20 (34D99, 80A30)

lowen-Colebunders, Eva *see* **Lowen-Colebunders, Eva**

Colegrave, R. K. (*with* Croxson, P.) Constants of the motion and diagonalization of the Hamiltonian for some scattering processes. *J. Math. Phys.* **32** (1991), *no.* 12, 3361–3368. (S. K. Srinivasan) **93b:81317** 81V80 (81Q10, 81R05)

Coleman, A. J. (*with* Yukalov, V. I.) Order indices for boson density matrices. (English summary) *Nuovo Cimento B* (11) **107** (1992), *no.* 5, 535–552. (Nicolae Angelescu) **93h:82003** 82B10

Coleman, Bernard D. (*with* Jenkins, James T.) On a class of solutions in the theory of nematic phases. (English summary) *Nematics* (*Orsay*, 1990), 93–105, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 332, *Kluwer Acad. Publ., Dordrecht*, 1991. (Helmut Kaul) **93h:58037** 58E12 (76A15)

— A survey of results on the loss of regularity of shearing flows of viscoelastic fluids. (English summary) *Waves and stability in continuous media* (*Sorrento*, 1989), 72–86, *Ser. Adv. Math. Appl. Sci.*, 4, *World Sci. Publishing, River Edge, NJ*, 1991. (*see* **93g:00030**) 76A15 (73F15)

— (*with* Marcus, Moshe M.; Mizel, Victor J.) On the thermodynamics of periodic phases. *Arch. Rational Mech. Anal.* **117** (1992), *no.* 4, 321–347. (John M. Ball) **93d:73008** 73B30 (49K15, 73V25, 80A22)

— (*with* Bethuel, Fabrice; Brézis, Haïm; Hélein, Frédéric) Bifurcation analysis of minimizing harmonic maps describing the equilibrium of nematic phases between cylinders. *Arch. Rational Mech. Anal.* **118** (1992), *no.* 2, 149–168. (E. Acerbi) **93h:49059** 49Q10 (58E20, 76A15, 76M30)

— (*with* Dill, Ellis Harold; Lembo, Marzio; Lu, Zheng; Tobias, Irwin) On the dynamics of rods in the theory of Kirchhoff and Clebsch. *Arch. Rational Mech. Anal.* **121** (1992), *no.* 4, 339–359. (D. Ieşan) **93k:73046** 73K05 (73D99, 73K12)

— (*with* Dill, Ellis Harold) Flexure waves in elastic rods. *J. Acoust. Soc. Amer.* **91** (1992), *no.* 5, 2663–2673. (Summary) **93b:73028** 73K12 (73D35, 73K05)

Coleman, Carol Flynn (*with* McLaughlin, Joyce R.) Solution of the inverse spectral problem for an impedance with integrable derivative. I, II. (English summary) *Comm. Pure Appl. Math.* **46** (1993), *no.* 2, 145–184, 185–212. (C. Tomei) **93m:34017** 34A55 (34B24, 34L40)

Coleman, E. Perfect compact T_1 spaces. (English summary) *Irish Math. Soc. Bull. No.* 26 (1991), 52–58. (James Chew) **93k:54049** 54D10 (54D30)

Coleman, John P. (*with* Booth, Andrew S.) Analysis of a family of Chebyshev methods for $y'' = f(x, y)$. (English summary) *J. Comput. Appl. Math.* **44** (1992), *no.* 1, 95–114. (Summary) **93m:65087** 65L05

Coleman, M. D. The distribution of points at which norm-forms are prime. *J. Number Theory* **41** (1992), *no.* 3, 359–378. (Adolf Hildebrand) **93f:11086** 11R44 (11N05)

Coleman, Matthew P. (*with* Wang, Han Kun) Analysis of vibration spectrum of a Timoshenko beam with boundary damping by the wave method. (English summary) *Wave Motion* **17** (1993), *no.* 3, 223–239. 73K12 (73K05)

Coleman, N. P. (*with* Zhang, Jian Liang; Shieh, Leang San) Hybrid optimal control of turret-gun system. (English summary) *Transactions of the Tenth Army Conference on*

Applied Mathematics and Computing (*West Point, NY*, 1992), 345–357, *ARO Rep.*, 93-1, *U.S. Army Res. Office, Research Triangle Park, NC*, 1993. (*see* **93m:00047**) 93C95 (49N55)

Coleman, Robert Alan (*with* Korté, Herbert) On attempts to rescue the conventionality thesis of distant simultaneity in STR. (English summary) *Found. Phys. Lett.* **5** (1992), *no.* 6, 535–571. (Lawrence Sklar) **93k:83002** 83A05

Coleman, Robert F. (*with* Voloch, José Felipe) Companion forms and Kodaira-Spencer theory. *Invent. Math.* **110** (1992), *no.* 2, 263–281. (Nigel Boston) **93i:11063** 11F80 (11F11, 11G18, 14F30)

Coleman, Sidney (*with* Preskill, John; Wilczek, Frank) Quantum hair on black holes. *Nuclear Phys. B* **378** (1992), *no.* 1-2, 175–246. (Summary) **93m:83050** 83C57 (83C47)

— *see also* **Quantum cosmology and baby universes, 93h:83024**

Coleman, Thomas F. (*with* Fenyes, Peter A.) Partitioned quasi-Newton methods for nonlinear equality constrained optimization. *Math. Programming* **53** (1992), *no.* 1, *Ser. A*, 17–44. (Nada I. Djuranović-Miličič) **93a:90059** 90C30 (65H10, 65K10)

— (*with* Li, Yuying) A globally and quadratically convergent affine scaling method for linear l_1 problems. (English summary) *Math. Programming* **56** (1992), *no.* 2, *Ser. A*, 189–222. (Summary) **93g:65073** 65H10 (65K05, 90C05)

— (*with* Li, Yuying) A global and quadratically convergent method for linear l_∞ problems. *SIAM J. Numer. Anal.* **29** (1992), *no.* 4, 1166–1186. (Summary) **93d:65050** 65H10 (65K05, 65K10)

— (*with* Plassmann, Paul E.) A parallel nonlinear least-squares solver: theoretical analysis and numerical results. *SIAM J. Sci. Statist. Comput.* **13** (1992), *no.* 3, 771–793. (Summary) **93a:65068** 65H10 (65F05, 65K05, 65Y05, 90C30)

Coleridge, Samuel Taylor *see* **Sysak, Janusz**

Colet, P. (*with* San Miguel, M.; Hernández-García, E.; Cáceres, Manuel O.; De Pasquale, F.) Passage time description of dynamical processes. (English summary) *Instabilities and nonequilibrium structures, III* (*Valparaíso*, 1989), 143–155, *Math. Appl.*, 64, *Kluwer Acad. Publ., Dordrecht*, 1991. (Summary) **93c:58190** 58F30 (58F14)

— (*with* Wio, H. S.; San Miguel, M.; Pesquera, L.; Rodríguez, Miguel Angel) Stochastic processes driven by colored noise: a path integral point of view. *Instabilities and nonequilibrium structures, III* (*Valparaíso*, 1989), 157–169, *Math. Appl.*, 64, *Kluwer Acad. Publ., Dordrecht*, 1991. (*see* **93b:00027**) 58D30

Coletti, G. (*with* Regoli, G.) How can an expert system help in choosing the optimal decision? (English summary) *Theory and Decision* **33** (1992), *no.* 3, 253–264. (Summary) **93j:90019** 90A10 (68T30, 90A06)

Coley, Alan A. (*with* Tupper, B. O. J.) Fluid spacetimes admitting covariantly constant vectors and tensors. *Gen. Relativity Gravitation* **23** (1991), *no.* 10, 1113–1142. (M. A. H. MacCallum) **93c:83016** 83C20 (53C80, 83C40)

— (*with* Tupper, B. O. J.) Affine conformal vectors in spacetime. *Proceedings of the 4th Canadian Conference on General Relativity and Relativistic Astrophysics* (*Winnipeg, MB*, 1991), 336–340, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93d:83016** 83C20

— Gravitational entropy and cosmology. *Proceedings of the 4th Canadian Conference on General Relativity and Relativistic Astrophysics* (*Winnipeg, MB*, 1991), 341–346, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93d:83071** 83F05

— (*with* Goode, S. W.; Wainwright, John) The isotropic singularity in cosmology. *Classical Quantum Gravity* **9** (1992), *no.* 2, 445–455. (Peter R. Law) **93b:83047** 83C75 (83F05)

— (*with* Wainwright, John) Qualitative analysis of two-fluid Bianchi cosmologies. *Classical Quantum Gravity* **9** (1992), *no.* 3, 651–665. (P. C. Vaidya) **93b:83013** 83C20

— (*with* Czapor, S. R.) Plane symmetric spacetimes admitting inheriting conformal Killing vector fields. *Classical Quantum Gravity* **9** (1992), *no.* 7, 1787–1811. (Shin-ichi Kitamura) **93f:83018** 83C20 (83C15)

— (*with* Castejón-Amenedo, J.) Exact solutions with conformal Killing vector fields. (English summary) *Classical Quantum Gravity* **9** (1992), *no.* 10, 2203–2215. (Nora Bretón Báez) **93j:83017** 83C15 (82C20)

— (*with* Tavakol, R. K.) Fragility in cosmology. *Gen. Relativity Gravitation* **24** (1992), *no.* 8, 835–855. (Summary) **93c:83125** 83F05

— (*with* Tupper, B. O. J.) Affine conformal vectors in space-time. *J. Math. Phys.* **33** (1992), *no.* 5, 1754–1764. (K. L. Duggal) **93b:83014** 83C20 (83C15)

— (*with* Dunn, K. A.) Qualitative analysis of a class of Bianchi V imperfect fluid cosmologies. *J. Math. Phys.* **33** (1992), *no.* 5, 1772–1779. (J. B. Griffiths) **93c:83017** 83C20

Colgren, R. D. (*with* Jonckheere, Edmond A.) Balanced model reduction for large aircraft models. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, I* (*Kobe*, 1991), 437–442, *Mita, Tokyo*, 1992. (*see* **93g:93005**) 93B11 (93C95)

garcía-Colín, L. S. *see* **García-Colín, L. S.**

Colin, Thierry (*with* Chern, I-Liang; Kaper, Hans G.) Classical solutions of the nondivergent barotropic equations on the sphere. (English summary) *Comm. Partial Differential Equations* **17** (1992), *no.* 5-6, 1001–1019. (J. Thomas Beale) **93g:76109** 76U05 (35A05, 35Q99, 76C15, 86A10)

Colin de Verdière, Yves Hyperbolic geometry in two dimensions and trace formulas. *Chaos et physique quantique* (*Les Houches*, 1989), 305–330, *North-Holland, Amsterdam*, 1991. (Jonathan Huntley) **93k:58232** 58G26 (58G25)

— Comment rendre géodésique une triangulation d'une surface? [How can a surface triangulation be made geodesic?] *Enseign. Math.* (2) **37** (1991), *no.* 3-4, 201–212. (Wolfgang Kühnel) **93a:53034** 53C22 (05C10, 57M20, 57R05, 57R40, 58E10)

Coll, Bartolomé (*with* Morales, Juan Antonio) 199 causal classes of space-time frames. *Internat. J. Theoret. Phys.* **31** (1992), *no.* 6, 1045–1062. (J. A. Lester) **93c:83002** 83A05

Coll, C. (*with* Brú, Rafael; Hernández, Vicente G.) Realizations of rational matrices in discrete periodic linear systems. (Spanish) *Proceedings of the XII Congress on Differential Equations and Applications/II Congress on Applied Mathematics* (*Spanish*) (*Oviedo*, 1991), 319–324, *Univ. Oviedo, Oviedo*, 1991. (*see* **93j:00009**) 93B15

Coll, Tomeu (*with* Catté, Francine; Lions, Pierre-Louis; Morel, Jean-Michel) Image selective smoothing and edge detection by nonlinear diffusion. *SIAM J. Numer. Anal.* **29** (1992), *no.* 1, 182–193. (Summary) **93a:94005** 94A12 (35K55, 68U10, 93D05)

fraguela Collar, Andrés *see* **Fraguela Collar, Andrés**

Collatz, Lothar Applications of functional analysis and approximation theory to elliptic boundary value problems. *Trends in functional analysis and approximation theory* (*Acquafredda di Maratea*, 1989), 3–15, *Univ. Modena, Modena*, 1991. (A. V. Dzhishkariani) **93d:65094** 65N15 (47F05, 47H17, 47N20, 65J05)

— Applications of functional analysis and approximation theory to elliptic boundary value problems. (English summary) *Atti Sem. Mat. Fis. Univ. Modena* **40** (1992), *no.* 1, 123–135. (Summary) **93g:65084** 65J15 (35J15, 41A20, 47H15)

— The 93 classes of equitilings of the plane with characteristics ≥ 3. *Discrete Math.* **102** (1992), *no.* 1, 1–11. (J. M. Wills) **93d:52027** 52C20 (05B45)

— *see also* **Guenther, Ronald B., 93c:01041a** *and* **Obituary: Collatz, Lothar, 93c:01041b**

Collet, P. Fast dynamo for some Anosov flows. *Instabilities and nonequilibrium structures, III* (*Valparaíso*, 1989), 5–11, *Math. Appl.*, 64, *Kluwer Acad. Publ., Dordrecht*, 1991. (*see* **93b:00027**) 58F15 (76F20)

— A dynamical system with spatial complexity increasing in time. *From phase transitions to chaos*, 580–585, *World Sci. Publishing, River Edge, NJ*, 1992. (Dieter H. Mayer) **93h:58095** 58F13 (35B40, 35Q99, 58F11)

— (*with* Eckmann, J.-P.) Solutions without phase-slip for the Ginsburg-Landau equation. *Comm. Math. Phys.* **145** (1992), *no.* 2, 345–356. (Peter L. Christiansen) **93d:35151** 35Q55 (82C10)

— (*with* Eckmann, J.-P.; Epstein, Henri) Diffusive repair for the Ginzburg-Landau equation. *Helv. Phys. Acta* **65** (1992), *no.* 1, 56–92. (H. Tasso) **93b:76037** 76E30 (35Q55)

Colley, Susan Jane (*with* Kennedy, Gary) Triple and quadruple contact of plane curves. *Enumerative algebraic geometry* (*Copenhagen*, 1989), 31–59, *Contemp. Math.*, 123, *Amer. Math. Soc., Providence, RI*, 1991. (Ming Wei Xu) **93c:14042** 14N10 (14C25)

Colli, Pierluigi An existence result for a thermomechanical model of shape memory alloys. *Adv. Math. Sci. Appl.* **1** (1992), *no.* 1, 83–97. (Miroslav Šilhavý) **93c:73009** 73B30

— Global existence for a second-order thermomechanical model of shape memory alloys. (English summary) *J. Math. Anal. Appl.* **168** (1992), *no.* 2, 580–595. (Marshall Slemrod) **93g:73015** 73B30 (80A22)

— On some doubly nonlinear evolution equations in Banach spaces. *Japan J. Indust. Appl. Math.* **9** (1992), *no.* 2, 181–203. (Paolo Acquistapace) **93d:47137** 47N20 (34G20, 47H05, 47H20)

— (*with* Sprekels, Jürgen) Global existence for a three-dimensional model for the thermomechanical evolution of shape memory alloys. *Nonlinear Anal.* **18** (1992), *no.* 9, 873–888. (Miroslav Šilhavý) **93c:73010** 73B30

— (*with* Visintin, A.) Doubly nonlinear evolution equations accounting for dissipations. *Free boundary problems involving solids* (*Montreal, PQ*, 1990), 14–19, *Pitman Res. Notes Math. Ser.*, 281, *Longman Sci. Tech., Harlow*, 1993. (*see* **93k:00037**) 35K55 (34G20)

Collina, R. (*with* Blasi, Alberto) The Chern-Simons model with boundary: a cohomological approach. *Internat. J. Modern Phys. A* **7** (1992), *no.* 13, 3083–3103. (Bogusław Broda) **93d:81110** 81T13 (81R10, 81T40, 81T50, 81T70)

Collingwood, David H. (*with* Boe, Brian D.) Enright-Shelton theory and Vogan's problem for generalized principal series. *Mem. Amer. Math. Soc.* **102** (1993), *no.* 486, viii+107 *pp.* (Brad Shelton) **93g:22014** 22E46 (22E47)

Collins, Charles (*with* Chipot, Michel) Numerical approximations in variational problems with potential wells. *SIAM J. Numer. Anal.* **29** (1992), *no.* 4, 1002–1019. (Charles I. Goldstein) **93j:65171** 65N15 (35J20, 65K10)

Collins, D. J. (*with* Boileau, M.; Zieschang, H.) Genus 2 Heegaard decompositions of small Seifert manifolds. (French summary) *Ann. Inst. Fourier* (*Grenoble*) **41** (1991), *no.* 4, 1005–1024. (Tsuyoshi Kobayashi) **93d:57026** 57N10 (57M05, 57M50, 57N37)

Collins, Dennis Glenn Canonical forms for the digraph isomorphism problem. *Graph theory, combinatorics, and applications, Vol. 1* (*Kalamazoo, MI*, 1988), 271–285, *Wiley-Intersci. Publ., Wiley, New York*, 1991. (Summary) **93b:05123** 05C60 (05C20)

Collins, Emmanuel G., Jr. (*with* Žigić, Dragan; Watson, Layne T.; Bernstein, Dennis S.) Homotopy methods for solving the optimal projection equations for the H_2 reduced order model problem. *Internat. J. Control* **56** (1992), *no.* 1, 173–191. (Kang-Zhi Liu) **93f:93058** 93B40 (93B36)

— (*with* King, James A.; Bernstein, Dennis S.) Application of maximum entropy/optimal projection design synthesis to a benchmark problem. (English summary) *J. Guidance Control Dynamics* **15** (1992), *no.* 5, 1094–1102. 93B50

Collins, George E. (*with* Hong, Hoon) Partial cylindrical algebraic decomposition for quantifier elimination. *J. Symbolic Comput.* **12** (1991), *no.* 3, 299–328. (Henry Africk) **93b:03015** 03B35 (03C10, 68Q40, 68T20)

Collins, Graham P. (*with* Weisberger, William I.) Surface quadrupling and regularized off-shell amplitudes for unoriented, open, bosonic strings. *J. Math. Phys.* **32** (1991), *no.* 10, 2890–2902. (Akira Asada) **93e:81091** 81T30 (30F50, 58G26, 81T50)

Collins, J. J. (*with* Stewart, Ian N.) Symmetry-breaking bifurcation: a possible mechanism for 2 : 1 frequency-locking in animal locomotion. (English summary) *J. Math. Biol.* **30** (1992), *no.* 8, 827–838. (Summary) **93h:92011** 92C10 (34C23, 58F14, 58F40, 92D50)

Collins, J. M. (*with* d'Inverno, R. A.) The Karlhede classification of type-*D* nonvacuum spacetimes. (English summary) *Classical Quantum Gravity* **10** (1993), *no.* 2, 343–351. (J. B. Griffiths) **93k:83014** 83C20

Collins, Karen L. Planar lattices are lexicographically shellable. *Order* **8** (1991/92), *no.* 4, 375–381. (James W. Walker) **93k:06009** 06A08 (05E25, 06A07)

Collins, Oliver (*with* Dolinar, Sam; McEliece, Robert J.; Pollara, Fabrizio) A VLSI decomposition of the de Bruijn graph. (English summary) *J. Assoc. Comput. Mach.* **39** (1992), *no.* 4, 931–948. (Summary) **93g:05132** 05C90 (68R10)

Collins, P. J. *see* **Proceedings: Symposium on General Topology and Applications, 93d:54003**

Collinson, C. D. (*with* Vaz, E. G. L. R.) Some canonical forms for the metric of spacetimes admitting a rational first integral of the geodesic equation. *Gen. Relativity Gravitation* **24** (1992), *no.* 4, 405–418. (Nora Bretón Báez) **93a:83010** 83C20

— (*with* O'Donnell, P. J.) A class of empty spacetimes admitting a rational first integral of the geodesic equation. *Gen. Relativity Gravitation* **24** (1992), *no.* 4, 451–455. (Nora Bretón Báez) **93e:83025a** 83C20 (83C15)

— (*with* O'Donnell, P. J.) Erratum: "A class of empty spacetimes admitting a rational first integral of the geodesic equation". *Gen. Relativity Gravitation* **24** (1992), *no.* 6, 691. (Nora Bretón Báez) **93e:83025b** 83C20 (83C15)

Colliot-Thélène, Jean-Louis Real rational surfaces without a real point. *Arch. Math.* (*Basel*) **58** (1992), *no.* 4, 392–396. (Robert Silhol) **93e:14027** 14G27 (14J26, 14P05)

— (*with* Skorobogatov, A. N.) Approximation faible pour les intersections de deux quadriques en dimension 3. (English summary) [Weak approximation for intersections of two quadrics in dimension 3] *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 2, 127–132. (Noriko Yui) **93c:11045** 11G35 (11G99, 14M10)

Collombier, D. Generally optimal main-effect fractions of $u \times v$ designs with $u + v$ units. (English summary) *Comput. Statist. Data Anal.* **14** (1992), *no.* 3, 333–342. (Girdhar G. Agarwal) **93m:62169** 62K05

Colmez, Pierre (*with* Schneps, Leila) p-adic interpolation of special values of Hecke L-functions. *Compositio Math.* **82** (1992), *no.* 2, 143–187. (Rodney I. Yager) **93d:11121** 11R42 (11M41, 11S40)

— Périodes p-adiques des variétés abéliennes. [p-adic periods of abelian varieties] *Math. Ann.* **292** (1992), *no.* 4, 629–644. (F. Baldassarri) **93d:14062** 14K20 (14K15, 14L05)

Colom, J. M. (*with* Silva, Manuel; Campos, Javier) Linear algebraic techniques for the analysis of Petri nets. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, II (Kobe, 1991)*, 35–42, *Mita, Tokyo*, 1992. (Summary) **93h:68108** 68Q90

Colombeau, Jean-François (*with* Heibig, Arnaud) Nonconservative products in bounded variation functions. *SIAM J. Math. Anal.* **23** (1992), *no.* 4, 941–949. (P. Crăciunas) **93f:46058** 46F10 (35L99)

Colombi, Pierluigi (*with* Elishakoff, Isaac) Combination of probabilistic and convex models of uncertainty when scarce knowledge is present on acoustic excitation parameters. (English summary) *Comput. Methods Appl. Mech. Engrg.* **104** (1993), *no.* 2, 187–209. (Summary) **93m:73027** 73K35 (73V30)

Colombini, F. (*with* Del Santo, Daniele; Zuily, C.) Some remarks on the uniqueness in the Cauchy problem for degenerate elliptic operators. *Nonlinear analysis*, 153–159, *Quaderni, Scuola Norm. Sup., Pisa*, 1991. (*see* **93h:00022**) 35J70

Colombo, Giovanni (*with* Tosques, M.) Multivalued perturbations for a class of nonlinear evolution equations. *Ann. Mat. Pura Appl.* (4) **160** (1991), 147–162 (1992). (Nicolae H. Pavel) **93k:34146** 34G20 (34A12, 34A60, 35K99, 47N20)

— Weak flow-invariance for nonconvex differential inclusions. *Differential Integral Equations* **5** (1992), *no.* 1, 173–180. (Corneliu Ursescu) **93a:34020** 34A60 (49J24)

— (*with* Bressan, Alberto) Selections and representations of multifunctions in paracompact spaces. *Studia Math.* **102** (1992), *no.* 3, 209–216. (Summary) **93d:54032** 54C65 (47H04)

Colombo, R. M. (*with* Cellina, Arrigo) Some qualitative and quantitative results on a differential inclusion. *Rend. Sem. Mat. Univ. Politec. Torino* **48** (1990), *no.* 2, 105–124 (1992). (Manfred Goebel) **93d:34023** 34A60

— (*with* Fryszkowski, Andrzej; Rzeżuchowski, Tadeusz; Staicu, Vasile) Continuous selections of solution sets of Lipschitzean differential inclusions. *Funkcial. Ekvac.* **34** (1991), *no.* 2, 321–330. (Péter Tallós) **93i:34022** 34A60 (47H04, 49J24, 54C65)

Colombo, Serge Louis de Broglie 1892–1987. (French) *Rev. Questions Sci.* **162** (1991), *no.* 4, 349–359. 01A70

Colomo, F. (*with* Lusanna, Luca) Wigner theory of the Nambu string. II. The closed string. (English summary) *Internat. J. Modern Phys. A* **7** (1992), *no.* 17, 4107–4148. (Gheorghe Zet) **93k:81172** 81T30

— (*with* Izergin, A. G.; Korepin, V. E.; Tognetti, V.) Correlators in the Heisenberg $XX0$ chain as Fredholm determinants. (English summary) *Phys. Lett. A* **169** (1992), *no.* 4, 243–247. (Summary) **93f:82020** 82B23

Colonius, Fritz (*with* Kliemann, Wolfgang) Stability radii and Lyapunov exponents. (English summary) *Control of uncertain systems (Bremen, 1989)*, 19–55, *Progr. Systems Control Theory*, 6, *Birkhäuser Boston, Boston, MA*, 1990. (Summary) **93i:93091** 93D05 (34D08, 34D99, 34H05, 93E15)

— (*with* Kliemann, Wolfgang) Lyapunov exponents of control flows. (English summary) *Lyapunov exponents (Oberwolfach, 1990)*, 331–365, *Lecture Notes in Math.*, 1486, *Springer, Berlin*, 1991. (Summary) **93f:93118** 93D20 (58F40)

— (*with* Kliemann, Wolfgang) Remarks on ergodic theory of stochastic flows and control flows. (English summary) *Diffusion processes and related problems in analysis, Vol. II (Charlotte, NC, 1990)*, 203–239, *Progr. Probab.*, 27, *Birkhäuser Boston, Boston, MA*, 1992. (M. J. Chappell) **93i:60110** 60H10 (58E07, 58G35, 93C10, 93E03)

— (*with* Kliemann, Wolfgang) Minimal and maximal Lyapunov exponents of bilinear control systems. (English summary) *J. Differential Equations* **101** (1993), *no.* 2, 232–275. (Wolfdietrich Müller) **93j:93096** 93D05 (34D08, 34H05, 93B10, 93D15)

Colpa, J. P. (*with* Temme, F. P.) Summary of $\mathscr{S}_n$ mapping properties of some lexical p-tuples, or wordlengths, over $(M_1 - M_n)$ fields of Rota-Cayley algebra in generating Hilbert space $SO(3) \times \mathscr{S}_n$ irreps of higher I_i identical spin clusters, $[A]_n(\mathscr{S}_n)$, for $n \leq 7$. (English summary) *J. Math. Chem.* **11** (1992), *no.* 4, 341–352. (Summary) **93i:81056** 81R05 (20C30, 81V55)

Colpi, Riccardo Equivalences between projective and injective modules and Morita duality for Artinian rings. (English summary) *Comm. Algebra* **21** (1993), *no.* 2, 601–606. (Summary) **93j:16004** 16D90

Colţoiu, Mihnea n-concavity of n-dimensional complex spaces. *Math. Z.* **210** (1992), *no.* 2, 203–206. (Takeo Ohsawa) **93f:32016** 32F10

Colton, David The inverse scattering problem for electromagnetic waves in an inhomogeneous medium. (English summary) *Direct and inverse boundary value problems (Oberwolfach, 1989)*, 27–35, *Methoden Verfahren Math. Phys.*, 37, *Lang, Frankfurt am Main*, 1991. (*see* **93k:00034**) 78A45 (35R30)

— (*with* Kress, Rainer) ★ Inverse acoustic and electromagnetic scattering theory. Applied Mathematical Sciences, 93. *Springer-Verlag, Berlin*, 1992. x+305 *pp. ISBN* 3-540-55518-8 (Volker Vogelsang) **93j:35124** 35P25 (35J99, 35Q60, 35R30, 76Q05, 78A45)

— (*with* Päivärinta, Lassi) The uniqueness of a solution to an inverse scattering problem for electromagnetic waves. *Arch. Rational Mech. Anal.* **119** (1992), *no.* 1, 59–70. (Hideo Soga) **93h:78009** 78A45 (35Q60, 35R30)

— (*with* Monk, Peter) The numerical solution of an inverse scattering problem for acoustic waves. (English summary) *IMA J. Appl. Math.* **49** (1992), *no.* 2, 163–184. (From the text) **93j:76053** 76Q05 (65P05, 76M25)

— (*with* Monk, Peter) A comparison of two methods for solving the inverse scattering problem for acoustic waves in an inhomogeneous medium. (English summary) *J. Comput. Appl. Math.* **42** (1992), *no.* 1, 5–16. (V. H. Weston) **93j:76054** 76Q05 (35J05, 35R30, 76M25)

— (*with* Kirsch, Andreas) The use of polarization effects in electromagnetic inverse scattering problems. *Math. Methods Appl. Sci.* **15** (1992), *no.* 1, 1–10. (Sergej M. Zverev) **93g:78013** 78A40 (86A22, 86A25)

Columbus, Joachim Tait-systems for fragments of L_m. *J. Non-Classical Logic* **6** (1989), *no.* 2, 47–70. 03B50 (03F05)

pasquali Coluzzi, D. *see* **Pasquali Coluzzi, D.**

Colwell, David B. (*with* Elliott, Robert James) Martingale representation and nonattainable contingent claims. *System modelling and optimization (Zurich, 1991)*, 833–842, *Lecture Notes in Control and Inform. Sci.*, 180, *Springer, Berlin*, 1992. (A. I. Yastremskiĭ) **93g:90013** 90A09 (60G44)

Colzani, Leonardo (*with* Crespi, Antonio; Travaglini, Giancarlo; Vignati, Marco) Equiconvergence theorems for Fourier-Bessel expansions with applications to the harmonic analysis of radial functions in Euclidean and non-Euclidean spaces. *Trans. Amer. Math. Soc.* **338** (1993), *no.* 1, 43–55. (Sundaram Thangavelu) **93j:42009** 42B15

rifà i Coma, Josep *see* **Rifà i Coma, Josep**

Comalada, Salvador (*with* Nart, Enric) Modular invariant and good reduction of elliptic curves. *Math. Ann.* **293** (1992), *no.* 2, 331–342. (Philippe Satgé) **93g:11058** 11G05

Coman, Dan The sharp upper bound for the modulus of the Schwarzian in the class of convex functions. (Romanian summary) *Studia Univ. Babeş-Bolyai Math.* **35** (1990), *no.* 4, 49–51 (1992). 30C45

— Upper bounds for the modulus of the first and second derivatives of the Schwarzian in the class of univalent functions. *Mathematica (Cluj)* **33(56)** (1991), *no.* 1-2, 31–34. (Stephen M. Zemyan) **93h:30022** 30C50

Coman, Gh. (*with* Gânscă, I.; Ţâmbulea, L.) On the shape of Bézier surfaces. (Romanian summary) *Studia Univ. Babeş-Bolyai Math.* **35** (1990), *no.* 3, 37–42. 65D17

Comay, E. Parity nonconservation in electromagnetic systems. (English summary) *Internat. J. Theoret. Phys.* **31** (1992), *no.* 11, 2035–2042. 78A25

Combé, M. B. (*with* Borst, S. C.) Letter to the editor: "Busy-period analysis of a correlated queue with exponential demand and service" [J. Appl. Probab. **24** (1987), no. 2, 476–485; MR 88g:60229] by C. Langaris. *J. Appl. Probab.* **29** (1992), *no.* 2, 482–483. (From the text) **93f:60134** 60K25

Combe, Ph. (*with* Blanchard, Philippe; Nencka, H.; Rodriguez, Roger) Stochastic dynamical models for synaptic connections. (English summary) *Probabilistic methods in mathematical physics (Siena, 1991)*, 83–94, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93h:82041** 82C32 (92B20)

— (*with* Blanchard, Philippe; Nencka, H.; Rodriguez, Roger) Stochastic dynamical aspects of neuronal activity. (English summary) *J. Math. Biol.* **31** (1993), *no.* 2, 189–198. (Summary) **93j:92010** 92C20 (60J15)

Combes, J.-M. (*with* Hislop, Peter D.) Stark ladder resonances for small electric fields. *Comm. Math. Phys.* **140** (1991), *no.* 2, 291–320. (Georgi E. Karadzhov) **93c:81040** 81Q10 (81Q20, 81V10)

— (*with* Hislop, Peter D.) Some transport and spectral properties of disordered media. *Schrödinger operators (Aarhus, 1991)*, 16–47, *Lecture Notes in Phys.*, 403, *Springer, Berlin*, 1992. (Lawrence E. Thomas) **93k:81047** 81Q10 (35J10, 35P05, 47F05, 47N50, 82C44, 82C70)

Combescure, A. (*with* Suo, Xiao Zheng) Second variation of energy and an associated line independent integral in fracture mechanics. I. Theory. (English summary) *European J. Mech. A Solids* **11** (1992), *no.* 5, 609–624. (Summary) **93j:73066** 73M25 (73V25)

Combescure, M. A generalized coherent state approach of the quantum dynamics for suitable time-dependent Hamiltonians. *Journées "Équations aux Dérivées Partielles" (Saint-Jean-de-Monts, 1992)*, *Exp. No. XVI*, 13 *pp., École Polytech., Palaiseau*, 1992. (A. Ventura) **93m:81040** 81R05 (81R30, 81V70)

— Recurrent versus diffusive dynamics for a kicked quantum oscillator. (English and French summaries) *Ann. Inst. H. Poincaré Phys. Théor.* **57** (1992), *no.* 1, 67–87. (Eugen Belokolos) **93j:81021** 81Q50 (82C10)

— The squeezed state approach of the semiclassical limit of the time-dependent Schrödinger equation. (English summary) *J. Math. Phys.* **33** (1992), *no.* 11, 3870–3880. (Nathalie Debergh) **93i:81083** 81R30

Combourieu, Marie-Christine (*with* Rauch, Helmut) The wave-particle dualism in 1992: a summary. (English summary) *Found. Phys.* **22** (1992), *no.* 12, 1403–1434. (Summary) **93i:81007** 81P05 (01A60)

Combs, L. L. (*with* Waggoner, C. A.) Optimization techniques in energy calculations involving the Hartree-Fock density matrix. (English summary) *J. Optim. Theory Appl.* **76** (1993), *no.* 2, 225–240. 49K20 (49N55, 81–08, 81V55, 90C30)

Comellas, F. Using genetic algorithms for planarization problems. (English summary) *Computational and applied mathematics, I (Dublin, 1991)*, 93–100, *North-Holland, Amsterdam*, 1992. (*see* **93j:00007**) 05C85 (68U05)

Comer, Stephen D. The representation of 3-dimensional cylindric algebras. *Algebraic logic (Budapest, 1988)*, 147–172, *Colloq. Math. Soc. János Bolyai*, 54, *North-Holland, Amsterdam*, 1991. (Ivo Düntsch) **93c:03079** 03G15

— Lattices of conjugacy relations. *Proceedings of the International Conference on Algebra, Part 3 (Novosibirsk, 1989)*, 31–48, *Contemp. Math.*, 131, *Part 3, Amer. Math. Soc., Providence, RI*, 1992. (Introduction) **93i:06003** 06B99 (06A23, 20N20)

Comets, Francis (*with* Gidas, Basilis) Asymptotics of maximum likelihood estimators for the Curie-Weiss model. *Ann. Statist.* **19** (1991), *no.* 2, 557–578. (Summary) **93c:62038** 62F10 (62F12, 62P99, 82B26)

— Limites hydrodynamiques. [Hydrodynamical limits] Séminaire Bourbaki, Vol. 1990/91. *Astérisque No.* 201-203 (1991), *Exp. No.* 735, 167–192 (1992). (Pablo A. Ferrari) **93e:60194** 60K35 (82C22)

— Statistical analysis of Markov random fields using large deviation estimates. (English summary) *Stochastic models, statistical methods, and algorithms in image analysis (Rome, 1990)*, 132–141, *Lecture Notes in Statist.*, 74, *Springer, Berlin*, 1992. (*see* **93e:62005**) 62M40 (60F10)

— (*with* Gidas, Basilis) Parameter estimation for Gibbs distributions from partially observed data. *Ann. Appl. Probab.* **2** (1992), *no.* 1, 142–170. (Christian Maes) **93b:60056** 60F10 (60G60, 62F99, 62M05, 82B99)

— On consistency of a class of estimators for exponential families of Markov random fields on the lattice. *Ann. Statist.* **20** (1992), *no.* 1, 455–468. (Yun Gang Lu) **93c:82024** 82B26 (60G60, 62F12, 62M40)

Comi, C. (*with* Maier, Giulio; Perego, U.) Generalized variable finite element modeling and extremum theorems in stepwise holonomic elastoplasticity with internal variables. *Comput. Methods Appl. Mech. Engrg.* **96** (1992), *no.* 2, 213–237. (Summary) **93a:73080** 73V05 (73E05, 73E50, 73V25)

Čomić, Irena Horizontal and vertical geodesics in the Riemann space. (Serbo-Croatian summary) *Mat. Vesnik* **42** (1990), *no.* 3-4, 139–153. (Andrzej Bucki) **93g:53058** 53C22 (53B40)

— The Ricci and Bianchi identities in the recurrent K-Hamilton space. (English summary) *Proceedings of the 3rd Congress of Geometry (Thessaloniki, 1991)*, 137–147, *Aristotle Univ. Thessaloniki, Thessaloniki*, 1992. (Mihai Anastasie) **93g:53032** 53B40
— The curvature theory of strongly distinguished connection in the recurrent K-Hamilton space. *Indian J. Pure Appl. Math.* **23** (1992), *no.* 3, 189–202. (Elena Macovei) **93d:53089** 53C60 (53B40)
Common, A. K. Bounds on the kinetic energy, mean radius, and electric dipole moment of ground states in a class of potential models of quarkonium. *J. Math. Phys.* **32** (1991), *no.* 11, 3111–3116. (Kay Kong Wan) **93b:81042** 81Q05 (81V05)
— Q-D algorithm and the discrete time Toda lattice. (English summary) *Comm. Anal. Theory Contin. Fractions* **1** (1992), 46–50. 82C20 (39A12)
— (*with* Hafez, S. T.) Linearization of the relativistic and discrete-time Toda lattices for particular boundary conditions. *Inverse Problems* **8** (1992), *no.* 1, 59–69. (Hong You Wu) **93c:58083** 58F07 (34K99, 35Q53)
— A solution of the initial value problem for half-infinite integrable lattice systems. *Inverse Problems* **8** (1992), *no.* 3, 393–408. (Ismagil T. Khabibullin) **93c:58084** 58F07 (34K99)
— Axial monogenic Clifford-Padé approximants. *J. Approx. Theory* **68** (1992), *no.* 2, 206–222. (Summary) **93j:41012** 41A21 (41A63)
Comon, P. Classification supervisée par réseaux multicouches. (English and French summaries) [Supervised classification by multilayer networks] *Traitement Signal* **8** (1991), *no.* 6, 387–407 (1993). 68T05 (92B20)
Compagner, Aaldert The hierarchy of correlations in random binary sequences. *J. Statist. Phys.* **63** (1991), *no.* 5-6, 883–896. (M. Mendès France) **93c:65012** 65C10 (62E99, 82B03, 94A55)
— (*with* Wang, Da Kai) On the use of reducible polynomials as random number generators. *Math. Comp.* **60** (1993), *no.* 201, 363–374. (Harald Niederreiter) **93e:65012** 65C10 (11K99)
Comparini, Elena A one-dimensional Bingham flow. *J. Math. Anal. Appl.* **169** (1992), *no.* 1, 127–139. (Renuka Ravindran) **93j:76008** 76A05 (35Q35)
— (*with* Fasano, Antonio) The effect of temperature on the dynamics of a phytoplankton population. *Nonlinear Anal.* **20** (1993), *no.* 11, 1355–1367. 92D25
Compton, Kevin (*with* Barrington, David A. Mix; Straubing, Howard; Thérien, Denis) Regular languages in NC^1. *J. Comput. System Sci.* **44** (1992), *no.* 3, 478–499. (Matti Linna) **93k:68055** 68Q45
Comte, Myriam (*with* Carpio Rodriguez, A.; Lewandowski, Roger) A nonexistence result for a nonlinear equation involving critical Sobolev exponent. (French summary) *Ann. Inst. H. Poincaré Anal. Non Linéaire* **9** (1992), *no.* 3, 243–261. (M. Biroli) **93d:35050** 35J65 (35D05)
— (*with* Tarantello, Gabriella) A Neumann problem with critical Sobolev exponent. *Houston J. Math.* **18** (1992), *no.* 2, 279–294. (John Urbas) **93c:35043** 35J65 (35J20)
Comtet, Alain (*with* Desbois, J.) Algebraic areas enclosed by Brownian curves on bounded domains. *J. Phys. A* **25** (1992), *no.* 11, 3097–3102. (Summary) **93b:82029** 82B41 (82D30)
— (*with* Khare, Avinash) Self-dual Maxwell-Chern-Simons vortices in the background of gravity. *Phys. Lett. B* **278** (1992), *no.* 3, 236–239. (Summary) **93a:81126** 81T13 (81T20, 81V17)
Comtet, Louis La rectification des courbes de Wallis comme exemple de descente "ultrarapide". [The rectification of Wallis curves as an example of "ultrarapid" descent] *Simon Stevin* **66** (1992), *no.* 1-2, 151–157. (Summary) **93m:41029** 41A60
Conaway, Mark (*with* Pillers, Carolyn; Robertson, Tim; Sconing, James) A circular-cone test for testing homogeneity against a simple tree order. (French summary) *Canad. J. Statist.* **19** (1991), *no.* 3, 283–296. (Adnan M. Awad) **93c:62029** 62F03 (62E17)
Conca, C. (*with* Durán, M.; Planchard, J.) A quadratic eigenvalue problem involving Stokes equations. (English summary) *Comput. Methods Appl. Mech. Engrg.* **100** (1992), *no.* 3, 295–313. (Summary) **93g:73097** 73K70 (35P05, 35Q30, 47N20, 73K12, 76D99)
— (*with* Planchard, J.; Vanninathan, M.) Resonance frequencies of a cavity containing a compressible viscous fluid. (English summary) *Math. Methods Appl. Sci.* **16** (1993), *no.* 3, 185–202. (E. G. Broadbent) **93m:73030** 73K70 (35Q72, 73D30, 73K12, 76N10)
González-Concepción, C. *see* **González-Concepción, C.**
di Concilio, A. *see* **Di Concilio, A.**
de Concini, Corrado *see* **De Concini, Corrado**
Conder, Marston D. E. (*with* Kulkarni, Ravi S.) Infinite families of automorphism groups of Riemann surfaces. *Discrete groups and geometry (Birmingham, 1991)*, 47–56, *London Math. Soc. Lecture Note Ser.*, 173, *Cambridge Univ. Press, Cambridge*, 1992. (Gabino González Díez) **93k:30073** 30F35
— (*with* Wilson, Robert A.; Woldar, Andrew J.) The symmetric genus of sporadic groups. *Proc. Amer. Math. Soc.* **116** (1992), *no.* 3, 653–663. (Gernot Stroth) **93a:20027** 20D08
Condon, Anne (*with* Cai, Jin-Yi; Lipton, Richard J.) On games of incomplete information. 7th Annual Symposium on Theoretical Aspects of Computer Science (STACS 90) (Rouen, 1990). *Theoret. Comput. Sci.* **103** (1992), *no.* 1, 25–38. (Akira Okada) **93h:90108** 90D05 (68Q10, 90D12, 90D46)
Conduché, Daniel (*with* Baues, Hans Joachim) On the tensor algebra of a nonabelian group and applications. *K-Theory* **5** (1991/92), *no.* 6, 531–554. (Timothy Porter) **93f:55015** 55R35
— (*with* Rodríguez-Fernández, Celso) Nonabelian tensor and exterior products modulo q and universal q-central relative extension. *J. Pure Appl. Algebra* **78** (1992), *no.* 2, 139–160. (Summary) **93b:20085** 20J05 (16S35)
barceló-Conesa, M. *see* **Barceló-Conesa, M.**
Conforti, D. (*with* De Luca, L.; Musmanno, R.) Unconstrained optimization on vector-parallel computers. (English summary) *Computational and applied mathematics, I (Dublin, 1991)*, 101–110, *North-Holland, Amsterdam*, 1992. (*see* **93j:00007**) 65Y05 (65K10)
Conforti, Michele (*with* Rao, M. R.) Articulation sets in linear perfect matrices. I. Forbidden configurations and star cutsets. *Discrete Math.* **104** (1992), *no.* 1, 23–47. (Alan Tucker) **93i:05058** 05C15
— (*with* Rao, M. R.) Properties of balanced and perfect matrices. *Math. Programming* **55** (1992), *no.* 1, *Ser. A*, 35–47. (Yahya Fathi) **93g:90063** 90C27 (05B40, 05C50, 68Q15, 90C35)
— (*with* Rao, M. R.) Structural properties and decomposition of linear balanced matrices. *Math. Programming* **55** (1992), *no.* 2, *Ser. A*, 129–168. (Olivia M. Carducci) **93e:05014** 05B20 (05C70, 90C10)
nguyen huu Cong *see* **Nguyen Huu Cong**
Coniglio, Antonio (*with* Shen, Xiao Jun; Hu, Qing; Sudborough, Ivan Hal; Girou, Mike; Bettayeb, Said) The 4-star graph is not a subgraph of any hypercube. (English summary) *Inform. Process. Lett.* **45** (1993), *no.* 4, 199–203. (Summary) **93k:05054** 05C10 (68Q10, 68R10)
Cong, Wen Xiang The fuzzy solution of multiobjective optimization control. *Math. Appl.* **5** (1992), *no.* 4, 100–102. 90C70 (04A72)
bùi Công Cu'ó'ng *see* **Bùi Công Cu'ó'ng**
Coniglio, Antonio (*with* Zannetti, Marco) Analytical study of scaling behavior in growth kinetics. *From phase transitions to chaos*, 100–117, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93c:82063** 82C99
— (*with* Zannetti, Marco) Multiscaling in spinodal decomposition. (English summary) *Probabilistic methods in mathematical physics (Siena, 1991)*, 166–171, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93g:81002**) 82C99
de Coninck, Joël *see* **De Coninck, Joël**
Conlan, James (*with* Wang, Chung-Lie) Gronwall-Bihari type inequalities for distributions. *Approximation, optimization and computing*, 371–375, *North-Holland, Amsterdam*, 1990. (Roland Lemmert) **93f:34022** 34A40 (26D20, 46F10)
Conley, William Cleland Multi-stage Monte Carlo optimization applied to a six hundred point travelling salesman problem. (English summary) *Internat. J. Systems Sci.* **24** (1993), *no.* 4, 609–626. (Summary) **93k:90008** 90–08 (90C27)
— Simulation applied to a three hundred degree polynomial. (English summary) *Internat. J. Systems Sci.* **24** (1993), *no.* 5, 819–828. (Summary) **93k:93007** 93–04 (65C20, 93B40)
Conlisk, John Stability and monotonicity for interactive Markov chains. (English summary) *J. Math. Sociol.* **17** (1992), *no.* 2-3, 127–143. (John Haigh) **93k:60166** 60J10 (60J20, 92H10, 92H30)
Conlon, Joseph G. (*with* Solovej, Jan Philip) Upper bound on the free energy of the spin 1/2 Heisenberg ferromagnet. *Lett. Math. Phys.* **23** (1991), *no.* 3, 223–231. (Flora Koukiou) **93b:82012** 82B20 (82B05)
Conlon, Lawrence (*with* Cantwell, John) Markov minimal sets have hyperbolic leaves. *Ann. Global Anal. Geom.* **9** (1991), *no.* 1, 13–25. (Claude Lamoureux) **93a:57032** 57R30 (58F18)
— (*with* Cantwell, John) Foliations of $E(5_2)$ and related knot complements. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 3, 953–962. (G. Burde) **93i:57037** 57R30 (57M25)
Conn, Andrew R. (*with* Gould, N. I. M.; Toint, Ph. L.) ★ LANCELOT. (English. English summary) A Fortran package for large-scale nonlinear optimization (release A). Springer Series in Computational Mathematics, 17. *Springer-Verlag, Berlin*, 1992. xx+330 *pp. ISBN* 3-540-55470-X 65–04 (65K10)
— (*with* Gould, N. I. M.; Toint, Ph. L.) Large-scale nonlinear constrained optimization. *ICIAM* 91 (*Washington, DC*, 1991), 51–70, *SIAM, Philadelphia, PA*, 1992. (*see* **93b:00026**) 90C30
— (*with* Gould, N. I. M.; Toint, Ph. L.) On the number of inner iterations per outer iteration of a globally convergent algorithm for optimization with general nonlinear constraints and simple bounds. *Numerical analysis* 1991 (*Dundee*, 1991), 49–68, *Pitman Res. Notes Math. Ser.*, 260, *Longman Sci. Tech., Harlow*, 1992. (*see* **93b:65005**) 90C30 (65K10)
— (*with* Li, Yuying) A structure-exploiting algorithm for nonlinear minimax problems. *SIAM J. Optim.* **2** (1992), *no.* 2, 242–263. (G. Mühlbach) **93d:90060** 90C30 (49K35, 65F20, 65K05)
— (*with* Gould, N. I. M.; Sartenaer, A.; Toint, Ph. L.) Global convergence of a class of trust region algorithms for optimization using inexact projections on convex constraints. (English summary) *SIAM J. Optim.* **3** (1993), *no.* 1, 164–221. (Morgan A. Hanson) **93k:90069** 90C25 (65K05, 90C30)
Connell, Ian Addendum to a paper of K. Harada and M.-L. Lang: "Some elliptic curves arising from the Leech lattice" [J. Algebra **125** (1989), no. 2, 298–310; MR 90g:11072]. *J. Algebra* **145** (1992), *no.* 2, 463–467. (Joseph H. Silverman) **93d:11057** 11G05 (11F22, 11Y16, 14H52)
Connes, Alain (*with* Lott, John) Particle models and noncommutative geometry. Recent advances in field theory (Annecy-le-Vieux, 1990). *Nuclear Phys. B Proc. Suppl.* **18B** (1990), 29–47 (1991). (Robert Coquereaux) **93a:58015** 58B30 (46L60, 46L87, 81V25)
— (*with* Lott, John) The metric aspect of noncommutative geometry. *New symmetry principles in quantum field theory (Cargèse, 1991)*, 53–93, *NATO Adv. Sci. Inst. Ser. B Phys.*, 295, *Plenum, New York*, 1992. (Palle E. T. Jørgensen) **93m:58011** 58B30 (22E40, 46L87, 81T60, 81V22)
— (*with* Bost, Jean-Benoît) Produits eulériens et facteurs de type III. (English and French summaries) [Euler products and type-III factors] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 3, 279–284. (H. Araki) **93m:46079** 46L55 (11M06, 46L35, 82B10)
— Sur la nature de la réalité mathématique. (German summary) [On the nature of mathematical reality] *Elem. Math.* **47** (1992), *no.* 1, 19–26. (Pierre Crépel) **93d:00012** 00A30
— (*with* Flato, Moshé; Sternheimer, Daniel) Closed star products and cyclic cohomology. *Lett. Math. Phys.* **24** (1992), *no.* 1, 1–12. (Benjamin David Enriquez) **93d:19003** 19D55 (17B65, 19K56, 58F05, 58G15)
— (*with* Gromov, Mikhael L.; Moscovici, Henri) Group cohomology with Lipschitz control and higher signatures. *Geom. Funct. Anal.* **3** (1993), *no.* 1, 1–78. (Chi Wai Leung) **93m:19011** 19K56 (19E99, 46L87, 57R99, 58G12)
Connett, William C. (*with* Schwartz, Alan L.) Fourier analysis off groups. *The Madison Symposium on Complex Analysis (Madison, WI, 1991)*, 169–176, *Contemp. Math.*, 137, *Amer. Math. Soc., Providence, RI*, 1992. (*see* **93e:32001**) 43A62
— (*with* Markett, Clemens; Schwartz, Alan L.) Product formulas and convolutions for angular and radial spheroidal wave functions. *Trans. Amer. Math. Soc.* **338** (1993), *no.* 2, 695–710. (Jean-Claude Lucquiaud) **93j:33011** 33E10 (33C80, 34B30)
Connolly, Francis X. (*with* Anderson, Douglas R.) Finiteness obstructions and cocompact actions on $S^m \times \mathbf{R}^n$. *Comment. Math. Helv.* **68** (1993), *no.* 1, 85–110. (A. A. Ranicki) **93k:57053** 57Q12 (19J35, 57S30)
Connor, B. (*with* de Ridder, M. A.; Owens, David H.) Approximate model techniques in robust control. *Control '91, Vol.* 1, 2 (*Edinburgh*, 1991), 1159–1164, *IEE Conf. Publ. Ser.*, 332, *IEE, London*, 1991. (*see* **93h:93007**) 93B36
Connor, J. N. L. (*with* Curtis, P. R.; Young, R. A. W.) Uniform asymptotics of oscillating integrals: applications in chemical physics. *Wave asymptotics (Manchester*, 1990), 24–42, *Cambridge Univ. Press, Cambridge*, 1992. (*see* **93b:76003**) 41A60 (58C27, 80A50)

Conolly, Brian (*with* Langaris, Christos) Solution of the stochastic birth-emigration model using continued fractions. (English summary) *Math. Sci.* **17** (1992), *no.* 2, 120–127. (Erik A. van Doorn) **93k:60212** 60J80

Conrad, Francis (*with* Leblond, Juliette; Marmorat, Jean-Paul) Energy decay estimates for a beam with nonlinear boundary feedback. (English summary) *Stabilization of flexible structures (Montpellier, 1989)*, 46–61, *Lecture Notes in Control and Inform. Sci.*, 147, *Springer, Berlin*, 1990. (*see* **93c:93006**) 93D15 (73K05, 73K50, 93C20)

— (*with* d'Andréa-Novel, B.; Boustany, F.) Control of an overhead crane: stabilization of flexibilities. *Boundary control and boundary variation (Sophia-Antipolis, 1990)*, 1–26, *Lecture Notes in Control and Inform. Sci.*, 178, *Springer, Berlin*, 1992. (*see* **93b:49001**) 93D15 (93C95)

— (*with* Leblond, Juliette; Marmorat, Jean-Paul) Boundary control and stabilization of the one-dimensional wave equation. *Boundary control and boundary variation (Sophia-Antipolis, 1990)*, 142–162, *Lecture Notes in Control and Inform. Sci.*, 178, *Springer, Berlin*, 1992. (Jerzy Klamka) **93e:93005** 93B05 (93C05, 93C20, 93D15)

— (*with* Pierre, Michel) Stabilisation de problèmes d'évolution du second ordre par des feedbacks non linéaires et non bornés. (English and French summaries) [Stabilization of second-order evolution equations by unbounded nonlinear feedback] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 2, 125–130. (P. K. C. Wang) **93j:93125** 93D15 (34G20, 34H05, 35B37, 47N20, 93C20)

— (*with* Rao, Bopeng) Decay of solutions of the wave equation with nonlinear boundary feedback. (English summary) *Analysis and optimization of systems: state and frequency domain approaches for infinite-dimensional systems (Sophia-Antipolis, 1992)*, 512–523, *Lecture Notes in Control and Inform. Sci.*, 185, *Springer, Berlin*, 1993. (*see* **93i:93005**) 93C20

Conradi, Heinz-Dieter Initial state in quantum cosmology. *Phys. Rev. D* (3) **46** (1992), *no.* 2, 612–619. (Summary) **93c:83047** 83C45 (83F05)

Conrady, A. E. ★ Applied optics and optical design. Part I. Reprint of the 1957 edition. *Dover Publications, Inc., New York*, 1992. vi+518 *pp. ISBN* 0-486-67007-4 (Editors) **93j:78001a** 78–01

— ★ Applied optics and optical design. Part II. With a foreword and an appendix by Hilda G. Conrady Kingslake. Edited and with a preface by Rudolf Kingslake. Reprint of the 1960 original. *Dover Publications, Inc., New York*, 1992. *pp.* i–x *and* 519–841. *ISBN* 0-486-67008-2 (Editors) **93j:78001b** 78–01

Conrady Kingslake, Hilda G. *see* **Conrady, A. E., 93j:78001b**

Consani, Caterina A moving-lemma for a singular variety and applications to the Grothendieck group $K_0(X)$. *Algebraic K-theory, commutative algebra, and algebraic geometry (Santa Margherita Ligure, 1989)*, 21–45, *Contemp. Math.*, 126, *Amer. Math. Soc., Providence, RI*, 1992. (Şerban Bărcănescu) **93f:14002** 14C15 (19A99)

Console, Luca (*with* Theseider Dupre, Daniele; Torasso, Pietro) On the relationship between abduction and deduction. *J. Logic Comput.* **1** (1991), *no.* 5, 661–690. (Summary) **93a:68131** 68T27 (03B60, 03B70)

Console, S. Surfaces with conformal second fundamental form. (English and Italian summaries) *Rend. Mat. Appl.* (7) **12** (1992), *no.* 2, 425–444. (Bang-yen Chen) **93g:53076** 53C40

Constales, D. The relative position of L^2 domains in Clifford analysis. (English summary) *Clifford algebras and their applications in mathematical physics (Montpellier, 1989)*, 205–214, *Fund. Theories Phys.*, 47, *Kluwer Acad. Publ., Dordrecht*, 1992. (Summary) **93j:30052** 30G35

Constanda, Christian The rigorous solution of the classical theory of plates. (English summary) *Integral methods in science and engineering—90 (Arlington, TX, 1990)*, 184–190, *Ser. Comput. Phys. Process. Mech. Thermal Sci., Hemisphere, New York*, 1991. (Introduction) **93g:73075** 73K10 (73C02)

— On the solution of the Dirichlet problem for the two-dimensional Laplace equation. *Proc. Amer. Math. Soc.* **119** (1993), *no.* 3, 877–884. (Yehuda Pinchover) **93m:31001** 31A10 (35J05)

Constantin, Adrian On pointwise estimates for solutions of Volterra integral equations. (Italian summary) *Boll. Un. Mat. Ital. A* (7) **6** (1992), *no.* 2, 215–225. (Kenneth B. Hannsgen) **93e:45003** 45D05

— A note on the φ-stability for differential systems. (Italian summary) *Boll. Un. Mat. Ital. A* (7) **6** (1992), *no.* 2, 233–243. (T. G. Proctor) **93h:34080** 34D05

— On fixed points in noncomplete metric spaces. *Publ. Math. Debrecen* **40** (1992), *no.* 3-4, 297–302. 54H25

Constantin, I. (*with* Dănilescu, A.) On a class of stochastic equations and applications. *Inst. Politehn. "Traian Vuia" Timişoara Lucrăr. Sem. Mat. Fiz.* **1988,** *November*, 83–86. 60H20

Constantin, Julien (*with* Barthélémy, Jean-Pierre) Median graphs, parallelism and posets. (English summary) Graph theory and combinatorics (Marseille-Luminy, 1990). *Discrete Math.* **111** (1993), *no.* 1-3, 49–63. (Summary) **93j:05123** 05C75

Constantine, G. (*with* Bapat, R. B.) An enumerating function for spanning forests with color restrictions. *Linear Algebra Appl.* **173** (1992), 231–237. (T. R. S. Walsh) **93h:05053** 05C05 (05A15, 05C70, 15A15)

Constantinescu, Florin (*with* Boenkost, W.) Functional calculus of the Borel transform. *J. Math. Phys.* **33** (1992), *no.* 5, 1648–1651. (Ahmed I. Zayed) **93d:30003** 30B10 (30B30, 40G10, 44A10, 44A15)

— (*with* Lüdde, Mirko) Braid modules. (English summary) *J. Phys. A* **25** (1992), *no.* 23, L1273–L1280. (Uwe Grimm) **93j:20082** 20F36 (81T40)

Constantinescu, Tiberiu Some aspects of nonstationarity. II. *Math. Balkanica (N.S.)* **4** (1990), *no.* 3, 211–235 (1991). (Yu. M. Arlinskiĭ) **93f:47006** 47A20 (47A45, 47A57, 47N70)

— (*with* Gheondea, Aurelian) Minimal signature in lifting of operators. II. *J. Funct. Anal.* **103** (1992), *no.* 2, 317–351. (T. Ya. Azizov) **93c:47041** 47B50 (47A20)

Constantinidis, C. P. (*with* Aratyn, Henrik; Ferreira, L. A.; Gomes, J. F.; Zimerman, A. H.) Higher spin symmetries and w_∞ algebra in the conformal affine Toda model. *Phys. Lett. B* **281** (1992), *no.* 3-4, 245–253. (Summary) **93b:81238** 81T40 (81R10)

— (*with* Ferreira, L. A.; Gomes, J. F.; Zimerman, A. H.) Connection between the affine and conformal affine Toda models and their Hirota solution. (English summary) *Phys. Lett. B* **298** (1993), *no.* 1-2, 88–94. (Henrik Aratyn) **93j:81088** 81T40 (58F07)

rodríguez Consuegra, Francisco *see* **Rodríguez Consuegra, Francisco**

Conte, Alberto When is a conic bundle rational? *Geometry and complex variables (Bologna, 1988/1990)*, 141–145, *Lecture Notes in Pure and Appl. Math.*, 132, *Dekker, New York*, 1991. (Harry D'Souza) **93g:14019** 14E05

— (*with* Verra, Alessandro) Reye constructions for nodal Enriques surfaces. *Trans. Amer. Math. Soc.* **336** (1993), *no.* 1, 79–100. (Jong Hae Keum) **93e:14045** 14J28 (14J60)

Conte, Giuseppe (*with* Wyman, B. F.; Sain, Michael K.; Perdon, Anna-Maria) Algebraic and system-theoretic notions of poles and zeros for matrices of rational functions. (English summary) *Rend. Sem. Mat. Univ. Politec. Torino* **48** (1990), *no.* 3, 225–250 (1992). (Krzysztof Kuźmiński) **93j:93063** 93B60 (93B25, 93C10)

— (*with* Moog, Claude H.; Perdon, Anna-Maria) Model matching of linear time-varying systems and nonlinear systems. *Control theory, stochastic analysis and applications (Hangzhou, 1991)*, 30–38, *World Sci. Publishing, River Edge, NJ*, 1991. (*see* **93a:93005**) 93B11

— (*with* Longhi, Sauro; Perdon, Anna-Maria) On the geometry of singular periodic systems. (English summary) *Mathematical and intelligent models in system simulation, I, II (Brussels, 1990)*, 119–124, *IMACS Ann. Comput. Appl. Math.*, 10, 11, *Baltzer, Basel*, 1991. (*see* **93c:93005**) 93B27

— (*with* Moog, Claude H.; Perdon, Anna-Maria) Structure of general nonlinear systems. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, II (Kobe, 1991)*, 241–246, *Mita, Tokyo*, 1992. (*see* **93g:93006**) 93A10 (93C10)

— (*with* Perdon, Anna-Maria; Longhi, Sauro) Invertibility and inversion of linear periodic systems. *Automatica J. IFAC* **28** (1992), *no.* 3, 645–648. (Summary) **93b:93053** 93C05 (93B17, 93C55)

— (*with* Perdon, Anna-Maria) Robust disturbance decoupling problem for parameter dependent families of linear systems. (English summary) *Automatica J. IFAC* **29** (1993), *no.* 2, 475–478. 93C05 (93B50, 93C35)

Conte, I. M. (*with* Slavov, Î. I.) Well-posedness of an optimal control problem with a singular perturbation and integral constraints. *Math. Balkanica (N.S.)* **5** (1991), *no.* 3, 212–228. (Summary) **93g:49018** 49K40 (34H05, 49J45)

Conte, Robert The test of negative integer indices in Painlevé analysis of NLPDE. (English summary) *Nonlinear evolution equations and dynamical systems (Baia Verde, 1991)*, 269–278, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93i:35032** 35F99

— (*with* Musette, M.) Link between solitary waves and projective Riccati equations. (English summary) *J. Phys. A* **25** (1992), *no.* 21, 5609–5623. (Summary) **93j:35160** 35Q55 (34A05)

Conti, Giuseppe (*with* Anichini, G.) Existence of solutions of a boundary value problem through the solution map of a linearized type problem. *Rend. Sem. Mat. Univ. Politec. Torino* **48** (1990), *no.* 2, 149–159 (1992). (Jesús Hernández) **93d:34029** 34B15 (47H15, 47N20)

— (*with* Nistri, Paolo; Zecca, Pietro) Systems of set-valued equations in Banach spaces. *Delay differential equations and dynamical systems (Claremont, CA, 1990)*, 98–109, *Lecture Notes in Math.*, 1475, *Springer, Berlin*, 1991. (Ethelbert N. Chukwu) **93e:34087** 34G20 (34A60, 34B15, 47H15, 47N20, 49J24)

— (*with* Kryszewski, Wojciech; Zecca, Pietro) On the solvability of systems of nonconvex inclusions in Banach spaces. *Ann. Mat. Pura Appl.* (4) **160** (1991), 371–408 (1992). (Introduction) **93m:34020** 34A60 (34G20, 47H04, 47H15, 47N20)

— (*with* Nistri, Paolo; Zecca, Pietro) Systems of multivalued equations for solving controllability problems. (English summary) *Pure Math. Appl. Ser. B* **2** (1991), *no.* 4, 215–225 (1992). (Summary) **93m:93009** 93B05 (34A60, 34H05, 47H04, 49J24)

— (*with* Nistri, Paolo; Zecca, Pietro) Controllability problems via set-valued maps. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, II (Kobe, 1991)*, 253–258, *Mita, Tokyo*, 1992. (Rauf N. Izmailov) **93j:93014** 93B05 (26E25, 49J24, 58C06)

Conti, Luigi G. Decahedral and icosahedral symmetries: an aperiodic multiple twinning model with linear strains and density inhomogeneity. *Internat. J. Modern Phys. B* **6** (1992), *no.* 10, 1623–1630. (Summary) **93c:82065** 82D25

Conti, M. (*with* Gregori, E.; Lenzini, L.) On the approximation of the slot occupancy pattern in a DQDB network. (English summary) *Performance Evaluation* **16** (1992), *no.* 1-3, 159–176. 60K25

Conti, P. L. (*with* De Giovanni, L.) Sampling strategies for stratified superpopulation models in the presence of an auxiliary variable. (Italian. English and Italian summaries) *Metron* **49** (1991), *no.* 1-4, 199–211 (1992). 62D05

— Oscillation measures as randomness tests. (English and Italian summaries) *Metron* **49** (1991), *no.* 1-4, 373–386 (1992). (Summary) **93m:62106** 62G10

Conti, Roberto Strictly stable linear ordinary differential equations and similarity. *Riv. Mat. Univ. Parma* (4) **17** (1991), 217–220 (1992). (A. Halanay) **93h:34081** 34D05

Contopanagos, H. F. (*with* Einhorn, Martin B.) Interpretation of the asymptotic S matrix for massless particles. *Phys. Rev. D* (3) **45** (1992), *no.* 4, 1291–1321. (A. Ventura) **93a:81138** 81T18 (81U20, 81V10)

Contopoulos, G. (*with* Papadaki, H.) Newtonian and relativistic periodic orbits around two fixed black holes. (English summary) *Celestial Mech. Dynam. Astronom.* **55** (1993), *no.* 1, 47–85. (Summary) **93m:85001** 85A05 (70F15, 83C57)

Contractor, Dinshaw N. (*with* Srivastava, Rajesh) Efficient evaluation of integrals in three-dimensional boundary element method using linear shape functions over plane triangular elements. *Appl. Math. Modelling* **16** (1992), *no.* 6, 282–290. (Summary) **93b:65185** 65N38 (65D30)

Contreras-Barandiarán, Gonzalo Regularity of topological and metric entropy of hyperbolic flows. *Math. Z.* **210** (1992), *no.* 1, 97–111. (Nicolai T. A. Haydn) **93f:58179** 58F15 (58F03, 58F25)

Contro, Walter S. *see* **Leibniz, Gottfried Wilhelm, 93h:01063**

Convent, Bernhard (*with* Biskup, Joachim) Relational chase procedures interpreted as resolution with paramodulation. *Fund. Inform.* **15** (1991), *no.* 2, 123–138. (Summary) **93a:68029** 68P15 (03B35)

Conway, J. H. (*with* Sloane, N. J. A.) On the covering multiplicity of lattices. *Discrete Comput. Geom.* **8** (1992), *no.* 2, 109–130. (Simon N. Litsyn) **93e:52034** 52C07 (11H31, 52C17)

— (*with* Sloane, N. J. A.) Four-dimensional lattices with the same theta series. *Internat. Math. Res. Notices* **1992,** *no.* 4, 93–96. (A. G. Earnest) **93e:11047** 11E12 (11E45, 11H55)

— (*with* Pless, Vera S.; Sloane, N. J. A.) The binary self-dual codes of length up to 32: a revised enumeration. *J. Combin. Theory Ser. A* **60** (1992), *no.* 2, 183–195. (Simon N. Litsyn) **93e:11150** 11T71 (94B05)

— (*with* Sloane, N. J. A.) Low-dimensional lattices. VI. Voronoĭ reduction of three-dimensional lattices. (English summary) *Proc. Roy. Soc. London Ser. A* **436** (1992), *no.* 1896, 55–68. (O. H. Körner) **93h:11074** 11H55 (11H06)

— (*with* Sloane, N. J. A.) ★ Sphere packings, lattices and groups. Second edition. With additional contributions by E. Bannai, R. E. Borcherds, J. Leech, S. P. Norton, A. M. Odlyzko, R. A. Parker, L. Queen and B. B. Venkov. Grundlehren der Mathematischen Wissenschaften [Fundamental Principles of Mathematical Sciences], 290. *Springer-Verlag, New York*, 1993. xliv+679 *pp. ISBN* 0-387-97912-3 (From the preface) **93h:11069** 11H31 (05B40, 11H06, 20D08, 52C07, 52C17, 94B75)

— (*with* Sloane, N. J. A.) Self-dual codes over the integers modulo 4. (English summary) *J. Combin. Theory Ser. A* **62** (1993), *no.* 1, 30–45. (Michael Klemm) **93m:94026** 94B05 (11T71)

Conze, A. (*with* Lasry, Jean-Michel; Scheinkman, J. A.) A system of nonlinear functional-differential equations arising in an equilibrium model of an economy with borrowing constraints. (French summary) *Ann. Inst. H. Poincaré Anal. Non Linéaire* **8** (1991), *no.* 5, 523–559. (Summary) **93a:90013** 90A14 (34K35)

Cook, Alan H. Harold Jeffreys. (Italian) *Atti Accad. Naz. Lincei Cl. Sci. Fis. Mat. Natur. Rend. Lincei* (9) *Suppl.* **2** (1991), 35–58. (From the text) **93f:01018** 01A70

Cook, Daniel R. (*with* Brizard, Alain J.; Kaufman, Allan N.) Wave-action conservation for pseudo-Hermitian fields. (English summary) *Phys. Rev. Lett.* **70** (1993), *no.* 5, 521–524. (Summary) **93m:82046** 82D10 (76W05)

Cook, Gregory B. (*with* Abrahams, Andrew M.) Horizon structure of initial-data sets for axisymmetric two-black-hole collisions. *Phys. Rev. D* (3) **46** (1992), *no.* 2, 702–713. 83C57

Cook, L. Pamela (*with* Cole, Julian D.) Asymptotic theory of the transonic area rule. *Mathematical approaches in hydrodynamics*, 481–490, *SIAM, Philadelphia, PA*, 1991. (A. R. Manwell) **93f:76062** 76H05

— (*with* Olagunju, D. O.; Schleiniger, G. F.) Viscoelastic fluid flow: critical parameters and asymptotics. (English summary) *Asymptotic and numerical methods for partial differential equations with critical parameters* (*Beaune*, 1992), 191–205, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 384, *Kluwer Acad. Publ., Dordrecht*, 1993. (*see* **93m:65006**) 76A10 (73F15)

Cook, Peyton (*with* Broemeling, Lyle D.) Bayesian analysis of threshold autoregressions. (English summary) *Comm. Statist. Theory Methods* **21** (1992), *no.* 9, 2459–2482. 62M10

Cook, R. Dennis (*with* Hawkins, D. M.; Weisberg, S.) Comparison of model misspecification diagnostics using residuals from least mean of squares and least median of squares fits. *J. Amer. Statist. Assoc.* **87** (1992), *no.* 418, 419–424. 62J05

— (*with* Saint Laurent, Roy T.) Leverage and superleverage in nonlinear regression. (English summary) *J. Amer. Statist. Assoc.* **87** (1992), *no.* 420, 985–990. (Summary) **93m:62167** 62J20 (62J02)

— (*with* Hawkins, D. M.; Weisberg, S.) Exact iterative computation of the robust multivariate minimum volume ellipsoid estimator. (English summary) *Statist. Probab. Lett.* **16** (1993), *no.* 3, 213–218. 62F35

Cook, R. J. *see* **Cook, Roger J.**

Cook, Robert (*with* Brostow, Witold; Kubát, Josef) Molecular dynamics and Monte Carlo simulations of polymeric materials: chain relaxation dynamics. *Integral methods in science and engineering*—90 (*Arlington, TX*, 1990), 22–34, *Ser. Comput. Phys. Process. Mech. Thermal Sci., Hemisphere, New York*, 1991. (*see* **93f:00014**) 65C05

Cook, Roger J. Chebyshev functions and inclusion-exclusion. *J. Indian Math. Soc.* (*N.S.*) **57** (1991), *no.* 1-4, 109–116. (Adolf Hildebrand) **93c:11004** 11A41 (11A25, 11N05)

— (*with* Brüdern, J.) On pairs of cubic Diophantine inequalities. *Mathematika* **38** (1991), *no.* 2, 250–263 (1992). (R. C. Baker) **93c:11020** 11D75 (11J25)

— (*with* Brüdern, J.) On simultaneous diagonal equations and inequalities. *Acta Arith.* **62** (1992), *no.* 2, 125–149. (R. C. Baker) **93h:11036** 11D72 (11D75)

— (*with* Atkinson, O. D.; Brüdern, J.) Simultaneous additive congruences to a large prime modulus. *Mathematika* **39** (1992), *no.* 1, 1–9. (D. R. Heath-Brown) **93g:11028** 11D79

Cook, Stephen A. Computational complexity of higher type functions. *Proceedings of the International Congress of Mathematicians, Vol. I, II* (*Kyoto*, 1990), 55–69, *Math. Soc. Japan, Tokyo*, 1991. (Marat M. Arslanov) **93e:03067** 03D65 (03D15, 68Q15)

Cook, W. *see* **Cook, William J.**

Cook, Wade D. (*with* Kress, Moshe) ★ Ordinal information and preference structures. Decision models and applications. *Prentice Hall, Inc., Englewood Cliffs, NJ*, 1992. xii+292 *pp. ISBN* 0-13-630120-7 (Reinhard Suck) **93j:90009** 90A06 (62J15, 90A07, 92G05, 92J45)

Cook, William J. (*with* Hartmann, Mark E.; Kannan, Ravindran; McDiarmid, Colin J. H.) On integer points in polyhedra. *Combinatorica* **12** (1992), *no.* 1, 27–37. (Paul R. Scott) **93e:52025** 52B12 (11P21)

— (*with* Rutherford, Thomas F.; Scarf, Herbert E.; Shallcross, David F.) An implementation of the generalized basis reduction algorithm for integer programming. (English summary) *ORSA J. Comput.* **5** (1993), *no.* 2, 206–212. 90C10

Cooke, David B. Compatibility conditions for Hamiltonian pairs. *J. Math. Phys.* **32** (1991), *no.* 11, 3071–3076. (I. S. Krasil'shchik) **93d:58051** 58F05

Cooke, Kenneth L. (*with* Huang, Wen Zhang) A theorem of George Seifert and an equation with state-dependent delay. *Delay and differential equations* (*Ames, IA*, 1991), 65–77, *World Sci. Publishing, River Edge, NJ*, 1992. (Curtis C. Travis) **93d:34128** 34K20 (34K05)

— (*with* Huang, Wen Zhang; Castillo-Chavez, Carlos) Stability and bifurcation for a multiple-group model for the dynamics of HIV/AIDS transmission. *SIAM J. Appl. Math.* **52** (1992), *no.* 3, 835–854. (Pauline van den Driessche) **93d:92009** 92C60 (34K15, 34K20)

— (*with* Busenberg, Stavros N.) ★ Vertically transmitted diseases. (English. English summary) Models and dynamics. Biomathematics, 23. *Springer-Verlag, Berlin*, 1993. xii+248 *pp. ISBN* 3-540-52004-X (Wei-Min Liu) **93m:92020** 92D30 (34C15, 34C35, 34K15)

Cooke, R. *see* **Cooke, Roger Marvin**

Cooke, Roger L. *see* **Partial differential equations, 93a:35004b**; **Arnol'd, V. I., 93b:34001** *and* **Medvedev, F. A., 93d:26001**

Cooke, Roger Marvin Statistics in expert resolution: a theory of weights for combining expert opinion. *Statistics in science*, 41–72, *Boston Stud. Philos. Sci.*, 122, *Kluwer Acad. Publ., Dordrecht*, 1990. (J. Panaretos) **93e:62012** 62A20 (62B10)

— (*with* Misiewicz, J. K.; Mendel, Max B.) Applications of l_p symmetric measures to Bayesian inference. *Stochastic methods in experimental sciences* (*Szklarska Poręba*, 1989), 96–113, *World Sci. Publishing, River Edge, NJ*, 1990. (Summary) **93b:62008** 62A15 (62F15, 62G99, 62N05)

— ★ Experts in uncertainty. Opinion and subjective probability in science. Environmental Ethics and Science Policy Series. *The Clarendon Press, Oxford University Press, New York*, 1991. xii+321 *pp. ISBN* 0-19-506465-8 (D. V. Lindley) **93a:62001** 62–02 (60A05, 62C99, 68T35)

Cooklev, T. V. (*with* Dimitrov, V. S.; Donevski, B. D.) On the multiplication of reduced biquaternions and applications. (English summary) *Inform. Process. Lett.* **43** (1992), *no.* 3, 161–164. (Summary) **93i:68100** 68Q40

Coolen, A. C. C. (*with* Lenders, L. G. V. M.) Dual processes in neural network models. I. Neural dynamics versus dynamics of learning. *J. Phys. A* **25** (1992), *no.* 9, 2577–2592. (Min Ping Qian) **93f:82037a** 82C32 (68T05, 92B20)

— (*with* Lenders, L. G. V. M.) Dual processes in neural network models. II. Analysis of zero-temperature fixed-point equations. *J. Phys. A* **25** (1992), *no.* 9, 2593–2606. (Min Ping Qian) **93f:82037b** 82C32 (68T05, 92B20)

Cooley, Donald W. (*with* Chan, Tony F. C.; Olkin, Julia A.) Solving quadratically constrained least squares using black box solvers. (English summary) *BIT* **32** (1992), *no.* 3, 481–494. (Summary) **93e:65091** 65K10 (65F99, 90C20)

Cools, Ronald (*with* Verschelde, Jan) Nonlinear reduction for solving deficient polynomial systems by continuation methods. (English summary) *Numer. Math.* **63** (1992), *no.* 2, 263–282. (Summary) **93f:65046** 65H10

Coolsaet, K. (*with* De Meyer, H.; Fack, V.) Optimal algorithms for total exchange without buffering on the hypercube. (English summary) *BIT* **32** (1992), *no.* 4, 559–569. (Summary) **93g:68004** 68M10 (68Q10)

de Cooman, G. *see* **De Cooman, G.**

Coombes, Kevin R. The arithmetic of zero cycles on surfaces with geometric genus and irregularity zero. *Math. Ann.* **291** (1991), *no.* 3, 429–452. (Wayne Raskind) **93i:14008** 14C25 (14C35, 14F20, 14G25, 14J20, 19E15)

— The K-cohomology of Enriques surfaces. *Algebraic K-theory, commutative algebra, and algebraic geometry* (*Santa Margherita Ligure*, 1989), 47–57, *Contemp. Math.*, 126, *Amer. Math. Soc., Providence, RI*, 1992. (Luca Barbieri Viale) **93a:14032** 14J28 (14C21, 19E20)

Coomes, Brian p-symmetries of two-dimensional p-f vector fields. *Differential Integral Equations* **5** (1992), *no.* 2, 461–480. (D. Bobrowski) **93b:34012** 34A12 (34A26, 34C20)

Coope, I. D. Circle fitting by linear and nonlinear least squares. (English summary) *J. Optim. Theory Appl.* **76** (1993), *no.* 2, 381–388. (Summary) **93k:65054** 65K05 (65D10)

Cooper, Adrian (*with* Susskind, Leonard; Thorlacius, Lárus) Two-dimensional quantum cosmology. *Nuclear Phys. B* **363** (1991), *no.* 1, 132–162. (Markku Lehto) **93c:83048** 83C45 (81T27, 81T30, 81T40, 83F05)

Cooper, Colin 1-pancyclic Hamilton cycles in random graphs. *Random Structures Algorithms* **3** (1992), *no.* 3, 277–287. (Lyuben R. Mutafchiev) **93d:05135** 05C80 (05C38, 05C45, 60C05)

Cooper, Curtis N. (*with* Kennedy, Robert E.) An extension of a theorem by Cheo and Yien concerning digital sums. *Fibonacci Quart.* **29** (1991), *no.* 2, 145–149. (Georges Grekos) **93b:11010** 11A63

— (*with* Kennedy, Robert E.) The statistics of the smallest space on a lottery ticket. *Fibonacci Quart.* **29** (1991), *no.* 4, 367–370. (D. P. Roselle) **93c:05018** 05A99

— (*with* Kennedy, Robert E.) Digital sum sums. *J. Inst. Math. Comput. Sci. Math. Ser.* **5** (1992), *no.* 1, 45–49. (Ti Zuo Xuan) **93j:11059** 11N37

Cooper, D. L. (*with* Bingulac, S.) Identification of first-order hold continuous-time systems. (English summary) *Identification and system parameter estimation* 1991, *Vol.* 1,2 (*Budapest*, 1991), 293–298, *IFAC Sympos. Ser.*, 3, *Pergamon, Oxford*, 1992. (*see* **93h:93009**) 93B30 (93C60)

Cooper, Daryl (*with* Long, Darren) An undetected slope in a knot manifold. *Topology* '90 (*Columbus, OH*, 1990), 111–121, *Ohio State Univ. Math. Res. Inst. Publ.*, 1, *de Gruyter, Berlin*, 1992. (Kimihiko Motegi) **93i:57022** 57N10 (57M05)

Cooper, Fred (*with* Simmons, L. M., Jr.; Sodano, Pasquale) Topological kinks in φ^{2n} field theories: a variational approach. *Phys. D* **56** (1992), *no.* 1, 68–83. (Summary) **93a:81116** 81T10

— (*with* Lucheroni, Carlo; Shepard, Harvey) Variational method for studying self-focusing in a class of nonlinear Schrödinger equations. (English summary) *Phys. Lett. A* **170** (1992), *no.* 3, 184–188. (Summary) **93i:81024** 81Q05 (49S05)

— (*with* Bender, Carl M.; Milton, Kimball A.; Moshe, Moshe; Pinsky, Stephen S.; Simmons, L. M., Jr.) δ expansion for local gauge theories. I. A one-dimensional model. *Phys. Rev. D* (3) **45** (1992), *no.* 4, 1248–1260. (Othmar Steinmann) **93g:81085** 81T13 (81T10)

— (*with* Lucheroni, Carlo; Shepard, Harvey; Sodano, Pasquale) Variational method for studying solitons in the Korteweg-de Vries equation. (English summary) *Phys. Lett. A* **173** (1993), *no.* 1, 33–36. (Summary) **93h:35175** 35Q53

Cooper, G. J. (*with* Vignesvaran, R.) Some schemes for the implementation of implicit Runge-Kutta methods. (English summary) *J. Comput. Appl. Math.* **45** (1993), *no.* 1-2, 213–225. (Summary) **93j:65112** 65L06

Cooper, K. D. Domain-imbedding alternating direction method for linear elliptic equations on irregular regions using collocation. (English summary) *Numer. Methods Partial Differential Equations* **9** (1993), *no.* 1, 93–106. (Summary) **93j:65192** 65N35 (65N55, 76M25)

Cooper, Paul R. (*with* Swain, Michael J.) Arc consistency: parallelism and domain dependence. (English summary) *Artificial Intelligence* **58** (1992), *no.* 1-3, 207–235. (Summary) **93i:68157** 68T20

Cooper, Robert B. Queueing theory. *Stochastic models*, 469–518, *Handbooks Oper. Res. Management Sci.*, 2, *North-Holland, Amsterdam*, 1990. (*see* **93a:60001**) 60K25 (90B22)

Cooper, S. Barry (*with* Harrington, Leo; Lachlan, Alistair H.; Lempp, Steffen; Soare, Robert I.) The d.r.e. degrees are not dense. *Ann. Pure Appl. Logic* **55** (1991), *no.* 2, 125–151. (Xi Zhong Zheng) **93a:03045** 03D30

Cooper, S. Clement (*with* Baltus, C.; Craviotto, C.; McCabe, John H.) On the use of a corresponding sequence algorithm for δ-fractions. *J. Comput. Appl. Math.* **37** (1991), *no.* 1-3, 57–69. (Andreas Guthmann) **93a:30001** 30B70 (40A15)

— (*with* Jones, William B.; Thron, W. J.) Asymptotics of orthogonal L-polynomials for log-normal distributions. *Constr. Approx.* **8** (1992), *no.* 1, 59–67. (Olav Njåstad) **93b:30003** 30B70 (33C45)

Cooper, W. W. (*with* Charnes, Abraham; Huang, Zhi Min; Sun, D. B.) Relations between half-space and finitely generated cones in polyhedral cone-ratio DEA models. *Internat. J.*

Systems Sci. **22** (1991), *no.* 11, 2057–2077. (S. Dubuc) **93b:52013** 52B30 (52A20, 65D17)

Cooperman, Gene (*with* Finkelstein, Larry) A strong generating test and short presentations for permutation groups. Computational group theory, Part 2. *J. Symbolic Comput.* **12** (1991), *no.* 4-5, 475–497. (Mark R. Jerrum) **93d:68037** 68Q40 (20B40, 68Q20)

— (*with* Finkelstein, Larry) Random algorithms for permutation groups. (English summary) *CWI Quarterly* **5** (1992), *no.* 2, 107–125. (J. D. Dixon) **93k:20005** 20B40 (20H30, 68Q22)

— (*with* Finkelstein, Larry) New methods for using Cayley graphs in interconnection networks. (English summary) *Discrete Appl. Math.* **37/38** (1992), 95–118. (Max Garzon) **93j:05077** 05C25 (05C85, 20B40, 68M10)

Cooperstein, Bruce N. (*with* Cohen, Arjeh M.) Generalized hexagons of even order. (English summary) A collection of contributions in honour of Jack van Lint. *Discrete Math.* **106/107** (1992), 139–146. (Norbert Knarr) **93i:51009** 51E12

Cooperstock, F. I. (*with* Richardson, S. A.) Energy localization and the Kerr-Newman metric. *Proceedings of the 4th Canadian Conference on General Relativity and Relativistic Astrophysics (Winnipeg, MB, 1991)*, 110–114, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93g:83039** 83C40 (83C15)

— (*with* Rosen, Nathan) The mass of a body in general relativity. (English summary) *Classical Quantum Gravity* **9** (1992), *no.* 12, 2657–2663. (Carl Brans) **93j:83033** 83C40

— Energy localization in general relativity: a new hypothesis. (English summary) *Found. Phys.* **22** (1992), *no.* 8, 1011–1024. (Peter R. Law) **93i:83039** 83C40 (83B05, 83C35)

— (*with* Carminati, John) Herlt metrics and gravitational-electrostatic balance in general relativity. *Gen. Relativity Gravitation* **24** (1992), *no.* 8, 881–895. (Summary) **93b:83008** 83C15 (83C75)

Cooray-Wijesinha, Manel (*with* Khuri, André I.) Robust designs for first-order multiple design multivariate models. *Comm. Statist. Theory Methods* **20** (1991), *no.* 9, 2987–2999. (Girdhar G. Agarwal) **93c:62127** 62K05

— Optimal designs to improve the power of multiresponse hypothesis tests. (English summary) *Comm. Statist. Theory Methods* **22** (1993), *no.* 2, 587–602. (Summary) **93k:62146** 62K05 (62L05)

Coornaert, Michel Rigidité ergodique de groupes d'isométries d'arbres. (English and French summaries) [Ergodic rigidity for groups of isometries of trees] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 3, 301–304. (Ruth Charney) **93k:57001** 57M07 (20E08)

Copeland, E. (*with* Haws, D.; Holbraad, S.; Rivers, R. J.) The statistical mechanics of interacting strings. *Phys. A* **179** (1991), *no.* 3, 507–530. (Claus Montonen) **93d:82008** 82B05 (82B26)

Coppel, W. A. (*with* Block, L. S.) ★ Dynamics in one dimension. Lecture Notes in Mathematics, 1513. *Springer-Verlag, Berlin*, 1992. viii+249 *pp. ISBN* 3-540-55309-6 (Frederick R. Marotto) **93g:58091** 58F13 (26A18, 54H20, 58F03)

— Dynamical systems: an introduction to some mathematical techniques and results. *Nonlinear dynamics and chaos (Canberra*, 1991), 41–90, *World Sci. Publishing, River Edge, NJ*, 1992. (A. Vanderbauwhede) **93f:58059** 58Fxx (34C35, 70H05)

Coppens, Marc (*with* Johnsen, Trygve) Secant lines of smooth projective curves; an infinitesimal study of the symmetric products. *Enumerative algebraic geometry (Copenhagen*, 1989), 61–87, *Contemp. Math.*, 123, *Amer. Math. Soc., Providence, RI*, 1991. (Jean D'Almeida) **93b:14081** 14N05

— (*with* Keem, Changho; Martens, Gerriet) Primitive linear series on curves. (English summary) *Manuscripta Math.* **77** (1992), *no.* 2-3, 237–264. (Montserrat Teixidor i Bigas) **93j:14028** 14H40 (14C20, 14H45)

— A remark on curves covered by coverings. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 3, 705–708. (Montserrat Teixidor i Bigas) **93i:14021** 14H30 (14H15, 14H45)

— The fat locus of Hilbert schemes of points. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 3, 777–783. (Raquel Mallavibarrena) **93i:14004** 14C05 (14E40)

Copper, Mark On the Gauss decomposition of a matrix. *Linear Algebra Appl.* **177** (1992), 175–189. (Dao Sheng Zheng) **93m:15017** 15A23

Coppersmith, Don (*with* Rivlin, T. J.) The growth of polynomials bounded at equally spaced points. *SIAM J. Math. Anal.* **23** (1992), *no.* 4, 970–983. (L. Leindler) **93d:26012** 26C05

Coppey, Laurent Graphes structuraux. [Structural graphs] Journées E.L.I.T. (Esquisses, Logique et Informatique Théorique), Vol. 3 (Paris, 1988). *Diagrammes* **24** (1990), 33–76. (Dan Dăianu) **93g:18002** 18A10

— Esquisses et types. [Sketches and types] *Diagrammes* **27** (1992), LC1–LC33. (Anna Labella) **93m:18012** 18C10 (03G30, 18D35)

Coppo, Marc-Antoine Une généralisation du théorème de Cayley-Bacharach. (English summary) [A generalization of the Cayley-Bacharach theorem] *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 8, 613–616. (Angelo Lopez) **93d:14072** 14M06 (14C25, 14M10)

Coppoletta, Giuseppe (*with* Bernardi, Christine; Girault, Vivette; Maday, Yvon) Spectral methods for the Stokes problem in stream-function formulation. (English summary) *Spectral and high order methods for partial differential equations (Como*, 1989), 229–236, *North-Holland, Amsterdam*, 1990. (*see* **93d:65005**) 65N35 (76D07, 76M25)

roelly-Coppoletta, Sylvie *see* **Roelly-Coppoletta, Sylvie**

Coquand, Thierry An introduction to type theory. *Logique et informatique: une introduction*, 117–135, *Collect. Didact.*, 8, *INRIA, Rocquencourt*, 1991. (*see* **93d:68003**) 03B40 (68Q55)

— Une preuve directe du théorème d'ultime obstination. (English summary) [A direct proof of the ultimate obstination theorem] *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 6, 489–492. (Summary) **93b:03068** 03D20

— An intuitionistic proof of Tychonoff's theorem. *J. Symbolic Logic* **57** (1992), *no.* 1, 28–32. (Peter Johnstone) **93c:03076** 03F65 (54B10, 54D30)

Coquel, F. (*with* Rogier, François; Schneider, Jacques) A deterministic method for solving the homogeneous Boltzmann equation. *Rech. Aérospat.* (*English Edition*) **1992**, *no.* 3, 1–10; *translated from Rech. Aérospat.* **1992**, *no.* 3, 1–10 (*French. English and French summaries*). (Hans Babovsky) **93k:76099** 76P05 (76M25, 82C40)

Coquereaux, Robert (*with* Esposito-Farese, Gilles) Right-invariant metrics on the Lie group SU(3) and the Gell-Mann-Okubo formula. *J. Math. Phys.* **32** (1991), *no.* 4, 826–831. (Mariano A. del Olmo) **93b:22039** 22E70 (53C80, 81V25)

— Connections, metrics, symmetries and scalar fields in commutative and noncommutative geometry. Les Journées Relativistes (Cargèse, 1991). *Classical Quantum Gravity* **9** (1992), *suppl.*, S41–S53. (Paula Beazley Cohen) **93e:58009** 58B30 (53C05, 81V15)

Coquio, A. (*with* Gravereaux, J.-B.) Calcul de Malliavin et régularité de la densité d'une probabilité invariante d'une chaîne de Markov. (English and French summaries) [The Malliavin calculus and the regularity of the density of an invariant probability of a Markov chain] *Ann. Inst. H. Poincaré Probab. Statist.* **28** (1992), *no.* 4, 431–478. (Dominique Lépingle) **93m:60112** 60H07

Corach, Gustavo (*with* Porta, Horacio A.; Recht, Lázaro) Differential geometry of spaces of relatively regular operators. *Integral Equations Operator Theory* **13** (1990), *no.* 6, 771–794. (W. Żelazko (Zbl 726:46028)) **93a:46099** 46H99 (46M20, 58B20)

— (*with* Porta, Horacio A.; Recht, Lázaro) Splitting of the positive set of a C^*-algebra. *Indag. Math. (N.S.)* **2** (1991), *no.* 4, 461–468. (Robert S. Doran) **93j:46059** 46L05 (46L99)

— (*with* Suárez, Fernando Daniel) Continuous selections and stable rank of Banach algebras. *Topology Appl.* **43** (1992), *no.* 3, 237–248. (Summary) **93a:46089** 46H05 (19A13, 46M20, 54C65)

Corazza, A. (*with* De Mori, R.; Satta, G.) Computation of upper-bounds for stochastic context-free languages. (English summary) *AAAI-92. Proceedings, Tenth National Conference on Artificial Intelligence (San Jose, CA*, 1992), 344–349, *Amer. Assoc. Artif. Intell., Menlo Park, CA*, 1992. (*see* **93j:68007**) 68T10 (03D05, 03D15, 68Q45)

Corazza, Eros Actualisme et possibilisme: l'evaluation dans les mondes possibles. [Actualism and possibilism: evaluation in possible worlds] *Logique et Anal. (N.S.)* **32** (1989), *no.* 125-126, 81–111. (Piero d'Altan) **93m:03025** 03B45 (03A05)

Corazza, Paul Ramsey sets, the Ramsey ideal, and other classes over **R**. (English summary) *J. Symbolic Logic* **57** (1992), *no.* 4, 1441–1468. (Jakub Jasiński) **93m:03080** 03E05 (03E15, 03E35, 04A15)

Corbacho Rosas, Eusebio (*with* Martínez Martínez, Antón) Mean dilatations and exterior powers. (Spanish. English summary) *Proceedings of the XVth Portuguese-Spanish Conference on Mathematics, Vol. II (Portuguese) (Évora*, 1990), 315–318, *Univ. Évora, Évora*, 1991. (Summary) **93b:47041** 47A80 (46M05, 47B10)

Corbae, Dean Relaxing the cash-in-advance constraint at a fixed cost: are simple trigger-target portfolio rules optimal? (English summary) *J. Econom. Dynamics Control* **17** (1993), *no.* 1-2, 51–64. 90A10 (90A09)

Corberán, Á. (*with* Benavent López, Enrique; Campos, V.; Mota, E.) The capacitated arc routing problem: lower bounds. (English summary) *Networks* **22** (1992), *no.* 7, 669–690. (Summary) **93h:90032** 90B10 (05C90, 68Q25, 68R10, 90C35)

Cordani, Bruno The Kepler problem half century after Fock. *General relativity and gravitational physics (Cavalese*, 1988), 153–160, *World Sci. Publishing, Teaneck, NJ*, 1989. (Martin Kummer) **93a:81061** 81R05 (35J10, 58Z05, 70F05, 81R25)

Cordaro, Paulo (*with* Trèves, François) Necessary conditions for the local solvability of the tangential CR equations. *Several complex variables and complex geometry, Part 3 (Santa Cruz, CA*, 1989), 83–91, *Proc. Sympos. Pure Math.*, 52, *Part 3, Amer. Math. Soc., Providence, RI*, 1991. (From the text) **93d:32024** 32F40

Cordeiro, Gauss M. Bartlett corrections and bias correction for two heteroscedastic regression models. (English summary) *Comm. Statist. Theory Methods* **22** (1993), *no.* 1, 169–188. 62J05

— General matrix formulae for computing Bartlett corrections. (English summary) *Statist. Probab. Lett.* **16** (1993), *no.* 1, 11–18. 62H15

boza Cordero, Juan *see* **Boza Cordero, Juan**

Cordero, Luis A. (*with* Wolak, Robert A.) Properties of the basic cohomology of transversely Kähler foliations. *Rend. Circ. Mat. Palermo (2)* **40** (1991), *no.* 2, 177–188. (Aziz El Kacimi Alaoui) **93c:58205** 58G05 (57N30, 57R30, 58A12)

— (*with* Dodson, Cristopher T. J.; Parker, Phillip E.) Examples of spaces of connections and universal connections. *Differential geometry and its applications (Eger*, 1989), 171–176, *Colloq. Math. Soc. János Bolyai*, 56, *North-Holland, Amsterdam*, 1992. (*see* **93i:53001**) 53C05 (57R22)

— (*with* de León, Manuel; Méndez, Isabel; Salgado, Modesto) Existence of p-almost tangent structures. *Czechoslovak Math. J.* **42(117)** (1992), *no.* 2, 225–234. (Ion Mihai) **93g:53045** 53C15

Cordero, Minerva The autotopism group of p-primitive semifield planes. *Ars Combin.* **32** (1991), 57–64. (T. G. Ostrom) **93d:51016** 51E15 (20B25, 51A40)

— Semifield planes of order p^4 that admit a p-primitive Baer collineation. *Osaka J. Math.* **28** (1991), *no.* 2, 305–321. (Norman L. Johnson) **93d:51014** 51E15

— The nuclei and other properties of p-primitive semifield planes. *Internat. J. Math. Math. Sci.* **15** (1992), *no.* 2, 367–370. (T. G. Ostrom) **93b:51003** 51A40 (51A35, 51E15)

— A note on the Boerner-Lantz semifield planes. *J. Geom.* **43** (1992), *no.* 1-2, 53–56. (T. G. Ostrom) **93d:51015** 51E15 (20B25, 51A40)

Cordero, Patricio Multiscaling structure of the density of states of the Ising Hamiltonian. *Nonlinear phenomena in fluids, solids and other complex systems (Santiago*, 1990), 339–349, *North-Holland Delta Ser., North-Holland, Amsterdam*, 1991. (Summary) **93a:82006** 82B20

Cordero-Vourtsanis, M. *see* **Cordero, Minerva**

Cordier, Stéphane Hyperbolicité des systèmes de Grad. (English and French summaries) [Hyperbolicity of Grad systems] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 8, 919–924. (Summary) **93i:82067** 82C70 (35L99, 82D10)

Córdoba, Antonio (*with* Cilleruelo, Javier) $B_2[\infty]$-sequences of square numbers. *Acta Arith.* **61** (1992), *no.* 3, 265–270. (Andrew Granville) **93g:11014** 11B13 (11N64)

— The fat needle problem. *Bull. London Math. Soc.* **25** (1993), *no.* 1, 81–82. (W. J. Firey) **93i:52011** 52A38 (52A10, 52A40)

Cordovil, Raul (*with* Guedes de Oliveira, António) A note on the fundamental group of the Salvetti complex determined by an oriented matroid. (English summary) *European J. Combin.* **13** (1992), *no.* 6, 429–437. (Hiroaki Terao) **93j:52021** 52B40 (05B35, 52B30)

— (*with* Fukuda, Komei) Oriented matroids and combinatorial manifolds. (English summary) *European J. Combin.* **14** (1993), *no.* 1, 9–15. (Egon Schulte) **93m:52016** 52B40 (05B35, 05C40, 52B70)

Corduneanu, Constantin Absolute stability of certain delay systems. (English summary) *Integral methods in science and engineering—90 (Arlington, TX*, 1990), 123–131, *Ser. Comput. Phys. Process. Mech. Thermal Sci., Hemisphere, New York*, 1991. (V. B. Smirnova) **93j:34112** 34K20

— Kneser's property for abstract Volterra functional-differential equations. (English summary) *Recent trends in differential equations*, 111–118, *World Sci. Ser. Appl. Anal.*, 1, *World Sci. Publishing, River Edge, NJ*, 1992. (P. Ch. Tsamatos) **93g:34102** 34K05

— An abstract LQ-optimal control problem and its applications. *Libertas Math.* **12** (1992), 21–27. 49N10 (49K27)
— (*with* Bantaş, G.) Tiberiu Popoviciu. Professor at the University of Iaşi. *Rev. Anal. Numér. Théor. Approx.* **21** (1992), *no.* 1, 1–8. (Editors) **93m:01056** 01A70
— *see also* **Integral methods in science and engineering—90, 93f:00014**
Cori, Robert (*with* Sopena, Eric) Some combinatorial aspects of time-stamp systems. (English summary) *European J. Combin.* **14** (1993), *no.* 2, 95–102. (Summary) **93k:05085** 05C35
Corichi, Alejandro Comment on: "Hamiltonian formulation of a theory with constraints" [J. Math. Phys. **33** (1992), no. 2, 633–638; MR 92m:81116] by U. Kulshreshta. (English summary) *J. Math. Phys.* **33** (1992), *no.* 12, 4066–4067. (Summary) **93j:81049** 81S05 (70G99, 70H05)
Corigliano, A. (*with* Perego, U.) Generalized midpoint finite element dynamic analysis of elastoplastic systems. (English summary) *Internat. J. Numer. Methods Engrg.* **36** (1993), *no.* 3, 361–383. (Summary) **93i:73054** 73V05 (73E50)
Corless, Martin Simple adaptive controllers for systems which are stabilizable via high gain feedback. Universal stabilizers and high-gain adaptive control. *IMA J. Math. Control Inform.* **8** (1991), *no.* 4, 379–387. (Summary) **93b:93060** 93C40 (93D15)
— (*with* Da, D.) Stability robustness of linear feedback controlled flexible mechanical systems. *Mechanics and control* (*Los Angeles, CA*, 1991), 57–71, *Lecture Notes in Control and Inform. Sci.*, 170, *Springer, Berlin*, 1992. (Zong Ji Chen) **93b:93082** 93D09 (34D15, 70Q05, 73K50)
— (*with* Glielmo, Luigi) On the exponential stability of singularly perturbed systems. (English summary) *SIAM J. Control Optim.* **30** (1992), *no.* 6, 1338–1360. (M. M. Khapaev) **93i:34091** 34D15 (34D20, 34E15, 34H05, 73K50, 93D05)
— (*with* Leitmann, George) Bounded controllers for robust exponential convergence. (English summary) *J. Optim. Theory Appl.* **76** (1993), *no.* 1, 1–12. (Hsi-han Yeh) **93k:93101** 93D21 (93B36, 93D09, 93D15)
Corless, Robert M. (*with* Corliss, George F.) Rationale for guaranteed ODE defect control. (English summary) *Computer arithmetic and enclosure methods* (*Oldenburg*, 1991), 3–12, *North-Holland, Amsterdam*, 1992. (Summary) **93j:65127** 65L70 (65L05)
— Defect-controlled numerical methods and shadowing for chaotic differential equations. (English summary) Experimental mathematics: computational issues in nonlinear science (Los Alamos, NM, 1991). *Phys. D* **60** (1992), *no.* 1-4, 323–334. (Summary) **93j:65102** 65L05 (34C99, 58F13)
Corliss, George F. (*with* Rall, Louis B.) Computing the range of derivatives. (English summary) *Computer arithmetic, scientific computation and mathematical modelling* (*Albena*, 1990), 195–212, *IMACS Ann. Comput. Appl. Math.*, 12, *Baltzer, Basel*, 1991. (Summary) **93g:65029** 65D25 (65G10, 65Y10)
— (*with* Corless, Robert M.) Rationale for guaranteed ODE defect control. (English summary) *Computer arithmetic and enclosure methods* (*Oldenburg*, 1991), 3–12, *North-Holland, Amsterdam*, 1992. (Summary) **93j:65127** 65L70 (65L05)
— (*with* Kirlinger, G.) On implicit Taylor series methods for stiff ODEs. (English summary) *Computer arithmetic and enclosure methods* (*Oldenburg*, 1991), 371–379, *North-Holland, Amsterdam*, 1992. (*see* **93i:65006**) 65L05
Cormack, Donald E. (*with* Rosen, Dan) Analysis and evaluation of singular integrals by the invariant imbedding approach. (English summary) *Internat. J. Numer. Methods Engrg.* **35** (1992), *no.* 3, 563–587. (G. F. Miller) **93h:65034** 65D30 (65N38)
— (*with* Rosen, Dan) Singular and near singular integrals in the BEM: a global approach. (English summary) *SIAM J. Appl. Math.* **53** (1993), *no.* 2, 340–357. (Summary) **93m:65163** 65N38 (45E05, 73V10, 76M15)
Cormack, R. M. (*with* Jupp, P. E.) Inference for Poisson and multinomial models for capture-recapture experiments. *Biometrika* **78** (1991), *no.* 4, 911–916. (A. Balogh) **93a:62035** 62F12
— Interval estimation for mark-recapture studies of closed populations. (French summary) *Biometrics* **48** (1992), *no.* 2, 567–576. (Summary) **93c:62166** 62P10
Cornbleet, S. An electromagnetic theory of rays in a nonuniform medium. *Huygens' principle* 1690–1990: *theory and applications* (*The Hague and Scheveningen*, 1990), 451–459, *Stud. Math. Phys.*, 3, *North-Holland, Amsterdam*, 1992. (Summary) **93a:78006** 78A25 (78A05)
Cornea, Aurel An identity theorem for logarithmic potentials. *Osaka J. Math.* **28** (1991), *no.* 4, 829–836. (Qi Ren Gao) **93c:31002** 31A05 (31A15)
Cornea, Florin Ovidiu Sheaf properties and cohomology in standard H-cones of functions. Analyse complexe (Bucharest, 1989). *Rev. Roumaine Math. Pures Appl.* **36** (1991), *no.* 1-2, 37–46. (Tadashi Murazawa) **93b:31009** 31D05 (28B05, 60J45)
Corneil, Derek G. (*with* Brown, Jason I.) Graph properties and hypergraph colourings. *Discrete Math.* **98** (1991), *no.* 2, 81–93. (H. L. Abbott) **93b:05055** 05C15 (05C65)
— (*with* Cai, Leizhen) Tree spanners: an overview. (English summary) Proceedings of the Twenty-third Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, FL, 1992). *Congr. Numer.* **88** (1992), 65–76. (Summary) **93j:05037** 05C05 (68M10, 90B12)
— (*with* Cai, Leizhen) On cycle double covers of line graphs. *Discrete Math.* **102** (1992), *no.* 1, 103–106. (Summary) **93b:05129** 05C70 (05C38)
Cornelius, Paul L. (*with* Seyedsadr, Mahmoud) Shifted multiplicative models for nonadditive two-way tables. (English summary) *Comm. Statist. Simulation Comput.* **21** (1992), *no.* 3, 807–832. (Nariaki Sugiura) **93k:62144** 62J10 (62-07, 62H12, 62J02)
Cornell, Gary A note on the class group of composita. *J. Number Theory* **39** (1991), *no.* 1, 1–4. (Jonathan W. Sands) **93b:11145a** 11R29 (11R37)
— *see also* **Moroz, B. Z., 93b:11145b**
Cornell, John A. ★ Experiments with mixtures. Designs, models, and the analysis of mixture data. Second edition. Wiley Series in Probability and Mathematical Statistics: Applied Probability and Statistics. A Wiley-Interscience Publication. *John Wiley & Sons, Inc., New York*, 1990. xxii+632 *pp. ISBN* 0-471-52221-X (Editors) **93e:62201** 62K99
Cornet, Bernard (*with* Bonnisseau, Jean-Marc) General equilibrium theory with increasing returns: the existence problem. *Equilibrium theory and applications* (*Louvain-la-Neuve*, 1989), 65–82, *Internat. Sympos. Econom. Theory Econometrics, Cambridge Univ. Press, Cambridge*, 1991. (Jeffrey L. Coles) **93d:90012** 90A14 (90A11)
Cornille, Henri Shock waves for the two speeds $8v_i$, $14v_i$ and $24v_i$ discrete Boltzmann models with temperature. (English summary) *Discrete models of fluid dynamics* (*Figueira da Foz*, 1990), 131–143, *Ser. Adv. Math. Appl. Sci.*, 2, *World Sci. Publishing, River Edge, NJ*, 1991. (Giuseppe Toscani) **93j:82060** 82C40 (82–02)
— Exact periodic solutions for a class of multispeed discrete Boltzmann models. (English summary) *Nonlinear coherent structures in physics and biology* (*Dijon*, 1991), 332–339, *Lecture Notes in Phys.*, 393, *Springer, Berlin*, 1991. (*see* **93e:00025**) 82C40 (76P05, 82–04)
— (1 + 1)-dimensional hierarchies of multispeed discrete Boltzmann model equations. *J. Math. Phys.* **32** (1991), *no.* 12, 3439–3454. (Carlo Cercignani) **93a:82046** 82C40 (76P05)
— Exact (1 + 1)-dimensional solutions to the multispeed discrete Boltzmann models. (English summary) *Nonlinear dispersive wave systems* (*Orlando, FL*, 1991), 539–550, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93h:82050** 82C40
— (*with* Platkowski, Tadeusz) Exact solutions of a hierarchy of mixing speeds models. *J. Math. Phys.* **33** (1992), *no.* 7, 2587–2606. (Giuseppe Toscani) **93g:82082** 82C40
Cornish, N. J. Quantum nonlocal field theory: physics without infinities. (English summary) *Internat. J. Modern Phys. A* **7** (1992), *no.* 24, 6121–6157. 81T99
— New methods in quantum nonlocal field theory. *Modern Phys. Lett. A* **7** (1992), *no.* 21, 1895–1904. (Alexander W. Smith) **93e:81069** 81T13
— (*with* Moffat, J. W.; Tatarski, D. C.) Gravitational waves in the nonsymmetric gravitational theory. (English summary) *Phys. Lett. A* **173** (1993), *no.* 2, 109–115. (Ilya Shapiro) **93k:83061** 83D05 (83C35)
— (*with* Frankel, Norman E.) Universal mass in 2 + 1 dimensions. (English summary) *Phys. Rev. D* (3) **47** (1993), *no.* 2, 714–717. (Michael O. Katanaev) **93m:83048** 83C55 (83C99)
Cornuéjols, Gérard (*with* Balas, Egon; Ceria, Sebastián) Solving mixed 0-1 programs by a lift-and-project method. (English summary) *Proceedings of the Fourth Annual ACM-SIAM Symposium on Discrete Algorithms* (*Austin, TX*, 1993), 232–242, *ACM, New York*, 1993. (*see* **93k:05002**) 90C09
Cornwell, Christopher (*with* Schmidt, Peter Joseph; Wyhowski, Donald) Simultaneous equations and panel data. *J. Econometrics* **51** (1992), *no.* 1-2, 151–181. (Hilmar Drygas) **93g:62136** 62P20
Cornwell, J. F. Multiparameter deformations of the universal enveloping algebras of the simple Lie algebras A_l for all $l \geq 2$ and the Yang-Baxter equation. (English summary) *J. Math. Phys.* **33** (1992), *no.* 12, 3963–3977. (Arne Schirrmacher) **93j:81042b** 81R50 (17B37)
— General theory of the matrix formulation of the automorphisms of affine Kac-Moody algebras. *J. Phys. A* **25** (1992), *no.* 8, 2311–2333. (From the summary) **93f:17038** 17B67 (17B40)
— Involutive automorphisms of the affine Kac-Moody algebra $A_1^{(1)}$. *J. Phys. A* **25** (1992), *no.* 8, 2335–2358. (Vjatcheslav Futorny) **93f:17039** 17B67 (17B40)
— The conjugacy classes of the involutive automorphisms of affine Kac-Moody algebra $A_2^{(1)}$. *J. Phys. A* **25** (1992), *no.* 14, 3955–3975. (Vjatcheslav Futorny) **93h:17059** 17B67 (81R10)
— Involutive automorphisms of the affine Kac-Moody algebras $A_l^{(1)}$ for $l \geq 3$ by the matrix method. *J. Phys. A* **25** (1992), *no.* 14, 3977–4015. (Vjatcheslav Futorny) **93h:17060** 17B67 (81R10)
— A two-parameter deformation of the universal enveloping algebra of sl(3, **C**). (English summary) *Z. Phys. C* **56** (1992), *no.* 2, 245–252. (Arne Schirrmacher) **93j:81042a** 81R50 (17B37)
Cornwell, Stuart Counterfactuals and the applications of mathematics. *Philos. Stud.* **66** (1992), *no.* 1, 73–87. (James Franklin) **93d:03006** 03A05 (00A30, 00A69)
Corominas, Ernest *see* **Pouzet, Maurice**
Coron, Jean-Michel (*with* Bethuel, Fabrice; Demengel, F.; Hélein, Frédéric) A cohomological criterion for density of smooth maps in Sobolev spaces between two manifolds. (English summary) *Nematics* (*Orsay*, 1990), 15–23, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 332, *Kluwer Acad. Publ., Dordrecht*, 1991. (Liliana Maxim-Răileanu) **93g:58020** 58D15
— Harmonic maps with values into spheres. *Proceedings of the International Congress of Mathematicians, Vol. I, II* (*Kyoto*, 1990), 1123–1135, *Math. Soc. Japan, Tokyo*, 1991. (Helmut Kaul) **93e:58033** 58E20
— (*with* Bethuel, Fabrice; Ghidaglia, Jean-Michel; Soyeur, Alain) Heat flows and relaxed energies for harmonic maps. *Nonlinear diffusion equations and their equilibrium states*, 3 (*Gregynog*, 1989), 99–109, *Progr. Nonlinear Differential Equations Appl.*, 7, *Birkhäuser Boston, Boston, MA*, 1992. (Wei Yue Ding) **93d:58036** 58E20 (35K05, 58G11)
— Global asymptotic stabilization for controllable systems without drift. *Math. Control Signals Systems* **5** (1992), *no.* 3, 295–312. (Summary) **93m:93084** 93D15 (34H05, 70F25, 70Q05, 93B05)
— *see also* **Nematics, 93d:58007** *and* **Variational methods, 93i:58006**
Corona-Galindo, M. G. (*with* González-Acosta, E.) Noether's theorem and the invariants for dissipative and driven dissipative like systems. (English and Spanish summaries) *Rev. Mexicana Fís.* **38** (1992), *no.* 4, 511–517. (P. G. L. Leach) **93k:70031** 70H35 (70D10, 70H33)
Corones, James P. Dedication. *Invariant imbedding and inverse problems* (*Albuquerque, NM*, 1990), xiii, *SIAM, Philadelphia, PA*, 1992. (Editors) **93m:01066** 01A70
— (*with* Sun, Zhiming) Simultaneous reconstruction of material and transient source parameters using the invariant imbedding method. (English summary) *J. Math. Phys.* **34** (1993), *no.* 5, 1824–1845. (Summary) **93k:35270** 35R30 (73D25)
— *see also* **Invariant imbedding and inverse problems, 93e:00023**
franco Coronil, D. *see* **Franco Coronil, D.**
Corovei, I. The reduction of $m + 1$ semigroups and its extensions to the same semigroup. *Mathematica* (*Cluj*) **32(55)** (1990), *no.* 2, 117–122. (From the text) **93g:20134** 20N15
— Simultaneous reductions and extensions of polyadic semigroups. *Mathematica* (*Cluj*) **33(56)** (1991), *no.* 1-2, 35–39. (D. C. Jackson) **93j:20127** 20M10
Coroyer, Christophe (*with* Le Roux, Joël; Rossille, Delphine) Bispectral analysis and reconstruction in the frequency domain of mono- and bidimensional deterministic sampled signals. (English summary) *Multidimens. Systems Signal Process.* **4** (1993), *no.* 1, 39–66. (Summary) **93j:94003** 94A12
Corrada, Manuel On the length of proofs of set theoretical statements in Zermelo-Fraenkel set theory and Kelley-Morse theory of classes. *J. Non-Classical Logic* **7** (1990), *no.* 1-2, 73–77. 03F20 (03E30, 03E70)
Corradi, C. Approximating the solution of an integral equation arising in the theory of risk: a comment. (English and Italian summaries) *Riv. Mat. Sci. Econom. Social.* **14** (1991),

no. 1, 3–7. 62P05 (60K99)

Corrádi, Keresztély (*with* Szabó, Sándor) Factorization of periodic subsets. II. *Math. Japon.* **36** (1991), *no.* 1, 165–172. (J. Wiegold) **93b:20090** 20K01 (20K27)

— (*with* Sands, Arthur D.; Szabó, Sándor) Simulated factorizations. (English summary) *J. Algebra* **151** (1992), *no.* 1, 12–25. (J. Wiegold) **93i:20061** 20K01 (20D60, 20K25)

— (*with* Szabó, Sándor) An extension for Hajós' theorem. *J. Pure Appl. Algebra* **79** (1992), *no.* 3, 217–223. (Summary) **93c:20084** 20K01

— (*with* Szabó, Sándor) Factoring certain infinite abelian groups by cyclic subsets. *Pure Math. Appl. Ser. A* **2** (1992), *no.* 3-4, 285–290. (S. Stein) **93e:20072** 20K25

Corradi, Leone (*with* Genna, Francesco; Annovazzi, Lorella) Holonomic versus rate relations in plasticity. *Unilateral problems in structural analysis, IV* (*Capri*, 1989), 29–38, *Internat. Ser. Numer. Math.*, 101, *Birkhäuser, Basel*, 1991. (*see* **93a:73001**) 73E05

Corrales-Rodrigáñez, Capi Nevanlinna theory on the p-adic plane. (English summary) *Ann. Polon. Math.* **57** (1992), *no.* 2, 135–147. (S. L. Segal) **93h:30067** 30G06 (12J25)

Corrêa, Gilberto Oliveira (*with* da Silveira, Marcos Azevedo) H_2-optimal control of linear systems with tracking/disturbance rejection constraints. *Internat. J. Control* **55** (1992), *no.* 5, 1115–1139. (Long Wang) **93a:93045** 93B36 (93B35, 93B51, 93D15)

Correira, António Dourado P. (*with* Monteiro, Paulo P.) Short-term production scheduling: a new and more efficient algorithm and its application to the pulp and paper industry. (English summary) *Inform. Decision Tech.* **18** (1992), *no.* 4, 241–263. (Summary) **93c:90038** 90B35 (90C20)

Corrigan, E. (*with* Braden, H. W.; Dorey, Patrick E.; Sasaki, Ryu) Aspects of perturbed conformal field theory, affine Toda field theory and exact S-matrices. *Differential geometric methods in theoretical physics* (*Davis, CA*, 1988), 169–182, *NATO Adv. Sci. Inst. Ser. B Phys.*, 245, *Plenum, New York*, 1990. (From the introduction) **93g:81139** 81T40

— (*with* Braden, H. W.; Dorey, Patrick E.; Sasaki, Ryu) Aspects of affine Toda field theory. Proceedings of the Winter School on Geometry and Physics (Srní, 1990). *Rend. Circ. Mat. Palermo* (2) *Suppl. No.* 26 (1991), 67–96. (Giuseppe Mussardo) **93e:81102** 81T40 (58F07)

— (*with* Braden, H. W.; Dorey, Patrick E.; Sasaki, Ryu) Aspects of affine Toda field theory. *Integrable systems and quantum groups* (*Pavia*, 1990), 99–124, *World Sci. Publishing, River Edge, NJ*, 1992. (Stanislav Z. Pakuliak) **93h:81110** 81T40 (81R10, 82B23)

— (*with* Braden, H. W.; Dorey, Patrick E.; Sasaki, Ryu) Affine Toda field theory: S-matrix vs. perturbation. *Quantum groups* (*Leningrad*, 1990), 210–220, *Lecture Notes in Math.*, 1510, *Springer, Berlin*, 1992. (Alexander Orlov) **93i:81148** 81T15 (81T18, 81T40, 81U20)

Corry, Leo Nicolas Bourbaki and the concept of mathematical structure. (English summary) *Synthese* **92** (1992), *no.* 3, 315–348. (Eduard Glas) **93h:00007** 00A30 (01A60, 03A05)

Corsini, Piergiulio Graphs and join spaces. (English summary) *J. Combin. Inform. System Sci.* **16** (1991), *no.* 4, 313–318. (Mario Gionfriddo) **93k:05179** 05C99

Corson, Jon Michael Complexes of groups. *Proc. London Math. Soc.* (3) **65** (1992), *no.* 1, 199–224. (M. J. Dunwoody) **93h:57003** 57M07 (20E08, 20F32, 57M60)

Cortés, Emilio Extremal trajectories for stochastic equations obtained directly from the Langevin differential operator. II. First integrals. *J. Phys. A* **25** (1992), *no.* 8, L409–L412. (Summary) **93c:81092** 81S25 (81P20, 82C31)

— On extremal paths for stochastic processes that involve step potentials and the generalized Hamilton-Jacobi equation. *Phys. A* **182** (1992), *no.* 1-2, 228–239. (B. H. Lavenda) **93d:82064** 82C35

Cortés, J. L. (*with* Gamboa, Jorge; Velázquez, L.) Electromagnetic interaction of anyons. (English summary) *Phys. Lett. B* **286** (1992), *no.* 1-2, 105–108. (Summary) **93e:81147** 81V10 (81T13)

Cortés, Teresa Bernstein algebras: lattice isomorphisms and isomorphisms. (English summary) *Nonassociative algebraic models* (*Zaragoza*, 1989), 69–89, *Nova Sci. Publ., Commack, NY*, 1992. (Irvin Roy Hentzel) **93j:17002** 17A30 (17D92)

— Modular Bernstein algebras. *Extracta Math.* **7** (1992), *no.* 1, 31–34. 17D92

— A note on the lattice definability of Bernstein algebras. (English summary) *Linear Algebra Appl.* **179** (1993), 203–210. (H. Röhrl) **93j:17061** 17D92

Cortés Tamayo, Joel Octavio Quantum optics of squeezed states. (Spanish. English and Spanish summaries) *Rev. Mexicana Fís.* **39** (1993), *no.* 1, 128–152. (Summary) **93k:81275** 81V80

Cortiñas, Guillermo Stieffel-Whitney classes for quadratic modules. (English summary) *Comm. Algebra* **21** (1993), *no.* 1, 163–178. (Bruno Kahn) **93m:19003** 19D45 (11E81, 19G12)

Corwin, Lawrence Constructing the supercuspidal representations of $\mathrm{GL}_n(F)$, F p-adic. *Harmonic analysis on reductive groups* (*Brunswick, ME*, 1989), 123–179, *Progr. Math.*, 101, *Birkhäuser Boston, Boston, MA*, 1991. (Rebecca Herb) **93h:22021** 22E35 (22–02, 22E50)

— (*with* Greenleaf, Frederick P.) Commutativity of invariant differential operators on nilpotent homogeneous spaces with finite multiplicity. *Comm. Pure Appl. Math.* **45** (1992), *no.* 6, 681–748. (Hidenori Fujiwara) **93i:22010** 22E27 (22E25, 43A85)

— Inducing "supercuspidal" representations of unipotent p-adic groups from compact-mod-center subgroups. (English summary) *Compositio Math.* **84** (1992), *no.* 1, 85–89. (Marko Tadić) **93j:22014** 22E27

— (*with* Greenleaf, Frederick P.) Spectral decomposition of invariant differential operators on certain nilpotent homogeneous spaces. (English summary) *J. Funct. Anal.* **108** (1992), *no.* 2, 374–426. (Ewa Damek) **93j:22009** 22E25 (22E27, 43A80, 43A85)

— A construction of the supercuspidal representations of $\mathrm{GL}_n(F)$, F p-adic. *Trans. Amer. Math. Soc.* **337** (1993), *no.* 1, 1–58. (Ernst-Wilhelm Zink) **93g:22017** 22E50 (11S37)

Coscia, Alessandra Existence result for a new variational problem in one-dimensional segmentation theory. (English summary) *Ann. Univ. Ferrara Sez. VII* (*N.S.*) **37** (1991), 185–203 (1992). (Françoise Berquier) **93m:49001** 49J10 (49J45)

Cosenza, Mario G. (*with* Kapral, Raymond) Coupled maps and pattern formation on the Sierpiński gasket. (English summary) *Chaos* **2** (1992), *no.* 3, 329–335. (G. Ambika) **93g:58095** 58F13 (58F40, 82D30)

— (*with* Kapral, Raymond) Coupled maps on fractal lattices. (English summary) *Phys. Rev. A* (3) **46** (1992), *no.* 4, 1850–1858. (Summary) **93e:82030** 82C05 (58F08)

Cosgrove, Christopher M. (*with* Scoufis, George) Painlevé classification of a class of differential equations of the second order and second degree. (English summary) *Stud. Appl. Math.* **88** (1993), *no.* 1, 25–87. (Andrei Bolibrukh) **93k:34008** 34A20 (33E30)

Cosma, D. (*with* Stanomir, D.; Mânescu, O.) Signal restoration by the use of the singular value analysis. II. An analytical solution. (Romanian summary) *Polytech. Inst. Bucharest Sci. Bull. Electr. Engrg.* **52** (1990), *no.* 1, 63–70. (Summary) **93b:94008** 94A12 (45B05, 94A11)

di Cosmo, Roberto *see* **Di Cosmo, Roberto**

Cosnard, Michel (*with* Ferreira, Afonso G.) Designing parallel nonnumerical algorithms. (English summary) *Parallel computing '91* (*London*, 1991), 3–18, *Adv. Parallel Comput.*, 4, *North-Holland, Amsterdam*, 1992. (*see* **93f:00016**) 68Q05 (68Q20, 68Q22)

— (*with* Bougé, Luc) Recouvrement d'une pièce trapézoïdale par des dominos. (English and French summaries) [Tiling a trapezoidal region with dominoes] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 2, 221–226. (Summary) **93j:05034** 05B45 (68U05)

— (*with* Tchuente, Maurice; Tindo, Gilbert) Sequences generated by neuronal automata with memory. *Complex Systems* **6** (1992), *no.* 1, 13–20. (Summary) **93b:92002** 92B20 (39A99, 68Q70)

— (*with* Akl, Selim G.; Ferreira, Afonso G.) Data-movement-intensive problems: two folk theorems in parallel computation revisited. (French summary) *Theoret. Comput. Sci.* **95** (1992), *no.* 2, 323–337. (Summary) **93a:68035** 68Q10

Cosner, C. (*with* Ali, S. W.) On the uniqueness of the positive steady state for Lotka-Volterra models with diffusion. (English summary) *J. Math. Anal. Appl.* **168** (1992), *no.* 2, 329–341. (Kazuaki Narita) **93f:92026** 92D40 (35K57)

Cossarini, Adriana E. (*with* Chimento, Luis P.) Self-consistent solution to the back-reaction problem for vector fields in two dimensions. *Nuclear Phys. B* **373** (1992), *no.* 2, 438–452. (Michael B. Mensky) **93b:81184** 81T20 (81T40)

Cossart, V. Modèle projectif régulier et désingularisation. [A regular projective model and desingularization] *Math. Ann.* **293** (1992), *no.* 1, 115–121. (From the introduction) **93c:14016** 14E05 (14E15)

Cossey, John (*with* Bryce, R. A.) A note on Hamiltonian 2-groups. *Rend. Sem. Mat. Univ. Padova* **86** (1991), 175–182 (1992). (From the introduction) **93m:20034** 20E15 (20F22)

— (*with* Hawkes, Trevor; Mann, Avinoam) A criterion for a group to be nilpotent. *Bull. London Math. Soc.* **24** (1992), *no.* 3, 267–270. (I. M. Isaacs) **93c:20040** 20D15

— (*with* Bryce, R. A.; Ormerod, E. A.) A note on p-groups with power automorphisms. *Glasgow Math. J.* **34** (1992), *no.* 3, 327–332. (Carlo M. Scoppola) **93j:20046** 20D15

— (*with* Hawkes, Trevor) Computing the order of the nilpotent residual of a finite group from knowledge of its group algebra. *Arch. Math.* (*Basel*) **60** (1993), *no.* 2, 115–120. (H. Heineken) **93m:20006** 20C05 (20D25)

Cossidente, Antonio About K-configurations in $\mathbf{P}^2$. (English summary) *J. Pure Appl. Algebra* **84** (1993), *no.* 2, 159–164. (Summary) **93i:14009** 14C25 (13D40, 14M10)

Costa, Antone Modular forms and class number congruences. *Acta Arith.* **61** (1992), *no.* 2, 101–118. (Peter Stevenhagen) **93k:11042** 11F33 (11F11, 11F67, 11R29)

— (*with* Friedman, Eduardo) Ratios of regulators in extensions of number fields. *Proc. Amer. Math. Soc.* **119** (1993), *no.* 2, 381–390. (T. Metsänkylä) **93k:11099** 11R27 (11R29)

Costa, Antonio F. (*with* Bujalance, E.) A combinatorial approach to the symmetries of M and $M-1$ Riemann surfaces. *Discrete groups and geometry* (*Birmingham*, 1991), 16–25, *London Math. Soc. Lecture Note Ser.*, 173, *Cambridge Univ. Press, Cambridge*, 1992. (Gabino González Díez) **93k:30075** 30F50

— (*with* Grasselli, Luigi) Universal coverings of PL-manifolds via coloured graphs. *Aequationes Math.* **44** (1992), *no.* 1, 60–71. (Mario Pezzana) **93e:57005** 57M15 (05C10, 57Q05)

— Locally regular coloured graphs. *J. Geom.* **43** (1992), *no.* 1-2, 57–74. (Mario Pezzana) **93a:57003** 57M15 (05C10, 57M60)

Costa, David Goldstein (*with* Liao, Guojun G.) Existence and multiplicity results for a class of elliptic problems with critical Sobolev exponents. *Rocky Mountain J. Math.* **21** (1991), *no.* 4, 1207–1223. (A. Simon) **93d:35051** 35J65 (35B05, 47H15, 47N20)

— (*with* de Figueiredo, Djairo G.; Srikanth, P. N.) The exact number of solutions for a class of ordinary differential equations through Morse index computation. *J. Differential Equations* **96** (1992), *no.* 1, 185–199. (Jean Mawhin) **93c:34050** 34B15 (58E05)

Costa, Douglas L. (*with* Keller, Gordon E.) Radix redux: normal subgroups of symplectic groups. *J. Reine Angew. Math.* **427** (1992), 51–105. (Chong Guang Cao) **93h:20053** 20G35 (20E07)

arlo Costa, Horacio L. *see* **Arlo Costa, Horacio L.**

da Costa, José Manuel N. (*with* Hall, G. S.) Curvature collineations in general relativity. I, II. *J. Math. Phys.* **32** (1991), *no.* 10, 2848–2853, 2854–2862. (Toshihiko Ikawa) **93a:53058** 53C50 (53C80, 83C99)

— (*with* Vaz, E. G. L. R.) Vacuum type N space-times admitting homothetic vector fields with isolated fixed points. *Gen. Relativity Gravitation* **24** (1992), *no.* 7, 745–755. (M. A. H. MacCallum) **93m:83012** 83C20

— (*with* Carot, J.; Mas, Luis; Rago, H.) Affine collineations in Einstein-Maxwell space-times. (English summary) *Gen. Relativity Gravitation* **24** (1992), *no.* 9, 959–972. (Birgitta Alertz) **93g:83029** 83C22 (83C20)

Costa, M.-C. (*with* Billionnet, Alain; Sutter, Alain) An efficient algorithm for a task allocation problem. (English summary) *J. Assoc. Comput. Mach.* **39** (1992), *no.* 3, 502–518. (Summary) **93i:68026** 68M20

Costa, M. I. S. (*with* Boldrini, José Luiz; Bassanezi, Rodney C.) Optimal chemical control of populations developing drug resistance. (English summary) *IMA J. Math. Appl. Med. Biol.* **9** (1992), *no.* 3, 215–226. (Summary) **93j:92015** 92C50

martins Costa, M. L. *see* **Martins Costa, M. L.**

da Costa, Newton C. A. (*with* Marconi, Diego) An overview of paraconsistent logic in the 80s. *J. Non-Classical Logic* **6** (1989), *no.* 1, 5–32. 03B53

— The philosophical importance of paraconsistent logic. (Portuguese. English summary) Translated from the English and with a preface by Décio Krause. *Bol. Soc. Paran. Mat.* (2) **11** (1990), *no.* 2, 91–113 (1992). (Editors) **93g:03023** 03B53 (00A30, 03A05)

— (*with* Doria, Francisco Antonio; Papavero, N.) Meinong's theory of objects and Hilbert's ε-symbol. (English summary) *Rep. Math. Logic No.* 25 (1991), 119–132. (Summary) **93f:03011** 03B53 (03A05, 03B60)

— (*with* Subrahmanian, V. S.; Vago, Carlo) The paraconsistent logics $P\mathcal{T}$. *Z. Math. Logik Grundlag. Math.* **37** (1991), *no.* 2, 139–148. (Stanisław J. Surma) **93c:03032** 03B53 (03B70, 68T27)

— (*with* Doria, Francisco Antonio) On the existence of very difficult satisfiability problems. *Bull. Sect. Logic Univ. Lódź* **21** (1992), *no.* 4, 122–133. 68Q25 (03D10, 03D15, 68Q05, 68Q30)

— (*with* Doria, Francisco Antonio) Mathematics is dramatically incomplete. (English summary) Theory, history and foundations of the formal sciences (Spanish). *Theoria (San Sebastián)* (2) **7** (1992), *no.* 16-18, *A*, 411–422. (Francisco A. Rodriguez Consuegra) **93m:03007** 03A05 (00A30)

Costabel, Martin (*with* Dauge, Monique) Singularités d'arêtes pour les problèmes aux limites elliptiques. (English and French summaries) [Edge singularities for elliptic boundary value problems] *Journées "Équations aux Dérivées Partielles" (Saint-Jean-de-Monts, 1992), Exp. No. IV*, 12 *pp., École Polytech., Palaiseau*, 1992. (Summary) **93j:35201** 35S15 (35A20, 35J40)

— (*with* Penzel, Frank; Schneider, Reinhold) A collocation method for a screen problem in $\mathbf{R}^3$. *Symposium "Analysis on Manifolds with Singularities" (Breitenbrunn, 1990)*, 43–50, *Teubner-Texte Math.*, 131, *Teubner, Stuttgart*, 1992. (*see* **93k:35004**) 65R20 (45E05)

— (*with* McLean, William) Spline collocation for strongly elliptic equations on the torus. *Numer. Math.* **62** (1992), *no.* 4, 511–538. (Gheorghe Micula) **93f:65096** 65R20 (65D07, 65N35)

Costabel, Pierre Courbure et dynamique: Jean I Bernoulli correcteur de Huygens et de Newton. [Curvature and dynamics: Johann I Bernoulli, corrector of Huygens and Newton] *Der Ausbau des Calculus durch Leibniz und die Brüder Bernoulli (Basel*, 1987), 12–24, *Studia Leibnitiana Sonderheft*, 17, *Steiner, Wiesbaden*, 1989. (*see* **93e:01009**) 01A45 (70–03)

— *see also* **Hall, A. Rupert**

Costabile, C. (*with* Costabile, Francesco; Gualtieri, M. I.) Generalization of the methods of Nyström. (Italian. English summary) *Rend. Mat. Appl.* (7) **11** (1991), *no.* 3, 447–469. (Summary) **93b:65092** 65L05

Costabile, Francesco (*with* Caira, R.) An explicit sixth-order three-stage method for the Cauchy problem. (Italian. English summary) *Calcolo* **28** (1991), *no.* 1-2, 93–110 (1992). (A. de Castro Brzezicki) **93g:65092** 65L06

— (*with* Costabile, C.; Gualtieri, M. I.) Generalization of the methods of Nyström. (Italian. English summary) *Rend. Mat. Appl.* (7) **11** (1991), *no.* 3, 447–469. (Summary) **93b:65092** 65L05

— A property of zeros and Cotes numbers of Hermite and Laguerre orthogonal polynomials. *Approximation theory, spline functions and applications (Maratea*, 1991), 311–316, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 356, *Kluwer Acad. Publ., Dordrecht*, 1992. (A. K. Agarwal) **93k:33004** 33C45

Costa de Beauregard, O. Is there a reality out there? *Found. Phys.* **22** (1992), *no.* 1, 121–135. (Lawrence Sklar) **93a:81008** 81P05

— Intersubjectivity, relativistic covariance, and conditionals. Response to C. I. J. M. Stuart: "Retrocausality and conditional probability" [Found. Phys. Lett. **4** (1991), no. 1, 37–48; MR 93e:81011]. *Found. Phys. Lett.* **5** (1992), *no.* 3, 291–294. (Lawrence Sklar) **93e:81012** 81P05

— Timing in EPR correlations. (English summary) *Found. Phys. Lett.* **5** (1992), *no.* 5, 489–491. (Jeffrey Bub) **93j:81007** 81P15

Costa Dias, Roberta (*with* del Castillo-Mussot, Marcelo) Fuzzy sets and physics. (English and Spanish summaries) *Rev. Mexicana Fís.* **39** (1993), *no.* 2, 295–303. (Summary) **93m:04009** 04A72

da Costa Leite, Manuel (*with* Lopes Gagean, David) General relativity and Portugal: a few pointers towards peripheral reception studies. (French summary) *Studies in the history of general relativity (Luminy*, 1988), 3–14, 463, *Einstein Stud.*, 3, *Birkhäuser Boston, Boston, MA*, 1992. (*see* **93a:01001**) 01A60 (83–03)

Costa Mattos, H. (*with* Frémond, M.; Mamiya, E. N.) A simple model of the mechanical behavior of ceramic-like materials. (English summary) *Internat. J. Solids Structures* **29** (1992), *no.* 24, 3185–3200. (Summary) **93f:73086** 73M25 (73B05, 73B30, 73K20)

Costantini, Cristina Diffusion approximation for a class of transport processes with physical reflection boundary conditions. *Mathematics of random media (Blacksburg, VA*, 1989), 151–162, *Lectures in Appl. Math.*, 27, *Amer. Math. Soc., Providence, RI*, 1991. (Autorreferat (Zbl 728:60082)) **93b:82072** 82C70 (60H10, 60J60)

— (*with* Spizzichino, Fabio) Optimal stopping of life-testing: use of stochastic orderings in the case of conditionally exponential lifetimes. (English summary) *Stochastic orders and decision under risk (Hamburg*, 1989), 95–103, *IMS Lecture Notes Monograph Ser.*, 19, *Inst. Math. Statist., Hayward, CA*, 1991. (*see* **93g:60003**) 60K10 (62N05)

— (*with* Marra, Rossana) Hydrodynamic limits for the Boltzmann process. *J. Statist. Phys.* **67** (1992), *no.* 1-2, 229–249. (Carlo Cercignani) **93c:82049** 82C40

— The Skorohod oblique reflection problem in domains with corners and application to stochastic differential equations. *Probab. Theory Related Fields* **91** (1992), *no.* 1, 43–70. (Philip Protter) **93e:60109** 60H10 (60H20, 60J60)

Costantini, Domenico (*with* Garibaldi, Ubaldo) The nonfrequency approach to elementary particle statistics. *Statistics in science*, 167–181, *Boston Stud. Philos. Sci.*, 122, *Kluwer Acad. Publ., Dordrecht*, 1990. (Andrèj K. Kwaśniewski) **93a:81009** 81P05

— (*with* Garibaldi, Ubaldo) A probabilistic formulation of Pauli's exclusion principle in the context of predictive inference. (Italian. English and Italian summaries) *Statistica (Bologna)* **51** (1991), *no.* 1, 21–34. (Summary) **93f:81008** 81P05 (60A99, 60G05, 82B03)

Costantini, Mauro Autoprojectivities and automorphisms of certain algebraic groups. (English and Italian summaries) *Rend. Accad. Naz. Sci. XL Mem. Mat.* (5) **16** (1992), 99–114. (Summary) **93j:20098** 20G99

saloff-Coste, Laurent *see* **Saloff-Coste, Laurent**

Coste, Michel (*with* Diop, Mahmadou) Real algebraic 1-cocycles are Nash coboundaries. (Italian summary) *Boll. Un. Mat. Ital. A* (7) **6** (1992), *no.* 2, 249–254. (Louis Mahé) **93i:14053** 14P20

— (*with* Shiota, Masahiro) Nash triviality in families of Nash manifolds. *Invent. Math.* **108** (1992), *no.* 2, 349–368. (Henri Lombardi) **93e:14066** 14P20 (14P15, 32C07, 58A07)

— (*with* Kurdyka, Krzysztof) On the link of a stratum in a real algebraic set. *Topology* **31** (1992), *no.* 2, 323–336. (Henry C. King) **93d:14088** 14P25 (58A35)

Costenoble, S. R. (*with* Waner, S.) Equivariant Poincaré duality. *Michigan Math. J.* **39** (1992), *no.* 2, 325–351. (Jan-Alve Svensson) **93d:55007** 55N25 (55M05, 55N91, 57P10, 57R91)

— (*with* Waner, S.) The equivariant Thom isomorphism theorem. *Pacific J. Math.* **152** (1992), *no.* 1, 21–39. (L. Gaunce Lewis, Jr.) **93c:55005** 55N91 (55N25, 55R91, 57R91)

de Coster, C. *see* **De Coster, C.**

cervantes-Cota, Jorge *see* **Cervantes-Cota, Jorge**

Coti Zelati, Vittorio Periodic solutions for N-body type problems. (French summary) *Ann. Inst. H. Poincaré Anal. Non Linéaire* **7** (1990), *no.* 5, 477–492. (Josefina Casasayas) **93a:70009** 70F10 (34C25, 58F22, 70H05)

— (*with* Rabinowitz, Paul H.) Homoclinic orbits for second order Hamiltonian systems possessing superquadratic potentials. *J. Amer. Math. Soc.* **4** (1991), *no.* 4, 693–727. (From the introduction) **93e:58023** 58E05 (34C37, 58F05, 58F15, 70H05)

— (*with* Ambrosetti, Antonio) Closed orbits of fixed energy for a class of N-body problems. (French summary) *Ann. Inst. H. Poincaré Anal. Non Linéaire* **9** (1992), *no.* 2, 187–200. (Marco Degiovanni) **93e:58156a** 58F22 (34C25, 58E05, 70F10)

— (*with* Ambrosetti, Antonio) Addendum to: "Closed orbits of fixed energy for a class of N-body problems". *Ann. Inst. H. Poincaré Anal. Non Linéaire* **9** (1992), *no.* 3, 337–338. (Marco Degiovanni) **93e:58156b** 58F22 (34C25, 58E05, 70F10)

— (*with* Serra, Enrico) Some properties of collision and noncollision orbits for a class of singular dynamical systems. (English and Italian summaries) *Atti Accad. Naz. Lincei Cl. Sci. Fis. Mat. Natur. Rend. Lincei* (9) *Mat. Appl.* **3** (1992), *no.* 3, 217–222. (Michel Willem) **93k:58189** 58F22 (34C25, 58E05, 70H05)

— (*with* Ambrosetti, Antonio) Multiplicité des orbites homoclines pour des systèmes conservatifs. (English summary) [Multiplicity of homoclinic orbits for a class of conservative systems] *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 8, 601–604. (Gabriella Tarantello) **93c:58041** 58E05 (34C05, 58F05, 70K05)

— (*with* Rabinowitz, Paul H.) Homoclinic type solutions for a semilinear elliptic PDE on $\mathbf{R}^n$. *Comm. Pure Appl. Math.* **45** (1992), *no.* 10, 1217–1269. (Yi Hong Du) **93k:35087** 35J60 (35B05, 35J65, 58E05)

Cotlar, Mischa (*with* León R., José Rafael; Pereyra, M. C.) Eigenfunction expansions of covariance kernels of Hilbert space processes. *Acta Cient. Venezolana* **38** (1987), *no.* 5-6, 563–569. (Summary) **93d:47001** 47–02 (47A40, 47A57, 47A70, 47N99)

— Quadratic inequalities for Hilbert transforms and Hankel forms in the spaces $\mathscr{L}^2(\mathscr{F})$ and $\mathscr{L}^2(\mathscr{B})$. *Geometry and complex variables (Bologna*, 1988/1990), 147–153, *Lecture Notes in Pure and Appl. Math.*, 132, *Dekker, New York*, 1991. (Richard Rochberg) **93e:47031** 47B35 (47G10)

— (*with* Sadosky, Cora) Weakly positive matrix measures, generalized Toeplitz forms, and their applications to Hankel and Hilbert transform operators. (English summary) *Continuous and discrete Fourier transforms, extension problems and Wiener-Hopf equations*, 93–120, *Oper. Theory Adv. Appl.*, 58, *Birkhäuser, Basel*, 1992. (I. Suciu) **93h:47027** 47B35 (47–02, 47A20)

— *see also* **Panchapagesan, T. V., 93a:28001a**

Cotsakis, Spiros Conformal transformations single out a unique measure of distance. (English summary) *Phys. Rev. D* (3) **47** (1993), *no.* 4, 1437–1439. (Summary) **93k:83062** 83D05

Cotsiolis, Athanase (*with* Oskolkov, A. P.; Shadiev, R. D.) Nonlocal problems for a class of nonlinear dissipative equations of Sobolev type. (Russian. English summary) *Zap. Nauchn. Sem. S.-Peterburg. Otdel. Mat. Inst. Steklov. (POMI)* **199** (1992), *Voprosy Kvant. Teor. Polya Statist. Fiz.* 11, 91–113, 186. (R. Guenther) **93d:35076** 35K60 (35B10, 35K70, 35Q99)

Cotta-Ramusino, Paolo (*with* Rinaldi, Maurizio) On the algebraic structure of link-diagrams on a 2-dimensional surface. *Comm. Math. Phys.* **138** (1991), *no.* 1, 137–173. (J. Stasheff) **93g:57006a** 57M25

— (*with* Rinaldi, Maurizio) Multi-parameter quantum groups related to link-diagrams. *Comm. Math. Phys.* **142** (1991), *no.* 3, 589–604. (Dmitrii I. Gurevich) **93d:17018** 17B37 (16W30, 57M25)

— (*with* Rinaldi, Maurizio) Erratum: "On the algebraic structure of link-diagrams on a 2-dimensional surface". *Comm. Math. Phys.* **142** (1991), *no.* 3, 643. (J. Stasheff) **93g:57006b** 57M25

Cottin, Claudia Approximation by bounded pseudo-polynomials. *Function spaces (Poznań*, 1989), 152–161, *Teubner-Texte Math.*, 120, *Teubner, Stuttgart*, 1991. (Summary) **93a:41024** 41A25 (42A10)

— On the degree of approximation by periodic approximants of Boolean sum type. *Approximation theory (Memphis, TN*, 1991), 263–274, *Lecture Notes in Pure and Appl. Math.*, 138, *Dekker, New York*, 1992. (Heinz H. Gonska) **93e:41027** 41A25 (41A17, 41A63, 42B99)

Cottingham, W. N. (*with* Hasan, N.) The fall of the sphaleron. (English summary) *Nuclear Phys. B* **392** (1993), *no.* 1, 39–57. (Summary) **93j:81112** 81V15 (81V22)

Cottle, Richard W. (*with* Pang, Jong-Shi; Stone, Richard E.) ★ The linear complementarity problem. Computer Science and Scientific Computing. *Academic Press, Inc., Boston, MA*, 1992. xxiv+762 *pp. ISBN* 0-12-192350-9 (Michael M. Kostreva) **93f:90001** 90–02 (65K05, 90C33)

— (*with* Yao, Jen Chih) Pseudo-monotone complementarity problems in Hilbert space. (English summary) *J. Optim. Theory Appl.* **75** (1992), *no.* 2, 281–295. (George Isac) **93i:47098** 47H15 (47N10, 73H05, 90C33)

— (*with* Guu, Sy-Ming) Two characterizations of sufficient matrices. *Linear Algebra Appl.* **170** (1992), 65–74. (J. Parida) **93g:90074** 90C33 (15A57)

— (*with* Chang, Yow Yieh) Least-index resolution of degeneracy in linear complementarity problems with sufficient matrices. (English summary) *SIAM J. Matrix Anal. Appl.* **13** (1992), *no.* 4, 1131–1141. (Laura Martein) **93g:90075** 90C33

Cottrell, Marie Mathematical analysis of a neural network with inhibitory coupling. *Stochastic Process. Appl.* **40** (1992), *no.* 1, 103–126. (Summary) **93b:92003** 92B20

Couch, W. E. (*with* Bombelli, Luca; Torrence, R. J.) Solvable systems of wave equations and nonabelian Toda lattices. *J. Phys. A* **25** (1992), *no.* 5, 1309–1327. (A. Roy Chowdhury) **93a:35143** 35Q58 (58F07, 70K99)

Couchman, Luise (*with* Ott, Edward; Antonsen, Thomas M., Jr.) Quantum chaos in systems with ray splitting. (English summary) *Phys. Rev. A* (3) **46** (1992), *no.* 10, 6193–6210. (Summary) **93k:81059** 81Q50 (58F13, 81–04)

Couchouron, Jean-François Équations d'évolution; application à la théorie discrète du potentiel. (English and French summaries) [Evolution equations; application to the discrete potential theory] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 3, 275–278. (Nicolae H. Pavel) **93h:34108** 34G20 (34A12, 47H20, 47N20)

Couder, Yves Growth patterns: from stable curved fronts to fractal structures. *Chaos, order, and patterns (Lake Como*, 1990), 203–227, *NATO Adv. Sci. Inst. Ser. B Phys.*, 280, *Plenum, New York*, 1991. (From the introduction) **93m:76030** 76D99 (76–05, 76E99, 80A22, 82C24)

Coughlin, Peter J. ★ Probabilistic voting theory. *Cambridge University Press, Cambridge*, 1992. xii+252 *pp. ISBN* 0-521-36052-8 (Sven Berg) **93j:90027** 90A28 (90-02)
— Pure strategy equilibria in a class of systems defense games. *Internat. J. Game Theory* **20** (1992), *no.* 3, 195–210. (Summary) **93g:90108** 90D40 (90D10)
Cougnard, Jean (*with* Verant, Michel) Monogénéité de l'anneau des entiers de corps de classes de rayon de corps quadratiques. [Monogeneity of the ring of integers of ray class fields of quadratic fields] *Sém. Théor. Nombres Bordeaux* (2) **4** (1992), *no.* 1, 53–74. (Vincent Fleckinger) **93i:11117** 11R04 (11R11, 11R37)
Coulaud, Olivier (*with* Funaro, Daniele; Kavian, Otared) Laguerre spectral approximation of elliptic problems in exterior domains. *Spectral and high order methods for partial differential equations* (*Como*, 1989), 451–458, *North-Holland, Amsterdam*, 1990. (*see* **93d:65005**) 65N35
Coule, David H. (*with* Ellis, George F. R.; Sumeruk, A.; Hellaby, C.) Change of signature in classical relativity. *Classical Quantum Gravity* **9** (1992), *no.* 6, 1535–1554. (André Burnel) **93c:83018** 83C20 (83C15)
— Wormholes with arbitrary coupling ξ. (English summary) *Classical Quantum Gravity* **9** (1992), *no.* 11, 2353–2360. (Mark D. Roberts) **93i:83019** 83C15 (83F05)
— Wormhole or bounce? (English summary) *Classical Quantum Gravity* **10** (1993), *no.* 2, L25–L28. (Summary) **93j:83018** 83C15 (83C45)
Coulhon, Thierry Dimensions of continuous and discrete semigroups on the L^p-spaces. *Semigroup theory and evolution equations* (*Delft*, 1989), 93–99, *Lecture Notes in Pure and Appl. Math.*, 135, *Dekker, New York*, 1991. (From the text) **93d:47076** 47D03 (47A30, 47B38, 47D07, 60J35)
— (*with* Lamberton, Damien) Quelques remarques sur la régularité L^p du semi-groupe de Stokes. [Some remarks on the L^p-regularity of the Stokes semigroup] *Comm. Partial Differential Equations* **17** (1992), *no.* 1-2, 287–304. (John Albert) **93f:35176** 35Q30 (35B65, 35G10, 47D06, 47N20, 76D05)
— Noyau de la chaleur et discrétisation d'une variété riemannienne. (English summary) [Heat kernel and discretization of a Riemannian manifold] *Israel J. Math.* **80** (1992), *no.* 3, 289–300. (Robert Brooks) **93k:58213** 58G11
Coullard, Collette R. (*with* Lubiw, Anna) Distance visibility graphs. (English summary) *Internat. J. Comput. Geom. Appl.* **2** (1992), *no.* 4, 349–362. (Summary) **93j:68221** 68U10 (05C85)
— (*with* Oxley, James G.) Extensions of Tutte's wheels-and-whirls theorem. (English summary) *J. Combin. Theory Ser. B* **56** (1992), *no.* 1, 130–140. (W. T. Tutte) **93g:05033** 05B35
— (*with* Wagner, Donald K.) Decomposing 3-connected graphs. (English summary) *Graph structure theory* (*Seattle, WA*, 1991), 631–633, *Contemp. Math.*, 147, *Amer. Math. Soc., Providence, RI*, 1993. (*see* **93m:05004**) 05C40
— (*with* Rais, Abdur; Rardin, Ronald L.; Wagner, Donald K.) Linear-time algorithms for the 2-connected Steiner subgraph problem on special classes of graphs. (English summary) *Networks* **23** (1993), *no.* 3, 195–206. (Summary) **93m:05181** 05C85
Coullet, Pierre (*with* Emilsson, Kjartan Pierre; Plaza, Frédéric) Qualitative theory of defects in nonequilibrium systems. *Instabilities and nonequilibrium structures, III* (*Valparaíso*, 1989), 357–363, *Math. Appl.*, 64, *Kluwer Acad. Publ., Dordrecht*, 1991. (*see* **93b:00027**) 82C26 (58F21)
— (*with* Frisch, T.; Plaza, Frédéric) Sources and sinks of wave patterns. (English summary) Homoclinic chaos (Brussels, 1991). *Phys. D* **62** (1993), *no.* 1-4, 75–79. (Summary) **93k:58204** 58F40 (35Q35, 58F13, 76E15, 76E30)
Coulon, J. *see* **Coulon, Josette**
Coulon, J.-L. (*with* Coulon, Josette; Höhle, Ulrich) Classification of extremal subobjects of algebras over SM-SET. *Applications of category theory to fuzzy subsets* (*Linz*, 1989), 9–31, *Theory Decis. Lib. Ser. B Math. Statist. Methods*, 14, *Kluwer Acad. Publ., Dordrecht*, 1992. (Anna Labella) **93b:18007** 18B05 (18A32, 18B25)
Coulon, Josette (*with* Coulon, J.-L.; Höhle, Ulrich) Classification of extremal subobjects of algebras over SM-SET. *Applications of category theory to fuzzy subsets* (*Linz*, 1989), 9–31, *Theory Decis. Lib. Ser. B Math. Statist. Methods*, 14, *Kluwer Acad. Publ., Dordrecht*, 1992. (Anna Labella) **93b:18007** 18B05 (18A32, 18B25)
Coupet, Bernard Uniform extendibility of automorphisms. *The Madison Symposium on Complex Analysis* (*Madison, WI*, 1991), 177–183, *Contemp. Math.*, 137, *Amer. Math. Soc., Providence, RI*, 1992. (Ian Graham) **93j:32033** 32H40
— Construction de disques analytiques et régularité de fonctions holomorphes au bord. [Construction of analytic discs and regularity of functions holomorphic at the boundary] *Math. Z.* **209** (1992), *no.* 2, 179–204. (Norman Levenberg) **93b:32038** 32H40 (32F05)
Courant, Richard (*with* Robbins, Herbert) ★ Was ist Mathematik? (German) [What is mathematics?] Fourth edition. Translated from the English by Iris Runge. With a foreword by S. Hildebrandt. *Springer-Verlag, Berlin*, 1992. xxii+399 *pp. ISBN* 3-540-55743-1 (Editors) **93k:00002** 00A05 (01A75)
Couraud, Marc Égalité de Heisenberg pour les solutions gaussiennes de l'équation des ondes. (English and French summaries) [The Heisenberg equality for Gaussian solutions of the wave equation] *C. R. Acad. Sci. Paris Sér. I Math.* **316** (1993), *no.* 2, 205–210. (Summary) **93m:35116** 35L05 (35A05, 35B30)
Courcelle, Bruno The monadic second-order logic of graphs. III. Tree-decompositions, minors and complexity issues. (French summary) *RAIRO Inform. Théor. Appl.* **26** (1992), *no.* 3, 257–286. (Christiane Rambaud) **93g:03036** 03C85 (03B15, 03B25, 03B70, 03C65, 05C65)
— *see also* **Logic and data processing: an introduction**, **93d:68003** *and* **Workshop: Computing by Graph Transformation**, **93h:68005**
Courcoubetis, C. (*with* Kesidis, G.; Ridder, A.; Walrand, Jean; Weber, Richard R.) Adaptive control of admissions and routing in an ATM network. (English summary) *Stochastic theory and adaptive control* (*Lawrence, KS*, 1991), 121–126, *Lecture Notes in Control and Inform. Sci.*, 184, *Springer, Berlin*, 1992. (*see* **93g:93007**) 93E35
Courteau, Bernard (*with* Camion, Paul; Montpetit, André) Weight distribution of cosets of 2-error-correcting binary BCH codes of length 15, 63, and 255. *IEEE Trans. Inform. Theory* **38** (1992), *no.* 4, 1353–1357. (Summary) **93h:94024** 94B15
Courty, Pascal (*with* Lasry, Jean-Michel; Morel, Jean-Michel; Yip, Cheuk Wai) Immunisation financière, incomplétude des marchés et ondelettes. (English and French summaries) [Financial immunization, market incompleteness and wavelets] *C. R. Acad. Sci. Paris Sér. I Math.* **316** (1993), *no.* 4, 399–402. 90A09
Cousot, Patrick (*with* Cousot, Radhia) Abstract interpretation and application to logic programs. *J. Logic Programming* **13** (1992), *no.* 2-3, 103–179. (F. J. van der Linden) **93g:68073** 68Q55 (68N17)
Cousot, Radhia (*with* Cousot, Patrick) Abstract interpretation and application to logic programs. *J. Logic Programming* **13** (1992), *no.* 2-3, 103–179. (F. J. van der Linden) **93g:68073** 68Q55 (68N17)
Coussement, Grégory (*with* Jacquotte, Olivier-Pierre) Structured mesh adaption: space accuracy and interpolation methods. (English summary) Reliability in computational mechanics (Kraków, 1991). *Comput. Methods Appl. Mech. Engrg.* **101** (1992), *no.* 1-3, 397–432. (Summary) **93h:76056** 76M25 (76M10)
Cousteix, J. Calculation methods of three-dimensional boundary layers. (English summary) *Computational methods in viscous aerodynamics*, 43–76, *Elsevier, Amsterdam*, 1990. (Summary) **93f:76028** 76D10 (76M99, 76N20)
— (*with* Brazier, J. Ph.; Aupoix, B.) Second-order effects in hypersonic laminar boundary layers. (English summary) *Computational methods in hypersonic aerodynamics*, 265–291, *Fluid Mech. Appl.*, 9, *Kluwer Acad. Publ., Dordrecht*, 1991. (*see* **93d:76001**) 76K05 (76N20)
Coutinho, F. A. B. (*with* Nogami, Yukihisa; Perez, J. Fernando) Selfadjoint extensions of the Hamiltonian for a charged particle in the presence of a thread of magnetic flux. (English summary) *Phys. Rev. A* (3) **46** (1992), *no.* 9, 6052–6055. (Summary) **93i:81025** 81Q05 (81Q10)
Coutinho, S. C. Basic element theory of noncommutative Noetherian rings. *J. Algebra* **144** (1991), *no.* 1, 24–42. (J. C. Robson) **93b:16007** 16D70 (16P40, 16P60)
— (*with* Holland, M. P.) Locally free $\mathscr{D}(\mathbf{P}^n)$-modules. *Math. Proc. Cambridge Philos. Soc.* **112** (1992), *no.* 2, 233–245. (Ian M. Musson) **93h:16044** 16S32
Coutts, Stewart (*with* Benjamin, Walter) Obituary: Sidney Benjamin. *J. Roy. Statist. Soc. Ser. A* **155** (1992), *no.* 3, 465–466. 01A70
Couture, Michel Josaphat (*with* Bednář, M.; Burdík, Č.; Hlavatý, Ladislav) On the quantum symmetries associated with the two parameter free fermion model. *J. Phys. A* **25** (1992), *no.* 7, L341–L346. (Dmitrii I. Gurevich) **93c:17023** 17B37 (81R50, 82B23)
— Quantum symmetries associated with the Perk-Schultz model. *J. Phys. A* **25** (1992), *no.* 7, 1953–1966. (Vladimir A. Stukopin) **93b:81109** 81R50 (17B37, 82B23)
Couture, Raymond (*with* Derhem, Aïssa) Un problème de capitulation. (English summary) [A capitulation problem] *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 11, 785–788. (Jonathan W. Sands) **93c:11100** 11R29 (11R11, 11R16, 11R37)
— (*with* L'Ecuyer, Pierre; Tezuka, Shu) On the distribution of k-dimensional vectors for simple and combined Tausworthe sequences. (English summary) *Math. Comp.* **60** (1993), *no.* 202, 749–761, S11–S16. (Robert F. Tichy) **93h:11085** 11K45
Couvreur, J. M. (*with* Haddad, S.; Peyre, J. F.) Résolution paramétrée de familles de systèmes linéaires. (English summary) [Parametrized solution of a family of linear systems] *RAIRO Rech. Opér.* **26** (1992), *no.* 2, 183–206. (A. G. Azpeitia) **93d:65063** 65K05 (90C08)
Covachev, V. *see* **Kovachev, V. Khr.**
Covachev, Valéry *see* **Kovachev, V. Khr.**
Covarrubias, G. M. Lie groups in cosmology. *Proceedings of the* 4*th Canadian Conference on General Relativity and Relativistic Astrophysics* (*Winnipeg, MB*, 1991), 20–24, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93c:83041** 83C40 (83D05, 83F05)
Coven, Ethan M. (*with* Bernhardt, Chris) A polynomial-time algorithm for deciding the forcing relation on cyclic permutations. (English summary) *Symbolic dynamics and its applications* (*New Haven, CT*, 1991), 85–93, *Contemp. Math.*, 135, *Amer. Math. Soc., Providence, RI*, 1992. (Jerzy Ombach) **93j:58041** 58F03 (54H20, 68Q25)
Cover, Alan S. (*with* Bose, Anil K.; Reneke, James A.) On point dissipative n-dimensional systems of differential equations with quadratic nonlinearity. (English summary) *Internat. J. Math. Math. Sci.* **16** (1993), *no.* 1, 139–148. (Summary) **93j:34074** 34D05 (34A34)
Cowan, David An associative operator on the lattice of varieties of inverse semigroups. *Semigroup Forum* **45** (1992), *no.* 3, 288–301. (P. M. Higgins) **93i:20072** 20M07 (20M18)
Cowan, Richard (*with* Lam, Kin) Stochastic reversibility in self-organizing systems. *Comm. Statist. Stochastic Models* **8** (1992), *no.* 2, 325–336. (Summary) **93c:68016** 68P10 (60J10)
— A constraint on the random packing of disks. (English summary) *J. Appl. Probab.* **30** (1993), *no.* 1, 263–268. (Summary) **93j:60012** 60D05 (52C15)
Cowen, Carl C. Transferring subnormality of adjoint composition operators. *Integral Equations Operator Theory* **15** (1992), *no.* 1, 167–171. (Benjamin A. Lotto) **93g:47025** 47B20 (46E22, 47B38)
— (*with* Angelos, James R.; Narayan, Sivaram K.) Triangular truncation and finding the norm of a Hadamard multiplier. *Linear Algebra Appl.* **170** (1992), 117–135. (Jorma Kaarlo Merikoski) **93d:15039** 15A60
Cowen, R. H. Hypergraph satisfiability. (English summary) *Rep. Math. Logic No.* 25 (1991), 113–117. (Slavcho Shtrakov) **93k:03011** 03B35 (05C65, 68R10)
Cowin, S. C. (*with* Mehrabadi, M. M.) The structure of the linear anisotropic elastic symmetries. (English summary) Elastic waves and related topics (Dublin, 1991). *J. Mech. Phys. Solids* **40** (1992), *no.* 7, 1459–1471. (Maurizio Vianello) **93i:73008** 73B40 (73B10, 73C02)
Cowley, D. *see* **Mori, Takehiro**, **93j:93110** *and* **Chen, Jie**, **93k:93079**
Cowley, Stephen J. (*with* Blackaby, Nicholas D.; Hall, Philip[2]) On the instability of hypersonic flow past a flat plate. (English summary) *J. Fluid Mech.* **247** (1993), 369–416. (Summary) **93m:76042** 76E99 (76K05, 76N20)
Cowling, M. (*with* Steger, T.) The irreducibility of restrictions of unitary representations to lattices. *J. Reine Angew. Math.* **420** (1991), 85–98. (Christopher Meaney) **93e:22019** 22E40 (22E46)
Cowsar, Lawrence C. (*with* Weiser, Alan; Wheeler, Mary Fanett) Parallel multigrid and domain decomposition algorithms for elliptic equations. (English summary) *Fifth International Symposium on Domain Decomposition Methods for Partial Differential Equations* (*Norfolk, VA*, 1991), 376–385, *SIAM, Philadelphia, PA*, 1992. (*see* **93g:65009**) 65N55 (65Y05)
— (*with* Dean, E. J.; Glowinski, Roland; Le Tallec, Patrick; Li, Chin Hsien; Périaux, Jacques; Wheeler, Mary Fanett) Decomposition principles and their applications in scientific computing. (English summary) *Parallel processing for scientific computing* (*Houston, TX*, 1991), 213–237, *SIAM, Philadelphia, PA*, 1992. (Summary) **93j:65200** 65N55 (65K10, 65N22, 65Y05)

Cowsik, R. C. A short note on the Schur-Jacobson theorem. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 2, 675–676. (William H. Gustafson) **93g:13015** 13E10 (13C15)

Cox, Cassandra On fibrations of cylinderlike surfaces. *Ulam Quart.* **1** (1992), *no.* 1, 28*ff.*, *approx.* 8 *pp.* (*electronic only*). (Piotr Blass) **93m:14033** 14J26

Cox, Christopher L. (*with* Moss, William F.) Backward error analysis for a pole assignment algorithm. II. The complex case. (English summary) *SIAM J. Matrix Anal. Appl.* **13** (1992), *no.* 4, 1159–1171. (Summary) **93i:93062** 93B55 (65G05, 93D15)

Cox, D. R. (*with* Ferguson, H.; Reid, N.) Estimating equations from modified profile likelihood. *Estimating functions*, 279–293, *Oxford Statist. Sci. Ser.*, 7, *Oxford Univ. Press, New York*, 1991. (Summary) **93a:62003** 62A10 (62F10)

— ★ Planning of experiments. Reprint of the 1958 original. Wiley Classics Library. A Wiley-Interscience Publication. *John Wiley & Sons, Inc., New York*, 1992. viii+308 *pp. ISBN* 0-471-57429-5 (Editors) **93h:62126** 62Kxx

— (*with* Wermuth, Nanny) Response models for mixed binary and quantitative variables. (English summary) *Biometrika* **79** (1992), *no.* 3, 441–461. (Summary) **93g:62090** 62J05

— (*with* Wermuth, Nanny) On the calculation of derived variables in the analysis of multivariate responses. (English summary) *J. Multivariate Anal.* **42** (1992), *no.* 1, 162–170. 62J10

— Causality: some statistical aspects. *J. Roy. Statist. Soc. Ser. A* **155** (1992), *no.* 2, 291–301. (Summary) **93b:62009** 62A99

— *see also* **Tukey, John W., 93a:01068**

Cox, David A. (*with* Little, John B.; O'Shea, Donal) ★ Ideals, varieties, and algorithms. An introduction to computational algebraic geometry and commutative algebra. Undergraduate Texts in Mathematics. *Springer-Verlag, New York*, 1992. xii+513 *pp. ISBN* 0-387-97847-X (Timothy Stokes) **93j:13031** 13P10 (13–01, 14–01, 14Qxx, 68Q40)

Cox, Edward A. (*with* Mortell, Michael P.) The evolution of nonlinear resonant oscillations in closed tubes: solution of the standard mapping. *Chaos* **2** (1992), *no.* 2, 201–214. (Summary) **93a:76083** 76N15 (35Q99, 58F40)

— (*with* Kluwick, A.) Propagation of weakly nonlinear waves in stratified media having mixed nonlinearity. (English summary) *J. Fluid Mech.* **244** (1992), 171–185. (Alexandre Fedorov) **93i:76096** 76V05 (76Q05)

Cox, Gertrude M. (*with* Cochran, William G.) ★ Experimental designs. Reprint of the second edition. Wiley Classics Library. A Wiley-Interscience Publication. *John Wiley & Sons, Inc., New York*, 1992. xvi+617 *pp. ISBN* 0-471-54567-8 (Editors) **93c:62126** 62Kxx

Cox, J. T. (*with* Durrett, Richard) Nonlinear voter models. *Random walks, Brownian motion, and interacting particle systems*, 189–201, *Progr. Probab.*, 28, *Birkhäuser Boston, Boston, MA*, 1991. (Richard Holley) **93e:60195** 60K35 (82C22)

— (*with* Greven, Andreas) On the long term behavior of finite particle systems: a critical dimension example. *Random walks, Brownian motion, and interacting particle systems*, 203–213, *Progr. Probab.*, 28, *Birkhäuser Boston, Boston, MA*, 1991. (G. R. Grimmett) **93d:60163** 60K35 (82C22)

— Some remarks on the theory of critical branching random walk. *Spatial stochastic processes*, 23–33, *Progr. Probab.*, 19, *Birkhäuser Boston, Boston, MA*, 1991. (Klaus Fleischmann) **93b:60190** 60J80

— (*with* Buttell, L.; Durrett, Richard) Estimating the critical values of stochastic growth models. (English summary) *J. Appl. Probab.* **30** (1993), *no.* 2, 455–461. (Summary) **93k:60231** 60K35

robison-Cox, James *see* **Robison-Cox, James**

Cox, John C. (*with* Huang, Chi-fu) A continuous-time portfolio turnpike theorem. *J. Econom. Dynamics Control* **16** (1992), *no.* 3-4, 491–507. (Summary) **93h:90008** 90A09

hippisley-Cox, S. D. *see* **Hippisley-Cox, S. D.**

Cox, Stephen M. (*with* Leibovich, Sidney; Moroz, Irene M.; Tandon, Amit) Nonlinear dynamics in Langmuir circulations with O(2) symmetry. (English summary) *J. Fluid Mech.* **241** (1992), 669–704. (Mikhail Zaks) **93h:76032** 76E20 (58F36, 76E15, 76E30, 76V05, 86A05)

— (*with* Leibovich, Sidney; Moroz, Irene M.; Tandon, Amit) Hopf bifurcations in Langmuir circulations. (English summary) *Phys. D* **59** (1992), *no.* 1-3, 226–254. (Mikhail Zaks) **93k:76045** 76E20 (58F14, 58F39, 76E30, 76V05, 86A05)

Cox, Steven J. The two phase drum with the deepest bass note. *Japan J. Indust. Appl. Math.* **8** (1991), *no.* 3, 345–355. (Günter Berger) **93g:35098** 35P05 (35J05, 65D17)

— The shape of the ideal column. *Math. Intelligencer* **14** (1992), *no.* 1, 16–24. (Peeter Müürsepp) **93a:01072** 01A99 (00A69)

— (*with* Overton, Michael L.) On the optimal design of columns against buckling. *SIAM J. Math. Anal.* **23** (1992), *no.* 2, 287–325. (Vadim Komkov) **93d:73052** 73K40 (73H05, 73K05)

Coxeter, H. S. M. Orthogonal trees. *Bull. Inst. Combin. Appl.* **3** (1991), 83–91. (V. R. Kulli) **93f:05033** 05C05 (51M04)

— The evolution of Coxeter-Dynkin diagrams. *Nieuw Arch. Wisk.* (4) **9** (1991), *no.* 3, 233–248. (F. D. Veldkamp) **93k:01048a** 01A60 (14–03, 17–03, 20–03, 52–03)

— Affine regularity. *Abh. Math. Sem. Univ. Hamburg* **62** (1992), 249–253. (E. J. F. Primrose) **93h:51028** 51N10 (51M04)

— Errata: "The evolution of Coxeter-Dynkin diagrams". *Nieuw Arch. Wisk.* (4) **10** (1992), *no.* 1-2, iii. (F. D. Veldkamp) **93k:01048b** 01A60 (14–03, 17–03, 20–03, 52–03)

— *see also* **Sved, Marta, 93a:51001**

Coyle, A. J. (*with* Taylor, P. G.) Bounds on the sensitivity of generalised semi-Markov processes with a single generally distributed lifetime. *Math. Oper. Res.* **17** (1992), *no.* 1, 132–147. (Masakiyo Miyazawa) **93d:60147** 60K15 (90C31, 90C40)

gondard-Cozette, Danielle *see* **Gondard-Cozette, Danielle**

Cozzarelli, Nicholas R. Evolution of DNA topology: implications for its biological roles. *New scientific applications of geometry and topology (Baltimore, MD, 1992)*, 1–16, *Proc. Sympos. Appl. Math.*, 45, *Amer. Math. Soc., Providence, RI*, 1992. (From the text) **93j:92022** 92D20 (57M25)

Cozzens, Margaret B. (*with* Roberts, Fred S.) Greedy algorithms for T-colorings of complete graphs and the meaningfulness of conclusions about them. (English summary) *J. Combin. Inform. System Sci.* **16** (1991), *no.* 4, 286–299. (Narsingh Deo) **93i:05059** 05C15 (05C85, 68R10, 94C15)

Crabb, M. C. (*with* Hubbuck, J. R.; Xu, Kai) Fields of spaces. *Adams Memorial Symposium on Algebraic Topology*, 1 (*Manchester*, 1990), 241–254, *London Math. Soc. Lecture Note Ser.*, 175, *Cambridge Univ. Press, Cambridge*, 1992. (N. J. Kuhn) **93h:55003** 55P10 (55P42)

Crabbé, Marcel Stratification and cut-elimination. *J. Symbolic Logic* **56** (1991), *no.* 1, 213–226. (G. E. Mints) **93f:03035** 03F05 (03E70)

— Soyons positifs: la complétude de la théorie naïve des ensembles. [Let's be positive: the completeness of naive set theory] *L'anti-fondation en logique et en théorie des ensembles*, 51–68, *Cahiers Centre Logique*, 7, *Univ. Catholique Louvain, Louvain-la-Neuve*, 1992. (P. C. Gilmore) **93i:03075** 03E70 (03B35, 03B60)

— On NFU. *Notre Dame J. Formal Logic* **33** (1992), *no.* 1, 112–119. (Summary) **93m:03090** 03E70

Crabbé, Philippe (*with* Long, Ngo Van) Entry deterrence and overexploitation of the fishery. (English summary) *J. Econom. Dynamics Control* **17** (1993), *no.* 4, 679–704. (Summary) **93m:90019** 90A30 (93C95)

Crăciun, Gheorghe On a covering theorem. (English summary) *Stud. Cerc. Mat.* **44** (1992), *no.* 2, 109–112. (Summary) **93j:28014** 28A99 (34A60)

Crăciun, Ion Al. On the uniqueness of the solution of some boundary value problems of the linear micropolar thermoelasticity. (Romanian summary) *Bul. Inst. Politehn. Iaşi Secţ. I* **36(40)** (1990), *no.* 1-4, 57–62. (Andrzej Chrzęszczyk) **93g:73016** 73B30 (73B18)

Crăciun, Mihai Points fixes communs. [Common fixed points] *Anal. Numér. Théor. Approx.* **19** (1990), *no.* 2, 151–155. 54H25

Crăciunaş, P. T. (*with* Mangeron, Dumitru Ion; Lenyuk, M. P.) Differential systems that generate classes of functions and their applications. I. Hybrid Hankel integral transforms of the Fourier first kind and some applications in mathematical physics. (Russian. French summary) *Mem. Secţ. Ştiinţ. Acad. Repub. Soc. România Ser. IV* **9** (1986), *no.* 1, 9–23 (1989). (A. M. Nagornij) **93b:44006** 44A15

— (*with* Mangeron, Dumitru Ion; Lenyuk, M. P.) Differential systems that generate classes of functions and their applications. II. Hybrid Hankel integral transforms of the Fourier second kind and some applications to problems in mathematical physics. (Russian. French summary) *Mem. Secţ. Ştiinţ. Acad. Repub. Soc. România Ser. IV* **10** (1987), *no.* 1, 7–22 (1989). (A. M. Nagornij) **93b:44007** 44A15

Craggs, R. Links in 3-manifolds as obstructions in free reduction problems. (English summary) *Topology Appl.* **49** (1993), *no.* 1, 15–53. (Bruno Zimmermann) **93k:57002** 57M07 (20F32, 57M20)

Craig, Errol A. (*with* Hoover, William G.; Hoover, Carol G.; Evans, Will J.; Moran, William; Levatin, Joanne A.) Irreversible processes from reversible mechanics. *Microscopic simulations of complex flows (Brussels, 1989)*, 199–231, *NATO Adv. Sci. Inst. Ser. B Phys.*, 236, *Plenum, New York*, 1990. (Summary) **93a:82035** 82C05 (58F13, 58F40)

Craig, Roy R., Jr. (*with* Su, Tzu-Jeng) Control design based on a linear state function observer. (English summary) *Internat. J. Systems Sci.* **23** (1992), *no.* 7, 1179–1190. 93B52 (93C05)

Craig, Walter (*with* Wayne, C. E.) Nonlinear waves and the KAM theorem: nonlinear degeneracies. *Large scale structures in nonlinear physics (Villefranche-sur-Mer, 1991)*, 37–49, *Lecture Notes in Phys.*, 392, *Springer, Berlin*, 1991. (Ilya A. Kuzin) **93h:35130** 35L70 (58F39)

— (*with* Sternberg, Peter) Comparison principles for free-surface flows with gravity. *J. Fluid Mech.* **230** (1991), 231–243. (Alan Jeffrey) **93f:76008** 76B15

— (*with* Kappeler, Thomas; Strauss, Walter Alexander) Gain of regularity for equations of KdV type. (French summary) *Ann. Inst. H. Poincaré Anal. Non Linéaire* **9** (1992), *no.* 2, 147–186. (V. V. Kovrizhkin) **93j:35153** 35Q53 (35B65, 76B25)

— (*with* Sternberg, Peter) Symmetry of free-surface flows. *Arch. Rational Mech. Anal.* **118** (1992), *no.* 1, 1–36. (Alberto Valli) **93c:76005** 76B15 (35Q35, 35R35)

— (*with* Sulem, C.; Sulem, Pierre-Louis) Nonlinear modulation of gravity waves: a rigorous approach. *Nonlinearity* **5** (1992), *no.* 2, 497–522. (Peter N. Zhevandrov) **93k:76012** 76B15 (35C10, 35Q53, 35Q55)

Craigen, R. A new class of weighing matrices with square weights. *Bull. Inst. Combin. Appl.* **3** (1991), 33–42. (W. D. Wallis) **93h:05029** 05B20

— Constructing Hadamard matrices with orthogonal pairs. (English summary) *Ars Combin.* **33** (1992), 57–64. (Summary) **93d:05030** 05B20

— Matrices equivalent to their transpose by permutations. Proceedings of the Twenty-first Manitoba Conference on Numerical Mathematics and Computing (Winnipeg, MB, 1991). *Congr. Numer.* **86** (1992), 33–41. (Summary) **93b:15025** 15A57 (05B20)

— A generalization of Belevitch's construction. Proceedings of the Twenty-first Manitoba Conference on Numerical Mathematics and Computing (Winnipeg, MB, 1991). *Congr. Numer.* **87** (1992), 43–50. (Summary) **93c:05032** 05B20

— (*with* Kharaghani, H.) On the nonexistence of Hermitian circulant complex Hadamard matrices. (English summary) *Australas. J. Combin.* **7** (1993), 225–227. (Summary) **93k:05033** 05B20

Craine, R. E. (*with* Harvey, A. P.; Syngellakis, S.) Propagation of nonlinear surface acoustic waves on elastic and piezoelectric solids. (English summary) Elastic waves and related topics (Dublin, 1991). *J. Mech. Phys. Solids* **40** (1992), *no.* 7, 1529–1542. (Summary) **93h:73015** 73D20 (73B40, 73D35, 73R05)

Crainic, Teodor Gabriel (*with* Delorme, Louis) Dual-ascent procedures for multicommodity location-allocation problems with balancing requirements. (English summary) *Transportation Sci.* **27** (1993), *no.* 2, 90–101. 90B06

Craizer, Marcos The Bernoulli property of inner functions. (English summary) *Ergodic Theory Dynamical Systems* **12** (1992), *no.* 2, 209–215. (Nathaniel F. G. Martin) **93k:28021** 28D05

Crama, Y. (*with* Loebl, Martin; Poljak, Svatopluk) A decomposition of strongly unimodular matrices into incidence matrices of digraphs. *Discrete Math.* **102** (1992), *no.* 2, 143–147. (Ernie S. Solheid) **93g:05097** 05C50 (15A21)

— (*with* Boros, Endre; Hammer, Peter L.) Chvátal cuts and odd cycle inequalities in quadratic 0-1 optimization. *SIAM J. Discrete Math.* **5** (1992), *no.* 2, 163–177. (Michael A. Trick) **93a:90043** 90C09 (90C27, 90C35)

Cramer, M. S. (*with* Tarkenton, G. M.) Transonic flows of Bethe-Zel'dovich-Thompson fluids. (English summary) *J. Fluid Mech.* **240** (1992), 197–228. (Summary) **93e:76046** 76H05 (76L05, 76N15)

— (*with* Sen, R.) A general scheme for the derivation of evolution equations describing mixed nonlinearity. *Wave Motion* **15** (1992), *no.* 4, 333–355. (R. M. Gundersen) **93f:35149** 35L70 (35L67, 73D99, 76N15, 78A40)

priess-Crampe, S. H. G. *see* **Priess-Crampe, S. H. G.**

Crandall, Michael G. (*with* Bénilan, Philippe) Completely accretive operators. *Semigroup theory and evolution equations (Delft, 1989)*, 41–75, *Lecture Notes in Pure and Appl. Math.*, 135, *Dekker, New York*, 1991. (Gheorghe Moroşanu) **93e:47071** 47H06 (47H20, 47N20)

— (*with* Huan, Zhong Dan) On nonuniqueness of viscosity solutions. *Differential Integral Equations* **5** (1992), *no.* 6, 1247–1265. (Teodor Havârneanu) **93j:34025** 34B05 (35D05, 49L25)

Crandall, Richard E. (*with* Buhler, J. P.; Sompolski, R. W.) Irregular primes to one million. *Math. Comp.* **59** (1992), *no.* 200, 717–722. (Duncan A. Buell) **93a:11106** 11Y35 (11B68, 11D41, 65T20)

— (*with* Buhler, J. P.; Ernvall, R.; Metsänkylä, T.) Irregular primes and cyclotomic invariants to four million. (English summary) *Math. Comp.* **61** (1993), *no.* 203, 151–153. (Harvey Cohn) **93k:11014** 11B68 (11D41, 11R29, 11Y35, 11Y40)

Crane, L. J. (*with* Sen, Siddhartha[1]) A note on slowly convergent double series. *Z. Angew. Math. Mech.* **72** (1992), *no.* 7, 308–310. (E. R. Love) **93g:40001** 40B05 (40A25, 44A15)

Crane, Tim Numbers and propositions: reply to Melia. *Analysis (Oxford)* **52** (1992), *no.* 4, 253–256. 03A05 (03B45)

Cranston, M. Gradient estimates on manifolds using coupling. *J. Funct. Anal.* **99** (1991), *no.* 1, 110–124. (Jacques Vauthier) **93a:58175** 58G32 (53C21, 60J65)

— In memory of Steven Orey. *Seminar on Stochastic Processes, 1991 (Los Angeles, CA, 1991)*, 1–5, 244–247, *Progr. Probab.*, 29, *Birkhäuser Boston, Boston, MA*, 1992. (Editors) **93d:01064** 01A70

— A probabilistic approach to gradient estimates. *Canad. Math. Bull.* **35** (1992), *no.* 1, 46–55. (L. C. G. Rogers) **93e:35011** 35B45 (60J60, 60J65)

Crauel, Hans (*with* Arnold, Ludwig) Random dynamical systems. *Lyapunov exponents (Oberwolfach, 1990)*, 1–22, *Lecture Notes in Math.*, 1486, *Springer, Berlin*, 1991. (Philippe Bougerol) **93m:60116** 60H10 (28D10, 58F11, 60J25)

— Lyapunov exponents of random dynamical systems on Grassmannians. (English summary) *Lyapunov exponents (Oberwolfach, 1990)*, 38–50, *Lecture Notes in Math.*, 1486, *Springer, Berlin*, 1991. (Philippe Bougerol) **93g:58077** 58F11 (34F05)

— Markov measures for random dynamical systems. *Stochastics Stochastics Rep.* **37** (1991), *no.* 3, 153–173. (A. N. Al-Hussaini) **93c:60096** 60J05 (58F11, 60H10)

— (*with* Arnold, Ludwig) Iterated function systems and multiplicative ergodic theory. (English summary) *Diffusion processes and related problems in analysis, Vol. II (Charlotte, NC, 1990)*, 283–305, *Progr. Probab.*, 27, *Birkhäuser Boston, Boston, MA*, 1992. (Philippe Bougerol) **93k:58132** 58F11 (60H99)

— (*with* Bogenschütz, Thomas) The Abramov-Rokhlin formula. (English summary) *Ergodic theory and related topics, III (Güstrow, 1990)*, 32–35, *Lecture Notes in Math.*, 1514, *Springer, Berlin*, 1992. (Anzelm Iwanik) **93h:28033** 28D20

— *see also* **Lyapunov exponents, 93d:00037**

Craveirinha, José (*with* Tralhão, Lino; Paixão, José) A study on a loss system with MMPP input and an access function. (English summary) *Applied stochastic models and data analysis (Granada, 1991)*, 598–609, *World Sci. Publishing, River Edge, NJ*, 1991. (*see* **93g:62001**) 60K25

Craveiro de Carvalho, F. J. *see* **de Carvalho, Francisco J. Craveiro**

Craven, B. D. (*with* Sach, P. H.) Invex multifunctions and duality. *Numer. Funct. Anal. Optim.* **12** (1991), *no.* 5-6, 575–591 (1992). (Fred Behringer) **93d:90058** 90C29 (49N15)

— (*with* Yang, Xiao Qi) A nonsmooth version of alternative theorem and nonsmooth multiobjective programming. *Utilitas Math.* **40** (1991), 117–128. (Valentin D. Batukhtin) **93a:90055** 90C29 (49J52)

— An algorithm for minimax. *Z. Oper. Res.* **35** (1991), *no.* 5, 425–434. (Summary) **93c:90076** 90C30 (49J35, 65K10)

— Matrix shadow costs for multilinear programs. (English summary) *Optimization, Vol.* 1, 2 (*Singapore*, 1992), 6–10, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93d:90005**) 90C29

Craven, Thomas C. Witt groups of Hermitian forms over $*$-fields. *J. Algebra* **147** (1992), *no.* 1, 96–127. (Murray Marshall) **93d:11044** 11E81 (12E15, 12J20, 19G12)

Cravero, Isabella (*with* Gatteschi, Luigi) Uniform approximation of Christoffel numbers for Laguerre weight. *Approximation, optimization and computing*, 59–62, *North-Holland, Amsterdam*, 1990. (*see* **93a:41001**) 41A55

Craviotto, C. (*with* Baltus, C.; Cooper, S. Clement; McCabe, John H.) On the use of a corresponding sequence algorithm for δ-fractions. *J. Comput. Appl. Math.* **37** (1991), *no.* 1-3, 57–69. (Andreas Guthmann) **93a:30001** 30B70 (40A15)

Crawford, J. P. The geometric structure of the space of fermionic physical observables. (English summary) *Clifford algebras and their applications in mathematical physics (Montpellier, 1989)*, 371–385, *Fund. Theories Phys.*, 47, *Kluwer Acad. Publ., Dordrecht*, 1992. (Dominique Lambert) **93j:81038** 81R25 (15A66)

Crawford, John David Normal forms for driven surface waves: boundary conditions, symmetry, and genericity. *Phys. D* **52** (1991), *no.* 2-3, 429–457. (Mikhail Zaks) **93a:76012** 76B15 (34C20, 58F36)

— Introduction to bifurcation theory. *Rev. Modern Phys.* **63** (1991), *no.* 4, 991–1037. (P. Mendes) **93d:58108** 58F14 (34C23, 34C35, 58F15)

Crawford, Paulo *see* **Nascimento, Paule Crawford**

Crawley-Boevey, William Matrix problems and Drozd's theorem. *Topics in algebra, Part* 1 (*Warsaw*, 1988), 199–222, *Banach Center Publ.*, 26, *Part* 1, *PWN, Warsaw*, 1990. (Peter Dräxler) **93g:16021** 16G60 (16G20, 16W30)

— (*with* Happel, Dieter; Ringel, Claus Michael) A bypass of an arrow is sectional. *Arch. Math. (Basel)* **58** (1992), *no.* 6, 525–528. (Flávio Ulhoa Coelho) **93c:16018** 16G70 (16G20)

— *see also* **Ringel, Claus Michael, 93e:16022**

Creagh, Stephen C. (*with* Littlejohn, Robert G.) Semiclassical trace formulae for systems with nonabelian symmetry. *J. Phys. A* **25** (1992), *no.* 6, 1643–1669. (Summary) **93b:81067** 81Q20 (58Z05, 70H99)

Creath, Richard Carnap's conventionalism. Carnap: a centenary reappraisal. *Synthese* **93** (1992), *no.* 1-2, 141–165. (Charles F. Kielkopf) **93k:03005** 03A05 (01A60, 03–03)

Cree, M. J. (*with* Bones, P. J.) Algorithms to numerically evaluate the Hankel transform. (English summary) *Comput. Math. Appl.* **26** (1993), *no.* 1, 1–12. (Summary) **93m:65176** 65R10

Creech, R. L. (*with* Spickerman, W. R.; Joyner, R. N.) On the $(2, F)$ generalizations of the Fibonacci sequence. *Fibonacci Quart.* **30** (1992), *no.* 4, 310–314. 11B39

Cremmer, Eugène (*with* Gervais, Jean-Loup) The quantum strip: Liouville theory for open strings. *Comm. Math. Phys.* **144** (1992), *no.* 2, 279–301. (Uwe Grimm) **93i:81214** 81T40 (81R50)

Cremona, J. E. ★ Algorithms for modular elliptic curves. (English. English summary) *Cambridge University Press, Cambridge*, 1992. vi+343 *pp. ISBN* 0-521-41813-5 (Philippe Satgé) **93m:11053** 11G40 (11G05, 11Y16, 11Y35)

— Abelian varieties with extra twist, cusp forms, and elliptic curves over imaginary quadratic fields. (English summary) *J. London Math. Soc.* (2) **45** (1992), *no.* 3, 404–416. (Henri Darmon) **93h:11056** 11G10 (11F12, 11F30, 11F66, 11G05)

— Modular symbols for $\Gamma_1(N)$ and elliptic curves with everywhere good reduction. *Math. Proc. Cambridge Philos. Soc.* **111** (1992), *no.* 2, 199–218. (Philippe Satgé) **93e:11065** 11F67 (11G05)

Crescenzi, Pierluigi (*with* Panconesi, Alessandro) Completeness in approximation classes. *Inform. and Comput.* **93** (1991), *no.* 2, 241–262. (Lane Hemaspaandra) **93c:68029** 68Q15

— (*with* Di Battista, Giuseppe; Piperno, A.) A note on optimal area algorithms for upward drawings of binary trees. (English summary) *Comput. Geom.* **2** (1992), *no.* 4, 187–200. 68U05

di Crescenzo, A. *see* **Di Crescenzo, A.**

Crescimanno, M. (*with* Hotes, S. A.) Monopoles, modular invariance and Chern-Simons field theory. *Nuclear Phys. B* **372** (1992), *no.* 3, 683–700. (Tsou Sheung Tsun) **93i:81215** 81T40 (58Z05, 81T13)

Crespi, Antonio (*with* Colzani, Leonardo; Travaglini, Giancarlo; Vignati, Marco) Equiconvergence theorems for Fourier-Bessel expansions with applications to the harmonic analysis of radial functions in Euclidean and non-Euclidean spaces. *Trans. Amer. Math. Soc.* **338** (1993), *no.* 1, 43–55. (Sundaram Thangavelu) **93j:42009** 42B15

Crespo, G. (*with* Aliaga, J.; Proto, A. N.) Squeezing in the SU(1, 1) group. (English summary) *Instabilities and nonequilibrium structures, III (Valparaíso, 1989)*, 87–94, *Math. Appl.*, 64, *Kluwer Acad. Publ., Dordrecht*, 1991. (*see* **93b:00027**) 81V10 (81R30)

— (*with* Aliaga, J.; Proto, A. N.) Information-theoretic and Wigner-function approaches to the nonclassical state dynamics for the variable-frequency harmonic oscillator. (English summary) *Phys. Rev. Lett.* **70** (1993), *no.* 4, 434–436. 81Q05 (81Q20, 81R30)

Crespo, Teresa Extensions de A_n par C_4 comme groupes de Galois. (English and French summaries) [C_4-extensions of A_n as Galois groups] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 6, 625–628. (Jaime-Luis Garcia-Roig) **93i:12007** 12F12 (11R32)

Cressie, Noel Modeling growth with random sets. (English summary) *Spatial statistics and imaging (Brunswick, ME, 1988)*, 31–45, *IMS Lecture Notes Monograph Ser.*, 20, *Inst. Math. Statist., Hayward, CA*, 1991. (*see* **93g:62004**) 60D05 (62F10, 62M30)

— (*with* Nanayakkara, Nuwan) Combining two unbiased estimators of a common mean of two normal populations. *Austral. J. Statist.* **33** (1991), *no.* 1, 43–56. (J. A. Melamed) **93a:62031** 62F10

— (*with* Zimmerman, Dale L.) Mean squared prediction error in the spatial linear model with estimated covariance parameters. *Ann. Inst. Statist. Math.* **44** (1992), *no.* 1, 27–43. (Xavier Guyon) **93e:62246** 62M30

— (*with* Lele, Subhash) New models for Markov random fields. (English summary) *J. Appl. Probab.* **29** (1992), *no.* 4, 877–884. (Summary) **93i:60096** 60G60

— (*with* Ver Hoef, Jay M.) Multivariable spatial prediction. (English summary) *Math. Geol.* **25** (1993), *no.* 2, 219–240. (Summary) **93k:86018** 86A32

Cressman, Ross (*with* Dash, A. T.) Strong stability and evolutionarily stable strategies with two types of players. *J. Math. Biol.* **30** (1991), *no.* 1, 89–99. (D. O. Logofet) **93a:92007** 92D15 (90D80, 92D25)

— ★ The stability concept of evolutionary game theory. A dynamic approach. Lecture Notes in Biomathematics, 94. *Springer-Verlag, Berlin*, 1992. viii+128 *pp. ISBN* 3-540-55419-X (Immanuel M. Bomze) **93j:92020** 92D15 (34D99, 90D40, 92–02)

— Evolutionarily stable sets in symmetric extensive two-person games. *Math. Biosci.* **108** (1992), *no.* 2, 179–201. (W. Gordon S. Hines) **93c:90121** 90D40 (90D05, 92D15, 92D50)

Creutzburg, R. (*with* Tasche, M.; Steidl, G.) Number-theoretic transforms and a theorem of Sylvester-Kronecker-Zsigmondy. *Computational number theory (Debrecen, 1989)*, 45–51, *de Gruyter, Berlin*, 1991. (Samuel S. Wagstaff, Jr.) **93b:11170** 11Y40 (11A07, 94A11)

Crew, Richard The p-adic monodromy of a generic abelian scheme in characteristic p. (English summary) *p-adic methods in number theory and algebraic geometry*, 59–74, *Contemp. Math.*, 133, *Amer. Math. Soc., Providence, RI*, 1992. (Adolfo Quirós) **93m:14018** 14F30 (11G10, 14G15, 14K15)

Crew, Roger F. (*with* Casley, Ross; Meseguer, José; Pratt, Vaughan) Temporal structures. *Math. Structures Comput. Sci.* **1** (1991), *no.* 2, 179–213. (Summary) **93i:68117** 68Q55 (68Q60)

Crews, M. (*with* Kouvaritakis, B.) An evaluation of super-optimality as a control tool: a relative stability perspective. (English summary) *Internat. J. Control* **57** (1993), *no.* 4, 767–776. (Summary) **93j:93101** 93D09 (93B36)

Crewther, I. (*with* Huilgol, R. R.; Jozsa, R.) Axisymmetric and nonaxisymmetric flows of a non-Newtonian fluid between coaxial rotating discs. *Philos. Trans. Roy. Soc. London Ser. A* **337** (1991), *no.* 1648, 467–495. (Xue-Ping Wang) **93a:76004** 76A10 (76A05, 76E99)

Criado, F. On the theorem of the two alternatives. (Spanish. English summary) *Rev. Real Acad. Cienc. Exact. Fís. Natur. Madrid* **84** (1990), *no.* 3, 429–433. (Summary) **93c:90106** 90D05

— On one structure theorem. (Russian and Georgian summaries) *Soobshch. Akad. Nauk Gruzii* **142** (1991), *no.* 2, 277–280. 90D06

Crighton, D. G. (*with* Lee-Bapty, I. P.) Spherical nonlinear wave propagation in a dissipative stratified atmosphere. *Wave Motion* **15** (1992), *no.* 4, 315–331. (Alexander Alenitsyn) **93i:76079** 76Q05 (76V05)

Crisalle, Oscar D. (*with* El-Khoury, Mario) Relative zero location for second-order sampled systems. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 10, 1551–1552. 93B55 (93C57)

Crisanti, A. (*with* Falcioni, M.; Provenzale, A.; Vulpiani, A.) Motion of passively advected impurities in two-dimensional flows: chaos, structures and diffusion. (English summary) *Nonlinear dynamics of structures (Vladimir Maiakovskiĭ, 1990)*, 49–70, *World Sci. Publishing, River Edge, NJ*, 1991. (Summary) **93h:76042** 76F20 (58F13, 58F40, 76R50)

— (*with* Falcioni, M.; Vulpiani, A.; Paladin, Giovanni) Lagrangian chaos: transport, mixing and diffusion in fluids. *Riv. Nuovo Cimento* (3) **14** (1991), *no.* 12, 80 *pp.* (Yong Nian Huang) **93d:76029** 76F20 (58F13, 58F40, 76–02, 76R50)

Crisci, M. R. (*with* Russo, E.; Jackiewicz, Z.; Vecchio, A.) Global stability of exact collocation methods for Volterra integro-differential equations. *Atti Sem. Mat. Fis. Univ. Modena* **39** (1991), *no.* 2, 527–536. (From the introduction) **93f:45020** 45L10 (34K05, 65R20)

Criscuolo, Giuliana (*with* Mastroianni, Giuseppe; Occorsio, Donatella) Some convergence estimates for the extended interpolation. *Approximation, optimization and computing*, 63–65, *North-Holland, Amsterdam*, 1990. (*see* **93a:41001**) 41A05

— (*with* Della Vecchia, B.; Mastroianni, Giuseppe) Hermite interpolation and mean convergence of its derivatives. (English summary) *Calcolo* **28** (1991), *no.* 1-2, 111–127 (1992). (P. Vértesi) **93g:41002** 41A05 (41A10)

— (*with* Mastroianni, Giuseppe; Occorsio, Donatella) Uniform convergence of derivatives of extended Lagrange interpolation. *Numer. Math.* **60** (1991), *no.* 2, 195–218. (T. J. Rivlin) **93b:41009** 41A10 (65D05)

— (*with* Della Vecchia, B.; Mastroianni, Giuseppe) Hermite-Fejér and Hermite interpolation. *Approximation theory, spline functions and applications* (*Maratea*, 1991), 317–331, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 356, *Kluwer Acad. Publ., Dordrecht*, 1992. (Terence M. Mills) **93k:41005** 41A05 (41A10, 41A25)

— (*with* Mastroianni, Giuseppe) New results on Lagrange interpolation. *Approximation theory, spline functions and applications* (*Maratea*, 1991), 333–340, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 356, *Kluwer Acad. Publ., Dordrecht*, 1992. (Summary) **93b:41002** 41A05

— (*with* Mastroianni, Giuseppe; Vértesi, Péter) Pointwise simultaneous convergence of extended Lagrange interpolation with additional knots. *Math. Comp.* **59** (1992), *no.* 200, 515–531. (L. Berg) **93a:41003** 41A05 (65D05)

Crisp, Michael D. Application of the displaced oscillator basis in quantum optics. (English summary) *Phys. Rev. A* (3) **46** (1992), *no.* 7, 4138–4149. (K. Wódkiewicz) **93k:81276** 81V80

Cristea, Mihai Some properties of the maps in $\mathbf{R}^n$ with applications to the distortion and singularities of quasiregular mappings. Analyse complexe (Bucharest, 1989). *Rev. Roumaine Math. Pures Appl.* **36** (1991), *no.* 7-8, 355–368. (Olli Martio) **93d:26011** 26B99 (28A78, 30C65)

— Certain sufficient conditions for univalency. (English summary) *Stud. Cerc. Mat.* **44** (1992), *no.* 1, 37–42. (Y. Komatu) **93i:30011** 30C45

Cristofano, Gerardo (*with* Maiella, G.; Musto, R.; Nicodemi, F.) Hall conductance and edge states in the Coulomb gas vertex operator formalism. *Modern Phys. Lett. A* **6** (1991), *no.* 32, 2985–2993. (Summary) **93a:81219** 81V70 (81T40)

— (*with* Maiella, G.; Musto, R.; Nicodemi, F.) Theoretical aspects of quantum Hall effect and two-dimensional CFT. (English summary) Topological and quantum group methods in field theory and condensed matter physics. *Internat. J. Modern Phys. B* **6** (1992), *no.* 11-12, 2217–2239. (Summary) **93h:81112** 81T40 (81V70)

— (*with* Maiella, G.; Musto, R.; Nicodemi, F.) The quantum Hall effect at arbitrary rational filling: a proposal. (English summary) *Modern Phys. Lett. A* **7** (1992), *no.* 28, 2583–2591. (Summary) **93g:81211** 81V70 (81T40)

— (*with* Maiella, G.; Musto, R.; Nicodemi, F.) Coulomb gas vertex operators for the fractional quantum Hall effect. (English summary) Low-dimensional field theories and condensed matter physics (Kyoto, 1991). *Progr. Theoret. Phys. Suppl. No.* 107 (1992), 195–203. (Summary) **93i:81216** 81T40 (81V70, 82D55)

— (*with* Marotta, Raffaele; Roland, Kaj) Unitarity and normalization of string amplitudes. (English summary) *Nuclear Phys. B* **392** (1993), *no.* 2, 345–368. (Summary) **93k:81173** 81T30

lanza de Cristoforis, Massimo *see* **Lanza de Cristoforis, Massimo**

Critchlow, Douglas E. On rank statistics: an approach via metrics on the permutation group. (English summary) *J. Statist. Plann. Inference* **32** (1992), *no.* 3, 325–346. (A. L. Rukhin) **93j:62127** 62G10 (62A05)

Criticou, Doukissa (*with* Terzakis, Dimitris) Une classe d'estimateurs à rétrécisseur bayesiens pour la moyenne d'un vecteur normal. (English and French summaries) [A class of Bayes shrinkage estimators for the mean of a normal vector] *Statist. Anal. Données* **16** (1991), *no.* 3, 1–23. 62J07 (62C10, 62F15)

Crivăţ, N. (*with* Bânzaru, T.) A new type of quasi-uniform convergence for nets of multifunctions. (Romanian summary) *Inst. Politehn. "Traian Vuia" Timişoara Lucrăr. Sem. Mat. Fiz.* **1988,** *November*, 32–38. 54C60 (54A20)

Crnjac, M. (*with* Guljaš, B.; Miller, H. I.) On some questions of Ger, Grubb and Kraljević. *Acta Math. Hungar.* **57** (1991), *no.* 3-4, 253–257. (Karol Baron) **93e:28013** 28A99

Crochemore, M. (*with* Apostolico, Alberto) Optimal canonization of all substrings of a string. *Inform. and Comput.* **95** (1991), *no.* 1, 76–95. (Friedrich Otto) **93a:68121** 68R15 (68Q25)

— (*with* Goralčík, P.) Mutually avoiding ternary words of small exponent. *Internat. J. Algebra Comput.* **1** (1991), *no.* 4, 407–410. (Jorge Almeida) **93c:05017** 05A99 (20M05, 68R15)

— (*with* Néraud, J.) A string-matching interpretation of the equation $x^m y^n = z^p$. Combinatorial Pattern Matching School (Paris, 1990). *Theoret. Comput. Sci.* **92** (1992), *no.* 1, 145–164. (Véronique Bruyère) **93d:68026** 68Q20 (68Q15, 68R15)

Croddy, W. Stephen Quine against essentialism and quantified modal logic. *Logique et Anal. (N.S.)* **31** (1988), *no.* 123-124, 317–328. 03B45 (03A05)

Croft, Tony (*with* Quinney, Douglas) The method of linear separation and approximate Green's functions. *Numerical treatment of differential equations* (*Halle*, 1989), 123–133, *Teubner-Texte Math.*, 121, *Teubner, Stuttgart*, 1991. (Valentin I. Bilenko) **93d:65070** 65L10 (34A50, 34B27, 65R20)

— Sequence transformations for a class of two-point boundary value problems on a semi-infinite domain. (English and Arabic summaries) *Arabian J. Sci. Engrg.* **17** (1992), *no.* 4, *B*, 675–681. 65L10

— An application of convergence acceleration techniques to a class of two-point boundary value problems on a semi-infinite domain. (English summary) *Numer. Algorithms* **2** (1992), *no.* 3-4, 307–320. (Summary) **93g:65097** 65L10 (65B99)

Croisille, Jean-Pierre (*with* Delorme, Philippe) Kinetic symmetrizations and pressure laws for the Euler equations. (English and French summaries) *Phys. D* **57** (1992), *no.* 3-4, 395–416. (Benoit Perthame) **93g:76098** 76N10 (35Q30, 65M99, 76M99)

Croitoro, E. (*with* Aron, M.) On deformations with constant modified stretches. *J. Elasticity* **28** (1992), *no.* 1, 79–89. (Summary) **93c:73048** 73G05

Croke, Christopher B. (*with* Kleiner, Bruce) A warped product splitting theorem. *Duke Math. J.* **67** (1992), *no.* 3, 571–574. (Midori Goto) **93h:53033** 53C20

— Volumes of balls in manifolds without conjugate points. *Internat. J. Math.* **3** (1992), *no.* 4, 455–467. (Nobuhiro Innami) **93e:53048** 53C22 (53C20, 58F17)

Crole, Roy L. (*with* Pitts, Andrew M.) New foundations for fixpoint computations: FIX-hyperdoctrines and the FIX-logic. Selections from the 1990 IEEE Symposium on Logic in Computer Science. *Inform. and Comput.* **98** (1992), *no.* 2, 171–210. (Eugenio Moggi) **93c:68059** 68Q55 (03B70)

Crombez, G. Image restoration by convex combinations of convex projections. (Serbo-Croatian summary) *Glas. Mat. Ser. III* **25(45)** (1990), *no.* 1, 87–93. (Simeon Reich) **93a:47068** 47H17 (41A50, 47B99, 47H09, 65J15)

— Group theoretical methods in gray-scale mathematical morphology. (Serbo-Croatian summary) *Zb. Rad. Prirod.-Mat. Fak. Ser. Mat.* **20** (1990), *no.* 2, 31–41. (Summary) **93e:68135** 68U10 (52A22, 68U05)

— Parallel methods in image recovery by projections onto convex sets. *Czechoslovak Math. J.* **42(117)** (1992), *no.* 3, 445–450. (Wolfgang Lusky) **93h:52001** 52A07 (47H09, 47H10, 47N99)

Crombie, A. C. Expectation, modelling and assent in the history of optics. I. Alhazen and the medieval tradition. *Stud. Hist. Philos. Sci.* **21** (1990), *no.* 4, 605–632. (A. G. Molland) **93g:01019** 01A30 (01A35, 01A40)

— Expectation, modelling and assent in the history of optics. II. Kepler and Descartes. *Stud. Hist. Philos. Sci.* **22** (1991), *no.* 1, 89–115. (A. G. Molland) **93g:01020** 01A30 (01A35, 01A40)

Cromme, Ludwig J. (*with* Diener, Immo) Fixed point theorems for discontinuous mapping. *Math. Programming* **51** (1991), *no.* 2, (*Ser. A*), 257–267. (J. Matkowski) **93d:90013** 90A14 (26B99, 65J15, 92B20)

Cromwell, Peter R. (*with* Morton, H. R.) Positivity of knot polynomials on positive links. *J. Knot Theory Ramifications* **1** (1992), *no.* 2, 203–206. (Józef H. Przytycki) **93i:57005** 57M25

— Celtic knotwork: mathematical art. *Math. Intelligencer* **15** (1993), *no.* 1, 36–47. 01A07 (00A69)

Cronin, J. A singularly perturbed model of a cardiac fiber. *Ordinary and partial differential equations, Vol. III* (*Dundee*, 1990), 50–66, *Pitman Res. Notes Math. Ser.*, 254, *Longman Sci. Tech., Harlow*, 1991. (Wei-Min Liu) **93c:92003** 92C30 (34E15)

Cross, Charles B. (*with* Thomason, Richmond H.) Conditionals and knowledge-base update. *Belief revision*, 247–275, *Cambridge Tracts Theoret. Comput. Sci.*, 29, *Cambridge Univ. Press, Cambridge*, 1992. (*see* **93g:68131**) 68T30 (03B60, 03B70, 68T27)

Cross, George E. (*with* Thomson, Brian S.) Symmetric integrals and trigonometric series. *Dissertationes Math.* (*Rozprawy Mat.*) **319** (1992), 49 *pp.* (Ralph Henstock) **93g:26012** 26A39 (42A16)

Cross, M. C. (*with* Bourzutschky, M. S.) Coupled map models for chaos in extended systems. *Chaos* **2** (1992), *no.* 2, 173–181. (Summary) **93c:58131** 58F13 (58F40, 76F20)

Cross, R. W. Linear transformations of Tauberian type in normed spaces. Dedicated to the memory of Professor Gottfried Köthe. *Note Mat.* **10** (1990), *suppl.* 1, 193–203 (1992). (Manuel González) **93m:47023** 47B07 (47A53)

— On a theorem of Kalton and Wilansky concerning Tauberian operators. (English summary) *J. Math. Anal. Appl.* **171** (1992), *no.* 1, 156–170. (Manuel González) **93m:47024** 47B07 (47A53)

— (*with* Labuschagne, L. E.) Characterisations of operators of lower semi-Fredholm type in normed linear spaces. (English summary) *Quaestiones Math.* **15** (1992), *no.* 2, 151–173. (Manuel González) **93i:47014** 47A53 (47A55)

Crosse, Jo (*with* West, Mike) Modelling probabilistic agent opinion. *J. Roy. Statist. Soc. Ser. B* **54** (1992), *no.* 1, 285–299. (I. J. Good) **93d:62006** 62A15 (62C10)

Crossley, John N. (*with* Remmel, Jeffrey B.) Cancellation laws for polynomial-time p-isolated sets. *Ann. Pure Appl. Logic* **56** (1992), *no.* 1-3, 147–172. (Rodney G. Downey) **93g:03041** 03D50 (03D15, 68Q15)

— *see also* **Smith, Gordon C. et al., 93d:01001**

Crouau, R. (*with* Hadiji, Rejeb; Lewandowski, Roger) Critical Sobolev exponent and the dimension three. *Houston J. Math.* **18** (1992), *no.* 2, 189–204. (Josef Voldřich) **93c:35044** 35J65

Crouch, J. D. Nonlocalized receptivity of boundary layers. (English summary) *J. Fluid Mech.* **244** (1992), 567–581. (Summary) **93h:76021** 76D10 (76D33, 76E05, 76Q05)

Crouch, P. E. (*with* Lamnabhi-Lagarrigue, F.) Realizations of input-output differential equations. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, II* (*Kobe*, 1991), 259–264, *Mita, Tokyo*, 1992. (*see* **93g:93006**) 93B15

Croux, Christophe (*with* Rousseeuw, Peter J.) Explicit scale estimators with high breakdown point. (English summary) *L_1-statistical analysis and related methods* (*Neuchâtel*, 1992), 77–92, *North-Holland, Amsterdam*, 1992. (*see* **93k:62005**) 62F35

— (*with* Rousseeuw, Peter J.) A class of high-breakdown scale estimators based on subranges. *Comm. Statist. Theory Methods* **21** (1992), *no.* 7, 1935–1951. (Summary) **93e:62093** 62F35

Crouzeix, Jean-Pierre (*with* Auslender, A. A.) Well behaved asymptotical convex functions. (English summary) *Analyse non linéaire* (*Perpignan*, 1987), 101–121, *Univ. Montréal, Montreal, PQ*, 1989. (*see* **93h:49003**) 49K45 (26B25, 90C31)

— (*with* Martínez-Legaz, Juan-Enrique; Seeger, Alberto) Un théorème de l'alternative pour des formes quadratiques et quelques extensions. (English summary) [An alternative theorem for quadratic forms and extensions] *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 7, 505–506. (Summary) **93b:49040** 49N15 (15A63)

— (*with* Kebbour, R.) Index multiplicatifs de convexité/concavité et applications. (English and French summaries) [Multiplicative convexity/concavity indices and applications] *Cahiers Centre Études Rech. Opér.* **34** (1992), *no.* 1, 7–23. (Pierre Loridan) **93k:90070** 90C25 (90A05, 90C05, 90C26)

— (*with* Ferland, Jacques A.; Schaible, Siegfried) Generalized convexity on affine subspaces with an application to potential functions. (English summary) *Math. Programming* **56** (1992), *no.* 2, *Ser. A*, 223–232. (Petra Weidner) **93h:90055** 90C05 (26B25, 26B35, 90C20)

Crow, John A. Long time classical solutions of a nonlinear wave equation. *Comm. Partial Differential Equations* **16** (1991), *no.* 8-9, 1529–1548. (Summary) **93f:35150** 35L70 (76D33)

— Quadrature of integrands with a logarithmic singularity. *Math. Comp.* **60** (1993), *no.* 201, 297–301. (Summary) **93d:65025** 65D32 (65D30)

Crowder, Martin (*with* Kimber, A. C.; Smith, Robert L.; Sweeting, Trevor J.) ★ Statistical analysis of reliability data. *Chapman & Hall, London*, 1991. xii+250 *pp. ISBN* 0-412-30560-7 (Bo Bergman) **93d:62167** 62N05 (90B25)

— On the identifiability crisis in competing risks analysis. *Scand. J. Statist.* **18** (1991), *no.* 3, 223–233. (A. H. Khan) **93e:62249** 62N05 (62P10)

— Bayesian priors based on a parameter transformation using the distribution function. (English summary) *Ann. Inst. Statist. Math.* **44** (1992), *no.* 3, 405–416. (Summary) **93j:62078** 62F15

Crowe, Donald W. Albrecht Dürer and the regular pentagon. *Fivefold symmetry*, 465–487, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93i:52002**) 01A40 (00A69)

Crowell, John I. (*with* Sen, Pranab Kumar) On stopping times for fixed-width confidence regions. (English summary) *Sequential Anal.* **11** (1992), *no.* 3, 199–212. (Peter Watts Jones) **93j:62205** 62L15 (62G09, 62G15)

Crowley, John (*with* Jones, Michael P.) Nonparametric tests of the Markov model for survival data. (English summary) *Biometrika* **79** (1992), *no.* 3, 513–522. 62G10

Crowley, W. P. *see* **Advances in the free-Lagrange method**, **93g:76001**

Croxson, P. (*with* Colegrave, R. K.) Constants of the motion and diagonalization of the Hamiltonian for some scattering processes. *J. Math. Phys.* **32** (1991), *no.* 12, 3361–3368. (S. K. Srinivasan) **93b:81317** 81V80 (81Q10, 81R05)

Crstici, B. (*with* Gâvruţa, P.; Neagu, Mihai) About a functional inequality. (Romanian summary) *Inst. Politehn. "Traian Vuia" Timişoara Lucrâr. Sem. Mat. Fiz.* **1988**, *November*, 66–68. 39B72

Crumeyrolle, A. Supergravity, supersymmetry: a geometric unitary spinor theory. (English summary) *Classical mechanics and relativity: relationship and consistency* (*Elba*, 1989), 75–93, *Monographs Textbooks Phys. Sci. Lecture Notes*, 20, *Bibliopolis, Naples*, 1991. (Reinhard Illge) **93m:83081** 83E50 (81R25, 81T60)

— Supergravity, supersymmetry: a geometric unitary spinor theory. (English summary) *Clifford algebras and their applications in mathematical physics* (*Montpellier*, 1989), 387–404, *Fund. Theories Phys.*, 47, *Kluwer Acad. Publ., Dordrecht*, 1992. (Boris Moiseevich Zupnik) **93m:83082** 83E50 (81R25, 81V17)

Crummey, T. P. (*with* Farshadnia, R.; Fleming, Philip Joseph; Grace, A. C. W.; Hancock, S. D.) An optimization toolbox for MATLAB. *Control '91, Vol.* 1, 2 (*Edinburgh*, 1991), 744–749, *IEE Conf. Publ. Ser.*, 332, *IEE, London*, 1991. (*see* **93h:93007**) 90C30

Crumpton, P. I. (*with* Shaw, G. J.) An assessment of the finite termination property of the defect correction method. (English summary) *Internat. J. Numer. Methods Fluids* **16** (1993), *no.* 3, 199–215. (Summary) **93h:76058** 76M25

Crupi, Giovanni On the relativistic formulation of electrodynamics in matter in general relativity. (Italian) Memoirs of mathematical physics in honor of Giovanni Carini on his 70th birthday (Italian). *Atti Accad. Peloritana Pericolanti Cl. Sci. Fis. Mat. Natur.* **68** (1990), *suppl.* 1, 11–39 (1991). (Gh. Procopiuc) **93b:83036** 83C50 (83C55)

Crusca, F. (*with* Aldeen, M.) A controller design method for large-scale systems in the frequency domain. (English summary) *Control '91, Vol.* 1, 2 (*Edinburgh*, 1991), 687–692, *IEE Conf. Publ. Ser.*, 332, *IEE, London*, 1991. (*see* **93h:93007**) 93B51

Cruse, T. A. (*with* Suwito, W.) On the Somigliana stress identity in elasticity. (English summary) *Comput. Mech.* **11** (1993), *no.* 1, 1–10. (Summary) **93i:73010** 73C02 (73V10)

Crutchfield, James P. (*with* Hanson, James E.) The attractor-basin portrait of a cellular automaton. *J. Statist. Phys.* **66** (1992), *no.* 5-6, 1415–1462. (Summary) **93i:68140** 68Q80 (58F08)

Cruywagen, G. C. (*with* Murray, J. D.) On a tissue interaction model for skin pattern formation. *J. Nonlinear Sci.* **2** (1992), *no.* 2, 217–240. (From the text) **93d:92006** 92C15

Cruz, Andrés (*with* Esparza, Javier; Sesma, Javier) Zeros of the Hankel function of real order out of the principal Riemann sheet. *J. Comput. Appl. Math.* **37** (1991), *no.* 1-3, 89–99. (Boro Döring) **93a:33005** 33C10

Cruz, Jaime Spectral theory of Schrödinger operators with very long range potentials. *Schrödinger operators* (*Aarhus*, 1991), 48–55, *Lecture Notes in Phys.*, 403, *Springer, Berlin*, 1992. (V. S. Ol'khovskiĭ) **93h:81026** 81Q10 (35J10, 35P05, 47F05, 47N50, 81U05)

blasco de la Cruz, Oscar *see* **Blasco De La Cruz, Oscar**

Cruz, Ricardo N. Multidimensional periodic knots. *Topology Appl.* **42** (1991), *no.* 2, 137–158. (J. P. Levine) **93g:57028** 57Q45 (57Q91)

Cruzeiro-Hansson, Leonor (*with* Jørgensen, Michael F.; Christiansen, Peter L.; De Lillo, Silvana) Note on a complex Eckhaus equation. (English summary) *Chaotic dynamics* (*Patras*, 1991), 71–73, *NATO Adv. Sci. Inst. Ser. B Phys.*, 298, *Plenum, New York*, 1992. (*see* **93i:58004**) 35Q55

Cruz Soto, J. L. (*with* Calzada Canalejo, M. C.; Marín Beltrán, M.; Fernández Cara, Enrique) Positivity of k and ε in the k-ε turbulence model. (Spanish) *Proceedings of the XII Congress on Differential Equations and Applications/II Congress on Applied Mathematics* (*Spanish*) (*Oviedo*, 1991), 405–408, *Univ. Oviedo, Oviedo*, 1991. (*see* **93j:00009**) 76F05

— (*with* Calzada Canalejo, M. C.; Marín Beltrán, M.; Fernández Cara, Enrique) A parallel algorithm for solving the incompressible Navier-Stokes problem. (English summary) *Comput. Math. Appl.* **25** (1993), *no.* 9, 51–58. 65M99 (65Y05, 76D05, 76M25)

Crvenković, S. (*with* Madarász, R. Sz.) A nonaxiomatizability result in algebraic logic. *Algebra Universalis* **28** (1991), *no.* 4, 487–494. (Ivo Düntsch) **93a:03071** 03G15 (20M99)

lozanov-Crvenković, Z. *see* **Lozanov-Crvenković, Z.**

Csaba, László (*with* Faudree, Ralph J.; Gyárfás, András; Lehel, Jenő; Schelp, Richard H.) Networks communicating for each pairing of terminals. (English summary) *Networks* **22** (1992), *no.* 7, 615–626. (Summary) **93h:05097** 05C35 (68M10, 90B10)

Csákány, Béla Life is functionally complete. *Algebra Universalis* **30** (1993), *no.* 1, 149–150. 06E30

Csáki, Endre Lim inf results for the standardized empirical distribution function. *Probability theory and mathematical statistics, Vol. I* (*Vilnius*, 1989), 238–244, "*Mokslas*", *Vilnius*, 1990. (Igor S. Borisov) **93b:60069** 60F20 (62G30)

— (*with* Csörgő, Miklós; Lin, Zheng Yan; Révész, Pál) On infinite series of independent Ornstein-Uhlenbeck processes. *Stochastic Process. Appl.* **39** (1991), *no.* 1, 25–44. (Byron Schmuland) **93a:60058** 60G15

— On the increments of additive functionals. *Studia Sci. Math. Hungar.* **26** (1991), *no.* 2-3, 185–199. (Michael T. Lacey) **93i:60039** 60F05 (60J15, 60J55)

— A note on: "Three problems on the random walk in $\mathbf{Z}^d$" by P. Erdős and P. Révész [Studia Sci. Math. Hungar. **26** (1991), no. 2-3, 309–320; MR 93k:60171]. *Studia Sci. Math. Hungar.* **26** (1991), *no.* 2-3, 201–205. (Karl Grill) **93k:60172** 60J15 (60F15)

— (*with* Csörgő, Miklós; Shao, Qi Man) Fernique type inequalities and moduli of continuity for l^2-valued Ornstein-Uhlenbeck processes. (English and French summaries) *Ann. Inst. H. Poincaré Probab. Statist.* **28** (1992), *no.* 4, 479–517. (Robert J. Adler) **93k:60095** 60G17 (60G15)

— (*with* Csörgő, Miklós) Inequalities for increments of stochastic processes and moduli of continuity. *Ann. Probab.* **20** (1992), *no.* 2, 1031–1052. (Byron Schmuland) **93c:60055** 60G17 (60B11, 60F10)

— (*with* Csörgő, Miklós; Földes, Antónia; Révész, Pál) Strong approximation of additive functionals. (English summary) *J. Theoret. Probab.* **5** (1992), *no.* 4, 679–706. (Karl Grill) **93k:60073** 60F15 (60J15)

Császár, Ákos Wie ist die mathematische Analysis entstanden? [How did mathematical analysis arise and develop?] *Große Augenblicke aus der Geschichte der Mathematik*, 81–102, *Bibliographisches Inst., Mannheim*, 1990. (*see* **93g:01004**) 01A05

— Wie sah Hilbert die Zukunft der Mathematik? [How did Hilbert perceive the future of mathematics?] *Große Augenblicke aus der Geschichte der Mathematik*, 167–192, *Bibliographisches Inst., Mannheim*, 1990. (*see* **93g:01004**) 01A60

— General absolutes of topological spaces. *Acta Math. Hungar.* **58** (1991), *no.* 1-2, 141–151. (Roman Pol) **93a:54035** 54G05 (54B30, 54D10)

— Additive extensions of set functions. *Ann. Univ. Sci. Budapest. Eötvös Sect. Math.* **34** (1991), 21–26 (1992). (P. Maritz) **93d:28008** 28A12 (04A03, 28E15)

— (*with* Deák, J.) Simultaneous extensions of proximities, semi-uniformities, contiguities and merotopies. III. *Math. Pannon.* **2** (1991), *no.* 2, 3–23. (H. Herrlich) **93d:54039** 54E15 (54E05, 54E17)

— (*with* Deák, J.) Simultaneous extensions of proximities, semi-uniformities, contiguities and merotopies. IV. *Math. Pannon.* **3** (1992), *no.* 1, 57–76. (H. Herrlich) **93g:54039** 54E15 (54E05, 54E17)

Császár, K. T_{-1}-spaces. *Ann. Univ. Sci. Budapest. Eötvös Sect. Math.* **34** (1991), 47–52 (1992). (A. H. Stone) **93g:54032** 54D10

Cseh, J. Dynamic versus kinematic symmetry breaking in a two-dimensional model of collective motion. (English summary) *J. Phys. A* **25** (1992), *no.* 22, L1225–L1231. 81V35

Csendes, Tibor Test results of interval methods for global optimization. (English summary) *Computer arithmetic, scientific computation and mathematical modelling* (*Albena*, 1990), 417–424, *IMACS Ann. Comput. Appl. Math.*, 12, *Baltzer, Basel*, 1991. (*see* **93e:00022**) 65K10 (65G10)

— Numerical testing of interval methods of global optimization. (Russian) *Optimization: models, methods, solutions* (*Russian*) (*Irkutsk*, 1989), 338–351, "*Nauka*" *Sibirsk. Otdel., Novosibirsk*, 1992. (*see* **93k:90002**) 90C30

Csenki, Attila Some renewal-theoretic investigations in the theory of sojourn times in finite semi-Markov processes. *J. Appl. Probab.* **28** (1991), *no.* 4, 822–832. (R. Subramanian) **93b:60199** 60K05 (60K10, 60K15)

— The joint distribution of sojourn times in finite semi-Markov processes. *Stochastic Process. Appl.* **39** (1991), *no.* 2, 287–299. (Summary) **93g:60188** 60K15 (60E10, 60J27, 60K05)

— The joint distribution of sojourn times in finite Markov processes. *Adv. in Appl. Probab.* **24** (1992), *no.* 1, 141–160. (Linn I. Sennott) **93a:60091** 60J10 (90C40)

— Occupation frequencies for irreducible finite semi-Markov processes with reliability applications. (English summary) *Comput. Oper. Res.* **20** (1993), *no.* 3, 249–259. 60K20

Csima, J. (*with* Lovász, László) A matching algorithm for regular bipartite graphs. *Discrete Appl. Math.* **35** (1992), *no.* 3, 197–203. (Dieter Kratsch) **93a:05100** 05C70 (68R10)

Csirik, János (*with* Kellerer, Hans[2]; Woeginger, Gerhard J.) The exact LPT-bound for maximizing the minimum completion time. (English summary) *Oper. Res. Lett.* **11** (1992), *no.* 5, 281–287. (Summary) **93f:90127** 90C25 (90B35)

Csiszár, Imre Why least squares and maximum entropy? An axiomatic approach to inference for linear inverse problems. *Ann. Statist.* **19** (1991), *no.* 4, 2032–2066. (M. Studený) **93c:62009** 62A99 (94A15)

Csordas, George (*with* Ruttan, Arden; Varga, Richard S.) The Laguerre inequalities with applications to a problem associated with the Riemann hypothesis. *Numer. Algorithms* **1** (1991), *no.* 3, 305–329. (Timothy S. Norfolk) **93c:30041** 30D10 (30D15, 65E05)

— (*with* Vincze, István) Convexity properties of power series with logarithmically s-concave coefficients. (Russian summary) *Anal. Math.* **18** (1992), *no.* 1, 3–13. (Jacques Dubois) **93m:26022** 26A51 (26D10)

— (*with* Smith, Wayne Stewart; Varga, Richard S.) Level sets of real entire functions and the Laguerre inequalities. (English summary) *Analysis* **12** (1992), *no.* 3-4, 377–402. (Timothy S. Norfolk) **93h:30004** 30C10 (30C15, 30D15)

Csörgő, Miklós (*with* Horváth, Lajos) On confidence bands for the quantile function of a continuous distribution function. *Limit theorems in probability and statistics* (*Pécs*, 1989), 95–106, *Colloq. Math. Soc. János Bolyai*, 57, *North-Holland, Amsterdam*, 1990. (M. D. Burke) **93a:62074** 62G15 (62G05)

— (*with* Horváth, Lajos; Deheuvels, Paul) Estimating the quantile-density function. *Nonparametric functional estimation and related topics* (*Spetses*, 1990), 213–223, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 335, *Kluwer Acad. Publ., Dordrecht*, 1991. (David W. Scott) **93a:62052** 62G05

— (*with* Gombay, Edit; Horváth, Lajos) Central limit theorems for L_p distances of kernel estimators of densities under random censorship. *Ann. Statist.* **19** (1991), *no.* 4, 1813–1831. (Paul Deheuvels) **93d:60032** 60F05 (60G15, 62G10)

— (*with* Csáki, Endre; Lin, Zheng Yan; Révész, Pál) On infinite series of independent Ornstein-Uhlenbeck processes. *Stochastic Process. Appl.* **39** (1991), *no.* 1, 25–44. (Byron Schmuland) **93a:60058** 60G15

— (*with* Shao, Qi Man; Szyszkowicz, Barbara) A note on local and global functions of a Wiener process and some Rényi-type statistics. (English summary) *Studia Sci. Math. Hungar.* **26** (1991), *no.* 2-3, 239–259. (Lajos Horváth) **93i:60078** 60G17 (60F15, 60F20, 60J65)

— (*with* Csáki, Endre; Shao, Qi Man) Fernique type inequalities and moduli of continuity for l^2-valued Ornstein-Uhlenbeck processes. (English and French summaries) *Ann. Inst. H. Poincaré Probab. Statist.* **28** (1992), *no.* 4, 479–517. (Robert J. Adler) **93k:60095** 60G17 (60G15)

— (*with* Csáki, Endre) Inequalities for increments of stochastic processes and moduli of continuity. *Ann. Probab.* **20** (1992), *no.* 2, 1031–1052. (Byron Schmuland) **93c:60055** 60G17 (60B11, 60F10)

— (*with* Horváth, Lajos) Rényi-type empirical processes. *J. Multivariate Anal.* **41** (1992), *no.* 2, 338–358. (Qi Man Shao) **93g:60069** 60F17 (62G30)

— (*with* Csáki, Endre; Földes, Antónia; Révész, Pál) Strong approximation of additive functionals. (English summary) *J. Theoret. Probab.* **5** (1992), *no.* 4, 679–706. (Karl Grill) **93k:60073** 60F15 (60J15)

— (*with* Horváth, Lajos) Invariance principles for logarithmic averages. *Math. Proc. Cambridge Philos. Soc.* **112** (1992), *no.* 1, 195–205. (Peter Schatte) **93e:60057** 60F15 (60F05, 60F17)

— (*with* Révész, Pál) Long random walk excursions and local time. *Stochastic Process. Appl.* **41** (1992), *no.* 2, 181–190. (Davar Khoshnevisan) **93g:60172** 60J65 (60F15, 60J55)

Csörgő, Sándor (*with* Viharos, László) Asymptotic distributions for vectors of power sums. *Limit theorems in probability and statistics (Pécs,* 1989), 137–156, *Colloq. Math. Soc. János Bolyai,* 57, *North-Holland, Amsterdam,* 1990. (R. A. Maller) **93i:60040** 60F05 (62E20, 62F12)

— (*with* Dodunekova, Rositsa D.) Infinitely divisible laws partially attracted to a Poisson law. *Math. Balkanica (N.S.)* **4** (1990), *no.* 3, 300–319 (1991). (N. R. Mohan) **93g:60033** 60E07 (60F05, 60G50)

— (*with* Viharos, László) Confidence bands for percentile residual lifetimes. *J. Statist. Plann. Inference* **30** (1992), *no.* 3, 327–337. (J. V. Deshpande) **93h:62097** 62G15 (62N05)

— On the law of large numbers for the bootstrap mean. *Statist. Probab. Lett.* **14** (1992), *no.* 1, 1–7. (K. B. Athreya) **93g:60063** 60F15 (62G09)

— (*with* Mason, David M.) Intermediate- and extreme-sum processes. *Stochastic Process. Appl.* **40** (1992), *no.* 1, 55–67. (N. R. Mohan) **93d:60092** 60G70 (60F05)

Csuhaj-Varjú, Erzsébet (*with* Dassow, Jürgen) On bounded interpretations of grammar forms. *Theoret. Comput. Sci.* **87** (1991), *no.* 2, 287–313. (K. G. Subramanian) **93a:68075** 68Q50

— (*with* Dassow, Jürgen; Păun, Gheorghe) Dynamically controlled cooperating/distributed grammar systems. (English summary) *Inform. Sci.* **69** (1993), *no.* 1-2, 1–25. (Summary) **93k:68057** 68Q50

nguyen ngoc Cu *see* **Nguyen Ngoc Cu**

Cuadras, C. M. Probability distributions with given multivariate marginals and given dependence structure. (English summary) *J. Multivariate Anal.* **42** (1992), *no.* 1, 51–66. (Moshe Shaked) **93h:62102** 62H05

Cubeddu, C. A Bayesian estimate for the one-parameter exponential family. (Italian summary) *Rend. Sem. Fac. Sci. Univ. Cagliari* **61** (1991), *no.* 1, 13–20. (Summary) **93a:62041** 62F15

Cuccaro, Steven A. (*with* Mascagni, Michael; Pryor, Daniel V.; Robinson, M. L.) Recent developments in parallel pseudorandom number generation. (English summary) *Parallel processing for scientific computing, Vol. I, II (Norfolk, VA,* 1993), 524–529, *SIAM, Philadelphia, PA,* 1993. (*see* **93k:65003**) 65R10

Cucker, Felipe (*with* González-Vega, Laureano; Rosselló-Llompart, Francesc) On algorithms for real algebraic plane curves. *Effective methods in algebraic geometry (Castiglioncello,* 1990), 63–87, *Progr. Math.,* 94, *Birkhäuser Boston, Boston, MA,* 1991. (From the introduction) **93e:14067** 14Q05 (14P05)

— (*with* Montaña, Jose L.; Pardo, Luis M.) Time bounded computations over the reals. *Internat. J. Algebra Comput.* **2** (1992), *no.* 4, 395–408. (Klaus Weihrauch) **93m:03067** 03D15 (03D75, 65Y20, 68Q05, 68Q15, 68Q40)

— $P_{\mathbb{R}} \neq NC_{\mathbb{R}}$. (English summary) *J. Complexity* **8** (1992), *no.* 3, 230–238. (Uwe Schöning) **93m:03068** 03D15 (68Q15, 68Q25)

— The arithmetical hierarchy over the reals. (English summary) *J. Logic Comput.* **2** (1992), *no.* 3, 375–395. (Hisao Tanaka) **93k:03043** 03D55 (03D10, 03E15, 68Q05, 68Q10)

Cucu-Dumitrescu, C. (*with* Şelaru, D.; Mioc, Vasile) On a two-body problem with periodically changing equivalent gravitational parameter. (English summary) *Astronom. Nachr.* **313** (1992), *no.* 4, 257–263. (Summary) **93f:70011** 70F15

Cuculescu, I. A proof of the Stone theorem using the Gel'fand representation. (English and Romanian summaries) *Polytech. Inst. Bucharest Sci. Bull. Electr. Engrg.* **52** (1990), *no.* 3-4, 5–8. (Alexander Isaakovich Shtern) **93j:47058** 47D03 (46J20)

Cudd, Ann E. *see* **Carroll, John W.**

Cudeck, Robert (*with* Browne, Michael W.) Constructing a covariance matrix that yields a specified minimizer and a specified minimum discrepancy function value. (English summary) *Psychometrika* **57** (1992), *no.* 3, 357–369. 62P15

ščurić-Čudovan, Vlasta *see* **Ščurić-Čudovan, Vlasta**

pérez Cuéllar, A. *see* **Pérez Cuéllar, A.**

Cuenca Mira, José Antonio Sur la théorie de structure des H^*-algèbres de Jordan non commutatives. [The structure theory of noncommutative Jordan H^*-algebras] *Ann. Sci. Univ. Clermont-Ferrand II Math. No.* 27 (1991), 143–152 (1992). (Khristo N. Boyadzhiev) **93d:46093** 46K70 (17C10, 46H70)

— (*with* Castellón Serrano, Alberto) Associative H^*-triple systems. (English summary) *Nonassociative algebraic models (Zaragoza,* 1989), 45–67, *Nova Sci. Publ., Commack, NY,* 1992. (P. Saworotnow) **93m:46062** 46K70 (17A40)

— (*with* Martín González, Cándido) Jordan two-graded H^*-algebras. (English summary) *Nonassociative algebraic models (Zaragoza,* 1989), 91–100, *Nova Sci. Publ., Commack, NY,* 1992. (P. J. Stacey) **93j:46058** 46K70 (17C65)

— (*with* Castellón Serrano, Alberto) Isomorphisms of H^*-triple systems. *Ann. Scuola Norm. Sup. Pisa Cl. Sci.* (4) **19** (1992), *no.* 4, 507–514. (P. Saworotnow) **93m:46063** 46K70 (17A40)

— (*with* Castellón Serrano, Alberto; Martín González, Cándido) Ternary H^*-algebras. (Italian summary) *Boll. Un. Mat. Ital. B* (7) **6** (1992), *no.* 1, 217–228. (Khristo N. Boyadzhiev) **93e:46066** 46K70 (17A40, 46H70)

— (*with* Castellón Serrano, Alberto) Alternative H^*-triple systems. *Comm. Algebra* **20** (1992), *no.* 11, 3191–3206. (Antonio Fernández López) **93m:46065** 46K70 (17A40, 17C27, 17D05)

Cuenya, Héctor (*with* Marano, Miguel) Heredity of density points. *Real Anal. Exchange* **17** (1991/92), *no.* 2, 545–549. (Władysław Wilczyński) **93g:26022** 26B99

garcía-Cuerva, José *see* **García-Cuerva, José**

Cuesta, Juan Antonio (*with* Matrán, Carlos) A short proof of the law of convergence of types. (English summary) *Sankhya Ser. A* **52** (1990), *no.* 2, 259–260. (Summary) **93d:62028** 62E20

— (*with* Matrán, Carlos) A review on strong convergence of weighted sums of random elements based on Wasserstein metrics. *J. Statist. Plann. Inference* **30** (1992), *no.* 3, 359–370. (A. Bozorgnia) **93h:60010** 60B12 (60B11)

Cuesta, Lylia E. *see* **Cuesta Saínz de la Torre, Lylia E.**

Cuesta, Mabel (*with* Gossez, Jean-Pierre) A variational approach to nonresonance with respect to the Fučik spectrum. *Nonlinear Anal.* **19** (1992), *no.* 5, 487–500. (Norman Dancer) **93i:34032** 34B15 (47H15, 47N20, 58E30)

Cuesta Moreno, Pedro (*with* Montero García, Gustavo; Winter, Gabriel; Almeida Benítez, Pedro) Solution of nonsymmetric systems with preconditioned conjugate double gradient in adaptive processes. (Spanish. English summary) *Proceedings of the XII Congress on Differential Equations and Applications/II Congress on Applied Mathematics (Spanish) (Oviedo,* 1991), 625–630, *Univ. Oviedo, Oviedo,* 1991. (*see* **93j:00009**) 65F35 (65N30)

Cuesta Saínz de la Torre, Lylia E. A note on the quantitative stability of infinite-dimensional parametric optimization problems. (English and Spanish summaries) *Investigación Oper.* **12** (1991), *no.* 1, 11–26. (Walter Alt) **93j:90110** 90C31 (90C48)

Cueva, M. C. *see* **Caldas Cueva, Miguel**

caldas Cueva, Miguel *see* **Caldas Cueva, Miguel**

Cuevas, Antonio (*with* González Manteiga, Wenceslao) Data-driven smoothing based on convexity properties. *Nonparametric functional estimation and related topics (Spetses,* 1990), 225–240, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.,* 335, *Kluwer Acad. Publ., Dordrecht,* 1991. (Margaret P. Gessaman) **93b:62056** 62G05

— (*with* Walter, Gilbert G.) On estimation of generalized densities. *Comm. Statist. Theory Methods* **21** (1992), *no.* 7, 1807–1821. (M. A. Mirzakhmedov) **93k:62084** 62G05

Cuevas, S. (*with* López de Haro, M.; del Río, J. A.; Vázquez, F.) On the contribution of the Mexican school to extended irreversible thermodynamics. (English and Spanish summaries) *Rev. Mexicana Fís.* **39** (1993), *no.* 1, 63–76. 01A60 (80–03)

Cufaro Petroni, Nicola (*with* Vigier, Jean-Pierre) Single-particle trajectories and interferences in quantum mechanics. *Found. Phys.* **22** (1992), *no.* 1, 1–40. (Dennis Dieks) **93a:81010** 81P05 (81P20)

— On the structure of the quantum-mechanical probability models. (English summary) *Found. Phys.* **22** (1992), *no.* 11, 1379–1401. (Sylvia Pulmannova) **93m:81010** 81P10 (06C15, 81P15)

Cufí, Julià Peano curves and conformal representations. (Catalan) *Butl. Soc. Catalana Mat. No.* 7 (1992), 47–60. 26A30

Cugliandolo, L. F. (*with* Schaposnik, Fidel A.; Vucetich, H.) A topological model for two-dimensional gravity coupled to matter. *Nuclear Phys. B* **377** (1992), *no.* 1-2, 191–217. (C. Gauthier) **93d:81153** 81T40

Cui, B. T. *see* **Cui, Bao Tong**

Cui, Bao Min (*with* Yuan, Zhu Zhi) New multivariable generalized predictive self-tuning controller. (English and Chinese summaries) *Control Theory Appl.* **9** (1992), *no.* 6, 672–677. 93C35 (93B52)

Cui, Bao Tong Oscillation theorems of nonlinear parabolic equations of neutral type. *Math. J. Toyama Univ.* **14** (1991), 113–123. (Russell C. Thompson) **93f:35233** 35R10 (35B05, 35K55)

— (*with* Lalli, B. S.; Yu, Yuan Hong) Oscillations of certain partial differential equations with deviating arguments. (English summary) *Bull. Austral. Math. Soc.* **46** (1992), *no.* 3, 373–380. (Summary) **93i:35149** 35R10 (35B05)

Cui, Guo Hua A mathematical model for the rate of spreading of a computer virus. (Chinese. English and Chinese summaries) *J. Huazhong Univ. Sci. Tech.* **20** (1992), *no.* 3, 119–126. 92D30 (68M99)

Cui, Heng Jian A necessary and sufficient condition for a weakly consistent PP estimator of a dispersion matrix to be robust. (Chinese. English and Chinese summaries) *Chinese J. Appl. Probab. Statist.* **8** (1992), *no.* 2, 113–121. 62H40 (62F35)

Cui, Jin Chuan (*with* Liu, De Gang; Zhang, Xiang Sun) Improvements on the sensitivity analysis of parametric linear programming. (Chinese) *Math. Practice Theory* **1991**, *no.* 4, 41–49. (Hang-Ling Chang) **93g:90071** 90C31 (90C05)

Cui, Jing An The limit behavior of a food web in a micro-organism culture system. (Chinese. English summary) *J. Xinjiang Univ. Natur. Sci.* **9** (1992), *no.* 1, 22–27. (Lai Fu Liu) **93f:92028** 92D40 (34C99, 92D25)

— (*with* Huang, Yong Nian[1]) Positive periodic solutions to a class of periodic cooperative systems. (Chinese. English and Chinese summaries) *J. Xinjiang Univ. Natur. Sci.* **9** (1992), *no.* 2, 14–23. (Summary) **93h:34060** 34C25 (34D05, 90D40, 92D25)

Cui, Jun Feng (*with* Wu, Guang Yu) A robust self-tuning controller for fast following. (Chinese. English and Chinese summaries) *Control Theory Appl.* **9** (1992), *no.* 4, 421–425. 93D21 (93B36)

Cui, L. (*with* Cheng, A. H.-D.) Green's function for axisymmetric poroelasticity and coupled thermoelasticity. (English summary) *Boundary element technology, VII (Albuquerque, NM,* 1992), 91–104, *Comput. Mech., Southampton,* 1992. (*see* **93b:65002**) 73V10 (65N38, 73N20, 76M15)

Cui, Li Li An abstract operator calculus system for computers. (Chinese. English and Chinese summaries) *Math. Appl.* **5** (1992), *no.* 2, 103–109. 68Q40

Cui, Ming Gen (*with* Jiao, Guang Hong) A good convexity-preserving smoothing operator. (Chinese. English and Chinese summaries) *J. Harbin Inst. Tech.* **25** (1993), *no.* 1, 1–7. 65D10

Cui, Shang Bin Local solvability of nonhomogeneous left-invariant linear partial differential operators with controllable lower-order terms on the Heisenberg group. (Chinese) *Chinese Ann. Math. Ser. A* **12** (1991), *no.* 6, 754–765. (Xue Bo Luo) **93g:22009** 22E30 (22E25, 58G30)

— Local solvability of second order transversely hyperbolic left invariant operators on the Heisenberg group. *Chinese Sci. Bull.* **36** (1991), *no.* 7, 534–537. (Ewa Damek) **93b:22012** 22E30 (22E25, 43A80)

— A generalization of the Paley-Wiener-Schwartz and Èskin theorems. (Chinese. Chinese summary) *Acta Math. Sci. (Chinese)* **12** (1992), *no.* 3, 332–337. (Summary) **93j:46043** 46F05 (46E99, 46F12)

— Sufficient conditions for local solvability of left invariant LPDOs on the groups of type *H*. (English summary) A Chinese summary appears in Chinese Ann. Math. Ser. A **13** (1992), no. 2, 278. *Chinese Ann. Math. Ser. B* **13** (1992), *no.* 2, 143–156. (Luigi Rodino) **93h:22017** 22E30 (35A07, 47G30)

Cui, Shi Min Dynamic Lie-algebra structure of a quantum system and the Aharonov-Anandan phase. (English summary) *Phys. Rev. A* (3) **47** (1993), *no.* 1, 690–693. (Piotr Kosiński) **93j:81012** 81Q05 (81R05)

Cui, Xianzhong (*with* Shin, Kang G.) Design of a general purpose MIMO predictor with neural networks. (English summary) *Mathematics of the analysis and design of process control* (*Dublin*, 1991/*Lille*, 1991), 567–576, *North-Holland, Amsterdam*, 1992. (*see* **93g:93004**) 93B51 (68T05)

Cui, Yu Jun (*with* Guo-Li, Ao; Izumi, Masao; Fukunaga, Kunio) Structural representation of the outline and its application. (English summary) *Bull. Univ. Osaka Prefect. Ser. A* **40** (1991), *no.* 1, 43–59. 94A12

Cui, Yu Ting (1, *f*)-odd-factors of graphs. (Chinese. English summary) *Dongbei Shida Xuebao* **1991**, *no.* 4, 23–26, 22. (Rong Si Chen) **93d:05114** 05C70

Culick, Fred E. C. (*with* Beran, Philip S.) The role of nonuniqueness in the development of vortex breakdown in tubes. (English summary) *J. Fluid Mech.* **242** (1992), 491–527. (Summary) **93f:76037** 76D99 (76D33)

Culik, Karel, II (*with* Yu, Sheng) Cellular automata, $\omega\omega$-regular sets, and sofic systems. *Discrete Appl. Math.* **32** (1991), *no.* 2, 85–101. (Sam M. Kim) **93e:68053** 68Q45 (68Q05, 68Q70)

— (*with* Hurd, Lyman P.; Kari, Jarkko) The topological entropy of cellular automata is uncomputable. (English summary) *Ergodic Theory Dynamical Systems* **12** (1992), *no.* 2, 255–265. (M. L. Blank) **93f:58124** 58F08 (68Q80)

Culler, Marc (*with* Shalen, Peter B.) Paradoxical decompositions, 2-generator Kleinian groups, and volumes of hyperbolic 3-manifolds. *J. Amer. Math. Soc.* **5** (1992), *no.* 2, 231–288. (Colin C. Adams) **93a:57017** 57M50 (30F40)

Cullis, B. R. (*with* Verbyla, A. P.) The analysis of multistratum and spatially correlated repeated measures data. (English and French summaries) *Biometrics* **48** (1992), *no.* 4, 1015–1032. 62H11

Cumberbatch, Ellis (*with* Fang, Wei Fu) Inverse problems for metal oxide semiconductor field-effect transistor contact resistivity. *SIAM J. Appl. Math.* **52** (1992), *no.* 3, 699–709. (Hideo Soga) **93f:35049** 35J25 (35R05, 35R30, 78A55)

Cumby, Robert E. (*with* Huizinga, John) Testing the autocorrelation structure of disturbances in ordinary least squares and instrumental variables regressions. *Econometrica* **60** (1992), *no.* 1, 185–195. (Hilmar Drygas) **93m:62149** 62J05 (62P20)

Cuminato, J. A. (*with* Boaventura, M.) Reductive quadrature rules for Volterra integral equations of the second kind. (Portuguese. English summary) *Bol. Soc. Paran. Mat.* (2) **11** (1990), *no.* 2, 57–71 (1992). (Summary) **93f:65095** 65R20 (45L05)

Cummings, Larry J. (*with* Mays, Michael E.) Shuffled Lyndon words. (English summary) *Ars Combin.* **33** (1992), 47–56. (Summary) **93d:05015** 05A99

— Gray arrays and Gray tori. *J. Combin. Theory Ser. A* **59** (1992), *no.* 2, 177–186. (Stefan Dodunekov) **93c:11110** 11T71 (94B60)

— (*with* Beasley, LeRoy B.) Schur extensions of monomial matrix groups. *Linear Algebra Appl.* **161** (1992), 11–25. (A. O. Morris) **93a:15008** 15A15

Cummings, Laurence A. The allegorical method and systems of fives. A beginning discussion exemplified in *Beowulf*. *Fivefold symmetry*, 407–422, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93i:52002**) 01A35 (00A99)

Cummings, Peter T. (*with* Ford, Roseanne M.) On the relationship between cell balance equations for chemotactic cell populations. (English summary) *SIAM J. Appl. Math.* **52** (1992), *no.* 5, 1426–1441. (Summary) **93h:92018** 92C45 (60J10, 92C10)

Cummins, C. J. (*with* Fulling, Stephen A.; King, Ronald Curtis; Wybourne, B. G.) Normal forms for tensor polynomials. I. The Riemann tensor. *Classical Quantum Gravity* **9** (1992), *no.* 5, 1151–1197. (J. F. Cornwell) **93j:53084** 53C80 (20C30, 22E70, 81T15, 83C47)

— (*with* King, Ronald Curtis) Characters of A_{n-1} Hecke algebras at roots of unity. *J. Phys. A* **25** (1992), *no.* 13, L789–L797. (Joris Van der Jeugt) **93g:05147** 05E10 (17B37)

— (*with* Burdík, Č.; Gaskell, R. W.; Sharp, R. T.) Complete branching rules generating function for $SO(7) \supset SU(2)^3$ and polynomial basis states. (English summary) *J. Phys. A* **25** (1992), *no.* 18, 4835–4846. (Hartmut Schlosser) **93j:22036** 22E70 (20C35, 81R05)

Cunha, Cristina (*with* Viloche, Fermin) The Laguerre functions in the inversion of the Laplace transform. (English summary) *Inverse Problems* **9** (1993), *no.* 1, 57–68. (Summary) **93m:65177** 65R10 (44A10)

Cuninghame-Green, R. A. (*with* Butkovič, P.) An $O(n^2)$ algorithm for the maximum cycle mean of an $n \times n$ bivalent matrix. *Discrete Appl. Math.* **35** (1992), *no.* 2, 157–162. (Summary) **93m:68069** 68Q25 (05C50)

Cunningham, Edward P. ★ Digital filtering. An introduction. With separately available computer disks. *Houghton Mifflin Co., Boston, MA*, 1992. xvi+536 *pp. ISBN* 0-395-53989-7 (A. Bultheel) **93g:94001** 94–01 (93–01, 93E11)

Cunningham, Robin A finite capacity analogue of the Koebe one-quarter theorem. *Proc. Amer. Math. Soc.* **119** (1993), *no.* 3, 869–875. (T. H. MacGregor) **93m:30009** 30C25

Cunningham, William H. (*with* Green-Krótki, Jan) *b*-matching degree-sequence polyhedra. *Combinatorica* **11** (1991), *no.* 3, 219–230. (Prabir Das) **93a:05101** 05C70 (15A39)

forte Cunto, Ana *see* **Forte Cunto, Ana**

Cunto, Walter (*with* Baeza-Yates, Ricardo A.) Unbalanced multiway trees improved by partial expansions. (English summary) *Acta Inform.* **29** (1992), *no.* 5, 443–460. (Summary) **93f:68020** 68P05

Cuntz, Joachim Cyclic cohomology and K-homology. *Proceedings of the International Congress of Mathematicians, Vol. I, II* (*Kyoto*, 1990), 969–978, *Math. Soc. Japan, Tokyo*, 1991. (Lars Kadison) **93c:19003** 19D55 (46L80)

nguyễn tự' Cư'ờ'ng *see* **Nguyễn Tự' Cư'ờ'ng**

Cuong, Nguyen Tu *see* **Nguyễn Tự' Cư'ờ'ng**

Čupona, G. (*with* Janeva, B.) On free objects in some classes of finite subset structures. *Contributions to general algebra*, 7 (*Vienna*, 1990), 75–85, *Hölder-Pichler-Tempsky, Vienna*, 1991. (Phullendu Das) **93b:20117** 20N99 (20L17)

— (*with* Markovski, S.) Embeddings of universal algebras in semigroups. (Macedonian summary) *Mat. Bilten* **41** (1991), *no.* 15, 5–16. (Katherine Johnston) **93d:08004** 08A99 (20M07)

Curbera, Guillermo P. Operators into L^1 of a vector measure and applications to Banach lattices. *Math. Ann.* **293** (1992), *no.* 2, 317–330. (Lawrence H. Riddle) **93b:46083** 46G10 (28B05, 46E40, 47B99)

Curien, Pierre-Louis Sequentiality and full abstraction. (English summary) *Applications of categories in computer science* (*Durham*, 1991), 66–94, *London Math. Soc. Lecture Note Ser.*, 177, *Cambridge Univ. Press, Cambridge*, 1992. (Summary) **93i:68119** 68Q55 (68–02)

— (*with* Ghelli, Giorgio) Coherence of subsumption, minimum typing and type-checking in $F_{\leq}$. *Math. Structures Comput. Sci.* **2** (1992), *no.* 1, 55–91. (John C. Mitchell) **93i:68120** 68Q55 (03B40)

Curir, Anna (*with* de Felice, Fernando) Axial collimation in the Kerr metric. *Classical Quantum Gravity* **9** (1992), *no.* 5, 1303–1307. (Summary) **93a:83005** 83C10

Curnier, A. (*with* Rakotomanana, L.) Generalized strain and stress measures: critical survey and new results. (English, Russian and Polish summaries) *Engrg. Trans.* **39** (1991), *no.* 3-4, 461–538 (1992). (C. F. M. Creasy) **93j:73016** 73C05 (73B99)

— (*with* Heegaard, J.-H.) An augmented Lagrangian method for discrete large-slip contact problems. (English summary) *Internat. J. Numer. Methods Engrg.* **36** (1993), *no.* 4, 569–593. (Summary) **93i:73049** 73T05 (73V05, 73V25)

Curran, J. H. (*with* Carvalho, J. L.) Two-dimensional Green's functions for elastic bi-materials. (English summary) *Trans. ASME J. Appl. Mech.* **59** (1992), *no.* 2, *part* 1, 321–327. (Summary) **93e:73008** 73C02 (73V10)

Curran, M. J. A note on characteristic subgroups. *Proc. Roy. Irish Acad. Sect. A* **90** (1990), *no.* 2, 245–246. (Piroska Lakatos) **93a:20044** 20E36 (20F28)

Curran, Paul F. Lyapunov's matrix equation with system matrix in companion form. (English summary) *Internat. J. Control* **57** (1993), *no.* 6, 1509–1516. (Summary) **93m:93034** 93B40 (93D05)

Curran, Stephen J. Hamilton paths in Cayley digraphs on the semidirect product of cyclic groups. (English summary) Proceedings of the Twenty-third Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, FL, 1992). *Congr. Numer.* **89** (1992), 209–221. (Summary) **93j:05101** 05C45 (05C25)

— (*with* Brand, Neal; Das, Sajal K.; Jacob, Roy Thomas, Jr.) Probability of diameter two for Steinhaus graphs. (English summary) *Discrete Appl. Math.* **41** (1993), *no.* 2, 165–171. (Summary) **93m:05130** 05C50

— Hamilton paths in Cayley digraphs of metacyclic groups. (English summary) *Discrete Math.* **115** (1993), *no.* 1-3, 133–139. (Summary) **93m:05087** 05C25 (05C45)

Current, John (*with* Church, Richard) Maximal covering tree problems. (English summary) *Naval Res. Logist.* **40** (1993), *no.* 1, 129–142. 90C35

Currie, J. D. (*with* Bendor-Samuel, A.) Words without near-repetitions. *Canad. Math. Bull.* **35** (1992), *no.* 2, 161–166. (Do Long Van) **93h:03057** 03D05 (03D40, 20F10, 68R15)

— Connectivity of distance graphs. *Discrete Math.* **103** (1992), *no.* 1, 91–94. (Summary) **93c:05077** 05C40

Currò, Carmela (*with* Valenti, Giovanna) Group analysis and nonlinear wave propagation for the hypoelastic media. Memoirs of mathematical physics in honor of Giovanni Carini on his 70th birthday (Italian). *Atti Accad. Peloritana Pericolanti Cl. Sci. Fis. Mat. Natur.* **68** (1990), *suppl.* 1, 607–621 (1991). (G. A. Nariboli) **93d:58192** 58G35 (35L60, 58G37, 73D99)

— (*with* Donato, A.; Povzner, A. Ya.) Perturbation method for a generalized Burgers' equation. *Internat. J. Non-Linear Mech.* **27** (1992), *no.* 2, 149–155. (Summary) **93b:76030** 76D99 (35Q53)

souza de Cursi, José Eduardo *see* **Souza de Cursi, José Eduardo**

Curtain, Ruth F. (*with* Bontsema, Jan) Robust stabilization of a flexible beam model using a normalized coprime factorization approach. (English summary) *Control of uncertain systems* (*Bremen*, 1989), 1–17, *Progr. Systems Control Theory*, 6, *Birkhäuser Boston, Boston, MA*, 1990. (Xiao Liang He) **93m:93082** 93D15 (93C20, 93D21)

— Robust stabilization for infinite-dimensional linear systems using normalized coprime factorizations. *Robust control of linear systems and nonlinear control* (*Amsterdam*, 1989), 591–598, *Progr. Systems Control Theory*, 4, *Birkhäuser Boston, Boston, MA*, 1990. (Stuart Townley) **93a:93097** 93D21 (93B36, 93B51, 93D09)

— (*with* van Keulen, B. A. M.; Peters, Marc) H_∞-optimal control with state feedback for infinite-dimensional systems. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, I* (*Kobe*, 1991), 121–126, *Mita, Tokyo*, 1992. (*see* **93g:93005**) 93B36 (93C25)

— Finite-dimensional robust controller designs for distributed parameter systems: a survey. *Robust control* (*Tokyo*, 1991), 90–97, *Lecture Notes in Control and Inform. Sci.*, 183, *Springer, Berlin*, 1992. (*see* **93f:93006**) 93B51 (93C70)

— (*with* van Keulen, B. A. M.) Robust control with respect to coprime factors of infinite-dimensional positive real systems. *IEEE Trans. Automat. Control* **37** (1992), *no.* 6, 868–871. (K. Maciej Przyłuski) **93a:93098** 93D21 (93B35, 93C20, 93D09)

— Robust controllers for infinite-dimensional systems. (English summary) *Analysis and optimization of systems: state and frequency domain approaches for infinite-dimensional systems* (*Sophia-Antipolis*, 1992), 140–159, *Lecture Notes in Control and Inform. Sci.*, 185, *Springer, Berlin*, 1993. (Summary) **93m:93030** 93B35 (93C25)

— (*with* Bontsema, Jan; Kuiper, C. R.; Osinga, H. M.) Comparison of robustly stabilizing controllers for a flexible beam model with additive, multiplicative and stable factor perturbations. (English summary) *Analysis and optimization of systems: state and frequency domain approaches for infinite-dimensional systems* (*Sophia-Antipolis*, 1992), 388–400, *Lecture Notes in Control and Inform. Sci.*, 185, *Springer, Berlin*, 1993. (*see* **93i:93005**) 93D15 (73K05, 73K50, 93C20)

— (*with* van Keulen, B. A. M.; Peters, Marc) H_∞-control with state-feedback: the infinite-dimensional case. (English summary) *J. Math. Systems Estim. Control* **3** (1993), *no.* 1, 1–39. (L. Rodman) **93i:93045** 93B36 (93C25)

— The strict bounded real lemma in infinite dimensions. (English summary) *Systems Control Lett.* **20** (1993), *no.* 2, 113–116. (Michel Malabre) **93k:93037** 93B36 (47N70, 93C25, 93D15)

— *see also* **Analysis and optimization of systems: state and frequency domain approaches for infinite-dimensional systems, 93i:93005**

Curtis, Charles W. Representation theory of finite groups: from Frobenius to Brauer. *Math. Intelligencer* **14** (1992), *no.* 4, 48–57. (Peter M. Neumann) **93j:01003** 01A55 (01A60, 20–03)

Curtis, Frank (*with* Bresinsky, Henrik) On generating sets and Gröbner bases for polynomial ideals. *Comm. Algebra* **20** (1992), *no.* 8, 2271–2287. (Ralf Fröberg) **93h:13026** 13P10

Curtis, P. R. (*with* Connor, J. N. L.; Young, R. A. W.) Uniform asymptotics of oscillating integrals: applications in chemical physics. *Wave asymptotics* (*Manchester*, 1990), 24–42, *Cambridge Univ. Press, Cambridge*, 1992. (*see* **93b:76003**) 41A60 (58C27, 80A50)

Curtiss, C. F. Bound-state effects on the classical Boltzmann equation. *J. Chem. Phys.* **97** (1992), *no.* 2, 1420–1423. (Summary) **93c:82050** 82C40

Curto, Raúl E. (*with* Muhly, Paul S.; Yan, Ke Ren) The C^*-algebra of an homogeneous ideal in two variables is type I. (English summary) *Current topics in operator algebras* (*Nara*, 1990), 130–136, *World Sci. Publishing, River Edge, NJ*, 1991. (Summary) **93h:47055** 47D25 (46L99, 47B38)

— (*with* Putinar, Mihai) Existence of nonsubnormal polynomially hyponormal operators. *Bull. Amer. Math. Soc. (N.S.)* **25** (1991), *no.* 2, 373–378. (From the text) **93e:47028** 47B20

— (*with* Fialkow, Lawrence A.) Recursiveness, positivity, and truncated moment problems. *Houston J. Math.* **17** (1991), *no.* 4, 603–635. (Vladimir Derkach) **93a:47016** 47A57 (42A70, 47A60, 47B35)

— Spectral theory of elementary operators. (English summary) *Elementary operators and applications* (*Blaubeuren*, 1991), 3–52, *World Sci. Publishing, River Edge, NJ*, 1992. (F.-H. Vasilescu) **93i:47041** 47B47 (46L57, 47–02, 47A13, 47D99)

Curtright, Thomas Quantum Bäcklund transformations and conformal algebras. *Differential geometric methods in theoretical physics* (*Davis, CA*, 1988), 279–289, *NATO Adv. Sci. Inst. Ser. B Phys.*, 245, *Plenum, New York*, 1990. (Summary) **93c:81064** 81R10 (17B81, 58F37, 81R50, 81T10)

— *see also* **Quantum field theory, statistical mechanics, quantum groups and topology, 93m:81007**

Cury, F. Catégories lax-localement-cartésiennes et catégories localement cartésiennes: un exemple de suffisante complétude connexe de sémantiques initiales. [Lax-locally Cartesian and locally Cartesian categories: an example of sufficient connected completeness of initial semantics] *Diagrammes* **25** (1991), 155 *pp.* (Harvey Wolff) **93b:18003** 18A10 (68Q55)

Cushing, J. M. Some delay models for juvenile vs. adult competition. *Differential equations models in biology, epidemiology and ecology* (*Claremont, CA*, 1990), 177–188, *Lecture Notes in Biomath.*, 92, *Springer, Berlin*, 1991. (*see* **93g:92001**) 92D40 (92D20)

Cushing, James T. ★ Theory construction and selection in modern physics. The S matrix. *Cambridge University Press, Cambridge*, 1990. xviii+409 *pp. ISBN* 0-521-38181-9 (J. S. Joel) **93b:00005** 00A30 (01A60, 81–03)

Cushman, Richard H. (*with* Sjamaar, Reyer) On singular reduction of Hamiltonian spaces. *Symplectic geometry and mathematical physics* (*Aix-en-Provence*, 1990), 114–128, *Progr. Math.*, 99, *Birkhäuser Boston, Boston, MA*, 1991. (Eugene Lerman) **93e:58059** 58F05 (58A35)

— A survey of normalization techniques applied to perturbed Keplerian systems. *Dynamics reported: expositions in dynamical systems*, 54–112, *Dynam. Report.* (*N.S.*), 1, *Springer, Berlin*, 1992. (Gerard Thompson) **93b:58127** 58F36 (70F05, 70H05)

Cusick, T. W. The Diophantine equation $x^4 - kx^2y^2 + y^4 = 1$. *Arch. Math.* (*Basel*) **59** (1992), *no.* 4, 345–347. (W. R. Utz) **93f:11025** 11D25

— Zaremba's conjecture and sums of the divisor function. (English summary) *Math. Comp.* **61** (1993), *no.* 203, 171–176. (G. Ramharter) **93k:11063** 11J13 (11J25, 11J70)

Cutland, Nigel J. (*with* Capiński, Marek) Stochastic Navier-Stokes equations. *Acta Appl. Math.* **25** (1991), *no.* 1, 59–85. (Cun-Zheng Wang) **93b:35108** 35Q30 (03H05, 35R60, 60H15, 76D05, 76M35)

— (*with* Ng, Siu-Ah) On homogeneous chaos. *Math. Proc. Cambridge Philos. Soc.* **110** (1991), *no.* 2, 353–363. (Summary) **93a:60079** 60H05 (03H05)

— On large deviations in Hilbert space. *Proc. Edinburgh Math. Soc.* (2) **34** (1991), *no.* 3, 487–495. (Arcady Ponosov) **93g:60058** 60F10 (03H05, 28E05, 46G12, 60B11)

— Stochastic differentiation of a Brownian martingale. *Stochastics Stochastics Rep.* **36** (1991), *no.* 3-4, 217–223. (Summary) **93e:60102** 60H05

— (*with* Capiński, Marek) A simple example of intrinsic turbulence. *J. Differential Equations* **98** (1992), *no.* 1, 19–33. (From the introduction) **93h:34077** 34C99 (03H05, 03H10, 34A34)

— (*with* Capiński, Marek) A simple proof of existence of weak and statistical solutions of Navier-Stokes equations. (English summary) *Proc. Roy. Soc. London Ser. A* **436** (1992), *no.* 1896, 1–11. (Summary) **93h:35155** 35Q30 (03H05, 65N30, 76D05)

— (*with* Capiński, Marek) Navier-Stokes equations with multiplicative noise. (English summary) *Nonlinearity* **6** (1993), *no.* 1, 71–78. (Summary) **93j:35130** 35Q30 (03H05, 26E35, 28E05, 60H15, 76D05, 76M35)

Cutler, Colleen D. Measure disintegrations with respect to σ-stable monotone indices and the pointwise representation of packing dimension. (English summary) Measure theory (Oberwolfach, 1990). *Rend. Circ. Mat. Palermo* (2) *Suppl. No.* 28 (1992), 319–339. (Hermann Haase) **93h:28005** 28A50 (28D05)

Cutolo, Giovanni A note on central automorphisms of groups. (Italian summary) *Atti Accad. Naz. Lincei Cl. Sci. Fis. Mat. Natur. Rend. Lincei* (9) *Mat. Appl.* **3** (1992), *no.* 2, 103–106. (Summary) **93d:20063** 20E36

Cuvier, Christian Homologie de Leibniz et homologie de Hochschild. (English summary) [Leibniz and Hochschild homology theories] *C. R. Acad. Sci. Paris Sér. I Math.* **313** (1991), *no.* 9, 569–572. (Summary) **93f:17003** 17A30 (18G30)

Cuypers, Hans The dual of Pasch's axiom. *European J. Combin.* **13** (1992), *no.* 1, 15–31. (F. De Clerck) **93e:51008** 51E14 (51A20, 51A45)

— Two remarks on Huang's characterization of the bilinear forms graphs. *European J. Combin.* **13** (1992), *no.* 1, 33–37. (F. De Clerck) **93d:05158** 05E30 (05C75, 15A33, 51E20)

— (*with* Pasini, Antonio) Locally polar geometries with affine planes. *European J. Combin.* **13** (1992), *no.* 1, 39–57. (Norbert Knarr) **93d:51007** 51A50 (51E24)

Cuyt, Annie Padé approximation in one and more variables. *Approximation theory, spline functions and applications* (*Maratea*, 1991), 41–68, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 356, *Kluwer Acad. Publ., Dordrecht*, 1992. (Summary) **93a:41022** 41A21 (41A63)

— Rational Hermite interpolation in one and more variables. *Approximation theory, spline functions and applications* (*Maratea*, 1991), 69–103, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 356, *Kluwer Acad. Publ., Dordrecht*, 1992. (Summary) **93f:41003** 41A05 (41A20, 41A63)

— (*with* Allouche, H.) On the structure of a table of multivariate rational interpolants. *Constr. Approx.* **8** (1992), *no.* 1, 69–86. (D. J. Leeming) **93e:41046** 41A63 (41A20)

— Extension of: "A multivariate convergence theorem of the 'de Montessus de Ballore' type" to multipoles [J. Comput. Appl. Math. **32** (1990), no. 1-2, 47–57; MR 92b:65015]. (English summary) *J. Comput. Appl. Math.* **41** (1992), *no.* 3, 323–330. (A. Bultheel) **93h:65012** 65D05 (41A21)

— (*with* Ogawa, S.; Verdonk, B.) Model reduction of multidimensional linear shift-invariant recursive systems using Padé techniques. (English summary) *Multidimens. Systems Signal Process.* **3** (1992), *no.* 4, 309–322. (Summary) **93e:93009** 93B11 (93C05, 93C35)

Cuzick, Jack Efficient estimates in semiparametric additive regression models with unknown error distribution. *Ann. Statist.* **20** (1992), *no.* 2, 1129–1136. (Khursheed Alam) **93h:62073** 62G05 (62F35, 62J05)

Cvejić, Stana D. (*with* Dimitrovski, Dragan S.) A general method of variation of constants for a first-order differential equation, and the determination of a Lie group of continuous transformations associated with this problem. (Macedonian. French summary) *Makedon. Akad. Nauk. Umet. Oddel. Mat.-Tehn. Nauk. Prilozi* **9** (1988), *no.* 1-2, 5–16 (1990). (From the introduction) **93b:34006** 34A05

— (*with* Dimitrovski, Dragan S.) A general problem of variation of constants for a second-order ordinary differential equation. (Macedonian. French summary) *Mat. Bilten* **39** (1989), *no.* 13, 35–43 (1990). (Summary) **93b:34007** 34A05

Cvetič, Mirjam (*with* Griffies, Stephen; Rey, Soo-Jong) Static domain walls in $N = 1$ supergravity. (English summary) *Nuclear Phys. B* **381** (1992), *no.* 1-2, 301–328. (W. Cox) **93i:81269** 81T60 (83E30)

— (*with* Griffies, Stephen) Gravitational effects in supersymmetric domain wall backgrounds. *Phys. Lett. B* **285** (1992), *no.* 1-2, 27–34. 83E50 (83F05)

— (*with* Davis, Richard Lynn; Griffies, Stephen; Soleng, Harald H.) Cauchy horizons, thermodynamics, and closed timelike curves in planar supersymmetric spaces. (English summary) *Phys. Rev. Lett.* **70** (1993), *no.* 9, 1191–1194. (Summary) **93j:83061** 83C75 (83C15)

Cvetković, Dragoš (*with* Milosavljević, Milan; Dimitrijević, Vladimir) An algorithm for M asymmetric travelling salesman problem on a bandwidth-limited graph. *Yugosl. J. Oper. Res.* **1** (1991), *no.* 1, 15–25. (Olivia M. Carducci) **93b:90071** 90C27 (68R10, 90C10, 90C39)

Cvetković, Ljiljana (*with* Herceg, Dragoslav) On an iterative method for a system of equations. (Serbo-Croatian summary) *Zb. Rad. Prirod.-Mat. Fak. Ser. Mat.* **20** (1990), *no.* 1, 11–15. (S. Galanis) **93d:65036** 65F10

Cvijović, Djurdje (*with* Klinowski, Jacek) The T and CLP families of triply periodic minimal surfaces. I. Derivation of parametric equations. (English summary) *J. Physique I* **2** (1992), *no.* 2, 137–147. (Kichoon Yang) **93h:53007** 53A10 (33E05)

Cvitanić, Jakša (*with* Karatzas, Ioannis) Convex duality in constrained portfolio optimization. (English summary) *Ann. Appl. Probab.* **2** (1992), *no.* 4, 767–818. (Yu. M. Kabanov) **93j:90068** 90C15 (49N15, 60G57, 60H30, 90A09, 93E20)

Cvitanović, Predrag Periodic orbit theory in classical and quantum mechanics. *Chaos* **2** (1992), *no.* 1, 1–4. (Viviane Baladi) **93c:58166** 58F20 (58F19, 81Q50)

— (*with* Gaspard, Pierre; Schreiber, Thomas) Investigation of the Lorentz gas in terms of periodic orbits. *Chaos* **2** (1992), *no.* 1, 85–90. (Dieter H. Mayer) **93h:82024** 82B40 (58F20, 82B21, 82B80)

— *see also* **Chaos, order, and patterns, 93i:58003**

Ćwik, Jan (*with* Mielniczuk, Jan) Some topics in estimation of Neyman-Pearson and performance curves. *Stochastic methods in experimental sciences* (*Szklarska Poręba*, 1989), 114–129, *World Sci. Publishing, River Edge, NJ*, 1990. (Summary) **93b:62057** 62G05

Cwikel, Michael Real and complex interpolation and extrapolation of compact operators. *Duke Math. J.* **65** (1992), *no.* 2, 333–343. (Fernando Cobos) **93c:46136** 46M35 (47B07)

— (*with* Kerman, Ronald) Positive multilinear operators acting on weighted L^p spaces. *J. Funct. Anal.* **106** (1992), *no.* 1, 130–144. (Luboš Pick) **93f:47031** 47B38

— *see also* **Interpolation spaces and related topics, 93j:46001**

Cybenko, G. Correction: "Approximation by superpositions of a sigmoidal function" [Math. Control Signals Systems **2** (1989), no. 4, 303–314; MR 90m:41033]. *Math. Control Signals Systems* **5** (1992), *no.* 4, 455. (From the text) **93g:41012** 41A30 (92B20, 92C20, 92J30)

— (*with* Saarinen, S.; Bramley, R.) Ill-conditioning in neural network training problems. (English summary) *SIAM J. Sci. Comput.* **14** (1993), *no.* 3, 693–714. 92B20 (68T05)

buenos aires Cyclic Homology Group *see* **Buenos Aires Cyclic Homology Group**

Cycon, Hans L. (*with* Froese, Richard; Kirsch, Werner; Simon, Barry) ★ Операторы Шрёдингера с приложениями к квантовой механике и глобальной геометрии. (Russian. Russian summary) [Schrödinger operators with applications to quantum mechanics and global geometry] Translated from the English by A. V. Sobolev. Translation edited and with a preface by D. R. Yafaev. "*Mir*", *Moscow*, 1990. 408 *pp. ISBN* 5-03-001422-5 (Editors) **93k:35002** 35–02 (35J10, 47F05, 47N50, 58G40, 81Q10)

Cynk, Sławomir The Picard theorem for analytic and algebraic sets. (English summary) *Bull. Polish Acad. Sci. Math.* **38** (1990), *no.* 1-12, 189–192. (Z. Denkowska) **93h:32035** 32H25 (32B20)

— (*with* Tworzewski, Piotr) Diagonal series of rational functions. Proceedings of the Tenth Conference on Analytic Functions (Szczyrk, 1990). *Ann. Polon. Math.* **55** (1991), 57–63. (Z. Denkowska) **93c:32010** 32B20 (32A05)

— (*with* Rusek, Kamil) Injective endomorphisms of algebraic and analytic sets. *Ann. Polon. Math.* **56** (1991), *no.* 1, 29–35. (Robert Silhol) **93d:14025** 14E09 (32C05)

Cypher, Robert Theoretical aspects of VLSI pin limitations. *Advanced research in VLSI* (*Cambridge, MA*, 1990), 314–327, *MIT Press, Cambridge, MA*, 1990. (Summary) **93c:68024** 68Q10 (68Q35)

— A lower bound on the size of shellsort sorting networks. (English summary) *SIAM J. Comput.* **22** (1993), *no.* 1, 62–71. (Summary) **93m:68037** 68P10 (68Q25)

normand-Cyrot, D. *see* **Normand-Cyrot, D.**

Cyvin, B. N. (*with* Brunvoll, J.; Cyvin, Sven J.) All-benzenoid systems with trigonal symmetry. (English summary) *Match No.* 28 (1992), 45–60. 92E10

Cyvin, Sven J. (*with* Zhang, Fu Ji; Brunvoll, J.) Enumeration of perifusenes with one internal vertex: a complete mathematical solution. (English summary) *J. Math. Chem.* **11** (1992), *no.* 4, 283–292. (Summary) **93h:92040** 92E10 (05C30)

— (*with* Chen, Rong Si) The number of Kekulé structures for rectangle-shaped benzenoids. XI. (English and Chinese summaries) *J. Xinjiang Univ. Natur. Sci.* **9** (1992), *no.* 2, 1–5. 92E10

— (*with* Cyvin, B. N.; Brunvoll, J.) All-benzenoid systems with trigonal symmetry. (English summary) *Match No.* 28 (1992), 45–60. 92E10

Czachor, Marek On classical models of spin. *Found. Phys. Lett.* **5** (1992), *no.* 3, 249–264. (Jeffrey Bub) **93h:81006** 81P05 (81P10)

Czado, Claudia (*with* Santner, Thomas J.) Orthogonalizing parametric link transformation families in binary regression analysis. (French summary) *Canad. J. Statist.* **20** (1992), *no.* 1, 51–61. 62F10

Czapor, S. R. (*with* Coley, Alan A.) Plane symmetric spacetimes admitting inheriting conformal Killing vector fields. *Classical Quantum Gravity* **9** (1992), *no.* 7, 1787–1811. (Shin-ichi Kitamura) **93f:83018** 83C20 (83C15)

— (*with* McLenaghan, R. G.; Carminati, John) The automatic conversion of spinor equations to dyad form in MAPLE. (English summary) *Gen. Relativity Gravitation* **24** (1992), *no.* 9, 911–928. (Garry Ludwig) **93f:83001** 83–04 (83C60)

— (*with* Guimaraes, J. E. F.; Heppler, G. R.) On the derivation and reduction of C^1 trigonometic basis functions using Maple. (English summary) *J. Symbolic Comput.* **13** (1992), *no.* 6, 643–675. (Summary) **93d:65117** 65T10

Czarnowska, Joanna (*with* Kwiecińska, Grażyna) On the Darboux property of multivalued functions. *Demonstratio Math.* **25** (1992), *no.* 1-2, 193–199. (Gerald Beer) **93f:26016** 26E25 (26A21, 54C60)

Czech, Zbigniew J. (*with* Havas, George; Majewski, Bohdan S.) An optimal algorithm for generating minimal perfect hash functions. (English summary) *Inform. Process. Lett.* **43** (1992), *no.* 5, 257–264. 68P05 (05C80)

Czédli, Gábor A note on lattice Horn sentences with three variables. *Math. Balkanica (N.S.)* **4** (1990), *no.* 3, 209–210 (1991). (Jānis Cīrulis) **93d:06007** 06C05 (08C15)

— Notes on congruence implication. (English summary) *Arch. Math. (Brno)* **27B** (1991), 149–153. (Summary) **93h:08007** 08B05 (08B10)

— (*with* Chajda, Ivan) A note on representation of lattices by tolerances. *J. Algebra* **148** (1992), *no.* 1, 274–275. (From the text) **93c:06010** 06B15 (08A30)

Czelakowski, Janusz (*with* Dziobiak, Wiesław) A deduction theorem schema for deductive systems of propositional logics. Algebraic logic. *Studia Logica* **50** (1991), *no.* 3-4, 385–390. (Décio Krause) **93e:03012** 03B22 (03G25)

— (*with* Dziobiak, Wiesław) A single quasi-identity for a quasivariety with the Fraser-Horn property. *Algebra Universalis* **29** (1992), *no.* 1, 10–15. (Joel Berman) **93b:08007** 08C15 (08B05)

Czerniawski, Jan The heuristic role of philosophy in the discovery of the special theory of relativity. (Polish) *Kwart. Hist. Nauk Tech.* **36** (1991), *no.* 2, 39–50. 01A60 (83–03)

Czerwinski, Terry (*with* Oakden, David) The translation planes of order twenty-five. *J. Combin. Theory Ser. A* **59** (1992), *no.* 2, 193–217. (M. J. Kallaher) **93c:51009** 51E15

Czichowski, Günter Hausdorff und die Exponentialformel in der Lie-Theorie. [Hausdorff and the exponential formula in Lie theory] *Sem. Sophus Lie* **2** (1992), *no.* 1, 85–93. (K. Strambach) **93m:22007** 22E05 (01A55, 01A60, 17B65, 22–03)

Człapiński, Tomasz On the Cauchy problem for quasilinear hyperbolic differential-functional systems in the Schauder canonic form. *Discuss. Math.* **10** (1990), 47–68 (1991). (Jan Turo) **93a:35153** 35R10 (35A30, 35L45)

— On the Cauchy problem for quasilinear hyperbolic systems of partial differential-functional equations of the first order. *Z. Anal. Anwendungen* **10** (1991), *no.* 2, 169–182. (Florin Iacob) **93b:35082** 35L45 (35B30, 35D05, 35R10)

— Generalized solutions to boundary value problems for quasilinear hyperbolic systems of partial differential-functional equations. (English summary) *Ann. Polon. Math.* **57** (1992), *no.* 2, 177–191. (Hans Engler) **93j:35175** 35R10 (35D05, 35L50)

Czogała, Ernest (*with* Disney, Peter L.) Decision making in a probabilistic fuzzy environment. *Combining fuzzy imprecision with probabilistic uncertainty in decision making*, 215–226, *Lecture Notes in Econom. and Math. Systems*, 310, *Springer, Berlin*, 1988. (*see* **93c:90002**) 90C70 (04A72, 90A05)

— (*with* Buckley, James J.; Hayashi, Yoichi) On the equivalence of neural nets and fuzzy expert systems. (English summary) *Fuzzy Sets and Systems* **53** (1993), *no.* 2, 129–134. (Summary) **93m:68158** 68T35 (04A72, 92B20)

Czyżewska, Katarzyna Generalization of the Pythagorean theorem. *Demonstratio Math.* **24** (1991), *no.* 1-2, 305–310. (H. W. Guggenheimer) **93d:51034** 51M04 (46C99)

Czyzowicz, Jurek (*with* Rivera-Campo, Eduardo; Urrutia, Jorge) Illuminating rectangles and triangles in the plane. (English summary) *J. Combin. Theory Ser. B* **57** (1993), *no.* 1, 1–17. (Martin Henk) **93m:52010** 52A37 (52C99)

–D–

Da, D. (*with* Corless, Martin) Stability robustness of linear feedback controlled flexible mechanical systems. *Mechanics and control (Los Angeles, CA, 1991)*, 57–71, *Lecture Notes in Control and Inform. Sci.*, 170, *Springer, Berlin*, 1992. (Zong Ji Chen) **93b:93082** 93D09 (34D15, 70Q05, 73K50)

Da, Qing Li (*with* He, Jian Min) A conventional separation approach for system structural models. (Chinese. English and Chinese summaries) *J. Southeast Univ.* **22** (1992), *no.* 2, 22–27. 93A30

olde Daalhuis, A. B. *see* **Olde Daalhuis, A. B.**

Dabagyan, A. V. (*with* Rvachëv, V. L.) Relativistic analysis and its application to the solution of certain nonlinear problems. (Russian) *Dokl. Akad. Nauk* **326** (1992), *no.* 4, 637–641; *translation in Soviet Phys. Dokl.* **37** (1992), *no.* 10, 497–499 (1993). (H. H. McFaden) **93m:26047** 26E30 (03F65)

Dabbour, Abd El-Sattar A. (*with* Sayed, Nawal) Duality and extension of canonical homology of partitions. *Simon Stevin* **65** (1991), *no.* 3-4, 337–348. (Stanislava Petkova) **93f:55006** 55N05 (55N07, 55N20, 55N35)

— (*with* Abd El-Halim, Fayza; Sayed, Nawal) Canonical homology of partitions. *Kyungpook Math. J.* **32** (1992), *no.* 2, 247–256. (L. J. Hernández) **93m:55004** 55N05 (55N07)

Dabholkar, A. (*with* Banks, Thomas; Douglas, M. R.; O'Loughlin, M.) Are horned particles the end point of Hawking evaporation? *Phys. Rev. D* (3) **45** (1992), *no.* 10, 3607–3616. (Summary) **93b:83042** 83C57 (83C47)

Daboul, Jamil Increase of average energy by the process of measurement. *Europhys. Lett.* **18** (1992), *no.* 3, 189–194. (Summary) **93a:81023** 81P15

— (*with* Mizrahi, Salomon S.) Squeezed states, generalized Hermite polynomials and pseudo-diffusion equation. (English summary) *Phys. A* **189** (1992), *no.* 3-4, 635–650. (K. Wódkiewicz) **93k:81088** 81R30 (33C45)

Daboussi, H. On a convolution method. *Proceedings of the Congress on Number Theory (Spanish) (Zarauz, 1984)*, 110–137, *Univ. País Vasco-Euskal Herriko Unib., Bilbao*, 1989. (Jacek Fabrykowski) **93m:11007** 11A25 (11N37)

Dabrowski, André Robert (*with* McDonald, David) Statistical analysis of multiple ion channel data. (English summary) *Ann. Statist.* **20** (1992), *no.* 3, 1180–1202. (Sharaschandra R. Adke) **93m:62208** 62M99 (60K15, 60K20, 62P10)

— (*with* Burton, Robert M., Jr.) Positive dependence of exchangeable sequences. (English summary) *Canad. J. Math.* **44** (1992), *no.* 4, 774–783. (Yung L. Tong) **93g:60038** 60E15 (60K99)

Dąbrowski, H. (*with* Brzeziński, Tomasz; Rembieliński, Jakub) On the quantum differential calculus and the quantum holomorphicity. *J. Math. Phys.* **33** (1992), *no.* 1, 19–24. (Michael Ringe) **93c:58020** 58B30 (14A22, 17B37, 81R50)

Dąbrowski, Jacek Density estimation for stationary processes and for Markov processes. *Demonstratio Math.* **25** (1992), *no.* 1-2, 253–267. (Anatolii B. Juditsky) **93f:62048** 62G05 (62M05, 62M09)

Dąbrowski, Ludwik (*with* Balog, J.; Fehér, László) Nonstandard quantum group in Toda and WZNW theories. (English summary) *Nonperturbative methods in low-dimensional quantum field theories (Debrecen, 1990)*, 279–293, *World Sci. Publishing, River Edge, NJ*, 1991. (*see* **93f:81005**) 81T40 (17B37, 81R10)

— (*with* Wang, Lu Yu) Two-parameter quantum deformation of GL(1|1). *Phys. Lett. B* **266** (1991), *no.* 1-2, 51–54. (A. M. Gavrilik) **93e:17016** 17B37 (17A70, 81R50)

— *see also* **DeWitt-Morette, Cécile, 93a:22017**

Dąbrowski, Romuald Kloosterman sums for Chevalley groups. *Trans. Amer. Math. Soc.* **337** (1993), *no.* 2, 757–769. (Daniel Bump) **93h:11091** 11L05 (20G05)

Dackland, Krister (*with* Elmroth, Erik; Kågström, Bo; Van Loan, Charles) Design and evaluation of parallel block algorithms: *LU* factorization on an IBM 3090 VF/600J. (English summary) *Parallel processing for scientific computing (Houston, TX, 1991)*, 3–10, *SIAM, Philadelphia, PA*, 1992. (*see* **93g:65178**) 65Y05 (65F05)

Dacorogna, Bernard Convexity of certain integrals of the calculus of variations. II. *Ann. Univ. Ferrara Sez. VII (N.S.)* **36** (1990), 53–62 (1991). (M. A. Yagubov) **93b:49025** 49K05 (49J05)

— ★ Introduction au calcul des variations. (French) [Introduction to the calculus of variations] Cahiers Mathématiques de l'École Polytechnique Fédérale de Lausanne [Mathematical Papers of the École Polytechnique Fédérale de Lausanne], 3. *Presses Polytechniques et Universitaires Romandes, Lausanne*, 1992. xiv+215 *pp. ISBN* 2-88074-237-4 (T. Zolezzi) **93e:49001** 49–01 (46–01, 47–01)

— (*with* Fonseca, Irene) A minimization problem involving variation of the domain. *Comm. Pure Appl. Math.* **45** (1992), *no.* 7, 871–897. (Gianfranco Bottaro) **93i:49053** 49Q10 (49J10)

Da Costa, José Manuel N. *see* **da Costa, José Manuel N.**

Da Costa, Newton C. A. *see* **da Costa, Newton C. A.**

Da Costa Leite, Manuel *see* **da Costa Leite, Manuel**

bui Dac Tac *see* **Bui Dac Tac**

D'Acunto, Berardino A hyperbolic-parabolic singular perturbation problem with moving boundary. (English summary) *Waves and stability in continuous media (Sorrento, 1989)*, 87–93, *Ser. Adv. Math. Appl. Sci.*, 4, *World Sci. Publishing, River Edge, NJ*, 1991. (*see* **93g:00030**) 35B25 (35K10, 35L10)

Dădărlat, Marius (*with* Blackadar, Bruce; Rørdam, Mikael) The real rank of inductive limit C^*-algebras. *Math. Scand.* **69** (1991), *no.* 2, 211–216 (1992). (Ronghui Ji) **93e:46067** 46L05 (46M40)

— (*with* Nagy, Gabriel; Némethi, András; Pasnicu, Cornel) Reduction of topological stable rank in inductive limits of C^*-algebras. *Pacific J. Math.* **153** (1992), *no.* 2, 267–276. (Gustavo Corach) **93d:46119** 46L80 (19B10, 19K99)

D'Adda, A. New methods of integration in matrix models. (English summary) *Classical Quantum Gravity* **9** (1992), *no.* 8, L77–L82. (Claude Itzykson) **93g:81142** 81T40 (58C35)

— (*with* Caselle, M.; Panzeri, S.) Exact solution of $D = 1$ Kazakov-Migdal induced gauge theory. (English summary) *Phys. Lett. B* **293** (1992), *no.* 1-2, 161–167. (Summary) **93i:81173** 81T25

Dade, Everett C. Counting characters in blocks. I. *Invent. Math.* **109** (1992), *no.* 1, 187–210. (Jorn B. Olsson) **93g:20021** 20C20

Dadebo, Solomon (*with* Luus, Rein) Optimal control of time-delay systems by dynamic programming. (English summary) *Optimal Control Appl. Methods* **13** (1992), *no.* 1, 29–41. 49K25 (49M25)

Dadiomov, V. M. Singular cases of a conjugation problem with derivatives in the sense of L. Bers for generalized analytic functions. (Russian. Kazakh summary) *Izv. Akad. Nauk Kazakh. SSR Ser. Fiz.-Mat.* **1990**, *no.* 5, 11–14. (Wazir Hasan Abdi) **93b:30043** 30G20

— Two boundary value problems for elliptic equations in the plane when the Lopatinskiĭ condition is violated. (Russian) *Sibirsk. Mat. Zh.* **33** (1992), *no.* 2, 66–72, 220; *translation in Siberian Math. J.* **33** (1992), *no.* 2, 233–238. (Summary) **93d:35039** 35J40

Dadok, Jiri (*with* Harvey, Reese) Calibrations and spinors. *Acta Math.* **170** (1993), *no.* 1, 83–120. (Timothy Murdoch) **93m:53053** 53C40 (53A50)

Dæhlen, Morten Modeling with box spline surfaces. *Curve and surface design (Tempe, AZ, 1989)*, 191–205, *Geom. Des. Publ., SIAM, Philadelphia, PA*, 1992. (*see* **93g:65027**) 65D17 (65D07)

— (*with* Lyche, Tom) Decomposition of splines. *Mathematical methods in computer aided geometric design, II (Biri, 1991)*, 135–160, *Academic Press, Boston, MA*, 1992. (Summary) **93e:65019** 65D07 (65D17)

— (*with* Arge, Erlend; Tveito, Aslak) Box spline interpolation; a computational study. (English summary) *J. Comput. Appl. Math.* **44** (1992), *no.* 3, 303–329. (Matthias Eck) **93m:65013** 65D07

— (*with* Arge, Erlend) Grid point interpolation on finite regions using C^1 box splines. *SIAM J. Numer. Anal.* **29** (1992), *no.* 4, 1136–1153. (Peter Alfeld) **93g:41001** 41A05 (41A15, 65D07)

van Daele, A. *see* **Van Daele, A.**

van Daele, M. *see* **Van Daele, M.**

randjbar-Daemi, S. *see* **Randjbar-Daemi, S.**

Dafalias, Y. F. (*with* Loret, Benjamin; Hammoum, F.) A note on the accuracy of stress-point algorithms for anisotropic elastic-plastic solids. (English summary) *Comput. Methods Appl. Mech. Engrg.* **98** (1992), *no.* 3, 399–409. (Summary) **93c:73094** 73V05 (73E05)

— (*with* Loret, Benjamin; Hammoum, F.) Computational aspects of large elastoplastic deformations in the presence of anisotropy and plastic spin. (English summary) *Comput. Methods Appl. Mech. Engrg.* **105** (1993), *no.* 2, 151–180. 73G20 (73V20)

Dafermos, S. C. (*with* McKelvey, S. C.) Partitionable variational inequalities with applications to network and economic equilibria. *J. Optim. Theory Appl.* **73** (1992), *no.* 2, 243–268. (Summary) **93d:49010** 49J40 (90A14)

Daffer, Peter Z. Convergence and weighted sums of random functions in $D[0, 1]$. *J. Multivariate Anal.* **38** (1991), *no.* 2, 319–332. (V. K. Rohatgi) **93b:60011** 60B10 (60B12)

— (*with* Kaneko, Hideaki) On expansive mappings. (English summary) *Math. Japon.* **37** (1992), *no.* 4, 733–735. (Summary) **93f:54042** 54E40 (54H25)

Daftardar, Varsha (*with* Giannopoulos, Abraham) Evaluation of the Ashtekar variables for any given metric using the algebraic computing system STENSOR. *Classical Quantum Gravity* **9** (1992), *no.* 7, 1813–1821. (Summary) **93d:83002** 83–04 (83C99)

Dagach, Luis A. (*with* Dagach, Sergio L.) The foundation of a theory of moving bodies in a locally nonrelativistic Riemannian space. (English summary) *Hadronic J. Suppl.* **7** (1992), *no.* 2, 117–131. (D. K. Sen) **93m:83068** 83D05 (70G99, 70H40)

Dagach, Sergio L. (*with* Dagach, Luis A.) The foundation of a theory of moving bodies in a locally nonrelativistic Riemannian space. (English summary) *Hadronic J. Suppl.* **7** (1992), *no.* 2, 117–131. (D. K. Sen) **93m:83068** 83D05 (70G99, 70H40)

Dagan, Gedeon Dispersion of a passive solute in nonergodic transport by steady velocity fields in heterogeneous formations. *J. Fluid Mech.* **233** (1991), 197–210. (Yanis C. Yortsos) **93a:76094** 76R50 (76S05)

Dagenais, Marcel G. (*with* Dufour, Jean-Marie) Nonlinear models, rescaling and test invariance. (English summary) *J. Statist. Plann. Inference* **32** (1992), *no.* 1, 111–135. (Stavros Kourouklis) **93m:62045** 62F03

Daglish, George The essential mathematics of remote sensing. (English summary) *J. Natur. Geom.* **2** (1992), *no.* 2, 129–135. (From the text) **93f:86007** 86A99 (62P99, 65F20)

D'Agnolo, Andrea Inverse image for the functor μ hom. *Publ. Res. Inst. Math. Sci.* **27** (1991), *no.* 3, 509–532. (Emmanuel Andronikof) **93e:58173** 58G07 (18F20, 32C38)

— (*with* Zampieri, Giuseppe) Vanishing theorem for sheaves of microfunctions at the boundary on CR-manifolds. (English summary) *Comm. Partial Differential Equations* **17** (1992), *no.* 5-6, 989–999. (Emmanuel Andronikof) **93i:58144** 58G07 (32C16, 32C35)

— (*with* Zampieri, Giuseppe) Continuation of holomorphic solutions of microhyperbolic differential equations. (English and Italian summaries) *Rend. Mat. Appl.* (7) **12** (1992), *no.* 1, 143–156. (P. Schapira) **93i:58143** 58G07 (32D15, 35A27, 35S99)

D'Agostino, Salvo The birth of theoretical physics: from Maxwell to Boltzmann. (Italian. English summary) *Rend. Accad. Naz. Sci. XL Mem. Sci. Fis. Natur.* (5) **14** (1990), *no.* 2, *part II*, 343–357 (1992). (Thomas Archibald) **93c:01018** 01A55 (00A79)

Dagotto, Andrés D. (*with* Gleiser, Reinaldo J.; Nicasio, Carlos O.) Time shifts and nonlinear interference in cylindrically symmetric Einstein-Maxwell solitons. (English summary) *Classical Quantum Gravity* **9** (1992), *no.* 11, 2449–2460. (Birgitta Alertz) **93m:83017** 83C22

Dagum, Paul (*with* Chung, Fan R. K.; Cleve, Richard) A note on constructive lower bounds for the Ramsey numbers $R(3, t)$. (English summary) *J. Combin. Theory Ser. B* **57** (1993), *no.* 1, 150–155. (Summary) **93m:05135** 05C55

Dahan-Dalmédico, Amy L'intégration des équations aux dérivées partielles linéaires à coefficients constants dans les travaux de Cauchy (1821–1830). (English and French summaries) [Integration of constant coefficient linear partial differential equations in the work of Cauchy (1821–1830)] Études sur Cauchy (1789–1857). *Rev. Histoire Sci.* **45** (1992), *no.* 1, 83–114. (Summary) **93h:01021** 01A55 (35–03)

Daher, Mohamed Convergence des martingales pluri-sous-harmoniques vectorielles à deux indices. (English and French summaries) [Convergence of two-parameter plurisubharmonic vector martingales] *Ann. Fac. Sci. Toulouse Math.* (6) **1** (1992), *no.* 1, 25–38. (Summary) **93j:60060** 60G48 (60B99)

Dahhou, B. (*with* Zeng, F. Y.; Nihtilä, M. T.) Adaptive control of a nonlinear fermentation process via MRAC technique. (English summary) *Appl. Math. Modelling* **17** (1993), *no.* 2, 58–69. 93C40 (92C45)

Dahiya, R. S. (*with* Akinyele, Olusola) Asymptotic and oscillatory behavior of solutions of differential equations with advanced arguments. (English summary) *Arch. Math. (Brno)* **26** (1990), *no.* 1, 55–63. (I. Kiguradze) **93i:34125** 34K15 (34K25)

Dahiya, Ram C. (*with* McKeon, James J.) Modified classical and inverse regression estimators in calibration. (English summary) *Sankhyā Ser. B* **53** (1991), *no.* 1, 48–55. (Summary) **93f:62090** 62J05

Dahl, Olav (*with* Johansen, Thormod; Tveito, Aslak; Winther, Ragnar) Multicomponent chromatography in a two phase environment. *SIAM J. Appl. Math.* **52** (1992), *no.* 1, 65–104. (Alberto Valli) **93c:35098** 35L65 (76S05, 76T05)

Dahlberg, Björn E. J. (*with* Andersson, Roger K.-E.) Interactive techniques for visual design. *Topics in surface modeling*, 95–113, *Geom. Des. Publ., SIAM, Philadelphia, PA*, 1992. (*see* **93c:65026**) 65D17

— (*with* Kenig, Carlos E.) Weak solutions of the porous medium equation in a cylinder. *Trans. Amer. Math. Soc.* **336** (1993), *no.* 2, 701–709. (Nicolae H. Pavel) **93g:35019** 35D05 (35K55, 76S05)

— (*with* Kenig, Carlos E.) Weak solutions of the porous medium equation. *Trans. Amer. Math. Soc.* **336** (1993), *no.* 2, 711–725. (Nicolae H. Pavel) **93g:35018** 35D05 (35K55, 76S05)

Dahlburg, R. B. (*with* Picone, J. M.) Pseudospectral simulation of compressible magneto-hydrodynamic turbulence. (English summary) *Spectral and high order methods for partial differential equations (Como, 1989)*, 409–416, *North-Holland, Amsterdam*, 1990. (*see* **93d:65005**) 65M70 (76F99, 76M25, 76N10, 76W05)

Dahleh, M. *see* **Dahleh, Mohammed A.**

Dahleh, M. A. *see* **Dahleh, Munther A.**

Dahleh, Marie Dillon Exterior flow of the Kida ellipse. (English summary) *Phys. Fluids A* **4** (1992), *no.* 9, 1979–1985. (Summary) **93f:76019** 76C05

— Fast numerical method for the solution of the quasigeostrophic vorticity equation. (English summary) *Numer. Methods Partial Differential Equations* **9** (1993), *no.* 2, 135–154. 65M99 (76C05, 76M25, 86–08)

Dahleh, Mohammed A. (*with* Chapellat, Hervé; Bhattacharyya, Shankar Prashad) Structure and optimality of multivariable periodic controllers. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, I (Kobe, 1991)*, 159–164, *Mita, Tokyo*, 1992. (*see* **93g:93005**) 49N20 (93B52)

— (*with* Khammash, Mustafa H.) Time-varying control and the robust performance of systems with structured norm-bounded perturbations. *Automatica J. IFAC* **28** (1992), *no.* 4, 819–821. 93B35 (93C73)

— (*with* Chapellat, Hervé) Analysis of time-varying control strategies for optimal disturbance rejection and robustness. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 11, 1734–1745. (Roberto Tempo) **93j:93075** 93C25 (93B36, 93B52, 93C50, 93D09)

— (*with* Tesi, Alberto; Vicino, Antonio) Robust stability and performance of interval plants. (English summary) *Systems Control Lett.* **19** (1992), *no.* 5, 353–363. (Kazuhiko Terashima) **93k:93080** 93D09

— (*with* Warren, Warren S.; Rabitz, Herschel) Coherent control of quantum dynamics: the dream is alive. (English summary) *Science* **259** (1993), *no.* 5101, 1581–1589. (Summary) **93j:93094** 93C95

Dahleh, Munther A. (*with* Tse, D. N. C.; Tsitsiklis, John N.) Optimal asymptotic worst-case identification with applications on l_1 and gap metrics. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, I (Kobe, 1991)*, 325–330, *Mita, Tokyo*, 1992. (*see* **93g:93005**) 93B30 (93B36)

— (*with* Bamieh, Bassam A.; Pearson, J. Boyd, Jr.) Rejection of persistent, bounded disturbances for sampled-data systems. (English summary) *Robust control (Tokyo, 1991)*, 32–39, *Lecture Notes in Control and Inform. Sci.*, 183, *Springer, Berlin*, 1992. (*see* **93f:93006**) 93C57 (93B36)

— (*with* Ohta, Yoshito) L^1 sensitivity minimization for plants with commensurate delays. *Math. Control Signals Systems* **5** (1992), *no.* 3, 281–293. (Mikołaj Busłowicz) **93d:93027** 93B35 (34K35, 93C30, 93D15)

— (*with* Shamma, Jeff S.) Rejection of persistent bounded disturbances: nonlinear controllers. *Systems Control Lett.* **18** (1992), *no.* 4, 245–252. (Jacob Kogan) **93g:93047** 93C10 (93B36, 93B52, 93D15)

— (*with* Diaz-Bobillo, Ignacio J.) State feedback l_1-optimal controllers can be dynamic. (English summary) *Systems Control Lett.* **19** (1992), *no.* 2, 87–93. 93C55 (93B36)

— (*with* Khammash, Mustafa H.) Controller design for plants with structured uncertainty. (English summary) *Automatica J. IFAC* **29** (1993), *no.* 1, 37–56. (Arno Linnemann) **93j:93040** 93B35 (90C05, 93B28, 93B50, 93C05)

— (*with* Theodosopoulos, Theodore V.; Tsitsiklis, John N.) The sample complexity of worst-case identification of FIR linear systems. (English summary) *Systems Control Lett.* **20** (1993), *no.* 3, 157–166. (Summary) **93k:93114** 93E12 (93C80)

Dahlen, F. A. (*with* Tromp, Jeroen) The Berry phase of a slowly varying waveguide. *Proc. Roy. Soc. London Ser. A* **437** (1992), *no.* 1900, 329–342. (Summary) **93b:78009** 78A50 (81Q99)

Dahlhaus, Elias (*with* Makowsky, J. A.) Query languages for hierarchic databases. (English summary) *Inform. and Comput.* **101** (1992), *no.* 1, 1–32. (Summary) **93h:68037** 68P20 (68P15)

— (*with* Karpiński, Marek; Kelsen, Pierre) An efficient parallel algorithm for computing a maximal independent set in a hypergraph of dimension 3. (English summary) *Inform. Process. Lett.* **42** (1992), *no.* 6, 309–313. (Summary) **93e:68097** 68R10 (68Q22)

— (*with* Karpiński, Marek) Perfect matching for regular graphs is AC^0-hard for the general matching problem. *J. Comput. System Sci.* **44** (1992), *no.* 1, 94–102. (Italo José Dejter) **93g:05113** 05C70 (68Q15, 68R10)

Dahlqvist, Per (*with* Russberg, Gunnar) Periodic orbit quantization of bound chaotic systems. *J. Phys. A* **24** (1991), *no.* 20, 4763–4778. (Nicolaï T. A. Haydn) **93a:81047** 81Q50 (58F20)

— Influence of intermittency on quantum spectra. (English summary) *J. Phys. A* **25** (1992), *no.* 23, 6265–6282. (Viviane Baladi) **93i:81039** 81Q50 (58F20)

Dahmen, H. D. (*with* Brandt, Siegmund) ★ Quantum mechanics on the personal computer. Second edition. With 1 IBM-PC floppy disk (3.5 inch; DD). *Springer-Verlag, Berlin*, 1992. xii+267 *pp. ISBN* 3-540-55722-9 (Editors) **93k:81002** 81–01 (81–04)

— (*with* Marculescu, S.; Szymanowski, Lech) Currents and anomalies in topological Yang-Mills theory. (English summary) *Nuclear Phys. B* **383** (1992), *no.* 1-2, 110–150. (Matthias Blau) **93i:81134** 81T13 (58D29, 81T40, 81T50)

Dahmen, Wolfgang (*with* Carnicer, Jésus Miguel) Convexity preserving interpolation and Powell-Sabin elements. (English summary) *Comput. Aided Geom. Design* **9** (1992), *no.* 4, 279–289. (Summary) **93g:65016** 65D05

— (*with* Micchelli, Charles A.; Seidel, Hans-Peter) Blossoming begets B-spline bases built better by B-patches. *Math. Comp.* **59** (1992), *no.* 199, 97–115. (K. G. Ivanov) **93b:41014** 41A15 (41A63, 65D07)

— (*with* Kunoth, Angela) Multilevel preconditioning. (English summary) *Numer. Math.* **63** (1992), *no.* 3, 315–344. (Guo Liang Chen) **93j:65065** 65F35 (41A17, 41A63, 65N30)

Dai, An Shun Generalized Menger spaces and families of generalized pseudometrics. (Chinese. English summary) *Nanjing Daxue Xuebao Shuxue Bannian Kan* **9** (1992), *no.* 2, 191–198. 54E70

Dai, C. (*with* Meek, J. L.) The integration of the Melan solution over a line segment—implementation for boundary element modelling of surface excavations. (English summary) *Internat. J. Numer. Anal. Methods Geomech.* **16** (1992), *no.* 9, 655–667. 73V10 (73C02)

Dai, Chong Ji (*with* Drasin, David; Li, Bao Qin) Correction to: "On the growth of entire and meromorphic functions of infinite order" [J. Analyse Math. **55** (1990), 217–228; MR 92a:30031]. *J. Anal. Math.* **57** (1991), 299. (Editors) **93k:30043** 30D35

Dai, Dao Qing On the Riemann-Hilbert boundary value problem for nonlinear elliptic equations in the plane. *Partial differential equations with complex analysis*, 150–155, *Pitman Res. Notes Math. Ser.*, 262, *Longman Sci. Tech., Harlow*, 1992. (Heinrich Begehr) **93k:35098** 35J65 (30E25, 35Q15)

— (*with* Lin, Wei[1]) The Riemann-Hilbert boundary value problems associated with linear and semilinear pseudoparabolic systems of two space variables. (English summary) *Partial differential equations with complex analysis*, 165–177, *Pitman Res. Notes Math. Ser.*, 262, *Longman Sci. Tech., Harlow*, 1992. (Summary) **93j:35103** 35K70 (30G35, 35Q15, 35S05)

— (*with* Begehr, Heinrich) Initial-boundary value problem for nonlinear pseudoparabolic equations. *Complex Variables Theory Appl.* **18** (1992), *no.* 1-2, 33–47. (Erwin Schechter) **93b:35024** 35E15 (30E25, 35G25, 35K70)

— (*with* Lin, Wei[1]) Piecewise continuous solutions of nonlinear pseudoparabolic equations in two space dimensions. (English summary) *Proc. Roy. Soc. Edinburgh Sect. A* **121** (1992), *no.* 3-4, 203–217. (Erwin Schechter) **93g:35082** 35K70

Dai, De Pei (*with* Chen, Hua Ling) Using the theory of Volterra series to analyze the transfer functions of a hysteresis nonlinear system. (Chinese. English and Chinese summaries) *Xi'an Jiaotong Daxue Xuebao* **26** (1992), *suppl.*, 143–146, 166. 93C10 (93B25)

Dai, Guan Zhong (*with* Zhang, Jian Hua[2]) Smooth algorithms for discrete-time systems in distributed networks. (Chinese. English and Chinese summaries) *Control Theory Appl.* **9** (1992), *no.* 3, 250–255. 93E14

— (*with* Qin, Chao Ying) State estimation of generalized discrete stochastic linear systems. (Chinese. English and Chinese summaries) *Inform. and Control* (*Shenyang*) **21** (1992), *no.* 5, 261–265, 277. 93E10 (93C55)

— (*with* Zhang, Jian Hua[2]) Decentralized smoothing algorithms of continuous-time systems in distributed-sensor networks. (English summary) *Internat. J. Systems Sci.* **23** (1992), *no.* 7, 1237–1243. 93E14 (93E35)

— (*with* Zhang, You Min; Zhang, Hong Cai) A survey of implementations of parallel Kalman filtering and its systolic arrays. (Chinese. English and Chinese summaries) *Control Theory Appl.* **10** (1993), *no.* 1, 3–12. 93–02 (93E11)

Dai, H.-H. On the general asymptotic expansions of K_ν-transforms. *Appl. Anal.* **46** (1992), *no.* 3-4, 157–174. (Ekkehard Krätzel) **93e:41042** 41A60 (44A15)

— (*with* Naylor, Derek) On an asymptotic expansion of Fourier integrals. (English summary) *Proc. Roy. Soc. London Ser. A* **436** (1992), *no.* 1896, 109–120. (Gilbert Walter) **93h:42007** 42A38 (41A60)

Dai, Hua An inverse problem for generalized eigenvalues of real symmetric matrices. (Chinese. English summary) *Gaoxiao Yingyong Shuxue Xuebao* **7** (1992), *no.* 2, 167–176. 15A18 (15A09)

Dai, J. G. (*with* Wang, Y.) Nonexistence of Brownian models for certain multiclass queueing networks. (English summary) *Queueing Systems Theory Appl.* **13** (1993), *no.* 1-3, 41–46. 60K25 (90B22)

Dai, Ji Qiong (*with* Dai, Xian Xi) On unique existence theorem and exact solution formula of the inverse black-body radiation problem. *IEEE Trans. Antennas and Propagation* **40** (1992), *no.* 3, 257–260. (Summary) **93a:78014** 78A40

Dai, Jian She (*with* Fei, Qi) An information selection model for the design of optimal distributed decision support systems. (Chinese. Chinese summary) *Inform. and Control* (*Shenyang*) **21** (1992), *no.* 6, 378–382. 90C90

Dai, Long Xiang Weighted inequalities for a class of singular integral operators. (Chinese. English summary) *Adv. in Math.* (*China*) **20** (1991), *no.* 3, 348–357. (Summary) **93m:42006** 42B20 (47G10)

— An extrapolation theorem and its application. (Chinese. Chinese summary) *Chinese Ann. Math. Ser. A* **13** (1992), *no.* 2, 204–210. (Weiyi Su) **93i:42011** 42B20

Dai, Wei Zhong An unconditionally stable three-level explicit difference scheme for the Schrödinger equation with a variable coefficient. *SIAM J. Numer. Anal.* **29** (1992), *no.* 1, 174–181. (P. Rochus) **93a:65112** 65M06 (65M12, 81–08, 81Q05)

Dai, Xian Xi (*with* Dai, Ji Qiong) On unique existence theorem and exact solution formula of the inverse black-body radiation problem. *IEEE Trans. Antennas and Propagation* **40** (1992), *no.* 3, 257–260. (Summary) **93a:78014** 78A40

Dai, Xian Xin (*with* Zhao, Zheng) The event horizon and temperature of an evaporating black hole with spherically symmetric charge. (Chinese. English and Chinese summaries) *Acta Phys. Sinica* **41** (1992), *no.* 6, 869–872. 83C57 (83C47)

— (*with* Zhao, Zheng) A new method dealing with Hawking effects of evaporating black holes. *Modern Phys. Lett. A* **7** (1992), *no.* 20, 1771–1778. (Michael B. Mensky) **93f:83065** 83C57 (81T20, 83C47)

Dai, Xin Sheng (*with* Ballico, Edoardo; Piene, Ragni) A characterization of balanced rational normal surface scrolls in terms of their osculating spaces. II. *Math. Scand.* **70** (1992), *no.* 2, 204–206. (Ming Wei Xu) **93j:14068** 14N10 (14J26)

Dai, Xu *see* **Luo, Jian Jin**, **(93i:01004)**

Dai, Yang (*with* Sekitani, K.; Yamamoto, Yoshitsugu) A variable dimension algorithm with the Dantzig-Wolfe decomposition for structured stationary point problems. *Z. Oper. Res.* **36** (1992), *no.* 1, 23–53. (Summary) **93a:90060** 90C30 (49J40, 65K05)

Dai, Yong Long The maximal value problem for p-functions. (Chinese. English and Chinese summaries) *Chinese J. Appl. Probab. Statist.* **7** (1991), *no.* 3, 311–322. 60J27 (60K05)

— The maximal oscillation problem for p-functions. (Chinese. English and Chinese summaries) *Chinese J. Appl. Probab. Statist.* **7** (1991), *no.* 4, 415–424. (Summary) **93k:60181** 60J25 (60K05)

Dai, Yue Jin Some commutativity theorems for Köthe semisimple rings. (Chinese. English and Chinese summaries) *J. Math.* (*Wuhan*) **11** (1991), *no.* 3, 331–334. (Summary) **93j:16023** 16U80

Dai, Zheng De (*with* Yang, Gan Shan) Upper semicontinuity and Kakutani's fixed-point theorem. (Chinese. English and Chinese summaries) *J. Math. Res. Exposition* **13** (1993), *no.* 2, 249–252. 54H25 (54C08)

Dai, Zong Duo (*with* Huang, Min Qiang) A criterion for primitiveness of polynomials over $\mathbf{Z}/(2^d)$. *Chinese Sci. Bull.* **36** (1991), *no.* 11, 892–895. (N. L. Manev) **93d:11126** 11T06

— (*with* Huang, Min Qiang) Linear complexity and the minimal polynomial of linear recurring sequences over $\mathbf{Z}/(m)$. (English summary) *Systems Sci. Math. Sci.* **4** (1991), *no.* 1, 51–54. (Summary) **93g:11018** 11B50 (94A60)

— (*with* Huang, Min Qiang) Projective maps of linear recurring sequences with maximal p-adic periods. *Fibonacci Quart.* **30** (1992), *no.* 2, 139–143. (Rudolf Lidl) **93b:11012** 11B37 (11B83)

— Binary sequences derived from ML-sequences over rings. I. Periods and minimal polynomials. (English summary) *J. Cryptology* **5** (1992), *no.* 3, 193–207. (Summary) **93g:68030** 68P25 (68Q40)

— (*with* Yang, Jun Hui; Zeng, Ken Cheng) A cryptographic study on S-boxes of DES type. III. (English summary) *Systems Sci. Math. Sci.* **5** (1992), *no.* 1, 27–32. (Summary) **93g:94011** 94A60 (68P25)

Dai, Zuo (*with* Fang, Yun; Zhou, Ji[1]; Wang, Jian Hua[4]; Cha, Jian Zhong) The discrete recursive quadratic programming with artificial intelligence strategy. (English summary) *Optimization, Vol.* 1, 2 (*Singapore*, 1992), 159–166, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93d:90005**) 90C20

Daicic, J. (*with* Frankel, Norman E.) Relativistic spin-1 bosons in a magnetic field. (English summary) *J. Phys. A* **26** (1993), *no.* 6, 1397–1408. 81V10

Daigle, D. Plane Frobenius sandwiches of degree p. *Proc. Amer. Math. Soc.* **117** (1993), *no.* 4, 885–889. (Liam O'Carroll) **93e:13006** 13A35 (13F20, 14L30)

Daigle, Gaétan (*with* Rivest, Louis-Paul) A robust biplot. (English and French summaries) *Canad. J. Statist.* **20** (1992), *no.* 3, 241–255. (Summary) **93g:62005** 62–07 (62F35)

Daigle, John N. (*with* Magalhães, Marcos N.) Transient behavior of $M/M^{[i]}/1$ queues. *Queueing Systems Theory Appl.* **8** (1991), *no.* 4, 357–377. (Summary) **93b:60209** 60K25 (90B22)

— (*with* Tang, Stanley C.) The queue length distribution for multiserver discrete time queues with batch Markovian arrivals. (English summary) *Comm. Statist. Stochastic Models* **8** (1992), *no.* 4, 665–683. (Summary) **93i:60168** 60K25

Daili, Noureddine ★ Contributions à l'étude des densités. (French. French summary) [Contributions to the study of densities] Dissertation, Université Louis Pasteur, Strasbourg, 1991. Publication de l'Institut de Recherche Mathématique Avancée [Publication of the Institute of Advanced Mathematical Research], 443. *Université Louis Pasteur, Département de Mathématique, Institut de Recherche Mathématique Avancée, Strasbourg*, 199?. viii+176 *pp.* (Jean-Loup Mauclaire) **93h:11013** 11B05 (11K55, 60A99)

Dailly, C. (*with* Smith, P. R.) Optimal filtering and Kalman filtering using MATLAB. *Control '91, Vol.* 1, 2 (*Edinburgh*, 1991), 734–737, *IEE Conf. Publ. Ser.*, 332, *IEE, London*, 1991. (*see* **93h:93007**) 93B40 (93E11)

Daily, John (*with* Cater, F. S.) Covering metric spaces with closed sets. *Rocky Mountain J. Math.* **22** (1992), *no.* 1, 109–115. (Philip L. Bowers) **93f:54041** 54E35 (46B99, 54D05, 54E50)

Daĭnyak, V. V. (*with* Korzyuk, V. I.) On a weak solution of a Dirichlet-type problem for a third-order linear differential equation. (Russian. Russian summary) *Differentsial'nye Uravneniya* **28** (1992), *no.* 6, 1056–1066, 1103; *translation in Differential Equations* **28** (1992), *no.* 6, 857–867. (Summary) **93j:35047** 35G05 (35D05)

Dal Pra, P. Space-time large deviations for interacting particle systems. (English summary) *Comm. Pure Appl. Math.* **46** (1993), *no.* 3, 387–422. (Christian Maes) **93k:60233** 60K35 (60F10, 60J25)

Dairbekov, N. S. (*with* Aleksandrov, V. A.) Remarks on the theorem of M. and S. Rădulescu about an initial value problem for the differential equation $x^{(n)} = f(t, x)$. *Rev. Roumaine Math. Pures Appl.* **37** (1992), *no.* 2, 95–102. (Summary) **93f:34098** 34G20 (34A12)

— Removable singularities of locally quasiconformal mappings. (Russian) *Sibirsk. Mat. Zh.* **33** (1992), *no.* 1, 193–195, 221; *translation in Siberian Math. J.* **33** (1992), *no.* 1, 159–161. (Jan Stankiewicz) **93d:30029** 30C65

Dajani, Karma Coboundaries under integrable exponentiation. *Tokyo J. Math.* **15** (1992), *no.* 1, 83–89. (G. R. Goodson) **93b:28041** 28D05

Dajczer, Marcos (*with* Rodríguez, Lucio) Euclidean hypersurfaces which make a constant angle. *Differential geometry*, 103–110, *Pitman Monographs Surveys Pure Appl. Math.*, 52, *Longman Sci. Tech., Harlow*, 1991. (Franki Dillen) **93f:53007** 53A07 (53A30, 53C55)

— Rigidity of isometric immersions of higher codimension. (English summary) *Bol. Soc. Brasil. Mat.* (*N.S.*) **23** (1992), *no.* 1-2, 67–77. (Maria Helena Noronha) **93m:53063** 53C42

— (*with* Tojeiro, Rui) On compositions of isometric immersions. *J. Differential Geom.* **36** (1992), *no.* 1, 1–18. (Qing Ming Cheng) **93g:53085** 53C42 (53B25, 53C40)

— (*with* Tojeiro, Rui) Hypersurfaces with a constant support function in spaces of constant sectional curvature. *Arch. Math.* (*Basel*) **60** (1993), *no.* 3, 296–299. (Thomas Hasanis) **93m:53054** 53C40 (53C42)

— (*with* Vergasta, Enaldo Silva) On compositions of conformal immersions. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 1, 211–215. (Chuan Yu Ma) **93f:53049** 53C42 (53A30)

— (*with* Tojeiro, Rui) Submanifolds of constant sectional curvature with parallel or constant mean curvature. (English summary) *Tôhoku Math. J.* (2) **45** (1993), *no.* 1, 43–49. (Sadahiro Maeda) **93k:53053** 53C40

Dalal, Mukesh Efficient propositional constraint propagation. (English summary) *AAAI-92. Proceedings, Tenth National Conference on Artificial Intelligence* (*San Jose, CA*, 1992), 409–414, *Amer. Assoc. Artif. Intell., Menlo Park, CA*, 1992. (*see* **93j:68007**) 68T20 (03B70)

— (*with* Etherington, David W.) A hierarchy of tractable satisfiability problems. (English summary) *Inform. Process. Lett.* **44** (1992), *no.* 4, 173–180. (Summary) **93m:03069** 03D15 (03B05, 03B35, 68T25, 68T27)

Dalal, S. R. (*with* Mallows, Colin L.) When to stop testing software? Some exact results. (English summary) *Bayesian analysis in statistics and econometrics* (*Bangalore*, 1988), 267–276, *Lecture Notes in Statist.*, 75, *Springer, New York*, 1992. (G. Sankaranarayanan) **93k:62201** 62N05 (60G40, 62L15)

— (*with* Mallows, Colin L.) Buying with exact confidence. (English summary) *Ann. Appl. Probab.* **2** (1992), *no.* 3, 752–765. (Summary) **93k:60107** 60G40 (62G30, 62L15, 62N10)

Dalang, Robert C. (*with* Walsh, John B.) The sharp Markov property of the Brownian sheet and related processes. *Acta Math.* **168** (1992), *no.* 3-4, 153–218. (Peter Imkeller) **93f:60068** 60G60 (60G20, 60J25, 60J30)

— (*with* Walsh, John B.) The sharp Markov property of Lévy sheets. *Ann. Probab.* **20** (1992), *no.* 2, 591–626. (Ditlev Monrad) **93e:60095** 60G60 (60J30, 60J75)

Dalbec, John P. When does restricted continuity on continuous function graphs imply joint continuity? *Proc. Amer. Math. Soc.* **118** (1993), *no.* 2, 669–674. (Luděk Zajíček) **93g:26021** 26B05 (54C05)

Dale, Andrew I. ★ A history of inverse probability. From Thomas Bayes to Karl Pearson. Studies in the History of Mathematics and Physical Sciences, 16. *Springer-Verlag, New York*, 1991. xx+495 *pp. ISBN* 0-387-97620-5 (Bernard Bru) **93d:60003** 60–03 (01A05, 62–03)

— Thomas Bayes's work on infinite series. (French and German summaries) *Historia Math.* **18** (1991), *no.* 4, 312–327. (F. Smithies) **93a:01020** 01A50 (01A70, 41–03)

— On the authorship of "A calculation of the credibility of human testimony". (English, French and German summaries) *Historia Math.* **19** (1992), *no.* 4, 414–417. 01A45

Dale, Magnar Averaging of relative permeability in composite cores. *The mathematics of oil recovery* (*Cambridge*, 1989), 649–682, *Inst. Math. Appl. Conf. Ser. New Ser.*, 31, *Oxford Univ. Press, New York*, 1992. (*see* **93b:76086**) 76S05

Dale, Wilbur N. (*with* Smith, Malcolm Clive) A note on eventually time-invariant systems. *Linear Algebra Appl.* **171** (1992), 225–231. (Summary) **93a:93058** 93C05 (93B35, 93D15)
Dalecky, Yu. L. *see* **Daletskii, Yu. L.**
Dales, H. G. (*with* Bade, W. G.) The Wedderburn decomposability of some commutative Banach algebras. *J. Funct. Anal.* **107** (1992), *no.* 1, 105–121. (E. A. Gorin) **93d:46090** 46J99 (43A15)
— (*with* Millington, A.) Translation-invariant linear operators. *Math. Proc. Cambridge Philos. Soc.* **113** (1993), *no.* 1, 161–172. (K. B. Laursen) **93m:47036** 47B38
D'Alessandro, G. (*with* Isola, S.; Politi, Antonio) Geometric properties of the pruning front. *Progr. Theoret. Phys.* **86** (1991), *no.* 6, 1149–1157. (Christian Beck) **93a:58052** 58F03 (58F13, 58F20)
Daletskii, Yu. L. (*with* Steblovskaya, V. R.) The smooth measures in Banach spaces and their smooth mappings. *Probability theory and mathematical statistics, Vol. I (Vilnius,* 1989), 245–257, "*Mokslas*", *Vilnius*, 1990. (E. Gerlach) **93c:46072** 46Gxx (28C20, 60B11)
— (*with* Goncharuk, N. Yu.) Random operator functions defined by stochastic differential equations. *Probability theory and mathematical statistics, Vol. I (Vilnius,* 1989), 433–445, "*Mokslas*", *Vilnius*, 1990. (E. Gerlach) **93c:46073** 46Gxx (34F05, 34G10, 47B80, 60H30)
— (*with* Fomin, S. V.) ★ Measures and differential equations in infinite-dimensional space. Translated from the Russian. With additional material by V. R. Steblovskaya, Yu. V. Bogdansky [Yu. V. Bogdanskiĭ] and N. Yu. Goncharuk. Mathematics and its Applications (Soviet Series), 76. *Kluwer Academic Publishers Group, Dordrecht*, 1991. xvi+337 *pp. ISBN* 0-7923-1517-0 (E. Gerlach) **93c:46071** 46Gxx (28C20, 34Gxx, 35R15, 35R60, 60B11)
— A bi-orthogonal analogue of Hermite polynomials and the inversion of the Fourier transform with respect to a non-Gaussian measure. (Russian) *Funktsional. Anal. i Prilozhen.* **25** (1991), *no.* 2, 68–70; *translation in Functional Anal. Appl.* **25** (1991), *no.* 2, 138–140. (A. Haimovici) **93a:33017** 33C45
— (*with* Roginskiĭ, G. K.) On the topological classification of some types of semilinear evolution equations in a Banach space. (Russian. Russian summary) *Differentsial'nye Uravneniya* **28** (1992), *no.* 4, 576–587, 731; *translation in Differential Equations* **28** (1992), *no.* 4, 463–472. (Bogdan Przeradzki) **93i:34112** 34G20 (34C20, 47N20, 58D25)
— *see also* **Goldstein, Jerome A., 93i:47054**
Daley, D. J. (*with* Kreĭnin, A. Ya.; Trengove, C. D.) Inequalities concerning the waiting-time in single-server queues: a survey. (English summary) *Queueing and related models*, 177–223, *Oxford Statist. Sci. Ser.*, 9, *Oxford Univ. Press, New York*, 1992. (Summary) **93k:60224** 60K25 (60E15)
— Ranking in a one-factor model used to describe examination marks. (English summary) With discussion. *The frontiers of modern statistical inference procedures, II (Sydney,* 1987), 381–400, *Amer. Sci. Press Ser. Math. Management Sci.*, 28, *Amer. Sci. Press, Columbus, OH*, 1992. (Summary) **93j:62054** 62F07 (62P15)
— (*with* Rolski, Tomasz) Light traffic approximations in many-server queues. *Adv. in Appl. Probab.* **24** (1992), *no.* 1, 202–218. (Richard F. Serfozo) **93b:60210** 60K25 (90B22)
— (*with* Rolski, Tomasz) Finiteness of waiting-time moments in general stationary single-server queues. (English summary) *Ann. Appl. Probab.* **2** (1992), *no.* 4, 987–1008. (Volker Schmidt) **93m:60181** 60K25 (60G10)
— (*with* Servi, L. D.) Exploiting Markov chains to infer queue length from transactional data. *J. Appl. Probab.* **29** (1992), *no.* 3, 713–732. (Masakiyo Miyazawa) **93i:60169** 60K25 (60J10, 90B22)
Daley, S. (*with* Wang, H.) An algorithm for tracking rapid parameter changes in unknown MIMO systems with nonlinear model uncertainties. *Control* '91, *Vol.* 1, 2 (*Edinburgh*, 1991), 511–516, *IEE Conf. Publ. Ser.*, 332, *IEE, London*, 1991. (*see* **93h:93007**) 93B40
— (*with* Wellstead, K. D.) On finding polynomial controllers with reduced pole sensitivity using state space methods. *Control* '91, *Vol.* 1, 2 (*Edinburgh*, 1991), 677–681, *IEE Conf. Publ. Ser.*, 332, *IEE, London*, 1991. (*see* **93h:93007**) 93B55
— (*with* Wang, H.) A fault detection method for unknown systems with unknown input and its application to hydraulic turbine monitoring. (English summary) *Internat. J. Control* **57** (1993), *no.* 2, 247–260. 93C95 (93B51)
Dalla Chiara, Maria Luisa Possible worlds, counterfactuals, and epistemic operators. *Knowledge, belief, and strategic interaction* (*Castiglioncello*, 1989), 155–166, *Cambridge Stud. Probab. Induc. Decis. Theory, Cambridge Univ. Press, Cambridge*, 1992. (*see* **93i:90006**) 03B45
— *see also* **Knowledge, belief, and strategic interaction, 93i:90006**
Dall'Aglio, G. *see* **Advances in probability distributions with given marginals, 93k:60004**
Dalla Mora, M. (*with* Ciccarella, G.; Germani, Alfredo) A Luenberger-like observer for nonlinear systems. (English summary) *Internat. J. Control* **57** (1993), *no.* 3, 537–556. (Xiao Ping Liu) **93k:93019** 93B07 (93C10, 93E10)
Dallaporta, Nicola Could final states of stellar evolution proceed towards naked singularities? *Gravitation and modern cosmology* (*Erice*, 1990), 11–18, *Ettore Majorana Internat. Sci. Ser. Phys. Sci.*, 56, *Plenum, New York*, 1991. (*see* **93j:83004**) 83F05 (83C75)
Dall'Asta, A. (*with* Menditto, G.) Perturbed motion of viscoelastic columns: a variational approach. (English summary) *Internat. J. Solids Structures* **30** (1993), *no.* 3, 325–335. (Summary) **93i:73026** 73F15 (73H10, 73V25)
Dalla Volta, Francesca Orthogonal groups with minimal Witt index generated by three involutions. (Italian. English summary) *Geom. Dedicata* **41** (1992), *no.* 2, 135–143. (Federico Menegazzo) **93f:20062** 20G40
Dallery, Yves (*with* Towsley, Donald) Symmetry property of the throughput in closed tandem queueing networks with finite buffers. *Oper. Res. Lett.* **10** (1991), *no.* 9, 541–547. (Summary) **93b:90027** 90B22 (60K25)
— (*with* Frein, Yannick) On decomposition methods for tandem queueing networks with blocking. (English summary) *Oper. Res.* **41** (1993), *no.* 2, 386–399. 90B22
Dalley, Simon On loop equations in KdV exactly solvable string theory. *Modern Phys. Lett. A* **7** (1992), *no.* 14, 1263–1272. (Nikolai A. Kostov) **93b:81207** 81T30 (58F07, 81T40)
— The Weingarten model à la Polyakov. *Modern Phys. Lett. A* **7** (1992), *no.* 18, 1651–1660. (Summary) **93c:81156** 81T27 (81T30)
— (*with* Johnson, Clifford V.; Morris, Tim R.; Wätterstam, Anders) Unitary matrix models and 2D quantum gravity. (English summary) *Modern Phys. Lett. A* **7** (1992), *no.* 29, 2753–2762. (Nir Sochen) **93j:81075** 81T27 (58F07, 81T40)
— (*with* Johnson, Clifford V.; Morris, Tim R.) Multicritical complex matrix models and nonperturbative two-dimensional quantum gravity. *Nuclear Phys. B* **368** (1992), *no.* 3, 625–654. (Yolanda Lozano) **93g:81143** 81T40 (81T27)
— (*with* Johnson, Clifford V.; Morris, Tim R.) Nonperturbative two-dimensional quantum gravity. *Nuclear Phys. B* **368** (1992), *no.* 3, 655–670. (Yolanda Lozano) **93g:81144** 81T40 (81T27)
Dallmann, Uwe (*with* Simen, Martin) ★ On the instability of hypersonic flow past a pointed cone—comparison of theoretical and experimental results at Mach 8. (English and German summaries) DLR-Forschungsbericht [DLR-Research Report], 92-02. *Deutsche Forschungsanstalt für Luft- und Raumfahrt, Cologne*, 1992. 75 *pp.* (Summary) **93h:76044** 76K05 (76–05, 76E99)
Dallner, Rudolf (*with* Bialecki, Ryszard; Kuhn, Günther) New application of hypersingular equations in the boundary element method. (English summary) *Comput. Methods Appl. Mech. Engrg.* **103** (1993), *no.* 3, 399–416. (Summary) **93m:73038** 73V10
Dal Maso, Gianni (*with* Chipot, Michel) Relaxed shape optimization: the case of nonnegative data for the Dirichlet problem. *Adv. Math. Sci. Appl.* **1** (1992), *no.* 1, 47–81. (Bernard Rousselet) **93d:49046** 49Q10 (73K40, 73V99)
— (*with* Ambrosio, Luigi) On the relaxation in $BV(\Omega; \mathbf{R}^m)$ of quasi-convex integrals. (English summary) *J. Funct. Anal.* **109** (1992), *no.* 1, 76–97. (U. D'Ambrosio) **93j:49012** 49J45 (49Q15, 58C35)
— (*with* Defranceschi, Anneliese; Vitali, Enrico) A characterization of C^1-convex sets in Sobolev spaces. *Manuscripta Math.* **75** (1992), *no.* 3, 247–272. (W. P. Ziemer) **93f:46045** 46E35
— (*with* Acerbi, Emilio; Chiadò Piat, V.; Percivale, Danilo) An extension theorem from connected sets, and homogenization in general periodic domains. *Nonlinear Anal.* **18** (1992), *no.* 5, 481–496. (Alexander Belyaev) **93a:35014** 35B27 (35A15, 46E35)
Dalmasso, Robert Un problème de symétrie pour une équation biharmonique. (English and French summaries) [A problem of symmetry for a biharmonic equation] *Ann. Fac. Sci. Toulouse Math.* (5) **11** (1990), *no.* 3, 45–53. (Summary) **93i:31003** 31B30 (35J40)
— Positive entire solutions of superlinear biharmonic equations. *Funkcial. Ekvac.* **34** (1991), *no.* 3, 403–422. (A. Simon) **93c:35036** 35J60 (35B05, 35B40, 35J30)
— On singular superlinear elliptic problems of second and fourth orders. (French summary) *Bull. Sci. Math.* (2) **116** (1992), *no.* 2, 247–263. (G. Albinus) **93d:35052** 35J65 (35J20, 35J35)
Dalmazi, D. (*with* Abdalla, Elcio; Abdalla, M. C. B.; Harada, Koji) Correlation functions in noncritical (super) string theory. (English summary) *Internat. J. Modern Phys. A* **7** (1992), *no.* 29, 7339–7363. 81T30
— (*with* Abdalla, Elcio; Abdalla, M. C. B.) On the amplitudes for noncritical $N = 2$ superstrings. (English summary) *Phys. Lett. B* **291** (1992), *no.* 1-2, 32–38. (Summary) **93f:81100** 81T30
Dalmazzo, Alberto Outside options in a bargaining model with decay in the size of the cake. (English summary) *Econom. Lett.* **40** (1992), *no.* 4, 417–421 (1993). 90A60
dahan-Dalmédico, Amy *see* **Dahan-Dalmédico, Amy**
Dalmedico, Amy Dahan *see* **Dahan-Dalmédico, Amy**
D'Almeida, Jean *see* **d'Almeida, Jean**
Dal Passo, Roberta (*with* Bertsch, Michiel; Ughi, Maura) Nonuniqueness of solutions of a degenerate parabolic equation. (English summary) *Ann. Mat. Pura Appl.* (4) **161** (1992), 57–81. (Lumin Jiang) **93f:35124** 35K65 (35B05)
— (*with* Bertsch, Michiel) Hyperbolic phenomena in a strongly degenerate parabolic equation. *Arch. Rational Mech. Anal.* **117** (1992), *no.* 4, 349–387. (Summary) **93g:35078** 35K65 (73B99)
— (*with* Ughi, Maura) Existence and regularity of solutions of a generalized porous media equation in noncylindrical domains shrinking in time to a point. *Free boundary problems in fluid flow with applications* (*Montreal, PQ*, 1990), 144–150, *Pitman Res. Notes Math. Ser.*, 282, *Longman Sci. Tech., Harlow*, 1993. (*see* **93k:00036**) 35K55 (35R35, 76S05)
Dalrymple, Robert A. (*with* Martin, Paul Andrew) Perfect boundary conditions for parabolic water-wave models. (English summary) *Proc. Roy. Soc. London Ser. A* **437** (1992), *no.* 1899, 41–54. (Summary) **93d:76006** 76B15
Daly, M. (*with* Heffernan, Daniel M.; Jenkins, P.; Hawdon, B. J.; O'Gorman, J.) Characterization of chaos. (English summary) *Internat. J. Theoret. Phys.* **31** (1992), *no.* 8, 1345–1362. (Summary) **93d:58097** 58F13 (34C35, 34D45)
Dalzell, C. J. (*with* Ramsay, James O.) Some tools for functional data analysis. With discussion and a reply by the authors. *J. Roy. Statist. Soc. Ser. B* **53** (1991), *no.* 3, 539–572. (P. A. K. Covey-Crump) **93e:62161** 62H25
— (*with* Ramsay, James O.) Computing reproducing kernels with arbitrary boundary constraints. (English summary) *SIAM J. Sci. Comput.* **14** (1993), *no.* 3, 511–518. (Summary) **93m:65188** 65U05 (62J02, 65D10, 65J05)
ten Dam, A. A. Stable numerical integration of dynamical systems subject to equality state-space constraints. *J. Engrg. Math.* **26** (1992), *no.* 2, 315–337. (Summary) **93c:70002** 70–08 (34A45, 65L99, 93C05)
Dam, Bui Khoi *see* **Bùi Kho'i Dàm**
van Dam, C. P. *see* **Fluid dynamics in biology, 93j:76003**
van Dam, Hendrik (*with* Frampton, Paul H.; Ng, Y. Jack) Possible solution of strong CP problem in generalized unimodular gravity. (English summary) *J. Math. Phys.* **33** (1992), *no.* 11, 3881–3882. (Summary) **93i:81300** 81V17 (83C45)
Dam, Mads *R*-generability, and definability in branching time logics. *Inform. Process. Lett.* **41** (1992), *no.* 5, 281–287. (J.-J. Ch. Meyer) **93h:03032** 03B70 (03B45, 68Q60)
Damaschke, Peter (*with* Deogun, Jitender S.; Kratsch, Dieter; Steiner, George) Finding Hamiltonian paths in cocomparability graphs using the bump number algorithm. *Order* **8** (1991/92), *no.* 4, 383–391. (Martin Sonntag) **93g:05093** 05C45
Damaskinskii, E. V. (*with* Kulish, P. P.) Hermite q-polynomials and q-oscillators. (Russian. English summary) *Zap. Nauchn. Sem. S.-Peterburg. Otdel. Mat. Inst. Steklov. (POMI)* **199** (1992), *Voprosy Kvant. Teor. Polya Statist. Fiz.* 11, 81–90, 185–186. (A. U. Klimyk) **93h:81057** 81R50
Damborg, M. J. (*with* Sznaier, Mario) Heuristically enhanced feedback control of constrained systems: the minimum time case. (English summary) *Automatica J. IFAC* **29** (1993), *no.* 2, 439–444. 93B52 (49N35, 93C83)
D'Ambra, G. (*with* Gromov, Mikhael L.) Lectures on transformation groups: geometry and dynamics. *Surveys in differential geometry* (*Cambridge, MA*, 1990), 19–111, *Lehigh Univ., Bethlehem, PA*, 1991. (Viktor Schroeder) **93d:58117** 58F15 (22E46, 53C10, 57S20)
— Induced connections on S^1-bundles over Riemannian manifolds. *Trans. Amer. Math. Soc.* **338** (1993), *no.* 2, 783–798. (Robert J. Fisher, Jr.) **93j:53031** 53C05 (58D15, 58E99)

D'Ambra, Luigi A factorial approach based on some coefficients of similarity to quantify categories of qualitative variables. (English summary) *Applied stochastic models and data analysis* (*Granada*, 1991), 138–149, *World Sci. Publishing, River Edge, NJ*, 1991. (*see* **93g:62001**) 62H17 (62H25)

D'Ambrosio, Ubiratan *see* **Pereira da Silva, Clóvis, 93d:01003**

D'Ambrumenil, N. *see* **d'Ambrumenil, N.**

Damek, Ewa (*with* Hulanicki, Andrzej) Maximal functions related to subelliptic operators invariant under an action of a solvable Lie group. *Studia Math.* **101** (1991), *no.* 1, 33–68. (Michael Cowling) **93c:43009** 43A85 (22E30, 35J70)

— (*with* Ricci, Fulvio) A class of nonsymmetric harmonic Riemannian spaces. *Bull. Amer. Math. Soc.* (*N.S.*) **27** (1992), *no.* 1, 139–142. (T. Okubo) **93b:53043** 53C35

— (*with* Ricci, Fulvio) Harmonic analysis on solvable extensions of H-type groups. *J. Geom. Anal.* **2** (1992), *no.* 3, 213–248. (A. H. Dooley) **93d:43006** 43A20 (43A90, 53C35)

Damen, A. (*with* van den Boom, T.; Klompstra, Martin H.) System identification for H_{∞}-robust control design. (English summary) *Identification and system parameter estimation* 1991, *Vol.* 1,2 (*Budapest*, 1991), 971–976, *IFAC Sympos. Ser.*, 3, *Pergamon, Oxford*, 1992. (*see* **93h:93009**) 93B30 (93B36)

Damerow, Karin A sufficient condition for the validity of the principle of reduced stability. *Math. Nachr.* **154** (1991), 243–252. (A. Vanderbauwhede) **93b:58030** 58E07 (47H15)

Damerow, Peter (*with* Nissen, Hans J.; Englund, Robert K.) ★ Frühe Schrift und Techniken der Wirtschaftsverwaltung im alten Vorderen Orient. (German) [Early writing and techniques of business administration in the ancient Middle East] Informationsspeicherung und -verarbeitung vor 5000 Jahren. [Information storage and processing 5000 years ago] Second edition. *Verlag Barbara Franzbecker, Didaktischer Dienst, Bad Salzdetfurth; Max-Planck-Institut für Bildungsforschung, Berlin*, 1991. 222 *pp. ISBN* 3-88120-110-6 (J. Friberg) **93c:01004** 01A17

Damgaard, P. H. (*with* Alfaro, Jorge) BRST symmetry of field redefinitions. (English summary) *Ann. Physics* **220** (1992), *no.* 2, 188–211. (Silvio Paolo Sorella) **93k:81236** 81T70 (81T10, 81T15, 81T50)

— Stability and instability of renormalization group flows. (English summary) *Internat. J. Modern Phys. A* **7** (1992), *no.* 27, 6933–6950. 81T18

— (*with* Nielsen, Holger Bech; Sollacher, R.) Smooth bosonization: the Cheshire cat revisited. (English summary) *Nuclear Phys. B* **385** (1992), *no.* 1-2, 227–250. (Summary) **93g:81195** 81T99 (81S40, 81V25)

— (*with* Alfaro, Jorge) The $D = 1$ matrix model and the renormalization group. (English summary) *Phys. Lett. B* **289** (1992), *no.* 3-4, 342–346. (David Sénéchal) **93i:81155** 81T17 (81T40)

— *see also* **Random surfaces and 2D quantum gravity, 93d:81004**

Damião Soares, I. *see* **Soares, Ivano Damião**

D'Amico, A. (*with* Ferri, G.; Faccio, M.) A new numerical triangle showing links with Fibonacci numbers. *Fibonacci Quart.* **29** (1991), *no.* 4, 316–321. (From the text) **93d:11015** 11B37 (05A10, 11B39)

Damil, N. (*with* Potier-Ferry, M.) Amplitude equations for cellular instabilities. *Dynamics Stability Systems* **7** (1992), *no.* 1, 1–34. (Muthiah Daniel) **93k:35242** 35Q55 (73H05, 76E30)

Damlamian, A. (*with* Kenmochi, Nobuyuki) Uniqueness of the solution of a Stefan problem with variable lateral boundary conditions. *Adv. Math. Sci. Appl.* **1** (1992), *no.* 1, 175–194. (Summary) **93c:35165** 35R35 (80A22)

Damm, Carsten (*with* Buntrock, Gerhard; Hertrampf, Ulrich; Meinel, Christoph) Structure and importance of logspace-MOD class. *Math. Systems Theory* **25** (1992), *no.* 3, 223–237. (Summary) **93d:68029** 68Q25 (03D15)

van Damme, Eric E. C. (*with* Bomze, Immanuel M.) A dynamical characterization of evolutionarily stable states. (English summary) Nonlinear methods in economic dynamics and optimal control (Vienna, 1990). *Ann. Oper. Res.* **37** (1992), *no.* 1-4, 229–244. (Summary) **93g:92014** 92D15

Damnjanovic, Zlatan (*with* Cain, James) On the weak Kleene scheme in Kripke's theory of truth. *J. Symbolic Logic* **56** (1991), *no.* 4, 1452–1468. (Henry Africk) **93d:03049** 03D35 (03B50, 03C62, 03C80, 03F40)

Damodar, R. A. (*with* Pasupathy, J.) The Gaussian Toeplitz matrix. *Linear Algebra Appl.* **171** (1992), 133–147. (A. Böttcher) **93g:15010** 15A23 (15A09, 47B35)

Damon, James Equivariant bifurcations and Morsifications for finite groups. *Singularity theory and its applications, Part II* (*Coventry*, 1988/1989), 80–106, *Lecture Notes in Math.*, 1463, *Springer, Berlin*, 1991. (Summary) **93d:58015** 58C27 (58F14)

— G-signature, G-degree, and symmetries of the branches of curve singularities. *Topology* **30** (1991), *no.* 4, 565–590. (Toshizumi Fukui) **93e:58017** 58C27 (57R45)

— Topological triviality and versality for subgroups of $\mathscr{A}$ and $\mathscr{K}$. II. Sufficient conditions and applications. *Nonlinearity* **5** (1992), *no.* 2, 373–412. (Shyūichi Izumiya) **93f:58020** 58C27

D'Amore, Fabrizio *see* **d'Amore, Fabrizio**

D'Amour, Alain Quadratic Jordan systems of Hermitian type. *J. Algebra* **149** (1992), *no.* 1, 197–233. (Erhard Neher) **93d:17041** 17C10 (17C05, 17C20)

Damour, Thibault Radiative spacetimes and approximation methods. *General relativity and gravitation*, 1989 (*Boulder, CO*, 1989), 107–112, *Cambridge Univ. Press, Cambridge*, 1990. (*see* **93b:83002**) 83C25

— (*with* Schäfer, Gerhard) Levi-Civita and the general-relativistic problem of motion. (French summary) *Studies in the history of general relativity* (*Luminy*, 1988), 393–399, 460, *Einstein Stud.*, 3, *Birkhäuser Boston, Boston, MA*, 1992. (*see* **93a:01001**) 01A60 (83-03)

— (*with* Esposito-Farese, Gilles) Tensor-multi-scalar theories of gravitation. (English summary) *Classical Quantum Gravity* **9** (1992), *no.* 9, 2093–2176. (Metin Gürses) **93f:83070** 83D05 (83B05, 83C25)

— (*with* Soffel, Michael; Xu, Chong Ming) General-relativistic celestial mechanics. II. Translational equations of motion. *Phys. Rev. D* (3) **45** (1992), *no.* 4, 1017–1044. (D. K. Sen) **93b:83006** 83C10 (83A05, 83C25)

— (*with* Deser, S.; McCarthy, James G.) Theoretical problems in nonsymmetric gravitational theory. *Phys. Rev. D* (3) **45** (1992), *no.* 10, R3289–R3291. (Summary) **93b:83051** 83D05

Damphousse, Pierre Automates et langages. (English summary) [Automata and languages] *Cahiers Topologie Géom. Différentielle Catégoriques* **33** (1992), *no.* 3, 217–222. (Summary) **93g:68093** 68Q70 (68Q45)

Damsma, M. (*with* de Roever, J. W.) Colombeau algebras on a C^{∞}-manifold. *Indag. Math.* (*N.S.*) **2** (1991), *no.* 3, 341–358. (Michael Oberguggenberger) **93e:46046** 46F10 (18F20, 58A25)

Damyanov, Blagovest P. On the singular operations with Schwartz distributions in many-dimensional case. *Complex analysis and applications '87* (*Varna*, 1987), 94–105, *Bulgar. Acad. Sci., Sofia*, 1989. (Stevan Pilipović) **93c:46067a** 46F10

— Nonlinear transformations of the Schwartz distributions. *Functional analytic methods in complex analysis and applications to partial differential equations* (*Trieste*, 1988), 365–378, *World Sci. Publishing, River Edge, NJ*, 1990. (Stevan Pilipović) **93c:46067b** 46F10

Dana, Itzhack Type specification of chaos. (English summary) *Phys. Rev. Lett.* **70** (1993), *no.* 16, 2387–2390. (Summary) **93k:58146** 58F13

Dana, Rose-Anne (*with* Pontier, Monique) On existence of an Arrow-Radner equilibrium in the case of complete markets. A remark. *Math. Oper. Res.* **17** (1992), *no.* 1, 148–163. (John P. Lehoczky) **93j:90018** 90A09 (90A14, 90A56)

Danaev, N. T. (*with* Smagulov, Sh. S.) A procedure for the numerical solution of Navier-Stokes equations in (ψ, ω) variables. (Russian. Russian summary) *Model. Mekh.* **5** (1991), *no.* 4, 38–47. (Summary) **93i:76059** 76M20 (76D05)

Danani, Andrea (*with* Montorsi, Arianna; Rasetti, Mario) Pairing in the extended Hubbard model: dimer Fermi-linearized approach. (English summary) *Probabilistic methods in mathematical physics* (*Siena*, 1991), 172–183, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93g:81002**) 82D55

Danao, R. A. Some properties of explicitly quasiconcave functions. (English summary) *J. Optim. Theory Appl.* **74** (1992), *no.* 3, 457–468. (B. Mond) **93h:90073** 90C25 (26B25, 90C29)

Dana-Picard, Th. (*with* Schaps, M.) Classifying generic algebras. *Rocky Mountain J. Math.* **22** (1992), *no.* 1, 125–156. (Summary) **93g:16029** 16P10

Dancer, Andrew S. Nahm data and SU(3) monopoles. (English summary) *Nonlinearity* **5** (1992), *no.* 6, 1355–1373. (Antony Maciocia) **93i:81135** 81T13 (53C07, 58E15)

Dancer, E. N. On the existence of two-dimensional invariant tori for scalar parabolic equations with time periodic coefficients. *Ann. Scuola Norm. Sup. Pisa Cl. Sci.* (4) **18** (1991), *no.* 3, 455–471. (Laurent Véron) **93c:35077** 35K60 (47H15, 47N20, 58F39)

— Some notes on the method of moving planes. (English summary) *Bull. Austral. Math. Soc.* **46** (1992), *no.* 3, 425–434. (Wei Yue Ding) **93m:35080** 35J65

— Global breaking of symmetry of positive solutions on two-dimensional annuli. *Differential Integral Equations* **5** (1992), *no.* 4, 903–913. (Filomena Pacella) **93f:35077** 35J65 (35B32, 47H15, 47N20)

— Addendum: "The effect of domain shape on the number of positive solutions of certain nonlinear equations. II" [J. Differential Equations **87** (1990), no. 2, 316–339; MR 91j:35034]. *J. Differential Equations* **97** (1992), *no.* 2, 379–381. (From the text) **93d:35013** 35B30 (35J65, 47H15)

— A note on uniqueness for the plasma problem. *Z. Angew. Math. Phys.* **43** (1992), *no.* 2, 397–400. (From the introduction) **93a:35148** 35Q99 (76X05)

— (*with* Church, P. T.; Timourian, J. G.) The structure of a nonlinear elliptic operator. *Trans. Amer. Math. Soc.* **338** (1993), *no.* 1, 1–42. (P. P. Zabreĭko) **93j:35076** 35J65 (47H15, 47N20, 58C27)

Danchura, Werner (*with* Pettitt, Brian A.; Labun, Donna) Spherical Bessel transforms. (English summary) *J. Comput. Phys.* **105** (1993), *no.* 1, 178–181. (Summary) **93m:44006** 44A15 (33C10, 65D20)

Dancis, Jerome Positive semidefinite completions of partial Hermitian matrices. (English summary) *Linear Algebra Appl.* **175** (1992), 97–114. (L. Rodman) **93f:15021** 15A57 (47A57)

D'Ancona, P. (*with* Spagnolo, Sergio) Global solvability for the degenerate Kirchhoff equation with real analytic data. *Invent. Math.* **108** (1992), *no.* 2, 247–262. (Pierre A. Vuillermot) **93h:35131** 35L70 (35B05)

Dancs, S. Topologies on the collection of closed subsets of a Banach space. *Pure Math. Appl. Ser. B* **1** (1990), *no.* 2-3, 143–160 (1991). (Gérard Lebourg) **93b:54017** 54C60 (26E25, 46B20, 54C65)

Dancsó, András (*with* Farkas, Henrik; Farkas, Miklós; Szabó, György) Investigations into a class of generalized two-dimensional Lotka-Volterra schemes. *Acta Appl. Math.* **23** (1991), *no.* 2, 103–127. (John H. Swart) **93a:92008** 92D25 (92B05)

Dandoloff, Rossen (*with* Baez, John C.; Bishop, Alan R.) On the Hopf term in a two-dimensional σ model for antiferromagnets. *Modern Phys. Lett. B* **5** (1991), *no.* 30, 2003–2005. (Ioan Bâldea) **93f:82017** 82B21 (82D40)

— (*with* Balakrishnan, Radha; Bishop, Alan R.) Two-level systems: space curve formalism, Berry's phase and Gauss-Bonnet theorem. (English summary) *J. Phys. A* **25** (1992), *no.* 18, L1105–L1110. (Shinichi Tajima) **93i:81048** 81Q99

carfagna D'Andrea, A. *see* **Carfagna D'Andrea, A.**

D'Andrea, Anna Bruna (*with* De Lucia, Paolo) On the Lebesgue decomposition of a function relative to a p-ideal of an orthomodular lattice. *Math. Slovaca* **41** (1991), *no.* 4, 423–430. (Anatolij Dvurečenskij) **93b:28027** 28B10 (03G12, 06C15, 81P10)

— (*with* De Lucia, Paolo) The Lebesgue decomposition theorem on an orthomodular lattice. Measure theory (Oberwolfach, 1990). *Rend. Circ. Mat. Palermo* (2) *Suppl. No.* 28 (1992), 379–386. (Introduction) **93h:28018** 28B10 (06C15, 28A60)

D'Andréa-Novel, B. *see* **d'Andréa-Novel, B.**

Danelich, S. I. Conditions for the positivity of difference operators with constant coefficients on the semi-axis. (Russian. Russian summary) *Boundary value problems* (*Russian*), 67–71, *Perm. Politekh. Inst., Perm'*, 1990. (*see* **93g:00023**) 39A70

Daners, Daniel Qualitative behaviour of an epidemics model. *Differential Integral Equations* **5** (1992), *no.* 5, 1017–1032. (Ya. I. Bilopol's'ka) **93m:92021** 92D30 (34G20, 35K55, 47N20, 47N60)

Dang, G. Do (*with* Klein, Abraham; Walet, Niels R.) Quantum corrections to the cranking model. (English summary) *Internat. J. Modern Phys. E* **1** (1992), *no.* 1, 95–130. (Summary) **93f:81161** 81V35

Dang, Kai Qian The circumference of a $K_{1,3}$-free graph and D. R. Woodall's conjecture. (Chinese. English summary) *Nanjing Daxue Xuebao Ziran Kexue Ban* **27** (1991), *Special Issue*, 93–97, 152. (Summary) **93b:05088** 05C38

Dang, Xin Yi (*with* Li, Lin) A study on the existence and uniqueness of limit cycles of a class of Kolmogorov systems. (Chinese. English and Chinese summaries) *J. Northwest Univ.* **22** (1992), *no.* 3, 255–258. (Summary) **93h:34038** 34C05 (34C25)

Danga, Alexis Moment de sommes partielles et estimation de la densité dans L^1 pour les processus mélangeants. (English and French summaries) [Moment of partial sums and density estimation in L^1 for mixing processes] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 4, 459–463. (Summary) **93f:62049** 62G05

Dangalchev, C. A. Partially-linear problems obtained by getting maximum of functions. *C. R. Acad. Bulgare Sci.* **45** (1992), *no.* 8, 21–22. 90C08

Đặng Đình Áng (*with* Schmitt, Klaus; Vy, L. K.) Variational inequalities and the contact of elastic plates. *Differential equations with applications in biology, physics, and engineering* (*Leibnitz*, 1989), 1–19, *Lecture Notes in Pure and Appl. Math.*, 133, *Dekker, New York*, 1991. (Igor Bock) **93h:35078** 35J85 (73K10, 73T05, 73V25)

— (*with* Gorenflo, Rudolf) A nonlinear Abel integral equation. (English summary) *Optimal control of partial differential equations* (*Irsee*, 1990), 26–37, *Lecture Notes in Control and Inform. Sci.*, 149, *Springer, Berlin*, 1991. (H. Brunner) **93g:45005** 45E10 (45D05)

— (*with* Schmitt, Klaus; Vy, L. K.) *P*-coercive variational inequalities and unilateral problems for von Kármán's equations. (English summary) *Recent trends in differential equations*, 15–29, *World Sci. Ser. Appl. Anal.*, 1, *World Sci. Publishing, River Edge, NJ*, 1992. (Ricardo S. Kubrusly) **93i:47105** 47H19 (35J85, 49J40, 73K10, 73V25)

Dang Dinh Hai On a doubly damped quasilinear wave equation. *Ann. Mat. Pura Appl.* (4) **160** (1991), 77–87 (1992). (Summary) **93a:35109** 35L70 (35B40)

Dangelmayr, Gerhard (*with* Knobloch, Edgar) Hopf bifurcation with broken circular symmetry. *Nonlinearity* **4** (1991), *no.* 2, 399–427. (Michael J. Field) **93a:58035** 58E09 (34C23, 58F14)

D'Angelo, John P. Finite type and the intersection of real and complex subvarieties. *Several complex variables and complex geometry, Part 3* (*Santa Cruz, CA*, 1989), 103–117, *Proc. Sympos. Pure Math.*, 52, *Part 3, Amer. Math. Soc., Providence, RI*, 1991. (Andrei Iordan) **93k:32034** 32F25

— Polynomial proper holomorphic mappings between balls. II. *Michigan Math. J.* **38** (1991), *no.* 1, 53–65. (Y. Zelinskij (Zbl 732:32014)) **93b:32037** 32H35

— The geometry of proper holomorphic maps between balls. *The Madison Symposium on Complex Analysis* (*Madison, WI*, 1991), 191–215, *Contemp. Math.*, 137, *Amer. Math. Soc., Providence, RI*, 1992. (James J. Faran, V) **93k:32057** 32H35 (32H02)

— (*with* Lichtblau, Daniel A.) Spherical space forms, CR mappings, and proper maps between balls. (English summary) *J. Geom. Anal.* **2** (1992), *no.* 5, 391–415. (James J. Faran, V) **93k:32056** 32H35 (32H02, 57S25)

Đặng Hùng Thắng Sample paths of random linear operators in Banach spaces. (English summary) *Mem. Fac. Sci. Kyushu Univ. Ser. A* **46** (1992), *no.* 2, 287–306. (Werner Linde) **93m:60137** 60H25 (47B80, 47N30, 60B11)

Đặng Huy Ruận An upper bound on the finite automaton complexity of a set of superwords defined by a generalized regular function. (Russian) *Constructions in algebra and logic* (*Russian*), 37–43, *Tver. Gos. Univ., Tver'*, 1990. (*see* **93m:00021**) 68Q70

vo Dang Thao *see* **Vo Dang Thao**

Dăng Vu, H. (*with* Delcarte, C.) An accurate solution of the Poisson equation by the Chebyshev collocation method. (English summary) *J. Comput. Phys.* **104** (1993), *no.* 1, 211–220. (Introduction) **93m:65161** 65N35

Dang Zui Ruan *see* **Đặng Huy Ruận**

Dani, Ernest The classical cooperative game—a relational system. II. *Mathematica* (*Cluj*) **32(55)** (1990), *no.* 1, 1–7. (From the summary) **93d:90074** 90D12

— The classical cooperative game—a relational system. III. *Mathematica* (*Cluj*) **33(56)** (1991), *no.* 1-2, 41–48. (From the text) **93f:90191** 90D12

Dani, Shrikrishna Gopalrao A remark on recurrent dynamical systems. *J. Indian Math. Soc.* (*N.S.*) **56** (1991), *no.* 1-4, 1–6. (M. Rees) **93g:58113** 58F17 (54H20, 58F21)

— (*with* Margulis, G. A.) On the limit distributions of orbits of unipotent flows and integral solutions of quadratic inequalities. (French summary) *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 10, 699–704. (Summary) **93b:22016** 22E40

— Invariance groups and convergence of types of measures on Lie groups. *Math. Proc. Cambridge Philos. Soc.* **112** (1992), *no.* 1, 91–108. (Alexander Starkov) **93f:60008** 60B15 (22D45)

Daniel, M. *see* **Daniel, Muthiah**

Daniel, Marc A curve intersection algorithm with processing of singular cases: introduction of a clipping technique. *Mathematical methods in computer aided geometric design, II* (*Biri*, 1991), 161–170, *Academic Press, Boston, MA*, 1992. (*see* **93d:65022**) 65D17

Daniel, Muthiah (*with* Porsezian, K.; Lakshmanan, M.) On the integrability aspects of the one-dimensional classical continuum isotropic biquadratic Heisenberg spin chain. *J. Math. Phys.* **33** (1992), *no.* 5, 1807–1816. (M. Lawrence Glasser) **93c:82022** 82B23 (81T25, 82B20)

— (*with* Porsezian, K.; Lakshmanan, M.) On the integrable models of the higher order water wave equation. (English summary) *Phys. Lett. A* **174** (1993), *no.* 3, 237–240. (From the text) **93m:35160** 35Q53 (76B15)

Daniel, Ron W. (*with* Chang, Yau-Zen) On the adaptive control of flexible joint robots. (English summary) *Automatica J. IFAC* **28** (1992), *no.* 5, 969–974. 93C40 (93C85)

Daniel, Tim (*with* Gruenhage, Gary F.) Some nonnormal Σ-products. *Topology Appl.* **43** (1992), *no.* 1, 19–25. (Judith Roitman) **93a:54008** 54B10 (54D15)

Daniel,David (*with* González-Arroyo, Antonio; Korthals-Altes, Chris P.) Small volume physics with twisted boundary conditions. Lattice 90 (Tallahassee, FL, 1990). *Nuclear Phys. B Proc. Suppl.* **20** (1991), 16–19. (Summary) **93c:81119** 81T13

Danieljan, Eduard A. *see* **Danielyan, È. A.**

Danielli, Donatella Formules de représentation et théorèmes d'inclusion pour des opérateurs sous-elliptiques. (English summary) [Representation formulas and embedding theorems for subelliptic operators] *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 13, 987–990. (Nicolas Lerner) **93e:35020** 35H05

D'Aniello, Alma Groups in which *n*-maximal subgroups are dual-pronormal. *Rend. Sem. Mat. Univ. Padova* **84** (1990), 83–90 (1991). (From the introduction) **93b:20054** 20E28 (20F16)

Daniels, Charles J. (*with* Mahanti, Ambuj) A SIMD approach to parallel heuristic search. (English summary) *Artificial Intelligence* **60** (1993), *no.* 2, 243–282. 68Q22

Daniels, H. E. A look at perturbation approximations for epidemics. (English summary) *Selected Proceedings of the Sheffield Symposium on Applied Probability* (*Sheffield*, 1989), 48–65, *IMS Lecture Notes Monograph Ser.*, 18, *Inst. Math. Statist., Hayward, CA*, 1991. (*see* **93f:60003**) 92D30

Daniels, P. G. A singularity in thermal boundary-layer flow on a horizontal surface. (English summary) *J. Fluid Mech.* **242** (1992), 419–440. (Summary) **93f:76029** 76D10 (76R10)

— (*with* Weinstein, Marcel Mordechai) On finite-amplitude patterns of convection near a lateral boundary. (English summary) *Quart. J. Mech. Appl. Math.* **45** (1992), *no.* 2, 315–336. (Summary) **93d:76024** 76E15 (76R05)

Danielsson, Ulf H. (*with* Gross, David J.) On the correlation functions of the special operators in $c = 1$ quantum gravity. *Nuclear Phys. B* **366** (1991), *no.* 1, 3–26. (Andrew R. Kavalov) **93b:81243** 81T40 (81T30)

— Symmetries and special states in two-dimensional string theory. (English summary) *Nuclear Phys. B* **380** (1992), *no.* 1-2, 83–102. (C. Gauthier) **93m:81115** 81T30

Danielyan, A. A. (*with* Levitan, B. M.; Khasanov, A. B.) Asymptotics of the Weyl-Titchmarsh *m*-function in the case of the Dirac system. (Russian) *Mat. Zametki* **50** (1991), *no.* 2, 67–76; *translation in Math. Notes* **50** (1991), *no.* 1-2, 816–823 (1992). (P. A. Mishnayevskiy) **93c:34068** 34B20 (34L40)

Danielyan, È. A. (*with* Liese, Friedrich) The analysis of a $M_r/G_r/1/\infty$ model with time dependent priorities. *Rostock. Math. Kolloq. No.* 43 (1991), 39–54. (B. Dimitrov) **93b:60211** 60K25

Daniev, Yu. F. (*with* Kushch, I. A.) Estimates for the probability of a random process staying in a band. (Russian. Russian and Ukrainian summaries) *Ukraïn. Mat. Zh.* **44** (1992), *no.* 4, 556–560; *translation in Ukrainian Math. J.* **44** (1992), *no.* 4, 496–500. 60G17

Dănilescu, A. (*with* Constantin, I.) On a class of stochastic equations and applications. *Inst. Politehn. "Traian Vuia" Timişoara Lucrăr. Sem. Mat. Fiz.* **1988,** *November*, 83–86. 60H20

Danilin, Yu. M. (*with* Nurnazarov, D.) Modification of a gradient-type method for minimizing nonsmooth penalty functions. (Russian) *Vychisl. Prikl. Mat.* (*Kiev*) *No.* 73 (1992), 108–112. (Summary) **93c:90077** 90C30 (65K10)

Danilov, N. N. (*with* Tomskii, G. V.) Cooperative dynamic games with side payments. (Russian) *Dynamical systems* (*Russian*), 8–18, *Yakutsk. Gos. Univ., Yakutsk*, 1989. (Summary) **93d:90075** 90D12 (90D25)

Danilov, V. G. (*with* Rashkovskii, O. B.) Asymptotic solution of an equation of the polytropic filtration of a gas in a nonhomogeneous medium. I. (Russian. English summary) *Mat. Model.* **3** (1991), *no.* 2, 119–134. (Jaroslaw Jelen) **93a:76097** 76S05 (35K20, 35Q35)

— (*with* Rashkovskii, O. B.) Asymptotic solution of an equation of the polytropic filtration of a gas in a nonhomogeneous porous medium. II. (Russian. English summary) *Mat. Model.* **3** (1991), *no.* 3, 97–108. (Jaroslaw Jelen) **93a:76098** 76S05 (35K20, 35Q35)

Danilov, V. I. de Rham complex on toroidal variety. *Algebraic geometry* (*Chicago, IL*, 1989), 26–38, *Lecture Notes in Math.*, 1479, *Springer, Berlin*, 1991. (T. Oda) **93i:14050** 14M25 (14F25, 14F40)

— Implementation via Nash equilibria. *Econometrica* **60** (1992), *no.* 1, 43–56. (Summary) **93a:90097** 90D40 (90A08)

Danilov, V. Ya. On control problems in a plane-layered medium. (Russian. Russian summary) *Vestnik Kiev. Univ. Model. Optim. Slozhn. Sist. No.* 9 (1990), 17–20. 76Q05 (49J20)

— (*with* Mel'nik, V. S.) On the problem of minimax control for nonlinear operator-differential equations. (Russian) *Vychisl. Prikl. Mat.* (*Kiev*) *No.* 71 (1990), 114–119. (Summary) **93b:49007** 49J35 (49J27)

Danilov, Vladimir *see* **Danilov, V. I.**

Danilov, Yu. A. *see* **Bergé, Pierre et al., 93e:58123** *and* **Gardner, Martin, 93m:00004**

Danilyuk, I. I. Problems with a free (unknown) boundary. (Russian) *Mathematics today* '92, *No.* 7 (*Russian*), 74–85, "*Vishcha Shkola*", *Kiev*, 1992. (*see* **93j:00003**) 35R35

— (*with* Bazalii, B. V.; Degtyarev, S. P.) Classical solvability of some free boundary problems for parabolic equations with degeneration. *Free boundary problems involving solids* (*Montreal, PQ*, 1990), 88–91, *Pitman Res. Notes Math. Ser.*, 281, *Longman Sci. Tech., Harlow*, 1993. (*see* **93k:00037**) 35R35 (35K65)

Danilyuk, V. I. (*with* Chebanu, V. M.) Centro-affine-invariant canonical forms of a two-dimensional differential system with cubic nonlinearities. (Russian) *Mat. Issled. No.* 124, *Funktsional. Metod. Teorii Differ. Uravn.* (1992), 43–55, 143. (Summary) **93b:34049** 34C20 (34A34)

Danninger, G. Role of copositivity in optimality criteria for nonconvex optimization problems. (English summary) *J. Optim. Theory Appl.* **75** (1992), *no.* 3, 535–558. (K. G. Murty) **93j:90079** 90C26 (90C30)

Dantas, Célia M. A. (*with* Pedrosa, I. A.; Baseia, B.) Harmonic oscillator with time-dependent mass and frequency and a perturbative potential. *Phys. Rev. A* (3) **45** (1992), *no.* 3, 1320–1324. (Summary) **93a:81031** 81Q05 (81R30)

D'Antoni, C. Technical properties of the quasi-local algebra. *The algebraic theory of superselection sectors* (*Palermo*, 1989), 248–258, *World Sci. Publishing, River Edge, NJ*, 1990. (*see* **93i:81122**) 81T05 (46L60)

Dantzig, George B. (*with* Infanger, Gerd) Large-scale stochastic linear programs—importance sampling and Benders decomposition. (English summary) *Computational and applied mathematics, I* (*Dublin*, 1991), 111–120, *North-Holland, Amsterdam*, 1992. (*see* **93j:00007**) 65K05 (90C08, 90C15)

Danzig, Peter B. A cooperative game with applications to computer networks. *Inform. Process. Lett.* **38** (1991), *no.* 6, 283–289. (From the introduction) **93d:90076** 90D12 (68M10, 94A05)

Dào Quang Tuyên (*with* Erdős, L.) Central limit theorems for the one-dimensional Rayleigh gas with semipermeable barriers. *Comm. Math. Phys.* **143** (1992), *no.* 3, 451–466. (Yun Gang Lu) **93d:82058** 82C22 (60J25, 60K35, 82C05, 82C70)

el-Daou, M. K. *see* **El-Daou, M. K.**

Daoud, Suzanne On the convergence of the series $\sum_1^\infty a_m \exp -\langle \lambda_m, \Psi(x)\rangle$. (Arabic summary) *Bull. Fac. Sci. Assiut Univ. C* **20** (1991), *no.* 1, 1–12. (S. Aljančić) **93b:40002** 40B05 (40A30)

— Space of entire functions represented by Dirichlet series of several complex variables having finite growth. *J. Inst. Math. Comput. Sci. Math. Ser.* **4** (1991), *no.* 3, 305–313. (Aydın Aytuna) **93h:46026** 46E10 (30B50, 32A05, 46A45)

— On the class of entire functions defined by Dirichlet series of several complex variables. *J. Math. Anal. Appl.* **162** (1991), *no.* 1, 294–299. (Vladimir Logvinenko) **93a:32001** 32A05 (32A15)

Daoudi, E. M. (*with* Manneback, P.) Parallel ICCG algorithm on distributed memory architecture. (English summary) *Parallel processing for scientific computing* (*Houston, TX*, 1991), 78–83, *SIAM, Philadelphia, PA*, 1992. (*see* **93g:65178**) 65F50 (65M06, 65Y05)

Dapatadu, Rohan (*with* Gibson, Charles; Gregory, John[1]) Numerical methods for nonlinear optimal control problems: application to abnormal problems. *J. Math. Anal. Appl.* **159** (1991), *no.* 1, 27–43. (Editors) **93e:49048** 49M25 (65K10)

Da Prato, Giuseppe (*with* Cannarsa, Piermarco) An existence and uniqueness result for Hamilton-Jacobi equations in Hilbert spaces. (Italian summary) *Atti Accad. Naz. Lincei Rend. Cl. Sci. Fis. Mat. Natur.* (8) **82** (1988), *no.* 4, 645–649 (1990). (A. I. Subbotin) **93c:49020** 49L25 (34G20)

— (*with* Cannarsa, Piermarco; Zolésio, Jean-Paul) Evolution equations in noncylindrical domains. (Italian summary) *Atti Accad. Naz. Lincei Rend. Cl. Sci. Fis. Mat. Natur.* (8) **83** (1989), 73–77 (1990). (Summary) **93c:35059** 35K22

— (*with* Delfour, Michel C.) Linear quadratic control problem without stabilizability. *Stabilization of flexible structures* (*Montpellier*, 1989), 126–147, *Lecture Notes in Control and Inform. Sci.*, 147, *Springer, Berlin*, 1990. (Piotr Grabowski) **93i:49041** 49N10 (49K27, 49N35, 49N55, 93B52)

— (*with* Cannarsa, Piermarco; Zolésio, Jean-Paul) Riccati equations in noncylindrical domains. *Stabilization of flexible structures* (*Montpellier*, 1989), 148–155, *Lecture Notes in Control and Inform. Sci.*, 147, *Springer, Berlin*, 1990. (*see* **93c:93006**) 93C20 (49N10, 93B40)

— (*with* Zolésio, Jean-Paul) Existence and optimal control for wave equation in moving domain. (English summary) *Stabilization of flexible structures* (*Montpellier*, 1989), 167–190, *Lecture Notes in Control and Inform. Sci.*, 147, *Springer, Berlin*, 1990. (Petr Procházka) **93g:49006** 49J20 (35B37, 35L05, 49K20, 49N35, 93C20)

— (*with* Cannarsa, Piermarco) Some properties of the value function of a nonlinear control problem in infinite dimensions. *Stabilization of flexible structures* (*Montpellier*, 1989), 235–247, *Lecture Notes in Control and Inform. Sci.*, 147, *Springer, Berlin*, 1990. (Teodor Havârneanu) **93g:49022** 49L20 (49K27)

— (*with* Sinestrari, Eugenio) Time dependent differential equations in nonreflexive Banach spaces. *Differential equations with applications in biology, physics, and engineering* (*Leibnitz*, 1989), 79–89, *Lecture Notes in Pure and Appl. Math.*, 133, *Dekker, New York*, 1991. (Yu. L. Daletskiĭ) **93h:34100** 34G10 (47D06, 47N20)

— Some remarks on the periodic linear quadratic regulator problem. *Modelling and inverse problems of control for distributed parameter systems* (*Laxenburg*, 1989), 43–51, *Lecture Notes in Control and Inform. Sci.*, 154, *Springer, Berlin*, 1991. (*see* **93d:93006**) 49N10 (47N20)

— (*with* Zolésio, Jean-Paul) Boundary control for inverse free boundary problems. *Boundary control and boundary variation* (*Sophia-Antipolis*, 1990), 163–173, *Lecture Notes in Control and Inform. Sci.*, 178, *Springer, Berlin*, 1992. (*see* **93b:49001**) 93C20

— (*with* Cannarsa, Piermarco) Second order Hamilton-Jacobi equations in infinite dimensions and stochastic optimal control problems. (English summary) *Probabilistic and stochastic methods in analysis, with applications* (*Il Ciocco*, 1991), 617–629, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 372, *Kluwer Acad. Publ., Dordrecht*, 1992. (*see* **93e:00029**) 93E20 (35R15)

— (*with* Zabczyk, Jerzy) On invariant measure for semilinear equations with dissipative nonlinearities. *Stochastic partial differential equations and their applications* (*Charlotte, NC*, 1991), 38–42, *Lecture Notes in Control and Inform. Sci.*, 176, *Springer, Berlin*, 1992. (*see* **93b:60006**) 60H15 (34F05, 34G10, 47N20)

— (*with* Aubin, Jean-Pierre) Contingent solutions to the center manifold equation. (French summary) *Ann. Inst. H. Poincaré Anal. Non Linéaire* **9** (1992), *no.* 1, 13–28. (Jose Luis Menaldi) **93h:35034** 35B99 (34A26, 34C99, 35L60, 49L25)

— (*with* Barbu, Viorel) A representation formula for the solutions to operator Riccati equation. *Differential Integral Equations* **5** (1992), *no.* 4, 821–829. (P. Brunovský) **93k:49031** 49N10 (34H05, 49K27, 49L15, 93C25)

— (*with* Tubaro, L.) Some results on periodic measures for differential stochastic equations with additive noise. *Dynamic Systems Appl.* **1** (1992), *no.* 2, 131–139. (Jerzy Zabczyk) **93k:60153** 60H15 (34F05, 47N20)

— (*with* Zabczyk, Jerzy) Nonexplosion, boundedness, and ergodicity for stochastic semilinear equations. *J. Differential Equations* **98** (1992), *no.* 1, 181–195. (Ralf Manthey) **93g:60129** 60H15 (34F05, 35R60)

— (*with* Sinestrari, Eugenio) Nonautonomous evolution operators of hyperbolic type. (English summary) *Semigroup Forum* **45** (1992), *no.* 3, 302–321. (Evgenii Mel'nikov) **93h:34101** 34G10 (34A12, 35R20, 47D06, 47N20)

— (*with* Zabczyk, Jerzy) A note on stochastic convolution. *Stochastic Anal. Appl.* **10** (1992), *no.* 2, 143–153. (P. Kotelenez) **93e:60116** 60H15 (34F05, 34G10, 47N30)

— (*with* Gątarek, Dariusz; Zabczyk, Jerzy) Invariant measures for semilinear stochastic equations. *Stochastic Anal. Appl.* **10** (1992), *no.* 4, 387–408. (Bohdan Maslowski) **93g:60130** 60H15 (60H10)

— Some results on boundary periodic control problems. *Mathematical theory of control* (*Bombay*, 1990), 69–86, *Lecture Notes in Pure and Appl. Math.*, 142, *Dekker, New York*, 1993. (Krystyn Styczeń) **93k:49034** 49N20 (47N70, 93C20)

— Spectral properties of the closed loop operator and periodic control problems. (English summary) *J. Math. Systems Estim. Control* **3** (1993), *no.* 1, 41–50. (Sauro Longhi) **93j:49039** 49N20 (49J20, 49N05, 93B52, 93C50)

— *see also* **Stochastic partial differential equations and applications, 93m:60010**

D'Aprile, M. (*with* Marino, V.) A geometric method to determine PDE conservation laws. (English summary) *Rep. Math. Phys.* **30** (1991), *no.* 2, 169–175 (1992). (Agostino Prástaro) **93i:58167** 58G37 (58F37, 58H99)

Da Providência, João *see* **da Providência, João**

D'Aquino, Paola The structure of countable recursively saturated models. (Italian summary) *Boll. Un. Mat. Ital. B* (7) **5** (1991), *no.* 4, 815–838. (David E. Marker) **93e:03051** 03C57 (03C15)

— Local behaviour of the Chebyshev theorem in models of $I\Delta_0$. *J. Symbolic Logic* **57** (1992), *no.* 1, 12–27. (Alessandro Berarducci) **93e:03079** 03F30 (03H15)

Darafsheh, M. R. Decomposition numbers of certain linear groups. *Bull. Iranian Math. Soc.* **18** (1992), *no.* 1, 9–29. (From the text) **93c:20018** 20C20 (20G40)

Darboux, G. *see* **Gispert-Chambaz, Hélène, 93f:01012**

Dardie, Jean Michel (*with* Medina, Alberto) Groupes de Lie à structure symplectique invariante. (English summary) [Lie groups with invariant symplectic structure] *Séminaire Gaston Darboux de Géométrie et Topologie Différentielle*, 1990–1991 (*Montpellier*, 1990–1991), iii, 77–85, *Univ. Montpellier II, Montpellier*, 1992. (Charles-Michel Marle) **93k:58088** 58F05 (53C15)

Dardi of Pisa *see* **Simi, Annalisa, 93f:01008**

Dare, V. R. (*with* Thomas, Donald G.; Subramanian, K. G.; Siromoney, Rani) Derivation sequences of semi-Thue and Thue systems. *National Seminar on Theoretical Computer Science* (*Madras*, 1991), 146–158, *IMS Rep.*, 115, *Inst. Math. Sci., Madras*, 199?. (Peter R. J. Asveld) **93j:68095** 68Q42

Darewych, J. W. (*with* Schlifer, I.) Bounding the remainder in variational calculations of potential scattering. *J. Math. Phys.* **33** (1992), *no.* 7, 2557–2561. (R. G. Newton) **93f:81154** 81U05 (34L25)

Dargahi-Noubary, G. R. Estimation of stress-strength reliability based on tail-modelling. (English summary) *Appl. Stochastic Models Data Anal.* **8** (1992), *no.* 1, 17–24. (Summary) **93d:62168** 62N05

— Discrimination between Gaussian time series based on their spectral differences. (English summary) *Comm. Statist. Theory Methods* **21** (1992), *no.* 9, 2439–2458. (S. M. Pandit) **93i:62083** 62M15 (62M10)

— (*with* Nanthakumar, A.) A method for estimating and detecting treatment effects. (English summary) *Comput. Statist.* **7** (1992), *no.* 3, 301–308. (Javad Behboodian) **93j:62048** 62E99 (62G05, 62G10)

Dargeĭko, M. M. (*with* Gorin, V. V.) Investigation of the feasibility of calculating the motion of a dynamic system without loss of accuracy. *Soviet J. Automat. Inform. Sci.* **24** (1991), *no.* 3, 61–66 (1992); *translated from Avtomatika* **1991**, *no.* 3, 62–68, 97 (*Russian. English summary*). (Inge Troch) **93g:00020** 00A71 (34A45, 60J99, 65L99, 93C41)

— (*with* Burdo, O. S.; Gorin, V. V.) On the error estimation problem in determining location in inertial navigation problems. (Russian. Russian summary) *Kibernet. i Vychisl. Tekhn. No.* 95 (1992), 68–73. (Summary) **93k:70038** 70Q05 (70–08, 70D05)

D'Ariano, G. M. SU(1, 1) symmetry of the balanced homodyne and statistics of the output. *Nuovo Cimento B* (11) **107** (1992), *no.* 6, 643–651. (Summary) **93d:81196** 81V80

Dariescu, C. (*with* Dariescu, Marina) U(1) gauge theory of the quantum Hall effect. *Found. Phys.* **21** (1991), *no.* 11, 1329–1333. (Shinichi Tajima) **93a:81220** 81V70

Dariescu, Marina (*with* Zet, Gh.; Agop, Marcel; Săndulescu, Valentina) Le parallélisme des directions et les coordonnées physiques. (Romanian summary) [Parallelism of directions and physical coordinates] *Bul. Inst. Politehn. Iaşi Secţ. I* **36(40)** (1990), *no.* 1-4, 73–76. 51P05 (83C99)

— (*with* Dariescu, C.) U(1) gauge theory of the quantum Hall effect. *Found. Phys.* **21** (1991), *no.* 11, 1329–1333. (Shinichi Tajima) **93a:81220** 81V70

Daripa, Prabir A fast algorithm to solve nonhomogeneous Cauchy-Riemann equations in the complex plane. (English summary) *SIAM J. Sci. Statist. Comput.* **13** (1992), *no.* 6, 1418–1432. (Summary) **93g:65037** 65E05 (30C99)

Darji, Udayan B. Symmetric functions, Lebesgue measurability, and the Baire property. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 4, 1151–1158. (B. K. Lahiri) **93j:26002** 26A21 (28A20, 54C30, 54C50, 54H05)

— Symmetric behavior in functions. *Proc. Amer. Math. Soc.* **119** (1993), *no.* 3, 915–923. (Marek Balcerzak) **93m:26002** 26A15 (26A24, 54C08)

Darko, Patrick W. Cohomology with bounds in $\mathbf{C}^n$. *Complex Variables Theory Appl.* **17** (1992), *no.* 3-4, 259–263. (Alessandro Tancredi) **93a:32013** 32C35 (32E10)

Darling, James P. (*with* Mayergoyz, Isaak D.) Data parallel algorithms for the numerical modeling of semiconductor devices. (English summary) *Parallel processing for scientific computing* (*Houston, TX*, 1991), 394–400, *SIAM, Philadelphia, PA*, 1992. (*see* **93g:65178**) 65N99 (65Y05, 78A55)

Darling, R. W. R. The Lyapunov exponent for products of infinite-dimensional random matrices. (English summary) *Lyapunov exponents* (*Oberwolfach*, 1990), 206–215, *Lecture Notes in Math.*, 1486, *Springer, Berlin*, 1991. (H. Kesten) **93m:60138** 60H25 (60K35)

— (*with* Mukherjea, Arunava) Discrete time voter models: a class of stochastic automata. (English summary) *Probability measures on groups, X* (*Oberwolfach*, 1990), 83–94, *Plenum, New York*, 1991. (T. M. Liggett) **93h:60161** 60K35 (82B44)

— Isotropic stochastic flows: a survey. *Diffusion processes and related problems in analysis, Vol. II* (*Charlotte, NC*, 1990), 75–94, *Progr. Probab.*, 27, *Birkhäuser Boston, Boston, MA*, 1992. (From the text) **93h:60089** 60H10 (60G60)

— Exit probability estimates for martingales in geodesic balls, using curvature. (English summary) *Probab. Theory Related Fields* **93** (1992), *no.* 2, 137–152. (Ming Liao) **93g:58159** 58G32 (60G44)

Darlington, John (*with* Guo, Yi Ke; Pull, Helen) A new perspective on integrating functional and logic languages. (English summary) *Fifth generation computer systems, Vol.* 1, 2 (*Tokyo*, 1992), 682–693, *Ohm, Tokyo*, 1992. (*see* **93i:68007**) 68N15 (68N17)

Darmanyan, S. A. (*with* Abrarov, R. M.; Christiansen, Peter L.; Scott, A. C.; Soerensen, M. P.) Soliton propagation in three coupled nonlinear Schrödinger equations. (English summary) *Phys. Lett. A* **171** (1992), *no.* 5-6, 298–302. (Summary) **93k:35238** 35Q55 (35Q51)

Darmawijaya, Soeparna A fundamental integral on the real line. *Proceedings of Asian Mathematical Conference*, 1990 (*Hong Kong*, 1990), 80–90, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93b:00022**) 26A42 (28A25)

Darmon, Henri A refined conjecture of Mazur-Tate type for Heegner points. (English summary) *Invent. Math.* **110** (1992), *no.* 1, 123–146. (John W. Jones) **93i:11066** 11G05 (11G40)

Darmstadt, S. S. L. On complex Lie algebras with a simple real form. Seminar Sophus Lie (Darmstadt, 1991). *Sem. Sophus Lie* **1** (1991), *no.* 2, 243–245. (Serge M. Skryabin) **93b:17029** 17B20

Da Rocha, Armando Freitas *see* **da Rocha, Armando Freitas**

Da Rocha Barros, Alberto Luiz *see* **da Rocha Barros, Alberto Luiz**

Daróczy, Z. (*with* Kátai, Imre) On positive additive functions with respect to interval filling sequences, and some sequences of integers with gap conditions. (Russian and Lithuanian summaries) *Litovsk. Mat. Sb.* **31** (1991), *no.* 1, 62–75; *reprinted in Lithuanian Math. J.* **31** (1991), *no.* 1, 42–52 (1992). (Armel Mercier) **93d:11078** 11K31

Darondeau, Philippe (*with* Yoccoz, Serge) Proof systems for infinite behaviours. *Inform. and Comput.* **99** (1992), *no.* 2, 178–191. (Alexey P. Stolboushkin) **93g:68084** 68Q60 (03B70)

— (*with* Nolte, Doris; Priese, Lutz; Yoccoz, Serge) Fairness, distances and degrees. *Theoret. Comput. Sci.* **97** (1992), *no.* 1, 131–142. (Manfred Broy) **93f:68024** 68Q05 (03D20,

03E15, 54H05, 68Q55)

Darouach, Mohamed (*with* Zasadzinski, Michel) Numerically efficient state estimation for a class of singular systems. (English summary) *Mathematical and intelligent models in system simulation, I, II* (*Brussels*, 1990), 135–140, *IMACS Ann. Comput. Appl. Math.*, 10, 11, *Baltzer, Basel*, 1991. (*see* **93c:93005**) 93E10

— (*with* Bassong-Onana, A.) Optimal filtering for singular systems using orthogonal transformations. (English summary) *Control Theory Adv. Tech.* **8** (1992), *no.* 4, 731–742. (Summary) **93i:93120** 93E11 (93C05, 93C55)

— (*with* Keller, J. Y.; Nowakowski, S.) State estimation and failure detection in singular systems. (English summary) *Control Theory Adv. Tech.* **8** (1992), *no.* 4, 755–762. 93E10

— (*with* Boutayeb, M.) Recursive state and parameter estimation of linear multivariable singular systems. (English summary) *Internat. J. Systems Sci.* **23** (1992), *no.* 10, 1785–1791. 93E10

— (*with* Zasadzinski, Michel; Mehdi, D.) State estimation of stochastic singular linear systems. (English summary) *Internat. J. Systems Sci.* **24** (1993), *no.* 2, 345–354. 93E10 (93C05)

Darst, Richard The Hausdorff dimension of the nondifferentiability set of the Cantor function is $[\ln(2)/\ln(3)]^2$. *Proc. Amer. Math. Soc.* **119** (1993), *no.* 1, 105–108. (Tim Bedford) **93k:28007** 28A80 (26A30)

Dart, Philip W. (*with* Zobel, Justin) Efficient run-time type checking of typed logic programs. (English summary) *J. Logic Programming* **14** (1992), *no.* 1-2, 31–69. (Summary) **93h:68084** 68Q60

Darvas, György *see* **Symmetry in a kaleidoscope, 93b:00010; 93e:00011; Symmetry of patterns, 93h:00017** *and* **Symmetry in a kaleidoscope, 93k:00019**

Darwiche, Adnan Y. (*with* Ginsberg, Matthew L.) A symbolic generalization of probability theory. (English summary) *AAAI-92. Proceedings, Tenth National Conference on Artificial Intelligence (San Jose, CA, 1992)*, 622–627, *Amer. Assoc. Artif. Intell., Menlo Park, CA*, 1992. (Summary) **93j:68200** 68T30 (03B48, 60A99, 62A15, 68T27)

Das, A. *see* **Das, Ashok**

Das, A. K. (*with* Khare, S. S.) Cobcat and singular bordism. (English summary) *Pacific J. Math.* **155** (1992), *no.* 2, 215–227. (R. E. Stong) **93i:57042** 57R75 (55M30)

Das, Aloke K. (*with* Sanyal, A.; Pal Chaudhuri, P.) On characterization of cellular automata with matrix algebra. *Inform. Sci.* **61** (1992), *no.* 3, 251–277. (Karel Culik, II) **93b:68062** 68Q80

— (*with* Nayak, Tapas K.; Pal Chaudhuri, P.) On characterization of state transition graph of additive cellular automata based on depth. *Inform. Sci.* **65** (1992), *no.* 3, 189–224. (Summary) **93k:68075** 68Q80

Das, Amitabha (*with* Moser, Louise E.; Melliar-Smith, P. M.) A parallel sorting algorithm for a novel model of computation. (English summary) *Internat. J. Parallel Programming* **20** (1991), *no.* 5, 403–419. 68Q05 (68Q22)

Das, Anadijiban (*with* Biech, T.) Collapse of a spherically symmetric anisotropic fluid in general relativity. *Proceedings of the 4th Canadian Conference on General Relativity and Relativistic Astrophysics (Winnipeg, MB, 1991)*, 86–89, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93c:83069** 83C55

Das, Anindya (*with* Luo, Gang; Bochmann, Gregor V.; Wu, Cheng) Failure-equivalent transformation of transition systems to avoid internal actions. (English summary) *Inform. Process. Lett.* **44** (1992), *no.* 6, 333–343. (Summary) **93h:68088** 68Q60 (68Q90)

Das, Ashish Some second order response surface designs in equal sized blocks. (English summary) *Calcutta Statist. Assoc. Bull.* **41** (1991), *no.* 161-164, 99–107. (E. Seiden) **93k:62152** 62K10

— (*with* Sinha, Kishore; Kageyama, Sanpei) Rectangular designs with varying replicates. (English summary) *Ars Combin.* **33** (1992), 27–29. 05B05

— (*with* Shah, K. R.) Binary designs are not always the best. (English and French summaries) *Canad. J. Statist.* **20** (1992), *no.* 3, 347–351. (Summary) **93h:62129** 62K05 (62K10)

— (*with* Gupta, Vinod Kumar; Das, Praggya) *E*-optimal block designs under heteroscedastic model. *Comm. Statist. Theory Methods* **21** (1992), *no.* 6, 1651–1666. (Summary) **93a:62103** 62K05

— (*with* Dey, A.) Universal optimality and nonoptimality of some row-column designs. *J. Statist. Plann. Inference* **31** (1992), *no.* 2, 263–271. (Bhagwandas) **93j:62188** 62K05

Das, Ashok (*with* Huang, Wen-Jui; Roy, Shibaji) A geometrical formulation of fermionic integrable systems. *J. Math. Phys.* **32** (1991), *no.* 10, 2733–2738. (Bakhit T. Matkarimov) **93f:58096** 58F07 (58A50)

— (*with* Huang, Wen-Jui; Roy, Shibaji) Zero curvature condition and 2D gravity theories. *Internat. J. Modern Phys. A* **7** (1992), *no.* 15, 3447–3472. (Andrew R. Kavalov) **93d:81067** 81R10 (58F07, 81T40)

— (*with* Huang, Wen-Jui) The Hamiltonian structures associated with a generalized Lax operator. *J. Math. Phys.* **33** (1992), *no.* 7, 2487–2497. (Vadim G. Bakurov) **93g:58055** 58F07

— (*with* Barcelos-Neto, J.) On the bi-Hamiltonian structures of the sKdV. *J. Math. Phys.* **33** (1992), *no.* 8, 2743–2748. (Yi Cheng) **93h:58065** 58F07 (35Q53, 35Q58, 58F37)

— (*with* Huang, Wen-Jui) A note on supersymmetric Gel'fand-Dikii brackets. (English summary) *Modern Phys. Lett. A* **7** (1992), *no.* 24, 2159–2164. (Vadim G. Bakurov) **93g:58056** 58F07

— (*with* Sezgin, Ergin; Sin, S.-J.) The super W_∞ symmetry of the Manin-Radul super KP hierarchy. *Phys. Lett. B* **277** (1992), *no.* 4, 435–441. (Alexander P. Veselov) **93a:58076** 58F07 (17B65, 17B70)

— (*with* Barcelos-Neto, J.; Panda, Sudhakar; Roy, Shibaji) The zero curvature formulation of the KP and the sKP equations. *Phys. Lett. B* **282** (1992), *no.* 3-4, 365–371. (Hugo H. Torriani) **93j:58057** 58F07 (17B81, 35Q53, 81R10)

— (*with* Khviengia, Zurab; Sezgin, Ergin) Self-duality in 3 + 3 dimensions and the KP equation. (English summary) *Phys. Lett. B* **289** (1992), *no.* 3-4, 347–353. (Ziemowit Popowicz) **93k:58110** 58F07 (35Q53, 81T13)

Das, Biswanath Optimal gauging proportions to detect one-sided shifts in location. *J. Indian Statist. Assoc.* **29** (1991), *no.* 2, 115–126. (Summary) **93b:62025** 62F03 (62N10)

Das, D. K. (*with* Barkalov, A. A.; Yusifov, S. I.) ★ *PR*-автоматы: функционирование, оптимизация, выбор метода синтеза. (Russian. Russian summary) [*PR*-automata: functioning, optimization, choice of design method] Препринт [Preprint], 91-55. *Akad. Nauk Ukrainy, Inst. Kibernet., Kiev*, 1991. 26 *pp.* 68Q70

Das, Dipali (*with* Krori, K. D.; Borgohain, P.) Quantum effects near a charged black hole singularity. *Modern Phys. Lett. A* **7** (1992), *no.* 23, 2051–2057. (Summary) **93c:83075** 83C57 (83C47)

— (*with* Krori, K. D.; Borgohain, P.) Quantum effects near the black hole singularity in Kruskal space-time. (English summary) *Modern Phys. Lett. A* **7** (1992), *no.* 24, 2153–2157. (Vladimir Soloviev) **93g:83065** 83C57 (83C47, 83C75)

Das, G. *see* **Das, Gokulananda**

Das, Gautam (*with* Joseph, Deborah) Minimum vertex hulls for polyhedral domains. (English summary) 7th Annual Symposium on Theoretical Aspects of Computer Science (STACS 90) (Rouen, 1990). *Theoret. Comput. Sci.* **103** (1992), *no.* 1, 107–135. (Răzvan Andonie) **93j:68211** 68U05 (68Q25)

— (*with* Althöfer, Ingo; Dobkin, David P.; Joseph, Deborah; Soares, José) On sparse spanners of weighted graphs. (English summary) *Discrete Comput. Geom.* **9** (1993), *no.* 1, 81–100. (Peter B. Gibbons) **93h:05161** 05C99 (05C85, 68R10)

Das, Gokulananda (*with* Mohapatra, P. C.) Inclusion theorems for absolute harmonic-Cesàro method of summation. *Indian J. Math.* **33** (1991), *no.* 2, 155–164. (S. Baron) **93a:40004** 40C05 (40D25, 40F05, 40G05)

— (*with* Mohanty, S. K.) Convergence in probability of matrix transformation of random Fourier-Stieltjes series. *J. Indian Math. Soc. (N.S.)* **56** (1991), *no.* 1-4, 133–143. (Tamotsu Tsuchikura) **93b:60107** 60G99 (42A24)

— (*with* Kuttner, B.; Nanda, Sudarsan) On absolute almost convergence. *J. Math. Anal. Appl.* **161** (1991), *no.* 1, 50–56. (M. S. Rangachari) **93g:40010** 40H05 (46A45)

— (*with* Mohapatra, Minati) Degree of approximation of functions by the $F(a, q)$ transform of its Fourier series in the Hölder metric. *Proc. Nat. Acad. Sci. India Sect. A* **61** (1991), *no.* 3, 345–356. (Rafat N. Siddiqi) **93f:42005** 42A10 (42A24)

— (*with* Sahoo, S. K.) On some sequence spaces. *J. Math. Anal. Appl.* **164** (1992), *no.* 2, 381–398. (K. Chandrasekhara Rao) **93d:40017** 40H05 (46A45, 46B45)

Das, J. K. (*with* Basu, A. K.) On estimation and asymptotic properties of the parameters of ARMA(p, q) process in the stable case. (English summary) *Calcutta Statist. Assoc. Bull.* **41** (1991), *no.* 161-164, 45–64. (Ye Ji Xu) **93k:62179** 62M10

Das, Kalyan (*with* Giri, N.) Locally minimax tests of independence with additional observations. (English summary) *Sankhyā Ser. B* **52** (1990), *no.* 1, 14–22. (Summary) **93e:62148** 62H15 (62C20)

— Improved estimation of the ratio of variance components for a balanced one-way random effects model. *Statist. Probab. Lett.* **13** (1992), *no.* 2, 99–108. (Jon Stene) **93d:62129** 62J10 (62F10)

Das, Kanak Kanti Study of propagation of waves in a magnetoelastic initially stressed conducting layer. (English summary) *Bull. Calcutta Math. Soc.* **84** (1992), *no.* 3, 281–286. 73R05 (73D20)

Das, Kanika (*with* Krori, K. D.; Chaudhury, Tarakeswar; Borgohain, P.; Mahanta, Chandra Rekha) Charged solutions in higher dimensions. (English and French summaries) *Canad. J. Phys.* **70** (1992), *no.* 9, 752–759. (Summary) **93j:83071** 83E15 (83C22)

Das, Lovejoy S. F-structure manifold with some linear connections. (English summary) *Comment. Math. Prace Mat.* **32** (1992), 19–27. (Andrzej Bucki) **93j:53043** 53C15 (53C05)

— Complete lift of a structure satisfying $F^K - (-)^{K+1}F = 0$. (English summary) *Internat. J. Math. Math. Sci.* **15** (1992), *no.* 4, 803–808. (Andrzej Bucki) **93h:53031** 53C15

— Prolongations of F-structure to the tangent bundle of order 2. (English summary) *Internat. J. Math. Math. Sci.* **16** (1993), *no.* 1, 201–204. (Aurel Bejancu) **93m:53031** 53C15

Das, M. N. (*with* Ghosh, Dilip Kumar) Construction of two way group divisible designs. (English summary) *Sankhyā Ser. B* **51** (1989), *no.* 3, 331–334. 62K10

— (*with* Agarwal, S. C.) Incomplete block designs for partial diallel cross. (English summary) *Sankhyā Ser. B* **52** (1990), *no.* 1, 75–81. 62K10

— (*with* Jain, Ratan Chandra) Efficiency balanced block designs using orthogonal arrays with variable symbols. (English summary) *Calcutta Statist. Assoc. Bull.* **41** (1991), *no.* 161-164, 173–178. 62K10

— (*with* Choudhury, D. Roy) Use of combinatorics for unique detection of unknown numbers of outliers using group tests. (English summary) *Sankhyā Ser. B* **54** (1992), *no.* 1, 92–99. (Summary) **93j:62049** 62F03

Das, N. C. (*with* Chakrabarti, C. G.) Repeatable experiment and maximum-entropy principle. (English summary) *Bull. Calcutta Math. Soc.* **83** (1991), *no.* 5, 475–480. 94A17

Das, P. *see* **Das, Pitambar**

Das, P. P. A note on: "Distance functions in digital geometry" [Inform. Sci. **42** (1987), no. 2, 113–136; MR 88e:68107] by Das, P. P. Chakrabarti and B. N. Chatterji. *Inform. Sci.* **64** (1992), *no.* 1-2, 181–190. (Summary) **93g:68146** 68U10 (51K99)

Das, Phullendu (*with* Chaudhuri, A. K.) Fuzzy connected sets in fuzzy topological spaces. (English summary) *Fuzzy Sets and Systems* **49** (1992), *no.* 2, 223–229. (Summary) **93f:54005** 54A40 (04A72)

— (*with* Bhakat, S. K.) q-similitudes and q-fuzzy partitions. (English summary) *Fuzzy Sets and Systems* **51** (1992), *no.* 2, 195–202. (Summary) **93f:04002** 04A72

— (*with* Bhakat, S. K.) On the definition of a fuzzy subgroup. (English summary) *Fuzzy Sets and Systems* **51** (1992), *no.* 2, 235–241. (Summary) **93h:20079** 20N25 (04A72)

— (*with* Bhakat, S. K.) Fuzzy subalgebras of a universal algebra. (English summary) *Bull. Calcutta Math. Soc.* **85** (1993), *no.* 1, 79–92. (Maria Scafati) **93m:08009** 08A99 (04A72)

Das, Pitambar (*with* Parhi, N.) On the zeros of solutions of nonhomogeneous third order differential equations. *Czechoslovak Math. J.* **41(116)** (1991), *no.* 4, 641–652. (Gary D. Jones) **93f:34057** 34C10

— (*with* Parhi, N.) Oscillation criteria for a class of nonlinear differential equations of third order. (English summary) *Ann. Polon. Math.* **57** (1992), *no.* 3, 219–229. (V. B. Headley) **93m:34045** 34C10 (34C11, 34C15)

Das, Praggya (*with* Das, Ashish; Gupta, Vinod Kumar) *E*-optimal block designs under heteroscedastic model. *Comm. Statist. Theory Methods* **21** (1992), *no.* 6, 1651–1666. (Summary) **93a:62103** 62K05

Das, Pramod K. (*with* Rosa, Alexander) Halving Steiner triple systems. (English summary) Algebraic graph theory (Leibnitz, 1989). *Discrete Math.* **109** (1992), *no.* 1-3, 59–67. (Charles J. Colbourn) **93h:05019** 05B07

Das, Pravangsu Sekhar (*with* Sengupta, P. R.; Debnath, Lokenath) Lamb's plane problem in a thermoviscoelastic micropolar medium with the effect of gravity. (English summary)

Internat. J. Math. Math. Sci. **15** (1992), *no.* 4, 795–802. (Summary) **93i:73021** 73D30 (73B30, 73F15)

Das, Premadhis (*with* Adhikary, Basudeb) A study of efficiency of proportional frequency plans. (English summary) *Sankhya Ser. B* **52** (1990), *no.* 3, 338–342. (Summary) **93e:62195** 62K15 (62K05)

— (*with* Chatterjee, Banibarna) Optimal design within the class of equal group incomplete orthogonal arrays. (English summary) *Calcutta Statist. Assoc. Bull.* **41** (1991), *no.* 161-164, 189–195. 62K05

Das, Rita (*with* Sinha, Bimal Kumar) Robust optimum invariant tests of covariance structures useful in linear models. (English summary) *Sankhya Ser. A* **52** (1990), *no.* 2, 244–258. (Summary) **93e:62094** 62F35 (62J05)

Das, S. *see* **Das, Shuvra**

Das, S. K. (*with* Lardner, R. W.) Variational parameter estimation for a two-dimensional numerical tidal model. *Internat. J. Numer. Methods Fluids* **15** (1992), *no.* 3, 313–327. 86A05 (76M20)

Das, Sajal K. Designing recursive networks combinatorially. Proceedings of the Twenty-second Southeastern Conference on Combinatorics, Graph Theory, and Computing (Baton Rouge, LA, 1991). *Congr. Numer.* **83** (1991), 11–24. (Qiao Li) **93c:68004** 68M07 (05C99, 68R10, 90B12)

— (*with* Deo, Narsingh; Prasad, Sushil) Reverse binary digraphs and graphs. (English summary) *J. Combin. Inform. System Sci.* **16** (1991), *no.* 1, 107–128. (Summary) **93d:05057** 05C20 (05C75, 68R10)

— (*with* Ghosh, Joydeep; Deo, Narsingh) Stirling networks: a versatile combinatorial topology for multiprocessor systems. (English summary) *Discrete Appl. Math.* **37/38** (1992), 119–146. (Mukkai S. Krishnamoorthy) **93g:05133** 05C90 (68M10)

— (*with* Chen, Calvin C.-Y.) Breadth-first traversal of trees and integer sorting in parallel. *Inform. Process. Lett.* **41** (1992), *no.* 1, 39–49. (Summary) **93b:68013** 68P10 (68Q25)

— (*with* Brand, Neal; Curran, Stephen J.; Jacob, Roy Thomas, Jr.) Probability of diameter two for Steinhaus graphs. (English summary) *Discrete Appl. Math.* **41** (1993), *no.* 2, 165–171. (Summary) **93m:05130** 05C50

Das, Shuvra (*with* Mitra, Ambar K.) Solution of inverse problems by using the boundary element method. (English summary) *Boundary element technology, VII* (*Albuquerque, NM*, 1992), 721–731, *Comput. Mech., Southampton*, 1992. (*see* **93b:65002**) 73V10 (65N38)

Das, Sumit R. (*with* Mandal, Gautam; Wadia, Spenta R.) Stochastic quantization on two-dimensional theory space and Morse theory. *Mathematical physics* (*Islamabad*, 1989), 126–137, *World Sci. Publishing, River Edge, NJ*, 1990. (Bani Mitra Södermark) **93b:81180** 81T17 (58E05, 81S20, 81T40)

— String fields in two-dimensional gravity. *Particles, strings and cosmology* (*Boston, MA*, 1990), 475–485, *World Sci. Publishing, River Edge, NJ*, 1991. (Summary) **93b:81244** 81T40 (81–02, 81T30)

— (*with* Dhar, Avinash; Rama, S. Kalyana) Physical states and scaling properties of W gravities and W strings. *Internat. J. Modern Phys. A* **7** (1992), *no.* 10, 2295–2333. (Alexander W. Smith) **93c:81164** 81T30 (81T40, 83E30)

— (*with* Dhar, Avinash; Mandal, Gautam; Wadia, Spenta R.) Gauge theory formulation of the $c = 1$ matrix model: symmetries and discrete states. (English summary) *Internat. J. Modern Phys. A* **7** (1992), *no.* 21, 5165–5191. (Summary) **93i:81217** 81T40 (81T13)

— (*with* Rama, S. Kalyana) Renormalization of couplings in embedded random surfaces. (English summary) *Modern Phys. Lett. A* **7** (1992), *no.* 40, 3747–3757. 81T40

— Physical properties and symmetries of the $d = 1$ matrix model. Random surfaces and 2D quantum gravity (Barcelona, 1991). *Nuclear Phys. B Proc. Suppl.* **25A** (1992), 92–103. (David Sénéchal) **93i:81218** 81T40 (81–02, 81T30)

— Matrix models and black holes. (English summary) *Modern Phys. Lett. A* **8** (1993), *no.* 1, 69–78. (Summary) **93i:81219** 81T40

Das, Tapan Kumar (*with* Sengupta, P. R.) Effect of gravity on wave propagation in a general higher order visco-elastic layer including strain rate and stress rate. *J. Indian Math. Soc. (N.S.)* **58** (1992), *no.* 1-4, 237–247. 73F15 (73D30)

Das, Tapas K. (*with* Wortman, Martin A.) Performance of N machine centers of K-out-of-M : G type maintained by a single repairman. (English summary) *Naval Res. Logist.* **39** (1992), *no.* 7, 919–936. 90B25

— (*with* Wortman, Martin A.) Performance evaluation of n-unit priority standby systems. (English summary) *Internat. J. Systems Sci.* **24** (1993), *no.* 3, 553–562. (Summary) **93j:60130** 60K10

Das, U. (*with* Bera, P. K.; Bhattacharyya, C.; Talukdar, B.) On integral representations of the Coulomb functions. *J. Math. Phys.* **33** (1992), *no.* 4, 1403–1407. (Giorgio Cattapan) **93d:81183** 81U05 (33C15, 81Q60)

— (*with* Talukdar, B.; Bhattacharyya, C.; Bera, P. K.) Phase-equivalent potentials from supersymmetric quantum mechanics. *J. Phys. A* **25** (1992), *no.* 14, 4073–4082. (Summary) **93d:81036** 81Q05 (81T60)

Da Sangallo Giovane, Antonio *see* **da Sangallo Giovane, Antonio**

DasGupta, A. *see* **DasGupta, Anirban**

Dasgupta, Ambarish (*with* Pal, Sankar Kumar) Spectral fuzzy sets and soft thresholding. *Inform. Sci.* **65** (1992), *no.* 1-2, 65–97. 04A72

DasGupta, Anirban (*with* Studden, W. J.) Robust Bayesian experimental designs in normal linear models. *Ann. Statist.* **19** (1991), *no.* 3, 1244–1256. (Ivar Petersen) **93e:62182** 62K05

Dasgupta, Bandana (*with* Mukherjee, S. P.) An inventory problem revisited. (English summary) *Calcutta Statist. Assoc. Bull.* **42** (1992), *no.* 165-166, 103–110. 90B05

— (*with* Mukherjee, S. P.) EOQ under permissible delay in payments. (English summary) *IAPQR Trans.* **17** (1992), *no.* 2, 25–35. 90B05

Dasgupta, Chandan Neural network modeling of associative memory: beyond the Hopfield model. (English summary) Statistical physics of disordered solids, polymers and glasses (Calcutta, 1991/1992). *Phys. A* **186** (1992), *no.* 1-2, 49–60. (Summary) **93f:82038** 82C32 (92B20)

Dasgupta, N. (*with* Roy Chowdhury, A.) Commutative differential operator and a class of solutions for the BKP equation on the singular rational curve. *J. Math. Phys.* **32** (1991), *no.* 12, 3473–3475. (Luen-Chau Li) **93a:58086** 58F07 (35Q51)

— (*with* Roy Chowdhury, A.) A new integrable equation in the $(2 + 1)$-dimension-dispersionless limit of the BKP equation. (English summary) *J. Phys. A* **25** (1992), *no.* 17, L1033–L1038. (Summary) **93f:35222** 35Q58 (58F07)

Dasgupta, Ratan Rates of convergence to normality for some variables with entire characteristic function. (English summary) *Sankhya Ser. A* **54** (1992), *no.* 2, 198–214. (J. Steinebach) **93m:60042** 60F05 (60F10, 60F25)

— Nonuniform rates of convergence to the Poisson distribution. (English summary) *Sankhya Ser. A* **54** (1992), *no.* 3, 460–463. (Summary) **93k:60052** 60F05

Dasgupta, S. *see* **Dasgupta, Soura**

Das Gupta, Somesh Pattern recognition when feature variables are subject to error. (English summary) *Sankhya Ser. B* **51** (1989), *no.* 3, 287–294. (Summary) **93e:62162** 62H30

Dasgupta, Soura (*with* Gevers, Michel; Bastin, G.; Campion, Guy; Chen, L.) Identifiability of scalar linearly parametrized polynomial systems. (English summary) *Identification and system parameter estimation* 1991, *Vol.* 1,2 (*Budapest*, 1991), 835–839, *IFAC Sympos. Ser.*, 3, *Pergamon, Oxford*, 1992. (*see* **93h:93009**) 93C10 (93B30)

Dash, A. T. (*with* Cressman, Ross) Strong stability and evolutionarily stable strategies with two types of players. *J. Math. Biol.* **30** (1991), *no.* 1, 89–99. (D. O. Logofet) **93a:92007** 92D15 (90D80, 92D25)

Dash, S. P. (*with* Bourghawi, Suad M.; El-Amaari, Ali) Randomization analysis of incomplete data in some basic designs. (English summary) *Biometrical J.* **35** (1993), *no.* 1, 81–97. 62K15

Dashkova, O. Yu. Solvable groups with metabelian subgroups of finite ranks. (Russian) *Complex analysis, algebra and topology* (*Russian*), 38–41, *Akad. Nauk Ukrain. SSR, Inst. Mat., Kiev*, 1990. (S. M. Vovsi) **93c:20061** 20F16

Da Silva, Ana Maria Porto Ferreira *see* **da Silva, Ana Maria Porto Ferreira**

Da Silva, Antonio R. *see* **da Silva, Antonio R.**

Da Silva, M. Eduarda A. *see* **da Silva, M. Eduarda A.**

Da Silva, Wagner Teixeira *see* **da Silva, Wagner Teixeira**

roque Da Silva Filho, Antônio C. *see* **Roque Da Silva Filho, Antônio C.**

Da Silveira, Marcos Azevedo *see* **da Silveira, Marcos Azevedo**

Daskalopoulos, Georgios D. (*with* Bradlow, Steven B.) Moduli of stable pairs for holomorphic bundles over Riemann surfaces. *Internat. J. Math.* **2** (1991), *no.* 5, 477–513. (N. J. Hitchin) **93b:58026** 58D27 (14D20, 14H60, 32G13, 58E15)

— The topology of the space of stable bundles on a compact Riemann surface. (English summary) *J. Differential Geom.* **36** (1992), *no.* 3, 699–746. (Steven B. Bradlow) **93i:58026** 58D27 (14D20, 32G13, 58E15)

Daskalov, Rumen N. (*with* Kapralov, Stoyan N.) New minimum distance bounds for certain binary linear codes. (English summary) *IEEE Trans. Inform. Theory* **38** (1992), *no.* 6, 1795–1796. (Summary) **93g:94013** 94B05 (94B65)

Daskaloyannis, C. Equivalent local potentials for a coupled-channel system and the Feshbach optical potential. *Internat. J. Theoret. Phys.* **31** (1992), *no.* 7, 1203–1215. (Summary) **93b:81297** 81U05

— (*with* Bonatsos, Dennis; Kokkotas, K.) WKB equivalent potentials for q-deformed harmonic and anharmonic oscillators. (English summary) *J. Math. Phys.* **33** (1992), *no.* 9, 2958–2965. (Summary) **93f:81034** 81Q20 (81R50, 81S05)

— Generalized deformed oscillator corresponding to the modified Pöschl-Teller energy spectrum. *J. Phys. A* **25** (1992), *no.* 8, 2261–2272. (N. D. Sengupta) **93d:81086** 81R50 (81Q15)

— (*with* Ypsilantis, K.) A deformed oscillator with Coulomb energy spectrum. (English summary) *J. Phys. A* **25** (1992), *no.* 15, 4157–4166. (Chang Pu Sun) **93b:81058** 81R50 (17B81, 81R30)

— Generalized deformed Virasoro algebras. *Modern Phys. Lett. A* **7** (1992), *no.* 9, 809–816. (Ji Sheng Na) **93b:81110** 81R50 (17B37, 17B68, 81R10)

— (*with* Bonatsos, Dennis; Kokkotas, K.) Classical potentials for q-deformed anharmonic oscillators. *Phys. Rev. A* (3) **45** (1992), *no.* 9, R6153–R6156. (Summary) **93b:81106** 81R50 (81Q05)

— (*with* Bonatsos, Dennis) Generalized deformed oscillators for vibrational spectra of diatomic molecules. *Phys. Rev. A* (3) **46** (1992), *no.* 1, 75–80. (Summary) **93d:81195** 81V55 (81R50)

Das Kar, Dipali *see* **Das, Dipali**

Das Neves, A. *see* **das Neves, A.**

hari Dass, N. D. *see* **Hari Dass, N. D.**

Dassios, George (*with* Apostolopoulos, Theodore) A parallel algorithm for solving the inverse scattering moment problem. (English summary) *J. Comput. Appl. Math.* **42** (1992), *no.* 1, 63–77. 65Y05 (76Q05)

— (*with* Charalambopoulos, Antonios) Inverse scattering via low-frequency moments. (English summary) *J. Math. Phys.* **33** (1992), *no.* 12, 4206–4216. (Summary) **93j:35051** 35J05 (35R30, 65P05, 76Q05)

— (*with* Zafiropoulos, Filareti) Errata: "Equipartition of energy in linearized 3-D viscoelasticity" [Quart. Appl. Math. **48** (1990), no. 4, 715–730; MR 92e:73021]. *Quart. Appl. Math.* **50** (1992), *no.* 3, 599. 73F15 (35B40, 35C15, 73B30, 73D99)

— (*with* Martin, Paul Andrew) Karp's theorem in elastodynamic inverse scattering. (English summary) *Inverse Problems* **9** (1993), *no.* 1, 97–111. (Plamen D. Stefanov) **93k:73030** 73D50 (35J99, 35R30, 73D25)

— (*with* Arnaudov, Ya. N.; Georgiev, Vladimir) High-frequency asymptotics in inverse scattering by ellipsoids. (English summary) *Math. Methods Appl. Sci.* **16** (1993), *no.* 1, 1–12. (Summary) **93j:35181** 35R30 (35J05, 76Q05)

— (*with* Rigou, Zafiria) On the density of traction traces in scattering of elastic waves. (English summary) *SIAM J. Appl. Math.* **53** (1993), *no.* 1, 141–153. (B. Belinskiy) **93k:73027** 73D25 (35Q72)

Dassow, Jürgen (*with* Păun, Gheorghe) On the succinctness of descriptions of context-free languages by cooperating/distributed grammar systems. (Russian summary) *Comput. Artificial Intelligence* **10** (1991), *no.* 6, 513–527. (I. M. Havel) **93i:68111** 68Q50 (68Q45)

— (*with* Csuhaj-Varjú, Erzsébet) On bounded interpretations of grammar forms. *Theoret. Comput. Sci.* **87** (1991), *no.* 2, 287–313. (K. G. Subramanian) **93a:68075** 68Q50

— (*with* Hromkovič, Juraj) On synchronized Lindenmayer picture languages. (English summary) *Lindenmayer systems*, 253–261, *Springer, Berlin*, 1992. (*see* **93m:68004**) 68U05 (68Q45)

— (*with* Csuhaj-Varjú, Erzsébet; Păun, Gheorghe) Dynamically controlled cooperating/distributed grammar systems. (English summary) *Inform. Sci.* **69** (1993), *no.* 1-2, 1–25. (Summary) **93k:68057** 68Q50

Dasu, Sriram (*with* Ahmadi, Javad H.; Ahmadi, Reza H.; Tang, Christopher S.) Batching and scheduling jobs on batch and discrete processors. (English summary) *Oper. Res.* **40**

(1992), *no.* 4, 750–763. 90B35
— (*with* Bitran, Gabriel R.) A review of open queueing network models of manufacturing systems. (English summary) *Queueing Systems Theory Appl.* **12** (1992), *no.* 1-2, 95–133. 90B22 (60K25)
Date, Etsurō (*with* Jimbo, Michio; Miki, Kei; Miwa, Tetsuji) New R matrices associated with cyclic representations of $U_q(A_2^{(2)})$. *Publ. Res. Inst. Math. Sci.* **27** (1991), *no.* 4, 639–655. (Ian M. Musson) **93g:17021** 17B37
— (*with* Jimbo, Michio; Miki, Kei; Miwa, Tetsuji) Braid group representations arising from the generalized chiral Potts models. *Pacific J. Math.* **154** (1992), *no.* 1, 37–66. (From the introduction) **93g:20074** 20F36 (57M25, 82B23)
Date, G. (*with* Murthy, M. V. N.; Law, J.; Bhaduri, R. K.) On a class of noninterpolating solutions of the many-anyon problem. (English summary) *J. Phys. A* **25** (1992), *no.* 23, 6163–6168. (Summary) **93k:81043** 81Q05 (81S05)
Date, Hikaru (*with* Furuya, Ken'ichi; Fukudome, Kimitoshi) Effects of finite register length in the fast Hartley transform. *Electron. Comm. Japan Part III Fund. Electron. Sci.* **75** (1992), *no.* 1, 76–86. 65T20
Date, Ranjit A. (*with* Chow, Joe H.) A parametrization approach to optimal H_2 and H_∞ decentralized control problems. (English summary) *Automatica J. IFAC* **29** (1993), *no.* 2, 457–463. 93B36
Da-te, T. (*with* Kawaguchi, M. F.) On calculation of fundamental operations of weakly noninteractive fuzzy numbers using digital representation. (English summary) *Japanese J. Fuzzy Theory Systems* **4** (1992), *no.* 3, 273–288. (Summary) **93m:04014** 04A72
Datko, R. Two examples of ill-posedness with respect to small time delays in stabilized elastic systems. (English summary) *IEEE Trans. Automat. Control* **38** (1993), *no.* 1, 163–166. (Summary) **93k:93093** 93D15 (93C20)
D'Atri, J. E. The long-time behavior of geodesics in certain left-invariant metrics. *Proc. Amer. Math. Soc.* **116** (1992), *no.* 3, 813–817. (T. Okubo) **93a:53035** 53C22 (32H15, 53C30)
Datta, Amitava Efficient algorithms for the largest rectangle problem. *Inform. Sci.* **64** (1992), *no.* 1-2, 121–141. 68U05
— (*with* Srikant, R.; Ramkumar, G. D. S.; Krithivasan, Kamala) Fast parallel algorithms for the maximum empty rectangle problem. *Sādhanā* **17** (1992), *no.* 1, 221–236. 68U05 (68Q22, 68Q25)
Datta, Aniruddha (*with* Ioannou, Petros A.) Robust adaptive control: design, analysis and robustness bounds. (English summary) *Foundations of adaptive control* (*Urbana, IL*, 1990), 71–152, *Lecture Notes in Control and Inform. Sci.*, 160, *Springer, Berlin*, 1991. (Norihiko Adachi) **93k:93103** 93D21 (93C40, 93D09)
Datta, Anjali (*with* Henderson, Johnny) Differentiation of solutions of difference equations with respect to right focal boundary values. *Panamer. Math. J.* **2** (1992), *no.* 1, 1–16. (Shao Zhu Chen) **93a:39002** 39A10 (39A12)
Datta, Barun Kumar The approximate evaluation of certain integrals. (English summary) *Comput. Math. Appl.* **25** (1993), *no.* 7, 47–49. 65D30
Datta, Bibhutibhusan (*with* Singh, Awadhesh Narayan) Magic squares in India. Revised by Kripa Shankar Shukla. *Indian J. Hist. Sci.* **27** (1992), *no.* 1, 51–120. (A. I. Volodarskii) **93b:01013** 01A32
— (*with* Singh, Awadhesh Narayan) Use of permutations and combinations in India. (English summary) *Indian J. Hist. Sci.* **27** (1992), *no.* 3, 231–249. (A. I. Volodarskii) **93i:01008** 01A32
Datta, Biswa *see* **Conference: Linear Algebra, Numerical Linear Algebra and Applications, 93a:15002**
Datta, Gauri Sankar (*with* Ghosh, Malay) On the frequentist properties of some hierarchical Bayes predictors in finite population sampling. *Calcutta Statist. Assoc. Bull.* **40** (1990/91), *no.* 157-160, 207–217. (Glen Meeden) **93i:62010** 62D05
— Pitman closeness for hierarchical Bayes predictors in mixed linear models. Pitman's measure of closeness. *Comm. Statist. Theory Methods* **20** (1991), *no.* 11, 3713–3727. (Michael J. Evans) **93d:62013** 62C10 (62F10, 62J12)
— (*with* Ghosh, Malay) Asymptotic optimality of hierarchical Bayes estimators and predictors. *J. Statist. Plann. Inference* **29** (1991), *no.* 3, 229–243. (Khursheed Alam) **93c:62052** 62F15 (62C12)
— Some applications of Anderson's inequality to some optimality criteria of the generalized least squares estimator. *Metrika* **39** (1992), *no.* 3-4, 239–251. (S. Jeyaratnam) **93j:62170** 62J05 (62C20, 62F10, 62F15)
Datta, K. B. (*with* Gangopadhyay, Subrata) Coprime matrix fraction description via orthogonal structure theorem. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 10, 1517–1520. 93B40
Datta, Nilanjana (*with* Ghosh, Gautam) Berry's phase for anharmonic oscillators. (English summary) *Phys. Rev. A* (3) **46** (1992), *no.* 9, 5358–5362. (Piotr Kosiński) **93j:81013** 81Q05 (70H99, 81S99)
Datta, Somnath (*with* McCormick, William P.) Bootstrap for a finite state Markov chain based on i.i.d. resampling. (English summary) *Exploring the limits of bootstrap* (*East Lansing, MI*, 1990), 77–97, *Wiley Ser. Probab. Math. Statist. Probab. Math. Statist., Wiley, New York*, 1992. (Arup Bose) **93k:62171** 62M05 (62F12, 62G09)
— (*with* Bhat, B. R.) On the completeness of a family of conditional distributions. (English summary) *Statist. Probab. Lett.* **15** (1992), *no.* 1, 27–30. (Eberhard Siebert) **93k:62007** 62B05
Dattatraya, Kirkire Prashant A CLT when summands come randomly from r populations. (English summary) *Calcutta Statist. Assoc. Bull.* **41** (1991), *no.* 161-164, 137–143. (J. D. Mason) **93j:60021** 60F05 (60E07)
Dattatreya Rao, A. V. (*with* Radhakrishna, C.; Anjaneyulu, G. V. S. R.) Estimation of parameters in a two-component mixture generalized gamma distribution. *Comm. Statist. Theory Methods* **21** (1992), *no.* 6, 1799–1805. 62F10
— (*with* Ramabhadrasarma, Ivatury; Venkata Ramana, K.) On LU decomposition of a centrosymmetric matrix. *Inform. Sci.* **63** (1992), *no.* 1-2, 3–10. (Summary) **93b:65051** 65F05 (15A23)
Dattoli, G. (*with* Loreto, V.; Mari, C.; Richetta, M.; Torre, Amalia) Biunitary transformations and ordinary differential equations. I, II, III. *Nuovo Cimento B* (11) **106** (1991), *no.* 12, 1357–1374, 1375–1390, 1391–1399. (P. G. L. Leach) **93e:34015** 34A26 (81Q05)
— (*with* Mari, C.; Richetta, M.; Torre, Amalia) On the generalized Twiss parameters and Courant-Snyder invariant in classical and quantum optics. *Nuovo Cimento B* (11) **107** (1992), *no.* 3, 269–287. (Summary) **93b:81318** 81V80 (78A99)
Daube, O. Resolution of the 2D Navier-Stokes equations in velocity-vorticity form by means of an influence matrix technique. (English summary) *J. Comput. Phys.* **103** (1992), *no.* 2, 402–414. (Summary) **93i:76066** 76M25 (76D05)
Daubechies, Ingrid ★ Ten lectures on wavelets. CBMS-NSF Regional Conference Series in Applied Mathematics, 61. *Society for Industrial and Applied Mathematics (SIAM), Philadelphia, PA*, 1992. xx+357 *pp. ISBN* 0-89871-274-2 (Albert Cohen) **93e:42045** 42C15 (94A12)
— (*with* Cohen, Albert; Feauveau, Jean-Christophe) Biorthogonal bases of compactly supported wavelets. *Comm. Pure Appl. Math.* **45** (1992), *no.* 5, 485–560. (W. R. Madych) **93e:42044** 42C15 (94A12)
— (*with* Lagarias, Jeffrey C.) Sets of matrices all infinite products of which converge. *Linear Algebra Appl.* **161** (1992), 227–263. (James Allen Fill) **93f:15006** 15A18 (15A51, 15A52, 39A10, 40A20, 60J10)
— (*with* Lagarias, Jeffrey C.) Two-scale difference equations. II. Local regularity, infinite products of matrices and fractals. *SIAM J. Math. Anal.* **23** (1992), *no.* 4, 1031–1079. (Evangelos Ifantis) **93g:39001** 39A10
Dauben, Joseph W. Abraham Robinson: les infinitésimaux, l'analyse non standard, et les fondements des mathématiques. [Abraham Robinson: infinitesimals, nonstandard analysis and the foundations of mathematics] Translated from the English. *La mathématique non standard*, 157–184, *Fondem. Sci., CNRS, Paris*, 1989. (*see* **93c:01002**) 01A60 (03A05, 03H05)
— The Pythagorean theorem and Chinese mathematics. Hui Liu's commentary on the theorem "gou gu" in the ninth chapter of the *Jiu zhang suan shu*. (Spanish) 2nd International Colloquium on Philosophy and History of Mathematics (Spanish) (México City, 1990). *Mathesis* **7** (1991), *no.* 3, 279–301. (J. Friberg) **93a:01009** 01A25
— The "Pythagorean theorem" and Chinese mathematics. Liu Hui's commentary on the gou-gu theorem in Chapter Nine of the *Jiu zhang suan shu*. (English summary) *Amphora*, 133–155, *Birkhäuser, Basel*, 1992. (Catherine Jami) **93i:01002** 01A25 (01A20)
Dauchet, Max (*with* Tison, S.) Structural complexity of classes of tree languages. (English summary) *Tree automata and languages* (*Le Touquet*, 1990), 327–353, *Stud. Comput. Sci. Artif. Intell.*, 10, *North-Holland, Amsterdam*, 1992. (Zdzisław Grodzki) **93j:68099** 68Q45 (68Q65)
— Simulation of Turing machines by a regular rewrite rule. (English summary) *Theoret. Comput. Sci.* **103** (1992), *no.* 2, 409–420. (Summary) **93i:68064** 68Q05 (03D10, 68Q42)
Daudel, Raymond La vie et l'œuvre de Gérard Petiau. [The life and works of Gérard Petiau] *C. R. Acad. Sci. Paris Sér. Gén. Vie Sci.* **8** (1991), *no.* 5, 441–442 (1992). (Editors) **93c:01036** 01A70
Daudin, Jean-Jacques (*with* Philoche, Jean-Louis) Recherche d'un sous-espace vectoriel de dimension donnée traversant au mieux un nuage de points: une démonstration globale, simple et autonome. (English and French summaries) [Search for a vector subspace of given dimension passing through at most a cloud of points: a global, simple and autonomous proof] *Statist. Anal. Données* **16** (1991), *no.* 3, 203–209. 62H25
Dauer, J. P. (*with* Saleh, Ossama A.) A representation of the set of feasible objectives in multiple objective linear programs. *Linear Algebra Appl.* **166** (1992), 261–275. (Christiane Tammer) **93a:90056** 90C29 (90C05, 90C31, 90C33)
Dauge, Monique (*with* Costabel, Martin) Singularités d'arêtes pour les problèmes aux limites elliptiques. (English and French summaries) [Edge singularities for elliptic boundary value problems] *Journées "Équations aux Dérivées Partielles"* (*Saint-Jean-de-Monts*, 1992), *Exp. No. IV*, 12 *pp., École Polytech., Palaiseau*, 1992. (Summary) **93j:35201** 35S15 (35A20, 35J40)
— (*with* Bernardi, Christine; Maday, Yvon) Relèvements de traces préservant les polynômes. (English and French summaries) [Trace liftings which preserve polynomials] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 3, 333–338. (Viorel Arnautu) **93g:65036** 65D99 (46E35, 47B38, 65N30, 65N35)
— Neumann and mixed problems on curvilinear polyhedra. *Integral Equations Operator Theory* **15** (1992), *no.* 2, 227–261. (B. Hellwig) **93e:35025** 35J25 (35B65, 35R05, 47F05)
— (*with* Bourlard, Maryse; Lubuma, Mbaro-Saman; Nicaise, Serge) Coefficients of the singularities for elliptic boundary value problems on domains with conical points. III. Finite element methods on polygonal domains. *SIAM J. Numer. Anal.* **29** (1992), *no.* 1, 136–155. (Enrique Zuazua) **93a:65146** 65N30 (35A20, 35J05)
Daughton, A. (*with* Balachandran, A. P.; Gu, Z.-C.; Marmo, Giuseppe; Sorkin, R. D.; Srivastava, A. M.) A topological spin-statistics theorem or a use of the antiparticle. The birth and early evolution of our Universe (Gräftåvallen, 1990). *Phys. Scripta* **1991**, *Vol.* T36, 253–257. (Yu Liang Liu) **93c:81099** 81S99 (81R99)
Daumens, M. (*with* Minnaert, Pierre; Mozrzymas, Marek; Toshev, S.) Regge symmetries of super 6-j symbols for the superalgebra osp(1|2). (English summary) *Europhys. Lett.* **20** (1992), *no.* 8, 671–676. (Summary) **93m:81044** 81R10 (17A70, 17B70)
Daun, Brian (*with* Zweben, Monte; Davis, Eugene; Drascher, Ellen; Deale, Michael; Eskey, Megan) Learning to improve constraint-based scheduling. (English summary) *Artificial Intelligence* **58** (1992), *no.* 1-3, 271–296. (Summary) **93i:68159** 68T20 (90B35)
Dauns, John Semiprime modules and rings. *Noncommutative ring theory* (*Athens, OH*, 1989), 41–62, *Lecture Notes in Math.*, 1448, *Springer, Berlin*, 1990. (J. L. García Hernández) **93d:16008** 16D80 (16D70, 16N60, 16S90)
— Torsion free types. *Fund. Math.* **139** (1991), *no.* 2, 99–117. (J. Jirásko) **93d:16006** 16D70
Dauphin-Tanguy, G. (*with* Sueur, C.) Grassmann algebra and bond-graph modelling. (English summary) *J. Franklin Inst.* **329** (1992), *no.* 6, 1129–1146. (Giuseppe Conte) **93k:93008** 93A30 (00A69, 93C05, 93C15)
D'Auria, R. (*with* Bonora, L.; Bregola, M.; et al.) Some remarks on the supersymmetrization of the Lorentz Chern-Simons form in $D = 10$ $N = 1$ supergravity theories. *Phys. Lett. B* **277** (1992), *no.* 3, 306–312. (Mark D. Roberts) **93e:83068** 83E50
Dau The Cap (*with* Nguyễn Văn Khuê) On the integral extension of algebras of semiglobal holomorphy and of semiglobally analytic algebras. *Rev. Roumaine Math. Pures Appl.* **35** (1990), *no.* 6, 523–529. (V. Brînzănescu (Zbl 731:32004)) **93b:46103** 46J15 (32E25)
Dautov, O. Sh. Equivalence of integral and integrofunctional equations in electrodynamical problems of diffraction by nonhomogeneous bodies. (Russian. English and Russian summaries) *Izv. Vyssh. Uchebn. Zaved. Radiofiz.* **34** (1991), *no.* 8, 936–946; *translation in Radiophys. and Quantum Electronics* **34** (1991), *no.* 8, 749–756 (1992). (Summary) **93j:78016** 78A45
Dauxois, T. (*with* Peyrard, Michel; Willis, C. R.) Localized breather-like solution in a discrete Klein-Gordon model and application to DNA. (English summary) *Phys. D* **57**

(1992), *no.* 3-4, 267–282. 92D20 (39A12)

Davaran, A. (*with* Behravesh, A.; Kaveh, A.) A finite difference scheme with variable rectilinear mesh for solving multi-harmonic partial differential equations. (English summary) *Comput. & Structures* **44** (1992), *no.* 4, 789–795. (Summary) **93f:65063** 65M06 (73V15)

Dave, Dinesh S. (*with* Fitzpatrick, Kathy E.; Korukonda, A. Rao) Implementing optimization methods in network crashing: an illustration. (English summary) *Optimization, Vol.* 1, 2 (*Singapore*, 1992), 275–283, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93d:90005**) 90C90

Dave, H. P. (*with* Jani, P. N.) Minimum variance unbiased estimation in a class of exponential family of distributions and some of its applications. (Italian summary) *Metron* **48** (1990), *no.* 1-4, 493–507 (1991). (Summary) **93d:62037** 62F10

Dave, Upendra On probabilistic scheduling period inventory system with instantaneous demand. (English summary) *Cahiers Centre Études Rech. Opér.* **34** (1992), *no.* 1, 25–35. 90B05 (90B35)

Davenport, H. ★ The higher arithmetic. An introduction to the theory of numbers. Sixth edition. *Cambridge University Press, Cambridge*, 1992. 217 *pp. ISBN* 0-521-41998-0; 0-521-42227-2 (Editors) **93i:11001** 11-01

Daverman, R. J. Hereditarily aspherical compacta and cell-like maps. *Topology Appl.* **41** (1991), *no.* 3, 247–254. (Leonard R. Rubin) **93b:54033** 54F45 (54F15, 55M10, 57P99)

— (*with* Repovš, Dušan) General position properties that characterize 3-manifolds. *Canad. J. Math.* **44** (1992), *no.* 2, 234–251. (Perrin Wright) **93d:57038** 57N75 (57N10)

— PL maps with manifold fibers. *J. London Math. Soc.* (2) **45** (1992), *no.* 1, 180–192. (Dušan Repovš) **93e:57041** 57Q99 (54B15, 55R05)

Davey, B. A. (*with* Priestley, H. A.) Optimal natural dualities. *Trans. Amer. Math. Soc.* **338** (1993), *no.* 2, 655–677. (T. S. Blyth) **93j:06011** 06D15

Davì, Fabrizio The theory of Kirchhoff rods as an exact consequence of three-dimensional elasticity. (English summary) *J. Elasticity* **29** (1992), *no.* 3, 243–262. (Summary) **93g:73073** 73K05 (73C02)

David, D. (*with* Holm, Darryl D.) Multiple Lie-Poisson structures, reductions, and geometric phases for the Maxwell-Bloch travelling wave equations. *J. Nonlinear Sci.* **2** (1992), *no.* 2, 241–262. (Richard Montgomery) **93e:58060** 58F05 (78A60)

ungureanu-David, Elena *see* **Ungureanu-David, Elena**

David, Elias (*with* Erné, Marcel) Ideal completion and Stone representation of ideal-distributive ordered sets. Proceedings of the Symposium on General Topology and Applications (Oxford, 1989). *Topology Appl.* **44** (1992), *no.* 1-3, 95–113. (H. A. Priestley) **93g:06002** 06A09 (06B10, 06D05)

David, François Louis Matrix models and 2-D gravity. *String theory and quantum gravity* (*Trieste*, 1990), 55–90, *World Sci. Publishing, River Edge, NJ*, 1991. (P. Mitra) **93c:81201** 81T40 (81-02, 81T30, 81V17)

— What is the intrinsic geometry of two-dimensional quantum gravity? *Nuclear Phys. B* **368** (1992), *no.* 3, 671–700. (Ilya Shapiro) **93g:81145** 81T40

David, Guy (*with* Semmes, Stephen W.) Quantitative rectifiability and Lipschitz mappings. *Trans. Amer. Math. Soc.* **337** (1993), *no.* 2, 855–889. (Juha Heinonen) **93h:42015** 42B20 (49Q15)

David, H. T. (*with* Salem, Shawki A.) Three shrinkage constructions for Pitman-closeness in the one-dimensional location case. Pitman's measure of closeness. *Comm. Statist. Theory Methods* **20** (1991), *no.* 11, 3605–3627. (Glen Meeden) **93b:62036** 62F10

— (*with* Jobe, J. Marcus) Buehler confidence bounds for a reliability-maintainability measure. *Technometrics* **34** (1992), *no.* 2, 214–222. (Summary) **93c:62059** 62F25 (62N05)

bar-David, Israel *see* **Bar-David, Israel**

David, Johan (*with* De Moor, Bart L. R.; Vandewalle, Joos; De Moor, Maarten; Berckmans, Daniel) Trade-offs in linear control system design: a practical example. (English summary) *Optimal Control Appl. Methods* **13** (1992), *no.* 2, 121–144. 93B51 (93B36, 93C05)

— (*with* De Moor, Bart L. R.) Total linear least squares and the algebraic Riccati equation. (English summary) *Systems Control Lett.* **18** (1992), *no.* 5, 329–337. (Summary) **93d:93090** 93E24 (93B40)

ben-David, Shai *see* **Ben-David, Shai**

Davidov, J. (*with* Mushkarov, Oleg K.) On the Riemannian curvature of a twistor space. *Acta Math. Hungar.* **58** (1991), *no.* 3-4, 319–332. (Henrik Pedersen) **93g:53061** 53C25 (32L25)

Davidović, D. M. (*with* Lalović, D.) On one controversy about the smoothed Wigner function. *Phys. A* **182** (1992), *no.* 4, 643–648. (Paul Busch) **93f:81065** 81S30

— (*with* Lalović, D.; Bijedić, N.) Quantum mechanics in terms of nonnegative distribution functions. *Phys. A* **184** (1992), *no.* 1-2, 231–243. (Nicolaas P. Landsman) **93h:81071** 81S30

— (*with* Marić, Z.) A note on smoothed quasidistributions. *Phys. Lett. A* **162** (1992), *no.* 6, 437–438. (Summary) **93b:81129** 81S30

— (*with* Lalović, D.; Bijedić, N.) Quantum mechanics in terms of a two-parameter generalized Wigner function. *Phys. Lett. A* **166** (1992), *no.* 2, 99–106. (Jules Beckers) **93g:81066** 81S30

— (*with* Lalović, D.; Bijedić, N.) Quantum mechanics in terms of nonnegative smoothed Wigner functions. (English summary) *Phys. Rev. A* (3) **46** (1992), *no.* 3, 1206–1212. (Summary) **93g:81067** 81S30

Davidovich, M. I. Convergence of the Weibull-Gnedenko distribution to the extreme value distribution. (Russian. English and Russian summaries) *Vestsi Akad. Navuk Belarust Ser. Fiz. Mat. Navuk* **1992**, *no.* 1, 103–106, 127. (Summary) **93j:60022** 60F05 (60G70)

Davidow, Amy Casson's invariant for branched cyclic covers over iterated torus knots. *Knots* 90 (*Osaka*, 1990), 151–161, *de Gruyter, Berlin*, 1992. (Christine Lescop) **93g:57003** 57M12 (57M25, 57N10)

Davidsen, Michael (*with* Jacobsen, Martin) Weak convergence of two-sided stochastic integrals, with an application to models for left truncated survival data. *Statistical inference in stochastic processes*, 167–182, *Probab. Pure Appl.*, 6, *Dekker, New York*, 1991. (Arnold Janssen) **93b:60010** 60B05 (60H05, 62G05, 62M09)

Davidson, Aharon (*with* Paz, Uzi) Threefold family of charged spin-$\frac{1}{2}$ Dirac bubbles. (English summary) *Phys. Lett. B* **300** (1993), *no.* 3, 234–240. (Summary) **93k:81257** 81V10

Davidson, Ernest R. (*with* Murray, Christopher W.; Racine, Stephen C.) Improved algorithms for the lowest few eigenvalues and associated eigenvectors of large matrices. (English summary) *J. Comput. Phys.* **103** (1992), *no.* 2, 382–389. (Summary) **93j:65055** 65F15

Davidson, James A central limit theorem for globally nonstationary near-epoch dependent functions of mixing processes. (English summary) *Econometric Theory* **8** (1992), *no.* 3, 313–329. (Qi Man Shao) **93m:60043** 60F05

— An L_1-convergence theorem for heterogeneous mixingale arrays with trending moments. (English summary) *Statist. Probab. Lett.* **16** (1993), *no.* 4, 301–304. (Summary) **93k:60078** 60F25

Davidson, Kenneth R. Domingo Herrero: his theorems and problems. *Houston J. Math.* **17** (1991), *no.* 4, 453–476. (Stephen Power) **93e:01020** 01A70 (01A60, 47-03, 47A58)

Davidson, M. R. A subgradient method for solving the problem of the development of multicommodity networks with a viability guarantee. (Russian. Russian summary) *Zh. Vychisl. Mat. i Mat. Fiz.* **33** (1993), *no.* 4, 503–521. (Summary) **93m:90029** 90B10 (90C35)

Davidson, Ronald C. (*with* Lund, Steven M.) A class of coherent vortex structures in rotating nonneutral plasma. (English summary) *Phys. Fluids B* **5** (1993), *no.* 5, 1421–1429. 76X05 (76E25)

Davidson, W. (*with* Bonnor, W. B.) Interpreting the Levi-Civita vacuum metric. (English summary) *Classical Quantum Gravity* **9** (1992), *no.* 9, 2065–2068. (M. A. J. Vandyck) **93g:83014** 83C15 (83C20)

Davies, Andrew T. *see* **Physics of the early universe, 93b:83071**

Davies, Brian Onsager's algebra and the Dolan-Grady condition in the non-self-dual case. *J. Math. Phys.* **32** (1991), *no.* 11, 2945–2950. (Summary) **93h:82014** 82B23 (17B81)

Davies, E. Brian (*with* Simon, Barry) L^p norms of noncritical Schrödinger semigroups. *J. Funct. Anal.* **102** (1991), *no.* 1, 95–115. (J. A. Van Casteren) **93e:47063** 47F05 (35J10, 47D07, 47N50, 81U05)

— (*with* Gross, Leonard; Simon, Barry) Hypercontractivity: a bibliographic review. *Ideas and methods in quantum and statistical physics* (*Oslo*, 1988), 370–389, *Cambridge Univ. Press, Cambridge*, 1992. (From the text) **93g:47052** 47D03 (47F05, 47N50, 81Q10)

— (*with* Simon, Barry) Spectral properties of Neumann Laplacian of horns. *Geom. Funct. Anal.* **2** (1992), *no.* 1, 105–117. (Summary) **93g:35099** 35P05 (35J05, 47F05, 58G25)

— (*with* Lindsay, J. Martin) Noncommutative symmetric Markov semigroups. *Math. Z.* **210** (1992), *no.* 3, 379–411. (Yun Gang Lu) **93f:46088** 46L05 (46L57, 47D03, 47N55, 60J60, 82C10)

— Analysis on graphs and noncommutative geometry. (English summary) *J. Funct. Anal.* **111** (1993), *no.* 2, 398–430. (Palle E. T. Jørgensen) **93m:58110** 58G11 (46L89, 47D07, 58B25, 58B30)

Davies, Ian M. On the stochastic Lagrangian in manifolds. (English summary) *Stochastics and quantum mechanics* (*Swansea*, 1990), 69–75, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93c:81005**) 81P20

— *see also* **Stochastics and quantum mechanics, 93c:81005**

Davies, J. A. (*with* Mehta, Manish A.; Aitchison, I. J. R.) Stable soliton solution of the CP^1 model with a Chern-Simons term. *Phys. Lett. B* **281** (1992), *no.* 1-2, 86–89. (Summary) **93b:81148** 81T10 (81T13)

Davies, K. T. R. (*with* Wu, J. S.; Davies, R. W.) Evaluation of integrals using general partial-fraction expansions. (English and French summaries) *Canad. J. Phys.* **70** (1992), *no.* 5, 311–318. (Summary) **93g:65030** 65D30

— (*with* Huston, T. E.; Baranger, M.) Calculations of periodic trajectories for the Hénon-Heiles Hamiltonian using the monodromy method. *Chaos* **2** (1992), *no.* 2, 215–224. (Richard C. Churchill) **93f:58072** 58F05 (34C25, 58F10, 58F14, 58F22, 70H05)

Davies, Laurie *see* **Davies, P. Laurie**

Davies, M. A. (*with* Moon, F. C.) 3-D spatial chaos in the elastica and the spinning top: Kirchhoff analogy. (English summary) *Chaos* **3** (1993), *no.* 1, 93–99. (Summary) **93m:58107** 58F40 (58F13, 70E15, 70K50, 73K99, 92C40)

Davies, M. E. An iterated function approximation in shadowing time series. (English summary) *Phys. Lett. A* **169** (1992), *no.* 4, 251–258. 58F13 (65Q05, 70K50)

Davies, M. J. (*with* Truman, Aubrey) Point sources, constant magnetic fields and Shucker's theorem in stochastic mechanics. (English summary) *Stochastics and quantum mechanics* (*Swansea*, 1990), 76–94, *World Sci. Publishing, River Edge, NJ*, 1992. (Gennady Berman) **93h:81018** 81P20 (81V10)

Davies, P. Laurie An efficient Fréchet differentiable high breakdown multivariate location and dispersion estimator. *J. Multivariate Anal.* **40** (1992), *no.* 2, 311–327. (M. Hušková) **93c:62094** 62H12 (62F35)

Davies, R. *see* **Davies, Roy O.**

Davies, R. W. (*with* Davies, K. T. R.; Wu, J. S.) Evaluation of integrals using general partial-fraction expansions. (English and French summaries) *Canad. J. Phys.* **70** (1992), *no.* 5, 311–318. (Summary) **93g:65030** 65D30

Davies, Roy O. (*with* Spurgeon, S. K.) Robust implementation of sliding mode control schemes. (English summary) *Internat. J. Systems Sci.* **24** (1993), *no.* 4, 733–743. 93B12

Davies, S. J. (*with* Fisher, Nicholas I.; Lunn, A. D.) Spherical median axes. (English summary) *J. Roy. Statist. Soc. Ser. B* **55** (1993), *no.* 1, 117–124. (Summary) **93k:62118** 62H05 (62H11)

gonzález-Dávila, J. C. *see* **González-Dávila, J. C.**

Dávila, Jaime (*with* Ruiz, Sergio; Giudici, Reinaldo) Smallest tetravalent graphs with a given cyclic group of automorphisms. (English and Spanish summaries) *Acta Cient. Venezolana* **43** (1992), *no.* 4, 208–212. (Summary) **93j:05078** 05C25

gonzález-Dávila, M. C. *see* **González-Dávila, M. C.**

Davini, Cesare (*with* Parry, Gareth P.) Uniform rearrangement in defective crystals. (English summary) *Proc. Roy. Soc. London Ser. A* **439** (1992), *no.* 1906, 247–256. (Miroslav Šilhavý) **93m:73007** 73C99 (73E99)

Davis, A. E. L. Kepler's resolution of individual planetary motion. *Centaurus* **35** (1992), *no.* 2, 97–102. 01A45

— Kepler's "distance law"—myth not reality. *Centaurus* **35** (1992), *no.* 2, 103–120. 01A45

— Grading the eggs (Kepler's sizing-procedure for the planetary orbit). (English summary) *Centaurus* **35** (1992), *no.* 2, 121–142. 01A45

— Kepler's road to Damascus. (English summary) *Centaurus* **35** (1992), *no.* 2, 143–164. 01A45

— Kepler's physical framework for planetary motion. (English summary) *Centaurus* **35** (1992), *no.* 2, 165–191. 01A45

Davis, A. M. J. Discussion related to E. B. B. Watson and D. V. Evans: "Resonant frequencies of a fluid in containers with internal bodies" [J. Engrg. Math. **25** (1991), no. 2, 115–135; MR 91m:76020]. (English summary) *J. Engrg. Math.* **26** (1992), *no.* 3, 445–454. (Summary) **93g:76018** 76B10

— Periodic blocking in parallel shear or channel flow at low Reynolds number. (English summary) *Phys. Fluids A* **5** (1993), *no.* 4, 800–809. (Summary) **93k:76032** 76D07 (76D99)

Davis, Burgess (*with* Bañuelos, Rodrigo) Sharp estimates for Dirichlet eigenfunctions in horn-shaped regions. (English summary) *Comm. Math. Phys.* **150** (1992), *no.* 1, 209–215. (Summary) **93i:35020** 35B40 (35P20, 47F05)

Davis, C. Brad (*with* Birkenmeier, Gary F.; Reeves, Kevin J.; Xiao, Sihai) Is a semidirect product of groups necessarily a group? *Proc. Amer. Math. Soc.* **118** (1993), *no.* 3, 689–692. (Orin Chein) **93i:20084** 20N05 (20E22)

Davis, Christopher A. (*with* Rivest, Chantal; Farrell, Brian F.) Upper-tropospheric syntopic-scale waves. I. Maintenance as Eady normal modes. (English summary) *J. Atmospheric Sci.* **49** (1992), *no.* 22, 2108–2119. (Summary) **93k:86007** 86A10 (76C15, 76E20)

Davis, Donald M. (*with* Bendersky, Martin) 2-primary v_1-periodic homotopy groups of $SU(n)$. *Amer. J. Math.* **114** (1992), *no.* 3, 465–494. (J. W. Rutter) **93g:55018** 55Q52 (55T99)

Davis, Eugene (*with* Zweben, Monte; Daun, Brian; Drascher, Ellen; Deale, Michael; Eskey, Megan) Learning to improve constraint-based scheduling. (English summary) *Artificial Intelligence* **58** (1992), *no.* 1-3, 271–296. (Summary) **93i:68159** 68T20 (90B35)

Davis, Gary Ernest (*with* Banks, J.; Brooks, Jeff; Cairns, Grant; Stacey, P. J.) On Devaney's definition of chaos. *Amer. Math. Monthly* **99** (1992), *no.* 4, 332–334. (J. E. Keesling) **93d:54059** 54H20 (58F13)

Davis, James Andrew Construction of relative difference sets in p-groups. *Discrete Math.* **103** (1992), *no.* 1, 7–15. (A. P. Street) **93i:05027** 05B10 (20D15)

— A generalization of Kraemer's result on difference sets. *J. Combin. Theory Ser. A* **59** (1992), *no.* 2, 187–192. (A. P. Street) **93i:05028** 05B10 (20D60)

Davis, James Francis Confluent mappings on [0, 1] and inverse limits. *Topology Proc.* **15** (1990), 1–9. (J. E. Keesling) **93f:54051** 54H20 (54B99, 54F15)

Davis, John E. Schwinger-Dyson analysis of an exactly solvable model. (English summary) *Phys. Rev. D* (3) **46** (1992), *no.* 4, 1750–1760. 81T10

Davis, Kenneth (*with* Webb, William A.) A binomial coefficient congruence modulo prime powers. (English summary) *J. Number Theory* **43** (1993), *no.* 1, 20–23. (Andrew Granville) **93m:11016** 11B65

Davis, M. H. A. (*with* Burstein, G.) Random conservation laws and global solutions of nonlinear SPDE—application to the HJB SPDE of anticipative control. (English summary) *Stochastic partial differential equations and their applications (Charlotte, NC, 1991)*, 43–53, *Lecture Notes in Control and Inform. Sci.*, 176, *Springer, Berlin*, 1992. (Krystyna Twardowska) **93h:60090** 60H15 (35R60, 93E03)

Davis, Malcolm E. (*with* Luty, Brock A.; McCammon, J. Andrew) Solving the finite-difference nonlinear Poisson-Boltzmann equation. (English summary) *J. Comput. Chem.* **13** (1992), *no.* 9, 1114–1118. (Summary) **93g:65109** 65M06 (65K10, 65M12)

Davis, Martin (*with* Fechter, Ronald) A free variable version of the first-order predicate calculus. *J. Logic Comput.* **1** (1991), *no.* 4, 431–451. (Henry Africk) **93i:03009** 03B10 (03B35, 68T15)

Davis, Philip J. Applied mathematics as social contract. *Math worlds*, 182–194, *SUNY Ser. Sci. Tech. Soc., SUNY Press, Albany, NY*, 1993. (*see* **93m:00025**) 00A30 (00A69)

Davis, Richard Alan (*with* Breidt, F. J.) Time-reversibility, identifiability and independence of innovations for stationary time series. (English summary) *J. Time Ser. Anal.* **13** (1992), *no.* 5, 377–390. (Gy. Terdik) **93j:62219** 62M10

— (*with* Knight, Keith; Liu, Jian^3) M-estimation for autoregressions with infinite variance. *Stochastic Process. Appl.* **40** (1992), *no.* 1, 145–180. (Pham Dinh Tuan) **93c:62145** 62M10 (62F12, 62F35)

Davis, Richard Lynn (*with* Cvetič, Mirjam; Griffies, Stephen; Soleng, Harald H.) Cauchy horizons, thermodynamics, and closed timelike curves in planar supersymmetric spaces. (English summary) *Phys. Rev. Lett.* **70** (1993), *no.* 9, 1191–1194. (Summary) **93j:83061** 83C75 (83C15)

Davis, S. H. (*with* Merchant, Gregory J.; Braun, R. J.; Brattkus, K.) Pulsatile instability in rapid directional solidification: strongly-nonlinear analysis. (English summary) *SIAM J. Appl. Math.* **52** (1992), *no.* 5, 1279–1302. (Summary) **93h:35203** 35Q72 (35B25, 35R35, 73B30, 80A22)

Davis, Stephen F. An interface tracking method for hyperbolic systems of conservation laws. (English summary) *Appl. Numer. Math.* **10** (1992), *no.* 6, 447–472. 65M99 (35L65)

Davison, A. C. (*with* Hinkley, D. V.; Worton, B. J.) Bootstrap likelihoods. *Biometrika* **79** (1992), *no.* 1, 113–130. (Gutti J. Babu) **93c:62078** 62G09

— (*with* Hall, Peter Gavin) On the bias and variability of bootstrap and cross-validation estimates of error rate in discrimination problems. (English summary) *Biometrika* **79** (1992), *no.* 2, 279–284. (Summary) **93f:62085** 62H30 (62G05, 62G09)

Davison, Edward J. (*with* Qiu, Li) A unified approach for the stability robustness of polynomials in a convex set. (English summary) *Automatica J. IFAC* **28** (1992), *no.* 5, 945–959. (Summary) **93f:93107** 93D09 (93B40)

— (*with* Qiu, Li) Pointwise gap metrics on transfer matrices. *IEEE Trans. Automat. Control* **37** (1992), *no.* 6, 741–758. (T. Kaczorek) **93b:93089** 93D09 (93C80)

— (*with* Qiu, Li) The stability robustness of generalized eigenvalues. *IEEE Trans. Automat. Control* **37** (1992), *no.* 6, 886–891. (Summary) **93a:93086** 93D09

Davison, L. (*with* Guenther, Grant R.) Maximal run lengths in binary strings. Proceedings of the Twenty-second Southeastern Conference on Combinatorics, Graph Theory, and Computing (Baton Rouge, LA, 1991). *Congr. Numer.* **82** (1991), 129–138. (Wayne M. Dymacek) **93c:05005** 05A10 (05A17)

— (*with* Guenther, Grant R.) Sums involving multinomial coefficients. *J. Combin. Math. Combin. Comput.* **11** (1992), 13–22. (Summary) **93b:05008** 05A10

Davison, Mark L. ★ Multidimensional scaling. Reprint of the 1983 original. *Robert E. Krieger Publishing Co., Inc., Malabar, FL*, 1992. xiv+242 *pp. ISBN* 0-89464-662-1 (Editors) **93d:62173** 62P15

Davydov, A. A. *K*-theory of rings with idempotents. *Proceedings of the International Conference on Algebra, Part* 2 (*Novosibirsk*, 1989), 279–284, *Contemp. Math.*, 131, *Part* 2, *Amer. Math. Soc., Providence, RI*, 1992. (Sue Geller) **93h:19004** 19D50 (16W50)

Davydov, A. S. *see* **Bar'yakhtar, V. G. et al.**

Davydov, È. G. (*with* Kokhova, S. V.) Some dynamic time-optimality problems for the distribution of several types of resources on network graphs. (Russian. Russian summary) *Vestnik Moskov. Univ. Ser. XV Vychisl. Mat. Kibernet.* **1992**, *no.* 1, 42–49, 82; *translation in Moscow Univ. Comput. Math. Cybernet.* **47** (1992), *no.* 1, 40–44. (Summary) **93m:90089** 90C35

— (*with* Khersonskaya, L. V.) Reduction of some multiple minimax problems with related constraints. (Russian. Russian summary) *Vestnik Moskov. Univ. Ser. XV Vychisl. Mat. Kibernet.* **1992**, *no.* 2, 51–54, 74; *translation in Moscow Univ. Comput. Math. Cybernet.* **47** (1992), *no.* 2, 49–51. 90C30

Davydov, G. V. (*with* Davydova, I. M.) Tautologies and positive solvability of linear homogeneous systems. *Ann. Pure Appl. Logic* **57** (1992), *no.* 1, 27–43. (R. Piziak) **93g:15020** 15A99 (03B05, 90C08)

Davydov, M. G. On an energy criterion for the stability of the elastoplastic deformation process. (Russian. Russian summary) *Boundary value problems (Russian)*, 31–38, *Perm. Politekh. Inst., Perm'*, 1991. (*see* **93m:00017**) 73E50 (73H99)

Davydov, V. A. Codes for correcting defects. (Russian. Russian summary) *Problemy Peredachi Informatsii* **29** (1993), *no.* 1, 99–104; *translation in Problems Inform. Transmission* **29** (1993), *no.* 1, 85–89. (Summary) **93m:94054** 94C12

Davydov, Yu. A. Convergence in variation of images of one-dimensional measures. (Russian. Russian summary) *Zap. Nauchn. Sem. S.-Peterburg. Otdel. Mat. Inst. Steklov. (POMI)* **194** (1992), *Problemy Teorii Veroyatnost. Raspred.* 12, 48–58, 177. (Nickolai A. Denis'evskii) **93k:60012** 60B10 (28A33, 60F05)

Davydova, I. M. (*with* Davydov, G. V.) Tautologies and positive solvability of linear homogeneous systems. *Ann. Pure Appl. Logic* **57** (1992), *no.* 1, 27–43. (R. Piziak) **93g:15020** 15A99 (03B05, 90C08)

Davydychev, A. I. Recursive algorithm for evaluating vertex-type Feynman integrals. (English summary) *J. Phys. A* **25** (1992), *no.* 21, 5587–5596. (Henryk Arodź) **93k:81153** 81T18 (81T30)

el-Dawaliby, N. *see* **El-Dawaliby, N.**

Dawar, Ravi (*with* Sharma, Sushil) A common fixed-point theorem for four maps in a complete metric space. (Hindi. English and Hindi summaries) *Vijnana Parishad Anusandhan Patrika* **35** (1992), *no.* 3, 229–233. 54H25

Dawid, A. Philip Prequential data analysis. (English summary) *Current issues in statistical inference: essays in honor of D. Basu*, 113–126, *IMS Lecture Notes Monograph Ser.*, 17, *Inst. Math. Statist., Hayward, CA*, 1992. (Summary) **93g:62006** 62–07 (62A15)

— (*with* Fang, Bi Qi) Conjugate Bayes discrimination with infinitely many variables. *J. Multivariate Anal.* **41** (1992), *no.* 1, 27–42. (Chien-Pai Han) **93e:62163** 62H30

— (*with* Seillier-Moiseiwitsch, F.; Sweeting, Trevor J.) Prequential tests of model fit. *Scand. J. Statist.* **19** (1992), *no.* 1, 45–60. (Lionel Weiss) **93g:62063** 62G10 (62A15, 62G20)

Dawidowicz, Antoni Leon Existence and uniqueness of solutions of generalized von Foerster integro-differential equation with multidimensional space of characteristics of maturity. (English summary) *Bull. Polish Acad. Sci. Math.* **38** (1990), *no.* 1-12, 65–70. (Summary) **93i:45009** 45K05 (35F20, 35R10)

— On invariant measures supported on compact sets. II. *Univ. Iagel. Acta Math. No.* 29 (1992), 25–28. (Nathaniel F. G. Martin) **93g:28020** 28D10

— (*with* Tumidajowicz, Danuta) Markovian description of the development of *Rhododendron ferrugineum L.* species by the theory of generating functions. *Univ. Iagel. Acta Math. No.* 29 (1992), 85–88. 92D40

Dawidowski, Marian (*with* Kisielewicz, Michał; Kubiaczyk, Ireneusz) Existence theorem for hyperbolic differential inclusion with Carathéodory right hand side. *Discuss. Math.* **10** (1990), 69–75 (1991). (Summary) **93a:35161** 35R70 (35L70)

— (*with* Kubiaczyk, Ireneusz) On bounded solutions of hyperbolic differential inclusion in Banach spaces. *Demonstratio Math.* **25** (1992), *no.* 1-2, 153–159. (Sadakazu Aizawa) **93i:35160** 35R70 (35L70, 35R20, 47N20)

Dawson, Clint N. The performance of an explicit/implicit domain decomposition procedure for parabolic equations on an Intel Hypercube. (English summary) *Fifth International Symposium on Domain Decomposition Methods for Partial Differential Equations (Norfolk, VA*, 1991), 386–393, *SIAM, Philadelphia, PA*, 1992. (*see* **93g:65009**) 65M55 (65Y05)

— (*with* Wheeler, Mary Fanett) Time-splitting methods for advection-diffusion-reaction equations arising in contaminant transport. *ICIAM* 91 (*Washington, DC*, 1991), 71–82, *SIAM, Philadelphia, PA*, 1992. (*see* **93b:00026**) 65N99

Dawson, Darren M. *see* **Berghuis, Harry et al., 93g:93055**

Dawson, Donald A. (*with* Hochberg, K. J.; Wu, Yadong) Multilevel branching systems. *White noise analysis (Bielefeld*, 1989), 93–107, *World Sci. Publishing, River Edge, NJ*, 1990. (Summary) **93b:60191** 60J80 (60G57)

— (*with* Hochberg, K. J.) A multilevel branching model. *Adv. in Appl. Probab.* **23** (1991), *no.* 4, 701–715. (Thomas G. Kurtz) **93d:60139** 60J80 (60G57)

— (*with* Rémillard, Bruno) A limit theorem for Brownian motion in a random scenery. *Canad. Math. Bull.* **34** (1991), *no.* 3, 385–391. (Gregory F. Lawler) **93c:60124** 60J65 (60F17)

— (*with* Fleischmann, Klaus) Critical branching in a highly fluctuating random medium. *Probab. Theory Related Fields* **90** (1991), *no.* 2, 241–274. (Luis G. Gorostiza) **93a:60130** 60J80 (60G57, 82C44)

— (*with* Fleischmann, Klaus) Diffusion and reaction caused by point catalysts. *SIAM J. Appl. Math.* **52** (1992), *no.* 1, 163–180. (Ya. I. Bilopol's'ka) **93e:35055** 35K55 (60G57, 82C70)

Dawson, Jeremy E. (*with* de Launey, Warwick) A note on the construction of GH($4tq$; EA(q)) for $t = 1, 2$. (English summary) *Australas. J. Combin.* **6** (1992), 177–186. (Summary) **93h:05031** 05B20 (05–04)

Dax, Achiya On regularized least norm problems. (English summary) *SIAM J. Optim.* **2** (1992), *no.* 4, 602–618. (Eugenia Duca) **93k:65055** 65K05 (90C20)

— On minimum norm solutions. (English summary) *J. Optim. Theory Appl.* **76** (1993), *no.* 1, 183–193. (Stephan Dempe) **93k:90066** 90C20 (49N15, 65K05)

— On row relaxation methods for large constrained least squares problems. (English summary) *SIAM J. Sci. Comput.* **14** (1993), *no.* 3, 570–584. (Summary) **93m:65081**

65K10

Dax, Jean-Pierre Points singuliers normaux, points singuliers normaux simples et modèles d'élimination. (English and French summaries) [Normal singular points, simple normal singular points and models for elimination] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 3, 315–319. (Summary) **93f:57036** 57R45 (58C27)

Day, Alan (*with* Gumm, H. P.) Some characterizations of the commutator. *Algebra Universalis* **29** (1992), *no.* 1, 61–78. (David Hobby) **93g:08005** 08B10 (08B99)

— Doubling constructions in lattice theory. *Canad. J. Math.* **44** (1992), *no.* 2, 252–269. (James B. Nation) **93f:06008** 06B25 (06B05, 08A50)

— (*with* Nation, J. B.) Congruence normal covers of finitely generated lattice varieties. (English summary) *Canad. Math. Bull.* **35** (1992), *no.* 3, 311–320. (M. E. Adams) **93h:06006** 06B20 (08B15)

— The lattice theory of functional dependencies and normal decompositions. *Internat. J. Algebra Comput.* **2** (1992), *no.* 4, 409–431. (K. Marguerite Hafen) **93i:68051** 68P15 (06B99)

— *see also* **Freese, Ralph et al., 93f:01019**

Day, Khaled (*with* Tripathi, Anand) Arrangement graphs: a class of generalized star graphs. (English summary) *Inform. Process. Lett.* **42** (1992), *no.* 5, 235–241. (Summary) **93e:68098** 68R10 (68M10)

Day, Martin V. Conditional exits for small noise diffusions with characteristic boundary. (English summary) *Ann. Probab.* **20** (1992), *no.* 3, 1385–1419. (Ofer Zeitouni) **93j:60071** 60H10 (34F05, 60J60)

Day, R. Alan *see* **Day, Alan**

Day, Richard D. (*with* Rao, B. Raja; Marsh, Gary M.) Estimation of relative risks from individual and ecological correlation studies. *Comm. Statist. Theory Methods* **21** (1992), *no.* 1, 241–268. (Byron J. T. Morgan) **93e:62259** 62P10

Day, Timothy J. Excluded middle and bivalence. (English summary) *Erkenntnis* **37** (1992), *no.* 1, 93–97. (Summary) **93e:03005** 03A05

Day, W. A. Parabolic equations and thermodynamics. *Quart. Appl. Math.* **50** (1992), *no.* 3, 523–533. (Mario Primicerio) **93k:80004** 80A10 (35B10)

— Slowly-varying periodic temperatures. (English summary) *Quart. J. Mech. Appl. Math.* **45** (1992), *no.* 2, 225–230. (P. Rochus) **93f:80005** 80A20

— Quasistatic cycles in dynamic linear thermoelasticity. (English summary) *Quart. J. Mech. Appl. Math.* **45** (1992), *no.* 4, 517–527. (J. Ignaczak) **93m:73003** 73B30 (80A20)

Day, William H. E. (*with* McMorris, F. R.) Interpreting consensus sequences based on plurality rule. (English summary) *Math. Biosci.* **111** (1992), *no.* 2, 231–247. (Summary) **93g:92017** 92D20

Dayal, Saheb Higher Fréchet and discrete Gateaux differentiability of n-convex functions on Banach spaces. *Functional analysis and operator theory* (*New Delhi*, 1990), 154–171, *Lecture Notes in Math.*, 1511, *Springer, Berlin*, 1992. (Marián Fabian) **93h:58014** 58C20 (46G05, 47H99)

Dayal, Shambhu (*with* Kumar, Rajesh) Estimation of weighted mean of finite populations. (English and Hindi summaries) *J. Indian Soc. Agricultural Statist.* **44** (1992), *no.* 2, 95–105, i. 62D05

Dayan, Ido (*with* Havlin, Shlomo) Number of distinct sites visited by a random walker in the presence of a trap. *J. Phys. A* **25** (1992), *no.* 9, L549–L553. (Summary) **93a:82053** 82C41

— (*with* Gitterman, Moshe; Weiss, George H.) On the entropy of a class of constrained random walks. *Phys. A* **183** (1992), *no.* 4, 508–518. (Cheng Xun Wu) **93g:82048** 82B30 (60J15)

Dayawansa, W. P. (*with* Romeiras, Filipe J.; Grebogi, Celso; Ott, Edward) Feedback control of chaotic systems. (English summary) *Chaotic dynamics* (*Patras*, 1991), 177–193, *NATO Adv. Sci. Inst. Ser. B Phys.*, 298, *Plenum, New York*, 1992. (Summary) **93j:93057** 93B52 (58F13, 93C10)

— (*with* Romeiras, Filipe J.; Grebogi, Celso; Ott, Edward) Controlling chaotic dynamical systems. (English summary) Interpretation of time series from nonlinear systems (Warwick, 1991). *Phys. D* **58** (1992), *no.* 1-4, 165–192. (Arkady S. Pikovsky) **93i:58111** 58F13 (58F30)

Dayi, Ömer F. Collective coordinates and constrained Hamiltonian systems. *Ann. Physics* **217** (1992), *no.* 1, 21–50. (Marc Henneaux) **93i:81275** 81T70 (58F05, 58Z05, 81T13)

— The Casalbuoni-Brink-Schwarz superparticle with covariant, reducible constraints. *Internat. J. Modern Phys. A* **7** (1992), *no.* 11, 2531–2546. (W. Cox) **93d:81174** 81T60

— (*with* Akdeniz, K. G.; Kızılersü, A.) Canonical description of a two-dimensional gravity. *Modern Phys. Lett. A* **7** (1992), *no.* 19, 1757–1764. (Gheorghe Zet) **93e:81099** 81T40

— (*with* Müller-Kirsten, H. J. W.; Shurgaya, A. V.; Tchrakian, D. H.) Model of a superconducting cosmic string. (English summary) *Phys. Lett. B* **286** (1992), *no.* 3-4, 234–238. (Summary) **93e:83072** 83F05 (81T30, 81V17)

— A general solution of the master equation for a class of first order systems. (English summary) *Modern Phys. Lett. A* **8** (1993), *no.* 9, 811–818. 81T13 (81T70)

abu-Dayyeh, Walid *see* **Abu-Dayyeh, Walid**

D'Azevedo, E. F. (*with* Forsyth, P. A.; Tang, Wei Pai) Towards a cost-effective ILU preconditioner with high level fill. (English summary) *BIT* **32** (1992), *no.* 3, 442–463. (Summary) **93e:65051** 65F10 (76M25)

— (*with* Chin, P.; Forsyth, P. A.; Tang, Wei Pai) Preconditioned conjugate gradient methods for the incompressible Navier-Stokes equations. *Internat. J. Numer. Methods Fluids* **15** (1992), *no.* 3, 273–295. 76D05 (65N22, 76M25)

— (*with* Forsyth, P. A.; Tang, Wei Pai) Ordering methods for preconditioned conjugate gradient methods applied to unstructured grid problems. Iterative methods in numerical linear algebra (Copper Mountain, CO, 1990). *SIAM J. Matrix Anal. Appl.* **13** (1992), *no.* 3, 944–961. (Summary) **93b:65054** 65F10 (65M50, 76M25, 76S05)

De, Anup K. (*with* Roy, Bimal K.) Computer construction of some group divisible designs. (English summary) *Sankhyā Ser. B* **52** (1990), *no.* 1, 82–92. 62K10

De, Prabuddha (*with* Ghosh, Jay B.; Wells, Charles E.) On the general solution for a class of early/tardy problems. (English summary) *Comput. Oper. Res.* **20** (1993), *no.* 2, 141–149. 90B35

De, R. (*with* Dutt, Ranabir; Sukhatme, Uday P.) Mapping of shape invariant potentials under point canonical transformations. *J. Phys. A* **25** (1992), *no.* 13, L843–L850. (A. O. Barut) **93k:81038** 81Q05 (33C90)

De, S. S. (*with* Dutta, P.) Pattern generations in RNA and protein synthesis. (English summary) *Bull. Calcutta Math. Soc.* **83** (1991), *no.* 4, 319–324. (Summary) **93h:92012** 92C15 (92D20)

De, U. C. (*with* Guha, N.) On generalised con-harmonically 2-recurrent Riemannian manifolds. (English summary) *Bull. Calcutta Math. Soc.* **83** (1991), *no.* 5, 457–460. (Andrzej Bucki) **93j:53047** 53C20

— (*with* Tarafdar, Debasish) On pseudo concircular symmetric manifolds. (English summary) *Bull. Calcutta Math. Soc.* **84** (1992), *no.* 1, 77–80. (Andrzej Bucki) **93j:53024** 53B20

— (*with* Guha, N.) On a type of Sasakian manifold. (English summary) *Math. Balkanica* (*N.S.*) **6** (1992), *no.* 2, 187–191. (Andrzej Bucki) **93g:53062** 53C25

De Abreu-Garcia, Jose A. (*with* Niu, Xiaoru; Yaz, Engin) Improved bounds for linear discrete-time systems with structured perturbations. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 8, *part I*, 1170–1173. (O. A. Sebakhy) **93f:93106** 93D09 (93D05)

Deaconescu, M. (*with* Cheng, Kai Nah; Lang, Mong-Lung; Shi, Wu Jie) Corrigendum and addendum to: "Classification of finite groups with all elements of prime order" [Proc. Amer. Math. Soc. **106** (1989), no. 3, 625–629; MR 89k:20038] by Deaconescu. *Proc. Amer. Math. Soc.* **117** (1993), *no.* 4, 1205–1207. (Summary) **93e:20031** 20D20

De Acosta, Alejandro D. *see* **de Acosta, Alejandro D.**

De Agostino, Sergio (*with* Petreschi, Rossella) On PV_{chunk} operations and matrogenic graphs. *Internat. J. Found. Comput. Sci.* **3** (1992), *no.* 1, 11–20. (Evangelos Kranakis) **93f:68031** 68Q10 (68R10)

De Aguiar, M. A. M. *see* **de Aguiar, M. A. M.**

Deák, J. On proximity-like relations introduced by F. Riesz in 1908. *Studia Sci. Math. Hungar.* **25** (1990), *no.* 4, 387–400. (Summary) **93c:54018** 54E05 (01A60, 54–03)

— (*with* Császár, Ákos) Simultaneous extensions of proximities, semi-uniformities, contiguities and merotopies. III. *Math. Pannon.* **2** (1991), *no.* 2, 3–23. (H. Herrlich) **93d:54039** 54E15 (54E05, 54E17)

— On bitopological spaces. II, III. *Studia Sci. Math. Hungar.* **26** (1991), *no.* 1, 1–17, 19–33. (Mila Mršević) **93g:54043** 54E55 (54C60, 54D10, 54D15, 54D35, 54E05)

— (*with* Császár, Ákos) Simultaneous extensions of proximities, semi-uniformities, contiguities and merotopies. IV. *Math. Pannon.* **3** (1992), *no.* 1, 57–76. (H. Herrlich) **93g:54039** 54E15 (54E05, 54E17)

— A counterexample on completeness in relator spaces. (English summary) *Publ. Math. Debrecen* **41** (1992), *no.* 3-4, 307–309. (Summary) **93f:54039** 54E15

Deakin, Michael A. B. The ascendancy of the Laplace transform and how it came about. (English summary) *Arch. Hist. Exact Sci.* **44** (1992), *no.* 3, 265–286. (C. H. Edwards, Jr.) **93k:01049** 01A60 (44–03, 44A10)

— Stirling's formula: the search for an elementary proof. *Austral. Math. Soc. Gaz.* **19** (1992), *no.* 3, 41–42. 41A60

— Women in mathematics: fact versus fabulation. *Austral. Math. Soc. Gaz.* **19** (1992), *no.* 5, 105–114. (D. J. Struik) **93m:01105** 01A80 (01A70)

Deale, Michael (*with* Zweben, Monte; Davis, Eugene; Daun, Brian; Drascher, Ellen; Eskey, Megan) Learning to improve constraint-based scheduling. (English summary) *Artificial Intelligence* **58** (1992), *no.* 1-3, 271–296. (Summary) **93i:68159** 68T20 (90B35)

De Alfaro, Vittorio *see* **de Alfaro, Vittorio**

De Almeida, J. P. Moitinho *see* **de Almeida, J. P. Moitinho**

De Almeida, R. M. C. *see* **de Almeida, R. M. C.**

De Alwis, S. P. *see* **de Alwis, S. P.**

Dean, A. M. *see* **Dean, Angela M.**

Dean, Alice M. (*with* Hutchinson, Joan P.) Relations among embedding parameters for graphs. *Graph theory, combinatorics, and applications, Vol.* 1 (*Kalamazoo, MI*, 1988), 287–296, *Wiley-Intersci. Publ., Wiley, New York*, 1991. (Summary) **93c:05045** 05C10

— (*with* Knickerbocker, C. J.; Lock, Patti Frazer; Sheard, Michael) A survey of graphs Hamiltonian-connected from a vertex. *Graph theory, combinatorics, and applications, Vol.* 1 (*Kalamazoo, MI*, 1988), 297–313, *Wiley-Intersci. Publ., Wiley, New York*, 1991. (*see* **93b:05002**) 05C45

Dean, Andrew P. (*with* Ágoston, István; Schewe, Wiebke) Superpurely simple modules. *Arch. Math.* (*Basel*) **58** (1992), *no.* 2, 133–142. (Frank Okoh) **93a:16008** 16G60

— Linear functionals and infinite-dimensional modules over tame hereditary algebras. *Comm. Algebra* **20** (1992), *no.* 10, 2821–2836. (Frank Okoh) **93h:16022** 16G60

Dean, Angela M. (*with* Lin, Meily) Trend-free block designs for varietal and factorial experiments. *Ann. Statist.* **19** (1991), *no.* 3, 1582–1596. (Summary) **93f:62106** 62K10

— (*with* Park, Dong-kwon) Structurally incomplete row-column designs with adjusted orthogonality. (English summary) *Comm. Statist. Theory Methods* **21** (1992), *no.* 12, 3545–3560. (Summary) **93i:62066** 62K10

Dean, Cleon E. (*with* Werby, Michael F.) Hamilton's principle and the equations of motion of an elastic shell with and without fluid loading. (English summary) *Computational and applied mathematics, II* (*Dublin*, 1991), 131–140, *North-Holland, Amsterdam*, 1992. (*see* **93j:00008**) 73K15 (73K70, 73V25)

Dean, David S. (*with* Jansons, Kalvis M.) A note on the integral of a Brownian bridge. *Proc. Roy. Soc. London Ser. A* **437** (1992), *no.* 1901, 729–730. (Min Ping Qian) **93g:60173** 60J65 (82D60)

Dean, E. J. (*with* Dinh, Q. V.; Glowinski, Roland; He, Jiwen; Pan, T. W.; Périaux, Jacques) Least squares/domain imbedding methods for Neumann problems: applications to fluid dynamics. (English summary) *Fifth International Symposium on Domain Decomposition Methods for Partial Differential Equations* (*Norfolk, VA*, 1991), 451–475, *SIAM, Philadelphia, PA*, 1992. (Summary) **93h:65152** 65N55 (76M25, 76N10)

— (*with* Cowsar, Lawrence C.; Glowinski, Roland; Le Tallec, Patrick; Li, Chin Hsien; Périaux, Jacques; Wheeler, Mary Fanett) Decomposition principles and their applications in scientific computing. (English summary) *Parallel processing for scientific computing* (*Houston, TX*, 1991), 213–237, *SIAM, Philadelphia, PA*, 1992. (Summary) **93j:65200** 65N55 (65K10, 65N22, 65Y05)

— A model trust-region modification of Newton's method for nonlinear two-point boundary value problems. (English summary) *J. Optim. Theory Appl.* **75** (1992), *no.* 2, 297–312. (Siegfried Filippi) **93j:65117** 65L10 (34A45, 34B15)

— An inexact Newton method for nonlinear two-point boundary value problems. (English summary) *J. Optim. Theory Appl.* **75** (1992), *no.* 3, 471–486. (Relja Vulanović) **93j:65118** 65L10

Dean, Nathaniel Which graphs are pancyclic modulo k? *Graph theory, combinatorics, and applications, Vol.* 1 (*Kalamazoo, MI*, 1988), 315–325, *Wiley-Intersci. Publ., Wiley, New*

York, 1991. (Summary) **93b:05089** 05C38
— (*with* Bienstock, Daniel) On obstructions to small face covers in planar graphs. *J. Combin. Theory Ser. B* **55** (1992), *no.* 2, 163–189. (Michael O. Albertson) **93i:05096** 05C70 (05C10)
— (*with* Bienstock, Daniel) New results on rectilinear crossing numbers and plane embeddings. (English summary) *J. Graph Theory* **16** (1992), *no.* 5, 389–398. (D. S. Archdeacon) **93h:05061** 05C10
Dean, Thomas (*with* Angluin, Dana; Basye, Kenneth; et al.) Inferring finite automata with stochastic output functions and an application to map learning. (English summary) *AAAI-92. Proceedings, Tenth National Conference on Artificial Intelligence* (*San Jose, CA*, 1992), 208–214, *Amer. Assoc. Artif. Intell., Menlo Park, CA*, 1992. (*see* **93j:68007**) 68T05 (68T10)
De Andrade, Eliana Xavier Linhares *see* **de Andrade, Eliana Xavier Linhares**
De Andrés, Luis C. *see* **de Andrés, Luis C.**
De Angelis, G. F. Relativistic Feynman-Kac-Itô formulas. (English summary) *Probabilistic methods in mathematical physics* (*Siena*, 1991), 184–193, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93g:81002**) 81S25 (47N50)
De Arcangelis, Riccardo A general homogenization result for almost periodic functionals. *J. Math. Anal. Appl.* **156** (1991), *no.* 2, 358–380. (U. D'Ambrosio) **93e:49019** 49J45 (35B27)
— (*with* Vitolo, Antonio) Some cases of homogenization with unbounded oscillating constraints on the gradient. *Asymptotic Anal.* **5** (1992), *no.* 5, 397–428. (N. Pacchiarotti) **93d:49011** 49J40 (35B27, 41A60)
— (*with* Serra Cassano, F.) On the homogenization of degenerate elliptic equations in divergence form. *J. Math. Pures Appl.* (9) **71** (1992), *no.* 2, 119–138. (Alexander Belyaev) **93h:35024** 35B27 (35J70)
Dearden, Bruce Quasi-multipliers of Pedersen's ideal. *Rocky Mountain J. Math.* **22** (1992), *no.* 1, 157–163. (A. Niknam) **93f:46089** 46L05
D'Eath, P. D. (*with* Dowker, H. F.; Hughes, D. I.) Supersymmetric quantum wormhole states. *Quantum gravity* (*Moscow*, 1990), 124–143, *World Sci. Publishing, River Edge, NJ*, 1991. (Summary) **93c:83049** 83C45 (81V17)
— (*with* Hughes, D. I.) Mini-superspace with local supersymmetry. *Nuclear Phys. B* **378** (1992), *no.* 1-2, 381–409. (Summary) **93m:83028** 83C45
— (*with* Payne, P. N.) Gravitational radiation in black-hole collisions at the speed of light. I. Perturbation treatment of the axisymmetric collision. *Phys. Rev. D* (3) **46** (1992), *no.* 2, 658–674. (A. D. Popova) **93j:83053** 83C57 (83C30, 83C35)
— (*with* Payne, P. N.) Gravitational radiation in black-hole collisions at the speed of light. II. Reduction to two independent variables and calculation of the second-order news function. *Phys. Rev. D* (3) **46** (1992), *no.* 2, 675–693. (A. D. Popova) **93j:83054** 83C57 (83C30, 83C35)
— (*with* Payne, P. N.) Gravitational radiation in black-hole collisions at the speed of light. III. Results and conclusions. *Phys. Rev. D* (3) **46** (1992), *no.* 2, 694–701. (A. D. Popova) **93j:83055** 83C57 (83C30, 83C35)
— (*with* Alty, L. J.; Dowker, H. F.) Quantum wormhole states and local supersymmetry. (English summary) *Phys. Rev. D* (3) **46** (1992), *no.* 10, 4402–4412. (Summary) **93g:83041** 83C45 (83E50)
— (*with* Hawking, Stephen W.; Obregón, O.) Supersymmetric Bianchi models and the square root of the Wheeler-DeWitt equation. (English summary) *Phys. Lett. B* **300** (1993), *no.* 1-2, 44–48. (Vladimir Soloviev) **93k:83029** 83C45 (83E50, 83F05)
De Azcárraga, J. A. *see* **de Azcárraga, J. A.**
De Azeredo Campos, R. *see* **de Azeredo Campos, R.**
Deb, T. K. (*with* Karanjai, S.; Biswas, G.) Time-dependent scattering and transmission function in an anisotropic two-layered atmosphere. *Astrophys. Space Sci.* **189** (1992), *no.* 1, 95–117. (Masamichi Matsumoto) **93d:85001** 85A20
— (*with* Karanjai, S.) An exact solution of the equation of transfer for coherent scattering in an exponential atmosphere. *Astrophys. Space Sci.* **189** (1992), *no.* 1, 119–122. (L. F. Oster) **93a:85003** 85A25 (44A10)
— (*with* Karanjai, S.) The time-dependent X- and Y-functions. (English summary) *Astrophys. Space Sci.* **196** (1992), *no.* 2, 223–229. (Carl T. Kelley) **93j:85006** 85A25 (45G10, 82C70)
De Backer, Bruno (*with* Beringer, Henri) Intelligent backtracking for CLP languages: an application to CLP(R). (English summary) *Logic programming* (*San Diego, CA*, 1991), 405–419, *MIT Press Ser. Logic Program., MIT Press, Cambridge, MA*, 1991. (*see* **93i:68009**) 68N17
De Baerdemaeker, J. (*with* Ramon, H.; Boullart, L.) A generalized mathematical modelling technique for complex mechanical systems seen from the viewpoint of control engineering. (English summary) *Mathematical and intelligent models in system simulation, I, II* (*Brussels*, 1990), 3–9, *IMACS Ann. Comput. Appl. Math.*, 10, 11, *Baltzer, Basel*, 1991. (*see* **93c:93005**) 93C85
De Baere, W. (*with* de Muynck, Willem M.; Martens, Hans) The Bell inequalities and the joint measurement of incompatible observables. (English summary) *Found. Phys. Lett.* **5** (1992), *no.* 6, 527–534. 81P15
De Bakker, J. W. *see* **de Bakker, J. W.**
De Barcellos, C. S. *see* **de Barcellos, C. S.**
De Barros, Ricardo C. (*with* Larsen, Edward W.) A numerical method for multigroup slab-geometry discrete ordinates problems with no spatial truncation error. *Transport Theory Statist. Phys.* **20** (1991), *no.* 5-6, 441–462. (Luisa Arlotti) **93b:82077** 82C80 (82C70)
Debart, Françoise (*with* Enjalbert, Patrice; Lescot, Madeleine) Multimodal logic programming using equational and order-sorted logic. (English summary) Second International Conference on Algebraic and Logic Programming (Nancy, 1990). *Theoret. Comput. Sci.* **105** (1992), *no.* 1, 141–166. (Summary) **93i:68038** 68N17 (03B45, 03B70)
De Beer, C. F. *see* **de Beer, C. F.**
De Berg, Mark T. *see* **de Berg, Mark T.**
Debergh, N. (*with* Beckers, J.) On a general framework for q-particles, paraparticles and q-paraparticles through deformations. *J. Phys. A* **24** (1991), *no.* 21, L1277–L1283. (A. M. Gavrilik) **93g:81046** 81R50
— (*with* Beckers, J.; Nikitin, A. G.) Lie extended symmetries and relativistic particles. (English summary) *J. Phys. A* **25** (1992), *no.* 22, 6145–6154. (A. U. Klimyk) **93j:81036** 81R20 (35A30, 35Q40)
— (*with* Beckers, J.; Nikitin, A. G.) More on supersymmetries of the Schrödinger equation. *Modern Phys. Lett. A* **7** (1992), *no.* 18, 1609–1616. (Summary) **93b:81077** 81Q60
— (*with* Beckers, J.; Nikitin, A. G.) Extended Dirac symmetries and hidden supersymmetry. *Phys. Lett. B* **279** (1992), *no.* 3-4, 333–335. (Summary) **93a:81069** 81R20
Dèbes, Pierre Critères de descente pour le corps de définition des G-revêtements de $\mathbf{P}^1$. (English and French summaries) [Descent criteria for the field of definition of G-covers of $\mathbf{P}^1$] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 8, 863–868. (Chr. U. Jensen) **93m:12003** 12F12 (14E20)
— On the irreducibility of the polynomials $P(t^m, Y)$. (English summary) *J. Number Theory* **42** (1992), *no.* 2, 141–157. (Gerhard Kowol) **93h:12002** 12E05 (12E25)
DeBessonet, Cary G. *see* **deBessonet, Cary G.**
Debiard, Amédée (*with* Gaveau, Bernard) Hypergeometric ladders and spherical polynomials for root systems BC of rank 2. I. Series expansions. *Ann. Mat. Pura Appl.* (4) **160** (1991), 235–301 (1992). (Jean-Claude Lucquiaud) **93i:33010** 33C80 (43A90)
— Le système différentiel hypergéométrique de type BC et son spectre. (English summary) [The hypergeometric differential system of BC type and its spectrum] *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 11, 793–796. (Jean-Claude Lucquiaud) **93i:33011** 33C80 (43A90)
De Biase, L. (*with* Pennati, V.; Feraudi, F.) A generalized finite-difference solution of parabolic 3-D problems of multi-connected regions. (English summary) *Comm. Appl. Numer. Methods* **8** (1992), *no.* 6, 361–371. (Summary) **93h:65113** 65M06
Debièvre, Camille A note on Fubini's theorem. *Amer. Math. Monthly* **100** (1993), *no.* 3, 281. 26B15
De Bièvre, Stephan (*with* El Gradechi, Amine M.) Quantum mechanics and coherent states on the anti-de Sitter spacetime and their Poincaré contraction. (English and French summaries) *Ann. Inst. H. Poincaré Phys. Théor.* **57** (1992), *no.* 4, 403–428. (Avraham Forge) **93m:81053** 81R30 (83C47)
— (*with* Pravica, D. W.) Spectral analysis for optical fibres and stratified fluids. II. Absence of eigenvalues. *Comm. Partial Differential Equations* **17** (1992), *no.* 1-2, 69–97. (J. A. Goldstein) **93c:35114** 35P05 (35Q99, 76Q05, 76V05, 78A40)
— Oscillator eigenstates concentrated on classical trajectories. (French summary) *J. Phys. A* **25** (1992), *no.* 11, 3399–3418. (Piotr Kosiński) **93h:81021** 81Q05 (81S99)
— (*with* Houard, Jean-Claude; Irac-Astaud, Michèle) Wave packets localized on closed classical trajectories. (English summary) *Differential equations with applications to mathematical physics*, 25–32, *Math. Sci. Engrg.*, 192, *Academic Press, Boston, MA*, 1993. (*see* **93i:00013**) 81Q20
Dębiński, H. (*with* Poreda, T.; Szadkowska, A.) On the stability of the generalized linear differential equation of first order in Banach spaces. *Demonstratio Math.* **23** (1990), *no.* 4, 1021–1031. (P. Talpalaru) **93d:34103** 34G10 (34D20)
De Blasi, Francesco S. (*with* Myjak, Józef) Some remarks on random difference equations. (Polish summary) *Opuscula Math. No.* 6 (1990), 29–39. (Si Ming Zhu) **93e:58125** 58F13 (39A10)
— (*with* Myjak, Józef) Ambiguous loci in best approximation theory. *Approximation theory, spline functions and applications* (*Maratea*, 1991), 341–349, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 356, *Kluwer Acad. Publ., Dordrecht*, 1992. (Julian Revalski) **93e:41049** 41A65 (41A50, 46B20)
— (*with* Pianigiani, G.) On the density of extremal solutions of differential inclusions. *Ann. Polon. Math.* **56** (1992), *no.* 2, 133–142. (V. V. Obukhovskiĭ) **93c:34042** 34A60 (34G20, 49J24)
— (*with* Myjak, Józef; Papini, Pier Luigi) On mutually nearest and mutually furthest points of sets in Banach spaces. *J. Approx. Theory* **70** (1992), *no.* 2, 142–155. (Jon Vanderwerff) **93d:46029** 46B20 (41A65, 47H99)
DeBlassie, R. Dante (*with* Toby, Ellen H.) Reflecting Brownian motion in a cusp. *Trans. Amer. Math. Soc.* **339** (1993), *no.* 1, 297–321. (Krzysztof Burdzy) **93k:60199** 60J60 (60H99, 60J65)
Debnath, Lokenath The Hilbert transform and its applications to fluid dynamics. *Progr. Math.* (*Varanasi*) **24** (1990), *no.* 1-2, 19–40. (P. M. Gupta) **93h:76059** 76M99 (44A15, 76C10, 76U05, 76V05)
— (*with* Verma, Ram U.) Phi-pseudo-monotonicity and approximation-solvability of nonlinear equations. *Appl. Math. Lett.* **4** (1991), *no.* 6, 73–75. (Summary) **93g:47083** 47H15 (47H17)
— (*with* Wiener, Joseph) The Fourier method for partial differential equations with piecewise continuous delay. *Oscillation and dynamics in delay equations* (*San Francisco, CA*, 1991), 241–263, *Contemp. Math.*, 129, *Amer. Math. Soc., Providence, RI*, 1992. (Summary) **93d:35173** 35R10 (35B40, 35K05)
— (*with* Ghosh, M. K.) Approximation of the fixed points of quasi-nonexpansive mappings in a uniformly convex Banach space. *Appl. Math. Lett.* **5** (1992), *no.* 3, 47–50. (Summary) **93b:47117** 47H10 (47H09)
— (*with* Wiener, Joseph) A parabolic differential equation with unbounded piecewise constant delay. *Internat. J. Math. Math. Sci.* **15** (1992), *no.* 2, 339–346. (Hans Engler) **93f:35092** 35K25 (35R10, 39B52)
— (*with* Wiener, Joseph) A wave equation with discontinuous time delay. (English summary) *Internat. J. Math. Math. Sci.* **15** (1992), *no.* 4, 781–788. (Hans Engler) **93j:35178** 35R10 (35L20)
— (*with* Das, Pravangsu Sekhar; Sengupta, P. R.) Lamb's plane problem in a thermoviscoelastic micropolar medium with the effect of gravity. (English summary) *Internat. J. Math. Math. Sci.* **15** (1992), *no.* 4, 795–802. (Summary) **93i:73021** 73D30 (73B30, 73F15)
— *see also* **Nonlinear dispersive wave systems, 93f:00015**
Debnath, M. (*with* Roy Chowdhury, A.) Integrable mapping, perturbations and attractors. (English summary) *Phys. Scripta* **46** (1992), *no.* 1, 9–13. (Summary) **93f:82033** 82C20 (58F40)
De Boer, Frank S. *see* **de Boer, Frank S.**
De Boer, Jan *see* **de Boer, Jan**
De Boer, Martin J. M. *see* **de Boer, Martin J. M.**
De Boor, Carl *see* **de Boor, Carl**
Debord, Bernard An axiomatic characterization of Borda's k-choice function. (English summary) *Soc. Choice Welf.* **9** (1992), *no.* 4, 337–343. (From the introduction) **93h:90003** 90A05
DeBortoli, Ann (*with* Henderson, Johnny) Boundary value problems for Lipschitz equations with coefficients bounded in L^r. (English summary) *Recent trends in*

differential equations, 119–125, *World Sci. Ser. Appl. Anal.*, 1, *World Sci. Publishing, River Edge, NJ*, 1992. (S. A. Brykalov) **93i:34033** 34B15 (34B10, 34H05)

— (*with* Henderson, Johnny; Pruet, Susan) Uniqueness of n-point boundary value problems. (English summary) *Panamer. Math. J.* **3** (1993), *no.* 1, 25–38. (P. W. Eloe) **93k:34046** 34B15 (34B10)

De Branges, Louis *see* **de Branges, Louis**

Debray, Saumya K. (*with* Giacobazzi, Roberto; Levi, Giorgio) A generalized semantics for constraint logic programs. (English summary) *Fifth generation computer systems, Vol.* 1, 2 (*Tokyo*, 1992), 581–591, *Ohm, Tokyo*, 1992. (*see* **93i:68007**) 68N17 (68Q55)

— Efficient dataflow analysis of logic programs. (English summary) *J. Assoc. Comput. Mach.* **39** (1992), *no.* 4, 949–984. (Summary) **93h:68018** 68N17 (68N20, 68Q60)

De Brito, A. L. *see* **de Brito, A. L.**

De Broglie, Louis *see* **de Broglie, Louis**

De Bruijn, N. G. *see* **de Bruijn, N. G.**

Dębski, W. (*with* Tymchatyn, E. D.) Composant-like decompositions of spaces. *Fund. Math.* **140** (1991), *no.* 1, 69–78. (E. G. Pytkeev) **93d:54046** 54F15 (54B15)

— Note on a problem by H. Cook. *Houston J. Math.* **17** (1991), *no.* 3, 439–441. (Wayne Lewis) **93b:54031** 54F15

— (*with* Mioduszewski, Jerzy) Conditions which ensure that a simple map does not raise dimension. *Colloq. Math.* **63** (1992), *no.* 2, 173–185. (Richard P. Millspaugh) **93f:54023** 54C10 (54F45)

Debussche, A. (*with* Temam, Roger) Inertial manifolds and the slow manifolds in meteorology. *Differential Integral Equations* **4** (1991), *no.* 5, 897–931. (Woodford W. Zachary) **93a:47073** 47N20 (34G20, 35Q30, 47H20, 58F12, 76D05, 86A10)

De Bustos, Eduardo *see* **de Bustos, Eduardo**

De Caen, D. *see* **de Caen, D.**

De Cambry, Olivier *see* **de Cambry, Olivier**

De Campos Ibáñez, Luis Miguel *see* **de Campos Ibáñez, Luis Miguel**

De Caro, Liberato (*with* Garuccio, Augusto) Quantum mechanics versus local realism: the importance of the wave function normalization. *Found. Phys. Lett.* **5** (1992), *no.* 4, 393–398. 81P10

De Carvalho, Alexandre Nolasco (*with* Arrieta, José; Hale, Jack K.) A damped hyperbolic equation with critical exponent. *Comm. Partial Differential Equations* **17** (1992), *no.* 5-6, 841–866. (Piotr Biler) **93f:35145** 35L70 (34D45, 34G20, 47H20, 47N20, 58F39)

— Spatial homogeneity in damped hyperbolic equations. (English summary) *Dynamic Systems Appl.* **1** (1992), *no.* 3, 221–249. (Jean-Michel Ghidaglia) **93h:35027** 35B40 (34G20, 35L55, 47H20)

De Carvalho, Francisco J. Craveiro *see* **de Carvalho, Francisco J. Craveiro**

uribe De Castellanos, Inés *see* **Uribe De Castellanos, Inés**

De Cataldo, Mark Andrea (*with* Palleschi, Marino) Polarized surfaces of positive Kodaira dimension with canonical bundle of small degree. *Forum Math.* **4** (1992), *no.* 3, 217–229. (Ovidiu Păsărescu) **93g:14043** 14J25 (14J10)

Dechert, W. Davis (*with* Gencay, Ramazan) An algorithm for the n Lyapunov exponents of an n-dimensional unknown dynamical system. (English summary) *Phys. D* **59** (1992), *no.* 1-3, 142–157. (Timothy Sauer) **93j:58090** 58F13 (58F10)

Dechter, Rina (*with* Ben-Eliyahu, Rachel) Default logic, propositional logic and constraints. (English summary) *AAAI-91. Proceedings, Ninth National Conference on Artificial Intelligence, Vol.* 1, 2, 379–385, *AAAI Press, Menlo Park, CA*, 1991. (Summary) **93j:68186** 68T27 (03B60)

— (*with* Pinkas, Gadi) An improved connectionist activation function for energy minimization. (English summary) *AAAI-92. Proceedings, Tenth National Conference on Artificial Intelligence (San Jose, CA*, 1992), 434–439, *Amer. Assoc. Artif. Intell., Menlo Park, CA*, 1992. (Summary) **93k:68085** 68T05 (92B20)

— From local to global consistency. *Artificial Intelligence* **55** (1992), *no.* 1, 87–107. (Summary) **93d:68017** 68P15

— (*with* Pearl, Judea) Structure identification in relational data. (English summary) *Artificial Intelligence* **58** (1992), *no.* 1-3, 237–270. (Lawrence V. Saxton) **93j:68201** 68T30 (68P20, 68Q25)

Deck, K. (*with* Harrison, D. K.) Properties of fields. *J. Algebra* **143** (1991), *no.* 2, 470–486. (Franz B. Kalhoff) **93b:12008** 12F20 (12J10, 18B99)

Deck, Thomas (*with* Ruffing, Andreas; Schlichenmaier, Martin) String branchings on complex tori and algebraic representations of generalized Krichever-Novikov algebras. (English summary) *Lett. Math. Phys.* **26** (1992), *no.* 1, 23–32. (S. V. Duzhin) **93j:17054** 17B68 (14H55, 81R10, 81T30)

Decker, Roger (*with* Genz, Henning) ★ Symmetrie und Symmetriebrechung in der Physik. (German) [Symmetry and symmetry-breaking in physics] Facetten. [Facets] *Friedr. Vieweg & Sohn, Braunschweig*, 1991. xiv+376 *pp. ISBN* 3-528-08558-4 (Piotr Kosiński) **93a:81001** 81–01 (81R40, 81R99, 81V99)

Decker, W. (*with* Pesch, W.; Feng, Q.; Kaiser, M.; Kramer, Lorenz; Weber, A.) Weakly nonlinear analysis of pattern formation in nematic liquid crystals. *Nematics (Orsay*, 1990), 291–301, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 332, *Kluwer Acad. Publ., Dordrecht*, 1991. (*see* **93d:58007**) 76A15

De Clerck, F. (*with* Del Fra, Alberto; Ghinelli-Smit, Dina) Pointsets in partial geometries. *Advances in finite geometries and designs (Chelwood Gate*, 1990), 93–110, *Oxford Sci. Publ., Oxford Univ. Press, New York*, 1991. (W. M. Kantor) **93a:51003** 51E14

— (*with* Johnson, Norman Lloyd[1]) Subplane covered nets and semipartial geometries. (English summary) A collection of contributions in honour of Jack van Lint. *Discrete Math.* **106/107** (1992), 127–134. (T. G. Ostrom) **93h:51012** 51E14

Decomps-Guilloux, A. (*with* Bertin, M.-J.; Grandet-Hugot, M.; Pathiaux-Delefosse, M.; Schreiber, J.-P.) ★ Pisot and Salem numbers. With a preface by David W. Boyd. *Birkhäuser Verlag, Basel*, 1992. xiv+291 *pp. ISBN* 3-7643-2648-4 (D. Boyd) **93k:11095** 11R06 (11K31, 11K70)

De Concini, Corrado (*with* Arbarello, Enrico) Abelian varieties, infinite-dimensional Lie algebras, and the heat equation. *Complex geometry and Lie theory (Sundance, UT*, 1989), 1–31, *Proc. Sympos. Pure Math.*, 53, *Amer. Math. Soc., Providence, RI*, 1991. (John B. Little) **93f:14023** 14K10 (14K25, 17B65, 58B20, 58F07)

— (*with* Kac, Victor G.; Procesi, Claudio) Quantum coadjoint action. *J. Amer. Math. Soc.* **5** (1992), *no.* 1, 151–189. (Jie Du) **93f:17020** 17B37 (16W30, 58F06, 81R50)

Deconinck, H. (*with* Struijs, R. J.) Multidimensional upwind schemes for the Euler equations using fluctuation distribution on a grid consisting of triangles. *Proceedings of the Eighth GAMM-Conference on Numerical Methods in Fluid Mechanics (Delft*, 1989), 533–543, *Notes Numer. Fluid Mech.*, 29, *Vieweg, Braunschweig*, 1990. (*see* **93b:76002**) 76M25 (76M20)

— (*with* Roe, Philip L.; Struijs, R. J.) Recent progress in multidimensional upwinding. *Twelfth International Conference on Numerical Methods in Fluid Dynamics (Oxford*, 1990), 273–277, *Lecture Notes in Phys.*, 371, *Springer, Berlin*, 1990. (*see* **93e:76002**) 76M25 (65M99)

Deconinck, J. (*with* Brichau, F.) A numerical model coupling galvanic corrosion and ohmic voltage drop in buried pipelines. (English summary) *Boundary element technology, VII (Albuquerque, NM*, 1992), 389–403, *Comput. Mech., Southampton*, 1992. (*see* **93b:65002**) 65N38 (65N30, 78A55)

De Coninck, Jožl (*with* Kotecký, Roman; Laanait, Lahoussine; Ruiz, Jean) SOS approximants for Potts crystal shapes. (English summary) *Phys. A* **189** (1992), *no.* 3-4, 616–634. (David Sénéchal) **93m:82011** 82B24 (82B20)

De Cooman, G. (*with* Kerre, E. E.; Vanmassenhove, F. R.) Possibility theory: an integral-theoretic approach. *Fuzzy Sets and Systems* **46** (1992), *no.* 2, 287–299. (Introduction) **93e:28023** 28E10 (04A72)

Décoste, Hélène (*with* Labelle, Gilbert; Leroux, Pierre) The functorial composition of species, a forgotten operation. *Discrete Math.* **99** (1992), *no.* 1-3, 31–48. (Wenchang Chu) **93c:05006** 05A15 (05E99, 18D35)

De Coster, C. (*with* Fabry, C.; Habets, P.) An abstract approach to a class of nonlinear boundary value problems. *Differential Integral Equations* **4** (1991), *no.* 5, 1073–1087. (Maria Patrizia Pera) **93d:47111** 47H15 (34B15, 34C25, 35G30, 47N20)

Decreusefond, L. (*with* Körezlioğlu, H.; van Dijk, Nico M.) An error bound for infinite approximations of queueing networks with large finite stations under RSRD protocol. (English summary) *Performance Evaluation* **17** (1993), *no.* 3, 177–187. 90B22 (60K25)

Decrocq, B. B. (*with* Shieh, Leang San; Zhang, Jian Liang) Optimal digital redesign of cascaded analogue controllers. (English summary) *Optimal Control Appl. Methods* **12** (1991), *no.* 4, 205–219. 93B50

Decruyenaere, Fabien (*with* Jespers, Eric) Prüfer domains and graded rings. *J. Algebra* **150** (1992), *no.* 2, 308–320. (Daniel D. Anderson) **93e:13033** 13F05 (13A02, 16S35)

Deddens, James A. (*with* Song, Ruiguang; Buchberger, Steven G.) Moments of variables summing to normal order statistics. (English summary) *Statist. Probab. Lett.* **15** (1992), *no.* 3, 203–208. (Moshe Shaked) **93i:60029** 60E05

Dedekind, R. *see* **Rodríguez Consuegra, Francisco, 93d:01035**

Dedesh, V. V. The use of a polynomial representation of the numerical viscosity matrix for constructing Godunov-type schemes. (Russian. Russian summary) *Model. Mekh.* **5** (1991), *no.* 5, 38–52. (Summary) **93i:76060** 76M20

Dedieu, Jean-Pierre L'image de la limite supérieure d'une famille d'ensembles est-elle égale à la limite supérieure de la famille des images? (English summary) [Is the image of the upper limit of a family of sets equal to the upper limit of the family of the images?] *Ann. Fac. Sci. Toulouse Math.* (5) **11** (1990), *no.* 2, 91–103. (Summary) **93f:46009** 46A99 (46N10)

— Obreschkoff's theorem revisited: what convex sets are contained in the set of hyperbolic polynomials? (English summary) *J. Pure Appl. Algebra* **81** (1992), *no.* 3, 269–278. (Thomas C. Craven) **93g:12001** 12D10

— On the convergence problem in interpolation theory: pointwise and uniform convergence to continuous or discontinuous functions. *Rev. Mat. Apl.* **13** (1992), *no.* 1, 9–22. (Summary) **93c:65014** 65D05 (65D07)

De Donato, O. (*with* Carini, A.) Fundamental solutions for linear viscoelastic continua. (English summary) *Internat. J. Solids Structures* **29** (1992), *no.* 23, 2989–3009. (Summary) **93f:73051** 73F15 (73B05)

De Doncker-Kapenga, Elise *see* **de Doncker-Kapenga, Elise**

Dedonder, J. P. (*with* Amado, R. D.; Cannata, F.) Supersymmetric quantum mechanics, phase equivalence, and low energy scattering anomalies. *Phys. Rev. C* (3) **43** (1991), *no.* 5, 2077–2081. (Summary) **93b:81076** 81Q60 (81U05)

el-Deeb, S. N. *see* **El-Deeb, S. N.**

Deeb, W. (*with* Khalil, R.) Exposed and smooth points of some classes of operation in $L(l^p)$. *J. Funct. Anal.* **103** (1992), *no.* 2, 217–228. (Marco P. Baronti) **93f:46016** 46B20 (46E99, 47D20)

— (*with* Khalil, R.) The sum of proximinal subspaces. *Soochow J. Math.* **18** (1992), *no.* 2, 163–167. (G. Godini) **93m:46008** 46B20 (41A65)

Deeba, E. Y. (*with* Koh, E. L.) A characterization of the generalized Meijer transform. (English summary) *Internat. J. Math. Math. Sci.* **15** (1992), *no.* 4, 823–827. (Summary) **93i:44006** 44A15 (46F12)

el-Deen Mohamedein, M. Sh. *see* **El-Deen Mohamedein, M. Sh.**

De Fabritiis, Chiara Complex geodesics and fixed points of families of holomorphic maps. *Geometry Seminars*, 1988–1991 (*Italian*) (*Bologna*, 1988–1991), 37–52, *Univ. Stud. Bologna, Bologna*, 1991. (Marco Abate) **93i:32032a** 32H02 (32H15)

— Fixed points and uniqueness of complex geodesics. *Rend. Circ. Mat. Palermo* (2) **40** (1991), *no.* 2, 251–269. (Marco Abate) **93i:32032b** 32H15 (32H99)

— On continuous dynamics of automorphisms of $\mathbf{C}^2$. (English summary) *Manuscripta Math.* **77** (1992), *no.* 4, 337–359. (Eric Bedford) **93k:32063** 32H50 (58F23)

De Faget de Casteljau, Paul *see* **de Faget de Casteljau, Paul**

De Falco, Diego *see* **de Falco, Diego**

De Falguerolles, Antoine *see* **de Falguerolles, Antoine**

Defant, Andreas (*with* Carl, Bernd) An inequality between the p- and $(p, 1)$-summing norm of finite rank operators from $C(K)$-spaces. *Israel J. Math.* **74** (1991), *no.* 2-3, 323–335. (M. S. Ramanujan) **93c:47027** 47B10 (47A30, 47A80, 47B38)

— (*with* Floret, Klaus) Continuity of tensor product operators between spaces of Bochner integrable functions. *Progress in functional analysis (Peñíscola*, 1990), 367–381, *North-Holland Math. Stud.*, 170, *North-Holland, Amsterdam*, 1992. (Summary) **93c:47036** 47B38 (46E40, 46M05, 47A80, 47B10)

— (*with* Bonet, José; Galbis, Antonio) Tensor products of Fréchet or (DF)-spaces with a Banach space. *J. Math. Anal. Appl.* **166** (1992), *no.* 2, 305–318. (Klaus-Dieter Bierstedt) **93e:46006** 46A32 (46A08, 46B08, 46M05)

Defant, Martin (*with* Junge, Marius) Grothendieck type inequalities and weak Hilbert spaces. *Geometry of Banach spaces (Strobl*, 1989), 71–87, *London Math. Soc. Lecture Note Ser.*, 158, *Cambridge Univ. Press, Cambridge*, 1990. (Rajappa K. Asthagiri) **93a:47026** 47A99 (46B99, 46C99, 47B10)

— (*with* Junge, Marius) Random variables in weak type p spaces. *Arch. Math. (Basel)* **58** (1992), *no.* 4, 399–406. (Jerzy Szulga) **93a:46018** 46B09 (60B11, 60E15)

— (*with* Junge, Marius) On absolutely summing operators with application to the (p, q)-summing norm with few vectors. *J. Funct. Anal.* **103** (1992), *no.* 1, 62–73. (A. Pietsch) **93b:47044** 47B10 (46B20)

— (*with* Junge, Marius) The iterated weak Hilbert procedure. *Proc. Amer. Math. Soc.* **117** (1993), *no.* 3, 645–651. (Jan H. Fourie) **93d:46013** 46A32 (46C99, 47D50)

De Faria, M. *see* **de Faria, M.**

De Faria Campos, Edison *see* **de Faria Campos, Edison**

De Felice, Clelia (*with* Bruyère, Véronique) Synchronization and decomposability for a family of codes. (English summary) *Internat. J. Algebra Comput.* **2** (1992), *no.* 4, 367–393. (Dominique Perrin) **93i:94009** 94A45 (68Q45)

De Felice, Fernando *see* **de Felice, Fernando**

DeFeo, Patrick (*with* Myers, Raymond H.) A new look at experimental design robustness. (English summary) *Biometrika* **79** (1992), *no.* 2, 375–380. 62K05

De Fermat, Pierre *see* **de Fermat, Pierre**

Defever, Filip (*with* Troost, W.; Hasiewicz, Zbigniew) Superconformal algebras with $N = 5, 6, 7, 8$. I, II. *Classical Quantum Gravity* **8** (1991), *no.* 2, 253–256, 257–261. (From the text) **93c:81065** 81R10 (17A70, 81R25)

— (*with* Deszcz, Ryszard) A note on geodesic mappings of pseudosymmetric Riemannian manifolds. *Colloq. Math.* **62** (1991), *no.* 2, 313–319. (V. N. Berestovskiĭ) **93c:53036** 53C35 (53C22)

— (*with* Hasiewicz, Zbigniew; Siemion, Przemysław) A bosonic model for particles with arbitrary spin. (English summary) *Internat. J. Modern Phys. A* **7** (1992), *no.* 17, 3979–3996. (W. Cox) **93h:81051** 81R20

— (*with* Deszcz, Ryszard; Verstraelen, Leopold) The compact cyclides of Dupin and a conjecture of B.-Y. Chen. (English summary) *J. Geom.* **46** (1993), *no.* 1-2, 33–38. (Steven G. Buyske) **93m:53064** 53C42 (53A05)

De Figueiredo, Djairo G. *see* **de Figueiredo, Djairo G.**

De Figueiredo, Rui J. P. *see* **de Figueiredo, Rui J. P.**

De Filippo, Sergio Space supersymmetries as hierarchies of ordinary Hamiltonian symmetries. *Phys. Lett. B* **279** (1992), *no.* 3-4, 336–340. (Vladimir Stefanov Gerdjikov) **93k:58111** 58F07 (17B70, 35Q53, 58F35)

De Fontenelle, Bernard *see* **de Fontenelle, Bernard**

Defranceschi, Anneliese (*with* Dal Maso, Gianni; Vitali, Enrico) A characterization of C^1-convex sets in Sobolev spaces. *Manuscripta Math.* **75** (1992), *no.* 3, 247–272. (W. P. Ziemer) **93f:46045** 46E35

Defranceschi, Mireille (*with* Fischer, Patrick; Delhalle, Joseph) Molecular Hartree-Fock equations for iteration-variation calculations in momentum space. (English summary) *Numer. Math.* **63** (1992), *no.* 1, 67–82. (A. Ventura) **93j:81114** 81V55 (65P05, 81-08, 81V70)

De Franchis, Michele *see* **de Franchis, Michele**

De Freitas, J. A. Teixeira *see* **de Freitas, J. A. Teixeira**

De Freitas, Lima *see* **de Freitas, Lima**

De Freitas, Luciane R. *see* **de Freitas, Luciane R.**

Defrise, M. (*with* Clack, R.; Townsend, Douglas W.) Solution to the three-dimensional image reconstruction problem from two-dimensional parallel projections. (English summary) *J. Opt. Soc. Amer. A* **10** (1993), *no.* 5, 869–877. (Summary) **93k:78016** 78A55 (44A12)

De Frutos, Javier *see* **de Frutos, Javier**

Degani, A. T. (*with* Smith, F. T.; Walker, J. D. A.) The structure of a three-dimensional turbulent boundary layer. (English summary) *J. Fluid Mech.* **250** (1993), 43–68. (Summary) **93m:76027** 76D10 (76F99)

Degasperis, A. (*with* Lebedev, D. R.; Ol'shanetskiĭ, M. A.; Pakulyak, S. Z.; Perelomov, A. M.; Santini, Paolo Maria) Nonlocal integrable partners to generalized MKdV and two-dimensional Toda lattice equation in the formalism of a dressing method with quantized spectral parameter. *Comm. Math. Phys.* **141** (1991), *no.* 1, 133–151. (Allan P. Fordy) **93d:58064** 58F07 (35Q53)

— (*with* Lebedev, D. R.; Ol'shanetskiĭ, M. A.; Pakulyak, S. Z.; Perelomov, A. M.; Santini, Paolo Maria) Generalized intermediate long-wave hierarchy in zero-curvature representation with noncommutative spectral parameter. (English summary) *J. Math. Phys.* **33** (1992), *no.* 11, 3783–3793. (Yun Bo Zeng) **93i:58071** 58F07 (35Q40, 58F37, 81R10)

Degen, J. W. Some contributions to the model theory of mono-unaries. *Séminaire Lotharingien de Combinatoire (Thurnau,* 1991), 7–11, *Publ. Inst. Rech. Math. Av.*, 476, *Univ. Louis Pasteur, Strasbourg,* 1992. (*see* **93g:00029**) 03C07 (08A60)

Degen, W. L. F. Best approximations of parametric curves by splines. *Mathematical methods in computer aided geometric design, II (Biri,* 1991), 171–184, *Academic Press, Boston, MA,* 1992. (Summary) **93e:41017** 41A15 (41A50, 65D07)

De Gennes, Pierre-Gilles *see* **de Gennes, Pierre-Gilles**

Degens, Paul O. (*with* Lausen, Berthold; Vach, Werner) Reconstruction of phylogenies by distance data: mathematical framework and statistical analysis. *Trees and hierarchical structures (Bielefeld,* 1987), 9–42, *Lecture Notes in Biomath.*, 84, *Springer, Berlin,* 1990. (*see* **93f:92004**) 92B10 (62H30)

De Giorgi, Ennio On some problems common to both analysis and geometry. (Italian) Conference on Differential Geometry and Topology (Italian) (Lecce, 1989). *Note Mat.* **9** (1989), *suppl.*, 59–71. (Donato Scolozzi) **93f:49036** 49Q05 (58E12)

— Some variational problems of geometry. (Italian) Recent developments in mathematical analysis and its applications (Italian) (Bari, 1990). *Confer. Sem. Mat. Univ. Bari No.* 237-244 (1991), 113–125. (Constantin Zălinescu) **93k:49038** 49Q20 (49J10, 49J45)

— Conjectures on limits of some quasilinear parabolic equations and flow by mean curvature. *Partial differential equations and related subjects (Trento,* 1990), 85–95, *Pitman Res. Notes Math. Ser.*, 269, *Longman Sci. Tech., Harlow,* 1992. (*see* **93e:35004**) 35K55 (58E20)

De Giovanni, Francesco *see* **de Giovanni, Francesco**

De Giovanni, L. (*with* Conti, P. L.) Sampling strategies for stratified superpopulation models in the presence of an auxiliary variable. (Italian. English and Italian summaries) *Metron* **49** (1991), *no.* 1-4, 199–211 (1992). 62D05

Degiovanni, Marco (*with* Benci, Vieri) Periodic solutions of dissipative dynamical systems. *Variational methods (Paris,* 1988), 395–411, *Progr. Nonlinear Differential Equations Appl.*, 4, *Birkhäuser Boston, Boston, MA,* 1990. (Shi Qing Zhang) **93k:58188** 58F22 (34C25)

— Bifurcation for odd nonlinear elliptic variational inequalities. (English and French summaries) *Ann. Fac. Sci. Toulouse Math. (5)* **11** (1990), *no.* 1, 39–66. (Andrzej Szulkin) **93m:58021** 58E07 (35B32, 35J85, 47H19, 49J24, 58E05, 58E35, 73H05)

Degiovanni, P. Moore and Seiberg's equations and 3D topological field theory. *Comm. Math. Phys.* **145** (1992), *no.* 3, 459–505. (Toshitake Kohno) **93k:81197** 81T40 (57M10, 57M25, 81T10)

De Goede, Erik D. *see* **de Goede, Erik D.**

Degoli, Lando Bases rationnelles des systèmes de quadriques. (French summary) [Rational bases of systems of quadrics] *Arch. Math. (Brno)* **25** (1989), *no.* 3, 119–126. (J. Čižmár) **93j:14067** 14N05 (14C20, 51N35)

Degond, Pierre (*with* Markowich, Peter A.) A mathematical analysis of quantum transport in three-dimensional crystals. *Ann. Mat. Pura Appl.* (4) **160** (1991), 171–191 (1992). (Luisa Arlotti) **93h:82069** 82C70 (82D25)

— (*with* Raviart, P.-A.) On a penalization of the Child-Langmuir emission condition for the one-dimensional Vlasov-Poisson equation. (English summary) *Asymptotic Anal.* **6** (1992), *no.* 1, 1–27. (R. Glassey) **93i:35029** 35C20 (65N99, 82D10)

— (*with* Lucquin-Desreux, B.) The Fokker-Planck asymptotics of the Boltzmann collision operator in the Coulomb case. *Math. Models Methods Appl. Sci.* **2** (1992), *no.* 2, 167–182. (Carlo Cercignani) **93g:82083** 82C40 (76P05, 82D10)

De Graaf, Jan *see* **de Graaf, Jan**

De Graaf, Jeannette M. *see* **de Graaf, Jeannette M.**

De Graaf, M. *see* **de Graaf, M.**

De Grande-De Kimpe, N. (*with* Pérez-García, Cristina) Non-Archimedean polar topologies. *Aligarh Bull. Math.* **12** (1987/89), 1–18. (E. U. Obienu) **93e:46093** 46S10 (46A99)

— (*with* Martínez-Maurica, J.) Fredholm theory for p-adic locally convex spaces. *Ann. Mat. Pura Appl.* (4) **160** (1991), 223–234 (1992). (Wim H. Schikhof) **93c:47092** 47S10 (47A53, 47B06, 47B07)

— $C(E, F)$ as a dual space. *p-adic functional analysis (Laredo,* 1990), 47–61, *Lecture Notes in Pure and Appl. Math.*, 137, *Dekker, New York,* 1992. (Wim H. Schikhof) **93a:46141** 46S10 (46A32, 47B07, 47D15, 47S10)

Degrez, G. (*with* Anderson, J. D.; Dick, Erik; Grundmann, R.) ★ Computational fluid dynamics. An introduction. Edited and with a preface by John F. Wendt. A von Karman Institute Book. *Springer-Verlag, Berlin,* 1992. xii+291 *pp. ISBN* 3-540-53460-1 (Corneliu Berbente) **93a:76081** 76N10 (76-01)

De Groot, C. *see* **de Groot, C.**

De Groot, Joost *see* **de Groot, Joost**

DeGroot, M. H. (*with* Bayarri, M. J.) What Bayesians expect of each other. *J. Amer. Statist. Assoc.* **86** (1991), *no.* 416, 924–932. (Summary) **93k:62063** 62F15 (62A15)

De Groot, Mark F. *see* **de Groot, Mark F.**

De Groote, M. (*with* Van Dooren, R.; Janssen, Hugo Leonard) Numerical evidence of Feigenbaum's number δ in nonlinear oscillations. *J. Comput. Phys.* **105** (1993), *no.* 1, 173–177. 34C15 (58F13, 65L99)

Dĕgtev, A. N. Weak combinatorial-selective properties of subsets of the natural numbers. (Russian) *Algebra i Logika* **29** (1990), *no.* 4, 421–429, 503; *translation in Algebra and Logic* **29** (1990), *no.* 4, 280–286 (1991). (Costică Cazacu) **93c:03058** 03D20

— On the semilattice of computable families of recursively enumerable sets. (Russian. Russian summary) *Mat. Zametki* **50** (1991), *no.* 4, 61–66, 158; *translation in Math. Notes* **50** (1991), *no.* 3-4, 1027–1030 (1992). (Editors) **93k:03038** 03D25 (03D45, 06A12)

Degtyar', P. V. Integration of Hamiltonian systems by the method of the $\overline{\partial}$-problem. (Russian) *Uspekhi Mat. Nauk* **47** (1992), *no.* 3(285), 159–160; *translation in Russian Math. Surveys* **47** (1992), *no.* 3, 170–171. (J. S. Joel) **93i:58053** 58F05 (32F20)

Degtyarëv, A. I. (*with* Antimirov, V. M.; Voronkov, A. A.; Zakhar'yashchev, M. V.; Protsenko, V. S.) Mathematical logic in programming. A survey. (Russian) *Mathematical logic in programming (Russian),* 331–407, *Mat. Obespechen. ÈVM, "Mir", Moscow,* 1991. (*see* **93d:68004**) 68N05 (03B70)

Degtyarëv, Aleksandr Igor'evich Classification of quartic surfaces that have a nonsimple singular point. II. (Russian. English summary) *Zap. Nauchn. Sem. Leningrad. Otdel. Mat. Inst. Steklov. (LOMI)* **193** (1991), *Geom. i Topol.* 1, 10–38, 161. (Piotr Jaworski) **93e:14041** 14J17 (14J10, 32S30)

Degtyarev, S. P. (*with* Bazalii, B. V.) The Stefan problem with a kinetic and classical condition on the free boundary. (Russian. Russian and Ukrainian summaries) *Ukraïn. Mat. Zh.* **44** (1992), *no.* 2, 155–166; *translation in Ukrainian Math. J.* **44** (1992), *no.* 2, 139–148. (Summary) **93f:35244** 35R35 (80A22)

— (*with* Bazalii, B. V.; Danilyuk, I. I.) Classical solvability of some free boundary problems for parabolic equations with degeneration. *Free boundary problems involving solids (Montreal, PQ,* 1990), 88–91, *Pitman Res. Notes Math. Ser.*, 281, *Longman Sci. Tech., Harlow,* 1993. (*see* **93k:00037**) 35R35 (35K65)

Deguchi, Shinichi Infinite tower extension of topological Yang-Mills theory. *Phys. Lett. B* **282** (1992), *no.* 3-4, 321–328. (Pablo M. Llatas) **93g:81189** 81T70 (58Z05, 81T40)

Deguchi, Tetsuo Link polynomials and solvable models. *Physics, geometry, and topology (Banff, AB,* 1989), 583–603, *NATO Adv. Sci. Inst. Ser. B Phys.*, 238, *Plenum, New York,* 1990. (Wilbur Whitten) **93a:57005** 57M25 (20F36, 82B23)

— (*with* Akutsu, Yasuhiro) A new hierarchy of colored vertex models. *J. Phys. Soc. Japan* **60** (1991), *no.* 12, 4051–4059. (Emil Vinţeler) **93h:82015** 82B23 (20F36)

— (*with* Fujii, Akira) IRF models associated with representations of the Lie superalgebras $\mathrm{gl}(m|n)$ and $\mathrm{sl}(m|n)$. *Modern Phys. Lett. A* **6** (1991), *no.* 37, 3413–3426. (Ladislav Šamaj) **93a:82017** 82B23 (17B70, 81R10)

— (*with* Wadati, Miki; Akutsu, Yasuhiro) Yang-Baxter relation, exactly solvable models and link polynomials. (English summary) *Quantum groups (Leningrad,* 1990), 373–388, *Lecture Notes in Math.*, 1510, *Springer, Berlin,* 1992. (Summary) **93e:57016** 57M25 (82B23)

— (*with* Akutsu, Yasuhiro) Colored braid matrices from infinite-dimensional representations of $U_q(g)$. *Modern Phys. Lett. A* **7** (1992), *no.* 9, 767–779. (Zhong Qi Ma) **93h:81111** 81R50 (17B37, 82B23)

De Guzman, Adolfo M. *see* **de Guzman, Adolfo M.**

De Haan, L. *see* **de Haan, L.**

Dehay, Dominique Estimation de paramètres fonctionnels spectraux de certains processus non-nécessairement stationnaires. (English summary) [Estimation of some spectral

functional parameters of not necessarily stationary processes] *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 4, 313–316. (Summary) **93a:62131** 62M15 (62M09)

— (*with* Moché, Raymond) Trace measures of a positive definite bimeasure. *J. Multivariate Anal.* **40** (1992), *no.* 1, 115–131. (M. M. Rao) **93d:60061** 60G12 (28A35, 46E22, 62M99)

Dehen, Danièle (*with* Mastrangelo, Michèle) Opérateurs différentiels paraboliques à coefficients continus par morceaux et admettant un drift généralisé. (English summary) [Parabolic differential operators with piecewise continuous coefficients and a generalized drift] *Bull. Sci. Math.* (2) **116** (1992), *no.* 1, 67–93. (Ya. Ĭ. Bilopol′ska) **93g:60175** 60J65 (35K05, 35R60, 60H10)

Deheri, G. M. Diameters of ellipsoids and vector valued diametraie [diametral] dimension. *J. Indian Math. Soc. (N.S.)* **56** (1991), *no.* 1-4, 43–53. (Tosun Terzioğlu) **93a:46013** 46A99

— On compact sets of continuous functions with values in a nuclear Fréchet space. *Math. Student* **59** (1991), *no.* 1-4, 129–133. (José Bonet) **93c:46057** 46E40

— (*with* Bhatt, Subhash J.) Orthogonal bases in a topological algebra are Schauder bases. *Internat. J. Math. Math. Sci.* **15** (1992), *no.* 1, 203–204. (T. Husain) **93a:46087** 46H05 (46A35)

Deheuvels, Paul (*with* Steinebach, Josef) On some alternative estimates of the adjustment coefficient in risk theory. *Scand. Actuar. J.* **1990**, *no.* 3-4, 135–159. (Jozef L. Teugels) **93f:62139** 62P05

— Laws of the iterated logarithm for density estimators. *Nonparametric functional estimation and related topics (Spetses,* 1990), 19–29, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 335, *Kluwer Acad. Publ., Dordrecht,* 1991. (Michael Falk) **93b:62058** 62G05 (60F17)

— (*with* Csörgő, Miklós; Horváth, Lajos) Estimating the quantile-density function. *Nonparametric functional estimation and related topics* (*Spetses,* 1990), 213–223, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 335, *Kluwer Acad. Publ., Dordrecht,* 1991. (David W. Scott) **93a:62052** 62G05

— On the limiting behavior of the Pickands estimator for bivariate extreme-value distributions. *Statist. Probab. Lett.* **12** (1991), *no.* 5, 429–439. (K. C. Chanda) **93g:62069** 62G30 (60F05, 62E20, 62G05)

— Functional Erdős-Rényi laws. (English summary) *Studia Sci. Math. Hungar.* **26** (1991), *no.* 2-3, 261–295. (J. Steinebach) **93i:60056** 60F15 (60F10, 60F17)

— (*with* Beirlant, Jan; Einmahl, John H. J.; Mason, David M.) Bahadur-Kiefer theorems for uniform spacings processes. *Teor. Veroyatnost. i Primenen.* **36** (1991), *no.* 4, 724–743; *reprinted in Theory Probab. Appl.* **36** (1991), *no.* 4, 647–669 (1992). (M. Csörgő) **93g:60061** 60F15 (60F05, 60F17, 62G30)

— (*with* Mason, David M.) Functional laws of the iterated logarithm for the increments of empirical and quantile processes. (English summary) *Ann. Probab.* **20** (1992), *no.* 3, 1248–1287. (Lajos Horváth) **93h:60046** 60F15 (62G05)

— (*with* Einmahl, John H. J.) Approximations and two-sample tests based on *P-P* and *Q-Q* plots of the Kaplan-Meier estimators of lifetime distributions. (English summary) *J. Multivariate Anal.* **43** (1992), *no.* 2, 200–217. (M. Csörgő) **93k:60053** 60F05 (60F17, 62E20, 62G10)

— A functional law of the iterated logarithm for tail quantile processes. (English summary) *J. Statist. Plann. Inference* **32** (1992), *no.* 1, 63–74. (Lajos Horváth) **93i:60057** 60F15

— Large deviations by Poisson approximations. (English summary) *J. Statist. Plann. Inference* **32** (1992), *no.* 1, 75–88. (Andrew D. Barbour) **93k:60068** 60F10 (62E20)

— (*with* Steinebach, Josef) On the limiting behavior of the Bahadur-Kiefer statistic for partial sums and renewal processes when the fourth moment does not exist. *Statist. Probab. Lett.* **13** (1992), *no.* 3, 179–188. (P. Révész) **93d:60041** 60F15 (60F05)

— Functional laws of the iterated logarithm for large increments of empirical and quantile processes. (English summary) *Stochastic Process. Appl.* **43** (1992), *no.* 1, 133–163. (M. Csörgő) **93m:60057** 60F15 (60F17, 62G05)

De Heybech, Nicholaus *see* **de Heybech, Nicholaus**

Dehler, Micha (*with* Bartsch, Michael; Dohlus, Martin; et al.) Solution of Maxwell's equations. (English summary) *Comput. Phys. Comm.* **73** (1992), *no.* 1-3, 22–39. (Summary) **93j:78003** 78–08 (78A25)

Dehling, H. G. (*with* Berkes, István; Móri, Tamás F.) Counterexamples related to the a.s. central limit theorem. *Studia Sci. Math. Hungar.* **26** (1991), *no.* 2-3, 153–164. (Peter Schatte) **93i:60055** 60F15

— (*with* Kalma, J. N.; Moes, C.; Schaafsma, W.) The Islamic mean: a peculiar *L*-statistic. (English summary) *Studia Sci. Math. Hungar.* **26** (1991), *no.* 2-3, 297–308. (Noël Veraverbeke) **93h:62099** 62G30 (62E20)

Dehman, B. (*with* Bahouri, H.) Remarque sur un problème de Cauchy semi-linéaire à données discontinues en un point. [Remark on a semilinear Cauchy problem with discontinuous data at one point] *Indiana Univ. Math. J.* **41** (1992), *no.* 1, 253–260. (Sergiu Aizicovici) **93c:35101** 35L70 (35R05)

Dehne, Frank (*with* Miller, Russ; Rau-Chaplin, Andrew) Optical clustering on a mesh-connected computer. (English summary) *Internat. J. Parallel Programming* **20** (1991), *no.* 6, 475–486. (Summary) **93g:68135** 68U05 (68Q22, 68R10)

— (*with* Ferreira, Afonso G.; Rau-Chaplin, Andrew) Parallel fractional cascading on hypercube multiprocessors. (English summary) *Comput. Geom.* **2** (1992), *no.* 3, 141–167. (Summary) **93i:68171** 68U05 (68Q22, 68Q25)

Dehnen, H. (*with* Macías, A.) Dirac field in the five-dimensional Kaluza-Klein theory with scalar field. (English summary) *Internat. J. Modern Phys. A* **7** (1992), *no.* 21, 5105–5113. (Enric Verdaguer) **93k:83040** 83C47 (81T20, 83E15)

De Hoop, Adrianus T. *see* **de Hoop, Adrianus T.**

De Hoop, Maarten V. *see* **de Hoop, Maarten V.**

Dehornoy, Patrick Deux propriétés des groupes de tresses. (English and French summaries) [Two properties of braid groups] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 6, 633–638. (Summary) **93f:20049** 20F36

— The adjoint representation of left distributive structures. *Comm. Algebra* **20** (1992), *no.* 4, 1201–1215. (Graham J. Ellis) **93a:20108** 20N02

— A criterion for proving Noetherianity of a relation. *Theoret. Comput. Sci.* **93** (1992), *no.* 2, 321–325. (Jürgen Dassow) **93e:68046** 68Q42 (03D05, 04A20)

— Problème de mots dans les gerbes libres. (English summary) [The word problem in free sheaves] Discrete mathematics and applications to computer science (Marseille, 1989). *Theoret. Comput. Sci.* **94** (1992), *no.* 2, 199–213. (Christine Charretton) **93i:68146** 68R15 (03D40)

— Structural monoids associated to equational varieties. *Proc. Amer. Math. Soc.* **117** (1993), *no.* 2, 293–304. (A. A. Iskander) **93d:08006** 08B20 (20F05, 20M07)

De Hoyos, Inmaculada *see* **de Hoyos, Inmaculada**

De Iaco, Bettina (*with* Luccio, Fabrizio) Finding all the palindromes in a binary tree in linear time and space. *Inform. Process. Lett.* **44** (1992), *no.* 2, 73–77. (Juhani Karhumäki) **93m:68140** 68R15 (68Q25)

Deif, A. S. (*with* Seif, N. P.; Hashem, S.) Bounding the eigenvectors for symmetric interval matrices. *Z. Angew. Math. Mech.* **72** (1992), *no.* 3, 233–236. (Summary) **93a:65055** 65F15 (15A18, 65G10, 90C05)

Deift, P. A. (*with* Demmel, James; Li, Luen Chau; Tomei, Carlos) Dynamical aspects of the bidiagonal singular value decomposition. *The geometry of Hamiltonian systems* (*Berkeley, CA,* 1989), 81–96, *Math. Sci. Res. Inst. Publ.*, 22, *Springer, New York,* 1991. (Summary) **93e:15003** 15A18 (58F07)

— (*with* Rivera, S.; Tomei, Carlos; Watkins, D. S.) A monotonicity property for Toda-type flows. *SIAM J. Matrix Anal. Appl.* **12** (1991), *no.* 3, 463–468. (Summary) **93f:15015** 15A42 (34A34, 58F07)

— (*with* Li, Luen Chau; Tomei, Carlos) Loop groups, discrete versions of some classical integrable systems, and rank 2 extensions. *Mem. Amer. Math. Soc.* **100** (1992), *no.* 479, viii+101 *pp.* (Malcolm Adams) **93d:58065** 58F07 (22E67)

Deimling, Klaus Multivalued differential equations and dry friction problems. *Delay and differential equations* (*Ames, IA,* 1991), 99–106, *World Sci. Publishing, River Edge, NJ,* 1992. (Summary) **93d:34024** 34A60 (34C25, 73T05)

— Bounds for solution sets of multivalued ODEs. (English summary) *Recent trends in differential equations,* 127–134, *World Sci. Ser. Appl. Anal.*, 1, *World Sci. Publishing, River Edge, NJ,* 1992. (Stefan Miricǎ) **93j:34022** 34A60 (26A48, 34A12, 49J24)

Deineka, V. S. (*with* Skopetskiĭ, V. V.; Marchenko, O. A.) Discretization of a dynamic problem in the theory of elasticity that admits a discontinuity in the solution. (Russian) *Vychisl. Prikl. Mat.* (*Kiev*) *No.* 75 (1991), 75–83. (Summary) **93d:73068** 73V05 (65M99, 73D99, 73V15)

— (*with* Sergienko, I. V.; Skopetskiĭ, V. V.) Approximate discontinuous solutions of the finite element method and their convergence in the norm $L_2(\Omega)$. (Russian. English summary) *Dokl. Akad. Nauk Ukrainy* **1992**, *no.* 4, 10–13, 165. (Summary) **93b:65119** 65L60 (65N30)

— (*with* Sergienko, I. V.; Skopetskiĭ, V. V.; Puzhaĭ, A. M.) Modeling and investigation of physical processes in structures with thin inhomogeneous inclusions. (Russian. English and Russian summaries) *Dokl. Akad. Nauk Ukrainy* **1992**, *no.* 8, 85–89, 172. (Summary) **93g:65159** 65P05 (76M10, 76S05)

— Discretization of a system of nonlinear equations of parabolic type that admit a discontinuity in the solution. (Russian) *Vychisl. Prikl. Mat.* (*Kiev*) *No.* 73 (1992), 33–42. (Pavel Nasláu) **93e:65131** 65N22 (35K60)

Deissenberg, Christophe Limit cycles in local preference optimization. (English summary) Nonlinear methods in economic dynamics and optimal control (Vienna, 1990). *Ann. Oper. Res.* **37** (1992), *no.* 1-4, 125–140. (Summary) **93f:90010** 90A06 (58F21, 58F40)

— The global failure of local preference optimization. (English summary) *Comput. Math. Appl.* **25** (1993), *no.* 10-11, 161–172. (Summary) **93k:90014** 90A06 (90A40)

Deistler, Manfred Identification of ARMA systems. (English summary) *Identification and system parameter estimation* 1991, *Vol.* 1,2 (*Budapest,* 1991), 355–358, *IFAC Sympos. Ser.*, 3, *Pergamon, Oxford,* 1992. (*see* **93h:93009**) 93E12

— Identification of linear systems. (English summary) *Stochastic theory and adaptive control* (*Lawrence, KS,* 1991), 127–141, *Lecture Notes in Control and Inform. Sci.*, 184, *Springer, Berlin,* 1992. (*see* **93g:93007**) 93C05 (93E12)

DeJong, David N. (*with* Nankervis, John C.; Savin, N. E.; Whiteman, Charles H.) The power problems of unit root tests in time series with autoregressive errors. (English summary) *J. Econometrics* **53** (1992), *no.* 1-3, 323–343. 62M10

De Jong, Frida *see* **de Jong, Frida**

De Jong, J. L. *see* **de Jong, J. L.**

De Jong, Theo *see* **de Jong, Theo**

De Jongh, Dick *see* **de Jongh, Dick**

De Jonghe, F. (*with* Siebelink, R.; Troost, W.) Nonlocal regularisation and two-dimensional induced actions. (English summary) *Phys. Lett. B* **288** (1992), *no.* 1-2, 47–53. (Summary) **93c:81120** 81T13 (81T50)

— (*with* Siebelink, R.; Troost, W.; Vandoren, S.; van Nieuwenhuizen, Peter; Van Proeyen, Antoine) The regularized BRST Jacobian of pure Yang-Mills theory. (English summary) *Phys. Lett. B* **289** (1992), *no.* 3-4, 354–360. (Summary) **93e:81070** 81T13 (81S40, 81T70)

Dejter, I. J. Vertex-specular covering graphs and their properties. *Combinatorics* (*Eger,* 1987), 545–546, *Colloq. Math. Soc. János Bolyai*, 52, *North-Holland, Amsterdam,* 1988. (*see* **93m:05002**) 05C75

— (*with* Quintana, J. A.) On an extension of a conjecture of I. Hável. *Graph theory, combinatorics, and applications, Vol.* 1 (*Kalamazoo, MI,* 1988), 327–341, *Wiley-Intersci. Publ., Wiley, New York,* 1991. (Summary) **93b:05104** 05C45

Dekel, Eddie (*with* Ben-Porath, Elchanan) Signaling future actions and the potential for sacrifice. *J. Econom. Theory* **57** (1992), *no.* 1, 36–51. (Peter Borm) **93h:90111** 90D10 (90A35)

— (*with* Scotchmer, Suzanne) On the evolution of optimizing behavior. (English summary) *J. Econom. Theory* **57** (1992), *no.* 2, 392–406. (Summary) **93f:90211** 90D40 (92D15)

Dekel, Eliezer (*with* Hu, Jie; Ouyang, Wen) An optimal algorithm for finding compact sets. (English summary) *Inform. Process. Lett.* **44** (1992), *no.* 5, 285–289. (Summary) **93h:05151** 05C85 (68Q25, 68R10)

De Kerf, E. A. *see* **de Kerf, E. A.**

de grande-De Kimpe, N. *see* **De Grande-De Kimpe, N.**

Dekker, Elly Epact tables on instruments: their definition and use. (English summary) *Ann. of Sci.* **50** (1993), *no.* 4, 303–324. 01A35 (01A40)

Dekker, J. C. E. (*with* Ellentuck, E.) Myhill's work in recursion theory. *Ann. Pure Appl. Logic* **56** (1992), *no.* 1-3, 43–71. (Roman Murawski) **93d:03048** 03D30 (01A70, 03–03, 03D50)

Dekker, L. Generalized steady-state, a system concept in simulation. (English summary) *Computational systems analysis* 1992 (*Berlin,* 1992), 11–20, *Elsevier, Amsterdam,* 1992. (*see* **93e:00021**) 93E30 (93A30)

Dekker, Rommert (*with* Hordijk, Arie) Recurrence conditions for average and Blackwell optimality in denumerable state Markov decision chains. *Math. Oper. Res.* **17** (1992),

no. 2, 271–289. (D. Kalin) **93h:90100** 90C40 (90B22)

Dekking, F. M. Branching processes that grow faster than binary splitting. *Amer. Math. Monthly* **98** (1991), *no.* 8, 728–731. (M. P. Quine) **93a:60131** 60J80

— (*with* Host, Bernard) Limit distributions for minimal displacement of branching random walks. *Probab. Theory Related Fields* **90** (1991), *no.* 3, 403–426. (J. D. Biggins) **93b:60189** 60J80

De Kleer, Johan *see* **de Kleer, Johan**

De Kok, A. G. *see* **de Kok, A. G.**

De Korvin, A. *see* **de Korvin, A.**

Dekrét, A. (*with* Vosmanská, G.) Natural transformations of 2-quasijets. (English summary) *Arch. Math.* (*Brno*) **27B** (1991), 155–160. (Marco Modugno) **93k:58005** 58A20 (53B05)

Dekster, Boris V. Manifolds of constant width. *Proceedings of Asian Mathematical Conference*, 1990 (*Hong Kong*, 1990), 91–94, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93b:00022**) 53C22 (52A20)

— Nonexistent spherical simplexes. *Proceedings of the* 3*rd Congress of Geometry* (*Thessaloniki*, 1991), 148–150, *Aristotle Univ. Thessaloniki, Thessaloniki*, 1992. (*see* **93d:53003**) 52A35

— Width and breadth for convex bodies in Riemannian manifolds. *Arch. Math.* (*Basel*) **58** (1992), *no.* 2, 190–198. (Fulga Pop) **93b:52008** 52A99 (53C99)

— Spherical simplexes too big to exist. *J. Geom.* **45** (1992), *no.* 1-2, 8–22. (J. B. Wilker) **93i:51039** 51M09 (52A55)

— Simplexes in Riemannian manifolds. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 4, 1227–1236. (George M. Rassias) **93j:52014** 52A55 (53C99)

Dektyarev, I. M. A new concept of a defect for holomorphic curves. (Russian) *Dokl. Akad. Nauk* **323** (1992), *no.* 3, 406–409; *translation in Russian Acad. Sci. Dokl. Math.* **45** (1992), *no.* 2, 355–359 (1993). (Mark A. Chinak) **93k:32055** 32H30 (32H25)

Delabaere, Éric Spectre de l'opérateur de Schrödinger stationnaire unidimensionnel à potentiel polynôme trigonométrique. (English summary) [Spectrum of the one-dimensional stationary Schrödinger operator for a trigonometric polynomial potential] *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 11, 807–810. (P. A. Mishnayevskiy) **93d:34140** 34L40 (34E20, 81Q20)

De La Bourdonnaye, Armel *see* **de La Bourdonnaye, Armel**

De la Cal, Jesús *see* **de la Cal, Jesús**

blasco De La Cruz, Oscar *see* **Blasco De La Cruz, Oscar**

De la Harpe, Pierre *see* **de la Harpe, Pierre**

Delahaye, J.-P. Les interprétations partielles et leurs applications á la programmation logique. [Partial interpretations and their applications to logic programming] *Logique et informatique. une introduction*, 181–228, *Collect. Didact.*, 8, *INRIA, Rocquencourt*, 1991. (*see* **93d:68003**) 68Q55 (03B50, 03B70, 68N17)

De la Horra Navarro, Julián *see* **de la Horra Navarro, Julián**

De la Incera, V. *see* **de la Incera, V.**

De La Jara F., J. (*with* Tabensky, Romualdo) Spinor operators. (English summary) *Internat. J. Modern Phys. A* **7** (1992), *no.* 26, 6537–6553. (Dominique Lambert) **93i:22015** 22E43 (15A66, 81R25)

Delaleau, Emmanuel (*with* Fliess, Michel) Algorithme de structure, filtrations et découplage. (English summary) [Structure algorithm, filtrations and decoupling] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 1, 101–106. (Summary) **93c:93016** 93B25 (93B15)

De la Llave, Rafael *see* **de la Llave, Rafael**

Delampady, Mohan (*with* Angers, Jean-François) Hierarchical Bayesian curve fitting and smoothing. (French summary) *Canad. J. Statist.* **20** (1992), *no.* 1, 35–49. (D. V. Lindley) **93e:62100** 62G05 (62F15)

Delandtsheer, Anne Finite (line, plane)-flag-transitive planar spaces. *Geom. Dedicata* **41** (1992), *no.* 2, 145–153. (Ulrich Dempwolff) **93h:51015** 51E26 (05B25)

De Lang, H. *see* **de Lang, H.**

Delange, Hubert Sur les zéros réels des polynômes de Bernoulli. (English summary) [On the real zeros of Bernoulli polynomials] *Ann. Inst. Fourier* (*Grenoble*) **41** (1991), *no.* 2, 267–309. (F. Beukers) **93h:11023; EA 93m** 11B68 (33C99)

— Méthode des moments et fonctions additives. [The moment method and additive functions] *Groupe de Travail en Théorie Analytique et Élémentaire des Nombres*, 1989–1990, 37–51, *Publ. Math. Orsay*, 92-01, *Univ. Paris XI, Orsay*, 1992. (Armel Mercier) **93h:11087** 11K65 (11N64)

— (*with* Tenenbaum, Gérald) Un théorème sur les séries de Dirichlet. (English summary) [A theorem on Dirichlet series] *Monatsh. Math.* **113** (1992), *no.* 2, 99–105. (H. G. Diamond) **93d:11087** 11M06 (30B50)

De Lange, O. L. *see* **de Lange, O. L.**

Delanghe, Richard (*with* Souček, Vladimír) On the structure of spinor-valued differential forms. *Complex Variables Theory Appl.* **18** (1992), *no.* 3-4, 223–236. (Wolfgang Sprössig) **93g:58002** 58A10 (15A66, 30G35)

— (*with* Cnops, J.) A generalised Christoffel-Darboux formula and reproducing kernels in spaces of polymonogenic and polyharmonic functions. (English summary) *Results Math.* **22** (1992), *no.* 3-4, 667–678. (Summary) **93i:46046** 46E22 (30G35, 33C99)

Delanoë, Philippe Generalized stereographic projections with prescribed scalar curvature. *Geometry and nonlinear partial differential equations* (*Fayetteville, AR*, 1990), 17–25, *Contemp. Math.*, 127, *Amer. Math. Soc., Providence, RI*, 1992. (Robert McOwen) **93e:53045** 53C21 (35J60)

— Partial decay on simple manifolds. *Ann. Global Anal. Geom.* **10** (1992), *no.* 1, 3–61. (Junjie Tang) **93h:58144** 58G03 (35J15, 53C21, 58G30)

— Addendum to: "Viscosity solutions of eikonal and Lie equations on compact manifolds" [Ann. Global Anal. Geom. **7** (1989), no. 2, 79–83; MR 91f:58102]. *Ann. Global Anal. Geom.* **10** (1992), *no.* 3, 305. (Editors) **93h:58165** 58G30 (35F20, 35J60)

De la Ossa, Xenia C. *see* **de la Ossa, Xenia C.**

De la Peña, J. A. *see* **de la Peña, J. A.**

De la Peña, Victor H. *see* **de la Peña, Victor H.**

Delaporte, Jacques (*with* Derighetti, Antoine) On Herz' extension theorem. (Italian summary) *Boll. Un. Mat. Ital. A* (7) **6** (1992), *no.* 2, 245–247. (Stephen H. Friedberg) **93i:43004** 43A15 (43A22)

— Convoluteurs continus et groupes quotients. [Continuous convolutors and quotient groups] *C. R. Math. Rep. Acad. Sci. Canada* **14** (1992), *no.* 4, 167–172. (George A. Willis) **93h:43002** 43A22 (43A07, 46J99)

De La Pradelle, Arnaud *see* **de La Pradelle, Arnaud**

De Larminat, P. *see* **de Larminat, P.**

De la Rosa, B. *see* **de la Rosa, B.**

De la Rubia, F. Javier *see* **de la Rubia, F. Javier**

De la Sen, Manuel *see* **de la Sen, Manuel**

DeLatte, David Nonstationary normal forms and cocycle invariants. (English summary) *Random Comput. Dynamics* **1** (1992/93), *no.* 2, 229–259. (Henk Broer) **93m:58102** 58F36 (58F11, 58F18)

DeLaubenfels, Ralph *see* **deLaubenfels, Ralph**

De Launey, Warwick *see* **de Launey, Warwick**

Delaurens, F. (*with* Mustieles Moreno, Francisco-José) A deterministic particle method for solving kinetic transport equations: the semiconductor Boltzmann equation case. *SIAM J. Appl. Math.* **52** (1992), *no.* 4, 973–988. (Suresh V. Lawande) **93k:65008** 65C20 (65D30, 76P05, 78A35, 82C40)

Delbaen, F. (*with* De Waegenaere, A.) A dynamic reinsurance theory. (English summary) *Insurance Math. Econom.* **11** (1992), *no.* 1, 31–48. (Summary) **93f:62138** 62P05

— (*with* De Schepper, A.; Goovaerts, M. J.) The Laplace transform of annuities certain with exponential time distribution. (English summary) *Insurance Math. Econom.* **11** (1992), *no.* 4, 291–294. 62P05

Delbourgo, Roger Relations between universal scaling constants in dissipative maps. *Nonlinear dynamics and chaos* (*Canberra*, 1991), 231–256, *World Sci. Publishing, River Edge, NJ*, 1992. (Gong Fu Liao) **93c:58121** 58F12 (58F13)

— (*with* Triyanta) Equivalence between the Fock-Schwinger gauge and the Feynman gauge. (English summary) *Internat. J. Modern Phys. A* **7** (1992), *no.* 23, 5833–5854. (Summary) **93e:81071** 81T13 (81V05, 81V10)

— (*with* Warner, Roland C.) Morphology of the period-doubling universal function. *J. Math. Phys.* **33** (1992), *no.* 2, 758–770. (Summary) **93b:58107** 58F13 (39B12)

— Accurate C^2 rational interpolants in tension. (English summary) *SIAM J. Numer. Anal.* **30** (1993), *no.* 2, 595–607. (Summary) **93m:65010** 65D05 (65N99)

Delcarte, C. (*with* Dăng Vu, H.) An accurate solution of the Poisson equation by the Chebyshev collocation method. (English summary) *J. Comput. Phys.* **104** (1993), *no.* 1, 211–220. (Introduction) **93m:65161** 65N35

Del Castillo, F. *see* **del Castillo, F.**

Del Castillo Franquet, Joan *see* **del Castillo Franquet, Joan**

Del Castillo-Mussot, Marcelo *see* **del Castillo-Mussot, Marcelo**

Delcher, Arthur L. (*with* Kasif, Simon) Efficient parallel term matching and anti-unification. (English summary) *J. Automat. Reason.* **9** (1992), *no.* 3, 391–406. (Summary) **93m:68064** 68Q22 (68Q25, 68T15)

Delcroix, Antoine A tool for the local study of slow-fast vector fields: the zoom. *Dynamic bifurcations* (*Luminy*, 1990), 151–167, *Lecture Notes in Math.*, 1493, *Springer, Berlin*, 1991. (G. A. Kurina) **93g:34083** 34E15 (03H05, 34C99, 58F99)

Delduc, François (*with* Sokatchev, E. S.) Superparticle with extended worldline supersymmetry. *Classical Quantum Gravity* **9** (1992), *no.* 2, 361–376. (Summary) **93b:81208** 81T30 (81T60)

— (*with* Ragoucy, E.; Sorba, P.) Super-Toda theories and W-algebras from superspace Wess-Zumino-Witten models. *Comm. Math. Phys.* **146** (1992), *no.* 2, 403–426. (Stanislav Z. Pakuliak) **93e:81135** 81T60 (17A70, 35Q58, 58F07)

— (*with* Ivanov, Evgenii Alekseevich[2]; Sokatchev, E. S.) Twistor-like superstrings with $D = 3, 4, 6$ target superspace and $N = (1, 0), (2, 0), (4, 0)$ world-sheet supersymmetry. (English summary) *Nuclear Phys. B* **384** (1992), *no.* 1-2, 334–351. (Summary) **93f:81104** 81T30 (81R20)

— (*with* Savel'ev, M. V.; Sorba, P.) Continuum Lie algebras and the scalar-flat Kähler surfaces. *Phys. Lett. B* **277** (1992), *no.* 4, 411–413. (Krzysztof Galicki) **93i:53047** 53C25 (17B70, 17B81, 53C55, 58G37)

— (*with* Ragoucy, E.; Sorba, P.) Towards a classification of W algebras arising from nonabelian Toda theories. *Phys. Lett. B* **279** (1992), *no.* 3-4, 319–325. (Robert E. C. Perret) **93i:81060** 81R10 (17B68, 81T40)

— (*with* Gervais, Jean-Loup; Savel'ev, M. V.) Supersymmetric black holes from Toda theories. (English summary) *Phys. Lett. B* **292** (1992), *no.* 3-4, 295–297. (Summary) **93i:81220** 81T40 (83C57)

— (*with* Gal'perin, A. S.; Howe, P. S.; Sokatchev, E. S.) Twistor formulation of the heterotic $D = 10$ superstring with manifest $(8, 0)$ world-sheet supersymmetry. (English summary) *Phys. Rev. D* (3) **47** (1993), *no.* 2, 578–593. (Sergey Merkulov) **93m:81050** 81R25 (81T30, 83E30)

Delecroix, M. (*with* Nogueira, M. E.; Rosa, A. C.) Sur l'estimation de la densité d'observations ergodiques. (English and French summaries) [Estimating the density of ergodic observations] *Statist. Anal. Données* **16** (1991), *no.* 3, 25–38. (Summary) **93m:62067** 62G05 (62M09)

— (*with* Yazourh, O.) Estimation non paramétrique du taux de hasard en présence de censures droites: la méthode des fonctions orthogonales. (English and French summaries) [Nonparametric inference for failure rates with random right censorship: the method of orthogonal functions] *Statist. Anal. Données* **16** (1991), *no.* 3, 39–62. (Summary) **93m:62068** 62G05 (62N05)

De Leeuw, Jan *see* **de Leeuw, Jan**

pathiaux-Delefosse, M. *see* **Pathiaux-Delefosse, M.**

De León, Manuel *see* **de León, Manuel**

De Leone, R. Partially and totally asynchronous algorithms for linear complementarity problems. *J. Optim. Theory Appl.* **69** (1991), *no.* 2, 235–249. (S. R. Mohan) **93c:90089** 90C33 (65K05)

Delest, M.-P. Polyominoes and animals: some recent results. Mathematical chemistry and computation (Dubrovnik, 1990). *J. Math. Chem.* **8** (1991), *no.* 1-3, 3–18. (Summary) **93e:05024** 05B50 (68Q45, 68R15, 82B41)

— (*with* Fedou, J. M.) Attribute grammars are useful for combinatorics. Second Workshop on Algebraic and Computer-theoretic Aspects of Formal Power Series (Paris, 1990). *Theoret. Comput. Sci.* **98** (1992), *no.* 1, 65–76. (Ranjan Chaudhuri) **93e:68059** 68Q50 (05A15, 33D99, 39B99, 68R05)

D'Eleuterio, G. M. T. Dynamics of an elastic multibody chain. C. Recursive dynamics. (English summary) *Dynamics Stability Systems* **7** (1992), *no.* 2, 61–89. (A. E. Zakrzhevskii) **93k:73057** 73K12 (70E99)

Delfour, Michel C. (*with* Zolésio, Jean-Paul) Analyse des problèmes de forme par la dérivation des minimax. (French summary) [Analysis of design problems by differentiation of the minimax] *Analyse non linéaire* (*Perpignan*, 1987), 210–227, *Univ. Montréal, Montreal, PQ*, 1989. (*see* **93h:49003**) 49Q15

— (*with* Da Prato, Giuseppe) Linear quadratic control problem without stabilizability. *Stabilization of flexible structures* (*Montpellier*, 1989), 126–147, *Lecture Notes in Control and Inform. Sci.*, 147, *Springer, Berlin*, 1990. (Piotr Grabowski) **93i:49041** 49N10 (49K27, 49N35, 49N55, 93B52)

— (*with* Zolésio, Jean-Paul) Shape Hessian by the velocity method: a Lagrangian approach. (English summary) *Stabilization of flexible structures* (*Montpellier*, 1989), 255–279, *Lecture Notes in Control and Inform. Sci.*, 147, *Springer, Berlin*, 1990. (*see* **93c:93006**) 49Q10

— (*with* Morgan, Jacqueline) Differentiability of min max and saddle points under relaxed assumptions. *Boundary control and boundary variation* (*Sophia-Antipolis*, 1990), 174–185, *Lecture Notes in Control and Inform. Sci.*, 178, *Springer, Berlin*, 1992. (Marcin Studniarski) **93g:49008** 49J35 (49J52, 49K35, 49K40)

— (*with* Ouansafi, A.) New noniterative approximations to the old Riccati differential equation. *Boundary control and boundary variation* (*Sophia-Antipolis*, 1990), 186–201, *Lecture Notes in Control and Inform. Sci.*, 178, *Springer, Berlin*, 1992. (Summary) **93d:65065** 65L05 (34A34, 34H05, 65L06)

— (*with* Zolésio, Jean-Paul) Structure of shape derivatives for nonsmooth domains. *J. Funct. Anal.* **104** (1992), *no.* 1, 1–33. (Marcin Studniarski) **93c:46075** 46G05 (46N10, 49J27, 49Q10)

— (*with* Chalifour, Alain) Optimal distribution of larvicide in running waters. *SIAM J. Optim.* **2** (1992), *no.* 2, 264–303. (Summary) **93b:92009** 92C60 (49N55, 90C90, 92–04, 92D40)

Del Fra, Alberto (*with* De Clerck, F.; Ghinelli-Smit, Dina) Pointsets in partial geometries. *Advances in finite geometries and designs* (*Chelwood Gate*, 1990), 93–110, *Oxford Sci. Publ., Oxford Univ. Press, New York*, 1991. (W. M. Kantor) **93a:51003** 51E14

— (*with* Ghinelli-Smit, Dina; Payne, Stanley E.) $(0, n)$-sets in a generalized quadrangle. (English summary) *Combinatorics '90* (*Gaeta*, 1990), 139–157, *Ann. Discrete Math.*, 52, *North-Holland, Amsterdam*, 1992. (Ferenc Wettl) **93j:51004** 51E12 (51E20)

— (*with* Ghinelli-Smit, Dina) Classification of extended generalized quadrangles with maximum diameter. (English summary) *Discrete Math.* **105** (1992), *no.* 1-3, 13–23. (Stanley E. Payne) **93h:51010** 51E12 (05B25, 51E25)

— (*with* Ghinelli-Smit, Dina) Truncated D_n Coxeter complexes as extended partial geometries with maximum diameter. *J. Geom.* **43** (1992), *no.* 1-2, 75–94. (Norbert Knarr) **93d:51013** 51E14

— (*with* Pasini, Antonio) $C_2.c$ geometries and generalized quadrangles of order $(s-1, s+1)$. (English summary) *Results Math.* **22** (1992), *no.* 1-2, 489–508. (Norbert Knarr) **93h:51009** 51E12 (05B25, 51E24)

van Delft, Ch. (*with* Boukas, El-Kebir; Haurie, Alain) A turnpike improvement algorithm for piecewise deterministic control. (English summary) *Optimal Control Appl. Methods* **12** (1991), *no.* 1, 1–18. 49M05

kreutz-Delgado, Kenneth *see* **Kreutz-Delgado, Kenneth**

Delgado, M. *see* **Delgado, Miguel**

martín-Delgado, M. A. *see* **Martín-Delgado, M. A.**

Delgado, Miguel (*with* Herrera, F.; Verdegay, J. L.; Vila, Maria Amparo) Post-optimality analysis on the membership functions of a fuzzy linear programming problem. (English summary) *Fuzzy Sets and Systems* **53** (1993), *no.* 3, 289–297. (Summary) **93k:90101** 90C70 (04A72, 90C08)

— (*with* González Muñoz, Antonio) An inductive learning procedure to identify fuzzy systems. (English summary) *Fuzzy Sets and Systems* **55** (1993), *no.* 2, 121–132. 93C42 (04A72, 68T05)

— (*with* Chanas, S.; Verdegay, J. L.; Vila, Maria Amparo) Ranking fuzzy interval numbers in the setting of random sets. (English summary) *Inform. Sci.* **69** (1993), *no.* 3, 201–217. (Summary) **93k:03052** 03E72 (90A05)

Delgado, Miguel A. Bounded influence regression in the presence of heteroskedasticity of unknown form. *Nonparametric functional estimation and related topics* (*Spetses*, 1990), 297–313, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 335, *Kluwer Acad. Publ., Dordrecht*, 1991. (Summary) **93a:62053** 62G05 (62J02)

— Semiparametric generalized least squares in the multivariate nonlinear regression model. (English summary) *Econometric Theory* **8** (1992), *no.* 2, 203–222. (P. Laurie Davies) **93j:62152** 62H12 (62G05, 62J02)

Delgado, Olaf (*with* Huson, Daniel H.; Zamorzaeva, Elizaveta) The classification of 2-isohedral tilings of the plane. *Geom. Dedicata* **42** (1992), *no.* 1, 43–117. (Ren Ding) **93d:52028** 52C20 (05B45)

Delgado A., Víctor (*with* Henriquez, Hernán R.; San Martín A., María E.) Invariance properties of trajectories in linear control systems. (Spanish) *Proyecciones* **10** (1991), *no.* 17, 13–26. (O. A. Malafeyev) **93f:93039** 93B25 (93C05)

Delgrande, James P. Incorporating nonmonotonic reasoning in Horn clause theories. (English summary) *AAAI-91. Proceedings, Ninth National Conference on Artificial Intelligence, Vol.* 1, 2, 405–411, *AAAI Press, Menlo Park, CA*, 1991. (*see* **93i:68011**) 68T27

Del Greco, John G. *see* **del Greco, John G.**

Del Grosso, G. (*with* Gerardi, A.; Koch, Giorgio) Optimality in accelerated life tests. (English summary) *Math. Oper. Res.* **17** (1992), *no.* 4, 866–881. (Harshinder Singh) **93k:62202** 62N05 (90B25)

Delhaise, Fabienne (*with* Henrard, Jacques) The problem of critical inclination combined with a resonance in mean motion in artificial satellite theory. (English summary) *Celestial Mech. Dynam. Astronom.* **55** (1993), *no.* 3, 261–280. 70M20 (70–08, 70F05, 70H05)

Delhalle, Joseph (*with* Fischer, Patrick; Defranceschi, Mireille) Molecular Hartree-Fock equations for iteration-variation calculations in momentum space. (English summary) *Numer. Math.* **63** (1992), *no.* 1, 67–82. (A. Ventura) **93j:81114** 81V55 (65P05, 81–08, 81V70)

De L'Hospital, Guillaume *see* **de L'Hospital, Guillaume**

Delic, Hakan (*with* Papantoni-Kazakos, P.) A class of scheduling policies for mixed data with renewal arrival processes. (English summary) *IEEE Trans. Automat. Control* **38** (1993), *no.* 3, 455–459. (Summary) **93k:90041** 90B35 (93E03)

Deligne, P. Le symbole modéré. [The tame symbol] *Inst. Hautes Études Sci. Publ. Math. No.* 73 (1991), 147–181. (José M. Muñoz Porras) **93i:14030** 14H55 (14F05)

— Groupe de Heisenberg et réalité. [The Heisenberg group and reality] *J. Amer. Math. Soc.* **4** (1991), *no.* 1, 197–206. (Palle E. T. Jørgensen) **93f:22013** 22E45 (22E25, 30E99, 58D19)

De Lillo, Silvana (*with* Jørgensen, Michael F.; Christiansen, Peter L.; Cruzeiro-Hansson, Leonor) Note on a complex Eckhaus equation. (English summary) *Chaotic dynamics* (*Patras*, 1991), 71–73, *NATO Adv. Sci. Inst. Ser. B Phys.*, 298, *Plenum, New York*, 1992. (*see* **93i:58004**) 35Q55

— Semiline solutions of the Eckhaus equation. (English summary) *Inverse Problems* **8** (1992), *no.* 4, L1–L4. (Summary) **93e:35102** 35Q55

— Semiline solution of a nonlinear diffusion-convection equation. *Phys. Lett. A* **167** (1992), *no.* 5-6, 479–482. (From the text) **93e:35060** 35K60 (35A30, 35C05)

Delincé, F. (*with* Nicolet, A.; Genon, A.; Legros, W.; Umé, M.) An optimal adaptative numerical integral method. (English summary) *Boundary element technology, VII* (*Albuquerque, NM*, 1992), 919–933, *Comput. Mech., Southampton*, 1992. (*see* **93b:65002**) 65D30

De Lisa, Francisco *see* **de Lisa, Francisco**

Deliu, Anca (*with* Jawerth, Björn) Geometrical dimension versus smoothness. *Constr. Approx.* **8** (1992), *no.* 2, 211–222. (Run Sheng Yang) **93a:28008** 28A80 (46E35, 58F11)

Delius, G. W. (*with* Grisaru, M. T.; Zanon, D.) Exact S-matrices for non-simply-laced affine Toda theories. (English summary) *Nuclear Phys. B* **382** (1992), *no.* 2, 365–406. (Niall J. MacKay) **93i:81221** 81T40 (81R10)

— (*with* Grisaru, M. T.; Zanon, D.) Quantum conserved currents in affine Toda theories. (English summary) *Nuclear Phys. B* **385** (1992), *no.* 1-2, 307–328. (Filippo Colomo) **93k:81198** 81T40 (81R10)

Deliyanni, Irene (*with* Argyros, Spiros A.) Representations of convex nondentable sets. *Pacific J. Math.* **155** (1992), *no.* 1, 29–70. (Walter Schachermayer) **93g:46016** 46B22

Del Junco, Andrés *see* **del Junco, Andrés**

Dell, J. (*with* Capovilla, Riccardo; Jacobson, Ted) Errata: "A pure spin-connection formulation of gravity" [Classical Quantum Gravity **8** (1991), no. 1, 59–73; MR 91m:83005]. *Classical Quantum Gravity* **9** (1992), *no.* 7, 1839–1840. (From the text) **93d:83006** 83C05 (83C60)

Dellacherie, Claude Théorie non linéaire du potentiel: un principe unifié de domination et du maximum et quelques applications. [Nonlinear potential theory: a unified domination and maximum principle and some applications] *Séminaire de Probabilités, XXV*, 1–9, *Lecture Notes in Math.*, 1485, *Springer, Berlin*, 1991. (J. Veselý) **93j:31011** 31C45 (35B50)

— Une version non linéaire du théorème de Hunt. (English summary) [A nonlinear version of Hunt's theorem] *Potential theory* (*Nagoya*, 1990), 25–32, *de Gruyter, Berlin*, 1992. (T. J. Lyons) **93m:31016** 31C99 (60J45)

Della Dora, J. (*with* Stolovitch, L.) Poincaré normal form and Carleman linearization ([of a] system of nonlinear ordinary differential equations). *Algebraic computing in control* (*Paris*, 1991), 288–306, *Lecture Notes in Control and Inform. Sci.*, 165, *Springer, Berlin*, 1991. (F. Neuman) **93g:34057** 34C20 (34A34, 58F36)

De Llano, M. *see* **de Llano, M.**

Dell'Antonio, Gianfausto Two results on Nelson diffusions. *Random partial differential equations* (*Oberwolfach*, 1989), 55–69, *Internat. Ser. Numer. Math.*, 102, *Birkhäuser, Basel*, 1991. (*see* **93e:60007**) 60J60 (81S20)

— (*with* Posilicano, Andrea) Convergence of Nelson diffusions. *Comm. Math. Phys.* **141** (1991), *no.* 3, 559–576. (Nariyuki Minami) **93e:60063** 60F17 (35J10, 60J60, 81P20, 81S20)

— Periodic solutions for resonant systems with an application to nonlinear wave equations. *Progress in variational methods in Hamiltonian systems and elliptic equations* (*L'Aquila*, 1990), 52–67, *Pitman Res. Notes Math. Ser.*, 243, *Longman Sci. Tech., Harlow*, 1992. (Marco Degiovanni) **93i:34113** 34G20 (34C25, 35B10, 35L70, 47N20)

— (*with* Benci, Vieri; D'Onofrio, Biancamaria) Index theory and stability of periodic solutions of Lagrangian systems. (English and French summaries) *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 5, 583–588. (Gabriella Tarantello) **93h:58126** 58F22 (34B15, 34C25, 34D99, 58E05, 70H35)

— (*with* D'Onofrio, Biancamaria; Ekeland, Ivar) Les systèmes hamiltoniens convexes et pairs ne sont pas ergodiques en général. (English and French summaries) [Convex symmetric Hamiltonian systems are not generally ergodic] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 13, 1413–1415. (Shi Qing Zhang) **93k:58190** 58F22 (58F05, 70H05)

Della Pietra, Vincent (*with* Burshtein, David; Kanevsky, Dimitri; Nádas, Arthur) Minimum impurity partitions. (English summary) *Ann. Statist.* **20** (1992), *no.* 3, 1637–1646. (Summary) **93i:62054** 62H30 (62C05, 62C10, 62J02, 68T10)

Della Rocca, Michael Kripke's essentialist argument against the identity theory. *Philos. Stud.* **69** (1993), *no.* 1, 101–112. 03A05 (03B45)

ronchi Della Rocca, Simona *see* **Ronchi Della Rocca, Simona**

Della Vecchia, B. (*with* Mastroianni, Giuseppe) A Nevai-Shepart type operator. *Atti Sem. Mat. Fis. Univ. Modena* **39** (1991), *no.* 2, 537–549. (Krzysztof Reczek) **93a:41021** 41A20

— (*with* Criscuolo, Giuliana; Mastroianni, Giuseppe) Hermite interpolation and mean convergence of its derivatives. (English summary) *Calcolo* **28** (1991), *no.* 1-2, 111–127 (1992). (P. Vértesi) **93g:41002** 41A05 (41A10)

— (*with* Criscuolo, Giuliana; Mastroianni, Giuseppe) Hermite-Fejér and Hermite interpolation. *Approximation theory, spline functions and applications* (*Maratea*, 1991), 317–331, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 356, *Kluwer Acad. Publ., Dordrecht*, 1992. (Terence M. Mills) **93k:41005** 41A05 (41A10, 41A25)

— (*with* Kocić, Ljubiša M.) Linear positive operators and their degeneracy sets. (English summary) *Atti Sem. Mat. Fis. Univ. Modena* **40** (1992), *no.* 2, 689–703. (George A. Anastassiou) **93k:41021** 41A36

Dell'isola, Francesco (*with* Kosiński, Witold) The interface between phases as a layer. II. A H-order model for two-dimensional nonmaterial continua. (English summary) *Waves and stability in continuous media* (*Sorrento*, 1989), 108–113, *Ser. Adv. Math. Appl. Sci.*, 4, *World Sci. Publishing, River Edge, NJ*, 1991. (*see* **93g:00030**) 80A22 (73B30)

— (*with* Kosiński, Witold) The curved interface with variable thickness. *Thermodynamics and kinetic theory* (*Mądralin*, 1990), 58–71, *Ser. Adv. Math. Appl. Sci.*, 12, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93d:82060** 82C24 (73B30, 80A22)

Dellnitz, Michael Computational bifurcation of periodic solutions in systems with symmetry. (English summary) IMA Conference on Dynamics of Numerics and Numerics of Dynamics (Bristol, 1990). *IMA J. Numer. Anal.* **12** (1992), *no.* 3, 429–455. (Summary) **93g:58104** 58F14 (34A50, 34C23, 34C25, 65L60)

— (*with* Melbourne, Ian; Marsden, Jerrold Eldon) Generic bifurcation of Hamiltonian vector fields with symmetry. *Nonlinearity* **5** (1992), *no.* 4, 979–996. (Yong-Geun Oh) **93c:58157** 58F14 (58F05)

Dell'Olmo, P. (*with* Bianco, Lucio; Speranza, M. Grazia) A decomposition approach to a scheduling problem with multiple modes. *System modelling and optimization* (*Zurich*, 1991), 875–884, *Lecture Notes in Control and Inform. Sci.*, 180, *Springer, Berlin*, 1992. (*see* **93e:90003**) 90B35

Dellwo, David R. (*with* Friedman, Morton B.; Aggarwal, Rajesh) Computational aspects of accelerated projection methods for nonlinear integral equations. (English summary) *Integral methods in science and engineering—90* (*Arlington, TX*, 1990), 158–169, *Ser. Comput. Phys. Process. Mech. Thermal Sci., Hemisphere, New York*, 1991. (*see* **93f:00014**) 65R20

Del Mar Soldevilla, Moreno *see* **Soldevilla Moreno, Ma. del Mar**

Del Monte, Guidobaldo *see* **del Monte, Guidobaldo**

Del Olmo, Mariano A. *see* **del Olmo, Mariano A.**

Delon, Françoise (*with* Gondard-Cozette, Danielle) XVIIème problème de Hilbert sur les corps chaîne-clos. (English summary) [Hilbert's XVIIth problem for chain-closed fields] *J. Symbolic Logic* **56** (1991), *no.* 3, 853–861. (Jesús M. Ruiz) **93d:12001** 12D15 (03C60, 12J10)

— Plongement dense d'un corps ordonné dans sa clôture réelle. (English summary) [Dense embedding of an ordered field in its real closure] *J. Symbolic Logic* **56** (1991), *no.* 3, 974–980. (G. G. Pestov) **93c:12014** 12J15 (03C60)

— Indécidabilité de la théorie des paires immédiates de corps valués henseliens. (English summary) [Undecidability of the theory of immediate pairs of Henselian valued fields] *J. Symbolic Logic* **56** (1991), *no.* 4, 1236–1242. (Françoise Point) **93a:03035** 03C60 (03C65, 03D35, 12J10, 12L12)

Delone, B. N. *see* **Discrete geometry and topology**

De Lorenzo, Javier *see* **de Lorenzo, Javier**

Delorme, C. Examples of products giving large graphs with given degree and diameter. (English summary) *Discrete Appl. Math.* **37/38** (1992), 157–167. (Jean-Claude Bermond) **93i:05125** 05C99

— (*with* Bermond, Jean-Claude; Quisquater, J.-J.) Table of large (Δ, D)-graphs. *Discrete Appl. Math.* **37/38** (1992), 575–577. 05C75

— (*with* Favaron, O.; Mahéo, M.) Isomorphisms of Cayley multigraphs of degree 4 on finite abelian groups. *European J. Combin.* **13** (1992), *no.* 1, 59–61. (Tomaž Pisanski) **93c:05056** 05C25 (05C20, 20K01)

— (*with* Poljak, Svatopluk) The performance of an eigenvalue bound on the max-cut problem in some classes of graphs. (English summary) Graph theory and combinatorics (Marseille-Luminy, 1990). *Discrete Math.* **111** (1993), *no.* 1-3, 145–156. (Summary) **93j:05083** 05C35 (05C50)

Delorme, Jean-Joël On the Diophantine equation $x_1^6 + x_2^6 + x_3^6 = y_1^6 + y_2^6 + y_3^6$. *Math. Comp.* **59** (1992), *no.* 200, 703–715. (Andrew Bremner) **93a:11023** 11D41 (11Y50)

Delorme, Louis (*with* Crainic, Teodor Gabriel) Dual-ascent procedures for multicommodity location-allocation problems with balancing requirements. (English summary) *Transportation Sci.* **27** (1993), *no.* 2, 90–101. 90B06

Delorme, Patrick Théorème de Paley-Wiener invariant tordu pour le changement de base $\mathbf{C}/\mathbf{R}$. [The twisted invariant Paley-Wiener theorem under the base change $\mathbf{C}/\mathbf{R}$] *Compositio Math.* **80** (1991), *no.* 2, 197–228. (Joe Repka) **93c:22016** 22E30 (22E46)

— (*with* Brylinski, Jean-Luc) Vecteurs distributions H-invariants pour les séries principales généralisées d'espaces symétriques réductifs et prolongement méromorphe d'intégrales d'Eisenstein. [H-invariant distribution vectors for the generalized principal series of reducible symmetric spaces and meromorphic extension of Eisenstein integrals] *Invent. Math.* **109** (1992), *no.* 3, 619–664. (D. Miličić) **93m:22016** 22E46

Delorme, Philippe (*with* Croisille, Jean-Pierre) Kinetic symmetrizations and pressure laws for the Euler equations. (English and French summaries) *Phys. D* **57** (1992), *no.* 3-4, 395–416. (Benoit Perthame) **93g:76098** 76N10 (35Q30, 65M99, 76M99)

Delort, Jean-Marc Conormalité des ondes semi-linéaires le long des caustiques. [Conormality of semilinear waves along caustics] *Amer. J. Math.* **113** (1991), *no.* 4, 593–651. (Nguyen Huu Duc) **93d:35006** 35A27 (35L55, 58G07)

— ★ F.B.I. transformation. Second microlocalization and semilinear caustics. Lecture Notes in Mathematics, 1522. *Springer-Verlag, Berlin*, 1992. vi+101 *pp. ISBN* 3-540-55764-4 (Nguyen Huu Duc) **93i:35010** 35A27 (35L55, 35S30, 58G07)

— Une remarque sur le problème des nappes de tourbillon axisymétriques sur $\mathbf{R}^3$. (English and French summaries) [A remark on the problem of axisymmetric vortex sheets in $\mathbf{R}^3$] *J. Funct. Anal.* **108** (1992), *no.* 2, 274–295. (Summary) **93j:35131** 35Q30 (76C05)

Delos, J. B. (*with* Mao, J.-M.; Shaw, J.) Closed orbits and semiclassical wavefunctions in two-dimensional Hamiltonian systems. *J. Statist. Phys.* **68** (1992), *no.* 1-2, 51–96. (Peter N. Zhevandrov) **93g:81023** 81Q20

De los Reyes, J. P. *see* **de los Reyes, J. P.**

Del Piero, Gianpietro (*with* Sampaio, Rubens) A unified treatment of damage and plasticity based on a new definition of microfracture. *Unilateral problems in structural analysis, IV* (*Capri*, 1989), 39–50, *Internat. Ser. Numer. Math.*, 101, *Birkhäuser, Basel*, 1991. (From the introduction) **93d:73058** 73M25 (73E05, 73S10)

— *see also* **Unilateral problems in structural analysis, 93a:73001**

Del Pino, Manuel A. Layers with nonsmooth interface in a semilinear elliptic problem. *Comm. Partial Differential Equations* **17** (1992), *no.* 9-10, 1695–1708. (Albert J. Milani) **93m:35071** 35J60 (35J65)

— (*with* Manásevich, Raúl F.; Murúa, Alejandro) On the number of 2π periodic solutions for $u'' + g(u) = s(1 + h(t))$ using the Poincaré-Birkhoff theorem. *J. Differential Equations* **95** (1992), *no.* 2, 240–258. (Tong Ren Ding) **93e:34062** 34C25

— (*with* Manásevich, Raúl F.; Montero, Alberto) T-periodic solutions for some second order differential equations with singularities. *Proc. Roy. Soc. Edinburgh Sect. A* **120** (1992), *no.* 3-4, 231–243. (B. Shekhter) **93c:34091** 34C25 (34B15)

Del Prete, I. (*with* Di Iorio, M.) A unifying approach to continuity-like notions for functions and multifunctions. (Italian summary) *Rend. Accad. Sci. Fis. Mat. Napoli* (4) **57** (1990), 67–82 (1991). (Ivan L. Reilly) **93a:54013** 54C08 (54A10, 54A20, 54B20, 54C60)

mauceri Del Prete, Vincenza *see* **Mauceri Del Prete, Vincenza**

Del Riego, L. (*with* Dodson, Cristopher T. J.) Universal reduction of second order tangent structure. *Proceedings of the Workshop on Recent Topics in Differential Geometry* (*Puerto de la Cruz*, 1990), 65–76, *Informes*, 32, *Univ. La Laguna, La Laguna*, 1991. (Marco Modugno) **93a:58001** 58A05 (53B05, 55R10, 58A20)

Del Río, E. *see* **del Río, E.**

Del Río, J. A. *see* **del Río, J. A.**

Del Santo, Daniele (*with* Colombini, F.; Zuily, C.) Some remarks on the uniqueness in the Cauchy problem for degenerate elliptic operators. *Nonlinear analysis*, 153–159, *Quaderni, Scuola Norm. Sup., Pisa*, 1991. (*see* **93h:00022**) 35J70

— (*with* Saint Raymond, Xavier) On the uniqueness theorem of Lerner and Robbiano. *Comm. Partial Differential Equations* **17** (1992), *no.* 11-12, 2137–2154. (Yu. V. Egorov) **93j:35006** 35A07 (35G10)

— (*with* Saint Raymond, Xavier) A remark on Hörmander's uniqueness theorem. *Proc. Amer. Math. Soc.* **117** (1993), *no.* 3, 721–725. (V. V. Kovrizhkin) **93d:35092** 35L30 (35A07, 35S50)

Delsanto, P. P. (*with* Whitcombe, T.; Chaskelis, H. H.; Mignogna, R. B.) Connection Machine simulation of ultrasonic wave propagation in materials. I. The one-dimensional case. *Wave Motion* **16** (1992), *no.* 1, 65–80. 73D15 (73V99, 76Q05)

Delsarte, Philippe (*with* Thayse, André) An extension of the Montague semantics. *Philips J. Res.* **46** (1991), *no.* 1, 23–55. (Summary) **93a:03026** 03B65

— (*with* Calderbank, A. R.) On error-correcting codes and invariant linear forms. (English summary) *SIAM J. Discrete Math.* **6** (1993), *no.* 1, 1–23. (Ian Blake) **93m:94025** 94B05 (05B05)

— (*with* Calderbank, A. R.) Extending the t-design concept. *Trans. Amer. Math. Soc.* **338** (1993), *no.* 2, 941–952. (Sylvia A. Hobart) **93j:05169** 05E30 (05B05, 33C45)

Delshams, Amadeo (*with* Seara, Teresa M.) An asymptotic expression for the splitting of separatrices of the rapidly forced pendulum. (English summary) *Comm. Math. Phys.* **150** (1992), *no.* 3, 433–463. (James A. Murdock) **93i:34084** 34C37 (34C15, 58F30, 70K40)

Del Sol Mesa, A. *see* **del Sol Mesa, A.**

De Luca, Aldo *see* **de Luca, Aldo**

De Luca, L. (*with* Conforti, D.; Musmanno, R.) Unconstrained optimization on vector-parallel computers. (English summary) *Computational and applied mathematics, I* (*Dublin*, 1991), 101–110, *North-Holland, Amsterdam*, 1992. (*see* **93j:00007**) 65Y05 (65K10)

De Lucia, Paolo (*with* Weber, Hans) Completeness of function spaces. *Ricerche Mat.* **39** (1990), *no.* 1, 81–97. (J. Musielak) **93b:46049** 46E30 (46E40)

— (*with* D'Andrea, Anna Bruna) On the Lebesgue decomposition of a function relative to a p-ideal of an orthomodular lattice. *Math. Slovaca* **41** (1991), *no.* 4, 423–430. (Anatolij Dvurečenskij) **93b:28027** 28B10 (03G12, 06C15, 81P10)

— (*with* Wright, John David Maitland) Group valued measures with the Lyapunoff property. (Italian summary) *Rend. Circ. Mat. Palermo* (2) **40** (1991), *no.* 3, 442–452. (Constantin Dumitrescu) **93k:28012** 28B10 (06E99, 22A10, 46G10)

— (*with* D'Andrea, Anna Bruna) The Lebesgue decomposition theorem on an orthomodular lattice. Measure theory (Oberwolfach, 1990). *Rend. Circ. Mat. Palermo* (2) *Suppl. No.* 28 (1992), 379–386. (Introduction) **93h:28018** 28B10 (06C15, 28A60)

— (*with* Morales, Pedro) A noncommutative version of a theorem of Marczewski for submeasures. *Studia Math.* **101** (1992), *no.* 2, 123–138. (Anatolij Dvurečenskij) **93b:28036** 28C20 (03G12, 06C15, 28B10, 46L50, 81P10)

De Luis, M. A. Incomplete j-diagrams fail to capture group structure. *J. Algebra* **144** (1991), *no.* 1, 88–93. (David C. Lantz) **93d:11130** 11T30 (16U60)

— Group structure computations in finite chain rings. *J. Algebra* **144** (1991), *no.* 2, 399–410. (Shi Zhong Pan) **93b:16039** 16P10

Delves, L. M. (*with* Abd-Elal, L. F.) Fredholm integral equations with singular convolution kernels. (Arabic summary) *Proc. Math. Phys. Soc. Egypt No.* 63 (1987), 123–141 (1990). (Summary) **93e:45002** 45B05 (45E10)

Delvos, Franz-J. Antiperiodic interpolation of uniform meshes. *Progress in approximation theory*, 187–199, *Academic Press, Boston, MA*, 1991. (Editors) **93c:41001** 41A05 (41A15)

Delyon, Bernard (*with* Yuditskiĭ, A. B.) Stable adaptive control for a plant with randomly varying parameters. (English summary) *Dynamics Control* **2** (1992), *no.* 4, 385–399. (Vladimir Katkovnik) **93i:93073** 93C40 (93D15, 93E35)

— (*with* Fuchs, Jean-Jacques) Adaptive control of a simple time-varying system. *IEEE Trans. Automat. Control* **37** (1992), *no.* 7, 1037–1040. (Summary) **93f:93148** 93E35 (93C40, 93C50)

— (*with* Izmaĭlov, R. N.; Yuditskiĭ, A. B.) On the projection algorithm and delay of peaking in adaptive control. (English summary) *IEEE Trans. Automat. Control* **38** (1993), *no.* 4, 581–584. (Summary) **93m:93054** 93C40

Delyon, F. (*with* Foulon, Patrick) Complex entropy for dynamical systems. (French summary) *Ann. Inst. H. Poincaré Phys. Théor.* **55** (1991), *no.* 4, 891–902. (Valery Covachev) **93b:58051** 58F05 (58F25)

DeLyra, Jorge L. *see* **deLyra, Jorge L.**

Delzant, Thomas Sous-groupes à deux générateurs des groupes hyperboliques. [Two-generator subgroups of hyperbolic groups] *Group theory from a geometrical viewpoint* (*Trieste*, 1990), 177–189, *World Sci. Publishing, River Edge, NJ*, 1991. (From the text) **93c:57001** 57M07 (20F32)

Delzell, C. N. (*with* González-Vega, Laureano; Lombardi, Henri) A new rational and continuous solution for the Hilbert's 17th problem. *Extracta Math.* **7** (1992), *no.* 1, 59–64. (Thomas C. Craven) **93j:12002** 12D15 (14P10)

Demailly, Jean-Pierre Holomorphic Morse inequalities. *Several complex variables and complex geometry, Part 2* (*Santa Cruz, CA*, 1989), 93–114, *Proc. Sympos. Pure Math.*, 52, *Part 2, Amer. Math. Soc., Providence, RI*, 1991. (Akira Asada) **93b:32048** 32L10 (58G11, 58G25)

— Singular Hermitian metrics on positive line bundles. (English summary) *Complex algebraic varieties* (*Bayreuth*, 1990), 87–104, *Lecture Notes in Math.*, 1507, *Springer, Berlin*, 1992. (Hajime Tsuji) **93g:32044** 32L10 (14J60, 32L05)

— Courants positifs et théorie de l'intersection. [Positive currents and intersection theory] *Gaz. Math. No.* 53 (1992), 131–159. (Salomon Ofman) **93f:32012** 32C30 (32–01)

— Regularization of closed positive currents and intersection theory. *J. Algebraic Geom.* **1** (1992), *no.* 3, 361–409. (Takeo Ohsawa) **93e:32015** 32C30 (32C17, 32J25)

DeMarco, C. L. (*with* Qian, R. X.) An approach to robust stability of matrix polytopes through copositive homogeneous polynomials. *IEEE Trans. Automat. Control* **37** (1992), *no.* 6, 848–852. (Summary) **93b:93088** 93D09

Demarco, G. L. (*with* Fosco, C.; Trinchero, R. C.) Nonlinear σ model as a local polynomial field theory. *Phys. Rev. D* (3) **45** (1992), *no.* 10, 3701–3705. (Summary) **93a:81131** 81T15 (81T10)

Demaret, J. (*with* De Rop, Y.; Tombal, P.; Moussiaux, A.) Qualitative analysis of ten-dimensional Lovelock cosmological models. (English summary) *Gen. Relativity Gravitation* **24** (1992), *no.* 11, 1169–1183. (Summary) **93g:83084** 83D05 (83E15)

De Mari, Filippo (*with* Ober, Raimund) Topological aspects of robust control. (English summary) *Control of uncertain systems* (*Bremen*, 1989), 57–67, *Progr. Systems Control Theory*, 6, *Birkhäuser Boston, Boston, MA*, 1990. (Introduction) **93i:93095** 93D09 (93B36, 93D15)

Demaria, Davide C. (*with* Kiihl, J. Carlos de S.) On the simple quotients of tournaments that admit exactly one Hamiltonian cycle. (Italian summary) *Atti Accad. Sci. Torino Cl. Sci. Fis. Mat. Natur.* **124** (1990), *no.* 3-4, 94–108. (Brian Alspach) **93c:05050** 05C20

— (*with* Kiihl, J. Carlos de S.) Some remarks on the enumeration of the Douglas tournaments. (Italian summary) *Atti Accad. Sci. Torino Cl. Sci. Fis. Mat. Natur.* **124** (1990), *no.* 5-6, 169–185. (Brian Alspach) **93c:05051** 05C20

— (*with* Kiihl, J. Carlos de S.) On the complete digraphs which are simply disconnected. (English summary) *Publ. Mat.* **35** (1991), *no.* 2, 517–525. (Zhaojun Liang) **93m:05077** 05C20 (05C40)

— (*with* Kiihl, J. Carlos de S.) On complete digraphs which are associated to spheres. (English summary) V International Meeting on Topology in Italy (Italian) (Lecce, 1990/Otranto, 1990). *Rend. Circ. Mat. Palermo* (2) *Suppl. No.* 29 (1992), 495–510. (Joseph Zaks) **93k:57051** 57Q05 (05C20, 57M15, 57Q99)

De Maria, Giuseppe (*with* Celentano, Giovanni) Positive linear parametrization of polynomials with zeros in prescribed regions. (Polish summary) *Systems Sci.* **16** (1990), *no.* 4, 47–56 (1991). (Summary) **93b:93081** 93D09 (93B55)

De Maria, Michelangelo (*with* Cattani, Carlo) Max Abraham and the reception of relativity in Italy: his 1912 and 1914 controversies with Einstein. *Einstein and the history of general relativity* (*North Andover, MA*, 1986), 160–174, *Einstein Stud.*, 1, *Birkhäuser Boston, Boston, MA*, 1989. (*see* **93g:83001**) 01A60 (83–03)

— (*with* Cattani, Carlo) The 1915 epistolary controversy between Einstein and Tullio Levi-Civita. *Einstein and the history of general relativity* (*North Andover, MA*, 1986), 175–200, *Einstein Stud.*, 1, *Birkhäuser Boston, Boston, MA*, 1989. (*see* **93g:83001**) 01A60 (83–03)

DeMarzo, Peter M. Coalitions, leadership, and social norms: the power of suggestion in games. *Games Econom. Behav.* **4** (1992), *no.* 1, 72–100. (Maurice Salles) **93b:90118** 90D12 (90D20)

De Masi, Anna (*with* Presutti, Errico) ★ Mathematical methods for hydrodynamic limits. Lecture Notes in Mathematics, 1501. *Springer-Verlag, Berlin*, 1991. x+196 *pp. ISBN* 3-540-55004-6 (Claudio Landim) **93k:60234** 60K35 (82C05, 82C40)

— (*with* Esposito, Raffaele; Presutti, Errico) Kinetic limits of the HPP cellular automaton. *J. Statist. Phys.* **66** (1992), *no.* 1-2, 403–464. (Giuseppe Toscani) **93a:82024** 82B40 (82C20)

— (*with* Boldrighini, C.; Pellegrinotti, Alessandro) Nonequilibrium fluctuations in particle systems modelling reaction-diffusion equations. *Stochastic Process. Appl.* **42** (1992), *no.* 1, 1–30. (Mu Fa Chen) **93m:60196** 60K35 (35K57, 35R60, 82C22)

De Mathan, Bernard *see* **de Mathan, Bernard**

De Matteis, A. (*with* Eichenauer-Herrmann, Jürgen; Grothe, H.) Computation of critical distances within multiplicative congruential pseudorandom number sequences. *J. Comput. Appl. Math.* **39** (1992), *no.* 1, 49–55. (Summary) **93b:65011** 65C10

Demay, Yves (*with* Iooss, Gérard; Mielke, Alexander) Mathematical justification of steady Ginzburg-Landau equation starting from Navier-Stokes. *New trends in nonlinear dynamics and pattern-forming phenomena* (*Cargèse*, 1988), 275–286, *NATO Adv. Sci. Inst. Ser. B Phys.*, 237, *Plenum, New York*, 1990. (Mikhail Zaks) **93f:76048** 76E30 (35Q30, 58F39, 76D05)

— (*with* Iooss, Gérard; Laure, P.) Wave patterns in the small gap Couette-Taylor problem. (English summary) *European J. Mech. B Fluids* **11** (1992), *no.* 5, 621–634. (Peter E. Kloeden) **93k:76048** 76E30 (35B32, 35Q35)

Dembélé, D. (*with* Favier, G.; Settineri, R.; Peyre, J. L.) ARMA identification: a survey. (English summary) *Identification and system parameter estimation* 1991, *Vol.* 1,2 (*Budapest*, 1991), 349–353, *IFAC Sympos. Ser.*, 3, *Pergamon, Oxford*, 1992. (*see* **93h:93009**) 93E12 (93–02)

Dembo, Amir (*with* Karlin, Samuel) Limit distributions of maximal segmental score among Markov-dependent partial sums. *Adv. in Appl. Probab.* **24** (1992), *no.* 1, 113–140. (Esa Nummelin) **93b:60042** 60F05 (60G70, 60K15)

— (*with* Zeitouni, Ofer) Erratum: "Parameter estimation of partially observed continuous time stochastic processes via the EM algorithm" [Stochastic Process. Appl. **23** (1986), no. 1, 91–113; MR 88h:93068]. *Stochastic Process. Appl.* **40** (1992), *no.* 2, 359–361. (Richard M. Hawkes) **93b:93105** 93E10 (62F10, 62M09, 93E14)

De Medeiros, A. S. *see* **de Medeiros, A. S.**

De Mello, J. C. *see* **de Mello, J. C.**

De Melo, W. *see* **de Melo, W.**

Demenchuk, A. K. Quasiperiodic solutions of differential systems with linear independence over **Q** of the frequency bases of the solution and the right-hand side. (Russian) *Differentsial'nye Uravneniya* **27** (1991), *no.* 10, 1673–1679, 1834; *translation in Differential Equations* **27** (1991), *no.* 10, 1176–1181 (1992). (V. G. Zadorozhnii) **93c:34099** 34C27

— Quasiperiodic solutions of periodic differential systems with analytic right-hand side. (Russian. Russian summary) *Differentsial'nye Uravneniya* **28** (1992), *no.* 6, 1073–1075, 1104. (Summary) **93h:34070** 34C27

— A class of quasiperiodic solutions of differential systems. (Russian. English summary) *Dokl. Akad. Nauk Belarusi* **36** (1992), *no.* 1, 14–17, 92. (Summary) **93c:34100** 34C27

Demengel, F. (*with* Bethuel, Fabrice; Coron, Jean-Michel; Hélein, Frédéric) A cohomological criterion for density of smooth maps in Sobolev spaces between two manifolds. (English summary) *Nematics* (*Orsay*, 1990), 15–23, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 332, *Kluwer Acad. Publ., Dordrecht*, 1991. (Liliana Maxim-Răileanu) **93g:58020** 58D15

— (*with* Hadiji, Rejeb) Relaxed energies for functionals on $W^{1,1}(B^2, S^1)$. *Nonlinear Anal.* **19** (1992), *no.* 7, 625–641. (Martin Fuchs) **93h:58038** 58E12 (49Q20, 76A15, 76M30)

Demenin, A. N. (*with* Diesperova, M. M.) Sequences of stochastic evolution equations with random perturbations of small intensity. (Russian. Russian summary) *Asymptotic methods in problems in the theory of random evolutions* (*Russian*), 25–30, *Akad. Nauk Ukrain. SSR, Inst. Mat., Kiev*, 1991. (Summary) **93j:60072** 60H10 (34B05, 34F05)

Dement'ev, Aleksandr (*with* Ivanauskas, Feliksas) Convergence of a splitting scheme for a system of nonlinear nonstationary equations of Schrödinger type. (Russian. English and Lithuanian summaries) *Differentsial'nye Uravneniya i Primenen. No.* 46 (1991), 42–57. (Summary) **93b:65133** 65M12 (35Q55)

Dement'ev, O. N. (*with* Karas', E. V.) Stability of the stretching of a rectangular band. (Russian) *Vestnik Chelyabinsk. Univ. Ser. Mat. Mekh. No.* 1 (1991), 121–128. (From the text) **93g:73059** 73E60 (73H99, 76A05)

Dement'ev, S. N. (*with* Yanovskii, L. P.) Solvability of nonlinear de la Vallée-Poussin boundary value problems. (Russian. Russian and Ukrainian summaries) *Ukraïn. Mat. Zh.* **44** (1992), *no.* 5, 700–703; *translation in Ukrainian Math. J.* **44** (1992), *no.* 5, 633–636 (1993). (V. Šeda) **93i:34034** 34B15 (47H07, 47H15, 47N20)

Dement'eva, A. M. (*with* Lusnikov, A. V.; Tronel', Zh.) Positive periodic oscillations in controlled systems. (Russian. Russian summary) *Avtomat. i Telemekh.* **1992,** *no.* 8, 187–189; *translation in Automat. Remote Control* **53** (1992), *no.* 8, *part* 2, 1297–1299 (1993). 93C05 (93C80)

Demesh, N. N. Some properties of a modified periodogram of observations of a discrete stable stationary process. (Russian) *Asymptotic and applied problems in the theory of random evolutions* (*Russian*), 28–34, *Akad. Nauk Ukrain. SSR, Inst. Mat., Kiev*, 1990. (Thomas Mikosch) **93a:62132** 62M15 (60G10)

Demeterfi, Krešimir (*with* Jevicki, Antal; Rodrigues, João P.) Scattering amplitudes and loop corrections in collective string field theory. II. *Nuclear Phys. B* **365** (1991), *no.* 2, 499–519. (Summary) **93a:81151** 81T30

Demetrius, Lloyd Thermodynamic perturbations of molecular systems. (English summary) *J. Chem. Phys.* **97** (1992), *no.* 9, 6663–6665. 82C99 (92C40)

— The thermodynamics of evolution. (English summary) *Phys. A* **189** (1992), *no.* 3-4, 417–436. (Summary) **93j:92021** 92D15 (82C35)

Demetropoulou-Psomopoulou, Demetra G_1-structures of second order. (English summary) *Publ. Mat.* **36** (1992), *no.* 1, 51–64. (Manuel de León) **93i:53027** 53C10 (53C15)

Demetrovics, János (*with* Katona, Gyula O. H.; Miklós, Dezső) Partial dependencies in relational databases. (Hungarian. English summary) *Alkalmaz. Mat. Lapok* **15** (1990/91), *no.* 1-2, 163–179 (1992). (Ana Pasztor) **93h:68029** 68P15

— (*with* Katona, Gyula O. H.; Sali, Attila) Branching dependency in relational databases. (Hungarian. English summary) *Alkalmaz. Mat. Lapok* **15** (1990/91), *no.* 1-2, 181–196 (1992). (Ana Pasztor) **93h:68030** 68P15

— (*with* Rónyai, Lajos; Hua, Nam Son) Dependency types. Hungarian applied mathematics. *Comput. Math. Appl.* **21** (1991), *no.* 1, 25–33. (J. Paredaens) **93a:68031** 68P15

— (*with* Hua, Nam Son) An explicit representation of functional dependencies and their relationships to Sperner systems. *Pure Math. Appl. Ser. A* **2** (1991), *no.* 1-2, 25–44. (Bernhard Thalheim) **93c:68019** 68P15 (03E05)

— (*with* Hencsey, Gusztáv; Libkin, L. O.; Muchnik, I. B.) On the interaction between closure operations and choice functions with applications to relational databases. (English summary) *Acta Cybernet.* **10** (1992), *no.* 3, 129–139. (Summary) **93k:68024** 68P15

— (*with* Hencsey, Gusztáv; Libkin, L. O.; Muchnik, I. B.) Normal form relation schemes: a new characterization. (English summary) *Acta Cybernet.* **10** (1992), *no.* 3, 141–163. (Summary) **93m:68042** 68P15

— (*with* Rónyai, Lajos) A note on intersections of isotone clones. (English summary) *Acta Cybernet.* **10** (1992), *no.* 3, 217–220. (Ágnes Szendrei) **93m:06005** 06A07 (08A40)

— (*with* Nguyễn Xuân Huy) Representation of closure for functional, multivaluated and join dependencies. (English summary) *Comput. Artificial Intelligence* **11** (1992), *no.* 2, 143–154. (Summary) **93g:68023** 68P15

— (*with* Katona, Gyula O. H.; Miklós, Dezső) Partial dependencies in relational databases and their realization. (English summary) *Discrete Appl. Math.* **40** (1992), *no.* 2, 127–138. (Summary) **93g:68022** 68P15

— (*with* Katona, Gyula O. H.; Sali, Attila) The characterization of branching dependencies. (English summary) *Discrete Appl. Math.* **40** (1992), *no.* 2, 139–153. (Summary) **93h:68031** 68P15

— (*with* Libkin, L. O.; Muchnik, I. B.) Functional dependencies in relational databases: a lattice point of view. (English summary) *Discrete Appl. Math.* **40** (1992), *no.* 2, 155–185. (Summary) **93g:68024** 68P15

DeMets, David L. (*with* Lee, Jae Won) Sequential comparison of changes with repeated measurements data. *J. Amer. Statist. Assoc.* **86** (1991), *no.* 415, 757–762. (Paul Cabilio) **93e:62203** 62L10 (62J05)

— (*with* Lee, Jae Won) Sequential rank tests with repeated measurements in clinical trials. *J. Amer. Statist. Assoc.* **87** (1992), *no.* 417, 136–142. (Paul Cabilio) **93d:62091** 62G10 (62L10)

DeMeyer, Frank R. (*with* Ford, Timothy J.) Nontrivial, locally trivial Azumaya algebras. *Azumaya algebras, actions, and modules* (*Bloomington, IN*, 1990), 39–49, *Contemp. Math.*, 124, *Amer. Math. Soc., Providence, RI*, 1992. (Lindsay N. Childs) **93a:13001** 13A20 (14M25, 16H05)

— (*with* Ford, Timothy J.; Miranda, Rick) The cohomological Brauer group of a toric variety. *J. Algebraic Geom.* **2** (1993), *no.* 1, 137–154. (T. Oda) **93i:14051** 14M25 (14F20)

— (*with* Ford, Timothy J.) On the Brauer group of toric varieties. *Trans. Amer. Math. Soc.* **335** (1993), *no.* 2, 559–577. (Andy R. Magid) **93d:14077** 14M25 (13A20, 14F20, 16H05)

De Meyer, H. (*with* Coolsaet, K.; Fack, V.) Optimal algorithms for total exchange without buffering on the hypercube. (English summary) *BIT* **32** (1992), *no.* 4, 559–569. (Summary) **93g:68004** 68M10 (68Q10)

— (*with* Van Daele, M.; Vanden Berghe, Guido) Five-diagonal finite difference methods based on mixed-type interpolation for a certain fourth-order two-point boundary-value

problem. (English summary) *Comput. Math. Appl.* **24** (1992), *no.* 10, 55–76. (Summary) **93e:65107** 65L10

— (*with* Vanden Berghe, Guido; Van Daele, M.) A five-diagonal finite-difference method based on mixed-type interpolation for computing eigenvalues of fourth-order two-point boundary-value problems. (English summary) *J. Comput. Appl. Math.* **41** (1992), *no.* 3, 359–372. (Summary) **93g:65101** 65L15

— (*with* Niyokindi, C.; Vanden Berghe, Guido) The implementation of parallel Gram-Schmidt orthogonalisation algorithms on a ring of transputers. (English summary) *Comput. Math. Appl.* **25** (1993), *no.* 1, 65–72. 65Y05 (65F25)

Demiański, Marek (*with* Doroshkevich, A. G.) On the universal character of the large scale structure of the Universe. (English summary) *Internat. J. Modern Phys. D* **1** (1992), *no.* 2, 303–333. (Summary) **93g:83097** 83F05

— (*with* de Ritis, R.; Rubano, C.; Scudellaro, P.) Scalar fields and anisotropy in cosmological models. (English summary) *Phys. Rev. D* (3) **46** (1992), *no.* 4, 1391–1398. (Summary) **93g:83096** 83F05 (83C15)

De Michele, Leonede (*with* Roux, Delfina) Nonmonotonicity of Féjer means in L^p spaces. *Rend. Sem. Mat. Univ. Politec. Torino* **48** (1990), *no.* 1, 57–60 (1992). (Y. Sitaraman) **93f:42013** 42A24

— (*with* Di Natale, Marina; Roux, Delfina) Inversion methods for Fourier transform. (Italian summary) *Rend. Accad. Naz. Sci. XL Mem. Mat.* (5) **15** (1991), 125–136. (Manfred Tasche) **93f:42011** 42A16 (42A10)

De Michelis, Stefano (*with* Freedman, Michael H.) Uncountably many exotic $\mathbf{R}^4$'s in standard 4-space. *J. Differential Geom.* **35** (1992), *no.* 1, 219–254. (Ronald J. Stern) **93d:57036** 57N13 (57R55, 57R57)

Děmichev, A. P. (*with* Iofa, M. Z.) Superharmonic gauge in string theory and double supersymmetric σ-model. *Modern Phys. Lett. A* **7** (1992), *no.* 11, 955–966. (Frans R. Klinkhamer) **93g:81122** 81T30 (58E50)

Demidenko, G. V. Conditions for the correct solvability of boundary value problems for equations and systems of Sobolev type. (Russian. Russian summary) *Some applications of functional analysis to problems of mathematical physics* (*Russian*), 64–71, 144, *Akad. Nauk SSSR Sibirsk. Otdel., Inst. Mat., Novosibirsk*, 1988. (*see* **93b:00021**) 35G15

— Boundary value problems for a class of pseudodifferential equations. (Russian) *Embedding theorems and their applications to problems in mathematical physics* (*Russian*), 60–69, 140, *Akad. Nauk SSSR Sibirsk. Otdel., Inst. Mat., Novosibirsk*, 1989. (Summary) **93a:35163** 35S15

— (*with* Matveeva, I. I.) A class of boundary value problems for the Sobolev system. (Russian) *Partial differential equations* (*Russian*), 54–78, 142, *Akad. Nauk SSSR Sibirsk. Otdel., Inst. Mat., Novosibirsk*, 1989. (Summary) **93a:35068** 35K40 (35Q99)

— The Cauchy problem for a hyperbolic system of the dynamics of a stratified fluid. (Russian. Russian summary) *Boundary value problems for partial differential equations* (*Russian*), 56–76, 138, *Akad. Nauk SSSR Sibirsk. Otdel., Inst. Mat., Novosibirsk*, 1990. (*see* **93d:35002**) 35L45 (35Q35, 76V05)

Demidov, A. S. Note on Cauchy problem for Laplace equation. *Arabian J. Sci. Engrg.* **17** (1992), *no.* 4, *B*, 685. 35J05

Demidov, E. E. (*with* Manin, Yu. I.; Mukhin, E. E.; Zhdanovich, D. V.) Nonstandard quantum deformations of GL(n) and constant solutions of the Yang-Baxter equation. Common trends in mathematics and quantum field theories (Kyoto, 1990). *Progr. Theoret. Phys. Suppl. No.* 102 (1990), 203–218 (1991). (Roland Berger) **93g:17022** 17B37 (16W30, 81R50, 82B23)

Demidov, S. S. Philosophical prerequisites for the origin of the Moscow school of function theory. (Russian) *Traditions and revolutions in the history of science* (*Russian*), 253–262, "*Nauka*", *Moscow*, 1991. (*see* **93b:01003**) 01A72

— (*with* Folkerts, Menso; Rowe, David E.; Scriba, Christoph J.) Hans Wußing zum 65. Geburtstag. [To Hans Wußing on his 65th birthday] *Amphora*, ix–xi, *Birkhäuser, Basel*, 1992. (*see* **93g:01001**) 01A70 (01A80)

— La théorie des équations différentielles à la limite des XVIIIe—XIXe siècles. [The theory of differential equations as the 18th century turned into the 19th] *Amphora*, 157–169, *Birkhäuser, Basel*, 1992. (Jesper Lützen) **93i:01016** 01A50 (01A55, 34-03, 35-03)

— (*with* Ivanov, O. V.; Smirnova, G. S.) Computer data bases on Russian scientists in the fields of physics and mathematical sciences. (Russian) *Voprosy Istor. Estestvoznan. i Tekhn.* **1993**, *no.* 1, 105–107. 01A99 (00A20)

— *see also* **Amphora**, **93g:01001**

Demidov, V. N. (*with* Belov, N. N.; Efremova, L. V.; et al.) Computer modeling of the dynamics of high-velocity impact and of the accompanying physical phenomena. (Russian. Russian summary) *Izv. Vyssh. Uchebn. Zaved. Fiz.* **35** (1992), *no.* 8, 5–48; *translation in Russian Phys. J.* **35** (1992), *no.* 8, 690–723 (1993). (Summary) **93k:73023** 73D05 (73B30, 73E99, 73M25, 73V15)

Demidovich, A. K. Invariance of Brauer pivoting with respect to elimination of orthogonal components. (Russian. English and Russian summaries) *Vestst Akad. Navuk Belarust Ser. Fiz. Mat. Navuk* **1992**, *no.* 2, 12–14, 123. (Summary) **93g:65038** 65F05 (15A06)

Demin, N. S. Extrapolation of random processes in continuous-discrete observation channels with memory. (Russian. Russian summary) *Avtomat. i Telemekh.* **1992**, *no.* 4, 64–72; *translation in Automat. Remote Control* **53** (1992), *no.* 4, *part* 1, 527–535. 60G35

Demiray, Hilmi Torsional waves in a stressed elastic tube filled with a viscous fluid. *Internat. J. Engrg. Sci.* **30** (1992), *no.* 6, 771–780. (From the introduction) **93b:73019** 73D99 (73K70, 73P20, 76Z05)

— Wave propagation through a viscous fluid contained in a prestressed thin elastic tube. (English summary) *Internat. J. Engrg. Sci.* **30** (1992), *no.* 11, 1607–1620. (G. Eason) **93g:76117** 76Z05 (73K70, 76D33)

Demircan, E. (*with* Arik, Metin; Turgut, T.; Ekinci, L.; Mungan, Muhittin) Fibonacci oscillators. (English summary) *Z. Phys. C* **55** (1992), *no.* 1, 89–95. (Boris Moiseevich Zupnik) **93g:81069** 81S99 (11B39, 81R50)

Demircioğlu, H. (*with* Gawthrop, P. J.) Continuous-time generalized predictive control (CGPC). (English summary) *Adaptive systems in control and signal processing*, 1989 (*Glasgow*), 67–72, *IFAC Sympos. Ser.*, 1990, *No.* 1, *Pergamon, Oxford*, 1990. (*see* **93j:93007**) 93C40

— (*with* Gawthrop, P. J.) Multivariable continuous-time generalized predictive control (MCGPC). *Automatica J. IFAC* **28** (1992), *no.* 4, 697–713. 93B51 (93C60)

Demirdžić, I. (*with* Kaluđerčić, P.) A contribution to solving a system of two nonlinear equations. (Serbo-Croatian summary) *Mat. Vesnik* **42** (1990), *no.* 2, 97–100. (Summary) **93a:65071** 65H10

— (*with* Kaluđerčić, P.) A contribution to solving a system of two nonlinear equations. (English, German and Serbo-Croatian summaries) *Mat. Vesnik* **43** (1991), *no.* 1-2, 19–22. 65H10

De Mitri, C. (*with* Guido, C.) *G*-fuzzy topological spaces and subspaces. V International Meeting on Topology in Italy (Italian) (Lecce, 1990/Otranto, 1990). *Rend. Circ. Mat. Palermo* (2) *Suppl. No.* 29 (1992), 363–383. (Abd El-Sattar Dabbour) **93m:54015** 54A40 (03E72, 04A72, 94D05)

Demko, S. (*with* Abenda, S.; Turchetti, Giorgio) Local moments and inverse problem for fractal measures. (English summary) *Inverse Problems* **8** (1992), *no.* 5, 739–750. (Summary) **93f:28006** 28A80 (44A60)

Demkowicz, Leszek (*with* Kuczma, M. S.) An adaptive algorithm for unilateral viscoelastic contact problems for beams and plates. (English summary) Reliability in computational mechanics (Kraków, 1991). *Comput. Methods Appl. Mech. Engrg.* **101** (1992), *no.* 1-3, 183–196. (Summary) **93h:73033** 73T05 (73F15, 73K05, 73K10, 73V25)

— (*with* Karafiat, A.; Oden, J. Tinsley) Solution of elastic scattering problems in linear acoustics using *h-p* boundary element method. (English summary) Reliability in computational mechanics (Kraków, 1991). *Comput. Methods Appl. Mech. Engrg.* **101** (1992), *no.* 1-3, 251–282. (Summary) **93j:73028** 73D25 (73V10, 76M15, 76Q05)

— (*with* Edwards, Michael G.; Oden, J. Tinsley) An *h-r*-adaptive approximate Riemann solver for the Euler equations in two dimensions. (English summary) *SIAM J. Sci. Comput.* **14** (1993), *no.* 1, 185–217. (Summary) **93m:65142** 65M60 (65M50, 76M10, 76M20, 76N10)

— *see also* **Reliability in computational mechanics**, **93g:73001**

Demlová, Marie The sixtieth birthday of Professor Bedřich Pondělíček. *Czechoslovak Math. J.* **42(117)** (1992), *no.* 4, 765–768. (Editors) **93h:01038** 01A70

Demmel, James (*with* Deift, P. A.; Li, Luen Chau; Tomei, Carlos) Dynamical aspects of the bidiagonal singular value decomposition. *The geometry of Hamiltonian systems* (*Berkeley, CA*, 1989), 81–96, *Math. Sci. Res. Inst. Publ.*, 22, *Springer, New York*, 1991. (Summary) **93e:15003** 15A18 (58F07)

— (*with* Veselić, Krešimir) Jacobi's method is more accurate than *QR*. (English summary) *SIAM J. Matrix Anal. Appl.* **13** (1992), *no.* 4, 1204–1245. (Summary) **93e:65057** 65F15 (65G05)

De Moivre, Abraham *see* **de Moivre, Abraham**

Demolombe, Robert Syntactical characterization of a subset of domain-independent formulas. *J. Assoc. Comput. Mach.* **39** (1992), *no.* 1, 71–94. (P. C. Gilmore) **93d:03018** 03B25 (03B10, 03B70, 68P20)

De Moor, Bart L. R. Generalizations of the singular value and *QR* decomposition. *Algorithms and parallel VLSI architectures, Vol. A* (*Pont-à-Mousson*, 1990), 229–240, *Elsevier, Amsterdam*, 1991. (Mihail Voicu) **93d:15020** 15A23 (15A18)

— (*with* Gevers, Michel; Goodwin, Graham C.) Overbiased, underbiased and unbiased estimation of transfer functions. (English summary) *Identification and system parameter estimation* 1991, *Vol.* 1,2 (*Budapest*, 1991), 805–810, *IFAC Sympos. Ser.*, 3, *Pergamon, Oxford*, 1992. (*see* **93h:93009**) 93B30 (93C80)

— (*with* Van Overschee, P.; Suykens, J.) Subspace algorithms for system identification and stochastic realization. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, I* (*Kobe*, 1991), 589–594, *Mita, Tokyo*, 1992. (*see* **93g:93005**) 93B30 (93B40)

— On the structure and geometry of the product singular value decomposition. *Linear Algebra Appl.* **168** (1992), 95–136. (Hua Lin Tan) **93c:93024** 93B40 (15A23)

— (*with* David, Johan; Vandewalle, Joos; De Moor, Maarten; Berckmans, Daniel) Trade-offs in linear control system design: a practical example. (English summary) *Optimal Control Appl. Methods* **13** (1992), *no.* 2, 121–144. 93B51 (93B36, 93C05)

— (*with* David, Johan) Total linear least squares and the algebraic Riccati equation. (English summary) *Systems Control Lett.* **18** (1992), *no.* 5, 329–337. (Summary) **93d:93090** 93E24 (93B40)

— (*with* Moonen, Marc; Ramos, José; Tan, Shao Hua) A subspace identification algorithm for descriptor systems. *Systems Control Lett.* **19** (1992), *no.* 1, 47–52. 93B40 (93B30)

De Moor, Maarten (*with* De Moor, Bart L. R.; David, Johan; Vandewalle, Joos; Berckmans, Daniel) Trade-offs in linear control system design: a practical example. (English summary) *Optimal Control Appl. Methods* **13** (1992), *no.* 2, 121–144. 93B51 (93B36, 93C05)

De Moor, Oege *see* **de Moor, Oege**

De Mora-Charles, Maria Sol *see* **de Mora-Charles, Maria Sol**

De Morgan, Augustus *see* **Cherkasova, E. V.**, **93d:01031**

De Mori, R. (*with* Corazza, A.; Satta, G.) Computation of upper-bounds for stochastic context-free languages. (English summary) *AAAI-92. Proceedings, Tenth National Conference on Artificial Intelligence* (*San Jose, CA*, 1992), 344–349, *Amer. Assoc. Artif. Intell., Menlo Park, CA*, 1992. (*see* **93j:68007**) 68T10 (03D05, 03D15, 68Q45)

De Mottoni, Piero *see* **de Mottoni, Piero**

Dempe, S. Optimality conditions for bilevel programming problems. *System modelling and optimization* (*Zurich*, 1991), 17–24, *Lecture Notes in Control and Inform. Sci.*, 180, *Springer, Berlin*, 1992. (Jacqueline Morgan) **93h:90083** 90C30 (90D05)

Dempster, M. A. H. (*with* Ye, J. J.) A maximum principle for control of piecewise deterministic Markov processes. *Approximation, optimization and computing*, 235–240, *North-Holland, Amsterdam*, 1990. (*see* **93a:41001**) 49K45 (49J52)

Demuth, Michael (*with* van Casteren, Jan A. W.) On differences of heat semigroups. *Ann. Sci. Univ. Clermont-Ferrand II Probab. Appl. No.* 8 (1989), 119–147 (1990). (Summary) **93f:47045** 47D03 (47D07, 47N20, 47N50, 58G11, 81Q10)

— Spectral properties of Schrödinger operators for large coupling and semi-classical asymptotics. *Functional analysis & related topics* (*Sapporo*, 1990), 77–84, *World Sci. Publishing, River Edge, NJ*, 1991. (Introduction) **93a:47053** 47F05 (35J10, 35P05, 47N50, 81Q10)

— On large coupling operator norm convergences of resolvent differences. *J. Math. Phys.* **32** (1991), *no.* 6, 1522–1530. (Shu Nakamura) **93a:47052** 47F05 (35J10, 35P25, 47A40, 47N50, 81Q15)

— (*with* Jeske, F.; Kirsch, Werner) Quantitative estimates for Schrödinger and Dirichlet semigroups. (English summary) *Journées "Équations aux Dérivées Partielles"* (*Saint-Jean-de-Monts*, 1992), *Exp. No. XVII*, 6 *pp., École Polytech., Palaiseau*, 1992. (*see* **93e:35005**) 47D03 (47F05, 81Q10)

— (*with* van Casteren, Jan A. W.) Perturbations of generalized Schrödinger operators in stochastic spectral analysis. *Schrödinger operators (Aarhus, 1991)*, 1–15, *Lecture Notes in Phys.*, 403, *Springer, Berlin*, 1992. (Summary) **93m:81028** 81Q10 (47D07, 47F05, 47N50, 60J35, 81U05)

De Muynck, Willem M. *see* **de Muynck, Willem M.**

Dem'yanenko, O. O. (*with* Buldygin, V. V.) Pointwise properties of estimates for the mutual correlation function of Gaussian fields. (Russian. Russian summary) *Stochastic equations and boundary theorems (Russian)*, 23–34, *Akad. Nauk Ukrainy, Inst. Mat., Kiev*, 1991. (Summary) **93j:62234** 62M40 (60G60)

Dem'yanenko, V. A. An estimate for the remainder term in the Tate formula. (Russian) *Mat. Zametki* **50** (1991), *no.* 5, 149–151; *translation in Math. Notes* **50** (1991), *no.* 5-6, 1200–1201 (1992). (J. S. Joel) **93b:11069** 11G05 (14H52)

Dem'yanov, V. F. Needle-like variations in nonsmooth problems of the calculus of variations. (Russian. English summary) *Vestnik Leningrad. Univ. Mat. Mekh. Astronom.* **1991**, *vyp.* 2, 16–21, 124; *translation in Vestnik Leningrad Univ. Math.* **24** (1991), *no.* 2, 17–24. (B. Mordukhovich) **93d:49017** 49J52 (49K15)

Dem'yanov, Yu. A. Asymptotic solution of a problem on the ignition of a fuel gas mixture by a heat source of constant intensity. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **32** (1992), *no.* 3, 468–472; *translation in Comput. Math. Math. Phys.* **32** (1992), *no.* 3, 407–411. (Summary) **93f:80018** 80A25 (76L05)

Demys, K. Erratum: "Comment: 'On the hyperbolic complex linear symmetry groups and their local gauge transformation actions' by Z. Z. Zhong" [J. Math. Phys. **28** (1987), no. 2, 339; MR 88a:83062]. *J. Math. Phys.* **33** (1992), *no.* 10, 3602. (Editors) **93i:83074** 83D05 (22E15, 22E70)

Denardo, Bruce (*with* Larraza, Andrés; Putterman, Seth; Roberts, Paul H.) Nonlinear theory of localized standing waves. *Phys. Rev. Lett.* **69** (1992), *no.* 4, 597–600. (Summary) **93d:73034** 73D99 (35Q53, 73B99)

Denche, M. (*with* Gorbachuk, M. L.) Boundary values of biharmonic functions. (Russian. Russian summary) *Boundary value problems for operator-differential equations (Russian)*, 15–20, *Akad. Nauk Ukrainy, Inst. Mat., Kiev*, 1991. (Summary) **93h:35051** 35J15 (31B30)

Dencker, Nils On the propagation of singularities for pseudo-differential operators with characteristics of variable multiplicity. *Comm. Partial Differential Equations* **17** (1992), *no.* 9-10, 1709–1736. (Peter R. Popivanov) **93k:35283** 35S05 (35A27, 58G17)

— The propagation of polarization in double refraction. *J. Funct. Anal.* **104** (1992), *no.* 2, 414–468. (Kuppuswamy Porsezian) **93e:35108** 35Q60 (78A25, 82D25)

Dendy, J. E., Jr. (*with* Morel, Jim Emanuel; Hall, Michael L.; White, Stephen W.) A cell-centered Lagrangian-mesh diffusion differencing scheme. (English summary) *J. Comput. Phys.* **103** (1992), *no.* 2, 286–299. (Summary) **93i:76061** 76M20

— (*with* Ida, M. P.; Rutledge, J. M.) A semicoarsening multigrid algorithm for SIMD machines. (English summary) *SIAM J. Sci. Statist. Comput.* **13** (1992), *no.* 6, 1460–1469. 65N55 (65Y05)

Denecke, K. (*with* Lau, Dietlinde; Pöschel, Reinhard; Schweigert, D.) Hyperidentities, hyperequational classes and clone congruences. *Contributions to general algebra*, 7 (*Vienna*, 1990), 97–118, *Hölder-Pichler-Tempsky, Vienna*, 1991. (Ewa Graczyńska) **93a:08001** 08A40 (03C05, 08B05)

— On varieties generated by Boolean clones. *Acta Math. Univ. Comenian. (N.S.)* **60** (1991), *no.* 2, 225–231. (Ágnes Szendrei) **93c:08001** 08A40

— (*with* Lau, Dietlinde) Congruences on maximal partial clones and strong regular varieties generated by preprimal partial algebras. II. Universal algebra, quasigroups and related systems (Jadwisin, 1989). *Demonstratio Math.* **24** (1991), *no.* 1-2, 105–119. (Ágnes Szendrei) **93a:08003** 08A55 (08A30, 08B99)

— (*with* Lüders, O.) Tolerance-primal algebras with one nontrivial tolerance, their dualities and equivalences. *General algebra and applications (Potsdam, 1992)*, 70–85, *Res. Exp. Math.*, 20, *Heldermann, Berlin*, 1993. (Ivan Chajda) **93m:08005** 08A30 (08C05)

— *see also* **General algebra and applications**, **93k:08001**

Denecker, Marc (*with* De Schreye, Danny) On the duality of abduction and model generation. (English summary) *Fifth generation computer systems, Vol.* 1, 2 (*Tokyo*, 1992), 650–657, *Ohm, Tokyo*, 1992. (Summary) **93j:68028** 68N17 (68Q55)

Deneckere, Raymond J. (*with* Ausubel, Lawrence M.) Bargaining and the right to remain silent. *Econometrica* **60** (1992), *no.* 3, 597–625. (Hans Haller) **93c:90030** 90A60 (90D12)

— (*with* Ausubel, Lawrence M.) Durable goods monopoly with incomplete information. (English summary) *Rev. Econom. Stud.* **59** (1992), *no.* 4, 795–812. (Summary) **93f:90050** 90A60

Deneen, Linda L. (*with* Shute, Gary M.; Thompson, Clark D.) A dualizable representation for imbedded graphs. *Graph theory, combinatorics, and applications, Vol.* 1 (*Kalamazoo, MI*, 1988), 343–357, *Wiley-Intersci. Publ., Wiley, New York*, 1991. (Summary) **93b:05047** 05C10

Denef, Jan (*with* Loeser, François) Polyèdres de Newton et poids de sommes exponentielles. [Newton polyhedra and weights of exponential sums] *p-adic analysis (Trento*, 1989), 217–222, *Lecture Notes in Math.*, 1454, *Springer, Berlin*, 1990. (From the introduction) **93c:14040** 14M25 (11L03)

— (*with* Meuser, Diane) A functional equation of Igusa's local zeta function. *Amer. J. Math.* **113** (1991), *no.* 6, 1135–1152. (Valeriu Ştefan Udrescu) **93e:11145** 11S40

— Report on Igusa's local zeta function. Séminaire Bourbaki, Vol. 1990/91. *Astérisque No.* 201-203 (1991), *Exp. No.* 741, 359–386 (1992). (Boris Datskovsky) **93g:11119** 11S40 (14G20)

— Local zeta functions and Euler characteristics. *Duke Math. J.* **63** (1991), *no.* 3, 713–721. (Daniel Barsky) **93a:11100** 11S40 (11M41, 14E15)

— (*with* Loeser, François) Weights of exponential sums, intersection cohomology, and Newton polyhedra. *Invent. Math.* **106** (1991), *no.* 2, 275–294. (F. Baldassarri) **93a:14019** 14F32 (11L03, 11T23, 14F20, 14M25)

— (*with* Loeser, François) Caractéristiques d'Euler-Poincaré, fonctions zêta locales et modifications analytiques. [Euler-Poincaré characteristics, local zeta functions and analytic modification] *J. Amer. Math. Soc.* **5** (1992), *no.* 4, 705–720. (Daniel Barsky) **93g:11118** 11S40 (11M41, 14E15, 32S45)

— (*with* Sargos, Patrick) Polyèdre de Newton et distribution f_+^s. II. [The Newton polyhedron and the distribution f_+^s. II] *Math. Ann.* **293** (1992), *no.* 2, 193–211. (Daniel Barlet) **93f:32037** 32S05 (14B05, 14P05)

De Nemore, Jordanus *see* **de Nemore, Jordanus**

Dénes, József (*with* Keedwell, A. D.) On two conjectures related to admissible groups and quasigroups. Proceedings of the Second International Mathematical Miniconference, Part II (Budapest, 1988). *Period. Polytech. Transportation Engrg.* **19** (1991), *no.* 1-2, 33–35. (From the text) **93f:20030** 20D99 (20N05)

— (*with* Keedwell, A. D.) A new authentication scheme based on Latin squares. (English summary) A collection of contributions in honour of Jack van Lint. *Discrete Math.* **106/107** (1992), 157–161. (Charles Laywine) **93g:05025** 05B15 (11T71)

— (*with* Mullen, Gary L.) Enumeration formulas for Latin and frequency squares. Graph theory and combinatorics (Marseille-Luminy, 1990). *Discrete Math.* **111** (1993), *no.* 1-3, 157–163. (Charles J. Colbourn) **93m:05035** 05B15

Deng, Bo (*with* Burchard, Almut; Lu, Kening) Smooth conjugacy of centre manifolds. *Proc. Roy. Soc. Edinburgh Sect. A* **120** (1992), *no.* 1-2, 61–77. (A. Vanderbauwhede) **93c:58197** 58F39 (34C45, 35K55, 58F25)

— The transverse homoclinic dynamics and their bifurcations at nonhyperbolic fixed points. *Trans. Amer. Math. Soc.* **331** (1992), *no.* 1, 15–53. (Michael Hurley) **93e:58139** 58F14 (34C23, 34C37, 58F15)

Deng, D.-G. *see* **Deng, Dong Gao**

Deng, Dian Liang The estimation of the superior limit in the law of iterated logarithm for tail sums. *Northeast. Math. J.* **7** (1991), *no.* 3, 265–274. (Summary) **93c:60003** 60B12 (60F15)

Deng, Dong Gao *see* **Harmonic analysis**, **93d:42002**

Deng, Haiyong (*with* Sen, Arunabha; Guha, Sumanta) On a graph partition problem with application to VLSI layout. *Inform. Process. Lett.* **43** (1992), *no.* 2, 87–94. 68R10 (05C90)

Deng, Hong Jun (*with* Hu, Yao Hua) On amenable Banach algebras. *J. Math. Res. Exposition* **11** (1991), *no.* 4, 487–496. (Gustavo Corach) **93c:46087** 46H20 (46J40, 46L05, 46M20)

— (*with* Hu, Yao Hua) On amenable Banach algebras. *Proceedings of Asian Mathematical Conference*, 1990 (*Hong Kong*, 1990), 95–102, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93b:00022**) 46H05

Deng, Hui Wen (*with* Wang, Xiao Feng) p-nilpotence and normal π-complements. (Chinese. English summary) *Adv. in Math. (China)* **21** (1992), *no.* 4, 398–412. (Yan Ming Wang) **93m:20027** 20D20

Deng, Ji Xian (*with* Fan, Wen Ning; Song, Xin Yuan) Application of the first-order closed cycle TAR model and asymptotic properties of its coefficient estimates. (Chinese. English and Chinese summaries) *Acta Sci. Natur. Univ. Sunyatseni* **31** (1992), *no.* 1, 21–27. 90A20

Deng, Jian Xin The rank-k updating algorithm for the exact inversion of matrices with integer elements. (English summary) *J. Comput. Math.* **10** (1992), *no.* 4, 296–300. (Summary) **93g:65039** 65F05 (65F30)

Deng, Ju Long The unit of information representation in grey system theory. (English summary) *J. Grey System* **3** (1991), *no.* 2, 87–106. 03E72 (93A30, 94A15)

— The comparability of representation in grey system theory. (English summary) *J. Grey System* **3** (1991), *no.* 2, 107–127. 03E72 (93C42)

— The forming relation $\mathfrak{C}$ in grey system theory. (English summary) *J. Grey System* **3** (1991), *no.* 3, 189–209. 03E72 (94A15)

— Grey units. (English summary) *J. Grey System* **4** (1992), *no.* 1, 3–11. 03E72 (93C42, 94A15)

— Grey hazy set. (English summary) *J. Grey System* **4** (1992), *no.* 1, 13–29. 03E72

— Grey causality and information cover. (English summary) *J. Grey System* **4** (1992), *no.* 2, 99–119. 03E72 (94A15)

Deng, K. M. (*with* Long, Qi Wei; Wang, K. L.) A gauge field theory of dislocations and disclinations with irreversible processes. *Internat. J. Engrg. Sci.* **30** (1992), *no.* 2, 231–236. (Summary) **93a:73071** 73S10 (73B30)

Deng, Keng Quenching for solutions of a plasma type equation. *Nonlinear Anal.* **18** (1992), *no.* 8, 731–742. (R. Glassey) **93d:35077** 35K60 (35B05, 35K65, 76X05)

— Comparison principle for some nonlocal problems. (English summary) *Quart. Appl. Math.* **50** (1992), *no.* 3, 517–522. (Summary) **93g:35075** 35K60 (35B05)

Deng, Lei Fixed points of nonexpansive mappings in convex metric spaces. (Chinese. English summary) *Sichuan Shifan Daxue Xuebao Ziran Kexue Ban* **14** (1991), *no.* 5, 35–42. 54H25 (47H10)

— (*with* Ding, Xie Ping) Ishikawa's iterations of real Lipschitz functions. *Bull. Austral. Math. Soc.* **46** (1992), *no.* 1, 107–113. (J. Matkowski) **93g:26006** 26A16 (26A18)

Deng, Lih-Yuan (*with* George, E. Olusegun) Some characterizations of the uniform distribution with applications to random number generation. (English summary) *Ann. Inst. Statist. Math.* **44** (1992), *no.* 2, 379–385. (A. H. Khan) **93j:62028** 62E10 (65C10)

— (*with* Chhikara, R. S.) Robustness of some nonuniform random variate generators. (English summary) *Statist. Neerlandica* **46** (1992), *no.* 2-3, 195–207. (Summary) **93e:65009** 65C10

Deng, Qing Derivations of full matrix rings over a ring. (Chinese. English summary) *J. Math. Res. Exposition* **13** (1993), *no.* 1, 115–118. (Summary) **93k:16070** 16W25 (16S20)

Deng, Qing Ping Finite element method for a nonlinear gradient obstacle problem with monotone operator. (English summary) *Northeast. Math. J.* **8** (1992), *no.* 2, 215–222. (Walter Alt) **93g:65145** 65N30 (49J40, 49M25, 65K10)

— (*with* Shen, Shu Min) Finite element method for the minimal surface problem with obstacle. (Chinese summary) *Numer. Math. J. Chinese Univ.* **14** (1992), *no.* 1, 42–51. (Jan Mandel) **93j:65186** 65N30 (49Q05, 65K10)

Deng, S.-W. (*with* Ersoy, Okan K.) Parallel, self-organizing, hierarchical neural networks with forward-backward training. (English summary) Networks for neural processing. *Circuits Systems Signal Process.* **12** (1993), *no.* 2, 223–246. (Summary) **93j:92003** 92B20

Deng, Shu Hui (*with* Chen, Wen De; Qi, Xiang Dong) The eigen-problem and period analysis of the discrete-event system. (English summary) *Systems Sci. Math. Sci.* **3** (1990), *no.* 3, 243–260. (Summary) **93m:93058** 93C55 (93B55)

— (*with* Yang, She Tang) A model for medium- or long-term planning. (English summary) *Systems Sci. Math. Sci.* **3** (1990), *no.* 4, 364–374. 90A11 (90A60)

Deng, T. (*with* Kawamata, M.; Higuchi, Tatsuo) Design of two-dimensional recursive digital filters based on the optimal decomposition of magnitude specifications. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, II (Kobe*, 1991), 153–158, *Mita, Tokyo*, 1992. (*see* **93g:93006**) 94A12 (93E11)

Deng, Xin De (*with* Szeto, George) Projective group rings. (Chinese. English and Chinese summaries) *Acta Sci. Natur. Univ. Sunyatseni* **31** (1992), *no.* 2, 7–11. (Summary)

93e:16042 16S34

Deng, Xue Gong A separating incompressible surface with a single boundary component in a handlebody. (Chinese. English summary) *Acta Sci. Natur. Univ. Jilin.* **1991,** *no.* 3, 23–25. (Summary) **93g:57022** 57N10

Deng, Yi Min (*with* Zhu, Ren Zhi; Tai, Mei Hua) A new algorithm for removing hidden lines and obtaining intersections of three-dimensional objects. (Chinese. English and Chinese summaries) *J. China Univ. Sci. Tech.* **22** (1992), *no.* 3, 295–302. 68U05

Deng, Yin Bin (*with* Wang, Guang Fa) Uniqueness of nonnegative solutions to singular nonlinear boundary value problems. (Chinese. English summary) *J. Central China Normal Univ. Natur. Sci.* **25** (1991), *no.* 3, 261–266. (Gong Qing Zhang) **93d:34046** 34B15

— Uniqueness of k-node solutions to a class of semilinear elliptic equations in $\mathbf{R}^n$. (Chinese. Chinese summary) *Acta Math. Sci.* (*Chinese*) **12** (1992), *no.* 2, 140–149. (Summary) **93k:35099** 35J65 (34A34, 34B15)

— Existence of multiple positive solutions for a semilinear equation with critical exponent. (English summary) *Proc. Roy. Soc. Edinburgh Sect. A* **122** (1992), *no.* 1-2, 161–175. (Xi Ting Liang) **93m:35072** 35J60 (35J20)

Deng, Zi Chen (*with* Ouyang, Hua Jiang; Zhong, Wan Xie) A solvability analysis for regular equations in nonlinear constrained control systems. (Chinese. English and Chinese summaries) *J. Dalian Univ. Tech.* **32** (1992), *no.* 6, 632–636. 93E20 (49K45)

— The general form of time-interval condensation formulas. (Chinese. English and Chinese summaries) *J. Dalian Univ. Tech.* **33** (1993), *no.* 1, 9–13. 49N55

Deng, Zi Ke De Morgan algebra of topology. II. (English and Chinese summaries) *Hunan Daxue Xuebao* **19** (1992), *no.* 5, 1–5. 54H12 (06D10, 54A40)

Deng, Zi Li (*with* Qin, Bin) A self-tunning Kalman filter with input estimation and its application. (Chinese. English and Chinese summaries) *Control Theory Appl.* **9** (1992), *no.* 6, 678–681. 93E11

— (*with* Qin, Bin) A self-tuning α-β-γ-tracking filter with a maneuvering input decision and estimation. (Chinese. English and Chinese summaries) *Inform. and Control* (*Shenyang*) **21** (1992), *no.* 4, 201–205. 93E11

Deng, Zong Qi A brief history of mathematical communication. (Chinese. English and Chinese summaries) *J. Central China Normal Univ. Natur. Sci.* **26** (1992), *no.* 4, 511–518. 01A05 (01A25)

Den Hertog, D. *see* **den Hertog, D.**

Den Hollander, Frank *see* **den Hollander, Frank**

Deniau, Claude (*with* Boutahar, Mohamed) Distribution limite de l'estimateur des moindres carrés dans un modèle autorégressif vectoriel stable avec signal exogène déterministe. (English summary) [Limiting distribution of least-squares estimates in a stable multivariate autoregressive model with deterministic exogenous signal] *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 4, 301–304. (Summary) **93a:62125** 62M10

— (*with* Bonnet, Catherine) Réduction dans la base d'équilibre de systèmes linéaires à temps discret de dimension infinie: le cas des systèmes nucléaires. (English summary) [Reduction of infinite-dimensional discrete-time linear systems via balanced realization: the case of nuclear systems] *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 11, 871–874. (Summary) **93b:93023** 93B15 (47B35, 47N70)

— (*with* Viano, Marie-Claude; Oppenheim, Georges) Une classe de processus fractionnaires à temps continu. (English and French summaries) [A class of fractional continuous-time processes] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 4, 451–454. (Summary) **93h:60058** 60G12 (62M10)

— (*with* Chen, Han Fu) Robustesse de l'estimateur des moindres carrés généralisés, vis-à-vis d'une erreur de modèle, pour des processus ARMA. (English and French summaries) [Robustness of the extended-least-squares estimator with respect to the model error in ARMA processes] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 10, 1103–1106. (Summary) **93j:62222** 62M10

— (*with* Boutahar, Mohamed) Almost sure convergence of least squares estimates for regular multivariate ARX systems. (English summary) *Systems Control Lett.* **19** (1992), *no.* 2, 157–163. (Summary) **93f:62122** 62M10 (60F15, 93E24)

De Nicolao, Giuseppe (*with* Gevers, Michel) Difference and differential Riccati equations: a note on the convergence to the strong solution. *IEEE Trans. Automat. Control* **37** (1992), *no.* 7, 1055–1057. (M. M. Konstantinov) **93i:93051** 93B40 (34H05, 39A10, 93B50)

— (*with* Bittanti, Sergio; Bolzern, P.) Comments on: "Stabilizability and detectability of discrete-time time-varying systems" [IEEE Trans. Automat. Control **35** (1990), no. 4, 425–429] by J. C. Engwerda. (English summary) With a reply by Engwerda. *IEEE Trans. Automat. Control* **37** (1992), *no.* 8, *part I*, 1274–1275. 93D15 (93B07, 93C55)

— Cyclomonotonicity and stabilizability properties of solutions of the difference periodic Riccati equation. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 9, 1405–1410. (Roberto Tempo) **93i:93121** 93E11 (93B40, 93D15)

— On the convergence to the strong solution of periodic Riccati equations. *Internat. J. Control* **56** (1992), *no.* 1, 87–97. (Vladimir B. Larin) **93g:93035** 93B40 (34A99, 34H05)

— Differential periodic Riccati equations: a note on the existence of an infinite number of periodic strong solutions. (English summary) *Internat. J. Control* **56** (1992), *no.* 4, 985–990. (Bernard J. Harris) **93h:34061** 34C25 (34A34, 93B40)

— (*with* Bittanti, Sergio) Spectral factorization of linear periodic systems with application to the optimal prediction of periodic ARMA models. (English summary) *Automatica J. IFAC* **29** (1993), *no.* 2, 517–522. 93C55 (93E11)

Denicolò, Vincenzo Fixed agenda social choice theory: correspondence and impossibility theorems for social choice correspondences and social decision functions. (English summary) *J. Econom. Theory* **59** (1993), *no.* 2, 324–332. (Summary) **93m:90009** 90A08

Déniel, Y. (*with* Broise, M.; Derriennic, Y.) Maximal inequalities and ergodic theorems for Cesàro-α or weighted averages. *Almost everywhere convergence, II* (*Evanston, IL*, 1989), 93–107, *Academic Press, Boston, MA*, 1991. (R. E. Bradley) **93b:28040** 28D05 (47A35, 47B38)

Denier, James P. (*with* Hall, Philip[2]; Seddougui, Sharon O.) On the receptivity problem for Görtler vortices: vortex motions induced by wall roughness. *Philos. Trans. Roy. Soc. London Ser. A* **335** (1991), *no.* 1636, 51–85. (Summary) **93c:76030** 76E05

— The structure of fully nonlinear Taylor vortices. (English summary) *IMA J. Appl. Math.* **49** (1992), *no.* 1, 15–33. (Summary) **93e:76023** 76E10 (76C05, 76D05, 76E30)

— (*with* Hall, Philip[2]) On the nonlinear development of the most unstable Görtler vortex mode. (English summary) *J. Fluid Mech.* **247** (1993), 1–16. (Summary) **93m:76040** 76E30 (76D10)

Denig, William A. (*with* Sarvate, Dinesh G.) Classification and constructions of ternary group divisible designs. (English summary) Proceedings of the Twenty-third Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, FL, 1992). *Congr. Numer.* **90** (1992), 129–140. (Summary) **93j:05027** 05B30

Deninger, Christopher Local L-factors of motives and regularized determinants. *Invent. Math.* **107** (1992), *no.* 1, 135–150. (Min Ho Lee) **93a:11056** 11G40 (11G09, 14F20, 58G26)

Denis, Laurent Lemmes de zéros et intersections. (English summary) [Zero estimates and intersections] *Approximations diophantiennes et nombres transcendants* (*Luminy*, 1990), 99–104, *de Gruyter, Berlin*, 1992. (Summary) **93h:11082** 11J89 (11G10, 14K99)

— Géométrie diophantienne sur les modules de Drinfel'd. (French summary) [Diophantine geometry on Drinfel'd modules] *The arithmetic of function fields* (*Columbus, OH*, 1991), 285–302, *Ohio State Univ. Math. Res. Inst. Publ.*, 2, *de Gruyter, Berlin*, 1992. (Yuichiro Taguchi) **93j:11033** 11G09 (11D41, 11R58)

— Lemmes de multiplicités et intersections. (English summary) [Multiplicity estimates and intersections] *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 2, 97–100. (Alain Faisant) **93c:11052** 11J89

— Comportement des martingales positives sur l'espace de Wiener vis-à-vis de la capacité. (English summary) [Behavior of nonnegative martingales on Wiener space with respect to capacity] *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 10, 771–773. (Summary) **93b:60095** 60G44 (60H07)

— Analyse quasi-sûre de l'approximation d'Euler et du flot d'une E.D.S. (English and French summaries) [Quasisure analysis for Euler approximation and flow related to an SDE] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 5, 599–602. (Summary) **93f:60085** 60H10

— Convergence quasi-partout pour les capacités définies par un semi-groupe sous-markovien. (English and French summaries) [Quasi-everywhere convergence for capacities defined by a sub-Markovian semigroup] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 10, 1033–1036. (Summary) **93k:31006** 31C15 (31C45, 46E35, 46E40, 47D07)

— Remarques sur la transcendance en caracteristique finie. (English summary) [Remarks on transcendence in finite characteristic] *C. R. Math. Rep. Acad. Sci. Canada* **14** (1992), *no.* 4, 157–162. (Summary) **93g:11075** 11J81 (11J99)

Denis, Remy Y. On reducibility of certain multiple q-series. *Math. Student* **59** (1991), *no.* 1-4, 177–180. (From the text) **93a:33030** 33D15

Denisenko, A. Yu. (*with* Vabishchevich, P. N.) Numerical methods for solving a coefficient inverse problem. (Russian) *Methods of mathematical modeling and computer diagnostics* (*Russian*), 35–45, 293, *Moskov. Gos. Univ., Moscow*, 1990. (Alexander Doktor) **93a:65091** 65K10 (35R30)

Denisov, A. *see* **Denisov, A. M.**

Denisov, A. A. Canonical Maslov operator on Lagrangian manifolds of special type. (Russian. Russian summary) *Differential equations and their applications in physics* (*Russian*), 92–96, 111, *Dnepropetrovsk. Gos. Univ., Dnepropetrovsk*, 1989. (*see* **93g:00024**) 58F05

— Solution of the Lagrangian Cauchy problem in the singular case. (Russian. Russian summary) *Differential equations and their applications in physics* (*Russian*), 67–70, 106, *Dnepropetrovsk. Gos. Univ., Dnepropetrovsk*, 1990. (*see* **93k:00023**) 35F25 (70H20)

Denisov, A. M. (*with* Tuikina, S. R.) Uniqueness of the solution of some inverse problems in sorption dynamics for a model with mixed-diffusion kinetics. (Russian. Russian summary) *Direct and inverse problems in mathematical physics* (*Russian*), 30–34, 259–260, *Moskov. Gos. Univ., Moscow*, 1991. (Summary) **93h:35207** 35R30 (82C40)

— (*with* Lorenzi, Alfredo) Identification of nonlinear terms in boundary value problems related to ordinary differential equations. *Differential Integral Equations* **5** (1992), *no.* 3, 567–579. (Brian D. Sleeman) **93b:34024** 34A55 (34B15)

— (*with* Korovin, S. V.) A Volterra-type integral equation of the first kind. (Russian. Russian summary) *Vestnik Moskov. Univ. Ser. XV Vychisl. Mat. Kibernet.* **1992,** *no.* 3, 22–28, 64; *translation in Moscow Univ. Comput. Math. Cybernet.* **47** (1992), *no.* 3, 19–24. (From the introduction) **93j:45001** 45D05

— Uniqueness of the solution of a problem of determining a nonlinear kinetic coefficient. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **32** (1992), *no.* 4, 658–663; *translation in Comput. Math. Math. Phys.* **32** (1992), *no.* 4, 567–572. (Summary) **93b:35132** 35R30 (35Q99)

Denisov, G. G. (*with* Kugusheva, E. K.; Novikov, V. V.) A problem on the dynamics of viscoelastic systems with moving boundaries. (Russian) *Dinamika Sistem* **1990,** *Dinam. Stokh. Bifur.*, 101–110. (Summary) **93c:73043** 73F15 (34B99, 73K05)

Denisov, L. V. (*with* Kholevo, A. S.) Conditionally positive definite functions on the coefficient algebra of a nonabelian group. *Probability theory and mathematical statistics, Vol. I* (*Vilnius*, 1989), 261–270, "*Mokslas*", *Vilnius*, 1990. (Jan Hamhalter) **93d:46107** 46L50 (22D10, 81P10)

— Convolution semigroups in noncommutative probability theory. (Russian) *Teor. Veroyatnost. i Primenen.* **36** (1991), *no.* 3, 572–577; *translation in Theory Probab. Appl.* **36** (1991), *no.* 3, 583–588 (1992). (D. Petz) **93d:46108** 46L50 (60B99)

Denisov, M. I. (*with* Denisov, V. I.) Generalization of post-Newtonian formalism. (Russian. English and Russian summaries) *Teoret. Mat. Fiz.* **91** (1992), *no.* 3, 500–509; *translation in Theoret. and Math. Phys.* **91** (1992), *no.* 3, 677–682. (Yu. N. Obukhov) **93k:83019** 83C25 (83D05)

Denisov, V. I. (*with* Denisov, M. I.) Generalization of post-Newtonian formalism. (Russian. English and Russian summaries) *Teoret. Mat. Fiz.* **91** (1992), *no.* 3, 500–509; *translation in Theoret. and Math. Phys.* **91** (1992), *no.* 3, 677–682. (Yu. N. Obukhov) **93k:83019** 83C25 (83D05)

Denisov, V. N. Stabilization of a solution of the Cauchy problem for hyperbolic and parabolic equations. (Russian) *Conference on Differential Equations and Applications* (*Ruse*, 1989), 172–183, *Tech. Univ., Ruse*, 1991. (*see* **93f:34004**) 35B40 (35K10, 35L10)

— (*with* Budak, A. B.) Some properties of the spectral function for the Sturm-Liouville operator with discontinuous coefficients. (Russian) *Mat. Zametki* **49** (1991), *no.* 6, 19–28, 157; *translation in Math. Notes* **49** (1991), *no.* 5-6, 568–574. (Summary) **93a:34092** 34L05 (34B24, 47E05)

— (*with* Budak, A. B.) Estimation of the closeness of partial sums of expansions in eigenfunctions of a Sturm-Liouville operator with discontinuous coefficients. (Russian. Russian summary) *Differentsial'nye Uravneniya* **28** (1992), *no.* 6, 943–956, 1100; *translation in Differential Equations* **28** (1992), *no.* 6, 752–762. (Summary) **93h:34144** 34L10 (34B24, 34L40)

Denisova, I. Yu. On the stability of the invariant set of a system of stochastic differential equations. (Ukrainian. Russian and Ukrainian summaries) *Teor. Ĭmovīr. ta Mat. Statist. No.* 46 (1992), 50–53. (Summary) **93j:60073** 60H10
— Attainability and stability of the invariant set of a system of stochastic differential equations. (Russian. Russian and Ukrainian summaries) *Ukraïn. Mat. Zh.* **44** (1992), *no.* 4, 568–572; *translation in Ukrainian Math. J.* **44** (1992), *no.* 4, 508–512. (Summary) **93g:60121** 60H10 (34C30, 34D35, 34F05)
Denisova, N. S. Geometric interpretations of biquasi-non-Euclidean spaces. (Russian) *Geometry of embedded manifolds (Russian)*, 19–23, "*Prometeĭ*", *Moscow*, 1989. (V. Cruceanu) **93i:53014** 53A35 (53A40)
Denisova, T. E. (*with* Man'ko, V. S.) Exact solution of the Einstein-Maxwell equations referring to a charged spinning mass. *Classical Quantum Gravity* **9** (1992), *no.* 6, L57–L60. (M. A. J. Vandyck) **93i:83031** 83C22 (83C15)
Denker, Ahmet (*with* Kaynak, Okyay) Discrete-time sliding mode control in the presence of system uncertainty. (English summary) *Internat. J. Control* **57** (1993), *no.* 5, 1177–1189. (Summary) **93m:93019** 93B12 (70B15, 70Q05, 93C55)
Denker, M. (*with* Urbański, Mariusz) Hausdorff measures on Julia sets of subexpanding rational maps. (English summary) *Israel J. Math.* **76** (1991), *no.* 1-2, 193–214. (Run Sheng Yang) **93g:58078** 58F11 (28A78, 30D05, 58F23)
— (*with* Krämer, K. F.) Upper and lower class results for subsequences of the Champernowne number. (English summary) *Ergodic theory and related topics, III (Güstrow*, 1990), 83–89, *Lecture Notes in Math.*, 1514, *Springer, Berlin*, 1992. (Summary) **93g:11085** 11K16 (11A63, 28D99)
— (*with* Urbański, Mariusz) Geometric measures for parabolic rational maps. *Ergodic Theory Dynamical Systems* **12** (1992), *no.* 1, 53–66. (Genadi Mironovich Levin) **93d:58133** 58F23 (30D05)
— (*with* Urbański, Mariusz) The capacity of parabolic Julia sets. *Math. Z.* **211** (1992), *no.* 1, 73–86. (Janina Kotus) **93j:30022** 30D05 (30C85, 58F23)
Denkowska, Zofia (*with* Roussarie, Robert) A method of desingularization for analytic two-dimensional vector field families. *Bol. Soc. Brasil. Mat. (N.S.)* **22** (1991), *no.* 1, 93–126. (J. S. Joel) **93c:58171** 58F21 (32C05, 32S20, 32S70, 34C05)
Dennett, Daniel C. Evolution, error, and intentionality. *The foundations of artificial intelligence*, 190–211, *Cambridge Univ. Press, Cambridge*, 1990. (*see* **93b:68073**) 68T30
Dennis, John E., Jr. (*with* Martínez, José Mario; Zhang, Xiaodong[1]) Parallel block triangular decompositions for solving sparse nonlinear systems of equations. (English summary) *Parallel processing for scientific computing (Houston, TX*, 1991), 168–173, *SIAM, Philadelphia, PA*, 1992. (*see* **93g:65178**) 65H10 (65F50, 65Y05)
— (*with* Zhang, Yin[1]; Tapia, Richard A.) On the superlinear and quadratic convergence of primal-dual interior point linear programming algorithms. *SIAM J. Optim.* **2** (1992), *no.* 2, 304–324. (Summary) **93a:65084** 65K05 (90C05)
Denny, J. L. (*with* Wright, A. Larry) Inference about the shape of neighboring points in fields. (English summary) *Spatial statistics and imaging (Brunswick, ME*, 1988), 46–54, *IMS Lecture Notes Monograph Ser.*, 20, *Inst. Math. Statist., Hayward, CA*, 1991. (Summary) **93h:62155** 62M05 (60J10, 62F05, 62M40)
Denyer, Nicholas Ease and difficulty: a modal logic with deontic applications. *Theoria* **56** (1990), *no.* 1-2, 42–61. (Kosta Došen) **93e:03023** 03B45 (03B65)
— Pure second-order logic. *Notre Dame J. Formal Logic* **33** (1992), *no.* 2, 220–224. (Kazumi Inoue) **93e:03011** 03B15
Denzler, Jochen *see* **Tromba, Anthony J., 93h:32028**
Deo, Arati S. (*with* Cavallaro, Joseph R.; Walker, Ian D.) New real-time robot motion algorithms using parallel VLSI architectures. (English summary) *Parallel processing for scientific computing (Houston, TX*, 1991), 369–375, *SIAM, Philadelphia, PA*, 1992. (*see* **93g:65178**) 93C85 (65K05, 65Y05)
Deo, Chandrakant M. Weak convergence of empirical processes of dependent random vectors under logarithmic mixing rates. (English summary) *Calcutta Statist. Assoc. Bull.* **42** (1992), *no.* 165-166, 111–117. (Summary) **93k:60054** 60F05 (60F17)
— Almost sure convergence of a class of random fields. (English summary) *Pure Appl. Math. Sci.* **36** (1992), *no.* 1-2, 47–51. (Summary) **93k:60074** 60F15 (60G48, 60G60)
Deo, Narsingh (*with* Das, Sajal K.; Prasad, Sushil) Reverse binary digraphs and graphs. (English summary) *J. Combin. Inform. System Sci.* **16** (1991), *no.* 1, 107–128. (Summary) **93d:05057** 05C20 (05C75, 68R10)
— (*with* Dutton, Ronald D.; Brigham, Robert C.) On Pascal graphs. Proceedings of the Twenty-third Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, FL, 1992). *Congr. Numer.* **90** (1992), 141–150. (Introduction) **93j:05125** 05C75
— (*with* Das, Sajal K.; Ghosh, Joydeep) Stirling networks: a versatile combinatorial topology for multiprocessor systems. (English summary) *Discrete Appl. Math.* **37/38** (1992), 119–146. (Mukkai S. Krishnamoorthy) **93g:05133** 05C90 (68M10)
Deo, Nivedita (*with* Jain, Sanjay[2]; Narayan, Onuttom; Tan, Chung I) Effect of topology on the thermodynamic limit for a string gas. *Phys. Rev. D* (3) **45** (1992), *no.* 10, 3641–3650. (Summary) **93a:81152** 81T30 (82B99)
Deo, S. G. (*with* Jayasree, K. N.) On piecewise constant delay differential equations. (English summary) *J. Math. Anal. Appl.* **169** (1992), *no.* 1, 55–69. (S. K. Ntouyas) **93f:34122** 34K15
Deo, Satya Countably finitistic spaces. (English summary) *Bull. Calcutta Math. Soc.* **84** (1992), *no.* 6, 549–556. (Klaas Pieter Hart) **93m:54039** 54D20 (54F45)
— (*with* Andotra, Janak Singh) On *G*-finitistic spaces and related notions. *Internat. J. Math. Math. Sci.* **15** (1992), *no.* 2, 371–378. (Dennis J. Garity) **93i:54031** 54F45 (54B17)
Deo, Sheela S. (*with* Shah, K. R.) Missing plot technique in linear models. *Comm. Statist. Theory Methods* **20** (1991), *no.* 10, 3239–3252. (Rahul Mukerjee) **93a:62099** 62J05 (62J10)
— Analysis of RBD with missing observations. (Hindi summary) *J. Indian Soc. Agricultural Statist.* **43** (1991), *no.* 3, 310–320, i. 62K10
Deodhar, Vinay *see* **Kazhdan-Lusztig theory and related topics, 93g:20002**
Deodhare, Girish (*with* Vidyasagar, M.) Control system design via infinite linear programming. *Internat. J. Control* **55** (1992), *no.* 6, 1351–1380. (L. Rodman) **93g:93040** 93B51 (90C08, 93C55)
— (*with* Vidyasagar, M.) Linear control synthesis and infinite linear programming. *Mathematical theory of control (Bombay*, 1990), 87–107, *Lecture Notes in Pure and Appl. Math.*, 142, *Dekker, New York*, 1993. (*see* **93g:93003**) 93B50 (90C08)
Deogun, Jitender S. (*with* Damaschke, Peter; Kratsch, Dieter; Steiner, George) Finding Hamiltonian paths in cocomparability graphs using the bump number algorithm. *Order* **8** (1991/92), *no.* 4, 383–391. (Martin Sonntag) **93g:05093** 05C45
— (*with* Steiner, George) Hamiltonian cycle is polynomial on cocomparability graphs. (English summary) *Discrete Appl. Math.* **39** (1992), *no.* 2, 165–172. (Summary) **93f:05058** 05C45 (68R10)
De Oliveira, E. Capelas *see* **de Oliveira, E. Capelas**
De Oliveira, Graciano *see* **de Oliveira, Graciano**
De Oliveira, H. P. *see* **de Oliveira, H. P.**
De Oliveira, J. C. F. (*with* Langevin, Rémi; Oliva, W. M.) Retarded functional-differential equations with white noise perturbations. (French summary) Multiscale phenomena (São Paulo, 1990). *Ann. Inst. H. Poincaré Phys. Théor.* **55** (1991), *no.* 2, 671–687. (Summary) **93i:60120** 60H99 (34K50)
De Oliveira, Joao Batista S. *see* **de Oliveira, Joao Batista S.**
De Oliveira, Luiz A. F. Existence of travelling waves in the FitzHugh-Nagumo equation. *Dynamic Systems Appl.* **1** (1992), *no.* 1, 83–92. (N. F. Britton) **93b:35071** 35K57 (34A34, 34E10, 92C20)
De Oliveira, Marcos Barbosa *see* **de Oliveira, Marcos Barbosa**
De Oliveira, P. M. C. *see* **de Oliveira, P. M. C.**
De Oliveira, Paula *see* **de Oliveira, Paula**
De Oliveira, S. Moss *see* **de Oliveira, S. Moss**
Deora, Yogendra (*with* Banerji, P. K.) Double Dirichlet average of e^x using fractional derivatives. (English summary) *J. Fract. Calc.* **3** (1993), 81–86. (Summary) **93m:26012** 26A33
De Pablo, Arturo *see* **de Pablo, Arturo**
De Pagter, Ben *see* **de Pagter, Ben**
De Pascale, E. (*with* Appell, Jürgen; Zabreĭko, P. P.) Multivalued superposition operators. (Italian summary) *Rend. Sem. Mat. Univ. Padova* **86** (1991), 213–231 (1992). (Pavel Drábek) **93a:47070** 47H30
— (*with* Trombetta, Giulio) A theorem on best approximations in topological vector spaces. *Approximation theory, spline functions and applications (Maratea*, 1991), 351–355, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 356, *Kluwer Acad. Publ., Dordrecht*, 1992. (Khalil Ahmad) **93h:41031** 41A65 (46A16)
De Pasquale, F. (*with* San Miguel, M.; Hernández-García, E.; Colet, P.; Cáceres, Manuel O.) Passage time description of dynamical processes. (English summary) *Instabilities and nonequilibrium structures, III (Valparaíso*, 1989), 143–155, *Math. Appl.*, 64, *Kluwer Acad. Publ., Dordrecht*, 1991. (Summary) **93c:58190** 58F30 (58F14)
De Pierro, Alvaro R. Multiplicative iterative methods in computed tomography. *Mathematical methods in tomography (Oberwolfach*, 1990), 167–186, *Lecture Notes in Math.*, 1497, *Springer, Berlin*, 1991. (Fritz Keinert) **93f:65092** 65R10 (44A12, 92C55)
— (*with* Iusem, Alfredo N.) A characterization of the set of fixed points of some smoothed operators. (English summary) *Linear Algebra Appl.* **177** (1992), 1–5. (Summary) **93j:65059** 65F30 (65K99)
De Pillis, John *see* **de Pillis, John**
Depireux, Didier A. (*with* Bakas, Ioannis) The origin of gauge symmetries in integrable systems of the KdV type. *Internat. J. Modern Phys. A* **7** (1992), *no.* 8, 1767–1792. (Luen-Chau Li) **93b:58061** 58F07 (17B65, 81R10, 81T13)
— (*with* Mathieu, Pierre) On the classical $W_N^{(l)}$ algebras. (English summary) *Internat. J. Modern Phys. A* **7** (1992), *no.* 24, 6053–6080. (Katsushi Ito) **93j:58060** 58F07 (17B68, 81R10)
— A note on the KP hierarchy. *Modern Phys. Lett. A* **7** (1992), *no.* 20, 1825–1833. (Summary) **93d:58066** 58F07 (81R10, 81T40)
De Power, B. F. *see* **de Power, B. F.**
De Prada Vicente, M. A. (*with* Macho Stadler, M.) On *N*-convergence of fuzzy nets. (English summary) *Fuzzy Sets and Systems* **51** (1992), *no.* 2, 203–217. 54A40 (04A72)
— (*with* Macho Stadler, M.) t^*-fuzzy topological concepts. *Portugal. Math.* **49** (1992), *no.* 1, 85–108. (Summary) **93e:54005** 54A40 (04A72)
— (*with* Macho Stadler, M.) Fuzzy *N*-limit spaces. (English summary) V International Meeting on Topology in Italy (Italian) (Lecce, 1990/Otranto, 1990). *Rend. Circ. Mat. Palermo* (2) *Suppl. No.* 29 (1992), 521–528. (Summary) **93m:54016** 54A40 (03E72, 04A72)
Deprettere, Ed F. (*with* Verhaegen, Michel) Subspace model identification. *Algorithms and parallel VLSI architectures, Vol. B (Pont-à-Mousson*, 1990), 13–32, *Elsevier, Amsterdam*, 1991. (Caro Lucas) **93e:93022** 93B30 (93B35)
— *see also* **Algorithms and parallel VLSI architectures, 93a:68004** *and* **93a:68005**
Deprez, J. (*with* Chen, Bang-Yen; Verheyen, Paul) A note on the centroid set of compact symmetric spaces of rank one. *Geometry and topology of submanifolds, IV (Leuven*, 1991), 3–10, *World Sci. Publishing, River Edge, NJ*, 1992. (O. Kowalski) **93k:53050** 53C35 (53C42)
— (*with* Chen, Bang-Yen; Verheyen, Paul) Immersions with geodesics of 2-type. *Geometry and topology of submanifolds, IV (Leuven*, 1991), 87–110, *World Sci. Publishing, River Edge, NJ*, 1992. (Yi Hong) **93h:53053** 53C35 (53C22)
De Prisco, Roberto (*with* De Santis, Alfredo) On binary search trees. (English summary) *Inform. Process. Lett.* **45** (1993), *no.* 5, 249–253. (Summary) **93k:68023** 68P10 (68R10)
Der, R. (*with* Dotsenko, Vladimir S.; Tirozzi, Brunello) Modified pseudo-inverse neural networks storing correlated patterns. *J. Phys. A* **25** (1992), *no.* 10, 2843–2857. (Dimitri Petritis) **93h:82043** 82C32 (92B20)
Derbel, N. (*with* Ouali, A.; Kamoun, M. B. A.) Application de la programmation dynamique différentielle avec contraintes pour la commande d'une grue. (English and French summaries) [An application of constrained differential dynamical programming to the control of a container crane] *RAIRO Automat.-Prod. Inform. Ind.* **26** (1992), *no.* 5-6, 385–397. 49M25
Derbenev, V. A. (*with* Pulyaev, V. F.) The structure of a resolvent and the stability of linear integral and integro-differential equations. (Russian. Russian summary) *Izv. Severo-Kavkaz. Nauchn. Tsentra Vyssh. Shkoly Estestv. Nauk.* **1992**, *no.* 1-2, 7–14, 89. (Tibor Krisztin) **93g:45002** 45D05 (34K20, 45J05, 47N20)
Derbeneva, O. V. Groups with certain restrictions on noncondensing chains of subgroups. (Russian) *Problems in group theory and homological algebra (Russian)*, 163–164, *Matematika, Yaroslav. Gos. Univ., Yaroslavl'*, 1990. (*see* **93a:00019**) 20F14

Derdziński, A. (*with* Chaves, Lucas M.; Rigas, A.) A condition for positivity of curvature. (English summary) *Bol. Soc. Brasil. Mat. (N.S.)* **23** (1992), *no.* 1-2, 153–165. (Gerard Walschap) **93j:53050** 53C21 (53C20)

Derech, V. D. Maximal stable orders on some bi-ideal extensions of the Brandt semigroup. (Russian) *Semigroups and their homomorphisms (Russian)*, 12–18, *Ross. Gos. Ped. Univ., Leningrad*, 1991. (Summary) **93e:20090** 20M20

Dereli, T. (*with* Verçin, A.) A physical realisation of the super-sine algebra. (English summary) *Phys. Lett. B* **288** (1992), *no.* 1-2, 109–112. (Bani Mitra Södermark) **93h:81044** 81R10 (17B67)

De Resmini, Marialuisa J. The fractal-like Steiner triple system. (English summary) *Combinatorics '90 (Gaeta, 1990)*, 119–126, *Ann. Discrete Math.*, 52, *North-Holland, Amsterdam*, 1992. (Summary) **93h:05020** 05B07

— (*with* Griggs, T. S.; Rosa, Alexander) Decomposing Steiner triple systems into four-line configurations. *Combinatorics '90 (Gaeta, 1990)*, 215–226, *Ann. Discrete Math.*, 52, *North-Holland, Amsterdam*, 1992. (Lucien Haddad) **93m:05031** 05B07

— (*with* Phelps, Kevin T.) Partitioning twofold triple systems into complete arcs. *Discrete Math.* **104** (1992), *no.* 3, 273–280. (Charles J. Colbourn) **93d:05023** 05B07

Deretsky, Tatiana (*with* Lee, Sin-Min; Mitchem, John) On vertex prime labelings of graphs. *Graph theory, combinatorics, and applications, Vol. 1 (Kalamazoo, MI, 1988)*, 359–369, *Wiley-Intersci. Publ., Wiley, New York*, 1991. (From the text) **93b:05146** 05C78

Dereziński, Jan Algebraic approach to the N-body long range scattering. *Rev. Math. Phys.* **3** (1991), *no.* 1, 1–62. (Hitoshi Kitada) **93d:81186** 81U10 (35P25, 46L99, 47A40, 47F05, 47N50)

— Asymptotic completeness in classical N-body systems. (English summary) *Journées "Équations aux Dérivées Partielles" (Saint-Jean-de-Monts, 1992), Exp. No. III*, 6 pp., *École Polytech., Palaiseau*, 1992. (*see* **93e:35005**) 70F10 (47N50, 81U10)

— Large time behavior of classical N-body systems. (English summary) *Comm. Math. Phys.* **148** (1992), *no.* 3, 503–520. (V. E. Kuzmichev) **93h:70004** 70F10 (34C99)

— N-body observables in the Calkin algebra. *Trans. Amer. Math. Soc.* **332** (1992), *no.* 2, 571–582. (Hagen Neidhardt) **93i:81284** 81U10 (35J10, 46L60, 47A40, 47F05, 47N50, 81Q20)

fon-Der-Flaass, D. G. *see* **Fon-Der-Flaass, D. G.**

De Rham, Georges *see* **de Rham, Georges**

Derhem, Aïssa (*with* Couture, Raymond) Un problème de capitulation. (English summary) [A capitulation problem] *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 11, 785–788. (Jonathan W. Sands) **93c:11100** 11R29 (11R11, 11R16, 11R37)

Deribas, A. A. Indeterminism in medicine. (Russian. Russian summary) *Vychisl. Sistemy No.* 138, *Metodol. Problemy Nauki* (1991), 3–10, 125. 92C50 (06C05)

De Ridder, M. A. *see* **de Ridder, M. A.**

Deriev, I. I. A central limit theorem for nonlinear functionals of Gaussian random fields. (Russian) *Proceedings of the XXIX All-Union Scientific Student Conference "The Student and Scientific-Technological Progress" (Russian) (Novosibirsk, 1991)*, 25–29, *Novosibirsk. Gos. Univ., Novosibirsk*, 1991. (*see* **93k:00038**) 60G60 (60F05)

Derighetti, Antoine (*with* Delaporte, Jacques) On Herz' extension theorem. (Italian summary) *Boll. Un. Mat. Ital. A* (7) **6** (1992), *no.* 2, 245–247. (Stephen H. Friedberg) **93i:43004** 43A15 (43A22)

Derigs, U. (*with* Metz, A.) A matching-based approach for solving a delivery/pick-up vehicle routing problem with time constraints. (English and German summaries) *OR Spektrum* **14** (1992), *no.* 2, 91–106. (Štefan Peško) **93f:90058** 90B06 (90C10)

De Rijke, Maarten *see* **de Rijke, Maarten**

DeRise, George Some n-dimensional geometry. *Internat. J. Math. Ed. Sci. Tech.* **23** (1992), *no.* 3, 371–379. (W. J. Firey) **93d:52001** 52-01 (52A38)

De Ritis, R. *see* **de Ritis, R.**

Derkach, V. A. Generalized resolvents of a class of Hermitian operators in a Krein space. (Russian) *Dokl. Akad. Nauk SSSR* **317** (1991), *no.* 4, 807–812; *translation in Soviet Math. Dokl.* **43** (1991), *no.* 2, 519–524. (From the introduction) **93b:47071** 47B50 (47A57, 47B25)

— (*with* Malamud, M. M.) Generalized resolvents of Hermitian operators and the truncated moment problem. (Russian. English summary) *Dokl. Akad. Nauk Ukrainy* **1991**, *no.* 11, 34–39, 173. (Tiberiu Constantinescu) **93c:47021** 47A57 (47A20, 47B15)

— (*with* Malamud, M. M.) Generalized resolvents and the boundary value problems for Hermitian operators with gaps. *J. Funct. Anal.* **95** (1991), *no.* 1, 1–95. (Björn Textorius) **93d:47046** 47B25 (34B05, 47A20, 47A45, 47A57)

Derkowska, Alicja Prominent Polish mathematical journals in the period between World War I and World War II. (Polish) *Mathematics at the turn of the twentieth century (Polish) (Jaworze, 1988)*, 75–83, *Prace Nauk. Univ. Śląsk. Katowic.*, 1253, *Univ. Śląski, Katowice*, 1992. (P. Szeptycki) **93k:01087** 01A72 (01A60)

Derks, G. (*with* van Groesen, E.) Energy propagation in dissipative systems. II. Centrovelocity for nonlinear wave equations. *Wave Motion* **15** (1992), *no.* 2, 159–172. (K. S. Harinath) **93a:35133** 35Q53 (35K55, 73D99, 76B25)

Derks, J. J. M. A short proof of the inclusion of the core in the Weber set. (English summary) *Internat. J. Game Theory* **21** (1992), *no.* 2, 149–150. (Summary) **93i:90117** 90D12

Derksen, H. G. J. The kernel of a derivation. (English summary) *J. Pure Appl. Algebra* **84** (1993), *no.* 1, 13–16. (Summary) **93k:13012** 13B10

Der Mégréditchian, Guy Problèmes engendrés par les données manquantes dans la pratique statistique. [Problems generated by missing data in statistical practice] *Rev. Statist. Appl.* **40** (1992), *no.* 1, 7–22. (Summary) **93d:62116** 62H99

Dermoune, A. Opérateurs d'échange et quelques applications des méthodes de noyaux. [Exchange operators and some applications of kernel methods] *Ann. Sci. Univ. Clermont-Ferrand II Probab. Appl. No.* 9 (1991), 45–54. (Robin Hudson) **93k:81118** 81S25

— Une remarque sur le processus: $\alpha a(f) + \overline{\alpha} a^+(f) + \lambda a^0(f)$. [A remark on the process $\alpha a(f) + \overline{\alpha} a^+(f) + \lambda a^0(f)$] *Ann. Sci. Univ. Clermont-Ferrand II Probab. Appl. No.* 9 (1991), 55–58. (Robin Hudson) **93k:81119** 81S25

De Roeck, Yann-Hervé (*with* Le Tallec, Patrick; Vidrascu, Marina) A domain-decomposed solver for nonlinear elasticity. (English summary) *Comput. Methods Appl. Mech. Engrg.* **99** (1992), *no.* 2-3, 187–207. (Summary) **93g:73109** 73V05 (73-04, 73C50, 73H05)

De Roever, J. W. *see* **de Roever, J. W.**

De Roever, W. P. *see* **de Roever, W. P.**

De Roo, Mees *see* **de Roo, Mees**

De Roos, André Marc *see* **de Roos, André Marc**

De Rop, Y. (*with* Demaret, J.; Tombal, P.; Moussiaux, A.) Qualitative analysis of ten-dimensional Lovelock cosmological models. (English summary) *Gen. Relativity Gravitation* **24** (1992), *no.* 11, 1169–1183. (Summary) **93g:83084** 83D05 (83E15)

De Rosa, M. *see* **de Rosa, M.**

DeRose, Tony (*with* Mann, Stephen) An approximately G^1 cubic surface interpolant. *Mathematical methods in computer aided geometric design, II (Biri, 1991)*, 185–196, *Academic Press, Boston, MA*, 1992. (*see* **93d:65022**) 65D17 (65D05)

De Rouilhan, Philippe *see* **de Rouilhan, Philippe**

van Der Putten, Roberto *see* **Van Der Putten, Roberto**

Derr, L. (*with* Outlaw, C.; Sarafyan, D.) A new method for derivation of continuous Runge-Kutta formulas. (English summary) *Comput. Math. Appl.* **26** (1993), *no.* 3, 7–13. (Summary) **93m:65102** 65L06

Derrick, William R. (*with* Cima, Joseph A.) Some solutions of the Beltrami equation with $\|\mu\|_\infty = 1$. *Several complex variables and complex geometry, Part 1 (Santa Cruz, CA, 1989)*, 41–44, *Proc. Sympos. Pure Math.*, 52, *Part 1, Amer. Math. Soc., Providence, RI*, 1991. (Juan J. Manfredi) **93b:30017** 30C62 (35J60)

— (*with* Cima, Joseph A.) Normal solutions of the Beltrami equation for bounded analytic functions. (English summary) *J. Integral Equations Appl.* **4** (1992), *no.* 3, 371–375. (Guo Chun Wen) **93h:30028** 30C62

Derrida, B. The zeroes of the partition function of the random energy model. Current problems in statistical mechanics (Washington, DC, 1991). *Phys. A* **177** (1991), *no.* 1-3, 31–37. (James L. Monroe) **93b:82002** 82B05 (30C15, 82B26)

— (*with* Hakim, V.; Vannimenus, J.) Effect of disorder on two-dimensional wetting. *J. Statist. Phys.* **66** (1992), *no.* 5-6, 1189–1213. (Klaus Ziegler) **93e:82022** 82B24

— (*with* Domany, E.; Mukamel, D.) An exact solution of a one-dimensional asymmetric exclusion model with open boundaries. (English summary) *J. Statist. Phys.* **69** (1992), *no.* 3-4, 667–687. (T. M. Liggett) **93m:60197** 60K35 (82C22)

Derridj, M. Domaines à estimation maximale. [Maximal-estimation domains] *Math. Z.* **208** (1991), *no.* 1, 71–88. (Jeffery D. McNeal) **93c:32024** 32F20 (35N15)

— Estimations par composantes pour le problème $\overline{\partial}$-Neumann pour quelques classes de domaines pseudoconvexes de $\mathbf{C}^n$. [Componentwise estimates for the $\overline{\partial}$-Neumann problem for some classes of pseudoconvex domains in $\mathbf{C}^n$] *Math. Z.* **208** (1991), *no.* 1, 89–99. (Jeffery D. McNeal) **93c:32025** 32F20 (35N15)

Derrien, Jean-Marc Critères d'ergodicité de cocycles en escalier. Exemples. (English and French summaries) [Ergodicity criteria for step cocycles. Examples] *C. R. Acad. Sci. Paris Sér. I Math.* **316** (1993), *no.* 1, 73–76. (Summary) **93j:28030** 28D15 (22D40)

Derriennic, Y. (*with* Broise, M.; Déniel, Y.) Maximal inequalities and ergodic theorems for Cesàro-α or weighted averages. *Almost everywhere convergence, II (Evanston, IL, 1989)*, 93–107, *Academic Press, Boston, MA*, 1991. (R. E. Bradley) **93b:28040** 28D05 (47A35, 47B38)

Derry, Sharon (*with* Hawkes, Lois Wright; Kandel, Abraham) Fuzzy expert systems for an intelligent computer-based tutor. *Fuzzy expert systems*, 237–257, *CRC, Boca Raton, FL*, 1992. (*see* **93g:68133**) 68T35 (03B52)

Dersanambika, K. S. (*with* Govindarajulu, P.; Subba Rao, V.) Continuity of set valued metric projection in normed almost linear spaces. *Proceedings of Asian Mathematical Conference, 1990 (Hong Kong, 1990)*, 103–108, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93b:00022**) 41A65 (46A99, 46B99)

— (*with* Govindarajulu, P.; Subba Rao, V.) Best approximations in normed almost linear spaces. *Proceedings of Asian Mathematical Conference, 1990 (Hong Kong, 1990)*, 109–114, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93b:00022**) 41A46 (41A50, 46A99, 46B99)

Deruelle, Nathalie (*with* Gundlach, Carsten; Polarski, David) The growth of density fluctuations in a simplified model of extended inflation. *Classical Quantum Gravity* **9** (1992), *no.* 6, 1511–1524. (Summary) **93a:83040** 83F05

Dervieux, Alain (*with* Beux, François) Exact-gradient shape optimization of a 2-D Euler flow. (English summary) *Finite Elem. Anal. Des.* **12** (1992), *no.* 3-4, 281–302. (Summary) **93j:76048** 76M30 (49Q10, 76G25, 76M25, 76N15)

— *see also* **Numerical simulation of compressible Euler flows, 93b:76056**

Deryugin, V. N. An algorithm for constructing the shortest path in a graph. (Russian. Russian summary) *Methods for solving problems of nonlinear and discrete programming (Russian)*, 69–73, *Akad. Nauk Ukrain. SSR, Inst. Kibernet., Kiev*, 1991. (*see* **93b:90010**) 90C35

De Sá, Eduardo Marques *see* **de Sá, Eduardo Marques**

De Sabbata, Venzo (*with* Sivaram, C.) The final state of an evaporating black hole and the dimensionality of the space-time. *Quantum mechanics in curved space-time (Erice, 1989)*, 485–501, *NATO Adv. Sci. Inst. Ser. B Phys.*, 230, *Plenum, New York*, 1990. (*see* **93d:83003**) 83C57

— (*with* Sivaram, C.) Inflation with massive spin-2 field in curved space-time. *Quantum mechanics in curved space-time (Erice, 1989)*, 503–515, *NATO Adv. Sci. Inst. Ser. B Phys.*, 230, *Plenum, New York*, 1990. (*see* **93d:83003**) 83F05 (83C47)

— (*with* Sivaram, C.) Torsion, time and temperature (the T^3 theorem). (English summary) *Comm. Theoret. Phys. (Allahabad)* **1** (1991), 121–137. (Summary) **93j:83044** 83C47 (83C57, 83D05)

— (*with* Sivaram, C.) Curvature from spin. (English summary) *Found. Phys. Lett.* **5** (1992), *no.* 6, 579–584. (Summary) **93i:83055** 83C55 (83D05)

— (*with* Sivaram, C.) Anyons and torsion. (English summary) *Nuovo Cimento B* (11) **107** (1992), *no.* 10, 1201–1205. (Summary) **93m:81157** 81V17 (81T13)

— *see also* **Quantum mechanics in curved space-time, 93d:83003** *and* **Gravitation and modern cosmology, 93j:83004**

Desages, Alfredo (*with* Agamennoni, Osvaldo; Paolini, Eduardo) On robust stability analysis of a control system using Laguerre series. *Automatica J. IFAC* **28** (1992), *no.* 4, 815–818. 93D09

— (*with* Robledo, C.; Cendra, H.) On the distance to the instability border of Hurwitz polynomials with coefficients that depend affinely on m parameters and a particular convexity property of H^n. *Multidimens. Systems Signal Process.* **3** (1992), *no.* 1, 45–61. (Long Wang) **93b:93090** 93D09 (93C41, 93C73, 93D22)

Desai, Premal (*with* Mahalanabis, A. K.) A state space self-tuning controller with integral action. (English summary) *Optimal Control Appl. Methods* **13** (1992), *no.* 4, 301–319.

93E24 (93B52)

Desai, Trupti D. (*with* Kalthia, N. L.; Timol, M. G.) A note on some matrix aspects of generalized dimensional analysis. (English summary) *Math. Today* **10** (1992), 37–46. 76A05 (00A73)

De Santis, Alberto (*with* Gandolfi, Alberto; Germani, Alfredo; Tardelli, Paola) A representation theorem for Radon-Nikodým derivatives in the white-noise theory. (English summary) *Mathematical theory of control* (*Bombay*, 1990), 109–123, *Lecture Notes in Pure and Appl. Math.*, 142, *Dekker, New York*, 1993. (Summary) **93h:60006** 60B11 (60G20, 60H99, 93E11)

— (*with* Germani, Alfredo; Scoglio, Caterina) Kalman filter approach to solution of rational expectations models. (English summary) *Comput. Math. Appl.* **25** (1993), *no.* 12, 39–47. 90A16 (93E11)

De Santis, Alfredo (*with* Blum, Manuel; Micali, Silvio; Persiano, Giuseppe) Noninteractive zero-knowledge. *SIAM J. Comput.* **20** (1991), *no.* 6, 1084–1118. (M. V. D. Burmester) **93c:68028** 68Q15 (68T15, 94A60)

— (*with* Capocelli, Renato M.; Gargano, Luisa; Vaccaro, Ugo) On the construction of statistically synchronizable codes. *IEEE Trans. Inform. Theory* **38** (1992), *no.* 2, *part* 1, 407–414. (Summary) **93a:94037** 94B35 (94A45)

— (*with* De Prisco, Roberto) On binary search trees. (English summary) *Inform. Process. Lett.* **45** (1993), *no.* 5, 249–253. (Summary) **93k:68023** 68P10 (68R10)

DeSanto, J. A. *k*-space properties of classical single- and double-layer potentials and their derivatives. (English summary) *Wave Motion* **17** (1993), *no.* 2, 143–159. (Summary) **93k:35059** 35C99 (65P05)

De Sarkar, S. C. (*with* Sarkar, U. K.; Chakrabarti, P. P.; Ghose, S.) A simple 0.5-bounded greedy algorithm for the 0/1 knapsack problem. *Inform. Process. Lett.* **42** (1992), *no.* 3, 173–177. 90C10 (68Q25)

Désarménien, Jacques Conséquences énumératives de la symétrie des fonctions de Schur. (English and French summaries) [Enumerative consequences of the symmetry of Schur functions] *Séminaire Lotharingien de Combinatoire* (*Salzburg*, 1990), 67–70, *Publ. Inst. Rech. Math. Av.*, 462, *Univ. Louis Pasteur, Strasbourg*, 1991. (*see* **93f:00018**) 05E05

— (*with* Foata, Dominique) The signed Eulerian numbers. *Discrete Math.* **99** (1992), *no.* 1-3, 49–58. (David M. Bressoud) **93e:11030a** 11B68 (05A15, 05A30, 05E05)

De Sarrazin, G. (*with* Lozada, Abraham; Torres, P. L.) Complete sets of commuting observables and irreducible sets of observables. (English summary) *Helv. Phys. Acta* **65** (1992), *no.* 7, 887–897. (Carol Sisson Regehr) **93k:81008** 81P05

Desbat, L. Efficient sampling on coarse grids in tomography. (English summary) *Inverse Problems* **9** (1993), *no.* 2, 251–269. (Summary) **93m:65178** 65R10 (44A12, 92C55)

Desbois, J. (*with* Comtet, Alain) Algebraic areas enclosed by Brownian curves on bounded domains. *J. Phys. A* **25** (1992), *no.* 11, 3097–3102. (Summary) **93b:82029** 82B41 (82D30)

— Algebraic areas distributions for two-dimensional Lévy flights. *J. Phys. A* **25** (1992), *no.* 13, L755–L762. (Summary) **93f:60121** 60J65

Descalzi, O. (*with* Graham, Robert) Gradient expansion of the nonequilibrium potential for the supercritical Ginzburg-Landau equation. (English summary) *Phys. Lett. A* **170** (1992), *no.* 2, 84–90. (Summary) **93h:82040** 82C31 (35Q55)

xambó-Descamps, S. *see* **Xambó-Descamps, S.**

Descartes, René *see* **Crombie, A. C., 93g:01020**

martin-Deschamps, Mireille *see* **Martin-Deschamps, Mireille**

Deschauer, Stefan ★ Das zweite Rechenbuch von Adam Ries. (German) [The second book of arithmetic by Adam Ries] Eine moderne Textfassung mit Kommentar und metrologischem Anhang und einer Einführung in Leben und Werk des Rechenmeisters. [A modern edition with commentary and metrological appendix including an introduction to the life and work of the arithmetician] *Friedr. Vieweg & Sohn, Braunschweig*, 1992. xiv+237 *pp. ISBN* 3-528-06412-9 (D. J. Struik) **93b:01015** 01A40 (01A75)

De Schepper, A. (*with* De Vylder, F.; Goovaerts, M. J.; Kaas, R.) Interest randomness in annuities certain. (English summary) *Insurance Math. Econom.* **11** (1992), *no.* 4, 271–281. (Summary) **93k:62208** 62P05

— (*with* Goovaerts, M. J.) Some further results on annuities certain with random interest. (English summary) *Insurance Math. Econom.* **11** (1992), *no.* 4, 283–290. (Summary) **93k:62209** 62P05

— (*with* Goovaerts, M. J.; Delbaen, F.) The Laplace transform of annuities certain with exponential time distribution. (English summary) *Insurance Math. Econom.* **11** (1992), *no.* 4, 291–294. 62P05

De Schreye, Danny (*with* Bruynooghe, Maurice; Martens, Bern) A general criterion for avoiding infinite unfolding during partial deduction of logic programs. (English summary) *Logic programming* (*San Diego, CA*, 1991), 117–131, *MIT Press Ser. Logic Program., MIT Press, Cambridge, MA*, 1991. (*see* **93i:68009**) 68Q60

— (*with* Martens, Bern; Bruynooghe, Maurice) Sound and complete partial deduction with unfolding based on well-founded measures. (English summary) *Fifth generation computer systems, Vol.* 1, 2 (*Tokyo*, 1992), 473–480, *Ohm, Tokyo*, 1992. (*see* **93i:68007**) 68Q60

— (*with* Denecker, Marc) On the duality of abduction and model generation. (English summary) *Fifth generation computer systems, Vol.* 1, 2 (*Tokyo*, 1992), 650–657, *Ohm, Tokyo*, 1992. (Summary) **93j:68028** 68N17 (68Q55)

Descloux, J. Stability of the solutions of the bidimensional magnetic shaping problem in absence of surface tension. *European J. Mech. B Fluids* **10** (1991), *no.* 5, 513–526. (From the introduction) **93g:76111** 76W05 (76E25, 76M30, 78A25)

Desel, Jörg (*with* Best, Eike; Esparza, Javier) Traps characterize home states in free choice systems. (English summary) Selected papers of the International BCS-FACS Workshop on Semantics for Concurrency (Leicester, 1990). *Theoret. Comput. Sci.* **101** (1992), *no.* 2, 161–176. (Summary) **93e:68085** 68Q90

Deser, S. Three topics in three dimensions. *Supermembranes and physics in* 2+1 *dimensions* (*Trieste*, 1989), 239–260, *World Sci. Publishing, River Edge, NJ*, 1990. (*see* **93g:81003**) 81T13

— Gravity and gauge theories in three dimensions. *Particles, strings and cosmology* (*Boston, MA*, 1990), 560–572, *World Sci. Publishing, River Edge, NJ*, 1991. (Introduction) **93c:81121** 81T13 (81–02, 81V17, 83C99)

— (*with* Steif, Alan R.) Gravity theories with lightlike sources in $D = 3$. (English summary) *Classical Quantum Gravity* **9** (1992), *no.* 11, L153–L160. (Summary) **93g:83080** 83C99

— (*with* Damour, Thibault; McCarthy, James G.) Theoretical problems in nonsymmetric gravitational theory. *Phys. Rev. D* (3) **45** (1992), *no.* 10, R3289–R3291. (Summary) **93b:83051** 83D05

— (*with* Jackiw, R.; 't Hooft, Gerard) Physical cosmic strings do not generate closed timelike curves. *Phys. Rev. Lett.* **68** (1992), *no.* 3, 267–269. (Laszlo B. Szabados) **93a:83026** 83C75

Deshmukh, Shailaja R. Bernoulli sampling. *Austral. J. Statist.* **33** (1991), *no.* 2, 167–176. (Jan Grandell) **93d:60085** 60G55

— (*with* Kale, Mohan M.) Estimation of probability of extinction of a multitype branching process. *Comm. Statist. Theory Methods* **20** (1991), *no.* 10, 3405–3419. (B. L. S. Prakasa Rao) **93c:62139** 62M05

— (*with* Kale, Mohan M.) Estimation in a continuous state space branching process. (English summary) *Biometrical J.* **34** (1992), *no.* 8, 1001–1006. (Summary) **93m:62189** 62M05 (60J80)

— (*with* Kale, Mohan M.) Estimation of extinction probability in Markov branching process. (English summary) *Statist. Probab. Lett.* **15** (1992), *no.* 3, 173–175. (Summary) **93j:62211** 62M05

Deshmukh, Sharief Mixed foliate CR-submanifolds of a Kaehler manifold. *Math. Chronicle* **19** (1990), 23–25. (Bang-yen Chen) **93c:53041** 53C40 (53C55)

— Geometry of compact 3-manifolds. *Tensor* (*N.S.*) **50** (1991), *no.* 1, 47–50. (David Blair) **93d:53035** 53C15 (57R15, 57R42)

— A note concerning submanifolds with parallel second fundamental form. *Tensor* (*N.S.*) **50** (1991), *no.* 3, 186–188. (Xue Shan Zhang) **93f:53019** 53B25 (53C40)

— Isometric immersion of a compact Riemannian manifold into a Euclidean space. (English summary) *Bull. Austral. Math. Soc.* **46** (1992), *no.* 2, 177–178. (Takehiro Itoh) **93k:53060** 53C42 (53C40)

— An integral formula for compact hypersurfaces in a Euclidean space and its applications. *Glasgow Math. J.* **34** (1992), *no.* 3, 309–311. (Leslie Coghlan) **93m:53055** 53C40 (53C42, 53C65)

— (*with* Al-Gwaiz, M. A.) Totally real surfaces in $\mathbf{CP}^2$ with parallel mean curvature vector. *Internat. J. Math. Math. Sci.* **15** (1992), *no.* 3, 589–592. (Maria Luiza Leite) **93e:53021** 53B25

— Hypersurfaces of nonnegative Ricci curvature in a Euclidean space. (English summary) *J. Geom.* **45** (1992), *no.* 1-2, 48–50. (C.-C. Hsiung) **93m:53056** 53C40 (53C21)

— (*with* Al-Gwaiz, M. A.) Hypersurfaces of the two-dimensional complex projective space. *Nihonkai Math. J.* **3** (1992), *no.* 1, 1–7. (M. Okumura) **93i:53052** 53C40

— (*with* El Hadi, Kamal) A Sasakian structure on a 3-dimensional totally real submanifold of the nearly Kaehler 6-sphere. *Panamer. Math. J.* **2** (1992), *no.* 3, 43–52. (Kouei Sekigawa) **93f:53023** 53C15 (53C25, 53C40)

— (*with* Ghazal, Tahsin) 3-dimensional minimal submanifolds of a sphere. *Soochow J. Math.* **18** (1992), *no.* 2, 159–162. (Irl Bivens) **93g:53086** 53C42 (53C40)

— Totally real surfaces in S^6. *Tamkang J. Math.* **23** (1992), *no.* 1, 11–14. (Bang-yen Chen) **93b:53045** 53C40

— (*with* Ghazal, Tahsin; Hashem, Huda) Submersions of CR-submanifolds on an almost Hermitian manifold. (English summary) *Yokohama Math. J.* **40** (1992), *no.* 1, 45–57. (Bang-yen Chen) **93h:53058** 53C40 (53C55)

Deshpande, Y. L. Towards reducing computational demands in calculating lower bounds in permutation flow shop scheduling. (English summary) *Optimization, Vol.* 1, 2 (*Singapore*, 1992), 527–537, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93d:90005**) 90B35

Désidéri, J.-A. (*with* Guillard, H.) Iterative methods with spectral preconditioning for elliptic equations. (English summary) *Spectral and high order methods for partial differential equations* (*Como*, 1989), 305–312, *North-Holland, Amsterdam*, 1990. (*see* **93d:65005**) 65N35 (65F10)

— The computation over unstructured grids of inviscid hypersonic reactive flow by upwind finite-volume schemes. (English summary) *Computational methods in hypersonic aerodynamics*, 387–446, *Fluid Mech. Appl.*, 9, *Kluwer Acad. Publ., Dordrecht*, 1991. (Dietmar Kröner) **93k:76072** 76K05 (76M20)

— (*with* Ciccoli, M. C.; Fezoui, L.) Efficient methods for inviscid nonequilibrium hypersonic flow fields. *Rech. Aérospat.* (*English Edition*) **1992**, *no.* 1, 37–52; *translated from Rech. Aérospat.* **1992**, *no.* 1, 37–52 (*French. English and French summaries*). (Summary) **93f:76066** 76M10 (76K05, 80–08, 80A32)

— (*with* Hemker, P. W.) Convergence behaviour of defect correction for hyperbolic equations. (English summary) *J. Comput. Appl. Math.* **45** (1993), *no.* 3, 357–365. 65M12

De Silva, Clarence W. *see* **de Silva, Clarence W.**

De Simone, Caterina (*with* Sassano, Antonio) Stability number of bull- and chair-free graphs. (English summary) *Discrete Appl. Math.* **41** (1993), *no.* 2, 121–129. (W. G. Brown) **93j:05144** 05C85 (68R10)

Deskov, V. P. (*with* Gough, N. E.; Dimirovski, G. M.; Ting, I. H.) Minimal realization of a class of discrete multivariable systems based on dyadic characteristic weighting patterns. (English summary) *Mutual impact of computing power and control theory* (*Prague*, 1992), 127–132, *Czech. Acad. Sci., Prague*, 1992. (*see* **93f:93005**) 93B15 (93B40)

— (*with* Dimirovski, G. M.; Gough, N. E.) On the ordering of characteristic input-output modes in MIMO discrete-time systems. (English summary) *Mutual impact of computing power and control theory* (*Prague*, 1992), 137–142, *Czech. Acad. Sci., Prague*, 1992. (*see* **93f:93005**) 93C55 (93B51)

Deslauriers, Gilles (*with* Dubuc, Serge) Continuous iterative interpolation processes. (English summary) *European Conference on Iteration Theory* (*Batschuns*, 1989), 71–78, *World Sci. Publishing, River Edge, NJ*, 1991. (Mao Dong Ye) **93i:65017** 65D05 (41A05)

— (*with* Montpetit, Marie-José; Haccoun, David) A branching process analysis of the stack algorithm for variable channel conditions. (English summary) *IEEE Trans. Inform. Theory* **38** (1992), *no.* 6, 1845–1848. 94A40

De Smit, Bart *see* **de Smit, Bart**

De Snoo, Henk *see* **de Snoo, Henk**

De Socio, L. M. (*with* Savateev, E. G.) An inverse problem for the hyperbolic heat equation. *Math. Models Methods Appl. Sci.* **2** (1992), *no.* 1, 113–120. (Gustavo Perla Menzala) **93g:35143** 35R30 (35B25, 35K05, 35Q99)

Desoer, Charles A. (*with* Sheikholeslam, Shahab) Control of a string of nonlinear systems. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, II* (*Kobe*, 1991), 333–338, *Mita, Tokyo*, 1992. (*see* **93g:93006**) 93C10 (93D05)

— (*with* Sheikholeslam, Shahab) Indirect adaptive control of a class of interconnected nonlinear dynamical systems. (English summary) *Internat. J. Control* **57** (1993), *no.* 3, 743–765. (Henk Nijmeijer) **93m:93056** 93C40 (93A14, 93B50, 93C10)

De Soete, M. Characterizations of the generalized quadrangle $P(T_2(O), L)$: an overview. *Combinatorics (Eger, 1987)*, 205–211, *Colloq. Math. Soc. János Bolyai*, 52, *North-Holland, Amsterdam*, 1988. (*see* **93m:05002**) 51E12 (05B25)

De Souza, Carlos E. *see* **de Souza, Carlos E.**

De Souza, Geraldo Soares (*with* Gallant, A. Ronald) On the asymptotic normality of Fourier flexible form estimates. *J. Econometrics* **50** (1991), *no.* 3, 329–353. (Summary) **93d:62174** 62P20 (62E20, 62F12)

De Souza, S. M. *see* **de Souza, S. M.**

De Souza Dutra, Álvaro *see* **de Souza Dutra, Álvaro**

D'Espagnat, B. *see* **d'Espagnat, B.**

Despeyroux, Joëlle Theo: an interactive proof development system. (English summary) *BIT* **32** (1992), *no.* 1, 15–29. (Summary) **93j:68173** 68T15 (03B35)

De-Spiller, D. A. Combinatorial interpretation of homogeneous Diophantine equations. (Russian) *Problems in group theory and homological algebra (Russian)*, 117–121, *Matematika, Yaroslav. Gos. Univ., Yaroslavl'*, 1987. (*see* **93d:20002**) 11D72

Desplas, M. Matrice pseudo-inverse de Moore-Penrose et variables duales généralisées en programmation mathématique. (English and French summaries) [The Moore-Penrose pseudo-inverse matrix and generalized dual variables in mathematical programming] *RAIRO Rech. Opér.* **26** (1992), *no.* 4, 313–360. (Juan-Enrique Martínez-Legaz) **93j:90096** 90C30 (49N15, 90A40, 90C31)

Desprez, F. (*with* Tourancheau, B.) Parallel BLAS and BLACS for numerical algorithms on a reconfigurable network. (English summary) *Asymptotic and numerical methods for partial differential equations with critical parameters (Beaune, 1992)*, 349–366, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 384, *Kluwer Acad. Publ., Dordrecht*, 1993. (*see* **93m:65006**) 65Y10 (65–04, 65F99)

lucquin-Desreux, B. *see* **Lucquin-Desreux, B.**

Desrochers, Alan A. (*with* Chen, Yaobin; Chien, Stanley Y.-P.) General structure of time-optimal control of robotic manipulators moving along prescribed paths. (English summary) *Internat. J. Control* **56** (1992), *no.* 4, 767–782. (Clementina D. Mladenova) **93f:93089** 93C85 (49N55, 70B15, 70Q05)

— (*with* Chen, Yaobin) Minimum-time control laws for robotic manipulators. (English summary) *Internat. J. Control* **57** (1993), *no.* 1, 1–27. (Clementina D. Mladenova) **93k:93070** 93C85 (70B15, 70Q05)

Desrochers, Martin (*with* Li, Chung-Lun; Simchi-Levi, David) On the distance constrained vehicle routing problem. (English summary) *Oper. Res.* **40** (1992), *no.* 4, 790–799. 90B06

D'Este, Gabriella Some remarks on representable equivalences. *Topics in algebra, Part 1 (Warsaw, 1988)*, 223–232, *Banach Center Publ.*, 26, *Part* 1, *PWN, Warsaw*, 1990. (Abram I. Saksonov) **93e:16016** 16D90 (16G10)

— Standard duals of algebras. *Comm. Algebra* **20** (1992), *no.* 12, 3503–3513. (T. Albu) **93k:16007** 16D70

— Simple submodules and multiplicities. *Forum Math.* **4** (1992), *no.* 1, 1–11. (Lawrence S. Levy) **93a:16004** 16D60 (16G30)

Destri, C. (*with* de Vega, H. J.) Bethe ansatz and quantum groups: the light-cone lattice approach. I. Six vertex and SOS models. *Nuclear Phys. B* **374** (1992), *no.* 3, 692–719. (Peter J. Forrester) **93h:82016** 82B23 (81R50, 81T40)

— (*with* de Vega, H. J.) New thermodynamic Bethe ansatz equations without strings. (English summary) *Phys. Rev. Lett.* **69** (1992), *no.* 16, 2313–2317. (Summary) **93h:82017** 82B23 (81T10)

Destuynder, Philippe (*with* Salaun, Michel) A mixed formulation for a general shell model. (Portuguese summary) *Mat. Apl. Comput.* **10** (1991), *no.* 2, 161–190. (L. P. Lebedev) **93g:73087** 73K15 (73V25)

— (*with* Legrain, I.; Castel, L.; Richard, N.) Piezoelectric wafers for reducing the structure vibrations. *Intelligent structural systems*, 243–284, *Solid Mech. Appl.*, 13, *Kluwer Acad. Publ., Dordrecht*, 1992. (*see* **93e:73030**) 73K50 (73K12)

Desu, M. M. (*with* Raghavarao, Damaraju) ★ Sample size methodology. Statistical Modeling and Decision Science. *Academic Press, Inc., Boston, MA*, 1990. xii+135 *pp. ISBN* 0-12-212165-1 (H. L. Harter) **93f:62010** 62D05 (62F03, 62F07, 62F10)

Desvillettes, L. On asymptotics of the Boltzmann equation when the collisions become grazing. *Transport Theory Statist. Phys.* **21** (1992), *no.* 3, 259–276. (Reinhard Illner) **93h:82051** 82C40 (76P05)

De Swart, H. C. M. *see* **de Swart, H. C. M.**

Deszcz, Ryszard Pseudosymmetry curvature conditions imposed on the shape operators of hypersurfaces in the affine space. *Affine differential geometry (Oberwolfach, 1991)*, 600–621, *Tech. Univ. Berlin, Berlin*, 1991. (*see* **93g:53001**) 53A15 (53C40)

— (*with* Defever, Filip) A note on geodesic mappings of pseudosymmetric Riemannian manifolds. *Colloq. Math.* **62** (1991), *no.* 2, 313–319. (V. N. Berestovskii) **93c:53036** 53C35 (53C22)

— Certain curvature characterizations of affine hypersurfaces. *Colloq. Math.* **63** (1992), *no.* 1, 21–39. (Hans Sachs) **93d:53018** 53A15 (53B21, 53B30)

— (*with* Defever, Filip; Verstraelen, Leopold) The compact cyclides of Dupin and a conjecture of B.-Y. Chen. (English summary) *J. Geom.* **46** (1993), *no.* 1-2, 33–38. (Steven G. Buyske) **93m:53064** 53C42 (53A05)

DeTemple, Duane W. The triangle of smallest perimeter which circumscribes a semicircle. *Fibonacci Quart.* **30** (1992), *no.* 3, 274. (H. W. Guggenheimer) **93f:51023** 51M16 (51M04)

— (*with* Dineen, M. J.; Robertson, J. M.; McAvaney, K. L.) Recent examples in the theory of partition graphs. (English summary) *Discrete Math.* **113** (1993), *no.* 1-3, 255–258. (Summary) **93k:05145** 05C75 (05C30)

De Thélin, François *see* **de Thélin, François**

Dethloff, Gerd (*with* Grauert, Hans) On the infinitesimal deformation of simply connected domains in one complex variable. *International Symposium in Memory of Hua Loo Keng, Vol. II (Beijing, 1988)*, 57–88, *Springer, Berlin*, 1991. (S. Dimiev) **93e:32022** 32G10 (30C35, 30F45)

De Tisi, Flavia (*with* Rossini, Milvia) Behavior of the beta-splines with values of the parameters beta2 negative. (English summary) *Comput. Aided Geom. Design* **9** (1992), *no.* 6, 419–423. (Summary) **93i:65022** 65D07

Detki, J. On the monotone solutions of second-order nonlinear differential equations with deviating arguments. Proceedings of the Second International Mathematical Miniconference, Part I (Budapest, 1988). *Period. Polytech. Transportation Engrg.* **18** (1990), *no.* 1-2, 111–117. (Hiroshi Onose) **93g:34107** 34K15 (34C10)

— Criteria for monotone solutions of some second-order differential equations with deviating arguments. Proceedings of the Second International Mathematical Miniconference, Part I (Budapest, 1988). *Period. Polytech. Transportation Engrg.* **18** (1990), *no.* 1-2, 119–126. (Hiroshi Onose) **93g:34108** 34K15 (34C10)

Detlefsen, Michael Brouwerian intuitionism. *Mind* **99** (1990), *no.* 396, 501–534. (Charles F. Kielkopf) **93a:03007** 03A05 (00A30, 03F55)

— Poincaré against the logicians. *Synthese* **90** (1992), *no.* 3, 349–378. (Hourya Sinaceur) **93c:03005** 03A05 (01A60, 03–03)

De Toledo Piza, A. F. R. *see* **de Toledo Piza, A. F. R.**

De Tommasi, Domenico One-parameter families of isochoric deformations. *J. Elasticity* **28** (1992), *no.* 1, 91–95. (Introduction) **93f:73028** 73C50 (73G05, 73V25)

Detournay, Christine A Cauchy integral element method for boundary singularities. (English summary) *Boundary element technology, VII (Albuquerque, NM, 1992)*, 801–813, *Comput. Mech., Southampton*, 1992. (*see* **93b:65002**) 65N38 (65F05)

— A Cauchy integral element for power-type singularities. (English summary) *Appl. Math. Modelling* **16** (1992), *no.* 9, 450–463. (G. T. Symm) **93g:65151** 65N38

Dette, Holger Optimal designs for a class of polynomials of odd or even degree. *Ann. Statist.* **20** (1992), *no.* 1, 238–259. (William I. Notz) **93b:62101** 62K05 (62J05)

— On the boundary behaviour of nonparametric regression estimators. (German summary) *Biometrical J.* **34** (1992), *no.* 2, 153–164. (Summary) **93c:62065** 62G05

— Experimental designs for a class of weighted polynomial regression models. (English summary) *Comput. Statist. Data Anal.* **14** (1992), *no.* 3, 359–373. (William I. Notz) **93k:62147** 62K05

— (*with* Brunner, Edgar) Rank procedures for the two-factor mixed model. (English summary) *J. Amer. Statist. Assoc.* **87** (1992), *no.* 419, 884–888. (Joachim Krauth) **93j:62126** 62G10 (62J10)

— (*with* Studden, W. J.) On a new characterization of the classical orthogonal polynomials. (English summary) *J. Approx. Theory* **71** (1992), *no.* 1, 3–17. (J. Prasad) **93k:33005** 33C45 (42C05)

Dettki, Arne (*with* Wipf, Andreas) Finite-size effects from general covariance and Weyl anomaly. *Nuclear Phys. B* **377** (1992), *no.* 1-2, 252–280. (Summary) **93a:81187** 81T50 (58Z05, 81T20)

Dettmann, C. P. (*with* Frankel, Norman E.) Potential theory and analytic properties of a Cantor set. (English summary) *J. Phys. A* **26** (1993), *no.* 5, 1009–1022. (Summary) **93k:78007** 78A30 (28A75, 31A15)

Dettweiler, Egbert Stochastic integration relative to Brownian motion on a general Banach space. (Turkish summary) *Doğa Mat.* **15** (1991), *no.* 2, 58–97. (Jerzy Szulga) **93b:60112** 60H05 (46N30, 47N30, 60B99)

— The martingale problem on Banach spaces. *Exposition. Math.* **10** (1992), *no.* 1, 3–59. (Jia Gang Wang) **93e:60088** 60G44 (60H10)

DeTurck, Dennis (*with* Gluck, Herman; Gordon, Carolyn S.; Webb, David L.) How can a drum change shape, while sounding the same? *Differential geometry*, 111–122, *Pitman Monographs Surveys Pure Appl. Math.*, 52, *Longman Sci. Tech., Harlow*, 1991. (Robert Brooks) **93f:58236** 58G25 (53C20)

— (*with* Gluck, Herman; Gordon, Carolyn S.; Webb, David L.) How can a drum change shape, while sounding the same? II. *Mechanics, analysis and geometry: 200 years after Lagrange*, 335–358, *North-Holland Delta Ser., North-Holland, Amsterdam*, 1991. (Robert Brooks) **93f:58237** 58G25 (53C20)

— (*with* Ziller, Wolfgang) Minimal isometric immersions of spherical space forms in spheres. *Comment. Math. Helv.* **67** (1992), *no.* 3, 428–458. (Franki Dillen) **93f:53050** 53C42 (53C30)

— (*with* Gluck, Herman; Gordon, Carolyn S.; Webb, David L.) Conformal isospectral deformations. *Indiana Univ. Math. J.* **41** (1992), *no.* 1, 99–107. (Robert Brooks) **93c:58218** 58G25 (58G30)

— (*with* Gluck, Herman; Gordon, Carolyn S.; Webb, David L.) The inaudible geometry of nilmanifolds. (English summary) *Invent. Math.* **111** (1993), *no.* 2, 271–284. (Robert Brooks) **93k:58222** 58G25

De Turckheim, Élisabeth *see* **de Turckheim, Élisabeth**

Detweiler, Steven (*with* Blackburn, James Kent) Close black-hole binary systems. (English summary) *Phys. Rev. D* (3) **46** (1992), *no.* 6, 2318–2333. (Summary) **93e:83043** 83C57 (83C30)

Deumlich, H. Interval enclosure of the solution set in vector optimization. (English summary) *Computer arithmetic and enclosure methods (Oldenburg, 1991)*, 205–214, *North-Holland, Amsterdam*, 1992. (Summary) **93k:65058** 65K10 (65G10, 90C29)

Deuschel, Jean-Dominique (*with* Ben Arous, Gérard; Stroock, Daniel W.) Precise asymptotics in large deviations. *Bull. Sci. Math.* (2) **117** (1993), *no.* 1, 107–124. (Ofer Zeitouni) **93m:60052** 60F10 (60K35)

Deutsch, Frank Constrained N-convex approximation. *Approximation theory (Memphis, TN, 1991)*, 275–284, *Lecture Notes in Pure and Appl. Math.*, 138, *Dekker, New York*, 1992. (Adrian S. Lewis) **93m:41003** 41A05

— The method of alternating orthogonal projections. *Approximation theory, spline functions and applications (Maratea, 1991)*, 105–121, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 356, *Kluwer Acad. Publ., Dordrecht*, 1992. (From the text) **93a:41047** 41A50 (41A65, 46C99, 47B99, 65J05)

— Selections for metric projections. *Approximation theory, spline functions and applications (Maratea, 1991)*, 123–137, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 356, *Kluwer Acad. Publ., Dordrecht*, 1992. (Summary) **93a:41062** 41A65 (46B20, 46E99)

— (*with* Chui, Charles K.; Ward, Joseph D.) Constrained best approximation in Hilbert space. II. (English summary) *J. Approx. Theory* **71** (1992), *no.* 2, 213–238. (C. Dierieck) **93k:41019** 41A29 (41A50, 41A65)

Deutsch, Harry Zalta on sense and substitutivity. *Philos. Stud.* **69** (1993), *no.* 2-3, 209–219. 03B45 (03B65)

Deutsch, Michael Reduktionstyp und spektrale Darstellung mit dem Präfix $\exists\forall\exists\forall$. [Reduction type and spectral representation with the prefix $\exists\forall\exists\forall$] *Z. Math. Logik Grundlag. Math.* **37** (1991), *no.* 3, 273–288. (G. Asser) **93g:03007** 03B10

Deutsch, Stuart J. (*with* Patel, Minnie H.; Nettles, Deborah L.) A linear-programming-based method for determining whether or not n demand points are on a hemisphere. (English summary) *Naval Res. Logist.* **40** (1993), *no.* 4, 543–552. (Summary) **93k:90053** 90C08

Deutz, A. (*with* Cahlon, Baruch) On the numerical stability of Volterra integro-differential and integral equations. (English summary) *Computational and applied mathematics, II (Dublin, 1991)*, 277–286, *North-Holland, Amsterdam*, 1992. (Summary) **93m:65182** 65R20 (45L05)

joag-Dev, Kumar *see* **Joag-Dev, Kumar**

De Valerio, M. (*with* Schäfer, Michael) Domain decomposition methods for the numerical solution of elliptic partial differential equations on array processors. (English summary) *Parallel computing '91 (London, 1991)*, 167–173, *Adv. Parallel Comput.*, **4**, *North-Holland, Amsterdam*, 1992. (*see* **93f:00016**) 65N55 (65Y05)

Devanathan, Rajagopalan *see* **Intelligent tuning and adaptive control, 93i:93007**

Devasahayam, M. Paul (*with* Samy, A. Antony; Arumugam, G.; Xavier, C.) A recognition algorithm for the intersection graphs of internally disjoint paths in trees. *National Seminar on Theoretical Computer Science (Madras, 1991)*, 169–178, *IMS Rep.*, 115, *Inst. Math. Sci., Madras*, 199?. (*see* **93b:68006**) 05C85 (68Q22, 68R10)

DeVault, R. (*with* Kocić, V. Lj.; Ladas, G.) Global stability of a recursive sequence. *Dynamic Systems Appl.* **1** (1992), *no.* 1, 13–21. (Sui Sun Cheng) **93b:39002** 39A11 (39A10)

Devchand, Ch. A q-analogue of the Lie superalgebra osp(2, 1) and its metaplectic representation. *Differential geometric methods in theoretical physics (Davis, CA, 1988)*, 345–351, *NATO Adv. Sci. Inst. Ser. B Phys.*, 245, *Plenum, New York*, 1990. (Hartmut Schlosser) **93d:17019** 17B37 (17A70)

— (*with* Ogievetskiĭ, V. I.) Super-self-duality as analyticity in harmonic superspace. (English summary) *Phys. Lett. B* **297** (1992), *no.* 1-2, 93–98. (Sergey Merkulov) **93m:81051** 81R25 (32L25, 81T13, 81T60)

Devdariani, M. T. (*with* Goncharov, A. L.; Prostomolotov, A. I.; Fryazinov, I. V.) Approximation and a numerical method for the solution of three-dimensional Navier-Stokes equations on orthogonal grids. (Russian. English summary) *Mat. Model.* **3** (1991), *no.* 5, 89–109. (Summary) **93b:76024** 76D05 (65M06, 76M20, 76R05, 76W05)

Devdariani, S. Yu. On the problem of identifying the prehistory structure for linear systems. (Russian. English and Georgian summaries) *Soobshch. Akad. Nauk Gruzii* **144** (1991), *no.* 1, 9–11 (1992). 93B30

De Vega, H. J. *see* **de Vega, H. J.**

van Deventer, D. (*with* de la Rosa, B.; Mouton, T.; van der Westhuizen, A.; Wessels, J. P. H.) A factorisation method based on an additive property. (Afrikaans. English and Afrikaans summaries) *Suid-Afrikaanse Tydskr. Natuurwetenskap Tegnol.* **11** (1992), *no.* 2, 52–54. (Summary) **93h:11009** 11A51 (11P99)

indira Devi, A. *see* **Indira Devi, A.**

vasundhara Devi, J. *see* **Vasundhara Devi, J.**

Deville, Jean-Claude (*with* Särndal, Carl-Erik) Calibration estimators in survey sampling. *J. Amer. Statist. Assoc.* **87** (1992), *no.* 418, 376–382. (Gad Nathan) **93h:62014** 62D05

Deville, M. O. Chebyshev collocation solutions of flow problems. (English summary) *Spectral and high order methods for partial differential equations (Como, 1989)*, 27–37, *North-Holland, Amsterdam*, 1990. (*see* **93d:65005**) 65N35 (65N55, 76A05, 76D07, 76M25)

— (*with* Francken, P.; Mund, E. H.) On the spectrum of the iteration operator associated to the finite element preconditioning of Chebyshev collocation calculations. (English summary) *Spectral and high order methods for partial differential equations (Como, 1989)*, 295–304, *North-Holland, Amsterdam*, 1990. (*see* **93d:65005**) 65L60

— (*with* Schneidesch, C. R.) Chebyshev collocation method and multi-domain decomposition for Navier-Stokes equations in complex curved geometries. (English summary) *J. Comput. Phys.* **106** (1993), *no.* 2, 234–257. 76M25 (65M70)

Deville, Robert Nouveaux principes variationnels. [New variational principles] *Séminaire d'Initiation à l'Analyse, Exp. No.* 21, 6 *pp., Publ. Math. Univ. Pierre et Marie Curie*, 104, *Univ. Paris VI, Paris*, 199?. (*see* **93k:00039**) 49J45 (47H99, 47N10)

— Autour du théorème de Borwein et Preiss. [Concerning the Borwein-Preiss theorem] *Séminaire d'Initiation à l'Analyse, Exp. No.* 25, 7 *pp., Publ. Math. Univ. Pierre et Marie Curie*, 95, *Univ. Paris VI, Paris*, 199?. (Dominikus Noll) **93i:49035** 49L25 (47H99, 47N10, 49J52)

Deville, Yves (*with* Van Hentenryck, Pascal; Teng, Choh-Man) A generic arc-consistency algorithm and its specializations. (English summary) *Artificial Intelligence* **57** (1992), *no.* 2-3, 291–321. (Summary) **93b:68126** 68T20 (68Q25)

Devillers, Olivier (*with* Boissonnat, Jean-Daniel; Preparata, Franco P.) Computing the union of 3-colored triangles. (English summary) *System modelling and optimization (Zurich, 1991)*, 85–93, *Lecture Notes in Control and Inform. Sci.*, 180, *Springer, Berlin*, 1992. (*see* **93e:90003**) 65Y25

— (*with* Boissonnat, Jean-Daniel; Schott, René; Teillaud, Monique; Yvinec, Mariette) Applications of random sampling to on-line algorithms in computational geometry. *Discrete Comput. Geom.* **8** (1992), *no.* 1, 51–71. (Evangelos Kranakis) **93a:68148** 68U05 (52B55)

— Randomization yields simple $O(n \log^* n)$ algorithms for difficult $\Omega(n)$ problems. *Internat. J. Comput. Geom. Appl.* **2** (1992), *no.* 1, 97–111. (Helmut Alt) **93d:68067** 68U05 (68Q10, 68Q25)

Devillers, Raymond Maximality preserving bisimulation. *Theoret. Comput. Sci.* **102** (1992), *no.* 1, 165–183. (Gabriel Ciobanu) **93i:68129** 68Q60 (68Q10, 68Q55)

Devinatz, Ethan S. Small ring spectra. *J. Pure Appl. Algebra* **81** (1992), *no.* 1, 11–16. (Hal Sadofsky) **93g:55012** 55P42

De Vito, Paola On a class of linear spaces with mutually intersecting long lines. (Italian. English summary) *Ricerche Mat.* **40** (1991), *no.* 1, 27–32. (Tamás Szőnyi) **93m:51011** 51E26 (05B25, 51E30)

Devitt, John S. (*with* Carminati, John; Fee, Greg J.) Isogroups of differential equations using algebraic computing. (English summary) *J. Symbolic Comput.* **14** (1992), *no.* 1, 103–120. (Summary) **93f:35004** 35–04 (35A30, 35Q99)

— (*with* Brown, Jason I.; Colbourn, Charles J.) Network transformations and bounding network reliability. (English summary) *Networks* **23** (1993), *no.* 1, 1–17. (Wolfgang Feitscher) **93k:68012** 68M15 (05C05, 90B12)

Devlin, Keith ★ Mathematics: the new Golden Age. *Penguin Books, New York*, 1990. ix+287 *pp. ISBN* 0-14-013551-0 (Editors) **93m:00001a** 00A05

— ★ Logic and information. *Cambridge University Press, Cambridge*, 1991. xii+308 *pp. ISBN* 0-521-41030-4 (Piero d'Altan) **93c:68094** 68T27 (03B65, 03B70, 68S05, 68T30)

— ★ Sternstunden der modernen Mathematik. (German. German summary) [Great moments of modern mathematics] Berühmte Probleme und neue Lösungen. [Famous problems and new solutions] Translated from the 1988 English original by Doris Gerstner. *Deutscher Taschenbuch Verlag, Munich*, 1992. 327 *pp. ISBN* 3-423-04591-4 (Editors) **93m:00001b** 00A05

Devloo, Philippe R. (*with* Faria, Luis) Discretization vs modelling error for a class of beam elements. (English and Portuguese summaries) *Mat. Apl. Comput.* **10** (1991), *no.* 3, 195–205. (Summary) **93c:73059** 73K05 (73V05)

Devolder, J. (*with* Timmerman, E.) Finitary codes for biinfinite words. (French summary) *RAIRO Inform. Théor. Appl.* **26** (1992), *no.* 4, 363–386. (Anton Černý) **93i:68106** 68Q45 (94A45)

DeVore, Ronald A. (*with* Lucier, Bradley J.) Wavelets. *Acta numerica*, 1992, 1–56, *Cambridge Univ. Press, Cambridge*, 1992. (S. D. Riemenschneider) **93g:42022** 42C15 (41A30, 65T99)

— (*with* Jawerth, Björn; Lucier, Bradley J.) Surface compression. (English summary) *Comput. Aided Geom. Design* **9** (1992), *no.* 3, 219–239. (S. Dubuc) **93i:65029** 65D17

— (*with* Leviatan, Dany; Yu, Xiang Ming) Polynomial approximation in L_p $(0 < p < 1)$. *Constr. Approx.* **8** (1992), *no.* 2, 187–201. (J. Szabados) **93f:41011** 41A10

— (*with* Sharpley, Robert C.) Besov spaces on domains in $\mathbf{R}^d$. *Trans. Amer. Math. Soc.* **335** (1993), *no.* 2, 843–864. (Vladimir D. Stepanov) **93d:46051** 46E35

De Vos, Koos *see* **de Vos, Koos**

De Vries, Casper G. *see* **de Vries, Casper G.**

De Vries, Douwe K. *see* **de Vries, Douwe K.**

De Vroedt, Cornelis *see* **de Vroedt, Cornelis**

Devroye, Luc Exponential inequalities in nonparametric estimation. *Nonparametric functional estimation and related topics (Spetses, 1990)*, 31–44, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 335, *Kluwer Acad. Publ., Dordrecht*, 1991. (Margaret P. Gessaman) **93c:62066** 62G05

— (*with* Sbihi, Amine) Inequalities for random walks on trees. *Random graphs, Vol. 2 (Poznań, 1989)*, 35–45, *Wiley-Intersci. Publ., Wiley, New York*, 1992. (David J. Aldous) **93e:60138** 60J15

— A limit theory for random skip lists. (English summary) *Ann. Appl. Probab.* **2** (1992), *no.* 3, 597–609. (Menachem Dishon) **93m:68033** 68P05 (60J85, 68P10)

— A note on the usefulness of superkernels in density estimation. (English summary) *Ann. Statist.* **20** (1992), *no.* 4, 2037–2056. (E. F. Schuster) **93m:62069** 62G05

— A note on the probabilistic analysis of Patricia trees. *Random Structures Algorithms* **3** (1992), *no.* 2, 203–214. (Summary) **93b:68012** 68P05

— (*with* Szpankowski, Wojciech; Rais, Bonita) A note on the height of suffix trees. *SIAM J. Comput.* **21** (1992), *no.* 1, 48–53. (Summary) **93a:68026** 68P05 (68Q25)

Devulder, Christophe (*with* Marion, Martine) A class of numerical algorithms for large time integration: the nonlinear Galerkin methods. *SIAM J. Numer. Anal.* **29** (1992), *no.* 2, 462–483. (Hong Yuan Fu) **93d:65079** 65M12 (58F39, 65P05)

— (*with* Marion, Martine; Titi, Edriss S.) On the rate of convergence of the nonlinear Galerkin methods. *Math. Comp.* **60** (1993), *no.* 202, 495–514. (Howard Swann) **93h:76017** 76D05 (35Q30, 58F39, 65N12, 65N30)

De Vuyst, Florian Un nouveau schéma numérique pour la résolution des équations d'Euler compressibles. (English summary) [A new numerical scheme for solving the compressible Euler equations] *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 7, 577–582. (Corneliu Berbente) **93d:65090** 65M99 (35Q30, 76L05, 76M25, 76N10)

Devyatov, B. N. (*with* Rubtsov, N. A.; Solov'ev, V. P.) A general method for the analytic investigation of nonlinear nonstationary problems of heat exchange and radiation transfer. (Russian) *Dokl. Akad. Nauk SSSR* **321** (1991), *no.* 5, 951–957; *translation in Soviet Phys. Dokl.* **36** (1991), *no.* 12, 846–849 (1992). (From the introduction) **93g:80002** 80–08 (80A20, 85–08, 85A25)

De Vylder, F. (*with* Goovaerts, M. J.) Estimation of the heterogeneity parameter in the Bühlmann-Straub credibility theory model. *Insurance Math. Econom.* **10** (1992), *no.* 4, 233–238. (Summary) **93c:62163** 62P05

— (*with* Goovaerts, M. J.) Optimal parameter estimation under zero-excess assumptions in a classical model. (English summary) *Insurance Math. Econom.* **11** (1992), *no.* 1, 1–6. (Summary) **93h:62186** 62P05

— (*with* Goovaerts, M. J.; Kaas, R.) Stochastic processes defined from a Lagrangian. (English summary) *Insurance Math. Econom.* **11** (1992), *no.* 1, 55–69. (Summary) **93g:60207** 60K99 (62P05)

— (*with* Goovaerts, M. J.) A summary of new results on optimal parameter estimation under zero-excess assumptions. (English summary) *Insurance Math. Econom.* **11** (1992), *no.* 2, 153–161. (Summary) **93g:62129** 62P05

— (*with* Goovaerts, M. J.) Optimal parameter estimation under zero excess assumptions in the Bühlmann-Straub model. (English summary) *Insurance Math. Econom.* **11** (1992), *no.* 3, 167–171. (Summary) **93j:62241** 62P05

— (*with* De Schepper, A.; Goovaerts, M. J.; Kaas, R.) Interest randomness in annuities certain. (English summary) *Insurance Math. Econom.* **11** (1992), *no.* 4, 271–281. (Summary) **93k:62208** 62P05

De Waal, Peter R. *see* **de Waal, Peter R.**

De Waegenaere, A. (*with* Delbaen, F.) A dynamic reinsurance theory. (English summary) *Insurance Math. Econom.* **11** (1992), *no.* 1, 31–48. (Summary) **93f:62138** 62P05

Dewald, Lee S. (*with* Arkin, Joseph; Arney, David C.; Giordano, Frank R.) Supercube. *Applications of Fibonacci numbers, Vol. 4 (Winston-Salem, NC, 1990)*, 17–32, *Kluwer Acad. Publ., Dordrecht*, 1991. (*see* **93g:11004**) 05B15

Dewan, K. K. (*with* Bidkham, M.) Inequalities for a polynomial and its derivative. *J. Math. Anal. Appl.* **166** (1992), *no.* 2, 319–324. (N. K. Govil) **93e:30008** 30A10 (30C10, 41A17)

Dewar, R. L. (*with* Meiss, J. D.) Flux-minimizing curves for reversible area-preserving maps. (English summary) *Phys. D* **57** (1992), *no.* 3-4, 476–506. (Richard C. Churchill) **93k:58197** 58F27 (58F05, 58F35)

Dewatripont, M. (*with* Roland, G.) Economic reform and dynamic political constraints. (English summary) *Rev. Econom. Stud.* **59** (1992), *no.* 4, 703–730. 90A53 (90A14)

Dewdney, C. (*with* Horton, G.; Lam, M. M.; Malik, Z.; Schmidt, Michael G.) Wave-particle dualism and the interpretation of quantum mechanics. (English summary) *Found. Phys.* **22** (1992), *no.* 10, 1217–1265. (Lawrence Sklar) **93i:81008** 81P05

— Constraints on quantum hidden-variables and the Bohm theory. *J. Phys. A* **25** (1992), *no.* 12, 3615–3626. (Jeffrey Bub) **93f:81009** 81P05 (81P15)

De Weger, B. M. M. *see* **de Weger, B. M. M.**

De Werra, D. *see* **de Werra, D.**

Dewilde, Patrick M. (*with* Alpay, Daniel; Dym, Harry) Lossless inverse scattering and reproducing kernels for upper triangular operators. *Extension and interpolation of linear operators and matrix functions*, 61–135, *Oper. Theory Adv. Appl.*, 47, *Birkhäuser, Basel*, 1990. (E. R. Tsekanovs'kiĭ) **93b:47027** 47A57 (46E22, 47A40, 47N70)

— A course on the algebraic Schur and Nevanlinna-Pick interpolation problems. *Algorithms and parallel VLSI architectures, Vol. A (Pont-à-Mousson*, 1990), 13–69, *Elsevier, Amsterdam*, 1991. (Summary) **93c:47022** 47A57 (30E05, 47N70, 93B99)

— Conditions for active states in neural networks. *Neurocomputers and attention, Vol. II (Moscow*, 1989), 695–700, *Proc. Nonlinear Sci., Manchester Univ. Press, Manchester*, 1991. (*see* **93j:92001b**) 92B20

— (*with* Alpay, Daniel; Dym, Harry) Interpolation in a class of upper-triangular operators. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, I (Kobe*, 1991), 43–52, *Mita, Tokyo*, 1992. (*see* **93g:93005**) 47A57 (47N70, 93B28)

— (*with* van der Veen, Alle-Jan) Orthogonal embedding theory for contractive time-varying systems. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, II (Kobe*, 1991), 513–518, *Mita, Tokyo*, 1992. (*see* **93g:93006**) 93B28 (93C05)

— (*with* Dym, Harry) Interpolation for upper triangular operators. *Time-variant systems and interpolation*, 153–260, *Oper. Theory Adv. Appl.*, 56, *Birkhäuser, Basel*, 1992. (*see* **93d:47148**) 47A57 (47A65)

— (*with* Verhaegen, Michel) Subspace model identification. I. The output-error state-space model identification class of algorithms. (English summary) *Internat. J. Control* **56** (1992), *no.* 5, 1187–1210. (R. Haber) **93m:93095** 93E12 (93B30, 93B40)

— (*with* Verhaegen, Michel) Subspace model identification. II. Analysis of the elementary output-error state-space model identification algorithm. (English summary) *Internat. J. Control* **56** (1992), *no.* 5, 1211–1241. (R. Haber) **93m:93096** 93E12 (93B30, 93B40)

De Wild Propitius, Mark *see* **de Wild Propitius, Mark**

Dewisme, A. (*with* Bouquet, S.) First integrals of Hamiltonian and non-Hamiltonian systems and chaos. (English summary) *Nonlinear evolution equations and dynamical systems (Baia Verde*, 1991), 395–403, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93h:58051** 58F05 (34C99, 58F13, 70H05, 70K50)

De Wit, B. *see* **de Wit, B.**

DeWitt, Bryce S. Nonlinear sigma models in 4 dimensions: a lattice definition. *Quantum mechanics in curved space-time (Erice*, 1989), 431–471, *NATO Adv. Sci. Inst. Ser. B Phys.*, 230, *Plenum, New York*, 1990. (*see* **93d:83003**) 81T10 (81T25)

— The uses and implications of curved-spacetime propagators: a personal view. *Forty more years of ramifications: spectral asymptotics and its applications*, 27–48, *Discourses Math. Appl.*, 1, *Texas A & M Univ., College Station, TX*, 1991. (David M. McAvity) **93k:81155** 81T20 (58G26, 81–03, 81V17)

— (*with* deLyra, Jorge L.; Foong, See Kit; Gallivan, Timothy; et al.) Lattice quantization of the $O(1,2)/O(2) \times Z_2$ sigma model in 4 dimensions. *Quantum gravity (Moscow*, 1990), 18–26, *World Sci. Publishing, River Edge, NJ*, 1991. (Ilya Shapiro) **93m:81112** 81T25 (81T13)

— ★ Supermanifolds. Second edition. Cambridge Monographs on Mathematical Physics. *Cambridge University Press, Cambridge*, 1992. xviii+407 *pp. ISBN* 0-521-41320-6; 0-521-42377-5 (Alice Rogers) **93j:58008** 58A50 (58C50, 81Q60, 81T60, 83E50)

— (*with* deLyra, Jorge L.; Foong, See Kit; et al.) The quantized $O(1,2)/O(2) \times Z_2$ sigma model has no continuum limit in four dimensions. I. Theoretical framework. (English summary) *Phys. Rev. D* (3) **46** (1992), *no.* 6, 2527–2537. 81T13 (81T27)

— (*with* deLyra, Jorge L.; Foong, See Kit; et al.) The quantized $O(1,2)/O(2) \times Z_2$ sigma model has no continuum limit in four dimensions. II. Lattice simulation. (English summary) *Phys. Rev. D* (3) **46** (1992), *no.* 6, 2538–2552. 81T13 (81–04, 81T80)

DeWitt-Morette, Cécile (*with* Foong, See Kit) Kac's solution of the telegrapher equation, revisited. I. *Developments in general relativity, astrophysics and quantum theory (Jerusalem and Haifa*, 1989), 351–366, *Ann. Israel Phys. Soc.*, 9, *IOP, Bristol*, 1990. (Claus Montonen) **93c:81095a** 81S40 (35L15)

— (*with* Gwo, Shang-Jr) One Spin group; two Pin groups. With the collaboration of L. Dąbrowski. *Proceedings of the International Symposium on Mathematics and Theoretical Physics (Guarujá*, 1989), 341–382, *Sympos. Gaussiana Ser. A Math. Theoret. Phys.*, 1, *Inst. Gaussianum, Toronto, ON*, 1990. (Pierre Anglès) **93a:22017** 22E70 (15A66, 81R25)

— Quantum mechanics in curved spacetimes—stochastic processes on frame bundles. *Quantum mechanics in curved space-time (Erice*, 1989), 49–87, *NATO Adv. Sci. Inst. Ser. B Phys.*, 230, *Plenum, New York*, 1990. (*see* **93d:83003**) 81S40 (81S25)

Dewynne, J. N. A survey of supercooled Stefan problems. (English summary) *Mini-Conference on Free and Moving Boundary and Diffusion Problems (Canberra*, 1990), 42–56, *Proc. Centre Math. Appl. Austral. Nat. Univ.*, 30, *Austral. Nat. Univ., Canberra*, 1992. (Summary) **93k:35276** 35R35

— (*with* Ockendon, J. R.; Wilmott, P.) A systematic derivation of the leading-order equations for extensional flows in slender geometries. (English summary) *J. Fluid Mech.* **244** (1992), 323–338. (Summary) **93i:76025** 76D07

Dey, A. (*with* Das, Ashish) Universal optimality and nonoptimality of some row-column designs. *J. Statist. Plann. Inference* **31** (1992), *no.* 2, 263–271. (Bhagwandas) **93j:62188** 62K05

— (*with* Balasubramanian, Krishnaswami; Bhimasankaram, P.) Diagonally range dominant matrices. (English summary) *Linear Algebra Appl.* **176** (1992), 45–60. (William Watkins) **93m:15004** 15A09 (15A23, 15A57)

Dey, Dipak K. (*with* Kuo, Lynn) A new empirical Bayes estimator with type II censored data. *Comput. Statist. Data Anal.* **12** (1991), *no.* 3, 271–279. (Françoise Garcia-Brouaye) **93b:62011** 62C12

— (*with* Gelfand, Alan E.) On Bayesian robustness of contaminated classes of priors. *Statist. Decisions* **9** (1991), *no.* 1-2, 63–80. (Summary) **93a:62042** 62F15 (62A15)

— (*with* Chung, Younshik) Compound Poisson distributions: properties and estimation. (English summary) *Comm. Statist. Theory Methods* **21** (1992), *no.* 11, 3097–3121. (A. Balogh) **93m:62037** 62E15 (62F10, 62F15)

— *see also* **Ghosh, Malay, 93d:62035**

Dey, S. K. A massively parallel algorithm for large-scale nonlinear computation with applications to nonlinear parabolic partial differential equations. (English summary) *Computational acoustics, Vol. 1 (Cambridge, MA*, 1991), 55–69, *North-Holland, Amsterdam*, 1993. (Summary) **93m:65068** 65H10 (65M06, 76M20)

De Young, Gregg *see* **de Young, Gregg**

Deza, François (*with* Busvelle, Éric; Gauthier, Jean-Paul; Rakotopara, Daniel) Un résultat de stabilité des filtres de Kalman étendu continu-continu et continu-discret. (English summary) [A stability result for continuous-continuous and continuous-discrete extended Kalman filters] *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 4, 321–324. (Introduction) **93f:93126** 93E11

— (*with* Bossanne, Denis; Rakotopara, Daniel; Gauthier, Jean-Paul) Un résultat de stabilité du filtre de Kalman étendu pour une large classe de systèmes multi-sorties. (English summary) [A stability result on the extended Kalman filter for a large class of multi-output systems] *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 9, 683–685. (Introduction) **93d:93081** 93E11

— (*with* Busvelle, Éric; Gauthier, Jean-Paul; Rakotopara, Daniel) High gain estimation for nonlinear systems. *Systems Control Lett.* **18** (1992), *no.* 4, 295–299. (Yuandong Ji) **93b:93106** 93E10 (93C10, 93E11)

— (*with* Bossanne, Denis; Busvelle, Éric; Gauthier, Jean-Paul; Rakotopara, Daniel) Exponential observers for nonlinear systems. (English summary) *IEEE Trans. Automat. Control* **38** (1993), *no.* 3, 482–484. 93B07

Deza, Michel (*with* Sabidussi, Gert) Combinatorial structures arising from commutative Moufang loops. *Quasigroups and loops: theory and applications*, 151–160, *Sigma Ser. Pure Math.*, 8, *Heldermann, Berlin*, 1990. (*see* **93g:20133**) 05B05 (05B35, 20N05)

— (*with* Hamada, Noboru) A characterization of $\{2v_{\alpha+1} + 2v_{\beta+1}, 2v_\alpha + 2v_\beta; t, q\}$-minihypers in $PG(t,q)$ ($t \geq 2$, $q \geq 5$ and $0 \leq \alpha < \beta < t$) and its applications to error-correcting codes. *Discrete Math.* **93** (1991), *no.* 1, 19–33. (Arrigo Bonisoli) **93i:51019** 51E22 (51E20, 94B05)

— Perfect matroid designs. *Matroid applications*, 54–72, *Encyclopedia Math. Appl.*, 40, *Cambridge Univ. Press, Cambridge*, 1992. (Laura Bertani) **93d:05037** 05B35

— (*with* Laurent, Monique) Extension operations for cuts. (English summary) A collection of contributions in honour of Jack van Lint. *Discrete Math.* **106/107** (1992), 163–179. (Konrad Engel) **93i:05046** 05B99 (90C27)

— (*with* Laurent, Monique) The Fibonacci and parachute inequalities for l_1-metrics. *Fibonacci Quart.* **30** (1992), *no.* 1, 54–61. (B. Klotzek) **93c:51018** 51K05 (11B68)

Dezani-Ciancaglini, Mariangiola (*with* Barbanera, Franco) Intersection and union types. *Theoretical aspects of computer software (Sendai*, 1991), 651–674, *Lecture Notes in Comput. Sci.*, 526, *Springer, Berlin*, 1991. (From the introduction) **93g:68071** 68Q55 (03B40)

— (*with* Hindley, J. Roger) Intersection types for combinatory logic. *Theoret. Comput. Sci.* **100** (1992), *no.* 2, 303–324. (Summary) **93i:03018** 03B40 (68Q55)

De Zeeuw, Aart J. *see* **de Zeeuw, Aart J.**

Dgheim, B. (*with* Alwadi, Y.; Roczen, Marko) Divisor class groups of some 3-dimensional singularities. *Topics in algebra, Part 2 (Warsaw*, 1988), 27–30, *Banach Center Publ.*, 26, *Part 2, PWN, Warsaw*, 1990. (From the introduction) **93k:13020** 13C20 (14C22)

Dhagat, Aditi (*with* Gács, Péter; Winkler, Peter M.) On playing "twenty questions" with a liar. *Proceedings of the Third Annual ACM-SIAM Symposium on Discrete Algorithms (Orlando, FL*, 1992), 16–22, *ACM, New York*, 1992. (Allen Klinger) **93f:68022** 68P99 (62C99, 62L99, 68Q99)

Dhage, B. C. Generalised metric spaces and mappings with fixed point. (English summary) *Bull. Calcutta Math. Soc.* **84** (1992), *no.* 4, 329–336. (Summary) **93k:54075** 54H25 (54E99)

al-Dhahir, M. W. *see* **Al-Dhahir, M. W.**

Dhaliwal, Ranjit S. (*with* He, Whenhua) A problem of Reissner-Sagoci type for a semi-infinite composite elastic cylinder. *Acta Mech.* **93** (1992), *no.* 1-4, 125–132. (Summary) **93c:73073** 73K20

— (*with* Saxena, H. S.; Rokne, J. G.) Penny-shaped crack in a nonhomogeneous isotropic elastic half-space under axisymmetric torsion. (English summary) *Indian J. Pure Appl. Math.* **23** (1992), *no.* 12, 887–903. 73M25

— (*with* He, Whenhua) Torsion of two nonhomogeneous elastic layers with penny-shaped flaw at the interface. (English summary) *J. Math. Phys. Sci.* **26** (1992), *no.* 1, 37–59. 73M25

Dhar, Avinash (*with* Das, Sumit R.; Rama, S. Kalyana) Physical states and scaling properties of W gravities and W strings. *Internat. J. Modern Phys. A* **7** (1992), *no.* 10, 2295–2333. (Alexander W. Smith) **93c:81164** 81T30 (81T40, 83E30)

— (*with* Das, Sumit R.; Mandal, Gautam; Wadia, Spenta R.) Gauge theory formulation of the $c = 1$ matrix model: symmetries and discrete states. (English summary) *Internat. J. Modern Phys. A* **7** (1992), *no.* 21, 5165–5191. (Summary) **93i:81217** 81T40 (81T13)

— (*with* Mandal, Gautam; Wadia, Spenta R.) Nonrelativistic fermions, coadjoint orbits of W_∞ and string field theory at $c = 1$. (English summary) *Modern Phys. Lett. A* **7** (1992), *no.* 33, 3129–3145. (Summary) **93f:81105** 81T30 (17B81, 81R10, 81S10)

— (*with* Mandal, Gautam; Wadia, Spenta R.) Classical Fermi fluid and geometric action for $c = 1$. (English summary) *Internat. J. Modern Phys. A* **8** (1993), *no.* 2, 325–349. (A. Hamid Bougourzi) **93k:81174** 81T30 (81T70)

Dhar, D. Estimation of survival function under random censorship. (English summary) *Calcutta Statist. Assoc. Bull.* **42** (1992), *no.* 165-166, 75–86. (Summary) **93k:62085** 62G05 (62N05)

— (*with* Mukhopadhyay, A. C.) Estimation of parameters of a parallel system under random censoring. (English summary) *IAPQR Trans.* **17** (1992), *no.* 2, 37–50. 62N05

Dhar, Raj Shree (*with* Singh, Anand Prakash) On deficiencies of differential polynomials. (English summary) *Proc. Indian Acad. Sci. Math. Sci.* **102** (1992), *no.* 2, 129–139. (Summary) **93k:30049** 30D35

Dhar, Ranajit (*with* Sinha, D. K.) Some aspects of stability in atmospheric dispersion problems. (English summary) *J. Math. Phys. Sci.* **26** (1992), *no.* 1, 91–104. (Summary) **93i:86003** 86A10 (76M20, 86–08)

Dhar, Sunil K. Computation of certain minimum distance estimators in AR[k] model. (English summary) *J. Amer. Statist. Assoc.* **88** (1993), *no.* 421, 278–283. (Summary) **93k:62182** 62M10

Dharmadhikari, A. D. (*with* Naik-Nimbalkar, U. V.) The importance of an item in a multistate system. *J. Oper. Res. Soc. Japan* **35** (1992), *no.* 1, 31–44. (Summary) **93a:60023** 60E99

— (*with* Kuber, M. M.) The association in time of a binary semi-Markov process. (English summary) *Statist. Probab. Lett.* **14** (1992), *no.* 5, 343–348. (M. Arató) **93j:60136** 60K15 (62H20)

Dharmadhikari, Sudhakar (*with* Tankou, V.) Improvement of ratio-type estimators. II. *Biometrical J.* **33** (1991), *no.* 6, 705–710. (Summary) **93d:62019** 62D05

Dharma-Wardana, M. W. C. Density functional theory and the Chern-Simons field approach to the fractional quantum Hall effect. (English summary) *Modern Phys. Lett. B* **6** (1992), *no.* 18, 1105–1110. (Summary) **93g:81212** 81V70 (81T30)

Dhawan, R. K. (*with* Sahai, A.; Nishar, D. V.; Prasada Rao, Ganti) Recursive estimation of Markov parameters in linear continuous-time SISO systems via block-pulse functions. (English summary) *Identification and system parameter estimation* 1991, *Vol.* 1,2 (*Budapest*, 1991), 325–330, *IFAC Sympos. Ser.*, 3, *Pergamon, Oxford*, 1992. (*see* **93h:93009**) 93E10

D'Hennezel, Frédéric *see* **d'Hennezel, Frédéric**

ben Dhia, Hachmi *see* **Ben Dhia, Hachmi**

Dhillon, Balbir S. Stochastic modelling of k-out-of-n units family of systems. (English summary) *Internat. J. Systems Sci.* **23** (1992), *no.* 8, 1277–1287. 93A30 (93E03)

Dhoble, Ashok R. (*with* Giri, R. D.) On a commutativity theorem of Quadri. (English summary) *Bull. Calcutta Math. Soc.* **84** (1992), *no.* 4, 294–296. (Summary) **93m:16023** 16U80

— (*with* Giri, R. D.) On a commutativity theorem of quadri for semi-simple rings. *Kyungpook Math. J.* **32** (1992), *no.* 2, 229–232. 16U80

— (*with* Giri, R. D.) Some commutativity theorems for rings. (English summary) *Publ. Math. Debrecen* **41** (1992), *no.* 1-2, 35–40. (Summary) **93d:16040** 16U80

D'Hoker, Eric (*with* Aoki, Kenichiro) On the Liouville approach to correlation functions for 2D quantum gravity. *Modern Phys. Lett. A* **7** (1992), *no.* 3, 235–249. (Guillermo Zemba) **93d:81147** 81T40

— (*with* Aoki, Kenichiro) Correlation functions of minimal models coupled to two-dimensional quantum supergravity. *Modern Phys. Lett. A* **7** (1992), *no.* 4, 333–343. (C. Gauthier) **93b:81237** 81T40 (81T60, 83E50)

D'Hollander, Erik H. Partitioning and labeling of loops by unimodular transformations. (English summary) *IEEE Trans. Parallel Distrib. Systems* **3** (1992), *no.* 4, 465–476. (Summary) **93f:68030** 68Q10 (68Q22)

Dhombres, Jean Le poids de la tradition et les ouvertures imprévues dans l'axiomatisation de la statique au début du XVIIIème siècle. [The weight of tradition and some unexpected openings in the axiomatization of statics at the beginning of the XVIIIth century] *Der Ausbau des Calculus durch Leibniz und die Brüder Bernoulli* (*Basel*, 1987), 123–139, *Studia Leibnitiana Sonderheft*, 17, *Steiner, Wiesbaden*, 1989. (*see* **93e:01009**) 01A50 (70–03)

Di, Ji Zheng Modified summation operators and their applications. *Approximation, optimization and computing*, 67–68, *North-Holland, Amsterdam*, 1990. (*see* **93a:41001**) 41A58 (41A65)

Di, Xiao (*with* Gilbert, Kenneth E.) An exact Laplace transform formulation for a point source above a ground surface. (English summary) *J. Acoust. Soc. Amer.* **93** (1993), *no.* 2, 714–720. (Summary) **93k:76100** 76Q05

Diaconescu, Răzvan Contraction algebras and unification of (infinite) terms. *J. Comput. System Sci.* **44** (1992), *no.* 1, 23–42. (Stephen J. Hegner) **93h:68078** 68Q55 (08A70)

Diaconis, Persi (*with* Perlman, Michael D.) Bounds for tail probabilities of weighted sums of independent gamma random variables. (English summary) *Topics in statistical dependence* (*Somerset, PA*, 1987), 147–166, *IMS Lecture Notes Monograph Ser.*, 16, *Inst. Math. Statist., Hayward, CA*, 1990. (Summary) **93i:60036** 60E15 (62E15)

— Finite Fourier methods: access to tools. *Probabilistic combinatorics and its applications* (*San Francisco, CA*, 1991), 171–194, *Proc. Sympos. Appl. Math.*, 44, *Amer. Math. Soc., Providence, RI*, 1991. (Summary) **93a:60014** 60B15 (60J15)

— (*with* Zabell, S. L.) Closed form summation for classical distributions: variations on a theme of de Moivre. *Statist. Sci.* **6** (1991), *no.* 3, 284–302. (C. C. Heyde) **93b:60001** 60–03 (01A50, 60E05, 62E15)

— Sufficiency as statistical symmetry. (English summary) *American Mathematical Society centennial publications, Vol. II* (*Providence, RI*, 1988), 15–26, *Amer. Math. Soc., Providence, RI*, 1992. (Summary) **93g:60137** 60J05 (60G09, 62B05)

— (*with* Bayer, Dave) Trailing the dovetail shuffle to its lair. *Ann. Appl. Probab.* **2** (1992), *no.* 2, 294–313. (David J. Aldous) **93d:60014** 60C05 (20B30, 60B15)

— (*with* Fill, James Allen; Pitman, James W.) Analysis of top to random shuffles. (English summary) *Combin. Probab. Comput.* **1** (1992), *no.* 2, 135–155. (Robin Pemantle) **93f:60011** 60C05 (20C30, 60B15)

— (*with* Graham, R. L.) Binomial coefficient codes over GF(2). (English summary) A collection of contributions in honour of Jack van Lint. *Discrete Math.* **106/107** (1992), 181–188. (Ram Autar) **93i:94024** 94B60

— (*with* Chung, Fan R. K.; Graham, R. L.) Universal cycles for combinatorial structures. (English summary) *Discrete Math.* **110** (1992), *no.* 1-3, 43–59. (Giuseppe Pellegrino) **93m:05018** 05A99 (05C20)

— (*with* Graham, R. L.) An affine walk on the hypercube. (English summary) Asymptotic methods in analysis and combinatorics. *J. Comput. Appl. Math.* **41** (1992), *no.* 1-2, 215–235. (José L. Palacios) **93i:60124** 60J10 (05A99, 60C05)

Diaconu, Adrian Sur l'approximation des solutions des problèmes polylocaux pour des équations différentielles non-linéaires. [On the approximation of solutions of polylocal problems for nonlinear differential equations] *Seminar on Mathematical Analysis*, 133–150, *Preprint*, 91-7, "*Babeş-Bolyai*" *Univ., Cluj-Napoca*, 1991. (*see* **93i:00015**) 65J15 (35A35, 47H17)

Diacu, Florin Nicolae Regularization of partial collisions in the N-body problem. *Differential Integral Equations* **5** (1992), *no.* 1, 103–136. (Jaume Llibre) **93c:70007** 70F10 (70F35)

— On the smoothness of regularization in Newtonian gravitational systems. (English summary) *Libertas Math.* **12** (1992), 161–179. (Ernesto A. Lacomba) **93k:70012** 70F07 (70F10, 70F35)

— A generic property of the bounded syzygy solutions. (French summary) *Proc. Amer. Math. Soc.* **116** (1992), *no.* 3, 809–812. (Donald G. Saari) **93a:70008** 70F07

Dialynas, Thanassis E. (*with* Xanthopoulos, Basilis C.) Einstein gravity coupled to a massless conformal scalar field in arbitrary space-time dimensions. *J. Math. Phys.* **33** (1992), *no.* 4, 1463–1471. (R. N. Tiwari) **93d:83015** 83C15 (83C57)

Diamandis, G. A. (*with* Georgalas, B. C.; Lahanas, A. B.) Does σ-model conformal invariance imply a Robertson-Walker universe? (English summary) *Phys. Lett. B* **287** (1992), *no.* 1-3, 69–72. (Summary) **93d:83066** 83E30 (81T30, 83C15)

Diamantaras, Dimitrios Regular public good economies. (English summary) *J. Math. Econom.* **21** (1992), *no.* 6, 523–542. (Summary) **93i:90035** 90A56

Diamantaras, K. (*with* Kung, S. Y.; Mao, W. D.; Taur, J. S.) Generalized perceptron networks with nonlinear discriminant functions. *Neural networks* (*New Brunswick, NJ*, 1990), 245–279, *Academic Press, Boston, MA*, 1991. (J. Leo van Hemmen) **93d:92005** 92B20 (92J30)

Diamantini, Maria Cristina (*with* Link, Robert; Sodano, Pasquale) Chern-Simons effective action for nonrelativistic planar electrons. (English summary) Topological and quantum group methods in field theory and condensed matter physics. *Internat. J. Modern Phys. B* **6** (1992), *no.* 11-12, 2241–2252. (Summary) **93h:81082** 81T13 (81V10, 81V70, 82B20)

Diamond, Beverly Rimcompactness and similar properties in preimages. (English summary) *Rocky Mountain J. Math.* **22** (1992), *no.* 2, 505–510. (C. R. Borges) **93j:54012** 54D20 (54D99)

Diamond, Fred Congruence primes for cusp forms of weight $k \geq 2$. (French summary) Courbes modulaires et courbes de Shimura (Orsay, 1987/1988). *Astérisque No.* 196-197 (1991), 6, 205–213 (1992). (Nigel Boston) **93b:11051** 11F33 (11F75, 11G18)

Diamond, Harold G. (*with* Halberstam, H.) Differential difference equations in analytic number theory. *Oscillation and dynamics in delay equations* (*San Francisco, CA*, 1991), 73–95, *Contemp. Math.*, 129, *Amer. Math. Soc., Providence, RI*, 1992. (Antal Balog) **93g:11096** 11N25 (11N35, 34K25)

Diamond, J. (*with* McLeod, R. D.; Pedrycz, Witold) A fuzzy cognitive structure: foundations, applications and VLSI implementation. *Fuzzy Sets and Systems* **47** (1992), *no.* 1, 49–64. 68T30 (04A72)

Diamond, James J. Classically forbidden behavior of the quantum harmonic oscillator for large quantum numbers. (English summary) *Amer. J. Phys.* **60** (1992), *no.* 10, 912–916. (Summary) **93e:81016** 81Q05 (81–08)

Diamond, Phil Least squares and maximum likelihood regression for fuzzy linear models. (English summary) *Fuzzy regression analysis*, 137–151, *Stud. Fuzziness*, 1, *Omnitech Press, Warsaw*, 1992. (*see* **93k:62004**) 62J99 (04A72)

— (*with* Fomenko, I. V.) Robustness of representations in multilayer feedforward neural networks. (English summary) Networks for neural processing. *Circuits Systems Signal Process.* **12** (1993), *no.* 2, 211–221. (Philippe De Wilde) **93m:41020** 41A30 (42A10, 68T05, 92B20)

— (*with* Asarin, E.; Fomenko, I. V.; Pokrovskiĭ, A. V.) Chaotic phenomena in desynchronized systems and stability analysis. *Comput. Math. Appl.* **25** (1993), *no.* 1, 81–87. (Peter E. Kloeden) **93k:58144** 58F13 (58F03, 58F10, 93D05)

Diané, Mamadi (*with* Plesník, Ján) An integer programming formulation of the Steiner problem in graphs. (English summary) *Z. Oper. Res.* **37** (1993), *no.* 1, 107–111. 90C10 (05C35, 90C35)

Diao, Bai Qing (*with* Jiang, Chang Jun) A dimension-lowering algorithm for parametric variable broken line smoothing splines. (Chinese. English and Chinese summaries) *Shandong Kuangye Xueyuan Xuebao* **11** (1992), *no.* 4, 417–419. 65D10 (65D07)

Diarra, Bertin Un article de M. Krasner sur les différentes des extensions finies de corps locaux. [An article of M. Krasner on the differents of finite extensions of local fields] *Séminaire d'Analyse*, 1988–89 (*Clermont-Ferrand*, 1988/1989), *Exp. No.* 1, 21 *pp., Univ. Clermont-Ferrand II, Clermont-Ferrand*, 199?. (Francis J. Rayner) **93i:12012** 12J10 (11S15, 13F30)

— (*with* Escassut, Alain) Non-integrally closed algebras $H(D)$. *p-adic functional analysis* (*Laredo*, 1990), 63–74, *Lecture Notes in Pure and Appl. Math.*, 137, *Dekker, New York*, 1992. (J. S. Joel) **93c:32046** 32P05 (12J27, 46J99, 46S10)

Dias, Frédéric (*with* Vanden-Broeck, Jean-Marc) Gravity-capillary solitary waves in water of infinite depth and related free-surface flows. (English summary) *J. Fluid Mech.* **240** (1992), 549–557. (Summary) **93d:76012** 76B25 (76B15, 76B45)

Dias, João-Paulo (*with* Figueira, Mário) On the existence of weak solutions for a semilinear singular hyperbolic system. *Rev. Mat. Univ. Complut. Madrid* **4** (1991), *no.* 1, 137–146. (Michael Oberguggenberger) **93g:35091** 35L60 (35D05, 35L45, 47N20)

— (*with* Povoas, Maria) A variant of the Euler-Poisson-Darboux equation arising in quantum gravity. (English and French summaries) *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 2, 169–173. (Alain J. Phares) **93k:35202** 35Q05 (81V17)

Dias, Oscar P., Jr. Ranking alternatives using fuzzy numbers: a computational approach. (English summary) *Fuzzy Sets and Systems* **56** (1993), *no.* 2, 247–251. 04A72

Dias, Ricardo G. (*with* Lopes dos Santos, J. M. B.) Simple representation of the eigenstates of the $U \to \infty$ one-dimensional Hubbard model. (English summary) *J. Physique I* **2** (1992), *no.* 10, 1889–1897. (Summary) **93k:82070** 82D55 (82B20)

costa Dias, Roberta *see* **Costa Dias, Roberta**

Dias Peres, Pedro Luis (*with* Geromel, J. C.; Souza, S. R.) $\mathscr{H}_2$ guaranteed cost control for uncertain continuous-time linear systems. *Systems Control Lett.* **19** (1992), *no.* 1, 23–27. (Leslie R. Fletcher) **93e:93024** 93B36 (93C05)

— (*with* Geromel, J. C.) $\mathscr{H}_2$ control for discrete-time systems optimality and robustness. (English summary) *Automatica J. IFAC* **29** (1993), *no.* 1, 225–228. 93B36 (93C55)

— (*with* Geromel, J. C.; Bernussou, J.) Quadratic stabilizability of linear uncertain systems in convex-bounded domains. (English summary) *Automatica J. IFAC* **29** (1993), *no.* 2, 491–493. 93D15 (93D21)

garcía Díaz, Alberto *see* **García Díaz, Alberto**

Diaz, Alejandro R. (*with* Kikuchi, Noboru) Solutions to shape and topology eigenvalue optimization problems using a homogenization method. (English summary) *Internat. J. Numer. Methods Engrg.* **35** (1992), *no.* 7, 1487–1502. (Summary) **93f:73073** 73K40 (73K12, 73K20)

diaz y Diaz, Francisco *see* **Díaz y Díaz, Francisco**

Díaz, G. *see* **Díaz Díaz, Gregorio**

díaz Díaz, Gregorio *see* **Díaz Díaz, Gregorio**

Diaz, Guy Minoration de $|\alpha_1^\beta - \alpha_2|$ lorsque β est de degré 2. (English summary) [Lower bound for $|\alpha_1^\beta - \alpha_2|$ when β is of degree 2] *Approximations diophantiennes et nombres transcendants* (*Luminy*, 1990), 105–121, *de Gruyter, Berlin*, 1992. (Francesco Amoroso) **93h:11079** 11J82 (11J86)

dorta Díaz, J. A. *see* **Dorta Díaz, J. A.**

Díaz, J. C. *see* **Díaz Alcaide, Juan Carlos**

Díaz, J. I. *see* **Díaz Díaz, Jesús Ildefonso**

díaz Díaz, Jesús Ildefonso *see* **Díaz Díaz, Jesús Ildefonso**

Díaz, Juan C. *see* **Díaz Alcaide, Juan Carlos**

Díaz, Juan Carlos *see* **Díaz Alcaide, Juan Carlos**

Díaz, Lorenzo J. (*with* Rocha, Jorge) Nonconnected heterodimensional cycles: bifurcation and stability. (English summary) *Nonlinearity* **5** (1992), *no.* 6, 1315–1341. (Frank Hubbuch) **93k:58167** 58F14

Díaz, Matthew (*with* O'Rourke, Joseph) Chord centers for convex polygons. *Vision geometry* (*Hoboken, NJ*, 1989), 29–43, *Contemp. Math.*, 119, *Amer. Math. Soc., Providence, RI*, 1991. (Michael B. Dillencourt) **93b:52015** 52B55 (68U05, 68U10)

gonzález-Díaz, Pedro F. *see* **González-Díaz, Pedro F.**

Díaz, Santiago *see* **Díaz Madrigal, Santiago**

Díaz Alcaide, Juan Carlos (*with* López Molina, Juan A.; Rivera Ortún, María José) The approximation property of order (p, q) in Banach spaces. *Collect. Math.* **41** (1990), *no.* 3, 217–232 (1992). (N. Tiţa) **93e:46016** 46B20 (46M05)

— (*with* Bonet, José) On the weak quasinormability condition of Grothendieck. (Turkish summary) *Doğa Mat.* **15** (1991), *no.* 3, 154–164. (Paweł Domański) **93c:46012** 46A45 (46A04)

— (*with* López Molina, Juan A.) A note on reflexivity of projective tensor products. *Portugal. Math.* **48** (1991), *no.* 4, 423–427. (Andreas Defant) **93c:46131** 46M05 (46A04)

— (*with* López Molina, Juan A.) On the projective tensor product of Fréchet spaces. *Proc. Edinburgh Math. Soc.* (2) **34** (1991), *no.* 2, 169–178. (Andreas Defant) **93b:46138** 46M05 (46A04, 46A45)

— (*with* Metafune, Giorgio) The problem of topologies of Grothendieck for quojections. *Results Math.* **21** (1992), *no.* 3-4, 299–312. (José Bonet) **93d:46006** 46A04 (46M05)

Díaz Bejarano, José (*with* Garcia-Margallo, J.) The limit cycles of the generalized Rayleigh-Liénard oscillator. (English summary) *J. Sound Vibration* **156** (1992), *no.* 2, 283–301. (Sui Lin Cai) **93g:34053** 34C15 (34C05, 34C25, 34C29, 70K10)

— (*with* Miró Rodríguez, C.) Planetary orbits as limit cycles. (English summary) *Nuovo Cimento B* (11) **107** (1992), *no.* 5, 497–501. (Summary) **93e:83011** 83C10

Díaz-Bobillo, Ignacio J. (*with* Dahleh, Munther A.) State feedback l_1-optimal controllers can be dynamic. (English summary) *Systems Control Lett.* **19** (1992), *no.* 2, 87–93. 93C55 (93B36)

Díaz Carrillo, M. (*with* Muñoz Rivas, Ma. Pilar) Finitely additive integration. (Spanish) *Papers in honor of Pablo Bobillo Guerrero* (*Spanish*), 29–35, *Univ. Granada, Granada*, 1992. (*see* **93k:00042**) 28A25

Díaz Díaz, Gregorio (*with* Rey, J. M.) Some estimates on the evolution by Hamilton-Jacobi equations. *Proceedings of the XII Congress on Differential Equations and Applications/II Congress on Applied Mathematics* (*Spanish*) (*Oviedo*, 1991), 221–225, *Univ. Oviedo, Oviedo*, 1991. (*see* **93j:00009**) 35F20 (35B45)

— (*with* Barles, Guy; Díaz Díaz, Jesús Ildefonso) Uniqueness and continuum of foliated solutions for a quasilinear elliptic equation with a non-Lipschitz nonlinearity. *Comm. Partial Differential Equations* **17** (1992), *no.* 5-6, 1037–1050. (Gershon Wolansky) **93f:35060** 35J60 (35B05)

— (*with* Letelier, R.) Uniqueness for viscosity solutions of quasilinear elliptic equations in $\mathbf{R}^N$ without conditions at infinity. *Differential Integral Equations* **5** (1992), *no.* 5, 999–1016. (H. Mete Soner) **93g:35041** 35J60 (35D05)

— Blow-up time involved with perturbed Hamilton-Jacobi equations. (English summary) *Proc. Roy. Soc. Edinburgh Sect. A* **122** (1992), *no.* 1-2, 17–44. (Shigeaki Koike) **93m:35028** 35B37 (35B40)

— (*with* Rey, J. M.) Finite extinction time for some perturbed Hamilton-Jacobi equations. (English summary) *Aprl. Math. Optim.* **27** (1993), *no.* 1, 1–33. (Ya Zhe Chen) **93k:35064** 35F25 (35K55, 49L20)

Díaz Díaz, Jesús Ildefonso (*with* Shmarëv, S. I.) The one-dimensional porous medium equation with a strong convection: study via Lagrangian coordinates. *Proceedings of the XII Congress on Differential Equations and Applications/II Congress on Applied Mathematics* (*Spanish*) (*Oviedo*, 1991), 227–231, *Univ. Oviedo, Oviedo*, 1991. (*see* **93j:00009**) 35R35 (35K55, 76S05)

— Symmetrization of nonlinear parabolic problems: application to reaction-diffusion equations. (Spanish. English summary) *Mem. Real Acad. Cienc. Exact. Fís. Natur. Madrid* **28** (1991), ii+41 *pp.* (Elias Tuma) **93c:35070** 35K57

— Inequalities of isoperimetric type for the Plateau problem and the capillarity problem. (Spanish) *Rev. Acad. Canaria Cienc.* **3** (1991), *no.* 1, 127–166. (H. R. Gluck) **93h:35062** 35J60 (53A10)

— Symmetrization of nonlinear elliptic and parabolic problems and applications: a particular overview. *Progress in partial differential equations: elliptic and parabolic problems* (*Pont-à-Mousson*, 1991), 1–16, *Pitman Res. Notes Math. Ser.*, 266, *Longman Sci. Tech., Harlow*, 1992. (Introduction) **93i:35001** 35–02 (35J60, 35K55)

— (*with* Alvino, Angelo; Lions, Pierre-Louis; Trombetti, Guido) Équations elliptiques et symétrisation de Steiner. (English summary) [Elliptic equations and Steiner symmetrization] *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 13, 1015–1020. (J. Chrastina) **93f:35047** 35J25 (35A30)

— (*with* Oleĭnik, O. A.) Nonlinear elliptic boundary value problems in unbounded domains and the asymptotic behaviour of its solutions. (English and French summaries) *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 7, 787–792. (Elvira Mascolo) **93k:35100** 35J65 (35B40)

— (*with* Barles, Guy; Díaz Díaz, Gregorio) Uniqueness and continuum of foliated solutions for a quasilinear elliptic equation with a non-Lipschitz nonlinearity. *Comm. Partial Differential Equations* **17** (1992), *no.* 5-6, 1037–1050. (Gershon Wolansky) **93f:35060** 35J60 (35B05)

— (*with* Mossino, J.) Isoperimetric inequalities in the parabolic obstacle problems. *J. Math. Pures Appl.* (9) **71** (1992), *no.* 3, 233–266. (Summary) **93d:35090** 35K85 (49Q05)

— (*with* Saá, J. E.) Uniqueness of very singular self-similar solution of a quasilinear degenerate parabolic equation with absorption. (English summary) *Publ. Mat.* **36** (1992), *no.* 1, 19–38. (Alan V. Lair) **93g:35079** 35K65 (34B15, 35K55)

— (*with* Fasano, Antonio; Meirmanov, A. M.) On the disappearance of the mushy region in multidimensional Stefan problems. *Free boundary problems involving solids* (*Montreal, PQ*, 1990), 124–129, *Pitman Res. Notes Math. Ser.*, 281, *Longman Sci. Tech., Harlow*, 1993. (*see* **93k:00037**) 35R35 (80A22)

Díaz Madrigal, Santiago Some Orlicz-Pettis-type theorems. (Spanish. English summary) *Proceedings of the XVth Portuguese-Spanish Conference on Mathematics, Vol. II* (*Portuguese*) (*Évora*, 1990), 149–153, *Univ. Évora, Évora*, 1991. (Summary) **93a:46011** 46A45 (46A30)

— Σ-completeness and closed graph theorems. (English summary) *Collect. Math.* **42** (1991), *no.* 3, 253–263 (1992). (I. Tweddle) **93m:46005** 46A30 (46A20, 46A45)

— (*with* Bilbao Arrese, Jesús Mario) Local completeness and series. *Simon Stevin* **65** (1991), *no.* 3-4, 331–335. (Cho Ho Chu) **93c:46008** 46A30 (46A03)

— (*with* Drewnowski, Lech; Fernández López, Antonio^2; Florencio, Miguel; Paúl, Pedro J.) Barrelledness and bornological conditions on spaces of vector-valued μ-simple functions. *Results Math.* **21** (1992), *no.* 3-4, 289–298. (Miguel Caldas Cueva) **93d:46060** 46E40 (46A08)

— Unconditional convergence and weakly compact maps. *Proc. Amer. Math. Soc.* **117** (1993), *no.* 2, 417–422. (James Bell Cooper) **93d:46025** 46B10 (46A08, 46B25)

Diaz y Diaz, Francisco (*with* Cohen, Henri) A polynomial reduction algorithm. (French summary) *Sém. Théor. Nombres Bordeaux* (2) **3** (1991), *no.* 2, 351–360. (Duncan A. Buell) **93a:11107** 11Y40 (11R04)

Dib, Hacen Fonction hypergéométrique ${}_2F_1$ sur une algèbre de Jordan. (English summary) [The hypergeometric function ${}_2F_1$ on a Jordan algebra] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 1, 25–30. (Summary) **93d:33012** 33C80

Dib, K. A. (*with* Youssef, Nabil L.) A new approach to fuzzy groupoids. (English summary) *Fuzzy Sets and Systems* **49** (1992), *no.* 3, 381–392. (Phullendu Das) **93k:20105** 20N25 (04A72)

Di Bacco, Mario Aggregation of probability assessments: a (not impartial) review. (Italian) *Survey of statistical methods and applications*, 8 (*Italian*) (*Cagliari*, 1989–1990), 79–103, *Coll. Atti Congr., Pitagora, Bologna*, 1993. (*see* **93m:62007**) 62F15 (62A15)

Di Battista, Giuseppe (*with* Crescenzi, Pierluigi; Piperno, A.) A note on optimal area algorithms for upward drawings of binary trees. (English summary) *Comput. Geom.* **2** (1992), *no.* 4, 187–200. 68U05

— (*with* Tamassia, Roberto; Tollis, Ioannis G.) Area requirement and symmetry display of planar upward drawings. *Discrete Comput. Geom.* **7** (1992), *no.* 4, 381–401. (Joseph Zaks) **93i:05053** 05C10 (52B55, 68R10, 68U05)

DiBenedetto, E. (*with* Bhattacharya, Tilak; Manfredi, Juan J.) Limits as $p \to \infty$ of $\Delta_p u_p = f$ and related extremal problems. Some topics in nonlinear PDEs (Turin, 1989). *Rend. Sem. Mat. Univ. Politec. Torino* **1989**, *Special Issue*, 15–68 (1991). (C. A. Swanson) **93a:35049** 35J65 (35J20)

— (*with* Kwong, Ying C.; Vespri, Vincenzo) Local space-analyticity of solutions of certain singular parabolic equations. *Indiana Univ. Math. J.* **40** (1991), *no.* 2, 741–765. (R. Schumann) **93b:35014** 35B65 (35B50, 35K55)

— (*with* Chen, Ya Zhe) Hölder estimates of solutions of singular parabolic equations with measurable coefficients. *Arch. Rational Mech. Anal.* **118** (1992), *no.* 3, 257–271. (Jesús Hernández) **93a:35092** 35K65 (35D10, 35K55, 35K60)

— (*with* Andreucci, Daniele) Weak solutions of the type of nonstationary filtration. *Nonlinear Anal.* **19** (1992), *no.* 1, 29–41. (Ioan I. Vrabie) **93g:35062** 35K55 (35D05, 76S05)

Di Benedetto, Fabio (*with* Bini, Dario) An observation on certain spectral properties of Toeplitz matrices. (English summary) *Calcolo* **28** (1991), *no.* 1-2, 37–43 (1992). (M. Tismenetsky) **93h:47026** 47B35 (47A75)

— (*with* Fiorentino, Giuseppe; Serra, Stefano) CG preconditioning for Toeplitz matrices. (English summary) *Comput. Math. Appl.* **25** (1993), *no.* 6, 35–45. (Summary) **93h:65063** 65F35

Di Benedetto, Maria Domenica (*with* Lucibello, P.) An inversion procedure for nonlinear time-varying systems. (English summary) *Advanced robot control* (*Grenoble*, 1990), 207–215, *Lecture Notes in Control and Inform. Sci.*, 162, *Springer, Berlin*, 1991. (Summary) **93e:93044** 93C85 (70B15, 70Q05)

— (*with* Grizzle, J. W.) Approximation by regular input-output maps. *IEEE Trans. Automat. Control* **37** (1992), *no.* 7, 1052–1055. (Summary) **93g:93021** 93B18

— (*with* Glumineau, Alain; Moog, Claude H.) Découplage entrée-sortie des systèmes non linéaires par retour d'état dynamique pur. (English and French summaries) [Nonlinear input-output decoupling by pure dynamic state feedback] *C. R. Acad. Sci. Paris Sér. I Math.* **316** (1993), *no.* 1, 101–106. (Summary) **93j:93027** 93B17 (93B52)

— (*with* Sastry, S. Shankar) Adaptive linearization and model reference control of a class of MIMO nonlinear systems. (English summary) *J. Math. Systems Estim. Control* **3** (1993), *no.* 1, 73–105. (Ülle Kotta) **93j:93069** 93C10 (93B18, 93C40)

— *see also* **Fossen, Thor I.**

Di Blasio, Gabriella Analytic semigroups generated by elliptic operators in L^1 and parabolic equations. *Osaka J. Math.* **28** (1991), *no.* 2, 367–384. (H. Triebel) **93a:46055** 46E35 (35J25, 35K10, 46M35, 47D03, 47F05)

Diblík, Josef Inequalities for components of solutions of systems of ordinary differential equations. (English summary) Third International Seminar on Ordinary Differential Equations (Poznań, 1990). *Fasc. Math. No.* 23 (1991), 51–59 (1992). (P. K. Palamides) **93j:34069** 34C99 (34A12, 34D05)

— On the asymptotic behavior of solutions of some systems of functional-differential equations of delay type. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* **1991**, *no.* 9, 15–20; *translation in Soviet Math.* (*Iz. VUZ*) **35** (1991), *no.* 9, 14–18. (Alexander I. Domoshnitsky) **93f:34118** 34K15 (34K10, 34K20)

— On asymptotic behaviour of solutions of certain classes of ordinary differential equations. *J. Differential Equations* **95** (1992), *no.* 2, 203–217. (Yiannis Sficas) **93d:34086** 34D05

— Some asymptotic properties of solutions of homogeneous linear systems of ordinary differential equations. *J. Math. Anal. Appl.* **165** (1992), *no.* 1, 288–304. (James M. D'Archangelo) **93a:34041** 34C11 (34A30, 34D20)

— The singular Cauchy-Nicoletti problem for the system of two ordinary differential equations. (Czech summary) *Math. Bohem.* **117** (1992), *no.* 1, 55–67. (P. K. Palamides) **93d:34033** 34B15

Di Carlo, Antonio (*with* Gurtin, Morton E.; Podio-Guidugli, Paolo) A regularized equation for anisotropic motion-by-curvature. *SIAM J. Appl. Math.* **52** (1992), *no.* 4, 1111–1119. (Jacob Rubinstein) **93g:73005** 73B05 (35Q72, 73B30)

DiCesare, Frank (*with* Zhou, Meng Chu; Rudolph, Daryl L.) Design and implementation of a Petri net based supervisor for a flexible manufacturing system. (English summary) *Automatica J. IFAC* **28** (1992), *no.* 6, 1199–1208. 93A30 (93C83)

— (*with* Guo, Dian Long; Zhou, Meng Chu) A moment generating function based approach for evaluating extended stochastic Petri nets. (English summary) *IEEE Trans. Automat. Control* **38** (1993), *no.* 2, 321–327. (Summary) **93m:68127** 68Q90

— (*with* Jeng, Mu Der) A review of synthesis techniques for Petri nets with applications to automated manufacturing systems. (English summary) *IEEE Trans. Systems Man Cybernet.* **23** (1993), *no.* 1, 301–312. 68Q90

Dichev, Angel V. On the effective enumerations of partial structures. (English and Russian summaries) *Annuaire Univ. Sofia Fac. Math. Inform.* **83** (1989), 29–37 (1992). (Cristian Calude) **93e:03064** 03D45

— Effective enumerations of families of finite sets of natural numbers. *Z. Math. Logik Grundlag. Math.* **37** (1991), *no.* 4, 301–306. (J. C. Owings, Jr.) **93c:03060** 03D25

Dichi, Henri (*with* Sangare, Daouda; Soumare, Mahamadou) Filtrations, integral dependence, reduction, f-good filtrations. *Comm. Algebra* **20** (1992), *no.* 8, 2393–2418. (L. J. Ratliff, Jr.) **93d:13008** 13A30 (13B21)

DiCiccio, Thomas J. (*with* Efron, Bradley) More accurate confidence intervals in exponential families. (English summary) *Biometrika* **79** (1992), *no.* 2, 231–245. (J. Glaz) **93k:62070** 62F25 (62F11, 62F12, 62G15)

— (*with* Martin, Michael A.; Young, G. Alastair) Fast and accurate approximate double bootstrap confidence intervals. (English summary) *Biometrika* **79** (1992), *no.* 2, 285–295. (Summary) **93f:62040** 62F35 (62G09, 62G15)

Dick, Erik (*with* Anderson, J. D.; Degrez, G.; Grundmann, R.) ★ Computational fluid dynamics. An introduction. Edited and with a preface by John F. Wendt. A von Karman Institute Book. *Springer-Verlag, Berlin*, 1992. xii+291 *pp. ISBN* 3-540-53460-1 (Corneliu Berbente) **93a:76081** 76N10 (76–01)

Dick, Rainer Holomorphic differentials on punctured Riemann surfaces. *Differential geometric methods in theoretical physics (Davis, CA*, 1988), 475–483, *NATO Adv. Sci. Inst. Ser. B Phys.*, 245, *Plenum, New York*, 1990. (A. K. Raina) **93g:81146** 81T40 (14C40, 17B68, 30F30, 32G81)

Dick, Wolfgang R. Otto Struve über Carl Friedrich Gauß. [Otto Struve on Carl Friedrich Gauss] *Gauss-Ges. Göttingen Mitt. No.* 29 (1992), 43–51. (C. J. Scriba) **93j:01009** 01A70

Dickenstein, Alicia (*with* Sessa, Carmen) Cohomologie modérée et résidus. (English and French summaries) [Moderate cohomology and residues] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 6, 729–734. (Tosiaki Kori) **93k:32015** 32C36 (32A27, 32C30)

Dickerson, Matthew T. (*with* Drysdale, R. L. Scot; Sack, Jörg-Rüdiger) Simple algorithms for enumerating interpoint distances and finding k nearest neighbors. (English summary) *Internat. J. Comput. Geom. Appl.* **2** (1992), *no.* 3, 221–239. (Summary) **93j:68212** 68U05 (52B55, 68Q25)

— The inverse of an automorphism in polynomial time. *J. Symbolic Comput.* **13** (1992), *no.* 2, 209–220. (Timothy Stokes) **93b:68036** 68Q40 (12Y05, 13P99)

— (*with* Shugart, Jason) A simple algorithm for enumerating longest distances in the plane. (English summary) *Inform. Process. Lett.* **45** (1993), *no.* 5, 269–274. 68U05

Dickey, James M. (*with* Garthwaite, Paul H.) Elicitation of prior distributions for variable-selection problems in regression. (English summary) *Ann. Statist.* **20** (1992), *no.* 4, 1697–1719. (I. Guttman) **93k:62066** 62F15 (62J05)

— (*with* Lad, Frank; Rahman, Mohammad A.) Numerical application of the fundamental theorem of prevision. (English summary) *J. Statist. Comput. Simulation* **40** (1992), *no.* 3-4, 135–151. 62A99 (60E15)

Dickey, L. A. ★ Soliton equations and Hamiltonian systems. Advanced Series in Mathematical Physics, 12. *World Scientific Publishing Co., Inc., River Edge, NJ*, 1991. x+310 *pp. ISBN* 981-02-0215-6 (Nikolai A. Kostov) **93d:58067** 58F07 (35Q51, 35Q53)

— On the τ-function of matrix hierarchies of integrable equations. *J. Math. Phys.* **32** (1991), *no.* 11, 2996–3002. (Wen Xiu Ma) **93d:58068** 58F07 (35Q53)

Dickinson, Robert (*with* Tamura, Takayuki) Notes on construction of subdirect products of groups of integers. *Proceedings of the 15th Symposium on Semigroups* (*Matsue*, 1991), 79–87, *Shimane Univ., Matsue*, 1992. (*see* **93e:20073**) 20M10

Dicks, Warren (*with* Bruna, Joaquim) Pere Menal i Brufal, 1951–1991. *Publ. Mat.* **36** (1992), *no.* 2*A*, 355–358 (1993). (Editors) **93m:01063** 01A70

Dickson, David C. M. On the distribution of the surplus prior to ruin. (English summary) *Insurance Math. Econom.* **11** (1992), *no.* 3, 191–207. (Summary) **93j:62242** 62P05

Dickstein, Samuel *see* **Domoradzki, Stanisław, 93k:01065**

Di Concilio, A. Uniform properties and hyperspace topologies for ℵ-uniformities. Proceedings of the Symposium on General Topology and Applications (Oxford, 1989). *Topology Appl.* **44** (1992), *no.* 1-3, 115–123. (J. R. Isbell) **93f:54014** 54B20 (54A25, 54E15)

— (*with* Naimpally, Somashekhar) Uniform continuity in sequentially uniform spaces. *Acta Math. Hungar.* **61** (1993), *no.* 1-2, 17–19. (Thomas E. Gantner) **93k:54059** 54E15 (54C05)

Di Cosmo, Roberto (*with* Bruce, Kim B.; Longo, Giuseppe[1]) Provable isomorphisms of types. International Conference on Symbolic Computation (Zurich, 1990). *Math. Structures Comput. Sci.* **2** (1992), *no.* 2, 231–247. (Summary) **93g:68072** 68Q55 (03B20, 03B40, 03B70, 68Q65)

Di Crescenzo, A. (*with* Giorno, Virginia; Nobile, Amelia G.) On some first-crossing-time probabilities for a two-dimensional random walk with correlated components. *Adv. in Appl. Probab.* **24** (1992), *no.* 2, 441–454. (Sri Gopal Mohanty) **93g:60016** 60C05 (05A15, 60J15)

Dicuonzo, V. (*with* Pasquali Coluzzi, D.) On the automorphism group of a class of finite inversive spaces of odd order. (Italian summary) *Rend. Mat. Appl.* (7) **11** (1991), *no.* 4, 913–923. (Ferenc Wettl) **93b:51018** 51E25

Diday, Edwin From data to knowledge: probabilist objects for a symbolic data analysis. (English summary) *Computational statistics, Vol.* 1 (*Neuchâtel*, 1992), 193–213, *Physica, Heidelberg*, 1992. (*see* **93k:62002**) 62–07 (68T30)

Diderot, Denis *see* **Mayer, Jean, 93b:01024**

Diduch, C. P. (*with* Marquez, H. J.) Sensitivity of failure detection using generalized observers. *Automatica J. IFAC* **28** (1992), *no.* 4, 837–840. 93B35 (93B07)

Diebolt, Jean (*with* Robert, Christian P.; Celeux, Gilles) Bayesian estimation of hidden Markov chains: a stochastic implementation. (English summary) *Statist. Probab. Lett.* **16** (1993), *no.* 1, 77–83. (Summary) **93k:62174** 62M05 (62F15)

Dieci, Luca Numerical integration of the differential Riccati equation and some related issues. *SIAM J. Numer. Anal.* **29** (1992), *no.* 3, 781–815. (Summary) **93b:65093** 65L05 (34A50, 65L10, 65Y10)

— (*with* Lorenz, Jens) Block M-matrices and computation of invariant tori. *SIAM J. Sci. Statist. Comput.* **13** (1992), *no.* 4, 885–903. (Zdzisław W. Trzaska) **93h:65109** 65L99 (34C30, 65J10, 65N22, 73K12)

tom Dieck, Tammo ★ Topologie. (German) [Topology] de Gruyter Lehrbuch. [de Gruyter Textbook] *Walter de Gruyter & Co., Berlin*, 1991. x+401 *pp. ISBN* 3-11-013187-0; 3-11-012463-7 (J. M. Boardman) **93f:55001** 55–01 (57–01)

— Homology planes without cancellation property. *Arch. Math.* (*Basel*) **59** (1992), *no.* 2, 105–114. (Claire Voisin) **93i:14012** 14E05 (14M20)

Diederich, Klas (*with* Herbort, Gregor) Extension of holomorphic L^2-functions with weighted growth conditions. *Nagoya Math. J.* **126** (1992), 141–157. (Kensho Takegoshi) **93h:32016** 32D15 (32F15)

— (*with* Ohsawa, Takeo) A continuity principle for the Bergman kernel function. *Publ. Res. Inst. Math. Sci.* **28** (1992), *no.* 3, 495–501. (Kensho Takegoshi) **93h:32030** 32H10

Diego, Oscar (*with* González, José) Multicriticality in stabilized 2D quantum gravity. (English summary) *Modern Phys. Lett. A* **7** (1992), *no.* 37, 3465–3477. 81T40

Diekert, Volker Some mathematical aspects of trace theory. (English summary) Mathematische Wissenschaften gestern und heute. 300 Jahre Mathematische Gesellschaft in Hamburg, Teil 4 (Hamburg, 1990). *Mitt. Math. Ges. Hamburg* **12** (1991), *no.* 4, 1171–1181 (1992). (Summary) **93f:68035** 68Q20 (20M05, 68R05)

Diekmann, O. (*with* Metz, J. A. J.) Exact finite-dimensional representations of models for physiologically structured populations. I. The abstract foundations of linear chain trickery. *Differential equations with applications in biology, physics, and engineering* (*Leibnitz*, 1989), 269–289, *Lecture Notes in Pure and Appl. Math.*, 133, *Dekker, New York*, 1991. (Boris G. Zaslavskiĭ) **93f:92023** 92D25

— (*with* Verduyn Lunel, Sjoerd M.) A new short proof of an old folk theorem in functional-differential equations. *Semigroup theory and evolution equations* (*Delft*, 1989), 101–106, *Lecture Notes in Pure and Appl. Math.*, 135, *Dekker, New York*, 1991. (Summary) **93b:34080** 34K05 (47D06, 47N20)

— (*with* Gyllenberg, Mats; Thieme, Horst R.) Perturbation theory for dual semigroups. V. Variation of constants formulas. *Semigroup theory and evolution equations* (*Delft*, 1989), 107–123, *Lecture Notes in Pure and Appl. Math.*, 135, *Dekker, New York*, 1991. (S. Kantorovitz) **93e:47047** 47D03 (47A55)

Diem Ho Quadratic programming for portfolio optimization. (English summary) *Appl. Stochastic Models Data Anal.* **8** (1992), *no.* 3, 189–194. 90C90 (90A09)

nguyen huu Dien *see* **Nguyen Huu Dien**

Dien, Nguyen Huu *see* **Nguyen Huu Dien**

Diener, Francine (*with* Diener, Marc) Maximal delay. *Dynamic bifurcations* (*Luminy*, 1990), 71–86, *Lecture Notes in Math.*, 1493, *Springer, Berlin*, 1991. (Henk Broer) **93m:34055** 34C23 (03H05, 34C50, 34E15, 58F14)

Diener, Immo (*with* Cromme, Ludwig J.) Fixed point theorems for discontinuous mapping. *Math. Programming* **51** (1991), *no.* 2, (*Ser. A*), 257–267. (J. Matkowski) **93d:90013** 90A14 (26B99, 65J15, 92B20)

Diener, Marc Canards, ou comment bifurquent les systèmes différentiels lents-rapides. [Canards, or how slow-fast differential systems bifurcate] *La mathématique non standard*, 401–421, *Fondem. Sci., CNRS, Paris*, 1989. (*see* **93c:01002**) 03H05 (34C23, 34E15)

— (*with* Diener, Francine) Maximal delay. *Dynamic bifurcations* (*Luminy*, 1990), 71–86, *Lecture Notes in Math.*, 1493, *Springer, Berlin*, 1991. (Henk Broer) **93m:34055** 34C23 (03H05, 34C50, 34E15, 58F14)

Dienes, Keith R. (*with* Tye, S.-H. Henry) Model-building for fractional superstrings. *Nuclear Phys. B* **376** (1992), *no.* 2, 297–349. (Alexander A. Zheltukhin) **93f:81106** 81T30 (81T40, 81T60)

đỗ ngọc Diệp *see* **Đỗ Ngọc Diệp**

Diepold, Klaus (*with* Pauli, Rainer; Nossek, Josef A.) A Schur-type algorithm for the triangular factorization of positive semi-definite matrices. *Algorithms and parallel VLSI architectures, Vol. B* (*Pont-à-Mousson*, 1990), 33–42, *Elsevier, Amsterdam*, 1991. (L. Rodman) **93h:65055** 65F30 (15A23)

Dierckx, P. (*with* Van Leemput, S.; Vermeire, T.) Algorithms for surface fitting using Powell-Sabin splines. *IMA J. Numer. Anal.* **12** (1992), *no.* 2, 271–299. (Summary) **93b:65026** 65D17 (65D07, 68U05)

Dierolf, S. (*with* Bonet, José; Fernández, Carmen) On two classes of LF-spaces. *Portugal. Math.* **49** (1992), *no.* 1, 109–130. (Pawel Domański) **93f:46002** 46A13

Diers, Yves Catégories algébriques prégaloisiennes. (English summary) [Pre-Galois algebraic categories] *Cahiers Topologie Géom. Différentielle Catégoriques* **32** (1991), *no.* 4, 279–296. (Kimmo I. Rosenthal) **93e:18008** 18C10

— ★ Categories of commutative algebras. Oxford Science Publications. *The Clarendon Press, Oxford University Press, New York*, 1992. x+271 *pp. ISBN* 0-19-853586-4 (Liam O'Carroll) **93m:13001** 13–02 (14–02, 18–02)

— The Zariski category of graded commutative rings. (English summary) *Category theory* 1991 (*Montreal, PQ*, 1991), 171–181, *CMS Conf. Proc.*, 13, *Amer. Math. Soc., Providence, RI*, 1992. (C. P. L. Rhodes) **93k:13006** 13A30 (14A05, 18B99)

— (*with* Koudsi, Élie) Algèbres de Boole non commutatives. (English summary) [Noncommutative Boolean algebras] *Ann. Sci. Math. Québec* **16** (1992), *no.* 1, 1–24. (Peter Johnstone) **93h:08003** 08A05 (06E99, 16B50, 18F20)

— Catégories multialgébriques galoisiennes. (English summary) [Galois multialgebraic categories] *Cahiers Topologie Géom. Différentielle Catégoriques* **33** (1992), *no.* 1, 55–69. (Bodo Pareigis) **93k:18011** 18B99

— The Zariski category of graded commutative rings. (French summary) *Cahiers Topologie Géom. Différentielle Catégoriques* **33** (1992), *no.* 3, 223–224. 13A02

Diesperova, M. M. (*with* Demenin, A. N.) Sequences of stochastic evolution equations with random perturbations of small intensity. (Russian. Russian summary) *Asymptotic methods in problems in the theory of random evolutions* (*Russian*), 25–30, *Akad. Nauk Ukrain. SSR, Inst. Mat., Kiev*, 1991. (*see* **93e:60002**) 60H20

Diestel, J. (*with* Ruess, Wolfgang M.; Schachermayer, W.) On weak compactness in $L^1(\mu, X)$. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 2, 447–453. (R. Anantharaman) **93g:46033** 46E40

Diestel, Reinhard Decomposing infinite graphs. Directions in infinite graph theory and combinatorics (Cambridge, 1989). *Discrete Math.* **95** (1991), *no.* 1-3, 69–89. (Thomas Andreae) **93b:05159** 05C99

— The end structure of a graph: recent results and open problems. Special volume to mark the centennial of Julius Petersen's "Die Theorie der regulären Graphs", Part I. *Discrete Math.* **100** (1992), *no.* 1-3, 313–327. (Carsten Thomassen) **93g:05038** 05C05 (01A65, 01A67)

— (*with* Leader, Imre) A proof of the bounded graph conjecture. *Invent. Math.* **108** (1992), *no.* 1, 131–162. (Koduvayur R. Parthasarathy) **93f:05095** 05C99 (05C75, 05C78)
— The structure of TK_4-free graphs. *J. Combin. Theory Ser. B* **54** (1992), *no.* 2, 222–238. (Yousef Alavi) **93a:05103** 05C75
— On spanning trees and k-connectedness in infinite graphs. (English summary) *J. Combin. Theory Ser. B* **56** (1992), *no.* 2, 263–277. (Jozef Širáň) **93i:05047** 05C05 (05C40)
— *see also* **Directions in infinite graph theory and combinatorics**
Dietel, Jürgen *see* **Engeln-Müllges, Gisela, 93g:65002a** *and* **93g:65002b**
Dieterich, Ernst Tame orders. *Topics in algebra, Part* 1 (*Warsaw*, 1988), 233–261, *Banach Center Publ.*, 26, *Part* 1, *PWN, Warsaw*, 1990. (Wolfgang Rump) **93d:16015** 16G30 (14H20)
Dietrich, C. R. Computationally efficient generation of Gaussian conditional simulations over regular sample grids. (English summary) *Math. Geol.* **25** (1993), *no.* 4, 439–451. (Summary) **93m:86008** 86A32
Dietrich, Eric Programs in the search for intelligent machines: the mistaken foundations of AI. *The foundations of artificial intelligence*, 223–233, *Cambridge Univ. Press, Cambridge*, 1990. (*see* **93b:68073**) 68T01
Dietrich, Roland ★ Vergleichende Analyse von Inferenzsystemen. (German) [Comparative analysis of inference systems] Dissertation, Universität Fridericiana Karlsruhe, Karlsruhe, 1990. With a foreword by Gerhard Goos. Berichte der Gesellschaft für Mathematik und Datenverarbeitung [Reports of the Society for Mathematics and Data Processing], 188. *Gesellschaft für Mathematik und Datenverarbeitung mbH, St. Augustin; R. Oldenbourg Verlag, Munich*, 1990. 151 *pp. ISBN* 3-486-21779-8 (Alexander Leitsch) **93g:03009** 03B22 (03B35, 68T15)
Dietrich, Volker ELISE, an algorithm to compute asymptotic representations for solutions of linear differential equations, realized with the computer algebra system MAPLE. (English summary) *J. Symbolic Comput.* **14** (1992), *no.* 1, 85–92. (Summary) **93f:34002** 34–04 (34A20, 34E05, 65L99)
Dietz, Klaus P. (*with* Breuer, H. P.; Holthaus, M.) A remark on the Kramers-Henneberger transformation. (English summary) *Phys. Lett. A* **165** (1992), *no.* 4, 341–346. (Summary) **93f:81158** 81V10
Dietze, S. (*with* Schmidt, Jochen W.) Unconstrained duals to partially separable constrained programs. (English summary) *Math. Programming* **56** (1992), *no.* 3, *Ser. A*, 337–341. (Summary) **93j:90078** 90C25 (65K05)
Dietzel, E. *see* **Klein, Felix, 93a:01065**
Dietzenbacher, Erik The LeChatelier-Samuelson principle revisited. (English summary) *Z. Nationalökonom.* **55** (1992), *no.* 3, 277–296. (Summary) **93e:90014** 90A15
Dietzfelbinger, Martin (*with* Meyer auf der Heide, Friedhelm) Dynamic hashing in real time. (English summary) *Informatik*, 95–119, *Teubner-Texte Inform.*, 1, *Teubner, Stuttgart*, 1992. (A. D. Booth) **93j:68040** 68P10 (65C05, 68P05, 68P15, 68P20)
— (*with* Maass, Wolfgang) The complexity of matrix transposition on one-tape off-line Turing machines with output tape. (English summary) *Theoret. Comput. Sci.* **108** (1993), *no.* 2, 271–290. (Summary) **93m:68073** 68Q25 (68Q05)
Dieudonné, Jean *see* **Medvedev, F. A., 93c:01047**
González Díez, G. *see* **González Díez, G.**
Diez, Javier Alberto (*with* Gratton, Julio; Minotti, Fernando) Self-similar solutions of the second kind of nonlinear diffusion-type equations. (English summary) *Quart. Appl. Math.* **50** (1992), *no.* 3, 401–414. (Summary) **93f:76090** 76R50 (35K55)
gutiérrez Díez, José Manuel *see* **Gutiérrez Díez, José Manuel**
Di Fazio, G. (*with* Ragusa, M. A.) Commutators and Morrey spaces. (Italian summary) *Boll. Un. Mat. Ital. A* (7) **5** (1991), *no.* 3, 323–332. (Bui Huy Qui) **93b:42028** 42B20 (42B25, 42B30, 46E99, 47G10)
— On Dirichlet problem in Morrey spaces. *Differential Integral Equations* **6** (1993), *no.* 2, 383–391. (Yu. V. Kostarchuk) **93k:35072** 35J10 (35B45, 35B65)
Di Febbraro, Angela (*with* Aicardi, Michele; Minciardi, Riccardo) Perturbation analysis of discrete event dynamic systems via minimax algebra. *System modelling and optimization* (*Zurich*, 1991), 925–933, *Lecture Notes in Control and Inform. Sci.*, 180, *Springer, Berlin*, 1992. (*see* **93e:90003**) 90C40
Diffie, Whitfield The first ten years of public key cryptology. (English summary) *Contemporary cryptology*, 135–175, *IEEE, New York*, 1992. (*see* **93k:94009**) 94A60
Di Francesco, Ph. (*with* Itzykson, Claude; Zuber, J.-B.) Classical W-algebras. *Comm. Math. Phys.* **140** (1991), *no.* 3, 543–567. (Summary) **93e:17041** 17B68 (58F07, 81R10)
— (*with* Bauer, Michel; Itzykson, Claude; Zuber, J.-B.) Covariant differential equations and singular vectors in Virasoro representations. *Nuclear Phys. B* **362** (1991), *no.* 3, 515–562. (P. D. Jarvis) **93c:81062** 81R10 (17B68, 81T30, 81T40)
— Integrable lattice models, graphs and modular invariant conformal field theories. *Internat. J. Modern Phys. A* **7** (1992), *no.* 3, 407–500. (Peter J. Forrester) **93d:82027** 82B23 (17B67, 22E70, 81T27, 81T40)
— (*with* Mathieu, Pierre; Sénéchal, David) Integrability of the quantum KdV equation at $c = -2$. *Modern Phys. Lett. A* **7** (1992), *no.* 8, 701–707. (Filippo Colomo) **93b:81245** 81T40 (58F07)
— (*with* Kutasov, David) World-sheet and space-time physics in two-dimensional (super)string theory. *Nuclear Phys. B* **375** (1992), *no.* 1, 119–170. (Mark D. Roberts) **93b:81209** 81T30 (81T40)
— (*with* Mathieu, Pierre) Singular vectors and conservation laws of quantum KdV type equations. *Phys. Lett. B* **278** (1992), *no.* 1-2, 79–84. (HoSeong La) **93i:81222** 81T40 (58F07)
Di Gennaro, Vincenzo Some observations on the singularities of the Hilbert scheme parametrizing linear varieties contained in a projective variety. (Italian) *Ricerche Mat.* **39** (1990), *no.* 2, 259–291 (1991). (Summary) **93a:14047** 14N05 (14M10)
Digne, F. (*with* Lehrer, Gustav Isaac; Michel, Jean) The characters of the group of rational points of a reductive group with nonconnected centre. *J. Reine Angew. Math.* **425** (1992), 155–192. (Bhama Srinivasan) **93c:20071** 20G05 (20C15)
Di Iorio, M. (*with* Del Prete, I.) A unifying approach to continuity-like notions for functions and multifunctions. (Italian summary) *Rend. Accad. Sci. Fis. Mat. Napoli* (4) **57** (1990), 67–82 (1991). (Ivan L. Reilly) **93a:54013** 54C08 (54A10, 54A20, 54B20, 54C60)
van Dijk, Herman K. (*with* Hop, J. Peter) SISAM and MIXIN: two algorithms for the computation of posterior moments and densities using Monte Carlo integration. (English summary) *Comput. Sci. Econom. Management* **5** (1992), *no.* 3, 183–220. (Summary) **93e:65157** 65U05 (65C05)
van Dijk, Nico M. Transient error bound analysis for continuous-time Markov reward structures. *Performance Evaluation* **13** (1991), *no.* 3, 147–158. (R. Petrović) **93a:90026** 90B25 (90B12)
— (*with* Taylor, P. G.) An error bound for a continuous time approximation of discrete time servicing. (English summary) *Comm. Statist. Stochastic Models* **8** (1992), *no.* 4, 651–664. (Hans Daduna) **93j:60141** 60K25 (68M20, 90B22)
— A note on monotonicity results in multicasting. (English summary) *Oper. Res. Lett.* **11** (1992), *no.* 5, 323–328. (Summary) **93e:94002** 94A05
— Uniformization for nonhomogeneous Markov chains. (English summary) *Oper. Res. Lett.* **12** (1992), *no.* 5, 283–291. (Summary) **93h:60106** 60J10
— Approximate uniformization for continuous-time Markov chains with an application to performability analysis. *Stochastic Process. Appl.* **40** (1992), *no.* 2, 339–357. (Summary) **93b:60162** 60J27 (60K25)
— (*with* Decreusefond, L.; Körezlioğlu, H.) An error bound for infinite approximations of queueing networks with large finite stations under RSRD protocol. (English summary) *Performance Evaluation* **17** (1993), *no.* 3, 177–187. 90B22 (60K25)
— (*with* Boucherie, Richard J.) A generalization of Norton's theorem for queueing networks. (English summary) *Queueing Systems Theory Appl.* **13** (1993), *no.* 1-3, 251–289. (Summary) **93m:60178** 60K25 (90B22)
Dijkgraaf, Robbert (*with* Verlinde, Herman; Verlinde, Erik) Notes on topological string theory and 2D quantum gravity. *String theory and quantum gravity* (*Trieste*, 1990), 91–156, *World Sci. Publishing, River Edge, NJ*, 1991. (Alexander W. Smith) **93c:81202** 81T40 (58F07, 81–02, 81T05, 81T30)
— (*with* Pasquier, V.; Roche, Philippe) Quasi-Hopf algebras, group cohomology and orbifold models [MR 92m:81238]. (English summary) *Integrable systems and quantum groups* (*Pavia*, 1990), 75–98, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93b:00028**) 81T40 (16W30, 17B37, 20J05)
— (*with* Verlinde, Herman; Verlinde, Erik) String propagation in a black hole geometry. *Nuclear Phys. B* **371** (1992), *no.* 1-2, 269–314. (Markku Lehto) **93e:81092** 81T30 (81T40, 83E30)
Dijkhuis, B. (*with* Horn, T. C. M.; Kleyn, A. W.) Catastrophes and classical surface scattering. *Chem. Phys.* **149** (1990), *no.* 3, 275–298. (D. R. J. Chillingworth) **93e:58020** 58C28 (78A05)
Dijksma, Aalt (*with* Alpay, Daniel; Bruinsma, Piet; de Snoo, Henk) A Hilbert space associated with a Nevanlinna function. *Signal processing, scattering and operator theory, and numerical methods* (*Amsterdam*, 1989), 115–122, *Progr. Systems Control Theory*, 5, *Birkhäuser Boston, Boston, MA*, 1990. (Vladimir Derkach) **93b:47013** 47A45 (46E22, 47B38, 47B99)
— (*with* Alpay, Daniel; Bruinsma, Piet; de Snoo, Henk) Interpolation problems, extensions of symmetric operators and reproducing kernel spaces. I. *Topics in matrix and operator theory* (*Rotterdam*, 1989), 35–82, *Oper. Theory Adv. Appl.*, 50, *Birkhäuser, Basel*, 1991. (Vladimir Derkach) **93k:47026a** 47A57 (30E05, 46E20, 47A20, 47B25)
— (*with* Alpay, Daniel; Bruinsma, Piet; de Snoo, Henk) Interpolation problems, extensions of symmetric operators and reproducing kernel spaces. II. *Integral Equations Operator Theory* **14** (1991), *no.* 4, 465–500. (Vladimir Derkach) **93k:47026b** 47A57 (30E05, 46E20, 47A20, 47B25)
— (*with* Alpay, Daniel; Bruinsma, Piet; de Snoo, Henk) Addendum: "Interpolation problems, extensions of symmetric operators and reproducing kernel spaces. II". *Integral Equations Operator Theory* **15** (1992), *no.* 3, 378–388. (Vladimir Derkach) **93k:47026c** 47A57 (30E05, 46E20, 47A20, 47B25)
Dijkstra, E. W. How computing science created a new mathematical style. Mathematische Wissenschaften gestern und heute. 300 Jahre Mathematische Gesellschaft in Hamburg, Teil 4 (Hamburg, 1990). *Mitt. Math. Ges. Hamburg* **12** (1991), *no.* 4, 897–905 (1992). (P. D. F. Ion) **93i:68004** 68–03 (00A35, 01A60)
Dijkstra, Henk A. On the structure of cellular solutions in Rayleigh-Bénard-Marangoni flows in small-aspect-ratio containers. (English summary) *J. Fluid Mech.* **243** (1992), 73–102. (Summary) **93g:76056** 76E15 (76D45, 76R05)
Dijkstra, T. K. On statistical inference with parameter estimates on the boundary of the parameter space. (English summary) *British J. Math. Statist. Psych.* **45** (1992), *no.* 2, 289–308. (Summary) **93j:62062** 62F10
Dika, O. V. (*with* Mikityuk, Ya. V.) Perturbation of the two-sided shift operator. (Ukrainian) *Visnik L'viv. Univ. Ser. Mekh. Mat. No.* 34 (1990), 50–51. 47B37
Dikin, I. I. Determination of an inner point of a system of linear inequalities. (Russian. English and Ukrainian summaries) *Kibernet. Sistem. Anal.* **1992**, *no.* 1, 67–74, 188; *translation in Cybernet. Systems Anal.* **28** (1992), *no.* 1, 54–61. (M. Vlach) **93j:90049** 90C05
Dikranjan, Dikran N. (*with* Gregorio, Enrico; Orsatti, A.) Kasch bimodules. *Rend. Sem. Mat. Univ. Padova* **85** (1991), 147–160. (K. R. Fuller) **93e:16017** 16D90 (16D20, 16D50)
— Semiregular closure operators and epimorphisms in topological categories. (English summary) V International Meeting on Topology in Italy (Italian) (Lecce, 1990/Otranto, 1990). *Rend. Circ. Mat. Palermo* (2) *Suppl. No.* 29 (1992), 105–160. (Walter Tholen) **93m:18009** 18B30 (18A20, 54B30, 54D10)
— (*with* Shakhmatov, D. B.) Pseudocompact and countably compact abelian groups: Cartesian products and minimality. *Trans. Amer. Math. Soc.* **335** (1993), *no.* 2, 775–790. (Luchezar Stojanov) **93d:22001** 22A05 (54B10)
Diks, Krzysztof (*with* Pelc, Andrzej) Almost safe gossiping in bounded degree networks. *SIAM J. Discrete Math.* **5** (1992), *no.* 3, 338–344. (A. Ádám) **93j:05092** 05C38 (05C35, 68R10, 90B12, 90B15)
— (*with* Djidjev, Hristo N.; Sýkora, Ondrej; Vrťo, Imrich) Edge separators of planar and outerplanar graphs with applications. (English summary) *J. Algorithms* **14** (1993), *no.* 2, 258–279. (Summary) **93i:05121** 05C85 (68Q25, 68R10)
Dikshit, G. D. (*with* Rhoades, B. E.) An inclusion relation between Cesàro and Nörlund matrices for absolute summability. *J. Math. Anal. Appl.* **170** (1992), *no.* 1, 171–195. (W. Beekmann) **93m:40001** 40F05 (40D25, 40G05)
Dilcher, Karl (*with* Nulton, James D.; Stolarsky, Kenneth B.) The zeros of a certain family of trinomials. *Glasgow Math. J.* **34** (1992), *no.* 1, 55–74. (From the introduction) **93b:26022** 26C10
Dileepan, Parthasarati Common due date scheduling problem with separate earliness and tardiness penalties. (English summary) *Comput. Oper. Res.* **20** (1993), *no.* 2, 179–184. 90B35

Diligenskii, S. N. (*with* Efremov, A. Yu.) On the synthesis of robust laws for the stabilization of the motion of aircraft. (Russian. Russian summary) *Avtomat. i Telemekh.* **1992**, *no.* 8, 31–38; *translation in Automat. Remote Control* **53** (1992), *no.* 8, *part* 1, 1153–1159 (1993). 93D21 (70Q05, 93C95)

Diligenti, M. (*with* Carini, A.; Maier, Giulio) Boundary integral equation analysis in linear viscoelasticity: variational and saddle point formulations. (English summary) *Comput. Mech.* **8** (1991), *no.* 2, 87–98. (N. Gass) **93g:73062** 73F15 (65N30, 73V10, 73V25)

Dill, D. L. (*with* Burch, J. R.; Clarke, E. M.; McMillan, K. L.; Hwang, L. J.) Symbolic model checking: 10^{20} states and beyond. Selections from the 1990 IEEE Symposium on Logic in Computer Science. *Inform. and Comput.* **98** (1992), *no.* 2, 142–170. (Summary) **93c:68065** 68Q60

Dill, Ellen R. (*with* Mikusiński, Piotr) Strong Boehmians. *Proc. Amer. Math. Soc.* **119** (1993), *no.* 3, 885–888. (E. L. Koh) **93m:44011** 44A40

Dill, Ellis Harold Kirchhoff's theory of rods. *Arch. Hist. Exact Sci.* **44** (1992), *no.* 1, 1–23. (D. Ieşan) **93e:73001** 73–03 (01A55, 73G05, 73K05)

— (*with* Coleman, Bernard D.; Lembo, Marzio; Lu, Zheng; Tobias, Irwin) On the dynamics of rods in the theory of Kirchhoff and Clebsch. *Arch. Rational Mech. Anal.* **121** (1992), *no.* 4, 339–359. (D. Ieşan) **93k:73046** 73K05 (73D99, 73K12)

— (*with* Coleman, Bernard D.) Flexure waves in elastic rods. *J. Acoust. Soc. Amer.* **91** (1992), *no.* 5, 2663–2673. (Summary) **93b:73028** 73K12 (73D35, 73K05)

Dillen, Franki The affine differential geometry of complex hypersurfaces. *Med. Konink. Acad. Wetensch. België* **52** (1990), *no.* 1, 89–112. (C. S. Houh) **93e:53010** 53A15 (53C40)

— (*with* Martínez, Antonio; Milán, Francisco; Santos, Florentino Garcia; Vrancken, Luc) On the Pick invariant, the affine mean curvature and the Gauss curvature of affine surfaces. *Affine differential geometry* (*Oberwolfach*, 1991), 622–642, *Tech. Univ. Berlin, Berlin*, 1991. (*see* **93g:53001**) 53A15

— (*with* Vrancken, Luc) Generalized Cayley surfaces. *Global differential geometry and global analysis* (*Berlin*, 1990), 36–47, *Lecture Notes in Math.*, **1481**, *Springer, Berlin*, 1991. (Ivan Sterling) **93m:53011** 53A15

— Semi-parallel hypersurfaces of a real space form. *Israel J. Math.* **75** (1991), *no.* 2-3, 193–202. (P. J. Ryan) **93f:53044** 53C40

— (*with* Martínez, Antonio; Milán, Francisco; Santos, Florentino Garcia; Vrancken, Luc) On the Pick invariant, the affine mean curvature and the Gauss curvature of affine surfaces. Affine differential geometry (Oberwolfach, 1991). *Results Math.* **20** (1991), *no.* 3-4, 622–642. (From the introduction) **93h:53015** 53A15

— (*with* Nölker, Stefan) Rotating submanifolds having the helix-property. *Geometry and topology of submanifolds, IV* (*Leuven*, 1991), 191–197, *World Sci. Publishing, River Edge, NJ*, 1992. (Bang-yen Chen) **93g:53077** 53C40 (53B25)

— (*with* Chen, Bang-Yen; Song, Hong Zao) Quadric hypersurfaces of finite type. *Colloq. Math.* **63** (1992), *no.* 2, 145–152. (Florentino García Santos) **93g:53010** 53A07

— (*with* Roşca, Radu; Verstraelen, Leopold; Vrancken, Luc) Pseudo-isotropic Lorentzian hypersurfaces in Minkowski space. *J. Geom. Phys.* **9** (1992), *no.* 2, 149–154. (Paul E. Ehrlich) **93d:53083** 53C50

— Hypersurfaces of a real space form with parallel higher order fundamental form. (English summary) *Soochow J. Math.* **18** (1992), *no.* 3, 321–338. (P. J. Ryan) **93m:53057** 53C40

— (*with* Vrancken, Luc) Homogeneous affine hypersurfaces with rank one shape operators. *Math. Z.* **212** (1993), *no.* 1, 61–72. (Udo Simon) **93k:53014** 53A15 (53C30)

— *see also* **Geometry and topology of submanifolds, 93d:53002**

Dillencourt, M. B. (*with* Samet, H.; Tamminen, M.) Corrigenda: "A general approach to connected-component labeling for arbitrary image representations" [J. Assoc. Comput. Mach. **39** (1992), no. 2, 253–280]. *J. Assoc. Comput. Mach.* **39** (1992), *no.* 4, 985–986. 68U10

Diller, Jeffrey (*with* Barrett, David E.) Poincaré series and holomorphic averaging. (English summary) *Invent. Math.* **110** (1992), *no.* 1, 23–27. (I. Kra) **93k:30071** 30F35 (14H15, 32G15)

Dilmann, Roland ★ Statistik. I. (German) [Statistics. I] Grundlagen der Wahrscheinlichkeitstheorie. [Foundations of probability theory] Physica-Lehrbuch. [Physica Textbook] *Physica-Verlag, Heidelberg*, 1990. xviii+270 *pp. ISBN* 3-7908-0469-X (Publisher's description) **93d:62003a** 62–01 (60–01)

— ★ Statistik. II. (German) [Statistics. II] Induktive Statistik. [Inductive statistics] Physica-Lehrbuch. [Physica Textbook] *Physica-Verlag, Heidelberg*, 1990. xiv+253 *pp. ISBN* 3-7908-0470-3 (Publisher's description) **93d:62003b** 62–01 (60–01)

Dillon, Meighan (*with* Loustau, John) ★ Linear geometry with computer graphics. (English. English summary) With 1 IBM-PC floppy disk (3.5 inch; DD). Monographs and Textbooks in Pure and Applied Mathematics, 170. *Marcel Dekker, Inc., New York*, 1993. x+440 *pp. ISBN* 0-8247-8898-2 (E. J. F. Primrose) **93j:51001** 51–01 (51A05, 68U05)

Dimaggio, F. (*with* Yip, S.-C.) Routes to chaos of a pendulum with vertically rotating pivot. (English summary) *Comput. & Structures* **46** (1993), *no.* 4, 725–740. (Summary) **93m:70026** 70K50 (58F13, 58F40)

Di Maio, Giuseppe (*with* Naimpally, Somashekhar) Abstract measure of farness and Wijsman convergence. (Serbo-Croatian summary) *Zb. Rad. No.* 5 (1991), 109–112. (Gerald Beer) **93g:54016** 54B20 (54A10, 54E05, 54E15)

— (*with* Naimpally, Somashekhar) The locally finite hypertopology and generalized uniformities. (Serbo-Croatian summary) *Zb. Rad. No.* 5 (1991), 113–116. (Gerald Beer) **93g:54017** 54B20 (54A10, 54D30, 54E15)

— (*with* Naimpally, Somashekhar) Proximal graph topologies. (English summary) *Questions Answers Gen. Topology* **10** (1992), *no.* 2, 97–125. (Summary) **93g:54025** 54C35 (54A10, 54A20, 54B20, 54E05, 54E15)

Dimakis, A. (*with* Müller-Hoissen, Folkert; Striker, T.) From continuum to lattice theory via deformation of the differential calculus. (English summary) *Phys. Lett. B* **300** (1993), *no.* 1-2, 141–144. (Arne Schirrmacher) **93j:81074** 81T25 (58B30)

Di Martino, L. (*with* Tamburini Bellani, Maria Chiara) Some remarks on the degrees of faithful irreducible representations of a finite p-group. *Geom. Dedicata* **41** (1992), *no.* 2, 155–164. (Roderick Gow) **93c:20014** 20C15

Di Marzio, Frank (*with* Szajman, Jakub) Mie scattering in the first-order corrected eikonal approximation. *Comput. Phys. Comm.* **70** (1992), *no.* 2, 297–304. 78A45

Di Massimo, C. (*with* Willis, M. J.; Montague, G. A.; Tham, Ming T.; Morris, A. Julian) Artificial neural networks in process estimation and control. (English summary) *Automatica J. IFAC* **28** (1992), *no.* 6, 1181–1187. (Summary) **93i:93084** 93C83 (92B20)

Dimca, Alexandru On the connectivity of complex affine hypersurfaces. *Topology* **29** (1990), *no.* 4, 511–514. (From the text) **93c:32011** 32C10 (14J70)

— On the de Rham cohomology of a hypersurface complement. *Amer. J. Math.* **113** (1991), *no.* 4, 763–771. (Editors) **93c:14021** 14F40

Dimentberg, F. M. (*with* Vorob'ev, E. I.) ★ Пространственные шарнирные механизмы. (Russian) [Spatial linkages] Замкнутые и открытые кинематические цепи. [Closed-loop and open-loop kinematic chains] With an English summary. "*Nauka*", *Moscow*, 1991. 264 *pp. ISBN* 5-02-014286-7 (From the summary) **93d:70007** 70B15 (70–01, 70E99, 73K10)

le Dimet, François-Xavier *see* **Le Dimet, François-Xavier**

le Dimet, Jean-Yves *see* **Le Dimet, Jean-Yves**

Dimiev, Stancho Holomorphic nonholonomic differential systems on complex manifolds. Proceedings of the Tenth Conference on Analytic Functions (Szczyrk, 1990). *Ann. Polon. Math.* **55** (1991), 65–73. (Joan Girbau) **93c:32017** 32C38 (32L05)

— Well situated extreme points. Analyse complexe (Bucharest, 1989). *Rev. Roumaine Math. Pures Appl.* **36** (1991), *no.* 3-4, 137–145. (R. H. Cox) **93a:46010** 46A40 (46E30, 54F05)

Dimirovski, G. M. (*with* Gough, N. E.; Ting, I. H.; Deskov, V. P.) Minimal realization of a class of discrete multivariable systems based on dyadic characteristic weighting patterns. (English summary) *Mutual impact of computing power and control theory* (*Prague*, 1992), 127–132, *Czech. Acad. Sci., Prague*, 1992. (*see* **93f:93005**) 93B15 (93B40)

— (*with* Deskov, V. P.; Gough, N. E.) On the ordering of characteristic input-output modes in MIMO discrete-time systems. (English summary) *Mutual impact of computing power and control theory* (*Prague*, 1992), 137–142, *Czech. Acad. Sci., Prague*, 1992. (*see* **93f:93005**) 93C55 (93B51)

Dimitracopoulos, C. (*with* Adamowicz, Zofia) On a problem concerning parameter free induction. *Z. Math. Logik Grundlag. Math.* **37** (1991), *no.* 4, 363–366. (Roman Murawski) **93b:03101** 03F30

Dimitrić, Ivko Submanifolds of E^m with harmonic mean curvature vector. *Bull. Inst. Math. Acad. Sinica* **20** (1992), *no.* 1, 53–65. (Angel Ferrández) **93g:53087** 53C42 (53C40)

Dimitrić, Radoslav M. Dualities between Hom_R and $\otimes_R$ and their applications. *Kobe J. Math.* **9** (1992), *no.* 1, 43–61. (Luigi Salce) **93k:13029** 13F30 (13C13, 16S50, 20K20)

— Anatoly Ivanovich Mal'tsev. *Math. Intelligencer* **14** (1992), *no.* 2, 26–30. (Editors) **93c:01037** 01A70 (01A74)

Dimitrijević, Vladimir (*with* Cvetković, Dragoš; Milosavljević, Milan) An algorithm for M asymmetric travelling salesman problem on a bandwidth-limited graph. *Yugosl. J. Oper. Res.* **1** (1991), *no.* 1, 15–25. (Olivia M. Carducci) **93b:90071** 90C27 (68R10, 90C10, 90C39)

Dimitrov, B. (*with* Rachev, Svetlozar T.; Khalil, Zohel) A probabilistic approach to optimal quality usage. (English summary) *Comput. Math. Appl.* **24** (1992), *no.* 8-9, 219–227. (Peter R. Nelson) **93m:60175** 60K10 (90B25)

— (*with* Chukova, S.) On distributions having the almost-lack-of-memory property. *J. Appl. Probab.* **29** (1992), *no.* 3, 691–698. (Kuo Tung Lin) **93k:62026** 62E10 (60E05, 60K25)

Dimitrov, Ivan Bifurcations of invariant manifolds in the Gel'fand-Dikii system. *Phys. Lett. A* **163** (1992), *no.* 4, 286–292. (Gui Zhang Tu) **93j:58061** 58F07 (35B32)

Dimitrov, V. S. (*with* Cooklev, T. V.; Donevski, B. D.) On the multiplication of reduced biquaternions and applications. (English summary) *Inform. Process. Lett.* **43** (1992), *no.* 3, 161–164. (Summary) **93i:68100** 68Q40

Dimitrova, M. B. (*with* Bainov, Drumi Dimitrov; Myshkis, A. D.) Oscillatory and asymptotic properties of the solutions of a class of operator-differential equations. *C. R. Acad. Bulgare Sci.* **45** (1992), *no.* 6, 29–31. 34C10 (34G10)

Dimitrova, Neli S. On an interval method for solving nonlinear systems. (English summary) *Computer arithmetic and enclosure methods* (*Oldenburg*, 1991), 215–223, *North-Holland, Amsterdam*, 1992. (Summary) **93m:65069** 65H10 (65G10)

— (*with* Markov, Svetoslav M.; Popova, E. D.) Extended interval arithmetics: new results and applications. (English summary) *Computer arithmetic and enclosure methods* (*Oldenburg*, 1991), 225–234, *North-Holland, Amsterdam*, 1992. (Summary) **93m:65062** 65G10

Dimitrovici, C. (*with* Grosse-Rhode, M.) Algebraic specification of action trees and recursive processes. (English summary) *Tree automata and languages* (*Le Touquet*, 1990), 235–290, *Stud. Comput. Sci. Artif. Intell.*, 10, *North-Holland, Amsterdam*, 1992. (Peter Bachmann) **93j:68130** 68Q60 (18B30, 54E35, 68Q10, 68Q55)

Dimitrovski, Dragan S. (*with* Cvejić, Stana D.) A general method of variation of constants for a first-order differential equation, and the determination of a Lie group of continuous transformations associated with this problem. (Macedonian. French summary) *Makedon. Akad. Nauk. Umet. Oddel. Mat.-Tehn. Nauk. Prilozi* **9** (1988), *no.* 1-2, 5–16 (1990). (From the introduction) **93b:34006** 34A05

— (*with* Cvejić, Stana D.) A general problem of variation of constants for a second-order ordinary differential equation. (Macedonian. French summary) *Mat. Bilten* **39** (1989), *no.* 13, 35–43 (1990). (Summary) **93b:34007** 34A05

— (*with* Ilievski, Borko; Rajović, Miloje) Sur la méthode de l'intégrale généralisée de Laplace appliquée aux équations aréolaires linéaires. (Macedonian summary) [On the Laplace generalized integral method applied to linear areolar equations] *Mat. Bilten* **41** (1991), *no.* 15, 41–48. (Summary) **93c:44001** 44A10

Dimkov, Georgi On properties of polynomials of special types. *New trends in geometric function theory and applications* (*Madras*, 1990), 26–28, *World Sci. Publishing, River Edge, NJ*, 1991. (Gerald Schmieder) **93e:30023** 30C45

— On products of starlike functions. I. Proceedings of the Tenth Conference on Analytic Functions (Szczyrk, 1990). *Ann. Polon. Math.* **55** (1991), 75–79. (S. L. Shukla) **93d:30012** 30C45

Dimkpa-Harry, Sunday H. Diagonal sum approach to the solution of particular integral of a difference equation with circular term on the right-hand side. *J. Math. Phys. Sci.* **25** (1991), *no.* 4, 369–373. 39A10

Dimock, J. (*with* Hurd, T. R.) A renormalization group analysis of correlation functions for the dipole gas. *J. Statist. Phys.* **66** (1992), *no.* 5-6, 1277–1318. (Tony C. Dorlas) **93g:82047** 82B28 (82B05)

— Quantized electromagnetic field on a manifold. *Rev. Math. Phys.* **4** (1992), *no.* 2, 223–233. (Stephen J. Summers) **93h:81094** 81T20 (46L60, 81T05, 81T13)

tamia-Dimopoulou, P. *see* **Tamia-Dimopoulou, P.**

Dimou, G. E. On the classification of nonsymmetric homogeneous bounded domains in nine-dimensional complex space $\mathbf{C}^9$. *J. Inst. Math. Comput. Sci. Math. Ser.* **4** (1991),

no. 2, 211–215. (Oleg K. Mushkarov) **93d:32053** 32M10 (32M15)
— The sectional curvature K in $\mathbf{R}^9$. *J. Inst. Math. Comput. Sci. Math. Ser.* **4** (1991), *no.* 3, 337–341. (G. Tsagas) **93g:53068** 53C30
— (*with* Tsagas, Gr.) The spectrum of the Laplace operator for a generalized Dold manifold. *J. Inst. Math. Comput. Sci. Math. Ser.* **4** (1991), *no.* 3, 355–360. (Carolyn Gordon) **93h:58161** 58G25
— Some properties of the T-algebra in $\mathbf{R}^9$. *J. Inst. Math. Comput. Sci. Math. Ser.* **4** (1991), *no.* 3, 391–396. (From the introduction) **93i:32041a** 32M10 (53C35)
— New representation of the T-algebra in $\mathbf{R}^9$. *J. Inst. Math. Comput. Sci. Math. Ser.* **4** (1991), *no.* 3, 419–423. (From the introduction) **93i:32041b** 32M10 (53C35)
— (*with* Tsagas, Gr.) The influence of the spectrum of the Laplace operator on the symmetric structure on a manifold. (English summary) *Algebras Groups Geom.* **9** (1992), *no.* 2, 99–109. (Robert Brooks) **93k:58229** 58G25
— (*with* Tsagas, Gr.) New representation of the nonsymmetric homogeneous bounded domains in $\mathbf{C}^4$ and $\mathbf{C}^5$. (English summary) *Internat. J. Math. Math. Sci.* **15** (1992), *no.* 4, 741–752. (Akio Kodama) **93i:32044** 32M10
— Classification of homogeneous convex cones and skeletons of dimension 10. *J. Inst. Math. Comput. Sci. Math. Ser.* **5** (1992), *no.* 1, 55–65. (Jean-Jacques Loeb) **93h:32044** 32M10
— (*with* Tsagas, Gr.) The spectrum of the Laplace operator for a generalized Dold manifold. *Tamkang J. Math.* **23** (1992), *no.* 1, 1–9. (Haruo Kitahara) **93f:58241** 58G25
— (*with* Tsagas, Gr.) New representation of a special nonsymmetric homogeneous domain in $\mathbf{C}^n$, $n \geq 6$. *Tamkang J. Math.* **23** (1992), *no.* 3, 239–246. (Jean-Jacques Loeb) **93k:32073** 32M15
Dimov, Georgi D. (*with* Tholen, Walter) Groups of dualities. *Trans. Amer. Math. Soc.* **336** (1993), *no.* 2, 901–913. (Hans-E. Porst) **93f:18005** 18A40 (18D05, 22D35, 54B30, 54H10)
Dimov, Ivan T. Minimization of the probable error for some Monte Carlo methods. *Mathematical modelling and scientific computations (Albena,* 1990), 159–170, *Bulgar. Acad. Sci., Sofia,* 1992. (*see* **93a:65004**) 65C05 (65D30, 65F05, 65R20)
— (*with* Tonev, O.) Random walk on distant mesh points: Monte Carlo methods. (English summary) *J. Statist. Phys.* **70** (1993), *no.* 5-6, 1333–1342. (Summary) **93j:82036** 82B80
— *see also* **Mathematical modelling and scientific computations, 93a:65004**
Dimova-Borshukova, Stefka (*with* Koleva, M. G.; Kaschiev, M. S.) ★ Исследование собственных функций горения нелинейной среды в полярных координатах методом конечных элементов. (Russian) [Investigation of the eigenfunctions of the burning of a nonlinear medium in polar coordinates by the finite element method] With an English summary. Сообщения Объединенного Института Ядерных Исследований. Дубна [Communications of the Joint Institute for Nuclear Research. Dubna], R11-91-552. *Joint Inst. Nuclear Res., Dubna,* 1991. 17 *pp.* (Summary) **93a:65128** 65M60 (65M12, 80A25)
Dimovski, Dončo Groups with unique product structures. *J. Algebra* **146** (1992), *no.* 1, 205–209. (Richard M. Thomas) **93c:20057** 20E99
shoaib-ud-Din *see* **Shoaib-ud-Din**
mohie el-Din, M. M. *see* **Mohie El-Din, M. M.**
Dinariev, O. Yu. Perturbation front structure for transport processes with relaxation. (Russian) *Prikl. Mat. Mekh.* **55** (1991), *no.* 6, 949–955; *translation in J. Appl. Math. Mech.* **55** (1991), *no.* 6, 828–835 (1992). (Nina B. Maslova) **93g:82089** 82C70 (35B20, 73B30, 73B99, 80A20)
— Some singularities of the curve of pressure reconstruction in the case of relaxation filtration of a fluid. (Russian) *Prikl. Mekh. Tekhn. Fiz.* **1991**, *no.* 5, 106–111; *translation in J. Appl. Mech. Tech. Phys.* **32** (1991), *no.* 5, 754–759 (1992). (From the text) **93a:76099** 76S05 (76A99)
— On the thermodynamics of interacting classical Hamiltonian systems. (Russian) *Dokl. Akad. Nauk* **323** (1992), *no.* 6, 1083–1085; *translation in Soviet Phys. Dokl.* **37** (1992), *no.* 4, 176–177. (M. Lawrence Glasser) **93m:82023** 82C05 (58F05)
— The propagation of a signal in a relativistic fluid with viscosity and heat conduction. (Russian. Russian summary) *Prikl. Mat. Mekh.* **56** (1992), *no.* 2, 250–259; *translation in J. Appl. Math. Mech.* **56** (1992), *no.* 2, 214–222. (Ilija Lukačević) **93i:83056** 83C55 (76Y05)
Di Natale, Marina (*with* De Michele, Leonede; Roux, Delfina) Inversion methods for Fourier transform. (Italian summary) *Rend. Accad. Naz. Sci. XL Mem. Mat.* (5) **15** (1991), 125–136. (Manfred Tasche) **93f:42011** 42A16 (42A10)
Dincă, G. (*with* Mateescu, D.) Well posed variational problems and Friedrichs extensions. *Math. Nachr.* **148** (1990), 277–291. (P. D. Panagiotopoulos) **93i:47106** 47H19 (47H04, 49K27, 49K40)
— (*with* Mateescu, D.) Friedrichs-type extension theorems for multivalued operators and some applications to mechanics. *Differential equations and control theory* (*Iaşi,* 1990), 69–88, *Pitman Res. Notes Math. Ser.*, 250, *Longman Sci. Tech., Harlow,* 1991. (From the introduction) **93b:49013** 49J45 (47H99, 49N15, 73B99)
— (*with* Mateescu, D.) Friedrichs type extension theorems for multivalued operators. (French summary) *Acad. Roy. Belg. Bull. Cl. Sci.* (6) **2** (1991), *no.* 1-3, 105–121. (Dominique Azé) **93h:49026** 49J45 (46G99, 46N10, 47H04)
Dincă, Iuliana Monte Carlo methods for solving some eigenvalue problems. (French and Russian summaries) *Econom. Comput. Econom. Cybernet. Stud. Res.* **25** (1990), *no.* 1-4, 69–78. (Summary) **93c:65009** 65C05 (65F15)
Dincbas, Mehmet (*with* Van Hentenryck, Pascal; Simonis, Helmut) Constraint satisfaction using constraint logic programming. (English summary) *Artificial Intelligence* **58** (1992), *no.* 1-3, 113–159. (Summary) **93i:68158** 68T20 (68N17, 68T27)
Dinculeanu, N. (*with* Brooks, James K.) Itô's formula for stochastic integration in Banach spaces. *Diffusion processes and related problems in analysis, Vol. I* (*Evanston, IL,* 1989), 349–397, *Progr. Probab.*, 22, *Birkhäuser Boston, Boston, MA,* 1990. (Ali Süleyman Üstünel) **93b:60109** 60H05 (46G12)
Dine, Michael (*with* Fischler, W.; Seiberg, Nathan) Small handles and auxiliary fields. *Quantum mechanics of fundamental systems,* 2 (*Santiago,* 1987), 59–71, *Ser. Cent. Estud. Cient. Santiago, Plenum, New York,* 1989. (*see* **93e:81005**) 81T40 (81T60)
— Compactification of superstrings. *Superstrings* '89 (*Trieste,* 1989), 303–365, *World Sci. Publishing, River Edge, NJ,* 1990. (Jean-Pierre Ader) **93e:81093** 81T30 (81T40)
Dineen, M. J. (*with* DeTemple, Duane W.; Robertson, J. M.; McAvaney, K. L.) Recent examples in the theory of partition graphs. (English summary) *Discrete Math.* **113** (1993), *no.* 1-3, 255–258. (Summary) **93k:05145** 05C75 (05C30)
Dineen, Seán (*with* Barroso, Jorge Alberto) Holomorphic functions on C^I, I uncountable. (English summary) Dedicated to the memory of Professor Gottfried Köthe. *Note Mat.* **10** (1990), *suppl.* 1, 65–71 (1992). (Miguel Caldas Cueva) **93i:46077** 46G20
— (*with* Timoney, Richard M.) On a problem of H. Bohr. *Bull. Soc. Roy. Sci. Liège* **60** (1991), *no.* 6, 401–404. (Kazimierz Włodarczyk) **93e:46050** 46G20
— (*with* Timoney, Richard M.) Extremal mappings for the Schwarz lemma. *Ark. Mat.* **30** (1992), *no.* 1, 61–81. (A. Sadullaev) **93j:32029** 32H02 (46B99, 46G20)
— (*with* Galindo, Pablo; García, Domingo; Maestre, Manuel) Linearity and holomorphy on fully nuclear spaces with a basis. (French summary) *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 10, 715–718. (Summary) **93a:46084** 46G20 (46A11, 46A13)
— Holomorphic functions on Fréchet-Montel spaces. *J. Math. Anal. Appl.* **163** (1992), *no.* 2, 581–587. (Sten Bjon) **93b:46084** 46G20 (46A11, 46A45)
Ding, Baoyan (*with* Wang, Chung-Lie) A note on proper efficiency of a vector optimization problem. Proceedings of the Twenty-first Manitoba Conference on Numerical Mathematics and Computing (Winnipeg, MB, 1991). *Congr. Numer.* **86** (1992), 27–31. (Summary) **93d:90055** 90C29
Ding, Bin A clustering dynamic state method for maximal trees in fuzzy graph theory. (Chinese. English summary) *J. Numer. Methods Comput. Appl.* **13** (1992), *no.* 2, 157–160. (Summary) **93i:05126** 05C99 (04A72, 05C05, 68R10)
Ding, Da Fu (*with* Totafurno, John; Trainor, L. E. H.) Bifurcation analysis of a nonlinear field model of regeneration. *J. Math. Biol.* **30** (1992), *no.* 4, 355–377. (V. N. Razzhevaikin) **93g:92007** 92C15 (35B32, 58F40)
Ding, De Cheng The distribution of the generic recursively enumerable degrees. (English summary) *Arch. Math. Logic* **32** (1992), *no.* 2, 113–135. (E. Herrmann) **93m:03071** 03D25
Ding, Deng Stochastic integration for operator-valued processes in duals of Fréchet nuclear spaces and its application. (Chinese. English and Chinese summaries) *Chinese J. Appl. Probab. Statist.* **7** (1991), *no.* 4, 381–389. (Summary) **93k:60138** 60H05 (60H10)
Ding, E Jiang (*with* Lü, Yan Nan) The Lyapunov exponents in a periodic window for a weak-coupled map lattice. *J. Phys. A* **25** (1992), *no.* 10, 2897–2906. (Summary) **93c:58133** 58F13
Ding, Feng (*with* Xie, Xin Min) A design for robust observer-controllers. (Chinese. English and Chinese summaries) *Control Theory Appl.* **9** (1992), *no.* 4, 404–409. 93B51
— (*with* Xie, Xin Min) A combined identification algorithm for multivariable linear systems. (Chinese. English and Chinese summaries) *Control Theory Appl.* **9** (1992), *no.* 5, 545–550. 93B30
— (*with* Xie, Xin Min) A canonical identification model for linear multivariable systems and a structural identification algorithm. (Chinese. English and Chinese summaries) *J. Tsinghua Univ.* **32** (1992), *no.* 1, 99–107. (Lei Guo) **93k:93116** 93E12 (93B30, 93E10)
— (*with* Xie, Xin Min) An instrumental model identification algorithm for multivariable systems. (Chinese. English and Chinese summaries) *J. Tsinghua Univ.* **32** (1992), *no.* 4, 100–106. 93B30 (93C35)
Ding, Fong-Yuen (*with* Cheng, Liping) A simple sequencing algorithm for mixed-model assembly lines in just-in-time production systems. (English summary) *Oper. Res. Lett.* **13** (1993), *no.* 1, 27–36. 90B35 (90B30)
Ding, Guan Dong (*with* Lin, Ying Ju) A feasible descent algorithm for nonsmooth optimization with linear inequality constraints. (Chinese. English summary) *J. Numer. Methods Comput. Appl.* **12** (1991), *no.* 4, 203–214. (Xiang-Sun Zhang) **93f:90147** 90C30 (49J52, 65K05)
Ding, Guang Gui The Hahn-Banach extension property in not locally convex topological linear spaces. (Chinese. English summary) *Adv. in Math.* (*China*) **21** (1992), *no.* 4, 427–431. (Summary) **93m:46003** 46A22 (46A16)
Ding, Guoli Subgraphs and well-quasi-ordering. (English summary) *J. Graph Theory* **16** (1992), *no.* 5, 489–502. (Peter Damaschke) **93g:05043** 05C10
— (*with* Schrijver, Alexander; Seymour, P. D.) Disjoint paths in a planar graph—a general theorem. *SIAM J. Discrete Math.* **5** (1992), *no.* 1, 112–116. (Ştefan Ţigan) **93b:05090** 05C38
Ding, Hong Li (*with* Zhou, Xue Sheng; Tian, Feng; Wu, Ze Zhong) Application of linear element boundary element method in elastic axisymmetric contact problems. *Theory and applications of boundary element methods* (*Beijing,* 1991), 427–432, *Internat. Acad. Publ., Beijing,* 1991. (*see* **93b:65008**) 73V10 (65N38)
Ding, Hongming Operator-valued Bessel functions on Schrödinger-Fock spaces and Siegel domains of type II. *J. Funct. Anal.* **106** (1992), *no.* 1, 189–225. (Harald Upmeier) **93f:32034** 32M15 (33C80, 46E22, 47N99)
— Operator-valued Bessel functions, holomorphic discrete series, and harmonic representations of $U(p,q)$. *J. Funct. Anal.* **108** (1992), *no.* 1, 187–230. (Brian E. Blank) **93m:22014** 22E45 (33C80)
— (*with* Gross, Kenneth I.) Operator-valued Bessel functions on Jordan algebras. *J. Reine Angew. Math.* **435** (1993), 157–196. (Harald Upmeier) **93m:33010** 33C80 (32M15, 46E99)
Ding, Hua² (*with* Xu, Shou Ze; Zheng, Zhe Min) A new approach to inverse problems of wave equations. II. The MCF method in time-domain. (English summary) *Wave propagation and inversion,* 26–33, *SIAM, Philadelphia, PA,* 1992. (*see* **93d:73004**) 35R30 (49N40, 65K10)
— Traces of nonsmooth functions on polyhedral domains. (English summary) *Sci. China Ser. A* **35** (1992), *no.* 4, 452–462. (H. Triebel) **93i:46059** 46E35
Ding, Hui Liang (*with* Sun, Xian Xue; Long, Qi Hao; Chen, Wen Pu; Pan, Bing Chen) YIDOYU—an optimization program system for wing structures. *Approximation, optimization and computing,* 381–384, *North-Holland, Amsterdam,* 1990. (*see* **93a:41001**) 90–08 (90C30)
Ding, Jie (*with* Greenberg, Betsy S.) Bowl shapes are better with buffers—sometimes. (English summary) *Probab. Engrg. Inform. Sci.* **5** (1991), *no.* 2, 159–169. 60K25
— (*with* Greenberg, Betsy S.) Optimal order for servers in series with no queue capacity. (English summary) *Probab. Engrg. Inform. Sci.* **5** (1991), *no.* 4, 449–461. 60K25
Ding, Nan Qing On rings of continuous functions. *Proceedings of the First China-Japan International Symposium on Ring Theory* (*Guilin,* 1991), 34–36, *Okayama Univ., Okayama,* 1992. (*see* **93k:16001**) 13F99
— GQF-rings. (Chinese. Chinese summary) *Chinese Ann. Math. Ser. A* **13** (1992), *no.* 2, 230–238. (George Szeto) **93h:16027** 16L60 (18G15)
— On projective equivalence. (Chinese. English summary) *Nanjing Daxue Xuebao Shuxue Bannian Kan* **9** (1992), *no.* 1, 81–84. (Summary) **93i:16012** 16D70

— (*with* Chen, Jian Long) The flat dimensions of injective modules. (English summary) *Manuscripta Math.* **78** (1993), *no.* 2, 165–177. (Ellen E. Kirkman) **93k:16013** 16E10 (16D50, 16E50)

Ding, Ping An improvement to Chalk's estimation of exponential sums. *Acta Arith.* **59** (1991), *no.* 2, 149–155. (John H. Loxton) **93a:11069** 11L07

Ding, Shu Xue (*with* Song, He Shan; An, Ying) Chern-Simons gauge theory and Ginzburg-Landau type theories. I. Abelian cases. (English summary) *Comm. Theoret. Phys.* **17** (1992), *no.* 3, 381–384. (Summary) **93k:81146** 81T13

Ding, Song Kang (*with* Andersen, Lars Døvling; Sabidussi, Gert; Vestergaard, Preben Dahl) Edge orbits and edge-deleted subgraphs. *Graphs Combin.* **8** (1992), *no.* 1, 31–44. (William L. Kocay) **93g:05102** 05C60

Ding, Tong Ren Topological transitivity & metric transitivity on T^2. *Dynamical systems and related topics (Nagoya, 1990)*, 65–71, *Adv. Ser. Dyn. Syst.*, 9, *World Sci. Publishing, River Edge, NJ*, 1991. (Romeo F. Thomas) **93d:58141** 58F25

— (*with* Iannacci, Rita; Zanolin, Fabio) On periodic solutions of sublinear Duffing equations. *J. Math. Anal. Appl.* **158** (1991), *no.* 2, 316–332. (Jean Mawhin) **93j:34052** 34C25 (34C15)

— (*with* Zanolin, Fabio) Time-maps for the solvability of periodically perturbed nonlinear Duffing equations. *Nonlinear Anal.* **17** (1991), *no.* 7, 635–653. (Jean Mawhin) **93j:34053** 34C25 (34B15, 34C15, 47H15)

— (*with* Zhang, Zhi Fen; Huang, Wen Zao; Dong, Zhen Xi) ★ Qualitative theory of differential equations. (English. English summary) Translated from the Chinese by Anthony Wing Kwok Leung. Translations of Mathematical Monographs, 101. *American Mathematical Society, Providence, RI*, 1992. xiv+461 *pp. ISBN* 0-8218-4551-9 (Douglas S. Shafer) **93h:34002** 34–01 (34Axx, 34Cxx, 54H20, 58Fxx)

— (*with* Zanolin, Fabio) Periodic solutions of Duffing's equations with superquadratic potential. *J. Differential Equations* **97** (1992), *no.* 2, 328–378. (Hassan El-Owaidy) **93e:34059** 34C25

Ding, Wei Yue (*with* Chen, Yun Mei) Blow-up analysis for heat flow of harmonic maps. (English summary) *Nematics (Orsay, 1990)*, 49–64, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 332, *Kluwer Acad. Publ., Dordrecht*, 1991. (Caio J. C. Negreiros) **93k:58063** 58E20 (58G11)

— (*with* Wang, You De) Harmonic maps of complete noncompact Riemannian manifolds. *Internat. J. Math.* **2** (1991), *no.* 6, 617–633. (Yi Bing Shen) **93a:58047** 58E20

— (*with* Tian, Gang) Kähler-Einstein metrics and the generalized Futaki invariant. *Invent. Math.* **110** (1992), *no.* 2, 315–335. (Antonella Nannicini) **93m:53039** 53C25 (32L07, 53C55)

— (*with* Zhang, Gong Qing; Ye, Rugang) Finite-time blow-up of the heat flow of harmonic maps from surfaces. *J. Differential Geom.* **36** (1992), *no.* 2, 507–515. (Martin Fuchs) **93h:58043** 58E20 (35K55, 58G11)

— (*with* Lin, Fang-Hua) A generalization of Eells-Sampson's theorem. (English summary) *J. Partial Differential Equations* **5** (1992), *no.* 4, 13–22. (Caio J. C. Negreiros) **93j:58032** 58E20

Ding, Xianchun (*with* Frank, Paul M.) Robust model-based fault detection and isolation for uncertain dynamical systems. (English summary) *Mathematics of the analysis and design of process control (Dublin, 1991/Lille, 1991)*, 655–664, *North-Holland, Amsterdam*, 1992. (*see* **93g:93004**) 93B36

Ding, Xie Ping (*with* Lan, Kun Quan) Minimal and maximal fixed point theorems and iterative technique for nonlinear operators in product spaces. *Appl. Math. Mech. (English Ed.)* **13** (1992), *no.* 3, 227–231; *translated from Appl. Math. Mech.* **13** (1992), *no.* 3, 209–213 (*Chinese. English summary*). (A. S. Vatsala) **93e:47076** 47H10

— (*with* Deng, Lei) Ishikawa's iterations of real Lipschitz functions. *Bull. Austral. Math. Soc.* **46** (1992), *no.* 1, 107–113. (J. Matkowski) **93g:26006** 26A16 (26A18)

— (*with* Kim, Won Kyu; Tan, Kok-Keong) A selection theorem and its applications. (English summary) *Bull. Austral. Math. Soc.* **46** (1992), *no.* 2, 205–212. (Summary) **93g:47072** 47H10 (47H04, 47N10, 54C60, 90A14)

— (*with* Tan, Kok-Keong) A minimax inequality with applications to existence of equilibrium point and fixed point theorems. *Colloq. Math.* **63** (1992), *no.* 2, 233–247. (S. Simons) **93j:47086** 47H10 (47N10, 49J35)

— (*with* Kim, Won Kyu; Tan, Kok-Keong) Equilibria of noncompact generalized games with $\mathscr{L}^*$-majorized preference correspondences. *J. Math. Anal. Appl.* **164** (1992), *no.* 2, 508–517. (Dave Furth) **93d:90014** 90A14 (46N10, 90D40)

— (*with* Kong, Wen Bo) Approximation theorems and fixed point theorems for multivalued condensing mappings in wedges. *J. Math. Anal. Appl.* **167** (1992), *no.* 2, 468–481. (A. S. Potapov) **93d:47099** 47H09 (47H04, 47H10)

— (*with* Kong, Wen Bo) Boundary conditions for the existence of positive fixed points of multivalued k-set deflation mappings. (Chinese) *J. Math. Res. Exposition* **12** (1992), *no.* 2, 207–212. (Shulang Yang) **93h:47068** 47H10 (47H04)

Ding, Y. *see* **Ding, Yuzheng**

Ding, Yan Heng (*with* Lin, Qun) Quadrature and extrapolation for the variable coefficient elliptic eigenvalue problem. (English summary) *Systems Sci. Math. Sci.* **3** (1990), *no.* 4, 327–336. (I. P. Gavrilyuk) **93g:65138** 65N25

— (*with* Li, Shu Jie) Periodic solutions to singular dynamical systems on a potential well. (Chinese. Chinese summary) *Chinese Ann. Math. Ser. A* **13** (1992), *no.* 5, 546–554. (De Ming Zhu) **93k:58191** 58F22 (34C25, 58F05)

— (*with* Li, Shu Jie) A remark on periodic solutions of singular Hamiltonian systems with sublinear terms. (English summary) *Systems Sci. Math. Sci.* **5** (1992), *no.* 2, 121–126. (Gabriella Tarantello) **93i:58127** 58F22 (34C25, 70H05)

Ding, Yi Dong *see* **Wang, Rong Bin**, (**93i:01004**)

Ding, Yiping (*with* Sholl, Howard A.) On queueing approximation formulas for mean waiting time. *Approximation, optimization and computing*, 171–174, *North-Holland, Amsterdam*, 1990. (*see* **93a:41001**) 90B22 (60K25)

Ding, Yuzheng (*with* Weiss, Mark Allen) Best case lower bounds for Heapsort. (English and German summaries) *Computing* **49** (1992), *no.* 1, 1–9. (Summary) **93f:68042** 68Q25 (68P10)

Ding, Zhong Man (*with* Wang, Zhi Qing) The new solution for the axially symmetrical laminar boundary layer equations between two parallel spherical surfaces. *Appl. Math. Mech. (English Ed.)* **13** (1992), *no.* 12, 1121–1126; *translated from Appl. Math. Mech.* **13** (1992), *no.* 12, 1075–1080 (*Chinese. English and Chinese summaries*). 76D10

Ding, Zhong Ming Integral solutions to the Diophantine equation $y^2 - k = x^3$ in arithmetic progressions. (Chinese. English summary) *Sichuan Daxue Xuebao* **29** (1992), *no.* 1, 16–21. (Tian Xin Cai) **93g:11023** 11D25

Ding, Zuo Hua (*with* Zhang, Shi Sheng; Kang, Shi Kun) Differential inclusions with nonlinear semigroups. (Chinese. English and Chinese summaries) *J. Chengdu Univ. Sci. Tech.* **1992**, *no.* 2, 29–33. (Qi Ji Zhu) **93i:34123** 34G20 (34A60, 47H20, 47N20)

Dinggong, Yang *see* **Yang, Ding Gong**

pham ngoc Dinh, Alain *see* **Pham Ngoc Dinh, Alain**

Dinh, G. V. (*with* Atamian, C.; Glowinski, Roland; He, Jiwen; Périaux, Jacques) On some imbedding methods applied to fluid dynamics and electromagnetics. Second World Congress on Computational Mechanics, Part III (Stuttgart, 1990). *Comput. Methods Appl. Mech. Engrg.* **91** (1991), *no.* 1-3, 1271–1299. (Rolf Rannacher) **93c:76066** 76M25 (65K10, 65N30, 65N55, 78–08)

Dinh, Hung T. Discrete product systems and their C^*-algebras. *J. Funct. Anal.* **102** (1991), *no.* 1, 1–34. (G. A. Elliott) **93d:46097** 46L05 (46L35)

— Multipliers on subsemigroups of the real line. *Proc. Amer. Math. Soc.* **117** (1993), *no.* 3, 783–788. (Tsuyoshi Kajiwara) **93d:46111** 46L55 (43A22)

— (*with* Carey, Graham) A grid anomaly in quadrilateral elements. (English summary) *SIAM Rev.* **35** (1993), *no.* 1, 130–134. 65N30 (65N50)

Dinh, Q. V. (*with* Glowinski, Roland; He, Jiwen; Kwock, V.; Pan, T. W.; Périaux, Jacques) Lagrange multiplier approach to fictitious domain methods: application to fluid dynamics and electromagnetics. (English summary) *Fifth International Symposium on Domain Decomposition Methods for Partial Differential Equations (Norfolk, VA, 1991)*, 151–194, *SIAM, Philadelphia, PA*, 1992. (Summary) **93h:65136** 65N30 (65N50, 76M25, 78–08)

— (*with* Dean, E. J.; Glowinski, Roland; He, Jiwen; Pan, T. W.; Périaux, Jacques) Least squares/domain imbedding methods for Neumann problems: applications to fluid dynamics. (English summary) *Fifth International Symposium on Domain Decomposition Methods for Partial Differential Equations (Norfolk, VA, 1991)*, 451–475, *SIAM, Philadelphia, PA*, 1992. (Summary) **93h:65152** 65N55 (76M25, 76N10)

nguyễn Đình Công *see* **Nguyễn Đình Công**

phan Đình Diệu *see* **Phan Đình Diệu**

ho Dinh Duan *see* **Ho Dinh Duan**

Đinh Dung On interpolation recovery for periodic functions. *Functional analysis & related topics (Sapporo, 1990)*, 224–233, *World Sci. Publishing, River Edge, NJ*, 1991. (T. J. Rivlin) **93f:42006** 42A10 (42A15)

— (*with* Dryanov, Dimiter P.) The minimal number of sample values for recovery of nonbandlimited functions. *Atti Sem. Mat. Fis. Univ. Modena* **39** (1991), *no.* 2, 423–431. (Paşc Găvruţa) **93c:41035** 41A35 (94A12)

— The sampling theorem, L_q^T-approximation and ε-dimension. *J. Approx. Theory* **70** (1992), *no.* 1, 1–15. (Paşc Găvruţa) **93e:41028** 41A25 (41A63, 94A12)

dang Dinh Hai *see* **Dang Dinh Hai**

nguyễn Đình Huy *see* **Nguyễn Đình Huy**

Đinh Nho Hào Regularization of a noncharacteristic Cauchy problem for the heat equation. (English summary) *Math. Methods Appl. Sci.* **15** (1992), *no.* 8, 537–545. (Manfred W. Kracht) **93k:35118** 35K05 (35B35, 35R25)

Đinh Thế Lục (*with* Phan Quốc Khánh) Problems of vector optimization. (English summary) *Acta Math. Vietnam.* **17** (1992), *no.* 1, 91–112. (Richard Gallagher) **93i:90084** 90C29 (49M37, 90C48)

— (*with* Malivert, C.) Invex optimisation problems. *Bull. Austral. Math. Soc.* **46** (1992), *no.* 1, 47–66. (Johannes Jahn) **93e:90053** 90C29 (49J52, 49N15)

— (*with* Jahn, Johannes) Axiomatic approach to duality in optimization. (English summary) *Numer. Funct. Anal. Optim.* **13** (1992), *no.* 3-4, 305–326. (Summary) **93h:90080** 90C29 (49N15)

pham Dinh Tuan *see* **Pham Dinh Tuan**

Dinh Van Huynh (*with* Smith, Patrick F.) Characterizing rings by their modules. *Topics in algebra, Part 1 (Warsaw, 1988)*, 109–124, *Banach Center Publ.*, 26, *Part 1*, *PWN, Warsaw*, 1990. (S. S. Page) **93e:16014** 16D70

— (*with* Wisbauer, Robert) A structure theorem for SI-modules. *Glasgow Math. J.* **34** (1992), *no.* 1, 83–89. (S. S. Page) **93e:16007** 16D50 (16D70)

— (*with* Wisbauer, Robert) Self-projective modules with π-injective factor modules. *J. Algebra* **153** (1992), *no.* 1, 13–21. (John Clark) **93k:16008** 16D80 (16D70, 16P20)

Dini, Gilberto (*with* Primicerio, Angela Selvaggi) Proper holomorphic mappings between generalized pseudoellipsoids. *Ann. Mat. Pura Appl.* (4) **158** (1991), 219–229. (Summary) **93d:32039** 32H35

— (*with* Primicerio, Angela Selvaggi) On the factorization of proper holomorphic mappings from pseudoellipsoids. (Italian summary) *Boll. Un. Mat. Ital. A* (7) **6** (1992), *no.* 3, 379–386. (Daowei Ma) **93k:32058** 32H35

Dinitz, Jeffrey H. (*with* Wallis, Walter) Trains: an invariant for one-factorizations. *Ars Combin.* **32** (1991), 161–180. (J. Richard Lundgren) **93c:05092** 05C70 (05C25)

— (*with* Archdeacon, Dan) Constructing indecomposable 1-factorizations of the complete multigraph. *Discrete Math.* **92** (1991), *no.* 1-3, 9–19. (A. Rosa) **93a:05099** 05C70

— (*with* Garnick, David K.; Gyárfás, András) On the irregularity strength of the $m \times n$ grid. *J. Graph Theory* **16** (1992), *no.* 4, 355–374. (Michael Jacobson) **93i:05074** 05C35

Dinno, K. S. Utilization of the multi-level approach in optimal design of R.C. structures. *Approximation, optimization and computing*, 385–388, *North-Holland, Amsterdam*, 1990. (*see* **93a:41001**) 90C90

Di Nola, Antonio (*with* Lettieri, Ada) Some results on matrix-eigenvectors in distributive lattices. Graphs, designs and combinatorial geometries (Catania, 1989). *J. Combin. Inform. System Sci.* **15** (1990), *no.* 1-4, 178–190. (John Maroulas) **93b:15004** 15A06 (05D99)

— (*with* Cignoli, Roberto; Lettieri, Ada) Priestley duality and quotient lattices of many-valued algebras. (Italian summary) *Rend. Circ. Mat. Palermo* (2) **40** (1991), *no.* 3, 371–384. (Introduction) **93f:06014** 06D99

— (*with* Pedrycz, Witold; Sessa, Salvatore) Reduction procedures for rule-based expert systems as a tool for studies of properties of expert's knowledge. *Fuzzy expert systems*, 69–79, *CRC, Boca Raton, FL*, 1992. (*see* **93g:68133**) 68T35 (03B52)

— (*with* Belluce, L. P.; Lettieri, Ada) Subalgebras, direct products and associated lattices of MV-algebras. *Glasgow Math. J.* **34** (1992), *no.* 3, 301–307. (Jerzy Kotas) **93i:03093** 03G25 (06D99)

Dinten, J. M. (*with* Guyon, Xavier; Yao, Jian Feng) On the choice of the regularization parameter: the case of binary images in the Bayesian restoration framework. (English summary) *Spatial statistics and imaging* (*Brunswick, ME*, 1988), 55–77, *IMS Lecture Notes Monograph Ser.*, 20, *Inst. Math. Statist., Hayward, CA*, 1991. (Summary) **93j:60055** 60G35 (62M40, 68U10)

D'Inverno, R. A. *see* **d'Inverno, R. A.**

Dinwoodie, I. H. Mesures dominantes et théorème de Sanov. (English and French summaries) [Dominant measures and Sanov's theorem] *Ann. Inst. H. Poincaré Probab. Statist.* **28** (1992), *no.* 3, 365–373. (Summary) **93h:60038** 60F10 (60B05)

— (*with* Zabell, S. L.) Large deviations for exchangeable random vectors. (English summary) *Ann. Probab.* **20** (1992), *no.* 3, 1147–1166. (J. Steinebach) **93g:60059** 60F10

Di Odoardo, Claudio (*with* Bertocchi, Maria) A stochastic algorithm for global optimization based on threshold accepting technique. (English summary) *Optimization, Vol.* 1, 2 (*Singapore*, 1992), 141–146, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93d:90005**) 90C30

Diogo, Teresa (*with* Tang, Tao; McKee, Sean) Product integration methods for an integral equation with logarithmic singular kernel. International Conference on the Numerical Solution of Volterra and Delay Equations (Tempe, AZ, 1990). *Appl. Numer. Math.* **9** (1992), *no.* 3-5, 259–266. (H. Brunner) **93d:65116** 65R20

Dion, Jean Michel (*with* Giri, F.; M'Saad, M.; Dugard, Luc) A direct adaptive controller for a class of stable and time-varying plants. (English summary) *Adaptive systems in control and signal processing*, 1989 (*Glasgow*), 195–198, *IFAC Sympos. Ser.*, 1990, *No.* 1, *Pergamon, Oxford*, 1990. (*see* **93j:93007**) 93C40

— (*with* Trofino-Neto, Alexandre; Dugard, Luc) Robustness bounds for LQ regulators. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 9, 1373–1377. (Andrzej Świerniak) **93j:93119** 93D09 (49N10, 93B36, 93D15, 93D21)

— (*with* Trofino-Neto, Alexandre; Dugard, Luc) On the robustness of LQ regulators for discrete-time systems. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 10, 1564–1568. (Zbigniew Nahorski) **93i:93109** 93D15 (93B36, 93B55)

— (*with* Lozano Leal, Rogelio; Dugard, Luc) Singularity-free adaptive pole placement using periodic controllers. (English summary) *IEEE Trans. Automat. Control* **38** (1993), *no.* 1, 104–108. (Krzysztof Kuźmiński) **93j:93060** 93B55

— *see also* **Kim, Jong-Hwan**

Diong, B. M. (*with* Medanić, J. V.) Dynamic output feedback variable structure control for system stabilization. (English summary) *Internat. J. Control* **56** (1992), *no.* 3, 607–630. (Summary) **93d:93069** 93D15

Dionne, Benoit (*with* Golubitsky, Martin) Planforms in two and three dimensions. *Z. Angew. Math. Phys.* **43** (1992), *no.* 1, 36–62. (Reiner Lauterbach) **93e:58026** 58E09 (35A30, 47H15, 76E15)

Dionne, Robert (*with* Mays, Eric; Oles, Frank J.) A non-well-founded approach to terminological cycles. (English summary) *AAAI-92. Proceedings, Tenth National Conference on Artificial Intelligence* (*San Jose, CA*, 1992), 761–766, *Amer. Assoc. Artif. Intell., Menlo Park, CA*, 1992. (Summary) **93k:68062** 68Q55

Dionysiou, D. D. (*with* Zois, A. K.; Iakovidis, K. G.) Artificial satellites and the three-body problem: a general case. *Astrophys. Space Sci.* **186** (1991), *no.* 1, 101–108. (Summary) **93a:70027** 70M20 (70F07)

Diop, Cheik A. (*with* Molino, Pierre) Une observation sur les feuilletages presque isométriques. (English summary) [An observation concerning almost isometric foliations] *Séminaire Gaston Darboux de Géométrie et Topologie Différentielle*, 1990–1991 (*Montpellier*, 1990–1991), iii, 45–53, *Univ. Montpellier II, Montpellier*, 1992. (James J. Hebda) **93j:53036** 53C12 (57R30)

Diop, Mahmadou (*with* Coste, Michel) Real algebraic 1-cocycles are Nash coboundaries. (Italian summary) *Boll. Un. Mat. Ital. A* (7) **6** (1992), *no.* 2, 249–254. (Louis Mahé) **93i:14053** 14P20

Diop, Sette Differential-algebraic decision methods and some applications to system theory. Second Workshop on Algebraic and Computer-theoretic Aspects of Formal Power Series (Paris, 1990). *Theoret. Comput. Sci.* **98** (1992), *no.* 1, 137–161. (Summary) **93f:12011** 12H05 (93B25)

— Closedness of morphisms of differential algebraic sets. Applications to system theory. (English summary) *Forum Math.* **5** (1993), *no.* 1, 33–47. (Joyce O'Halloran) **93k:12011** 12H05 (14A20, 93B27)

alvarez-Dios, J. A. *see* **Alvarez-Dios, J. A.**

Diósi, Lajos Coarse graining and decoherence translated into von Neumann language. *Phys. Lett. B* **280** (1992), *no.* 1-2, 71–74. (Summary) **93b:81023** 81P15 (83C45)

Di Paola, Robert A. (*with* Montagna, Franco) Some properties of the syntactic p-recursion categories generated by consistent, recursively enumerable extensions of Peano arithmetic. *J. Symbolic Logic* **56** (1991), *no.* 2, 643–660. (Andreas Blass) **93b:03103** 03F30 (03D75, 03G30, 18B99)

Di Piazza, L. (*with* Bongiorno, Benedetto) Convergence theorems for generalized Riemann-Stieltjes integrals. *Real Anal. Exchange* **17** (1991/92), *no.* 1, 339–361. (Frank N. Huggins) **93a:26006** 26A42 (26A39)

Di Pillo, Gianni (*with* Facchinei, Francisco; Grippo, Luigi) An RQP algorithm using a differentiable exact penalty function for inequality constrained problems. *Math. Programming* **55** (1992), *no.* 1, *Ser. A*, 49–68. (Vladimir I. Venets) **93c:90078** 90C30 (49M30, 90C20)

Di Porto, Adina (*with* Filipponi, Piero) Generating M-strong Fibonacci pseudoprimes. *Fibonacci Quart.* **30** (1992), *no.* 4, 339–343. (Krassimir Atanassov) **93i:11013** 11B39

Dipper, Richard (*with* James, Gordon) Representations of Hecke algebras of type B_n. *J. Algebra* **146** (1992), *no.* 2, 454–481. (Robert Bédard) **93c:20019** 20C20 (20C33, 20F55)

Dippon, Jürgen Recursive estimation: asymptotic confidence regions by empirical quantiles. *Sequential Anal.* **11** (1992), *no.* 1, 91–100. (René Flavigny) **93m:62184** 62L20

Di Ruscio, David Maximal imaginary eigenvalues in optimal systems. *MIC—Modeling Identification Control* **12** (1991), *no.* 3, 149–158. (Krzysztof Kuźmiński) **93d:93043** 93B60 (93B40, 93D05)

— On the location of LQ-optimal closed-loop poles. *MIC—Modeling Identification Control* **13** (1992), *no.* 1, 15–23. (Summary) **93e:93035** 93B55 (93B60, 93C05)

Dishliev, A. B. (*with* Bainov, Drumi Dimitrov) Population dynamics control in regard to minimizing the time necessary for the regeneration of a biomass taken away from the population. (English summary) *Bull. Calcutta Math. Soc.* **84** (1992), *no.* 1, 21–30. (Summary) **93i:92011** 92D25

— (*with* Bainov, Drumi Dimitrov) Investigation of the Lipschitz stability via limiting equations. (English summary) *Bull. Calcutta Math. Soc.* **84** (1992), *no.* 3, 235–240. (Summary) **93k:34104** 34D05 (34D99)

— (*with* Bainov, Drumi Dimitrov) Investigation of the Lipschitz stability via limiting equations. (English summary) *Bull. Inst. Math. Acad. Sinica* **20** (1992), *no.* 2, 187–193. (Zvi Artstein) **93k:34108** 34D20

— (*with* Bainov, Drumi Dimitrov) Uniform stability with respect to the impulse hypersurfaces of the solutions of differential equations with impulses. (English summary) *J. Math. Anal. Appl.* **172** (1993), *no.* 2, 452–462. (S. G. Deo) **93k:34030** 34A37 (34D99)

Disney, Peter L. (*with* Czogala, Ernest) Decision making in a probabilistic fuzzy environment. *Combining fuzzy imprecision with probabilistic uncertainty in decision making*, 215–226, *Lecture Notes in Econom. and Math. Systems*, 310, *Springer, Berlin*, 1988. (*see* **93c:90002**) 90C70 (04A72, 90A05)

Disney, Ralph L. (*with* Wortman, Martin A.; Kiessler, Peter C.) The $M/GI/1$ Bernoulli feedback queue with vacations. *Queueing Systems Theory Appl.* **9** (1991), *no.* 4, 353–363. (U. Narayan Bhat) **93d:60159** 60K25 (90B22)

Di Stasio, M. (*with* Seno, F.; Stella, A. L.) Vesicles on a hierarchical lattice: an exact renormalization group approach. *J. Phys. A* **25** (1992), *no.* 14, 3891–3900. (Summary) **93d:82042** 82B28 (82D60, 92C99)

Distler, Jacques (*with* Nelson, Philip) The dilaton equation in semirigid string theory. *Nuclear Phys. B* **366** (1991), *no.* 2, 255–272. (Andrei D. Mironov) **93i:81223** 81T40 (58D27, 81T70)

— (*with* Nelson, Philip) New discrete states of strings near a black hole. *Nuclear Phys. B* **374** (1992), *no.* 1, 123–155. (A. V. Aminova) **93h:81098** 81T30

— (*with* Doyle, Mark D.) World-sheet supersymmetry without contact terms. (English summary) *Phys. Lett. B* **287** (1992), *no.* 1-3, 73–81. (Summary) **93g:81123** 81T30

Diță, Petre *see* **Recent developments in quantum mechanics, 93e:81007**

Ditchev, Angel V. *see* **Dichev, Angel V.**

Ditkin, V. V. On a hydrodynamic load on a vibrating wall of a cylindrical shell. (Russian) *Dokl. Akad. Nauk* **327** (1992), *no.* 2, 196–200; *translation in Soviet Phys. Dokl.* **37** (1992), *no.* 11, 532–534 (1993). (From the text) **93k:73065** 73K70 (73H10, 73K12, 73K15, 76N15)

Dito, Joseph Star-products and nonstandard quantization for Klein-Gordon equation. *J. Math. Phys.* **33** (1992), *no.* 2, 791–801. (Simone Gutt) **93d:81092** 81S10 (22E70, 58F06, 81T99)

Dittmann, Jochen (*with* Rudolph, Gerd) On a connection governing parallel transport along 2×2 density matrices. (English summary) *J. Geom. Phys.* **10** (1992), *no.* 1, 93–106. (Richard Montgomery) **93h:53024** 53C07 (53C80, 81T13)

— (*with* Rudolph, Gerd) A class of connections governing parallel transport along density matrices. (English summary) *J. Math. Phys.* **33** (1992), *no.* 12, 4148–4154. (Nicolaas P. Landsman) **93k:53076** 53C80 (46L89, 53C05, 58Z05, 81Q99)

Ditto, William (*with* Shinbrot, Troy; Grebogi, Celso; Ott, Edward; Spano, Mark; Yorke, James A.) Using the sensitive dependence of chaos (the "butterfly effect") to direct trajectories in an experimental chaotic system. *Phys. Rev. Lett.* **68** (1992), *no.* 19, 2863–2866. (Gong Fu Liao) **93f:58159** 58F13

Dittrich, J. (*with* Exner, P.; Šeba, P.) Dirac Hamiltonian with Coulomb potential and spherically symmetric shell contact interaction. *J. Math. Phys.* **33** (1992), *no.* 6, 2207–2214. (Summary) **93b:81056** 81Q10 (81V45)

Dittrich, Thomas (*with* Graham, Robert) Continuously measured chaotic quantum systems. *Quantum chaos—quantum measurement* (*Copenhagen*, 1991), 219–229, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 358, *Kluwer Acad. Publ., Dordrecht*, 1992. (Koichiro Matsuno) **93b:81024** 81P15 (81Q50)

Ditzian, Z. (*with* Chen, Weiyu) Best polynomial and Durrmeyer approximation in $L_p(S)$. *Indag. Math. (N.S.)* **2** (1991), *no.* 4, 437–452. (Summary) **93c:41011** 41A10 (41A35)

— (*with* Jiang, D.) Approximation of functions by polynomials in $C[-1, 1]$. (English summary) *Canad. J. Math.* **44** (1992), *no.* 5, 924–940. (Chengmin Yang) **93h:41016** 41A25 (41A10, 41A27)

— Multivariate Bernstein and Markov inequalities. (English summary) *J. Approx. Theory* **70** (1992), *no.* 3, 273–283. (B. Boyanov) **93i:41007** 41A17 (41A63)

— (*with* Jiang, D.; Leviatan, Dany) Shape-preserving polynomial approximation in $C[-1, 1]$. *Math. Proc. Cambridge Philos. Soc.* **112** (1992), *no.* 2, 309–316. (B. Boyanov) **93h:41010** 41A10 (41A25)

Di Vecchia, Paolo (*with* Kato, Mitsuhiro; Ohta, Nobuyoshi) Double scaling limit in $O(N)$ vector models in D dimensions. *Internat. J. Modern Phys. A* **7** (1992), *no.* 7, 1391–1413. (Asao Arai) **93b:81197** 81T27 (81T10)

— (*with* Moshe, Moshe) On the double scaling limit of $O(N)$ vector models in $d = 2$. (English summary) *Phys. Lett. B* **300** (1993), *no.* 1-2, 49–52. 81T40

Divecha, Jyoti (*with* Ghosh, Dilip Kumar; Kageyama, Sanpei) Equireplicate variance-balanced designs from group divisible designs. *J. Japan Statist. Soc.* **21** (1991), *no.* 2, 205–209. (N. R. Mohan) **93d:62137** 62K10 (05B05)

— (*with* Ghosh, Dilip Kumar; Karmoker, P. K.) On comparison of ternary efficiency balanced and ternary variance balanced designs. *Utilitas Math.* **40** (1991), 257–271. (Summary) **93a:05017** 05B05

Di Vincenzo, O. M. (*with* Valenti, Angela) On nth commutators with nilpotent or regular values in rings. *Rend. Circ. Mat. Palermo* (2) **40** (1991), *no.* 3, 453–464. (Louis Rowen) **93k:16031** 16N40

— (*with* Valenti, Angela) *-multilinear polynomials with invertible values. *Rend. Sem. Mat. Univ. Padova* **86** (1991), 47–55 (1992). (Louis Rowen) **93c:16025** 16R20 (16U80, 16W10)

Dix, Daniel B. The dissipation of nonlinear dispersive waves: the case of asymptotically weak nonlinearity. (English summary) *Comm. Partial Differential Equations* **17** (1992), *no.* 9-10, 1665–1693. (Takashi Narazaki) **93k:35041** 35B40 (35K55, 35Q99)

Dix, J. G. (*with* Torrejón, Ricardo) A quasilinear integrodifferential equation of hyperbolic type. (English summary) *Differential Integral Equations* **6** (1993), *no.* 2, 431–447. (Tie Hu Qin) **93j:45007** 45K05 (35L70, 35R10)

Dixit, K. K. (*with* Pal, Shiv Kumar) On a class of multivalent spiral-like functions. *Kyungpook Math. J.* **32** (1992), *no.* 1, 87–96. 30C45

Dixit, V. N. (*with* Kumar, Rajesh; Ajmal, Naseem) On fuzzy rings. (English summary) *Fuzzy Sets and Systems* **49** (1992), *no.* 2, 205–213. (T. M. G. Ahsanullah) **93j:13008** 13A99 (04A72)

Dixmier, Jacques Sur les invariants du groupe symétrique dans certaines représentations. II. [Symmetric group invariants in certain representations. II] *Topics in invariant theory*

(*Paris*, 1989/1990), 1–34, *Lecture Notes in Math.*, 1478, *Springer, Berlin*, 1991. (A. Kerber) **93j:20029** 20C30 (13A50)

— (*with* Brion, Michel) Comportement asymptotique des dimensions des covariants. (English summary) [Asymptotic behavior of the dimensions of covariants] *Bull. Soc. Math. France* **119** (1991), *no.* 2, 217–230. (Summary) **93a:20068** 20G05 (13A50, 14L30, 22E46)

— *see also* **Steele Prizes, 93m:01098**

Dixon, A. E. The stability and evolution of interfacial waves. (English summary) *Nonlinear dispersive wave systems* (*Orlando, FL*, 1991), 217–243, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93i:76041** 76E99 (76B15, 76V05)

Dixon, Alfred Cardew *see* **Ward, James J., 93k:01059**

Dixon, Brandon (*with* Rauch, Monika; Tarjan, Robert Endre) Verification and sensitivity analysis of minimum spanning trees in linear time. (English summary) *SIAM J. Comput.* **21** (1992), *no.* 6, 1184–1192. (Summary) **93j:68153** 68R10 (05C05, 05C85, 68Q25)

Dixon, J. A. *see* **Dixon, John A.**

Dixon, J. M. (*with* Nip, M. L. A.; Tuszyński, J. A.; Otwinowski, M.) Search for regular orbits in the x^2y^2 potential problem. (English summary) *J. Phys. A* **25** (1992), *no.* 21, 5553–5562. (Summary) **93h:70011** 70H05 (78A35)

— (*with* Kelley, M.; Tuszyński, J. A.) Coherent structures from the three-dimensional nonlinear Schrödinger equation. (English summary) *Phys. Lett. A* **170** (1992), *no.* 2, 77–83. (Woodford W. Zachary) **93m:81023** 81Q05 (35Q55)

Dixon, John A. (*with* Duff, M. J.; Sezgin, Ergin) The coupling of Yang-Mills to extended objects. *Phys. Lett. B* **279** (1992), *no.* 3-4, 265–271. (Marc Henneaux) **93d:81114** 81T13 (81T30)

Dixon, John D. Random sets which invariably generate the symmetric group. (English summary) *Discrete Math.* **105** (1992), *no.* 1-3, 25–39. (Summary) **93e:20004** 20B30

Dixon, L. C. W. On the impact of automatic differentiation on the relative performance of parallel truncated Newton and variable metric algorithms. *SIAM J. Optim.* **1** (1991), *no.* 4, 475–486. (Matthias Heinkenschloss) **93c:90079** 90C30 (65D25, 65Y05)

— (*with* Jha, M.) The parallel truncated Newton method implemented on a multitransputer network. (English summary) *Parallel computing '91* (*London*, 1991), 175–182, *Adv. Parallel Comput.*, 4, *North-Holland, Amsterdam*, 1992. (*see* **93f:00016**) 65K10 (65Y05)

Dixon, Martyn R. Countable periodic CC-groups as automorphism groups. *Proc. Edinburgh Math. Soc.* (2) **35** (1992), *no.* 2, 295–299. (Martin R. Pettet) **93e:20053** 20F29

— (*with* Rigsby, E. Myron) The Sylow p-subgroups of semicomplete nilpotent groups. *Proc. Amer. Math. Soc.* **119** (1993), *no.* 2, 341–349. (D. J. S. Robinson) **93k:20056** 20F18 (20D20, 20F28)

Dixon, P. G. Topologically nilpotent Banach algebras and factorisation. *Proc. Roy. Soc. Edinburgh Sect. A* **119** (1991), *no.* 3-4, 329–341. (Sandy Grabiner) **93d:46073** 46H05 (46H25, 46J45)

— Unbounded approximate identities in normed algebras. *Glasgow Math. J.* **34** (1992), *no.* 2, 189–192. (W. Żelazko) **93c:46081** 46H05

— (*with* Müller, Vladimír) A note on topologically nilpotent Banach algebras. *Studia Math.* **102** (1992), *no.* 3, 269–275. (H. G. Dales) **93d:46074** 46H05

Dixon, Robert The pentasnow gasket and its fractal dimension. *Fivefold symmetry*, 141–150, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93i:52002**) 28A80

Djafari Rouhani, Behzad Asymptotic behaviour of unbounded trajectories for some nonautonomous systems in a Hilbert space. *Nonlinear Anal.* **19** (1992), *no.* 8, 741–751. (Norimichi Hirano) **93m:47070** 47H20 (34G20, 47A35, 47N20)

— Asymptotic behaviour of unbounded nonexpansive sequences in Banach spaces. *Proc. Amer. Math. Soc.* **117** (1993), *no.* 4, 951–956. (K. Goebel) **93e:47073** 47H10 (46B15)

Djaferis, T. E. (*with* Ciolfi, John) Representations of robustly stabilizing controllers for systems with parameter uncertainty. *Internat. J. Control* **56** (1992), *no.* 1, 35–49. 93D21

el Djalil Kateb, Mohamed *see* **El Djalil Kateb, Mohamed**

Djambazova, Milena (*with* Radenski, Atanas A.) Schemes for recursion elimination in Backus' FP-systems. (English and Russian summaries) *Annuaire Univ. Sofia Fac. Math. Inform.* **83** (1989), 39–49 (1992). (Summary) **93h:68014** 68N05

Djebbar, A. Quelques éléments nouveaux sur l'activité mathématique arabe dans le Maghreb oriental (IXe–XVIe S.). (Arabic summary) [Some new elements of Arab mathematical activity in the eastern Maghreb (IXth–XVIth C.)] *Deuxième Colloque Maghrebin sur l'Histoire des Mathématiques Arabes* (*Tunis*, 1988), 53–73, A153–A154, *Maghreb, Tunis*, 19??. (Julio Samsó-Moya) **93d:01009** 01A30

Djehiche, Boualem Bernstein processes and spin-$\frac{1}{2}$ particles. (English summary) *J. Math. Phys.* **33** (1992), *no.* 9, 3050–3059. (Ana Bela Cruzeiro) **93i:81117** 81S40 (60J75)

Djemai, A. E. F. Quantum mechanical Galilei group and q-planes. (English summary) *Modern Phys. Lett. A* **7** (1992), *no.* 34, 3169–3177. (Andrey V. Tsiganov) **93j:81043** 81R50 (17B37)

Djidjev, Hristo N. (*with* Lingas, Andrzej; Sack, Jörg-Rüdiger) An $O(n \log n)$ algorithm for computing the link center of a simple polygon. *Discrete Comput. Geom.* **8** (1992), *no.* 2, 131–152. (Nikolaj M. Korneenko) **93g:52011** 52B55 (68Q25, 68U05)

— (*with* Diks, Krzysztof; Sýkora, Ondrej; Vrťo, Imrich) Edge separators of planar and outerplanar graphs with applications. (English summary) *J. Algorithms* **14** (1993), *no.* 2, 258–279. (Summary) **93i:05121** 05C85 (68Q25, 68R10)

Djordjević, Radosav Ž. (*with* Rašković, Miodrag D.) Second-order probability logic. *Math. Balkanica (N.S.)* **6** (1992), *no.* 1, 105–108. (Mohamed Amer) **93h:03022** 03B48 (03C70, 03C80, 03C85)

Djorić, M. (*with* Vanhecke, Lieven) Geometry of tubes about characteristic curves on Sasakian manifolds. (English summary) *Rend. Circ. Mat. Palermo* (2) **41** (1992), *no.* 1, 111–122. (David Blair) **93f:53038** 53C25 (53C15)

Djrbashian, Ashot *see* **Dzhrbashyan, A. È.**

Djukić, Djordje S. (*with* Atanacković, Teodor M.) Extremum variational principle for an inextensible rotating rod. (English summary) *Internat. J. Non-Linear Mech.* **27** (1992), *no.* 4, 591–595. (Summary) **93c:73060** 73K05 (73K12, 73V25)

Djuranović-Miličić, Nada I. A projection method for linearly constrained problems which only uses function values. *Yugosl. J. Oper. Res.* **1** (1991), *no.* 1, 71–77. (Marco Gaviano) **93f:90148** 90C30 (65K05)

Djurovic, Željko (*with* Kovačević, Branko; Glavaški, Sonja) On robust Kalman filtering. (English summary) *Internat. J. Control* **56** (1992), *no.* 3, 547–562. (Summary) **93f:93128** 93E11 (93B35)

Dlab, Vlastimil (*with* Ringel, Claus Michael) The dimension of a quasi-hereditary algebra. *Topics in algebra, Part 1* (*Warsaw*, 1988), 263–271, *Banach Center Publ.*, 26, *Part 1*, *PWN, Warsaw*, 1990. (Ellen E. Kirkman) **93f:16014** 16E60 (16G20, 16P10)

— (*with* Ágoston, István; Wakamatsu, Takayoshi) Neat algebras. *Comm. Algebra* **19** (1991), *no.* 2, 433–442. (Héctor A. Merklen) **93b:16017** 16E60 (16E10)

— *see also* **Proceedings: Conference on Representations of Algebras, 93j:16001**; **Procházka, Ladislav, 93m:01083a** *and* **93m:01083b**

Dlaska, Karin (*with* Ganster, Maximilian) S-sets and co-S-closed topologies. (English summary) *Indian J. Pure Appl. Math.* **23** (1992), *no.* 10, 731–737. (Summary) **93f:54010** 54A99

— (*with* Ganster, Maximilian) On the questions of Jiang and Reilly. (English summary) *Questions Answers Gen. Topology* **10** (1992), *no.* 2, 187–190. (Summary) **93g:54035** 54D20

Dłotko, Tadeusz On the solutions of certain functional-differential equations of the nth order. *Ann. Math. Sil. No.* 5 (1991), 37–42. (P. W. Eloe) **93d:34119** 34K15 (34C10)

— On periodic boundary value problem for a differential equation of nth order. *Ann. Math. Sil. No.* 5 (1991), 43–50. (P. W. Eloe) **93d:34034** 34B15 (34C25, 47H15)

Dłotko, Tomasz Local solvability of diagonal semilinear parabolic systems. *Czechoslovak Math. J.* **41(116)** (1991), *no.* 4, 634–640. (H. Marcinkowska) **93c:35060** 35K40 (35K50, 35K55)

— Stability of the Chandrasekhar-Münch equation. *Univ. Iagel. Acta Math. No.* 28 (1991), 85–92. (Jürgen Batt) **93c:85002** 85A15 (35Q99, 45K05, 47D03, 85A99)

Dmitrienko, V. T. (*with* Zvyagin, V. G.) Properness of nonlinear elliptic differential operators in Hölder spaces. (Russian) *Nonlinear operators in global analysis* (*Russian*), 68–86, 162, *Novoe Global. Anal., Voronezh. Gos. Univ., Voronezh*, 1991. (Jana D. Madjarova) **93h:47084** 47N20 (35J65, 47H15)

Dmitriev, A. P. Exceptional directions of simple singular points of algebraic class of autonomous systems of differential equations in the plane. (Russian) *Differential equations (qualitative theory)* (*Russian*), 33–50, *Ryazan. Gos. Ped. Inst., Ryazan'*, 1990. (A. P. Sadovskiĭ) **93e:34037** 34C05

Dmitriev, A. S. (*with* Komlev, U. A.; Turaev, D. V.) Bifurcation phenomena in the 1 : 1 resonant horn for the forced van der Pol-Duffing equation. *Internat. J. Bifur. Chaos Appl. Sci. Engrg.* **2** (1992), *no.* 1, 93–100. (Martin Čadek) **93g:34060** 34C23 (34C15, 58F13, 70K30, 70K40, 70K50)

Dmitriev, È. M. (*with* Tikhonov, N. A.) Existence and uniqueness of the solution of a problem on the dynamics of multicomponent ion exchange. (Russian. Russian summary) *Zh. Vychisl. Mat. i Mat. Fiz.* **32** (1992), *no.* 7, 1033–1038; *translation in Comput. Math. Math. Phys.* **32** (1992), *no.* 7, 1017–1022. 92E20

Dmitriev, V. I. (*with* Solov'eva, E. N.) Mathematical modeling of the energy and structural evolution of the Earth. (Russian. Russian summary) *Direct and inverse problems in mathematical physics* (*Russian*), 115–132, 262, *Moskov. Gos. Univ., Moscow*, 1991. (Summary) **93k:86019** 86A60

Dmitriev, V. I. Extreme rays of a cone of convex forms of the sixth degree in two variables. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* **1991,** *no.* 10, 28–35; *translation in Soviet Math. (Iz. VUZ)* **35** (1991), *no.* 10, 25–31. (T. T. Tonkov) **93i:12003** 12E99

— Estimates for the interpolation orbits of functions in $L_1 + L_\infty$. (Russian) *Mat. Zametki* **51** (1992), *no.* 1, 62–71; *translation in Math. Notes* **51** (1992), *no.* 1-2, 40–47. (Naum Zobin) **93h:46107** 46M35 (46E30)

Dmitrieva, I. Yu. On factorization of noncommutative substitutionary matrices with not prime order on complex plane. *Classical analysis* (*Kazimierz Dolny*, 1991), 1–16, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93b:00024**) 30E25 (14H55)

— Factorization of noncommutative permutation matrices on an algebraic surface of nonzero genus. (Russian. Russian summary) *Algebra i Analiz* **4** (1992), *no.* 2, 129–140; *translation in St. Petersburg Math. J.* **4** (1993), *no.* 2, 309–318. (S. R. Nasyrov) **93k:30068** 30E25 (14J99, 30F99)

Dmitrovskiĭ, V. A. On the integrability of the maximum and the local properties of Gaussian fields. *Probability theory and mathematical statistics, Vol. I* (*Vilnius*, 1989), 271–284, "*Mokslas*", *Vilnius*, 1990. (Robert J. Adler) **93d:60064** 60G15 (60G17)

Dmitruk, A. V. Second order necessary and sufficient conditions of Pontryagin minimum for singular regimes. *System modelling and optimization* (*Zurich*, 1991), 334–343, *Lecture Notes in Control and Inform. Sci.*, 180, *Springer, Berlin*, 1992. (*see* **93e:90003**) 49K15

— A generalized estimate of the number of zeros for solutions of a class of linear differential equations. (English summary) *SIAM J. Control Optim.* **30** (1992), *no.* 5, 1087–1091. (Summary) **93e:34044** 34C10 (34A30)

Dmitruk, Pablo (*with* Saúl, Andrés; Reyna, Luis G.) High electric field approximation to charge transport in semiconductor devices. *Appl. Math. Lett.* **5** (1992), *no.* 3, 99–102. (Jian Ning Chen) **93f:82041** 82C40 (78A55, 82D99)

le fe Do *see* **Le Fe Do**

Do, Chi Ngoc Generalized second-order derivatives of convex functions in reflexive Banach spaces. *Trans. Amer. Math. Soc.* **334** (1992), *no.* 1, 281–301. (Marcin Studniarski) **93a:49011** 49J52 (46G05)

Do, Kim-Anh (*with* Hall, Peter Gavin) Distribution estimation using concomitants of order statistics, with application to Monte Carlo simulation for the bootstrap. *J. Roy. Statist. Soc. Ser. B* **54** (1992), *no.* 2, 595–607. (Michael Falk) **93e:62136** 62G30 (62G05, 62G09)

Do Amaral, R. L. P. G. *see* **do Amaral, R. L. P. G.**

Dobbs, Betty Jo Teeter ★ The Janus faces of genius. The role of alchemy in Newton's thought. *Cambridge University Press, Cambridge*, 1991. xii+359 *pp. ISBN* 0-521-38084-7 (J. S. Joel) **93d:01018** 01A45 (01A70)

Dobbs, David E. On n-flat modules over a commutative ring. *Bull. Austral. Math. Soc.* **43** (1991), *no.* 3, 491–498. (Summary) **93a:13005** 13C13 (13C11)

— (*with* Lancaster, Mark J.) The probability of invertibility for a matrix over a finite commutative ring. *C. R. Math. Rep. Acad. Sci. Canada* **13** (1991), *no.* 5, 217–222. (John H. Hodges) **93a:15021** 15A33 (11T99, 20H25)

— (*with* Hanks, Robert) ★ A modern course on the theory of equations. Second edition. With an appendix by Michael Weinstein. *Polygonal Publ. House, Washington, NJ*, 1992. x+253 *pp. ISBN* 0-936428-14-7 (From the introduction) **93b:12001** 12-01

— Seminormality of complete integral closures. *Arch. Math.* (*Basel*) **59** (1992), *no.* 5, 417–419. 13B22

— (*with* Lancaster, Mark J.) The expected dimension of a sum of vector subspaces. *Bull. Austral. Math. Soc.* **45** (1992), *no.* 3, 467–477. (B. Reichstein) **93h:15002** 15A03 (60C05)
— (*with* Anderson, David F.; Fontana, Marco) Hilbert rings arising as pullbacks. (English summary) *Canad. Math. Bull.* **35** (1992), *no.* 4, 431–438. (Salah-Eddine Kabbaj) **93j:13003** 13A15 (13G05)
— (*with* Houston, Evan G.; Lucas, Thomas G.; Roitman, Moshe; Zafrullah, Muhammad) On t-linked overrings. *Comm. Algebra* **20** (1992), *no.* 5, 1463–1488. (Marco Fontana) **93e:13034** 13F05 (13B02, 13G05)
— (*with* Anderson, David F.; Fontana, Marco; Khalis, Mohammed) Catenarity of formal power series rings over a pullback. *J. Pure Appl. Algebra* **78** (1992), *no.* 2, 109–122. (J. W. Brewer) **93d:13022** 13C15 (13J05)
Dobkin, David P. (*with* Souvaine, Diane L.) Detecting the intersection of convex objects in the plane. *Comput. Aided Geom. Design* **8** (1991), *no.* 3, 181–199. (Summary) **93a:65190** 65Y25 (52B55, 65D17)
— (*with* Althöfer, Ingo; Das, Gautam; Joseph, Deborah; Soares, José) On sparse spanners of weighted graphs. (English summary) *Discrete Comput. Geom.* **9** (1993), *no.* 1, 81–100. (Peter B. Gibbons) **93h:05161** 05C99 (05C85, 68R10)
Dobner, Hans-Jürgen (*with* Kaucher, Edgar) Inclusion methods for integral equations. (English summary) *Computer arithmetic and enclosure methods* (*Oldenburg*, 1991), 13–24, *North-Holland, Amsterdam*, 1992. (Summary) **93j:65219** 65R20 (65G05)
— (*with* Kaucher, Edgar) Singular operator equations with functional constraints. (English summary) *Computer arithmetic and enclosure methods* (*Oldenburg*, 1991), 235–241, *North-Holland, Amsterdam*, 1992. (Summary) **93j:65069** 65G10 (65N99, 65R20)
— Verified solution of integral equations with applications. (English summary) *Scientific computing with automatic result verification*, 225–253, *Math. Sci. Engrg.*, 189, *Academic Press, Boston, MA*, 1993. (Weimin Han) **93j:65220** 65R20 (45L10)
Dobordzhginidze, L. G. On a nonlinear model of the theory of quasibrittle fracture. (Russian) *Dokl. Akad. Nauk SSSR* **321** (1991), *no.* 2, 281–284; *translation in Soviet Phys. Dokl.* **36** (1991), *no.* 11, 806–807 (1992). (From the text) **93a:73066** 73M25
Dobovišek, Mirko The Riccati algebraic equation in a locally-C^*-algebra. (English summary) *Integral Equations Operator Theory* **16** (1993), *no.* 1, 64–81. (L. Rodman) **93k:46059** 46L99 (46K99, 47N70, 93B28)
Dobrakov, Ivan Feynman type integrals as multilinear integrals. I. Measure theory (Oberwolfach, 1990). *Rend. Circ. Mat. Palermo* (2) *Suppl. No.* 28 (1992), 169–180. (M. M. Rao) **93j:28018** 28C20 (28B05, 81S40)
Dobran, Flavio ★ Theory of structured multiphase mixtures. Lecture Notes in Physics, 372. *Springer-Verlag, Berlin*, 1991. x+223 *pp. ISBN* 3-540-53564-0 (Gérard A. Maugin) **93g:73024** 73B99 (73B30, 73S10, 76A02, 76T05, 80A99)
— Modeling of structured multiphase mixtures. (English summary) The Eringen anniversary issue. *Internat. J. Engrg. Sci.* **30** (1992), *no.* 10, 1497–1505. (Summary) **93g:73017** 73B30 (73B27, 76T05)
Dobrev, V. K. Classification and characters of $U_q(\mathrm{sl}(3,\mathbf{C}))$ representations. (English summary) *Quantum groups* (*Clausthal*, 1989), 107–117, *Lecture Notes in Phys.*, 370, *Springer, Berlin*, 1990. (Branislav Jurčo) **93m:17009** 17B37 (17B10, 81R50)
— Characters of the $U_q(\mathrm{sl}(3,\mathbf{C}))$ highest weight modules. (English summary) Common trends in mathematics and quantum field theories (Kyoto, 1990). *Progr. Theoret. Phys. Suppl. No.* 102 (1990), 137–158 (1991). (D. V. Yur'ev) **93f:17021** 17B37 (16W30, 81R50)
— Representations of quantum groups. *Symmetries in science, V* (*Lochau*, 1990), 93–135, *Plenum, New York*, 1991. (Sergey Merkulov) **93h:17024** 17B37 (17B10, 81R50)
— Duality for the matrix quantum group $\mathrm{GL}_{p,q}(2,\mathbf{C})$. (English summary) *J. Math. Phys.* **33** (1992), *no.* 10, 3419–3430. (Jia-Chen Ye) **93h:17025** 17B37 (16W30, 81R50)
— (*with* Chair, Noureddine; Kanno, Hiroaki) SO(2, **C**) invariant ring structure of BRST cohomology and singular vectors in 2D gravity with $c < 1$ matter. *Phys. Lett. B* **283** (1992), *no.* 3-4, 194–202. (A. K. Raina) **93j:81100** 81T70 (17B68, 17B81, 81T40)
Dobrokhotov, S. Yu. (*with* Shafarevich, A. I.) Short-wave asymptotics in a linearized system of equations of hydrodynamics with rapidly oscillating coefficients. (Russian) *Asymptotic properties of solutions of differential equations* (*Russian*), 17–18, *Akad. Nauk SSSR Ural. Otdel., Bashkir. Nauchn. Tsentr, Ufa*, 1988. (*see* **93m:35033**) 76V05 (35C20, 76C99)
— (*with* Kolokol'tsov, V. N.; Maslov, V. P.) Splitting of the low energy levels of the Schrödinger equation, and the asymptotic behavior of the fundamental solution of the equation $hu_t = \frac{1}{2}h^2\Delta u - V(x)u$. (Russian. English summary) *Teoret. Mat. Fiz.* **87** (1991), *no.* 3, 323–375; *translation in Theoret. and Math. Phys.* **87** (1991), *no.* 3, 561–599. (David Gurarie) **93d:35030** 35J10 (35P15, 81Q20)
— (*with* Maslov, V. P.; Tsvetkov, V. B.) The problem of tipping a wave for the model equation $v_t + vv_x - \frac{1}{2}ihv_{xx} = 0$. (Russian) *Mat. Zametki* **51** (1992), *no.* 6, 143–147; *translation in Math. Notes* **51** (1992), *no.* 5-6, 624–627. (Cun-Zheng Wang) **93k:35243** 35Q55 (76B15)
— (*with* Shafarevich, A. I.) Some asymptotic solutions of linearized Navier-Stokes equations. (Russian. Russian summary) *Mat. Zametki* **53** (1993), *no.* 1, 25–35, 154. (Summary) **93m:35141** 35Q30 (35C20, 76D05)
Dobronets, B. S. (*with* Gerasimov, V. A.; Shustrov, M. Yu.) Numerical operations for histogram arithmetic and their applications. (Russian) *Avtomat. i Telemekh.* **1991**, *no.* 2, 83–88; *translation in Automat. Remote Control* **52** (1991), *no.* 2, *part* 1, 208–212. (Introduction) **93b:65216** 65U05 (65G10)
— (*with* Senashov, V. I.) On interval extensions of some classes of functions. (Russian. English and Russian summaries) *Interval Comput./Interval. Vychisl.* **1991**, *no.* 1, 54–58. 65G10
— On some two-sided methods for solving systems of ordinary differential equations. (English and Russian summaries) *Interval Comput./Interval. Vychisl.* **1992**, *no.* 1, 6–21. (Summary) **93f:65054** 65L05 (65G10)
Dobrovol'skii, S. M. (*with* Kotyurgina, A. S.; Romanovskiĭ, R. K.) Stability of solutions of linear systems with an almost periodic matrix. (Russian. Russian summary) *Mat. Zametki* **52** (1992), *no.* 6, 10–14, 157; *translation in Math. Notes* **52** (1992), *no.* 5-6, 1178–1181 (1993). (Summary) **93k:34109** 34D20 (34A30, 34H05)
Dobrovol'skii, V. A. A. M. Lyapunov's manuscripts on the theory of ordinary differential equations. (Russian) *Istor.-Mat. Issled. No.* 32-33 (1990), 74–90. (A. Reinfelds) **93d:01032** 01A55
Dobrowolski, Edward (*with* Januszkiewicz, Tadeusz) Arithmetic of an elliptic curve and circle actions on four-manifolds. *Colloq. Math.* **64** (1993), *no.* 1, 13–18. (Mark Hovey) **93m:57042** 57S15 (11D25)
Dobrowolski, Manfred On the smoothness of elliptic variational problems in convex domains. (English summary) *Extrapolation and defect correction* (1990), 121–130, *Bonner Math. Schriften*, 228, *Univ. Bonn, Bonn*, 1991. (Summary) **93h:35079** 35J85 (35B65, 35J25)
— (*with* Apel, T.) Anisotropic interpolation with applications to the finite element method. (German summary) *Computing* **47** (1992), *no.* 3-4, 277–293. (Gheorghe Micula) **93b:65166** 65N30 (65D07)
— (*with* Staib, Tilo) On finite element approximation of a second order unilateral variational inequality. (English summary) *Numer. Funct. Anal. Optim.* **13** (1992), *no.* 3-4, 243–247. (Jan Mandel) **93j:65176** 65N30 (65K10)
— A mixed finite element method for approximating incompressible materials. *SIAM J. Numer. Anal.* **29** (1992), *no.* 2, 365–389. (Jiří Nedoma) **93b:65167** 65N30 (73C50, 73V05, 73V25)
Dobrowolski, Tadeusz (*with* Mogilski, Jerzy) Absorbing sets in the Hilbert cube related to transfinite dimension. (English summary) *Bull. Polish Acad. Sci. Math.* **38** (1990), *no.* 1-12, 185–188. (Raymond Y. T. Wong) **93i:57028** 57N20
— (*with* Mogilski, Jerzy) Certain sequence and function spaces homeomorphic to the countable product of l_f^2. (English summary) *J. London Math. Soc.* (2) **45** (1992), *no.* 3, 566–576. (Summary) **93f:46010** 46A99 (46B20, 57N17)
— (*with* Grabowski, Janusz) Subgroups of Hilbert spaces. *Math. Z.* **211** (1992), *no.* 4, 657–669. (Alexander Isaakovich Shtern) **93k:58009** 58B25 (22A15, 46A99, 46C05, 47D03)
Dobrushin, R. L. (*with* Sokolovskiĭ, F.) Higher order hydrodynamic equations for a system of independent random walks. *Random walks, Brownian motion, and interacting particle systems*, 231–254, *Progr. Probab.*, 28, *Birkhäuser Boston, Boston, MA*, 1991. (Maria E. Vares) **93c:60157** 60K35 (82C22)
— (*with* Koteckỳ, Roman; Shlosman, S. B.) ★ Wulff construction. (English. English summary) A global shape from local interaction. Translated from the Russian by the authors. Translations of Mathematical Monographs, 104. *American Mathematical Society, Providence, RI*, 1992. x+204 *pp. ISBN* 0-8218-4563-2 (Joël De Coninck) **93k:82002** 82B05 (82-02, 82B20)
— (*with* Kirillov, Anatoli A.; Malyshev, V. A.; Sinaĭ, Ya. G.; Khelemskiĭ, A. Ya.) Robert Adol'fovich Minlos (on the occasion of his sixtieth birthday). (Russian) *Uspekhi Mat. Nauk* **47** (1992), *no.* 1(283), 225–226; *translation in Russian Math. Surveys* **47** (1992), *no.* 1, 275–277. 01A70
Dobrynin, A. A. Enumeration of some subclasses of graphs of nonramified hexagonal systems. (Russian. Russian summary) *Vychisl. Sistemy No.* 136, *Mat. Issled. v Khim. Inform.* (1990), 16–34, 141–142. (Summary) **93j:92035** 92E10 (05C30)
— Distribution of the values of the distance of graphs of nonramified hexagonal systems. (Russian. Russian summary) *Vychisl. Sistemy No.* 136, *Mat. Issled. v Khim. Inform.* (1990), 61–140, 143–144. (V. I. Bykov) **93g:92032** 92E10 (05C12)
— Cubic graphs with 62 vertices having the same path layer matrix. (English summary) *J. Graph Theory* **17** (1993), *no.* 1, 1–4. (Summary) **93m:05132** 05C50
Dobson, David C. Phase reconstruction via nonlinear least-squares. (English summary) *Inverse Problems* **8** (1992), *no.* 4, 541–548. (Summary) **93e:65149** 65R10 (65K10)
— Convergence of a reconstruction method for the inverse conductivity problem. *SIAM J. Appl. Math.* **52** (1992), *no.* 2, 442–458. (Fumio Kojima) **93c:35159** 35R30 (35Q60, 49N45, 65N12, 65Y10, 78A45)
Dobson, Ian (*with* Lu, Liming) Computing an optimum direction in control space to avoid saddle node bifurcation and voltage collapse in electric power systems. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 10, 1616–1620. 93B40 (93C95)
Do Carmo, Manfredo *see* **do Carmo, Manfredo**
Dockery, Jack D. Existence of standing pulse solutions for an excitable activator-inhibitory system. *J. Dynamics Differential Equations* **4** (1992), *no.* 2, 231–257. (Pierre A. Vuillermot) **93h:35097** 35K57 (34C99, 35A30)
— (*with* Lui, Roger) Existence of travelling wave solutions for a bistable evolutionary ecology model. *SIAM J. Math. Anal.* **23** (1992), *no.* 4, 870–888. (Jian Hong Wu) **93h:35098** 35K57 (92D10, 92D25)
Dockner, Engelbert J. (*with* Feichtinger, Gustav) On the optimality of limit cycles in dynamic economic systems. *Z. Nationalökonom.* **53** (1991), *no.* 1, 31–50. (Jun Ping Chen) **93c:90024** 90A16 (34C05, 49K15)
— (*with* Jørgensen, Steffen) New product advertising in dynamic oligopolies. (English summary) *Z. Oper. Res.* **36** (1992), *no.* 5, 459–473. 90D25 (90A16)
Dodd, R. K. (*with* Moon, S. J.) A shifted analytic map. *Phys. Lett. A* **162** (1992), *no.* 1, 37–40. (Yong Nian Huang) **93a:58120** 58F13 (58F14, 78A60)
Dodds, Peter G. (*with* Dodds, Theresa K.; de Pagter, Ben) Weakly compact subsets of symmetric operator spaces. *Math. Proc. Cambridge Philos. Soc.* **110** (1991), *no.* 1, 169–182. (Alexander Isaakovich Shtern) **93e:46074** 46L50 (46E30, 47D15)
Dodds, Theresa K. (*with* Dodds, Peter G.; de Pagter, Ben) Weakly compact subsets of symmetric operator spaces. *Math. Proc. Cambridge Philos. Soc.* **110** (1991), *no.* 1, 169–182. (Alexander Isaakovich Shtern) **93e:46074** 46L50 (46E30, 47D15)
Dodge, Yadolah (*with* Jurečková, Jana) Flexible l-estimation in the linear model. *Comput. Statist. Data Anal.* **12** (1991), *no.* 2, 211–220. (Jan Ámos Víšek) **93a:62095** 62J05 (62F35)
— *see also* **Computational statistics, 93k:62002**; **93k:62003** *and* **L_1-statistical analysis and related methods, 93k:62005**
Dodonov, V. V. (*with* Man'ko, V. I.; Osipov, D. L.) A gradient-invariant Weyl representation. An oscillator in a nonuniform magnetic field. (Russian. Russian summary) *Trudy Fiz. Inst. Lebedev.* **191** (1989), 3–45, 246. (Ivailo M. Mladenov) **93h:81069** 81S30 (81V10)
— (*with* Man'ko, V. I.; Man'ko, O. V.) A quantum nonstationary oscillator. (Russian. Russian summary) *Trudy Fiz. Inst. Lebedev.* **191** (1989), 171–244, 247. (K. Wódkiewicz) **93g:81016** 81Q05 (81-02)
— (*with* Man'ko, V. I.; Nikonov, D. E.) Exact propagators for time-dependent Coulomb, delta and other potentials. *Phys. Lett. A* **162** (1992), *no.* 5, 359–364. (Summary) **93b:81079** 81Q99
— (*with* Klimov, A. B.; Man'ko, V. I.) Quantum multidimensional systems with quadratic Hamiltonians. Evolution of distinguished subsystems. (Russian. Russian summary) *Trudy Fiz. Inst. Lebedev.* **208** (1992), 105–178, 245–246. (P. A. Mishnayevskiy) **93k:81264** 81V70

— (*with* Man'ko, V. I.; Man'ko, O. V.) A nonstationary parametric chain of oscillators. (Russian. Russian summary) *Trudy Fiz. Inst. Lebedev.* **208** (1992), 179–206, 246. (V. I. Yukalov) **93k:81265** 81V70

Dodson, Cristopher T. J. (*with* Del Riego, L.) Universal reduction of second order tangent structure. *Proceedings of the Workshop on Recent Topics in Differential Geometry (Puerto de la Cruz, 1990)*, 65–76, *Informes*, 32, *Univ. La Laguna, La Laguna*, 1991. (Marco Modugno) **93a:58001** 58A05 (53B05, 55R10, 58A20)

— (*with* Vázquez-Abal, María Elena) Induced harmonic mappings of tangent bundles and frame bundles. (Russian) *Mat. Zametki* **50** (1991), *no.* 3, 27–37, 156; *translation in Math. Notes* **50** (1991), *no.* 3-4, 902–908 (1992). (Guo Ying Jiang) **93f:58041** 58E20

— (*with* Cordero, Luis A.; Parker, Phillip E.) Examples of spaces of connections and universal connections. *Differential geometry and its applications (Eger, 1989)*, 171–176, *Colloq. Math. Soc. János Bolyai*, 56, *North-Holland, Amsterdam*, 1992. (*see* **93i:53001**) 53C05 (57R22)

— Recent applications of universal connections. (English summary) *Topology Hawaii (Honolulu, HI, 1990)*, 63–73, *World Sci. Publishing, River Edge, NJ*, 1992. (Marco Modugno) **93j:53032** 53C05 (53–02)

Dodson, David S. (*with* Levin, Stewart A.) A tricyclic tridiagonal equation solver. (English summary) *SIAM J. Matrix Anal. Appl.* **13** (1992), *no.* 4, 1246–1254. (Summary) **93g:65176** 65Y05 (65F05)

Dodson, K. T. Dzh. *see* **Dodson, Cristopher T. J.**

Dodson, M. M. (*with* Hasan, S.) Systems of linear forms and covers for star bodies. *Acta Arith.* **61** (1992), *no.* 2, 119–127. (F. Schweiger) **93g:11078** 11J83 (11K55)

— (*with* Pöschel, Jürgen; Rynne, Bryan P.; Vickers, J. A. G.) The Hausdorff dimension of small divisors for lower-dimensional KAM-tori. (English summary) *Proc. Roy. Soc. London Ser. A* **439** (1992), *no.* 1906, 359–371. (Alessandra Celletti) **93m:58096** 58F27 (11J83, 70H05)

— (*with* Beaty, M. G.) The distribution of sampling rates for signals with equally wide, equally spaced spectral bands. (English summary) *SIAM J. Appl. Math.* **53** (1993), *no.* 3, 893–906. 94A12 (11J70)

Do Duc Thai Hyperbolicity and the Montel property of fiber spaces. (Russian) *Nonlinear operators in global analysis (Russian)*, 131–136, 163–164, *Novoe Global. Anal., Voronezh. Gos. Univ., Voronezh*, 1991. (Sergio Venturini) **93m:32035** 32H20 (32H15)

— On the D^*-extension and the Hartogs extension. *Ann. Scuola Norm. Sup. Pisa Cl. Sci.* (4) **18** (1991), *no.* 1, 13–38. (Sergey Ivashkovich) **93b:32015** 32D20 (32H20)

— The fixed points of holomorphic maps on a convex domain. *Ann. Polon. Math.* **56** (1992), *no.* 2, 143–148. (Marco Abate) **93c:32032** 32H02 (32H15, 46G20)

Dodunekov, Stefan M. (*with* Nilsson, Jan E. M.) Algebraic decoding of the Zetterberg codes. (English summary) *IEEE Trans. Inform. Theory* **38** (1992), *no.* 5, 1570–1573. 94B05

— (*with* Encheva, S. B.) Uniqueness of some linear subcodes of the binary extended Golay code. (Russian. Russian summary) *Problemy Peredachi Informatsii* **29** (1993), *no.* 1, 45–51; *translation in Problems Inform. Transmission* **29** (1993), *no.* 1, 38–43. (Summary) **93m:94030** 94B25

Dodunekova, Rositsa D. (*with* Csörgő, Sándor) Infinitely divisible laws partially attracted to a Poisson law. *Math. Balkanica (N.S.)* **4** (1990), *no.* 3, 300–319 (1991). (N. R. Mohan) **93g:60033** 60E07 (60F05, 60G50)

Do Dyk Tkhai *see* **Do Duc Thai**

Dodziuk, J. (*with* Buser, Peter; Colbois, B.) Tubes and eigenvalues for negatively curved manifolds. (English summary) *J. Geom. Anal.* **3** (1993), *no.* 1, 1–26. (Robert Brooks) **93k:58220** 58G25

Doebner, Heinz-Dietrich (*with* Tolar, J.) Algebras and symmetries—quantum mechanical symmetry breaking. *Symmetries in science, V (Lochau, 1990)*, 137–146, *Plenum, New York*, 1991. (Mayer Humi) **93c:81076** 81R40

— *see also* **Differential geometry, group representations, and quantization, 93c:81004** *and* **Quantum groups, 93h:00020**

Doedel, Eusebius (*with* Keller, Herbert B.; Kernévez, Jean-Pierre) Numerical analysis and control of bifurcation problems. I. Bifurcation in finite dimensions. *Internat. J. Bifur. Chaos Appl. Sci. Engrg.* **1** (1991), *no.* 3, 493–520. (Alois Klíč) **93c:34001a** 34–01 (34–04, 34C23, 34G20, 65H17)

— (*with* Keller, Herbert B.; Kernévez, Jean-Pierre) Numerical analysis and control of bifurcation problems. II. Bifurcation in infinite dimensions. *Internat. J. Bifur. Chaos Appl. Sci. Engrg.* **1** (1991), *no.* 4, 745–772. (Alois Klíč) **93c:34001b** 34–01 (34–04, 34C23, 65M06)

Doerk, Klaus (*with* Hawkes, Trevor) ★ Finite soluble groups. de Gruyter Expositions in Mathematics, 4. *Walter de Gruyter & Co., Berlin*, 1992. xiv+891 *pp. ISBN* 3-11-012892-6 (R. Bryce) **93k:20033** 20D10 (20F17)

— (*with* Ballester-Bolinches, A.; Pérez-Ramos, M. D.) On the lattice of $\mathfrak{F}$-subnormal subgroups. *J. Algebra* **148** (1992), *no.* 1, 42–52. (Alexander N. Skiba) **93h:20020** 20D10

Doerschuk, Peter C. (*with* Gelfand, Saul B.; Nahhas-Mohandes, Mohamed) Simulated annealing algorithms for continuous optimization. (English summary) *Transactions of the Tenth Army Conference on Applied Mathematics and Computing (West Point, NY, 1992)*, 273–281, *ARO Rep.*, 93-1, *U.S. Army Res. Office, Research Triangle Park, NC*, 1993. (*see* **93m:00047**) 65K99 (65C05, 65U05)

Does, R. J. M. M. (*with* Schriever, B. F.) Variables control chart limits and tests for special causes. (English summary) *Statist. Neerlandica* **46** (1992), *no.* 4, 229–245. 62N10

Doets, Kees Axiomatizing universal properties of quantifiers. *J. Symbolic Logic* **56** (1991), *no.* 3, 901–905. (Michal Krynicki) **93b:03061** 03C80 (03C95)

— A slight strengthening of a theorem of Blair and Kunen. *Theoret. Comput. Sci.* **97** (1992), *no.* 1, 175–181. (Summary) **93d:68010** 68N17 (03B70)

Doğanaksoy, Ali Almost quaternionic substructures. (English and Turkish summaries) *Doğa Mat.* **16** (1992), *no.* 2, 109–118. (Paolo Piccinni) **93i:53029** 53C15

Doghieri, F. (*with* Camera-Roda, G.; Ruggeri, Tommaso; Sarti, G. C.) Thermodynamically consistent rate-type constitutive equations for the diffusive mass flux. *Nonlinear waves and dissipative effects (Reggio di Calabria, 1990)*, 182–195, *Pitman Res. Notes Math. Ser.*, 227, *Longman Sci. Tech., Harlow*, 1991. (V. Soundalgekar) **93b:76079** 76R50 (80A05)

Doh, Jeong-In (*with* Chwa, Kyung Yong) An algorithm for determining visibility of a simple polygon from an internal line segment. (English summary) *J. Algorithms* **14** (1993), *no.* 1, 139–168. (Nikolaj M. Korneenko) **93k:68101** 68U05 (52B55)

Doha, E. H. Recurrence relations for the coefficients in ultraspherical series solutions of ordinary differential equations. *Ann. Univ. Sci. Budapest. Sect. Comput.* **11** (1991), 127–145. (Martin Hermann) **93c:34032b** 34A45 (34A05, 34A20)

— Recurrence relations for the coefficients in ultraspherical series solutions of ordinary differential equations. *J. Comput. Math.* **9** (1991), *no.* 2, 171–183. (Martin Hermann) **93c:34032a** 34A45 (34A05, 34A20)

Dohi, Tadashi (*with* Kaio, Naoto; Osaki, Shunji) Optimal maintenance policies with lead times and repair. (English summary) *Internat. J. Systems Sci.* **23** (1992), *no.* 8, 1299–1308. (Summary) **93f:90091** 90B35

Dohlus, Martin (*with* Bartsch, Michael; Dehler, Micha; et al.) Solution of Maxwell's equations. (English summary) *Comput. Phys. Comm.* **73** (1992), *no.* 1-3, 22–39. (Summary) **93j:78003** 78–08 (78A25)

Dohnal, Mirko (*with* Popela, Pavel; Šiller, Aleš) Linear qualitative models: solution, application and engineering interpretation. I. Qualitative algebra. (English summary) *Comput. Artificial Intelligence* **11** (1992), *no.* 6, 535–544. (Summary) **93j:68226** 68U20

Dohrn, Daniela (*with* Aldrovandi, Ettore; Guerra, Francesco) The Lagrangian approach to stochastic variational principles on curved manifolds. Application of statistical methods in theoretical physics and fluid mechanics (Calcutta, 1991). *Acta Appl. Math.* **26** (1992), *no.* 3, 219–236. (Jacques Vauthier) **93m:58123** 58G32 (81P20)

Dohtani, Akitaka Global stability of the competitive economy involving complementary relations among commodities. (English summary) *J. Math. Econom.* **22** (1993), *no.* 1, 73–83. (Anjan Mukherji) **93k:90022** 90A14 (90A16)

Doi, Koji Award of the Spring prize to Haruzo Hida. (Japanese) *Sūgaku* **44** (1992), *no.* 4, 343–348. (Editors) **93m:01070b** 01A70

Doi, S. *see* **Doi, Shun**

Doi, Shinji Some number theoretical aspects on periodic orbits of a tent map. (English summary) *Adv. in Appl. Math.* **14** (1993), *no.* 1, 51–61. (Arkady S. Pikovsky) **93k:58079** 58F03 (58F20)

Doi, Shun (*with* Watanabe, Hiroshi) A comparison of Bi-CGSTAB and CGS methods for convection-diffusion equations. (English summary) *Parallel processing for matrix computation (Yokohama, 1991)*, 19–26, *Adv. Numer. Methods Large Sparse Sets Linear Equations*, 7, *Keio Univ., Yokohama*, 1991. (*see* **93e:65040**) 65N22 (65N12)

— A Gustafsson-type modification for parallel ordered incomplete LU factorizations. (English summary) *Parallel processing for matrix computation (Yokohama, 1991)*, 36–42, *Adv. Numer. Methods Large Sparse Sets Linear Equations*, 7, *Keio Univ., Yokohama*, 1991. (*see* **93e:65040**) 65F10 (65N22, 65Y05)

— (*with* Washio, T.; Tanaka, T.) Implementation and evaluation of ILU-preconditioned iterative methods on Cenju parallel computer. (Japanese. English summary) *Parallel processing for scientific computing (Yokohama, 1992)*, 9–15, *Adv. Numer. Methods Large Sparse Sets Linear Equations*, 8, *Keio Univ., Yokohama*, 1992. (*see* **93f:65027**) 65F10 (65Y05)

Doi, Yukio (*with* Masuoka, Akira) Generalization of cleft comodule algebras. *Comm. Algebra* **20** (1992), *no.* 12, 3703–3721. (E. J. Taft) **93j:16030** 16W30

Doichinov, Doichin B. (*with* Malykhin, V. I.) On compactly determined spaces. *Serdica* **17** (1991), *no.* 2-3, 157–160 (1992). (H. H. Wicke) **93k:54056** 54D30 (54A25, 54B10, 54F65)

Doković, Dragomir Ž. Ten Hadamard matrices of order 1852 of Goethals-Seidel type. (English summary) *European J. Combin.* **13** (1992), *no.* 4, 245–248. (Jennifer Seberry) **93h:05030** 05B20 (05–04)

— Skew Hadamard matrices of order 4×37 and 4×43. (English summary) *J. Combin. Theory Ser. A* **61** (1992), *no.* 2, 319–321. (Summary) **93f:05023** 05B20

Dokshevich, A. I. Small oscillations of a top in the vicinity of a motion obeying the law of a physical pendulum. (Russian) *Mekh. Tverd. Tela No.* 23 (1991), 16–24. (Summary) **93b:70004** 70E15 (70E20)

— Rapid rotation of a body around a fixed point in the Hess case. (Russian. Russian summary) *Mekh. Tverd. Tela No.* 24 (1992), 9–15. (Summary) **93m:70006** 70E15 (70E05)

Doktorov, E. V. (*with* Tarakanov, A. N.) Generation of soliton solutions of self-duality equations for gauge fields. (Russian) *Current group analysis (Russian) (Baku, 1988)*, 87–93, "*Élm*", *Baku*, 1989. (*see* **93d:58002**) 81T13 (35Q51)

Doktorskiĭ, R. Ya. Reiterative relations of the real interpolation method. (Russian) *Dokl. Akad. Nauk SSSR* **321** (1991), *no.* 2, 241–245; *translation in Soviet Math. Dokl.* **44** (1992), *no.* 3, 665–669. (Irina U. Asekritova) **93b:46143** 46M35

Dokuchaev, M. A. Torsion units in integral group rings of nilpotent metabelian groups. *Comm. Algebra* **20** (1992), *no.* 2, 423–435. (Jürgen Ritter) **93b:20015** 20C12 (16U60, 20F18)

Dokuchaev, N. G. Integral estimates for ordinary differential equations and their application to nonsmooth problems of optimal control. (Russian) *Differentsial'nye Uravneniya* **27** (1991), *no.* 10, 1679–1691, 1834–1835; *translation in Differential Equations* **27** (1991), *no.* 10, 1181–1191 (1992). (Dariusz Zagrodny) **93b:34078** 34H05 (34A99, 49J15, 90C39)

— Boundary value problems for functionals of Itô processes. (Russian) *Teor. Veroyatnost. i Primenen.* **36** (1991), *no.* 3, 464–481; *translation in Theory Probab. Appl.* **36** (1991), *no.* 3, 459–476 (1992). (J. M. Stoyanov) **93e:60117** 60H15

Dolan, Brian P. (*with* Nash, Charles) Zeta function continuation and the Casimir energy on odd- and even-dimensional spheres. (English summary) *Comm. Math. Phys.* **148** (1992), *no.* 1, 139–153. (Martin Leblanc) **93f:58243** 58G26 (58G03, 58G40, 81T20)

Dolan, L. (*with* Liu, James T.) Running gauge couplings and thresholds in the type-II superstring. (English summary) *Nuclear Phys. B* **387** (1992), *no.* 1, 86–96. 81T30 (81V22)

Dolan, Peter Spanning trees in random graphs. *Random graphs, Vol.* 2 (*Poznań*, 1989), 47–58, *Wiley-Intersci. Publ., Wiley, New York*, 1992. (Zbigniew Palka) **93d:05136** 05C80

— (*with* Halsey, Mark) Random edge domination. (English summary) *Discrete Math.* **112** (1993), *no.* 1-3, 259–260. (Summary) **93k:05166** 05C80

Dolbilin, N. P. (*with* Shtan'ko, M. A.; Shtogrin, M. I.) Quadrillages and parametrizations of lattice cycles. (Russian) Translated in Proc. Steklov Inst. Math. **1992**, no. 4, 73–93. Discrete geometry and topology (Russian). *Trudy Mat. Inst. Steklov.* **196** (1991), 66–85. (Dušan Repovš) **93a:52014** 52C05 (54C10, 57M99, 82B20)

Dolbilov, A. M. (*with* Shneĭberg, I. Ya.) Continuous selections of multivalued mappings. (Russian. Russian summary) *Nonlinear oscillations and control theory (Russian)*, 55–64, 89, 91, *Udmurt. Gos. Univ., Izhevsk*, 1989. (*see* **93m:00031**) 28B20 (47H04, 49J24, 54C60, 54C65)

Dolcetta, I. Capuzzo *see* **Capuzzo-Dolcetta, I.**

Dolcetti, Alberto On the generation of certain bundles over $\mathbf{P}^3$. *Math. Ann.* **294** (1992), *no.* 1, 99–107. (Marino Palleschi) **93h:14013** 14F05 (14J60)

Dold, Albrecht Characteristic classes of augmented bundles. *Math. Ann.* **292** (1992), *no.* 4, 729–745. (Donald W. Kahn) **93d:55021** 55R40 (55R12, 55R25)

Dold, J. W. Emergence of a detonation within a reacting medium. *Fluid dynamical aspects of combustion theory*, 161–183, *Pitman Res. Notes Math. Ser.*, 223, *Longman Sci. Tech., Harlow*, 1991. (From the introduction) **93h:80003** 80A25 (76L05, 76N15)

— (*with* Brauner, C.-M.; Buckmaster, John; Schmidt-Lainé, Cl.) On an evolution equation arising in detonation theory. *Fluid dynamical aspects of combustion theory*, 196–210, *Pitman Res. Notes Math. Ser.*, 223, *Longman Sci. Tech., Harlow*, 1991. (Graeme C. Wake) **93k:80011** 80A25 (35Q99, 76L05, 76N15)

— (*with* Henderson, K. L.) Transition from thermal runaway to propagating flames. *SIAM J. Appl. Math.* **51** (1991), *no.* 5, 1304–1314. (Summary) **93c:80013** 80A25

— An efficient surface-integral algorithm applied to unsteady gravity waves. (English summary) *J. Comput. Phys.* **103** (1992), *no.* 1, 90–115. (Summary) **93g:76091** 76M25 (76B15)

— A note on integral properties of periodic orbits. (English summary) *SIAM Rev.* **35** (1993), *no.* 1, 125–129. (Summary) **93m:34057** 34C25 (34C15, 70H05, 70K99)

Dold-Samplonius, Yvonne al-Kāshī's measurement of Muqarnas. (Arabic summary) *Deuxième Colloque Maghrebin sur l'Histoire des Mathématiques Arabes* (*Tunis*, 1988), 74–84, A156, *Maghreb, Tunis*, 19??. (E. S. Kennedy) **93b:01011** 01A30

— The XVth century Timurid mathematician Ghiyāth al-Dīn Jamshīd al-Kāshī and his computation of the qubba. *Amphora*, 171–181, *Birkhäuser, Basel*, 1992. (J. L. Berggren) **93k:01010** 01A30

Dolecki, S. (*with* Guillerme, J.; Lignola, M. B.; Malivert, C.) Γ-inequalities and stability of generalized extremal convolutions. *Math. Nachr.* **152** (1991), 299–323. (Jean-Paul Penot) **93e:49020** 49J45 (47H19, 54A20)

Dolev, Danny (*with* Bar-Noy, Amotz; Dwork, Cynthia; Strong, H. Raymond) Shifting gears: changing algorithms on the fly to expedite Byzantine agreement. *Inform. and Comput.* **97** (1992), *no.* 2, 205–233. (A. T. Amin) **93f:68036** 68Q22 (68M10)

— (*with* Feder, Tomás) Determinism vs. nondeterminism in multiparty communication complexity. (English summary) *SIAM J. Comput.* **21** (1992), *no.* 5, 889–895. (Summary) **93i:68019** 68M10 (68Q25, 90B12)

— (*with* Bar-Noy, Amotz) A partial equivalence between shared-memory and message-passing in an asynchronous fail-stop distributed environment. (English summary) *Math. Systems Theory* **26** (1993), *no.* 1, 21–39. (Summary) **93i:68016** 68M10

Dolezal, Vaclav Sensitivity and robust stability of some control systems containing a nonlinear plant. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 12, 1949–1956. (Antonis I. G. Vardulakis) **93k:93081** 93D09 (93B36)

Dolfi, Silvio On hypernormalizing Frobenius groups. (Italian. English summary) *Boll. Un. Mat. Ital. B* (7) **5** (1991), *no.* 3, 521–543. (John S. Wilson) **93b:20032** 20D10 (20D35)

Dolgachev, Igor V. (*with* Reider, Igor) On rank 2 vector bundles with $c_1^2 = 10$ and $c_2 = 3$ on Enriques surfaces. *Algebraic geometry* (*Chicago, IL*, 1989), 39–49, *Lecture Notes in Math.*, 1479, *Springer, Berlin*, 1991. (Arnaud Beauville) **93k:14053** 14J60 (14J28)

— Enriques surfaces: old and new. *Geometry and complex variables* (*Bologna*, 1988/1990), 165–176, *Lecture Notes in Pure and Appl. Math.*, 132, *Dekker, New York*, 1991. (Jong Hae Keum) **93g:14044** 14J28

— *see also* **Algebraic geometry, 93d:14004**

Dolgii, Yu. F. Stability of a periodic system with delay. (Russian. Russian summary) *Boundary value problems* (*Russian*), 16–21, *Perm. Politekh. Inst., Perm'*, 1989. (*see* **93k:00022**) 34K20

— (*with* Kim, A. V.) On the method of Lyapunov functionals for systems with aftereffect. (Russian) *Differentsial'nye Uravneniya* **27** (1991), *no.* 8, 1313–1318, 1468; *translation in Differential Equations* **27** (1991), *no.* 8, 918–922 (1992). (Denis Khusainov) **93b:34099** 34K20

Dolgosheina, E. B. (*with* Latyshev, A. V.; Yushkanov, A. A.) Exact solutions of model BGK Boltzmann equation in temperature jump and weak evaporation problems. *Fluid Dynamics* **27** (1992), *no.* 1, 122–128; *translated from Izv. Ross. Akad. Nauk Mekh. Zhidk. Gaza* **1992**, *no.* 1, 163–171 (*Russian. Russian summary*). (Summary) **93h:76065** 76P05 (45J05, 82C40)

Dolgov, A. D. (*with* Sena, L. A.; Feoktistov, L. P.; Smirnov, Yu. N.; Gershtein, S. S.; Arnol'd, V. I.) Master. (Russian) *Priroda* **1992**, *no.* 2, 84–111. (Editors) **93g:01083** 01A70

Dolinar, Sam (*with* Ko, Tsz-Mei; McEliece, Robert J.) Some VLSI decompositions of the de Bruijn graph. (English summary) A collection of contributions in honour of Jack van Lint. *Discrete Math.* **106/107** (1992), 189–198. (Qing De Kang) **93h:05159** 05C90 (68Q35)

— (*with* Collins, Oliver; McEliece, Robert J.; Pollara, Fabrizio) A VLSI decomposition of the de Bruijn graph. (English summary) *J. Assoc. Comput. Mach.* **39** (1992), *no.* 4, 931–948. (Summary) **93g:05132** 05C90 (68R10)

Doll, H. A generalized bridge number for links in 3-manifolds. *Math. Ann.* **294** (1992), *no.* 4, 701–717. (G. Burde) **93i:57023** 57N10 (57M25)

Dollas, Apostolos (*with* Thint, Marcus P.; Wang, Paul P.) Nonparametric graded data processing with back-error propagation networks. (English summary) *Inform. Sci.* **67** (1993), *no.* 1-2, 167–188. 68T05

Dollinger, Michael B. (*with* Staudte, Robert G.) Influence functions of iteratively reweighted least squares estimators. *J. Amer. Statist. Assoc.* **86** (1991), *no.* 415, 709–716. (K. C. Chanda) **93k:62057** 62F12 (62F35, 62J05)

Dol'nikov, V. L. On transversal families of sets. (Russian) *Problems in group theory and homological algebra* (*Russian*), 164–166, *Matematika, Yaroslav. Gos. Univ., Yaroslavl'*, 1990. (Konrad Engel) **93g:05143** 05D15 (52A35)

— A generalization of the sandwich theorem. (Russian. Russian summary) *Mat. Zametki* **52** (1992), *no.* 2, 27–37, 155; *translation in Math. Notes* **52** (1992), *no.* 1-2, 771–779 (1993). (Béla Uhrin) **93j:28002** 28A12 (52A37)

Đỗ Long Vân (*with* Phan Trung Huy; Livotsky, Igor) Which finite monoids are syntactic monoids of rational ω-languages. *Inform. Process. Lett.* **42** (1992), *no.* 3, 127–132. (Ludwig Staiger) **93f:68061** 68Q45 (20M35)

— (*with* Le Saëc, Bertrand; Litovsky, Igor) On coding morphisms for zigzag codes. (English and French summaries) *RAIRO Inform. Théor. Appl.* **26** (1992), *no.* 6, 565–580. (Dong Yang Long) **93m:20105** 20M25 (68Q45, 94A45)

— (*with* Phan Trung Huy) Varieties of finite monoids and Büchi-McNaughton theorem. *Theoret. Comput. Sci.* **98** (1992), *no.* 2, 321–337. (Danièle Beauquier) **93m:68123** 68Q70 (20M07, 68Q45)

— (*with* Le Saëc, Bertrand; Litovsky, Igor) Stability for the zigzag submonoids. (English and French summaries) *Theoret. Comput. Sci.* **108** (1993), *no.* 2, 237–249. (Wit Foryś) **93m:68098** 68Q45

Dolotova, O. A. On the complexity of tests for monotone functions. (Russian) *Constructions in algebra and logic* (*Russian*), 43–49, *Tver. Gos. Univ., Tver'*, 1990. (*see* **93m:00021**) 68Q25 (03G05, 06E30)

— On the complexity of minimal control tests for Post classes. (Russian) *Dokl. Akad. Nauk* **324** (1992), *no.* 4, 730–733; *translation in Russian Acad. Sci. Dokl. Math.* **45** (1992), *no.* 3, 610–613 (1993). (János Demetrovics) **93m:03102** 03G20 (03G05, 06E30)

Dolov, M. V. Differential equations generated by a Darboux-type integral. (Russian) *Differential and integral equations* (*Russian*), 31–37, *Gor'kov. Gos. Univ., Gorki*, 1990. (*see* **93g:34001**) 34C05

Doltsinis, I. St. *see* **Congress: Computational Mechanics, 93d:73002**

Dolzhanskiĭ, F. V. (*with* Krymov, V. A.; Manin, D. Yu.) Quasi two-dimensional coherent structures. (English summary) *Nonlinear dynamics of structures* (*Vladimir Maiakovskiĭ*, 1990), 1–20, *World Sci. Publishing, River Edge, NJ*, 1991. (*see* **93g:76004**) 76F20 (76E99)

— (*with* Manin, D. Yu.) The effect of the Ekman turbulent layer on the dynamics of large-scale motions. (Russian) *Dokl. Akad. Nauk* **322** (1992), *no.* 6, 1065–1069. (From the text) **93c:76049** 76F99 (76E20, 86A10)

Dolzhenko, I. V. On the completeness of some classes of subspaces of a locally convex space. (Russian) *Mathematical analysis* (*Russian*), 10–14, *Ross. Gos. Ped. Univ., Leningrad*, 1991. (Vitali V. Shevchik) **93k:46001** 46A03 (46A19, 47A99)

Dolzhikov, V. V. (*with* Smyshlyaeva, L. G.; Malinina, T. B.) ★ Нестандартные задачи фильтрации. (Russian) [Nonstandard filtering problems] *Leningrad. Univ., Leningrad*, 1991. 304 *pp. ISBN* 5-288-00489-7 (L. Stettner) **93c:93050** 93E11 (93E10, 93E20)

Dolzmann, G. (*with* Frehse, J.) Optimale asymptotische Konvergenz linearer finiter Elemente bei elliptischen Problemen mit Hilfe von Campanato-Abschätzungen. [Optimal asymptotic convergence of linear finite elements in elliptical problems with the aid of Campanato estimates] *Extrapolation and defect correction* (1990), 95–120, *Bonner Math. Schriften*, 228, *Univ. Bonn, Bonn*, 1991. (Juhani Pitkäranta) **93j:65177** 65N30 (65N12)

Doman, Małgorzata Weak uniform rotundity of Musielak-Orlicz spaces. *Comment. Math. Univ. Carolin.* **32** (1991), *no.* 3, 441–446. (Barry Turett) **93f:46039** 46E30 (46B20)

Domanova, E. D. Estimates for the solutions of parabolic systems in weighted Hölder classes in the absence of compatibility conditions. (Russian) *Embedding theorems and their applications to problems in mathematical physics* (*Russian*), 70–85, 141, *Akad. Nauk SSSR Sibirsk. Otdel., Inst. Mat., Novosibirsk*, 1989. (Summary) **93a:35071** 35K45 (35B45)

Domański, Paweł On the injective $C(T)$-spaces. *Indag. Math. (N.S.)* **2** (1991), *no.* 3, 289–299. (Gary Gruenhage) **93a:54014** 54C35 (46E10)

— A note on injective $C(T)$-spaces and the Amir boundary. *Israel J. Math.* **73** (1991), *no.* 3, 357–359. (Summary) **93d:54054** 54G05 (46E25)

— (*with* Drewnowski, Lech) Fréchet spaces of continuous vector-valued functions: complementability in dual Fréchet spaces and injectivity. *Studia Math.* **102** (1992), *no.* 3, 257–267. (José Bonet) **93d:46061** 46E40 (46A04)

Domanskiĭ, E. N. Continuous regularizability in the sense of Maslov of ill-posed problems. (Russian) *Dokl. Akad. Nauk SSSR* **321** (1991), *no.* 2, 246–249; *translation in Soviet Math. Dokl.* **44** (1992), *no.* 3, 670–673. (Anton Suhadolc) **93b:47015** 47A50 (65J20)

Domany, E. (*with* Derrida, B.; Mukamel, D.) An exact solution of a one-dimensional asymmetric exclusion model with open boundaries. (English summary) *J. Statist. Phys.* **69** (1992), *no.* 3-4, 667–687. (T. M. Liggett) **93m:60197** 60K35 (82C22)

Dombre, Thierry (*with* Pumir, Alain; Siggia, Eric D.) On the interface dynamics for convection in porous media. (English summary) *Phys. D* **57** (1992), *no.* 3-4, 311–329. (Sam D. Howison) **93i:76089** 76S05 (76C99, 76R99)

Dombrowski, J. Absolutely continuous measures for systems of orthogonal polynomials with unbounded recurrence coefficients. *Constr. Approx.* **8** (1992), *no.* 2, 161–167. (V. Totik) **93f:42043** 42C05 (47A10)

Dombrowski, Peter (*with* Zitterbarth, Jürgen) On the planetary motion in the 3-dim. standard spaces $\mathbf{M}_\kappa^3$ of constant curvature $\kappa \in \mathbf{R}$. Differential spaces and their applications (Pasierbiec, 1990). *Demonstratio Math.* **24** (1991), *no.* 3-4, 375–458. (A. Sumbatov) **93c:53057** 53C80 (58F05, 70F05, 70G05, 70H40)

— Dynamics in spaces of constant curvature. *Geometry and topology of submanifolds, IV* (*Leuven*, 1991), 74–75, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93d:53002**) 53A17 (70E99, 70F15)

Domenech, G. (*with* Castagnino, Mario A.; Frolov, V. P.; Noriega, R. J.; Schifini, G.) Concomitants theory and renormalization in even dimensions. *J. Math. Phys.* **33** (1992), *no.* 3, 1097–1102. (R. J. McKellar) **93b:83030** 83C47 (81T16, 81T20)

Domenjoud, Eric A technical note on AC-unification. The number of minimal unifiers of the equation $\alpha x_1 + \cdots + \alpha x_p \doteq_{AC} \beta y_1 + \cdots + \beta y_q$. *J. Automat. Reason.* **8** (1992), *no.* 1, 39–44. (Summary) **93a:68126** 68T15 (03B35, 11D04)

— AC unification through order-sorted ACI unification. (English summary) *J. Symbolic Comput.* **14** (1992), *no.* 6, 537–556. (Ralph W. Wilkerson) **93m:68091** 68Q40 (03B35, 68T15)

Domiaty, Rudolf Z. Die Gruppe der stetigen Autotopismen des Loops S^7. (English summary) [The group of continuous autotopisms of the loop S^7] *J. Geom.* **45** (1992), *no.* 1-2, 51–62. (Summary) **93h:20077** 20N07 (22E99)

Domínguez, Demetrio Deformations of secondary classes for subfoliations. *Canad. Math. Bull.* **35** (1992), *no.* 2, 167–173. (Robert A. Wolak) **93e:57048** 57R32 (55R40)

Domínguez, E. *see* **Domínguez Murillo, Eladio**

Domínguez, Eladio *see* **Domínguez Murillo, Eladio**

outerelo Domínguez, Enrique *see* **Outerelo Domínguez, Enrique**

Domínguez, José (*with* Brebbia, C. A.) ★ Boundary elements: an introductory course. Second edition. *Computational Mechanics Publications, Southampton*; *copublished with McGraw Hill Publishing Company, New York*, 1992. vi+314 *pp. ISBN* 1-85312-160-6 (Editors) **93d:73069** 73V10 (65N38, 73-04, 73V25)

Domínguez Benavides, T. (*with* Carmona Alvárez, J.) Porosity and K-set contractions. (Italian summary) *Boll. Un. Mat. Ital. A* (7) **6** (1992), *no.* 2, 227–232. (Louis A. Talman) **93j:47079** 47H09 (47H10, 54E35, 54H25)

— (*with* López Acedo, Genaro) Lower bounds for normal structure coefficients. (English summary) *Proc. Roy. Soc. Edinburgh Sect. A* **121** (1992), *no.* 3-4, 245–252. (Józef Banaś) **93i:46025** 46B20

Domínguez Murillo, Eladio Formal models in digital topology. (Spanish) With the collaboration of A. Francés and A. Márquez. *II Meeting on Computational Geometry (Spanish)* (*Madrid*, 1991), 1–17, *Univ. Politéc. Madrid, Madrid*, 1992. (*see* **93b:68004**) 68U05

— (*with* Márquez, Alberto) Properties of universal graphs that arise in digital geometry and topology. (Spanish) *II Meeting on Computational Geometry (Spanish)* (*Madrid*, 1991), 159–168, *Univ. Politéc. Madrid, Madrid*, 1992. (*see* **93b:68004**) 05C10 (68U05)

— (*with* Ayala, R.; Márquez, Alberto; Quintero, A.) Lusternik-Schnirelmann invariants in proper homotopy theory. *Pacific J. Math.* **153** (1992), *no.* 2, 201–215. (John F. Oprea) **93a:55005** 55P55 (55M30)

— *see also* **Frances Román, Ángel Ramón**, (**93b:68004**)

Domínguez-Tenreiro, R. (*with* Roy, L. J.; Martínez, V. J.) On the multifractal character of the Lorenz attractor. (English summary) *Progr. Theoret. Phys.* **87** (1992), *no.* 5, 1107–1118. (Summary) **93e:58118** 58F12 (34–04, 34D45, 58–04)

— (*with* Yepes, G.) A computational study of the dynamical evolution of self-gravitating systems. (English summary) *J. Comput. Phys.* **104** (1993), *no.* 1, 75–85. (Summary) **93k:85003** 85A05 (85–08)

Domitrz, Wojciech (*with* Sasin, Wiesław) On the dimension of the tangent differential space. Differential spaces and their applications (Pasierbiec, 1990). *Demonstratio Math.* **24** (1991), *no.* 3-4, 677–685. (W. Waliszewski) **93a:58007** 58A40

Domke, Gayla S. (*with* Hedetniemi, Stephen T.; Laskar, Renu C.; Fricke, Gerd) Relationships between integer and fractional parameters of graphs. *Graph theory, combinatorics, and applications, Vol. 1* (*Kalamazoo, MI*, 1988), 371–387, *Wiley-Intersci. Publ., Wiley, New York*, 1991. (Summary) **93c:05060** 05C35

— (*with* Knisely, J.; Wallis, C.) The partitioned graph isomorphism problem. (English summary) Proceedings of the Twenty-third Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, FL, 1992). *Congr. Numer.* **89** (1992), 39–44. (Summary) **93j:05040** 05C05 (68R10)

Domnitskii, V. N. A study of oscillatory processes in integro-differential systems of rational rank. (Russian. Russian summary) *Asymptotic solutions of nonlinear equations with a small parameter* (*Russian*), 26–31, *Akad. Nauk Ukrainy, Inst. Mat., Kiev*, 1991. (From the introduction) **93g:45010** 45K05

Domokos, G. Taylor approximation of operators with discrete rotational symmetry. *Z. Angew. Math. Mech.* **72** (1992), *no.* 3, 221–225. (Introduction) **93f:58022** 58C28 (73B10, 73H05, 73K99)

— *see also* **Nonperturbative methods in low-dimensional quantum field theories**, **93f:81005**

kővesi-Domokos, S. *see* **Kővesi-Domokos, S.**

Domoradzki, Stanisław Samuel Dickstein (1851–1939) in the light of his correspondence with Władysław Natanson and Marian Smoluchowski. Problems concerning science in Poland. (Polish) *Mathematics at the turn of the twentieth century* (*Polish*) (*Jaworze*, 1988), 84–103, *Prace Nauk. Uniw. Śląsk. Katowic.*, 1253, *Univ. Śląski, Katowice*, 1992. (P. Szeptycki) **93k:01065** 01A70

Domoshnitskaya, N. E. On the generalized measurement of a partially ordered semigroup. (Russian. Russian summary) *Boundary value problems* (*Russian*), 173–179, *Perm. Politekh. Inst., Perm'*, 1989. (*see* **93k:00022**) 06F05

Domoshnitskii, A. I. On the Green matrix of a periodic problem for a second-order system. (Russian. Russian summary) *Boundary value problems* (*Russian*), 31–34, *Perm. Politekh. Inst., Perm'*, 1989. (*see* **93k:00022**) 34B27 (34C25)

— (*with* Azbelev, N. V.) On the sign of the Green function of the de la Vallée-Poussin problem. (Russian. Russian summary) *Boundary value problems* (*Russian*), 3–7, *Perm. Politekh. Inst., Perm'*, 1990. (*see* **93g:00023**) 34K10

— (*with* Gavrilov, A. V.; Ershov, A. V.; Moshchenkov, I. A.; Sheina, M. V.) On an automatic control problem. (Russian. Russian summary) *Boundary value problems* (*Russian*), 46–53, *Perm. Politekh. Inst., Perm'*, 1990. (Summary) **93h:93058** 93D15 (93C95)

— Nonnegativity of separate elements of the Cauchy matrix and the exponential stability of a system with delay. (Russian. Russian summary) *Functional-differential equations* (*Russian*), 58–69, *Perm. Politekh. Inst., Perm'*, 1991. (Tibor Krisztin) **93i:34141** 34K20 (34K40)

— Factorization of a linear boundary value problem and the monotonicity of the Green operator. (Russian. Russian summary) *Differentsial'nye Uravneniya* **28** (1992), *no.* 3, 390–394, 546; *translation in Differential Equations* **28** (1992), *no.* 3, 323–327. (Summary) **93f:34111** 34K10

Dömösi, P. (*with* Kovács, B.) Simulation on finite networks of automata. *Words, languages and combinatorics* (*Kyoto*, 1990), 131–138, *World Sci. Publishing, River Edge, NJ*, 1992. (A. D. Korshunov) **93e:68076** 68Q68 (68M10, 68R10)

— (*with* Gécseg, F.) Simulation and representation by ν_i^*-products of automata. *Publ. Math. Debrecen* **40** (1992), *no.* 1-2, 75–83. (Summary) **93d:68049** 68Q70

Don, Wai-Sun (*with* Gottlieb, David) Spectral simulations of an unsteady compressible flow past a circular cylinder. (English summary) *Spectral and high order methods for partial differential equations* (*Como*, 1989), 39–58, *North-Holland, Amsterdam*, 1990. (*see* **93d:65005**) 65N35 (76M25, 76N10)

Donagi, Ron *see* **Curves, Jacobians, and abelian varieties**, **93f:14001**

Donald, Bruce Randall The complexity of planar compliant motion planning under uncertainty. (English summary) *Proceedings of the Fourth Annual Symposium on Computational Geometry* (*Urbana, IL*, 1988), 309–318, *ACM, New York*, 1988. (*see* **93k:68003**) 68U05 (68Q25)

— (*with* Chang, David Renpan) On the complexity of computing the homology type of a triangulation. (English summary) *32nd Annual Symposium of Foundations of Computer Science* (*San Juan, PR*, 1991), 650–661, *IEEE Comput. Soc. Press, Los Alamitos, CA*, 1991. (Hale F. Trotter) **93j:68086** 68Q40 (15A36, 55U15, 68Q25)

mac Donald, Craig *see* **Mac Donald, Craig**

Donald, John (*with* Elwin, John) On the structure of the strong orientations of a graph. (English summary) *SIAM J. Discrete Math.* **6** (1993), *no.* 1, 30–43. (Zhibo Chen) **93k:05073** 05C20 (05C85)

Donald, Matthew J. A priori probability and localized observers. (English summary) *Found. Phys.* **22** (1992), *no.* 9, 1111–1172. (S. Gudder) **93h:81013** 81P10 (46L60, 47N50, 81P15, 81T05)

Donald, Stephen G. (*with* Paarsch, Harry J.) Piecewise pseudo-maximum likelihood estimation in empirical models of auctions. (English summary) *Internat. Econom. Rev.* **34** (1993), *no.* 1, 121–148. (Summary) **93i:90036** 90A60 (62F12)

Donaldson, S. K. Yang-Mills invariants of four-manifolds. *Geometry of low-dimensional manifolds, 1* (*Durham*, 1989), 5–40, *London Math. Soc. Lecture Note Ser.*, 150, *Cambridge Univ. Press, Cambridge*, 1990. (Ronald J. Stern) **93f:57040** 57R57 (32J15, 57–02, 57N13, 57R55, 58B15, 58D27)

— Boundary value problems for Yang-Mills fields. *J. Geom. Phys.* **8** (1992), *no.* 1-4, 89–122. (Nicholas Buchdahl) **93d:53033** 53C07 (22E67, 32L07, 58E15, 58E20)

— *see also* **Geometry of low-dimensional manifolds**, **93b:57001**; **93b:57002** *and* **Atiyah, Michael F.**, **93e:57001**

Donat, Rosa (*with* Osher, Stanley) Propagation of error into regions of smoothness for nonlinear approximations to hyperbolic equations. *Spectral and high order methods for partial differential equations* (*Como*, 1989), 59–64, *North-Holland, Amsterdam*, 1990. (*see* **93d:65005**) 65M99 (35B30)

Donati-Martin, C. (*with* Yor, Marc) Extension d'une formule de Paul Lévy pour la variation quadratique du mouvement brownien plan. [Extension of a formula of Paul Lévy for the quadratic variation of plane Brownian motion] *Bull. Sci. Math.* (2) **116** (1992), *no.* 3, 353–382. (Paul McGill) **93i:60153** 60J65 (60J35)

Donato, A. A perturbation method for a point explosion model with small dissipations. (Italian summary) Memoirs of mathematical physics in honor of Giovanni Carini on his 70th birthday (Italian). *Atti Accad. Peloritana Pericolanti Cl. Sci. Fis. Mat. Natur.* **68** (1990), *suppl.* 1, 55–67 (1991). (Alexandre Fedorov) **93c:76071** 76N15

— (*with* Palumbo, Annunziata) Approximate asymptotic symmetries. (English summary) *Computational and applied mathematics, II* (*Dublin*, 1991), 141–151, *North-Holland, Amsterdam*, 1992. (Summary) **93j:35018** 35A35 (35Q99)

— (*with* Currò, Carmela; Povzner, A. Ya.) Perturbation method for a generalized Burgers' equation. *Internat. J. Non-Linear Mech.* **27** (1992), *no.* 2, 149–155. (Summary) **93b:76030** 76D99 (35Q53)

Donato, Jerry Cartan's method and Plateau's problem. (English summary) *The problem of Plateau*, 87–110, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93i:53002**) 53A10 (58E12)

de Donato, O. *see* **De Donato, O.**

Donato, Patrizia (*with* Moscariello, Gioconda) On the homogenization of some nonlinear problems in perforated domains. *Rend. Sem. Mat. Univ. Padova* **84** (1990), 91–108 (1991). (Fu Ru Jiang) **93b:35011** 35B27 (35B45, 35J65, 49J45)

— (*with* Cioranescu, Doïna; Zuazua, Enrike) Strong convergence on the exact boundary controllability of the wave equation in perforated domains. *Estimation and control of distributed parameter systems* (*Vorau*, 1990), 99–113, *Internat. Ser. Numer. Math.*, 100, *Birkhäuser, Basel*, 1991. (Jerzy Klamka) **93b:93015** 93B05 (35L15, 93C20, 93C45)

— (*with* Cioranescu, Doïna; Zuazua, Enrike) Approximate controllability for the wave equation with oscillating coefficients. *Boundary control and boundary variation* (*Sophia-Antipolis*, 1990), 118–124, *Lecture Notes in Control and Inform. Sci.*, 178, *Springer, Berlin*, 1992. (*see* **93b:49001**) 93C05 (93C20)

— (*with* Cioranescu, Doïna; Zuazua, Enrike) Exact boundary controllability for the wave equation in domains with small holes. (English and French summaries) *J. Math. Pures Appl.* (9) **71** (1992), *no.* 4, 343–377. (Florin Iacob) **93k:35037** 35B37 (35L05, 93B05, 93C05)

Donato, Santi (*with* Vozza, Franca) On pseudo-Riemannian manifold endowed with a conformal cosymplectic quasi-Sasakian structure. (Italian summary) *Atti Accad. Peloritana Pericolanti Cl. Sci. Fis. Mat. Natur.* **68** (1990), 359–369 (1992). (Yasuo Matsushita) **93f:53039** 53C25 (53C15, 53C50)

Doncarli, Christian (*with* Auger, François) Quelques commentaires sur des représentations temps-fréquence proposées récemment. (English summary) [Some remarks about recently proposed time-frequency representations] *Traitement Signal* **9** (1992), *no.* 1, 3–25. (Summary) **93a:94004** 94A12

Donchenko, V. S. (*with* Shpak, V. M.) Estimation of parameters based on the Hough transform. (Russian. Russian summary) *Random evolutions: theoretical and applied problems* (*Russian*), 34–39, *Akad. Nauk Ukrainy, Inst. Mat., Kiev*, 1992. (*see* **93m:60009**) 62F10 (62M40, 68U10)

Donchev, Tzanko (*with* Ivanov, Radostin) On the existence of solutions of differential inclusions in uniformly convex Banach space. *Math. Balkanica (N.S.)* **6** (1992), *no.* 1, 13–24. (Evgenios P. Avgerinos) **93i:34023** 34A60 (34G20, 34K30)

de Doncker-Kapenga, Elise (*with* Cariño, Ricolindo; Robinson, Ian) An algebraic study of the Levin transformation in numerical integration. (English summary) *Numerical integration* (*Bergen*, 1991), 175–186, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 357, *Kluwer Acad. Publ., Dordrecht*, 1992. (*see* **93f:65006**) 65D30

— (*with* Cariño, Ricolindo; Robinson, Ian) An algorithm for automatic integration of certain singular functions over a triangle. (English summary) *Numerical integration* (*Bergen*, 1991), 295–304, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 357, *Kluwer Acad. Publ., Dordrecht*, 1992. (*see* **93f:65006**) 65–04 (65D30)

— (*with* Vakalis, Ignatios) Convergence results and speedup of parallel numerical integration algorithms. (English summary) *Parallel processing for scientific computing, Vol. I, II* (*Norfolk, VA*, 1993), 539–545, *SIAM, Philadelphia, PA*, 1993. (*see* **93k:65003**) 65D30 (65Y05)

Donéa, J. (*with* Quartapelle, L.) An introduction to finite element methods for transient advection problems. *Comput. Methods Appl. Mech. Engrg.* **95** (1992), *no.* 2, 169–203. (From the introduction) **93a:76065** 76M10

Donegani, M. A bootstrap adaptive test for two-way analysis of variance. (French summary) *Biometrical J.* **34** (1992), *no.* 2, 141–146. 62J10

Donelan, P. S. (*with* Gibson, C. G.) First-order invariants of Euclidean motions. *Acta Appl. Math.* **24** (1991), *no.* 3, 233–251. (P. E. Newstead) **93e:22038** 22E60 (14L30, 15A72, 22E45, 70B10)

Donets, E. E. (*with* Gal'tsov, D. V.) Continuous family of Einstein-Yang-Mills wormholes. (English summary) *Phys. Lett. B* **294** (1992), *no.* 1, 44–48. (Summary) **93i:83027** 83C20 (81V17, 83E05)

— (*with* Gal'tsov, D. V.) Continuous family of Einstein-Yang-Mills wormholes. (English summary) *Phys. Lett. B* **296** (1992), *no.* 3-4, 311–315. (Summary) **93k:83015** 83C20 (81T13, 81V17)

Donets, G. A. (*with* Nezhentsev, Yu. I.) An estimate for the complexity of algorithms in arithmetic graphs. (Russian. Russian summary) *Methods for solving problems of nonlinear and discrete programming (Russian)*, 79–87, *Akad. Nauk Ukrain. SSR, Inst. Kibernet., Kiev*, 1991. (*see* **93b:90010**) 90C35

Donev, S. On the description of single massless quantum objects. (English summary) *Helv. Phys. Acta* **65** (1992), *no.* 7, 910–921. (Summary) **93k:81031** 81P99

Donevska, Snejanka D. State-space realization of multidimensional systems via modified Cauer form continued fraction expansion. *Mathematical modelling and scientific computations (Albena*, 1990), 171–178, *Bulgar. Acad. Sci., Sofia*, 1992. (*see* **93a:65004**) 93B15

Donevski, B. D. (*with* Dimitrov, V. S.; Cooklev, T. V.) On the multiplication of reduced biquaternions and applications. (English summary) *Inform. Process. Lett.* **43** (1992), *no.* 3, 161–164. (Summary) **93i:68100** 68Q40

Doney, R. A. Hitting probabilities for spectrally positive Lévy processes. *J. London Math. Soc.* (2) **44** (1991), *no.* 3, 566–576. (Bert Fristedt) **93b:60166** 60J30

— (*with* Goldie, Charles M.) Letter to the editor: "Autoregressive processes and first-hit probabilities for randomized random walks" [J. Appl. Probab. **28** (1991), no. 2, 347–359; MR 93a:60100] by R. Epstein-Feldman. *J. Appl. Probab.* **29** (1992), *no.* 1, 244. (Peter J. Brockwell) **93c:60102** 60J15

— (*with* O'Brien, George L.) Thickened renewal processes. (English summary) *Stochastic Process. Appl.* **43** (1992), *no.* 1, 1–8. (E. Omey) **93k:60215** 60K05 (60F05)

— (*with* Greenwood, P. E.) On the joint distribution of ladder variables of random walk. (English summary) *Probab. Theory Related Fields* **94** (1993), *no.* 4, 457–472. (Rudolf Grübel) **93k:60170** 60J15

Dong, Chun Ying (*with* Yao, Zhen Han) A direct error estimator and adaptive scheme of boundary element method. *Theory and applications of boundary element methods (Beijing*, 1991), 95–102, *Internat. Acad. Publ., Beijing*, 1991. (*see* **93b:65008**) 65N38 (65N15)

Dong, Dawei W. (*with* Hopfield, John J.) Dynamic properties of neural networks with adapting synapses. (English summary) *Network* **3** (1992), *no.* 3, 267–283. (Summary) **93g:92003** 92B20 (68T05)

Dong, Fang On the identification of active contrasts in unreplicated fractional factorials. (English summary) *Statist. Sinica* **3** (1993), *no.* 1, 209–217. 62K15

Dong, Guang Chang ★ Nonlinear partial differential equations of second order. Translated from the Chinese by Kai Seng Chou [Kaising Tso]. Translations of Mathematical Monographs, 95. *American Mathematical Society, Providence, RI*, 1991. viii+251 *pp. ISBN* 0-8218-4554-3 (Paul G. Schmidt) **93f:35002** 35–02 (35G20, 35K55)

— (*with* Bian, Bao Jun) The regularity of viscosity solutions for a class of fully nonlinear equations. *Sci. China Ser. A* **34** (1991), *no.* 12, 1448–1457. (Michael Wiegner) **93f:35078** 35J65 (35D10)

Dong, Guang Mao (*with* Liu, Zeng Rong; Xu, Zheng Fan) Stochasticity near resonances in a kind of near-integrable Hamiltonian systems based on Smale horseshoes. *Appl. Math. Mech.* (*English Ed.*) **13** (1992), *no.* 1, 11–16; *translated from Appl. Math. Mech.* **13** (1992), *no.* 1, 11–16 (*Chinese. English summary*). (Richard C. Churchill) **93a:70015** 70H05 (58F05, 58F14, 70K50)

Dong, Guozhu On datalog linearization of chain queries. *Theoretical studies in computer science*, 181–206, *Academic Press, Boston, MA*, 1992. (Marc Gyssens) **93h:68032** 68P15 (68Q15, 68Q45, 68T25)

Dong, J. L. *see* **Dong, Jia Li**

Dong, Ji Run (*with* Wang, Hai Yang) Occurrence of reasoning duplication in deductive databases and a new algorithm for its reduction. (Chinese. English and Chinese summaries) *Shandong Daxue Xuebao Ziran Kexue Ban* **27** (1992), *no.* 2, 185–189. 68P15

Dong, Jia Li (*with* Yu, T.) An axiomatic approach to the derivatives of nonsmooth functions. *Approximation, optimization and computing*, 241–243, *North-Holland, Amsterdam*, 1990. (*see* **93a:41001**) 49J52

Dong, Jin Quan On the vertex star arboricity of a graph. (English and Chinese summaries) *Nei Mongol Daxue Xuebao Ziran Kexue* **23** (1992), *no.* 4, 465–467. (Summary) **93h:05098** 05C35 (05C15)

Dong, Kui Zhe Extension of mappings from regular spaces to basic square bodies. (Chinese. English and Chinese summaries) *Qufu Shifan Daxue Xuebao Ziran Kexue Ban* **19** (1993), *no.* 1, 57–60. 54C20

Dong, Pingping Minoration de combinaisons linéaires de deux logarithmes p-adiques. (English and French summaries) [Lower bound for linear combinations of two p-adic logarithms] *Ann. Fac. Sci. Toulouse Math.* (5) **12** (1991), *no.* 2, 195–250. (Noriko Hirata-Kohno) **93i:11080** 11J61 (11J85, 11J86)

— Minorations de combinaisons linéaires de logarithmes p-adiques de nombres algébriques. (English and French summaries) [Lower bounds for linear combinations in p-adic logarithms of algebraic numbers] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 5, 503–506. (Summary) **93g:11080** 11J86 (11J13, 11J61)

Dong, Rong Sen Relatively complemented distributive lattice. *Sci. China Ser. A* **34** (1991), *no.* 12, 1427–1437. (Summary) **93f:06012** 06D15

Dong, Rui-Tao Nodal sets of eigenfunctions on Riemann surfaces. (English summary) *J. Differential Geom.* **36** (1992), *no.* 2, 493–506. (Stig I. Andersson) **93h:58159** 58G25 (35P99)

Dong, Xiaoning (*with* Chen, Guan Rong) On feedback control of chaotic nonlinear dynamic systems. (English summary) *Internat. J. Bifur. Chaos Appl. Sci. Engrg.* **2** (1992), *no.* 2, 407–411. (Boris G. Zaslavskii) **93g:93046** 93C10 (58F13, 93B52, 93C55)

Dong, Xiaoying On iteration of a function in the sine family. *J. Math. Anal. Appl.* **165** (1992), *no.* 2, 575–586. (Tadashi Kuroda) **93c:30038** 30D05

Dong, Xin Han A remark on de Branges theorem. (Chinese summary) *Acta Sci. Natur. Univ. Norm. Hunan.* **14** (1991), *no.* 3, 193–197, 205. (A. Z. Grinshpan) **93a:30015** 30C50

Dong, Xue Dong On an open question of S. Singh and R. Kumar. *Chinese Sci. Bull.* **35** (1990), *no.* 18, 1503–1504. (From the text) **93j:13009** 13A99

— von Neumann regular rings and α-rings. *Northeast. Math. J.* **7** (1991), *no.* 3, 275–278. (From the text) **93b:13029** 13E10

— Pseudoprimary rings. *Northeast. Math. J.* **7** (1991), *no.* 4, 448–452. (Summary) **93e:13013** 13C05 (13A99)

— A note on restricted weakly primary rings. (English and Chinese summaries) *J. Math. Res. Exposition* **12** (1992), *no.* 4, 565–568. (Introduction) **93j:13010** 13A99

Dong, Y. F. (*with* Parreira, P.) Quadratic h-hierarchical adaptive boundary elements. (English summary) *Boundary element technology, VII* (*Albuquerque, NM*, 1992), 835–850, *Comput. Mech., Southampton*, 1992. (*see* **93b:65002**) 65N38

Dong, Ying (*with* Ren, Zhi Ping[2]) An oscillation criterion for nonlinear second-order differential equations. (Chinese. English and Chinese summaries) *Qufu Shifan Daxue Xuebao Ziran Kexue Ban* **18** (1992), *no.* 3, 29–32. (Summary) **93g:34048** 34C10

Dong, Yu Jun (*with* Zhou, Qin De) Boundary value problems for impulsive differential equations. (Chinese. English summary) *Acta Sci. Natur. Univ. Jilin.* **1991,** *no.* 2, 13–20. (Jun Jie Wei) **93f:34039** 34B15 (34A37)

— (*with* Zhou, Qin De) Boundary value problems for impulsive differential equations. (Chinese. English summary) *Acta Sci. Natur. Univ. Jilin.* **1991,** *no.* 3, 1–8. (Jun Jie Wei) **93f:34038** 34B15 (34A37)

Dong, Yu Xing On the isotropy of harmonic maps from surfaces to complex projective spaces. *Internat. J. Math.* **3** (1992), *no.* 2, 165–177. (John C. Wood) **93e:58034** 58E20

Dong, Z. D. (*with* Wei, Jia Ning; Huang, C. X.) On asymptotic expansion of rapidly oscillatory integrals. *Approximation, optimization and computing*, 209–211, *North-Holland, Amsterdam*, 1990. (*see* **93a:41001**) 41A60

Dong, Zhen Xi (*with* Zhang, Zhi Fen; Ding, Tong Ren; Huang, Wen Zao) ★ Qualitative theory of differential equations. (English. English summary) Translated from the Chinese by Anthony Wing Kwok Leung. Translations of Mathematical Monographs, 101. *American Mathematical Society, Providence, RI*, 1992. xiv+461 *pp. ISBN* 0-8218-4551-9 (Douglas S. Shafer) **93h:34002** 34–01 (34Axx, 34Cxx, 54H20, 58Fxx)

Dong, Zheng Zhu (*with* Huang, Ping) Numerical residual elimination method of finite differential equations. *Appl. Math. Mech.* (*English Ed.*) **14** (1993), *no.* 2, 185–191; *translated from Appl. Math. Mech.* **14** (1993), *no.* 2, 173–179 (*Chinese. English and Chinese summaries*). 65F99 (65N30)

Dong, Zhi Ming (*with* Yang, Hai Xing) Stability of a Chaplygin sphere rolling with sliding on a horizontal plane with viscous friction. (Chinese. English and Chinese summaries) *J. Shanghai Jiaotong Univ.* **26** (1992), *no.* 1, 59–65. (Summary) **93e:70001** 70E15 (70K20)

Dongarra, Jack J. (*with* Sidani, M.) A parallel algorithm for the nonsymmetric eigenvalue problem. (English summary) *Numerical analysis* 1991 (*Dundee*, 1991), 85–102, *Pitman Res. Notes Math. Ser.*, 260, *Longman Sci. Tech., Harlow*, 1992. (*see* **93b:65005**) 65F15 (65Y05)

— (*with* van de Geijn, Robert A.) Reduction to condensed form for the eigenvalue problem on distributed memory architectures. (English summary) *Parallel Comput.* **18** (1992), *no.* 9, 973–982. 65Y05 (65F15)

— (*with* Hammarling, Sven; Wilkinson, James H.) Numerical considerations in computing invariant subspaces. *SIAM J. Matrix Anal. Appl.* **13** (1992), *no.* 1, 145–161. (Colette Lebaud) **93a:65049** 65F15

— *see also* **Parallel processing for scientific computing, 93g:65178**

Đỗ Ngọc Diệp On the Langlands type discrete groups. II. The theory of Eisenstein series. *Acta Math. Vietnam.* **16** (1991), *no.* 1, 77–90. (Stephen Gelbart) **93f:11044** 11F75 (22E40, 22E45)

Donini, Francesco M. (*with* Lenzerini, Maurizio; Nardi, Daniele; Hollunder, Bernhard; Nutt, Werner; Marchetti-Spaccamela, Alberto) The complexity of existential quantification in concept languages. *Artificial Intelligence* **53** (1992), *no.* 2-3, 309–327. (Summary) **93a:68138** 68T30 (03D15, 68Q25)

Donkin, Stephen Invariants of several matrices. *Invent. Math.* **110** (1992), *no.* 2, 389–401. (Michel Brion) **93j:20090** 20G05 (13A50, 14L35)

— Infinitesimal invariants of algebraic groups. *J. London Math. Soc.* (2) **45** (1992), *no.* 3, 481–490. (Stephen R. Doty) **93i:20055** 20G99 (13A50)

Donley, M. G. (*with* Spanos, Pol-T. D.) Nonlinear multi-degree-of-freedom system random vibration by equivalent statistical quadratization. (English summary) *Internat. J. Non-Linear Mech.* **27** (1992), *no.* 5, 735–748. (Summary) **93f:73072** 73K35 (70L05)

Donnay, Victor J. Using integrability to produce chaos: billiards with positive entropy. *Comm. Math. Phys.* **141** (1991), *no.* 2, 225–257. (Donal Hurley) **93c:58111** 58F11 (58F13, 58F15)

Donnelly, Harold (*with* Fefferman, Charles) Nodal domains and growth of harmonic functions on noncompact manifolds. *J. Geom. Anal.* **2** (1992), *no.* 1, 79–93. (Robert Brooks) **93b:58150** 58G25 (53C21)

— (*with* Garofalo, Nicola) Riemannian manifolds whose Laplacians have purely continuous spectrum. *Math. Ann.* **293** (1992), *no.* 1, 143–161. (Johan Tysk) **93c:58219** 58G25

Donnelly, Peter (*with* Kurtz, Thomas G.; Tavaré, Simon) On the functional central limit theorem for the Ewens sampling formula. *Ann. Appl. Probab.* **1** (1991), *no.* 4, 539–545. (M. P. Quine) **93c:60064** 60F17 (92D10)

— (*with* Joyce, Paul) Weak convergence of population genealogical processes to the coalescent with ages. *Ann. Probab.* **20** (1992), *no.* 1, 322–341. (S. N. Ethier) **93d:60053** 60F17 (92D15)

— *see also* **Jagers, Peter, 93b:60193**

Donnelly, Rod (*with* Ziolkowski, Richard W.) A method for constructing solutions of homogeneous partial differential equations: localized waves. *Proc. Roy. Soc. London Ser. A* **437** (1992), *no.* 1901, 673–692. (Anthony D. Osborne) **93e:35007** 35A22 (35C05)

Donner, Allan (*with* Bull, Shelley B.) A characterization of the efficiency of individualized logistic regressions. (English and French summaries) *Canad. J. Statist.* **21** (1993), *no.* 1, 71–78. 62F12 (62P10)

Donner, Quentin On the number of list-colorings. *J. Graph Theory* **16** (1992), *no.* 3, 239–245. (N. Z. Li) **93h:05074** 05C15

D'Onofrio, Biancamaria (*with* Benci, Vieri; Dell'Antonio, Gianfausto) Index theory and stability of periodic solutions of Lagrangian systems. (English and French summaries) *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 5, 583–588. (Gabriella Tarantello) **93h:58126** 58F22 (34B15, 34C25, 34D99, 58E05, 70H35)

— (*with* Dell'Antonio, Gianfausto; Ekeland, Ivar) Les systèmes hamiltoniens convexes et pairs ne sont pas ergodiques en général. (English and French summaries) [Convex symmetric Hamiltonian systems are not generally ergodic] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 13, 1413–1415. (Shi Qing Zhang) **93k:58190** 58F22 (58F05, 70H05)

Donoghue, W. F., Jr. Orthonormal sets in reproducing kernel spaces and functional completion. Dedicated to the memory of Professor Gottfried Köthe. *Note Mat.* **10** (1990), *suppl.* 1, 223–227 (1992). (Daniel Alpay) **93k:46017** 46E22 (42C05)

Donoho, David L. (*with* Liu, Richard C.) Geometrizing rates of convergence. II, III. *Ann. Statist.* **19** (1991), *no.* 2, 633–667, 668–701. (M. Hušková) **93f:62066** 62G10 (62G05)
— (*with* Low, Mark G.) Renormalization exponents and optimal pointwise rates of convergence. *Ann. Statist.* **20** (1992), *no.* 2, 944–970. (Theo Gasser) **93m:62070** 62G05
— (*with* Johnstone, Iain M.; Hoch, Jeffrey C.; Stern, Alan S.) Maximum entropy and the nearly black object. With discussion and a reply by the authors. *J. Roy. Statist. Soc. Ser. B* **54** (1992), *no.* 1, 41–81. (P. N. Rathie) **93d:62010** 62B10 (94A17)
— (*with* Logan, B. F.) Signal recovery and the large sieve. *SIAM J. Appl. Math.* **52** (1992), *no.* 2, 577–591. (Hans-Jürgen Schmeisser) **93d:42003** 42A05 (30D10, 30D15, 94A12)
— Superresolution via sparsity constraints. (English summary) *SIAM J. Math. Anal.* **23** (1992), *no.* 5, 1309–1331. (A. Bultheel) **93f:42023** 42A70 (94A12)
Donovan, Diane (*with* Oates-Williams, Sheila) Single laws for sloops and squags. *Discrete Math.* **92** (1991), *no.* 1-3, 79–83. (From the text) **93g:20131** 20N05
— (*with* Gower, Rebecca A. H.; Oates-Williams, Sheila; Billington, Elizabeth J.) The quasigroup variety arising from a 2-perfect 6-cycle system of order 13. *J. Combin. Math. Combin. Comput.* **10** (1991), 119–128. (Charles C. Lindner) **93b:05027** 05B30 (20N05)
— (*with* Rahilly, Alan) The central spectrum of the order of a Steiner loop. (English summary) *Southeast Asian Bull. Math.* **16** (1992), *no.* 2, 115–121. (Summary) **93j:20140** 20N05 (05B30)
Dontchev, Asen L. (*with* Slavov, Î. I.) Upper semicontinuity of solutions of singularly perturbed differential inclusions. *System modelling and optimization* (*Leipzig*, 1989), 273–280, *Lecture Notes in Control and Inform. Sci.*, 143, *Springer, Berlin*, 1990. (Péter Tallós) **93b:34029** 34A60 (34E15, 49J24)
— (*with* Hager, William W.) Discretization error in optimal control. (English summary) *Optimal control of partial differential equations* (*Irsee*, 1990), 120–128, *Lecture Notes in Control and Inform. Sci.*, 149, *Springer, Berlin*, 1991. (*see* **93b:49002**) 49M25
— Time-scale decomposition of the reachable set of constrained linear systems. *Math. Control Signals Systems* **5** (1992), *no.* 3, 327–340. (Michael E. Fisher) **93d:93011** 93B03 (34E15, 34H05, 93C70)
— (*with* Lempio, Frank) Difference methods for differential inclusions: a survey. *SIAM Rev.* **34** (1992), *no.* 2, 263–294. (Zvi Artstein) **93g:34024** 34A60 (34A50, 49J24, 65L05)
Dooley, Anthony H. (*with* Brown, Gavin) Odometer actions on *G*-measures. *Ergodic Theory Dynamical Systems* **11** (1991), *no.* 2, 279–307. (William Moran) **93e:22010** 22D40 (43A05)
— On Kakutani's criterion and Shiryaev's theorem. *Miniconference on probability and analysis* (*Sydney*, 1991), 58–62, *Proc. Centre Math. Appl. Austral. Nat. Univ.*, 29, *Austral. Nat. Univ., Canberra*, 1992. (*see* **93e:00024**) 28A35
van Dooren, Paul *see* **Van Dooren, Paul**
van Dooren, R. *see* **Van Dooren, R.**
Doorly, D. J. (*with* Smith, F. T.) Initial value problems for spot disturbances in incompressible or compressible boundary layers. *J. Engrg. Math.* **26** (1992), *no.* 1, 87–106. (Summary) **93a:76031** 76D10 (76E30, 76F99, 76N20)
van Doorn, Erik A. Quasi-stationary distributions and convergence to quasi-stationarity of birth-death processes. *Adv. in Appl. Probab.* **23** (1991), *no.* 4, 683–700. (E. Seneta) **93b:60192** 60J80 (60J27)
Doostie, H. (*with* Jamali, A. R.) A class of deficiency zero soluble groups of derived length 4. *Proc. Roy. Soc. Edinburgh Sect. A* **121** (1992), *no.* 1-2, 163–168. (Colin M. Campbell) **93g:20055** 20F05
Doplicher, Sergio Local observables and the structure of quantum field theory. *The algebraic theory of superselection sectors* (*Palermo*, 1989), 230–247, *World Sci. Publishing, River Edge, NJ*, 1990. (*see* **93i:81122**) 81T05
— Operator algebras and group duality. (English summary) *Current topics in operator algebras* (*Nara*, 1990), 304–312, *World Sci. Publishing, River Edge, NJ*, 1991. (From the introduction) **93k:46045** 46L05 (22D25, 46M15)
— Abstract compact group duals, operator algebras and quantum field theory. *Proceedings of the International Congress of Mathematicians, Vol. I, II* (*Kyoto*, 1990), 1319–1333, *Math. Soc. Japan, Tokyo*, 1991. (Stephen J. Summers) **93e:81065** 81T05 (22D35, 46L60, 47N50)
— Progress and problems in algebraic quantum field theory. *Ideas and methods in quantum and statistical physics* (*Oslo*, 1988), 390–404, *Cambridge Univ. Press, Cambridge*, 1992. (*see* **93e:00034**) 81T05 (81–02)
Doppel, K. (*with* Hochmuth, R.) On the regularity of solutions of a homogeneous Dirichlet problem for a nonhypoelliptic linear partial differential operator. *Ann. Acad. Sci. Fenn. Ser. A I Math.* **16** (1991), *no.* 1, 183–198. (Min You Qi) **93m:35034** 35B65 (35G15, 35H05, 46E35)
— (*with* Schomburg, B.) Regularity of solutions of the weak floating beam problem. *Z. Anal. Anwendungen* **10** (1991), *no.* 4, 461–477. (A. J. Meir) **93e:35016** 35D10 (35J25, 76B99)
Doppler, Christian *see* **Hearnshaw, J. B., 93g:01068**
Dor, Avner Properties of smooth proper holomorphic maps between balls. *Several complex variables* (*Stockholm*, 1987/1988), 274–296, *Math. Notes*, 38, *Princeton Univ. Press, Princeton, NJ*, 1993. (Masaaki Suzuki) **93k:32059** 32H35
della Dora, J. *see* **Della Dora, J.**
Dorato, P. (*with* Fortuna, L.; Muscato, G.) ★ Robust control for unstructured perturbations—an introduction. Lecture Notes in Control and Information Sciences, 168. *Springer-Verlag, Berlin*, 1992. vi+118 *pp. ISBN* 3-540-54920-X (Andrzej W. Olbrot) **93h:93002** 93–02 (93B36, 93D09, 93D15)
— (*with* Tempo, Roberto; Muscato, G.) Bibliography on robust control. (English summary) *Automatica J. IFAC* **29** (1993), *no.* 1, 201–213. (Summary) **93j:93001** 93–00 (00A15)
Dorband, John E. (*with* Raadhakrishnan, Poovendran; Yagle, Andrew E.; Rao, B. V.) On upper bounds of the equivalent oscillator and notch-filter circuits: a noncommutative group-theoretic approach. (English summary) *IEEE Trans. Circuits Systems I Fund. Theory Appl.* **39** (1992), *no.* 9, 756–759. (Summary) **93k:94011** 94C05
Dordan, Olivier Mathematical problems arising in qualitative simulation of a differential equation. *Artificial Intelligence* **55** (1992), *no.* 1, 61–86. (Summary) **93d:68062** 68T35 (92E99)
Dordević, Radosav S. *see* **Djordjević, Radosav Ž.**
Dore, Giovanni (*with* Venni, Alberto) Maximal regularity for abstract differential equations in higher order interpolation spaces. *Semigroup theory and evolution equations* (*Delft*, 1989), 125–141, *Lecture Notes in Pure and Appl. Math.*, 135, *Dekker, New York*, 1991. (Alexei I. Filinkov) **93f:34092** 34G10 (35R20, 46E35, 46M35, 47N20)
— L^p regularity for abstract differential equations. *Functional analysis and related topics*, 1991 (*Kyoto*), 25–38, *Lecture Notes in Math.*, 1540, *Springer, Berlin*, 1993. (*see* **93m:00049**) 34G10 (34A12, 47D06, 47N20)
Dorea, C. C. Y. (*with* Miazaki, E. S.) Parameter free limiting distribution for a random optimization algorithm. (English summary) *Comput. Statist. Data Anal.* **14** (1992), *no.* 3, 391–399. (Friedrich Liese) **93m:62040** 62E20 (62F25)
Dorey, Patrick E. (*with* Braden, H. W.; Corrigan, E.; Sasaki, Ryu) Aspects of perturbed conformal field theory, affine Toda field theory and exact *S*-matrices. *Differential geometric methods in theoretical physics* (*Davis, CA*, 1988), 169–182, *NATO Adv. Sci. Inst. Ser. B Phys.*, 245, *Plenum, New York*, 1990. (From the introduction) **93g:81139** 81T40
— Root systems and purely elastic *S*-matrices. *Nuclear Phys. B* **358** (1991), *no.* 3, 654–676. (Summary) **93b:81092** 81R10 (17B81, 81T40)
— (*with* Braden, H. W.; Corrigan, E.; Sasaki, Ryu) Aspects of affine Toda field theory. Proceedings of the Winter School on Geometry and Physics (Srní, 1990). *Rend. Circ. Mat. Palermo* (2) *Suppl. No.* 26 (1991), 67–96. (Giuseppe Mussardo) **93e:81102** 81T40 (58F07)
— (*with* Braden, H. W.; Corrigan, E.; Sasaki, Ryu) Aspects of affine Toda field theory. *Integrable systems and quantum groups* (*Pavia*, 1990), 99–124, *World Sci. Publishing, River Edge, NJ*, 1992. (Stanislav Z. Pakuliak) **93h:81110** 81T40 (81R10, 82B23)
— (*with* Braden, H. W.; Corrigan, E.; Sasaki, Ryu) Affine Toda field theory: *S*-matrix vs. perturbation. *Quantum groups* (*Leningrad*, 1990), 210–220, *Lecture Notes in Math.*, 1510, *Springer, Berlin*, 1992. (Alexander Orlov) **93i:81148** 81T15 (81T18, 81T40, 81U20)
— Root systems and purely elastic *S*-matrices. II. *Nuclear Phys. B* **374** (1992), *no.* 3, 741–761. (Summary) **93d:81154** 81T40 (17B20, 81R10)
— Partition functions, intertwiners and the Coxeter element. (English summary) *Internat. J. Modern Phys. A* **8** (1993), *no.* 1, 193–208. (Anni Koubek) **93j:82020** 82B23 (81R10, 82B20)
Dörfler, Peter Über die bestmögliche Konstante in Markov-Ungleichungen mit Laguerre-Gewicht. [On the best possible constant in Markov inequalities with Laguerre weight] *Österreich. Akad. Wiss. Math.-Natur. Kl. Sitzungsber. II* **200** (1991), *no.* 1-10, 13–20. (S. Aljančić) **93d:41012** 41A17
Dorfman, A. A. (*with* Bestuzheva, A. N.) Wave motions of a fluid over an inclined bottom that are caused by a moving pressure system. (Russian) *Prikl. Mekh. Tekhn. Fiz.* **1991**, *no.* 6, 38–44; *translation in J. Appl. Mech. Tech. Phys.* **32** (1991), *no.* 6, 855–861 (1992). (Vladan D. Djordjević) **93a:76010** 76B15 (86A05)
Dorfman, Alan H. (*with* Chambers, Raymond L.; Hall, Peter Gavin) Properties of estimators of the finite population distribution function. (English summary) *Biometrika* **79** (1992), *no.* 3, 577–582. (Summary) **93j:62090** 62G05 (62D05)
— (*with* Chambers, Raymond L.; Wehrly, Thomas E.) Bias robust estimation in finite populations using nonparametric calibration. (English summary) *J. Amer. Statist. Assoc.* **88** (1993), *no.* 421, 268–277. (Summary) **93k:62021** 62D05
Dorfman, I. Ya. (*with* Mokhov, O. I.) Local symplectic operators and structures related to them. *J. Math. Phys.* **32** (1991), *no.* 12, 3288–3296. (Vadim G. Bakurov) **93a:58056** 58F05 (35Q53, 58F07, 81S10)
— (*with* Nijhoff, F. W.) On a (2 + 1)-dimensional version of the Krichever-Novikov equation. *Phys. Lett. A* **157** (1991), *no.* 2-3, 107–112. (Alexander P. Veselov) **93a:58077** 58F07 (35Q58)
— (*with* Fokas, A. S.) Hamiltonian theory over noncommutative rings and integrability in multidimensions. *J. Math. Phys.* **33** (1992), *no.* 7, 2504–2514. (I. S. Krasil'shchik) **93c:58085** 58F07
Dorfman, Jeffrey H. (*with* Aoki, Masanao) Statistical analysis of some identification procedures for state space innovation models. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, I* (*Kobe*, 1991), 619–624, *Mita, Tokyo*, 1992. (*see* **93g:93005**) 93E11
— (*with* Havenner, Arthur M.) A Bayesian approach to state space multivariate time series modeling. *J. Econometrics* **52** (1992), *no.* 3, 315–346. (Summary) **93c:62146** 62M10 (62P20)
Dorfmeister, Josef (*with* Guan, Zhuang Dan) Classification of compact homogeneous pseudo-Kähler manifolds. *Comment. Math. Helv.* **67** (1992), *no.* 4, 499–513. (B. Gilligan) **93i:32042** 32M10 (53C55)
— (*with* Guan, Zhuang Dan) Supplement to: "Fine structure of reductive pseudo-Kählerian spaces" [Geom. Dedicata **39** (1991), no. 3, 321–338; MR 92h:53081]. *Geom. Dedicata* **42** (1992), *no.* 2, 241–242. (Editors) **93b:53055** 53C55 (53C30)
Doria, Francisco Antonio (*with* da Costa, Newton C. A.; Papavero, N.) Meinong's theory of objects and Hilbert's ε-symbol. (English summary) *Rep. Math. Logic No.* 25 (1991), 119–132. (Summary) **93f:03011** 03B53 (03A05, 03B60)
— (*with* da Costa, Newton C. A.) On the existence of very difficult satisfiability problems. *Bull. Sect. Logic Univ. Łódź* **21** (1992), *no.* 4, 122–133. 68Q25 (03D10, 03D15, 68Q05, 68Q30)
— (*with* da Costa, Newton C. A.) Mathematics is dramatically incomplete. (English summary) Theory, history and foundations of the formal sciences (Spanish). *Theoria* (*San Sebastián*) (2) **7** (1992), *no.* 16-18, *A*, 411–422. (Francisco A. Rodriguez Consuegra) **93m:03007** 03A05 (00A30)
Dorlas, T. C. (*with* Lewis, John Trevor; Pulé, J. V.) Condensation in some perturbed meanfield models of a Bose gas. *Helv. Phys. Acta* **64** (1991), *no.* 8, 1200–1224. (Yun Gang Lu) **93c:82035** 82C10 (60K35)
— Large deviations for some models of an interacting Bose gas. (English summary) *Stochastics and quantum mechanics* (*Swansea*, 1990), 95–114, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93c:81005**) 82C10 (82–02)
— (*with* Lewis, John Trevor; Pulé, J. V.) Condensation in a variational problem on the space of measures. *Arch. Rational Mech. Anal.* **118** (1992), *no.* 3, 245–256. (John M. Ball) **93g:49033** 49Q20 (82B30)
Dorling, Jon Bayesian conditionalization resolves positivist/realist disputes. *J. Philos.* **89** (1992), *no.* 7, 362–382. 00A30 (03B30)
van Dormael, Jan *see* **Van Dormael, Jan**
Dorman, David R. Factorization of Drinfel'd singular moduli. (English summary) *p-adic methods in number theory and algebraic geometry*, 75–79, *Contemp. Math.*, 133, *Amer. Math. Soc., Providence, RI*, 1992. (*see* **93d:11003**) 11G15
Dormayer, Peter Smooth symmetry breaking bifurcation for functional-differential equations. *Differential Integral Equations* **5** (1992), *no.* 4, 831–854. (Jürgen Scheurle)

93c:58158 58F14 (34C23, 34K15, 58F32)
— An attractivity region for characteristic multipliers of special symmetric solutions of $\dot{x}(t) = \alpha f(x(t-1))$ near critical amplitudes. *J. Math. Anal. Appl.* **169** (1992), *no.* 1, 70–91. (Ovide Arino) **93m:34105** 34K15 (58F14)
Dorn, H. (*with* Otto, H.-J.) Analysis of all dimensionful parameters relevant in gravitational dressing of conformal theories. *Phys. Lett. B* **280** (1992), *no.* 3-4, 204–212. (Summary) **93b:81246** 81T40
— (*with* Otto, H.-J.) On correlation functions for noncritical strings with $c \leq 1$ but $d \geq 1$. (English summary) *Phys. Lett. B* **291** (1992), *no.* 1-2, 39–43. (Summary) **93f:81107** 81T30
Dorn, Jürgen Temporal reasoning in sequence graphs. (English summary) *AAAI-92. Proceedings, Tenth National Conference on Artificial Intelligence (San Jose, CA,* 1992), 735–740, *Amer. Assoc. Artif. Intell., Menlo Park, CA,* 1992. (*see* **93j:68007**) 68T27 (03B45, 03B70)
Dorodnitsyn, V. A. (*with* Svirshchevskiĭ, S. R.) Group properties of a stationary system of equations of the inversion of a wave front of optic radiation in nonlinear media. (Russian. English summary) *Akad. Nauk SSSR Inst. Prikl. Mat. Preprint* **1991**, *no.* 88, 19 *pp.* (Summary) **93b:78004** 78A40 (35K40)
Dorofeev, I. F. (*with* Laneev, E. B.; Mustakhishev, K. K.) An inverse problem of diffraction. (Russian) *Boundary value problems and spaces of differentiable functions (Russian),* 6–10, *Univ. Druzhby Narodov, Moscow,* 1989. (*see* **93m:35001**) 65P05
Dorofeev, V. Yu. (*with* Grib, A. A.) Quantum theory of particles with Planckean masses. *Quantum gravity (Moscow,* 1990), 202–212, *World Sci. Publishing, River Edge, NJ,* 1991. (*see* **93b:83004**) 81T20 (83C47)
Dorogovtsev, A. A. Equations with Gaussian random operators, and differential operators of infinite order. (Russian. Russian summary) *Stochastic equations and boundary theorems (Russian),* 51–61, *Akad. Nauk Ukrainy, Inst. Mat., Kiev,* 1991. (Summary) **93k:60159** 60H25 (35R50, 35R60)
— Stochastic integrals with respect to Gaussian random measures. (Russian) *Teor. Veroyatnost. i Mat. Statist. No.* 44 (1991), 56–63; *translation in Theory Probab. Math. Statist. No.* 44 (1992), 53–59. (Sheng Wu He) **93g:60116** 60H05
Dorogovtsev, A. Ya. A method for proving the existence of bounded and periodic solutions. (Russian) *Mathematics today '90, No.* 6 (*Russian*), 39–48, "*Vishcha Shkola*", *Kiev,* 1990. (J. S. Joel) **93k:47019** 47A50 (39B42, 47N99)
— Stationary and periodic solutions of stochastic difference and differential equations in Banach space. (English summary) *New trends in probability and statistics, Vol.* 1 (*Bakuriani,* 1990), 375–390, *VSP, Utrecht,* 1991. (V. Mackevičius) **93m:60117** 60H10 (60G10)
— Consistency of the least squares estimator of an infinite-dimensional parameter. (Russian. Russian summary) *Sibirsk. Mat. Zh.* **33** (1992), *no.* 4, 65–69, 221; *translation in Siberian Math. J.* **33** (1992), *no.* 4, 603–607 (1993). (Andrej Pázman) **93h:62119** 62J02 (62F12)
— *see also* **Mathematics today '90, 93j:00002** *and* **Mathematics today '92, 93j:00003**
Dorokhov, I. N. (*with* Maseev, Yu. N.; Kafarov, V. V.) The method of discrete mappings for the prediction of the phase state of a reaction mixture in the production of multifunctional composite materials. (Russian) *Dokl. Akad. Nauk* **324** (1992), *no.* 6, 1207–1212. (Š. Schwabik) **93j:92037** 92E20 (58F13, 58F40)
Doronin, G. G. Well-posedness of the Cauchy problem for Kligel-Nickerson equations with viscosity in the gas phase. (Russian. Russian summary) *Model. Mekh.* **6** (1992), *no.* 2, 58–70. (Summary) **93m:35176** 35Q72 (76N15, 76T05)
Doronin, V. G. (*with* Ligun, A. A.) On the problem of sharpening Jackson-type inequalities. (Russian. Russian and Ukrainian summaries) *Ukraïn. Mat. Zh.* **44** (1992), *no.* 4, 475–480; *translation in Ukrainian Math. J.* **44** (1992), *no.* 4, 416–421. (A. Kroó) **93i:41017** 41A44
Doroshkevich, A. G. (*with* Demiański, Marek) On the universal character of the large scale structure of the Universe. (English summary) *Internat. J. Modern Phys. D* **1** (1992), *no.* 2, 303–333. (Summary) **93g:83097** 83F05
Dörr, Norbert Cartan algebras in symmetric Lie algebras. Seminar Sophus Lie (Darmstadt, 1991). *Sem. Sophus Lie* **1** (1991), *no.* 2, 175–183. (Joseph C. Ferrar) **93c:17033** 17B40 (17B60)
— A note on the oscillator group. (English summary) *Sem. Sophus Lie* **2** (1992), *no.* 1, 31–38. (Joachim Hilgert) **93j:22010** 22E25
Dörre, Jochen (*with* Rounds, William C.) On subsumption and semiunification in feature algebras. *J. Symbolic Comput.* **13** (1992), *no.* 4, 441–461. (P. Štěpánek) **93h:68064** 68Q40 (68T30)
Dorren, H. J. S. (*with* Tip, A.) Maxwell's equations for nonsmooth media; fractal-shaped and pointlike objects. *J. Math. Phys.* **32** (1991), *no.* 11, 3060–3070. (V. H. Weston) **93a:78007** 78A25 (35Q60, 47F05, 47N20, 78A40, 81Q05)
Dorsett, Charles Semiregularization spaces and the semiclosure operator, and s-closed spaces. *General topology and applications (Staten Island, NY,* 1989), 35–45, *Lecture Notes in Pure and Appl. Math.,* 134, *Dekker, New York,* 1991. (Dix H. Pettey) **93f:54001** 54A10
Dorsey, John F. (*with* Qu, Zhihua) Robust control by two Lyapunov functions. *Internat. J. Control* **55** (1992), *no.* 6, 1335–1350. (Takehiro Mori) **93c:93046** 93D21 (93C15, 93C60, 93D09, 93D30)
— *see also* **Berghuis, Harry et al., 93g:93055**
Dorso, C. O. (*with* Fendrik, A. J.; Vega, J. L.; Bernath, M.) Chaos in billiards of nuclear interest. *Nonlinear phenomena in fluids, solids and other complex systems (Santiago,* 1990), 447–459, *North-Holland Delta Ser., North-Holland, Amsterdam,* 1991. (Summary) **93b:58098** 58F13 (81Q50, 81V35)
Dorta Díaz, J. A. (*with* Méndez Pérez, J. M. R.) Dini's series expansions and the finite Hankel-Clifford transformations. (English summary) *J. Inst. Math. Comput. Sci. Math. Ser.* **5** (1992), *no.* 1, 1–17. (B. M. Agrawal) **93k:44003** 44A15 (33C10)
Dorvlo, Atsu S. S. On the correlation between the linear and quadratic discriminant functions. (English summary) *Internat. J. Math. Ed. Sci. Tech.* **24** (1993), *no.* 1, 1–8. 62H30
Dorwart, Harold L. (*with* Grünbaum, Branko) Are these figures oxymora? *Math. Mag.* **65** (1992), *no.* 3, 158–169. (E. J. F. Primrose) **93d:51039** 51M15
Došen, Kosta Ancestral Kripke models and nonhereditary Kripke models for the Heyting propositional calculus. *Notre Dame J. Formal Logic* **32** (1991), *no.* 4, 580–597 (1992). (Wiesław Dziobiak) **93b:03012** 03B20
— Modal translations in substructural logics. *J. Philos. Logic* **21** (1992), *no.* 3, 283–336. (Alexander V. Chagrov) **93i:03033** 03B60 (03B45, 03B46)
— The first axiomatization of relevant logic. (English summary) *J. Philos. Logic* **21** (1992), *no.* 4, 339–356. (Daniel H. Cohen) **93i:03028** 03B46 (01A60, 03–03, 03B45)
Dosiev, A. A. A block-grid method of increased accuracy for the solution of the Laplace equation on polygons. (Russian) *Dokl. Akad. Nauk* **323** (1992), *no.* 4, 628–631; *translation in Russian Acad. Sci. Dokl. Math.* **45** (1992), *no.* 2, 396–399 (1993). (Lutz Angermann) **93k:65083** 65N06
Dosinas, G. (*with* Navickas, Z.) Construction of solutions of a partial differential equation with constant coefficients in the form of formal series. I. (Russian. English and Lithuanian summaries) *Litovsk. Mat. Sb.* **31** (1991), *no.* 3, 411–419; *translation in Lithuanian Math. J.* **31** (1991), *no.* 3, 285–291 (1992). (Florin Iacob) **93f:35029** 35C10 (35E99)
Došlá, Zuzana Singular quadratic functionals and transformation of linear Hamiltonian systems. (English summary) *Arch. Math. (Brno)* **25** (1989), *no.* 4, 223–234. (A. M. Tarasyev) **93g:49015** 49K27 (34A30, 34H05, 49K15)
Došlý, Ondřej Transformations of linear Hamiltonian systems preserving oscillatory behaviour. (English summary) *Arch. Math. (Brno)* **27B** (1991), 211–219. (Michel Willem) **93k:34070** 34C10 (34A30, 58F05, 70H05)
— (*with* Fiedler, Frank) A remark on Nehari-type oscillation criteria for selfadjoint linear differential equations. *Comment. Math. Univ. Carolin.* **32** (1991), *no.* 3, 447–462. (A. Halanay) **93d:34056** 34C10 (34A30)
— The multiplicity criteria for zero points of second order differential equations. *Math. Slovaca* **42** (1992), *no.* 2, 181–193. (Gary D. Jones) **93i:34057** 34C10
Dos Reis, Alfredo Egídio *see* **dos Reis, Alfredo Egídio**
Doss, Halim (*with* Stroock, Daniel W.) Nouveaux résultats concernant les petites perturbations de systèmes dynamiques. (English summary) [New results concerning small perturbations of dynamical systems] *J. Funct. Anal.* **101** (1991), *no.* 2, 370–391. (Summary) **93i:60148** 60J60 (60F10, 60H10)
Doss, Hani (*with* Gill, Richard D.) An elementary approach to weak convergence for quantile processes, with applications to censored survival data. (English summary) *J. Amer. Statist. Assoc.* **87** (1992), *no.* 419, 869–877. (Gutti J. Babu) **93j:62144** 62G30 (62N05)
Doss, S. (*with* Hewett, D. W.; Larson, D. J.) Solution of simultaneous partial differential equations using dynamic ADI: solution of the streamlined Darwin field equations. *J. Comput. Phys.* **101** (1992), *no.* 1, 11–24. 65P05 (76X05, 78A25)
Dos Santos, A. F. *see* **dos Santos, A. F.**
Dos Santos, Ivonete B. *see* **dos Santos, Ivonete B.**
Dos Santos, Josenildo The P-ideal linking concept in critical point theory. Nonequivariant case. *Osaka J. Math.* **30** (1993), *no.* 1, 101–118. (Thomas Bartsch) **93k:58043** 58E05
Dos Santos Filho, José Ruidival *see* **dos Santos Filho, José Ruidival**
Dost, S. (*with* Erbay, H. A.; Erbay, S.) Wave propagation in fluid filled nonlinear viscoelastic tubes. (English summary) *Acta Mech.* **95** (1992), *no.* 1-4, 87–102. (Summary) **93f:73080** 73K70 (73F15, 76B15, 76Z05)
Dostál, Zdeněk Domain decomposition and PDE with periodic boundary conditions. (English summary) *Fifth International Symposium on Domain Decomposition Methods for Partial Differential Equations (Norfolk, VA,* 1991), 258–261, *SIAM, Philadelphia, PA,* 1992. (*see* **93g:65009**) 65F10 (65N55)
Dostanić, Milutin R. The generalization of the Keldysh theorem. *J. Math. Anal. Appl.* **162** (1991), *no.* 1, 7–12. (Horst Behncke) **93b:47019** 47A55 (47B10)
Dosumov, T. B. On the theory of differential equations with unbounded operators. (Russian) *Mathematical analysis and discrete mathematics (Russian),* 122–131, *Novosibirsk. Gos. Univ., Novosibirsk,* 1989. (Józef Banaś) **93i:34114** 34G20 (34A12, 47H15, 47N20)
Doszhanova, G. N. (*with* Sarbasov, K. E.) A modified Simpson formula for the approximate solution of the Volterra integral equation. (Russian) *Theory of functions and problems in numerical mathematics (Russian),* 26–30, 71, *Kazakh. Gos. Univ., Alma Ata,* 1990. (Summary) **93c:65164** 65R20 (45L10)
Dotsenko, Vladimir S. Three-point correlation functions of the minimal conformal theories coupled to 2D gravity. *Modern Phys. Lett. A* **6** (1991), *no.* 39, 3601–3612. (Marc Henneaux) **93a:81170** 81T40 (17B56, 81T70)
— Correlation functions of local operators in 2D gravity coupled to minimal matter. (English summary) *New symmetry principles in quantum field theory (Cargèse,* 1991), 423–431, *NATO Adv. Sci. Inst. Ser. B Phys.,* 295, *Plenum, New York,* 1992. (*see* **93h:81002**) 81T40
— (*with* Der, R.; Tirozzi, Brunello) Modified pseudo-inverse neural networks storing correlated patterns. *J. Phys. A* **25** (1992), *no.* 10, 2843–2857. (Dimitri Petritis) **93h:82043** 82C32 (92B20)
— (*with* Parisi, Giorgio) Random magnetic fields and instantons in replica space. *J. Phys. A* **25** (1992), *no.* 11, 3143–3151. (A. Ventura) **93g:82057** 82B44 (81S40, 82D40)
Dotson, Allen C. Nonlocal interactions: a Jammerian analysis. *Found. Phys. Lett.* **5** (1992), *no.* 4, 373–382. (Summary) **93c:81006** 81P05
D'Ottaviano, Itala M. Loffredo On the development of paraconsistent logic and da Costa's work. *J. Non-Classical Logic* **7** (1990), *no.* 1-2, 89–152. 03B53 (01A65, 03–03)
Dotti Miatello, Isabel G. Complex structures on normal j-algebras. *J. Pure Appl. Algebra* **73** (1991), *no.* 3, 247–256. (J. Dorfmeister) **93a:32052** 32M15 (17B30)
— Rigidity of invariant complex structures. *Trans. Amer. Math. Soc.* **338** (1993), *no.* 1, 159–172. (J. Dorfmeister) **93j:32040** 32M10 (32C17, 53C55)
Doty, Stephen R. The symmetric algebra and representations of general linear groups. *Proceedings of the Hyderabad Conference on Algebraic Groups (Hyderabad,* 1989), 123–150, *Manoj Prakashan, Madras,* 1991. (N. J. Kuhn) **93a:20077** 20G40 (20C33, 20G05, 20M30)
— (*with* Walker, Grant) The composition factors of $\mathbf{F}_p[x_1, x_2, x_3]$ as a $\mathrm{GL}(3, p)$-module. *J. Algebra* **147** (1992), *no.* 2, 411–441. (N. J. Kuhn) **93h:20015** 20C33 (20G05)
— (*with* Walker, Grant) Modular symmetric functions and irreducible modular representations of general linear groups. (English summary) *J. Pure Appl. Algebra* **82** (1992), *no.* 1, 1–26. (R. W. Carter) **93i:20050** 20G05 (05E05, 20C20)
Dou, Zh. Problems of completeness for finitely generated functional systems $\langle P_{k,2}, \widetilde{\Omega} \rangle$ and $\langle P_{k,2}, \widehat{\Omega} \rangle$. (Russian) *Diskret. Mat.* **2** (1990), *no.* 4, 116–124. (János Demetrovics) **93b:03034** 03B50

Douak, Khalfa (*with* Maroni, Pascal) Les polynômes orthogonaux "classiques" de dimension deux. (English summary) [Two-dimensional "classical" orthogonal polynomials] *Analysis* **12** (1992), *no.* 1-2, 71–107. (W. A. Al-Salam) **93d:33004** 33C45 (42C05)

Doubabi, S. (*with* Bouslous, H.; El Bagdouri, M.) Étude numérique d'un problème de commande pour un système thermique non linéaire. (English and French summaries) [Numerical study of a control problem for a nonlinear thermal system] *RAIRO Automat.-Prod. Inform. Ind.* **26** (1992), *no.* 3, 193–208. 49M07 (49K20)

Douce, J. L. (*with* Warwick, Kevin; Zhu, Q.-M.) An adaptive controller for nonlinear systems. (English summary) *Adaptive systems in control and signal processing*, 1989 (*Glasgow*), 159–169, *IFAC Sympos. Ser.*, 1990, *No.* 1, *Pergamon, Oxford*, 1990. (*see* **93j:93007**) 93C40 (93C10)

Dougalis, Vassilios A. (*with* Akrivis, Georgios D.) Finite difference discretization with variable mesh of the Schrödinger equation in a variable domain. *Bull. Soc. Math. Grèce (N.S.)* **31** (1990), 19–28. (G. Fairweather) **93a:65111** 65M06 (65M12, 65M15)

Dougan, Andrew J. Quasi-local mass for spheres. (English summary) *Classical Quantum Gravity* **9** (1992), *no.* 11, 2461–2475. (Peter R. Law) **93j:83059** 83C60 (83C30, 83C40)

Dougherty, Daniel J. (*with* Johann, Patricia) An improved general *E*-unification method. (English summary) *J. Symbolic Comput.* **14** (1992), *no.* 4, 303–320. (From the introduction) **93i:68155** 68T15 (03B35, 03C05)

Dougherty, Edward R. Euclidean gray-scale granulometries: representation and umbra inducement. *J. Math. Imaging Vision* **1** (1992), *no.* 1, 7–21. (Gilbert Crombez) **93h:68142** 68U10 (06B99)

— (*with* Mathew, A. V.; Swarnakar, V.) Efficient derivation of the optimal mean-square binary morphological filter from the conditional expectation via a switching algorithm for discrete power-set lattice. (English summary) *Circuits Systems Signal Process.* **12** (1993), *no.* 3, 409–430. 94A12 (68U10)

— (*with* Sinha, Divyendu) Fuzzification of set inclusion: theory and applications. (English summary) *Fuzzy Sets and Systems* **55** (1993), *no.* 1, 15–42. (Summary) **93k:03055** 03E72 (68U10)

— *see also* **Mathematical morphology in image processing, 93f:68100**

Dougherty, Randall (*with* Foreman, Matthew) Banach-Tarski paradox using pieces with the property of Baire. (English summary) *Proc. Nat. Acad. Sci. U.S.A.* **89** (1992), *no.* 22, 10726–10728. (Eva Coplakova) **93j:04001** 04A20 (03E15, 03E25, 04A15, 54H05)

Douglas, Craig C. (*with* Douglas, Jim, Jr.) A greatly simplified theory for parallel multigrid or projection methods. (English summary) *Parallel processing for scientific computing* (*Houston, TX*, 1991), 105–110, *SIAM, Philadelphia, PA*, 1992. (*see* **93g:65178**) 65F10 (65Y05)

— (*with* Mandel, Jan) An abstract theory for the domain reduction method. (German summary) *Computing* **48** (1992), *no.* 1, 73–96. (I. Norman Katz) **93b:65162** 65N12 (65N22, 65Y05)

Douglas, Jesse *see* **Problem of Plateau, 93i:53002**; **Tropp, Henry S., 93k:01079**; **Siegel, Edward, (93i:53002)**; **Steinhardt, Fritz, (93i:53002)** *and* **Struik, Dirk J., (93i:53002)**

Douglas, Jim, Jr. Three models for waterflooding in a naturally fractured petroleum reservoir. *Proceedings of the Second International Symposium on Numerical Analysis* (*Prague*, 1987), 19–27, *Teubner-Texte Math.*, 107, *Teubner, Leipzig*, 1988. (*see* **93b:65007**) 76S05 (76M99)

— (*with* Chen, Zhang Xing) Approximation of coefficients in hybrid and mixed methods for nonlinear parabolic problems. (Portuguese summary) *Mat. Apl. Comput.* **10** (1991), *no.* 2, 137–160. (Peter B. Monk) **93d:65097** 65N30

— (*with* Hensley, J. L.; Wei, Y.; et al.) A derivation for Darcy's law for miscible fluids and a revised model for miscible displacement in porous media. (English summary) *Computational methods in water resources, IX, Vol. 2* (*Denver, CO*, 1992), 165–178, *Comput. Mech., Southampton*, 1992. (*see* **93g:76003**) 76S05

— (*with* Douglas, Craig C.) A greatly simplified theory for parallel multigrid or projection methods. (English summary) *Parallel processing for scientific computing* (*Houston, TX*, 1991), 105–110, *SIAM, Philadelphia, PA*, 1992. (*see* **93g:65178**) 65F10 (65Y05)

— (*with* Paes-Leme, P. J.) Finite difference methods for a model for immiscible displacement in naturally fractured petroleum reservoirs. (English and Portuguese summaries) *Mat. Apl. Comput.* **11** (1992), *no.* 1, 3–16. (Randall J. LeVeque) **93i:65084** 65M06 (76M20, 76S05)

Douglas, M. R. (*with* Banks, Thomas; Dabholkar, A.; O'Loughlin, M.) Are horned particles the end point of Hawking evaporation? *Phys. Rev. D* (3) **45** (1992), *no.* 10, 3607–3616. (Summary) **93b:83042** 83C57 (83C47)

Douglas, R. R. (*with* Bergeron, Mario; Semenoff, Gordon W.) Canonical structure of the CP^1 model in three dimensions. *Internat. J. Modern Phys. A* **7** (1992), *no.* 11, 2417–2445. (Marc Henneaux) **93d:81104** 81T10

Douglas, Robert James NP-completeness and degree restricted spanning trees. (English summary) *Discrete Math.* **105** (1992), *no.* 1-3, 41–47. (Summary) **93i:68085** 68Q25 (05C05, 05C85, 68R10)

Douglas, Ronald G. Elliptic renormalization. (English summary) *Current topics in operator algebras* (*Nara*, 1990), 225–233, *World Sci. Publishing, River Edge, NJ*, 1991. (Summary) **93i:58147** 58G12 (46L87, 46M20, 47G99)

— (*with* Chen, Xiao Man) Rigidity of Hardy submodules on the unit ball. *Houston J. Math.* **18** (1992), *no.* 1, 117–125. (Mihai Putinar) **93e:47009** 47A15 (32A35, 46J10, 46M20, 47B38)

— (*with* Chen, Xiao Man) Localization of Hilbert modules. *Michigan Math. J.* **39** (1992), *no.* 3, 443–454. (F.-H. Vasilescu) **93h:46105** 46M20 (46H25, 46M05, 47A99)

Douglas, Ruth (*with* Fienberg, Stephen E.) An overview of dependency models for cross-classified categorical data involving ordinal variables. (English summary) *Topics in statistical dependence* (*Somerset, PA*, 1987), 167–188, *IMS Lecture Notes Monograph Ser.*, 16, *Inst. Math. Statist., Hayward, CA*, 1990. (Summary) **93g:62079** 62H17

— (*with* Fienberg, Stephen E.; Lee, Mei Ling Ting; Sampson, Allan R.; Whitaker, Lyn R.) Positive dependence concepts for ordinal contingency tables. (English summary) *Topics in statistical dependence* (*Somerset, PA*, 1987), 189–202, *IMS Lecture Notes Monograph Ser.*, 16, *Inst. Math. Statist., Hayward, CA*, 1990. (Summary) **93g:62080** 62H17

Douglass, J. Matthew On the cohomology of an arrangement of type B_l. *J. Algebra* **147** (1992), *no.* 2, 265–282. (Hiroaki Terao) **93d:52017** 52B30 (20C33, 20F55, 32S20)

Douglass, Rod W. (*with* Dunbar, Steven R.; Camp, W. J.) The divider dimension of the graph of a function. *J. Math. Anal. Appl.* **167** (1992), *no.* 2, 403–413. (Remo Badii) **93e:28012** 28A80 (28A75)

Douillet, Pierre L. (*with* Becker, Monique) Une méthode hiérarchique, auto-régulée, de simulation d'événements extrêmement rares. (English and French summaries) [A hierarchical, self-regulated method for simulating very rare events] *C. R. Acad. Sci. Paris Sér. I Math.* **316** (1993), *no.* 1, 87–92. (Summary) **93h:65010** 65C20

Doukhan, Paul (*with* Gassiat, Élisabeth) Quadratic deviation of penalized mean squares regression estimates. *J. Multivariate Anal.* **41** (1992), *no.* 1, 89–101. (Arup Bose) **93i:62042** 62G10 (60F05, 62J02)

Doull, Floy Andrews Leibniz's logical system of 1686–1690. G. W. Leibniz (1646–1716) (Spanish). *Theoria (San Sebastián)* (2) **6** (1991), *no.* 14-15, 9–28. (Summary) **93a:03004** 03–03 (01A45)

Doupovec, Miroslav (*with* Kolář, Ivan) Natural affinors on time-dependent Weil bundles. (English summary) *Arch. Math. (Brno)* **27B** (1991), 205–209. (Marco Modugno) **93j:58004** 58A20 (53A55)

le Dourneuf, M. *see* **Le Dourneuf, M.**

le Doussal, Pierre *see* **Le Doussal, Pierre**

Doust, Ian (*with* Ricker, Werner J.) Spectral properties for Hermitian operators. (English summary) *Linear Algebra Appl.* **175** (1992), 75–96. (Ridgley Lange) **93g:47024** 47B15 (47A10, 47B40)

— *see also* **Miniconference: Probability and Analysis, 93e:00024**

Douthett, Jack (*with* Barefoot, C. A.; Clark, L. H.; Entringer, R. C.; Fellows, Michael R.) Cycles of length 0 modulo 3 in graphs. *Graph theory, combinatorics, and applications, Vol. 1* (*Kalamazoo, MI*, 1988), 87–101, *Wiley-Intersci. Publ., Wiley, New York*, 1991. (Summary) **93c:05067** 05C38

Douven, R. C. M. H. (*with* Jansen, Johannes; van Berkum, E. E. M.) An annealing algorithm for searching optimal block designs. (English summary) *Biometrical J.* **34** (1992), *no.* 5, 529–538. 62K05

van Douwen, Eric K. (*with* Reed, G. M.; Roscoe, A. W.; Tree, Ian J.) Star covering properties. *Topology Appl.* **39** (1991), *no.* 1, 71–103. (H. H. Wicke) **93a:54020** 54D20 (54A35, 54E30)

— The product of a Fréchet space and a metrizable space. (English summary) *Topology Appl.* **47** (1992), *no.* 3, 163–164. (Summary) **93k:54027** 54B10 (54D55)

— The product of two normal initially κ-compact spaces. *Trans. Amer. Math. Soc.* **336** (1993), *no.* 2, 509–521. (J. E. Vaughan) **93f:54012** 54B10 (03E35, 03E50, 54A35, 54D20, 54D35)

Đỗ Văn Lu'u On necessary optimality conditions for discrete minimax problems. *Acta Math. Vietnam.* **16** (1991), *no.* 2, 201–210. (Aharon Ben-Tal) **93e:49036** 49K27 (49J52, 90C48)

Dovbysh, S. A. Kolmogorov stability, the impossibility of Fermi acceleration, and the existence of periodic solutions in some systems of Hamiltonian type. (Russian. Russian summary) *Prikl. Mat. Mekh.* **56** (1992), *no.* 2, 218–229; *translation in J. Appl. Math. Mech.* **56** (1992), *no.* 2, 188–197. (Alexander Burov) **93k:58192** 58F22 (34C25, 58F05, 70H05)

— On the separatrix of the unstable equilibrium of the Hess-Appel'rot top. (Russian. Russian summary) *Prikl. Mat. Mekh.* **56** (1992), *no.* 4, 632–642; *translation in J. Appl. Math. Mech.* **56** (1992), *no.* 4, 534–545. (Summary) **93k:70008** 70E15 (34C37, 70H05)

Dovermann, Karl Heinz (*with* Little, Robert D.) Involutions of cohomology complex projective space with codimension-two fixed points. *Indiana Univ. Math. J.* **41** (1992), *no.* 1, 197–211. (Mikiya Masuda) **93d:57068** 57S17 (57R55, 57R85)

— (*with* Suh, Dong Youp) Smith equivalence for finite abelian groups. *Pacific J. Math.* **152** (1992), *no.* 1, 41–78. (Mikiya Masuda) **93d:57069** 57S17 (55M35, 57R65, 57R67, 57S25)

— *see also* **Topology Hawaii, 93c:55001**

Dovgalyuk, V. V. (*with* Piterbarg, V. I.) Large deviations of the trajectories of a Poisson process. (Russian) *Probabilistic processes and their applications* (*Russian*), 112–118, *Moskov. Inst. Élektron. Mashinostroeniya, Moscow*, 1989. (*see* **93b:60003**) 60G55 (60G17)

Dovgoshei, A. A. Integral representations in Hardy classes and best approximations in some function spaces. (Russian. Ukrainian summary) *Ukrain. Mat. Zh.* **43** (1991), *no.* 3, 342–347; *translation in Ukrainian Math. J.* **43** (1991), *no.* 3, 306–311. (Ruben A. Avetisian) **93b:30032** 30D55 (30E10, 41A10)

Dovletov, A. M. (*with* Dovletov, M.) A method for integrating equations of the dynamics of a variable mass with impulse coupling factors. (Russian) *Izv. Akad. Nauk Turkm. Ser. Fiz.-Mat. Tekhn. Khim. Geol. Nauk* **1992**, *no.* 4, 92–94. 70F30 (70H35, 70P05)

Dovletov, M. (*with* Dovletov, A. M.) A method for integrating equations of the dynamics of a variable mass with impulse coupling factors. (Russian) *Izv. Akad. Nauk Turkm. Ser. Fiz.-Mat. Tekhn. Khim. Geol. Nauk* **1992**, *no.* 4, 92–94. 70F30 (70H35, 70P05)

Dow, Alan (*with* Gruenhage, Gary F.) A point-picking game and semi-selective filters. *Topology Proc.* **14** (1989), *no.* 2, 221–238. (Richard A. Alò) **93b:54004** 54A25

— (*with* Simon, Petr) Thin-tall Boolean algebras and their automorphism groups. *Algebra Universalis* **29** (1992), *no.* 2, 211–226. (Sabine Koppelberg) **93c:03065** 03E05 (03G05, 20B27, 60E15)

— (*with* Vermeer, J.) Not all σ-complete Boolean algebras are quotients of complete Boolean algebras. *Proc. Amer. Math. Soc.* **116** (1992), *no.* 4, 1175–1177. (Klaas Pieter Hart) **93b:54036** 54G05 (03G05, 06E10, 54A35, 54G20)

— On the consistency of the Moore-Mrówka solution. Proceedings of the Symposium on General Topology and Applications (Oxford, 1989). *Topology Appl.* **44** (1992), *no.* 1-3, 125–141. (Nobuyuki Kemoto) **93i:03071** 03E35 (54A35, 54D30)

— (*with* Watson, W. Stephen) A subcategory of TOP. *Trans. Amer. Math. Soc.* **337** (1993), *no.* 2, 825–837. (Hao Xuan Zhou) **93h:54002** 54A35 (18B30, 54B30)

Dow, James (*with* Werlang, Sérgio Ribeiro da Costa) Homothetic preferences. *J. Math. Econom.* **21** (1992), *no.* 4, 389–394. (Wulf Gaertner) **93i:90016** 90A10 (90A06)

Dow, John O. (*with* Stevenson, Ian) Adaptive refinement procedure for the finite difference method. (English summary) *Numer. Methods Partial Differential Equations* **8** (1992), *no.* 6, 537–550. 65M50 (65N50)

Dowbor, Piotr On Bernstein-Gel'fand-Gel'fand equivalence and tilting theory. *Topics in algebra, Part* 1 (*Warsaw*, 1988), 273–285, *Banach Center Publ.*, 26, *Part* 1, *PWN, Warsaw*, 1990. (Jeremy Rickard) **93j:18008** 18E30 (14F05, 16D90)

— (*with* Meltzer, Hagen) On equivalences of Bernstein-Gel'fand-Gel'fand, Beĭlinson and Happel. (English summary) *Comm. Algebra* **20** (1992), *no.* 9, 2513–2531. (Jeremy Rickard) **93i:16015** 16D90 (14F05, 18E30)

Dowd, Martin Generic oracles, uniform machines, and codes. *Inform. and Comput.* **96** (1992), *no.* 1, 65–76. (Jean-Marc Piveteau) **93c:68022** 68Q05 (03D10, 06E30)

Dowell, E. H. (*with* Gottwald, J. A.; Virgin, L. N.) Experimental mimicry of Duffing's equation. (English summary) *J. Sound Vibration* **158** (1992), *no.* 3, 447–467. (Summary) **93g:70002** 70–05 (34C15, 70K40, 70K50)

Dowker, H. F. (*with* D'Eath, P. D.; Hughes, D. I.) Supersymmetric quantum wormhole states. *Quantum gravity* (*Moscow*, 1990), 124–143, *World Sci. Publishing, River Edge, NJ*, 1991. (Summary) **93c:83049** 83C45 (81V17)

— (*with* Alty, L. J.; D'Eath, P. D.) Quantum wormhole states and local supersymmetry. (English summary) *Phys. Rev. D* (3) **46** (1992), *no.* 10, 4402–4412. (Summary) **93g:83041** 83C45 (83E50)

Dowker, J. S. On Verlinde's formula for the dimensions of vector bundles on moduli spaces. *J. Phys. A* **25** (1992), *no.* 9, 2641–2648. (Michael Thaddeus) **93j:14010** 14D20 (11B68, 81T40)

— (*with* Wolski, A.) Finite model of two-dimensional ideal hydrodynamics. (English summary) *Phys. Rev. A* (3) **46** (1992), *no.* 10, 6417–6430. (Summary) **93i:76019** 76C05 (58F40, 76M25, 82D15)

— (*with* Chang, Peter) Polyhedral cosmic strings. (English summary) *Phys. Rev. D* (3) **46** (1992), *no.* 8, 3458–3464. (André Burnel) **93j:83045** 83C47 (81T20)

Dowling, Cornelia E. Applying the basis of a knowledge space for controlling the questioning of an expert. (English summary) *J. Math. Psych.* **37** (1993), *no.* 1, 21–48. 90A05 (68T30)

— On the irredundant generation of knowledge spaces. (English summary) *J. Math. Psych.* **37** (1993), *no.* 1, 49–62. 90A05 (68T30)

Dowling, Patrick N. A stability property of a class of Banach spaces not containing c_0. *Canad. Math. Bull.* **35** (1992), *no.* 1, 56–60. (Peter Greim) **93i:46063** 46E40 (43A46, 46B20)

— (*with* Lennard, Chris) Kadec-Klee properties of vector-valued Hardy spaces. *Math. Proc. Cambridge Philos. Soc.* **111** (1992), *no.* 3, 535–544. (Takahiko Nakazi) **93b:46063** 46E40 (46B99, 46J15)

— Duality in some vector-valued function spaces. (English summary) *Rocky Mountain J. Math.* **22** (1992), *no.* 2, 511–518. (Peter Greim) **93i:46064** 46E40 (43A15)

— (*with* Hu, Zhibao; Smith, Mark A.) Extremal structure of the unit ball of $C(K, X)$. (English summary) *Banach spaces* (*Mérida*, 1992), 81–85, *Contemp. Math.*, 144, *Amer. Math. Soc., Providence, RI*, 1993. (Summary) **93j:46042** 46E40 (46B20)

Downarowicz, Tomasz How a function on a zero-dimensional group Δ_a defines a Toeplitz flow. (English summary) *Bull. Polish Acad. Sci. Math.* **38** (1990), *no.* 1-12, 219–222. (Introduction) **93h:58046** 58F03

— The Choquet simplex of invariant measures for minimal flows. *Israel J. Math.* **74** (1991), *no.* 2-3, 241–256. (Summary) **93e:54029** 54H20 (28D05, 58F11)

— (*with* Mauldin, R. Daniel; Warnock, Tony T.) Random circle homeomorphisms. (English summary) *Ergodic Theory Dynamical Systems* **12** (1992), *no.* 3, 441–458. (F. M. Dekking) **93m:54067** 54H20 (58F08, 60B05)

Downey, Rodney On Π^0_1 classes and their ranked points. *Notre Dame J. Formal Logic* **32** (1991), *no.* 4, 499–512 (1992). (Steffen Lempp) **93a:03046** 03D30 (03D25, 03D55)

— (*with* Stob, Michael) Jumps of hemimaximal sets. *Z. Math. Logik Grundlag. Math.* **37** (1991), *no.* 2, 113–120. (E. Herrmann) **93e:03056** 03D25

— (*with* Stob, Michael) Automorphisms of the lattice of recursively enumerable sets: orbits. *Adv. Math.* **92** (1992), *no.* 2, 237–265. (John P. Helm) **93g:03038** 03D25

— (*with* Bailey, Colin) Tabular degrees in α-recursion theory. *Ann. Pure Appl. Logic* **55** (1992), *no.* 3, 205–236. (Yu. G. Ventsov) **93i:03063** 03D60 (03D30)

— (*with* Slaman, Theodore A.) On co-simple isols and their intersection types. *Ann. Pure Appl. Logic* **56** (1992), *no.* 1-3, 221–237. (Thomas McLaughlin) **93g:03042** 03D50 (03D25)

— (*with* Fellows, Michael R.) Fixed-parameter tractability and completeness. Proceedings of the Twenty-first Manitoba Conference on Numerical Mathematics and Computing (Winnipeg, MB, 1991). *Congr. Numer.* **87** (1992), 161–178. (Summary) **93b:05074** 05C35 (05C85, 68Q25)

— An invitation to structural complexity. New Zealand Mathematics Colloquium (Dunedin, 1991). *New Zealand J. Math.* **21** (1992), 33–89. (Marius Zimand) **93i:68072** 68Q15 (03D15)

— (*with* Cenzer, Douglas; Jockusch, Carl; Shore, Richard A.) Countable thin Π^0_1 classes. (English summary) *Ann. Pure Appl. Logic* **59** (1993), *no.* 2, 79–139. (Marius Zimand) **93m:03075** 03D30 (03D25, 03D45)

Doyle, J. *see* **Doyle, John C.**

Doyle, James F. ★ Static and dynamic analysis of structures. With an emphasis on mechanics and computer matrix methods. Solid Mechanics and its Applications, 6. *Kluwer Academic Publishers Group, Dordrecht*, 1991. xiv+442 *pp. ISBN* 0-7923-1124-8 (Publisher's description) **93i:73031** 73Kxx (73–04, 73Vxx)

Doyle, John C. (*with* Francis, Bruce Allen; Tannenbaum, Allen R.) ★ Feedback control theory. *Macmillan Publishing Company, New York*, 1992. xii+227 *pp. ISBN* 0-02-330011-6 (Petko Petkov) **93k:93002** 93–02 (49–01, 93–01, 93B52, 93C05)

— (*with* Smith, Roy S.) Model validation: a connection between robust control and identification. *IEEE Trans. Automat. Control* **37** (1992), *no.* 7, 942–952. (Summary) **93g:93032** 93B36 (93B30)

— (*with* Packard, Andy) The complex structured singular value. (English summary) *Automatica J. IFAC* **29** (1993), *no.* 1, 71–109. (Kathryn E. Lenz) **93k:93042** 93B36 (93–02, 93B51, 93B52, 93C05)

Doyle, Jon Reason maintenance and belief revision: foundations vs. coherence theories. *Belief revision*, 29–51, *Cambridge Tracts Theoret. Comput. Sci.*, 29, *Cambridge Univ. Press, Cambridge*, 1992. (*see* **93g:68131**) 68T27 (03B60, 03B70)

Doyle, M. (*with* Sri Namachchivaya, N.; Pai, M. A.) Stochastic approach to small disturbance stability in power systems. (English summary) *Lyapunov exponents* (*Oberwolfach*, 1990), 292–308, *Lecture Notes in Math.*, 1486, *Springer, Berlin*, 1991. (*see* **93d:00037**) 34D05

Doyle, Mark D. Dilaton contact terms in the bosonic and heterotic strings. (English summary) *Nuclear Phys. B* **381** (1992), *no.* 1-2, 158–200. (C. Gauthier) **93m:81116** 81T30

— (*with* Distler, Jacques) World-sheet supersymmetry without contact terms. (English summary) *Phys. Lett. B* **287** (1992), *no.* 1-3, 73–81. (Summary) **93g:81123** 81T30

Doyle, P. G. (*with* Lagarias, Jeffrey C.; Randall, Dana J.) Self-packing of centrally symmetric convex bodies in $\mathbf{R}^2$. *Discrete Comput. Geom.* **8** (1992), *no.* 2, 171–189. (Martin Henk) **93e:52038** 52C15 (05B40, 05C05, 11H31)

Draayer, J. P. *see* **Group theory and special symmetries in nuclear physics, 93e:81150**

Drabant, Bernhard (*with* Schlieker, Michael; Weich, Wolfgang; Zumino, Bruno) Complex quantum groups and their dual Hopf algebras. (English summary) *Quantum groups and related topics* (*Wrocław*, 1991), 13–22, *Math. Phys. Stud.*, 13, *Kluwer Acad. Publ., Dordrecht*, 1992. (Roland Berger) **93m:17010** 17B37 (16W30, 81R50)

— (*with* Schlieker, Michael; Weich, Wolfgang; Zumino, Bruno) Complex quantum groups and their quantum enveloping algebras. (English summary) *Comm. Math. Phys.* **147** (1992), *no.* 3, 625–633. (Sergei Spirin) **93i:17015** 17B37 (81R50)

— (*with* Chryssomalakos, Chryss; Schlieker, Michael; Weich, Wolfgang; Zumino, Bruno) Vector fields on complex quantum groups. (English summary) *Comm. Math. Phys.* **147** (1992), *no.* 3, 635–646. (Nicolás Andruskiewitsch) **93j:17023** 17B37 (81R50)

— (*with* Jurčo, Branislav; Schlieker, Michael; Weich, Wolfgang; Zumino, Bruno) The Hopf algebra of vector fields on complex quantum groups. (English summary) *Lett. Math. Phys.* **26** (1992), *no.* 2, 91–96. (Summary) **93h:17026** 17B37 (16W30, 81R50)

Drábek, Pavel On the global bifurcation for a class of degenerate equations. *Ann. Mat. Pura Appl.* (4) **159** (1991), 1–16. (Norman Dancer) **93d:47112** 47H15 (34B15, 35B32, 35J70, 47H11, 47N20, 58E07)

— (*with* Nicolosi, Francesco) Solubilité des problèmes elliptiques dégénérés d'ordre supérieur à l'aide du théorème de Leray-Lions. (English and French summaries) [Solvability of degenerate elliptic problems of higher order with the help of the Leray-Lions theorem] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 6, 689–692. (Summary) **93f:35082** 35J70

Drachman, Byron (*with* Ashkenazi, Max; Chow, Shui-Nee) Symbolic computation of normal forms for nonlinear Hamiltonian systems (Algorithm 34). *J. Comput. Appl. Math.* **39** (1992), *no.* 3, 363–378. (Summary) **93c:65103** 65L99 (34–04, 34C20, 58F36, 70–04, 70H05)

Dragan, F. F. (*with* Chepoi, V. D.) The median problem on pseudomedian graphs. (Russian) *Issled. Operatsiĭ i ASU No.* 35 (1991), 47–56. (From the introduction) **93c:90096** 90C35 (05C35)

— (*with* Chepoi, V. D.) Properties of pseudomodular graphs. (Russian) *Issled. Operatsiĭ i ASU No.* 37 (1991), 47–54. (Valentin E. Brimkov) **93e:05098** 05C99

— Domination and packings in triangulated graphs. (Russian. Russian summary) *Metody Diskret. Analiz. No.* 51 (1991), 17–36, 112–113. (Stanislav Jendrol') **93j:05114** 05C70 (05C75)

Drăgan, Irinel An average per capita formula for the Shapley value. (English summary) *Libertas Math.* **12** (1992), 139–146. (From the text) **93j:90132** 90D12

Drăgan, Vasile Discrete implementation of a stabilizing linear control for a system with two time scales. *Rev. Roumaine Sci. Tech. Sér. Électrotech. Énergét.* **36** (1991), *no.* 1, 121–129. (Iordan I. Slavov) **93b:93070** 93C70 (34E15, 93B15, 93B51)

— (*with* Halanay, Aristide) Global solutions for matrix Riccati differential equations via input-output operators. *Recent trends in differential equations*, 135–148, *World Sci. Ser. Appl. Anal.*, 1, *World Sci. Publishing, River Edge, NJ*, 1992. (S. P. Bhattacharyya) **93f:34032** 34A99 (34A34, 34H05, 93B40)

— Adaptive stabilization of a class of linear systems. *Rev. Roumaine Math. Pures Appl.* **37** (1992), *no.* 4, 307–311. 93D21

— (*with* Halanay, Aristide) Asymptotic expansions for singular values associated to singularly perturbed control systems. (English summary) *Rev. Roumaine Math. Pures Appl.* **37** (1992), *no.* 5, 371–385. (T. R. Gichev) **93k:93065** 93C73 (34E15, 34H05)

— (*with* Halanay, Aristide) Uniform controllability for systems with two time-scales. (English summary) *Rev. Roumaine Math. Pures Appl.* **37** (1992), *no.* 8, 673–681. (T. R. Gichev) **93k:93066** 93C73 (34E15, 34H05, 93B05)

— Optimal stabilizing compensator for linear systems under white noise perturbations. (English summary) *Stochastic Anal. Appl.* **10** (1992), *no.* 5, 545–556. (Marcelo Fragoso) **93j:93126** 93D15 (49N10, 93C41, 93E03, 93E11)

— (*with* Morozan, Toader; Halanay, Aristide) Optimal stabilizing compensator for linear systems with state-dependent noise. (English summary) *Stochastic Anal. Appl.* **10** (1992), *no.* 5, 557–572. (Marcelo Fragoso) **93j:93127** 93D15 (49N10, 93C41, 93E03, 93E11)

Dragan, Ya. P. Covariance analysis of equidistant sampling of functions and of harmonizable random processes with a finite spectrum. (Russian) *Otbor i Obrabotka Informatsii No.* 8(84) (1992), 1–9. (Summary) **93e:94003** 94A12

Drăgănescu, Gh. E. (*with* Campigotto, C.; Kibler, Maurice) On a generalized Aharonov-Bohm plus Coulomb system. (English summary) *Phys. Lett. A* **170** (1992), *no.* 5, 339–343. (Nathalie Debergh) **93m:81054** 81R30 (22E70, 81R50)

Drăghia, Dumitru D. Finite dimensionality of certain class of Banach algebras. *Mem. Fac. Sci. Kōchi Univ. Ser. A Math.* **13** (1992), 15–18. (John Duncan) **93d:46075** 46H05

Drăghici, E. (*with* Blezu, D.; Ovesea, H.; Pascu, Nicolae N.) Sufficient conditions for univalence of a large class of functions. (Romanian summary) *Studia Univ. Babeş-Bolyai Math.* **35** (1990), *no.* 4, 41–47 (1992). 30C45

Drăghici, Tedi Cătălin Pseudo-Riemannian manifolds in geodesic correspondence. (Romanian. English summary) *Stud. Cerc. Mat.* **43** (1991), *no.* 1-2, 25–36. (Cornelia-Livia Bejan) **93c:53010** 53B30 (53B20)

Dragieva, N. A. A nonlinear evolution equation with a nonstandard domain. (Bulgarian. English and Russian summaries) *Godishnik Vissh. Uchebn. Zaved. Prilozhna Mat.* **23** (1987), *no.* 3, 155–166 (1989). (Summary) **93b:35087** 35L70 (35D05)

— A hyperbolic equation with two space variables with strong nonlinearity. (Bulgarian. English and Russian summaries) *Godishnik Vissh. Uchebn. Zaved. Prilozhna Mat.* **23** (1987), *no.* 4, 95–106 (1989). (Summary) **93b:35088** 35L70

Dragomir, Sever Silvestru (*with* Ionescu, Nicoleta M.) The Wendroff type lemmas and applications. IV. (Romanian summary) *Bul. Ştiinţ. Inst. Politehn. Cluj-Napoca Ser. Mat. Mec. Apl. Construc. Maş.* **30** (1987), 19–22. (B. G. Pachpatte) **93d:45003a** 45D05

— On some operatorial inequalities in Hilbert spaces. (Romanian summary) *Bul. Ştiinţ. Inst. Politehn. Cluj-Napoca Ser. Mat. Mec. Apl. Construc. Maş.* **30** (1987), 23–28. (Takayuki Furuta) **93c:47026** 47A63 (47A99)

— (*with* Ionescu, Nicoleta M.) The Wendroff type lemmas and applications. V. *Itinerant Seminar on Functional Equations, Approximation and Convexity* (*Cluj-Napoca*, 1989), 147–154, *Preprint*, 89-6, *Univ. "Babeş-Bolyai", Cluj-Napoca*, 1989. (B. G. Pachpatte) **93d:45003b** 45D05

— On Cauchy-Buniakowski-Schwarz inequality for isotonic functionals. *Seminar on Optimization Theory*, 27–34, *Preprint*, 89-8, *Univ. "Babeş-Bolyai", Cluj-Napoca*, 1989. (Ji

Pu Ma) **93a:46038** 46C99 (46A99)

— Some inequalities for convex functions. (English and Macedonian summaries) *Makedon. Akad. Nauk. Umet. Oddel. Mat.-Tehn. Nauk. Prilozi* **10** (1989), *no.* 1-2, 25–28 (1991). (Iọn Raşa) **93b:26034** 26D20

— On some characterization of inner product spaces. *An. Ştiinţ. Univ. "Al. I. Cuza" Iaşi Secţ. I a Mat. (N.S.)* **36** (1990), *no.* 3, 193–197. (D. E. Wulbert) **93b:46039** 46C15 (46C50)

— Existence theorems for some operatorial equations in Hilbert spaces. *An. Univ. Bucureşti Mat.* **39** (1990), *no.* 1-2, 6–13. (A. B. Bakushinskiĭ) **93a:47012** 47A50

— (*with* Ionescu, Nicoleta M.) On some inequalities for convex-dominated functions. *Anal. Numér. Théor. Approx.* **19** (1990), *no.* 1, 21–27. (Ion Raşa) **93b:26014** 26A51 (26D15)

— (*with* Pečarić, Josip E.; Sándor, József) A note on the Jensen-Hadamard inequality. *Anal. Numér. Théor. Approx.* **19** (1990), *no.* 1, 29–34. (Chung Lie Wang) **93c:26016** 26D15 (26A51)

— (*with* Pečarić, Josip E.) Some remarks on Čebyšev's inequality. *Anal. Numér. Théor. Approx.* **19** (1990), *no.* 1, 59–65. (Ion Raşa) **93d:26022** 26D15

— (*with* Pečarić, Josip E.) On some integral inequalities for convex functions. (Romanian summary) *Bul. Inst. Politehn. Iaşi Secţ. I* **36(40)** (1990), *no.* 1-4, 19–23. (E. Thandapani) **93i:26019** 26D15

— Some theorems of surjectivity for a class of nonlinear operators. *Mathematica (Cluj)* **32(55)** (1990), *no.* 1, 9–14. (György Szabó) **93e:47093** 47H99 (46B20, 47H15)

— (*with* Ionescu, Nicoleta M.) A new refinement of Jensen's inequality. *Anal. Numér. Théor. Approx.* **20** (1991), *no.* 1-2, 39–41. 26D15

— A mapping in connection to Hadamard's inequalities. (English summary) *Anz. Österreich. Akad. Wiss. Math.-Natur. Kl.* **128** (1991), 17–20 (1992). (J. Sándor) **93h:26032** 26D15

— Best approximation in linear spaces endowed with subinner products. *Math. Balkanica (N.S.)* **5** (1991), *no.* 4, 271–278 (1992). (Wu Li) **93a:41063** 41A65 (46C50)

— Linear and continuous functionals on R-semi-inner product spaces. *Mathematica (Cluj)* **33(56)** (1991), *no.* 1-2, 49–57. (Richard Fleming) **93f:46028** 46C50 (46B20)

— Characterizations of proximinal, semi-Chebychevian and Chebychevian subspaces in real normed spaces. *Numer. Funct. Anal. Optim.* **12** (1991), *no.* 5-6, 487–491 (1992). (G. Godini) **93g:46011** 46B20 (41A65, 46C50)

— Smooth normed spaces of (BD)-type. *J. Fac. Sci. Univ. Tokyo Sect. IA Math.* **39** (1992), *no.* 1, 1–15. (P. Miličić) **93e:46017** 46B20 (46C99)

— Some refinements of Ky Fan's inequality. *J. Math. Anal. Appl.* **163** (1992), *no.* 2, 317–321. (D. C. Russell) **93d:26019** 26D15

— Two mappings in connection to Hadamard's inequalities. *J. Math. Anal. Appl.* **167** (1992), *no.* 1, 49–56. (Jerzy Popenda) **93m:26038** 26D15

— Some refinements of Jensen's inequality. *J. Math. Anal. Appl.* **168** (1992), *no.* 2, 518–522. (P. S. Bullen) **93e:26014** 26D15

— On Hadamard's inequalities for convex functions. (English summary) *Math. Balkanica (N.S.)* **6** (1992), *no.* 3, 215–222. (J. Sándor) **93h:26033** 26D15

— (*with* Ionescu, Nicoleta M.) Some remarks on convex functions. *Rev. Anal. Numér. Théor. Approx.* **21** (1992), *no.* 1, 31–36. (J. Sándor) **93m:26023** 26A51 (26D15)

Dragomir, Sorin (*with* Capursi, Mauro) Submanifolds of generalized Hopf manifolds, type numbers and the first Chern class of the normal bundle. *Ann. Mat. Pura Appl.* (4) **160** (1991), 1–18 (1992). (Bang-yen Chen) **93c:53042** 53C40

— (*with* Capursi, Mauro) On Cauchy-Riemann submanifolds whose local geodesic symmetries preserve the fundamental form. (English summary) *Ann. Polon. Math.* **57** (1992), *no.* 2, 99–103. (Andrzej Bucki) **93g:53078** 53C40 (53C55)

Dragomirescu, Mihai Extensions of Jensen's inequality $f(x_1)+\cdots+f(x_n)\geq nf((x_1+\cdots+x_n)/n)$. (English summary) *Rev. Roumaine Math. Pures Appl.* **37** (1992), *no.* 10, 847–871. (I. Gavrea) **93m:26039** 26D15 (26A51)

Dragon, Norbert Regular gravitational Lagrangians. *Phys. Lett. B* **276** (1992), *no.* 1-2, 31–35. (V. A. Golubeva) **93h:81138** 81T50 (81V17)

scorza Dragoni, Giuseppe *see* **Scorza Dragoni, Giuseppe**

Dragoş, Lazăr (*with* Carabineanu, Adrian; Oprea, Iuliana) The linearized theory for submerged thin hydrofoil of infinite span. (English, Russian and Polish summaries) *Arch. Mech. (Arch. Mech. Stos.)* **43** (1991), *no.* 1, 29–39 (1992). (Summary) **93g:76017** 76B10 (76C05)

— (*with* Georgescu, Adelina; Homentcovschi, Dorel) In memoriam. Caius Jacob (1912–1992). *Rev. Roumaine Math. Pures Appl.* **37** (1992), *no.* 7, 537–538. 01A70

— (*with* Popescu, Marin) Certain quadrature formulae of interest in aerodynamics. (English summary) *Rev. Roumaine Math. Pures Appl.* **37** (1992), *no.* 7, 587–599. (Helmut Brass) **93h:65037** 65D32 (76G25, 76M25)

Dragović, Branko G. Power series everywhere convergent on $\mathbf{R}$ and all Q_p. (English summary) *J. Math. Phys.* **34** (1993), *no.* 3, 1143–1148. 40A30

Dragt, Alex J. (*with* Healy, Liam M.; Gjaja, Ivan M.) Computation of error effects in nonlinear Hamiltonian systems using Lie algebraic methods. *J. Math. Phys.* **33** (1992), *no.* 6, 1948–1963. (Summary) **93b:70018** 70H05 (70–08, 70H33, 78A35)

— (*with* Neri, Filippo; Rangarajan, Govindan) General moment invariants for linear Hamiltonian systems. *Phys. Rev. A* (3) **45** (1992), *no.* 4, 2572–2585. (Richard C. Churchill) **93c:58067** 58F05 (14D25, 14L30, 20G05, 20G45, 70H05)

Drake, David A. (*with* Larson, Jean A.) The nonexistence of certain projective planes of order 15. (English summary) *Experiment. Math.* **1** (1992), *no.* 1, 65–69. (J. C. Fisher) **93h:51013** 51E15 (05B25, 51E21)

Drake, G. W. F. (*with* Guo, Dong Sheng) Stationary solutions for an electron in an intense laser field. I. Single-mode case. *J. Phys. A* **25** (1992), *no.* 11, 3383–3397. (K. Wódkiewicz) **93c:81265** 81V10

Drake, John B. (*with* Williamson, David L.; Hack, James J.; Jakob, Rüdiger; Swarztrauber, Paul N.) A standard test set for numerical approximations to the shallow water equations in spherical geometry. (English summary) *J. Comput. Phys.* **102** (1992), *no.* 1, 211–224. (Summary) **93d:86006** 86A10 (65P05, 76C20, 86–08)

Drakhlin, M. E. Convergence of a sequence of inner superposition operators. (Russian. Russian summary) *Boundary value problems (Russian)*, 179–184, *Perm. Politekh. Inst., Perm'*, 1989. (*see* **93k:00022**) 47B38

— On a necessary condition for the extremum of a functional. (Russian. Russian summary) *Boundary value problems (Russian)*, 196–200, *Perm. Politekh. Inst., Perm'*, 1990. (*see* **93g:00023**) 49K27

— A condition for the existence of asymptotically periodic solutions. (Russian. Russian summary) *Functional-differential equations (Russian)*, 168–170, *Perm. Politekh. Inst., Perm'*, 1990. (*see* **93m:00024**) 34K15

Drakunov, S. V. (*with* Utkin, Vadim I.) Sliding mode control in dynamic systems. *Internat. J. Control* **55** (1992), *no.* 4, 1029–1037. (Ülle Kotta) **93f:93018** 93B05 (93C15, 93C55)

Drane, C. R. ★ Positioning systems. A unified approach. Lecture Notes in Control and Information Sciences, 181. *Springer-Verlag, Berlin*, 1992. x+168 *pp. ISBN* 3-540-55850-0 (H. Vincent Poor) **93k:94001** 94A05 (94–02, 94B05)

Drane, J. Wanzer (*with* Fu, Chongyau; Postelnicu, Tiberiu) Theorems on binary responses to combinations of stimuli. (English summary) *Biometrical J.* **34** (1992), *no.* 5, 605–615. (Summary) **93d:62171** 62P10

Drangazhov, S. T. (*with* Sgurev, Vasil S.) Markov decision flows. (Russian summary) *Problemi Tekhn. Kibernet. Robot.* **36** (1992), 58–66. (Summary) **93m:90095** 90C40

Dranishnikov, A. N. Extension of mappings into CW-complexes. (Russian) *Mat. Sb.* **182** (1991), *no.* 9, 1300–1310; *translation in Math. USSR-Sb.* **74** (1993), *no.* 1, 47–56. (Dušan Repovš) **93a:55002** 55M10 (54F45)

— K-theory of Eilenberg-Mac Lane spaces and cell-like mapping problem. *Trans. Amer. Math. Soc.* **335** (1993), *no.* 1, 91–103. (John J. Walsh) **93e:55003** 55M10 (54F45, 57Q55)

Drápal, Aleš On a planar construction of quasigroups. *Czechoslovak Math. J.* **41(116)** (1991), *no.* 3, 538–548. (Introduction) **93c:20114** 20N05

— How far apart can the group multiplication tables be? (English summary) *European J. Combin.* **13** (1992), *no.* 5, 335–343. (Summary) **93e:20035** 20D60

Draper, David (*with* Hodges, James S.; Mallows, Colin L.; Pregibon, Daryl) Exchangeability and data analysis. (English summary) With discussion. *J. Roy. Statist. Soc. Ser. A* **156** (1993), *no.* 1, 9–37. (Summary) **93j:62010** 62A99 (62E10)

Draper, Norman R. (*with* Guttman, Irwin) Treating bias as variance for experimental design purposes. (English summary) *Ann. Inst. Statist. Math.* **44** (1992), *no.* 4, 659–671. 62K99

— Applied regression analysis. Bibliography update 1990–91. (English summary) *Comm. Statist. Theory Methods* **21** (1992), *no.* 9, 2415–2437. 62Jxx (62–00)

— (*with* Lin, Dennis K. J.) Generating alias relationships for two-level Plackett and Burman designs. (English summary) *Comput. Statist. Data Anal.* **15** (1993), *no.* 2, 147–157. 62K10

elgot-Drapkin, Jennifer J. *see* **Elgot-Drapkin, Jennifer J.**

Drascher, Ellen (*with* Zweben, Monte; Davis, Eugene; Daun, Brian; Deale, Michael; Eskey, Megan) Learning to improve constraint-based scheduling. (English summary) *Artificial Intelligence* **58** (1992), *no.* 1-3, 271–296. (Summary) **93i:68159** 68T20 (90B35)

Drášil, Milan A grammatical inference for C-finite languages. (English summary) *Arch. Math. (Brno)* **25** (1989), *no.* 3, 163–173. (Summary) **93f:68058** 68Q45

— (*with* Novotný, Miroslav) A characterization of harmonic languages. (English summary) *Arch. Math. (Brno)* **27A** (1991), 7–14. (Summary) **93g:68066** 68Q50

Drasin, David (*with* Dai, Chong Ji; Li, Bao Qin) Correction to: "On the growth of entire and meromorphic functions of infinite order" [J. Analyse Math. **55** (1990), 217–228; MR 92a:30031]. *J. Anal. Math.* **57** (1991), 299. (Editors) **93k:30043** 30D35

Draškovičová, Hilda Varieties of modular median algebras. *Contributions to general algebra*, 7 (*Vienna*, 1990), 119–125, *Hölder-Pichler-Tempsky, Vienna*, 1991. (Anna Romanowska) **93b:08006** 08B15

Draux, André On two-point Padé-type and two-point Padé approximants. *Ann. Mat. Pura Appl.* (4) **158** (1991), 99–150. (S. Clement Cooper) **93k:41018** 41A21 (41A28, 41A65)

Dravecký, Jozef (*with* Kupka, Ivan A. K.; Pakanec, Miroslav) On projection measurability of functions and multifunctions. (English summary) *Math. Slovaca* **42** (1992), *no.* 3, 275–278. (Summary) **93h:28002** 28A20 (28B20, 54C60)

Drăxler, Peter (*with* Happel, Dieter) A proof of the generalized Nakayama conjecture for algebras with $J^{2l+1}=0$ and A/J^l representation finite. *J. Pure Appl. Algebra* **78** (1992), *no.* 2, 161–164. (Hagen Meltzer) **93g:16012** 16G10

Dray, Tevian (*with* Araujo, Marcelo E.; Skea, James E. F.) Finding isometry groups in theory and practice. *Gen. Relativity Gravitation* **24** (1992), *no.* 5, 477–500. (A. H. Taub) **93c:83001** 83–04 (83C99)

— (*with* Kulkarni, Ravi S.; Manogue, Corinne A.) Scalar field quantization in stationary, nonstatic spacetimes. (English summary) *Gen. Relativity Gravitation* **24** (1992), *no.* 12, 1255–1266. (Ilya Shapiro) **93j:83046** 83C47 (81T20, 81V17)

Drazin, Michael P. (*with* Roberts, Mark L.) Diagonalizability of traces. *J. Pure Appl. Algebra* **80** (1992), *no.* 2, 117–121. (Reinhard C. Laubenbacher) **93h:16020** 16G30

Drazin, P. G. (*with* Watson, P.; Banks, W. H. H.; Zaturska, M. B.) Laminar channel flow driven by accelerating walls. *European J. Appl. Math.* **2** (1991), *no.* 4, 359–385. (Mikhail Zaks) **93k:76030** 76D05 (35Q35, 58F13, 58F40, 76E99)

— *see also* **Interpretation of time series from nonlinear systems, 93d:58005**

Drechsler, Konrad On completing conics. *Topics in algebra, Part* 2 (*Warsaw*, 1988), 39–47, *Banach Center Publ.*, 26, *Part* 2, *PWN, Warsaw*, 1990. (Yuliy M. Baryshnikov) **93g:14062** 14N10 (14C17)

— (*with* Sterz, Ulrich) Contact conditions on conic varieties and Halphen's 2nd formula. *Beiträge Algebra Geom. No.* 33 (1992), 55–69. (From the summary) **93g:14063** 14N10 (14C17)

Drechsler, W. Quantized fiber dynamics for extended elementary objects involving gravitation. (English summary) *Found. Phys.* **22** (1992), *no.* 8, 1041–1077. (Alexander D. Popov) **93j:81059** 81S30 (81R05, 83C99, 83D05)

Drees, Holger (*with* Milbrodt, Hartmut) Components of the two-sided Kolmogorov-Smirnov test in signal detection problems with Gaussian white noise. *J. Statist. Plann. Inference* **29** (1991), *no.* 3, 325–335. (Arup Bose) **93d:62088** 62G10

Dreizin, Yu. A. (*with* Balashov, L. A.; Mel'nikov, M. S.) Approximation of exponential functions and the relative proximity of stable signals. (Russian) *Mat. Sb.* **182** (1991), *no.* 11, 1542–1558; *translation in Math. USSR-Sb.* **74** (1993), *no.* 2, 291–307. (Manfred Tasche) **93a:41070** 41A80 (65R10, 94A12)

Drekova, G. V. (*with* Kravchenko, V. G.) On the theory of the normalization of the Riemann problem. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* **1991,** *no.* 9, 20–28; *translation in Soviet Math. (Iz. VUZ)* **35** (1991), *no.* 9, 19–27. (N. K. Karapetyants) **93h:47082** 47N20 (30E25, 45P05, 47A50, 47G10)

Drěmov, O. A. (*with* Koldoba, A. V.; Poveshchenko, Yu. A.) Study of difference schemes of the supporting operator method. (Russian. Russian summary) *Zh. Vychisl. Mat. i Mat.*

Fiz. **32** (1992), *no.* 9, 1433–1446; *translation in Comput. Math. Math. Phys.* **32** (1992), *no.* 9, 1281–1293 (1993). (V. D. Glushenkov) **93k:65084** 65N06

Drennan, W. M. (*with* Hui, W. H.; Tenti, G.) Accurate calculations of Stokes water waves of large amplitude. (French summary) *Z. Angew. Math. Phys.* **43** (1992), *no.* 2, 367–384. (Summary) **93b:76010** 76B15 (65M99, 76M25)

Drenski, Veselin S. Computational techniques for PI-algebras. *Topics in algebra, Part* 1 (*Warsaw*, 1988), 17–44, *Banach Center Publ.*, 26, *Part* 1, *PWN, Warsaw*, 1990. (E. Formanek) **93e:16036** 16R10 (16R30)

— (*with* Carini, Luisa) The Hilbert series of the polynomial identities for the tensor square of the Grassmann algebra. *Rend. Circ. Mat. Palermo* (2) **40** (1991), *no.* 3, 470–479. (E. Formanek) **93d:16026** 16R10

— Relations for the cocharacter sequences of T-ideals. (English summary) *Proceedings of the International Conference on Algebra, Part* 2 (*Novosibirsk*, 1989), 285–300, *Contemp. Math.*, 131, *Part* 2, *Amer. Math. Soc., Providence, RI*, 1992. (E. Formanek) **93h:16041** 16R10

— Tame primitivity for free nilpotent algebras. *C. R. Math. Rep. Acad. Sci. Canada* **14** (1992), *no.* 1, 19–24. (S. M. Vovsi) **93b:16045** 16R10

— (*with* Racine, M. L.) Distinguishing simple Jordan algebras by means of polynomial identities. *Comm. Algebra* **20** (1992), *no.* 2, 309–327. (R. Iordănescu) **93b:17081** 17C20

Drescher, K. (*with* Becher, Heiko; Jöckel, K.-H.) Design aspects and odds ratio estimation in multicenter case-control studies. (English and German summaries) *Biometrical J.* **34** (1992), *no.* 6, 675–690. (Summary) **93f:62143** 62P10

Dress, Andreas W. M. (*with* Siebeneicher, Christian; Yoshida, Tomoyuki) Applications of Burnside rings in elementary group theory. (English summary) *Séminaire Lotharingien de Combinatoire* (*Salzburg*, 1990), 71–81, *Publ. Inst. Rech. Math. Av.*, 462, *Univ. Louis Pasteur, Strasbourg*, 1991. (Summary) **93j:19001** 19A22 (20C99)

— (*with* Grabmeier, Johannes) The interpolation problem for k-sparse polynomials and character sums. *Adv. in Appl. Math.* **12** (1991), *no.* 1, 57–75. (Summary) **93b:12018** 12Y05 (20M14)

— (*with* Wenzel, Walter) A greedy-algorithm characterization of valuated Δ-matroids. *Appl. Math. Lett.* **4** (1991), *no.* 6, 55–58. (András Recski) **93f:05026** 05B35

— (*with* Huson, Daniel H.) Les pavages d'anges et de diables. [Heaven and hell tilings] Dual French-English text. *Structural Topology No.* 17 (1991), 25–42. (Hanna Nencka) **93b:52022** 52C20 (00A08)

— (*with* Clausen, Michael; Grabmeier, Johannes; Karpiński, Marek) On zero-testing and interpolation of k-sparse multivariate polynomials over finite fields. *Theoret. Comput. Sci.* **84** (1991), *no.* 2, *Algorithms Automat. Complexity Games*, 151–164. (B. David Saunders) **93e:68045** 68Q40 (12Y05, 41A05)

— (*with* Ruch, E.; Triesch, Eberhard) Extremals of the cone of norms and the cohomology of c^3-stratifications. *Adv. in Appl. Math.* **13** (1992), *no.* 1, 1–47. (Béla Uhrin) **93e:52008** 52A20 (15A51)

— (*with* Bouchet, André; Havel, Timothy F.) Δ-matroids and metroids. *Adv. Math.* **91** (1992), *no.* 1, 136–142. (Laura Bertani) **93e:05018** 05B35

— (*with* Wenzel, Walter) Perfect matroids. *Adv. Math.* **91** (1992), *no.* 2, 158–208. (Gui Zhen Liu) **93a:05046** 05B35 (04A72, 52B40)

— (*with* Bandelt, Hans-Jürgen) A canonical decomposition theory for metrics on a finite set. *Adv. Math.* **92** (1992), *no.* 1, 47–105. (Henry Martyn Mulder) **93h:54022** 54E35 (05C99)

— (*with* Wenzel, Walter) Valuated matroids. *Adv. Math.* **93** (1992), *no.* 2, 214–250. (Dragan M. Acketa) **93h:05045** 05B35

— (*with* Klin, M. Kh.; Muzichuk, M. E.) On p-configurations with few slopes in the affine plane over $\mathbf{F}_p$ and a theorem of W. Burnside's. *Bayreuth. Math. Schr. No.* 40 (1992), 7–19. (Summary) **93f:20006** 20B20

— *see also* **Trees and hierarchical structures, 93f:92004**

Dresselhaus, Eliot (*with* Tabor, M.) The kinematics of stretching and alignment of material elements in general flow fields. *J. Fluid Mech.* **236** (1992), 415–444. (Summary) **93a:76036** 76D99 (76C05, 76F20)

Dressler, Ute (*with* Nitsche, Gregor) Controlling chaotic dynamical systems using time delay coordinates. (English summary) Interpretation of time series from nonlinear systems (Warwick, 1991). *Phys. D* **58** (1992), *no.* 1-4, 153–164. (Qi Keith Chen) **93j:58094** 58F13

Drew, John (*with* Johnson, Charles Royal; van den Driessche, P.) Strong forms of nonsingularity. Directions in matrix theory (Auburn, AL, 1990). *Linear Algebra Appl.* **162/164** (1992), 187–204. (Peter M. Gibson) **93c:15002** 15A03 (15A09)

Drewes, Frank NP-completeness of k-connected hyperedge-replacement languages of order k. (English summary) *Inform. Process. Lett.* **45** (1993), *no.* 2, 89–94. (Summary) **93k:68058** 68Q50 (68R10)

Drewnowski, Lech (*with* Florencio, Miguel; Paúl, Pedro J.) Barrelled function spaces. *Progress in functional analysis* (*Peñíscola*, 1990), 191–199, *North-Holland Math. Stud.*, 170, *North-Holland, Amsterdam*, 1992. (James Bell Cooper) **93a:46066** 46E40 (46A08)

— (*with* Florencio, Miguel; Paúl, Pedro J.) Some new classes of Banach-Mackey spaces. (English summary) *Manuscripta Math.* **76** (1992), *no.* 3-4, 341–351. (P. Pérez Carreras) **93i:46008** 46A08 (46A35)

— (*with* Díaz Madrigal, Santiago; Fernández López, Antonio[2]; Florencio, Miguel; Paúl, Pedro J.) Barrelledness and bornological conditions on spaces of vector-valued μ-simple functions. *Results Math.* **21** (1992), *no.* 3-4, 289–298. (Miguel Caldas Cueva) **93d:46060** 46E40 (46A08)

— (*with* Domański, Paweł) Fréchet spaces of continuous vector-valued functions: complementability in dual Fréchet spaces and injectivity. *Studia Math.* **102** (1992), *no.* 3, 257–267. (José Bonet) **93d:46061** 46E40 (46A04)

Drey, K.-D. (*with* Burkhardt, S.) Massive parallel computers and their application in simulation. *Computational systems analysis* 1992 (*Berlin*, 1992), 299–306, *Elsevier, Amsterdam*, 1992. (*see* **93e:00021**) 65Y05

Dreyer, Thomas Nonlinear ILU-decomposition as smoother in multigrid methods. *Parallel algorithms for partial differential equations* (*Kiel*, 1990), 47–57, *Notes Numer. Fluid Mech.*, 31, *Vieweg, Braunschweig*, 1991. (Summary) **93a:65171** 65N55 (65H10)

Dreyfus, Hubert L. (*with* Dreyfus, Stuart E.) Towards a reconciliation of phenomenology and AI. *The foundations of artificial intelligence*, 396–410, *Cambridge Univ. Press, Cambridge*, 1990. (*see* **93b:68073**) 68T01

Dreyfus, Stuart E. (*with* Dreyfus, Hubert L.) Towards a reconciliation of phenomenology and AI. *The foundations of artificial intelligence*, 396–410, *Cambridge Univ. Press, Cambridge*, 1990. (*see* **93b:68073**) 68T01

Drèze, Jacques H. ★ Essays on economic decisions under uncertainty. *Cambridge University Press, Cambridge*, 1990. xxviii+424 *pp. ISBN* 0-521-38697-7 (Editors) **93b:90005** 90–02 (90A05, 90A60)

Drezner, Zvi A note on the Weber location problem. (English summary) Locational decisions (Fullerton, CA, 1990). *Ann. Oper. Res.* **40** (1992), *no.* 1-4, 153–161 (1993). (Summary) **93m:90044** 90B80 (90C27)

— (*with* Simchi-Levi, David) Asymptotic behavior of the Weber location problem on the plane. (English summary) Locational decisions (Fullerton, CA, 1990). *Ann. Oper. Res.* **40** (1992), *no.* 1-4, 163–172 (1993). (Summary) **93m:90045** 90B80 (90C27)

— *see also* **Locational decisions, 93k:90005**

Drgas-Burchardt, Ewa (*with* Borowiecki, Mieczysław) Classes of chromatically unique graphs. (English summary) Graph theory and combinatorics (Marseille-Luminy, 1990). *Discrete Math.* **111** (1993), *no.* 1-3, 71–75. (Summary) **93j:05054** 05C15

Driebe, Dean J. (*with* Hasegawa, Hiroshi H.) Transport as a dynamical property of a simple map. (English summary) *Phys. Lett. A* **168** (1992), *no.* 1, 18–24. (Summary) **93d:58096** 58F13 (82C70)

van Driel, Peter On a new hierarchy associated with the $W_3^{(2)}$ conformal algebra. *Phys. Lett. B* **274** (1992), *no.* 2, 179–185. (Summary) **93i:58072** 58F07 (17B67, 81R10)

— (*with* Bais, F. Alexander; de Wild Propitius, Mark) Quantum symmetries in discrete gauge theories. *Phys. Lett. B* **280** (1992), *no.* 1-2, 63–70. (Summary) **93b:81153** 81T13

van den Dries, Lou Analytic Ax-Kochen-Ersov theorems. *Proceedings of the International Conference on Algebra, Part* 3 (*Novosibirsk*, 1989), 379–398, *Contemp. Math.*, 131, *Part* 3, *Amer. Math. Soc., Providence, RI*, 1992. (M. Yasuhara) **93i:03041** 03C10 (03C60, 12L12, 13J15, 13L05)

— (*with* Holly, Jan) Quantifier elimination for modules with scalar variables. *Ann. Pure Appl. Logic* **57** (1992), *no.* 2, 161–179. (Carlo Toffalori) **93e:03045** 03C10 (03C60, 03D15, 13L05, 68Q25)

van den Driessche, P. (*with* Busenberg, Stavros N.) Nonexistence of periodic solutions for a class of epidemiological models. (English summary) *Differential equations models in biology, epidemiology and ecology* (*Claremont, CA*, 1990), 70–79, *Lecture Notes in Biomath.*, 92, *Springer, Berlin*, 1991. (Summary) **93h:92032** 92D30 (34C25)

— (*with* Lin, Xiao Dong) A threshold result for an epidemiological model. *J. Math. Biol.* **30** (1992), *no.* 6, 647–654. (Summary) **93d:92014** 92D30

— (*with* Drew, John; Johnson, Charles Royal) Strong forms of nonsingularity. Directions in matrix theory (Auburn, AL, 1990). *Linear Algebra Appl.* **162/164** (1992), 187–204. (Peter M. Gibson) **93c:15002** 15A03 (15A09)

— (*with* Maybee, John S.; Olesky, D. D.; Tsatsomeros, Michael) Combinatorial eigenvalues of matrices. (English summary) *Linear Algebra Appl.* **175** (1992), 213–224. (Mihail Voicu) **93h:15008** 15A18

Drigo Filho, Elso Supersymmetric solution for two-dimensional Schrödinger equation. (English summary) *Modern Phys. Lett. A* **8** (1993), *no.* 1, 63–68. (Summary) **93i:81043** 81Q60

Drinfel'd, V. G. On the structure of quasitriangular quasi-Hopf algebras. (Russian) *Funktsional. Anal. i Prilozhen.* **26** (1992), *no.* 1, 78–80; *translation in Functional Anal. Appl.* **26** (1992), *no.* 1, 63–65. (J. Stasheff) **93i:16052** 16W30 (17B37)

— *see also* **Manin, Yu. I., 93c:01029** *and* **Schmid, Rudolf, 93i:01023**

saadi Drissi, K. *see* **Saadi Drissi, K.**

Drits, V. V. Methods for constructing conservative difference schemes for nonlinear quasi-optic problems. (Russian) *Differentsial'nye Uravneniya i Primenen. No.* 46 (1991), 63–71. (Summary) **93b:65124** 65M06 (78A99)

— Numerical methods for investigating the effects of self-action of ultrashort light pulses in resonant media. (Russian. English summary) *Vestsi Akad. Navuk BSSR Ser. Fiz.-Mat. Navuk* **1991,** *no.* 6, 75–80, 126. (Summary) **93b:78001** 78–08 (78A55)

— Conservative difference schemes in problems of nonlinear optics. II. (Russian. Russian summary) *Differentsial'nye Uravneniya* **28** (1992), *no.* 7, 1211–1218, 1286; *translation in Differential Equations* **28** (1992), *no.* 7, 973–980 (1993). (Summary) **93j:65134** 65M06 (78A60)

Dritschel, David G. (*with* Legras, Bernard) The elliptical model of two-dimensional vortex dynamics. I. The basic state. *Nonlinear world, Vol.* 1 (*Kiev*, 1989), 444–459, *World Sci. Publishing, River Edge, NJ*, 1990. (*see* **93b:00012**) 76C05

— (*with* Legras, Bernard) The elliptical model of two-dimensional vortex dynamics. II. Disturbance equations. *Nonlinear world, Vol.* 1 (*Kiev*, 1989), 460–469, *World Sci. Publishing, River Edge, NJ*, 1990. (*see* **93b:00012**) 76C05

— (*with* Legras, Bernard) A comparison of the contour surgery and pseudo-spectral methods. (English summary) *J. Comput. Phys.* **104** (1993), *no.* 2, 287–302. (Summary) **93i:76069** 76M25 (76C05)

— A fast contour dynamics method for many-vortex calculations in two-dimensional flows. (English summary) *Phys. Fluids A* **5** (1993), *no.* 1, 173–186. (Oscar F. Orellana) **93k:76084** 76M25 (76C05, 76D99)

— Vortex properties of two-dimensional turbulence. (English summary) *Phys. Fluids A* **5** (1993), *no.* 4, 984–997. (Summary) **93k:76067** 76F99 (76C05, 76M25)

— (*with* Nycander, J.; Sutyrin, G. G.) The dynamics of long frontal waves in the shallow-water equations. (English summary) *Phys. Fluids A* **5** (1993), *no.* 5, 1089–1091. (Summary) **93k:76120** 76U05 (76C99, 86A05)

Dritschel, Michael A. (*with* Rovnyak, James) Julia operators and complementation in Krein spaces. *Indiana Univ. Math. J.* **40** (1991), *no.* 3, 885–901. (J. Bognár) **93b:46042** 46C20 (46E22, 47B50)

Driver, Bruce K. (*with* Röckner, Michael) Construction of diffusions on path and loop spaces of compact Riemannian manifolds. (English and French summaries) *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 5, 603–608. (Seth Stafford) **93f:58246** 58G32 (60J60)

Driver, K. A. (*with* Lubinsky, D. S.; Petruska, György; Sarnak, Peter C.) Irregular distribution of $\{n\beta\}$, $n = 1, 2, 3\cdots$, quadrature of singular integrands, and curious basic hypergeometric series. *Indag. Math. (N.S.)* **2** (1991), *no.* 4, 469–481. (Mizan Rahman) **93b:33016** 33D15 (41A10)

— nth root asymptotics for extremal errors associated with slowly decreasing weights. *Quaestiones Math.* **14** (1991), *no.* 3, 337–354. (Summary) **93e:41043** 41A60 (30E10, 42C05)

Drmota, Michael (*with* Baron, Gerd) Die Komponentenverteilung von gesättigten Teilgraphen in Baumfamilien. [The component distribution of saturated subgraphs in families of trees] *Séminaire Lotharingien de Combinatoire (Salzburg, 1990)*, 63–65, *Publ. Inst. Rech. Math. Av.*, 462, *Univ. Louis Pasteur, Strasbourg*, 1991. (*see* **93f:00018**) 05C05

— Kerne und Grundyfunktionen auf Bäumen. [Kernels and Grundy functions on trees] *Séminaire Lotharingien de Combinatoire (Thurnau, 1991)*, 13–16, *Publ. Inst. Rech. Math. Av.*, 476, *Univ. Louis Pasteur, Strasbourg*, 1992. (*see* **93g:00029**) 05C05

— (*with* Baron, Gerd) Distribution properties of induced subgraphs of trees. (English summary) *Ars Combin.* **35** (1993), 193–213. (Summary) **93m:05093** 05C30 (05C05)

— (*with* Schmid, Ulrich) Exponential limiting distributions in queueing systems with deadlines. (English summary) *SIAM J. Appl. Math.* **53** (1993), *no.* 1, 301–318. (Summary) **93m:60182** 60K25 (90B22)

Drnovšek, Roman Spectral inequalities for compact integral operators on Banach function spaces. (English summary) *Math. Proc. Cambridge Philos. Soc.* **112** (1992), *no.* 3, 589–598. (Luboš Pick) **93h:47038** 47B38 (47G10)

Drobný, Gabriel (*with* Jex, Igor) SU(1, 1) and SU(2) squeezing in trilinear optical processes. *J. Modern Opt.* **39** (1992), *no.* 5, 1043–1053. (Summary) **93b:81319** 81V80 (81R30)

Drobot, Adam (*with* Lottati, Itzhak; Eidelman, Shmuel) Solution of Euler's equations on adaptive grids using a fast unstructured grid second order Godunov solver (FUGGS). (English summary) *Advances in the free-Lagrange method (Moran, WY, 1990)*, 37–46, *Lecture Notes in Phys.*, 395, *Springer, Berlin*, 1991. (*see* **93g:76001**) 76M20 (76N15)

Drobotenko, V. S. (*with* Gudivok, P. M.; Vashchuk, F. G.) Chernikov's p-groups and integral p-adic representations of finite groups. (Russian. Russian and Ukrainian summaries) *Ukraïn. Mat. Zh.* **44** (1992), *no.* 6, 742–753; *translation in Ukrainian Math. J.* **44** (1992), *no.* 6, 668–678 (1993). (S. M. Vovsi) **93j:20063** 20E22 (20C11)

Drobotskaya, I. S. (*with* Verbitskaya, L. V.; Suyarov, U. S.) Weakly perturbed integrable dynamical systems and Bäcklund-type transformations. (Russian) *Akad. Nauk Ukrainy Inst. Mat. Preprint* **1992**, *no.* 6, 19–23. (Vladimir Mikhalev) **93i:58138** 58F37 (58F30)

Drobotukhina, Yu. V. Classification of projective Montesinos links. (Russian) *Algebra i Analiz* **3** (1991), *no.* 1, 118–130; *translation in St. Petersburg Math. J.* **3** (1992), *no.* 1, 97–107. (Józef H. Przytycki) **93c:57004** 57M25

— Classification of links in $\mathbf{RP}^3$ with a small number of crossing points. (Russian. English summary) *Zap. Nauchn. Sem. Leningrad. Otdel. Mat. Inst. Steklov. (LOMI)* **193** (1991), *Geom. i Topol.* 1, 39–63, 161. (Jonathan A. Hillman) **93b:57006** 57M25

Drobyshevich, V. I. (*with* Laevskiĭ, Yu. M.) An algorithm of solution of parabolic equations with different time-steps in subdomains. *Russian J. Numer. Anal. Math. Modelling* **7** (1992), *no.* 3, 205–220. (V. Soundalgekar) **93e:65113** 65M12 (80A25, 92B05)

Drogovoz, A. M. Design of systems in the operation of which resonance energy is used. (Russian. Russian summary) *Kibernet. i Vychisl. Tekhn. No.* 91 (1991), 56–60. 93B50

Droms, Carl (*with* Servatius, Brigitte; Servatius, Herman) Groups assembled from free and direct products. (English summary) Algebraic graph theory (Leibnitz, 1989). *Discrete Math.* **109** (1992), *no.* 1-3, 69–75. (Stephen G. Brick) **93k:20044** 20E07

— (*with* Servatius, Herman) The Cayley graphs of Coxeter and Artin groups. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 3, 693–698. (François Digne) **93i:20046** 20F55 (05C25, 20F36)

— (*with* Lewin, Jacques; Servatius, Herman) The length of elements in free solvable groups. *Proc. Amer. Math. Soc.* **119** (1993), *no.* 1, 27–33. (D. F. Holt) **93k:20051** 20F06 (20F14)

Dror, Moshe Openshop scheduling with machine dependent processing times. (English summary) *Discrete Appl. Math.* **39** (1992), *no.* 3, 197–205. (Summary) **93h:90047** 90B35 (68Q25)

Dror Farjoun, Emmanuel Homotopy localization and v_1-periodic spaces. *Algebraic topology (San Feliu de Guíxols, 1990)*, 104–113, *Lecture Notes in Math.*, 1509, *Springer, Berlin*, 1992. (Georg Peschke) **93k:55013** 55P60 (55P10, 55P65)

Droste, Manfred (*with* Göbel, Rüdiger) Universal information systems. *Internat. J. Found. Comput. Sci.* **1** (1990), *no.* 4, 413–424. (John Shawe-Taylor) **93a:68078** 68Q55

— (*with* Göbel, Rüdiger) A categorical theorem on universal objects and its application in abelian group theory and computer science. *Proceedings of the International Conference on Algebra, Part 3 (Novosibirsk, 1989)*, 49–74, *Contemp. Math.*, 131, *Part 3*, *Amer. Math. Soc., Providence, RI*, 1992. (H.-J. Hoehnke) **93g:18003** 18A15 (20F50, 20K12, 68Q55)

— Finite axiomatizations for universal domains. *J. Logic Comput.* **2** (1992), *no.* 2, 119–131. (Philip J. Scott) **93g:68074** 68Q55 (03B70, 18B20)

Drouffe, Jean-Michel (*with* Itzykson, Claude) ★ Statistical field theory. Vol. 1. From Brownian motion to renormalization and lattice gauge theory. Cambridge Monographs on Mathematical Physics. *Cambridge University Press, Cambridge*, 1989. xvi+403+Ivii *pp. ISBN* 0-521-34058-6; 0-521-40805-9 (C. A. Hurst) **93k:81003a** 81–02 (81T17, 81T25, 82–02)

— (*with* Itzykson, Claude) ★ Statistical field theory. Vol. 2. Strong coupling, Monte Carlo methods, conformal field theory, and random systems. Cambridge Monographs on Mathematical Physics. *Cambridge University Press, Cambridge*, 1989. *pp.* i–xvi, 405–810 *and* Ii–Ivii. *ISBN* 0-521-37012-4; 0-521-40806-7 (C. A. Hurst) **93k:81003b** 81–02 (81T40, 81T80, 82–02, 82B41, 82B80)

Droz, Serge (*with* Heusler, Markus; Straumann, Norbert) Linear stability of Einstein-Skyrme black holes. *Phys. Lett. B* **285** (1992), *no.* 1-2, 21–26. 83C57

Drozd, V. V. Approximation of uniform almost-periodic functions by Fourier sums. (Russian. Russian summary) *Studies in the theory of the approximation of functions (Russian)*, 32–37, *Akad. Nauk Ukrain. SSR, Inst. Mat., Kiev*, 1991. (Aleš Založnik) **93k:42003** 42A10 (42A75)

Drozd, Yu. A. (*with* Ovsienko, S. A.; Futorny, V. M.) On Gel'fand-Zetlin modules. Proceedings of the Winter School on Geometry and Physics (Srní, 1990). *Rend. Circ. Mat. Palermo* (2) *Suppl. No.* 26 (1991), 143–147. (F. W. Lemire) **93b:17021** 17B10

— (*with* Ovsienko, S. A.; Futorny, V. M.) Gel'fand-Zetlin modules over Lie algebra SL(3). *Proceedings of the International Conference on Algebra, Part 2 (Novosibirsk, 1989)*, 23–29, *Contemp. Math.*, 131, *Part 2*, *Amer. Math. Soc., Providence, RI*, 1992. (*see* **93b:00030**) 17B10

— Representations of bocses and algebras. *Proceedings of the International Conference on Algebra, Part 2 (Novosibirsk, 1989)*, 301–316, *Contemp. Math.*, 131, *Part 2*, *Amer. Math. Soc., Providence, RI*, 1992. (*see* **93b:00030**) 16G60 (16G20, 16G70)

— (*with* Greuel, Gert-Martin) Tame-wild dichotomy for Cohen-Macaulay modules. *Math. Ann.* **294** (1992), *no.* 3, 387–394. (Wolfgang Rump) **93h:16023** 16G60 (16G50)

— (*with* Izyumchenko, L. V.) Representations of $\mathfrak{D}$-forms. (Russian. Russian and Ukrainian summaries) *Ukraïn. Mat. Zh.* **44** (1992), *no.* 4, 572–574; *translation in Ukrainian Math. J.* **44** (1992), *no.* 4, 513–515. (Zygmunt Pogorzały) **93h:16021** 16G30 (16S50)

Drozdov, A. D. (*with* Kolmanovskiĭ, V. B.) The stability of viscoelastic rods under a random longitudinal load. (Russian) *Prikl. Mekh. Tekhn. Fiz.* **1991**, *no.* 5, 124–131; *translation in J. Appl. Mech. Tech. Phys.* **32** (1991), *no.* 5, 772–779 (1992). (From the text) **93e:73019** 73H10 (73F15, 73K05, 73K35)

— Stability of viscoelastic beams under the action of follower forces. (English summary) *Dynamic Systems Appl.* **1** (1992), *no.* 4, 453–466. (Summary) **93j:73044** 73K05 (73F15, 73H10)

— (*with* Kolmanovskiĭ, V. B.) Stochastic stability of viscoelastic bars. *Stochastic Anal. Appl.* **10** (1992), *no.* 3, 265–276. (From the introduction) **93a:73032** 73F15 (73H05, 73K05)

Drozdov, V. V. (*with* Galkin, S. A.; Martynov, A. A.) A variational approach to constructing of approximate models for MHD equilibrium and stability. *Akad. Nauk SSSR Inst. Prikl. Mat. Preprint* **1991**, *no.* 52, 34 *pp.* (Summary) **93c:76084** 76W05 (76E25, 76M30)

Drożdż, S. (*with* Caurier, E.; Okołowicz, J.; Płoszajczak, M.) Geometrical quantization in dynamical variational approach. *Acta Phys. Polon. B* **22** (1991), *no.* 4, 389–396. (Ivailo M. Mladenov) **93a:81089** 81S10 (81–04, 81Q20, 81R30)

Drozhzhinov, Yu. N. (*with* Zav'yalov, B. I.) Multidimensional Tauberian comparison theorems for holomorphic functions of a bounded argument. (Russian) *Izv. Akad. Nauk SSSR Ser. Mat.* **55** (1991), *no.* 6, 1139–1155; *translation in Math. USSR-Izv.* **39** (1992), *no.* 3, 1097–1112. (Valentin Napalkov) **93c:46068** 46F10 (32A10)

Drucker, Daniel S. Reflection properties of curves and surfaces. *Math. Mag.* **65** (1992), *no.* 3, 147–157. (Jerzy Kaczmarek) **93h:51018** 51M04 (51N20)

Drucker, Thomas (*with* Anellis, Irving H.) In memoriam—William C. Kneale. *Modern Logic* **3** (1993), *no.* 2, 158–161. (Editors) **93m:01050** 01A70 (03–03)

Druetta, María J. Minimal orbits at infinity in homogeneous spaces of nonpositive curvature. (English summary) *Pacific J. Math.* **156** (1992), *no.* 2, 287–296. (Midori Goto) **93i:53048** 53C30 (53C35)

Drumm, Todd A. Examples of nonproper affine actions. *Michigan Math. J.* **39** (1992), *no.* 3, 435–442. (Michel Nguiffo B. Boyom) **93j:57022** 57S20 (57S30)

Drummond, I. T. Multiplicative stochastic differential equations with noise-induced transitions. *J. Phys. A* **25** (1992), *no.* 8, 2273–2296. (Andrzej Fuliński) **93d:82061** 82C31 (34K50, 35R60, 60H10)

Drummond, P. D. (*with* Fernée, M.) Dynamical renormalization of the Jaynes-Cummings model. (English summary) *Quantum Opt.* **5** (1993), *no.* 1, 1–8. (Summary) **93i:81313** 81V80

Drunk, W. (*with* Fuchs, D.; Zirnbauer, Martin R.) Migdal-Kadanoff renormalization of a nonlinear supervector model with hyperbolic symmetry. *Ann. Physik* (8) **1** (1992), *no.* 2, 134–150. (H. S. Green) **93g:82027** 82B21 (82–04, 82B28)

Drury, S. W. A counterexample to a question of Merikoski and Virtanen on the compounds of unitary matrices. *Linear Algebra Appl.* **168** (1992), 251–257. (G. N. de Oliveira) **93a:15009** 15A15 (15A18)

— On symmetric functions of the eigenvalues of the sum of two Hermitian matrices. (English summary) *Linear Algebra Appl.* **176** (1992), 211–222. (F. Szidarovszky) **93i:15011** 15A18

— (*with* Cload, B.) On the determinantal conjecture of Marcus and de Oliveira. (English summary) *Linear Algebra Appl.* **177** (1992), 105–109. (Natalia Bebiano) **93k:15008** 15A15 (15A60)

Druskin, Vladimir (*with* Knizhnerman, L. A.) The Lanczos optimization of a splitting-up method to solve homogeneous evolutionary equations. (English summary) *J. Comput. Appl. Math.* **42** (1992), *no.* 2, 221–231. (Summary) **93g:65089** 65L05

Druzhinin, I. Yu. Formulation of problems on the stability of shock waves in magnetohydrodynamics. (Russian. Russian summary) *Some applications of functional analysis to problems of mathematical physics (Russian)*, 72–81, 144, *Akad. Nauk SSSR Sibirsk. Otdel., Inst. Mat., Novosibirsk*, 1988. (From the text) **93d:76074** 76W05 (35Q35, 76E25, 76L05)

— Formulations of problems on the stability of discontinuities in magnetohydrodynamics. (Russian) *Embedding theorems and their applications to problems in mathematical physics (Russian)*, 100–112, 141, *Akad. Nauk SSSR Sibirsk. Otdel., Inst. Mat., Novosibirsk*, 1989. (Summary) **93j:76067** 76W05 (35Q99, 76E99, 76L05)

— (*with* Blokhin, A. M.) On the stability of a fast magnetohydrodynamic shock wave for a weak magnetic field. (Russian) *Partial differential equations (Russian)*, 15–32, 142, *Akad. Nauk SSSR Sibirsk. Otdel., Inst. Mat., Novosibirsk*, 1989. (Summary) **93j:76066** 76W05 (35Q99, 76E99, 76L05)

— (*with* Blokhin, A. M.; Mishchenko, E. V.) Theory and computation of third order aberrations for cathode systems. I. (English summary) Siberian Advances in Mathematics. *Siberian Adv. Math.* **2** (1992), *no.* 3, 1–51. (Kotik K. Lee) **93m:78009** 78A35

Druzhinin, O. A. (*with* Khomenko, G. A.) Nonlinear hydrodynamic alpha-effect and inverse energy cascade in turbulence of compressible fluid. *Nonlinear world, Vol. 1 (Kiev, 1989)*, 470–489, *World Sci. Publishing, River Edge, NJ*, 1990. (*see* **93b:00012**) 76F99 (76E99)

— (*with* Khomenko, G. A.; Moiseev, S. S.) Turbulent forcing and large-scale instability of compressible flows. (English summary) *Nonlinear dynamics of structures (Vladimir Maiakovskiĭ, 1990)*, 369–386, *World Sci. Publishing, River Edge, NJ*, 1991. (*see* **93g:76004**) 76F05 (76N10)

Druzhinina, A. L. (*with* Gulyaev, V. I.; Koshkin, V. L.) A universal sequence of period-doubling bifurcations for a conservative oscillator with power nonlinearities. (Russian) *Mat. Fiz. Nelinein. Mekh. No.* 15(49) (1991), 49–54. (Ji Bin Li) **93a:58121** 58F13 (34C23, 58F14, 70K50)

Drużkowski, Ludwik M. The Jacobian conjecture in case of rank or corank less than three. (English summary) *J. Pure Appl. Algebra* **85** (1993), *no.* 3, 233–244. (Arno van den Essen) **93m:14011** 14E09

Dryanov, Dimiter P. (*with* Dinh Dung) The minimal number of sample values for recovery of nonbandlimited functions. *Atti Sem. Mat. Fis. Univ. Modena* **39** (1991), *no.* 2, 423–431. (Paşc Gâvruţa) **93c:41035** 41A35 (94A12)

— Optimal quadrature formulae on the real line. *J. Math. Anal. Appl.* **165** (1992), *no.* 2, 556–564. (Hans Strauss) **93g:41025** 41A55 (65D32)

Dryden, I. L. (*with* Mardia, Kanti V.) Theoretical and distributional aspects of shape analysis. (English summary) *Probability measures on groups, X (Oberwolfach, 1990)*,

95–116, *Plenum, New York*, 1991. (T. Keith Carne) **93k:60029** 60D05
— (*with* Mardia, Kanti V.) Size and shape analysis of landmark data. *Biometrika* **79** (1992), *no.* 1, 57–68. (Summary) **93c:62093** 62H11
Drygas, Hilmar (*with* Zymślony, Roman) Jordan algebras and Bayesian quadratic estimation of variance components. *Linear Algebra Appl.* **168** (1992), 259–275. (R. Kala) **93c:15003** 15A06 (15A09, 62F10, 62F15)
— Minimax linear estimation in a convex linear model—a paradoxon in decision theory? *Statist. Decisions* **10** (1992), *no.* 1-2, 63–66. (Dipak K. Dey) **93g:62017** 62C20 (62J05)
Dryja, Maksymilian (*with* Widlund, Olof B.) Multilevel additive methods for elliptic finite element problems. *Parallel algorithms for partial differential equations* (*Kiel*, 1990), 58–69, *Notes Numer. Fluid Mech.*, 31, *Vieweg, Braunschweig*, 1991. (Summary) **93b:65188** 65N55 (65N30)
— (*with* Widlund, Olof B.) Additive Schwarz methods for elliptic finite element problems in three dimensions. (English summary) *Fifth International Symposium on Domain Decomposition Methods for Partial Differential Equations* (*Norfolk, VA*, 1991), 3–18, *SIAM, Philadelphia, PA*, 1992. (Li Shan Kang) **93j:65201** 65N55 (65N30)
Drysdale, R. L. Scot (*with* Dickerson, Matthew T.; Sack, Jörg-Rüdiger) Simple algorithms for enumerating interpoint distances and finding k nearest neighbors. (English summary) *Internat. J. Comput. Geom. Appl.* **2** (1992), *no.* 3, 221–239. (Summary) **93j:68212** 68U05 (52B55, 68Q25)
Dryuma, V. S. On geometry of differential equation of the second order and its applications. *Solitons and applications* (*Dubna*, 1989), 94–100, *World Sci. Publishing, River Edge, NJ*, 1990. (Summary) **93a:34013** 34A26 (34A34, 53A55)
— A three-dimensional completely integrable system of nonlinear equations and its applications. (Russian) *Mat. Issled. No.* 124, *Funktsional. Metod. Teorii Differ. Uravn.* (1992), 56–68, 143. (Summary) **93d:35158** 35Q58 (53A07, 58F07, 83C99)
Dshalalow, Jewgeni H. On single-server closed queues with priorities and state dependent parameters. *Queueing Systems Theory Appl.* **8** (1991), *no.* 3, 237–253. (Charles Tier) **93a:60144** 60K25 (90B22)
— (*with* Russell, Gary) On a single-server queue with fixed accumulation level, state dependent service, and semi-Markov modulated input flow. *Internat. J. Math. Math. Sci.* **15** (1992), *no.* 3, 593–600. (Summary) **93c:60143** 60K25 (90B22)
— (*with* Abolnikov, Lev) A first passage problem and its applications to the analysis of a class of stochastic models. *J. Appl. Math. Stochastic Anal.* **5** (1992), *no.* 1, 83–97. (S. Kalpakam) **93d:60146** 60K10 (60K15, 60K25)
— On a first passage problem in general queueing systems with multiple vacations. (English summary) *J. Appl. Math. Stochastic Anal.* **5** (1992), *no.* 2, 177–192. (Summary) **93k:60225** 60K25
— (*with* Abolnikov, Lev) On a multilevel controlled bulk queueing system $M^X/G^{r,R}/1$. (English summary) *J. Appl. Math. Stochastic Anal.* **5** (1992), *no.* 3, 237–260. (B. R. K. Kashyap) **93m:60177** 60K25 (90B22)
— (*with* Abolnikov, Lev; Dukhovny, Alexander) On stochastic processes in a multilevel control bulk queueing system. *Stochastic Anal. Appl.* **10** (1992), *no.* 2, 155–179. (B. R. K. Kashyap) **93b:60206** 60K25 (90B22)
— (*with* Abolnikov, Lev) Semi-regenerative analysis of controlled bulk queueing systems with a bilevel service delay discipline and some ergodic theorems. (English summary) *Comput. Math. Appl.* **25** (1993), *no.* 3, 107–116. (Summary) **93j:60139** 60K25
— Single-server queues with controlled bulk service, random accumulation level, and modulated input. (English summary) *Stochastic Anal. Appl.* **11** (1993), *no.* 1, 29–41. (L. M. Abol′nikov) **93m:60183** 60K25 (90B22)
D'Souza, J. C. (*with* Biggins, J. D.) The supercritical Galton-Watson process in varying environments. *Stochastic Process. Appl.* **42** (1992), *no.* 1, 39–47. (Tetsuo Nakagawa) **93g:60183** 60J80
D'Souza, Richard (*with* Mishra, Adya Prasad) Quasiprobability distributions of negative binomial states. *Phys. Rev. A* (3) **45** (1992), *no.* 9, 6925–6927. (Summary) **93b:81102** 81R30 (81V80)
nguyễn hữ'u Du' *see* **Nguyễn Hữ'u Du'**
Du, B. *see* **Du, Bei Liang**
Du, Bau-Sen *see* **Tu, Pao Shêng**
Du, Bei Liang More mutually orthogonal diagonal Latin squares. (English summary) *Australas. J. Combin.* **6** (1992), 3–6. (Summary) **93h:05024** 05B15
— Four pairwise orthogonal diagonal Latin squares. (English summary) *Utilitas Math.* **42** (1992), 247–254. (Summary) **93j:05019** 05B15
Du, Cheng Lin (*with* Piao, Yong Jun; Yu, Sheng Lei) A fixed-point theorem for nonexpansive mappings of quasi-(16) type. (Chinese. English and Chinese summaries) *Natur. Sci. J. Harbin Normal Univ.* **7** (1991), *no.* 4, 9–12. 47H10 (54H25)
Du, Ding Zhu (*with* Hwang, F. K.) An approach for proving lower bounds: solution of Gilbert-Pollak's conjecture on Steiner ratio. 31*st Annual Symposium on Foundations of Computer Science, Vol. I, II* (*St. Louis, MO*, 1990), 76–85, *IEEE Comput. Soc. Press, Los Alamitos, CA*, 1990. (Summary) **93a:90075** 90C35 (05C05, 68R10)
— Why is an intractable problem intractable? *Advances in science of China. Mathematics, Vol.* 3, 29–44, *Science Press, Beijing*, 1990. (William Gasarch) **93f:68033** 68Q15 (03D15)
— (*with* Hsu, D. Frank; Hwang, F. K.; Zhang, Xian Mo) The Hamiltonian property of generalized de Bruijn digraphs. *J. Combin. Theory Ser. B* **52** (1991), *no.* 1, 1–8. (Arthur M. Hobbs) **93b:05105** 05C45
— (*with* Hsu, D. Frank; Peck, G. W.) Connectivity of consecutive-d digraphs. (English summary) *Discrete Appl. Math.* **37/38** (1992), 169–177. (L. W. Beineke) **93g:05089** 05C40 (05C38, 68R10, 94C15)
— (*with* Jiang, Tao[1]; Li, Ming[1]) A note on shortest superstrings with flipping. (English summary) *Inform. Process. Lett.* **44** (1992), *no.* 4, 195–199. (Summary) **93j:68225** 68U15 (68R15, 92D20)
— (*with* Ko, Ker-I) A note on best fractions of a computable real number. (English summary) *J. Complexity* **8** (1992), *no.* 3, 216–229. (Zhuo Jun Liu) **93j:68071** 68Q25 (03D15)
— (*with* Liu, Zi Cheng; Hu, Xiao Dong; Chen, Bo) A note on Rosen's algorithm. (Chinese. English summary) *J. Systems Sci. Math. Sci.* **12** (1992), *no.* 1, 94–96. 90C08
— (*with* Zhang, Yanjun) On better heuristics for Steiner minimum trees. (English summary) *Math. Programming* **57** (1992), *no.* 2, *Ser. B*, 193–202. (Lukas P. P. P. van Ginneken) **93i:90101** 90C35 (05C05, 90B10)
— (*with* Hwang, F. K.) Reducing the Steiner problem in a normed space. (English summary) *SIAM J. Comput.* **21** (1992), *no.* 6, 1001–1007. (Gerard Sierksma) **93j:52018** 52B12 (90C27)
Du, Dong Lei A graphical method for a class of linear fractional programs. (Chinese. English and Chinese summaries) *Qufu Shifan Daxue Xuebao Ziran Kexue Ban* **18** (1992), *no.* 4, 45–48. (Tian Xiong Han) **93m:90087** 90C32
Du, Hong Ke Perturbations of spectrum of hyperbolic operators. *Ann. Differential Equations* **7** (1991), *no.* 4, 402–408. (Laurent Véron) **93f:47021** 47A99 (34C35, 34Gxx, 47N20)
— (*with* Ji, Guo Xing) Williamson's theorem on Hilbert space. *Ann. Differential Equations* **8** (1992), *no.* 1, 13–17. (Matjaž Omladič) **93k:47028** 47A60
Du, Jianzhong (*with* Leung, Joseph Y.-T.; Wong, Chin Siong) Minimizing the number of late jobs with release time constraint. *J. Combin. Math. Combin. Comput.* **11** (1992), 97–107. (Summary) **93a:90029** 90B35
— (*with* Leung, Joseph Y.-T.) Minimizing mean flow time in two-machine open shops and flow shops. (English summary) *J. Algorithms* **14** (1993), *no.* 1, 24–44. (Summary) **93i:90050** 90B35 (68Q25)
— (*with* Leung, Joseph Y.-T.) Minimizing mean flow time with release time and deadline constraints. (English summary) *J. Algorithms* **14** (1993), *no.* 1, 45–68. 90B35 (68M20)
Du, Jie (*with* Parshall, Brian J.; Wang, Jian Pan) Two-parameter quantum linear groups and the hyperbolic invariance of q-Schur algebras. *J. London Math. Soc.* (2) **44** (1991), *no.* 3, 420–436. (Toshiyuki Tanisaki) **93d:20084** 20G15 (16W30)
— The modular representation theory of q-Schur algebras. II. *Math. Z.* **208** (1991), *no.* 4, 503–536. (Richard Dipper) **93e:20012** 20C20 (16E70, 20G40)
— Canonical bases for irreducible representations of quantum GL_n. *Bull. London Math. Soc.* **24** (1992), *no.* 4, 325–334. (H. H. Andersen) **93g:17023** 17B37 (20G30)
— Integral Schur algebras for GL_2. *Manuscripta Math.* **75** (1992), *no.* 4, 411–427. (Robert Bédard) **93g:20086** 20G05
Du, M. L. (*with* Xu, L. F.) Wave packets in a magnetic field. (English summary) *Comm. Theoret. Phys.* **17** (1992), *no.* 3, 257–262. (Summary) **93j:78008** 78A25 (35Q60)
Du, Min Wen (*with* Chang, S. C.) A model and a fast algorithm for multiple errors spelling correction. *Acta Inform.* **29** (1992), *no.* 3, 281–302. (Răzvan Andonie) **93f:68079** 68T10
Du, Ming Sheng (*with* Zhou, Yu Lin) Difference method for fully nonlinear pseudo-parabolic systems. *Numerical methods for partial differential equations* (*Tianjin*, 1991), 157–175, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93b:65006**) 65M06
Du, Nguyen Huu *see* **Nguyễn Hữ'u Du'**
Du, Qiang (*with* Chiu, Chichia; Li, Tien-Yien) Error estimates of the Markov finite approximation of the Frobenius-Perron operator. *Nonlinear Anal.* **19** (1992), *no.* 4, 291–308. (Wojciech Bartoszek) **93f:28014** 28D05 (47A35, 47A50, 47B38)
— (*with* Gunzburger, Max D.; Peterson, Janet S.) Analysis and approximation of the Ginzburg-Landau model of superconductivity. *SIAM Rev.* **34** (1992), *no.* 1, 54–81. (Tatiana Bilgildeyeva) **93g:82109** 82D55 (35Q55, 65P05)
— (*with* Gunzburger, Max D.; Peterson, Janet S.) Finite element approximation of a periodic Ginzburg-Landau model for type-II superconductors. (English summary) *Numer. Math.* **64** (1993), *no.* 1, 85–114. (B. Kellogg) **93j:65178** 65N30 (82D55)
Du, Qing Hua (*with* Yao, Zhen Han; Cen, Zhang Zhi) Eigenproblems by boundary element method using component mode synthesis. *Theory and applications of boundary element methods* (*Beijing*, 1991), 193–200, *Internat. Acad. Publ., Beijing*, 1991. (*see* **93b:65008**) 73V10 (65N38)
— (*with* Huo, Tong Ru; Yao, Zhen Han) Shape optimal design by boundary element method and recursive quadratic programming. *Theory and applications of boundary element methods* (*Beijing*, 1991), 399–406, *Internat. Acad. Publ., Beijing*, 1991. (*see* **93b:65008**) 73V10 (49Q10, 65K10, 65N38)
— *see also* **Theory and applications of boundary element methods**, **93b:65008**
Du, Qing Yan A characterization of 4-connected graphs without contractible edges. (Chinese summary) *Nei Mongol Daxue Xuebao Ziran Kexue* **23** (1992), *no.* 1, 49–58. (R. L. Hemminger) **93a:05104** 05C75 (05C40)
— Chromatic polynomials of triangulated graphs. (Chinese. English summary) *Nei Mongol Daxue Xuebao Ziran Kexue* **23** (1992), *no.* 2, 148–151. (Summary) **93a:05060** 05C15
Du, Rui Zhi *see* **Yushkevich, A. P.**, **(93i:01005)**
Du, Wen-Hui (*with* Schmitt, Francis J. M.) On the G^2 continuity of piecewise parametric surfaces. *Mathematical methods in computer aided geometric design, II* (*Biri*, 1991), 197–207, *Academic Press, Boston, MA*, 1992. (*see* **93d:65022**) 65D17
Du, X. C. (*with* Brella, A.; Longchamp, R.) Fast algorithm of Chandrasekhar type for ARMA model identification. (English summary) *Automatica J. IFAC* **28** (1992), *no.* 5, 927–934. 93B40 (93E10)
Du, Xi Yu (*with* Wang, Li Zhi; Xia, Fei) Nonessential singularities of the second kind and stability for multidimensional digital filters. (English summary) *Multidimens. Systems Signal Process.* **3** (1992), *no.* 4, 363–380. (Summary) **93d:93084** 93E11 (94A12)
Du, Xian Kun The centers of a radical ring. *Proceedings of the First China-Japan International Symposium on Ring Theory* (*Guilin*, 1991), 37–38, *Okayama Univ., Okayama*, 1992. (*see* **93k:16001**) 16N99
— The centers of a radical ring. *Canad. Math. Bull.* **35** (1992), *no.* 2, 174–179. (Stefan Veldsman) **93d:16023** 16N20 (17B60)
Du, Xian Neng (*with* Zhang, Ju Le) On fPP-rings. *Proceedings of the First China-Japan International Symposium on Ring Theory* (*Guilin*, 1991), 39–41, *Okayama Univ., Okayama*, 1992. (*see* **93k:16001**) 13F99
— (*with* Zhang, Ju Le) Left SF-rings whose complement left ideals are ideals. (English summary) *Acta Math. Vietnam.* **17** (1992), *no.* 1, 157–159. (Summary) **93j:16008** 16E50 (16D40, 16D60)
Du, Xiu Hua (*with* Shi, Song Jiao) A robustness optimization method for general systems. (Chinese. English and Chinese summaries) *J. Shanghai Jiaotong Univ.* **26** (1992), *no.* 3, 63–72. 93B36
Du, Xu Guang (*with* Yang, Guang Chong) Coupled fixed points of mixed monotone operators and their applications. (Chinese. English summary) *Sichuan Shifan Daxue Xuebao Ziran Kexue Ban* **14** (1991), *no.* 5, 20–26. (Shi Sheng Zhang) **93g:47075** 47H10 (47N20)
Du, Xue Tang (*with* Wang, Mu Qiu; Wang, Lian) On the decomposition problem of stability for Volterra integro-differential equations. *Chinese Sci. Bull.* **35** (1990), *no.* 18, 1497–1502. (Tian You Fan) **93m:45002** 45J05 (34K20, 45M10)

— (*with* Wang, Mu Qiu; Wang, Lian) On the decomposition problem of stability for Volterra integrodifferential equations. *Acta Math. Appl. Sinica (English Ser.)* **8** (1992), *no.* 1, 82–96. (S. N. Askhabov) **93g:45004** 45D05 (45M10)

Du, Yi Hong The structure of the solution set of a class of nonlinear eigenvalue problems. *J. Math. Anal. Appl.* **170** (1992), *no.* 2, 567–580. (Norman Dancer) **93m:47068** 47H15 (35J65, 47H12, 47N20)

ho dinh Duan *see* **Ho Dinh Duan**

Duan, Chan Lun (*with* Huang, Wen Ke) Generation of 2-edge-chromatic graphs $K_{22}(3,7)$ and $K_{27}(3,8)$ of increasing type. (Chinese. English summary) *Nei Mongol Daxue Xuebao Ziran Kexue* **23** (1992), *no.* 2, 157–162. (Summary) **93a:05093** 05C55

Duan, Guang Ren A simple algorithm for robust pole assignment in linear output feedback. *Control '91, Vol.* 1, 2 (*Edinburgh*, 1991), 682–686, *IEE Conf. Publ. Ser.*, 332, *IEE, London*, 1991. (*see* **93h:93007**) 93B55

— Design of control systems with poles located in a robust region. (Chinese. English summary) *Inform. and Control (Shenyang)* **20** (1991), *no.* 3, 39–42, 46. 93B55

— Sensitivity analysis of characteristic spectra of feedback systems. (Chinese. Chinese summary) *Acta Math. Sci. (Chinese)* **12** (1992), *no.* 3, 313–317. 93B60 (93C73)

— Solution to matrix equation $AV + BW = EVF$ and eigenstructure assignment for descriptor systems. *Automatica J. IFAC* **28** (1992), *no.* 3, 639–643. (Petko Petkov) **93e:93029** 93B40 (15A24, 93B55)

— (*with* Qiang, Wen Yi) Eigenstructure assignment of decentralized output feedback for linear systems. (Chinese. English and Chinese summaries) *Control Theory Appl.* **9** (1992), *no.* 5, 555–559. 93B55

— (*with* Feng, Ru Peng; Qiang, Wen Yi) A parametric approach to eigenstructure assignment for linear systems via dynamical compensators. (Chinese. English and Chinese summaries) *Control Theory Appl.* **9** (1992), *no.* 6, 652–654. 93B55

— (*with* Liu, Rui Zhi; Lü, Hai Bo) Eigenstructure assignment via state feedback for linear systems—a case with uncontrollable modes. (Chinese. English and Chinese summaries) *Heilongjiang Daxue Ziran Kexue Xuebao* **9** (1992), *no.* 3, 48–52. 93B55

— (*with* Hu, Wen Yuan) Decoupling control of linear systems via output feedback. (Chinese. English and Chinese summaries) *J. Harbin Inst. Tech.* **24** (1992), *no.* 5, 55–59. 93B52 (93C05)

— Robust eigenstructure assignment via dynamical compensators. (English summary) *Automatica J. IFAC* **29** (1993), *no.* 2, 469–474. 93B55

— Solutions of the equation $AV + BW = VF$ and their application to eigenstructure assignment in linear systems. (English summary) *IEEE Trans. Automat. Control* **38** (1993), *no.* 2, 276–280. (Summary) **93j:93059** 93B55 (93B40, 93C05)

Duan, Kui Chen A criterion for stability of discrete population models. (Chinese) *J. Math. Res. Exposition* **13** (1993), *no.* 1, 34. 92D25

Duan, Qi (*with* Li, Shai He) An error estimate for a class of bivariate splines. (Chinese. Chinese summary) *J. Math. (Wuhan)* **12** (1992), *no.* 1, 20–26. 65D07

Duan, Wen Ze (*with* Li, Yuan Shu) Extension and application of the regularizing method for singular control. (Chinese. English and Chinese summaries) *Control Theory Appl.* **9** (1992), *no.* 3, 288–291. 49K40

Duan, Xiao Dong (*with* Zhu, Wei Yong) *D*-optimal symmetric designs and an algorithm for mixture experiments and its application. (Chinese. English and Chinese summaries) *Gaoxiao Yingyong Shuxue Xuebao* **7** (1992), *no.* 4, 550–557. 62K05

Duan, Yan Zheng (*with* Chen, Shu Tao) Normal structure and weakly normal structure of Orlicz spaces. *Comment. Math. Univ. Carolin.* **32** (1991), *no.* 2, 219–225. (Mikhail Ostrovskii) **93c:46042** 46E30 (46B20)

Duan, Yi Shi (*with* Zhang, Sheng Li^2; Jiang, Li Cai) A new coordinate condition in general relativity. (English summary) *Gen. Relativity Gravitation* **24** (1992), *no.* 10, 1033–1045. (Ciprian Dariescu) **93g:83007** 83C05 (53B50, 83C15, 83C20)

— (*with* Zhang, Sheng Li^2) The quantum group $SU_q(2)$ and q-analogue of angular momenta in classical mechanics. (English summary) *J. Phys. A* **25** (1992), *no.* 19, 5135–5140. (Summary) **93j:81048** 81R50 (17B37)

Duan, Z. Y. Extensions of abelian by hyper-(cyclic or finite) groups. I. *Comm. Algebra* **20** (1992), *no.* 8, 2305–2321. (John S. Wilson) **93g:20048** 20E22 (20F19, 20F22)

— The structure of Noetherian modules over hyperfinite groups. *Math. Proc. Cambridge Philos. Soc.* **112** (1992), *no.* 1, 21–28. (B. Hartley) **93j:20070** 20F19 (20C07)

taborda Duarte, J. *see* **Taborda Duarte, J.**

Dube, K. K. (*with* Patel, B. N.) sT_D separation property. (English summary) *J. Inst. Math. Comput. Sci. Math. Ser.* **5** (1992), *no.* 3, 293–297. 54D10

Dube, Madhulika (*with* Srivastava, Virendra Kumar; Toutenburg, H.; Wijekoon, P.) Stein-rule estimator under inclusion of superfluous variables in linear regression models. *Comm. Statist. Theory Methods* **20** (1991), *no.* 7, 2009–2022. (Girdhar G. Agarwal) **93b:62095** 62J07

— (*with* Srivastava, Virendra Kumar) Properties of the ordinary least squares and Stein-rule predictions in linear regression models with proxy variables. (English summary) *Statist. Papers* **34** (1993), *no.* 1, 27–41. (Summary) **93m:62158** 62J05

Dubey, A. B. (*with* Singh, Ramji P.; Singh, Shambhoo Nath) Some integral representations of a generalized polynomial set $\{W_n^*(x,y)\}$. *Math. Ed. (Siwan)* **25** (1991), *no.* 4, 209–217. (Mizan Rahman) **93h:33008** 33C60

Dubey, B. N. (*with* Dubey, R. P.; Pathak, Hemant Kumar) A fixed point theorem for weak** commuting mappings. (English summary) *Bull. Calcutta Math. Soc.* **83** (1991), *no.* 3, 239–246. 54H25

— (*with* Dubey, R. P.) Common fixed point theorem for three mappings with a rational inequality. *Ganita* **42** (1991), *no.* 1-2, 75–87 (1992). 54H25

Dubey, Pradeep (*with* Sahi, Siddhartha; Shubik, Martin) Repeated trade and the velocity of money. (English summary) *J. Math. Econom.* **22** (1993), *no.* 2, 125–137. (Summary) **93j:90032** 90A60

Dubey, Praveen A result on common fixed point and a sequence of mappings. *Ganita* **42** (1991), *no.* 1-2, 133–136 (1992). 54H25

Dubey, R. P. (*with* Pathak, Hemant Kumar; Dubey, B. N.) A fixed point theorem for weak** commuting mappings. (English summary) *Bull. Calcutta Math. Soc.* **83** (1991), *no.* 3, 239–246. 54H25

— (*with* Dubey, B. N.) Common fixed point theorem for three mappings with a rational inequality. *Ganita* **42** (1991), *no.* 1-2, 75–87 (1992). 54H25

— A generalization of a fixed point theorem of Khan and Imdad. *J. Indian Acad. Math.* **14** (1992), *no.* 1, 5–7. 47H10

— (*with* Pathak, Hemant Kumar) Fixed point theorems in two-metric space satisfying rational inequalities. (English summary) *Math. Ed. (Siwan)* **26** (1992), *no.* 3, 154–159. 54H25

Dubey, Satya D. *see* **Harter, H. Leon, 93c:62001a**

Dubhashi, Devdatt P. On decidable varieties of Heyting algebras. *J. Symbolic Logic* **57** (1992), *no.* 3, 988–991. (S. Comer) **93i:03013** 03B25 (03G25, 06D20, 08B99)

Dubiel, Władysław Development and spread of mathematical didactics in Poland (1918–1939). (Polish) *Kwart. Hist. Nauk Tech.* **37** (1992), *no.* 1, 23–34. 01A60 (00A35)

Dubin, A. Yu. Path-integral quantization of the straight-line string. *JETP Lett.* **56** (1992), *no.* 11, 545–550 (1993); *translated from Pis'ma Zh. Èksper. Teoret. Fiz.* **56** (1992), *no.* 11, 565–569 (*Russian*). (Summary) **93k:81175** 81T30 (81S40)

Dubiner, Moshe (*with* Galil, Zvi; Magen, Edith) Faster tree pattern matching. 31*st Annual Symposium on Foundations of Computer Science, Vol. I, II (St. Louis, MO*, 1990), 145–150, *IEEE Comput. Soc. Press, Los Alamitos, CA*, 1990. (Summary) **93a:68048** 68Q20 (68Q25)

Dubinin, V. N. Transformations of condensers in an n-dimensional space. (Russian) *Zap. Nauchn. Sem. Leningrad. Otdel. Mat. Inst. Steklov. (LOMI)* **196** (1991), *Modul. Funktsii Kvadrat. Formy.* 2, 41–60, 173. (Guo Chun Wen) **93h:31007** 31B15 (30C99)

Dubinin, V. V. Cubature formulas for classes of functions with bounded mixed difference. (Russian. Russian summary) *Mat. Sb.* **183** (1992), *no.* 7, 23–34. (I. P. Mysovskikh) **93m:41026** 41A55 (41A30, 65D32)

Dubins, L. E. (*with* Emery, M.; Yor, Marc) A continuous martingale in the plane that may spiral away to infinity. (English summary) *Séminaire de Probabilités, XXV*, 284–290, *Lecture Notes in Math.*, 1485, *Springer, Berlin*, 1991. (F. B. Knight) **93i:60134** 60J25 (60J45)

Dubinskii, Yu. A. ★ Analytic pseudo-differential operators and their applications. Translated from the Russian. Mathematics and its Applications (Soviet Series), 68. *Kluwer Academic Publishers Group, Dordrecht*, 1991. xii+252 *pp. ISBN* 0-7923-1296-1 (William Margulies) **93j:35200** 35Sxx (35–02, 35G20, 46Fxx, 47G30, 58G15)

— Sobolev spaces of infinite order. (Russian) *Uspekhi Mat. Nauk* **46** (1991), *no.* 6(282), 97–131, 240; *translation in Russian Math. Surveys* **46** (1991), *no.* 6, 107–147. (T. Runst) **93e:46038** 46E35 (35R50)

Dubitskas, A. Approximations of certain numbers by elements of a given number field. (Russian. English and Lithuanian summaries) *Litovsk. Mat. Sb.* **31** (1991), *no.* 1, 76–81; *translation in Lithuanian Math. J.* **31** (1991), *no.* 1, 52–56 (1992). (Oto Strauch) **93f:11052** 11J82

— Estimation of a linear form in certain algebraic numbers. (Russian. English and Lithuanian summaries) *Litovsk. Mat. Sb.* **31** (1991), *no.* 1, 82–89; *translation in Lithuanian Math. J.* **31** (1991), *no.* 1, 56–61 (1992). (Summary) **93j:11040** 11J13

Dubko, V. A. ★ Вопросы теории и применения стохастических дифференциальных уравнений. (Russian. Russian summary) [Problems in the theory and application of stochastic differential equations] *Akad. Nauk SSSR, Dal'nevostochn. Otdel., Vladivostok*, 1989. 186 *pp.* (Publisher's description) **93f:60086** 60H10 (34F05)

— Limit theorems on the transition to a diffusion description of slow constituent solutions of Itô equations. (Russian) *Akad. Nauk Ukrain. SSR Inst. Mat. Preprint* **1991**, *no.* 41, 55 *pp.* (Summary) **93c:60116** 60J60 (60H10)

Dubois, Didier (*with* Prade, Henri) Decision evaluation methods under uncertainty and imprecision. *Combining fuzzy imprecision with probabilistic uncertainty in decision making*, 48–65, *Lecture Notes in Econom. and Math. Systems*, 310, *Springer, Berlin*, 1988. (*see* **93c:90002**) 90A05 (04A72)

— (*with* Lang, Jérôme; Prade, Henri) Timed possibilistic logic. *Fund. Inform.* **15** (1991), *no.* 3-4, 211–234. (Summary) **93a:03023** 03B60 (03B52, 68T30)

— (*with* Prade, Henri) Belief change and possibility theory. *Belief revision*, 142–182, *Cambridge Tracts Theoret. Comput. Sci.*, 29, *Cambridge Univ. Press, Cambridge*, 1992. (*see* **93g:68131**) 68T27 (03B60, 03B70)

— (*with* Prade, Henri) Combination of fuzzy information in the framework of possibility theory. *Data fusion in robotics and machine intelligence*, 481–505, *Academic Press, Boston, MA*, 1992. (*see* **93g:68002**) 68T30 (04A72)

— (*with* Lang, Jérôme; Prade, Henri) Advances in automated reasoning using possibilistic logic. *Fuzzy expert systems*, 125–134, *CRC, Boca Raton, FL*, 1992. (*see* **93g:68133**) 68T15 (03B52, 68T35)

— (*with* Prade, Henri; Sessa, Salvatore) Recent literature. *Fuzzy Sets and Systems* **47** (1992), *no.* 1, 125–139. 04–00 (00A15, 04A72)

— (*with* Prade, Henri; Sessa, Salvatore) Recent literature. *Fuzzy Sets and Systems* **48** (1992), *no.* 1, 145–153. 04A72 (00A15)

— (*with* Prade, Henri) When upper probabilities are possibility measures. (English summary) *Fuzzy Sets and Systems* **49** (1992), *no.* 1, 65–74. 60A99 (04A72)

— (*with* Prade, Henri; Sessa, Salvatore) Recent literature. *Fuzzy Sets and Systems* **51** (1992), *no.* 1, 119–129. 04A72 (00A15)

— (*with* Prade, Henri; Sessa, Salvatore) Recent literature. *Fuzzy Sets and Systems* **51** (1992), *no.* 3, 361–363. 04A72 (00A15, 03E72)

— (*with* Prade, Henri) Gradual inference rules in approximate reasoning. *Inform. Sci.* **61** (1992), *no.* 1-2, 103–122. (Summary) **93a:68132** 68T27

— (*with* Prade, Henri) Upper and lower images of a fuzzy set induced by a fuzzy relation: applications to fuzzy inference and diagnosis. *Inform. Sci.* **64** (1992), *no.* 3, 203–232. (Summary) **93b:04005** 04A72

— (*with* Yager, Ronald R.) Fuzzy set connectives as combinations of belief structures. (English summary) *Inform. Sci.* **66** (1992), *no.* 3, 245–276. (Summary) **93g:68128** 68T30 (03B52, 04A72)

— (*with* Prade, Henri; Sessa, Salvatore) Recent literature. *Fuzzy Sets and Systems* **55** (1993), *no.* 3, 365–373. 04A72 (00A15)

Dubois, Eugène (*with* Paysant-Le Roux, R.; Gaunet, M.-L.) Sur la spécialisation des points extrémaux cubiques. [On the specialization of cubic extremal points] *Acta Arith.* **59** (1991), *no.* 3, 221–242. (From the introduction) **93c:11099** 11R27 (11J70)

— (*with* Paysant-Le Roux, R.) Sur la longueur du développement en fraction continue de $\sqrt{f(n)}$. [On the length of the expansion of $\sqrt{f(n)}$ into a continued fraction] Journées Arithmétiques, 1989 (Luminy, 1989). *Astérisque No.* 198-200 (1991), 107–119 (1992). (W. W. Adams) **93c:11006** 11A55

Dubois, Jacques (*with* Hadjou, Brahim) On the Lebesgue decomposition of the normal states of a JBW-algebra. *Math. Bohem.* **117** (1992), *no.* 2, 185–193. (Sh. A. Ayupov)

93d:46114 46L70 (06C15, 17C50, 46H70)

Dubois, N. (*with* de Werra, D.) EPCOT: an efficient procedure for coloring optimally with Tabu search. (English summary) *Comput. Math. Appl.* **25** (1993), *no.* 10-11, 35–45. 90–08 (90C35)

Dubois, Olivier Counting the number of solutions for instances of satisfiability. *Theoret. Comput. Sci.* **81** (1991), *no.* 1, (*Part A*), 49–64. (Summary) **93d:68031** 68Q25

— (*with* Carlier, Jacques) Probabilistic approach to the satisfiability problem. *Theoret. Comput. Sci.* **81** (1991), *no.* 1, (*Part A*), 65–75. (Summary) **93d:68032** 68Q25

Du Bois, Philippe Dualité dans la catégorie des complexes filtrés d'opérateurs differentiels d'ordre ≤ 1. (English summary) [Duality in the category of filtered complexes of differential operators of order ≤ 1] *Collect. Math.* **41** (1990), *no.* 2, 89–121 (1991). (Summary) **93d:14033** 14F40 (14C30, 32C37, 32C38)

— (*with* Michel, Françoise) Filtration par le poids et monodromie entière. (English summary) [Weight filtration and integral monodromy] *Bull. Soc. Math. France* **120** (1992), *no.* 2, 129–167. (Aleksandr G. Aleksandrov) **93h:32049** 32S35 (32S55)

Dubois, Thierry (*with* Jauberteau, François; Temam, Roger) The nonlinear Galerkin method for the two- and three-dimensional Navier-Stokes equations. *Twelfth International Conference on Numerical Methods in Fluid Dynamics (Oxford, 1990)*, 116–120, *Lecture Notes in Phys.*, 371, *Springer, Berlin*, 1990. (*see* **93e:76002**) 76M25 (76D05)

Dubois-Violette, Michel (*with* Madore, J.; Kerner, Richard) Super matrix geometry. *Classical Quantum Gravity* **8** (1991), *no.* 6, 1077–1089. (J. S. Joel) **93b:58014** 58B30 (58A10, 58H05, 81T60, 81V15, 83D05)

— (*with* Henneaux, Marc; Talon, Michel; Viallet, Claude-Michel) General solution of the consistency equation. (English summary) *Phys. Lett. B* **289** (1992), *no.* 3-4, 361–367. (Wolfgang Kalau) **93i:81276** 81T70 (17B55, 81T13, 81T20)

DuBose, Derrick Albert Determinacy and the sharp function on the reals. *Ann. Pure Appl. Logic* **54** (1991), *no.* 1, 59–85. (David E. Marker) **93e:03071a** 03E15

— Determinacy and the sharp function on the reals. (English summary) *Ann. Pure Appl. Logic* **55** (1992), *no.* 3, 237–263. (David E. Marker) **93e:03071b** 03E15

— Determinacy and extended sharp functions on the reals. II. Obtaining sharps from determinacy. *Ann. Pure Appl. Logic* **58** (1992), *no.* 1, 1–28. (Jakub Jasiński) **93h:03076** 03E60 (03E15)

Dubov, S. Yu. (*with* Eleonskiĭ, V. M.; Kulagin, N. E.) Equidistant spectra of anharmonic oscillators. *Soviet Phys. JETP* **75** (1992), *no.* 3, 446–451; *translated from Zh. Èksper. Teoret. Fiz.* **102** (1992), *no.* 3, 814–825 (*Russian*). (Summary) **93h:81022** 81Q05 (34L40, 35J10)

Dubov, Yu. A. Stochastic stimuli and balance in a model of competing possibilities. (Russian. Russian summary) *Avtomat. i Telemekh.* **1992**, *no.* 3, 136–144; *translation in Automat. Remote Control* **53** (1992), *no.* 3, *part* 2, 442–448. 93A30 (90D40)

Dubovik, A. V. (*with* Savula, Ya. G.; Pauk, N. M.) Boundary value and variational problems with a penalty for a combined model in the plane theory of elasticity. (Ukrainian) *Visnik L'viv. Derzh. Univ. Ser. Mekh.-Mat. No.* 33 (1990), 3–9. 73V25 (73C02)

Dubovik, O. A. On a theorem of B. Kostant. (Russian) *Sibirsk. Mat. Zh.* **33** (1992), *no.* 2, 168–171, 222; *translation in Siberian Math. J.* **33** (1992), *no.* 2, 326–329. (Andrej A. Zolotykh) **93i:17009** 17B20 (22E60)

Dubovik, V. M. (*with* Afanas'ev, G. N.) Electromagnetic properties of a toroidal solenoid. (English summary) *J. Phys. A* **25** (1992), *no.* 18, 4869–4886. (Summary) **93g:78004** 78A25

Dubovoĭ, V. K. (*with* Galstyan, L. A.) A generalization of the Schur interpolation problem. (Russian. English and Armenian summaries) *Izv. Akad. Nauk Armyan. SSR Ser. Mat.* **25** (1990), *no.* 2, 171–181, 211. (Victor Katsnelson) **93a:30044** 30E05

— (*with* Fritzsche, Bernd; Kirstein, Bernd) ★ Matricial version of the classical Schur problem. With German, French and Russian summaries. Teubner-Texte zur Mathematik [Teubner Texts in Mathematics], 129. *B. G. Teubner Verlagsgesellschaft mbH, Stuttgart*, 1992. 355 *pp. ISBN* 3-8154-2015-6 (Joseph A. Ball) **93e:47021** 47A57 (30E05, 47A56, 47B50, 47N70)

Dubovskiĭ, P. B. (*with* Galkin, V. A.; Stewart, I. W.) Exact solutions for the coagulation-fragmentation equation. (English summary) *J. Phys. A* **25** (1992), *no.* 18, 4737–4744. (Carlo Cercignani) **93h:82052** 82C40

Dubrovin, B. A. ★ Geometry of Hamiltonian evolutionary systems. Monographs and Textbooks in Physical Science. Lecture Notes, 22. *Bibliopolis, Naples*, 1991. iv+131 *pp. ISBN* 88-7088-262-4 (Vladimir Mikhalev) **93k:58112** 58F07 (35Qxx, 58F05)

— Hamiltonian formalism of Whitham-type hierarchies and topological Landau-Ginsburg models. *Comm. Math. Phys.* **145** (1992), *no.* 1, 195–207. (Alexander P. Veselov) **93a:58078** 58F07 (81T40)

— Integrable systems in topological field theory. (English summary) *Nuclear Phys. B* **379** (1992), *no.* 3, 627–689. (Pablo M. Llatas) **93h:81113** 81T40 (58F07)

— *see also* **Novikov, S. P., 93g:58062**

Dubrovin, N. I. Noncommutative Krull rings. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* **1991**, *no.* 8, 13–19; *translation in Soviet Math. (Iz. VUZ)* **35** (1991), *no.* 8, 11–16. (Edmund R. Puczyłowski) **93j:16009** 16H05 (16K40)

— Noncommutative Prüfer rings. (Russian) *Mat. Sb.* **182** (1991), *no.* 9, 1251–1260; *translation in Math. USSR-Sb.* **74** (1993), *no.* 1, 1–8. (Jusuf Alajbegović) **93e:16003** 16D30 (16H05, 16N60, 16P60, 16U20)

Dubrovskiĭ, V. A. (*with* Borisyuk, M. N.; Orlov, Yu. F.; Tirskikh, V. V.; Turbal, V. K.) A fluid dynamics problem concerning a catamaran. (Russian. Russian summary) *Asymptotic methods in the theory of systems (Russian)*, 52–73, 276, *Akad. Nauk SSSR Sibirsk. Otdel., Irkut-sk. Nauchn. Tsentr, Irkutsk*, 1989. (*see* **93d:00031**) 76B99

Dubrovskiĭ, V. G. (*with* Konopel'chenko, B. G.) Coherent structures for the Ishimori equation. II. Time-dependent boundaries. *Phys. D* **55** (1992), *no.* 1-2, 1–13. (Shen Qi Zhao) **93f:35196** 35Q51 (34A55, 34L40, 35Q53)

Dubrovskiĭ, V. V. (*with* Sadovnichiĭ, V. A.[1]) The classical regularized trace formula for eigenvalues of the Laplace-Beltrami operator with potential on the sphere S^2. (Russian) *Dokl. Akad. Nauk SSSR* **319** (1991), *no.* 1, 61–62; *translation in Soviet Math. Dokl.* **44** (1992), *no.* 1, 56–58. (Jürgen Eichhorn) **93c:58222** 58G25 (47F05)

— On an abstract Gel'fand-Levitan formula. (Russian) *Uspekhi Mat. Nauk* **46** (1991), *no.* 3(279), 187–188; *translation in Russian Math. Surveys* **46** (1991), *no.* 3, 217–218. (Evgeney V. Cheremnikh) **93a:47013** 47A55 (47A10)

— (*with* Nagornyi, A. V.) Stability of the solution of inverse problems of spectral analysis. (Russian. Russian summary) *Differentsial'nye Uravneniya* **28** (1992), *no.* 5, 839–843, 918; *translation in Differential Equations* **28** (1992), *no.* 5, 683–686. (Jan Bochenek) **93k:47029** 47A70 (47A10, 47B38, 47N20)

— (*with* Kunakova, E. Yu.) A formula for the first regularized trace of a power of the Laplace operator on a triangle. (Russian. Russian summary) *Differentsial'nye Uravneniya* **28** (1992), *no.* 7, 1274–1276, 1288. 35J05 (35P05, 47F05)

Dubrovsky, V. G. *see* **Dubrovskiĭ, V. G.**

Dubson, Alberto S. Local multiplicity of the intersection of Lagrangian cycles and the index of holonomic modules. *New developments in Lie theory and their applications (Córdoba, 1989)*, 207–225, *Progr. Math.*, 105, *Birkhäuser Boston, Boston, MA*, 1992. (J. S. Joel) **93j:32014** 32B20 (32S30, 32S60, 58G07)

Dubuc, Serge (*with* Deslauriers, Gilles) Continuous iterative interpolation processes. (English summary) *European Conference on Iteration Theory (Batschuns, 1989)*, 71–78, *World Sci. Publishing, River Edge, NJ*, 1991. (Mao Dong Ye) **93i:65017** 65D05 (41A05)

— (*with* Baouche, A.) La non-dérivabilité de la fonction de Weierstrass. [The nondifferentiability of the Weierstrass function] *Enseign. Math.* (2) **38** (1992), *no.* 1-2, 89–94. (Introduction) **93g:26009** 26A27 (01A55)

nguyen minh Duc *see* **Nguyen Minh Duc**

Duca, Dorel I. The dual of the dual in mathematical programming in complex space. *Anal. Numér. Théor. Approx.* **19** (1990), *no.* 1, 35–43. (Dỗ Văn Lu'u) **93d:49041** 49N15 (90C30)

— (*with* Duca, Eugenia) Vectorial fractional optimization in complex space. *Seminar on Mathematical Analysis*, 163–170, *Preprint*, 91-7, "*Babeş-Bolyai*" *Univ., Cluj-Napoca*, 1991. (*see* **93i:00015**) 90C29

Duca, Eugenia (*with* Duca, Dorel I.) Vectorial fractional optimization in complex space. *Seminar on Mathematical Analysis*, 163–170, *Preprint*, 91-7, "*Babeş-Bolyai*" *Univ., Cluj-Napoca*, 1991. (*see* **93i:00015**) 90C29

pham Duc Chinh *see* **Pham Duc Chinh**

truong xuan Duc Ha *see* **Truong Xuan Duc Ha**

Duchamp, Gérard (*with* Krob, Daniel) Computing with P.B.W. in enveloping algebras. *Algebraic computing in control (Paris, 1991)*, 223–240, *Lecture Notes in Control and Inform. Sci.*, 165, *Springer, Berlin*, 1991. (E. S. Lee) **93b:17038** 17B35 (16W30, 16W80, 17B01)

— (*with* Krob, Daniel) The free partially commutative Lie algebra: bases and ranks. (English summary) *Adv. Math.* **95** (1992), *no.* 1, 92–126. (Alexander V. Il'tyakov) **93j:17009** 17B01

— (*with* Thibon, Jean-Yves) Simple orderings for free partially commutative groups. (English and French summaries) *Internat. J. Algebra Comput.* **2** (1992), *no.* 3, 351–355. (N. Ya. Medvedev) **93j:06017** 06F15 (20F60)

— (*with* Krob, Daniel) The lower central series of the free partially commutative group. (English summary) *Semigroup Forum* **45** (1992), *no.* 3, 385–394. (Summary) **93e:20047** 20F14

— (*with* Krob, Daniel) On the partially commutative shuffle product. *Theoret. Comput. Sci.* **96** (1992), *no.* 2, 405–410. (Norbert Blum) **93g:68060** 68Q40 (68Q45, 68Q65)

— *see also* **Workshop: Algebraic and Computer-theoretic Aspects of Formal Power Series, 93a:68010**

Ducharme, Gilles R. (*with* Beran, Rudolf) ★ Asymptotic theory for bootstrap methods in statistics. *Université de Montréal, Centre de Recherches Mathématiques, Montreal, PQ*, 1991. viii+81 *pp. ISBN* 2-921120-10-0 (Arup Bose) **93c:62002** 62–02 (62G09, 62G15, 62G20)

virotte-Ducharme, Marguerite-Marie *see* **Virotte-Ducharme, Marguerite-Marie**

DuChateau, Paul (*with* Cannon, John R.; Moaveni, Saeed) An unknown ingredient inverse problem reduced to a functional-differential equation. (English summary) *Computational methods in geosciences*, 29–43, *SIAM, Philadelphia, PA*, 1992. (Giovanni Crosta) **93i:80002** 80A23 (35R30, 39B99, 76S05)

nguyễn-Dú'c Hiếu *see* **Nguyễn-Dú'c Hiếu**

Duchon, Jean (*with* Robert, Raoul) Relaxation of Euler equations and hydrodynamic instabilities. *Quart. Appl. Math.* **50** (1992), *no.* 2, 235–255. (A. J. Meir) **93g:76029** 76C05 (35Q35, 76E99)

Duck, Peter W. (*with* Balakumar, P.) On the stability of normal shock waves. (English summary) *Instability, transition, and turbulence (Hampton, VA, 1991)*, 253–265, *ICASE/NASA LaRC Ser., Springer, New York*, 1992. (Summary) **93k:76054** 76E99 (76L05)

— (*with* Khorrami, Mehdi R.) A note on the effects of viscosity on the stability of a trailing-line vortex. (English summary) *J. Fluid Mech.* **245** (1992), 175–189. (Summary) **93k:76055** 76E99 (76D99)

— (*with* Bodonyi, R. J.) Boundary-layer receptivity due to a wall suction and control of Tollmien-Schlichting waves. *Phys. Fluids A* **4** (1992), *no.* 6, 1206–1214. (Summary) **93a:76029** 76D10 (76D33, 76E05)

le Duc Kiem *see* **Le Duc Kiem**

Ducomet, B. Diffusion électromagnétique à basse fréquence par un réseau de cylindres diélectriques. (English and French summaries) [Low-frequency electromagnetic scattering by an array of dielectric cylinders] *Ann. Inst. H. Poincaré Phys. Théor.* **57** (1992), *no.* 2, 183–208. (R. F. Millar) **93k:78008** 78A40 (78A45)

— (*with* Quang, D. Ha.) Diffusion électromagnétique à basse fréquence par un réseau de cylindres diélectriques: étude numérique. (English and French summaries) [Low-frequency electromagnetic scattering by a grating of dielectric cylinders: numerical study] *RAIRO Modél. Math. Anal. Numér.* **26** (1992), *no.* 6, 709–738. (Summary) **93g:78018** 78A45 (78–04)

do Duc Thai *see* **Do Duc Thai**

nguyen Duc Tuan *see* **Nguyen Duc Tuan**

trần-Dú'c Vân *see* **Trần-Dú'c Vân**

Duda, Edwin (*with* Krupski, Pawel) A characterization of finitely junctioned continua. *Proc. Amer. Math. Soc.* **116** (1992), *no.* 3, 839–841. (James T. Rogers, Jr.) **93a:54031** 54F15

Duda, Jan (*with* Kowalewski, Adam) On some optimal control problem for a parabolic system with boundary condition involving a time-varying lag. (English summary) *IMA J. Math. Control Inform.* **9** (1992), *no.* 2, 131–146. (Summary) **93h:49034** 49K20 (35K10)

Duda, Jaromír Congruence restrictions on axes. (English and Czech summaries) *Math. Bohem.* **117** (1992), *no.* 3, 251–258. (Summary) **93h:08008** 08B05
— Tolerances on powers of a finite algebra. (English and Czech summaries) *Math. Bohem.* **117** (1992), *no.* 3, 299–304. (Summary) **93h:08004** 08A30
Dudarev, E. P. On the solvability, representation of the solution, and regularization of a general linear boundary value problem for a system of functional-differential equations that is not solved with respect to the derivative. (Russian. Russian summary) *Boundary value problems (Russian)*, 14–28, *Perm. Politekh. Inst., Perm'*, 1990. (Summary) **93i:34124** 34K10 (47N20)
Dudek, Józef (*with* Kisielewicz, Andrzej) Totally commutative semigroups. *J. Austral. Math. Soc. Ser. A* **51** (1991), *no.* 3, 381–399. (T. E. Hall) **93d:20103** 20M07 (08B15)
— The minimal extension of the sequence $(0, 0, 3)$. *Algebra Universalis* **29** (1992), *no.* 3, 419–436. (Winfried Müller) **93j:08002** 08A40
Dudek, Wiesław A. Unipotent n-ary groups. Universal algebra, quasigroups and related systems (Jadwisin, 1989). *Demonstratio Math.* **24** (1991), *no.* 1-2, 75–81. (Smile Markovski) **93a:20116** 20N15
— The number of subalgebras of finite BCC-algebras. (English summary) *Bull. Inst. Math. Acad. Sinica* **20** (1992), *no.* 2, 129–135. (Summary) **93f:06019** 06F35 (03G25)
— On proper BCC-algebras. (English summary) *Bull. Inst. Math. Acad. Sinica* **20** (1992), *no.* 2, 137–150. (Summary) **93f:06020** 06F35 (03G25)
Dudek, Zbigniew On multiplicative operators in commutative algebras. *Demonstratio Math.* **23** (1990), *no.* 4, 921–928. (Summary) **93d:47005** 47A05 (16S99)
— (*with* Behara, M.) On paraconcave entropy functions. *Inform. Sci.* **64** (1992), *no.* 1-2, 143–148. (Summary) **93f:94007** 94A17 (26A51)
Dudewicz, Edward J. (*with* Aoshima, Makoto; Siotani, Minoru) Heteroscedastic discriminant analysis with a preassigned misclassification probability. (English summary) Modern sequential analysis (SSA), Vol. II (Syracuse, NY, 1989). *Amer. J. Math. Management Sci.* **11** (1991), *no.* 3-4, 371–386. (Richard A. Johnson) **93m:62136** 62H30
— (*with* Taneja, Baldeo K.) Selection of the best experimental category provided it is better than a standard: the heteroscedastic method solution. (English summary) With discussion. *The frontiers of modern statistical inference procedures, II (Sydney, 1987)*, 47–94, *Amer. Sci. Press Ser. Math. Management Sci.*, 28, *Amer. Sci. Press, Columbus, OH*, 1992. (Summary) **93j:62060** 62F07
— (*with* Chen, Hubert J.) Subset selection with expected subset size control. (English summary) With discussion. *The frontiers of modern statistical inference procedures, II (Sydney, 1987)*, 177–222, *Amer. Sci. Press Ser. Math. Management Sci.*, 28, *Amer. Sci. Press, Columbus, OH*, 1992. (*see* **93g:62002**) 62F07
— *see also* **Frontiers of modern statistical inference procedures, 93g:62002**
Dudey, Marc Dynamic Edgeworth-Bertrand competition. *Quart. J. Econom.* **107** (1992), *no.* 4, 1461–1477. 90A14
Dudley, Donald G. (*with* Nabulsi, Khalid A.) On the interaction between the input signal and the singularity expansion method. (English summary) *Wave Motion* **16** (1992), *no.* 4, 367–378. (Summary) **93i:78009** 78A45
Dudley, Underwood ★ Mathematical cranks. MAA Spectrum. *Mathematical Association of America, Washington, DC*, 1992. x+372 *pp. ISBN* 0-88385-507-0 (David Singmaster) **93m:00003** 00A08 (01A80)
Dudman, V. H. Probability and assertion. *Analysis (Oxford)* **52** (1992), *no.* 4, 204–211. 03B48 (03A05, 03B65)
Dudnikov, P. I. Endomorphisms of the semimodule of bounded functions. *Idempotent analysis*, 47–63, *Adv. Soviet Math.*, 13, *Amer. Math. Soc., Providence, RI*, 1992. (K. D. Magill, Jr.) **93m:46097** 46S99 (16Y60, 46N99, 47B38)
— (*with* Samborskii, S. N.) Endomorphisms of finitely generated free semimodules. *Idempotent analysis*, 65–85, *Adv. Soviet Math.*, 13, *Amer. Math. Soc., Providence, RI*, 1992. (Juturu Hanumanthachari) **93m:16029** 16Y60 (46S99, 47A99, 47S99)
Duduchava, R. V. Wiener-Hopf equations with the transmission property. *Integral Equations Operator Theory* **15** (1992), *no.* 3, 412–426. (Johannes Elschner) **93c:47059** 47G10 (45E10, 47A53, 47B35, 47N20)
Dudyński, Marek (*with* Ekiel-Jeżewska, Maria L.) Global existence proof for relativistic Boltzmann equation. *J. Statist. Phys.* **66** (1992), *no.* 3-4, 991–1001. (Luisa Arlotti) **93b:82064** 82C40 (76P05)
Dudziński, Krzysztof (*with* Walukiewicz, Stanisław) PC-oriented algorithms for the knapsack problem. (English summary) *System modelling and optimization (Zurich, 1991)*, 155–164, *Lecture Notes in Control and Inform. Sci.*, 180, *Springer, Berlin*, 1992. (*see* **93e:90003**) 90C10 (90C27)
Duff, G. F. D. Navier-Stokes derivative estimates in three dimensions with boundary values and body forces. *Canad. J. Math.* **43** (1991), *no.* 6, 1161–1212. (Andro Mikelić) **93b:35109** 35Q30 (76D05)
— In memoriam: Gilbert de Beauregard Robinson (1906–1992). Text in English and French. *Canad. J. Math.* **45** (1993), *no.* 1, 3–5. 01A70
Duff, I. S. (*with* Arioli, Mario; Ruiz, Daniel; Sadkane, Miloud) Techniques for accelerating the block Cimmino method. (English summary) *Parallel processing for scientific computing (Houston, TX, 1991)*, 98–104, *SIAM, Philadelphia, PA*, 1992. (*see* **93g:65178**) 65F10 (65F50, 65Y10)
— (*with* Watson, G. A.; et al.) Editorial: Leslie Fox, 1918–1992. *IMA J. Numer. Anal.* **13** (1993), *no.* 1, i–ii. 01A70
Duff, M. J. (*with* Lu, Jian Xin) Duality for strings and membranes. *Supermembranes and physics in 2+1 dimensions (Trieste, 1989)*, 111–125, *World Sci. Publishing, River Edge, NJ*, 1990. (*see* **93g:81003**) 81T30
— (*with* Lu, Jian Xin) A duality between strings and 5-branes. *Classical Quantum Gravity* **9** (1992), *no.* 1, 1–16. (Helmut Rumpf) **93b:81210** 81T30 (83E30)
— (*with* Khuri, Ramzi R.; Lu, Jian Xin) String and five-brane solitons: singular or nonsingular? *Nuclear Phys. B* **377** (1992), *no.* 1-2, 281–294. (Summary) **93c:83113** 83E30 (81T30, 83E50)
— (*with* Dixon, John A.; Sezgin, Ergin) The coupling of Yang-Mills to extended objects. *Phys. Lett. B* **279** (1992), *no.* 3-4, 265–271. (Marc Henneaux) **93d:81114** 81T13 (81T30)
— *see also* **Supermembranes and physics in 2 + 1 dimensions, 93g:81003**
Duffie, Darrell (*with* Epstein, Larry G.) Stochastic differential utility. With an appendix by the authors and C. Skiadas. *Econometrica* **60** (1992), *no.* 2, 353–394. (Summary) **93e:90020** 90A43 (49L20, 90A10)
— (*with* Stanton, Richard) Pricing continuously resettled contingent claims. *J. Econom. Dynamics Control* **16** (1992), *no.* 3-4, 561–573. (Manfred Kraft) **93h:90009** 90A09 (60J60, 90A19)
— (*with* Lions, Pierre-Louis) PDE solutions of stochastic differential utility. (English summary) *J. Math. Econom.* **21** (1992), *no.* 6, 577–606. (Yu. M. Kabanov) **93j:90020** 90A10 (60H20, 60H30, 90A43)
Duffield, N. G. (*with* Werner, R. F.) Classical Hamiltonian dynamics for quantum Hamiltonian mean-field limits. (English summary) *Stochastics and quantum mechanics (Swansea, 1990)*, 115–129, *World Sci. Publishing, River Edge, NJ*, 1992. (Robert Alicki) **93j:82042** 82C10 (58F05)
— (*with* Roos, Hansjörg O.; Werner, R. F.) Macroscopic limiting dynamics of a class of inhomogeneous mean field quantum systems. (French summary) *Ann. Inst. H. Poincaré Phys. Théor.* **56** (1992), *no.* 2, 143–186. (Robert Alicki) **93b:82043** 82C10 (46L60, 82B10)
Duffield, R. C. (*with* Shih, H.-R.; Lin, J.) Boundary-finite element model for eccentrically stiffened plates under transverse loading. (English summary) *Boundary element technology, VII (Albuquerque, NM, 1992)*, 555–571, *Comput. Mech., Southampton*, 1992. (*see* **93b:65002**) 73V10 (65N30, 65N38, 73K10, 73V05)
Duffin, Richard J. (*with* Coffman, Charles V.) On the fundamental eigenfunctions of a clamped punctured disk. *Adv. in Appl. Math.* **13** (1992), *no.* 2, 142–151. (R. Kodnár) **93c:35113** 35P05 (35J40, 73K10)
Duffus, Dwight (*with* Winkler, Peter M.) On the number of k-realizations of an ordered set. *Order* **7** (1990), *no.* 3, 267–273. (K. P. Bogart) **93a:06003** 06A07
— (*with* Rödl, Vojtěch; Sauer, Norbert W.; Woodrow, Robert) Coloring ordered sets to avoid monochromatic maximal chains. *Canad. J. Math.* **44** (1992), *no.* 1, 91–103. (Eduard Fuchs) **93g:06001** 06A07
— (*with* Rödl, Vojtěch; Sands, Bill; Woodrow, Robert) Enumeration of order preserving maps. (English summary) *Order* **9** (1992), *no.* 1, 15–29. (Keqin Feng) **93k:06004** 06A07 (05A15, 06A06)
Duflo, Michel (*with* Vergne, Michèle) Orbites coadjointes et cohomologie équivariante. [Coadjoint orbits and equivariant cohomology] *The orbit method in representation theory (Copenhagen, 1988)*, 11–60, *Progr. Math.*, 82, *Birkhäuser Boston, Boston, MA*, 1990. (Brian E. Blank) **93b:22013** 22E30 (22E60)
Dufour, Jean-Marie (*with* Hallin, Marc) Nonuniform bounds for nonparametric t-tests. *Econometric Theory* **7** (1991), *no.* 2, 253–263. (Summary) **93e:62123** 62G10
— (*with* Boudjellaba, Hafida; Roy, Roch) Testing causality between two vectors in multivariate autoregressive moving average models. (English summary) *J. Amer. Statist. Assoc.* **87** (1992), *no.* 420, 1082–1090. (Summary) **93m:62193** 62M10
— (*with* Hallin, Marc) Simple exact bounds for distributions of linear signed rank statistics. *J. Statist. Plann. Inference* **31** (1992), *no.* 3, 311–333. (Sotiris Loukas) **93j:62128** 62G10 (62E15)
— (*with* Dagenais, Marcel G.) Nonlinear models, rescaling and test invariance. (English summary) *J. Statist. Plann. Inference* **32** (1992), *no.* 1, 111–135. (Stavros Kourouklis) **93m:62045** 62F03
Dufour, Jean-Paul Théorème de Nekhoroshev à singularités. [The Nekhoroshev theorem with singularities] *Séminaire Gaston Darboux de Géometrie et Topologie Différentielle, 1989–1990 (Montpellier, 1989/1990)*, vi–vii, 49–56, *Univ. Montpellier II, Montpellier*, 1991. (Summary) **93g:58130** 58F36 (58F05)
— Formes normales de structures de Poisson. [Normal forms of Poisson structures] *Symplectic geometry and mathematical physics (Aix-en-Provence, 1990)*, 129–135, *Progr. Math.*, 99, *Birkhäuser Boston, Boston, MA*, 1991. (Henk G. J. Pijls) **93k:58089** 58F05 (58F36)
— Introduction aux tissus. (English summary) [Introduction to webs] *Séminaire Gaston Darboux de Géométrie et Topologie Différentielle, 1990–1991 (Montpellier, 1990–1991)*, iii, 55–76, *Univ. Montpellier II, Montpellier*, 1992. (Vladislav Goldberg) **93j:53019** 53A60
— (*with* Tueno, J. P.) Singularités et photographies de surfaces. (English summary) [Singularities and photographs of surfaces] *J. Geom. Phys.* **9** (1992), *no.* 2, 173–182. (Peter Giblin) **93e:58018** 58C27 (53A04, 78A05)
Dufresne, F. (*with* Gerber, Hans U.) The probability of ruin for the inverse Gaussian and related processes. (English summary) *Insurance Math. Econom.* **12** (1993), *no.* 1, 9–22. 62P05
Dugard, Luc (*with* Giri, F.; M'Saad, M.; Dion, Jean Michel) A direct adaptive controller for a class of stable and time-varying plants. (English summary) *Adaptive systems in control and signal processing, 1989 (Glasgow)*, 195–198, *IFAC Sympos. Ser.*, 1990, *No.* 1, *Pergamon, Oxford*, 1990. (*see* **93j:93007**) 93C40
— (*with* Trofino-Neto, Alexandre; Dion, Jean Michel) Robustness bounds for LQ regulators. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 9, 1373–1377. (Andrzej Świerniak) **93j:93119** 93D09 (49N10, 93B36, 93D15, 93D21)
— (*with* Trofino-Neto, Alexandre; Dion, Jean Michel) On the robustness of LQ regulators for discrete-time systems. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 10, 1564–1568. (Zbigniew Nahorski) **93i:93109** 93D15 (93B36, 93B55)
— (*with* M'Saad, M.; Hammad, Sh.) A suitable generalized predictive adaptive controller case study: control of a flexible arm. (English summary) *Automatica J. IFAC* **29** (1993), *no.* 3, 589–608. 93C85 (70B15, 70Q05)
— (*with* Lozano Leal, Rogelio; Dion, Jean Michel) Singularity-free adaptive pole placement using periodic controllers. (English summary) *IEEE Trans. Automat. Control* **38** (1993), *no.* 1, 104–108. (Krzysztof Kuźmiński) **93j:93060** 93B55
— *see also* **Kim, Jong-Hwan**
Dugas, Manfred (*with* Hausen, J.; Johnson, Johnny Albert) Rings whose additive endomorphisms are multiplicative. *Period. Math. Hungar.* **23** (1991), *no.* 1, 67–75. (Introduction) **93d:16007** 16D70 (16S99, 20K99)
— (*with* Rangaswamy, K. M.) Separable pure subgroups of completely decomposable torsion-free abelian groups. *Arch. Math. (Basel)* **58** (1992), *no.* 4, 332–337. (L. Bican) **93a:20083** 20K20
— (*with* Irwin, John M.) On a class of abelian p-groups. *Forum Math.* **4** (1992), *no.* 2, 147–158. (Doyle O. Cutler) **93g:20100** 20K10
— On countable torsion-free abelian groups with trivial Z-dual. *Proc. Roy. Irish Acad. Sect. A* **92** (1992), *no.* 1, 85–87. (Summary) **93d:20096** 20K15
Dugat, Vincent (*with* Astié-Vidal, Annie; Tuza, Zsolt) Construction of nonisomorphic regular tournaments. (English summary) *Combinatorics '90 (Gaeta, 1990)*, 11–23, *Ann.*

Discrete Math., 52, *North-Holland, Amsterdam*, 1992. (Summary) **93h:05082** 05C20
— (*with* Astié-Vidal, Annie) Near-homogeneous tournaments and permutation groups. *Discrete Math.* **102** (1992), *no.* 2, 111–120. (K. B. Reid) **93e:05037** 05C20 (05B30, 05C25)
— (*with* Astié-Vidal, Annie) Autonomous parts and decomposition of regular tournaments. (English summary) Graph theory and combinatorics (Marseille-Luminy, 1990). *Discrete Math.* **111** (1993), *no.* 1-3, 27–36. (Summary) **93j:05065** 05C20
Duggal, B. P. A generalized commutativity theorem. *Z. Anal. Anwendungen* **10** (1991), *no.* 3, 265–274. (Summary) **93b:47070** 47B47 (47A05, 47A65)
— A note on generalised commutativity theorems in the Schatten norm. *Functional analysis and operator theory* (*New Delhi*, 1990), 47–54, *Lecture Notes in Math.*, 1511, *Springer, Berlin*, 1992. (Fuad Kittaneh) **93i:47007** 47A30 (47B10, 47B15, 47B20)
Duggal, K. L. Ricci inheritance symmetry in fluid spacetimes. *Proceedings of the 4th Canadian Conference on General Relativity and Relativistic Astrophysics* (*Winnipeg, MB*, 1991), 94–98, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93e:83031** 83C40
— Curvature inheritance symmetry in Riemannian spaces with applications to fluid space times. (English summary) *J. Math. Phys.* **33** (1992), *no.* 9, 2989–2997. (Peter R. Law) **93j:83031** 83C40 (53C80, 83C20, 83C55)
— (*with* Bejancu, Aurel) Lightlike submanifolds of codimension two. *Math. J. Toyama Univ.* **15** (1992), 59–82. (Demir N. Kupeli) **93j:53080** 53C50
Dugina, T. N. (*with* Belyaev, Yu. K.; Chistyakova, N. V.) Estimation of the reliability of a system with multiple failures on the basis of incomplete data. (Russian. Russian summary) *Avtomat. i Telemekh.* **1992**, *no.* 2, 181–189; *translation in Automat. Remote Control* **53** (1992), *no.* 2, *part* 2, 299–305. 62N05 (90B25)
Dugošija, Djordje P. On stability in quasiconvex semi-infinite optimization. *Yugosl. J. Oper. Res.* **1** (1991), *no.* 2, 135–140. (Ewa Bednarczuk) **93b:90098** 90C34 (90C31)
Duh, Yi-Jing (*with* Ghosh, Subir) Adjusting residuals in estimation of dispersion effects. *Austral. J. Statist.* **33** (1991), *no.* 1, 65–74. (Summary) **93d:62140** 62K15
Duhamel, Pierre (*with* Rioul, Olivier) Fast algorithms for discrete and continuous wavelet transforms. *IEEE Trans. Inform. Theory* **38** (1992), *no.* 2, *part* 2, 569–586. (Summary) **93b:65215** 65T20 (42C15)
Duhem, Pierre-Maurice-Marie ★ The origins of statics. The sources of physical theory. Translated from the French and with an introduction by Grant F. Leneaux, Victor N. Vagliente and Guy H. Wagener. With a foreword by Stanley L. Jaki. Boston Studies in the Philosophy of Science, 123. *Kluwer Academic Publishers Group, Dordrecht*, 1991. xxxvi+593 *pp. ISBN* 0-7923-0898-0 (Peeter Müürsepp) **93a:01063** 01A75 (01A05, 70–03, 70C20)
— ★ The aim and structure of physical theory. With a foreword by Louis de Broglie. Translated from the second French edition by Philip P. Wiener. Reprint of the 1954 English translation. With an introduction by Jules Vuillemin. Princeton Science Library. *Princeton University Press, Princeton, NJ*, 1991. xxxviii+344 *pp. ISBN* 0-691-02524-X (I. Grattan-Guinness) **93a:01064** 01A75 (00A79)
— ★ L'évolution de la mécanique. (French) [The evolution of mechanics] Suivi de "Les théories de la chaleur", "Analyse de l'ouvrage de Ernst Mach: *La Mécanique*". [Followed by "Heat theories" and "Analysis of Ernst Mach's *Mechanics*"] Reprint of the 1903 original. Edited and with an introduction by Anastasios Brenner. With a preface by Paul Germain. Mathesis. *Librairie Philosophique J. Vrin, Paris*, 1992. xxiv+474 *pp. ISBN* 2-7116-1105-1 (I. Grattan-Guinness) **93k:01089** 01A75 (01A55, 70–03, 80–03)
— *see also* **Needham, Paul, 93e:01014** *and* **Malewicz, Małgorzata H.**
van Duijn, C. J. (*with* Peletier, L. A.) How the interface approaches the boundary in the dead core problem. *J. Reine Angew. Math.* **432** (1992), 1–21. (Qi Xiao Ye) **93i:35055** 35J65 (35B05, 80A30)
— (*with* Peletier, L. A.) A boundary-layer problem in fresh-salt groundwater flow. *Quart. J. Mech. Appl. Math.* **45** (1992), *no.* 1, 1–24. (Hong Fei Zhang) **93c:76077** 76S05 (35Q35, 76D10, 86A05)
— (*with* Clément, Philippe; Li, Shuanhu) On a nonlinear elliptic-parabolic partial differential equation system in a two-dimensional groundwater flow problem. *SIAM J. Math. Anal.* **23** (1992), *no.* 4, 836–851. (Themistocles M. Rassias) **93h:35089** 35K50 (47H15, 47N20)
Duijvestijn, A. J. W. (*with* Bouwkamp, C. J.) ★ Catalogue of simple perfect squared squares of orders 21 through 25. EUT Report-WSK, 92-03. *Eindhoven University of Technology, Department of Mathematics and Computing Science, Eindhoven*, 1992. ii+207 *pp.* 05B15
Duistermaat, J. J. Self-similarity of "Riemann's nondifferentiable function". *Nieuw Arch. Wisk.* (4) **9** (1991), *no.* 3, 303–337. (Michael Evans) **93h:26009** 26A27 (11F03)
Duke, Richard (*with* Erdős, Paul; Rödl, Vojtěch) Extremal problems for cycle-connected graphs. Proceedings of the Twenty-second Southeastern Conference on Combinatorics, Graph Theory, and Computing (Baton Rouge, LA, 1991). *Congr. Numer.* **83** (1991), 147–151. (A. C. Liu) **93a:05073** 05C35
Duke, W. (*with* Howe, Roger E.; Li, Jian-Shu) Estimating Hecke eigenvalues of Siegel modular forms. *Duke Math. J.* **67** (1992), *no.* 1, 219–240. (T. C. Vasudevan) **93i:11057** 11F60 (11F30, 11F46, 11F70)
— (*with* Bump, Daniel; Hoffstein, Jeffrey; Iwaniec, Henryk) An estimate for the Hecke eigenvalues of Maass forms. *Internat. Math. Res. Notices* **1992**, *no.* 4, 75–81. (M. Ram Murty) **93d:11047** 11F11 (11F37, 11F66, 11F70)
— (*with* Iwaniec, Henryk) A relation between cubic exponential and Kloosterman sums. *A tribute to Emil Grosswald: number theory and related analysis*, 255–258, *Contemp. Math.*, 143, *Amer. Math. Soc., Providence, RI*, 1993. (Paul Thomas Young) **93m:11082** 11L05 (11T23)
Dukes, Phillip R. (*with* Larson, Everett G.) The evolution of our probability image for the spin orientation of a spin-$\frac{1}{2}$- ensemble as measurements are made on several members of the ensemble—connections with information theory and Bayesian statistics. *Maximum entropy and Bayesian methods* (*Laramie, WY*, 1990), 181–189, *Fund. Theories Phys.*, 43, *Kluwer Acad. Publ., Dordrecht*, 1991. (*see* **93b:00011**) 81P15
Dukhovny, Alexander (*with* Abolnikov, Lev) Markov chains with transition delta-matrix: ergodicity conditions, invariant probability measures and applications. *J. Appl. Math. Stochastic Anal.* **4** (1991), *no.* 4, 333–355. (B. R. K. Kashyap) **93e:60132** 60J10 (60K25, 60K30, 90B22)
— (*with* Abolnikov, Lev; Dshalalow, Jewgeni H.) On stochastic processes in a multilevel control bulk queueing system. *Stochastic Anal. Appl.* **10** (1992), *no.* 2, 155–179. (B. R. K. Kashyap) **93b:60206** 60K25 (90B22)
Dukowicz, John K. (*with* Dvinsky, Arkady S.) Approximate factorization as a high order splitting for the implicit incompressible flow equations. (English summary) *J. Comput. Phys.* **102** (1992), *no.* 2, 336–347. (Summary) **93g:76092** 76M25 (76D05, 76M10)
Dulá, José H. An upper bound on the expectation of simplicial functions of multivariate random variables. *Math. Programming* **55** (1992), *no.* 1, *Ser. A*, 69–80. (Kurt Marti) **93c:90050** 90C15 (60E15)
Dular, P. (*with* Nicolet, A.; Genon, A.; Legros, W.) Boundary element singularities in 3D magnetostatic problems based on the vector potential. (English summary) *Boundary element technology, VII* (*Albuquerque, NM*, 1992), 319–329, *Comput. Mech., Southampton*, 1992. (*see* **93b:65002**) 65N38 (78A25)
Dulio, Paolo Dimensional aspects of hyperbolic self-similarity. (Italian. English summary) *Boll. Un. Mat. Ital. B* (7) **5** (1991), *no.* 3, 557–571. (Summary) **93d:51038** 51M10
Dullerud, Geir E. (*with* Francis, Bruce Allen) $\mathscr{L}_1$-performance in sampled-data systems. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, I* (*Kobe*, 1991), 493–498, *Mita, Tokyo*, 1992. (*see* **93g:93005**) 93C57
— (*with* Francis, Bruce Allen) $\mathscr{L}_1$ analysis and design of sampled-data systems. *IEEE Trans. Automat. Control* **37** (1992), *no.* 4, 436–446. (Han Sheng Wu) **93a:93074** 93C57 (49N35, 93B36, 93D09)
Düllmann, Stephan (*with* Buchmann, Johannes) Distributed class group computation. (English summary) *Informatik*, 69–79, *Teubner-Texte Inform.*, 1, *Teubner, Stuttgart*, 1992. (Summary) **93e:11153** 11Y40 (11R29)
Dulucq, Serge (*with* Favreau, Luc) Un modèle combinatoire pour les polynômes de Bessel. (English summary) [A combinatorial model for Bessel polynomials] *Séminaire Lotharingien de Combinatoire* (*Salzburg*, 1990), 83–100, *Publ. Inst. Rech. Math. Av.*, 462, *Univ. Louis Pasteur, Strasbourg*, 1991. (Volker Strehl) **93j:05173** 05E35 (33C45)
Dumas, François Sous-corps de fractions rationnelles des corps gauches de séries de Laurent. [Subfields of rational functions of skew fields of Laurent series] *Topics in invariant theory* (*Paris*, 1989/1990), 192–214, *Lecture Notes in Math.*, 1478, *Springer, Berlin*, 1991. (P. M. Cohn) **93j:16014** 16S36
— (*with* Vidal, Robert) Dérivations, et hautes dérivations, dans certains corps gauches de series de Laurent. (English summary) [Derivations and higher derivations of Laurent series in some skew fields] *Pacific J. Math.* **153** (1992), *no.* 2, 277–288. (Miguel Ferrero) **93c:16035** 16W25 (16K99, 16W60)
— Skew power series rings with general commutation formula. Second Workshop on Algebraic and Computer-theoretic Aspects of Formal Power Series (Paris, 1990). *Theoret. Comput. Sci.* **98** (1992), *no.* 1, 99–114. (V. A. Artamonov) **93h:16050** 16S36 (16W25)
Dumas, H. Scott Existence and stability of particle channeling in crystals on timescales beyond all orders. *Asymptotics beyond all orders* (*La Jolla, CA*, 1991), 267–273, *NATO Adv. Sci. Inst. Ser. B Phys.*, 284, *Plenum, New York*, 1991. (*see* **93i:00016**) 82D25
Dümbgen, Lutz The asymptotic behavior of some nonparametric change-point estimators. *Ann. Statist.* **19** (1991), *no.* 3, 1471–1495. (Summary) **93d:62059** 62G05 (62G15, 62G20)
— Limit theorems for the simplicial depth. *Statist. Probab. Lett.* **14** (1992), *no.* 2, 119–128. (Evarist Giné) **93m:60063** 60F17 (60B12, 60F15)
Dümcke, R. (*with* Fazelpour, S.; Reichl, H.) Solution of two-dimensional electrostatic and eddy current problems based on BEM for modelling of interconnects on multichip modules. (English summary) *Boundary element technology, VII* (*Albuquerque, NM*, 1992), 305–318, *Comput. Mech., Southampton*, 1992. (*see* **93b:65002**) 65N38 (78A25)
Dumer, I. I. (*with* Barg, A. M.) On computing the weight spectrum of cyclic codes. *IEEE Trans. Inform. Theory* **38** (1992), *no.* 4, 1382–1386. (Summary) **93b:94023** 94B15
Dumir, V. C. (*with* Hans-Gill, R. J.) Mathematical contributions of Professor Hansraj Gupta. *J. Indian Math. Soc.* (*N.S.*) **57** (1991), *no.* 1-4, 11–16. (Gloria Olive) **93d:01060** 01A70 (05–03)
— (*with* Hans-Gill, R. J.) The view obstruction problems for boxes. *J. Indian Math. Soc.* (*N.S.*) **57** (1991), *no.* 1-4, 117–122. (J. M. Wills) **93e:52035** 52C07 (11H31)
— (*with* Hans-Gill, R. J.) Markoff type chain for the view obstruction problem for three-dimensional cubes. *J. Indian Math. Soc.* (*N.S.*) **57** (1991), *no.* 1-4, 123–141. (Marilyn Breen) **93g:52004** 52A37
— (*with* Sehmi, Ranjeet) Positive values of nonhomogeneous indefinite quadratic forms of type (3, 2). (English summary) *Indian J. Pure Appl. Math.* **23** (1992), *no.* 12, 827–853. (Leonid Vulakh) **93k:11062a** 11H50
— (*with* Sehmi, Ranjeet) Positive values of nonhomogeneous indefinite quadratic forms of signature 1. (English summary) *Indian J. Pure Appl. Math.* **23** (1992), *no.* 12, 855–864. (Leonid Vulakh) **93k:11062b** 11H50
cucu-Dumitrescu, C. *see* **Cucu-Dumitrescu, C.**
Dumitrescu, D. (*with* Pop, H.) A preliminary bibliography on fuzzy clustering and related fields. (Romanian summary) *Studia Univ. Babeş-Bolyai Math.* **35** (1990), *no.* 3, 13–24. (Summary) **93m:68143** 68T10 (00A15, 04A72)
— Entropy of a fuzzy process. (English summary) *Fuzzy Sets and Systems* **55** (1993), *no.* 2, 169–177. 28D20 (04A72, 94A17)
— Fuzzy training procedures. I. (English summary) *Fuzzy Sets and Systems* **56** (1993), *no.* 2, 155–169. 68T05 (04A72)
Dümmel, Siegfried On a theorem of M. G. Arsove. *Math. Bohem.* **117** (1992), *no.* 2, 159–167. (V. Totik) **93i:31004** 31B99 (31A99)
— (*with* Pfaffe, Mike) Identifikation eines Koeffizienten in der eindimensionalen Wärmeleitungsgleichung. [Identification of a coefficient in the one-dimensional heat equation] *Wiss. Z. Tech. Univ. Chemnitz* **34** (1992), *no.* 1, 45–51. (Gottfried Anger) **93i:35153** 35R30 (35K05)
Dummett, Michael ★ Frege. Philosophy of mathematics. *Harvard University Press, Cambridge, MA*, 1991. xiv+331 *pp. ISBN* 0-674-31935-4 (Francisco A. Rodriguez Consuegra) **93g:03001** 03A05 (00A30, 01A55, 01A60, 03–03)
— *see also* **Mitchell, Samuel William, 93e:03007**
Dumont, G. A. (*with* Fu, Ye; Elshafei, A.-L.) Orthonormal functions in identification and adaptive control. (English summary) *Intelligent tuning and adaptive control* (*Singapore*, 1991), 193–198, *IFAC Sympos. Ser.*, 1991, *No.* 7, *Pergamon, Oxford*, 1991. (*see* **93i:93007**) 93B30 (93C40)
Dumortier, Freddy (*with* Broer, H. W.; van Strien, Sebastian; Takens, Floris) ★ Structures in dynamics. Finite-dimensional deterministic studies. Studies in Mathematical Physics, 2. *North-Holland Publishing Co., Amsterdam*, 1991. xii+309 *pp. ISBN* 0-444-89257-5; 0-444-89258-3 (Hans G. Bothe) **93b:58043** 58Fxx (58F05, 58F08, 58F13, 58F14)

— (*with* Roussarie, Robert; Sotomayor, J.; Żołądek, H.) ★ Bifurcations of planar vector fields. Nilpotent singularities and Abelian integrals. Lecture Notes in Mathematics, 1480. *Springer-Verlag, Berlin*, 1991. viii+226 *pp. ISBN* 3-540-54521-2 (Milan Medveď) **93f:58165** 58F14 (34C23, 58C27)

— (*with* Roussarie, Robert) Tracking limit cycles escaping from rescaling domains. *Dynamical systems and related topics (Nagoya*, 1990), 80–99, *Adv. Ser. Dyn. Syst.*, 9, *World Sci. Publishing, River Edge, NJ*, 1991. (Summary) **93e:58154** 58F21 (34C05)

— (*with* Annabi, H.; Annabi, Mohamed Larbi) Continuous dependence on parameters in the Bogdanov-Takens bifurcation. *Geometry and analysis in nonlinear dynamics (Groningen*, 1989), 1–21, *Pitman Res. Notes Math. Ser.*, 222, *Longman Sci. Tech., Harlow*, 1992. (Robert Roussarie) **93e:58135** 58F14

Dunbar, David C. (*with* Bailin, David; Love, Alex) Generations in irreducible $N = 2$ superconformal coset theories. *Internat. J. Modern Phys. A* **6** (1991), *no.* 10, 1659–1674. (Young-Hun Kwon) **93e:81089** 81T30 (17B81, 81R10)

Dunbar, Jean (*with* Laskar, Renu C.) Universal and global irredundancy in graphs. (English summary) *J. Combin. Math. Combin. Comput.* **12** (1992), 179–185. (Summary) **93h:05099** 05C35 (05C85, 68Q25)

Dunbar, Steven R. (*with* Logan, J. David) Travelling waves in model reacting flows with reversible kinetics. (English summary) *IMA J. Appl. Math.* **49** (1992), *no.* 2, 103–121. (Summary) **93h:80008** 80A32 (35B20, 35Q35)

— (*with* Douglass, Rod W.; Camp, W. J.) The divider dimension of the graph of a function. *J. Math. Anal. Appl.* **167** (1992), *no.* 2, 403–413. (Remo Badii) **93e:28012** 28A80 (28A75)

— Geometric analysis of a nonlinear boundary value problem from physical oceanography. (English summary) *SIAM J. Math. Anal.* **24** (1993), *no.* 2, 444–465. (Tassilo Küpper) **93m:34026** 34B15 (34C35, 76C99, 86A05)

Duncan, A. J. (*with* O'Carroll, L.) On Zariski-regularity, the vanishing of Tor and a uniform Artin-Rees theorem. *Topics in algebra, Part* 2 (*Warsaw*, 1988), 49–55, *Banach Center Publ.*, 26, *Part* 2, *PWN, Warsaw*, 1990. (M. H. Bijan-Zadeh) **93e:13026** 13E05 (13D40)

Duncan, A. M. Eric John Aiton (1923–1991). *British J. Hist. Sci.* **25** (1992), *no.* 85, *part* 2, 253–254. (Editors) **93g:01066** 01A70

pasik-Duncan, Bożenna *see* **Pasik-Duncan, Bożenna**

Duncan, D. B. *see* **Duncan, Dugald B.**

Duncan, Della C. (*with* Ihrig, Edwin C.) Flat pseudo-Riemannian manifolds with a nilpotent transitive group of isometries. *Ann. Global Anal. Geom.* **10** (1992), *no.* 1, 87–101. (William Goldman) **93f:53055** 53C50 (53C22, 53C30)

— (*with* Ihrig, Edwin C.) Translationally isotropic flat homogeneous manifolds with metric signature $(n, 2)$. (English summary) *Ann. Global Anal. Geom.* **11** (1993), *no.* 1, 3–24. (Yoshinobu Kamishima) **93k:53067** 53C50 (53C30)

Duncan, Dugald B. (*with* Walshaw, C. H.; Wattis, J. A. D.) A symplectic solver for lattice equations. (English summary) *Nonlinear coherent structures in physics and biology (Dijon*, 1991), 151–158, *Lecture Notes in Phys.*, 393, *Springer, Berlin*, 1991. (*see* **93e:00025**) 65L99 (34A50, 58F05)

Duncan, John (*with* Ülger, A.) Almost periodic functionals on Banach algebras. *Rocky Mountain J. Math.* **22** (1992), *no.* 3, 837–848. (M. S. Kassem) **93h:46057** 46Hxx

Duncan, Joseph W. (*with* Shelton, William C.) U.S. Government contributions to probability sampling and statistical analysis. (English summary) *Statist. Sci.* **7** (1992), *no.* 3, 320–338. (Summary) **93g:01105** 01A99 (01A60)

Duncan, K. N. (*with* López-Gómez, Julián; Eilbeck, J. C.; Molina-Meyer, Marcela) Structure of solution manifolds in a strongly coupled elliptic system. (English summary) IMA Conference on Dynamics of Numerics and Numerics of Dynamics (Bristol, 1990). *IMA J. Numer. Anal.* **12** (1992), *no.* 3, 405–428. (Summary) **93f:35058** 35J55 (35B32, 58G28)

Duncan, M. J. (*with* Kaloper, Nemanja; Olive, Keith A.) Axion hair and dynamical torsion from anomalies. (English summary) *Nuclear Phys. B* **387** (1992), *no.* 1, 215–235. (Summary) **93g:83092** 83E30 (81T30, 81T50, 83C57)

Duncan, Tyrone E. Some solvable stochastic control problems in symmetric spaces of type IV. *Stochastic systems and optimization (Warsaw*, 1988), 284–297, *Lecture Notes in Control and Inform. Sci.*, 136, *Springer, Berlin*, 1989. (*see* **93d:93009**) 93E20 (58G32)

— (*with* Maslowski, Bohdan; Pasik-Duncan, Bożenna) On boundary control of unknown linear stochastic distributed parameter systems. *System modelling and optimization (Zurich*, 1991), 500–509, *Lecture Notes in Control and Inform. Sci.*, 180, *Springer, Berlin*, 1992. (*see* **93e:90003**) 93C20 (93E03)

— (*with* Chojnowska-Michalik, Anna; Pasik-Duncan, Bożenna) Uniform operator continuity of the stationary Riccati equation in Hilbert space. *Appl. Math. Optim.* **25** (1992), *no.* 2, 171–187. (H. J. Kuiper) **93f:93036** 93B25 (47N70, 49N10)

— A solvable stochastic control problem in the hyperbolic plane. *J. Math. Systems Estim. Control* **2** (1992), *no.* 4, 445–452. (Shin'ichi Aihara) **93e:93065** 93E20 (49K45)

— (*with* Mandl, Petr; Pasik-Duncan, Bożenna) On least squares estimation in continuous time linear stochastic systems. *Kybernetika (Prague)* **28** (1992), *no.* 3, 169–180. (Engin Yaz) **93e:93073** 93E24 (93E12)

— *see also* **Stochastic theory and adaptive control, 93g:93007**

Duncan-Jones, Austin Fugitive propositions. *Reflexivity*, 183–185, *North-Holland, Amsterdam*, 1992. (*see* **93g:03005**) 03A05

Duneau, M. (*with* Oguey, C.; Thalal, A.) Coincidence lattices and associated shear transformations. (English summary) *Acta Cryst. Sect. A* **48** (1992), *no.* 5, 772–781. (Summary) **93f:52021** 52C07 (82D25)

tran viet Dung *see* **Tran Viet Dung**

nguyễn việt Dũng² *see* **Nguyễn Việt Dũng²**

Dung, Nguyen V. *see* **Nguyễn Việt Dũng²**

Dung, Nguyen Viet *see* **Nguyễn Việt Dũng²**

Dung, Phan Minh *see* **Phan Minh Dung**

lê Dũng Tráng *see* **Lê Dũng Tráng**

Dunham, Charles B. Existence of nonlinear uniform approximations under Hermite (Lagrange) type interpolatory constraints. *Approximation, optimization and computing*, 69–72, *North-Holland, Amsterdam*, 1990. (*see* **93a:41001**) 41A05 (41A50)

— (*with* Zhu, Chang Zhong) Perturbation theorem for constrained mean approximation. *Approximation, optimization and computing*, 73–75, *North-Holland, Amsterdam*, 1990. (Summary) **93c:41028** 41A29 (41A55)

— Kemp's conjecture on existence in discrete rational Chebyshev approximation. *Approximation theory (Memphis, TN*, 1991), 285–288, *Lecture Notes in Pure and Appl. Math.*, 138, *Dekker, New York*, 1992. (D. J. Leeming) **93i:41009** 41A20

— Uniform approximation with alternation, Young's condition and the Remez first algorithm. Proceedings of the Twenty-first Manitoba Conference on Numerical Mathematics and Computing (Winnipeg, MB, 1991). *Congr. Numer.* **86** (1992), 97–113. (A. B. Pevnyĭ) **93e:41001** 41–02 (41A30, 65D15)

Dunham, Douglas Fivefold symmetry in hyperbolic crystallography. *Fivefold symmetry*, 129–139, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93i:52002**) 51M10 (20H15, 51F15)

Dunkl, Charles F. Integral kernels with reflection group invariance. *Canad. J. Math.* **43** (1991), *no.* 6, 1213–1227. (Eric M. Opdam) **93g:33012** 33C80 (20F55)

Dunlap, R. A. Fivefold symmetry in the graphic art of M. C. Escher. *Fivefold symmetry*, 489–504, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93i:52002**) 00A69 (52C20)

Dunlop, François (*with* Magnen, Jacques; Rivasseau, Vincent; Roche, Philippe) Pinning of an interface by a weak potential. *J. Statist. Phys.* **66** (1992), *no.* 1-2, 71–98. (Boris A. Khoruzhenko) **93a:82007** 82B20 (82B24)

Dunn, J. C. (*with* Tian, T.) Variants of the Kuhn-Tucker sufficient conditions in cones of nonnegative functions. (English summary) *SIAM J. Control Optim.* **30** (1992), *no.* 6, 1361–1384. (Vera Zeidan) **93j:49021** 49K15 (49K27, 90C48)

Dunn, K. A. (*with* Harriott, Tina A.; Williams, Jeffrey George) Kinks in $1 + 1$, $2 + 1$ and $3 + 1$ dimensions. *Proceedings of the 4th Canadian Conference on General Relativity and Relativistic Astrophysics (Winnipeg, MB*, 1991), 360–363, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93d:83017** 83C20 (81T99, 83C15)

— (*with* Coley, Alan A.) Qualitative analysis of a class of Bianchi V imperfect fluid cosmologies. *J. Math. Phys.* **33** (1992), *no.* 5, 1772–1779. (J. B. Griffiths) **93c:83017** 83C20

— (*with* Harriott, Tina A.; Williams, Jeffrey George) FLRW kinks. *Phys. Lett. A* **163** (1992), *no.* 3, 152–154. (Shin-ichi Kitamura) **93f:83010** 83C15 (81T13, 83C20)

Dunne, Gerald (*with* Lerda, Alberto; Sciuto, Stefano; Trugenberger, Carlo A.) Exact multi-anyon wave functions in a magnetic field. *Nuclear Phys. B* **370** (1992), *no.* 3, 601–635. (Joan Soto) **93c:81028** 81Q05 (81S99, 81T13)

— (*with* Rius, Nuria) A comment on the relationship between differential and dimensional renormalization. (English summary) *Phys. Lett. B* **293** (1992), *no.* 3-4, 367–374. (Alexander W. Smith) **93j:81069** 81T15 (81T18)

Dunne, Timothy T. (*with* Schall, Robert) A note on the relationship between parameter collinearity and local influence. (English summary) *Biometrika* **79** (1992), *no.* 2, 399–404. 62F35

Dunning, Larry A. (*with* Clark, W. Edwin) Partial partitions of vector spaces arising from the construction of byte error control codes. (English summary) *Ars Combin.* **33** (1992), 161–177. (J. J. Stiffler) **93g:94012** 94B05 (94B15)

Dunsby, Peter K. S. (*with* Bruni, Marco; Ellis, George F. R.) Gauge-invariant perturbations in a scalar field dominated universe. *Classical Quantum Gravity* **9** (1992), *no.* 4, 921–945. (Oscar J. P. Éboli) **93c:83124** 83F05

Dunskaya, N. V. Lyapunov functions in problems of the design of a control for mechanical systems by the objective potential method. (Russian. Russian summary) *Development and application of the method of Lyapunov functions* (*Russian*) (*Irkutsk*, 1989), 95–101, 284, "*Nauka*" *Sibirsk. Otdel., Novosibirsk*, 1992. (*see* **93m:93005**) 70Q05 (70K20, 93D30)

Dunster, T. M. Conical functions with one or both parameters large. *Proc. Roy. Soc. Edinburgh Sect. A* **119** (1991), *no.* 3-4, 311–327. (F. W. J. Olver) **93c:33001** 33C05 (65D20)

Dűntsch, I. (*with* Andréka, Hajnal; Németi, István) A nonpermutational integral relation algebra. *Michigan Math. J.* **39** (1992), *no.* 3, 371–384. (D. Monk) **93i:03089** 03G15

Dunwoody, J. Linear thermoelastic singular surfaces: a revision. (English summary) Elastic waves and related topics (Dublin, 1991). *J. Mech. Phys. Solids* **40** (1992), *no.* 7, 1473–1484. (Reinhard Racke) **93j:73006** 73B30 (73D40)

Dunwoody, M. J. (*with* Roller, M. A.) Splitting groups over polycyclic-by-finite subgroups. *Bull. London Math. Soc.* **25** (1993), *no.* 1, 29–36. (Ĭ. Ya. Subbotin) **93h:20029** 20E06 (20E08, 20F32)

Dunz, Karl (*with* Berliant, Marcus; Thomson, William L.) On the fair division of a heterogeneous commodity. *J. Math. Econom.* **21** (1992), *no.* 3, 201–216. (Summary) **93a:90019** 90A80

Duoandikoetxea, Javier (*with* Torrea Hernández, José Luis; García-Cuerva, José; Carbery, Anthony) The work of José Luis Rubio de Francia. I, II, III, IV. Conference on Mathematical Analysis (El Escorial, 1989). *Publ. Mat.* **35** (1991), *no.* 1, 9–25, 27–63, 65–80, 81–93. (J. Horváth) **93b:01044** 01A70 (42–03, 43–03, 44–03, 46–03)

— (*with* Moyua Pinillos, Adela) Weighted inequalities for square and maximal functions in the plane. *Studia Math.* **102** (1992), *no.* 1, 39–47. (Douglas Kurtz) **93c:42019** 42B25 (42B15)

— Weighted norm inequalities for homogeneous singular integrals. *Trans. Amer. Math. Soc.* **336** (1993), *no.* 2, 869–880. (Steve Hofmann) **93f:42030** 42B20 (42B25, 47G10)

Duong, Quang Phuc (*with* Pham-Gia, T.; Turkkan, N.) Using the mean deviation in the elicitation of the prior distribution. (English summary) *Statist. Probab. Lett.* **13** (1992), *no.* 5, 373–381. (Summary) **93c:62055** 62F15

— The distribution of the run length in CUSUM procedures. (English summary) *Math. Comput. Modelling* **17** (1993), *no.* 1, 49–54. 60J15 (62E15, 62G10)

ha-Duong, Tuong *see* **Ha-Duong, Tuong**

Duong, Xuan Thinh H_∞ functional calculus of elliptic operators on L^p spaces. An approach using Calderón-Zygmund operator theory. *Austral. Math. Soc. Gaz.* **19** (1992), *no.* 1-2, 1–10. (W. Ricker) **93f:47054** 47F05 (35Jxx, 47A60, 47N20)

Duong Quốc Viêt (*with* Ngô Việt Trung) Cohen-Macaulay and Gorenstein property of Rees algebras of nonsingular equimultiple prime ideals. (English summary) *Manuscripta Math.* **76** (1992), *no.* 2, 147–167. (L. J. Ratliff, Jr.) **93g:13003** 13A30 (13H10)

— A note on the Cohen-Macaulayness of Rees algebras of filtrations. *Comm. Algebra* **21** (1993), *no.* 1, 221–229. (Matthew Miller) **93m:13002** 13A30 (13H10)

Dupač, Václav Stochastic approximation and optimization. (English summary) *Computational aspects of model choice* (*Prague*, 1991), 153–161, *Contrib. Statist., Physica, Heidelberg*, 1993. (Summary) **93m:62185** 62L20

Dupačová, Jitka On interval estimates for optimal value of stochastic programs. *System modelling and optimization* (*Zurich*, 1991), 556–563, *Lecture Notes in Control and*

Inform. Sci., 180, *Springer, Berlin*, 1992. (*see* **93e:90003**) 90C15
— Epi-consistency in restricted regression models. The case of a general convex fitting function. (English summary) *Comput. Statist. Data Anal.* **14** (1992), *no.* 4, 417–425. (M. Hušková) **93k:62058** 62F12 (62J05)
Dupain, Y. (*with* Charpentier, Ph.) Une estimation des coefficients tangents d'un courant postif fermé dans un domaine de $\mathbf{C}^3$. (English summary) [An estimate of the tangent coefficients of a closed positive current in a domain in $\mathbf{C}^3$] *Publ. Mat.* **36** (1992), *no.* 1, 319–349. (Harold P. Boas) **93h:32015** 32C30 (32F15)
Duplák, Ján Quasigroups and translation planes. *J. Geom.* **43** (1992), *no.* 1-2, 95–107. (V. Havel) **93d:51006** 51A40
Duplantier, Bertrand Fractal critical phenomena in two dimensions and conformal invariance. *Fractals' physical origin and properties* (*Erice*, 1988), 83–121, *Ettore Majorana Internat. Sci. Ser. Phys. Sci.*, **45**, *Plenum, New York*, 1989. (*see* **93k:00018**) 82B27 (28A80, 82B41, 82B43)
— Statistical mechanics on a 2D-random surface. (English summary) Physics in two dimensions (Neuchâtal, 1991). *Helv. Phys. Acta* **65** (1992), *no.* 2-3, 291–296. (Summary) **93e:82001** 82-02 (81-02, 81T27, 81T40)
— (*with* Schäfer, Lothar; von Ferber, Christian; Lehr, Ulrike) Renormalization of polymer networks and stars. *Nuclear Phys. B* **374** (1992), *no.* 3, 473–495. (Summary) **93a:82072** 82D60 (82B28)
— (*with* Lawler, Gregory F.; Le Gall, Jean-François; Lyons, T. J.) The geometry of the Brownian curve. (English and French summaries) *Bull. Sci. Math.* (2) **117** (1993), *no.* 1, 91–106. (Krzysztof Burdzy) **93k:60205** 60J65 (31A20, 60G17, 60J15, 60J50, 60K35)
Dupont, G. (*with* Nicolis, G.; Amellal, A.; Mareschal, M.) Nonequilibrium states and long range correlations in chemical dynamics. *Stochastic methods in experimental sciences* (*Szklarska Poręba*, 1989), 332–346, *World Sci. Publishing, River Edge, NJ*, 1990. (Andrzej Fuliński) **93b:82056** 82C26 (80A30, 82C31)
Dupont, Nicolas Minimalité des algèbres de chaînes et modèle d'Adams-Hilton. (English and French summaries) [Minimality of chain algebras and the Adams-Hilton model] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 8, 949–952. (Jean-Claude Thomas) **93j:55016** 55P62 (18G99)
Dupont, Patrick Jean (*with* Bollé, D.; Vinck, B.) On the overlap dynamics of multi-state neural networks with a finite number of patterns. *J. Phys. A* **25** (1992), *no.* 10, 2859–2872. (J. Leo van Hemmen) **93h:82042** 82C32 (92B20)
Dupont, T. (*with* Glowinski, Roland; Kinton, W.; Wheeler, Mary Fanett) Mixed finite-element methods for time-dependent problems: application to control. *Finite elements in fluids, Vol. 8* (*Huntsville, AL*, 1989), 119–136, *Ser. Comput. Phys. Process. Mech. Thermal Sci., Hemisphere, Washington, DC*, 1992. (Introduction) **93h:65122** 65M60 (35A15, 35B37, 93B40, 93C20)
DuPré, Arthur M. (*with* Kass, Seymour) Distance and parallelism between flats in $\mathbf{R}^n$. *Linear Algebra Appl.* **171** (1992), 99–107. (B. Reichstein) **93f:15001** 15A03 (15A06)
theseider Dupre, Daniele *see* **Theseider Dupre, Daniele**
Dupree, Thomas H. Coarse-grain entropy in two-dimensional turbulence. (English summary) *Phys. Fluids B* **4** (1992), *no.* 10, 3101–3114. (Summary) **93f:76058** 76F99
Dupuis, Alain (*with* Guillemin, Fabrice; Boyer, Jacqueline) Burstiness in broadband integrated networks. (English summary) *Performance Evaluation* **15** (1992), *no.* 3, 163–176. 90B22
Dupuis, Paul (*with* Ishii, Hitoshi) On Lipschitz continuity of the solution mapping to the Skorokhod problem, with applications. *Stochastics Stochastics Rep.* **35** (1991), *no.* 1, 31–62. (Constantin Tudor) **93e:60110** 60H10
— A numerical method for a calculus of variations problem with discontinuous integrand. *Applied stochastic analysis* (*New Brunswick, NJ*, 1991), 90–107, *Lecture Notes in Control and Inform. Sci.*, 177, *Springer, Berlin*, 1992. (Ryszard Gessing) **93e:49049** 49M25 (49K10)
— (*with* Ellis, Richard S.) Large deviations for Markov processes with discontinuous statistics. II. Random walks. *Probab. Theory Related Fields* **91** (1992), *no.* 2, 153–194. (Summary) **93c:60034** 60F10 (60J05)
Dupuy, F. (*with* Sabatier, Pierre C.) Discontinuous media and underdetermined scattering problems. (English summary) *J. Phys. A* **25** (1992), *no.* 15, 4253–4268. (Frank Natterer) **93g:35138** 35R30 (35P25, 73D25, 73D50, 78A45)
Durairajan, T. M. Optimal estimating function for nonorthogonal model. (English summary) *J. Statist. Plann. Inference* **33** (1992), *no.* 3, 381–384. (Summary) **93h:62043** 62F10
Durán, Ana Lía The converse of de l'Hôpital's rule. (Spanish. English and Spanish summaries) *Cienc. Tecn.* **16** (1992), *no.* 1-2, 111–119. 26A06
Duran, Antonio J. *see* **Durán Guardeño, Antonio J.**
Duran, B. S. (*with* Esparza, S. O.) Multistate coherent systems and the three modules theorem. (English summary) *Comm. Statist. Theory Methods* **22** (1993), *no.* 2, 561–573. 62N05
— (*with* Martínez-Morales, Manuel) A test for randomness based on a complexity measure. (English summary) *Comm. Statist. Theory Methods* **22** (1993), *no.* 3, 879–895. 62G10 (68Q30)
montalvo Durán, Francisco *see* **Montalvo Durán, Francisco**
aular de Durán, Judith *see* **Aular de Durán, Judith**
de Durán, Judith Aular *see* **Aular de Durán, Judith**
Durán, M. (*with* Conca, C.; Planchard, J.) A quadratic eigenvalue problem involving Stokes equations. (English summary) *Comput. Methods Appl. Mech. Engrg.* **100** (1992), *no.* 3, 295–313. (Summary) **93g:73097** 73K70 (35P05, 35Q30, 47N20, 73K12, 76D99)
Durán, Ricardo (*with* Rodríguez, Rodolfo) On the asymptotic exactness of Bank-Weiser's estimator. *Numer. Math.* **62** (1992), *no.* 3, 297–303. (Summary) **93e:65135** 65N30 (65N50)
— (*with* Muschietti, María Amelia; Rodríguez, Rodolfo) Asymptotically exact error estimators for rectangular finite elements. *SIAM J. Numer. Anal.* **29** (1992), *no.* 1, 78–88. (Lubor Malina) **93a:65148** 65N30 (65N15)
— (*with* Babuška, Ivo M.; Rodríguez, Rodolfo) Analysis of the efficiency of an a posteriori error estimator for linear triangular finite elements. *SIAM J. Numer. Anal.* **29** (1992), *no.* 4, 947–964. (Summary) **93d:65096** 65N30 (65N15)
Durand, Jeffrey (*with* Durand, Roger) Fitting and testing a "predator-prey" model. (English summary) *J. Math. Sociol.* **17** (1992), *no.* 1, 51–62. 92K10 (92D40)
Durand, Marie-José *see* **Durand-Richard, Marie-José**
canalis-Durand, Mireille *see* **Canalis-Durand, Mireille**
Durand, Roger (*with* Durand, Jeffrey) Fitting and testing a "predator-prey" model. (English summary) *J. Math. Sociol.* **17** (1992), *no.* 1, 51–62. 92K10 (92D40)
Durand, Stéphane (*with* Mayrand, Michel; Spiridonov, V. P.; Vinet, Luc) Higher order parasupersymmetric quantum mechanics. *Modern Phys. Lett. A* **6** (1991), *no.* 34, 3163–3169. (From the text) **93f:81043** 81Q60
— Fractional superspace formulation of generalized super-Virasoro algebras. (English summary) *Modern Phys. Lett. A* **7** (1992), *no.* 31, 2905–2911. (Kyo Nishiyama) **93k:17053** 17B68 (81R10)
Durand-Alegría, Ana Isabel (*with* López-Sánchez, Jesús; Pérez de Vargas, Alberto) Zygotic algebra for k-linked multiallelic loci with sexually different recombination rates. *Nonassociative algebraic models* (*Zaragoza*, 1989), 101–117, *Nova Sci. Publ., Commack, NY*, 1992. (Sebastian Walcher) **93k:17062** 17D92 (92D10)
Durand-Richard, Marie-José Genèse de l'algèbre symbolique en Angleterre: une influence possible de J. Locke. (English summary) [The origins of symbolic algebra in England: the possible influence of J. Locke] *Rev. Histoire Sci.* **43** (1990), *no.* 2-3, 129–180. (Kenneth L. Manders) **93b:01025** 01A55
— Charles Babbage (1791–1871): de l'école algébrique anglaise à la "machine analytique". (English and French summaries) [Charles Babbage (1791–1871): from the English algebraic school to the "analytical engine"] *Math. Inform. Sci. Humaines No.* 118 (1992), 5–31. (A. D. Booth) **93k:01043a** 01A55 (01A70)
— Erratum: "Charles Babbage (1791–1871): from the English algebraic school to the 'analytical engine'". (French) *Math. Inform. Sci. Humaines No.* 120 (1992), 79–82. (A. D. Booth) **93k:01043b** 01A55 (01A70)
Durán Guardeño, Antonio J. Gel'fand-Shilov spaces for the Hankel transform. *Indag. Math. (N.S.)* **3** (1992), *no.* 2, 137–151. (Stevan Pilipović) **93h:46048** 46F12 (44A15, 47G10)
Duranović-Miličić, Nada I. *see* **Djuranović-Miličić, Nada I.**
Durany, J. (*with* Vázquez, C.) Existence and uniqueness of the solution of a piezoviscous lubrication problem with axial inflow. (Spanish. English summary) *Proceedings of the XII Congress on Differential Equations and Applications/II Congress on Applied Mathematics* (*Spanish*) (*Oviedo*, 1991), 433–440, *Univ. Oviedo, Oviedo*, 1991. (*see* **93j:00009**) 76D08 (35R35)
— (*with* García Lomba, Guillermo; Vázquez, C.) Numerical solution of free-boundary problems in piezoviscous lubrication. (Spanish. English summary) *Proceedings of the XII Congress on Differential Equations and Applications/II Congress on Applied Mathematics* (*Spanish*) (*Oviedo*, 1991), 441–446, *Univ. Oviedo, Oviedo*, 1991. (*see* **93j:00009**) 76D08 (65N99, 65P05)
Durbin, James On a test of serial correlation for regression models with lagged dependent variables. (English summary) *The art of statistical science*, 27–32, *Wiley Ser. Probab. Math. Statist. Probab. Math. Statist., Wiley, Chichester*, 1992. (*see* **93b:62003**) 62J05 (62M10)
— The first-passage density of the Brownian motion process to a curved boundary. With an appendix by D. Williams. *J. Appl. Probab.* **29** (1992), *no.* 2, 291–304. (Thomas H. Scheike) **93d:60130** 60J65
Durdević, Mićo Quantum field theory and local contextual extensions. *J. Phys. A* **25** (1992), *no.* 3, 665–677. (S. Sakai) **93c:81101** 81T05 (81P05)
— A C^*-algebraic formulation of local contextual hidden variables. (English summary) *J. Phys. A* **25** (1992), *no.* 20, 5345–5364. (Jan Hamhalter) **93i:81011** 81P10 (46L60, 81Q10)
Durdiev, D. K. A problem on determining the scattering indicatrix in the transport equation. (Russian) *Mathematical analysis and differential equations* (*Russian*), 55–59, *Novosibirsk. Gos. Univ., Novosibirsk*, 1991. (*see* **93m:00026**) 35Q99 (82C70)
— On the ill-posedness of an inverse problem for a hyperbolic integro-differential equation. (Russian. Russian summary) *Sibirsk. Mat. Zh.* **33** (1992), *no.* 3, 69–77, 219; *translation in Siberian Math. J.* **33** (1992), *no.* 3, 427–433 (1993). (Summary) **93f:35234** 35R10 (45K05)
Duren, Peter The Legendre relation for elliptic integrals. *Paul Halmos*, 305–315, *Springer, New York*, 1991. (J. M. H. Peters) **93a:33033** 33E05 (01A55, 33C05)
— (*with* Khavinson, Dmitry; Shapiro, Harold S.; Sundberg, Carl) Contractive zero-divisors in Bergman spaces. *The Madison Symposium on Complex Analysis* (*Madison, WI*, 1991), 217–220, *Contemp. Math.*, 137, *Amer. Math. Soc., Providence, RI*, 1992. (*see* **93e:32001**) 30D55
Dürer, Albrecht *see* **Crowe, Donald W.**, (**93i:52002**)
Durgaprasad, G. (*with* Prasada Rao, Ganti; Patra, Amit; Mukhopadhyay, Siddhartha) Indirect methods of parameter estimation of discrete-time models. (English summary) *Identification and system parameter estimation* 1991, *Vol.* 1,2 (*Budapest*, 1991), 343–348, *IFAC Sympos. Ser.*, 3, *Pergamon, Oxford*, 1992. (*see* **93h:93009**) 93B30 (93C55)
Durga Prasad, Modekurti Venkata (*with* Bector, C. R.; Husain, I.) Constrained continuous-time games and symmetric duality. Proceedings of the Twenty-first Manitoba Conference on Numerical Mathematics and Computing (Winnipeg, MB, 1991). *Congr. Numer.* **87** (1992), 33–42. (Bruce D. Craven) **93c:90105** 90D05 (90C48)
Durhuus, Bergfinnur Critical properties of some discrete random surface models. *Constructive quantum field theory, II* (*Erice*, 1988), 235–264, *NATO Adv. Sci. Inst. Ser. B Phys.*, 234, *Plenum, New York*, 1990. (*see* **93g:81074**) 82B41
— (*with* Jónsson, Thórdur) On subdivision invariant actions for random surfaces. (English summary) *Phys. Lett. B* **297** (1992), *no.* 3-4, 271–274. (Summary) **93k:81243** 81T80 (81S40, 81T30)
Durier, Roland (*with* Papini, Pier Luigi) Polyhedral norms and related properties in infinite-dimensional Banach spaces: a survey. *Trends in functional analysis and approximation theory* (*Acquafredda di Maratea*, 1989), 17–39, *Univ. Modena, Modena*, 1991. (J. H. M. Whitfield) **93f:46017** 46B20 (52A07)
— (*with* Papini, Pier Luigi) Polyhedral norms and related properties in infinite-dimensional Banach spaces: a survey. (English summary) *Atti Sem. Mat. Fis. Univ. Modena* **40** (1992), *no.* 2, 623–645. (Marco P. Baronti) **93k:46008** 46B20 (52A21)
sarmant-Durix, Marie-Claude *see* **Sarmant-Durix, Marie-Claude**
Durkin, Marilyn B. The accuracy of computer algorithms in dynamical systems. *Internat. J. Bifur. Chaos Appl. Sci. Engrg.* **1** (1991), *no.* 3, 625–639. (Fuyao Ren) **93d:58134** 58F23 (30D05, 39B12)
Durlauf, Steven N. Spectral based testing of the martingale hypothesis. *J. Econometrics* **50** (1991), *no.* 3, 355–376. (Bert M. Steece) **93e:62212** 62M02 (62M10, 62P20)

— Time series properties of aggregate output fluctuations. (English summary) *J. Econometrics* **56** (1993), *no.* 1-2, 39–56. (Summary) **93j:62225** 62M10 (62P20)

Durner, Alexander On a theorem of Gauss-Kuzmin-Lévy. *Arch. Math. (Basel)* **58** (1992), *no.* 3, 251–256. (Oto Strauch) **93c:11056** 11K50

Durnev, V. G. Unsolvability of the problem of endomorphic reducibility for sets of elements of a free nilpotent group of rank 2. (Russian) *Problems in group theory and homological algebra (Russian)*, 88–93, *Matematika, Yaroslav. Gos. Univ., Yaroslavl'*, 1988. (*see* **93b:00020**) 20F18

— (*with* Korableva, N. B.) An algorithmically undecidable problem for systems of linear Diophantine equations. (Russian) *Problems in group theory and homological algebra (Russian)*, 93–96, *Matematika, Yaroslav. Gos. Univ., Yaroslavl'*, 1988. (*see* **93b:00020**) 11D04

— On Tarski's problem for free groups of some varieties. (Russian) *Problems in group theory and homological algebra (Russian)*, 25–36, *Matematika, Yaroslav. Gos. Univ., Yaroslavl'*, 1990. (Yu. N. Mukhin) **93f:20003** 20A15 (20E10, 20F16)

— Equations with endomorphisms in free semigroups. (Russian. Russian summary) *Diskret. Mat.* **4** (1992), *no.* 2, 136–141. (L. Bokut') **93h:20061** 20M05 (03D35, 03D40)

Durović, Željko *see* **Djurovic, Željko**

Dürr, Detlef (*with* Goldstein, Sheldon; Zanghì, Nino) Quantum equilibrium and the origin of absolute uncertainty. *J. Statist. Phys.* **67** (1992), *no.* 5-6, 843–907. (Summary) **93k:81006** 81P05 (81P20)

— (*with* Goldstein, Sheldon; Zanghì, Nino) Quantum chaos, classical randomness, and Bohmian mechanics. *J. Statist. Phys.* **68** (1992), *no.* 1-2, 259–270. (Summary) **93c:81048** 81Q50 (58F13, 81P05)

— (*with* Goldstein, Sheldon; Zanghì, Nino) David Joseph Bohm: 1917–1992. *Found. Phys. Lett.* **6** (1993), *no.* 1, 1–4. 01A70

Durran, Richard M. (*with* Truman, Aubrey) Log-concavity of radial Schrödinger wave functions and convergence of planetesimal diffusions. *Ideas and methods in mathematical analysis, stochastics, and applications (Oslo*, 1988), 124–150, *Cambridge Univ. Press, Cambridge*, 1992. (Introduction) **93j:85004** 85A05 (35J10, 60J99, 81P20)

Durrani, T. S. *see* **Adaptive systems in control and signal processing, 93j:93007**

Durrant-Whyte, H. (*with* Brown, Christopher; Leonard, J.; Rao, B. Y.; Steer, Brian) Distributed data fusion using Kalman filtering: a robotics application. *Data fusion in robotics and machine intelligence*, 267–309, *Academic Press, Boston, MA*, 1992. (*see* **93g:68002**) 68T30 (68U05, 70B15, 70Q05, 93E11)

Durrett, Richard (*with* Cox, J. T.) Nonlinear voter models. *Random walks, Brownian motion, and interacting particle systems*, 189–201, *Progr. Probab.*, 28, *Birkhäuser Boston, Boston, MA*, 1991. (Richard Holley) **93e:60195** 60K35 (82C22)

— (*with* Kesten, Harry; Lawler, Gregory F.) Making money from fair games. *Random walks, Brownian motion, and interacting particle systems*, 255–267, *Progr. Probab.*, 28, *Birkhäuser Boston, Boston, MA*, 1991. (A. Spătaru) **93a:60075** 60G50 (60J15)

— A new method for proving the existence of phase transitions. *Spatial stochastic processes*, 141–169, *Progr. Probab.*, 19, *Birkhäuser Boston, Boston, MA*, 1991. (G. R. Grimmett) **93c:60158** 60K35 (82C22)

— (*with* Steif, Jeffrey E.) Some rigorous results for the Greenberg-Hastings model. *J. Theoret. Probab.* **4** (1991), *no.* 4, 669–690. (B. M. Gurevich) **93h:60162** 60K35 (68Q80)

— Some new games for your computer. *Nonlinear Sci. Today* **1** (1991), *no.* 4, 1–7. 00A08 (82C80)

— Multicolor particle systems with large threshold and range. *J. Theoret. Probab.* **5** (1992), *no.* 1, 127–152. (Bernard Ycart) **93b:60227** 60K35

— (*with* Rogers, L. C. G.) Asymptotic behavior of Brownian polymers. *Probab. Theory Related Fields* **92** (1992), *no.* 3, 337–349. (Michael Cranston) **93g:60132** 60H20 (60J70)

— (*with* Buttell, L.; Cox, J. T.) Estimating the critical values of stochastic growth models. (English summary) *J. Appl. Probab.* **30** (1993), *no.* 2, 455–461. (Summary) **93k:60231** 60K35

Duru, I. H. Casimir force between two Aharonov-Bohm solenoids. (English summary) *Found. Phys.* **23** (1993), *no.* 5, 809–818. 81V10

Du Sautoy, Marcus P. F. *see* **du Sautoy, Marcus P. F.**

Dushina, N. V. Two-dimensional surfaces in a dual Hermite space. (Russian) *Geometry of embedded manifolds (Russian)*, 24–27, "*Prometei*", *Moscow*, 1989. (*see* **93g:53003**) 53A40

Düsing, R. (*with* Meier, G.) Zur Modellierung logischer Aussagen ergänzend zu linearen Programmen. Grundlagen und Entwurfsüberlegungen für einen Modellgenerator. (English and German summaries) [On the modelling of logical predicates supplementary to linear programs. Foundations and design ideas for a model generator] *OR Spektrum* **14** (1992), *no.* 3, 149–160. (Summary) **93k:90048** 90C05 (90C90)

Duske, J. (*with* Middendorf, Matthias; Parchmann, R.) Indexed counter languages. (French summary) *RAIRO Inform. Théor. Appl.* **26** (1992), *no.* 1, 93–113. (Summary) **93a:68072** 68Q45

Duszak, Zbigniew On the degree of an analytic map germ. *Canad. J. Math.* **44** (1992), *no.* 2, 270–279. (Aleksandr G. Aleksandrov) **93h:58015** 58C27 (32S10)

Duthie, A. I. A class of E-optimal hypercubic designs. (English summary) *Comm. Statist. Theory Methods* **22** (1993), *no.* 3, 717–722. (Summary) **93m:62170** 62K05

Dutka, Jacques The early history of the factorial function. *Arch. Hist. Exact Sci.* **43** (1991), *no.* 3, 225–249. (Jesper Lützen) **93g:01034** 01A50 (01A55, 11-03, 33-03)

Dutoya, D. (*with* Errera, M. P.) A formal decomposition of the Jacobian matrix of the Euler equations. Application to upwind numerical schemes. *Rech. Aérospat.* (*English Edition*) **1992**, *no.* 1, 25–35; *translated from Rech. Aérospat.* **1992**, *no.* 1, 25–35 (*French. English and French summaries*). (Summary) **93f:76070** 76M20 (76N15)

de souza Dutra, Álvaro *see* **de Souza Dutra, Álvaro**

Dutschk, Roland Zur Bestimmung von Ausgleichsflächen für Zyklo-Palloid-Kegelradflanken. (German summary) [On the determination of fitting surfaces for cyclopalloid bevel gear tooth flanks] *Wiss. Z. Tech. Univ. Dresden* **41** (1992), *no.* 5, 25–28. (Hellmuth Stachel) **93k:53016** 53A17

Dutt, Ranabir (*with* De, R.; Sukhatme, Uday P.) Mapping of shape invariant potentials under point canonical transformations. *J. Phys. A* **25** (1992), *no.* 13, L843–L850. (A. O. Barut) **93k:81038** 81Q05 (33C90)

Dutta, Amartya K. (*with* Bhatwadekar, S. M.) On residual variables and stably polynomial algebras. (English summary) *Comm. Algebra* **21** (1993), *no.* 2, 635–645. (Jean-Luc Chabert) **93k:13028** 13F20 (13B25)

Dutta, Bhaskar (*with* Ray, Debraj) Constrained egalitarian allocations. *Games Econom. Behav.* **3** (1991), *no.* 4, 403–422. (Rajiv Vohra) **93a:90087** 90D12 (90D40)

— (*with* Esteban, Joan) Social welfare and equality. (English summary) *Soc. Choice Welf.* **9** (1992), *no.* 4, 267–276. (Summary) **93h:90025** 90A19

Dutta, D. (*with* Rao, J. R.; Tiwari, R. N.) Sensitivity analysis in fuzzy linear fractional programming problem. (English summary) *Fuzzy Sets and Systems* **48** (1992), *no.* 2, 211–216. 90C70 (90C05)

— (*with* Rao, J. R.; Tiwari, R. N.) Effect of tolerance in fuzzy linear fractional programming. (English summary) *Fuzzy Sets and Systems* **55** (1993), *no.* 2, 133–142. (Summary) **93k:90102** 90C70 (04A72)

Dutta, P. (*with* De, S. S.) Pattern generations in RNA and protein synthesis. (English summary) *Bull. Calcutta Math. Soc.* **83** (1991), *no.* 4, 319–324. (Summary) **93h:92012** 92C15 (92D20)

Dutta, Prajit K. What do discounted optima converge to? A theory of discount rate asymptotics in economic models. *J. Econom. Theory* **55** (1991), *no.* 1, 64–94. (E. S. Boylan) **93a:90077** 90C39 (90C15)

— (*with* Sundaram, Rangarajan K.) Markovian equilibrium in a class of stochastic games: existence theorems for discounted and undiscounted models. *Econom. Theory* **2** (1992), *no.* 2, 197–214. (Costis Melolidakis) **93h:90020** 90A16 (90A80, 90D15, 90D40)

— Finite horizon optimization: sensitivity and continuity in multi-sectoral models. (English summary) *J. Math. Econom.* **22** (1993), *no.* 2, 101–123. (Summary) **93j:90034** 90A80 (49K40, 90A17, 90C31)

Dutta, Soumitra (*with* Bonissone, Piero P.) Integrating case- and rule-based reasoning. (English summary) *Internat. J. Approx. Reason.* **8** (1993), *no.* 3, 163–203. 68T27

Dutta, Tapas Kumar A note on Si-measurable function and S^*-integrable functions. *Ganita Sandesh* **5** (1991), *no.* 2, 65–71. (Summary) **93b:28009** 28A20

Dutta, Tarini Kumar Hermitian operators on C^*-algebras. *Nat. Acad. Sci. Lett.* **14** (1991), *no.* 8, 347–350. (Robert S. Doran) **93b:46110** 46L05 (47B15)

Dutta Choudhury, S. B. (*with* Banerjee, Asit Kumar; Chatterjee, Sujit) Nonstatic perfect fluid sphere in higher-dimensional space-time. (English summary) *Gen. Relativity Gravitation* **24** (1992), *no.* 9, 991–999. (Summary) **93g:83060** 83C55 (83E15)

Dutto, Laura C. (*with* Bristeau, Marie Odile; Glowinski, Roland; Périaux, Jacques; Rogé, G.) On recent numerical simulations of compressible Navier-Stokes flows. (English summary) *Numerical simulation of unsteady flows and transition to turbulence (Lausanne*, 1990), 443–472, *Cambridge Univ. Press, Cambridge*, 1992. (Summary) **93f:76074** 76M25 (76M10, 76M20, 76N10)

— The effect of ordering on preconditioned GMRES algorithm, for solving the compressible Navier-Stokes equations. (English summary) *Internat. J. Numer. Methods Engrg.* **36** (1993), *no.* 3, 457–497. (Summary) **93h:76048** 76M10 (76M25, 76N10)

Dutton, Ronald D. (*with* Brigham, Robert C.) Compatible committees. Proceedings of the Twenty-second Southeastern Conference on Combinatorics, Graph Theory, and Computing (Baton Rouge, LA, 1991). *Congr. Numer.* **83** (1991), 161–166. (Summary) **93a:92020** 92H99

— (*with* Brigham, Robert C.) Edges in graphs with large girth. *Graphs Combin.* **7** (1991), *no.* 4, 315–321. (Samuel Stueckle) **93b:05075** 05C35 (05C75)

— (*with* Brigham, Robert C.; Deo, Narsingh) On Pascal graphs. Proceedings of the Twenty-third Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, FL, 1992). *Congr. Numer.* **90** (1992), 141–150. (Introduction) **93j:05125** 05C75

Duval, Anne Biconfluence et groupe de Galois. (English summary) [Biconfluence and Galois groups] *J. Fac. Sci. Univ. Tokyo Sect. IA Math.* **38** (1991), *no.* 2, 211–223. (J. S. Joel) **93a:32035** 32G34 (12H05, 33C15, 34A20)

Duval, C. (*with* Elhadad, J.) Geometric quantization and localization of relativistic spin systems. (English summary) *Mathematical aspects of classical field theory (Seattle, WA*, 1991), 317–330, *Contemp. Math.*, 132, *Amer. Math. Soc., Providence, RI*, 1992. (Alexander D. Popov) **93i:81103** 81S10 (22E70, 58F06, 81R05)

— (*with* Elhadad, J.; Tuynman, G. M.) Pukanszky's condition and symplectic induction. (English summary) *J. Differential Geom.* **36** (1992), *no.* 2, 331–348. (Eugene Lerman) **93j:58056** 58F06 (22E60, 81S10)

Duvall, P. F., Jr. (*with* Husch, L. S.) Attractors of iterated function systems. *Proc. Amer. Math. Soc.* **116** (1992), *no.* 1, 279–284. (Y. Kodama) **93d:54057** 54H15 (54E40, 54H20)

Duviryak, A. A. (*with* Klyuchkovskii, Yu. B.) Covariant two-particle light lines in relativistic Hamiltonian mechanics. (Ukrainian. Ukrainian summary) *Mat. Metody i Fiz.-Mekh. Polya No.* 34 (1991), 100–105. 70H40 (83A05)

— (*with* Klyuchkovskiĭ, Yu. B.) Space-time interpretation of relativistic Hamiltonian mechanics of a system of particles. (Ukrainian. English, Russian and Ukrainian summaries) *Ukraïn. Fiz. Zh.* **37** (1992), *no.* 2, 313–321. (Summary) **93g:70018** 70H40

van der Duyn Schouten, F. A. (*with* Wartenhorst, P.) A two-machine repair model with variable repair rate. (English summary) *Naval Res. Logist.* **40** (1993), *no.* 4, 495–523. 90B25

nguyen Duy Thai Son *see* **Nguyen Duy Thai Son**

nguyễn Duy Tiến *see* **Nguyễn Duy Tiến**

Duzaar, Frank (*with* Fuchs, Martin[2]) On removable singularities of p-harmonic maps. (French summary) *Ann. Inst. H. Poincaré Anal. Non Linéaire* **7** (1990), *no.* 5, 385–405. (Helmut Kaul) **93e:58035** 58E20 (35A20, 49N60)

— (*with* Fuchs, Martin[2]) Existence and regularity of functions which minimize certain energies in homotopy classes of mappings. *Asymptotic Anal.* **5** (1991), *no.* 2, 129–144. (Guojun Liao) **93b:58039** 58E20

— (*with* Fuchs, Martin[2]) A general existence theorem for integral currents with prescribed mean curvature form. (Italian summary) *Boll. Un. Mat. Ital. B* (7) **6** (1992), *no.* 4, 901–912. (J. S. Joel) **93m:49022** 49Q20

Dvinskikh, S. F. Reliability of a system with multiple failures. (Russian) *Vestnik Moskov. Univ. Ser. I Mat. Mekh.* **1991**, *no.* 3, 63–67; *translation in Moscow Univ. Math. Bull.* **46** (1991), *no.* 3, 49–51. 60K10 (62N05)

— (*with* Solov'ev, A. D.) Repairable systems with multiple failures. (Russian) *Vestnik Moskov. Univ. Ser. I Mat. Mekh.* **1991**, *no.* 4, 74–77; *translation in Moscow Univ. Math. Bull.* **46** (1991), *no.* 4, 53–55. 60K10

Dvinsky, Arkady S. (*with* Dukowicz, John K.) Approximate factorization as a high order splitting for the implicit incompressible flow equations. (English summary) *J. Comput. Phys.* **102** (1992), *no.* 2, 336–347. (Summary) **93g:76092** 76M25 (76D05, 76M10)

Dvorak, George J. (*with* Benveniste, Yakov) Uniform fields and universal relations in piezoelectric composites. (English summary) *J. Mech. Phys. Solids* **40** (1992), *no.* 6, 1295–1312. (E. S. Şuhubi) **93g:73101** 73R05 (73B27, 73B35, 73K20, 78A99)
— On some exact results in thermoplasticity of composite materials. (English summary) Sixty-fifth Birthday of Bruno A. Boley Symposium, Part 2 (Atlanta, GA, 1991). *J. Thermal Stresses* **15** (1992), *no.* 2, 211–228. (Summary) **93e:73004** 73B30 (73E05, 73E50, 73K20)
— (*with* Benveniste, Yakov) On transformation strains and uniform fields in multiphase elastic media. *Proc. Roy. Soc. London Ser. A* **437** (1992), *no.* 1900, 291–310. (Cesare Davini) **93e:73034a** 73S10 (73B27, 73K20)
— Transformation field analysis of inelastic composite materials. *Proc. Roy. Soc. London Ser. A* **437** (1992), *no.* 1900, 311–327. (Cesare Davini) **93e:73034b** 73S10 (73B27, 73E99, 73K20)
Dvořák, Ivan (*with* Šiška, Jaromír) The theory of deterministic chaos and some of its applications. I. (Czech) *Pokroky Mat. Fyz. Astronom.* **36** (1991), *no.* 2, 73–91. (Ladislav Andrey) **93e:58126** 58F13 (58F11)
— (*with* Šiška, Jaromír) The theory of deterministic chaos and some of its applications. II. (Czech) *Pokroky Mat. Fyz. Astronom.* **36** (1991), *no.* 3, 155–171. (Ladislav Andrey) **93e:58127** 58F13 (58F40, 92C20, 92D40)
Dvorak, R. Progress in the elliptic restricted 3-body problem: asteroids in the 2/1, 3/1 and 1/1 resonance. (English summary) *Celestial Mech. Dynam. Astronom.* **54** (1992), *no.* 1-3, 195–205. (Summary) **93g:70010** 70F07
Dvornicich, R. (*with* Forti, M.) Elements of large orders in (p, q)-groups. (Italian summary) *Boll. Un. Mat. Ital. B* (7) **5** (1991), *no.* 3, 589–618. (Michael E. Mays) **93c:20045** 20D60
Dvortsovoi, D. V. (*with* Moshchenskiĭ, V. A.) Context-free and axiomatic grammars. (Russian. Russian summary) *Vestnik Beloruss. Gos. Univ. Ser. I Fiz. Mat. Mekh.* **1992**, *no.* 3, 51–54, 80. (Summary) **93j:68110** 68Q50 (68Q45)
Dvurečenskij, Anatolij (*with* Tirpáková, Anna) Sum of observables in fuzzy quantum spaces. (Slovak summary) *Appl. Math.* **37** (1992), *no.* 1, 40–50. (Mirko Navara) **93b:81021** 81P10 (03B52, 04A72)
— Regular measures and inner product spaces. *Internat. J. Theoret. Phys.* **31** (1992), *no.* 5, 889–905. (Pavel Pták) **93b:28039** 28C99 (06C15, 46C05, 46N50, 81P10)
— Quantum logics and completeness criteria of inner product spaces. (English summary) Quantum logics, Part II (Gdańsk, 1990). *Internat. J. Theoret. Phys.* **31** (1992), *no.* 10, 1899–1907. (Jan Hamhalter) **93k:81014** 81P10 (46C15, 46L60, 46N50)
Dwilewicz, Roman Holomorphic extension and approximation of Cauchy-Riemann functions. *Functional analytic methods in complex analysis and applications to partial differential equations* (*Trieste*, 1988), 249–264, *World Sci. Publishing, River Edge, NJ*, 1990. (Introduction) **93g:32027** 32F40 (32C16, 32F25)
— (*with* Boivin, André) Holomorphic approximation of CR functions on tubular submanifolds of $\mathbf{C}^2$. Proceedings of the Tenth Conference on Analytic Functions (Szczyrk, 1990). *Ann. Polon. Math.* **55** (1991), 11–18. (Sergey Ivashkovich) **93b:32017** 32E30 (32F40)
Dwivedi, I. H. (*with* Joshi, Pankaj S.) Cosmic censorship violation in non-self-similar Tolman-Bondi models. *Classical Quantum Gravity* **9** (1992), *no.* 7, L69–L75. (Summary) **93c:83084** 83C75
— (*with* Joshi, Pankaj S.) The structure of naked singularity in self-similar gravitational collapse. *Comm. Math. Phys.* **146** (1992), *no.* 2, 333–342. (Alan D. Rendall) **93a:83027** 83C75 (83C20)
— (*with* Joshi, Pankaj S.) Strong curvature naked singularities in non-self-similar gravitational collapse. *Gen. Relativity Gravitation* **24** (1992), *no.* 2, 129–137. (Summary) **93e:83049** 83C75
Dwork, Bernard M. (*with* Sperber, Steven) Logarithmic decay and overconvergence of the unit root and associated zeta functions. *Ann. Sci. École Norm. Sup.* (4) **24** (1991), *no.* 5, 575–604. (F. Baldassarri) **93b:12012** 12H25 (14D10)
— (*with* Christol, G.) Effective p-adic bounds at regular singular points. *Duke Math. J.* **62** (1991), *no.* 3, 689–720. (From the introduction) **93c:12009** 12H25
— (*with* Christol, G.) Differential modules of bounded spectral norm. *p-adic methods in number theory and algebraic geometry*, 39–58, *Contemp. Math.*, 133, *Amer. Math. Soc., Providence, RI*, 1992. (Takashi Harase) **93m:12007** 12H25 (12J27)
— (*with* van der Poorten, Alfred J.) The Eisenstein constant. *Duke Math. J.* **65** (1992), *no.* 1, 23–43. (F. Baldassarri) **93c:12010** 12H25 (11R09)
Dwork, Cynthia (*with* Bar-Noy, Amotz; Dolev, Danny; Strong, H. Raymond) Shifting gears: changing algorithms on the fly to expedite Byzantine agreement. *Inform. and Comput.* **97** (1992), *no.* 2, 205–233. (A. T. Amin) **93f:68036** 68Q22 (68M10)
Dwyer, Harry A. (*with* Yam, Clement G.) Unsteady flow in a curved pipe. *Fluid dynamics in biology* (*Seattle, WA*, 1991), 543–564, *Contemp. Math.*, 141, *Amer. Math. Soc., Providence, RI*, 1993. (*see* **93j:76003**) 76Z05 (73K70, 76D05)
Dwyer, Thomas A. W., III (*with* Karray, Fakhreddine) On the robust control aspect of a class of systems involving interconnected rigid and flexible appendages: case study. (English summary) *Internat. J. Control* **57** (1993), *no.* 1, 29–54. 93B36 (93C95)
Dwyer, W. G. (*with* Friedlander, Eric Mark; Mitchell, Stephen A.) The generalized Burnside ring and the K-theory of a ring with roots of unity. (English summary) *K-Theory* **6** (1992), *no.* 4, 285–300. (V. P. Snaith) **93m:19010** 19F99 (55P42)
— (*with* Wilkerson, C. W.) A cohomology decomposition theorem. *Topology* **31** (1992), *no.* 2, 433–443. (J. P. May) **93h:55008** 55R35 (55R40, 55S10)
— (*with* Wilkerson, C. W.) A new finite loop space at the prime two. *J. Amer. Math. Soc.* **6** (1993), *no.* 1, 37–64. (John F. Oprea) **93d:55011** 55P35 (55P99)
D'yachenko, M. I. Piecewise monotone functions of several variables and a theorem of Hardy and Littlewood. (Russian) *Izv. Akad. Nauk SSSR Ser. Mat.* **55** (1991), *no.* 6, 1156–1170; *translation in Math. USSR-Izv.* **39** (1992), *no.* 3, 1113–1128. (Aleš Založnik) **93c:42010** 42B05 (26B35)
— Convex sets and multiple Fourier series. (Russian) *Trudy Mat. Inst. Steklov.* **200** (1991), 147–156; *translation in Proc. Steklov Inst. Math.* **1993**, *no.* 2, 161–171. (S. Baron) **93c:42011** 42B08
Dyachenko, S. (*with* Newell, Alan C.; Pushkarev, A.; Zakharov, V. E.) Optical turbulence: weak turbulence, condensates and collapsing filaments in the nonlinear Schrödinger equation. *Phys. D* **57** (1992), *no.* 1-2, 96–160. (Summary) **93c:76050** 76F99 (35Q55, 76X05, 78A99)
Dyadchenko, G. G. (*with* Shokuev, V. N.) Prime divisors of the number $(a^p + b^p)(a + b)^{-1}$. (Russian) *Rings and linear groups* (*Russian*), 42–43, *Kuban. Gos. Univ., Krasnodar*, 1988. (*see* **93i:00023**) 11A41
D'yakonov, E. G. ★ Минимизация вычислительной работы. Асимптотически оптимальные алгоритмы для эллиптических задач. (Russian) [Minimization of computational work. Asymptotically optimal algorithms for elliptic problems] With an English summary. "*Nauka*", *Moscow*, 1989. 272 *pp. ISBN* 5-02-013970-X (Lydia Kronsjö) **93e:65136** 65N30 (65Y20, 68Q25, 76M10)
— Optimal algorithms for elliptic problems. (Russian) *Conference on Differential Equations and Applications* (*Ruse*, 1989), 335–346, *Tech. Univ., Ruse*, 1991. (*see* **93f:34004**) 65N99
D'yakonov, K. M. Interpolating functions of minimal norm, star-invariant subspaces and kernels of Toeplitz operators. *Proc. Amer. Math. Soc.* **116** (1992), *no.* 4, 1007–1013. (Summary) **93f:30037** 30D55 (30E05, 47B35)
— Kernels of Toeplitz operators, smooth functions and Bernstein-type inequalities. (Russian. English summary) *Zap. Nauchn. Sem. S.-Peterburg. Otdel. Mat. Inst. Steklov. (POMI)* **201** (1992), *Issled. po Lineĭn. Oper. Teor. Funktsiĭ.* 20, 5–21, 190. (D. Sarason) **93h:47028** 47B35 (46E15)
Dyban, E. P. (*with* Bileka, B. D.; Kabkov, V. Ja.) Local one-dimensional method for solving parabolic equations in thermal conductivity process modeling and boundary condition identification problems. (English summary) *Computational systems analysis* 1992 (*Berlin*, 1992), 411–415, *Elsevier, Amsterdam*, 1992. (*see* **93e:00021**) 65M06
Dydak, Jerzy (*with* Walsh, John J.) Dimension theory and the Sullivan conjecture. (English summary) *Topology Hawaii* (*Honolulu, HI*, 1990), 75–89, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93e:55004** 55M10 (54F45, 55P20, 55Q40)
— Epimorphisms and monomorphisms in homotopy. *Proc. Amer. Math. Soc.* **116** (1992), *no.* 4, 1171–1173. (Donald M. Davis) **93b:55007** 55N25 (55P10)
— Cohomological dimension and metrizable spaces. *Trans. Amer. Math. Soc.* **337** (1993), *no.* 1, 219–234. (Leonard R. Rubin) **93g:55001** 55M10 (54F45, 55M15, 55U20)
Dye, John M. (*with* Reich, Simeon) Unrestricted iterations of nonexpansive mappings in Hilbert space. *Nonlinear Anal.* **18** (1992), *no.* 2, 199–207. (Ricardo Torrejón) **93c:47070** 47H10
Dye, R. H. Hexagons, conics, A_5 and $\mathrm{PSL}_2(K)$. *J. London Math. Soc.* (2) **44** (1991), *no.* 2, 270–286. (E. W. Ellers) **93d:51047** 51N30 (20G15)
— Maximal sets of nonpolar points of quadrics and symplectic polarities over GF(2). (English summary) *Geom. Dedicata* **44** (1992), *no.* 3, 281–293. (Tamás Szőnyi) **93m:51002** 51A50 (51E22)
— The extraordinary higher tangent spaces of certain quadric intersections. (English summary) *Proc. Edinburgh Math. Soc.* (2) **35** (1992), *no.* 3, 437–447. (Ragni Piene) **93j:14064** 14M10 (14N99)
Dyer, Eldon (*with* Roitberg, Joseph) Homotopy-epimorphisms, homotopy-monomorphisms and homotopy-equivalences. (English summary) *Topology Appl.* **46** (1992), *no.* 2, 119–124. (Steven R. Costenoble) **93f:55009** 55P10 (55N25)
Dyer, Martin (*with* Frieze, A. M.) Computing the volume of convex bodies: a case where randomness provably helps. *Probabilistic combinatorics and its applications* (*San Francisco, CA*, 1991), 123–169, *Proc. Sympos. Appl. Math.*, 44, *Amer. Math. Soc., Providence, RI*, 1991. (Summary) **93a:52004** 52A22 (52A38, 60D05, 68Q25)
— (*with* Frieze, A. M.) Probabilistic analysis of the generalised assignment problem. *Math. Programming* **55** (1992), *no.* 2, *Ser. A*, 169–181. (Günther Ruhe) **93d:90042** 90C10 (90C15, 90C27)
van Dyke, Milton *see* **Van Dyke, Milton**
Dykema, Ken Free products of hyperfinite von Neumann algebras and free dimension. *Duke Math. J.* **69** (1993), *no.* 1, 97–119. (Marie Choda) **93m:46071** 46L35
Dykhta, V. A. A variational maximum principle for pulse and singular regimes in an optimization problem that is linear with respect to control. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* **1991**, *no.* 11, 89–91 (1992); *translation in Soviet Math. (Iz. VUZ)* **35** (1991), *no.* 11, 89–91. 49K30
Dykstra, Hans (*with* Brekke, Lee; Hughes, Shane J.; Imbo, Tom D.) Knots and links of nonabelian string. (English summary) *Phys. Lett. B* **288** (1992), *no.* 3-4, 273–278. (Summary) **93g:81087** 81T13 (57M25, 81T30)
Dykstra, Richard L. Asymptotic normality for chi-bar-square distributions. (French summary) *Canad. J. Statist.* **19** (1991), *no.* 3, 297–306. (Summary) **93k:62029** 62E20 (62F05)
— (*with* Calvin, James A.) A note on maximizing a special concave function subject to simultaneous Loewner order constraints. (English summary) *Linear Algebra Appl.* **176** (1992), 37–44. (Summary) **93e:90057** 90C30 (62F30)
Dym, Harry (*with* Alpay, Daniel; Dewilde, Patrick M.) Lossless inverse scattering and reproducing kernels for upper triangular operators. *Extension and interpolation of linear operators and matrix functions*, 61–135, *Oper. Theory Adv. Appl.*, 47, *Birkhäuser, Basel*, 1990. (E. R. Tsekanovs'kiĭ) **93b:47027** 47A57 (46E22, 47A40, 47N70)
— (*with* Alpay, Daniel) Structured invariant spaces of vector valued rational functions, Hermitian matrices, and a generalization of the Iohvidov laws. *Linear Algebra Appl.* **137/138** (1990), 137–181. (Summary) **93g:46024** 46E20 (15A57, 46C20, 47A99, 47B35, 47B50)
— (*with* Alpay, Daniel) Structured invariant spaces of vector valued functions, sesquilinear forms, and a generalization of the Iohvidov laws. *Linear Algebra Appl.* **137/138** (1990), 413–451. (Summary) **93g:46025** 46E20 (15A57, 46E22, 47A99, 47B35, 47B50)
— (*with* Alpay, Daniel; Dewilde, Patrick M.) Interpolation in a class of upper-triangular operators. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, I* (*Kobe*, 1991), 43–52, *Mita, Tokyo*, 1992. (*see* **93g:93005**) 47A57 (47N70, 93B28)
— (*with* Dewilde, Patrick M.) Interpolation for upper triangular operators. *Time-variant systems and interpolation*, 153–260, *Oper. Theory Adv. Appl.*, 56, *Birkhäuser, Basel*, 1992. (*see* **93d:47148**) 47A57 (47A65)
Dyment, A. (*with* Merlen, A.) Anisotropic blast waves and explosions in a moving gas. *European J. Mech. B Fluids* **11** (1992), *no.* 2, 161–198. (Alexandre Fedorov) **93b:76054** 76L05
Dymkov, M. P. Necessary conditions for optimality in a linear 2-D control system with constraints. (Russian. English and Russian summaries) *Dokl. Akad. Nauk Belarusi* **36** (1992), *no.* 2, 115–119, 189. (Radoslaw Pytlak) **93i:49032** 49K27 (49K24, 90C48, 93C55)
Dyn, Nira (*with* Levin, David) Stationary and nonstationary binary subdivision schemes. *Mathematical methods in computer aided geometric design, II* (*Biri*, 1991), 209–216, *Academic Press, Boston, MA*, 1992. (*see* **93d:65022**) 65D17 (65D10)

— (*with* Levin, David; Yad-Shalom, I.) Conditions for regular B-spline curves and surfaces. (French summary) Topics in computer aided geometric design (Erice, 1990). *RAIRO Modél. Math. Anal. Numér.* **26** (1992), *no.* 1, 177–190. (Geng Zhe Chang) **93f:41004** 41A05 (41A15, 65D07)

Dynkin, E. B. Additive functionals of superdiffusion processes. *Random walks, Brownian motion, and interacting particle systems*, 269–281, *Progr. Probab.*, 28, *Birkhäuser Boston, Boston, MA*, 1991. (Steven N. Evans) **93d:60122** 60J55 (60G57, 60H30)

— Superdiffusions and parabolic nonlinear differential equations. *Ann. Probab.* **20** (1992), *no.* 2, 942–962. (Steven N. Evans) **93d:60124** 60J60 (35K15, 60G57, 60J45)

— Birth delay of a Markov process and the stopping distributions for regular processes. (English summary) *Probab. Theory Related Fields* **94** (1993), *no.* 3, 399–411. (F. B. Knight) **93m:60166** 60J65 (60J45)

Dyn'kin, E. M. Methods of the theory of singular integrals: Hilbert transform and Calderón-Zygmund theory [see MR 91b:42021]. *Commutative harmonic analysis, I*, 167–259, *Encyclopaedia Math. Sci.*, 15, *Springer, Berlin*, 1991. (*see* **93b:42001**) 42B20

— (*with* Naboko, S. N.; Yakovlev, S. I.) A finiteness bound for the singular spectrum in a selfadjoint Friedrichs model. (Russian) *Algebra i Analiz* **3** (1991), *no.* 2, 77–90; *translation in St. Petersburg Math. J.* **3** (1992), *no.* 2, 299–313. (Hagen Neidhardt) **93d:47028** 47A55 (47A10, 47B25, 47G99)

Dynnikov, I. A. A proof of S. P. Novikov's conjecture for the case of small perturbations of rational magnetic fields. (Russian) *Uspekhi Mat. Nauk* **47** (1992), *no.* 3(285), 161–162; *translation in Russian Math. Surveys* **47** (1992), *no.* 3, 172–173. (J. S. Joel) **93h:58039** 58E15 (78A25, 78A35, 81V10)

Dyson, Freeman J. (*with* Falk, Harold) Period of a discrete cat mapping. *Amer. Math. Monthly* **99** (1992), *no.* 7, 603–614. (Frederick R. Marotto) **93k:58177** 58F15 (11B39, 11Z50)

huber-Dyson, Verena *see* **Huber-Dyson, Verena**

Dyubko, A. G. (*with* Yakovlev, S. V.) Approximate approach to the solution of minimax problems on vertices of a permutation polyhedron. (Russian) *Issled. Operatsii i ASU No.* 37 (1991), 77–82. (Summary) **93c:90043** 90C08 (65K10, 90C30)

Dyukova, M. V. (*with* Tkachëv, D. L.) Sufficient conditions for the well-posedness of a mixed problem for the wave equation in a domain with a corner. (Russian. Russian summary) *Boundary value problems for partial differential equations* (*Russian*), 77–87, 138, *Akad. Nauk SSSR Sibirsk. Otdel., Inst. Mat., Novosibirsk*, 1990. (*see* **93d:35002**) 35L05

Dyuzhenkova, O. Yu. A remark on approximation by analytic splines in domains with a quasismooth boundary. (Ukrainian. Ukrainian summary) *Boundary value problems for differential equations* (*Russian*), 37–43, *Akad. Nauk Ukrainy, Inst. Mat., Kiev*, 1992. (*see* **93m:00018**) 30E10 (41A15)

Dzagnidze, O. P. Generalizations of Fatou and Luzin theorems for derivatives of the Poisson integral on a sphere. (Russian. English and Georgian summaries) *Soobshch. Akad. Nauk Gruzin. SSR* **139** (1990), *no.* 1, 29–32. (S. Baron) **93c:42013** 42B10

Dzgoev, V. D. Algorithmic dimension of lattices. (Russian) *Sibirsk. Mat. Zh.* **32** (1991), *no.* 3, 215–218; *translation in Siberian Math. J.* **32** (1991), *no.* 3, 535–538 (1992). (V. Novák) **93a:03034** 03C57 (03C30, 06B99)

Dzhabbarov, I. Sh. On an identity in harmonic analysis and its applications. (Russian) *Dokl. Akad. Nauk SSSR* **314** (1990), *no.* 5, 1052–1054; *translation in Soviet Math. Dokl.* **42** (1991), *no.* 2, 577–579. (S. V. Kotov) **93i:11096; EA 93m** 11K70 (11D72, 42B10)

Dzhabrailov, M. S. (*with* Shakhmurov, V. B.) On the compactness of the embedding of B-spaces. (Russian. English and Azerbaijani summaries) *Akad. Nauk Azerbaĭdzhan. SSR Dokl.* **46** (1990), *no.* 3, 7–10 (1992). (Georgi E. Karadzhov) **93d:46055** 46E35 (46E40)

Dzhafarov, A. N. A class of three-person noncooperative differential games. (Russian. Russian summary) *Avtomat. i Telemekh.* **1992**, *no.* 6, 24–29; *translation in Automat. Remote Control* **53** (1992), *no.* 6, *part* 1, 804–809. (Summary) **93g:90102** 90D25 (90D06)

Dzhafarov, Arif S. Approximation on the sphere by spherical polynomials. *Proceedings of the* 21*st. Annual Iranian Mathematics Conference* (*Isfahan*, 1990), 130–140, *Univ. Isfahan, Isfahan*, 199?. (Summary) **93c:41012** 41A10

Dzhafarov, V. Ya. Multivalued synthesis for a class of controllable systems. (Russian. Russian summary) *Prikl. Mat. Mekh.* **56** (1992), *no.* 4, 680–682; *translation in J. Appl. Math. Mech.* **56** (1992), *no.* 4, 581–583. 49N35 (93B51)

Dzhafasrov, Arif S. *see* **Dzhafarov, Arif S.**

Dzhaiani, G. V. On a way of construction of solutions of boundary value problems for higher order equations. (Italian summary) *Rend. Mat. Appl.* (7) **10** (1990), *no.* 4, 717–731 (1991). (M. Yu. Vasil'chik) **93f:35054** 35J40

Dzhaikbaev, A. M. (*with* Isaev, S. A.) Parabolic approximation of a diffusion model of an inhomogeneous fluid. (Russian. Russian summary) *Model. Mekh.* **4** (1990), *no.* 6, 27–40. (Lech Slawik) **93k:76038** 76D99 (35Q35, 76R50)

Dzhamalov, S. Z. Solvability of a linear inverse problem for an equation of mixed type in space. (Russian) *Application of the methods of functional analysis to nonclassical equations of mathematical physics* (*Russian*), 132–139, *Akad. Nauk SSSR Sibirsk. Otdel., Inst. Mat., Novosibirsk*, 1988. (R. G. Mukhometov) **93g:35139** 35R30 (35M10)

— Well-posedness of some nonlocal boundary value problems for a multidimensional equation of mixed type of the first kind. (Russian) *Boundary value problems for nonclassical equations in mathematical physics* (*Russian*) (*Novosibirsk*, 1989), 112–114, *Akad. Nauk SSSR Sibirsk. Otdel., Inst. Mat., Novosibirsk*, 1989. (*see* **93d:35001**) 35M10

Dzhamard, B. *see* **Jaumard, Brigitte**

Dzhamburiya, L. G. (*with* Glonti, O. A.) Optimal transmission of Gaussian signals involving cost of feedback. *Ann. Acad. Sci. Fenn. Ser. A I Math.* **17** (1992), *no.* 1, 23–28. (Shunsuke Ihara) **93d:94011** 94A24 (60G35)

Dzhanelidze, G. Yu. Precategories and Galois theory. *Category theory* (*Como*, 1990), 157–173, *Lecture Notes in Math.*, 1488, *Springer, Berlin*, 1991. (Ieke Moerdijk) **93h:18011** 18B40 (18C99)

— (*with* Tholen, Walter) How algebraic is the change-of-base functor? *Category theory* (*Como*, 1990), 174–186, *Lecture Notes in Math.*, 1488, *Springer, Berlin*, 1991. (Shu Hao Sun) **93f:18011** 18C15 (18C20, 54C10)

— What is a double central extension? (French summary) *Cahiers Topologie Géom. Différentielle Catégoriques* **32** (1991), *no.* 3, 191–201. (Ronald Brown) **93e:20042** 20E22 (18G99)

— A note on Barr-Diaconescu covering theory. *Proceedings of the International Conference on Algebra, Part* 3 (*Novosibirsk*, 1989), 121–124, *Contemp. Math.*, 131, *Part* 3, *Amer. Math. Soc., Providence, RI*, 1992. (Ieke Moerdijk) **93j:18002** 18B25

Dzhangibekov, G. Noethericity conditions and the index of some two-dimensional singular integral operators. (Russian) *Dokl. Akad. Nauk SSSR* **319** (1991), *no.* 4, 811–815; *translation in Soviet Math. Dokl.* **44** (1992), *no.* 1, 220–224. (N. K. Karapetyants) **93c:47060** 47G10 (45E10, 47A53)

— An algebra generated by polykernel operators with shift. (Russian. Tajiki summary) *Dokl. Akad. Nauk Tadzhik. SSR* **34** (1991), *no.* 7, 399–403 (1992). (N. L. Vasilevskiĭ) **93i:47075** 47G10 (30E20, 47A53, 47D25)

— A class of two-dimensional singular integral operators with several fixed singularities. (Russian) *Dokl. Akad. Nauk SSSR* **322** (1992), *no.* 1, 22–27; *translation in Soviet Math. Dokl.* **45** (1992), *no.* 1, 15–20. (Zbigniew Binderman) **93e:47067** 47G10 (45E05, 45P05, 47A53, 47N20)

Dzhaparidze, G. K. Predicate provability logic with nonmodalized quantifiers. *Studia Logica* **50** (1991), *no.* 1, 149–160. (Alessandro Berarducci) **93m:03026** 03B45 (03F30, 03F40)

Dzhaparidze, K. O. (*with* Valkeila, Esko) On large deviation probabilities for the maximum likelihood estimators. *Probability theory and mathematical statistics, Vol. I* (*Vilnius*, 1989), 285–292, "*Mokslas*", *Vilnius*, 1990. (Andrzej Sierociński) **93g:62045** 62F12 (60F10)

— (*with* Nikulin, M. S.) On the calculation of statistics of chi-square-type tests. (Russian. Russian summary) *Zap. Nauchn. Sem. S.-Peterburg. Otdel. Mat. Inst. Steklov.* (*POMI*) **194** (1992), *Problemy Teorii Veroyatnost. Raspred.* 12, 59–78, 177. (Zuzana Prášková) **93g:62029** 62E20 (62F03, 62G05, 62G10)

Dzhenaliev, M. T. A boundary value problem for a linear loaded parabolic equation with nonlocal boundary conditions. (Russian) *Differentsial'nye Uravneniya* **27** (1991), *no.* 10, 1825–1827, 1839. (Summary) **93a:35063** 35K20 (35R10)

— Boundary value problems for loaded parabolic and hyperbolic equations with time derivatives in the boundary conditions. (Russian. Russian summary) *Differentsial'nye Uravneniya* **28** (1992), *no.* 4, 661–666, 734; *translation in Differential Equations* **28** (1992), *no.* 4, 537–540. (A. S. Berdyshev) **93k:35128** 35K35 (35L35)

Dzhgamadze, N. O. (*with* Popov, A. V.) Convergence of a difference scheme for two-dimensional equations of gas dynamics. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **32** (1992), *no.* 4, 613–622; *translation in Comput. Math. Math. Phys.* **32** (1992), *no.* 4, 521–529. (Corneliu Berbente) **93i:76074** 76N15 (65M06, 76M20)

Dzhibladze, M. A. (*with* Johnstone, Peter T.) The frame of fibrewise closed nuclei. (French summary) *Cahiers Topologie Géom. Différentielle Catégoriques* **32** (1991), *no.* 2, 99–112. (Jiří Rosický) **93b:18010** 18B30 (06D99, 54B30)

Dzhrbashyan, A. È. Integral representations for Riesz systems in the unit ball and some applications. *Proc. Amer. Math. Soc.* **117** (1993), *no.* 2, 395–403. (Bi Yun Yao) **93d:42020** 42B99 (31B10, 46E15)

Dzhrbashyan, A. M. (*with* Gubreev, G. M.) Functions of generalized bounded type in spectral theory of nonweak contractions. Analyse complexe (Bucharest, 1989). *Rev. Roumaine Math. Pures Appl.* **36** (1991), *no.* 3-4, 147–154. (E. Durszt) **93e:47014** 47A45 (30D99, 47A10, 47A56, 47B10)

— On functions of bounded and generalized bounded type in the half-plane. Analyse complexe (Bucharest, 1989). *Rev. Roumaine Math. Pures Appl.* **36** (1991), *no.* 7-8, 425–432. (Summary) **93d:30041** 30D50

Dzhrbashyan, M. M. (*with* Karapetyan, A. O.) Integral representations in a generalized upper half-plane. (Russian. English and Armenian summaries) *Izv. Akad. Nauk Armyan. SSR Ser. Mat.* **25** (1990), *no.* 6, 507–533, 605 (1991); *translation in Soviet J. Contemporary Math. Anal.* **25** (1990), *no.* 6, 1–28 (1991). (Alexandr M. Kytmanov) **93c:32004** 32A25 (32A37)

Dzhumabaev, D. S. Singular boundary value problems and their approximation for nonlinear ordinary differential equations. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **32** (1992), *no.* 1, 13–29; *translation in Comput. Math. Math. Phys.* **32** (1992), *no.* 1, 10–24. (Summary) **93c:34051** 34B15 (34A34, 34A45, 65L10)

Dzhumadil'daev, A. S. Cohomology and nonsplit extensions of modular Lie algebras. (English summary) *Proceedings of the International Conference on Algebra, Part* 2 (*Novosibirsk*, 1989), 31–43, *Contemp. Math.*, 131, *Part* 2, *Amer. Math. Soc., Providence, RI*, 1992. (Graham J. Ellis) **93f:17034** 17B56 (17B50)

Dzhumaev, S. (*with* Mukhamadiev, È.) On the regularization of operator equations. (Russian) *Dokl. Akad. Nauk* **324** (1992), *no.* 2, 254–257; *translation in Russian Acad. Sci. Dokl. Math.* **45** (1992), *no.* 3, 556–559 (1993). (A. B. Bakushinskiĭ) **93m:65073** 65J10 (47A50, 65J20)

Dzhuraev, A. D. Formulation of three-dimensional elliptic boundary value problems for systems. (Russian) *Dokl. Akad. Nauk SSSR* **319** (1991), *no.* 1, 33–37; *translation in Soviet Math. Dokl.* **44** (1992), *no.* 1, 26–31. (D. G. Natroshvili) **93d:35017** 35E20 (35J55)

— On a degenerate boundary value problem in 3-dimensional space. (Russian) *Dokl. Akad. Nauk SSSR* **320** (1991), *no.* 5, 1043–1048; *translation in Soviet Math. Dokl.* **44** (1992), *no.* 2, 588–593. (Hans Gerd Leopold) **93c:35052** 35J70 (35J25)

— On the theory of overdetermined first-order systems. (Russian) *Dokl. Akad. Nauk SSSR* **321** (1991), *no.* 4, 664–669; *translation in Soviet Math. Dokl.* **44** (1992), *no.* 3, 762–767. (Lilia Nikolova Apostolova) **93a:35113** 35N10 (35F05)

— On the Moisil-Theodorescu system. *Partial differential equations with complex analysis*, 186–203, *Pitman Res. Notes Math. Ser.*, 262, *Longman Sci. Tech., Harlow*, 1992. (Wolfgang Rüprich) **93m:35067** 35J55

— (*with* Kopp, Larisa) On the Riemann problem for general first order elliptic systems in the plane. *Complex Variables Theory Appl.* **18** (1992), *no.* 1-2, 109–118. (H. Renelt) **93f:30048** 30G20 (35B65, 35J45)

— *see also* **Il'in, Vladimir Aleksandrovich et al., 93h:01041**

Dzhuraev, N. (*with* Isamukhamedov, S. S.) A nonlocal problem for a degenerate parabolic-hyperbolic equation of the second kind. (Russian) *Boundary value problems for nonclassical equations in mathematical physics* (*Russian*) (*Novosibirsk*, 1989), 29–32, *Akad. Nauk SSSR Sibirsk. Otdel., Inst. Mat., Novosibirsk*, 1989. (*see* **93d:35001**) 35M10

Dzhuraev, T. D. (*with* Sopuev, A.) Some boundary value problems for a third-order equation of parabolic-hyperbolic type. (Russian) *Nonclassical equations and equations of mixed type* (*Russian*), 82–94, *Akad. Nauk SSSR Sibirsk. Otdel., Inst. Mat., Novosibirsk*, 1990. (*see* **93b:35002**) 35M10

— (*with* Popiolek, Jan) On the theory of third order partial differential equations. *Conference on Differential Equations and Applications* (*Ruse*, 1989), 244–254, *Tech. Univ., Ruse*, 1991. (*see* **93f:34004**) 35G20 (35A30)

— (*with* Abdinazarov, S.) On the theory of odd-order equations with multiple characteristics. (Russian) *Dokl. Akad. Nauk SSSR* **320** (1991), *no.* 6, 1305–1309; *translation in Soviet Math. Dokl.* **44** (1992), *no.* 2, 619–623. (Victor V. Zharinov) **93b:35005** 35A30 (35F05, 35G15)

Dzhurakulov, R. (*with* Usmanov, G. U.) Solution of a nonlinear equation with a singular kernel of a special type. (Russian. Russian summary) *Voprosy Vychisl. i Prikl. Mat. (Tashkent) No.* 88 (1990), 59–64, 160. 45J05

Dzhuri, È. I. *see* **Jury, Eliahu I.**

Dziechcińska-Halamoda, Z. (*with* Michael, J.; Szwiec, W.) Games without repetitions on digraphs. *Arch. Math. (Basel)* **59** (1992), *no.* 6, 603–609. (A. Pultr) **93m:05078** 05C20 (05C38, 90D05, 90D43)

Dzieciol, Aleksander The Stokes constants associated with the differential equation $d^2\psi/dz^2 - 4A^2z^{n-2}(z^n + c)\psi = 0$. *J. Math. Phys.* **33** (1992), *no.* 3, 840–853. (Adriana Bohé) **93a:34068** 34E20 (34L40)

Dzierzgowski, Daniel Intuitionistic typical ambiguity. *Arch. Math. Logic* **31** (1992), *no.* 3, 171–182. (P. C. Gilmore) **93c:03075** 03F55 (03E70)

Dziobiak, Wiesław A finite matrix whose set of tautologies is not finitely axiomatizable. *Rep. Math. Logic No.* 25 (1991), 105–112. (Stanisław J. Surma) **93k:03025** 03B50 (03B22)

— (*with* Czelakowski, Janusz) A deduction theorem schema for deductive systems of propositional logics. Algebraic logic. *Studia Logica* **50** (1991), *no.* 3-4, 385–390. (Décio Krause) **93e:03012** 03B22 (03G25)

— (*with* Czelakowski, Janusz) A single quasi-identity for a quasivariety with the Fraser-Horn property. *Algebra Universalis* **29** (1992), *no.* 1, 10–15. (Joel Berman) **93b:08007** 08C15 (08B05)

Dziubański, Jacek Schwartz spaces associated with some nondifferential convolution operators on homogeneous groups. *Colloq. Math.* **63** (1992), *no.* 2, 153–161. (Gerald B. Folland) **93i:43005** 43A22 (22E25, 22E30, 46F05, 47G99)

— (*with* Biler, Piotr; Hebisch, Waldemar) Scattering of small solutions to generalized Benjamin-Bona-Mahony equation in several space dimensions. (English summary) *Comm. Partial Differential Equations* **17** (1992), *no.* 9-10, 1737–1758. (Alan Jeffrey) **93k:35209** 35Q35 (35L70)

Džonova-Jerman-Blažič, B. *see* **Concepts in mathematical chemistry, 93e:92002**

Dzuraev, T. D. *see* **Dzhuraev, T. D.**

Džurina, Jozef Oscillation and asymptotic properties of nth order differential equations. *Czechoslovak Math. J.* **42(117)** (1992), *no.* 1, 11–14. (Cheh-Chih Yeh) **93d:34057** 34C10

— (*with* Ohriska, Ján) Asymptotic and oscillatory properties of differential equations with deviating argument. *Hiroshima Math. J.* **22** (1992), *no.* 3, 561–571. (Anatolii Fedorovich Ivanov) **93i:34129** 34K15

— Comparison theorems for nonlinear ODEs. (English summary) *Math. Slovaca* **42** (1992), *no.* 3, 299–315. (Wadi Mahfoud) **93j:34099** 34K15

— The oscillation of a differential equation of second order with deviating argument. (English summary) *Math. Slovaca* **42** (1992), *no.* 3, 317–324. (Wadi Mahfoud) **93j:34100** 34K15

Dzyadyk, V. K. (*with* Vasilenko, Ya. F.) Application of the approximation-iterative method to the solution of stiff problems for ordinary differential equations. (Russian) *Akad. Nauk Ukrainy Inst. Mat. Preprint* **1991**, *no.* 55, 39 *pp.* (Summary) **93b:65094** 65L05

— *see also* **Studies in the theory of the approximation of functions, 93e:00019**

Dzyuba, I. A. Difference schemes of the multicomponent method of variable directions for the solution of problems in elasticity theory. (Russian) *Differentsial'nye Uravneniya i Primenen. No.* 46 (1991), 58–62. (Summary) **93b:73038** 73V15 (65M06, 73C35)

— (*with* Abrashin, V. N.; Kamenskaya, N. E.) Efficient methods for solving multidimensional thermoelasticity problems. (Russian. Russian summary) *Differentsial'nye Uravneniya* **28** (1992), *no.* 2, 290–305, 366; *translation in Differential Equations* **28** (1992), *no.* 2, 249–261. (Michael Fröhner) **93j:65208** 65P05 (35Q99, 73B30, 73V15)

— On a class of difference schemes of the multicomponent method of variable directions of the second order of approximation with respect to time. (Russian. Russian summary) *Differentsial'nye Uravneniya* **28** (1992), *no.* 7, 1205–1211, 1286; *translation in Differential Equations* **28** (1992), *no.* 7, 967–973 (1993). (V. D. Glushenkov) **93k:65068** 65M06 (65M12)

Dzyuba, S. M. Some properties of trajectories of dynamical systems. (Russian) *Dokl. Akad. Nauk SSSR* **319** (1991), *no.* 1, 88–90; *translation in Soviet Phys. Dokl.* **36** (1991), *no.* 7, 493–494 (1992). (Jan Andres) **93d:34083** 34C40 (58F21, 58F22, 93C10)

Dzyubenko, K. G. (*with* Erokhin, V. F.) Comparison of various methods for estimating the components of a group discrete parameter. (Russian. Russian summary) *Stochastic equations and boundary theorems (Russian)*, 45–51, *Akad. Nauk Ukrainy, Inst. Mat., Kiev*, 1991. (*see* **93e:60008**) 94A12.

– E –

E, Weinan (*with* Cai, Zhi Qiang) Hierarchical method for elliptic problems using wavelet. (English summary) *Comm. Appl. Numer. Methods* **8** (1992), *no.* 11, 819–825. (Summary) **93g:65144** 65N30

— Propagation of oscillations in the solutions of 1-D compressible fluid equations. *Comm. Partial Differential Equations* **17** (1992), *no.* 3-4, 347–370. (Bruno Scheurer) **93a:35120** 35Q30 (76N10)

— Homogenization of scalar conservation laws with oscillatory forcing terms. *SIAM J. Appl. Math.* **52** (1992), *no.* 4, 959–972. (Summary) **93d:35096** 35L65 (35B27, 65M99, 76M25)

— Convergence of spectral methods for Burgers' equation. (English summary) *SIAM J. Numer. Anal.* **29** (1992), *no.* 6, 1520–1541. (Meng Zhao Qin) **93j:65158** 65M70 (34A50, 34G20, 65L60)

— (*with* Shu, Chi-Wang) Effective equations and the inverse cascade theory for Kolmogorov flows. (English summary) *Phys. Fluids A* **5** (1993), *no.* 4, 998–1010. (Summary) **93m:76048** 76F05

Eagambaram, N. $(i, j, \cdots, k)$-inverses via bordered matrices. (English summary) *Sankhyā Ser. A* **53** (1991), *no.* 3, 298–308. (Mihail Voicu) **93i:15003** 15A09 (15A18)

Eagleson, G. K. (*with* Carter, C. K.) A comparison of variance estimators in nonparametric regression. (English summary) *J. Roy. Statist. Soc. Ser. B* **54** (1992), *no.* 3, 773–780. (Summary) **93f:62045** 62G05 (62J02)

Eaqub Ali, S. M. Some problems on generating functions involving modified Laguerre polynomials and Hermite polynomials. *Pure Math. Manuscript* **8** (1989), 11–18. (Antonio J. Durán) **93b:33010** 33C45

— Analytic methods for obtaining generating functions. (English summary) *Bull. Calcutta Math. Soc.* **83** (1991), *no.* 5, 461–468. 33–02 (33C99)

Earle, Clifford J. The group of biholomorphic self-mappings of Schottky space. *Ann. Acad. Sci. Fenn. Ser. A I Math.* **16** (1991), *no.* 2, 399–410. (È. Yakubov) **93a:30051** 30F60 (32G15)

— Some Riemann surfaces whose Jacobians have strange product structures. (English summary) *Curves, Jacobians, and abelian varieties (Amherst, MA, 1990)*, 127–137, *Contemp. Math.*, 136, *Amer. Math. Soc., Providence, RI*, 1992. (Allen Tannenbaum) **93j:14029** 14H40 (14H42)

Earman, John ★ Bayes or bust? A critical examination of Bayesian confirmation theory. A Bradford Book. *MIT Press, Cambridge, MA*, 1992. xvi+272 *pp. ISBN* 0-262-05046-3 (Henry E. Kyburg, Jr.) **93f:60004** 60A05 (03B48, 62A15)

— (*with* Norton, John Daniel) Forever is a day: supertasks in Pitowsky and Malament-Hogarth spacetimes. (English summary) *Philos. Sci.* **60** (1993), *no.* 1, 22–42. (Lawrence Sklar) **93m:83060** 83C75 (00A30, 00A79, 03A05, 03D99)

Earn, David J. D. (*with* Tremaine, Scott) Exact numerical studies of Hamiltonian maps: iterating without roundoff error. *Phys. D* **56** (1992), *no.* 1, 1–22. (Gennady Berman) **93c:58068** 58F05 (58–04, 65C20, 70–08, 70K50)

sa Earp, Ricardo *see* **Sa Earp, Ricardo**

Earp, Ricardo Sa *see* **Sa Earp, Ricardo**

Easdown, David (*with* Putcha, Mohan S.) The local semilattice of chains of idempotents. *Semigroup Forum* **44** (1992), *no.* 2, 157–163. (K. S. S. Nambooripad) **93g:20113** 20M10 (06A99)

Easley, David (*with* Blume, Lawrence) Evolution and market behavior. (English summary) *J. Econom. Theory* **58** (1992), *no.* 1, 9–40. (Summary) **93g:90026** 90A60

Eason, R. O. (*with* Gonzalez, Rafael C.) Least-squares fusion of multisensory data. *Data fusion in robotics and machine intelligence*, 367–413, *Academic Press, Boston, MA*, 1992. (*see* **93g:68002**) 68U05 (68T30, 70B15, 70Q05)

Eastham, Michael S. P. Asymptotic solution of differential equations of generalised hypergeometric type. (English summary) *Recent trends in differential equations*, 149–161, *World Sci. Ser. Appl. Anal.*, 1, *World Sci. Publishing, River Edge, NJ*, 1992. (Khélifa Trimèche) **93k:34118** 34E05 (33C99, 34A30)

— Resonant perturbations of higher-order harmonic oscillation. *Quaestiones Math.* **15** (1992), *no.* 1, 1–25. (Summary) **93b:34067** 34E10 (34A30)

Easthope, Peter L. Classifying the conformations of a chemical system using matrices of integers. (English summary) *J. Math. Chem.* **13** (1993), *no.* 2, 73–94. 92E10

Eastwood, Alan Interpolation à N variables. [N-variable interpolation] *J. Algebra* **139** (1991), *no.* 2, 273–310. (A. Hirschowitz) **93a:14048** 14N05 (14C99, 14F99)

Eastwood, Brian J. Asymptotic normality of semi-nonparametric estimators using minimization of C_p or adaptive polynomial truncation selection procedures. *Limit theorems in probability and statistics (Pécs*, 1989), 173–183, *Colloq. Math. Soc. János Bolyai*, 57, *North-Holland, Amsterdam*, 1990. (K. C. Chanda) **93d:62118** 62J02 (62G05, 62G20)

— (*with* Gallant, A. Ronald) Adaptive rules for seminonparametric estimators that achieve asymptotic normality. *Econometric Theory* **7** (1991), *no.* 3, 307–340. (Thomas W. Sager) **93g:62053** 62G05 (62P20, 90A19)

— (*with* Huse-Eastwood, Vera R.) Percentiles for Cramér-von Mises functionals of Gaussian processes and some applications to Bayesian tests. (English summary) *Stochastic Process. Appl.* **42** (1992), *no.* 2, 329–344. (Friedrich Liese) **93j:62136** 62G20 (62E20)

Eastwood, Bruce Stansfield Heraclides and heliocentrism: texts, diagrams, and interpretations. *J. Hist. Astronom.* **23** (1992), *no.* 4, 233–260. 01A20

Eastwood, Michael G. (*with* Hübsch, Tristan) Endomorphism valued cohomology and gauge-neutral matter. *Comm. Math. Phys.* **132** (1990), *no.* 2, 383–413. (Introduction) **93e:14048** 14J30 (14J15, 32G13, 32J27, 53C80, 81T30)

— (*with* Graham, C. Robin) Invariants of CR densities. *Several complex variables and complex geometry, Part 2 (Santa Cruz, CA*, 1989), 117–133, *Proc. Sympos. Pure Math.*, 52, *Part 2, Amer. Math. Soc., Providence, RI*, 1991. (Michael Murray) **93e:32012** 32C16 (22E47, 53A55)

— (*with* Graham, C. Robin) Invariants of conformal densities. *Duke Math. J.* **63** (1991), *no.* 3, 633–671. (Michael Murray) **93b:22030** 22E47 (14F05, 22E46, 53A30, 58G35)

— (*with* Pilato, A. M.) On the density of twistor elementary states. *Pacific J. Math.* **151** (1991), *no.* 2, 201–215. (Michael Murray) **93e:22027a** 22E46 (32L25, 81R25)

— A Penrose transform for D_4 and homomorphisms of generalized Verma modules. *Bull. London Math. Soc.* **24** (1992), *no.* 4, 347–350. (Brad Shelton) **93j:22030** 22E47 (32L25)

— (*with* LeBrun, Claude) Fattening complex manifolds: curvature and Kodaira-Spencer maps. *J. Geom. Phys.* **8** (1992), *no.* 1-4, 123–146. (Nicholas Buchdahl) **93d:32048** 32L25 (32G05, 81R25)

— (*with* Pilato, A. M.) Correction to: "On the density of twistor elementary states". *Pacific J. Math.* **155** (1992), *no.* 1, 199. (Michael Murray) **93e:22027b** 22E46 (32L25, 81R25)

huse-Eastwood, Vera R. *see* **Huse-Eastwood, Vera R.**

Easwaran, C. V. (*with* Chikwendu, S. C.) Multiple-scale solution of initial-boundary value problems for weakly nonlinear wave equations on the semi-infinite line. *SIAM J. Appl. Math.* **52** (1992), *no.* 4, 946–958. (Hidetoshi Tahara) **93f:35148** 35L70 (35B20, 35C20)

— (*with* Kokal, S. L.) A theory for transient discharge in tubes with applications to a new type of viscometer. (English summary) *SIAM J. Appl. Math.* **52** (1992), *no.* 6, 1501–1508. (Summary) **93h:76024** 76D99 (76Z05, 92C10)

— (*with* Majumdar, S. R.) Oseen flow past a split-plate in a micropolar fluid. (English summary) *Z. Angew. Math. Mech.* **73** (1993), *no.* 3, 179–181. 76A05 (73B25, 76D05)

Eatock Taylor, R. (*with* Chau, F. P.) Second-order wave diffraction by a vertical cylinder. (English summary) *J. Fluid Mech.* **240** (1992), 571–599. (Summary) **93d:76005** 76B15

Eaton, Morris L. (*with* Perlman, Michael D.) Multivariate probability inequalities: convolution theorems, composition theorems, and concentration inequalities. (English summary) *Stochastic orders and decision under risk (Hamburg*, 1989), 104–122, *IMS*

Lecture Notes Monograph Ser., 19, *Inst. Math. Statist., Hayward, CA*, 1991. (Summary) **93h:60027** 60E15 (62H10)

— (*with* Perlman, Michael D.) Concentration inequalities for multivariate distributions. I. Multivariate normal distributions. *Statist. Probab. Lett.* **12** (1991), *no.* 6, 487–504. (Yasunori Fujikoshi) **93d:62098** 62H05 (60E15)

— A statistical diptych: admissible inferences—recurrence of symmetric Markov chains. (English summary) *Ann. Statist.* **20** (1992), *no.* 3, 1147–1179. (Marek Kaluszka) **93i:62006** 62C10 (62C15)

— (*with* Runger, George C.) Most powerful invariant permutation tests. (English summary) *J. Multivariate Anal.* **42** (1992), *no.* 2, 202–209. (Nariaki Sugiura) **93m:62128** 62H15 (62A05, 62G10)

Eaton, Nancy (*with* Rödl, Vojtěch) A canonical Ramsey theorem. (English summary) *Random Structures Algorithms* **3** (1992), *no.* 4, 427–444. (Y. Roditty) **93m:05136** 05C55

Eaves, B. Curtis (*with* Rothblum, Uriel G.) Dines-Fourier-Motzkin quantifier elimination and an application of corresponding transfer principles over ordered fields. *Math. Programming* **53** (1992), *no.* 3, *Ser. A*, 307–321. (Max A. Dickmann) **93h:03037** 03C10 (03C60, 12J15, 90C60)

Eaves, D. M. (*with* Chang, Theodore) Posterior mode estimation for the generalized linear model. (English summary) *Ann. Inst. Statist. Math.* **44** (1992), *no.* 3, 417–434. 62J05

— (*with* Chang, Theodore) Priors for ordered conditional variance and vector partial correlation. *J. Multivariate Anal.* **41** (1992), *no.* 1, 43–55. (Jack C. Lee) **93e:62086** 62F15 (62H12)

Ebeling, Werner (*with* Engel-Herbert, H.; Herzel, Hans-Peter) ★ Selbstorganisation in der Zeit. (German) [Self-organization in time] Wissenschaftliche Taschenbücher, Reihe Mathematik/Physik [Scientific Paperbacks, Mathematics/Physics Series], 309. *Akademie-Verlag, Berlin*, 1990. 205 *pp. ISBN* 3-05-500709-3 (J. S. Joel) **93d:00019** 00A69 (34C23, 58–02, 70–02, 70K40, 76E99, 80–02, 92–02)

— On the relation between the entropy concepts of Clausius, Boltzmann, Gibbs, Shannon and Kolmogorov. *From phase transitions to chaos*, 470–486, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93c:82003** 82B03 (94A17)

— Chaos, order, and information in the evolution of strings. (English summary) *Appl. Math. Comput.* **56** (1993), *no.* 2-3, 131–151. 92D15

— *see also* **Models of self-organization in complex systems—MOSES, 93g:58001**

Ebeling, Wolfgang (*with* Okonek, Christian) On the diffeomorphism groups of certain algebraic surfaces. *Enseign. Math.* (2) **37** (1991), *no.* 3-4, 249–262. (I. Dolgachev) **93e:57052** 57R50 (14F45, 32J15)

Eberbach, Eugeniusz Fixed point semantics for sets of equations over SMA-net. (English summary) *Fixed point theory and applications (Halifax, NS*, 1991), 97–111, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93h:68043** 68Q10 (03B70)

Eberhard, W. (*with* Freiling, G.) Necessary conditions for the convergence and summability of eigenfunction expansions in the complex domain. *Differential Integral Equations* **4** (1991), *no.* 6, 1217–1232. (Nikolai Bozhinov) **93e:34107** 34L10 (34B05)

— (*with* Freiling, G.) The distribution of the eigenvalues for second order eigenvalue problems in the presence of an arbitrary number of turning points. *Results Math.* **21** (1992), *no.* 1-2, 24–41. (Angelo B. Mingarelli) **93e:34108** 34L20 (34B24)

Eberhardt, B. (*with* Greiner, Günther) Baillon's theorem on maximal regularity. (English summary) Positive operators and semigroups on Banach lattices (Curaçao, 1990). *Acta Appl. Math.* **27** (1992), *no.* 1-2, 47–54. (Ioana Ciorănescu) **93i:47053** 47D03

Eberhardt, Thomas *see* **Peitgen, Heinz-Otto et al., 93i:00001**

Eberle, Albrecht (*with* Rizzi, Arthur; Hirschel, Ernst Heinrich) ★ Numerical solutions of the Euler equations for steady flow problems. Notes on Numerical Fluid Mechanics, 34. *Friedr. Vieweg & Sohn, Braunschweig*, 1992. xvi+448 *pp. ISBN* 3-528-07634-8 (Dennis C. Jespersen) **93f:76081** 76N10 (65–02, 76M20)

Eberlein, Claudia Fluctuations of Casimir forces on finite objects. I. Spheres and hemispheres. *J. Phys. A* **25** (1992), *no.* 10, 3015–3037. (Alexander W. Smith) **93e:81140** 81T99 (81V10)

— Fluctuations of Casimir forces on finite objects. II. Flat circular disk. *J. Phys. A* **25** (1992), *no.* 10, 3039–3050. (Alexander W. Smith) **93e:81141** 81T99 (81V10)

Eberly, David (*with* Aragon, Jorge) Existence and uniqueness of maximum likelihood estimators for certain size-biased discrete distributions. (English summary) *Sankhyā Ser. B* **53** (1991), *no.* 2, 213–228. (Summary) **93e:62068** 62F10

— (*with* Aragon, Jorge; Eberly, Shelly) Existence and uniqueness of the maximum likelihood estimator for the two-parameter negative binomial distribution. (English summary) *Statist. Probab. Lett.* **15** (1992), *no.* 5, 375–379. 62F10

Eberly, J. H. (*with* Wódkiewicz, K.) Click-counting distributions in optical transitions. *Ann. Physics* **216** (1992), *no.* 2, 268–290. (Summary) **93b:81325** 81V80 (81P15)

Eberly, Shelly (*with* Aragon, Jorge; Eberly, David) Existence and uniqueness of the maximum likelihood estimator for the two-parameter negative binomial distribution. (English summary) *Statist. Probab. Lett.* **15** (1992), *no.* 5, 375–379. 62F10

Eberly, Wayne (*with* Bshouty, Nader H.; Cleve, Richard) Size-depth tradeoffs for algebraic formulae. (English summary) *32nd Annual Symposium on Foundations of Computer Science (San Juan, PR*, 1991), 334–341, *IEEE Comput. Soc. Press, Los Alamitos, CA*, 1991. (Summary) **93e:68043** 68Q40

— Decomposition of algebras over finite fields and number fields. *Comput. Complexity* **1** (1991), *no.* 2, 183–210. (H.-J. Hoehnke) **93d:68038** 68Q40 (16–04)

— Decompositions of algebras over **R** and **C**. *Comput. Complexity* **1** (1991), *no.* 3, 211–234. (Summary) **93k:68052** 68Q40

Ebert, G. L. (*with* Hemmeter, Joe; Lazebnik, Felix; Woldar, Andrew J.) On the number of irregular assignments on a graph. *Discrete Math.* **93** (1991), *no.* 2-3, 131–142. (Michael Jacobson) **93b:05147** 05C78

— On Buekenhout-Metz unitals of even order. *European J. Combin.* **13** (1992), *no.* 2, 109–117. (J. W. P. Hirschfeld) **93d:51023** 51E21 (05B25, 51E05)

— (*with* Baker, R. D.) On Buekenhout-Metz unitals of odd order. *J. Combin. Theory Ser. A* **60** (1992), *no.* 1, 67–84. (Tamás Szőnyi) **93g:51009** 51E21

Ebiefung, Aniekan A. (*with* Kostreva, Michael M.) Global solvability of generalized linear complementarity problems and a related class of polynomial complementarity problems. *Recent advances in global optimization (Princeton, NJ*, 1991), 102–124, *Princeton Ser. Comput. Sci., Princeton Univ. Press, Princeton, NJ*, 1992. (Vera V. Kovačević-Vujčić) **93a:90070** 90C33 (65K05, 90C60)

Ebihara, Madoka On unirationality of threefolds which contain toric surfaces with ample normal bundles. *J. Fac. Sci. Univ. Tokyo Sect. IA Math.* **39** (1992), *no.* 1, 87–139. (T. Oda) **93b:14066** 14J30 (14B20, 14E05, 14M25)

Ebihara, Yukiyoshi On degenerate quasilinear diffusion equations. *Conference on Differential Equations and Applications (Ruse*, 1989), 255–264, *Tech. Univ., Ruse*, 1991. (*see* **93f:34004**) 35K55

— Global estimates for solutions of initial-boundary value problem for a semilinear wave equation with a singular damping. *Adv. Math. Sci. Appl.* **1** (1992), *no.* 1, 99–111. (Summary) **93b:35090** 35L70 (35B45)

— (*with* Furusho, Yasuhiro; Nagai, Toshitaka) Singular solutions of traveling waves in a chemotactic model. *Bull. Kyushu Inst. Tech. Math. Natur. Sci. No.* 39 (1992), 29–38. (Roger Lui) **93f:92012** 92C15 (35K40)

— (*with* Hoshino, Hiroki; Kurokiba, M.) On exact solutions of Kirchhoff quasilinear hyperbolic equation with absorbing term. *Fukuoka Univ. Sci. Rep.* **22** (1992), *no.* 1, 14–15. (From the introduction) **93b:35089** 35L70 (35C05)

Ebine, T. (*with* Hashimoto, K.; Kimoto, T.; Kimura, Hidenori) Image-based dynamic visual servo for a hand-eye manipulator. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, II (Kobe*, 1991), 609–614, *Mita, Tokyo*, 1992. (*see* **93g:93006**) 93C85

Ebner, Dieter W. Scalar fields in a seven-dimensional manifold behaving as Lorentz-covariant spinor fields in space-time. *Gen. Relativity Gravitation* **23** (1991), *no.* 11, 1279–1301. (Summary) **93d:83065** 83E15 (53C80)

— (*with* Rodríguez-Romo, Suemi) Fermions as special states of bosons. (English summary) *Clifford algebras and their applications in mathematical physics (Montpellier*, 1989), 405–411, *Fund. Theories Phys.*, 47, *Kluwer Acad. Publ., Dordrecht*, 1992. (*see* **93f:00011**) 81T20

— (*with* Rodríguez-Romo, Suemi) Unified treatment of fermions and bosons. (English summary) *Internat. J. Theoret. Phys.* **31** (1992), *no.* 8, 1371–1373. 81R05

Ebneshahrashoob, M. (*with* Jammalamadaka, Sreenivasa R.; Tiwari, Ram C.; Sen, Pranab Kumar) A rank test based on the number of "near-matches" for ordered alternatives in randomized blocks. (English summary) *Sankhyā Ser. A* **53** (1991), *no.* 2, 183–193. (Georg Neuhaus) **93k:62114** 62G20 (62E20)

Ebrahimi, Nader How to compare two systems. *J. Appl. Probab.* **28** (1991), *no.* 4, 940–946. (Summary) **93a:60161** 60K99 (62N05)

— On estimating change point in a mean residual life function. (English summary) *Sankhyā Ser. A* **53** (1991), *no.* 2, 206–219. (Prafulchandra N. Jani) **93k:62059** 62F12 (62N05)

— (*with* Basu, Asit P.) Bayesian approach to some problems in life testing and reliability estimation. (English summary) *Bayesian analysis in statistics and econometrics (Bangalore*, 1988), 257–266, *Lecture Notes in Statist.*, 75, *Springer, New York*, 1992. (Summary) **93i:62085** 62N05 (62F15)

— Information theory and the failure time of a system. (English summary) *Ann. Inst. Statist. Math.* **44** (1992), *no.* 3, 463–477. (V. Thangaraj) **93k:62010** 62B10 (60K10, 62N05, 94A17)

— (*with* Habibullah, Mohamed; Soofi, Ehsan) Testing exponentiality based on Kullback-Leibler information. (English summary) *J. Roy. Statist. Soc. Ser. B* **54** (1992), *no.* 3, 739–748. 62F03

— An optimal stopping time for a power law process. (English summary) *Sequential Anal.* **11** (1992), *no.* 3, 213–227. (Albrecht Irle) **93i:62071** 62L12 (62C10, 62L15)

— More predictable, less predictable and stable counting processes. (English summary) *J. Appl. Probab.* **30** (1993), *no.* 2, 341–352. (Summary) **93m:60176** 60K15 (60G55, 62B10)

Èbralidze, Sh. S. On the bounds for the probabilities of large deviations for random variables and vectors. (English summary) *New trends in probability and statistics, Vol.* 1 (*Bakuriani*, 1990), 3–10, *VSP, Utrecht*, 1991. (Summary) **93h:60039** 60F10

Écalle, Jean The bridge equation and its applications to local geometry. *Dynamical systems and related topics (Nagoya*, 1990), 100–122, *Adv. Ser. Dyn. Syst.*, 9, *World Sci. Publishing, River Edge, NJ*, 1991. (J. S. Joel) **93d:32011** 32B99 (32S05, 32S65)

— Singularités non abordables par la géométrie. (English summary) [Singularities that are inaccessible by geometry] *Ann. Inst. Fourier (Grenoble)* **42** (1992), *no.* 1-2, 73–164. (J. S. Joel) **93f:58214** 58F36 (30B99, 30D60, 32A30, 34A20, 34E05, 40A99)

Eccarius, Wolfgang Über eine Auseinandersetzung um den Mathematikunterricht an thüringischen Gymnasien aus dem Jahre 1843. [On a discussion, from the year 1843, concerning the teaching of mathematics in the "Gymnasia" in Thuringia] *Amphora*, 183–187, *Birkhäuser, Basel*, 1992. (*see* **93g:01001**) 01A55

Eccher, Lorenzo (*with* Opricović, Serafim; Isailovski, Miodrag) An optimization procedure for water reservoirs in cascade. (English summary) *Yugosl. J. Oper. Res.* **2** (1992), *no.* 1, 83–95. 90C90

Eccleston, John A. (*with* Saunders, Ian W.) Experimental design for continuous processes. (English summary) *Austral. J. Statist.* **34** (1992), *no.* 1, 77–89. (R. J. Martin) **93k:62160** 62K15 (62K05, 62M10)

— (*with* Martin, Richard John) A new model for slowly-decaying correlations. *Statist. Probab. Lett.* **13** (1992), *no.* 2, 139–145. (Summary) **93k:62189** 62M10

Ece, Mehmet Cem The initial boundary-layer flow past a translating and spinning rotational symmetric body. (English summary) *J. Engrg. Math.* **26** (1992), *no.* 3, 415–428. 76D10

Echandía, Ventura (*with* Finol, Carlos E.; Maligranda, Lech) Interpolation of some spaces of Orlicz type. I. (English summary) *Bull. Polish Acad. Sci. Math.* **38** (1990), *no.* 1-12, 125–134. (Lars Erik Persson) **93i:46141** 46M35 (46B70, 46E30)

— Interpolation between dyadic Hardy spaces $\mathbf{H}^p$: the complex method. *Acta Math. Hungar.* **58** (1991), *no.* 1-2, 63–67. (H. Triebel) **93b:46055** 46E35 (42C10, 46E15, 46M35)

Echarte Reula, Francisco Javier (*with* Gómez Martin, José Ramon; Núñez Valdés, J.) On complex filiform Lie algebras derived or not derived from other Lie algebras. (Spanish. English summary) *Proceedings of the XVth Portuguese-Spanish Conference on Mathematics, Vol. III (Portuguese) (Évora*, 1990), 101–106, *Univ. Évora, Évora*, 1991. (Summary) **93a:17007** 17B30

— (*with* Gómez Martin, José Ramon) Classification of complex filiform nilpotent Lie algebras of dimension 9. *Rend. Sem. Fac. Sci. Univ. Cagliari* **61** (1991), *no.* 1, 21–29. (Michel Goze) **93d:17014** 17B30

Echave, Julián (*with* Fernández, Francisco M.) Baker-Campbell-Hausdorff relations for finite-dimensional Lie algebras. *J. Math. Chem.* **9** (1992), *no.* 1, 87–95. (F. W. Lemire) **93b:17062** 17B40 (81R05)

Echeverría, Javier Geometrical calculations in Leibniz. (Spanish. English summary) G. W. Leibniz (1646–1716) (Spanish). *Theoria (San Sebastián)* (2) **6** (1991), *no.* 14-15, 29–54. (Luigi Pepe) **93e:01006a** 01A45 (03–03)
— (*with* Ibarra, Andoni; Mormann, Thomas) Introductory afterthoughts. *The space of mathematics (San Sebastiàn, 1990)*, ix–xvi, *Found. Comm. Cogn., de Gruyter, Berlin*, 1992. (*see* **93j:00010**) 00A30 (01A60, 03A05)
— *see also* **Space of mathematics, 93j:00010**
Echeverría Enríquez, A. (*with* Muñoz Lecanda, M. C.) Variational calculus in several variables: a Hamiltonian approach. (French summary) *Ann. Inst. H. Poincaré Phys. Théor.* **56** (1992), *no.* 1, 27–47. (Jaime Muñoz Masqué) **93f:58051** 58E30 (49J10, 58F05, 70H05)
Echterhoff, Siegfried (*with* Kaniuth, Eberhard; Kumar, Ajay[1]) A qualitative uncertainty principle for certain locally compact groups. *Forum Math.* **3** (1991), *no.* 4, 355–369. (Michael Cowling) **93a:43005** 43A30 (43A32)
— The primitive ideal space of twisted covariant systems with continuously varying stabilizers. *Math. Ann.* **292** (1992), *no.* 1, 59–84. (Robert J. Archbold) **93a:46128** 46L55 (22D25, 46L05)
Eck, Matthias Algorithms for geometric spline curves. *Curve and surface design (Tempe, AZ, 1989)*, 99–121, *Geom. Des. Publ., SIAM, Philadelphia, PA*, 1992. (*see* **93g:65027**) 65D17 (65D07)
— MQ-curves are curves in tension. *Mathematical methods in computer aided geometric design, II (Biri, 1991)*, 217–228, *Academic Press, Boston, MA*, 1992. (*see* **93d:65022**) 65D05 (41A05, 65D07, 65D17)
Ecke, Robert E. Quasiperiodicity, mode-locking, and universal scaling in Rayleigh-Bénard convection. (English summary) *Chaos, order, and patterns (Lake Como, 1990)*, 77–108, *NATO Adv. Sci. Inst. Ser. B Phys.*, 280, *Plenum, New York*, 1991. (Summary) **93k:76043** 76E15 (58F27, 76F20, 76R99)
— (*with* Zhong, Fang) Pattern dynamics and heat transport in rotating Rayleigh-Bénard convection. *Chaos* **2** (1992), *no.* 2, 163–171. (Summary) **93a:76093** 76R10 (58F40, 76E15, 76U05)
Eckelmann, Helmut (*with* Noack, Bernd R.) On chaos in wakes. *Phys. D* **56** (1992), *no.* 2-3, 151–164. (Summary) **93b:76027** 76D25 (58F13, 76F20)
— (*with* Noack, Bernd R.; Ohle, Frank) Construction and analysis of differential equations from experimental time series of oscillatory systems. *Phys. D* **56** (1992), *no.* 4, 389–405. (Ladislav Andrey) **93e:34019** 34A34 (34C25, 58F22)
Eckhardt, Bruno Periodic orbits and diffusion in standard maps. (English summary) *Phys. Lett. A* **172** (1993), *no.* 6, 411–415. (Summary) **93j:58113** 58F20 (58F13, 70K50)
Eckhardt, C. (*with* Patterson, S. J.) On the Fourier coefficients of biquadratic theta series. *Proc. London Math. Soc.* (3) **64** (1992), *no.* 2, 225–264. (Solomon Friedberg) **93a:11036** 11F30 (11F27)
Eckhaus, Wiktor On modulation equations of the Ginzburg-Landau type. *ICIAM 91 (Washington, DC, 1991)*, 83–98, *SIAM, Philadelphia, PA*, 1992. (*see* **93b:00026**) 35Q35
— Singular perturbations of homoclinic orbits in $\mathbf{R}^4$. (English summary) *SIAM J. Math. Anal.* **23** (1992), *no.* 5, 1269–1290. (Zengrong Liu) **93f:34074** 34C37 (34E10, 34E15, 76D99)
— On water waves at Froude number slightly higher than one and Bond number less than $\frac{1}{3}$. *Z. Angew. Math. Phys.* **43** (1992), *no.* 2, 254–269. (Jürgen Scheurle) **93f:76009** 76B15 (34C11, 34E15, 76B25, 76B45)
Eckhoff, Jürgen A Gallai-type transversal problem in the plane. (English summary) *Discrete Comput. Geom.* **9** (1993), *no.* 2, 203–214. (Peter M. Gruber) **93j:52006** 52A35 (52C10)
— Extremal interval graphs. (English summary) *J. Graph Theory* **17** (1993), *no.* 1, 117–127. (Douglas B. West) **93j:05084** 05C35 (05C75)
Eckmann, Beno Continuous solutions of linear equations—an old problem, its history, and its solution. *Exposition. Math.* **9** (1991), *no.* 4, 351–365. (Ross Geoghegan) **93g:55016** 55Q25 (01A55, 01A60, 15–03, 19L20)
— Amenable groups and Euler characteristic. *Comment. Math. Helv.* **67** (1992), *no.* 3, 383–393. (From the introduction) **93k:57070** 57S20 (20F19, 55P20)
— Georges de Rham 1903–1990. (German) *Elem. Math.* **47** (1992), *no.* 3, 118–122. (Editors) **93g:01067** 01A70
Eckmann, J.-P. (*with* Collet, P.) Solutions without phase-slip for the Ginsburg-Landau equation. *Comm. Math. Phys.* **145** (1992), *no.* 2, 345–356. (Peter L. Christiansen) **93d:35151** 35Q55 (82C10)
— (*with* Collet, P.; Epstein, Henri) Diffusive repair for the Ginzburg-Landau equation. *Helv. Phys. Acta* **65** (1992), *no.* 1, 56–92. (H. Tasso) **93b:76037** 76E30 (35Q55)
— (*with* Ruelle, David) Fundamental limitations for estimating dimensions and Lyapunov exponents in dynamical systems. *Phys. D* **56** (1992), *no.* 2-3, 185–187. (Hans-Peter Herzel) **93c:58122** 58F12
— *see also* **Lyapunov exponents, 93d:00037**
Eckstein, Jonathan (*with* Bertsekas, Dimitri P.) On the Douglas-Rachford splitting method and the proximal point algorithm for maximal monotone operators. *Math. Programming* **55** (1992), *no.* 3, *Ser. A*, 293–318. (F. Giannessi) **93c:90057** 90C25 (65K05)
Economakis, Michael A counterexample to uniqueness and regularity for harmonic maps between hyperbolic spaces. (English summary) *J. Geom. Anal.* **3** (1993), *no.* 1, 27–36. (Caio J. C. Negreiros) **93m:58024** 58E20
kapella-Economou, A. *see* **Kapella-Economou, A.**
Eda, Katsuya The first integral singular homology groups of one point unions. *Quart. J. Math. Oxford Ser.* (2) **42** (1991), *no.* 168, 443–456. (Joel M. Cohen) **93b:55005** 55N10
— Applications of set theory to abelian groups. (Japanese) *Sūgaku* **43** (1991), *no.* 2, 128–138. (Editors) **93a:20086** 20K99 (03E75)
— (*with* Sakai, Katsuro) A factor of singular homology. *Tsukuba J. Math.* **15** (1991), *no.* 2, 351–387. (Edgar H. Brown, Jr.) **93d:55008** 55N35
Edakov, A. V. Numerical solution of nonlinear multipoint boundary value problems for systems of ordinary differential equations. (Russian. Russian summary) *Differentsial'nye Uravneniya* **28** (1992), *no.* 7, 1276–1279, 1288. 65L10
Edalat, A. (*with* Zeeman, E. C.) The stable classes and the codimension-one bifurcations of the planar replicator system. *Nonlinearity* **5** (1992), *no.* 4, 921–939. (Hans G. Bothe) **93i:58114** 58F14 (34C23, 58F10)
Edder, O. Derivation of a simplified model of drop combustion. (English summary) *European J. Mech. B Fluids* **11** (1992), *no.* 5, 611–619. (Maria B. Zaturska) **93g:80009** 80A25
Eddy, Roland H. The Brocard line as a locus of isogonal conjugate points. *Internat. J. Sci. Engrg.* **3/4** (1986/87), 57–64 (1991). (H. W. Guggenheimer) **93a:51012** 51M04
— (*with* Foster, E. A. D.) An optimization approach to a certain class of geometric inequalities. *Nieuw Arch. Wisk.* (4) **9** (1991), *no.* 3, 253–262. (Murray S. Klamkin) **93i:51044** 51M16 (90C90)
— (*with* Wilker, J. B.) Plane mappings of isogonal-isotomic type. *Soochow J. Math.* **18** (1992), *no.* 2, 135–158. (Jerzy Kaczmarek) **93f:51026** 51N15
Edelen, Dominic G. B. (*with* Wang, Jian Hua[1]) ★ Transformation methods for nonlinear partial differential equations. *World Scientific Publishing Co., Inc., River Edge, NJ*, 1992. xiv+325 *pp. ISBN* 981-02-0933-9 (J. Chrastina) **93k:58003** 58A15 (35A30, 35Q30, 58–01, 58G37)
— A 1-dimensional elastic model with time translation gauge invariance. (English summary) The Eringen anniversary issue. *Internat. J. Engrg. Sci.* **30** (1992), *no.* 10, 1389–1399. (Summary) **93g:73025** 73B99 (73B10, 73D99, 73S10)
Edelman, David Inadmissibility of fixed-sample procedures in two independent tests for normal means. (English summary) Modern sequential analysis (SSA), Vol. II (Syracuse, NY, 1989). *Amer. J. Math. Management Sci.* **11** (1991), *no.* 3-4, 223–231. (Summary) **93e:62026** 62C15 (62F03)
Edelman, Paul H. On the average number of k-sets. *Discrete Comput. Geom.* **8** (1992), *no.* 2, 209–213. (Rade Živaljević) **93a:52017** 52C10
— (*with* Simion, Rodica; White, Dennis) Partition statistics on permutations. *Discrete Math.* **99** (1992), *no.* 1-3, 63–68. (Wen Li Chen) **93f:05010** 05A18 (05A15, 11B65)
— (*with* Reiner, Victor) A counterexample to Orlik's conjecture. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 3, 927–929. (Hiroaki Terao) **93i:52021** 52B30 (32S20)
Edelsbrunner, Herbert (*with* Guibas, Leonidas J.; Sharir, Micha) The complexity of many faces in arrangements of lines and of segments. (English summary) *Proceedings of the Fourth Annual Symposium on Computational Geometry (Urbana, IL, 1988)*, 44–55, *ACM, New York*, 1988. (*see* **93k:68003**) 68R10 (68Q30)
— (*with* Guibas, Leonidas J.; Hershberger, John; et al.) Implicitly representing arrangements of lines or segments. (English summary) *Proceedings of the Fourth Annual Symposium on Computational Geometry (Urbana, IL, 1988)*, 56–69, *ACM, New York*, 1988. (*see* **93k:68003**) 68U05 (68R10)
— (*with* Mücke, Ernst Peter) Simulation of simplicity: a technique to cope with degenerate cases in geometric algorithms. (English summary) *Proceedings of the Fourth Annual Symposium on Computational Geometry (Urbana, IL, 1988)*, 118–133, *ACM, New York*, 1988. (*see* **93k:68003**) 68U05
— (*with* Guibas, Leonidas J.; Hershberger, John; et al.) On arrangements of Jordan arcs with three intersections per pair. (English summary) *Proceedings of the Fourth Annual Symposium on Computational Geometry (Urbana, IL, 1988)*, 258–265, *ACM, New York*, 1988. (*see* **93k:68003**) 57N05 (52B55, 68U05)
— (*with* Agarwal, Pankaj K.; Schwarzkopf, Otfried; Welzl, Emo) Euclidean minimum spanning trees and bichromatic closest pairs. *Discrete Comput. Geom.* **6** (1991), *no.* 5, 407–422. (Summary) **93a:68146** 68U05 (65Y10, 68Q25)
— (*with* Chazelle, Bernard; Guibas, Leonidas J.; et al.) Counting and cutting cycles of lines and rods in space. *Comput. Geom.* **1** (1992), *no.* 6, 305–323. (Henk Meijer) **93m:68164** 68U05 (65Y25, 68Q25, 68R05)
— (*with* Aggarwal, Alok; Raghavan, Prabhakar; Tiwari, Prasoon) Optimal time bounds for some proximity problems in the plane. *Inform. Process. Lett.* **42** (1992), *no.* 1, 55–60. (Summary) **93a:68147** 68U05
— (*with* Chazelle, Bernard) An optimal algorithm for intersecting line segments in the plane. *J. Assoc. Comput. Mach.* **39** (1992), *no.* 1, 1–54. (Summary) **93h:68139** 68U05 (52B55, 68Q25)
— (*with* Guibas, Leonidas J.; Pach, János; Pollack, Richard; Seidel, Raimund; Sharir, Micha) Arrangements of curves in the plane—topology, combinatorics, and algorithms. *Theoret. Comput. Sci.* **92** (1992), *no.* 2, 319–336. (Summary) **93g:68136** 68U05
— *see also* **ACM Symposium: Computational Geometry, 93b:65223**
Èdel'shtein, S. L. Asymptotic splitting of boundary value problems for differential equations in Banach spaces. (Russian) *Dokl. Akad. Nauk* **323** (1992), *no.* 3, 427–429; *translation in Russian Acad. Sci. Dokl. Math.* **45** (1992), *no.* 2, 379–381 (1993). (From the text) **93g:34088** 34G10 (34B05)
— Operator analogues of WKB-type estimates, and the solvability of boundary value problems. (Russian) *Mat. Zametki* **51** (1992), *no.* 4, 124–131, 144; *translation in Math. Notes* **51** (1992), *no.* 3-4, 411–416. (A. G. Baskakov) **93f:34093** 34G10 (34E20, 47N20, 81Q20)
Edemskii, V. A. Additive and formal Galois modules in p-extensions of local fields. (Russian) *Rings and linear groups (Russian)*, 44–54, *Kuban. Gos. Univ., Krasnodar*, 1988. (*see* **93i:00023**) 11S20
Eden, A. (*with* Milani, Albert J.; Nicolaenko, Basil) Finite-dimensional exponential attractors for semilinear wave equations with damping. (English summary) *J. Math. Anal. Appl.* **169** (1992), *no.* 2, 408–419. (Summary) **93f:35200** 35Q53 (34D45, 34G20, 58F39)
— (*with* Milani, Albert J.; Nicolaenko, Basil) Local exponential attractors for models of phase change for compressible gas dynamics. (English summary) *Nonlinearity* **6** (1993), *no.* 1, 93–117. (Summary) **93j:35139** 35Q35 (58F39, 76N15)
Eden, Murray (*with* Unser, Michael; Aldroubi, Akram) On the asymptotic convergence of B-spline wavelets to Gabor functions. *IEEE Trans. Inform. Theory* **38** (1992), *no.* 2, *part* 2, 864–872. (Ewald Quak) **93f:41020** 41A15 (41A58, 42C15)
Eder, Elmar ★ Relative complexities of first order calculi. Artificial Intelligence. *Friedr. Vieweg & Sohn, Braunschweig*, 1992. iv+173 *pp. ISBN* 3-528-05122-1 (Neculai Curteanu) **93f:03007** 03B35 (03–01, 03F20, 68Q15, 68T15)
Edgar, Brian Integration methods within existing tetrad formalisms in general relativity. (English summary) *Gen. Relativity Gravitation* **24** (1992), *no.* 12, 1267–1295. (J. B. Griffiths) **93j:83021** 83C20 (83C60)
Edgar, G. A. (*with* Mauldin, R. Daniel) Multifractal decompositions of digraph recursive fractals. (English summary) *Proc. London Math. Soc.* (3) **65** (1992), *no.* 3, 604–628. (S. J. Taylor) **93h:28010** 28A80 (28A78, 60J10)
Edgar, Hugh (*with* Gordon, Jonathan; Zhang, Liang Cheng) On unit solutions of the equation $xyz = x + y + z$ in totally imaginary quartic fields. *J. Number Theory* **40** (1992), *no.* 3, 255–263. (R. A. Mollin) **93b:11040** 11D72 (11R11, 11R16)

Edgar, S. Brian Conditions for a symmetric connection to be a metric connection. (English summary) *J. Math. Phys.* **33** (1992), *no.* 11, 3716–3722. (Alan D. Rendall) **93h:53019** 53B05 (53B30)

— Spacetimes in which the Ricci equations characterize the Riemann tensor. (English summary) *Internat. J. Theoret. Phys.* **32** (1993), *no.* 1, 121–135. (Alan D. Rendall) **93k:53068** 53C50 (53C80, 83C99)

Edge, W. L. A plane sextic and its five cusps. *Proc. Roy. Soc. Edinburgh Sect. A* **118** (1991), *no.* 3-4, 209–223. (R. H. Dye) **93b:14052** 14H45 (14H20)

— Obituary: Robert Schlapp, M.A., Ph.D., F.R.S.E. (1899–1991). *Proc. Edinburgh Math. Soc.* (2) **35** (1992), *no.* 2, 329–334. (Editors) **93e:01021** 01A70

Edgington, Alec Some more weak Hilbert spaces. *Studia Math.* **100** (1991), *no.* 1, 1–11. (Ioan Şerb) **93b:46028** 46B20 (46B45, 46C99)

Edgington, Dorothy Validity, uncertainty and vagueness. *Analysis* (*Oxford*) **52** (1992), *no.* 4, 193–204. 03B48 (03A05)

Edigarov, A. S. Numerical computation of the turbulent flow of a cold heavy gas in the atmosphere. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **31** (1991), *no.* 9, 1369–1380; *translation in Comput. Math. Math. Phys.* **31** (1991), *no.* 9, 76–84 (1992). (Summary) **93a:76070** 76M20 (76N15, 86–08, 86A10)

Edirisinghe, N. C. P. (*with* Ziemba, W. T.) Tight bounds for stochastic convex programs. (English summary) *Oper. Res.* **40** (1992), *no.* 4, 660–677. (Alexei Gaivoronski) **93i:90074** 90C15

Edixhoven, Bas Néron models and tame ramification. *Compositio Math.* **81** (1992), *no.* 3, 291–306. (Min Ho Lee) **93a:14041** 14K15 (11G10)

— The weight in Serre's conjectures on modular forms. *Invent. Math.* **109** (1992), *no.* 3, 563–594. (Douglas L. Ulmer) **93h:11124** 11R39 (11F80, 11G18)

Edjvet, M. Solutions of certain sets of equations over groups. *Groups—St. Andrews* 1989, *Vol.* 1, 105–123, *London Math. Soc. Lecture Note Ser.*, 159, *Cambridge Univ. Press, Cambridge*, 1991. (F. Levin) **93f:20055** 20F99

— An example of an infinite group. *Discrete groups and geometry* (*Birmingham*, 1991), 66–74, *London Math. Soc. Lecture Note Ser.*, 173, *Cambridge Univ. Press, Cambridge*, 1992. (N. D. Gupta) **93m:20037** 20F05 (20F55)

— (*with* Johnson, David Lawrence) The growth of certain amalgamated free products and HNN-extensions. *J. Austral. Math. Soc. Ser. A* **52** (1992), *no.* 3, 285–298. (Kathryn J. Horadam) **93b:20048** 20E06

Edlund, Ulf (*with* Klarbring, Anders) A geometrically nonlinear model of the adhesive joint problem and its numerical treatment. *Comput. Methods Appl. Mech. Engrg.* **96** (1992), *no.* 3, 329–350. (Summary) **93b:73034** 73T05 (73V05)

Edmonds, Allan L. (*with* Ewing, John H.) Realizing forms and fixed point data in dimension four. *Amer. J. Math.* **114** (1992), *no.* 5, 1103–1126. (Steven H. Weintraub) **93i:57047** 57S17

Edmonds, Jack (*with* Cameron, Kathie) Coflow polyhedra. Special volume to mark the centennial of Julius Petersen's "Die Theorie der regulären Graphs", Part II. *Discrete Math.* **101** (1992), *no.* 1-3, 1–21. (Summary) **93d:90040** 90C08 (05C20, 90C35)

Edmonds, Jeff (*with* Impagliazzo, Russell; Rudich, Steven; Sgall, Jiří) Communication complexity towards lower bounds on circuit depth. (English summary) 32*nd Annual Symposium on Foundations of Computer Science* (*San Juan, PR*, 1991), 249–257, *IEEE Comput. Soc. Press, Los Alamitos, CA*, 1991. (Summary) **93g:68035** 68Q10 (68M10, 68Q25)

Edmondson, R. N. Systematic row-and-column designs balanced for low order polynomial interactions between rows and columns. (English summary) *J. Roy. Statist. Soc. Ser. B* **55** (1993), *no.* 3, 707–723. 62K15

Edmunds, David E. (*with* Sun, Jiong) Approximation and entropy numbers of embeddings in weighted Orlicz spaces. (Czech summary) *Math. Bohem.* **116** (1991), *no.* 3, 281–295. (Abdelmoujib Benkirane) **93b:46056** 46E35 (41A46)

— (*with* Triebel, Hans) Entropy numbers and approximation numbers in function spaces. II. *Proc. London Math. Soc.* (3) **64** (1992), *no.* 1, 153–169. (J. S. Martins) **93b:46057** 46E35 (41A46, 47B06, 47B10, 47B38)

— (*with* Rákosník, Jiří) Density of smooth functions in $W^{k,p(x)}(\Omega)$. (English summary) *Proc. Roy. Soc. London Ser. A* **437** (1992), *no.* 1899, 229–236. (H. Triebel) **93h:46037** 46E35

Edwald, Tryggvi The t-variable method in Gentzen-style automatic theorem proving. *Z. Math. Logik Grundlag. Math.* **36** (1990), *no.* 3, 253–261. (A. A. Mullin) **93a:03011** 03B35 (68T15)

Edwards, A. W. F. ★ Likelihood. Expanded edition. Revised reprint of the 1972 original. *Johns Hopkins University Press, Baltimore, MD*, 1992. xx+275 *pp. ISBN* 0-8018-4445-2 (Editors) **93m:62003** 62–02 (62A15, 62F10)

Edwards, C. M. (*with* Rüttimann, G. T.) Inner ideals in C^*-algebras. *Math. Ann.* **290** (1991), *no.* 4, 621–628. (Horst Behncke) **93b:46111** 46L05 (46L70)

— (*with* Rüttimann, G. T.) A characterization of inner ideals in JB*-triples. *Proc. Amer. Math. Soc.* **116** (1992), *no.* 4, 1049–1057. (Josuke Hakeda) **93b:46132** 46L70

Edwards, Harold M. ★ Divisor theory. *Birkhäuser Boston, Inc., Boston, MA*, 1990. xiv+166 *pp. ISBN* 0-8176-3448-7 (D. Ştefănescu (Zbl 689:12001)) **93h:11115** 11Rxx (11–01, 13F05, 14H05)

— Kronecker's arithmetical theory of algebraic quantities. *Jahresber. Deutsch. Math.-Verein.* **94** (1992), *no.* 3, 130–139. (Doru Ştefănescu) **93m:01032** 01A55 (11–03, 12–03)

— Mathematical ideas, ideals, and ideology. *Math. Intelligencer* **14** (1992), *no.* 2, 6–19. (J. Dieudonné) **93d:01033** 01A55 (00A30, 00A35)

Edwards, Howard P. Empirical Bayes estimators of the probability of correct selection. (English summary) With discussion. *The frontiers of modern statistical inference procedures, II* (*Sydney*, 1987), 421–437, *Amer. Sci. Press Ser. Math. Management Sci.*, 28, *Amer. Sci. Press, Columbus, OH*, 1992. (*see* **93g:62002**) 62C12 (62F07)

Edwards, John A. Exact equations of the nonlinear spline. *ACM Trans. Math. Software* **18** (1992), *no.* 2, 174–192. (Summary) **93c:41018** 41A15 (65D05, 65D07, 65K10, 65Y25)

Edwards, Keith The complexity of some graph colouring problems. *Discrete Appl. Math.* **36** (1992), *no.* 2, 131–140. (Fabrizio Luccio) **93d:05051** 05C15 (05C85, 68Q25, 68R10)

Edwards, Maureen P. (*with* Hill, James M.; Avagliano, Aaron J.) Some exact results for nonlinear diffusion with absorption. *IMA J. Appl. Math.* **48** (1992), *no.* 3, 283–304. (From the summary) **93c:35067** 35K55 (35C05)

Edwards, Michael G. (*with* Oden, J. Tinsley; Demkowicz, Leszek) An h-r-adaptive approximate Riemann solver for the Euler equations in two dimensions. (English summary) *SIAM J. Sci. Comput.* **14** (1993), *no.* 1, 185–217. (Summary) **93m:65142** 65M60 (65M50, 76M10, 76M20, 76N10)

Edwards, N. J. (*with* Goh, C. J.; Zomaya, A. Y.) Feedback control of minimum-time optimal control problems using neural networks. (English summary) *Optimal Control Appl. Methods* **14** (1993), *no.* 1, 1–16. 49N35 (93B52, 93C85)

Edwards, S. F. Some reminiscences of the sixties. *Internat. J. Modern Phys. B* **6** (1992), *no.* 10, 1563–1566. (Yurii Raikher) **93g:82053** 82B44 (82–02, 82–03, 82B21, 82D30, 82D60)

— Some new extensions of the Edwards model. *Internat. J. Modern Phys. B* **6** (1992), *no.* 10, 1567–1577. (Yurii Raikher) **93h:82028** 82B44 (82C24, 82C44, 82D30)

— Dynamical extensions of the Edwards model. *Internat. J. Modern Phys. B* **6** (1992), *no.* 10, 1579–1582. (Yurii Raikher) **93g:82054** 82B44 (82C24, 82C44, 82D60)

— Localisation via the Edwards model. *Internat. J. Modern Phys. B* **6** (1992), *no.* 10, 1583–1586. (Yurii Raikher) **93h:82029** 82B44 (81S40, 82D30, 82D60)

— The glass transition. *Internat. J. Modern Phys. B* **6** (1992), *no.* 10, 1587–1594. (Yurii Raikher) **93g:82028** 82B21 (82B44, 82C44, 82D30)

— (*with* Oakeshott, R. B. S.) Local theory of the statistics of sphere packings. (English summary) *Phys. A* **189** (1992), *no.* 1-2, 188–207. (Summary) **93f:52009** 52A22 (52C17, 60D05, 82D99)

— (*with* Oakeshott, R. B. S.) On the stereology of ellipsoids and cylinders. (English summary) *Phys. A* **189** (1992), *no.* 1-2, 208–233. (Summary) **93f:52010** 52A22 (52C17, 60D05, 82D99)

Edwards, William R., Jr. (*with* Greenblatt, Bruce) Semigroup automaton structure by homomorphism and domain partition. Combinatorics and theoretical computer science (Washington, DC, 1989). *Discrete Appl. Math.* **34** (1991), *no.* 1-3, 129–143. (Pascal Weil) **93a:68099** 68Q70 (20M35)

van Eeden, Constance On a conjecture concerning a characterization of the exponential distribution. *CWI Quarterly* **4** (1991), *no.* 3, 205–211. (Summary) **93d:62022** 62E10

— (*with* Charras, A.) Bayes properties of estimators of location parameters in truncated parameter spaces. *Statist. Decisions* **10** (1992), *no.* 1-2, 81–86. (Marek Kałuszka) **93h:62006** 62C10 (62F15)

Eells, Ellery ★ Probabilistic causality. Cambridge Studies in Probability, Induction, and Decision Theory. *Cambridge University Press, Cambridge*, 1991. xii+413 *pp. ISBN* 0-521-39244-6 (Zeno G. Swijtink) **93e:00005** 00A30 (03B48, 60A05)

Eells, James ★ Harmonic maps. Selected papers of James Eells and collaborators. *World Scientific Publishing Co., Inc., River Edge, NJ*, 1992. xii+438 *pp. ISBN* 981-02-0704-2 (Martin A. Guest) **93m:01101** 01A75 (00B60, 58–06, 58E20)

— *see also* **Whitney, Hassler, 93i:01033a** *and* **93i:01033b**

Effros, Edward G. (*with* Ruan, Zhong-jin) A new approach to operator spaces. *Canad. Math. Bull.* **34** (1991), *no.* 3, 329–337. (P. A. Fillmore) **93a:47045** 47D15 (46L99, 46M05)

— (*with* Ruan, Zhong-jin) Self-duality for the Haagerup tensor product and Hilbert space factorizations. *J. Funct. Anal.* **100** (1991), *no.* 2, 257–284. (Robert J. Archbold) **93f:46090** 46L05 (46M05, 47D15)

Efimov, G. V. Functional integrals, variational method and some problems of stochastical physics. *Probability theory and mathematical statistics, Vol. I* (*Vilnius*, 1989), 293–303, "*Mokslas*", *Vilnius*, 1990. (G. Vitiello) **93f:81066** 81S40

— (*with* Nedelko, S. N.) Phase structure of three- and four-dimensional φ^4 field theory. (English summary) *Internat. J. Modern Phys. A* **7** (1992), *no.* 19, 4539–4558. (Summary) **93d:81106** 81T10

— (*with* Nedelko, S. N.) Phase structure of the two-dimensional φ^4 field theory within thermofield dynamics. *J. Phys. A* **25** (1992), *no.* 9, 2721–2735. (Summary) **93b:81142** 81T10

Efimov, I. E. Analysis of systematic error in natural simulators. (Russian. Russian summary) *Gibrid. Vychisl. Mashiny Kompleksy No.* 15 (1992), 57–61. 93B30

Efimov, N. V. *see* **All-Union Conference: Differential Geometry**

Efrat, Ido The elementary theory of free pseudo p-adically closed fields of finite corank. *J. Symbolic Logic* **56** (1991), *no.* 2, 484–496. (M. Yasuhara) **93a:03036** 03C60 (03B25, 03C65, 11U05, 12L05)

— On the model companion for e-fold p-adically valued fields. *Manuscripta Math.* **73** (1991), *no.* 4, 359–371. (Dan Haran) **93a:12012** 12L12 (03C60, 12J10)

— Undecidability of pseudo p-adically closed fields. *Arch. Math.* (*Basel*) **58** (1992), *no.* 5, 444–452. (Dan Haran) **93f:12012** 12L12 (03C60)

Efrat, Isaac On a GL(3) analog of $|\eta(z)|$. *J. Number Theory* **40** (1992), *no.* 2, 174–186. (Solomon Friedberg) **93a:11040** 11F55 (11E45, 11F20, 11R42)

Efrati, T. (*with* Palmor, Z. J.; Halevi, Yoram) Limit cycles in decentralized relay systems. (English summary) *Internat. J. Control* **56** (1992), *no.* 4, 755–765. (Summary) **93f:93010** 93A14 (34C05, 34H05)

Efremov, A. Yu. (*with* Diligenskiĭ, S. N.) On the synthesis of robust laws for the stabilization of the motion of aircraft. (Russian. Russian summary) *Avtomat. i Telemekh.* **1992**, *no.* 8, 31–38; *translation in Automat. Remote Control* **53** (1992), *no.* 8, *part* 1, 1153–1159 (1993). 93D21 (70Q05, 93C95)

Efremov, I. I. An aerodynamic hypothesis for solving problems of wing aeroelasticity. (Russian. English and Ukrainian summaries) *Prikl. Mekh.* **28** (1992), *no.* 4, 63–70; *translation in Internat. Appl. Mech.* **28** (1992), *no.* 4, 258–263. (Adrian Carabineanu) **93i:73037** 73K70 (76G25)

Efremova, L. V. (*with* Belov, N. N.; Demidov, V. N.; et al.) Computer modeling of the dynamics of high-velocity impact and of the accompanying physical phenomena. (Russian. Russian summary) *Izv. Vyssh. Uchebn. Zaved. Fiz.* **35** (1992), *no.* 8, 5–48; *translation in Russian Phys. J.* **35** (1992), *no.* 8, 690–723 (1993). (Summary) **93k:73023** 73D05 (73B30, 73E99, 73M25, 73V15)

Efremovich, V. A. Two types of volume invariants. (Russian) *Problems in group theory and homological algebra* (*Russian*), 160–161, *Matematika, Yaroslav. Gos. Univ., Yaroslavl'*, 1988. (*see* **93b:00020**) 51M99 (53C99)

Efron, Bradley (*with* LePage, Raoul) Introduction to bootstrap. *Exploring the limits of bootstrap* (*East Lansing, MI*, 1990), 3–10, *Wiley Ser. Probab. Math. Statist. Probab. Math. Statist., Wiley, New York*, 1992. (*see* **93f:62003**) 62G09

— Six questions raised by the bootstrap. (English summary) *Exploring the limits of bootstrap* (*East Lansing, MI*, 1990), 99–126, *Wiley Ser. Probab. Math. Statist. Probab. Math. Statist., Wiley, New York*, 1992. (Summary) **93j:62117** 62G09

— (*with* DiCiccio, Thomas J.) More accurate confidence intervals in exponential families. (English summary) *Biometrika* **79** (1992), *no.* 2, 231–245. (J. Glaz) **93k:62070** 62F25 (62F11, 62F12, 62G15)

— Jackknife-after-bootstrap standard errors and influence functions. *J. Roy. Statist. Soc. Ser. B* **54** (1992), *no.* 1, 83–127. (Hung Trung Nguyen) **93c:62079** 62G09

Efros, P. P. On the surfaces $V_p \subset E_{p+3}$ with two linearly independent quadratic forms. (Russian) *Algebraic structures and geometry* (*Russian*), 44–54, 158, "*Shtiintsa*", *Kishinev*, 1991. (Vladislav Goldberg) **93b:53007** 53A07

Ègamov, B. N. (*with* Amirov, A. Kh.) On the existence and uniqueness of the solution of an inverse problem for a kinetic equation. (Russian. Russian summary) *Methods for solving inverse problems* (*Russian*), 22–35, 142, *Akad. Nauk SSSR Sibirsk. Otdel., Inst. Mat., Novosibirsk*, 1990. (Summary) **93k:35268** 35R30 (35Q72, 45K05, 82C40)

Egawa, Y. (*with* Vestergaard, Preben Dahl) Spanning trees in a cactus. (English summary) *Discrete Math.* **110** (1992), *no.* 1-3, 269–274. (Summary) **93h:05055** 05C05

Eğecioğlu, Ömer (*with* Koç, Çetin Kaya) Parallel prefix computation with few processors. *Comput. Math. Appl.* **24** (1992), *no.* 4, 77–84. (Summary) **93b:65221** 65Y10

— (*with* Koç, Çetin Kaya) A parallel algorithm for generating discrete orthogonal polynomials. *Parallel Comput.* **18** (1992), *no.* 6, 649–659. (Summary) **93c:68037** 68Q22 (42C05, 68Q25)

Egeland, Thore Mixing dependence and system reliability. *Scand. J. Statist.* **19** (1992), *no.* 2, 173–183. (William D. Ray) **93h:62179** 62N05 (90B25)

— On the S-shaped theorem. *Statist. Probab. Lett.* **13** (1992), *no.* 1, 1–4. (Summary) **93a:62135** 62N05

Egger, A. (*with* Huotari, Robert) Pólya properties in $\mathbf{R}^n$. *Numer. Funct. Anal. Optim.* **13** (1992), *no.* 1-2, 123–128. (Summary) **93a:41072** 41A99

Eggermann, Uli *see* **Engeln-Müllges, Gisela, 93g:65002a**

Eggermont, P. P. B. On Volterra-Lotka differential equations and multiplicative algorithms for monotone complementarity problems. (English summary) *Mathematical methods in tomography* (*Oberwolfach*, 1990), 141–152, *Lecture Notes in Math.*, 1497, *Springer, Berlin*, 1991. (Bruce D. Craven) **93j:90114** 90C33 (34A99, 65K05, 92D25)

— On noncompact Hammerstein integral equations and a nonlinear boundary value problem for the heat equation. *J. Integral Equations Appl.* **4** (1992), *no.* 1, 47–68. (J. Kolomý) **93d:47138** 47N20 (35K05, 45K05, 47H15, 47H30, 65R20)

— On the quadrature error in operational quadrature methods for convolutions. *Numer. Math.* **62** (1992), *no.* 1, 35–48. (G. F. Miller) **93d:65112** 65R20 (45E10, 65D32)

— (*with* Lubich, Ch.) Operational quadrature methods for Wiener-Hopf integral equations. *Math. Comp.* **60** (1993), *no.* 202, 699–718. (John W. Hilgers) **93h:65166** 65R20 (45E10, 45L05, 47B35, 47G10)

Eggers, Jens Intermittency in dynamical models of turbulence. (English summary) *Phys. Rev. A* (3) **46** (1992), *no.* 4, 1951–1959. (P. L. Sulem) **93m:76049** 76F05

Eggers, K. On far-field approximations to the wave pattern around a ship travelling at constant velocity. *Wave asymptotics* (*Manchester*, 1990), 136–159, *Cambridge Univ. Press, Cambridge*, 1992. (Yu. Z. Aleshkov) **93g:76025** 76B20 (76B15)

Eggert, Anselm (*with* Bokowski, Jürgen) Toutes les réalisations du tore de Möbius avec sept sommets. [All realizations of Möbius' torus with seven vertices] *Structural Topology No.* 17 (1991), 59–78. (P. McMullen) **93b:52017** 52B70 (52B40, 57Q15)

— Extending the Campbell-Hausdorff multiplication. *Sem. Sophus Lie* **2** (1992), *no.* 1, 59. 17B99

Eggleton, R. B. (*with* Lacampagne, C. B.; Selfridge, J. L.) Euclidean quadratic fields. *Amer. Math. Monthly* **99** (1992), *no.* 9, 829–837. (W. Narkiewicz) **93i:11118** 11R11 (11R29, 13F07)

— (*with* Holton, D. A.; Little, C. H. C.) Cycles and paths in multigraphs. *Australas. J. Combin.* **5** (1992), 3–11. (Summary) **93a:05077** 05C38

Egidi, Lavinia (*with* Honsell, Furio; Ronchi Della Rocca, Simona) Operational, denotational and logical descriptions: a case study. Mathematical foundations of computer science '91 (Kazimierz Dolny, 1991). *Fund. Inform.* **16** (1992), *no.* 2, 149–169. (Summary) **93i:68036** 68N15 (68Q55)

Egikyan, R. S. (*with* Ktitarev, D. V.) The Feynman formula in phase space for systems of pseudodifferential equations with analytic symbols. (Russian. Russian summary) *Mat. Zametki* **51** (1992), *no.* 5, 44–50, 157; *translation in Math. Notes* **51** (1992), *no.* 5-6, 453–457. (J. S. Joel) **93g:35154** 35S10 (35R20, 58D25, 58D30, 81Q05, 81S40)

Èglit, M. È. (*with* Bakhvalov, N. S.) On the rate of propagation of perturbations in micro-inhomogeneous elastic media with small shear elasticity. (Russian) *Dokl. Akad. Nauk* **323** (1992), *no.* 1, 13–18; *translation in Russian Acad. Sci. Dokl. Math.* **45** (1992), *no.* 2, 239–244 (1993). (Serguei M. Kozlov) **93g:73053** 73D99 (35B40, 35Q99, 73B27, 73S10)

— (*with* Bakhvalov, N. S.) Propagation of small perturbations in weakly thermoconducting and weakly viscous microninhomogeneous media. (Russian) *Dokl. Akad. Nauk* **325** (1992), *no.* 1, 9–15; *translation in Russian Acad. Sci. Dokl. Math.* **46** (1993), *no.* 1, 1–7. (Adrian Carabineanu) **93k:80006** 80A20 (35B10, 35Q35)

Egnell, Henrik Asymptotic results for finite energy solutions of semilinear elliptic equations. *J. Differential Equations* **98** (1992), *no.* 1, 34–56. (Allan L. Edelson) **93k:35101** 35J65 (35B40)

— (*with* Bianchi, Gabriele) An ODE approach to the equation $\Delta u + Ku^{(n+2)/(n-2)} = 0$, in $\mathbf{R}^n$. *Math. Z.* **210** (1992), *no.* 1, 137–166. (Michael Wiegner) **93m:35069** 35J60 (35B45)

Egorchenko, I. A. (*with* Fushchich, V. I.; Zhdanov, R. Z.) On the reduction of the nonlinear multi-dimensional wave equations and compatibility of the D'Alembert-Hamilton system. *J. Math. Anal. Appl.* **161** (1991), *no.* 2, 352–360. (J. Chrastina) **93c:35103** 35L70 (35A20, 35L05)

— (*with* Fushchich, V. I.) Non-Lie ansätze and conditional symmetry of the nonlinear Schrödinger equation. (Russian. Ukrainian summary) *Ukrain. Mat. Zh.* **43** (1991), *no.* 12, 1620–1628; *translation in Ukrainian Math. J.* **43** (1991), *no.* 12, 1507–1515 (1992). (Victor V. Zharinov) **93f:35215** 35Q55 (58G37)

— (*with* Fushchich, V. I.) Second-order differential invariants of the rotation group $O(n)$ and of its extensions: $E(n)$, $P(1,n)$, $G(1,n)$. (English summary) *Acta Appl. Math.* **28** (1992), *no.* 1, 69–92. (J. Chrastina) **93i:53016** 53A55 (35A30)

— (*with* Vorob'eva, A. I.) Conditional invariance and exact solutions of the Klein-Gordon-Fock equation. (Russian. English and Russian summaries) *Dokl. Akad. Nauk Ukrainy* **1992**, *no.* 1, 19–22, 176. (Summary) **93f:35194** 35Q40 (35C05, 81Q05)

— (*with* Vorob'eva, A. I.) Conditional invariance and exact solutions of a nonlinear heat equation. (Russian. English and Russian summaries) *Dokl. Akad. Nauk Ukrainy* **1992**, *no.* 3, 20–22, 160. (Summary) **93f:35100** 35K55 (35C05, 80A20)

Egorov, A. D. Wick monomials, diagrams, and a formula for the infinitesimal substitution of a moment function for quasimeasures. (Russian. English and Russian summaries) *Dokl. Akad. Nauk Belarusi* **36** (1992), *no.* 2, 101–106, 189. (Summary) **93f:81067** 81S40 (28C20, 46G12)

Egorov, Andreĭ Ivanovich (*with* Egorova, L. I.) Maximally mobile Finsler spaces $F_{n,y}$ in the homothetic sense. (Russian) *Trudy Geom. Sem. Kazan. Univ. No.* 21 (1991), 43–57. (Elena Macovei) **93k:53026** 53B40 (53C60)

Egorov, G. A. Stability of hybrid control systems. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* **1991**, *no.* 11, 91–94 (1992); *translation in Soviet Math. (Iz. VUZ)* **35** (1991), *no.* 11, 92–94. 93D05

Egorov, I. G. On the stability in the large of the zero solution of a system of two differential equations. (Russian) *Differentsial'nye Uravneniya* **27** (1991), *no.* 9, 1544–1550, 1652; *translation in Differential Equations* **27** (1991), *no.* 9, 1093–1097 (1992). (Alexander Kanevskiĭ) **93d:34087** 34D05

Egorov, S. N. Solution of a Lyapunov matrix differential equation with constant coefficients. *J. Comput. Systems Sci. Internat.* **31** (1993), *no.* 1, 65–70; *translated from Izv. Akad. Nauk SSSR Tekhn. Kibernet.* **1991**, *no.* 4, 47–51 (*Russian. Russian summary*). (Summary) **93m:34096** 34H05 (34A34, 70Q05, 93C05)

Egorov, V. A. The law of the iterated logarithm and order statistics. *Probability theory and mathematical statistics, Vol. I* (*Vilnius*, 1989), 304–313, "*Mokslas*", *Vilnius*, 1990. (Toshio Mori) **93d:60042** 60F15 (60G70, 62G30)

Egorov, Yuriĭ Vladimirovich (*with* Shubin, M. A.) Linear partial differential equations. Foundations of the classical theory. (Russian) *Partial differential equations*, 1 (*Russian*), 5–265, *Itogi Nauki i Tekhniki, Akad. Nauk SSSR, Vsesoyuz. Inst. Nauchn. i Tekhn. Inform., Moscow*, 1988. (Jürgen Scheurle) **93a:35004c** 35–02

— (*with* Shubin, M. A.) Linear partial differential equations. Elements of the contemporary theory. (Russian. Russian summary) *Partial differential equations*, 2 (*Russian*), 5–125, 268, *Itogi Nauki i Tekhniki, Akad. Nauk SSSR, Vsesoyuz. Inst. Nauchn. i Tekhn. Inform., Moscow*, 1988. (Introduction) **93e:35001** 35–02 (35A27, 35Sxx)

— Microlocal analysis. (Russian. Russian summary) *Partial differential equations*, 4 (*Russian*), 5–156, 254, *Itogi Nauki i Tekhniki, Akad. Nauk SSSR, Vsesoyuz. Inst. Nauchn. i Tekhn. Inform., Moscow*, 1988. (From the preface) **93e:35002** 35–02 (35A27, 35S05, 58G07)

— Generalized functions. (Russian) *Conference on Differential Equations and Applications* (*Ruse*, 1989), 184–191, *Tech. Univ., Ruse*, 1991. (*see* **93f:34004**) 35A25 (46Fxx)

— (*with* Kondrat'ev, V. A.) On an estimate for the first eigenvalue of the Sturm-Liouville operator. (Russian. Russian summary) *Vestnik Moskov. Univ. Ser. I Mat. Mekh.* **1991**, *no.* 6, 5–11, 102; *translation in Moscow Univ. Math. Bull.* **46** (1991), *no.* 6, 4–11. (Summary) **93i:34152** 34L15 (34B24, 34L40, 47E05)

— (*with* Shubin, M. A.) Linear partial differential equations. Foundations of the classical theory. *Partial differential equations, I*, 1–259, *Encyclopaedia Math. Sci.*, 30, *Springer, Berlin*, 1992. (Jürgen Scheurle) **93a:35004d** 35–02

— (*with* Kondrat'ev, V. A.) Estimates of the negative spectrum of an elliptic operator. *Spectral theory of operators* (*Novgorod*, 1989), 111–140, *Amer. Math. Soc. Transl. Ser.* 2, 150, *Amer. Math. Soc., Providence, RI*, 1992. (V. S. Rabinovich) **93b:35100** 35P15 (35J30, 47F05)

— *see also* **Partial differential equations, 93a:35004a** *and* **93a:35004b**

Egorova, I. E. On a class of almost periodic solutions of the KdV equation with a nowhere dense spectrum. (Russian) *Dokl. Akad. Nauk* **323** (1992), *no.* 2, 219–222; *translation in Russian Acad. Sci. Dokl. Math.* **45** (1992), *no.* 2, 290–293 (1993). (B. G. Konopel'chenko) **93m:35161** 35Q53

Egorova, L. I. (*with* Egorov, Andreĭ Ivanovich) Maximally mobile Finsler spaces $F_{n,y}$ in the homothetic sense. (Russian) *Trudy Geom. Sem. Kazan. Univ. No.* 21 (1991), 43–57. (Elena Macovei) **93k:53026** 53B40 (53C60)

Egorushkin, S. A. (*with* Kulikovskiĭ, A. G.) Stability of solutions of some boundary value problems for hyperbolic equations. (Russian) *Prikl. Mat. Mekh.* **56** (1992), *no.* 1, 40–51; *translation in J. Appl. Math. Mech.* **56** (1992), *no.* 1, 36–45. (From the text) **93g:35089** 35L45 (35B35, 76L05, 76W05)

Egorychev, G. P. (*with* Moiseenko, D. A.) Mixed discriminants in graph theory and electrical engineering. (Russian) *Permanents: theory and applications* (*Russian*), 138–158, *Krasnoyarsk. Politekhn. Inst., Krasnoyarsk*, 1990. (*see* **93b:00018**) 94–01 (05C90)

— *see also* **Permanents: theory and applications, 93b:00018**

Egozcue, J. J. (*with* Bofill, F.; Griful, E.) Orthogonal decomposition of stationary processes into nondeterministic components. (Spanish) *Proceedings of the XII Congress on Differential Equations and Applications/II Congress on Applied Mathematics* (*Spanish*) (*Oviedo*, 1991), 601–606, *Univ. Oviedo, Oviedo*, 1991. (*see* **93j:00009**) 60G10

Eguchi, Miyoichi (*with* Wada, Kiyoshi) Over-determined estimation of pulse transfer function model by least-squares method. (English summary) *Identification and system parameter estimation* 1991, *Vol.* 1,2 (*Budapest*, 1991), 823–828, *IFAC Sympos. Ser.*, 3, *Pergamon, Oxford*, 1992. (*see* **93h:93009**) 93C80

Eguchi, Shinto Geometry of minimum contrast. *Hiroshima Math. J.* **22** (1992), *no.* 3, 631–647. (Syed N. U. A. Kirmani) **93i:62004** 62B10 (62A99)

Eguchi, Tohru (*with* Ooguri, Hirosi) Differential equations in moduli space. *Quantum mechanics of fundamental systems*, 2 (*Santiago*, 1987), 73–77, *Ser. Cent. Estud. Cient. Santiago, Plenum, New York*, 1989. (*see* **93e:81005**) 81T40 (30F99)

— (*with* Kawai, Toshiya; Mizoguchi, Shun'ya; Yang, Sung-Kil) Character formulas for coset $N = 2$ superconformal theories. (English summary) *Rev. Math. Phys.* **4** (1992), *no.* 3, 329–381. (Mark A. Walton) **93k:81199** 81T40 (17B81, 81R10, 81T60)

— (*with* Kanno, Hiroaki; Yang, Sung-Kil) W_∞ algebra in a two-dimensional black hole. (English summary) *Phys. Lett. B* **298** (1993), *no.* 1-2, 73–78. (Stanislav Z. Pakuliak) **93k:81200** 81T40 (17B67, 17B68, 81R10)

— *see also* **Common trends in mathematics and quantum field theories, 93c:00006** *and* **Infinite analysis, 93g:00027**

Egupov, N. D. (*with* Lapin, S. V.) Analysis of continuous time-varying nonlinear systems using block-pulse expansions. (English summary) *Internat. J. Systems Sci.* **23** (1992), *no.* 7, 1201–1212. 93C10 (93C50)

— (*with* Lapin, S. V.) Determinant and statistical analysis of linear time-varying systems via block-pulse functions. (English summary) *Internat. J. Systems Sci.* **23** (1992), *no.* 7, 1213–1227. 93C05 (93E30)

Egusquiza, I. L. Quantum group invariance in quantum sphere valued statistical models. *Phys. Lett. B* **276** (1992), *no.* 4, 465–471. (L. L. Vaksman) **93a:82018** 82B23 (17B37, 81R50)

Ehlers, Jürgen Conference summary. *General relativity and gravitation*, 1989 (*Boulder, CO*, 1989), 491–502, *Cambridge Univ. Press, Cambridge*, 1990. (*see* **93b:83002**) 83–06

Ehme, Jeffrey A. (*with* Henderson, Johnny) Differentiation of solutions of boundary value problems with respect to boundary conditions. *Appl. Anal.* **46** (1992), *no.* 3-4, 175–194. (Mauro Marini) **93g:34028** 34B10 (34B15)

— Differentiation of solutions of boundary value problems with respect to nonlinear boundary conditions. (English summary) *J. Differential Equations* **101** (1993), *no.* 1, 139–147. (Summary) **93k:34047** 34B15 (34B10)

Eholzer, W. (*with* Flohr, M.; Honecker, A.; Hübel, R.; Nahm, Werner; Varnhagen, R.) Representations of W-algebras with two generators and new rational models. (English summary) *Nuclear Phys. B* **383** (1992), *no.* 1-2, 249–288. (A. Hamid Bougourzi) **93i:81061** 81R10 (81T40)

Ehrenfeucht, Andrzej (*with* Rozenberg, Grzegorz) Grammatical codes of trees. *Discrete Appl. Math.* **32** (1991), *no.* 2, 103–129. (Wolfgang Thomas) **93b:68044** 68Q50 (05C05, 68R05, 68S05)

— (*with* Zawadowski, Marek W.) A representation of partial Boolean algebras. (English summary) *Fund. Inform.* **16** (1992), *no.* 3-4, 349–353. (Summary) **93d:06012** 06E05 (03C60, 03G05)

— (*with* Rozenberg, Grzegorz) Angular 2-structures. *Theoret. Comput. Sci.* **92** (1992), *no.* 2, 227–248. (I. Broere) **93h:05163** 05C99 (06A06, 68R10)

Ehrenmark, U. T. A mixed problem for the biharmonic equation in a wedge with application to dissipating linear waves on a plane beach. (English summary) *Quart. J. Mech. Appl. Math.* **45** (1992), *no.* 3, 407–433. (Summary) **93g:76042** 76D33

Ehrenpreis, Leon Hypergeometric functions. *Special functions* (*Okayama*, 1990), 78–89, *ICM-90 Satell. Conf. Proc., Springer, Tokyo*, 1991. (Introduction) **93m:33011** 33C80 (22E70, 33-02, 33D80)

— Nonlinear Fourier transform. *Geometric analysis* (*Philadelphia, PA*, 1991), 39–48, *Contemp. Math.*, 140, *Amer. Math. Soc., Providence, RI*, 1992. (Walter Schempp) **93m:44002** 44A12 (42A38, 58G15)

Ehrentraut, Harald (*with* Blenk, Stefan; Muschik, Wolfgang) Macroscopic constitutive equations for liquid crystals induced by their mesoscopic orientation distribution. *Internat. J. Engrg. Sci.* **30** (1992), *no.* 9, 1127–1143. 76A15 (73B05, 73S10)

Ehresmann, A. C. (*with* Vanbremeersch, J.-P.) Outils mathématiques pour modéliser les systèmes complexes. (English summary) [Mathematical tools for modeling complex systems] *Cahiers Topologie Géom. Différentielle Catégoriques* **33** (1992), *no.* 3, 225–236. 92B05 (00A71, 93A30)

Ehrhard, Dirk Decoding algebraic-geometric codes by solving a key equation. *Coding theory and algebraic geometry* (*Luminy*, 1991), 18–25, *Lecture Notes in Math.*, 1518, *Springer, Berlin*, 1992. (Simon N. Litsyn) **93i:94019** 94B27 (11T71)

Ehrich, Hans-Dieter (*with* Gogolla, Martin; Lipeck, Udo Walter) ★ Algebraische Spezifikation abstrakter Datentypen. (German) [Algebraic specification of abstract data types] Eine Einführung in die Theorie [An introduction to the theory]. Leitfäden und Monographien der Informatik. [Guides and Monographs in Information Science] *B. G. Teubner, Stuttgart*, 1989. x+236 *pp. ISBN* 3-519-02266-4 (Eric G. Wagner) **93a:68098** 68Q65

Ehrig, Hartmut (*with* Habel, Annegret; Kreowski, Hans-Jörg; Parisi-Presicce, Francesco) Parallelism and concurrency in high-level replacement systems. *Math. Structures Comput. Sci.* **1** (1991), *no.* 3, 361–404. (K. G. Subramanian) **93e:68047** 68Q42

— (*with* Taentzer, Gabriele) From parallel graph grammars to parallel high-level replacement systems. (English summary) *Lindenmayer systems*, 283–303, *Springer, Berlin*, 1992. (*see* **93m:68004**) 68Q50 (68R10)

Ehrlich, Paul E. (*with* Emch, Gérard G.) Quasi-time functions in Lorentzian geometry. *Geometric analysis and nonlinear partial differential equations* (*Denton, TX*, 1990), 203–212, *Lecture Notes in Pure and Appl. Math.*, 144, *Dekker, New York*, 1993. (Alan D. Rendall) **93k:53069** 53C50 (83C99)

Ehtamo, Harri (*with* Ruusunen, Jukka; Hämäläinen, Raimo P.) On intertemporal cooperation—a dynamic stochastic problem with nonadditive group utility function. *Dynamic games in economic analysis* (*Espoo*, 1990), 88–94, *Lecture Notes in Control and Inform. Sci.*, 157, *Springer, Berlin*, 1991. (*see* **93d:90003**) 90A10 (90D25)

— (*with* Hämäläinen, Raimo P.) A cooperative incentive equilibrium for a resource management problem. (English summary) *J. Econom. Dynamics Control* **17** (1993), *no.* 4, 659–678. (Summary) **93m:90123** 90D25 (90A16)

— *see also* **Differential games—developments in modelling and computation, 93c:90003** *and* **Dynamic games in economic analysis, 93d:90003**

Ei, Shin-Ichiro (*with* Ohara, Kazutaka; Nagai, Toshitaka) Stationary solutions of a reaction-diffusion equation with a nonlocal convection. (English summary) *Hiroshima Math. J.* **22** (1992), *no.* 2, 365–386. (Elias Tuma) **93g:35072** 35K57

— (*with* Mimura, Masayasu) Relaxation oscillations in combustion models of thermal self-ignition. *J. Dynamics Differential Equations* **4** (1992), *no.* 1, 191–229. (Jesús Hernández) **93a:35080** 35K57 (35B25, 35B40, 80A25)

— (*with* Kuwamura, M.; Mimura, Masayasu) Very slow dynamics for some reaction-diffusion systems of the activator-inhibitor type. *Japan J. Indust. Appl. Math.* **9** (1992), *no.* 1, 35–77. (Mario Primicerio) **93f:35113** 35K57 (35B25, 35R35, 92D25)

Eichenauer-Herrmann, Jürgen Gamma-minimax estimation in exponential families with quadratic variance functions. *Statist. Decisions* **9** (1991), *no.* 4, 319–326. (Sam Gutmann) **93c:62017** 62C20 (62F10)

— (*with* De Matteis, A.; Grothe, H.) Computation of critical distances within multiplicative congruential pseudorandom number sequences. *J. Comput. Appl. Math.* **39** (1992), *no.* 1, 49–55. (Summary) **93b:65011** 65C10

— Construction of inversive congruential pseudorandom number generators with maximal period length. *J. Comput. Appl. Math.* **40** (1992), *no.* 3, 345–349. (Henri Faure) **93d:65010** 65C10

— A remark on the discrepancy of quadratic congruential pseudorandom numbers. (English summary) *J. Comput. Appl. Math.* **43** (1992), *no.* 3, 383–387. (Summary) **93i:65010** 65C10

— (*with* Brockmann, M.) Gamma-minimax estimation of multinomial probabilities. (English summary) *Zastos. Mat.* **21** (1992), *no.* 3, 427–435. (A. L. Rukhin) **93f:62009** 62C20 (62F10)

— Statistical independence of a new class of inversive congruential pseudorandom numbers. *Math. Comp.* **60** (1993), *no.* 201, 375–384. (R. G. Stoneham) **93d:65011** 65C10 (11K45)

Eichhorn, Jürgen (*with* Buttig, Ingolf) The heat kernel for p-forms on manifolds of bounded geometry. *Acta Sci. Math.* (*Szeged*) **55** (1991), *no.* 1-2, 33–51. (Introduction) **93e:58176** 58G11 (53C20, 58G25)

— The heat semigroup acting on tensors or differential forms with values in vector bundle. (English summary) *Arch. Math.* (*Brno*) **27A** (1991), 15–24. (Józef Dodziuk) **93j:58126** 58G11 (58G30)

— A priori estimates in geometry and Sobolev spaces on open manifolds. *Partial differential equations, Part* 1, 2 (*Warsaw*, 1990), 141–146, *Banach Center Publ.*, 27, *Part* 1, 2, *Polish Acad. Sci., Warsaw*, 1992. (Józef Dodziuk) **93k:58036** 58D15 (46E35)

— Gauge theory on open manifolds of bounded geometry. (English summary) *Internat. J. Modern Phys. A* **7** (1992), *no.* 17, 3927–3977. (David Groisser) **93k:53028** 53C07 (58D27, 58E15, 81T13)

Eichler, M. (*with* Brzeziński, Juliusz) On the imbeddings of imaginary quadratic orders in definite quaternion orders. *J. Reine Angew. Math.* **426** (1992), 91–105. (Rainer Schulze-Pillot) **93i:11136** 11R52 (11E20, 11R29)

Eichwald, C. (*with* Kaiser, Friedemann) Bifurcation structure of a driven multi-limit-cycle van der Pol oscillator. II. Symmetry-breaking crisis and intermittency. *Internat. J. Bifur. Chaos Appl. Sci. Engrg.* **1** (1991), *no.* 3, 711–715. (Summary) **93c:34086** 34C23 (34C15, 34C25, 58F14, 70K50)

Eicke, Bertolt Iteration methods for convexly constrained ill-posed problems in Hilbert space. (English summary) *Numer. Funct. Anal. Optim.* **13** (1992), *no.* 5-6, 413–429. (Summary) **93i:49038** 49M30 (49N10, 65J05, 65K05, 90C48)

Eickermann, Th. (*with* Spatschek, K. H.; Pietsch, H.; Laedke, E. W.) Chaotic behavior in time in nonlinear-Schrödinger-systems. *Nonlinear world, Vol.* 2 (*Kiev*, 1989), 978–1001, *World Sci. Publishing, River Edge, NJ*, 1990. (*see* **93b:00013**) 58F39 (35Q55, 58F13)

— (*with* Spatschek, K. H.; Zhang, W.; Naulin, V.) Self-organization of nonlinear waves and vortices in driven and damped systems. (English summary) *Nonlinear dispersive wave systems* (*Orlando, FL*, 1991), 507–538, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93i:76102** 76X05 (76E25, 82D10)

Eid, George M. On Lindelöf lattices and separation. *Internat. J. Math. Math. Sci.* **14** (1991), *no.* 3, 605–609. (Marcel Erné) **93a:06011** 06D05 (28A60, 54D20)

— Regular lattices and weakly replete lattices. *Rocky Mountain J. Math.* **22** (1992), *no.* 3, 849–860. (Rastislav Potocký) **93j:28007** 28A60 (06B05)

Eidelman, Shmuel (*with* Lottati, Itzhak; Drobot, Adam) Solution of Euler's equations on adaptive grids using a fast unstructured grid second order Godunov solver (FUGGS). (English summary) *Advances in the free-Lagrange method* (*Moran, WY*, 1990), 37–46, *Lecture Notes in Phys.*, 395, *Springer, Berlin*, 1991. (*see* **93g:76001**) 76M20 (76N15)

Èidel'man, Yu. S. An inverse problem for an evolution equation. (Russian) *Mat. Zametki* **49** (1991), *no.* 5, 135–141, 160; *translation in Math. Notes* **49** (1991), *no.* 5-6, 535–540. (Alfredo Lorenzi) **93h:34102** 34G10 (35R30, 47N20)

— Conditions of existence and uniqueness of solution of inverse problem for the evolutionary equation. (Russian summary) *Dokl. Akad. Nauk Ukrainy* **1992**, *no.* 8, 8–11, 168. (From the text) **93g:34089** 34G10 (34B05, 47N20)

Èiderman, V. Ya. On a comparison between the Hausdorff measure and capacity. (Russian) *Algebra i Analiz* **3** (1991), *no.* 6, 173–188 (1992); *translation in St. Petersburg Math. J.* **3** (1992), *no.* 6, 1367–1381. (S. K. Vodop'yanov) **93m:31007** 31B15 (28A75)

— Measure and capacity of exceptional sets arising in estimations of δ-subharmonic functions. *Potential theory* (*Nagoya*, 1990), 171–177, *de Gruyter, Berlin*, 1992. (A. I. Kheĭfits) **93h:31001** 31A05 (30D15, 30D30, 31A15)

Èidovich, A. A. (*with* Brodskiĭ, G. M.) Mappings that associate with each graph its subgraph. (Russian) *Problems in group theory and homological algebra* (*Russian*), 159–160, *Matematika, Yaroslav. Gos. Univ., Yaroslavl'*, 1988. (*see* **93b:00020**) 05C99

Eie, Minking (*with* Krieg, Aloys) The Maass space on the half-plane of Cayley numbers of degree two. *Math. Z.* **210** (1992), *no.* 1, 113–128. (K.-B. Gundlach) **93e:11063** 11F55 (11F66)

— The special values at negative integers of Dirichlet series associated with polynomials of several variables. *Proc. Amer. Math. Soc.* **119** (1993), *no.* 1, 51–61. (Andrew Granville) **93k:11082** 11M41 (11B68)

Eiermann, Michael J. (*with* Marek, Ivo; Niethammer, Wilhelm) On semi-iterative methods for the solution of singular linear systems. *Proceedings of the Second International Symposium on Numerical Analysis* (*Prague*, 1987), 131–138, *Teubner-Texte Math.*, 107, *Teubner, Leipzig*, 1988. (*see* **93b:65007**) 65F10

— (*with* Niethammer, Wilhelm; Varga, Richard S.) Acceleration of relaxation methods for non-Hermitian linear systems. Iterative methods in numerical linear algebra (Copper Mountain, CO, 1990). *SIAM J. Matrix Anal. Appl.* **13** (1992), *no.* 3, 979–991. (Summary) **93e:65052** 65F10

Eigen, Stanley (*with* Hajian, Arshag; Kalikow, Steven) Ergodic transformations and sequences of integers. *Israel J. Math.* **75** (1991), *no.* 1, 119–128. (Peter J. Hellekalek) **93c:28014** 28D05 (11B13)

— (*with* Hajian, Arshag; Kakutani, Shizuo) Complementing sets of integers—a result from ergodic theory. *Japan. J. Math.* (*N.S.*) **18** (1992), *no.* 1, 205–211. (F. Schweiger) **93g:11087** 11K55 (28D05)

Eigenthaler, Günther (*with* Nöbauer, Wilfried) Über die mit einem Polynom vertauschbaren linearen Polynome. [On linear polynomials commuting with a polynomial] *Österreich. Akad. Wiss. Math.-Natur. Kl. Sitzungsber. II* **199** (1990), *no.* 4-7, 143–153. (From the introduction) **93e:13012** 13B25 (16U60)

van Eijck, M. A. (*with* van Weert, Ch. G.) Finite-temperature retarded and advanced Green functions. *Phys. Lett. B* **278** (1992), *no.* 3, 305–310. (Summary) **93a:81202** 81T99

Eijkhout, Victor (*with* Margenov, Svetozar) Preconditioned iterative solution of spline finite element systems. *Math. Balkanica* (*N.S.*) **4** (1990), *no.* 4, 350–367 (1991). (Summary) **93a:65149** 65N30 (65F10)

Eikelberg, Markus The Picard group of a compact toric variety. (English summary) *Results Math.* **22** (1992), *no.* 1-2, 509–527. (Barry H. Dayton) **93g:14060** 14M25 (14C22)

Eilbeck, J. C. Numerical studies of solitons on lattices. (English summary) *Nonlinear coherent structures in physics and biology* (*Dijon*, 1991), 143–150, *Lecture Notes in Phys.*,

393, *Springer, Berlin*, 1991. (*see* **93e:00025**) 82C80
— (*with* Grinfeld, Michael; Furter, J. E.) A monotonicity theorem and its application to stationary solutions of the phase field model. (English summary) *IMA J. Appl. Math.* **49** (1992), *no.* 1, 61–72. (J. R. Ockendon) **93j:80003** 80A22 (34B15)
— (*with* López-Gómez, Julián; Molina-Meyer, Marcela; Duncan, K. N.) Structure of solution manifolds in a strongly coupled elliptic system. (English summary) IMA Conference on Dynamics of Numerics and Numerics of Dynamics (Bristol, 1990). *IMA J. Numer. Anal.* **12** (1992), *no.* 3, 405–428. (Summary) **93f:35058** 35J55 (35B32, 58G28)
— (*with* Ènol'skiĭ, V. Z.; Salerno, Mario; Scott, A. C.) There's more than one way to skin Schrödinger's cat. (English summary) *Phys. D* **59** (1992), *no.* 1-3, 1–24. (Tuncay Aktosun) **93j:81107** 81U40 (58F40, 81Q05)
Eilenberg, Samuel Karol Borsuk—personal reminiscences. *Topol. Methods Nonlinear Anal.* **1** (1993), *no.* 1, 1–2. 01A70
Eilenberger, G. (*with* Lustfeld, H.; Juhnke, M.) On Schröder's "generating function" for the logistic map. *From phase transitions to chaos*, 387–412, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93d:58136** 58F23 (30D05)
— (*with* Schmidt, K.) Poincaré maps of Duffing-type oscillators and their reduction to circle maps. I. Analytic results. (English summary) *J. Phys. A* **25** (1992), *no.* 23, 6335–6356. (Summary) **93k:34078** 34C15 (34C23, 34D08, 58F13, 70K99)
Ein, Lawrence (*with* Bertram, Aaron; Lazarsfeld, Robert K.) Surjectivity of Gaussian maps for line bundles of large degree on curves. *Algebraic geometry (Chicago, IL*, 1989), 15–25, *Lecture Notes in Math.*, 1479, *Springer, Berlin*, 1991. (Enrique Arrondo) **93i:14031** 14H60
— (*with* Lazarsfeld, Robert K.) Syzygies and Koszul cohomology of smooth projective varieties of arbitrary dimension. *Invent. Math.* **111** (1993), *no.* 1, 51–67. (Gary P. Kennedy) **93m:13006** 13D02 (14F17, 14J60)
Einarsson, G. (*with* Ericson, Thomas H. E.; Ingemarsson, I.; Johannesson, Rolf; Zigangirov, K. Sh.; Sundberg, C.-E.) ★ Topics in coding theory. In honor of Lars H. Zetterberg. Lecture Notes in Control and Information Sciences, 128. *Springer-Verlag, Berlin*, 1989. viii+176 *pp. ISBN* 3-540-51405-8 94–02 (94A24, 94Bxx)
Einarsson, Torbjörn (*with* Eriksson, Anders B.; Östlund, Stellan) Circle maps with symmetry-breaking perturbations. *Phys. D* **57** (1992), *no.* 1-2, 58–84. (Helmut Rüssmann) **93c:58182** 58F27 (58F03, 58F13)
Einhorn, Martin B. (*with* Contopanagos, H. F.) Interpretation of the asymptotic S matrix for massless particles. *Phys. Rev. D* (3) **45** (1992), *no.* 4, 1291–1321. (A. Ventura) **93a:81138** 81T18 (81U20, 81V10)
Einmahl, John H. J. (*with* Beirlant, Jan; Deheuvels, Paul; Mason, David M.) Bahadur-Kiefer theorems for uniform spacings processes. *Teor. Veroyatnost. i Primenen.* **36** (1991), *no.* 4, 724–743; *reprinted in Theory Probab. Appl.* **36** (1991), *no.* 4, 647–669 (1992). (M. Csörgő) **93g:60061** 60F15 (60F05, 60F17, 62G30)
— The a.s. behavior of the weighted empirical process and the LIL for the weighted tail empirical process. *Ann. Probab.* **20** (1992), *no.* 2, 681–695. (Endre Csáki) **93e:60058** 60F15 (60F05, 62G15, 62G30)
— (*with* Mason, David M.) Generalized quantile processes. *Ann. Statist.* **20** (1992), *no.* 2, 1062–1078. (P. Révész) **93c:60023** 60F05 (62E20)
— (*with* Koning, Alex J.) Limit theorems for a general weighted process under random censoring. (French summary) *Canad. J. Statist.* **20** (1992), *no.* 1, 77–89. (M. Csörgő) **93h:62100** 62G30 (60F17, 62G10)
— (*with* Deheuvels, Paul) Approximations and two-sample tests based on P-P and Q-Q plots of the Kaplan-Meier estimators of lifetime distributions. (English summary) *J. Multivariate Anal.* **43** (1992), *no.* 2, 200–217. (M. Csörgő) **93k:60053** 60F05 (60F17, 62E20, 62G10)
— Limit theorems for tail processes with application to intermediate quantile estimation. (English summary) *J. Statist. Plann. Inference* **32** (1992), *no.* 1, 137–145. (Paul Deheuvels) **93m:60044** 60F05 (62G05)
— (*with* van Zuijlen, Martien C. A.) Glivenko-Cantelli-type theorems for weighted empirical distribution functions based on uniform spacings. (English summary) *Statist. Probab. Lett.* **13** (1992), *no.* 5, 411–419. (M. Csörgő) **93m:62119** 62G30 (60F15, 62G20)
Einmahl, Uwe (*with* Mason, David M.) Approximations to permutation and exchangeable processes. *J. Theoret. Probab.* **5** (1992), *no.* 1, 101–126. (Sándor Csörgő) **93a:60051** 60F17 (60G09, 60G20, 62G20, 62G30)
— Exact convergence rates for the bounded law of the iterated logarithm in Hilbert space. *Probab. Theory Related Fields* **92** (1992), *no.* 2, 177–194. (Xiang Chen Wang) **93i:60013** 60B12 (60F15)
Einstein, Albert *see* **Holton, Gerald**, **93b:01029**; **Temple, Blake**, **93c:01001**; **Barbour, Julian B.**, **93d:01037**; **Illy, József**, **93g:01045** *and* **Liu, Chuang**, **93g:01048**
mato Eiroa, P. *see* **Mato Eiroa, P.**
Eirola, Timo Sobolev characterization of solutions of dilation equations. *SIAM J. Math. Anal.* **23** (1992), *no.* 4, 1015–1030. (Fritz Keinert) **93f:42056** 42C15 (39B52)
Eisele, Eberhard On homeomorphisms and incidence relations of compact projective planes. *Arch. Math. (Basel)* **58** (1992), *no.* 6, 615–620. (Rainer Löwen) **93c:51014** 51H10
Eisele, Peter On shifted convolution powers of a probability measure. *Math. Z.* **211** (1992), *no.* 4, 557–574. (A. Mukherjea) **93j:60008** 60B15 (43A05)
Eiselt, Horst A. Hotelling's duopoly on a tree. (English summary) Locational decisions (Fullerton, CA, 1990). *Ann. Oper. Res.* **40** (1992), *no.* 1-4, 195–207 (1993). (Summary) **93m:90046** 90B80 (90C27)
— (*with* Gendreau, Michel; Laporte, Gilbert) Location of facilities on a network subject to a single-edge failure. *Networks* **22** (1992), *no.* 3, 231–246. (Summary) **93b:90039** 90B80 (05C35, 05C85, 90B10, 90B25)
— (*with* Sandblom, C.-L.) A computational study of redundancy in randomly generated polytopes. (English and German summaries) *Computing* **49** (1993), *no.* 4, 315–327. (Summary) **93k:90052** 90C06 (52B12)
— (*with* Laporte, Gilbert) The existence of equilibria in the 3-facility Hotelling model in a tree. (English summary) *Transportation Sci.* **27** (1993), *no.* 1, 39–43. (Summary) **93m:90047** 90B80
Eiseman, Peter R. (*with* Choo, Yung K.; Smith, Robert E.) Algebraic grid generation with control points. *Finite elements in fluids, Vol.* 8 (*Huntsville, AL*, 1989), 97–116, *Ser. Comput. Phys. Process. Mech. Thermal Sci., Hemisphere, Washington, DC*, 1992. (*see* **93e:76050**) 76M25 (65M60)
— Control point grid generation. *Comput. Math. Appl.* **24** (1992), *no.* 5-6, 57–67. 65N50
Eisen, Henner (*with* Heinrichs, Wilhelm) A new method of stabilization for singular perturbation problems with spectral methods. *SIAM J. Numer. Anal.* **29** (1992), *no.* 1, 107–122. (I. Norman Katz) **93a:65160** 65N35 (34E15)
Eisenberg, Bennett (*with* Ghosh, Bhaskar K.) The sequential probability ratio test. *Handbook of sequential analysis*, 47–65, *Statist. Textbooks Monographs*, 118, *Dekker, New York*, 1991. (*see* **93g:62102**) 62L10
— Multihypothesis problems. *Handbook of sequential analysis*, 229–244, *Statist. Textbooks Monographs*, 118, *Dekker, New York*, 1991. (*see* **93g:62102**) 62L10
— A variation of a theorem of Sparre-Andersen. *Statist. Probab. Lett.* **14** (1992), *no.* 3, 219–222. (Summary) **93g:60148** 60J15 (60C05, 60G09)
— (*with* Baryshnikov, Yu. M.) Independent events and independent experiments. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 2, 615–617. (Anant P. Godbole) **93g:60015** 60C05 (60A99)
Eisenberg, R. S. (*with* Barcilon, Victor; Chen, D.-P.) Ion flow through narrow membrane channels. II. (English summary) *SIAM J. Appl. Math.* **52** (1992), *no.* 5, 1405–1425. (Brian D. Sleeman) **93m:92008** 92C05 (78A99)
Eisenberg, Wolfgang Zu den Wirklichkeitsauffassungen der Physiker Wolfgang Pauli und Ludwig Boltzmann (Vergleich). [On the views of reality of the physicists Wolfgang Pauli and Ludwig Boltzmann (a comparison)] *Mathematik und Wirklichkeit*, 47–54, *Akademie-Verlag, Berlin*, 1991. (*see* **93e:00008**) 00A30 (00A79, 01A55, 01A60)
Eisenberg, Yeshayahu A consistent covariant quantization of the Brink-Schwarz superparticle. *Phys. Lett. B* **276** (1992), *no.* 3, 325–328. (From the text) **93b:81287** 81T70 (81R25, 81T30)
Eisenbud, David (*with* Koh, Jee) Some linear syzygy conjectures. *Adv. Math.* **90** (1991), *no.* 1, 47–76. (Summary) **93e:13019** 13D02 (13D25)
— (*with* Harris, Joseph Daniel) ★ Schemes. The language of modern algebraic geometry. The Wadsworth & Brooks/Cole Mathematics Series. *Wadsworth & Brooks/Cole Advanced Books & Software, Pacific Grove, CA*, 1992. xii+157 *pp. ISBN* 0-534-17606-2; 0-534-17604-6 (Alexey N. Rudakov) **93k:14001** 14-01 (14A15)
— Green's conjecture: an orientation for algebraists. *Free resolutions in commutative algebra and algebraic geometry (Sundance, UT*, 1990), 51–78, *Res. Notes Math.*, 2, *Jones and Bartlett, Boston, MA*, 1992. (Montserrat Teixidor i Bigas) **93e:13020** 13D02 (14H45, 14H50)
— (*with* Harris, Joseph Daniel) The dimension of the Chow variety of curves. *Compositio Math.* **83** (1992), *no.* 3, 291–310. (R. F. Lax) **93h:14002** 14C05 (14H10)
— (*with* Huneke, Craig L.; Vasconcelos, Wolmer V.) Direct methods for primary decomposition. (English summary) *Invent. Math.* **110** (1992), *no.* 2, 207–235. (Joachim Apel) **93j:13032** 13P10 (13B25, 13C99)
— (*with* Avramov, Luchezar L.) Regularity of modules over a Koszul algebra. (English summary) *J. Algebra* **153** (1992), *no.* 1, 85–90. (Dinh Van Huynh) **93k:16018** 16E99 (16W50)
Eisenstaedt, Jean The early interpretation of the Schwarzschild solution. *Einstein and the history of general relativity (North Andover, MA*, 1986), 213–233, *Einstein Stud.*, 1, *Birkhäuser Boston, Boston, MA*, 1989. (*see* **93g:83001**) 01A60 (83–03)
— The low water mark of general relativity, 1925–1955. *Einstein and the history of general relativity (North Andover, MA*, 1986), 277–292, *Einstein Stud.*, 1, *Birkhäuser Boston, Boston, MA*, 1989. (*see* **93g:83001**) 01A60 (83–03)
— *see also* **Studies in the history of general relativity**, **93a:01001**
Eisenstat, Stanley C. (*with* Liu, Joseph W. H.) Exploiting structural symmetry in a sparse partial pivoting code. (English summary) *SIAM J. Sci. Comput.* **14** (1993), *no.* 1, 253–257. 65F50 (65F05)
Eisner, Jason M. (*with* Jones, Mark A.) A probabilistic parser applied to software testing documents. (English summary) *AAAI-92. Proceedings, Tenth National Conference on Artificial Intelligence (San Jose, CA*, 1992), 322–328, *Amer. Assoc. Artif. Intell., Menlo Park, CA*, 1992. (*see* **93j:68007**) 68Q52
Eitelberg, E. (*with* Boje, E.) On identification of time delay via the approximation $e^{-Ts} \simeq (1 - sT/2)/(1 + sT/2)$. (English summary) *Identification and system parameter estimation* 1991, *Vol.* 1,2 (*Budapest*, 1991), 337–341, *IFAC Sympos. Ser.*, 3, *Pergamon, Oxford*, 1992. (*see* **93h:93009**) 93B30
Eiter, Thomas (*with* Cadoli, Marco; Gottlob, Georg) An efficient method for eliminating varying predicates from a circumscription. *Artificial Intelligence* **54** (1992), *no.* 3, 397–410. (Gerard R. Renardel de Lavalette) **93g:68125** 68T27 (03B60)
— (*with* Gottlob, Georg) On the complexity of propositional knowledge base revision, updates, and counterfactuals. (English summary) *Artificial Intelligence* **57** (1992), *no.* 2-3, 227–270. (Alexey P. Stolboushkin) **93k:68093** 68T30 (03B60, 03B70, 68T27)
Eit-s, S. *see* **Yates, Samuel**
Ejiri, N. (*with* Kotani, M.) Minimal surfaces in $S^{2m}(1)$ with extra eigenfunctions. *Quart. J. Math. Oxford Ser.* (2) **43** (1992), *no.* 172, 421–440. (João Lucas Marques Barbosa) **93k:53061** 53C42 (58E20)
Eke, B. I. A translation of the basefield of inseparable Galois extensions. *J. Nigerian Math. Soc.* **10** (1991), 31–38. (Shizuka Sato) **93d:12008** 12F15
Ekeland, Ivar (*with* Ambrosetti, Antonio) Perturbation results for a class of singular Hamiltonian systems. (Italian summary) *Atti Accad. Naz. Lincei Rend. Cl. Sci. Fis. Mat. Natur.* (8) **83** (1989), 129–132 (1990). (Vittorio Coti Zelati) **93d:58129** 58F22 (58F05, 58F30, 70F07, 70H05)
— (*with* Mathlouthi, Salem) Calcul numérique de la capacité symplectique. [Numerical computation of symplectic capacity] *Progress in variational methods in Hamiltonian systems and elliptic equations (L'Aquila*, 1990), 68–91, *Pitman Res. Notes Math. Ser.*, 243, *Longman Sci. Tech., Harlow*, 1992. (Nikolai K. Smolentsev) **93k:58090** 58F05 (34C25, 53C15, 65K10)
— (*with* Dell'Antonio, Gianfausto; D'Onofrio, Biancamaria) Les systèmes hamiltoniens convexes et pairs ne sont pas ergodiques en général. (English and French summaries) [Convex symmetric Hamiltonian systems are not generally ergodic] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 13, 1413–1415. (Shi Qing Zhang) **93k:58190** 58F22 (58F05, 70H05)
— *see also* **Nonlinear analysis**, **93h:49003** *and* **Variational methods**, **93i:58006**
Ekhad, Shalosh B. (*with* Parnes, Sheldon) A WZ-style proof of Jacobi polynomials' generating function. *Discrete Math.* **110** (1992), *no.* 1-3, 263–264. 05A15 (33C45)
Ekhaguere, G. O. S. Partial W^*-dynamical systems. *Current topics in operator algebras (Nara*, 1990), 202–217, *World Sci. Publishing, River Edge, NJ*, 1991. (Giuseppina

Epifanio) **93m:46080** 46L55 (47D40, 81T05)
— (*with* Odiobala, P. O.) Completely positive conjugate-bilinear maps on partial $*$-algebras. *J. Math. Phys.* **32** (1991), *no.* 11, 2951–2958. (Giuseppina Epifanio) **93b:46105** 46K05 (46L05, 46N99, 47D40)
— Lipschitzian quantum stochastic differential inclusions. (English summary) *Internat. J. Theoret. Phys.* **31** (1992), *no.* 11, 2003–2027. (Kalyanapuram R. Parthasarathy) **93k:81120** 81S25 (60H99)
Ekiel-Jeżewska, Maria L. (*with* Turski, L. A.) Relativistic hydrodynamics. XIXth Biennial Symposium on Advanced Problems and Methods in Fluid Mechanics (Kozubnik, 1989). *Arch. Mech. (Arch. Mech. Stos.)* **43** (1991), *no.* 5, 589–601 (1992). (Summary) **93e:76070** 76Y05 (76–02, 76A02, 76P05, 82C40, 83C55)
— (*with* Dudyński, Marek) Global existence proof for relativistic Boltzmann equation. *J. Statist. Phys.* **66** (1992), *no.* 3-4, 991–1001. (Luisa Arlotti) **93b:82064** 82C40 (76P05)
Ekinci, L. (*with* Arik, Metin; Demircan, E.; Turgut, T.; Mungan, Muhittin) Fibonacci oscillators. (English summary) *Z. Phys. C* **55** (1992), *no.* 1, 89–95. (Boris Moiseevich Zupnik) **93g:81069** 81S99 (11B39, 81R50)
Ekisheva, S. V. (*with* Tikhomirov, A. N.) Normal approximation of the probability of sums of dependent random variables hitting a ball. (Russian. Russian summary) *Ordered spaces and operator equations (Russian)*, 58–68, 161, *Syktyvkar. Gos. Univ., Syktyvkar*, 1989. (*see* **93m:00034**) 60F05
Eklof, Paul C. (*with* Mekler, Alan H.; Shelah, Saharon) On coherent systems of projections for $\aleph_1$-separable groups. (English summary) *Comm. Algebra* **21** (1993), *no.* 1, 343–353. (Manfred Dugas) **93k:20078** 20K20
Eklund, P. (*with* Gähler, Werner) Fuzzy filter functors and convergence. *Applications of category theory to fuzzy subsets (Linz*, 1989), 109–136, *Theory Decis. Lib. Ser. B Math. Statist. Methods*, 14, *Kluwer Acad. Publ., Dordrecht*, 1992. (Introduction) **93h:18005** 18A99 (04A72)
abou-el-Ela, A. M. A. *see* **Abou-El-Ela, A. M. A.**
El Abbadi, A. (*with* Agrawal, D.) The generalized tree quorum protocol: an efficient approach for managing replicated data. (English summary) *ACM Trans. Database Systems* **17** (1992), *no.* 4, 689–717. 68M10
El-Abbasy, E. M. On the van der Pol oscillator with critical forcing term. (English summary) *J. Math. Phys. Sci.* **26** (1992), *no.* 3, 291–309. (Summary) **93k:34079** 34C15 (34C25)
— On the second order nonlinear differential equation with nondifferentiable damping. (English summary) *Proc. Pakistan Acad. Sci.* **29** (1992), *no.* 3, 251–262. (W. R. Utz) **93j:34054** 34C25 (34C11)
nour El Abidine, Driss *see* **Nour El Abidine, Driss**
El-Abyad, Abdelwahab M. (*with* El-Hamouly, Hassan M.) Completeness of the standard fuzzy real line for FNS. (English summary) *Fuzzy Sets and Systems* **51** (1992), *no.* 1, 95–103. (Summary) **93f:54006** 54A40 (04A72)
abd-Elal, L. F. *see* **Abd-Elal, L. F.**
El-Amaari, Ali (*with* Dash, S. P.; Bourghawi, Suad M.) Randomization analysis of incomplete data in some basic designs. (English summary) *Biometrical J.* **35** (1993), *no.* 1, 81–97. 62K15
El-Amawy, A. (*with* Barada, H.) A methodology for algorithm regularization and mapping into time-optimal VLSI arrays. (English summary) *Parallel Comput.* **19** (1993), *no.* 1, 33–61. (Summary) **93j:65231** 65Y10
El Amrani, Mohammed La forme hermitienne canonique explicite pour la singularité $x^2 - y^{2p+1}$ ($p \geq 1$). (English and French summaries) [Explicit canonical Hermitian form for the singularity $x^2 - y^{2p+1}$ ($p \geq 1$)] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 8, 945–948. (Summary) **93i:32049** 32S40 (32S25, 32S55)
— La forme hermitienne canonique sur la partie invariante de la cohomologie de la fibre de Milnor d'une singularité isolée de polynôme quasi-homogène. [The canonical Hermitian form on the invariant subset of the cohomology of the Milnor fiber of an isolated singularity of a quasihomogeneous polynomial] *Compositio Math.* **83** (1992), *no.* 1, 107–125. (Daniel Barlet) **93f:32040** 32S20 (32S05, 32S35)
El Amri, Hassan (*with* Bourgeat, A.; Tapiéro, R.) Existence d'une taille critique pour une fissure dans un milieu poreux. (English summary) [Existence of a critical ratio for a fissure in a porous medium] *Mathématiques appliquées aux sciences de l'ingénieur (Santiago*, 1989), 67–80, *Cépaduès, Toulouse*, 1991. (Zvonimir Tutek) **93c:76076** 76S05 (35Q30, 73B27, 73N20, 76D07)
— (*with* Baranger, Jacques) A posteriori error estimators for mixed finite element approximation of some quasi-Newtonian flows. (Portuguese summary) *Mat. Apl. Comput.* **10** (1991), *no.* 2, 89–102. (Long An Ying) **93f:76065** 76M10 (65N15, 65N30, 76A05)
El-Arishy, Samia M. Admissibility of continuous unbiased estimators in linear mixed models. *Egyptian Statist. J.* **35** (1991), *no.* 1, 64–73. (Summary) **93d:62016** 62C15 (62J05)
Elashoff, Robert M. (*with* Lee, J. Jack; Li, Ker-Chau) On recensoring for censored paired data. (English summary) *J. Amer. Statist. Assoc.* **88** (1993), *no.* 421, 104–118. (Summary) **93k:62073** 62F35 (62P10)
Elashvili, A. G. Invariant algebras. *Lie groups, their discrete subgroups, and invariant theory*, 57–64, *Adv. Soviet Math.*, 8, *Amer. Math. Soc., Providence, RI*, 1992. (Joseph C. Ferrar) **93c:17013** 17B10 (17B60)
Elata, David (*with* Bar-Yoseph, Pinchas; Israeli, Moshe) On the generalized L_2 Galerkin finite element method for linear hyperbolic equations. (English summary) *Internat. J. Numer. Methods Engrg.* **36** (1993), *no.* 4, 679–694. (Summary) **93j:65146** 65M60
El Attar, M. Finite element analysis on distributed memory architectures. (English summary) *Appl. Math. Comput.* **52** (1992), *no.* 2-3, 309–316. 65Y05 (65N30)
El-Awaidy, H. *see* **El-Owaidy, Hassan M.**
Elaydi, Saber (*with* Farran, Hani) Weakly-Anosov diffeomorphisms and exponential trichotomy. *Libertas Math.* **12** (1992), 99–107. (Romeo F. Thomas) **93m:58082** 58F15
El Bagdouri, M. (*with* Bouslous, H.; Doubabi, S.) Étude numérique d'un problème de commande pour un système thermique non linéaire. (English and French summaries) [Numerical study of a control problem for a nonlinear thermal system] *RAIRO Automat.-Prod. Inform. Ind.* **26** (1992), *no.* 3, 193–208. 49M07 (49K20)
Elbakidze, N. V. (*with* Osidze, A. G.) Optimal control of stopping moments. (Russian. English and Georgian summaries) *Soobshch. Akad. Nauk Gruzii* **142** (1991), *no.* 1, 25–28. 93E20
El-Bassiouny, A. F. (*with* Elnaggar, A. M.) Response of self-excited three-degree-of-freedom systems to multifrequency excitations. (English summary) *Internat. J. Theoret. Phys.* **31** (1992), *no.* 8, 1531–1548. (G. V. Khmelevskaya-Plotnikova) **93i:70022** 70K40 (70K30)
El Baz, Didier (*with* Ribeiro, Cassilda) A dual method for optimal routing in packet-switched networks. *System modelling and optimization (Zurich*, 1991), 199–208, *Lecture Notes in Control and Inform. Sci.*, 180, *Springer, Berlin*, 1992. (*see* **93e:90003**) 90C35 (90B10)
Elbaz, E. (*with* Novello, M.) Electrodynamics, gravity and the corresponding short-range Fermi forces. (English summary) *Fortschr. Phys.* **40** (1992), *no.* 7, 651–665. (A. D. Popova) **93m:81158** 81V17 (83C50)
El-Bendari, Sh. E. (*with* El-Serafi, S. A.; El-Namoury, A. R. M.) On the solution of a nonlinear differential equation for oscillator with particular damping. (English and Arabic summaries) *Delta J. Sci.* **15** (1991), *no.* 1, 31–44. (Summary) **93i:34064** 34C15
Elber, G. (*with* Cohen, Elaine) Offset approximation improvement by control point perturbation. *Mathematical methods in computer aided geometric design, II (Biri*, 1991), 229–237, *Academic Press, Boston, MA*, 1992. (*see* **93d:65022**) 65D17
Elbert, Árpád (*with* Kusano, Takaši) Oscillation and nonoscillation theorems for a class of second order quasilinear differential equations. *Acta Math. Hungar.* **56** (1990), *no.* 3-4, 325–336. (From the introduction) **93b:34039** 34C10
— (*with* Laforgia, Andrea; Lorch, Lee) Additional monotonicity properties of the zeros of Bessel functions. *Analysis* **11** (1991), *no.* 4, 293–299. (Evangelos Ifantis) **93a:33006** 33C10
— (*with* Stavroulakis, I. P.) Oscillations of first order differential equations with deviating arguments. (English summary) *Recent trends in differential equations*, 163–178, *World Sci. Ser. Appl. Anal.*, 1, *World Sci. Publishing, River Edge, NJ*, 1992. (Pavol Marušiak) **93g:34109** 34K15 (34K40)
— (*with* Neuman, František; Vosmanský, Jaromír) Principal pairs of solutions of linear second order oscillatory differential equations. *Differential Integral Equations* **5** (1992), *no.* 4, 945–960. (V. B. Headley) **93g:34013** 34A30 (34B30, 34C10, 34C11)
— (*with* Kusano, Takaši) On differential equation $y'' + p(t)|y'|\operatorname{sgn} y + q(t)y = 0$. *Hiroshima Math. J.* **22** (1992), *no.* 1, 203–218. (James M. D'Archangelo) **93g:34045** 34C10
— Asymptotic behaviour of the analytic solution of the differential equation $y'(t) + y(qt) = 0$ as $q \to 1^-$. (English summary) Asymptotic methods in analysis and combinatorics. *J. Comput. Appl. Math.* **41** (1992), *no.* 1-2, 5–22. (Klaus Morgenthal) **93m:34106** 34K15 (34K25)
El Bestawy, R. S. (*with* Sobeih, M. M.) A study for finding the solution of a differential equation by using approximations. (English summary) *Proc. Pakistan Acad. Sci.* **28** (1991), *no.* 2, 183–196. 34A50 (65L10)
El Bouhtouri, A. (*with* Pritchard, A. J.) Stability radii of linear systems with respect to stochastic perturbations. *Systems Control Lett.* **19** (1992), *no.* 1, 29–33. (Takashi Yahagi) **93g:93063** 93D09 (93E15)
Elby, Andrew Should we explain the EPR correlations causally? *Philos. Sci.* **59** (1992), *no.* 1, 16–25. (Dennis Dieks) **93a:81011** 81P05
El-Daou, M. K. (*with* Namasivayam, S.; Ortiz, E. L.) Differential equations with piecewise approximate coefficients: discrete and continuous estimation for initial and boundary value problems. *Comput. Math. Appl.* **24** (1992), *no.* 4, 33–47. (Summary) **93b:65101** 65L10
— (*with* Ortiz, E. L.) Error analysis of the tau method: dependence of the error on the degree and on the length of the interval of approximation. (English summary) *Comput. Math. Appl.* **25** (1993), *no.* 7, 33–45. (I. N. Molchanov) **93m:65110** 65L10 (65L70)
El-Dawaliby, N. (*with* Zaghrout, Afaf A. S.) Generalizations to Gronwall-Bellman-Reid inequalities. (English summary) *Proc. Pakistan Acad. Sci.* **28** (1991), *no.* 3, 279–294. (Jerzy Popenda) **93m:26045** 26D15 (34A40)
El-Deeb, S. N. (*with* Abd El-Monsef, M. E.; Hanafy, I. M.) Fuzzy weakly α-continuous functions. *Bull. Inst. Math. Acad. Sinica* **19** (1991), *no.* 1, 75–85. (Osmo Kaleva) **93c:54002** 54A40 (04A72)
El-Deen Mohamedein, M. Sh. (*with* Iskandar, Labib) Solitary waves interaction for the BBM equation. *Comput. Methods Appl. Mech. Engrg.* **96** (1992), *no.* 3, 361–372. (Summary) **93b:65126** 65M06 (35Q35, 76B25)
mohie El-Din, M. M. *see* **Mohie El-Din, M. M.**
El Djalil Kateb, Mohamed (*with* Bourdaud, Gérard) Calcul fonctionnel dans l'espace de Sobolev fractionnaire. [Functional calculus in fractional Sobolev spaces] *Math. Z.* **210** (1992), *no.* 4, 607–613. (Takahide Kurokawa) **93i:46058** 46E35 (26B40, 47B38)
Eldred, L. B. (*with* Kapania, R. K.) Solution of nonlinear partial differential equations using the Chebyshev spectral method. (English summary) *Comput. Mech.* **8** (1991), *no.* 3, 173–179. (Summary) **93e:65122** 65M70
Elduque, Alberto (*with* Myung, Hyo Chul) On Okubo algebras. *From symmetries to strings: forty years of Rochester Conferences (Rochester, NY*, 1990), 299–310, *World Sci. Publishing, River Edge, NJ*, 1990. (Sebastian Walcher) **93f:17004** 17A30 (17A75, 17B60)
— On some identities in mutation algebras. (Spanish. English summary) *Proceedings of the XVth Portuguese-Spanish Conference on Mathematics, Vol. I (Portuguese) (Évora*, 1990), 113–118, *Univ. Évora, Évora*, 1991. (Summary) **93a:17031** 17D25
— A note on the Frattini subalgebra of a nonassociative algebra. (English summary) *Nonassociative algebraic models (Zaragoza*, 1989), 119–129, *Nova Sci. Publ., Commack, NY*, 1992. (Edgar G. Goodaire) **93j:17060** 17D10 (17D05)
— On the J-potency of Mal'cev algebras. *J. Algebra* **147** (1992), *no.* 1, 81–89. (Yuri Medvedev) **93b:17086** 17D10
— (*with* Myung, Hyo Chul) Color algebras and affine connections on S^6. *J. Algebra* **149** (1992), *no.* 1, 234–261. (A. A. Sagle) **93e:17008** 17A99 (17B25, 17B81, 22E70, 53B05, 81R05)
— (*with* Albuquerque, Helena) On the nullity of Lie algebras. *Linear Algebra Appl.* **166** (1992), 195–206. (Joseph C. Ferrar) **93c:17051** 17B99
Eleev, V. A. Boundary value problems with shift for hyperbolic-type nonlinear equations. (Russian) *Boundary value problems for equations in mathematical physics (Russian)*, 85–89, *Kuibyshev. Gos. Ped. Inst., Kuybyshev*, 1991. (*see* **93f:35006**) 35L70
abou-El-Ela, A. M. A. *see* **Abou-El-Ela, A. M. A.**
Eleonskiĭ, V. M. (*with* Alfimov, G. L.; Kulagin, N. E.) Dynamical systems in the theory of solitons in the presence of nonlocal interactions. (English summary) *Chaos* **2** (1992), *no.* 4, 565–570. (Summary) **93k:35225** 35Q51

— (*with* Dubov, S. Yu.; Kulagin, N. E.) Equidistant spectra of anharmonic oscillators. *Soviet Phys. JETP* **75** (1992), *no.* 3, 446–451; *translated from Zh. Èksper. Teoret. Fiz.* **102** (1992), *no.* 3, 814–825 (*Russian*). (Summary) **93h:81022** 81Q05 (34L40, 35J10)

Elewa, S. A. (*with* Nagarsenker, B. N.; Nagarsenker, P. B.) On a test of equality of exponential populations based on censored samples. (English summary) *Comm. Statist. Simulation Comput.* **21** (1992), *no.* 3, 909–917. (David Birkes) **93j:62050** 62F03 (62E15)

Elezović-Hadžić, Sunčica (*with* Milošević, Sava) Critical exponent ν of the self-avoiding walks on plane X and checkerboard fractal families. (English summary) *J. Phys. A* **25** (1992), *no.* 15, 4095–4102. (Summary) **93g:82050** 82B41 (82B28)

Elfes, A. Multi-source spatial data fusion using Bayesian reasoning. *Data fusion in robotics and machine intelligence*, 137–163, *Academic Press, Boston, MA*, 1992. (*see* **93g:68002**) 68U05

Elfessi, Abdulaziz (*with* Pal, Nabendu) A note on the common mean of two normal populations with order restricted variances. (English summary) *Comm. Statist. Theory Methods* **21** (1992), *no.* 11, 3177–3184. (Adnan M. Awad) **93k:62049** 62F10

Elfimov, V. S. (*with* Vypov, A. G.) Composition of a mathematical model of a branched manipulator at the design stage. (Russian. Russian summary) *Mekh. Tverd. Tela No.* 24 (1992), 111–117. 70B15

El-Gamal, Mahmoud A. The role of priors in active Bayesian learning in the sequential statistical decision framework. *Maximum entropy and Bayesian methods (Laramie, WY*, 1990), 33–38, *Fund. Theories Phys.*, 43, *Kluwer Acad. Publ., Dordrecht*, 1991. (*see* **93b:00011**) 90A19

El-Gawad, H. R. *see* **Abdel-Gawad, H. R.**

El-Gebeily, Mohamed (*with* Moustafa, Kamal A. F.) Asymptotic analysis of almost periodic weakly nonlinear systems. *Internat. J. Control* **54** (1991), *no.* 3, 561–575. (M. M. Khapaev) **93a:34058** 34C99 (34E05)

El-Gendi, S. (*with* Nasr, H.; El-Hawary, H. M.) Numerical solution of Poisson's equation by expansion in Chebyshev polynomials. (English summary) *Bull. Calcutta Math. Soc.* **84** (1992), *no.* 5, 443–449. 65N99 (35C10)

El Ghali, A. Méthode du sous-gradient réduit généralisé comme extension du GRG d'Abadie au cas non différentiable. (English and French summaries) [The generalized reduced subgradient method as an extension of Abadie's GRG method to the nondifferentiable case] *RAIRO Rech. Opér.* **26** (1992), *no.* 3, 237–267. (Phan Quốc Khánh) **93i:90088** 90C30 (49J52, 49M07, 49M37)

El Ghali, Badia Un type d'homéomorphisme pour la convergence au sens de Mosco. (English summary) [A type of homeomorphism of the Mosco convergence] *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 11, 825–828. (Dominique Azé) **93i:49019** 49J45 (46G99, 49J50)

El Ghaoui, Laurent Fast computation of the largest stability radius for a two-parameter linear system. *IEEE Trans. Automat. Control* **37** (1992), *no.* 7, 1033–1037. 93D05 (93B40)

— (*with* Carrier, Alain; Bryson, Arthur E., Jr.) Linear quadratic minimax controllers. *J. Guidance Control Dynamics* **15** (1992), *no.* 4, 953–961. (Zoran Gajic) **93f:93063** 93B51 (49N10, 93B36, 93B60)

El-Ghezawi, Omar M. A two-stage method for eigenvalue-eigenvector assignment. (English and Arabic summaries) *Dirasat Ser. B Pure Appl. Sci.* **17** (1990), *no.* 1, 65–77. 93B55

Elgin, John (*with* Kent, Phillip) Travelling-waves of the Kuramoto-Sivashinsky equation: period-multiplying bifurcations. *Nonlinearity* **5** (1992), *no.* 4, 899–919. (Jürgen Scheurle) **93g:58106** 58F14 (34C25, 34C37, 35Q58)

Elgindi, M. B. M. (*with* Yen, D. H. Y.) On the existence of equilibrium states of an elastic beam on a nonlinear foundation. (English summary) *Internat. J. Math. Math. Sci.* **16** (1993), *no.* 1, 193–198. (Summary) **93k:73047** 73K05 (34B15, 73H05, 73V25)

El-Gindy, Hossam (*with* Keil, J. Mark) Efficient algorithms for the capacitated 1-median problem. (English summary) *ORSA J. Comput.* **4** (1992), *no.* 4, 418–425. 90C27

Elgondyev, K. K. (*with* Rogovchenko, Yu. V.) Application of the averaging method for the study of differential equations with impulse action. (Russian. Russian summary) *Asymptotic solutions of nonlinear equations with a small parameter (Russian)*, 32–36, *Akad. Nauk Ukrainy, Inst. Mat., Kiev*, 1991. (*see* **93f:34003**) 34C29 (34A37)

— (*with* Mitropol'skiĭ, Yu. A.; Androsenko, N. P.; Samoilenko, V. Gr.) Construction of asymptotic approximations for weakly nonlinear first-order differential-difference equations with instantaneous correction of the initial data. (Russian) *Akad. Nauk Ukrainy Inst. Mat. Preprint* **1992**, *no.* 6, 1–13. (Klaus Morgenthal) **93j:34115** 34K25 (34K15)

Elgot-Drapkin, Jennifer J. Step-logic and the three-wise-men problem. (English summary) *AAAI-91. Proceedings, Ninth National Conference on Artificial Intelligence, Vol.* 1, 2, 412–417, *AAAI Press, Menlo Park, CA*, 1991. (*see* **93i:68011**) 68T27

El Gradechi, Amine M. (*with* De Bièvre, Stephan) Quantum mechanics and coherent states on the anti-de Sitter spacetime and their Poincaré contraction. (English and French summaries) *Ann. Inst. H. Poincaré Phys. Théor.* **57** (1992), *no.* 4, 403–428. (Avraham Forge) **93m:81053** 81R30 (83C47)

— (*with* Balbinot, Roberto; Gazeau, Jean-Pierre; Giorgini, Bruno) Phase spaces for quantum elementary systems in anti-de Sitter and Minkowski spacetimes. *J. Phys. A* **25** (1992), *no.* 5, 1185–1210. (J.-P. Antoine) **93j:81058** 81S30 (22E70, 81R05, 81S10)

Elhadad, J. (*with* Duval, C.) Geometric quantization and localization of relativistic spin systems. (English summary) *Mathematical aspects of classical field theory (Seattle, WA*, 1991), 317–330, *Contemp. Math.*, 132, *Amer. Math. Soc., Providence, RI*, 1992. (Alexander D. Popov) **93i:81103** 81S10 (22E70, 58F06, 81R05)

— (*with* Duval, C.; Tuynman, G. M.) Pukanszky's condition and symplectic induction. (English summary) *J. Differential Geom.* **36** (1992), *no.* 2, 331–348. (Eugene Lerman) **93j:58056** 58F06 (22E60, 81S10)

El Hadi, Kamal (*with* Deshmukh, Sharief) A Sasakian structure on a 3-dimensional totally real submanifold of the nearly Kaehler 6-sphere. *Panamer. Math. J.* **2** (1992), *no.* 3, 43–52. (Kouei Sekigawa) **93f:53023** 53C15 (53C25, 53C40)

abd El-Hakeim, K. M. *see* **Abd El-Hakeim, K. M.**

abd-El-Hakim, Nagi S. *see* **Abd-El-Hakim, Nagi S.**

abd El-Halim, Fayza *see* **Abd El-Halim, Fayza**

El-Hamouly, Hassan M. (*with* El-Abyad, Abdelwahab M.) Completeness of the standard fuzzy real line for FNS. (English summary) *Fuzzy Sets and Systems* **51** (1992), *no.* 1, 95–103. (Summary) **93f:54006** 54A40 (04A72)

El Haouari, Mohammed p-formalité des espaces. [p-formality of spaces] *J. Pure Appl. Algebra* **78** (1992), *no.* 1, 27–47. (Marc Aubry) **93d:55016** 55P62

ElHarrouni, K. (*with* Ouazar, D.; Wrobel, L. C.; Brebbia, C. A.) Dual reciprocity boundary element method for heterogeneous porous media. (English summary) *Boundary element technology, VII (Albuquerque, NM*, 1992), 151–159, *Comput. Mech., Southampton*, 1992. (*see* **93b:65002**) 76M15 (65N38, 76S05)

El-Hawary, H. M. (*with* El-Gendi, S.; Nasr, H.) Numerical solution of Poisson's equation by expansion in Chebyshev polynomials. (English summary) *Bull. Calcutta Math. Soc.* **84** (1992), *no.* 5, 443–449. 65N99 (35C10)

Elhay, Sylvan (*with* Boley, Daniel L.; Golub, Gene H.; Gutknecht, Martin H.) Nonsymmetric Lanczos and finding orthogonal polynomials associated with indefinite weights. *Numer. Algorithms* **1** (1991), *no.* 1, 21–43. (Alexander S. Babanin) **93f:65033** 65F15 (65F30, 65F50, 65G05)

— (*with* Golub, Gene H.; Kautský, Jaroslav) Jacobi matrices for sums of weight functions. (English summary) *BIT* **32** (1992), *no.* 1, 143–166. (Summary) **93k:65036** 65F30 (65D15)

Elhefnawy, Abdel Raouf F. The Rayleigh-Taylor instability in magnetic fluids and nonlinear interfacial waves. (English and French summaries) *Canad. J. Phys.* **70** (1992), *no.* 8, 603–609. (Summary) **93h:76035** 76E25 (76E30, 76W05)

— Nonlinear Rayleigh-Taylor instability in magnetic fluids between two parallel plates. (English summary) *Internat. J. Theoret. Phys.* **31** (1992), *no.* 8, 1505–1520. (Summary) **93e:76031** 76E25 (76E30, 76W05)

— Nonlinear electrohydrodynamic Kelvin-Helmholtz instability under the influence of an oblique electric field. *Phys. A* **182** (1992), *no.* 3, 419–435. (E. Infeld) **93b:76036** 76E25 (76W05)

El-Helaly, Sherif (*with* Husain, Taqdir) Orthogonal bases characterizations of the Banach algebras l_1 and c_0. (English summary) *Math. Japon.* **37** (1992), *no.* 4, 649–655. (Krzysztof Jarosz) **93g:46045** 46H20 (46B15)

El-Helbawy, Abdalla T. (*with* Hassan, Tawfik) Some direct methods for testing hypotheses in 2^n factorial paired comparison models. (English summary) *Proc. Pakistan Acad. Sci.* **29** (1992), *no.* 2, 127–143. 62J15 (62K15)

Elia, Michele (*with* Taricco, Giorgio) A note on linear equations modelling birth-and-death processes. (English summary) *Math. Comput. Modelling* **16** (1992), *no.* 12, 61–69. 60J80

Eliahou, Shalom (*with* Kervaire, Michel; Saffari, Bahman) On Golay polynomial pairs. *Adv. in Appl. Math.* **12** (1991), *no.* 3, 235–292. (Michio Ozeki) **93b:68066** 68R05 (05A19, 11B83)

— (*with* Kervaire, Michel) Barker sequences and difference sets. *Enseign. Math.* (2) **38** (1992), *no.* 3-4, 345–382. (Alexander Pott) **93i:11018** 11B50 (05B10, 68R05)

Elias, Georges (*with* Malbéqui, Patrice) Scattering by an open sphere: exact solution and comparison with a boundary integral method. (English summary) *J. Acoust. Soc. Amer.* **93** (1993), *no.* 2, 609–616. (Summary) **93k:76101** 76Q05

Eliáš, Jozef On the properties of the solutions of nonlinear differential equation of the third order. *Conference on Differential Equations and Applications (Ruse*, 1989), 110–115, *Tech. Univ., Ruse*, 1991. (*see* **93f:34004**) 34C10

Elías, Juan (*with* Buchberger, Bruno) Using Gröbner bases for detecting polynomial identities: a case study on Fermat's ideal. *J. Number Theory* **41** (1992), *no.* 3, 272–279. (Gianfranco Niesi) **93h:13028** 13P10 (12E10)

— A numerical characterization of hypersurface singularities. *Proc. Amer. Math. Soc.* **119** (1993), *no.* 1, 15–17. (Adam Parusiński) **93k:14007** 14B05 (13H15)

Eliashberg, Yakov Filling by holomorphic discs and its applications. *Geometry of low-dimensional manifolds*, 2 (*Durham*, 1989), 45–67, *London Math. Soc. Lecture Note Ser.*, 151, *Cambridge Univ. Press, Cambridge*, 1990. (Nikolai K. Smolentsev) **93g:53060** 53C23 (32D10, 53C15, 58E99)

— (*with* Gromov, Mikhael L.) Convex symplectic manifolds. *Several complex variables and complex geometry, Part* 2 (*Santa Cruz, CA*, 1989), 135–162, *Proc. Sympos. Pure Math.*, 52, *Part* 2, *Amer. Math. Soc., Providence, RI*, 1991. (Introduction) **93f:58073** 58F05 (32E10, 53C15, 53C23)

— Contact 3-manifolds twenty years since J. Martinet's work. (French summary) *Ann. Inst. Fourier (Grenoble)* **42** (1992), *no.* 1-2, 165–192. (Nikolai K. Smolentsev) **93k:57029** 57M50 (53C15, 57R15, 58F05)

— (*with* Gromov, Mikhael L.) Embeddings of Stein manifolds of dimension n into the affine space of dimension $3n/2 + 1$. *Ann. of Math.* (2) **136** (1992), *no.* 1, 123–135. (Zong Yuan Yao) **93g:32037** 32H35 (32E10)

— (*with* Hofer, Helmut) Towards the definition of symplectic boundary. *Geom. Funct. Anal.* **2** (1992), *no.* 2, 211–220. (Nikolai K. Smolentsev) **93c:58069** 58F05 (53C23, 57R32, 58F18)

Eliasson, L. H. Floquet solutions for the 1-dimensional quasi-periodic Schrödinger equation. *Comm. Math. Phys.* **146** (1992), *no.* 3, 447–482. (Tuncay Aktosun) **93d:34141** 34L40 (81Q05)

Eliezer, D. (*with* Semenoff, Gordon W.) Anyonization of lattice Chern-Simons theory. *Ann. Physics* **217** (1992), *no.* 1, 66–104. (Kornél Szlachányi) **93i:81174** 81T25 (81T13, 82D55)

Eliopoulou, H. (*with* Karcanias, Nicos) Geometric properties of the Segre characteristic at infinity of a singular pencil. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, II (Kobe*, 1991), 109–114, *Mita, Tokyo*, 1992. (*see* **93g:93006**) 93B29 (15A22)

Elipe Sánchez, Antonio C. (*with* Abad, A.; Arribas, M.) Scaling Hamiltonians in attitude dynamics of two rigid bodies. (English summary) *Rev. Acad. Cienc. Zaragoza* (2) **47** (1992), 147–154. (Summary) **93k:70010** 70E99 (70H05, 70M20)

Elishakoff, Isaac (*with* Cai, Guo Qiang; Lin, Y. K.) A new approximate solution technique for randomly excited nonlinear oscillators. II. (English summary) *Internat. J. Non-Linear Mech.* **27** (1992), *no.* 6, 969–979. (Summary) **93g:70028** 70L05 (70–08)

— (*with* Zhang, X.) An appraisal of different stochastic linearization techniques. *J. Sound Vibration* **153** (1992), *no.* 2, 370–375. (Andrzej Tylikowski) **93c:70016** 70L05 (34F05)

— (*with* Colombi, Pierluigi) Combination of probabilistic and convex models of uncertainty when scarce knowledge is present on acoustic excitation parameters. (English summary) *Comput. Methods Appl. Mech. Engrg.* **104** (1993), *no.* 2, 187–209. (Summary) **93m:73027** 73K35 (73V30)

Elitzur, Avshalom C. Locality and indeterminism preserve the second law. *Phys. Lett. A* **167** (1992), *no.* 4, 335–340. (Lawrence Sklar) **93e:81015** 81P99 (83A05)

Elitzur, S. (*with* Forge, A.; Rabinovici, E.) Comments on the importance of being over-constrained. (English summary) *Phys. Lett. B* **289** (1992), *no.* 1-2, 45–50. (Summary) **93f:81151** 81T99 (81T40, 81V10, 81V17)

ben-Eliyahu, Rachel *see* **Ben-Eliyahu, Rachel**

Elizalde, E. (*with* Odintsov, S. D.) Renormalization group equations in curved space-time with nontrivial topology. *Europhys. Lett.* **19** (1992), *no.* 4, 261–265. (Summary) **93d:81125** 81T20

— (*with* Romeo, A.) Epstein-function analysis of the Casimir effect at finite temperature for massive fields. (English summary) *Internat. J. Modern Phys. A* **7** (1992), *no.* 29, 7365–7399. (Martin Leblanc) **93i:81149** 81T15 (58G20, 58G26, 81Q05, 81T20)

— (*with* Odintsov, S. D.) Spontaneous compactification in 2D induced quantum gravity. (English summary) *Modern Phys. Lett. A* **7** (1992), *no.* 26, 2369–2376. (Summary) **93g:81147** 81T40

— (*with* Odintsov, S. D.) Renormalization of 2D quantum gravity with matter in connection with black holes. *JETP Lett.* **56** (1992), *no.* 4, 185–187; *translated from Pis'ma Zh. Éksper. Teoret. Fiz.* **56** (1992), *no.* 4, 189–191 (*Russian*). (Summary) **93f:83037** 83C45 (81V17, 83C57)

— (*with* Odintsov, S. D.) One-loop divergences in two-dimensional Maxwell-dilaton quantum gravity. (English summary) *Modern Phys. Lett. A* **8** (1993), *no.* 1, 33–43. (Summary) **93i:81224** 81T40

— (*with* Bytsenko, A. A.; Odintsov, S. D.; Zerbini, Sergio) A finite temperature periodic structure in (super)string theory. (English summary) *Modern Phys. Lett. A* **8** (1993), *no.* 12, 1131–1138. (Summary) **93m:81113** 81T30

Elizarov, A. M. (*with* Il'inskii, N. B.; Potashev, A. V.) Inverse boundary value problems of aerohydrodynamics as a theoretical basis for the design of wing profiles in a subsonic flow. (Russian. Russian summary) *Model. Mekh.* **5** (1991), *no.* 1, 121–140. (Summary) **93i:76049** 76G25 (76M25)

— (*with* Il'inskii, A. N.; Il'inskii, N. B.; Potashev, A. V.; Fokin, D. A.) Aerohydrodynamically appropriate velocity distributions in inverse boundary value problems of subsonic aerohydrodynamics. (Russian) *Trudy Sem. Kraev. Zadacham No.* 26 (1991), 115–137. 76B05 (76G25)

— (*with* Fokin, D. A.) An inverse boundary value problem in aerodynamics with specification of the velocity distribution for two angles of attack. (Russian) *Trudy Sem. Kraev. Zadacham No.* 26 (1991), 137–148. 76G25

Elizarov, V. P. (*with* Alekseichuk, A. N.) Finite rings with a large number of zero divisors. (Russian. Russian summary) *Diskret. Mat.* **4** (1992), *no.* 2, 45–51. (Summary) **93g:16028** 16P10

El Jaï, A. Actuators and controllability of distributed systems. (English summary) *Stabilization of flexible structures* (*Montpellier*, 1989), 109–125, *Lecture Notes in Control and Inform. Sci.*, 147, *Springer, Berlin*, 1990. (*see* **93c:93006**) 93B05 (93C20)

— (*with* Pritchard, A. J.) Regional controllability of distributed systems. (English summary) *Analysis and optimization of systems: state and frequency domain approaches for infinite-dimensional systems* (*Sophia-Antipolis*, 1992), 326–335, *Lecture Notes in Control and Inform. Sci.*, 185, *Springer, Berlin*, 1993. (Summary) **93m:93010** 93B05 (93C20)

Eljendy, A. Numerical approach to the exact controllability of hyperbolic systems. *Boundary control and boundary variation* (*Sophia-Antipolis*, 1990), 202–214, *Lecture Notes in Control and Inform. Sci.*, 178, *Springer, Berlin*, 1992. (*see* **93b:49001**) 93B05 (65M60)

El Kaabouchi, A. Sur l'épaisseur d'une capacité alternée d'ordre *n*. [On the thickness of an alternating capacity of order *n*] *Séminaire d'Initiation à l'Analyse, Comm. No.* 1, 4 *pp., Publ. Math. Univ. Pierre et Marie Curie*, 95, *Univ. Paris VI, Paris*, 199?. (*see* **93d:00039**) 28A12

El Kacimi-Alaoui, A. Invariants de certaines actions de Lie. Instabilité du caractère Fredholm. [Invariants of certain Lie actions. Instability of the Fredholm character] *Manuscripta Math.* **74** (1992), *no.* 2, 143–160. (W. T. van Est) **93f:58024** 58D19 (47A99, 58B15)

El Karoui, Nicole (*with* Karatzas, Ioannis) A new approach to the Skorohod problem, and its applications. *Stochastics Stochastics Rep.* **34** (1991), *no.* 1-2, 57–82. (H.-J. Engelbert) **93b:60088a** 60G40 (60J50, 60J65, 93E20)

— (*with* Karatzas, Ioannis) Correction: "A new approach to the Skorohod problem, and its applications". *Stochastics Stochastics Rep.* **36** (1991), *no.* 3-4, 265. (H.-J. Engelbert) **93b:60088b** 60G40 (60J50, 60J65, 93E20)

— (*with* Jeanblanc-Picqué, Monique; Viswanathan, Ravi) Bounds for the price of options. *Applied stochastic analysis* (*New Brunswick, NJ*, 1991), 224–237, *Lecture Notes in Control and Inform. Sci.*, 177, *Springer, Berlin*, 1992. (Summary) **93c:90019** 90A12 (60G99)

— (*with* Lepeltier, J.-P.; Millet, Annie) A probabilistic approach to the reduite in optimal stopping. (English summary) *Probab. Math. Statist.* **13** (1992), *no.* 1, 97–121. (V. Mackevičius) **93k:60108** 60G40

El-Kassar, Nasser *see* **el-Kassar, Nasser**

Elkhader, A. S. A result on a feedback system of ordinary differential equations. (English summary) *J. Dynamics Differential Equations* **4** (1992), *no.* 3, 399–418. (H. I. Freedman) **93g:34070** 34C35 (34C25, 92D25, 92D40)

El-Khatib, A. Sur les anneaux quasi-reguliers. (English and Italian summaries) [On quasiregular rings] *Rend. Mat. Appl.* (7) **11** (1991), *no.* 3, 617–632. (S. Greco) **93b:13036** 13F99 (13E05, 13H10)

El-Khoury, Mario (*with* Crisalle, Oscar D.) Relative zero location for second-order sampled systems. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 10, 1551–1552. 93B55 (93C57)

El'khovskii, A. S. (*with* Sil'vestrov, P. G.) Exact solution of two-dimensional gravity via analytic continuation of matrix model. *Modern Phys. Lett. A* **6** (1991), *no.* 30, 2749–2756. (Summary) **93e:81127** 81T40 (81–02)

Elkies, Noam D. Distribution of supersingular primes. Journées Arithmétiques, 1989 (Luminy, 1989). *Astérisque No.* 198-200 (1991), 127–132 (1992). (Joseph H. Silverman) **93b:11070** 11G05

— *ABC* implies Mordell. *Internat. Math. Res. Notices* **1991**, *no.* 7, 99–109. (Joseph H. Silverman) **93d:11064** 11G30 (11D41)

El Kinani, A. Fonctions analytiques de contractions topologiques dans les algèbres hermitiennes. (English summary) [Analytic functions of topological contractions in Hermitian algebras] *Collect. Math.* **41** (1990), *no.* 3, 197–216 (1992). (F.-H. Vasilescu) **93e:46053** 46H30 (46G99, 46K99)

El Koutri, Abdelkader Synthèse du cercle dans certaines algèbres de Banach stables par rotations. (English summary) [Synthesis of the circle in some Banach algebras stable under rotations] *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 7, 531–533. (Summary) **93b:43006** 43A45 (46J99)

El-Krunz, Sadi M. (*with* Studden, W. J.) Bayesian optimal designs for linear regression models. *Ann. Statist.* **19** (1991), *no.* 4, 2183–2208. (N. Gaffke) **93a:62104** 62K05 (62C10)

abd El-Latif, G. M. *see* **Abd El-Latif, G. M.**

El-Leithy, O. A. (*with* El-Owaidy, Hassan M.) Limit cycles in the chemostat. (English summary) *Proc. Pakistan Acad. Sci.* **28** (1991), *no.* 3, 217–224. (Summary) **93h:92025** 92D25 (80A30)

Ellentuck, E. (*with* Dekker, J. C. E.) Myhill's work in recursion theory. *Ann. Pure Appl. Logic* **56** (1992), *no.* 1-3, 43–71. (Roman Murawski) **93d:03048** 03D30 (01A70, 03–03, 03D50)

Ellers, Erich W. (*with* Ishibashi, Hiroyuki) Bireflectionality of the orthogonal group over a valuation domain. *J. Algebra* **149** (1992), *no.* 2, 322–325. (Summary) **93f:20064** 20H25

— *see also* **Generators and relations in groups and geometries, 93i:00017**

Ellers, Harald (*with* Hill, Gregory) Block multiplicities and the Brauer correspondence. *J. Algebra* **147** (1992), *no.* 2, 491–508. (David Benson) **93e:20013** 20C20

— (*with* Hill, Gregory) A local characterization of the Alperin-Burry correspondence. *J. Algebra* **150** (1992), *no.* 2, 427–434. (V. A. Belonogov) **93h:20008** 20C20

Ellia, Philippe (*with* Idà, Monica) Some connections between equations and geometric properties of curves in $\mathbf{P}^3$. *Geometry and complex variables* (*Bologna*, 1988/1990), 177–188, *Lecture Notes in Pure and Appl. Math.*, 132, *Dekker, New York*, 1991. (Angelo Lopez) **93d:14046** 14H50 (14H45)

— (*with* Hirschowitz, André; Mezzetti, Emilia) On the number of irreducible components of the Hilbert scheme of smooth space curves. *Internat. J. Math.* **3** (1992), *no.* 6, 799–807. (Şerban Bârcânescu) **93j:14006** 14C05 (14H10)

— (*with* Hirschowitz, André) Voie ouest. I. Génération de certains fibrés sur les espaces projectifs et application. [Western track. I. Generation of certain bundles over projective spaces, and application] *J. Algebraic Geom.* **1** (1992), *no.* 4, 531–547. (Laurent Manivel) **93h:14033** 14J60 (14H50)

Ellinas, D. (*with* Chaichian, M.; Prešnajder, Peter) Path integrals and supercoherent states. *J. Math. Phys.* **32** (1991), *no.* 12, 3381–3391. (Kishin Mariwalla) **93c:81074** 81R30 (81S40)

Ellingham, M. N. (*with* Royle, Gordon F.) Vertex-switching reconstruction of subgraph numbers and triangle-free graphs. *J. Combin. Theory Ser. B* **54** (1992), *no.* 2, 167–177. (Y. Roditty) **93d:05112** 05C60

— Sum graphs from trees. (English summary) *Ars Combin.* **35** (1993), 335–349. (Summary) **93m:05172** 05C78 (05C05)

— (*with* Campbell, S. R.; Royle, Gordon F.) A characterisation of well-covered cubic graphs. (English summary) *J. Combin. Math. Combin. Comput.* **13** (1993), 193–212. (Summary) **93m:05160** 05C75 (68R10)

Ellingsrud, G. *see* **Complex projective geometry, 93g:14002**

Elliot, Robert J. Prior, intermittent identity and Leibniz' law. *Logique et Anal.* (*N.S.*) **32** (1989), *no.* 125-126, 55–60. 03A05

Elliott, Charles M. (*with* Blowey, J. F.) The Cahn-Hilliard gradient theory for phase separation with nonsmooth free energy. I. Mathematical analysis. *European J. Appl. Math.* **2** (1991), *no.* 3, 233–280. (Bishun Pandey) **93a:35025** 35D10 (35B40, 80A22)

— (*with* Blowey, J. F.) The Cahn-Hilliard gradient theory for phase separation with nonsmooth free energy. II. Numerical analysis. *European J. Appl. Math.* **3** (1992), *no.* 2, 147–179. (Bishun Pandey) **93g:80007** 80A22 (35K85, 35Q99, 49M07, 65M60)

— *see also* **Conference: Dynamics of Numerics and Numerics of Dynamics, 93d:65002**

Elliott, David L. The geometry of nonlinear control systems. *Mathematical theory of control* (*Bombay*, 1990), 125–141, *Lecture Notes in Pure and Appl. Math.*, 142, *Dekker, New York*, 1993. (Kevin A. Grasse) **93j:93031** 93B27 (93B05, 93B07, 93B29)

Elliott, George A. (*with* Loring, Terry A.) AF embeddings of $C(\mathbf{T}^2)$ with a prescribed K-theory. *J. Funct. Anal.* **103** (1992), *no.* 1, 1–25. (Cornel Pasnicu) **93b:46134** 46L80 (19A99, 46L05)

— (*with* Blackadar, Bruce; Bratteli, Ola; Kumjian, Alexander) Reduction of real rank in inductive limits of C^*-algebras. *Math. Ann.* **292** (1992), *no.* 1, 111–126. (Cornel Pasnicu) **93a:46112** 46L05

— Are amenable C^*-algebras classifiable? *Representation theory of groups and algebras*, 423–427, *Contemp. Math.*, 145, *Amer. Math. Soc., Providence, RI*, 1993. (*see* **93k:00028**) 46K05 (19K14, 46L80)

Elliott, J. R. (*with* Gibbons, Peter B.) The construction of subsquare free Latin squares by simulated annealing. *Australas. J. Combin.* **5** (1992), 209–228. (Summary) **93a:05033** 05B15

Elliott, P. D. T. A. Additive functions on shifted primes. *Bull. Amer. Math. Soc.* (*N.S.*) **27** (1992), *no.* 2, 273–278. (Adolf Hildebrand) **93c:11077** 11N37 (11K65, 11L20)

Elliott, Robert James (*with* Kopp, P. Ekkehard) Equivalent martingale measures for bridge processes. *Stochastic Anal. Appl.* **9** (1991), *no.* 4, 429–444. (Yu. M. Kabanov) **93a:60064** 60G30 (60G55, 90A09)

— Finite-dimensional filters related to Markov chains. (English summary) *Stochastic theory and adaptive control* (*Lawrence, KS*, 1991), 142–160, *Lecture Notes in Control and Inform. Sci.*, 184, *Springer, Berlin*, 1992. (Jean Picard) **93m:93089** 93E11 (94A12)

— (*with* Colwell, David B.) Martingale representation and nonattainable contingent claims. *System modelling and optimization* (*Zurich*, 1991), 833–842, *Lecture Notes in Control and Inform. Sci.*, 180, *Springer, Berlin*, 1992. (A. I. Yastremskii) **93g:90013** 90A09 (60G44)

— (*with* Sworder, D. D.) Control of a hybrid conditionally linear Gaussian process. *J. Optim. Theory Appl.* **74** (1992), *no.* 1, 75–85. (Leopoldo Jetto) **93f:93138** 93E20 (93E11)

— (*with* Aggoun, Lakhdar) Finite-dimensional predictors for hidden Markov chains. (English summary) *Systems Control Lett.* **19** (1992), *no.* 5, 335–340. (P. Neumann) **93k:93109** 93E11

— New finite-dimensional filters and smoothers for noisily observed Markov chains. (English summary) *IEEE Trans. Inform. Theory* **39** (1993), *no.* 1, 265–271. (Summary) **93m:94006** 94A12

Ellis, A. J. Real linear isometries of complex function spaces. *Function spaces* (*Edwardsville, IL*, 1990), 71–78, *Lecture Notes in Pure and Appl. Math.*, 136, *Dekker, New York*, 1992. (Eggert Briem) **93c:46040** 46E15 (46J10)

— Affine geometry in complex function spaces and algebras. *Proceedings of Asian Mathematical Conference*, 1990 (*Hong Kong*, 1990), 127–131, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93b:00022**) 46J10

Ellis, George F. R. (*with* Stoeger, William R.; Nel, Stanley D.) Observational cosmology. III. Exact spherically symmetric dust solutions. *Classical Quantum Gravity* **9** (1992), *no.* 2, 509–525. (Peter Szekeres) **93e:83021** 83C15 (83F05)
— (*with* Bruni, Marco; Dunsby, Peter K. S.) Gauge-invariant perturbations in a scalar field dominated universe. *Classical Quantum Gravity* **9** (1992), *no.* 4, 921–945. (Oscar J. P. Éboli) **93c:83124** 83F05
— (*with* Sumeruk, A.; Coule, David H.; Hellaby, C.) Change of signature in classical relativity. *Classical Quantum Gravity* **9** (1992), *no.* 6, 1535–1554. (André Burnel) **93c:83018** 83C20 (83C15)
— (*with* Stoeger, William R.; Nel, Stanley D.) Observational cosmology. IV. Perturbed spherically symmetric dust solutions. *Classical Quantum Gravity* **9** (1992), *no.* 7, 1711–1723. (Peter Szekeres) **93j:83082** 83F05 (83B05, 83C15)
— (*with* Stoeger, William R.; Nel, Stanley D.) Observational cosmology. V. Solution of the first-order general perturbation equations. *Classical Quantum Gravity* **9** (1992), *no.* 7, 1725–1751. (Peter Szekeres) **93j:83083** 83F05 (83B05, 83C15)
— (*with* Xu, Chong Ming) A new higher-order gravitational field equation with $L = R + \Omega R_{\mu\nu} R^{\mu\nu}/R + \tau R_{\alpha\beta\gamma\delta} R^{\alpha\beta\gamma\delta}/R$. *Found. Phys. Lett.* **5** (1992), *no.* 4, 365–371. (Summary) **93c:83108** 83D05 (58E50)
— Covariant change of signature in classical relativity. (English summary) *Gen. Relativity Gravitation* **24** (1992), *no.* 10, 1047–1068. (Charles G. Torre) **93i:83007** 83C05
— (*with* Madsen, Mark S.; Mimoso, José P.; Butcher, Jacqueline A.) Evolution of the density parameter in inflationary cosmology reexamined. (English summary) *Phys. Rev. D* (3) **46** (1992), *no.* 4, 1399–1415. 83F05
— *see also* **Teyssandier, P., 93g:83089**
Ellis, Graham J. ★ Rings and fields. (English. English summary) Oxford Science Publications. *The Clarendon Press, Oxford University Press, New York*, 1992. viii+169 *pp. ISBN* 0-19-853455-8; 0-19-853454-X (T. Albu) **93m:00002** 00A05 (12–01, 13–01)
— Homology of 2-types. *J. London Math. Soc.* (2) **46** (1992), *no.* 1, 1–27. (Steven R. Costenoble) **93h:55014** 55U99 (18G99, 20F05, 20J99, 55P15)
— On five well-known commutator identities. (English summary) *J. Austral. Math. Soc. Ser. A* **54** (1993), *no.* 1, 1–19. (Gheorghe Ivan) **93m:20002** 20A05 (08A99)
Ellis, J. E. (*with* Kandamby, N. H.; Roberts, P. D.) Rationalization and application of algorithms for integrated system optimization and parameter estimation. (English summary) *Internat. J. Systems Sci.* **24** (1993), *no.* 2, 219–229. 93A13 (93C20)
Ellis, Jonathan Richard Four-dimensional string model-building. *Particles, strings and cosmology* (*Boston, MA*, 1990), 395–401, *World Sci. Publishing, River Edge, NJ*, 1991. (*see* **93a:81004**) 81T30
— (*with* Mavromatos, N. E.; Nanopoulos, D. V.) On the connection between quantum mechanics and the geometry of two-dimensional strings. *Phys. Lett. B* **272** (1991), *no.* 3-4, 261–271. (Claus Montonen) **93b:81211** 81T30 (81T40, 81V17)
— (*with* Mavromatos, N. E.; Nanopoulos, D. V.) Quantum mechanics and black holes in four-dimensional string theory. *Phys. Lett. B* **278** (1992), *no.* 3, 246–256. (Piret Kuusk) **93c:83114** 83E30 (81T30, 83C45, 83C57)
— (*with* Mavromatos, N. E.; Nanopoulos, D. V.) Measuring W-hair. *Phys. Lett. B* **284** (1992), *no.* 1-2, 27–35. (Summary) **93c:81165** 81T30 (81V17, 83C57, 83E30)
— (*with* Mavromatos, N. E.; Nanopoulos, D. V.) Measuring the W-hair of string black holes. *Phys. Lett. B* **284** (1992), *no.* 1-2, 43–49. (Summary) **93c:81166** 81T30 (81V17, 83C57, 83E30)
— (*with* Mavromatos, N. E.; Nanopoulos, D. V.) The origin of space-time as W-symmetry breaking in string theory. (English summary) *Phys. Lett. B* **288** (1992), *no.* 1-2, 23–30. (Summary) **93e:81105** 81T40 (81R10)
— (*with* Mavromatos, N. E.; Nanopoulos, D. V.) World-sheet duality, space-time foam, and the quantum fate of a stringy black hole. (English summary) *Phys. Lett. B* **289** (1992), *no.* 1-2, 25–34. (Summary) **93g:83093** 83E30 (81T30, 81V17, 83C45, 83C57)
— (*with* Mavromatos, N. E.; Nanopoulos, D. V.) String theory modifies quantum mechanics. (English summary) *Phys. Lett. B* **293** (1992), *no.* 1-2, 37–48. (Nicolaas P. Landsman) **93i:81187** 81T30 (81P15, 83C57)
Ellis, Richard S. A unified approach to large deviations for Markov chains and applications to statistical mechanics. *Stochastic processes, physics and geometry* (*Ascona and Locarno*, 1988), 392–433, *World Sci. Publishing, Teaneck, NJ*, 1990. (Summary) **93b:60138** 60J05 (60F10, 60K35, 82B05)
— (*with* Dupuis, Paul) Large deviations for Markov processes with discontinuous statistics. II. Random walks. *Probab. Theory Related Fields* **91** (1992), *no.* 2, 153–194. (Summary) **93c:60034** 60F10 (60J05)
— (*with* Wang, Kong Ming) Limit theorems for maximum likelihood estimators in the Curie-Weiss-Potts model. *Stochastic Process. Appl.* **40** (1992), *no.* 2, 251–288. (Summary) **93c:62046** 62F12 (60F05, 82B20)
Ellis, Robert Lee (*with* Lay, David C.) Factorization of finite rank Hankel and Toeplitz matrices. *Linear Algebra Appl.* **173** (1992), 19–38. (A. Böttcher) **93g:15009** 15A23 (15A57, 47B35)
Ellis, Steven P. The singularities of fitting planes to data. *Ann. Statist.* **19** (1991), *no.* 3, 1661–1666. (Summary) **93f:62087** 62H99 (62J05)
— A metric representation for minimum chi square. (English summary) *Sankhyā Ser. A* **53** (1991), *no.* 1, 60–69. (Adnan M. Awad) **93i:62020** 62F10
— (*with* Morgenthaler, Stephan) Leverage and breakdown in L_1 regression. *J. Amer. Statist. Assoc.* **87** (1992), *no.* 417, 143–148. (A. K. Md. Ehsanes Saleh) **93b:62048** 62F35 (62J05)
Ellison, J. A. (*with* Cogburn, R.) A stochastic theory of adiabatic invariance. (English summary) *Comm. Math. Phys.* **149** (1992), *no.* 1, 97–126. (Gershon Wolansky) **93j:34083** 34F05 (34C29, 60F05, 60H10)
Ellner, Stephen (*with* McCaffrey, Daniel F.; Gallant, A. Ronald; Nychka, Douglas W.) Estimating the Lyapunov exponent of a chaotic system with nonparametric regression. (English summary) *J. Amer. Statist. Assoc.* **87** (1992), *no.* 419, 682–695. (Jan Beran) **93k:62092** 62G05
Elloumi, S. (*with* Billionnet, Alain) Placement de tâches dans un système distribué et dualité lagrangienne. (English summary) [Task allocation in a distributed system and Lagrangian duality] *RAIRO Rech. Opér.* **26** (1992), *no.* 1, 83–97. (S. Rudeanu) **93b:90047** 90C09
Ellwanger, U. (*with* Schnittger, J.) Local world sheet Weyl-invariance in the presence of background charges. *Internat. J. Modern Phys. A* **7** (1992), *no.* 14, 3389–3402. (Summary) **93a:81140** 81T20
Eltzey, M. L., Jr. Expression of the SU(2) rotation matrices $D^{(J)}$ in terms of normalized irreducible tensorial matrices. *J. Math. Chem.* **8** (1991), *no.* 4, 333–344. (Mariano A. del Olmo) **93d:22027** 22E70 (81R05)
Elmali, Hakan (*with* Olgac, Nejat) Sliding mode control with perturbation estimation (SMCPE): a new approach. (English summary) *Internat. J. Control* **56** (1992), *no.* 4, 923–941. 93B12 (93C10)
El-Mallah, Ehab S. Algorithms for K-terminal reliability problems with node failures. *Networks* **22** (1992), *no.* 4, 369–384. (Summary) **93b:68008** 68M15 (90B25)
— (*with* Colbourn, Charles J.) Series-parallel subgraphs of planar graphs. (English summary) *Networks* **22** (1992), *no.* 6, 607–614. (Summary) **93d:05091** 05C40 (05C05)
Elman, H. C. (*with* Babuška, Ivo M.; Markley, K.) Parallel implementation of the hp-version of the finite element method on a shared-memory architecture. (English summary) *SIAM J. Sci. Statist. Comput.* **13** (1992), *no.* 6, 1433–1459. (Summary) **93h:65179** 65Y05 (65N30)
Elman, Richard (*with* Arason, Jón Kr.; Jacob, Bill) On indecomposable vector bundles. *Comm. Algebra* **20** (1992), *no.* 5, 1323–1351. (K. Szymiczek) **93e:14051** 14J60 (14F05, 14H60)
El Mawaziny, Ahmed H. (*with* Shoukry, Elham; Abdel-Moneim, Tharwat M.) Weibull accelerated life testing under competing risks by using power rule model with increasing stress, and in case of step-stress. (English summary) *J. Inst. Math. Comput. Sci. Math. Ser.* **5** (1992), *no.* 1, 19–44. 62N05
ben-El-Mechaiekh, H. *see* **Ben-El-Mechaiekh, H.**
Elmendorf, A. D. A simple formula for cyclic duality. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 3, 709–711. (Zbigniew Marciniak) **93i:19001** 19D55 (18G60)
Elmfors, Per (*with* Skagerstam, Bo-Sture) Quantum fields at local equilibrium and distortions of the cosmic microwave background. (English summary) *Ann. Physics* **217** (1992), *no.* 2, 304–317. (Summary) **93e:83039** 83C47 (81T20, 83F05)
El Mir, Hassine (*with* Jerbi Amamou, Moufida) Sur le prolongement des courants positifs fermés avec conditions sur les tranches. (English and French summaries) [Extending closed positive currents with conditions on the slices] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 7, 777–780. (Salomon Ofman) **93k:32013** 32C30
abd El-Moneim, M. A. *see* **Abd El-Moneim, M. A.**
abd El-Monsef, M. E. *see* **Abd El-Monsef, M. E.**
El-Mosalamy, Mohamed Soliman On hyperbolic complexes. (English and Arabic summaries) *Delta J. Sci.* **14** (1990), *no.* 3, 790–801. (Stephen J. Pride) **93g:20056** 20F05 (20F32)
Elmroth, Erik (*with* Dackland, Krister; Kågström, Bo; Van Loan, Charles) Design and evaluation of parallel block algorithms: LU factorization on an IBM 3090 VF/600J. (English summary) *Parallel processing for scientific computing* (*Houston, TX*, 1991), 3–10, *SIAM, Philadelphia, PA*, 1992. (*see* **93g:65178**) 65Y05 (65F05)
Elnagar, A. M. *see* **Elnaggar, A. M.**
Elnagar, Gamal (*with* Razzaghi, Mohsen) A Legendre technique for solving time-varying linear quadratic optimal control problems. (English summary) *J. Franklin Inst.* **330** (1993), *no.* 3, 453–463. 49N10 (49M30)
Elnaggar, A. M. On the dynamical problem of a generalized thermoelastic granular infinite cylinder under initial stress. *Astrophys. Space Sci.* **190** (1992), *no.* 2, 177–190. (Summary) **93d:73009** 73B30 (73D15)
— (*with* El-Bassiouny, A. F.) Response of self-excited three-degree-of-freedom systems to multifrequency excitations. (English summary) *Internat. J. Theoret. Phys.* **31** (1992), *no.* 8, 1531–1548. (G. V. Khmelevskaya-Plotnikova) **93i:70022** 70K40 (70K30)
El-Nahhas, A. Small constant perturbations of a nonlinear autonomous nth order differential equation. (English summary) *Proc. Pakistan Acad. Sci.* **28** (1991), *no.* 2, 127–132. (J. O. C. Ezeilo) **93i:34073** 34C25 (34C10)
El-Namoury, A. R. M. (*with* El-Serafi, S. A.; El-Bendari, Sh. E.) On the solution of a nonlinear differential equation for oscillator with particular damping. (English and Arabic summaries) *Delta J. Sci.* **15** (1991), *no.* 1, 31–44. (Summary) **93i:34064** 34C15
— On the finite element method for a singular problem. *Appl. Math. Comput.* **49** (1992), *no.* 2-3, 239–249. (Summary) **93a:65150** 65N30
— On the solution of a system of integro-differential equations with exponential coefficients. (English summary) *Proc. Pakistan Acad. Sci.* **29** (1992), *no.* 2, 145–155. (Summary) **93d:45007** 45J05 (45D05)
El Naschie, M. S. Physics-like mathematics in four dimensions—implications for classical and quantum mechanics. (English summary) *Computational and applied mathematics, II* (*Dublin*, 1991), 15–23, *North-Holland, Amsterdam*, 1992. (*see* **93j:00008**) 76F99 (81Q99)
— Complex dynamic in a 4D Peano-Hilbert space. (English summary) *Nuovo Cimento B* (11) **107** (1992), *no.* 5, 583–594. (Summary) **93f:58148** 58F13 (34C15, 58F12, 81P99)
— Statistical mechanics of multi-dimensional Cantor sets, Gödel theorem and quantum spacetime. (English summary) *J. Franklin Inst.* **330** (1993), *no.* 1, 199–211. (Summary) **93k:82036** 82C03 (58F40)
— (*with* Elnashaie, S. S. E. H.) On the connection between fluid and elastostatical turbulence in Hamiltonian and flutter sets. (English summary) *Z. Angew. Math. Mech.* **73** (1993), *no.* 3, 182–184. 76F20 (73K12, 73K70)
Elnashaie, S. S. E. H. (*with* El Naschie, M. S.) On the connection between fluid and elastostatical turbulence in Hamiltonian and flutter sets. (English summary) *Z. Angew. Math. Mech.* **73** (1993), *no.* 3, 182–184. 76F20 (73K12, 73K70)
El-Neweihi, Emad (*with* Boland, Philip J.; Proschan, Frank) Redundancy importance and allocation of spares in coherent systems. Reliability theory (Columbia, MO, 1988). *J. Statist. Plann. Inference* **29** (1991), *no.* 1-2, 55–66. (Ramesh C. Gupta) **93a:62134** 62N05
— (*with* Sethuraman, Jayaram) A study of the role of modules in the failure of systems. (English summary) *Probab. Engrg. Inform. Sci.* **5** (1991), *no.* 2, 215–227. (Bent Natvig) **93j:60131** 60K10 (62N05, 90B25)
— (*with* Boland, Philip J.; Proschan, Frank) Stochastic order for redundancy allocations in series and parallel systems. *Adv. in Appl. Probab.* **24** (1992), *no.* 1, 161–171. (Truc Nguyen) **93d:62166** 62N05 (90B05)
Eloe, Paul W. (*with* Henderson, Johnny) Singular nonlinear boundary value problems for higher order ordinary differential equations. *Nonlinear Anal.* **17** (1991), *no.* 1, 1–10. (J. V. Baxley) **93b:34034** 34B15 (47H15)
— (*with* Henderson, Johnny) Comparison of eigenvalues for a class of multipoint boundary value problems. (English summary) *Recent trends in differential equations*, 179–188,

World Sci. Ser. Appl. Anal., 1, *World Sci. Publishing, River Edge, NJ*, 1992. (Curtis C. Travis) **93f:34036** 34B10 (47N20)

— (*with* Burton, T. A.; Islam, Muhammad Nurul) Nonlinear integrodifferential equations and a priori bounds on periodic solutions. (English summary) *Ann. Mat. Pura Appl.* (4) **161** (1992), 271–283. (Saber Elaydi) **93f:45011** 45J05 (34K15)

El-Owaidy, Hassan M. (*with* El-Leithy, O. A.) Limit cycles in the chemostat. (English summary) *Proc. Pakistan Acad. Sci.* **28** (1991), *no.* 3, 217–224. (Summary) **93h:92025** 92D25 (80A30)

Elphick, Christian Solitary waves, topological defects, and their interactions in systems with translational and Galilean invariance. (English summary) *Instabilities and nonequilibrium structures, III* (*Valparaíso*, 1989), 321–329, *Math. Appl.*, **64**, *Kluwer Acad. Publ., Dordrecht*, 1991. (C. Rogers) **93f:35197** 35Q51 (35A30, 35Q53)

El-Qallali, Abdulsalam Quasi-adequate semigroups. II. *Semigroup Forum* **44** (1992), *no.* 3, 273–282. (J. L. Chrislock) **93f:20077** 20M10

Elqortobi, Abdelkader (*with* Atteia, Marc) Polaire de la somme de deux ensembles. (English summary) [The polar of the sum of two sets] *Ann. Sci. Math. Québec* **15** (1991), *no.* 2, 117–121. (S. Simons) **93a:46008** 46A20 (49N15, 52A20, 90C48)

— Hamiltonien selon une polarité. (English and French summaries) [Hamiltonian according to a polarity] *Ann. Sci. Math. Québec* **16** (1992), *no.* 2, 143–154. (Carlo Bardaro) **93m:49005** 49J35 (49K35)

— Inf-convolution quasi-convexe des fonctionnelles positives. (English and French summaries) [Quasiconvex inf-convolution of positive functionals] *RAIRO Rech. Opér.* **26** (1992), *no.* 4, 301–311. (Alberto Seeger) **93j:90080** 90C26 (49J52, 49N15)

abd El-Rady, A. S. *see* **Abd El-Rady, A. S.**

El-Rayes, A. B. (*with* Abd El-Moneim, M. A.; Fergani, H. A.) On the generalized linear search problem. (English and Arabic summaries) *Delta J. Sci.* **16** (1992), *no.* 2, 1–10. 90B40

El-Rewini, Hesham (*with* Al-Bassam, Sulaiman; Bose, Bella; Lewis, T. G.) Processor allocation for hypercubes. (English summary) *J. Parallel Distrib. Comput.* **16** (1992), *no.* 4, 394–401. 68M07

El-Sabaa, F. M. F. Periodic solutions in the Kovalevskaya case of a rigid body in rotation about a fixed point. (English summary) *Astrophys. Space Sci.* **193** (1992), *no.* 2, 309–315. 70E15

El-Sabbagh, M. F. A. The Painlevé property, complete integrability and the soliton condition. (English summary) *Proc. Pakistan Acad. Sci.* **28** (1991), *no.* 4, 363–375. (Summary) **93f:35201** 35Q53 (58F07, 58F37)

El-Said, M. (*with* Halilsoy, M.) The physical interpretation of a Painlevé transcendent spacetime. (English summary) *Gen. Relativity Gravitation* **25** (1993), *no.* 1, 81–86. (Nora Bretón Báez) **93m:83010** 83C15

El-Sakkary, Ahmed K. The symmetric Rouché's form for robustness. *IEEE Trans. Automat. Control* **37** (1992), *no.* 6, 810–812. (Summary) **93d:93063** 93D09

Elsanousi, S. A. (*with* Noor, Muhammad Aslam) Iterative algorithms for random variational inequalities. (English summary) *Panamer. Math. J.* **3** (1993), *no.* 1, 39–50. (Summary) **93k:49008** 49J40 (35J85, 47H19, 65K99)

Elsayed, A. *see* **Elsayed, Ahmed**

El-Sayed, A. M. A. On the fractional differential equations. *Appl. Math. Comput.* **49** (1992), *no.* 2-3, 205–213. (Summary) **93b:34019** 34A34 (34A25, 34K05, 45J05)

— Semigroups and higher order generators. *Kyungpook Math. J.* **32** (1992), *no.* 1, 79–86. (Alberto Guzman) **93e:47051** 47D06 (34G10)

— Linear differential equations of fractional orders. (English summary) *Appl. Math. Comput.* **55** (1993), *no.* 1, 1–12. (K. S. Miller) **93m:34009** 34A30 (26A33, 45J05)

Elsayed, Ahmed (*with* Grimble, M. J.; Ho, Daniel W. C.) H_∞ robust linear estimator. (English summary) *Adaptive systems in control and signal processing*, 1989 (*Glasgow*), 477–482, *IFAC Sympos. Ser.*, 1990, *No.* 1, *Pergamon, Oxford*, 1990. (*see* **93j:93007**) 93E11 (93B36)

El-Sayed, Khaled M. F. (*with* Mostafa, Magdi S.) Matrix-geometric solution of a multi-server queue with Markovian group arrivals and Coxian servers. *Appl. Math. Comput.* **49** (1992), *no.* 2-3, 177–196. (Summary) **93a:60149** 60K25 (90B22)

El-Sayed, M. A. (*with* Ghaleb, A. F.) Qualitative analysis of a problem of extended thermodynamics. *Z. Angew. Math. Mech.* **72** (1992), *no.* 3, 219–220. (From the introduction) **93c:80004** 80A20

— An oscillation criterion for a forced second order linear differential equation. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 3, 813–817. (Summary) **93i:34058** 34C10

El-Sayed, Wagdy Gomaa (*with* Banaś, Józef) Solvability of Hammerstein integral equation in the class of functions of locally bounded variation. (Italian summary) *Boll. Un. Mat. Ital. B* (7) **5** (1991), *no.* 4, 893–904. (A. S. Potapov) **93f:47089** 47N20 (45G10, 47H09, 47H30)

— (*with* Banaś, Józef) Functions of generalized bounded variation. (Russian and Polish summaries) *Zeszyty Nauk. Politech. Rzeszowskiej Mat. Fiz. No.* 12 (1991), 91–110. (D. K. Dutta) **93b:26012** 26A45

— (*with* Banaś, Józef) Remarks concerning Darboux functions. (Russian and Polish summaries) *Zeszyty Nauk. Politech. Rzeszowskiej Mat. Fiz. No.* 12 (1991), 111–114. (Editors) **93g:26007** 26A21

— (*with* Banaś, Józef) Measures of noncompactness and solvability of an integral equation in the class of functions of locally bounded variation. *J. Math. Anal. Appl.* **167** (1992), *no.* 1, 133–151. (R. R. Akhmerov) **93f:47078** 47H15 (47H09, 47H30, 47N20)

El-Serafi, S. A. (*with* El-Namoury, A. R. M.; El-Bendari, Sh. E.) On the solution of a nonlinear differential equation for oscillator with particular damping. (English and Arabic summaries) *Delta J. Sci.* **15** (1991), *no.* 1, 31–44. (Summary) **93i:34064** 34C15

Elshaboury, S. M. Three-dimensional periodic solutions around collinear equilibrium points of generalized Hill's problem. *Indian J. Pure Appl. Math.* **23** (1992), *no.* 7, 497–507. (V. Szebehely) **93f:70007** 70F07 (70F15)

El-Shafee, M. E. (*with* Kandil, A.; Kerre, E. E.; Nouh, A. A.) Quasi θ-spaces and pairwise θ-perfect irreducible mappings. *J. Austral. Math. Soc. Ser. A* **52** (1992), *no.* 3, 322–333. (Summary) **93h:54010** 54C10 (54E05, 54E55)

Elshafei, A.-L. (*with* Dumont, G. A.; Fu, Ye) Orthonormal functions in identification and adaptive control. (English summary) *Intelligent tuning and adaptive control* (*Singapore*, 1991), 193–198, *IFAC Sympos. Ser.*, 1991, *No.* 7, *Pergamon, Oxford*, 1991. (*see* **93i:93007**) 93B30 (93C40)

El-Shafei, M. E. *see* **El-Shafee, M. E.**

El-Shehawey, Mohamed A. Delayed random walk. (English summary) *Bull. Calcutta Math. Soc.* **83** (1991), *no.* 5, 439–446. (Summary) **93i:60132** 60J15

— Limit distribution of first hitting time of delayed random walk. (English summary) *J. Indian Soc. Statist. Oper. Res.* **13** (1992), *no.* 1-4, 63–72. 60J15

El Sheikh, M. G. The finite mixed Sturm-Liouville problems of the Dirichlet-Newton type. (English summary) *Comput. Math. Appl.* **25** (1993), *no.* 5, 3–10. (Summary) **93i:65105** 65N25

El-Sheikh, M. M. A. A note on the bifurcation of periodic solutions of activator-inhibitor systems. (English summary) *Bull. Calcutta Math. Soc.* **83** (1991), *no.* 5, 427–434. (Summary) **93j:92009** 92C15 (34C23, 34C25, 58F14, 58F40)

— A note on the bifurcation of periodic solutions of activator-inhibitor system. *J. Inst. Math. Comput. Sci. Math. Ser.* **4** (1991), *no.* 2, 151–158. (Edoardo Beretta) **93f:34062** 34C23 (34C25, 58F14, 92B05)

— A note on the bifurcation of periodic solutions of activator-inhibitor system. (English summary) *Proc. Pakistan Acad. Sci.* **28** (1991), *no.* 3, 295–302. (Summary) **93h:92013** 92C15 (34C23, 34C25, 58F14)

Elskens, Yves (*with* Escande, D. F.) Infinite resonance overlap: a natural limit for Hamiltonian chaos. (English summary) Homoclinic chaos (Brussels, 1991). *Phys. D* **62** (1993), *no.* 1-4, 66–74. (Summary) **93k:58147** 58F13 (34C37, 58F05, 70H05, 70K50)

Elsner, Bernd Jacob Struve, Direktor des Christianeums und Liebhaber der Mathematik. [Jacob Struve, Director of the Christianeum and connoisseur of mathematics] Mathematische Wissenschaften gestern und heute. 300 Jahre Mathematische Gesellschaft in Hamburg, Teil 4 (Hamburg, 1990). *Mitt. Math. Ges. Hamburg* **12** (1991), *no.* 4, 1071–1081 (1992). (Eberhard Knobloch) **93d:01065** 01A70 (01A50, 01A55)

Elsner, C. On Mahler's approximation function for powers of certain algebraic numbers. (English summary) *Studia Sci. Math. Hungar.* **27** (1992), *no.* 1-2, 147–158. (Summary) **93m:11064** 11J82

Elsner, L. (*with* Koltracht, I.; Neumann, Michael) Convergence of sequential and asynchronous nonlinear paracontractions. *Numer. Math.* **62** (1992), *no.* 3, 305–319. (H. R. Shen) **93d:65057** 65J15 (65F10)

— A note on the Hoffman-Wielandt theorem. (English summary) *Linear Algebra Appl.* **182** (1993), 235–237. (Summary) **93m:15021** 15A27

— (*with* Koltracht, I.; Neumann, Michael; Xiao, D.) On accurate computations of the Perron root. (English summary) *SIAM J. Matrix Anal. Appl.* **14** (1993), *no.* 2, 456–467. (Summary) **93m:65057** 65F30 (15A06, 15A18)

El Soufi, Ahmed (*with* Jeune, Albert) Indice de Morse des applications p-harmoniques. (English and French summaries) [Morse index of p-harmonic maps] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 11, 1189–1192. (Andrea Ratto) **93m:58025** 58E20

— (*with* Ilias, S.) Une inégalité du type "Reilly" pour les sous-variétés de l'espace hyperbolique. [A Reilly-type inequality for submanifolds of hyperbolic space] *Comment. Math. Helv.* **67** (1992), *no.* 2, 167–181. (Sorin Dragomir) **93i:53059** 53C42 (53C40)

— (*with* Ilias, S.) Majoration de la seconde valeur propre d'un opérateur de Schrödinger sur une variété compacte et applications. (English summary) [Upper bound for the second eigenvalue of a Schrödinger operator on a compact manifold, and applications] *J. Funct. Anal.* **103** (1992), *no.* 2, 294–316. (Summary) **93g:58150** 58G25 (35J10, 35P15, 58E15)

ter Elst, A. F. M. (*with* Robinson, Derek W.) Subelliptic operators on Lie groups. *Miniconference on probability and analysis* (*Sydney*, 1991), 63–72, *Proc. Centre Math. Appl. Austral. Nat. Univ.*, 29, *Austral. Nat. Univ., Canberra*, 1992. (Gerald B. Folland) **93j:43014** 43A65 (22E45, 35H05, 46E35)

El'sting, G. O. Analogues of classical Lie algebras over a field of characteristic 3. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* **1991**, *no.* 7, 61–65; *translation in Soviet Math.* (*Iz. VUZ*) **35** (1991), *no.* 7, 56–60. (Serge M. Skryabin) **93b:17030** 17B20 (17B70)

El-Taha, Muhammad On conditional ASTA: a sample-path approach. *Comm. Statist. Stochastic Models* **8** (1992), *no.* 1, 157–177. (Masakiyo Miyazawa) **93e:60181** 60K25 (60G17)

— (*with* Stidham, Shaler, Jr.) A filtered ASTA property. (English summary) *Queueing Systems Theory Appl.* **11** (1992), *no.* 3, 211–222. (Erik A. van Doorn) **93h:60148** 60K25 (90B22)

El-Tahir, Ali R^2-gravity at short distances from the gravitational centre. *Proceedings of the 21st. Annual Iranian Mathematics Conference* (*Isfahan*, 1990), 141–148, *Univ. Isfahan, Isfahan*, 199?. (S. Kichenassamy) **93e:83059** 83D05

— A generalized metric of gravitation. *Internat. J. Modern Phys. A* **7** (1992), *no.* 13, 3133–3139. (Carl Brans) **93d:83055** 83D05

El Tarazi, M. N. (*with* Karaballi, A. A.) Direct nonperiodic and periodic cubic splines. *Serdica* **17** (1991), *no.* 2-3, 111–119 (1992). (L. L. Schumaker) **93c:41019** 41A15 (41A05)

— (*with* Karaballi, A. A.) Solving second order initial value problems by cubic splines. (English summary) *J. Inst. Math. Comput. Sci. Math. Ser.* **5** (1992), *no.* 2, 133–145. (Summary) **93m:65091** 65L05 (65D07)

Eltinge, John L. Exponential convergence properties of autocovariance matrix inverses and latent vector prediction coefficients. (English summary) *SIAM J. Matrix Anal. Appl.* **13** (1992), *no.* 4, 1067–1084. (Ye Ji Xu) **93j:62226** 62M10 (62M20)

— (*with* Carroll, Raymond J.; Ruppert, David) Robust linear regression in replicated measurement error models. (English summary) *Statist. Probab. Lett.* **16** (1993), *no.* 3, 169–175. 62J05

Elton, Bracy H. An asynchronous domain decomposition method for the two-dimensional Poisson equation. (English summary) *Parallel processing for scientific computing, Vol. I, II* (*Norfolk, VA*, 1993), 691–695, *SIAM, Philadelphia, PA*, 1993. (*see* **93k:65003**) 65N55

Elton, J. H. (*with* Hill, Theodore P.) Fusions of a probability distribution. *Ann. Probab.* **20** (1992), *no.* 1, 421–454. (Thomas E. Armstrong) **93a:60007** 60B11 (28C20, 46G12, 60G42)

— (*with* Piccioni, Mauro) Iterated function systems arising from recursive estimation problems. *Probab. Theory Related Fields* **91** (1992), *no.* 1, 103–114. (M. Iosifescu) **93b:60139** 60J05

El'tsov, A. A. (*with* Ruban, A. I.) Robust identification of distributed dynamical objects described by loaded equations with the application of estimates for sensitivity functions. (Russian. Russian summary) *Avtomat. i Telemekh.* **1993**, *no.* 2, 140–148. 93B30 (93B36)

El-Wakeel, M. A. M. H. (*with* Ashour, S. K.) Estimation of the unknown parameters of the generalized Burr distribution. (English summary) *Egyptian Statist. J.* **36** (1992), *no.* 1, 1–14. 62F10

Elwin, John (*with* Donald, John) On the structure of the strong orientations of a graph. (English summary) *SIAM J. Discrete Math.* **6** (1993), *no.* 1, 30–43. (Zhibo Chen)

93k:05073 05C20 (05C85)

Elworthy, K. D. Manifolds and graphs with mostly positive curvatures. *Stochastic analysis and applications* (*Lisbon*, 1989), 96–110, *Progr. Probab.*, 26, *Birkhäuser Boston, Boston, MA*, 1991. (Józef Dodziuk) **93f:58238** 58G25 (39A12)

— Stochastic flows on Riemannian manifolds. *Diffusion processes and related problems in analysis, Vol. II* (*Charlotte, NC*, 1990), 37–72, *Progr. Probab.*, 27, *Birkhäuser Boston, Boston, MA*, 1992. (Ming Liao) **93i:58166** 58G32 (60H10)

— (*with* Zhao, H. Z.) The travelling wave solutions of scalar generalized KPP equations via classical mechanics and stochastic approaches. (English summary) *Stochastics and quantum mechanics* (*Swansea*, 1990), 298–316, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93f:35108** 35K55 (60J60, 70H20)

Elyutin, P. V. On a self-similar soliton. (Russian) *Vestnik Moskov. Univ. Ser. III Fiz. Astronom.* **33** (1992), *no.* 1, 107–108. (Summary) **93c:76007** 76B25 (35Q51, 76B15)

El-Zahaby, S. A. (*with* Gali, I. M.) Optimal control of a system governed by variational inequalities for infinite order elliptic operator. *Kyungpook Math. J.* **31** (1991), *no.* 2, 193–200. (Igor Bock) **93e:49016** 49J40 (35J85, 47H19, 49J20)

El-Zahar, M. (*with* Sauer, Norbert W.) Ramsey-type properties of relational structures. *Discrete Math.* **94** (1991), *no.* 1, 1–10. (Wen Li Chen) **93a:05127** 05D10 (03C65, 04A05, 05C55)

El-Zanati, Saad I. (*with* Rodger, Chris A.) Blocking sets in G-designs. (English summary) *Ars Combin.* **35** (1993), 237–251. (Summary) **93m:05148** 05C70 (05B05)

Elżanowski, Marek (*with* Epstein, Marcelo) The interplay of uniformity with constrained elasticity. *Stability Appl. Anal. Contin. Media* **1** (1991), *no.* 1, 95–107. (Gérard A. Maugin) **93a:73042** 73G05 (73B05, 73C50)

— (*with* Epstein, Marcelo) The symmetry group of second-grade materials. (English summary) *Internat. J. Non-Linear Mech.* **27** (1992), *no.* 4, 635–638. (Introduction) **93f:73007** 73B10 (73B99)

El-Zayat, M. F. On the limit-point classification of a weighted fourth order differential expression. *Kyungpook Math. J.* **32** (1992), *no.* 1, 67–78. 34B

El Zein, Fouad ★ Introduction à la théorie de Hodge mixte. (French) [Introduction to the theory of mixed Hodge structures] Actualités Mathématiques. [Current Mathematical Topics] *Hermann, Paris*, 1991. 238 *pp. ISBN* 2-7056-6168-7 (Claire Voisin) **93c:14013** 14D07 (14D05, 14F40, 32G20, 32J25)

Emam, E. G. (*with* Mishref, M. A.) Transitivity and subinverses in fuzzy matrices. (English summary) *Fuzzy Sets and Systems* **52** (1992), *no.* 3, 337–343. (J. B. Kim) **93m:15025** 15A33 (04A72)

Emamirad, H. (*with* Jazar, M.) Applications of spectral distributions to some Cauchy problems in $L^p(\mathbf{R}^n)$. *Semigroup theory and evolution equations* (*Delft*, 1989), 143–151, *Lecture Notes in Pure and Appl. Math.*, 135, *Dekker, New York*, 1991. (Ming Zhu Yang) **93h:47048** 47D03 (35J10, 35L05, 46F10, 47B40, 47N20)

Emamy-K., M. R. (*with* Guan, Puhua; Rivera-Vega, Pedro I.) On the characterization of the maximum squareless subgraphs of 5-cube. (English summary) Proceedings of the Twenty-third Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, FL, 1992). *Congr. Numer.* **88** (1992), 97–109. (Summary) **93j:05126** 05C75

— (*with* Pei, P.) An isomorphism invariance for some cubical complexes in small dimensions. (English summary) Proceedings of the Twenty-third Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, FL, 1992). *Congr. Numer.* **90** (1992), 187–192. (Summary) **93j:05145** 05C85

Èmanuilov, O. Yu. On some optimal control problems connected with the Navier-Stokes system. (English summary) *J. Soviet Math.* **60** (1992), *no.* 6, 1725–1741. (Tsvetomir Tsachev) **93h:49013** 49J20 (35Q30, 49J45, 49K20, 76D05)

— (*with* Fursikov, A. V.) ε-controllability of the Stokes problem with distributed control concentrated in a subdomain. (Russian) *Uspekhi Mat. Nauk* **47** (1992), *no.* 1(283), 217–218; *translation in Russian Math. Surveys* **47** (1992), *no.* 1, 255–257. 93C20 (35B37, 76D07, 93B05)

Emara, Salah A. A. Estimates for operators in weighted $L^{p,q}$-spaces. *Tôhoku Math. J.* (2) **44** (1992), *no.* 2, 201–210. (Ron Kerman) **93m:46023** 46E30 (42B10, 47B38)

Emara-Shabaik, Hosam E. (*with* Moustafa, Kamal A. F.) Nonlinearity detection of weakly nonlinear dynamic systems using cumulants. (English summary) *Internat. J. Systems Sci.* **23** (1992), *no.* 7, 1167–1177. 93E10 (93E30)

Embaby, Mokhtar (*with* Mohamed, Abdel-Rahman) On a Dirichlet and strong limit-point criterion for the square of a second order differential expression. (English summary) *Bull. Calcutta Math. Soc.* **84** (1992), *no.* 5, 467–474. (Anton Zettl) **93k:34053** 34B20 (34B24)

Embacher, Franz (*with* Peterlik, Herwig) Crack motion and hydrodynamic flow. *Internat. J. Fracture* **54** (1992), *no.* 2, 101–116. (Summary) **93c:73081** 73M25

— Analytic study of self-intersections in the Turok two-parameter family of cosmic strings. (English summary) *Phys. Rev. D* (3) **46** (1992), *no.* 6, 2381–2383. (Summary) **93g:83098** 83F05

Embergenov, A. (*with* Lyashenko, I. N.; Meredov, Kh.) A combined difference scheme for the eigenvalue problem of the Laplace operator. (Russian) *Vychisl. Prikl. Mat.* (*Kiev*) *No.* 75 (1991), 55–60. (Summary) **93b:65164** 65N25 (65N06)

Embid, Pedro (*with* Baer, M.) Mathematical analysis of a two-phase continuum mixture theory. (English summary) *Contin. Mech. Thermodyn.* **4** (1992), *no.* 4, 279–312. (Summary) **93h:80004** 80A25 (35Q35, 73B30, 76T05)

— (*with* Hunter, John K.; Majda, Andrew J.) Simplified asymptotic equations for the transition to detonation in reactive granular materials. (English summary) *SIAM J. Appl. Math.* **52** (1992), *no.* 5, 1199–1237. (Summary) **93f:35139** 35L65 (35C20, 76N15, 76T05, 80A25)

Embrechts, Paul Martingales in non-life insurance. *Probability theory and mathematical statistics, Vol. I* (*Vilnius*, 1989), 314–322, "*Mokslas*", *Vilnius*, 1990. (Summary) **93b:62135** 62P05 (60G44)

— (*with* Aebi, Markus; Mikosch, Thomas) A large claim index. (English, French and German summaries) *Schweiz. Verein. Versicherungsmath. Mitt.* **1992,** *no.* 2, 143–156. 62P05

— (*with* Grübel, Rudolf; Pitts, Susan M.) Some applications of the fast Fourier transform algorithm in insurance mathematics. (English summary) *Statist. Neerlandica* **47** (1993), *no.* 1, 59–75. (Summary) **93j:62243** 62P05

Embry-Wardrop, Mary (*with* Lambert, Alan) Measurable transformations and centred composition operators. *Proc. Roy. Irish Acad. Sect. A* **90** (1990), *no.* 2, 165–172. (Raj Kishor Singh) **93d:47060** 47B38 (28A20)

Emch, Gérard G. Kolmogorov flows, dynamical entropies and mechanics. (English summary) *Quantum probability & related topics*, 125–137, *QP-PQ, VII, World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93e:81006**) 46L55 (58F11, 82–02, 82C03)

— (*with* Ehrlich, Paul E.) Quasi-time functions in Lorentzian geometry. *Geometric analysis and nonlinear partial differential equations* (*Denton, TX*, 1990), 203–212, *Lecture Notes in Pure and Appl. Math.*, 144, *Dekker, New York*, 1993. (Alan D. Rendall) **93k:53069** 53C50 (83C99)

Emde, Anna-Maria (*with* Schinzel, Britta) Aggregating inductive expertise on partial recursive functions. *Inform. and Comput.* **96** (1992), *no.* 2, 139–167. (From the introduction) **93d:68055** 68Q99 (03D25, 68T99)

van Emden, M. H. (*with* Lee, J. H. M.) Adapting CLP($\mathcal{R}$) to floating-point arithmetic. (English summary) *Fifth generation computer systems, Vol.* 1, 2 (*Tokyo*, 1992), 996–1003, *Ohm, Tokyo*, 1992. (Summary) **93m:68027** 68N15 (68N17, 68Q40)

Emelichev, V. A. (*with* Kravtsov, M. K.; Krachkovskii, A. P.) Multi-index planar transportation polytopes with a maximum number of vertices. (Russian) *Diskret. Mat.* **4** (1992), *no.* 1, 3–18; *translation in Discrete Math. Appl.* **2** (1992), *no.* 6, 571–586. (Summary) **93j:90059** 90C06 (52B12)

Emel'yanov, S. V. (*with* Zhivoglyadov, P. V.; Korovin, S. K.) A method for stabilizing discrete objects with compact uncertainty. (Russian) *Dokl. Akad. Nauk SSSR* **319** (1991), *no.* 1, 91–97; *translation in Soviet Phys. Dokl.* **36** (1991), *no.* 7, 494–497 (1992). (P. Seibert) **93c:93044** 93D15 (93C55, 93D21)

Emel'yanova, I. S. ★ Проблема "симметрия-интегралы движения" в аналитической динамике. (Russian. English and Russian summaries) [The "symmetry-integrals of motion" problem in analytical dynamics] *Nizhegorod. Gos. Univ., Nizhniĭ Novgorod*, 1992. 171 *pp. ISBN* 5-230-04156-0 (Victor V. Zharinov) **93k:70030** 70H33 (58F05, 58F40, 70E99, 70F20, 70H05, 70H35)

Emery, M. Quelques cas de représentation chaotique. [Some cases of chaos representation] *Séminaire de Probabilités, XXV*, 10–23, *Lecture Notes in Math.*, 1485, *Springer, Berlin*, 1991. (Sheng Wu He) **93i:60100** 60H05 (60G44)

— (*with* Mokobodzki, Gabriel) Sur le barycentre d'une probabilité dans une variété. [On the barycenter of a probability in a manifold] *Séminaire de Probabilités, XXV*, 220–233, *Lecture Notes in Math.*, 1485, *Springer, Berlin*, 1991. (Jean Picard) **93j:58143** 58G32 (60G44)

— (*with* Dubins, L. E.; Yor, Marc) A continuous martingale in the plane that may spiral away to infinity. (English summary) *Séminaire de Probabilités, XXV*, 284–290, *Lecture Notes in Math.*, 1485, *Springer, Berlin*, 1991. (F. B. Knight) **93i:60134** 60J25 (60J45)

Emery, Stéphane (*with* Piguet, Olivier) Chern-Simons theory in the axial gauge: manifold with boundary. *Helv. Phys. Acta* **64** (1991), *no.* 8, 1256–1270. (Summary) **93f:81082** 81T13 (81T40)

Emets, V. F. Characterization of a closed impedance obstacle from the scattered acoustic field. (Russian. Russian summary) *Mat. Metody i Fiz.-Mekh. Polya No.* 36 (1992), 101–105. 76Q05

Emilichev, V. A. (*with* Mel'nikov, O. I.; Sarvanov, V. I.; Tyshkevich, R. I.) ★ Лекция по теории графов. (Russian) [Lectures in graph theory] "*Nauka*", *Moscow*, 1990. 384 *pp. ISBN* 5-02-013992-0 (Alexander M. Barg) **93b:05041** 05Cxx (05–01, 05B35)

Emilsson, Kjartan Pierre (*with* Coullet, Pierre; Plaza, Frédéric) Qualitative theory of defects in nonequilibrium systems. *Instabilities and nonequilibrium structures, III* (*Valparaíso*, 1989), 357–363, *Math. Appl.*, 64, *Kluwer Acad. Publ., Dordrecht*, 1991. (*see* **93b:00027**) 82C26 (58F21)

Emiris, Ioannis (*with* Canny, John F.) A general approach to removing degeneracies. (English summary) *32nd Annual Symposium on Foundations of Computer Science* (*San Juan, PR*, 1991), 405–413, *IEEE Comput. Soc. Press, Los Alamitos, CA*, 1991. (*see* **93d:68005**) 68Q25

Emmanuele, Giovanni On the Banach spaces with the property (V*) of Pełczyński. II. *Ann. Mat. Pura Appl.* (4) **160** (1991), 163–170 (1992). (Editors) **93d:46030** 46B20

— Existence of solutions of perturbed ODEs in Banach spaces. *Comment. Math. Univ. Carolin.* **32** (1991), *no.* 3, 463–470. (Józef Banaś) **93d:34107** 34G20 (34A12, 47H15, 47N20)

— On strongly Dunford-Pettis operators on certain spaces. *Proc. Roy. Irish Acad. Sect. A* **91** (1991), *no.* 2, 129–131. (From the text) **93f:47032** 47B38 (46E30)

— About the existence of integrable solutions of a functional-integral equation. *Rev. Mat. Univ. Complut. Madrid* **4** (1991), *no.* 1, 65–69. (Introduction) **93a:34083** 34K15 (47H15, 47N20)

— Banach spaces in which Dunford-Pettis sets are relatively compact. *Arch. Math.* (*Basel*) **58** (1992), *no.* 5, 477–485. (G. J. O. Jameson) **93m:46014** 46B22

— Copies of l_∞ in Köthe spaces of vector valued functions. *Illinois J. Math.* **36** (1992), *no.* 2, 293–296. (Barry Turett) **93f:46052** 46E40 (46B25)

— Integrable solutions of a functional-integral equation. *J. Integral Equations Appl.* **4** (1992), *no.* 1, 89–94. (Wojciech Mydlarczyk) **93b:45007** 45G10 (45B05, 45E10)

— Addendum to: "Remarks on weak compactness of operators defined on certain injective tensor products" [Proc. Amer. Math. Soc. **116** (1992), no. 2, 473–476; MR 92m:46109]. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 1, 335. (From the text) **93f:47022** 47B07 (46B20, 46M05)

Emmer, M. (*with* Barozzi, E.; Gonzalez, E. H. A.) Lagrange multipliers and variational methods for equilibrium problems of fluids. *Rend. Sem. Mat. Univ. Padova* **85** (1991), 35–53. (Klaus Steffen) **93j:49044** 49Q20 (58E30, 76B45, 76E99, 76M30, 76U05)

Èm Ren Zin (*with* Odintsov, V. G.; Rakhmonov, T. T.) ★ Изучение свойств блочно-диагональных и блочно-трехдиагональных окаймленных матриц. (Russian. English and Russian summaries) [A study of block-diagonal and block-tridiagonal bordered matrices] Сообщения Объединенного Института Ядерных Исследований. Дубна [Communications of the Joint Institute for Nuclear Research. Dubna], R5-92-135. *Joint Inst. Nuclear Res., Dubna*, 1992. 9 *pp.* 15A09 (65F05)

Ènat-skaya, N. Yu. (*with* Khakimullin, E. R.) The rate of convergence of the distribution of waiting time to the limit distribution in an equiprobable scheme for the allocation of particles in groups. (Russian) *Probabilistic processes and their applications* (*Russian*), 123–130, *Moskov. Inst. Élektron. Mashinostroeniya, Moscow*, 1989. (*see* **93b:60003**) 60C05

Encarnación, Mark J. A note on linear regression functions. *Comm. Statist. Theory Methods* **21** (1992), *no.* 3, 665–666. (Summary) **93e:62039** 62E10 (62J05)

Enchev, Ognian Nonlinear filtering for signal correlated with the noise. *Stochastic systems and optimization (Warsaw, 1988)*, 24–47, *Lecture Notes in Control and Inform. Sci.*, 136, *Springer, Berlin*, 1989. (*see* **93d:93009**) 93E11 (60G35)

— Stochastic calculus with anticipation and shift transformations of Wiener's measure. *Stochastic partial differential equations and their applications (Charlotte, NC, 1991)*, 54–61, *Lecture Notes in Control and Inform. Sci.*, 176, *Springer, Berlin*, 1992. (*see* **93b:60006**) 60H05 (60H07)

Encheva, S. B. (*with* Dodunekov, Stefan M.) Uniqueness of some linear subcodes of the binary extended Golay code. (Russian. Russian summary) *Problemy Peredachi Informatsii* **29** (1993), *no.* 1, 45–51; *translation in Problems Inform. Transmission* **29** (1993), *no.* 1, 38–43. (Summary) **93m:94030** 94B25

End, Werner Nonorientable surfaces in 3-manifolds. *Arch. Math. (Basel)* **59** (1992), *no.* 2, 173–185. (Bruno Zimmermann) **93e:57024** 57N10 (57M99)

van den Ende, Jan (*with* de Jong, Frida) Die Berechnung von Wasserfluten. Tideforschung in den Niederlanden, 1920–1960. (English and German summaries) [The computation of floods. Tidal research in the Netherlands, 1920–1960] Translated by Rosi Wiegman. *Ber. Wiss.-Gesch.* **15** (1992), *no.* 2, 119–129. 01A60 (86–03, 86A05)

Ènder, A. Ya. (*with* Kolyshkin, I. N.; Ènder, I. A.) Anisotropic solutions of the Boltzmann equation. (Russian. Russian summary) *Model. Mekh.* **4** (1990), *no.* 6, 54–64. 82C40 (76P05)

Ènder, I. A. (*with* Kolyshkin, I. N.; Ènder, A. Ya.) Anisotropic solutions of the Boltzmann equation. (Russian. Russian summary) *Model. Mekh.* **4** (1990), *no.* 6, 54–64. 82C40 (76P05)

Enders, P. (*with* Schmidtmann, O.) An embedding technique for the solution of coupled Riccati equations. *J. Phys. A* **25** (1992), *no.* 7, 1981–1987. (Tassos Bountis) **93j:34012** 34A34 (34A25)

Endimioni, Gérard Groupes contenant un p-sous-groupe de Sylow fini. (English summary) [Groups containing a finite Sylow p-subgroup] *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 7, 497–499. (Summary) **93a:20060** 20F50 (20E28)

Endo, Kunio (*with* Obata, Tsunehiro; Hara, Hiroaki) Differential geometry of nonequilibrium processes. *Phys. Rev. A* (3) **45** (1992), *no.* 10, 6997–7001. (Summary) **93b:82039** 82C05 (53C80, 60J15)

Endo, Mikihiko (*with* Khrennikov, A. Yu.) Unboundedness of the p-adic Gaussian distribution. (Russian. Russian summary) *Izv. Ross. Akad. Nauk Ser. Mat.* **56** (1992), *no.* 5, 1104–1115. (Evgenii I. Zelenov) **93m:46095** 46S10 (11S80)

Endow, Yasushi Dyadic differentiability conditions for dyadic stationary processes. (English summary) *Theory and applications of Gibbs derivatives (Kupari-Dubrovnik, 1989)*, 127–136, *Mat. Inst., Belgrade*, 199?. (Summary) **93k:60082** 60G10 (42C10)

Endres, Norbert Group related symmetric groupoids. Universal algebra, quasigroups and related systems (Jadwisin, 1989). *Demonstratio Math.* **24** (1991), *no.* 1-2, 63–74. (From the text) **93a:20109** 20N02

Endress, Gerhard "La concordance entre Platon et Aristote", l'Aristote arabe et l'emancipation de la philosophie en Islam médiéval. ["The concordance between Plato and Aristotle", the Arab Aristotle and the emancipation of philosophy in medieval Islam] *Historia philosophiae medii aevi, Band I, II*, 237–257, *Grüner, Amsterdam*, 1991. (*see* **93e:01001**) 01A30 (01A20)

Èndzhirgli, M. V. Estimates for the distribution of the supremum of a class of stationary random processes. (Russian. Ukrainian summary) *Ukrain. Mat. Zh.* **43** (1991), *no.* 12, 1628–1637; *translation in Ukrainian Math. J.* **43** (1991), *no.* 12, 1515–1523 (1992). (G. Niculescu) **93h:60057** 60G10

Ene, Vasile Monotonicity and local systems. *Real Anal. Exchange* **17** (1991/92), *no.* 1, 291–313. (James Foran) **93b:26013** 26A48

— Integration by parts for the Foran integral. *Real Anal. Exchange* **17** (1991/92), *no.* 1, 402–404. (James Foran) **93b:26011** 26A39

Enflo, Per Contractive projections onto subsets of L^p-spaces. *Function spaces (Edwardsville, IL, 1990)*, 79–95, *Lecture Notes in Pure and Appl. Math.*, 136, *Dekker, New York*, 1992. (M. M. Popov) **93a:46047** 46E30 (46B04, 47B38, 47H99)

— The largest coefficient in products of polynomials. *Function spaces (Edwardsville, IL, 1990)*, 97–105, *Lecture Notes in Pure and Appl. Math.*, 136, *Dekker, New York*, 1992. (Michel Waldschmidt) **93d:26013** 26C05

Eng, Teh Pang *see* **Teh, Pang Eng**

Engber, Michael The Weierstrass realization problem. *Mathematical vistas*, 39–53, *Ann. New York Acad. Sci.*, 607, *New York Acad. Sci., New York*, 1990. (Introduction) **93b:30041** 30F99 (14H55, 30–03)

Engberg, Niclas (*with* Nilsson, Bengt E. W.; Sundell, Per) On the use of dual Reggeon vertices for untwisted and twisted scalar fields. (English summary) *Internat. J. Modern Phys. A* **7** (1992), *no.* 19, 4559–4581. (Summary) **93c:81167** 81T30

Enge, N. (*with* Buzug, Th.; Pfister, Gerd) Noise reduction on chaotic attractors. (English summary) *Phys. Lett. A* **175** (1993), *no.* 3-4, 178–186. (Summary) **93k:58148** 58F13 (58F40, 65Q05)

Engel, Andreas (*with* Reimers, L.) Generalization from educated teachers. (English summary) *J. Phys. A* **25** (1992), *no.* 24, 6649–6668. 82C32 (92B20)

Engel, Charles The risk premium and the liquidity premium in foreign exchange markets. (English summary) *Internat. Econom. Rev.* **33** (1992), *no.* 4, 871–879. 90A14 (90A60)

Engel, Harald *see* **Engel-Herbert, H.**

Engel, Klaus-J. An application of polynomial operator matrices to a second order Cauchy problem. *Differential equations with applications in biology, physics, and engineering (Leibnitz, 1989)*, 115–120, *Lecture Notes in Pure and Appl. Math.*, 133, *Dekker, New York*, 1991. (*see* **93a:00021**) 47N20 (34G10, 35B45, 35L15, 47D06)

— On singular perturbations of second order Cauchy problems. *Pacific J. Math.* **152** (1992), *no.* 1, 79–91. (Evgenii Mel'nikov) **93c:34117** 34E15 (34G10, 47D09, 47N20)

Engel, Konrad (*with* Blidia, Mostafa) Perfectly orderable graphs and almost all perfect graphs are kernel M-solvable. *Graphs Combin.* **8** (1992), *no.* 2, 103–108. (Olivia M. Carducci) **93h:05131** 05C75 (90D43)

Engel, Peter On the symmetry classification of the four-dimensional parallelohedra. *Z. Krist.* **200** (1992), *no.* 3-4, 199–213. (Marjorie Senechal) **93i:52020** 52B20 (82D25)

Engelbert, H. J. (*with* Schmidt, Wolfgang Michael) Continuous local martingales: strong Markov property, solutions of stochastic equations, and the interplay between them. *Stochastic systems and optimization (Warsaw, 1988)*, 48–74, *Lecture Notes in Control and Inform. Sci.*, 136, *Springer, Berlin*, 1989. (Philip Protter) **93i:60135** 60J25 (60G44, 60H20)

Engelbrecht, Jüri K. ★ An introduction to asymmetric solitary waves. With an appendix by T. Peipman. Pitman Monographs and Surveys in Pure and Applied Mathematics, 56. *Longman Scientific & Technical, Harlow; copublished in the United States with John Wiley & Sons, Inc., New York*, 1991. viii+280 *pp. ISBN* 0-582-07814-8 (Alan Jeffrey) **93h:35176** 35Q53 (35–02, 92C20)

— Etalon evolution equations. (English, Russian and Estonian summaries) *Eesti Tead. Akad. Toimetised Füüs. Mat.* **41** (1992), *no.* 2, 77–83, 173. 73D15 (76B15)

Engeler, Erwin *see* **Specker, E., 93d:01080**

Engelfriet, Joost (*with* Heyker, Linda) Context-free hypergraph grammars have the same term-generating power as attribute grammars. *Acta Inform.* **29** (1992), *no.* 2, 161–210. (Katsushi Inoue) **93c:68056** 68Q50 (68Q45, 68Q55)

— An elementary proof of double Greibach normal form. *Inform. Process. Lett.* **44** (1992), *no.* 6, 291–293. 68Q45 (68Q50)

Engelhardt, Max (*with* Bain, Lee J.) Statistical analysis of a Weibull process with left-censored data. (English summary) With a discussion by Saul Blumenthal. *Survival analysis: state of the art (Columbus, OH, 1991)*, 173–195, *NATO Adv. Sci. Inst. Ser. E Appl. Sci.*, 211, *Kluwer Acad. Publ., Dordrecht*, 1992. (Summary) **93d:62169** 62N05 (62M07, 62M09)

Engel-Herbert, H. (*with* Ebeling, Werner; Herzel, Hans-Peter) ★ Selbstorganisation in der Zeit. (German) [Self-organization in time] Wissenschaftliche Taschenbücher, Reihe Mathematik/Physik [Scientific Paperbacks, Mathematics/Physics Series], 309. *Akademie-Verlag, Berlin*, 1990. 205 *pp. ISBN* 3-05-500709-3 (J. S. Joel) **93d:00019** 00A69 (34C23, 58–02, 70–02, 70K40, 76E99, 80–02, 92–02)

Engelking, Ryszard Characterizations of strongly countable-dimensional and locally finite-dimensional spaces. (English summary) *Topology Appl.* **46** (1992), *no.* 2, 125–134. (John J. Walsh) **93k:54069** 54F45

Engeln, Claus *see* **Engeln-Müllges, Gisela, 93g:65002a**

Engeln-Müllges, Gisela (*with* Reutter, Fritz) ★ Formelsammlung zur numerischen Mathematik mit C-Programmen. (German) [Collection of formulas on numerical mathematics with C-programs] With an appendix by Albert Becker, Thilo Gukelberger, and Dorothée Seesing-Völkel. Second edition. *Bibliographisches Institut, Mannheim*, 1990. xvi+744 *pp. ISBN* 3-411-14272-3 (From the introduction) **93g:65001** 65–00

— (*with* Reutter, Fritz) ★ Formelsammlung zur numerischen Mathematik mit QuickBASIC-Programmen. (German) [Collection of formulas on numerical mathematics with QuickBASIC programs] With an appendix by Jürgen Dietel, Uli Eggermann, Claus Engeln and Elmar Pohl. Third edition. *Bibliographisches Institut, Mannheim*, 1991. xxiv+1006 *pp. ISBN* 3-411-14312-6 (From the introduction) **93g:65002a** 65–00

— (*with* Reutter, Fritz) ★ Formelsammlung zur numerischen Mathematik mit Turbo Pascal-Programmen. (German) [Collection of formulas on numerical mathematics with Turbo Pascal programs] With an appendix by Albert Becker and Jürgen Dietel. Third edition. *Bibliographisches Institut, Mannheim*, 1991. xxiv+912 *pp. ISBN* 3-411-15003-3 (From the introduction) **93g:65002b** 65–00

Engheta, Nader (*with* Murphy, William D.; Rokhlin, Vladimir V.; Vassiliou, Marius S.) The fast multipole method (FMM) for electromagnetic scattering problems. *IEEE Trans. Antennas and Propagation* **40** (1992), *no.* 6, 634–641. 78–08 (78A45)

Engineer, J. C. (*with* Abrahams, I. D.) A secularity condition for systems of linear partial differential equations. *J. Sound Vibration* **150** (1991), *no.* 2, 338–341. (Introduction) **93a:73058** 73K12 (35F15, 73D30, 76Q05)

Engl, Heinz W. (*with* Isakov, Victor) On the identifiability of steel reinforcement bars in concrete from magnetostatic measurements. (English summary) *European J. Appl. Math.* **3** (1992), *no.* 3, 255–262. (Eduard Eitelberg) **93g:78010** 78A30 (35R30, 78A55)

— (*with* Scherzer, Otmar; Anderssen, Robert S.) Parameter identification from boundary measurements in a parabolic equation arising from geophysics. *Nonlinear Anal.* **20** (1993), *no.* 2, 127–156. (Guan Quan Zhang) **93m:35185** 35R30 (35K99, 65M12, 65M30, 86A25)

England, A. H. (*with* Bradford, I. D. R.; Rogers, T. G.) Finite deformations of a fibre-reinforced cantilever: point-force solutions. *Acta Mech.* **91** (1992), *no.* 1-2, 77–95. (From the introduction) **93a:73041** 73G05 (73H05, 73K05)

— (*with* Rogers, T. G.; Bradford, I. D. R.) Finite plane deformations of highly anisotropic elastic-plastic plates and shells. (English summary) Elastic waves and related topics (Dublin, 1991). *J. Mech. Phys. Solids* **40** (1992), *no.* 7, 1595–1606. (Summary) **93i:73032** 73K10 (73B40, 73G05, 73K15, 73K20)

— (*with* Naghdi, P. M.; Spencer, A. J. M.) Professor A. E. Green, F.R.S. *Quart. J. Mech. Appl. Math.* **45** (1992), *no.* 4, 515–516. (From the text) **93m:01078** 01A70

— (*with* Rogers, T. G.; Bradford, I. D. R.) Finite deformations of a fibre-reinforced cantilever: distributed-load solutions. (English summary) *Quart. J. Mech. Appl. Math.* **45** (1992), *no.* 4, 711–732. (Summary) **93k:73039** 73G05 (73K05, 73K20)

Engle, Robert F. (*with* Bollerslev, Tim) Common persistence in conditional variances. (English summary) *Econometrica* **61** (1993), *no.* 1, 167–186. (Summary) **93i:62091** 62P20

Englefield, M. J. Darboux transformation and inverse scattering. *Mini-Conference on Inverse Problems in Partial Differential Equations (Canberra, 1990)*, 111–120, *Proc. Centre Math. Appl. Austral. Nat. Univ.*, 31, *Austral. Nat. Univ., Canberra*, 1992. (Introduction) **93m:34136** 34L25 (34A55, 35Q53)

Engler, Hans (*with* Lenhart, Suzanne M.) Viscosity solutions for weakly coupled systems of Hamilton-Jacobi equations. *Proc. London Math. Soc.* (3) **63** (1991), *no.* 1, 212–240. (Gabriella Tarantello) **93a:35024** 35D05 (35F20)

— On semilinear evolution equations with many Lyapunov functionals. *Differential Integral Equations* **5** (1992), *no.* 5, 1069–1088. (Piotr Biler) **93d:35078** 35K60 (34G20, 35B40)

— (*with* Hetzer, Georg) Convergence to equilibria for a class of reaction-diffusion systems. *Osaka J. Math.* **29** (1992), *no.* 3, 471–481. (Elias Tuma) **93h:35099** 35K57

Englert, B.-G. (*with* Briegel, H.-J.; Michaelis, M.; Süssmann, G.) Über die Wurzel aus der Klein-Gordon-Gleichung als Schrödinger-Gleichung eines relativistischen Spin-0-Teilchens. (English summary) [On the square-root Klein-Gordon equation as Schrödinger equation for a relativistic spin-0 particle] *Z. Naturforsch. A* **46** (1991), *no.* 11, 925–932. (Brian DeFacio) **93a:81070** 81R20 (81Q05)

Englert, F. (*with* Casher, A.) Entropy generation in quantum gravity. (English summary) *Classical Quantum Gravity* **9** (1992), *no.* 10, 2231–2248. (Orfeu Bertolami) **93g:83044** 83C45 (81V17)

Engliš, Miroslav Toeplitz operators on Cartan domains essentially commute with a bilateral shift. *Proc. Amer. Math. Soc.* **117** (1993), *no.* 2, 365–368. (Karim Seddighi) **93d:47053** 47B35 (32M15)

Englisch, H. (*with* Šeba, P.) Cooper pairs with point interaction. *Rep. Math. Phys.* **30** (1991), *no.* 1, 9–13 (1992). (Summary) **93c:82072** 82D55

English, Brian J. (*with* Gillett, Raphael; Phillips, Michael J.) Inequalities concerning the expected selection differentials. *Ann. Inst. Statist. Math.* **44** (1992), *no.* 1, 169–175. (S. Panchapakesan) **93f:62072** 62G30

Englund, Robert K. (*with* Nissen, Hans J.; Damerow, Peter) ★ Frühe Schrift und Techniken der Wirtschaftsverwaltung im alten Vorderen Orient. (German) [Early writing and techniques of business administration in the ancient Middle East] Informationsspeicherung und -verarbeitung vor 5000 Jahren. [Information storage and processing 5000 years ago] Second edition. *Verlag Barbara Franzbecker, Didaktischer Dienst, Bad Salzdetfurth; Max-Planck-Institut für Bildungsforschung, Berlin*, 1991. 222 *pp. ISBN* 3-88120-110-6 (J. Friberg) **93c:01004** 01A17

Engman, Martin New spectral characterization theorems for S^2. *Pacific J. Math.* **154** (1992), *no.* 2, 215–229. (Johan Tysk) **93d:58173** 58G25

Engwerda, Jacob C. Tracking strategies for asymptotically admissible target paths in economic models. (English summary) *Differential games—developments in modelling and computation* (*Espoo*, 1990), 216–225, *Lecture Notes in Control and Inform. Sci.*, 156, *Springer, Berlin*, 1991. (*see* **93c:90003**) 90A16

— *see also* **Bittanti, Sergio et al.**

Enis, Peter (*with* Bar-Lev, Shaul K.) Variance stabilizing and normalizing transformations for the compound Poisson process. *Metrika* **39** (1992), *no.* 3-4, 165–175. (Summary) **93c:62156** 62M99

— (*with* Bar-Lev, Shaul K.; Bshouty, Daoud) On polynomial variance functions. (English summary) *Probab. Theory Related Fields* **94** (1992), *no.* 1, 69–82. (Paul Embrechts) **93i:62013** 62E10 (60J30)

— (*with* Bar-Lev, Shaul K.; Bshouty, Daoud; Ohayon, Avital Y.) Compositions and products of infinitely divisible variance functions. *Scand. J. Statist.* **19** (1992), *no.* 1, 83–89. (Gérard Letac) **93h:60021** 60E07 (62E10)

Enjalbert, Patrice (*with* Auffray, Yves) Modal theorem proving: an equational viewpoint. (English summary) *J. Logic Comput.* **2** (1992), *no.* 3, 247–295. (Neculai Curteanu) **93i:03016** 03B35 (03B45, 68T15)

— (*with* Debart, Françoise; Lescot, Madeleine) Multimodal logic programming using equational and order-sorted logic. (English summary) Second International Conference on Algebraic and Logic Programming (Nancy, 1990). *Theoret. Comput. Sci.* **105** (1992), *no.* 1, 141–166. (Summary) **93i:68038** 68N17 (03B45, 03B70)

Ennis, Daniel M. (*with* Johnson, Norman Lloyd[2]) Noncentral and central chi-square, F and beta distribution functions as special cases of the distribution function of an indefinite quadratic form. (English summary) *Comm. Statist. Theory Methods* **22** (1993), *no.* 3, 897–905. 62E15

Ennis, M. (*with* Fraser, D. A. S.) Higher order local unbiasedness with computer algebra. (English summary) *Comm. Statist. Theory Methods* **21** (1992), *no.* 11, 3171–3176. (Summary) **93k:62050** 62F10

Ennola, V. Cubic number fields with exceptional units. *Computational number theory* (*Debrecen*, 1989), 103–128, *de Gruyter, Berlin*, 1991. (Lawrence Washington) **93e:11131** 11R27 (11R16, 11R29)

Enns, Dale F. (*with* Garrard, William L.; Snell, S. Antony) Nonlinear feedback control of highly manoeuvrable aircraft. (English summary) *Internat. J. Control* **56** (1992), *no.* 4, 799–812. 93C95 (70Q05, 93B52)

Enns, E. G. Dependence relationships for rays in a convex body in $\mathbf{R}^n$. (English summary) *Topics in statistical dependence* (*Somerset, PA*, 1987), 203–206, *IMS Lecture Notes Monograph Ser.*, 16, *Inst. Math. Statist., Hayward, CA*, 1990. (*see* **93f:62004**) 62H05 (62H20)

— (*with* Ravindran, K.) A two Poisson stream competitive decision problem. (English summary) *Math. Japon.* **37** (1992), *no.* 4, 723–731. (Krzysztof Szajowski) **93h:90116** 90D15 (60G40, 62L15, 93E05)

Enochs, Edgar E. (*with* Jenda, Overtoun M. G.) Tensor and torsion products of injective modules. *J. Pure Appl. Algebra* **76** (1991), *no.* 2, 143–149. (Manfred Herrmann) **93b:13013** 13C11 (13C12)

— (*with* Jenda, Overtoun M. G.) Injective covers and resolutions. *Proceedings of the First China-Japan International Symposium on Ring Theory* (*Guilin*, 1991), 42–45, *Okayama Univ., Okayama*, 1992. (*see* **93k:16001**) 16E10

Enoki, Ichiro Compact Kähler manifolds with parallel Ricci tensor. *Recent topics in differential and analytic geometry*, 239–249, *Adv. Stud. Pure Math.*, 18-I, *Academic Press, Boston, MA*, 1990. (Robert L. Foote) **93e:53078** 53C55 (32C17, 32J27)

Ènol'skiĭ, V. Z. (*with* Salerno, Mario; Scott, A. C.; Eilbeck, J. C.) There's more than one way to skin Schrödinger's cat. (English summary) *Phys. D* **59** (1992), *no.* 1-3, 1–24. (Tuncay Aktosun) **93j:81107** 81U40 (58F40, 81Q05)

Enomoto, Hikoe (*with* Usami, Yoko) The star arboricity of complete bipartite graphs. *Graph theory, combinatorics, and applications, Vol.* 1 (*Kalamazoo, MI*, 1988), 389–396, *Wiley-Intersci. Publ., Wiley, New York*, 1991. (Summary) **93c:05061** 05C35

— A simple proof of Nash-Williams' formula on the arboricity of a graph. (English summary) *SUT J. Math.* **28** (1992), *no.* 2, 121–127. (Summary) **93j:05115** 05C70 (05C05)

Enomoto, Kazuyuki Compactification of asymptotically umbilical hypersurfaces in hyperbolic space. *Mem. Fac. Sci. Kyushu Univ. Ser. A* **46** (1992), *no.* 1, 57–68. (Gudlaugur Thorbergsson) **93c:53051** 53C42 (53A35)

Enright, Gerard M. On a question posed by Graham Higman. *Irish Math. Soc. Bull. No.* 28 (1992), 57–67. (Gerald J. Janusz) **93m:11141** 11Y55 (11B75)

Enright, Wayne H. (*with* Suhartanto, Heru) Detecting and locating a singular point in the numerical solution of IVPs for ODEs. (German summary) *Computing* **48** (1992), *no.* 2, 161–175. (Summary) **93a:65096** 65L06

— (*with* Mac Donald, Craig) Implications of order reduction for implicit Runge-Kutta methods. (English summary) *Numer. Algorithms* **2** (1992), *no.* 3-4, 351–369. (Summary) **93m:65103** 65L06 (34A45)

Enriques, Federigo *see* **Ciliberto, Ciro, 93c:14002** *and* **Newton, Isaac, 93d:01020**

echeverría Enríquez, A. *see* **Echeverría Enríquez, A.**

Enriquez, Benjamin An application of the Tomita-Takesaki theory to 2D foliations with harmonic measures. (English summary) *Current topics in operator algebras* (*Nara*, 1990), 218–221, *World Sci. Publishing, River Edge, NJ*, 1991. (Summary) **93h:58148** 58G12 (46L87)

— (*with* Andruskiewitsch, Nicolás) Examples of compact matrix pseudogroups arising from the twisting operation. (English summary) *Comm. Math. Phys.* **149** (1992), *no.* 1, 195–207. (Albert Jeu-Liang Sheu) **93k:17022** 17B37 (16W30, 46L89, 81R50)

— Rational forms for twistings of enveloping algebras of simple Lie algebras. (English summary) *Lett. Math. Phys.* **25** (1992), *no.* 2, 111–120. (William M. McGovern) **93j:16028** 16W30 (16S35, 17B35, 17B37)

van Enter, Aernout C. D. (*with* Fernández, Roberto; Sokal, Alan D.) Regularity properties and pathologies of position-space renormalization-group transformations. Lattice 90 (Tallahassee, FL, 1990). *Nuclear Phys. B Proc. Suppl.* **20** (1991), 48–52. (Summary) **93d:82043** 82B28 (81T17)

— Nonperiodic ground and Gibbs states. *Proceedings of Asian Mathematical Conference*, 1990 (*Hong Kong*, 1990), 132–134, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93b:00022**) 82B05

— (*with* Hof, A.; Miękisz, Jacek) Overlap distributions for deterministic systems with many pure states. (English summary) *J. Phys. A* **25** (1992), *no.* 18, L1133–L1137. (Dimitri Petritis) **93i:82045** 82B44 (82B26)

— (*with* Miękisz, Jacek) How should one define a (weak) crystal? *J. Statist. Phys.* **66** (1992), *no.* 3-4, 1147–1153. (Krystyna Parczyk) **93b:82080** 82D25 (28D99, 82B05, 82B20)

Enting, I. G. Inverse problems in greenhouse gas modelling. *Mini-Conference on Inverse Problems in Partial Differential Equations* (*Canberra*, 1990), 262–277, *Proc. Centre Math. Appl. Austral. Nat. Univ.*, 31, *Austral. Nat. Univ., Canberra*, 1992. (From the introduction) **93m:86006** 86A22 (86A10)

— (*with* Guttmann, A. J.) Self-avoiding rings on the triangular lattice. *J. Phys. A* **25** (1992), *no.* 10, 2791–2807. (H. N. V. Temperley) **93b:82030** 82B41

— (*with* Guttmann, A. J.; Richmond, L. Bruce; Wormald, Nicholas C.) Enumeration of almost-convex polygons on the square lattice. (English summary) *Random Structures Algorithms* **3** (1992), *no.* 4, 445–461. (Jozef Širáň) **93h:05051** 05B99 (05A15)

Èntov, M. R. On real Morsifications of D_μ singularities. (Russian) *Dokl. Akad. Nauk* **325** (1992), *no.* 1, 32–36; *translation in Russian Acad. Sci. Dokl. Math.* **46** (1993), *no.* 1, 25–29. (Piotr Jaworski) **93m:58014** 58C27

Entov, V. M. (*with* Ètingof, P. I.) Some exact solutions of the thin-sheet stamping problem. *Fluid Dynamics* **27** (1992), *no.* 2, 169–176; *translated from Izv. Ross. Akad. Nauk Mekh. Zhidk. Gaza* **1992**, *no.* 2, 24–33 (*Russian. Russian summary*). (Summary) **93i:76029** 76D08 (73E50, 76A99)

— (*with* Ginzburg, I. S.; Teodorovich, È. V.) The renormalization group method in a problem of convective diffusion with irreversible sorption. (Russian) *Prikl. Mat. Mekh.* **56** (1992), *no.* 1, 68–76; *translation in J. Appl. Math. Mech.* **56** (1992), *no.* 1, 59–66. (From the text) **93c:76075** 76R50 (76S05, 82C28)

Entringer, R. C. (*with* Barefoot, C. A.; Clark, L. H.; Douthett, Jack; Fellows, Michael R.) Cycles of length 0 modulo 3 in graphs. *Graph theory, combinatorics, and applications, Vol.* 1 (*Kalamazoo, MI*, 1988), 87–101, *Wiley-Intersci. Publ., Wiley, New York*, 1991. (Summary) **93c:05067** 05C38

— (*with* Clark, L. H.; Székely, László A.) Threshold functions for local properties of graphs: triangles. Combinatorics and theoretical computer science (Washington, DC, 1989). *Discrete Appl. Math.* **34** (1991), *no.* 1-3, 83–105. (Andrzej Ruciński) **93a:05112** 05C80

— (*with* Székely, László A.; Clark, L. H.) An inequality for degree sequences. *Discrete Math.* **103** (1992), *no.* 3, 293–300. (Prabir Das) **93g:05139** 05C99

Eoff, C. M. p-envelopes of non-locally convex F-spaces. (English summary) *Ann. Polon. Math.* **57** (1992), *no.* 2, 121–134. (Paweł Domański) **93j:46004** 46A16 (30D55, 46E10, 46J15)

Ephraim, Yariv (*with* Merhav, Neri) Lower and upper bounds on the minimum mean-square error in composite source signal estimation. (English summary) *IEEE Trans. Inform. Theory* **38** (1992), *no.* 6, 1709–1724. (N. C. Mohanty) **93m:94007** 94A12

Ephremides, Anthony (*with* Bhattacharya, Partha P.) Stochastic monotonicity properties of multiserver queues with impatient customers. *J. Appl. Probab.* **28** (1991), *no.* 3, 673–682. (Summary) **93d:60153** 60K25

— (*with* Tassiulas, Leandros) Stability properties of constrained queueing systems and scheduling policies for maximum throughput in multihop radio networks. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 12, 1936–1948. 90B22

Epifanio, G. (*with* Todorov, Todor S.; Trapani, Camillo) Complete sets of compatible nonselfadjoint observables. *Helv. Phys. Acta* **65** (1992), *no.* 1, 1–10. (W. Timmermann) **93d:47087** 47D99 (47B25, 47D40, 47N50, 81Q10)

Epifanov, O. V. Duality of a pair of spaces of analytic functions of bounded growth. (Russian) *Dokl. Akad. Nauk SSSR* **319** (1991), *no.* 6, 1297–1300; *translation in Soviet Math. Dokl.* **44** (1992), *no.* 1, 314–317. (Kamil Rusek) **93d:46039** 46E10 (32A22, 44A10, 46F15)

— Solvability of the inhomogeneous Cauchy-Riemann equation in classes of functions that are bounded with weight and a system of weights. (Russian) *Mat. Zametki* **51** (1992), *no.* 1, 83–92; *translation in Math. Notes* **51** (1992), *no.* 1-2, 54–60. (Vladimir Logvinenko) **93h:30060** 30E99 (31A35)

— (*with* Il'in, Vladimir Aleksandrovich; Nikol'skiĭ, S. M.; Sedletskiĭ, A. M.; Ul'yanov, P. L.; Sheremeta, M. N.) Yuriĭ Fedorovich Korobeĭnik (on the occasion of his sixtieth birthday). (Russian) *Uspekhi Mat. Nauk* **47** (1992), *no.* 5(287), 199–200; *translation in Russian Math. Surveys* **47** (1992), *no.* 5, 215–217. 01A70

Epp, R. J. (*with* Kunstatter, G.; Toms, David J.) Path-integral quantization of scalar QED. (English summary) *Phys. Rev. D* (3) **47** (1993), *no.* 6, 2474–2482. (Summary) **93k:81258** 81V10 (81S40)

Epperlein, Joachim (*with* Hanke, Marko; Tröltzsch, Fredi) On a system of partial differential equations occurring in double-layer-systems in photochemistry. *Wiss. Z. Tech. Univ. Chemnitz* **34** (1992), *no.* 1, 53–65. (Summary) **93a:35081** 35K57 (65P05, 92E20)

Epps, T. W. (*with* Seneta, Eugene) Maximum-likelihood estimation for Galton-Watson processes. *Comm. Statist. Theory Methods* **21** (1992), *no.* 3, 733–748. (M. M. Siddiqui) **93j:62208** 62M05

Eppstein, David Dynamic three-dimensional linear programming. (English summary) 32*nd Annual Symposium on Foundations of Computer Science* (*San Juan, PR*, 1991), 488–494, *IEEE Comput. Soc. Press, Los Alamitos, CA*, 1991. (*see* **93d:68005**) 90C05

— (*with* Chrobak, Marek) Planar orientations with low out-degree and compaction of adjacency matrices. *Theoret. Comput. Sci.* **86** (1991), *no.* 2, 243–266. (G. P. Bhattacharjee) **93a:68114** 68R10 (05C20, 05C85, 68Q25)

— Approximating the minimum weight triangulation. *Proceedings of the Third Annual ACM-SIAM Symposium on Discrete Algorithms (Orlando, FL, 1992)*, 48–57, *ACM, New York*, 1992. (Summary) **93e:68099** 68R10 (05-04, 68Q25)

— New algorithms for minimum area k-gons. *Proceedings of the Third Annual ACM-SIAM Symposium on Discrete Algorithms (Orlando, FL, 1992)*, 83–88, *ACM, New York*, 1992. (*see* **93b:68005**) 68U05 (52B55, 68Q25)

— (*with* Italiano, Giuseppe F.; Tamassia, Roberto; Tarjan, Robert Endre; Westbrook, Jeffery; Yung, Moti) Maintenance of a minimum spanning forest in a dynamic plane graph. *J. Algorithms* **13** (1992), *no.* 1, 33–54. (Mirko Křivánek) **93a:68027** 68P05 (05C05, 05C85, 68Q25, 68R10)

— (*with* Galil, Zvi; Giancarlo, Raffaele; Italiano, Giuseppe F.) Sparse dynamic programming. I. Linear cost functions. (English summary) *J. Assoc. Comput. Mach.* **39** (1992), *no.* 3, 519–545. (Moshe Sniedovich) **93i:90107a** 90C39 (49L20)

— (*with* Galil, Zvi; Giancarlo, Raffaele; Italiano, Giuseppe F.) Sparse dynamic programming. II. Convex and concave cost functions. (English summary) *J. Assoc. Comput. Mach.* **39** (1992), *no.* 3, 546–567. (Moshe Sniedovich) **93i:90107b** 90C39 (49L20)

— Dynamic three-dimensional linear programming. (English summary) *ORSA J. Comput.* **4** (1992), *no.* 4, 360–368. 90C05

Èpremidze, L. N. On the distribution function of the majorant of ergodic means. (English summary) *Studia Math.* **103** (1992), *no.* 1, 1–15. (Karl Petersen) **93j:28022** 28D05

Epstein, Charles L. (*with* Burns, Daniel M.) Embeddability for three-dimensional CR-manifolds. *J. Amer. Math. Soc.* **3** (1990), *no.* 4, 809–841. (From the introduction) **93b:32024** 32F40 (32C16)

— (*with* Kleiner, Bruce) Spherical means in annular regions. *Comm. Pure Appl. Math.* **46** (1993), *no.* 3, 441–451. (Tomasz Przebinda) **93m:43005** 43A85 (35A22, 44A12)

Epstein, David B. A. (*with* Cannon, James W.; Holt, Derek F.; Levy, Silvio V. F.; Paterson, Michael S.; Thurston, William P.) ★ Word processing in groups. *Jones and Bartlett Publishers, Boston, MA*, 1992. xii+330 *pp. ISBN* 0-86720-244-0 (Richard M. Thomas) **93i:20036** 20F10 (03D40, 20–02, 68Q70)

Epstein, Henri (*with* Collet, P.; Eckmann, J.-P.) Diffusive repair for the Ginzburg-Landau equation. *Helv. Phys. Acta* **65** (1992), *no.* 1, 56–92. (H. Tasso) **93b:76037** 76E30 (35Q55)

Epstein, Larry G. (*with* Duffie, Darrell) Stochastic differential utility. With an appendix by the authors and C. Skiadas. *Econometrica* **60** (1992), *no.* 2, 353–394. (Summary) **93e:90020** 90A43 (49L20, 90A10)

Epstein, Leonardo D. (*with* Fienberg, Stephen E.) Bayesian estimation in multidimensional contingency tables. (English summary) *Bayesian analysis in statistics and econometrics (Bangalore, 1988)*, 27–41, *Lecture Notes in Statist.*, 75, *Springer, New York*, 1992. (Summary) **93i:62050** 62H17 (62F15)

Epstein, Marcelo (*with* Elżanowski, Marek) The interplay of uniformity with constrained elasticity. *Stability Appl. Anal. Contin. Media* **1** (1991), *no.* 1, 95–107. (Gérard A. Maugin) **93a:73042** 73G05 (73B05, 73C50)

— (*with* Maugin, Gérard A.; Trimarco, Carmine) Theory of elastic inhomogeneities in electromagnetic materials. (English summary) The Eringen anniversary issue. *Internat. J. Engrg. Sci.* **30** (1992), *no.* 10, 1441–1449. (E. S. Şuhubi) **93h:73032** 73R05 (73B27, 73C50, 73M25, 78A25)

— (*with* Elżanowski, Marek) The symmetry group of second-grade materials. (English summary) *Internat. J. Non-Linear Mech.* **27** (1992), *no.* 4, 635–638. (Introduction) **93f:73007** 73B10 (73B99)

— (*with* Maugin, Gérard A.; Trimarco, Carmine) Pseudomomentum and material forces in inhomogeneous materials (application to the fracture of electromagnetic materials in electromagnetoelastic fields). *Internat. J. Solids Structures* **29** (1992), *no.* 14-15, 1889–1900. (Hilmi Demiray) **93c:73020** 73B99 (73B27, 73B40, 73R05)

— (*with* Śniatycki, Jędrzej) Fermat's principle in elastodynamics. *J. Elasticity* **27** (1992), *no.* 1, 45–56. (Summary) **93a:73029** 73D99 (73B27, 73B40)

Epstein, Richard L. A theory of truth based on a medieval solution to the liar paradox. (English summary) *Hist. Philos. Logic* **13** (1992), *no.* 2, 149–177. (E. Mendelson) **93j:03004** 03A05 (01A35, 03–03, 03B99)

Epstein-Feldman, Raisa Autoregressive processes and first-hit probabilities for randomized random walks. *J. Appl. Probab.* **28** (1991), *no.* 2, 347–359. (Gy. Terdik) **93a:60100** 60J15 (60G17, 60G25)

— *see also* **Doney, R. A., 93c:60102**

Er, Meng J. (*with* Anderson, Brian D. O.) Performance study of multi-rate output controllers under noise disturbances. (English summary) *Internat. J. Control* **56** (1992), *no.* 3, 531–545. (Summary) **93d:93086** 93E20 (93B52)

induráin Eraso, Esteban *see* **Induráin Eraso, Esteban**

Erbas, Cengiz (*with* Tanik, Murat M.; Aliyazicioglu, Zekeriya) Linear congruence equations for the solutions of the N-queens problem. *Inform. Process. Lett.* **41** (1992), *no.* 6, 301–306. (Summary) **93b:05040** 05B99

Erbay, H. A. (*with* Erbay, S.; Dost, S.) Wave propagation in fluid filled nonlinear viscoelastic tubes. (English summary) *Acta Mech.* **95** (1992), *no.* 1-4, 87–102. (Summary) **93f:73080** 73K70 (73F15, 76B15, 76Z05)

Erbay, S. (*with* Erbay, H. A.; Dost, S.) Wave propagation in fluid filled nonlinear viscoelastic tubes. (English summary) *Acta Mech.* **95** (1992), *no.* 1-4, 87–102. (Summary) **93f:73080** 73K70 (73F15, 76B15, 76Z05)

Erbe, Lynn H. (*with* Krawcewicz, W.) Nonlinear boundary value problems for differential inclusions $y'' \in F(t, y, y')$. *Ann. Polon. Math.* **54** (1991), *no.* 3, 195–226. (Summary) **93e:34024** 34A60 (34B15)

— (*with* Krawcewicz, W.; Chen, Shao Zhu) Some existence results for solutions of differential inclusions with retardations. *Ann. Polon. Math.* **54** (1991), *no.* 3, 227–239. (Summary) **93e:34025** 34A60 (34B15, 34K10)

— (*with* Xu, Yuan Tong) Necessary and sufficient conditions for oscillation of abstract neutral differential system in Banach space. (English summary) *Recent trends in differential equations*, 189–203, *World Sci. Ser. Appl. Anal.*, 1, *World Sci. Publishing, River Edge, NJ*, 1992. (T. L. Herdman) **93m:34107** 34K15 (34K30, 34K40)

— (*with* Guo, Da Jun) Periodic boundary value problems for second order integrodifferential equations of mixed type. *Appl. Anal.* **46** (1992), *no.* 3-4, 249–258. (Introduction) **93f:34119** 34K15 (45J05)

— (*with* Yan, Peng Xiang) Weighted averaging techniques in oscillation theory for second order difference equations. *Canad. Math. Bull.* **35** (1992), *no.* 1, 61–69. (G. Ladas) **93a:39010** 39A12

— (*with* Kong, Qing Kai) Oscillation results for second order neutral differential equations. *Funkcial. Ekvac.* **35** (1992), *no.* 3, 545–555. (Yiannis Sficas) **93j:34101** 34K15 (34K40)

— (*with* Krawcewicz, W.; Gęba, K.; Wu, Jian Hong) S^1-degree and global Hopf bifurcation theory of functional-differential equations. *J. Differential Equations* **98** (1992), *no.* 2, 277–298. (From the summary) **93f:58034** 58E07 (34K15, 47H15, 47N20, 58F14, 58F32)

— (*with* Guo, Da Jun; Liu, Xinzhi) Positive solutions of a class of nonlinear integral equations and applications. *J. Integral Equations Appl.* **4** (1992), *no.* 2, 179–195. (N. K. Karapetyants) **93h:45002** 45G15 (34K15)

— (*with* Yan, Peng Xiang) Disconjugacy for linear Hamiltonian difference systems. *J. Math. Anal. Appl.* **167** (1992), *no.* 2, 355–367. (P. W. Eloe) **93f:39001** 39A10 (34A30, 39A12)

— (*with* Krawcewicz, W.; Guo, Da Jun) Some fixed point theorems for multivalued maps and applications. *Results Math.* **21** (1992), *no.* 1-2, 42–64. (Juan A. Gatica) **93h:47067** 47H10 (34A60, 34B15, 47H04, 47N20)

— (*with* Krawcewicz, W.) Existence of solutions to boundary value problems for impulsive second order differential inclusions. (English summary) *Rocky Mountain J. Math.* **22** (1992), *no.* 2, 519–539. (Florin Iacob) **93i:34024** 34A60 (34A37, 34B15)

— (*with* Kong, Qing Kai; Ruan, Shi Gui) Kamenev type theorems for second-order matrix differential systems. *Proc. Amer. Math. Soc.* **117** (1993), *no.* 4, 957–962. (Summary) **93e:34045** 34C10 (34A30)

— (*with* Yan, Peng Xiang) Oscillation criteria for Hamiltonian matrix difference systems. *Proc. Amer. Math. Soc.* **119** (1993), *no.* 2, 525–533. (Olusola Akinyele) **93k:39002** 39A10 (34C10)

— (*with* Krawcewicz, W.; Wu, Jian Hong) A composite coincidence degree with applications to boundary value problems of neutral equations. *Trans. Amer. Math. Soc.* **335** (1993), *no.* 2, 459–478. (V. V. Obukhovskiĭ) **93e:47085** 47H11 (34K10, 34K40, 47H15, 47N20)

Erben, W. (*with* Grimeisen, G.) Integration by means of Riemann sums in Banach spaces. I. (German and Russian summaries) *Z. Anal. Anwendungen* **9** (1990), *no.* 6, 481–501. (Ralph Henstock) **93a:28009** 28B05 (26A42)

— (*with* Grimeisen, G.) Integration by means of Riemann sums in Banach spaces. II. (German and Russian summaries) *Z. Anal. Anwendungen* **10** (1991), *no.* 1, 11–26. (Ralph Henstock) **93c:28010** 28B05 (26A42)

Erber, T. (*with* Gavelek, D.) Shadowing and iterative interpolation for Čebyšev mixing transformations. *J. Comput. Phys.* **101** (1992), *no.* 1, 25–50. (Summary) **93d:65015** 65D05 (58F13)

— (*with* Guralnick, S. A.; Michels, S. C.) Hysteresis and fatigue. (English summary) *Ann. Physics* **224** (1993), *no.* 2, 157–192. 73M25

Ercolani, Nicholas M. (*with* Siggia, Eric D.) The Painlevé property and integrability. (Russian) *Integrability and kinetic equations for solitons (Russian)*, 159–167, "*Naukova Dumka*", *Kiev*, 1990. (Vadim G. Bakurov) **93g:58057** 58F07 (34A34, 35Q58)

Ercolessi, E. (*with* Balachandran, A. P.; Morandi, G.; Srivastava, A. M.) ★ Hubbard model and anyon superconductivity. World Scientific Lecture Notes in Physics, 38. *World Scientific Publishing Co., Inc., River Edge, NJ*, 1990. viii+138 *pp. ISBN* 981-02-0348-9; 981-02-0349-7 (Guang Shan Tian) **93g:82108** 82D55 (81V70, 82D40, 82D50)

— (*with* Balachandran, A. P.) Statistics on networks. (English summary) *Internat. J. Modern Phys. A* **7** (1992), *no.* 19, 4633–4654. (Summary) **93d:81025** 81P99 (82B03)

— (*with* Morandi, G.; Ortolani, F.) Global and gauge symmetries of the Hubbard model. *Modern Phys. Lett. B* **6** (1992), *no.* 2, 77–83. (Summary) **93a:82008** 82B20

Erdahl, Robert A cone of inhomogeneous second-order polynomials. (English summary) *Discrete Comput. Geom.* **8** (1992), *no.* 4, 387–416. (Martin Henk) **93g:11070** 11H55 (05B40, 11H31, 52C07)

Erdélyi, Tamás (*with* Nevai, Paul; Zhang, John; Geronimo, Jeffrey S.) A simple proof of "Favard's theorem" on the unit circle. *Atti Sem. Mat. Fis. Univ. Modena* **39** (1991), *no.* 2, 551–556. (Walter Van Assche) **93a:42010** 42C05

— (*with* Borwein, Peter B.) Notes on lacunary Müntz polynomials. (English summary) *Israel J. Math.* **76** (1991), *no.* 1-2, 183–192. (Wiesław Pleśniak) **93h:41014** 41A17 (26D07, 41A45)

— Nikol′skiĭ-type inequalities for generalized polynomials and zeros of orthogonal polynomials. *J. Approx. Theory* **67** (1991), *no.* 1, 80–92. (D. S. Lubinsky) **93c:42020** 42C05 (41A17)

— (*with* Máté, Attila; Nevai, Paul) Inequalities for generalized nonnegative polynomials. *Constr. Approx.* **8** (1992), *no.* 2, 241–255. (M. Lachance) **93e:41020** 41A17

— (*with* Borwein, Peter B.) Remez-, Nikol′skiĭ-, and Markov-type inequalities for generalized nonnegative polynomials with restricted zeros. *Constr. Approx.* **8** (1992), *no.* 3, 343–362. (Wiesław Pleśniak) **93f:41021** 41A17 (30C10)

— Weighted Markov and Bernstein type inequalities for generalized nonnegative polynomials. *J. Approx. Theory* **68** (1992), *no.* 3, 283–305. (B. Boyanov) **93f:41022** 41A17

— (*with* Nevai, Paul) Generalized Jacobi weights, Christoffel functions, and zeros of orthogonal polynomials. *J. Approx. Theory* **69** (1992), *no.* 2, 111–132. (Mircea Ivan) **93c:33004** 33C45 (41A05, 42A05, 42C05)

— Remez-type inequalities on the size of generalized polynomials. *J. London Math. Soc.* (2) **45** (1992), *no.* 2, 255–264. (Adam Piotr Wójcik) **93e:41022** 41A17

Erdem, Ismail (*with* Proctor, Charles) Three-phase sampling for quantitative and for binary measurements. (English summary) *Sankhya Ser. B* **53** (1991), *no.* 2, 244–256. 62D05

Erdl, Helmut (*with* Schneider, Peter) Classification of the multiple deflection two-point-mass gravitational lens models and application of catastrophe theory in lensing. (English summary) *Astronom. and Astrophys.* **268** (1993), *no.* 2, 453–471. (Summary) **93m:85003** 85A15 (58C28)

Erdmann, Karin On a class of tame symmetric algebras having only periodic modules. *Topics in algebra, Part* 1 (*Warsaw*, 1988), 287–302, *Banach Center Publ.*, 26, *Part* 1, *PWN, Warsaw*, 1990. (P. Donovan) **93e:16024** 16G60

— Classification problems for modular group representations. *Representations of algebras and related topics (Kyoto*, 1990), 250–283, *London Math. Soc. Lecture Note Ser.*, 168, *Cambridge Univ. Press, Cambridge*, 1992. (P. Donovan) **93k:20019** 20C20

— (*with* Skowroński, Andrzej) On Auslander-Reiten components of blocks and self-injective biserial algebras. *Trans. Amer. Math. Soc.* **330** (1992), *no.* 1, 165–189. (Abram I. Saksonov) **93b:16022** 16G70 (20C20)

— Schur algebras of finite type. *Quart. J. Math. Oxford Ser.* (2) **44** (1993), *no.* 173, 17–41. (P. Donovan) **93k:16024** 16G60 (20C30)

grosse-Erdmann, Karl-Goswin *see* **Grosse-Erdmann, Karl-Goswin**

Erdős, L. On some problems of P. Turán concerning power sums of complex numbers. *Acta Math. Hungar.* **59** (1992), *no.* 1-2, 11–24. (E. J. Scourfield) **93d:11099** 11N30

— (*with* Dão Quang Tuyên) Central limit theorems for the one-dimensional Rayleigh gas with semipermeable barriers. *Comm. Math. Phys.* **143** (1992), *no.* 3, 451–466. (Yun Gang Lu) **93d:82058** 82C22 (60J25, 60K35, 82C05, 82C70)

Erdős, Paul (*with* Lovász, László; Vesztergombi, K.) The chromatic number of the graph of large distances. *Combinatorics* (*Eger*, 1987), 547–551, *Colloq. Math. Soc. János Bolyai*, 52, *North-Holland, Amsterdam*, 1988. (*see* **93m:05002**) 05C15

— (*with* Pach, János; Pyber, L.) Isomorphic subgraphs in a graph. *Combinatorics* (*Eger*, 1987), 553–556, *Colloq. Math. Soc. János Bolyai*, 52, *North-Holland, Amsterdam*, 1988. (*see* **93m:05002**) 05C80

— (*with* Sárközy, A.) On a conjecture of Roth and some related problems. II. *Number theory* (*Banff, AB*, 1988), 125–138, *de Gruyter, Berlin*, 1990. (Hédi Daboussi) **93e:11017** 11B05

— On some of my favourite problems in graph theory and block designs. (English summary) Graphs, designs and combinatorial geometries (Catania, 1989). *Matematiche* (*Catania*) **45** (1990), *no.* 1, 61–73 (1991). (E. J. F. Primrose) **93h:05052** 05Cxx (05Bxx)

— (*with* Tuza, Zsolt) Rainbow Hamiltonian paths and canonically colored subgraphs in infinite complete graphs. *Math. Pannon.* **1** (1990), *no.* 1, 5–13. (Jaroslav Nešetřil) **93e:05062** 05C45 (05C15)

— (*with* Burr, Stefan A.) Extremal non-Ramsey graphs. *Graph theory, combinatorics, algorithms, and applications* (*San Francisco, CA*, 1989), 42–66, *SIAM, Philadelphia, PA*, 1991. (R. H. Schelp) **93b:05118** 05C55 (05C35)

— (*with* Burr, Stefan A.; Sós, Vera T.; Frankl, Peter; Graham, R. L.) Further results on maximal anti-Ramsey graphs. *Graph theory, combinatorics, and applications, Vol.* 1 (*Kalamazoo, MI*, 1988), 193–206, *Wiley-Intersci. Publ., Wiley, New York*, 1991. (Summary) **93i:05093** 05C55

— Problems and results in combinatorial analysis and combinatorial number theory. *Graph theory, combinatorics, and applications, Vol.* 1 (*Kalamazoo, MI*, 1988), 397–406, *Wiley-Intersci. Publ., Wiley, New York*, 1991. (A. N. Philippou) **93g:05136** 05C99 (11B75)

— (*with* Faudree, Ralph J.; Gyárfás, András; Schelp, Richard H.) Odd cycles in graphs of given minimum degree. *Graph theory, combinatorics, and applications, Vol.* 1 (*Kalamazoo, MI*, 1988), 407–418, *Wiley-Intersci. Publ., Wiley, New York*, 1991. (Summary) **93d:05085** 05C38

— (*with* Faudree, Ralph J.; Rousseau, C. C.; Schelp, Richard H.) Edge conditions for the existence of minimal degree subgraphs. *Graph theory, combinatorics, and applications, Vol.* 1 (*Kalamazoo, MI*, 1988), 419–434, *Wiley-Intersci. Publ., Wiley, New York*, 1991. (Summary) **93c:05062** 05C35

— (*with* Gimbel, John) A note on the largest H-free subgraph in a random graph. *Graph theory, combinatorics, and applications, Vol.* 1 (*Kalamazoo, MI*, 1988), 435–437, *Wiley-Intersci. Publ., Wiley, New York*, 1991. (Summary) **93d:05137** 05C80

— (*with* Jacobson, Michael S.; Lehel, Jenő) Graphs realizing the same degree sequences and their respective clique numbers. *Graph theory, combinatorics, and applications, Vol.* 1 (*Kalamazoo, MI*, 1988), 439–449, *Wiley-Intersci. Publ., Wiley, New York*, 1991. (Summary) **93d:05149** 05C99

— (*with* Horváth, Miklós; Joó, István) On the uniqueness of the expansions $1 = \sum q^{-n_i}$. *Acta Math. Hungar.* **58** (1991), *no.* 3-4, 333–342. (John H. Loxton) **93e:11012** 11A63

— (*with* Duke, Richard; Rödl, Vojtěch) Extremal problems for cycle-connected graphs. Proceedings of the Twenty-second Southeastern Conference on Combinatorics, Graph Theory, and Computing (Baton Rouge, LA, 1991). *Congr. Numer.* **83** (1991), 147–151. (A. C. Liu) **93a:05073** 05C35

— (*with* Larson, Jean A.) Matchings from a set below to a set above. Directions in infinite graph theory and combinatorics (Cambridge, 1989). *Discrete Math.* **95** (1991), *no.* 1-3, 169–182. (Andreas Blass) **93a:04001** 04A20 (03E05, 05C70)

— Distances determined by n points in the plane. *Geombinatorics* **1** (1991), *no.* 2, 3–4. 52C10

— Distances in convex polygons. *Geombinatorics* **1** (1991), *no.* 3, 4. 52A10

— (*with* Schuster, Seymour) Existence of complementary graphs having specified edge domination numbers. (English summary) *J. Combin. Inform. System Sci.* **16** (1991), *no.* 1, 7–10. (Summary) **93d:05068** 05C35

— (*with* Alavi, Yousef; Behzad, Mehdi; Lick, Don R.) Double vertex graphs. (English summary) *J. Combin. Inform. System Sci.* **16** (1991), *no.* 1, 37–50. (Summary) **93d:05126** 05C75

— (*with* Révész, Pál) Three problems on the random walk in $\mathbf{Z}^d$. (English summary) *Studia Sci. Math. Hungar.* **26** (1991), *no.* 2-3, 309–320. (Karl Grill) **93k:60171** 60J15 (60F15, 60G50)

— On some of my favourite problems in various branches of combinatorics. *Fourth Czechoslovakian Symposium on Combinatorics, Graphs and Complexity* (*Prachatice*, 1990), 69–79, *Ann. Discrete Math.*, 51, *North-Holland, Amsterdam*, 1992. (Zoltán Füredi) **93k:05001** 05–02

— (*with* Alavi, Yousef; Liu, Jiu Qiang; McCanna, Joseph) On the minimum size of graphs with a given bandwidth. (English summary) *Bull. Inst. Combin. Appl.* **6** (1992), 22–32. (Summary) **93g:05071** 05C35 (05C78)

— (*with* Joó, M.; Joó, István) On a problem of Tamás Varga. (English and French summaries) *Bull. Soc. Math. France* **120** (1992), *no.* 4, 507–521. (F. Schweiger) **93m:11076** 11K55 (11A63)

— (*with* Nicolas, Jean-Louis; Sárközy, A.) On the number of pairs of partitions of n without common subsums. *Colloq. Math.* **63** (1992), *no.* 1, 61–83. (George E. Andrews) **93c:11087** 11P82

— (*with* Graham, R. L.; Ruzsa, Imre Z.; Taylor, Herbert) Bounds for arrays of dots with distinct slopes on lengths. *Combinatorica* **12** (1992), *no.* 1, 39–44. (Summary) **93k:05182** 05D05

— In memory of Tibor Gallai. *Combinatorica* **12** (1992), *no.* 4, 373–374. (Editors) **93m:01054b** 01A70

— (*with* Faudree, Ralph J.; Rousseau, C. C.) Extremal problems involving vertices and edges on odd cycles. Special volume to mark the centennial of Julius Petersen's "Die Theorie der regulären Graphs", Part II. *Discrete Math.* **101** (1992), *no.* 1-3, 23–31. (Douglas B. West) **93g:05074** 05C35

— (*with* Sárközy, A.) Arithmetic progressions in subset sums. *Discrete Math.* **102** (1992), *no.* 3, 249–264. (Georges Grekos) **93g:11015** 11B25

— (*with* Gallai, Tibor; Tuza, Zsolt) Covering the cliques of a graph with vertices. (English summary) Topological, algebraical and combinatorial structures. Frolík's memorial volume. *Discrete Math.* **108** (1992), *no.* 1-3, 279–289. (David Burns) **93h:05124** 05C70 (68R10)

— Diameters of point sets. *Geombinatorics* **1** (1992), *no.* 4, 4. 52A37

— Obituary of my friend and coauthor Tibor Gallai. *Geombinatorics* **2** (1992), *no.* 1, 5–6. 01A70

— Distances determined by points in the plane. *Geombinatorics* **2** (1992), *no.* 1, 7. 52C10

— Distances determined by points in the plane. II. *Geombinatorics* **2** (1992), *no.* 2, 24. 52C10

— (*with* Joó, István) Corrigendum: "On the expansion $1 = \sum q^{-n_i}$" [Period. Math. Hungar. **23** (1991), no. 1, 27–30; MR 92i:11030]. *Period. Math. Hungar.* **25** (1992), *no.* 1, 113. (Editors) **93k:11017** 11B83 (11A67)

— (*with* Fon-Der-Flaass, D. G.; Kostochka, A. V.; Tuza, Zsolt) Small transversals in uniform hypergraphs. Siberian Advances in Mathematics. *Siberian Adv. Math.* **2** (1992), *no.* 1, 82–88. (Daniel Turzík) **93b:05076** 05C35 (05C65)

— (*with* Hsu, D. Frank) Distributed loop network with minimum transmission delay. *Theoret. Comput. Sci.* **100** (1992), *no.* 1, 223–241. (Summary) **93d:68006** 68M10

— (*with* Rousseau, C. C.) The size Ramsey number of a complete bipartite graph. (English summary) *Discrete Math.* **113** (1993), *no.* 1-3, 259–262. (Summary) **93k:05117** 05C55

— Errata: "Distances determined by points in the plane. II" [Geombinatorics **2** (1992), no. 2, 24]. *Geombinatorics* **2** (1993), *no.* 3, 65. 52C10

— (*with* Soifer, Alexander) Triangles in convex polygons. *Geombinatorics* **2** (1993), *no.* 4, 72–74. 51M25

— (*with* Lacampagne, C. B.; Selfridge, J. L.) Estimates of the least prime factor of a binomial coefficient. (English summary) *Math. Comp.* **61** (1993), *no.* 203, 215–224. (Adolf Hildebrand) **93k:11013** 11B65 (11N37)

— (*with* Zhang, Zhen Xiang) Upper bound of $\sum 1/(a_i \log a_i)$ for primitive sequences. *Proc. Amer. Math. Soc.* **117** (1993), *no.* 4, 891–895. (H. G. Diamond) **93e:11018** 11B05

— *see also* **Alon, Noga**, **93h:60002**; **Hall, R. R.**, **93k:11084**; **Csáki, Endre**, **93k:60172** *and* **Sved, Marta**

Erdős, Péter L. (*with* Székely, László A.) Evolutionary trees: an integer multicommodity max-flow–min-cut theorem. (English summary) *Adv. in Appl. Math.* **13** (1992), *no.* 4, 375–389. (Daniel Turzík) **93j:05038** 05C05 (90B10, 90C35, 92D15)

— (*with* Frankl, Peter; Kleitman, Daniel J.; Saks, Michael E.; Székely, László A.) Sharpening the LYM inequality. (English summary) *Combinatorica* **12** (1992), *no.* 3, 287–293. (G. F. Clements) **93m:05198** 05D05

Eremeev, V. A. (*with* Zubov, L. M.) Conditions for phase equilibrium in non-linearly elastic media with microstructure. (Russian) *Dokl. Akad. Nauk* **322** (1992), *no.* 6, 1052–1056; *translation in Soviet Phys. Dokl.* **37** (1992), *no.* 2, 114–116. (From the text) **93c:73011** 73B30 (73C50, 73G05, 73S10, 76A15)

— (*with* Zubov, L. M.; Karyakin, M. I.; Chernega, N. Ya.) Cavitation in non-linearly elastic bodies with dislocations and disclinations. (Russian) *Dokl. Akad. Nauk* **326** (1992), *no.* 6, 968–971; *translation in Soviet Phys. Dokl.* **37** (1992), *no.* 10, 518–520 (1993). (From the text) **93j:73018** 73C50 (73G05, 73S10)

Erĕmenko, A. Ė. (*with* Ostrovskiĭ, M. I.; Sodin, M. L.) On the carrier of the Riesz charge of a δ-subharmonic function. (Russian) *Operator theory, subharmonic functions* (*Russian*), 50–54, "*Naukova Dumka*", *Kiev*, 1991. (Jiong Qi Wu) **93j:31002** 31A15 (31A05)

— (*with* Sodin, M. L.) Distribution of values of meromorphic functions and meromorphic curves from the standpoint of potential theory. (Russian) *Algebra i Analiz* **3** (1991), *no.* 1, 131–164; *translation in St. Petersburg Math. J.* **3** (1992), *no.* 1, 109–136. (W. K. Hayman) **93a:32003** 32A22 (30D35, 31A05, 32H30)

— (*with* Lewis, John L.) Uniform limits of certain A-harmonic functions with applications to quasiregular mappings. *Ann. Acad. Sci. Fenn. Ser. A I Math.* **16** (1991), *no.* 2, 361–375. (Juha Heinonen) **93b:35039** 35J60 (30C65, 35B40)

— (*with* Lyons, T. J.) Finely open sets in the limit set of a finitely generated Kleinian group. *Approximation by solutions of partial differential equations* (*Hanstholm*, 1991), 61–67, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 365, *Kluwer Acad. Publ., Dordrecht*, 1992. (Peter M. Makienko) **93c:30057** 30F40 (31A05)

— (*with* Lyubich, M. Yu.) Dynamical properties of some classes of entire functions. (English and French summaries) *Ann. Inst. Fourier* (*Grenoble*) **42** (1992), *no.* 4, 989–1020. (Ben Bielefeld) **93k:30034** 30D05 (58F23)

— (*with* Sodin, M. L.) Meromorphic functions of finite order with maximal deficiency sum. *J. Soviet Math.* **59** (1992), *no.* 1, 643–651. (D. Drasin) **93f:30033** 30D35 (30D30, 31A05, 31A15)

— On the characterization of a Riemann surface by its semigroup of endomorphisms. *Trans. Amer. Math. Soc.* **338** (1993), *no.* 1, 123–131. (A. Hinkkanen) **93j:30023** 30D05 (20M20, 30F20)

Eremenko, S. Yu. ★ Методы конечных элементов в механике деформируемых тел. (Russian. Russian summary) [Finite-element methods in the mechanics of deformable bodies] With a preface by V. L. Rvachëv. "*Osnova*", *Khar'kov*, 1991. 272 *pp. ISBN* 5-7768-0017-X (Jiří Nedoma) **93h:73037** 73V05 (65N30, 73B30, 73E99, 73R05)

Erĕmin, A. Yu. (*with* Simon, Horst D.) A new approach to construction of efficient iterative schemes for massively parallel applications: variable block CG and BiCG methods and variable block Arnoldi procedure. (English summary) *Parallel processing for scientific computing, Vol. I, II* (*Norfolk, VA*, 1993), 57–60, *SIAM, Philadelphia, PA*, 1993. (*see* **93k:65003**) 65Y05

— (*with* Kolotilina, L. Yu.) Factorized sparse approximate inverse preconditionings. I. Theory. (English summary) *SIAM J. Matrix Anal. Appl.* **14** (1993), *no.* 1, 45–58. (Dao Sheng Zheng) **93m:65061** 65F50 (65F35, 65Y05)

Erĕmin, I. I. Improper optimization problems. (Russian) *Optimization: models, methods, solutions* (*Russian*) (*Irkutsk*, 1989), 69–81, "*Nauka*" *Sibirsk. Otdel., Novosibirsk*, 1992. (*see* **93k:90002**) 90C30 (90C31)

— Symmetric duality for lexicographic problems of linear programming. (Russian. Russian and Ukrainian summaries) *Ukraïn. Mat. Zh.* **44** (1992), *no.* 6, 766–773; *translation in*

Ukrainian Math. J. **44** (1992), *no.* 6, 690–696 (1993). (Anna Rycerz) **93k:90077** 90C29 (49N15, 90C05)

Erëmin, Yu. A. (*with* Sveshnikov, A. G.) Pattern recognition and synthesis problems in diffraction theory. (Russian. Russian summary) *Zh. Vychisl. Mat. i Mat. Fiz.* **32** (1992), *no.* 10, 1594–1607; *translation in Comput. Math. Math. Phys.* **32** (1992), *no.* 10, 1433–1443 (1993). (Summary) **93j:35052** 35J05 (35R50, 76Q05, 78A45)

Eren, Murat (*with* Higgins, Walter T.) A new algorithm for computing modified z-transforms. (English summary) *IMA J. Math. Control Inform.* **9** (1992), *no.* 2, 113–129. 93B40 (93C80)

Erez, Boas (*with* Taylor, M. J.) Hermitian modules in Galois extensions of number fields and Adams operations. *Ann. of Math.* (2) **135** (1992), *no.* 2, 271–296. (A. Agboola) **93g:11113** 11R33 (11E39)

— (*with* Morales, Jorge F.) The Hermitian structure of rings of integers in odd degree abelian extensions. *J. Number Theory* **40** (1992), *no.* 1, 92–104. (Anupam Srivastav) **93b:11153** 11R33 (11R32)

Ergashov, M. Investigation of processes of elastic wave propagation in winding connections taking into account the effects of their rotation and stretching. (Russian) *Prikl. Mat. Mekh.* **56** (1992), *no.* 1, 134–142; *translation in J. Appl. Math. Mech.* **56** (1992), *no.* 1, 117–124. (From the text) **93d:73035** 73D99 (73D05, 73D40, 73K05, 73K12, 73K20)

Ergun, Nurettin (*with* Noiri, Takashi) On weakly closed functions. (Serbo-Croatian summary) *Mat. Vesnik* **42** (1990), *no.* 3-4, 167–176. (C. W. Patty) **93g:54020** 54C10 (54D20)

Ergüt, Mahmut The drall and the scalar normal curvature of $(r+1)$-dimensional generalised ruled surfaces. (English summary) *Comm. Fac. Sci. Univ. Ankara Ser. A_1 Math. Statist.* **38** (1989), *no.* 1-2, 115–125 (1990). (Vladislav Goldberg) **93i:53006** 53A07

Erhel, Jocelyne (*with* Bristeau, Marie Odile; Glowinski, Roland; Périaux, Jacques) A time dependent approach to the solution of the Helmholtz equation at high wave numbers. (English summary) *Parallel processing for scientific computing, Vol. I, II (Norfolk, VA, 1993)*, 258–261, *SIAM, Philadelphia, PA*, 1993. (*see* **93k:65003**) 65P05 (76Q05)

Ericksen, J. L. ★ Introduction to the thermodynamics of solids. Applied Mathematics and Mathematical Computation, 1. *Chapman & Hall, London*, 1991. xii+204 *pp. ISBN* 0-412-39840-0 (M. A. Grinfel'd) **93d:73010** 73B30 (73-01, 76A15, 80A20)

— Bifurcation and martensitic transformations in Bravais lattices. *J. Elasticity* **28** (1992), *no.* 1, 55–78. (Miroslav Šilhavý) **93f:73013** 73B30 (73B05, 82D25)

Ericson, Thomas H. E. (*with* Einarsson, G.; Ingemarsson, I.; Johannesson, Rolf; Zigangirov, K. Sh.; Sundberg, C.-E.) ★ Topics in coding theory. In honor of Lars H. Zetterberg. Lecture Notes in Control and Information Sciences, 128. *Springer-Verlag, Berlin*, 1989. viii+176 *pp. ISBN* 3-540-51405-8 94–02 (94A24, 94Bxx)

— (*with* Zinov'ev, V. A.) On spherical codes generating the kissing number in dimensions 8 and 24. (English summary) A collection of contributions in honour of Jack van Lint. *Discrete Math.* **106/107** (1992), 199–207. (Ian Blake) **93g:94027** 94B60 (05B40, 52C17)

— (*with* Zinov'ev, V. A.) New packings on a Euclidean sphere for finite dimensions. (Russian. Russian summary) *Problemy Peredachi Informatsii* **28** (1992), *no.* 2, 47–53; *translation in Problems Inform. Transmission* **28** (1992), *no.* 2, 141–147. (Summary) **93f:94028** 94B60 (52C15)

Ërikke, B. *see* **Jöricke, Burglind**

Eriksen, E. (*with* Grøn, Øyvind) Equivalence in two-, three-, and four-dimensional space-times. (English summary) *Internat. J. Theoret. Phys.* **31** (1992), *no.* 8, 1421–1432. (Carl Brans) **93e:83054** 83C99

Erikson, T. *see* **Ericson, Thomas H. E.**

Eriksson, Anders B. (*with* Einarsson, Torbjörn; Östlund, Stellan) Circle maps with symmetry-breaking perturbations. *Phys. D* **57** (1992), *no.* 1-2, 58–84. (Helmut Rüssmann) **93c:58182** 58F27 (58F03, 58F13)

Eriksson, Kenneth (*with* Johnson, Claes) Adaptive streamline diffusion finite element methods for stationary convection-diffusion problems. *Math. Comp.* **60** (1993), *no.* 201, 167–188, S1–S2. (Summary) **93d:65095** 65N15 (65N30, 76M10, 76Rxx)

Eriksson-Bique, Sirkka-Liisa A. Generalized Riesz spaces. Analyse complexe (Bucharest, 1989). *Rev. Roumaine Math. Pures Appl.* **36** (1991), *no.* 1-2, 47–69. (N. Boboc) **93e:31016** 31D05 (06F05, 06F20, 46A40)

— Balayage spaces, standard H-cones and hyperharmonic cones. *Potential theory (Nagoya, 1990)*, 179–191, *de Gruyter, Berlin*, 1992. (Tadashi Murazawa) **93h:31016** 31D05 (06A99)

— (*with* Latvala, Visa) Convex cones in potential theory. *Summer School in Potential Theory (Joensuu, 1990)*, 141–190, *Joensuun Yliop. Luonnont. Julk.*, 26, *Univ. Joensuu, Joensuu*, 1992. (I. Netuka) **93j:31013** 31D05 (46A55)

Erinchek, N. M. (*with* Tyatyushkin, A. I.; Zholudev, A. I.) The gradient method for solving optimal control problems with phase constraints. (English summary) *System modelling and optimization (Zurich, 1991)*, 456–464, *Lecture Notes in Control and Inform. Sci.*, 180, *Springer, Berlin*, 1992. (*see* **93e:90003**) 49M07

Eringen, A. Cemal Vistas of nonlocal continuum physics. (English summary) The Eringen anniversary issue. *Internat. J. Engrg. Sci.* **30** (1992), *no.* 10, 1551–1565. (Summary) **93g:73006** 73B18

— Continuum theory of microstretch liquid crystals. (English summary) *J. Math. Phys.* **33** (1992), *no.* 12, 4078–4086. (Epifanio G. Virga) **93k:73011** 73B99 (76A15, 82D25)

— An assessment of director and micropolar theories of liquid crystals. (English summary) *Internat. J. Engrg. Sci.* **31** (1993), *no.* 4, 605–616. (Summary) **93m:76002** 76A15 (73B25, 82D30)

— *see also* **Eringen anniversary issue**, **93e:00032**; **Speziale, Charles G.**, **93h:01051a** *and* **Bibliography: Eringen, A. Cemal**, **93h:01051b**

Erkip, N. (*with* Süral, H.; Kondakcı, S.) Scheduling unit-time tasks in renewable resource constrained flowshops. (English summary) *Z. Oper. Res.* **36** (1992), *no.* 6, 497–516. 90B35

Erkolani, N. *see* **Ercolani, Nicholas M.**

Erkomaishvili, G. L. On the number of representations of integers by some quadratic functions. (Russian and Georgian summaries) *Soobshch. Akad. Nauk Gruzin. SSR* **139** (1990), *no.* 2, 257–259. (Editors) **93b:11046** 11E25

Erkut, Erhan (*with* Tarimcilar, Murat) On sensitivity analysis in the analytic hierarchy process. *IMA J. Math. Appl. Bus. Indust.* **3** (1991), *no.* 1, 61–83. 90A05 (90B50)

Erlebacher, Gordon (*with* Pruett, C. David; Ng, Lian L.) On the nonuniqueness of the parallel-flow approximation. (English summary) *Instability, transition, and turbulence (Hampton, VA, 1991)*, 344–355, *ICASE/NASA LaRC Ser., Springer, New York*, 1992. (Summary) **93k:76042** 76E05

Erler, J. (*with* Jungnickel, Dirk; Lauer, J.; Mas, Javier) String emission from twisted sectors: cocycle operators and modular background symmetries. (English summary) *Ann. Physics* **217** (1992), *no.* 2, 318–363. (C. Gauthier) **93h:81099** 81T30

Erlichson, Herman How Newton went from a mathematical model to a physical model for the problem of a first power resistive force. *Centaurus* **34** (1991), *no.* 3, 272–283. (Massimo Galuzzi) **93d:01019** 01A45

— Newton's first inverse solutions. *Centaurus* **34** (1991), *no.* 4, 345–366. (Craig G. Fraser) **93k:01021** 01A45

— Newton and Hooke on centripetal force motion. (English summary) *Centaurus* **35** (1992), *no.* 1, 46–63. (Peeter Müürsepp) **93k:01022** 01A45 (70–03)

— Newton's solution to the equiangular spiral problem and a new solution using only the equiangular property. (English, French and German summaries) *Historia Math.* **19** (1992), *no.* 4, 402–413. (Summary) **93i:01014** 01A45

nu Er Mai Mai Ti *see* **Nu Er Mai Mai Ti**

Ermakov, M. S. Asymptotic minimaxity of usual goodness of fit tests. *Probability theory and mathematical statistics, Vol. I (Vilnius, 1989)*, 323–331, "*Mokslas*", *Vilnius*, 1990. (Khursheed Alam) **93d:62032** 62F03 (62C20, 62G10, 62G20)

— On asymptotic minimaxity of rank tests. (English summary) *Statist. Probab. Lett.* **15** (1992), *no.* 3, 191–196. (A. L. Rukhin) **93j:62129** 62G10 (62G20)

Ermakov, S. M. *see* **Zhiglyavskiĭ, A. A.**, **93i:90004**

Ermekkaliev, K. Sh. Incomplete feedback control in a stabilization problem. (Russian) *Mathematical methods in problems of control and data processing (Russian)*, 36–39, *Ryazan. Radiotekhn. Inst., Ryazan'*, 1990. (*see* **93m:00028**) 93D15

Ermilov, A. N. (*with* Kurbatov, A. M.; Kabanovich, V. I.; Racotoaridzauna, S.) Almeida-Thouless inequality for the quenched Ising models with arbitrary distributions of coupling constants. *Phys. A* **182** (1992), *no.* 1-2, 190–196. (Krystyna Parczyk) **93a:82009** 82B20 (82B26, 82B27)

Ermilov, V. A. Modeling digital circuits taking into account the dependence of indeterminate signals. (Russian. Russian summary) *Avtomat. i Telemekh.* **1992**, *no.* 5, 116–125; *translation in Automat. Remote Control* **53** (1992), *no.* 5, *part* 2, 726–733. (Summary) **93d:94029** 94C10

Ermini, Luigi Some unresolved issues in the application of control theory to economic policy-making. (English summary) *Comput. Math. Appl.* **24** (1992), *no.* 8-9, 125–136. 90A16 (93C95)

Ermolaev, B. V. The use of generalized functions in a problem on elastic oscillations of a composite rod. (Russian. Russian summary) *Prikl. Mat. Mekh.* **56** (1992), *no.* 3, 465–472; *translation in J. Appl. Math. Mech.* **56** (1992), *no.* 3, 383–389. (Summary) **93k:73058** 73K12 (73K05, 73K20, 73P20)

Ermolaev, E. A. On the mass spectrum of a particle described by the superposition of Bargmann-Wigner equations. (Russian. English summary) *Vestsi Akad. Navuk BSSR Ser. Fīz.-Mat. Navuk* **1991**, *no.* 6, 41–44, 124. (Summary) **93a:81071** 81R20 (35Q40)

— (*with* Zhestkov, S. V.) An algebraic method for studying the stability of linear normal partial differential systems. (Russian. Russian and Ukrainian summaries) *Ukraïn. Mat. Zh.* **44** (1992), *no.* 4, 480–489; *translation in Ukrainian Math. J.* **44** (1992), *no.* 4, 421–429. (Summary) **93f:35033** 35F10 (30G35, 35B35)

Ermolaev, Yu. B. V. V. Morozov's regularity theorem. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* **1991**, *no.* 10, 5–10; *translation in Soviet Math. (Iz. VUZ)* **35** (1991), *no.* 10, 3–8. (Karl-Heinz Schlote) **93m:01043** 01A60 (01A70, 17–03)

Ermolaeva, N. S. The first years of emigration of Russian mathematicians. (Russian. English summary) *Voprosy Istor. Estestvoznan. i Tekhn.* **1992**, *no.* 2, 50–61, 173. (Renate Tobies) **93i:01035** 01A80

Ermol'ev, Yu. M. (*with* Gaĭvoronskiĭ, A. A.) Stochastic quasigradient methods for optimization of discrete event systems. (English summary) *Ann. Oper. Res.* **39** (1992), *no.* 1-4, 1–39 (1993). (Kurt Marti) **93k:90060** 90C15

— *see also* **Uryas'ev, S. P.**, **93b:90007**

Erné, Marcel Tensor products for bounded posets revisited. *Order* **7** (1990), *no.* 3, 295–314. (Eduard Fuchs) **93a:06005** 06A15 (06A23, 18A40, 18D10)

— The ABC of order and topology. *Category theory at work (Bremen, 1990)*, 57–83, *Res. Exp. Math.*, 18, *Heldermann, Berlin*, 1991. (Jiří Adámek) **93d:18006** 18B30 (06B35, 06F30, 18B35)

— Bigeneration in complete lattices and principal separation in ordered sets. *Order* **8** (1991), *no.* 2, 197–221. (Joel Berman) **93b:06011** 06A23 (06D05, 54D15)

— (*with* Stege, Kurt) Counting finite posets and topologies. *Order* **8** (1991), *no.* 3, 247–265. (D. J. Kleitman) **93b:06004** 06A07 (54A10)

— The number of partially ordered sets with more points than incomparable pairs. (English summary) *Discrete Math.* **105** (1992), *no.* 1-3, 49–60. (Joseph Neggers) **93g:05011** 05A15 (06A07)

— Semidistributivity, prime ideals and the subbase lemma. (English summary) *Rend. Circ. Mat. Palermo* (2) **41** (1992), *no.* 2, 241–250. (Yehuda Rav) **93j:06002** 06A06 (03E25, 06B10, 06D05)

— (*with* David, Elias) Ideal completion and Stone representation of ideal-distributive ordered sets. Proceedings of the Symposium on General Topology and Applications (Oxford, 1989). *Topology Appl.* **44** (1992), *no.* 1-3, 95–113. (H. A. Priestley) **93g:06002** 06A09 (06B10, 06D05)

Ernesti, A. (*with* Korsch, H. J.) Factorization relations and Wigner's rotation matrices. *J. Phys. A* **25** (1992), *no.* 13, L817–L821. (Summary) **93f:81163** 81V55 (81R05, 81U99)

Erneux, T. (*with* Reiss, E. L.; Holden, L. J.; Georgiou, M.) Slow passage through bifurcation and limit points. Asymptotic theory and applications. *Dynamic bifurcations (Luminy, 1990)*, 14–28, *Lecture Notes in Math.*, 1493, *Springer, Berlin*, 1991. (Miklós Farkas) **93f:34063** 34C23 (58F14)

Ernst, Bruno $\mathrm{ind}_{p\to 0}H^p$ is complete. *Arch. Math. (Basel)* **57** (1991), *no.* 3, 277–280. (P. Pérez Carreras) **93c:46005** 46A13 (46A30, 46E10)

Ernst, D. J. (*with* Ahluwalia, D. V.) Paradoxical kinematic acausality in Weinberg's equations for massless particles of arbitrary spin. *Modern Phys. Lett. A* **7** (1992), *no.* 22, 1967–1974. (A. O. Barut) **93k:81082** 81R20

Ernst, M. H. (*with* van Beijeren, H.) Diffusion in Lorentz lattice gas automata with backscattering. (English summary) *J. Statist. Phys.* **70** (1993), *no.* 3-4, 793–809. (Summary) **93k:82041** 82C20 (82C40)

— (*with* van Velzen, G. A.; Brito, R.) Stress-stress correlation functions in lattice gases beyond Boltzmann's approximation. (English summary) *J. Statist. Phys.* **70** (1993), *no.* 3-4, 811–832. 82C80

Ernvall, R. (*with* Metsänkylä, T.) Cyclotomic invariants for primes to one million. *Math. Comp.* **59** (1992), *no.* 199, 249–250. (Duncan A. Buell) **93a:11108** 11Y40 (11R18, 11R29)

— (*with* Buhler, J. P.; Crandall, Richard E.; Metsänkylä, T.) Irregular primes and cyclotomic invariants to four million. (English summary) *Math. Comp.* **61** (1993), *no.* 203, 151–153. (Harvey Cohn) **93k:11014** 11B68 (11D41, 11R29, 11Y35, 11Y40)

Erofeenko, V. T. (*with* Kozlovskaya, I. S.) Integral equations in problems of screening electromagnetic fields for cylindrical bodies. (Russian. Russian summary) *Differentsial'nye Uravneniya* **28** (1992), *no.* 2, 242–247, 365; *translation in Differential Equations* **28** (1992), *no.* 2, 209–213. (Introduction) **93g:45007** 45G10 (35Q60, 78A55)

Eroğlu, Mehmet Sait Topological representation for fuzzy topological spaces. *Fuzzy Sets and Systems* **42** (1991), *no.* 3, 355–362. (A. I. Krivoruchko) **93b:54007** 54A40 (04A72, 06B99)

— Algebraic characterization of some fuzzy topological spaces. *Fuzzy Sets and Systems* **47** (1992), *no.* 3, 377–380. (Summary) **93d:54012** 54A40 (04A72)

Erokhin, G. N. (*with* Alekseev, A. S.) A complex approach in the solution of inverse problems of integral geophysics. (Russian) *Nonclassical equations and equations of mixed type (Russian)*, 5–11, *Akad. Nauk SSSR Sibirsk. Otdel., Inst. Mat., Novosibirsk*, 1990. (Introduction) **93f:86003** 86A22 (35R30)

Erokhin, N. S. *see* **Nonlinear world, 93b:00012; 93b:00013** *and* **Nonlinear dynamics of structures, 93g:76004**

Erokhin, V. F. (*with* Dzyubenko, K. G.) Comparison of various methods for estimating the components of a group discrete parameter. (Russian. Russian summary) *Stochastic equations and boundary theorems (Russian)*, 45–51, *Akad. Nauk Ukrainy, Inst. Mat., Kiev*, 1991. (*see* **93e:60008**) 94A12

Erol, Kutluhan (*with* Nau, Dana S.; Subrahmanian, V. S.) On the complexity of domain-independent planning. (English summary) *AAAI-92. Proceedings, Tenth National Conference on Artificial Intelligence (San Jose, CA, 1992)*, 381–386, *Amer. Assoc. Artif. Intell., Menlo Park, CA*, 1992. (*see* **93j:68007**) 68Q45 (68T25)

Erovenko, V. A. The essential spectrum of differential operators in a Banach space. (Russian. English and Russian summaries) *Dokl. Akad. Nauk Belarusi* **36** (1992), *no.* 6, 490–493, 571. (Summary) **93f:47053** 47E05 (34L05, 47A10)

Errera, M. P. (*with* Dutoya, D.) A formal decomposition of the Jacobian matrix of the Euler equations. Application to upwind numerical schemes. *Rech. Aérospat. (English Edition)* **1992,** *no.* 1, 25–35; *translated from Rech. Aérospat.* **1992,** *no.* 1, 25–35 (*French. English and French summaries*). (Summary) **93f:76070** 76M20 (76N15)

Ersh, N. M. (*with* Gol'dshtik, M. A.) Stability of self-similar pipe flow with suction. *Fluid Dynamics* **26** (1991), *no.* 5, 651–657 (1992); *translated from Izv. Akad. Nauk SSSR Mekh. Zhidk. Gaza* **1991,** *no.* 5, 18–25 (*Russian*). (William H. H. Banks) **93b:76023** 76D05 (76E99)

Ershov, A. P. *see* **Images of programming, 93i:68008; Pottosin, I. V., 93k:01077a; 93k:01077b** *and* **Lavrov, S. S., (93i:68008)**

Ershov, A. V. (*with* Gavrilov, A. V.; Domoshnitskiĭ, A. I.; Moshchenkov, I. A.; Sheina, M. V.) On an automatic control problem. (Russian. Russian summary) *Boundary value problems (Russian)*, 46–53, *Perm. Politekh. Inst., Perm'*, 1990. (Summary) **93h:93058** 93D15 (93C95)

Ershov, Andrei P. *see* **Ershov, A. P.**

Ershov, Andrej Petrovich *see* **Ershov, A. P.**

Ershov, E. K. On the number of cycles of some differential equations on a two-dimensional torus. (Russian) *Differentsial'nye Uravneniya* **27** (1991), *no.* 12, 2167–2169, 2207. (Vladislav S. Medvedev) **93b:58118** 58F21 (34C05, 34C35)

Ershov, L. A. (*with* Mazmanishvili, A. S.; Tolmachev, V. I.) Application of methods of continual integration with respect to a dissipative measure in problems of optimal filtering of random processes. (Russian) *Otbor i Obrabotka Informatsii No.* 8(84) (1992), 23–26. (Summary) **93d:93082** 93E11 (60G35)

Ershov, S. V. (*with* Potapov, A. B.) The nature of nonchaotic turbulence. (Russian. English summary) *Akad. Nauk SSSR Inst. Prikl. Mat. Preprint* **1991,** *no.* 7, 19 *pp.* (Summary) **93a:76054** 76F20 (58F13, 58F40)

— (*with* Potapov, A. B.) Macrodynamics: large-scale structures in turbulent media. (English summary) *J. Statist. Phys.* **69** (1992), *no.* 3-4, 763–779. (D. ter Haar) **93j:76036** 76F20 (35Q35)

— Asymptotic theory of multidimensional chaos. (English summary) *J. Statist. Phys.* **69** (1992), *no.* 3-4, 781–812. (Si Ming Zhu) **93k:58149** 58F13 (82C80)

— (*with* Potapov, A. B.) On the nature of nonchaotic turbulence. (English summary) *Phys. Lett. A* **167** (1992), *no.* 1, 60–64. (Summary) **93f:58149** 58F13

Ershov, Yu. L. Forcing in admissible sets. *Algebra and Logic* **29** (1990), *no.* 6, 424–430 (1991). (Andreas Blass) **93a:03055** 03E40 (03C62)

— Projective Γ-groups. (Russian) *Dokl. Akad. Nauk SSSR* **318** (1991), *no.* 4, 798–801; *translation in Soviet Math. Dokl.* **43** (1991), *no.* 3, 762–766 (1992). (From the text) **93f:20037** 20E18 (11S20, 12F10)

— PC_p-fields with universal Galois group. Siberian Advances in Mathematics. *Siberian Adv. Math.* **1** (1991), *no.* 4, 1–26. (Moshe Jarden) **93i:12014** 12J12 (03B25, 03C60)

— (*with* Anikonov, Yu. E.; Bogolyubov, N. N.; Zhizhchenko, A. B.; Mishchenko, E. F.; Romanov, V. G.) Mikhail Mikhailovich Lavrent'ev (on the occasion of his sixtieth birthday). (Russian) *Uspekhi Mat. Nauk* **47** (1992), *no.* 3(285), 183–185; *translation in Russian Math. Surveys* **47** (1992), *no.* 3, 197–200. (Editors) **93h:01034** 01A70

— *see also* **Proceedings: Conference on Algebra, 93b:00029; 93b:00030** *and* **93b:00031**

Ersland, Brit Gunn (*with* Teigland, Rune) Comparison of two cell-centered multigrid schemes for problems with discontinuous coefficients. (English summary) *Numer. Methods Partial Differential Equations* **9** (1993), *no.* 3, 265–283. 65N55 (76M20, 76S05)

Ersoy, Okan K. (*with* Cho, Seongwon; Lehto, Mark) An algorithm to compute the degree of match in fuzzy systems. (English summary) *Fuzzy Sets and Systems* **49** (1992), *no.* 3, 285–299. 68P20 (68T35)

— (*with* Deng, S.-W.) Parallel, self-organizing, hierarchical neural networks with forward-backward training. (English summary) Networks for neural processing. *Circuits Systems Signal Process.* **12** (1993), *no.* 2, 223–246. (Summary) **93j:92003** 92B20

Ersü, E. (*with* Tolle, H.; Parks, P. C.; Hormel, M.; Militzer, Jürgen) Learning control with interpolating memories—general ideas, design lay-out, theoretical approaches and practical applications. (English summary) *Internat. J. Control* **56** (1992), *no.* 2, 291–317. 93E35

Ertas, Kadir (*with* Alvo, Mayer) Graphical methods for ranking data. (English and French summaries) *Canad. J. Statist.* **20** (1992), *no.* 4, 469–482. (Summary) **93m:62008** 62-07 (62H20)

Ertel, Hans ★ Geophysical hydrodynamics and Ertel's potential vorticity. Selected papers of Hans Ertel. Edited and with a preface by Wilfried Schröder. With an introduction in German by Hans-Jürgen Treder. Newsletters of the Interdivisional Commission on History of the IAGA, 12. *Interdivisional Commission on History of the International Association of Geomagnetism and Aeronomy, Bremen-Rönnebeck*, 1991. 218 *pp.* (From the preface) **93k:01090** 01A75 (76-03, 76Cxx, 86-03)

— *see also* **Theoretical concepts and observational implications in meteorology and geophysics, 93g:86002**

Erunova, I. B. (*with* Rivkind, V. Ya.) Investigation of the problem of liquid evaporation. (Russian. English summary) *Vestnik Leningrad. Univ. Mat. Mekh. Astronom.* **1991,** *vyp.* 2, 22–27, 124; *translation in Vestnik Leningrad Univ. Math.* **24** (1991), *no.* 2, 25–30. (Summary) **93b:76031** 76D99 (35Q30)

Ervin, V. J. (*with* Stephan, E. P.) Collocation with Chebyshev polynomials for a hypersingular integral equation on an interval. (English summary) Orthogonal polynomials and numerical methods. *J. Comput. Appl. Math.* **43** (1992), *no.* 1-2, 221–229. (Summary) **93j:65221** 65R20 (45L10)

Ervine, D. A. (*with* Addison, P. S.; Chan, Andrew H. C.; Williams, K. J.) Observations on numerical method dependent solutions of a modified duffing oscillator. (English summary) *Comm. Appl. Numer. Methods* **8** (1992), *no.* 8, 519–528. 65L05 (65L06)

fernández-ferreirós Erviti, Ana *see* **Fernández-Ferreirós Erviti, Ana**

fernández-ferreirós Erviti, Pilar *see* **Fernández-Ferreirós Erviti, Pilar**

Ervolina, Thomas R. (*with* McCormick, S. Thomas) Canceling most helpful total cuts for minimum cost network flow. (English summary) *Networks* **23** (1993), *no.* 1, 41–52. (Summary) **93j:90037** 90B10 (05C90)

Erzakova, N. A. A class of condensing operators in spaces of summable functions. (Russian. Russian summary) *Applied numerical analysis and mathematical modeling (Russian)*, 65–72, 176, *Akad. Nauk SSSR, Dal'nevostochn. Otdel., Vladivostok*, 1989. (From the text) **93f:47068** 47H09 (47A30, 47B38)

— On the existence and continuability of solutions of a differential equation with a discontinuous right-hand side. (Russian. Russian summary) *Differentsial'nye Uravneniya* **28** (1992), *no.* 6, 1078–1080, 1104. (Summary) **93h:34005** 34A12 (34G20, 47H09, 47N20)

Erzhanov, R. Zh. (*with* Matsevityi, Yu. M.; Sultangazin, U. M.; Sheryshev, V. P.) ★ Сосредоточенная емкость в задачах теплофизики и микроэлектроники. (Russian. Russian and Ukrainian summaries) [Concentrated capacity in problems of thermophysics and micro-electronics] *"Naukova Dumka", Kiev*, 1992. 296 *pp. ISBN* 5-12-002959-0 (Publisher's description) **93m:80007** 80A20 (78A55)

van Es, A. J. Uniform deconvolution: nonparametric maximum likelihood and inverse estimation. *Nonparametric functional estimation and related topics (Spetses*, 1990), 191–198, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 335, *Kluwer Acad. Publ., Dordrecht*, 1991. (M. Bertrand-Retali) **93b:62059** 62G05

van Es, Bert Estimating functionals related to a density by a class of statistics based on spacings. *Scand. J. Statist.* **19** (1992), *no.* 1, 61–72. (Sh. A. Khashimov) **93h:62074** 62G05

Eşanu, Mihai Une généralisation des théorèmes de A. Froda et Yu. Y. Prokhorov concernant les points de discontinuité de la première espèce. (French summary) [A generalization of the theorems of A. Froda and Yu. Y. Prokhorov concerning discontinuity points of the first kind] *Stud. Cerc. Mat.* **44** (1992), *no.* 4, 297–299. (J. M. Aarts) **93m:54035** 54C99 (26A15, 54F05)

Escalier S., Segundo (*with* Mondaca O., Guillermo; Varela V., Héctor) Alternative Bayes approach for estimating a distribution function in homogeneous right-neutral process. (Spanish. English summary) *Estadíst. Española* **33** (1991), *no.* 126, 99–113. 62G05 (62F15)

Escande, D. F. Large scale structures in kinetic plasma turbulence. (English summary) *Large scale structures in nonlinear physics (Villefranche-sur-Mer*, 1991), 73–104, *Lecture Notes in Phys.*, 392, *Springer, Berlin*, 1991. (*see* **93d:00036**) 82D10 (76X05)

— (*with* Elskens, Yves) Infinite resonance overlap: a natural limit for Hamiltonian chaos. (English summary) Homoclinic chaos (Brussels, 1991). *Phys. D* **62** (1993), *no.* 1-4, 66–74. (Summary) **93k:58147** 58F13 (34C37, 58F05, 70H05, 70K50)

Escassut, Alain (*with* Sarmant-Durix, Marie-Claude) The p-adic differential equation $y' = \omega y$ in the closed unit disk. *Collect. Math.* **41** (1990), *no.* 2, 165–174 (1991). (J. S. Joel) **93b:12013** 12H25 (30G06, 34A25)

— The equation $y' = fy$ in $\mathbf{C}_p$ when f is quasi-invertible. *Rend. Sem. Mat. Univ. Padova* **86** (1991), 17–27 (1992). (J. S. Joel) **93b:12014** 12H25 (34A99)

— (*with* Diarra, Bertin) Non-integrally closed algebras $H(D)$. *p-adic functional analysis (Laredo*, 1990), 63–74, *Lecture Notes in Pure and Appl. Math.*, 137, *Dekker, New York*, 1992. (J. S. Joel) **93c:32046** 32P05 (12J27, 46J99, 46S10)

— (*with* Sarmant-Durix, Marie-Claude) The equation $y' = \omega y$ and the meromorphic products. *p-adic functional analysis (Laredo*, 1990), 157–175, *Lecture Notes in Pure and Appl. Math.*, 137, *Dekker, New York*, 1992. (J. S. Joel) **93c:12011** 12H25 (30G06, 34A25)

— (*with* Sarmant-Durix, Marie-Claude) Injectivity, Mittag-Leffler series and Motzkin products. (English and French summaries) *Ann. Sci. Math. Québec* **16** (1992), *no.* 2, 155–173. (James J. Moloney) **93m:12008** 12J05

Escauriaza, Luis Uniqueness in the Dirichlet problem for time independent elliptic operators. *Partial differential equations with minimal smoothness and applications (Chicago, IL*, 1990), 115–127, *IMA Vol. Math. Appl.*, 42, *Springer, New York*, 1992. (Summary) **93a:35152** 35R05 (35J25)

— (*with* Seo, Jin Keun) Regularity properties of solutions to transmission problems. *Trans. Amer. Math. Soc.* **338** (1993), *no.* 1, 405–430. (V. S. Rabinovich) **93j:35039** 35B65 (35C15, 35D05, 35J15, 42B20, 45E05, 73D15)

Eschen, Elaine M. (*with* Spinrad, Jeremy P.) An $O(n^2)$ algorithm for circular-arc graph recognition. *Proceedings of the Fourth Annual ACM-SIAM Symposium on Discrete Algorithms (Austin, TX*, 1993), 128–137, *ACM, New York*, 1993. (Summary) **93k:05168** 05C85 (68Q25, 68R10)

Eschenauer, H. A. (*with* Vietor, T.) An augmented optimization procedure for stochastic optimization and its application to design with advanced materials. (English summary)

System modelling and optimization (Zurich, 1991), 943–952, Lecture Notes in Control and Inform. Sci., 180, Springer, Berlin, 1992. (see **93e:90003**) 90C33

Eschenburg, J.-H. (*with* Tribuzy, R.) Conformal mappings of surfaces and Cauchy-Riemann inequalities. *Differential geometry*, 149–170, *Pitman Monographs Surveys Pure Appl. Math.*, 52, *Longman Sci. Tech., Harlow*, 1991. (John C. Wood) **93h:53063** 53C42 (58E20)

— (*with* Galloway, Gregory J.) Lines in space-times. (English summary) *Comm. Math. Phys.* **148** (1992), *no.* 1, 209–216. (J. K. Beem) **93i:53064** 53C50 (53C80, 83C99)

— Cohomology of biquotients. *Manuscripta Math.* **75** (1992), *no.* 2, 151–166. (Samuel Evens) **93e:57070** 57T15 (53C30, 55R20)

Escher, Joachim Nonlinear elliptic systems with dynamic boundary conditions. *Math. Z.* **210** (1992), *no.* 3, 413–439. (G. Albinus) **93i:35056** 35J65 (35J55, 47N20)

Escher, M. C. *see* **Schattschneider, Doris, 93i:52001** *and* **Dunlap, R. A., (93i:52002)**

Eschmeier, Jörg (*with* Fialkow, Lawrence A.; Harte, Robin E.; Magajna, Bojan; Mathieu, Martin; Smith, Roger R.) Open problems. *Elementary operators and applications (Blaubeuren, 1991), 249–251, World Sci. Publishing, River Edge, NJ*, 1992. (F.-H. Vasilescu) **93i:47043** 47B47 (01A67, 47–02)

— Bishop's condition (β) and joint invariant subspaces. *J. Reine Angew. Math.* **426** (1992), 1–22. (Mihai Putinar) **93b:47010** 47A15 (46M20, 47A13, 47B40)

— Representations of Alg Lat(T). *Proc. Amer. Math. Soc.* **117** (1993), *no.* 4, 1013–1021. (P. A. Fillmore) **93j:47034** 47B20 (47A11, 47A15, 47B40)

Eschrig, H. *see* **Lifshits, E. M., 93g:00002**

López-Escobar, E. G. K. *see* **López-Escobar, E. G. K.**

carreras Escobar, Francesc *see* **Carreras Escobar, Francesc**

Escobar, José F. The geometry of the Sobolev quotients. *Differential geometry*, 171–177, *Pitman Monographs Surveys Pure Appl. Math., 52, Longman Sci. Tech., Harlow*, 1991. (Philippe-A. Dionne) **93g:53055** 53C21 (46E35)

— Conformal deformation of a Riemannian metric to a scalar flat metric with constant mean curvature on the boundary. *Ann. of Math.* (2) **136** (1992), *no.* 1, 1–50. (Dennis M. DeTurck) **93e:53046** 53C21 (53C25, 58G30)

— (*with* Freire, Alexandre S.) The spectrum of the Laplacian of manifolds of positive curvature. *Duke Math. J.* **65** (1992), *no.* 1, 1–21. (Stig I. Andersson) **93d:58174** 58G25 (35P05, 53C21)

— (*with* Aviles, Patricio) On the Sobolev quotient of an Einstein manifold. *Indiana Univ. Math. J.* **41** (1992), *no.* 2, 435–438. (Zhi Ren Jin) **93i:53045** 53C25 (53C21, 58G30)

— The Yamabe problem on manifolds with boundary. *J. Differential Geom.* **35** (1992), *no.* 1, 21–84. (Dennis M. DeTurck) **93b:53030** 53C21 (35J20, 58E11, 58G30)

Escobar, Luis A. (*with* Meeker, William Q., Jr.) Assessing influence in regression analysis with censored data. (French summary) *Biometrics* **48** (1992), *no.* 2, 507–528. 62J05

Escobedo, Miguel (*with* Levine, Howard A.) Explosion et existence globale pour un système faiblement couplé d'équations de réaction diffusion. (English summary) [Blow up and global existence for a weakly coupled reaction-diffusion system] *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 10, 735–739. (Elena Comparini) **93f:35095** 35K45 (35B05, 35K05, 35K57)

barba Escriba, Juan *see* **Barba Escriba, Juan**

Escribano, Ma. del Carmen (*with* Fernández y Fernández-Arroyo, Fidel José; Jiménez Guerra, P.) On the Orlicz spaces of functions valued in locally convex spaces. (English summary) *Comment. Math. Prace Mat.* **32** (1992), 33–44. (M. M. Popov) **93m:46038** 46E40 (46E30)

Escudero, L. F. (*with* Ascheuer, N.; Grötschel, Martin; Stoer, Mechthild) A cutting plane approach to the sequential ordering problem (with applications to job scheduling in manufacturing). (English summary) *SIAM J. Optim.* **3** (1993), *no.* 1, 25–42. (Summary) **93k:90033** 90B10 (90B30)

Escudero, M. (*with* Fàbrega, J.; Fiol, Miguel A.; Homobono, N.) On surviving route graphs of iterated line digraphs. *Graph theory, combinatorics, and applications, Vol. 1 (Kalamazoo, MI, 1988), 451–466, Wiley-Intersci. Publ., Wiley, New York*, 1991. (Summary) **93c:05052** 05C20

Esebbag, C. (*with* Getino, J. M.; de Llano, M.; et al.) Cooper pairing in one, two, and three dimensions. *J. Math. Phys.* **33** (1992), *no.* 3, 1221–1223. (Guang Shan Tian) **93a:82068** 82D55

Esfahanian, Abdol-Hossein (*with* Choi, Hyeong-Ah; Houck, Bradley C.) Optimal communication trees with application to hypercube multicomputers. *Graph theory, combinatorics, and applications, Vol. 1 (Kalamazoo, MI, 1988), 245–264, Wiley-Intersci. Publ., Wiley, New York*, 1991. (Summary) **93b:05156** 05C90 (05C05)

— (*with* Zimmerman, Guy W.) Chordal rings as fault-tolerant loops. (English summary) *Discrete Appl. Math.* **37/38** (1992), 563–573. (Summary) **93e:68007** 68M10 (68M20)

— (*with* Choi, Hyeong-Ah) A message-routing strategy for multicomputer systems. (English summary) *Networks* **22** (1992), *no.* 7, 627–646. 68M10 (68Q25, 68R10)

Esfandiari, Farzad (*with* Khalil, Hassan K.) Output feedback stabilization of fully linearizable systems. (English summary) *Internat. J. Control* **56** (1992), *no.* 5, 1007–1037. (Wolfgang Kliemann) **93h:93057** 93D15 (93B18, 93B52)

Esfandiari, Ramin S. (*with* Sadek, Ibrahim S.) Optimal open/closed-loop control of a Rayleigh beam. (English summary) *Optimal Control Appl. Methods* **13** (1992), *no.* 3, 247–253. 49M30 (49K20, 73K05, 73K50)

Ésik, Zoltán (*with* Bloom, Stephen L.) Floyd-Hoare logic in iteration theories. *J. Assoc. Comput. Mach.* **38** (1991), *no.* 4, 887–934. (G. Mirkowska) **93c:68064** 68Q60 (03B70)

— Varieties of automata and transformation semigroups. *Acta Math. Hungar.* **59** (1992), *no.* 1-2, 59–74. (G. J. Lallement) **93g:20119** 20M20 (20M35, 68Q45, 68Q70)

Esimova, S. T. A procedure for smoothing the nonsmooth terms of the asymptotic expansion of the solution of a system of parabolic-type singularly perturbed equations. (Russian. Russian summary) *Vestnik Moskov. Univ. Ser. XV Vychisl. Mat. Kibernet.* **1992**, *no.* 2, 13–20, 73; *translation in Moscow Univ. Comput. Math. Cybernet.* **47** (1992), *no.* 2, 12–18. (Summary) **93f:65077** 65M99 (35B25, 35C20)

Esipov, S. E. (*with* Newman, T. J.) New formulation of restricted growth processes. (English summary) *J. Statist. Phys.* **70** (1993), *no.* 3-4, 691–702. (Summary) **93k:82044** 82C24 (82C20)

Eskey, Megan (*with* Zweben, Monte; Davis, Eugene; Daun, Brian; Drascher, Ellen; Deale, Michael) Learning to improve constraint-based scheduling. (English summary) *Artificial Intelligence* **58** (1992), *no.* 1-3, 271–296. (Summary) **93i:68159** 68T20 (90B35)

Ėskin, L. D. ★ Нелокальная асимптотика решений дифференциальных уравнений и ее приложения. (Russian) [Nonlocal asymptotic behavior of solutions of differential equations and applications] *Kazan. Gos. Univ., Kazan'*, 1990. 296 *pp. ISBN* 5-7464-0656-2 (V. G. Kolomiets) **93e:35010** 35B40 (34E05, 35B25)

Eskola, L. ★ Geophysical interpretation using integral equations. *Chapman & Hall, London*, 1992. xii+191 *pp. ISBN* 0-412-37020-4 (Olga A. Hachay) **93m:86007** 86A25 (45A05, 65R20, 78A30, 86A22)

Eslami, Esfandiar (*with* Stewart, Patrick N.) Two-sided essential nilpotence. *Internat. J. Math. Math. Sci.* **15** (1992), *no.* 2, 351–354. (Stefan Veldsman) **93a:16018** 16N40

Eslami, Mansour Robust quadratic optimization of systems with large parameter variations. (English summary) *Optimal Control Appl. Methods* **12** (1991), *no.* 1, 33–48. (Françoise Berquier) **93i:93039** 93B35 (93B40)

— Set by set generation of robust stable matrices. (English summary) *IEEE Trans. Automat. Control* **38** (1993), *no.* 4, 646–651. (Summary) **93m:93068** 93D09 (93B40)

— On the construction of robustly stable large-scale dynamic systems. (English summary) *Internat. J. Control* **57** (1993), *no.* 6, 1499–1508. (Summary) **93m:93069** 93D09 (93A15)

Esmaganbetov, M. G. Sharpening of the Jackson-Stechkin theorem on the best approximation of functions in L_p. (Russian. English and Kazakh summaries) *Izv. Akad. Nauk Kazakh. SSR Ser. Fiz.-Mat.* **1991**, *no.* 1, 28–33. (Jia-Ding Cao) **93b:42004** 42A10 (41A17)

Esmerligil, Z. G. (*with* Ünlü, Y.) Edge disconnectivity of G and $K_2 \times G$. (English and Turkish summaries) *Doğa Mat.* **16** (1992), *no.* 3, 187–191. (Summary) **93i:05082** 05C40

Esnault, Hélène (*with* Schechtman, Vadim V.; Viehweg, Eckart) Cohomology of local systems on the complement of hyperplanes. *Invent. Math.* **109** (1992), *no.* 3, 557–561. (Hiroaki Terao) **93g:32051** 32S40 (52B30)

— (*with* Srinivas, V.) Chern classes of vector bundles with holomorphic connections on a complete smooth complex variety. *J. Differential Geom.* **36** (1992), *no.* 2, 257–267. (Steven B. Bradlow) **93h:32041** 32L10 (14F05, 32C35)

— (*with* Seade, José A.; Viehweg, Eckart) Characteristic divisors on complex manifolds. *J. Reine Angew. Math.* **424** (1992), 17–30. (Anatoly Libgober) **93h:32042** 32L20 (14C40, 19L10, 32J18, 57R20)

— (*with* Nori, Madhav; Srinivas, V.) Hodge type of projective varieties of low degree. *Math. Ann.* **293** (1992), *no.* 1, 1–6. (David Cox) **93d:14018** 14C30 (14A20, 14G15)

Esogbue, Augustine O. (*with* Fedrizzi, Mario; Kacprzyk, Janusz) Fuzzy dynamic programming with stochastic systems. *Combining fuzzy imprecision with probabilistic uncertainty in decision making*, 266–285, *Lecture Notes in Econom. and Math. Systems*, 310, *Springer, Berlin*, 1988. (*see* **93c:90002**) 90C70 (04A72)

— (*with* Suh, Doug Y.) Transformation of mass function and joint mass function for evidence theory in the continuous domain. (English summary) *J. Math. Anal. Appl.* **176** (1993), *no.* 2, 521–544. 68T30 (60A99)

d'Espagnat, B. Heisenberg picture and reality. (English summary) *Found. Phys.* **22** (1992), *no.* 12, 1495–1504. 81P05

Español, Josep (*with* de la Rubia, F. Javier) Mixing and equilibrium probability densities in classical statistical mechanics. (English summary) *Phys. A* **187** (1992), *no.* 3-4, 589–602. (Koichiro Matsuno) **93j:82039** 82C03

Esparza, Javier (*with* Silva, Manuel) Compositional synthesis of live and bounded free choice Petri nets. *CONCUR '91 (Amsterdam, 1991), 172–187, Lecture Notes in Comput. Sci., 527, Springer, Berlin*, 1991. (Summary) **93a:68037** 68Q10 (68Q90)

— (*with* Cruz, Andrés; Sesma, Javier) Zeros of the Hankel function of real order out of the principal Riemann sheet. *J. Comput. Appl. Math.* **37** (1991), *no.* 1-3, 89–99. (Boro Döring) **93a:33005** 33C10

— A solution to the covering problem for 1-bounded conflict-free Petri nets using linear programming. *Inform. Process. Lett.* **41** (1992), *no.* 6, 313–319. (Jean-Luc Lambert) **93g:68100** 68Q90 (68Q25, 90C05)

— (*with* Best, Eike; Desel, Jörg) Traps characterize home states in free choice systems. (English summary) Selected papers of the International BCS-FACS Workshop on Semantics for Concurrency (Leicester, 1990). *Theoret. Comput. Sci.* **101** (1992), *no.* 2, 161–176. (Summary) **93e:68085** 68Q90

— (*with* Silva, Manuel) A polynomial-time algorithm to decide liveness of bounded free choice nets. *Theoret. Comput. Sci.* **102** (1992), *no.* 1, 185–205. (Anna Bagyinszkiné-Orosz) **93h:68105** 68Q90 (68Q25)

Esparza, S. O. (*with* Duran, B. S.) Multistate coherent systems and the three modules theorem. (English summary) *Comm. Statist. Theory Methods* **22** (1993), *no.* 2, 561–573. 62N05

Espedal, M. S. (*with* Hansen, R.; Nygaard, O.) An operator splitting technique for two-phase immiscible flow dominated by gravity and capillary forces. (English summary) *Computational methods in water resources, IX, Vol. 1 (Denver, CO, 1992), 59–67, Comput. Mech., Southampton*, 1992. (*see* **93g:76002**) 76M25 (76T05)

ruíz Espejo, Mariano *see* **Ruíz Espejo, Mariano**

Espelid, Terje O. *see* **Numerical integration, 93f:65006**

Espiau, Bernard (*with* Chaumette, François) Some issues in the control of rigid robots in a sensory space. (English summary) *Advanced robot control (Grenoble, 1990), 152–171, Lecture Notes in Control and Inform. Sci., 162, Springer, Berlin*, 1991. (*see* **93d:70002**) 70Q05 (70B15)

otero-Espinar, Maria Victoria *see* **Otero-Espinar, Maria Victoria**

Espina-Valencia, Carlos Stability of equilibria in a class-age-dependent epidemic model. (English summary) *J. Integral Equations Appl.* **4** (1992), *no.* 4, 509–532. (Summary) **93j:92030** 92D30 (35Q80, 45M10)

Espinel Febles, Ma. Candelaria (*with* Sánchez García, Miguel; Sobrón Fernández, Ma. Inés) Obtaining the double q-rose as a generalization of the q-rose. (Spanish. English summary) *Rev. Acad. Canaria Cienc.* **3** (1991), *no.* 1, 21–31. (From the introduction) **93f:05053** 05C35

Espino, V. (*with* de Korvin, A.; Kleyle, R.) Using multiple sources of information to recognize and classify objects. (English summary) *Stochastic Anal. Appl.* **10** (1992), *no.* 5, 573–589. 68T10 (04A72)

Espinosa, Aurea (*with* Fujioka, Jorge) Similarity reductions of a simplified version of the Hirota-Satsuma equation by means of the Clarkson-Kruskal method. *J. Phys. Soc. Japan* **60** (1991), *no.* 12, 4071–4075. (Summary) **93c:35134** 35Q35 (58F37)

puga-Espinosa, Isabel *see* **Puga-Espinosa, Isabel**

pentón Espinosa, Morayma *see* **Pentón Espinosa, Morayma**

salazar Espinoza, Reinaldo *see* **Salazar Espinoza, Reinaldo**

Esposito, Giampiero (*with* Buccella, Franco; Miele, Gennaro) Spontaneously broken SU(5) symmetries and 1-loop effects in the early universe. *Classical Quantum Gravity* **9** (1992), *no.* 6, 1499–1509. (Summary) **93b:81183** 81T20 (33E20, 81R05, 81T13, 83F05)

— Mathematical structures of space-time. *Fortschr. Phys.* **40** (1992), *no.* 1, 1–30. (M. A. H. MacCallum) **93i:83003** 83–02 (53C80, 83C30, 83C75)

— Singularity theory in classical cosmology. (English summary) *Nuovo Cimento B* (11) **107** (1992), *no.* 7, 849–851. 83C75

Esposito, Raffaele Kinetic and hydrodynamical limits for cellular automata. (English summary) *Probabilistic methods in mathematical physics* (*Siena*, 1991), 194–208, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93g:81002**) 82C40 (82C32)

— (*with* De Masi, Anna; Presutti, Errico) Kinetic limits of the HPP cellular automaton. *J. Statist. Phys.* **66** (1992), *no.* 1-2, 403–464. (Giuseppe Toscani) **93a:82024** 82B40 (82C20)

Esposito-Farese, Gilles (*with* Coquereaux, Robert) Right-invariant metrics on the Lie group SU(3) and the Gell-Mann-Okubo formula. *J. Math. Phys.* **32** (1991), *no.* 4, 826–831. (Mariano A. del Olmo) **93b:22039** 22E70 (53C80, 81V25)

— Superconnections and noncommutative geometry at the service of the standard model. Les Journées Relativistes (Cargèse, 1991). *Classical Quantum Gravity* **9** (1992), *suppl.*, S73–S78. (Michael Ringe) **93c:81122** 81T13 (17B70, 58B30, 81V22)

— (*with* Damour, Thibault) Tensor-multi-scalar theories of gravitation. (English summary) *Classical Quantum Gravity* **9** (1992), *no.* 9, 2093–2176. (Metin Gürses) **93f:83070** 83D05 (83B05, 83C25)

Espriu, D. *see* **Random surfaces and 2D quantum gravity, 93d:81004**

Espuelas, Alberto On a conjecture of Thompson. *J. Algebra* **145** (1992), *no.* 1, 94–112. (Thomas R. Berger) **93g:20039** 20D15 (20D10)

Esquembre, Francisco (*with* Balibrea Gallego, Francisco) Existence of a repulsive invariant curve for a mapping of the plane into itself with distinct real eigenvalues. (Spanish. English summary) *Proceedings of the XVth Portuguese-Spanish Conference on Mathematics, Vol. II* (*Portuguese*) (*Évora*, 1990), 347–352, *Univ. Évora, Évora*, 1991. (Summary) **93c:58098** 58F08

— (*with* Balibrea Gallego, Francisco) Chaotic properties of the solution of Feigenbaum's functional equation. (Spanish. English summary) *Proceedings of the XVth Portuguese-Spanish Conference on Mathematics, Vol. II* (*Portuguese*) (*Évora*, 1990), 353–358, *Univ. Évora, Évora*, 1991. (Summary) **93c:58129** 58F13 (26A18, 39A12, 54H20)

— Rotation sets for some noncontinuous maps of degree one. (English summary) *Acta Math. Univ. Comenian.* (*N.S.*) **61** (1992), *no.* 2, 167–183. (Coraci P. Malta) **93m:58035** 58F03 (58F08)

Esquivel-Avila, Jorge A. Liapunov stability properties in second order evolution equations with finite memory. *Nonlinear Anal.* **19** (1992), *no.* 8, 701–715. (Piotr Biler) **93i:34115** 34G20 (34D20, 34K20, 34K30, 73D35, 73K12)

Essam, J. W. (*with* Zhao, Dongming; Lookman, Turab) Exact results for fully directed polymer networks in two dimensions. (English summary) *J. Phys. A* **25** (1992), *no.* 19, L1181–L1185. (J. Štastna) **93j:82077** 82D60 (60J15, 82C41)

Essannouni, H. (*with* Kaïdi, El Amin Mokhtar) Speciality of full subalgebras and rational identities in Jordan algebras. *Mathematika* **39** (1992), *no.* 2, 327–329. (Alexander V. Il'tyakov) **93k:17059** 17C05

Essawy, A. H. (*with* Al-Hawaj, A. Y.) The optimum shape of an hydrofoil with no cavitation. (English summary) *Rev. Colombiana Mat.* **25** (1991), *no.* 1-4, 103–122. (Summary) **93m:76004** 76B05 (76M30)

van den Essen, Arno (*with* Adjamagbo, Kossivi) A new inversion formula for a polynomial map in two variables. *J. Pure Appl. Algebra* **76** (1991), *no.* 2, 119–120. (L. Andrew Campbell) **93a:14011** 14E07 (13B25, 13P99, 14E35)

— A note on Meisters and Olech's proof of the global asymptotic stability Jacobian conjecture. *Pacific J. Math.* **151** (1991), *no.* 2, 351–356. (L. Andrew Campbell) **93b:14028** 14E05 (13B10, 16S32, 34D05)

— (*with* Levelt, A. H. M.) An explicit description of all simple $k[\![x]\!][\partial]$-modules. (English summary) *Abelian groups and noncommutative rings*, 121–131, *Contemp. Math.*, 130, *Amer. Math. Soc., Providence, RI*, 1992. (Martin P. Holland) **93f:16028** 16S32 (13N10)

— Meromorphic differential equations having all monomials as solutions. *Arch. Math.* (*Basel*) **59** (1992), *no.* 1, 42–49. (L. Andrew Campbell) **93m:34002** 34A20 (12H20, 13N10)

— (*with* Kwieciński, Michał) On the reconstruction of polynomial automorphisms from their face polynomials. *J. Pure Appl. Algebra* **80** (1992), *no.* 3, 327–336. (Ludwik M. Drużkowski) **93j:14015** 14E09

— (*with* Adjamagbo, Kossivi) Eulerian operators and the Jacobian conjecture. III. (English summary) *J. Pure Appl. Algebra* **81** (1992), *no.* 2, 111–116. (L. Andrew Campbell) **93k:14022** 14E07 (13B10)

— (*with* Parthasarathy, T.) Polynomial maps and a conjecture of Samuelson. (English summary) *Linear Algebra Appl.* **177** (1992), 191–195. (Summary) **93i:14013** 14E07

— Locally finite and locally nilpotent derivations with applications to polynomial flows and polynomial morphisms. *Proc. Amer. Math. Soc.* **116** (1992), *no.* 3, 861–871. (Gary H. Meisters) **93a:13003** 13B10 (14E09, 34A99, 34C99)

— Eulerian operators and the Jacobian conjecture. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 2, 373–378. (L. Andrew Campbell) **93g:14021** 14E07 (13B10, 13H10, 14E20, 16S30, 16S32)

Esser, B. (*with* Hennig, D.) Transfer dynamics of a quasiparticle in a nonlinear dimer coupled to an intersite vibration: chaos on the Bloch sphere. (English summary) *Phys. Rev. A* (3) **46** (1992), *no.* 8, 4569–4576. (Summary) **93i:82068** 82C70 (58F13, 58F40)

Esser, Henning (*with* Büttgenbach, B.; Lüttgens, G.; Nessel, R. J.) A sharp error estimate for the numerical solution of a Dirichlet problem for the Poisson equation. (English summary) *J. Comput. Appl. Math.* **44** (1992), *no.* 3, 331–337. (J. Mikliček) **93m:65152** 65N06 (65N12)

Essler, Fabian H. L. (*with* Korepin, V. E.; Schoutens, Kareljan) Fine structure of the Bethe ansatz for the spin-$\frac{1}{2}$ Heisenberg XXX model. (English summary) *J. Phys. A* **25** (1992), *no.* 15, 4115–4126. (Ladislav Šamaj) **93i:82030** 82B23 (82B20)

— (*with* Korepin, V. E.; Schoutens, Kareljan) New eigenstates of the 1-dimensional Hubbard model. *Nuclear Phys. B* **372** (1992), *no.* 3, 559–596. (Yu Kui Zhou) **93f:82009** 82B20

— (*with* Korepin, V. E.; Schoutens, Kareljan) Completeness of the SO(4) extended Bethe ansatz for the one-dimensional Hubbard model. (English summary) *Nuclear Phys. B* **384** (1992), *no.* 3, 431–458. (Yu Kui Zhou) **93k:82013** 82B23

Esteban, J. *see* **Esteban, Joan**

Esteban, J. R. (*with* Bertsch, Michiel; Zhang, Hong Fei) On the asymptotic behaviour of the solutions of a degenerate equation in hydrology. *Nonlinear Anal.* **19** (1992), *no.* 4, 365–374. (L. Hsiao) **93i:35070** 35K55 (35B40, 76R50, 86A05)

Esteban, Joan (*with* Dutta, Bhaskar) Social welfare and equality. (English summary) *Soc. Choice Welf.* **9** (1992), *no.* 4, 267–276. (Summary) **93h:90025** 90A19

Esteban, Maria J. (*with* Berestycki, Henri) Sur la structure des solutions pour un problème elliptique dégénéré. Multiplicité et bifurcations. (English and French summaries) [On the structure of the solutions to a degenerate elliptic problem. Multiplicity and bifurcations] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 13, 1375–1380. (Tassilo Küpper) **93k:34044** 34B15 (34A47, 47H15)

— (*with* Müller, Stefan) Sobolev maps with integer degree and applications to Skyrme's problem. (English summary) *Proc. Roy. Soc. London Ser. A* **436** (1992), *no.* 1896, 197–201. (Anders Linnér) **93j:58039** 58E50 (49Q20, 58E05, 81V05)

casasús Estelles, Trinidad *see* **Casasús Estelles, Trinidad**

pérez Esteva, Salvador *see* **Pérez Esteva, Salvador**

Esteve, J. G. (*with* Boya, Luis J.; Casahorran, J.) Anomalous SUSY quantum mechanics, heterotic models and scattering states. (English summary) *Modern Phys. Lett. A* **7** (1992), *no.* 25, 2325–2331. (Summary) **93e:81027** 81Q60 (81T60)

Esteves, Eduardo A geometric proof of an inequality of order sequences. *Comm. Algebra* **21** (1993), *no.* 1, 231–238. (Letterio Gatto) **93j:14032** 14H45

Estévez, P. G. Painlevé analysis of the generalized Burgers-Huxley equation and the driven and damped sine-Gordon equation. (English summary) *Nonlinear evolution equations and dynamical systems* (*Baia Verde*, 1991), 279–287, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93i:35121** 35Q53

— (*with* Gordoa, P. R.) Painlevé test and solutions for the general anharmonic oscillator with variable damping. (English summary) *Nonlinear evolution equations and dynamical systems* (*Baia Verde*, 1991), 297–302, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93i:35145** 35Q72 (34A20, 34C15)

— The direct method and the singular manifold method for the FitzHugh-Nagumo equation. (English summary) *Phys. Lett. A* **171** (1992), *no.* 5-6, 259–261. (Summary) **93k:35261** 35Q80 (92C20)

quintela Estévez, Peregrina *see* **Quintela Estévez, Peregrina**

Estévez-Bretón, Erika Sabrina (*with* Estévez-Bretón, Gentil A.) The nonsingular spiked harmonic oscillator. (English summary) *J. Math. Phys.* **34** (1993), *no.* 2, 437–440. (M. Znojil) **93j:33002** 33B15 (81Q05, 81Q15)

Estévez-Bretón, Gentil A. (*with* Estévez-Bretón, Erika Sabrina) The nonsingular spiked harmonic oscillator. (English summary) *J. Math. Phys.* **34** (1993), *no.* 2, 437–440. (M. Znojil) **93j:33002** 33B15 (81Q05, 81Q15)

Estivill-Castro, Vladimir (*with* Wood, Derick) Randomized adaptive sorting. (English summary) *Random Structures Algorithms* **4** (1993), *no.* 1, 37–57. (Peter B. Gibbons) **93j:68041** 68P10

Estrada, Ricardo (*with* Kanwal, R. P.) Distributional solutions of the Wiener-Hopf integral and integro-differential equations. *J. Integral Equations Appl.* **3** (1991), *no.* 4, 489–514. (N. L. Vasilevskii) **93a:45005** 45E10 (34K05, 47B35, 47G10)

— (*with* Kanwal, R. P.) The asymptotic expansion of certain multidimensional generalized functions. *J. Math. Anal. Appl.* **163** (1992), *no.* 1, 264–283. (J. P. Singhal) **93e:41044** 41A60 (46F10)

— The separation of zeros for functions with compact spectrum. *J. Math. Anal. Appl.* **171** (1992), *no.* 2, 593–594. (Jean Lavoine) **93h:46046** 46F10 (30C15)

Estrada Sarlabous, J. On the Jacobian varieties of Picard curves defined over fields of characteristic $p > 0$. *Math. Nachr.* **152** (1991), 329–340. (H.-G. Rück) **93g:14033** 14H40

Estrade, Anne Exponentielle stochastique et intégrale multiplicative discontinues. (English summary) [Discontinuous stochastic exponential and multiplicative integral] *Ann. Inst. H. Poincaré Probab. Statist.* **28** (1992), *no.* 1, 107–129. (Summary) **93k:60116** 60G48 (60B15)

Estruch, Vicente D. (*with* Pedroso de Lima, Teresa; Hernández, Vicente G.) Discrete periodic linear systems in implicit form. (Spanish) *Proceedings of the XII Congress on Differential Equations and Applications/II Congress on Applied Mathematics* (*Spanish*) (*Oviedo*, 1991), 325–330, *Univ. Oviedo, Oviedo*, 1991. (*see* **93j:00009**) 93C55

Estudillo, Francisco J. M. (*with* Romero, Alfonso) On maximal surfaces in the n-dimensional Lorentz-Minkowski space. *Geom. Dedicata* **38** (1991), *no.* 2, 167–174. (Joel L. Weiner) **93b:53048** 53C42 (53C50)

— (*with* Romero, Alfonso) Generalized maximal surfaces in Lorentz-Minkowski space L^3. *Math. Proc. Cambridge Philos. Soc.* **111** (1992), *no.* 3, 515–524. (Cornelia-Livia Bejan) **93b:53010** 53A10 (53C50)

Esty, Warren W. Votes or competitions which determine a winner by estimating expected plurality. *J. Amer. Statist. Assoc.* **87** (1992), *no.* 418, 373–375. (Title) **93f:62074** 62G99

Eswarathasan, Arulappah (*with* Levine, Eugene) p-integral harmonic sums. *Discrete Math.* **91** (1991), *no.* 3, 249–257. (Ronald J. Evans) **93b:11039** 11D68 (11A41)

— (*with* Lubell, David) On the densities of some sequences. (English summary) *J. Number Theory* **42** (1992), *no.* 1, 88–99. (B. Garrison) **93f:11010** 11B05 (11P32)

Et al. *see* **et al.**

Etayo Gordejuela, Fernando Tangent of references embeds in references of tangent: a geometrical explanation. *Rev. Acad. Cienc. Zaragoza* (2) **45** (1990), 55–67. (Summary) **93e:53041** 53C20 (53C05)

— On jets of surfaces. (English summary) *Collect. Math.* **42** (1991), *no.* 2, 171–176 (1992). (Paulo R. Rodrigues) **93m:58006** 58A20

— The geometry of good squares of vector bundles. (English summary) *Riv. Mat. Univ. Parma* (4) **17** (1991), 131–147 (1992). (Marco Modugno) **93f:55013** 55R10 (53C05)

— (*with* Trías, Ujué R.) On the holonomy bundle of the sphere. (English summary) *Rev. Acad. Cienc. Zaragoza* (2) **47** (1992), 83–87. (Gilbert Monna) **93m:53023** 53C05

Etchemendy, John (*with* Barwise, K. Jon) ★ The language of first-order logic. Including the Macintosh program Tarski's World (1 Macintosh floppy disk (3.5 inch)). Second edition. CSLI Lecture Notes, 23. *Stanford University, Center for the Study of Language and Information, Stanford, CA*, 1991. xiv+297 *pp. ISBN* 0-937073-74-1 (J. M. Plotkin) **93e:03001** 03–01

Etemadi, N. Maximal inequalities for partial sums of independent random vectors with multi-dimensional time parameters. *Comm. Statist. Theory Methods* **20** (1991), *no.* 12, 3909–3923. (F. Móricz) **93d:60025** 60E15

— A simple inequality for independent random vectors. (English summary) *Sankhyā Ser. A* **53** (1991), *no.* 1, 111–114. (Summary) **93g:60009** 60B12 (60F15)

ayissi Eteme, Fidèle *see* **Ayissi Eteme, Fidèle**

Eterovic, A. L. (*with* Bathe, Klaus-Jürgen) On large strain elastoplastic analysis with frictional contact conditions. Numerical methods in applied science and industry (Torino, 1990). *Rend. Sem. Mat. Univ. Politec. Torino* **1991**, *Special Issue*, 81–93 (1992). (Summary) **93d:73067** 73V05 (65N30, 73E99, 73G05, 73G20, 73T05)

Etheridge, Alison M. Asymptotic behaviour of measure-valued critical branching processes. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 4, 1251–1261. (Ingemar Kaj) **93j:60118** 60J80 (60G57, 60J60)

Etherington, David W. (*with* Dalal, Mukesh) A hierarchy of tractable satisfiability problems. (English summary) *Inform. Process. Lett.* **44** (1992), *no.* 4, 173–180. (Summary) **93m:03069** 03D15 (03B05, 03B35, 68T25, 68T27)

Ethier, S. N. (*with* Griffiths, R. C.) Harmonic measure for random genetic drift. *Diffusion processes and related problems in analysis, Vol. I* (*Evanston, IL*, 1989), 73–81, *Progr. Probab.*, 22, *Birkhäuser Boston, Boston, MA*, 1990. (Akinobu Shimizu) **93d:60125** 60J60 (60J70, 92D10)

— (*with* Kurtz, Thomas G.) On the stationary distribution of the neutral diffusion model in population genetics. *Ann. Appl. Probab.* **2** (1992), *no.* 1, 24–35. (S. Tavaré) **93j:60107** 60J35 (60J70, 92D10)

— Equivalence of two descriptions of the ages of alleles. *J. Appl. Probab.* **29** (1992), *no.* 1, 185–189. (Fred M. Hoppe) **93f:60124** 60J70 (60G57, 92D10)

— Eigenstructure of the infinitely-many-neutral-alleles diffusion model. *J. Appl. Probab.* **29** (1992), *no.* 3, 487–498. (Seiichi Itatsu) **93m:60156** 60J35 (60J60, 60J70, 92D15)

Etienne, Gwihen Tableaux de Young et solitaire bulgare. (English summary) [Young tableaux and Bulgarian Solitaire] *J. Combin. Theory Ser. A* **58** (1991), *no.* 2, 181–197. (Andrea Brini) **93a:05134** 05E99 (05E10)

Étingof, P. I. (*with* Varchenko, A. N.) ★ Why the boundary of a round drop becomes a curve of order four. University Lecture Series, 3. *American Mathematical Society, Providence, RI*, 1992. viii+72 *pp. ISBN* 0-8218-7002-5 (Wen Xiong Chen) **93k:58056** 58E12 (35J05, 53A10)

— (*with* Entov, V. M.) Some exact solutions of the thin-sheet stamping problem. *Fluid Dynamics* **27** (1992), *no.* 2, 169–176; *translated from Izv. Ross. Akad. Nauk Mekh. Zhidk. Gaza* **1992**, *no.* 2, 24–33 (*Russian. Russian summary*). (Summary) **93i:76029** 76D08 (73E50, 76A99)

Etzion, Tuvi (*with* Bar-Yehuda, Reuven) Connections between two cycles—a new design of dense processor interconnection networks. (English summary) *Discrete Appl. Math.* **37/38** (1992), 29–43. (Summary) **93f:94033** 94C15 (05C35, 68M10)

— (*with* Goldfeld, David) UPP graphs and UMFA networks—architecture for parallel systems. (English summary) *IEEE Trans. Comput.* **41** (1992), *no.* 11, 1479–1483. (Summary) **93j:68012** 68M10 (68R10)

— Optimal codes for correcting single errors and detecting adjacent errors. *IEEE Trans. Inform. Theory* **38** (1992), *no.* 4, 1357–1360. 94B60

— Optimal partitions for triples. *J. Combin. Theory Ser. A* **59** (1992), *no.* 2, 161–176. (Jonathan I. Hall) **93b:05018** 05B07 (05A18)

— Partitions of triples into optimal packings. *J. Combin. Theory Ser. A* **59** (1992), *no.* 2, 269–284. (Summary) **93h:05048** 05B40 (94B60)

— (*with* Bar-David, Israel) An explicit construction of Euler circuits in shuffle nets and related networks. (English summary) *Networks* **22** (1992), *no.* 6, 523–529. (Gerald Hammer) **93g:90036** 90B12 (94C15)

— (*with* Greenberg, Gadi) Constructions for perfect mixed codes and other covering codes. (English summary) *IEEE Trans. Inform. Theory* **39** (1993), *no.* 1, 209–214. (Summary) **93m:94038** 94B60

— (*with* Bar-Yehuda, Reuven; Moran, Shlomo) Rotating-table games and derivatives of words. (English summary) *Theoret. Comput. Sci.* **108** (1993), *no.* 2, 311–329. (Edward W. Packel) **93m:68138** 68R15 (68Q45, 90D05)

Etzioni, Oren A structural theory of explanation-based learning. (English summary) *Artificial Intelligence* **60** (1993), *no.* 1, 93–139. 68T05

Eu, Byung Chan (*with* Mao, Kefei) Note on the kinetic theory approach to irreversible thermodynamics of radiation and matter. *Phys. A* **184** (1992), *no.* 1-2, 187–191. (Summary) **93e:82039** 82C40 (82C10)

Eubank, R. L. (*with* Speckman, P. L.) A bias reduction theorem with applications in nonparametric regression. *Scand. J. Statist.* **18** (1991), *no.* 3, 211–222. (Ewaryst Rafajłowicz) **93d:62060** 62G05 (62G09, 62J99)

— (*with* Hart, Jeffrey D.) Testing goodness-of-fit in regression via order selection criteria. (English summary) *Ann. Statist.* **20** (1992), *no.* 3, 1412–1425. (M. Hušková) **93k:62107** 62G10 (62E20, 62J02)

— (*with* LaRiccia, V. N.) Asymptotic comparison of Cramér-von Mises and nonparametric function estimation techniques for testing goodness-of-fit. (English summary) *Ann. Statist.* **20** (1992), *no.* 4, 2071–2086. (Arup Bose) **93k:62108** 62G10 (62E20)

— (*with* Thomas, Will) Detecting heteroscedasticity in nonparametric regression. (English summary) *J. Roy. Statist. Soc. Ser. B* **55** (1993), *no.* 1, 145–155. (Summary) **93k:62109** 62G10

Eubank, Stephen (*with* Casdagli, Martin; Farmer, J. Doyne; Gibson, John F.) State space reconstruction in the presence of noise. Nonlinear science: the next decade (Los Alamos, NM, 1990). *Phys. D* **51** (1991), *no.* 1-3, 52–98. (C. Eugene Wayne) **93a:58112** 58F12 (34C35, 34D45, 58F13)

— (*with* Gibson, John F.; Farmer, J. Doyne; Casdagli, Martin) An analytic approach to practical state space reconstruction. *Phys. D* **57** (1992), *no.* 1-2, 1–30. (Summary) **93c:58200** 58F40 (58F13)

Euclid *see* **de Young, Gregg, 93b:01012**; **Knorr, Wilbur R., 93d:01006**; **Mancosu, Paolo, 93e:01008**; **Gardies, Jean-Louis, 93g:01010**; **Fowler, David H., 93k:01003**; **Mueller, Ian, (93g:01015)**; **Knorr, Wilbur R., (93g:01015)** *and* **Bowen, Alan C., (93g:01015)**

Eugeni, Franco (*with* Maturo, Antonio) Generalized affine planes. *J. Inform. Optim. Sci.* **12** (1991), *no.* 3, 431–439. (Pavel Burda) **93a:51006** 51E21

— Combinatorics and cryptography. *Combinatorics* '90 (*Gaeta*, 1990), 159–174, *Ann. Discrete Math.*, 52, *North-Holland, Amsterdam*, 1992. (*see* **93f:05003**) 94A60 (01A99)

— (*with* Maturo, Antonio) A new authentication system based on the generalized affine planes. (English summary) *J. Inform. Optim. Sci.* **13** (1992), *no.* 2, 183–193. (Michael M. Dediu) **93h:94015** 94A60 (05B25)

Euler, Leonhard *see* **Fraser, Craig G., 93a:01022** *and* **93c:01017**

Euler, Norbert (*with* Steeb, Willi-Hans; Mulser, P.) A note on integrability and chaos of reduced self-dual Yang-Mills equations and Yang-Mills equations. *Nuovo Cimento B* (11) **106** (1991), *no.* 9, 1059–1061. (Summary) **93e:58092** 58F07 (58F13, 81T13)

— (*with* Steeb, Willi-Hans) ★ Continuous symmetries, Lie algebras and differential equations. *Bibliographisches Institut, Mannheim*, 1992. vi+320 *pp. ISBN* 3-411-15391-1 (Niky Kamran) **93k:58239** 58G37 (34A26, 35A30)

— (*with* Steeb, Willi-Hans) Nonlinear evolution equations and Painlevé test. (English summary) *Computational and applied mathematics, II* (*Dublin*, 1991), 227–236, *North-Holland, Amsterdam*, 1992. (Summary) **93j:35169** 35Q58 (34A99)

— (*with* Steeb, Willi-Hans) Nonlinear evolution equations and the Painlevé test. *Internat. J. Modern Phys. A* **7** (1992), *no.* 8, 1669–1683. (Walter Oevel) **93f:58116** 58F07 (34A34, 35Q58)

— (*with* Steeb, Willi-Hans) Parametrically driven pendulum and exact solutions. (English summary) *Internat. J. Theoret. Phys.* **31** (1992), *no.* 8, 1527–1530. (Summary) **93e:34007** 34A05 (34C15, 70K40)

— (*with* Shul'ga, M. V.; Steeb, Willi-Hans) Approximate symmetries and approximate solutions for a multidimensional Landau-Ginzburg equation. (English summary) *J. Phys. A* **25** (1992), *no.* 18, L1095–L1103. (Summary) **93f:35214** 35Q55

— (*with* Steeb, Willi-Hans; Hereman, W.) A note on the Zakharov equation and Lie-symmetry vector fields. (English summary) *Nuovo Cimento B* (11) **107** (1992), *no.* 10, 1211–1213. (Mehmet Can) **93k:58241** 58G37 (17B66, 35Q51)

— (*with* Shul'ga, M. V.; Steeb, Willi-Hans) Lie symmetries and Painlevé test for explicitly space- and time-dependent nonlinear wave equations. (English summary) *J. Phys. A* **26** (1993), *no.* 6, L307–L313. (Summary) **93k:35177** 35L70 (35A30, 58F35, 58G35)

— *see also* **Steeb, Willi-Hans, 93h:65001**

Euler, Reinhardt (*with* Mahjoub, A. R.) On a composition of independence systems by circuit identification. *J. Combin. Theory Ser. B* **53** (1991), *no.* 2, 235–259. (Summary) **93f:05096** 05C99 (05B35)

Eum, Sang Seup Sasakian manifolds with vanishing contact Bochner curvature tensor. *Kyungpook Math. J.* **32** (1992), *no.* 1, 141–148. (Oleg K. Mushkarov) **93j:53060** 53C25

Eusterbrock, Jutta Errata to: "Selecting the top three elements" [Discrete Appl. Math. **4** (1982), no. 4, 247–267; MR 83k:68023] by M. Aigner: a result of a computer-assisted proof search. (English summary) *Discrete Appl. Math.* **41** (1993), *no.* 2, 131–137. (Summary) **93m:68145** 68T15

Euvrard, Daniel (*with* Lenoir, Marc André) About nonhomogeneous free-surface conditions in hydrodynamics and underwater acoustics. *Mathematical approaches in hydrodynamics*, 101–115, *SIAM, Philadelphia, PA*, 1991. (Sergei Grudskii) **93a:76007** 76B10 (76M99, 76Q05)

Evangelou, S. N. A numerical study of sparse random matrices. (English summary) *J. Statist. Phys.* **69** (1992), *no.* 1-2, 361–383. (Pierre Moussa) **93j:82034** 82B44 (15A52, 65C10, 65F50, 82B43, 82B80)

Evans, Anthony B. Maximal sets of mutually orthogonal Latin squares. II. (English summary) *European J. Combin.* **13** (1992), *no.* 5, 345–350. (Charles Laywine) **93i:05030** 05B15

Evans, D. J. *see* **Evans, David J.**

Evans, D. V. (*with* Linton, C. M.) Trapped modes above a submerged horizontal plate. *Quart. J. Mech. Appl. Math.* **44** (1991), *no.* 3, 487–506. (Summary) **93f:76012** 76B15

— Vertical barriers, sloping beaches and submerged bodies. *Wave asymptotics* (*Manchester*, 1990), 202–219, *Cambridge Univ. Press, Cambridge*, 1992. (*see* **93b:76003**) 76B15

— Trapped acoustic modes. (English summary) *IMA J. Appl. Math.* **49** (1992), *no.* 1, 45–60. (John A. DeSanto) **93g:76102** 76Q05

— (*with* Linton, C. M.) Integral equations for a class of problems concerning obstacles in waveguides. (English summary) *J. Fluid Mech.* **245** (1992), 349–365. (Summary) **93i:76084** 76Q05 (76B15)

— (*with* Linton, C. M.) Sloshing frequencies. (English summary) *Quart. J. Mech. Appl. Math.* **46** (1993), *no.* 1, 71–87. (Summary) **93m:76006** 76B10

— *see also* **Davis, A. M. J., 93g:76018**

Evans, David J. Design of parallel numerical algorithms. (English summary) *Parallel computing* '91 (*London*, 1991), 39–74, *Adv. Parallel Comput.*, 4, *North-Holland, Amsterdam*, 1992. (*see* **93f:00016**) 65Y05 (65F99)

— (*with* Bekakos, M. P.) The double alternating group explicit method for nonlinear parabolic equations on MIMD parallel computers. (English summary) *Parallel Comput.* **18** (1992), *no.* 8, 879–895. 65-04 (65M99)

— (*with* Yousif, W. S.) Explicit block iterative method for the solution of the biharmonic equation. (English summary) *Numer. Methods Partial Differential Equations* **9** (1993), *no.* 1, 1–12. 65N06 (65N12)

— *see also* **Retraction: "The age Galerkin method for solving two-point boundary value problems", 93b:65111** *and* **Parallel computing '91, 93f:00016**

Evans, E. G., Jr. (*with* Charalambous, H.) Problems on Betti numbers of finite length modules. *Free resolutions in commutative algebra and algebraic geometry* (*Sundance, UT*, 1990), 25–33, *Res. Notes Math.*, 2, *Jones and Bartlett, Boston, MA*, 1992. (Şerban Bărcănescu) **93e:13018** 13D02 (13D25)

Evans, G. A. The high-order use of the trapezoidal rule in numerical quadrature. (English summary) *Internat. J. Math. Ed. Sci. Tech.* **23** (1992), *no.* 4, 525–536. (Summary) **93g:65031** 65D30

Evans, J. *see* **Evans, Jonathan M.**

Evans, J. W. *see* **Evans, James William**

Evans, James D. (*with* Hubbell, John H.; Evans, Valerie D.) Exact series solution to the Epstein-Hubbell generalized elliptic type integral using complex variable residue theory. (English summary) *Appl. Math. Comput.* **53** (1993), *no.* 2-3, 173–189. (Summary) **93h:65028** 65D20 (33E05)

Evans, James R. (*with* Minieka, Edward) ★ Optimization algorithms for networks and graphs. Second edition. With 1 IBM-PC floppy disk (5.25 inch). *Marcel Dekker, Inc., New York*, 1992. x+470 *pp. ISBN* 0-8247-8602-5 (N. I. Yanev) **93j:90002** 90–02 (05C85, 90B10, 90C27, 90C35)

Evans, James William (*with* Kang, H. C.) Analytic observations for the $d = 1 + 1$ bridge site (or single-step) deposition model. *J. Math. Phys.* **32** (1991), *no.* 10, 2918–2922. (Summary) **93a:82010** 82B20

Evans, Jonathan M. Covariant canonical quantisation of superparticles and superstrings. *Supermembranes and physics in 2+1 dimensions (Trieste, 1989)*, 224–235, *World Sci. Publishing, River Edge, NJ*, 1990. (*see* **93g:81003**) 81T70 (81T30)
— (*with* Hollowood, Timothy J.) Erratum: "Supersymmetric Toda field theories" [Nuclear Phys. B **352** (1991), no. 3, 723–768; MR 92h:81150]. *Nuclear Phys. B* **382** (1992), *no.* 3, 662. (Editors) **93j:81089** 81T40 (17B65, 17B70, 58F07)
— (*with* Hollowood, Timothy J.) Integrable $N = 2$ supersymmetric field theories. (English summary) *Phys. Lett. B* **293** (1992), *no.* 1-2, 100–110. (Summary) **93i:81270** 81T60 (17B81, 81R10)
Evans, Lawrence C. (*with* Souganidis, P. E.) A PDE approach to certain large deviation problems for systems of parabolic equations. (English summary) *Analyse non linéaire (Perpignan, 1987)*, 228–258, *Univ. Montréal, Montreal, PQ*, 1989. (*see* **93h:49003**) 35B40 (35K45, 49L25, 60F10)
— (*with* Gariepy, Ronald F.) Partial regularity for constrained minimizers of convex or quasiconvex functionals. Some topics in nonlinear PDEs (Turin, 1989). *Rend. Sem. Mat. Univ. Politec. Torino* **1989**, *Special Issue*, 75–93 (1991). (Summary) **93a:35060** 35J85
— Partial regularity for stationary harmonic maps into spheres. *Arch. Rational Mech. Anal.* **116** (1991), *no.* 2, 101–113. (From the introduction) **93m:58026** 58E20
— (*with* Gariepy, Ronald F.) ★ Measure theory and fine properties of functions. Studies in Advanced Mathematics. *CRC Press, Boca Raton, FL*, 1992. viii+268 *pp. ISBN* 0-8493-7157-0 (R. G. Bartle) **93f:28001** 28–02 (26–02, 26Bxx, 46E35)
— (*with* Soner, H. Mete; Souganidis, P. E.) Phase transitions and generalized motion by mean curvature. (English summary) *Comm. Pure Appl. Math.* **45** (1992), *no.* 9, 1097–1123. (Themistocles M. Rassias) **93g:35064** 35K55 (35Q99, 73B30)
— (*with* Spruck, Joel) Motion of level sets by mean curvature. III. *J. Geom. Anal.* **2** (1992), *no.* 2, 121–150. (Robert McOwen) **93d:58044** 58E99 (35K55, 49Q15, 53A07, 58G11)
— Periodic homogenisation of certain fully nonlinear partial differential equations. *Proc. Roy. Soc. Edinburgh Sect. A* **120** (1992), *no.* 3-4, 245–265. (Fu Ru Jiang) **93a:35016** 35B27 (35F20, 35J65)
Evans, M. W. (*with* Aktas, Y.; Farahi, F.) On the relativistic theory of charge. (English summary) *Modern Phys. Lett. B* **7** (1993), *no.* 6, 413–419. 78A25 (78A35)
Evans, Mark (*with* Giannakis, Ioannis) Isolated states and the classical phase space of 2D string theory. *Phys. Lett. B* **278** (1992), *no.* 1-2, 119–124. (Summary) **93c:81168** 81T30
Evans, Martin J. T-systems of certain finite simple groups. *Math. Proc. Cambridge Philos. Soc.* **113** (1993), *no.* 1, 9–22. (J. Wiegold) **93m:20022** 20D06 (20F05)
Evans, Michael E. Correction to: "Bilinear systems with homogeneous input-output maps" [IEEE Trans. Automat. Control **28** (1983), no. 1, 113–115; MR 84i:93043]. *IEEE Trans. Automat. Control* **37** (1992), *no.* 11, 1854–1855. (From the text) **93i:93027** 93B15
Evans, Michael Jon (*with* Humke, Paul D.; Saxe, Karen) A symmetric porosity conjecture of Zajíček. *Real Anal. Exchange* **17** (1991/92), *no.* 1, 258–271. (Tapan Kumar Dutta) **93g:26019** 26A99
Evans, N. W. Group theory of the Smorodinsky-Winternitz system. *J. Math. Phys.* **32** (1991), *no.* 12, 3369–3375. (Joshua Zak) **93a:81062** 81R05 (70H33, 81Q05)
Evans, R. J. *see* **Evans, Robin J.**
Evans, Richard B. The existence of generalized eigenfunctions and multiple eigenvalues in underwater acoustics. (English summary) *J. Acoust. Soc. Amer.* **92** (1992), *no.* 4, *part* 1, 2024–2029. (Summary) **93h:76066** 76Q05
Evans, Robin J. (*with* Mareels, Iven M. Y.; Penfold, H. B.) Controlling nonlinear time-varying systems via Euler approximations. *Automatica J. IFAC* **28** (1992), *no.* 4, 681–696. 93C40 (93B40)
Evans, Ronald J. The evaluation of Selberg character sums. *Enseign. Math.* (2) **37** (1991), *no.* 3-4, 235–248. (Bruce C. Berndt) **93c:11062** 11L05
— (*with* Berndt, Bruce C.) Some elegant approximations and asymptotic formulas of Ramanujan. *J. Comput. Appl. Math.* **37** (1991), *no.* 1-3, 35–41. (Andreas Guthmann) **93a:41055** 41A60 (01A60)
— (*with* Wavrik, John J.) Zeros of difference polynomials. *J. Approx. Theory* **69** (1992), *no.* 1, 1–14. (M. E. Muldoon) **93d:30006** 30C15 (26C10, 33C45, 41A10)
— (*with* Heuer, Gerald A.) Silverman's game on discrete sets. *Linear Algebra Appl.* **166** (1992), 217–235. (F. Szidarovszky) **93a:90082** 90D05 (90D46)
— (*with* Greene, John; Niederreiter, Harald) Linearized polynomials and permutation polynomials of finite fields. *Michigan Math. J.* **39** (1992), *no.* 3, 405–413. (Daniel Ashlock) **93j:11080** 11T06
— (*with* Berndt, Bruce C.) Asymptotic expansion of a series of Ramanujan. *Proc. Edinburgh Math. Soc.* (2) **35** (1992), *no.* 2, 189–199. (F. W. J. Olver) **93i:41020** 41A60 (33B15)
— Multidimensional q-beta integrals. *SIAM J. Math. Anal.* **23** (1992), *no.* 3, 758–765. (David M. Bressoud) **93e:33004** 33D05
Evans, Steven N. Equivalence and perpendicularity of local field Gaussian measures. *Seminar on Stochastic Processes*, 1990 (*Vancouver, BC*, 1990), 173–181, *Progr. Probab.*, 24, *Birkhäuser Boston, Boston, MA*, 1991. (Autorreferat (Zbl 723:60037)) **93m:60078** 60G30 (60G15)
— (*with* Barlow, Martin T.; Perkins, Edwin A.) Collision local times and measure-valued processes. *Canad. J. Math.* **43** (1991), *no.* 5, 897–938. (Robert J. Adler) **93a:60119** 60J55 (60G57)
— (*with* Brydges, David; Imbrie, John Z.) Self-avoiding walk on a hierarchical lattice in four dimensions. *Ann. Probab.* **20** (1992), *no.* 1, 82–124. (Massimo Campanino) **93b:60150** 60J15 (81T60, 82B41)
— Polar and nonpolar sets for a tree indexed process. *Ann. Probab.* **20** (1992), *no.* 2, 579–590. (S. J. Taylor) **93e:60156** 60J45 (60G17)
— The entrance space of a measure-valued Markov branching process conditioned on nonextinction. *Canad. Math. Bull.* **35** (1992), *no.* 1, 70–74. (Thomas G. Kurtz) **93j:60110** 60J50 (60G57, 60J25, 60J80)
— (*with* Speed, T. P.) Invariants of some probability models used in phylogenetic inference. (English summary) *Ann. Statist.* **21** (1993), *no.* 1, 355–377. (C. R. Rao) **93m:62121** 62H05 (60K99, 62F99)
— (*with* McPeek, M. S.; Speed, T. P.) A characterisation of crossover models that possess map functions. (English summary) *Theoret. Population Biol.* **43** (1993), *no.* 1, 80–90. (Summary) **93m:92013** 92D10
Evans, Trevor Varieties of loops and quasigroups. *Quasigroups and loops: theory and applications*, 1–26, *Sigma Ser. Pure Math.*, 8, *Heldermann, Berlin*, 1990. (*see* **93g:20133**) 20N05 (05B05, 05B15, 08A50, 08B20)
Evans, Valerie D. (*with* Evans, James D.; Hubbell, John H.) Exact series solution to the Epstein-Hubbell generalized elliptic type integral using complex variable residue theory. (English summary) *Appl. Math. Comput.* **53** (1993), *no.* 2-3, 173–189. (Summary) **93h:65028** 65D20 (33E05)
Evans, W. A. B. (*with* Powles, J. G.; Mallett, M. J. D.; Rickayzen, G.) Exact analytic solutions for diffusion impeded by an infinite array of partially permeable barriers. (English summary) *Proc. Roy. Soc. London Ser. A* **436** (1992), *no.* 1897, 391–403. (Jacob Rubinstein) **93f:76096** 76S05 (76R50)
Evans, W. D. (*with* Lewis, Roger T.; Saitō, Yoshimi) Geometric spectral properties of N-body Schrödinger operators. II. *Philos. Trans. Roy. Soc. London Ser. A* **338** (1992), *no.* 1649, 113–144. (B. Hellwig) **93f:35163** 35P15 (35J10, 47F05, 47N50, 81U10)
— (*with* Brown, B. Malcolm) On an extension of Copson's inequality for infinite series. *Proc. Roy. Soc. Edinburgh Sect. A* **121** (1992), *no.* 1-2, 169–183. (J. Sándor) **93e:26013** 26D15
— (*with* Brown, B. Malcolm; Littlejohn, L. L.) Discrete inequalities, orthogonal polynomials and the spectral theory of difference operators. *Proc. Roy. Soc. London Ser. A* **437** (1992), *no.* 1900, 355–373. (David R. Masson) **93g:47043** 47B39 (33C45, 39A10, 47A10, 47A57)
— (*with* Brown, B. Malcolm; Kirby, V. G.; Plum, Michael) Safe numerical bounds for the Titchmarsh-Weyl $m(\lambda)$-function. (English summary) *Math. Proc. Cambridge Philos. Soc.* **113** (1993), *no.* 3, 583–599. (J. K. Shaw) **93k:34052** 34B20 (34L40, 47E05)
Evans, Will J. (*with* Hoover, William G.; Hoover, Carol G.; Moran, William; Levatin, Joanne A.; Craig, Errol A.) Irreversible processes from reversible mechanics. *Microscopic simulations of complex flows (Brussels, 1989)*, 199–231, *NATO Adv. Sci. Inst. Ser. B Phys.*, 236, *Plenum, New York*, 1990. (Summary) **93a:82035** 82C05 (58F13, 58F40)
Evard, Jean-Claude (*with* Jafari, F.) A complex Rolle's theorem. *Amer. Math. Monthly* **99** (1992), *no.* 9, 858–861. 30–01
— (*with* Uhlig, Frank) On the matrix equation $f(X) = A$. Directions in matrix theory (Auburn, AL, 1990). *Linear Algebra Appl.* **162/164** (1992), 447–519. (Anna Lee) **93a:15020** 15A24
Evdokimov, A. A. Embedding of chains and cycles in a hypercube. I. (Russian) *Metody Diskret. Analiz. No.* 50 (1990), 10–25, 85. (Summary) **93c:94007** 94B20 (94C10)
Evdokimova, T. E. Investigation of bifurcations in a family of differential equations in the plane. (Russian) *Mathematical analysis (Russian)*, 14–21, *Ross. Gos. Ped. Univ., Leningrad*, 1991. (Henryk Żołądek) **93h:34054** 34C23 (34C05, 58F14)
Evens, Leonard ★ The cohomology of groups. Oxford Mathematical Monographs. Oxford Science Publications. *The Clarendon Press, Oxford University Press, New York*, 1991. xii+159 *pp. ISBN* 0-19-853580-5 (U. Stammbach) **93i:20059** 20J06 (20–02)
Everest, G. R. Applications of the p-adic subspace theorem. *p-adic methods and their applications*, 33–56, *Oxford Sci. Publ., Oxford Univ. Press, New York*, 1992. (T. N. Shorey) **93d:11071** 11J17
— p-primary parts of unit traces and the p-adic regulator. *Acta Arith.* **62** (1992), *no.* 1, 11–23. (Manfred Kolster) **93i:11134** 11R47 (11N45, 11N56, 11R27)
— On the solution of the norm-form equation. *Amer. J. Math.* **114** (1992), *no.* 3, 667–682. (A. Pethő) **93g:11026a** 11D57
— Addendum: "On the solution of the norm-form equation". *Amer. J. Math.* **114** (1992), *no.* 4, 787–788. (A. Pethő) **93g:11026b** 11D57
— Uniform distribution and lattice point counting. *J. Austral. Math. Soc. Ser. A* **53** (1992), *no.* 1, 39–50. (K. Győry) **93i:11114** 11P21 (11H16, 11M41, 11R45)
— On the canonical height for the algebraic unit group. *J. Reine Angew. Math.* **432** (1992), 57–68. (Henri Darmon) **93i:11135** 11R47 (11G05, 11J86, 11N45)
Everitt, C. W. F. (*with* Kalligas, D.; Wesson, Paul S.) Flat FRW models with variable G and Λ. *Gen. Relativity Gravitation* **24** (1992), *no.* 4, 351–357. (R. C. Roeder) **93b:83069** 83F05 (83D05)
Everitt, W. N. (*with* Bailey, P. B.; Zettl, Anton) Computing eigenvalues of singular Sturm-Liouville problems. *Results Math.* **20** (1991), *no.* 1-2, 391–423. (K. Balla) **93a:65102** 65L15 (34L15, 65–04)
— (*with* Zettl, Anton) Differential operators generated by a countable number of quasi-differential expressions on the real line. *Proc. London Math. Soc.* (3) **64** (1992), *no.* 3, 524–544. (R. C. Gilbert) **93k:34182** 34L99 (34B10, 34L05, 47B25, 47E05)
— (*with* Race, D.) The regular representation of singular second-order differential expressions using quasi-derivatives. *Proc. London Math. Soc.* (3) **65** (1992), *no.* 2, 383–404. (Walter Eberhard) **93m:34140** 34L99 (34A30, 34B24, 47E05)
— (*with* Krall, Allan M.; Littlejohn, L. L.) The Legendre type operator in a left definite Hilbert space. (English summary) *Quaestiones Math.* **15** (1992), *no.* 4, 467–475. (Summary) **93j:34122** 34L40 (34B05, 34B30, 34L10)
— (*with* Markus, Lawrence) Nonlinear quasi-differential control systems. *Results Math.* **21** (1992), *no.* 1-2, 65–82. (O. Hájek) **93a:93015** 93B05 (93C10)
— (*with* Krall, Allan M.; Littlejohn, L. L.; Onyango-Otieno, V. P.) Differential operators and the Laguerre type polynomials. *SIAM J. Math. Anal.* **23** (1992), *no.* 3, 722–736. (N. Hayek Calil) **93e:33002** 33C45 (34B99, 34L05, 34L10, 47E05)
Everling, Ulrich ★ Lokale Verkettungsintegrale und ihre Nenner für die speziellen linearen und unitären Gruppen dreier Variabler. (German) [Local intertwining integrals and their denominators for the special linear and unitary groups of three variables] Dissertation, Rheinische Friedrich-Wilhelms-Universität Bonn, Bonn, 1991. Bonner Mathematische Schriften [Bonn Mathematical Publications], 219. *Universität Bonn, Mathematisches Institut, Bonn*, 1991. ii+55 *pp.* (Jürgen Rohlfs) **93i:22020** 22E50 (11F67, 11F70, 22D30)
Evertse, Jan-Hendrik (*with* Győry, K.) Some results on Thue equations and Thue-Mahler equations. *Computational number theory (Debrecen*, 1989), 295–302, *de Gruyter, Berlin*, 1991. (T. N. Shorey) **93c:11014** 11D41 (11D75)
— (*with* Győry, K.) Thue inequalities with a small number of solutions. *The mathematical heritage of C. F. Gauss*, 204–224, *World Sci. Publishing, River Edge, NJ*, 1991. (T. N. Shorey) **93e:11045** 11D75 (11J25)
— (*with* Győry, K.) Effective finiteness theorems for decomposable forms of given discriminant. *Acta Arith.* **60** (1992), *no.* 3, 233–277. (C. L. Stewart) **93b:11035** 11D57 (11D75)
— Reduced bases of lattices over number fields. *Indag. Math.* (*N.S.*) **3** (1992), *no.* 2, 153–168. (Jerzy Kaczorowski) **93i:11137** 11R56 (11H06, 13F05)
— (*with* van Heyst, Eugène) Which new RSA-signatures can be computed from certain given RSA-signatures? *J. Cryptology* **5** (1992), *no.* 1, 41–52. (Hirosuke Yamamoto) **93g:94010** 94A60

— Decomposable form equations with a small linear scattering. *J. Reine Angew. Math.* **432** (1992), 177–217. (István Gaál) **93j:11020** 11D72 (11D57, 11D75)

Evertsz, Carl J. G. (*with* Mandelbrot, Benoit B.) Harmonic measure around a linearly self-similar tree. *J. Phys. A* **25** (1992), *no.* 7, 1781–1797. (Ilya S. Molchanov) **93b:28018** 28A80 (31–04, 31A99)

— *see also* **Peitgen, Heinz-Otto et al., 93k:58157**

Evseev, A. E. Commutative semigroups, every partition of which contains a subsemigroup. (Russian) *Semigroups and their homomorphisms* (*Russian*), 8–11, *Ross. Gos. Ped. Univ., Leningrad*, 1991. (From the text) **93d:20111** 20M14

Evstigneev, V. A. (*with* Kas'yanov, V. N.) ★ Алгоритмы на деревьях. (Russian) [Algorithms on trees] *Akad. Nauk SSSR Sibirsk. Otdel., Vychisl. Tsentr, Novosibirsk*, 1989. 312 *pp.* (Vladimir V. Markov) **93i:05122** 05C85 (05C05, 68Q25, 68R10)

Evstratov, V. V. A criterion for the finiteness of the discrete spectrum of a multidimensional Jacobi matrix. (Russian) *Mat. Zametki* **49** (1991), *no.* 5, 45–53, 158; *translation in Math. Notes* **49** (1991), *no.* 5-6, 473–479. (From the text) **93b:47066** 47B39 (15A18, 39A12, 47A10, 47N99)

Evteev, V. P. Quasiperiodic orbits of the generating system of differential equations of the interior variant of the restricted three-body problem. (Russian. Tajiki summary) *Dokl. Akad. Nauk Tadzhik. SSR* **34** (1991), *no.* 7, 403–406 (1992). 70F07 (34C27)

Evtimov, Stiliyan N. Nonlinear inertial-gravitational waves in equatorial regions. (Bulgarian. English and Russian summaries) *Annuaire Univ. Sofia Fac. Phys.* **80** (1992), 5–20. 76B15 (76U05, 86A05)

Evtimova, E. N. (*with* Georgiev, Vladimir) Critical points of the "entropy"-like functional for the quantum distribution functions. (English summary) *Helv. Phys. Acta* **65** (1992), *no.* 4, 596–610. (Matthew J. Donald) **93i:81115** 81S30

Evtukhov, V. M. On the asymptotic behavior of monotone solutions of nonlinear differential equations of Emden-Fowler type. (Russian. Russian summary) *Differentsial'nye Uravneniya* **28** (1992), *no.* 6, 1076–1078, 1104. (From the text) **93j:34042** 34C11 (34E99)

— Asymptotic representations of monotone solutions of an nth-order nonlinear differential equation of Emden-Fowler type. (Russian) *Dokl. Akad. Nauk* **324** (1992), *no.* 2, 258–260; *translation in Russian Acad. Sci. Dokl. Math.* **45** (1992), *no.* 3, 560–562 (1993). (From the text) **93i:34086** 34C99 (34C11, 34E99)

Evtushenko, A. A. (*with* Prikarpat·skii, A. K.) The parametric integro-interpolation method for solving singular integral equations. (Russian. Russian and Ukrainian summaries) *Ukraïn. Mat. Zh.* **44** (1992), *no.* 11, 1614–1617; *translation in Ukrainian Math. J.* **44** (1992), *no.* 11, 1487–1490 (1993). 65R20 (45L05)

Evtushenko, Yu. G. (*with* Zhadan, V. G.) Exact auxiliary functions. (Russian and Lithuanian summaries) *Informatica* **1** (1990), *no.* 1, 40–58, 185, 196. (Kang Hoh Phua) **93a:90061** 90C30 (49M30, 65K10)

— Automatic differentiation viewed from optimal control theory. *Automatic differentiation of algorithms* (*Breckenridge, CO*, 1991), 25–30, *SIAM, Philadelphia, PA*, 1991. (Summary) **93f:65024** 65D25 (49M05)

— (*with* Zhadan, V. G.) The space transformation technique in mathematical programming. (English summary) *System modelling and optimization* (*Zurich*, 1991), 292–300, *Lecture Notes in Control and Inform. Sci.*, 180, *Springer, Berlin*, 1992. (*see* **93e:90003**) 90C30

Evzerov, I. D. An approximate scheme for a coupled problem of thermoelastoviscoplasticity. (Russian. Russian summary) *Model. Mekh.* **4** (1990), *no.* 6, 41–48. (Summary) **93h:73019** 73E60 (73B30, 73V05, 73V15)

Ewacha, Kevin (*with* Li, Wei Xuan; Rival, Ivan) Order, genus, and diagram invariance. *Order* **8** (1991), *no.* 2, 107–113. (Summary) **93c:06002** 06A06 (05C10)

Ewald, Günter A short proof of Alexandrov-Fenchel's inequality. Dedicated to the memory of Professor Gottfried Köthe. *Note Mat.* **10** (1990), *suppl.* 1, 243–249 (1992). (W. J. Firey) **93j:52010** 52A39 (52A40)

— (*with* Schulz, Christoph) Nonstarshaped spheres. *Arch. Math.* (*Basel*) **59** (1992), *no.* 4, 412–416. (Jürgen Eckhoff) **93j:52025** 52B70 (52A30)

Ewell, John A. On sums of triangular numbers and sums of squares. *Amer. Math. Monthly* **99** (1992), *no.* 8, 752–757. (James J. Tattersall) **93j:11021** 11D85 (11P99)

— On representations of numbers by sums of two triangular numbers. *Fibonacci Quart.* **30** (1992), *no.* 2, 175–178. (H. L. Abbott) **93d:11013** 11B34 (11E25)

— An Eulerian method for representing π^2 by series. *Rocky Mountain J. Math.* **22** (1992), *no.* 1, 165–168. (Ronald J. Evans) **93e:11154** 11Y60

Ewen, H. (*with* Ogievetskii, O. V.; Wess, Julius) Quantum matrices in two dimensions. *Lett. Math. Phys.* **22** (1991), *no.* 4, 297–305. (Vladimir A. Stukopin) **93b:81112** 81R50 (17B37)

Ewen, R. (*with* Hofmeister, M.) On coverings of the complete graph with 4 vertices. (English summary) *Ars Combin.* **35** (1993), 87–96. (Summary) **93m:05149** 05C70

Ewens, W. J. An optimizing principle of natural selection in evolutionary population genetics. (English summary) *Theoret. Population Biol.* **42** (1992), *no.* 3, 333–346. 92D15

Ewert, Janina Continuity and quasi-uniform convergence of nets of fuzzy-valued maps. (English summary) *Fuzzy Sets and Systems* **52** (1992), *no.* 1, 83–88. (Summary) **93k:54018** 54A40 (04A72)

— Hashimoto topologies and quasicontinuous maps. *Math. Slovaca* **42** (1992), *no.* 1, 111–121. (I. Blum) **93i:54010** 54C60 (54C08)

Ewert-Krzemieniewski, Stanisław On conformally birecurrent Ricci-recurrent manifolds. *Colloq. Math.* **62** (1991), *no.* 2, 299–312. (From the introduction) **93f:53017** 53B20 (53C20)

Ewing, John H. (*with* Edmonds, Allan L.) Realizing forms and fixed point data in dimension four. *Amer. J. Math.* **114** (1992), *no.* 5, 1103–1126. (Steven H. Weintraub) **93i:57047** 57S17

— (*with* Schober, Glenn) Coefficients associated with the reciprocal of the Mandelbrot set. (English summary) *J. Math. Anal. Appl.* **170** (1992), *no.* 1, 104–114. (Frederick R. Marotto) **93i:30021** 30D05 (28A80, 58F23)

— (*with* Schober, Glenn) The area of the Mandelbrot set. *Numer. Math.* **61** (1992), *no.* 1, 59–72. (Feliks Przytycki) **93e:30006** 30–04 (30C30, 58–04, 58F23)

Ewing, Richard E. (*with* Lazarov, R. D.; Vassilevski, Panayot S.) Finite difference schemes on grids with local refinement in time and in space for parabolic problems. Optimal order two-grid iterative methods. *Parallel algorithms for partial differential equations* (*Kiel*, 1990), 70–93, *Notes Numer. Fluid Mech.*, 31, *Vieweg, Braunschweig*, 1991. (Summary) **93a:65113** 65M06 (65F10, 65M50)

— Operator splitting and Eulerian-Lagrangian localized adjoint methods for multiphase flow. *The mathematics of finite elements and applications, VII* (*Uxbridge*, 1990), 215–232, *Academic Press, London*, 1991. (Jerzy Stopa) **93b:76082** 76S05 (76M25, 76T05)

— (*with* Lazarov, R. D.; Vassilevski, Panayot S.) Local refinement techniques for elliptic problems on cell-centered grids. III. Algebraic multilevel BEPS preconditioners. *Numer. Math.* **59** (1991), *no.* 5, 431–452. (Summary) **93e:65126** 65N06 (65N15, 65N50)

— (*with* Wang, Jun Ping) The Schwarz algorithm and multilevel decomposition iterative techniques for mixed finite element methods. (English summary) *Fifth International Symposium on Domain Decomposition Methods for Partial Differential Equations* (*Norfolk, VA*, 1991), 48–55, *SIAM, Philadelphia, PA*, 1992. (Beny Neta) **93j:65188** 65N30

— (*with* Vassilevski, Panayot S.) Two-level iterative refinement preconditioners. (English summary) *Fifth International Symposium on Domain Decomposition Methods for Partial Differential Equations* (*Norfolk, VA*, 1991), 262–270, *SIAM, Philadelphia, PA*, 1992. (*see* **93g:65009**) 65N30 (65F35)

— Finite-element methods for multiphase and multicomponent flows. *Finite elements in fluids, Vol.* 8 (*Huntsville, AL*, 1989), 165–176, *Ser. Comput. Phys. Process. Mech. Thermal Sci., Hemisphere, Washington, DC*, 1992. (*see* **93e:76050**) 76M10 (76S05, 76T05)

— (*with* Lazarov, R. D.; Vassilev, A. T.) Adaptive techniques for time-dependent problems. (English summary) Reliability in computational mechanics (Kraków, 1991). *Comput. Methods Appl. Mech. Engrg.* **101** (1992), *no.* 1-3, 113–126. (Summary) **93i:65099** 65M99

— (*with* Wang, Jun Ping) Analysis of mixed finite element methods on locally refined grids. (English summary) *Numer. Math.* **63** (1992), *no.* 2, 183–194. (Zhimin Zhang) **93h:65137** 65N30

— (*with* Lin, Tao) Direct numerical method for an inverse problem of hyperbolic equations. (English summary) *Numer. Methods Partial Differential Equations* **8** (1992), *no.* 6, 551–574. (V. D. Glushenkov) **93k:65070** 65M06 (65M12)

— *see also* **Computational methods in water resources, 93g:76002** *and* **93g:76003**

Exel, Ruy (*with* Loring, Terry A.) Finite-dimensional representations of free product C^*-algebras. *Internat. J. Math.* **3** (1992), *no.* 4, 469–476. (Robert S. Doran) **93f:46091** 46L05

Exner, George R. (*with* Jung, Il Bong) Dual operator algebras and a hereditary property of minimal isometric dilations. *Michigan Math. J.* **39** (1992), *no.* 2, 263–270. (Srdjan Petrović) **93d:47037** 47A65 (47A15, 47A20, 47D27)

Exner, P. Spectral properties of bent quantum wires. (English summary) *Recent developments in quantum mechanics* (*Poiana Braşov*, 1989), 257–264, *Math. Phys. Stud.*, 12, *Kluwer Acad. Publ., Dordrecht*, 1991. (*see* **93e:81007**) 82D99 (81Q10)

— (*with* Truman, Aubrey) Models of K-capture decay: stochastic vs. quantum mechanics. (English summary) *Stochastics and quantum mechanics* (*Swansea*, 1990), 130–150, *World Sci. Publishing, River Edge, NJ*, 1992. (Gennady Berman) **93i:81304** 81V45 (81P20, 81V35)

— (*with* Dittrich, J.; Šeba, P.) Dirac Hamiltonian with Coulomb potential and spherically symmetric shell contact interaction. *J. Math. Phys.* **33** (1992), *no.* 6, 2207–2214. (Summary) **93b:81056** 81Q10 (81V45)

Exoo, Geoffrey (*with* Abbott, H. L.) On set systems not containing delta systems. *Graphs Combin.* **8** (1992), *no.* 1, 1–9. (Zoltán Füredi) **93c:05110** 05D05

— Announcement: On the Ramsey numbers $R(4,6)$, $R(5,6)$ and $R(3,12)$. (English summary) *Ars Combin.* **35** (1993), 85. 05C55

Exton, Harold On the triconfluent Heun equation $[0,0,1_6]$. (English summary) *Ann. Soc. Sci. Bruxelles Sér. I* **105** (1991), *no.* 4, 189–195 (1992). (Summary) **93d:34001** 34A05 (33C99, 34A25)

— Reducible forms of the confluent Heun equation. *J. Indian Acad. Math.* **13** (1991), *no.* 2, 67–71. (H. M. Srivastava) **93d:33003** 33C15 (33C70, 34A05)

— On the confluent Heun equation $[0,2,1_1]$. *J. Natur. Sci. Math.* **31** (1991), *no.* 1, 23–34. (R. K. Gupta) **93c:33013** 33C99 (34A46)

— On a hypergeometric function of four variables with a new aspect of SL-symmetry. (English summary) *Ann. Mat. Pura Appl.* (4) **161** (1992), 315–343. (Summary) **93m:33012** 33C80 (33C50)

— An equation of Ince: the confluent Mathieu equation. (English summary) *Indian J. Pure Appl. Math.* **23** (1992), *no.* 9, 649–655. (Summary) **93i:34002** 34A05 (33E10, 34A20, 34E05)

— Generating relations for Tratnik's multivariable biorthogonal continuous Hahn polynomials. *J. Math. Phys.* **33** (1992), *no.* 2, 524–527. (A. N. Srivastava) **93c:33005** 33C45 (33C15)

Eydeland, Alexander (*with* Nagurney, Anna) A splitting equilibration algorithm for the computation of large-scale constrained matrix problems: theoretical analysis and applications. (English summary) *Computational economics and econometrics* (*Minneapolis, MN*, 1990), 65–105, *Adv. Stud. Theoret. Appl. Econometrics*, 22, *Kluwer Acad. Publ., Dordrecht*, 1992. (K. Schittkowski) **93f:90112** 90C06 (65K05, 90A99)

— (*with* Turkington, Bruce; Lifschitz, Alexander E.; Spruck, Joel) Multiconstrained variational problems in magnetohydrodynamics: equilibrium and slow evolution. (English summary) *J. Comput. Phys.* **106** (1993), *no.* 2, 269–285. (Summary) **93m:76075** 76W05 (76M30, 76X05)

Eyink, Gregory L. (*with* Lebowitz, Joel L.; Spohn, Herbert) Lattice gas models in contact with stochastic reservoirs: local equilibrium and relaxation to the steady state. *Comm. Math. Phys.* **140** (1991), *no.* 1, 119–131. (Summary) **93b:82013** 82B20 (82B44)

— Lagrangian field theory, multifractals, and universal scaling in turbulence. (English summary) *Phys. Lett. A* **172** (1993), *no.* 5, 355–360. (Summary) **93k:76059** 76F05 (76F20, 82C28)

Eykholt, R. (*with* Umberger, D. K.) Extension of the fat-fractal exponent β to arbitrary sets in D dimensions. *Phys. Lett. A* **163** (1992), *no.* 5-6, 409–414. (Colleen D. Cutler) **93f:58136** 58F12 (58F13)

Eyland, Roger (*with* Sharp, Bernice) Convex spaces: classification by differentiable convex functions. *Bull. Austral. Math. Soc.* **46** (1992), *no.* 1, 127–138. (Jing Hui Qiu) **93f:46065** 46G05 (26E15, 46A03, 58C20)

Eynard, B. (*with* Zinn-Justin, Jean) The O(n) model on a random surface: critical points and large-order behaviour. (English summary) *Nuclear Phys. B* **386** (1992), *no.* 3, 558–591. (Yolanda Lozano) **93k:81201** 81T40 (81T27, 82B41)

vanden Eynde, Ria *see* **Vanden Eynde, Ria**

vanden Eynden, Charles *see* **Vanden Eynden, Charles**

Eytan, Michel (*with* Sedogbo, Celestin) A tableau calculus for DRT. (English summary) *Logique et Anal. (N.S.)* **31** (1988), *no.* 123-124, 379–402. 03B65

abul-Ez, M. A. *see* **Abul-Ez, M. A.**

Ezawa, Hiroshi (*with* Watanabe, Keiji; Nakamura, Koichi[2]) Quantum field theory of thermal diffusion. *Thermal field theories (Ibaraki, 1990)*, 79–94, *North-Holland Delta Ser., North-Holland, Amsterdam*, 1991. (Summary) **93b:82051** 82C10 (81T10)

Ezawa, Yoshinori Homomorphic robustness of fuzzy reasoning. *Tech. Rep. Kansai Univ. No.* 32 (1990), 55–69. (Summary) **93c:03031** 03B52 (68T27)

— (*with* Umano, Motohide) Linguistic approximation of fuzzy sets by several hedges. *Tech. Rep. Kansai Univ. No.* 34 (1992), 13–21. 03E72

Ezawa, Zyun F. (*with* Iwazaki, Aiichi) Chern-Simons gauge theory for double-layer electron system. (English summary) *Internat. J. Modern Phys. B* **6** (1992), *no.* 19, 3205–3234. (Summary) **93h:81152** 81V70 (81T13, 82D99)

— (*with* Iwazaki, Aiichi) Derivation of Laughlin's wavefunction in anyon system. *Modern Phys. Lett. B* **6** (1992), *no.* 12, 737–745. (Summary) **93c:81278** 81V70 (82D55)

— (*with* Hotta, Masahiro; Iwazaki, Aiichi) Anyon field theory and fractional quantum Hall states. (English summary) Low-dimensional field theories and condensed matter physics (Kyoto, 1991). *Progr. Theoret. Phys. Suppl. No.* 107 (1992), 185–194. (Summary) **93i:81307** 81V70 (81T40, 82D55)

al-Ezeh, H. *see* **Al-Ezeh, H.**

Ezentas, Ridvan (*with* Carter, Sheila) Immersions with totally reducible focal set. *J. Geom.* **45** (1992), *no.* 1-2, 1–7. (Steven G. Buyske) **93k:53056** 53C42

tal-Ezer, Hillel *see* **Tal-Ezer, Hillel**

gal-Ezer, Judith *see* **Gal-Ezer, Judith**

Ezersky, A. B. (*with* Afraimovich, V. S.; Rabinovich, M. I.; Shereshevskiĭ, M. A.; Zheleznyak, A. L.) Dynamical description of spatial disorder. (English summary) Interpretation of time series from nonlinear systems (Warwick, 1991). *Phys. D* **58** (1992), *no.* 1-4, 331–338. (Hans-Peter Herzel) **93i:58139** 58F40 (58F13)

Ezhevskaya, N. A. (*with* Batalova, Z. S.) The structure of a phase space and bifurcations of the Duffing equation. (Russian) *Dinamika Sistem* **1990**, *Dinam. Stokh. Bifur.*, 4–26. (Henryk Żołądek) **93e:34048** 34C15 (34C23, 58F14, 70K50)

— (*with* Batalova, Z. S.; Belyakova, G. V.) On the stability of nonlinear nonautonomous oscillators. (Russian) *Dinamika Sistem* **1990**, *Dinam. Stokh. Bifur.*, 27–45. (From the text) **93e:34075** 34D99 (34C15, 70K20)

Ezhov, A. M. On the Volterra function for the Euler-Poisson equation and its application to the solution of the Cauchy problem and the characteristic problem. (Russian) *Boundary value problems for equations in mathematical physics (Russian)*, 19–26, *Kuĭbyshev. Gos. Ped. Inst., Kuybyshev*, 1991. (*see* **93f:35006**) 35L80

Ezhov, V. V. On the problem of the linearization of the stability group of a real-analytic hypersurface. *Several complex variables and complex geometry, Part* 1 (*Santa Cruz, CA*, 1989), 45–58, *Proc. Sympos. Pure Math.*, 52, *Part* 1, *Amer. Math. Soc., Providence, RI*, 1991. (Introduction) **93e:32021** 32F25

— Cauchy-Riemann automorphism groups that cannot be projectively realized. (English summary) *J. Geom. Anal.* **2** (1992), *no.* 5, 417–427. (Chong Kyu Han) **93i:32022** 32F25 (32M05)

Ezin, Jean-Pierre Remarks on an identity by R. Schoen and others. *J. Nigerian Math. Soc.* **10** (1991), 19–24. (Dennis M. DeTurck) **93c:58215** 58G20 (58C20, 58G30)

Ežov, V. V. *see* **Ezhov, V. V.**

– F –

Fa, Jing Huai (*with* Yang, Xiao Jun; Zheng, Ying Ping) Formulas for a class of controllable and observable sublanguages larger than the supremal controllable and normal sublanguage. (English summary) *Systems Control Lett.* **20** (1993), *no.* 1, 11–18. (Summary) **93i:93055** 93B50 (93B05, 93C83)

Fabbri, Marc A. Virasoro-toroidal algebras and vertex representations. *C. R. Math. Rep. Acad. Sci. Canada* **14** (1992), *no.* 2-3, 77–82. (Kailash C. Misra) **93k:17045** 17B65 (17B10, 17B66, 17B67, 17B68)

Fabec, R. C. Multipliers between Sobolev spaces. *Canad. Math. Bull.* **34** (1991), *no.* 4, 465–473. (Walter Trebels) **93e:42013** 42A45 (46E35)

Fabella, Raul V. Quasi-concave (composition) functions with nonconcave argument functions. *Internat. Econom. Rev.* **33** (1992), *no.* 2, 473–477. (Reinhard Deumlich) **93d:90049** 90C25 (26A51)

Faber, Vance (*with* Kuczma, Marek; Mycielski, Jan) Some models of plane geometries and a functional equation. *Colloq. Math.* **62** (1991), *no.* 2, 279–281. (Wen Rong Li) **93b:39005** 39B22 (51N20)

— (*with* Mycielski, Jan) Applications of learning theorems. *Fund. Inform.* **15** (1991), *no.* 2, 145–167. (A. Haimovici) **93b:65022** 65D15 (92B20)

— (*with* Wing, G. Milton; Zahrt, John D.) Time-dependent radiative transfer in a spherical vacuum. II. Asymptotic results. *Transport Theory Statist. Phys.* **21** (1992), *no.* 3, 151–181. (Summary) **93e:85002** 85A25

Fabes, Eugene (*with* Sand, Mark; Seo, Jin Keun) The spectral radius of the classical layer potentials on convex domains. *Partial differential equations with minimal smoothness and applications (Chicago, IL*, 1990), 129–137, *IMA Vol. Math. Appl.*, 42, *Springer, New York*, 1992. (Yehuda Pinchover) **93d:35026** 35J05 (31B10, 35C15)

peralta-Fabi, R. *see* **Peralta-Fabi, R.**

san-Fabián, Emilio *see* **San-Fabián, Emilio**

Fabián, Marián Projectional resolution of the identity sometimes implies weakly compact generating. (English summary) *Bull. Polish Acad. Sci. Math.* **38** (1990), *no.* 1-12, 117–120. (Summary) **93g:46012** 46B20

Fabian, Václav On the problem of interactions in the analysis of variance. With discussion and a rejoinder by the author. *J. Amer. Statist. Assoc.* **86** (1991), *no.* 414, 362–375. (Song Gui Wang) **93a:62101** 62J10

Fabiano, Adelina (*with* Marino, V.) Bounds for the degree of the entries of generalized inverses of polynomial matrices. (English and Italian summaries) *Rend. Istit. Mat. Univ. Trieste* **22** (1990), *no.* 1-2, 126–135 (1992). (Anna Lee) **93m:15024** 15A33 (15A09)

— Koszul complexes in spaces of tempered distribution spaces supported by cones. (Italian. English summary) *Boll. Un. Mat. Ital. A* (7) **5** (1991), *no.* 1, 13–20. (Daniele Struppa) **93c:46064** 46F05 (46M20)

Fabre, Caroline A problem of exact controllability of distributed system: boundary control obtained as limit of internal control. *Optimal control of partial differential equations (Irsee*, 1990), 56–67, *Lecture Notes in Control and Inform. Sci.*, 149, *Springer, Berlin*, 1991. (From the introduction) **93f:93019** 93B05 (93C20)

— Résultats de contrôlabilité exacte interne pour l'équation de Schrödinger et leurs limites asymptotiques: application à certaines équations de plaques vibrantes. (English summary) [Results on exact internal controllability for the Schrödinger equation and their asymptotic limits: application to some vibrating-plate equations] *Asymptotic Anal.* **5** (1992), *no.* 4, 343–379. (Paolo Acquistapace) **93d:35031** 35J10 (35B37, 73K12, 73K50, 93C20)

— (*with* Puel, Jean-Pierre; Zuazua, Enrike) Contrôlabilité approchée de l'équation de la chaleur semi-linéaire. (English and French summaries) [Approximate controllability for the semilinear heat equation] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 7, 807–812. (Summary) **93f:93020** 93B05 (93C20)

— Exact boundary controllability of the wave equation as the limit of internal controllability. (English summary) *SIAM J. Control Optim.* **30** (1992), *no.* 5, 1066–1086. (Sergei A. Avdonin) **93k:93015** 93B05 (35B37, 35L05, 93C20)

— (*with* Puel, Jean-Pierre; Zuazua, Enrike) Boundary approximate controllability for semilinear heat equations. *Analysis and optimization of systems: state and frequency domain approaches for infinite-dimensional systems (Sophia-Antipolis*, 1992), 524–530, *Lecture Notes in Control and Inform. Sci.*, 185, *Springer, Berlin*, 1993. (*see* **93i:93005**) 93B05 (93C20)

Fabre, Sylvie Stability analysis of the Euler-Poisson equations. *J. Comput. Phys.* **101** (1992), *no.* 2, 445–451. (Introduction) **93e:76052** 76M20 (76X05, 82D10)

Fàbrega, J. (*with* Escudero, M.; Fiol, Miguel A.; Homobono, N.) On surviving route graphs of iterated line digraphs. *Graph theory, combinatorics, and applications, Vol.* 1 (*Kalamazoo, MI*, 1988), 451–466, *Wiley-Intersci. Publ., Wiley, New York*, 1991. (Summary) **93c:05052** 05C20

Fabrie, Pierre (*with* Langlais, Michel) Mathematical analysis of miscible displacement in porous medium. (English summary) *SIAM J. Math. Anal.* **23** (1992), *no.* 6, 1375–1392. (Andro Mikelić) **93m:76069** 76S05 (35Q35, 76T05)

Fabrikant, A. L. Resonant vortex-wave interaction. (English summary) *Nonlinear dynamics of structures (Vladimir Maiakovskiĭ*, 1990), 359–367, *World Sci. Publishing, River Edge, NJ*, 1991. (*see* **93g:76004**) 76C05 (76V05)

Fabris, Francesco Variable-length-to-variable-length source coding: a greedy step-by-step algorithm. (English summary) *IEEE Trans. Inform. Theory* **38** (1992), *no.* 5, 1609–1617. 94A29

Fabris, Júlio C. (*with* Kerner, Richard; Balbinot, Roberto) Cosmological solutions from supersymmetric Kaluza-Klein theory. *Quantum gravity (Moscow*, 1990), 633–642, *World Sci. Publishing, River Edge, NJ*, 1991. (Summary) **93c:83111** 83E15 (83C20, 83E50)

— (*with* Tossa, J.) Qualitative study of multidimensional cosmological models. (English summary) *Phys. Lett. B* **296** (1992), *no.* 3-4, 307–310. (Summary) **93i:83083** 83E15 (83F05)

de Fabritiis, Chiara *see* **De Fabritiis, Chiara**

Fabrizio, Mauro (*with* Graffi, Dario) On the notion of state for viscoelastic materials of "rate" type. (Italian. English summary) *Atti Accad. Naz. Lincei Rend. Cl. Sci. Fis. Mat. Natur.* (8) **83** (1989), 201–208 (1990). (Stan Chiriță) **93a:73036** 73F15 (73B05)

— (*with* Graffi, Dario) Nonuniqueness of free energy for viscoelastic materials. (Italian. English summary) *Atti Accad. Naz. Lincei Rend. Cl. Sci. Fis. Mat. Natur.* (8) **83** (1989), 209–214 (1990). (Stan Chiriță) **93a:73037** 73F15 (73B05)

— Stability properties for systems with memory. (Italian. English summary) Memoirs of mathematical physics in honor of Giovanni Carini on his 70th birthday (Italian). *Atti Accad. Peloritana Pericolanti Cl. Sci. Fis. Mat. Natur.* **68** (1990), *suppl.* 1, 209–225 (1991). (Stan Chiriță) **93a:73033** 73F15 (73B30, 73H99, 76A10)

— (*with* Lazzari, Barbara) Stability problems for nonlinear dissipative systems. (English summary) *Waves and stability in continuous media (Sorrento*, 1989), 114–122, *Ser. Adv. Math. Appl. Sci.*, 4, *World Sci. Publishing, River Edge, NJ*, 1991. (*see* **93g:00030**) 78A25 (35Q60)

— (*with* Morro, Angelo) ★ Mathematical problems in linear viscoelasticity. SIAM Studies in Applied Mathematics, 12. *Society for Industrial and Applied Mathematics (SIAM), Philadelphia, PA*, 1992. x+203 *pp. ISBN* 0-89871-266-1 (Michael Renardy) **93a:73034** 73F15 (73–02, 73B30, 76A10)

— On the inversion of a linear viscoelastic constitutive equation. (Italian. English summary) *Atti Accad. Naz. Lincei Cl. Sci. Fis. Mat. Natur. Rend. Lincei* (9) *Mat. Appl.* **3** (1992), *no.* 2, 141–148. (Summary) **93d:73041** 73F15 (73B05)

Fabry, C. (*with* De Coster, C.; Habets, P.) An abstract approach to a class of nonlinear boundary value problems. *Differential Integral Equations* **4** (1991), *no.* 5, 1073–1087. (Maria Patrizia Pera) **93d:47111** 47H15 (34B15, 34C25, 35G30, 47N20)

— (*with* Fonda, Alessandro) Nonlinear equations at resonance and generalized eigenvalue problems. *Nonlinear Anal.* **18** (1992), *no.* 5, 427–444. (R. Kent Nagle) **93i:47099** 47H15 (34B15, 34C25, 35J65, 47N20)

— (*with* Habets, P.) Periodic solutions of second order differential equations with superlinear asymmetric nonlinearities. *Arch. Math. (Basel)* **60** (1993), *no.* 3, 266–276. (Pavel Drábek) **93j:34055** 34C25 (34B15)

Fabrykowski, Jacek (*with* Gupta, Narain) On groups with sub-exponential growth functions. II. *J. Indian Math. Soc. (N.S.)* **56** (1991), *no.* 1-4, 217–228. (Martha K. Smith) **93g:20053** 20E99 (20F05, 20F19)

— Squares in difference sets. *Acta Arith.* **61** (1992), *no.* 2, 199–208. (Adolf Hildebrand) **93d:11012** 11B05

Facchinei, Francisco Refinements of necessary conditions for optimality in nonlinear programming. *J. Optim. Theory Appl.* **73** (1992), *no.* 1, 65–74. (D. Klatte) **93b:90081** 90C30 (49M37)

— (*with* Di Pillo, Gianni; Grippo, Luigi) An RQP algorithm using a differentiable exact penalty function for inequality constrained problems. *Math. Programming* **55** (1992), *no.* 1, *Ser. A*, 49–68. (Vladimir I. Venets) **93c:90078** 90C30 (49M30, 90C20)

— (*with* Lucidi, Stefano) Nonmonotone bundle-type scheme for convex nonsmooth minimization. (English summary) *J. Optim. Theory Appl.* **76** (1993), *no.* 2, 241–257. (Giorgio Giorgi) **93m:90058** 90C25 (49J52)

Facchini, Alberto Rings of finite representation type, rings of pure global dimension zero, and Mittag-Leffler modules. (Italian. English summary) *Rend. Sem. Mat. Fis. Milano* **59** (1989), 65–80 (1992). (Rainer Schulz) **93d:16002** 16D40 (16E70, 16G60, 18G99)

— Mittag-Leffler modules, reduced products, and direct products. *Rend. Sem. Mat. Univ. Padova* **85** (1991), 119–132. (Pere Ara) **93d:16003** 16D40 (16D50)

— On the Cartan matrix of a left Artinian ring. (Italian summary) *Boll. Un. Mat. Ital. B* (7) **6** (1992), *no.* 2, 299–316. (S. S. Page) **93f:16017** 16G20 (16E70)

Faccio, M. (*with* Ferri, G.; D'Amico, A.) A new numerical triangle showing links with Fibonacci numbers. *Fibonacci Quart.* **29** (1991), *no.* 4, 316–321. (From the text) **93d:11015** 11B37 (05A10, 11B39)

Fack, V. (*with* Van der Jeugt, J.) Algorithms for generating labelled graphs with given degree. *J. Comput. Appl. Math.* **37** (1991), *no.* 1-3, 187–194. (Ronald C. King) **93d:05142** 05C85

— (*with* Coolsaet, K.; De Meyer, H.) Optimal algorithms for total exchange without buffering on the hypercube. (English summary) *BIT* **32** (1992), *no.* 4, 559–569. (Summary) **93g:68004** 68M10 (68Q10)

Fadali, M. S. (*with* Zohdy, Mohamed A.; Liu, Jun) Variable structure control using system decomposition. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 10, 1514–1517. (Summary) **93g:93019** 93B12

— (*with* Zohdy, Mohamed A.; Abdul-Wahab, Abdul-Amir A.) Robust control system design with state constraints. (English summary) *Internat. J. Systems Sci.* **24** (1993), *no.* 1, 193–202. (Summary) **93m:93033** 93B36 (93B51)

Faddeev, D. K. *see* **Shafarevich, I. R., 93a:01057a**; **Voevodin, V. V. et al., 93a:01057b** *and* **Kublanovskaya, V. N., 93a:01057c**

Faddeev, L. D. On the work of E. Witten. *Proceedings of the International Congress of Mathematicians, Vol. I, II (Kyoto, 1990)*, 27–29, *Math. Soc. Japan, Tokyo*, 1991. (Arthur Greenspoon) **93e:81001a** 81–02 (01A65, 01A70)

— (*with* Alekseev, A. Yu.) $(T^*G)_t$: a toy model for conformal field theory. *Comm. Math. Phys.* **141** (1991), *no.* 2, 413–422. (Summary) **93g:81138** 81T40 (17B37, 58F05, 58F07, 81R50)

— Quantum symmetry in conformal field theory by Hamiltonian methods. *New symmetry principles in quantum field theory (Cargèse, 1991)*, 159–175, *NATO Adv. Sci. Inst. Ser. B Phys.*, 295, *Plenum, New York*, 1992. (C. Gauthier) **93k:81094** 81R50 (17B37, 81T40)

— (*with* Alekseev, A. Yu.; Semenov-Tyan-Shanskiĭ, M. A.) Hidden quantum groups inside Kac-Moody algebras. *Quantum groups (Leningrad, 1990)*, 148–158, *Lecture Notes in Math.*, 1510, *Springer, Berlin*, 1992. (Vladimir A. Stukopin) **93i:17013** 17B37 (17B67, 81R50)

— (*with* Alekseev, A. Yu.; Semenov-Tyan-Shanskiĭ, M. A.) Hidden quantum groups inside Kac-Moody algebra. (English summary) *Comm. Math. Phys.* **149** (1992), *no.* 2, 335–345. (Stanislav Z. Pakuliak) **93j:17017** 17B37 (17B67, 81R10, 81R50)

— (*with* Alekseev, A. Yu.) Involution and dynamics in the system "q-deformed top". (Russian. English and Russian summaries) *Zap. Nauchn. Sem. S.-Peterburg. Otdel. Mat. Inst. Steklov. (POMI)* **200** (1992), *Kraev. Zadachi Mat. Fiz. Smezh. Voprosy Teor. Funktsiĭ.* 24, 3–16, 187. (J. S. Joel) **93k:58103** 58F06 (17B37)

Faddeev, M. M. (*with* Naboko, S. N.) Operators of the Friedrichs model that are similar to a selfadjoint operator. (Russian. English summary) *Vestnik Leningrad. Univ. Fiz. Khim.* **1990**, *vyp.* 4, 78–82, 114. (Hagen Neidhardt) **93d:47027** 47A55 (47B25, 47B40)

Faddeeva, V. N. *see* **Voevodin, V. V. et al., 93a:01057b** *and* **Kublanovskaya, V. N., 93a:01057c**

Fadeev, S. B. (*with* Ivashchuk, Vladimir D.; Mel'nikov, V. N.) Variations of constants and exact solutions in multidimensional gravity. *Gravitation and modern cosmology (Erice, 1990)*, 37–49, *Ettore Majorana Internat. Sci. Ser. Phys. Sci.*, 56, *Plenum, New York*, 1991. (*see* **93j:83004**) 83F05 (83E15)

— (*with* Ivashchuk, Vladimir D.; Mel'nikov, V. N.) Black holes in multidimensional theory with Ricci-flat internal spaces. (Russian. Russian summary) *Izv. Vyssh. Uchebn. Zaved. Fiz.* **34** (1991), *no.* 9, 62–65; *translation in Soviet Phys. J.* **34** (1991), *no.* 9, 794–797 (1992). (Yu. N. Obukhov) **93m:83076** 83E15 (83C57)

Faessler, Amand (*with* Bonatsos, Dennis; Raichev, P. P.; Roussev, R. P.; Smirnov, Yu. F.) An exactly soluble nuclear model with $SU_q(3) \supset SU_q(2) \supset SO_q(2)$ symmetry. *J. Phys. A* **25** (1992), *no.* 6, L267–L274. (A. Ventura) **93b:81105** 81R50 (81V35)

— (*with* Bonatsos, Dennis; Raichev, P. P.; Roussev, R. P.; Smirnov, Yu. F.) $B(E2)$ transition probabilities in the q-rotator model with $SU_q(2)$ symmetry. *J. Phys. A* **25** (1992), *no.* 11, 3275–3285. (Summary) **93b:81308** 81V35 (81R50)

Fafard, M. (*with* Massicotte, B.) Geometrical interpretation of the arc-length method. (English summary) *Comput. & Structures* **46** (1993), *no.* 4, 603–615. (Summary) **93m:73040** 73V20 (73V05)

de Faget de Casteljau, Paul POLynomials, POLar forms, and interPOLation. *Mathematical methods in computer aided geometric design, II (Biri, 1991)*, 57–68, *Academic Press, Boston, MA*, 1992. (*see* **93d:65022**) 65D17 (65D05)

Fagin, Ronald (*with* Halpern, Joseph Y.) Two views of belief: belief as generalized probability and belief as evidence. *Artificial Intelligence* **54** (1992), *no.* 3, 275–317. (J.-J. Ch. Meyer) **93h:68132** 68T30 (03B45, 60A99)

— (*with* Halpern, Joseph Y.; Vardi, Moshe Y.) What can machines know? On the properties of knowledge in distributed systems. *J. Assoc. Comput. Mach.* **39** (1992), *no.* 2, 328–376. (J.-J. Ch. Meyer) **93h:68131** 68T30 (03B45, 03B70, 68Q10)

Fagnani, Fabio Controllability and observability indices for linear time-invariant systems: a new approach. *Systems Control Lett.* **17** (1991), *no.* 4, 243–250. (V. M. Marchenko) **93f:93021** 93B05 (93B07)

— (*with* Willems, Jan C.) Controllability of l^2-systems. (English summary) *SIAM J. Control Optim.* **30** (1992), *no.* 5, 1101–1125. (J. Kučera) **93g:93012** 93B05 (47N70, 93B20)

Fagnola, Franco A Lévy theorem for free noises. *Probab. Theory Related Fields* **90** (1991), *no.* 4, 491–504. (Andrzej Łuczak) **93a:46120** 46L50 (60G20, 81S25)

— Pure birth and pure death processes as quantum flows in Fock space. (English summary) *Sankhya Ser. A* **53** (1991), *no.* 3, 288–297. (Paula Beazley Cohen) **93m:81080** 81S25 (46L50, 60H99)

— Unitarity of solutions to quantum stochastic differential equations and conservativity of the associated semigroups. (English summary) *Quantum probability & related topics*, 139–148, *QP-PQ, VII, World Sci. Publishing, River Edge, NJ*, 1992. (Kalyanapuram R. Parthasarathy) **93m:81081** 81S25 (46N50, 47D06, 47N50)

— (*with* Accardi, Luigi; Quaegebeur, J.) A representation free quantum stochastic calculus. *J. Funct. Anal.* **104** (1992), *no.* 1, 149–197. (Robin Hudson) **93e:81061** 81S25 (46L50, 46N50, 60H05)

— (*with* Lu, Yun Gang) The weak coupling limit for free noise. (English summary) *Riv. Mat. Pura Appl. No.* 11 (1992), 93–112. (Kalyanapuram R. Parthasarathy) **93j:82048** 82C22 (81S25, 81V80)

Fagundes, Helio V. Closed spaces in cosmology. *Gen. Relativity Gravitation* **24** (1992), *no.* 2, 199–217. (K. L. Duggal) **93c:83019** 83C20 (57R30)

Fahim, Abdelmajid Extensions galoisiennes d'algèbres différentielles. (English summary) [Galois extensions of differential algebras] *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 1, 1–4. (Alexandru Buium) **93b:12011** 12H05

Fahimi, M. (*with* Pathak, Pramod K.) Optimal integration of surveys. (English summary) *Current issues in statistical inference: essays in honor of D. Basu*, 208–224, *IMS Lecture Notes Monograph Ser.*, 17, *Inst. Math. Statist., Hayward, CA*, 1992. (Summary) **93g:62019** 62D05

Fahmy, Mohamed Hussein (*with* Mohammady, S.) Algebraic elements in directly finite self-injective regular factors of type II. (Arabic summary) *Proc. Math. Phys. Soc. Egypt No.* 63 (1987), 67–78 (1990). (Summary) **93c:16031** 16U50

Faĭbusovich, L. E. Reduction to generalized Hessenberg form and inverse spectral problems. *Linear Algebra Appl.* **165** (1992), 71–92. (Jian-Pan Wang) **93i:17010** 17B20 (15A57, 22E60)

— Toda flows and isospectral manifolds. *Proc. Amer. Math. Soc.* **115** (1992), *no.* 3, 837–847. (Vladimir Stefanov Gerdjikov) **93b:58089** 58F09 (17B20, 35Q58, 58F07)

Faierman, M. ★ Two-parameter eigenvalue problems in ordinary differential equations. Pitman Research Notes in Mathematics Series, 205. *Longman Scientific & Technical, Harlow; copublished in the United States with John Wiley & Sons, Inc., New York*, 1991. viii+160 *pp. ISBN* 0-582-06117-2 (Björn Textorius) **93b:47095** 47E05 (34B05, 34L10, 47A75, 47B50)

— Generalized parabolic cylinder functions. *Asymptotic Anal.* **5** (1992), *no.* 6, 517–531. (Wolfgang Bühring) **93d:34009** 34A30 (33E30, 34A20)

Faigle, Ulrich (*with* Schrader, Rainer; Turán, György) The communication complexity of interval orders. (English summary) Combinatorial methods in VLSI. *Discrete Appl. Math.* **40** (1992), *no.* 1, 19–28. (Summary) **93g:68055** 68Q25 (68M10)

— (*with* Kern, Walter) The Shapley value for cooperative games under precedence constraints. (English summary) *Internat. J. Game Theory* **21** (1992), *no.* 3, 249–266. (Summary) **93m:90118** 90D12

Faille, I. A control volume method to solve an elliptic equation on a two-dimensional irregular mesh. (English summary) *Comput. Methods Appl. Mech. Engrg.* **100** (1992), *no.* 2, 275–290. (Bernd Heinrich) **93j:65167** 65N06 (65N12, 65N30)

Faina, Giorgio Recent intrinsic characterizations of ovoids and elliptic quadrics in PG(3, K). (English summary) *Combinatorics '90 (Gaeta, 1990)*, 175–190, *Ann. Discrete Math.*, 52, *North-Holland, Amsterdam*, 1992. (J. W. P. Hirschfeld) **93k:51009** 51E20 (51E21)

— Complete k-caps in PG(3, q) with $k < (q^2 + q + 4)/2$. (English summary) *Ars Combin.* **33** (1992), 311–317. (Summary) **93d:05033** 05B25

— (*with* Bonisoli, Arrigo) On the family of linear flocks of an absolutely irreducible hyperbolic quadric in a finite projective space. (Italian. English summary) *Atti Accad. Naz. Lincei Cl. Sci. Fis. Mat. Natur. Rend. Lincei* (9) *Mat. Appl.* **3** (1992), *no.* 2, 121–124. (From the text) **93f:51011** 51E20

— (*with* Ughi, E.) Note on the number of solutions of an equation. *Pure Math. Appl. Ser. A* **2** (1992), *no.* 3-4, 181–185. (Summary) **93f:12004** 12E12

Fainberg, V. Ya. *see* **Sakharov Memorial Lectures in Physics, 93h:81003**

Fainleib, A. S. Asymptotic expansions for some arithmetic sums. (Russian) *Mat. Zametki* **51** (1992), *no.* 2, 109–116, 159; *translation in Math. Notes* **51** (1992), *no.* 1-2, 182–188. (Adolf Hildebrand) **93c:11078** 11N37 (11K65)

Fairbairn, N. A. (*with* Grimble, M. J.) The F-iteration approach to H_∞ control. (English summary) *Adaptive systems in control and signal processing, 1989 (Glasgow)*, 199–204, *IFAC Sympos. Ser.*, 1990, *No.* 1, *Pergamon, Oxford*, 1990. (*see* **93j:93007**) 93B36

— *see also* **Zhang, Han Quan**

Fairley, David (*with* Pearl, Dennis K.; Verducci, Joseph S.) Some ramifications of a bound on the MSE of a prediction. (English summary) *Sankhya Ser. B* **52** (1990), *no.* 1, 40–49. (Summary) **93e:62165** 62J02 (62E15, 62G10)

— (*with* Pearl, Dennis K.) Using strength of opinion to test for nonresponse bias in mail surveys. (English summary) *Sankhya Ser. B* **53** (1991), *no.* 3, 340–351. 62D05

Fairlie, David B. (*with* Fletcher, Paul) Infinite-dimensional algebras, a trigonometric basis for the classical Lie algebras, and SU(∞). *Supermembranes and physics in 2+1 dimensions (Trieste, 1989)*, 378–389, *World Sci. Publishing, River Edge, NJ*, 1990. (*see* **93g:81003**) 17B65 (17B20, 81R10)

— (*with* Manogue, Corinne A.) The formulation of quantum mechanics in terms of phase space functions—the third equation. *J. Phys. A* **24** (1991), *no.* 16, 3807–3815. (Günter Braunss) **93d:81097** 81S30

— (*with* Nuyts, Jean) Alternative Hamiltonian quantization. *J. Phys. A* **24** (1991), *no.* 17, L1001–L1005. (Vladimir Rubtsov) **93b:81122** 81S05

— (*with* Govaerts, Jan) Euler hierarchies and universal equations. (English summary) *J. Math. Phys.* **33** (1992), *no.* 10, 3543–3566. (Jaime Muñoz Masqué) **93k:58070** 58E30 (58F07)

— (*with* Govaerts, Jan; Morozov, A. Yu.) Universal field equations with covariant solutions. *Nuclear Phys. B* **373** (1992), *no.* 1, 214–232. (Sergey Merkulov) **93d:81115** 81T13 (58E99)

— (*with* Govaerts, Jan) Universal field equations with reparametrisation invariance. *Phys. Lett. B* **281** (1992), *no.* 1-2, 49–53. (Summary) **93b:81212** 81T30

— (*with* Nuyts, Jean) Neutral and charged quommutators with and without symmetries. (English summary) *Z. Phys. C* **56** (1992), *no.* 2, 237–243. (Arne Schirrmacher) **93i:81096** 81S05

Fairtlough, M. V. H. (*with* Wainer, S. S.) Ordinal complexity of recursive definitions. *Inform. and Comput.* **99** (1992), *no.* 2, 123–153. (Rodney G. Downey) **93h:03059** 03D20 (03D15)

Fairweather, Graeme (*with* López Marcos, J. C.) A box method for a nonlinear equation of population dynamics. *IMA J. Numer. Anal.* **11** (1991), *no.* 4, 525–538. (Ezio Venturino) **93c:92006** 92D25 (65C20, 65M12, 65R20, 92–08)
— (*with* Majaess, Fouad; Keast, Patrick; Bennett, Karin R.) The solution of almost block diagonal linear systems arising in spline collocation at Gaussian points with monomial basis functions. *ACM Trans. Math. Software* **18** (1992), *no.* 2, 193–204. (Summary) **93a:65002** 65–04 (65D15, 65F05)
— (*with* Majaess, Fouad; Keast, Patrick; Bennett, Karin R.) Algorithm 704: ABDPACK and ABBPACK-FORTRAN programs for the solution of almost block diagonal linear systems arising in spline collocation at Gaussian points with monomial basis functions. *ACM Trans. Math. Software* **18** (1992), *no.* 2, 205–210. (Summary) **93a:65003** 65–04 (65F05)
— (*with* Yan, Yi) Orthogonal spline collocation methods for some partial integrodifferential equations. *SIAM J. Numer. Anal.* **29** (1992), *no.* 3, 755–768. (N. Gass) **93c:65130** 65N15 (45K05, 65N35, 65R20, 73F15, 76A10)
— (*with* Robinson, Mark P.) An orthogonal spline collocation method for the numerical solution of underwater acoustic wave propagation problems. (English summary) *Computational acoustics, Vol. 2* (*Cambridge, MA*, 1991), 339–353, *North-Holland, Amsterdam*, 1993. (*see* **93j:76002**) 76Q05 (76M25)
— (*with* Robinson, Mark P.; Herbst, Ben M.) On the numerical solution of the cubic Schrödinger equation in one space variable. *J. Comput. Phys.* **104** (1993), *no.* 1, 277–284. 81–04
Faisant, Alain ★ L'équation diophantienne du second degré. (French) [Quadratic Diophantine equations] Actualités Scientifiques et Industrielles [Current Scientific and Industrial Topics], 1430. Collection Formation des Enseignants et Formation Continue. [Collection on Teacher Education and Continuing Education] *Hermann, Paris*, 1991. vi+238 *pp. ISBN* 2-7056-1430-0 (From the introduction) **93e:11034** 11D09
Faith, Carl Addendum to: "Rings with zero intersection property on annihilators: ZIP rings" [Publ. Mat. **33** (1989), no. 2, 329–338; MR 91a:16011]. *Publ. Mat.* **36** (1992), *no.* 1, 351. 16L60 (16D70)
— Addendum to: "Finitely embedded commutative rings" [Proc. Amer. Math. Soc. **112** (1991), no. 3, 657–659; MR 91j:13012]. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 1, 331. (From the text) **93f:13012** 13E10 (16L60, 16P20, 16P60)
Faivre, Christian Distribution of Lévy constants for quadratic numbers. *Acta Arith.* **61** (1992), *no.* 1, 13–34. (G. Ramharter) **93c:11057** 11K50 (11J70)
Faiziev, V. A. Spaces of pseudocharacters of the free product of semigroups. (Russian. Russian summary) *Mat. Zametki* **52** (1992), *no.* 6, 119–130, 160; *translation in Math. Notes* **52** (1992), *no.* 5-6, 1255–1264 (1993). (B. Pondělíček) **93m:20087** 20M05 (20M10)
— On the pseudocharacters of a free semigroup that are invariant with respect to its endomorphisms. (Russian) *Uspekhi Mat. Nauk* **47** (1992), *no.* 2(284), 205–206; *translation in Russian Math. Surveys* **47** (1992), *no.* 2, 215–216. 20M05
Faizullin, I. S. (*with* Shapiro, S. A.) Scattering of elastic waves by a fractal inhomogeneity in a medium. (Russian) *Izv. Akad. Nauk SSSR Ser. Fiz. Zemli* **1992,** *no.* 1, 71–84. (Summary) **93c:73032** 73D25 (73N20, 86A15)
Faizullina, N. T. Well-posedness of a boundary value problem of electrogasdynamics for a model of a viscous heat-conducting gas. (Russian. Russian summary) *Dinamika Sploshn. Sredy No.* 97 (1990), 124–145, 214. (From the text) **93d:76075** 76W05 (35Q35, 76N15, 76X05)
Fakhre-Zakeri, I. (*with* Lee, S.) Sequential estimation of the mean of a linear process. *Sequential Anal.* **11** (1992), *no.* 2, 181–197. (Wolfgang Winkler) **93f:62115** 62L12
Fakikh, D. S. An analogue of the Levinson-Pliss theorem for differential inclusions. (Russian) *Mat. Issled. No.* 124, *Funktsional. Metod. Teorii Differ. Uravn.* (1992), 100–105, 144. (Summary) **93a:34021** 34A60 (54H20)
Falaleev, L. P. Inequalities for Landau constants. (Russian) *Sibirsk. Mat. Zh.* **32** (1991), *no.* 5, 194–195, 210; *translation in Siberian Math. J.* **32** (1991), *no.* 5, 896–897 (1992). (Summary) **93c:30001** 30B10 (41A17, 42A20)
Falaschi, Moreno (*with* Alpuente Frasnedo, María; Gabbrielli, Maurizio; Levi, Giorgio) The semantics of equational logic programming as an instance of CLP. (English summary) *Logic programming languages*, 49–81, *MIT Press, Cambridge, MA*, 1993. (*see* **93k:68020**) 68N17
Falb, Peter ★ Methods of algebraic geometry in control theory. Part I. (English. English summary) Scalar linear systems and affine algebraic geometry. Systems & Control: Foundations & Applications, 4. *Birkhäuser Boston, Inc., Boston, MA*, 1990. viii+202 *pp. ISBN* 0-8176-3454-1 (Henk Nijmeijer) **93m:93003** 93–02 (14A99, 93B17, 93B25)
Falbel, Elisha Nonembeddable CR-manifolds and surface singularities. *Invent. Math.* **108** (1992), *no.* 1, 49–65. (Introduction) **93j:32016** 32C16 (32G07, 32S55)
Falbo-Kenkel, M. K. (*with* Mansouri, F.) Nonperturbative gauge-theoretic treatment of two-particle scattering in $(2+1)$-dimensional gravity. (English summary) *Modern Phys. Lett. A* **7** (1992), *no.* 24, 2173–2178. (Summary) **93f:81083** 81T13 (83C99)
Falcidieno, Bianca (*with* Spagnuolo, Michela) Polyhedral surface decomposition based on curvature analysis. (English summary) *Modern geometric computing for visualization* (*Tokyo*, 1992), 57–72, *Springer, Tokyo*, 1992. (Wolfgang Kühnel) **93i:53003** 53A05 (52B70, 68U07)
Falcioni, M. (*with* Crisanti, A.; Provenzale, A.; Vulpiani, A.) Motion of passively advected impurities in two-dimensional flows: chaos, structures and diffusion. (English summary) *Nonlinear dynamics of structures* (*Vladimir Maiakovskiĭ*, 1990), 49–70, *World Sci. Publishing, River Edge, NJ*, 1991. (Summary) **93h:76042** 76F20 (58F13, 58F40, 76R50)
— (*with* Crisanti, A.; Vulpiani, A.; Paladin, Giovanni) Lagrangian chaos: transport, mixing and diffusion in fluids. *Riv. Nuovo Cimento* (3) **14** (1991), *no.* 12, 80 *pp.* (Yong Nian Huang) **93d:76029** 76F20 (58F13, 58F40, 76–02, 76R50)
Falcitelli, M. (*with* Farinola, A.) Locally conformal Kähler manifolds with pointwise constant antiholomorphic sectional curvature. (Italian summary) *Riv. Mat. Univ. Parma* (4) **17** (1991), 295–314 (1992). (Marisa Fernández) **93h:53070** 53C55 (53C15, 53C21)
Falcó, Antonio (*with* Alsedà i Soler, Lluís) An entropy formula for a class of circle maps. (French summary) *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 9, 677–682. (Frederick R. Marotto) **93e:58103** 58F11 (28D20, 58F08)
de Falco, Diego (*with* Apolloni, Bruno) Probabilistic aspects of machine learning. *White noise analysis* (*Bielefeld*, 1989), 22–30, *World Sci. Publishing, River Edge, NJ*, 1990. (Summary) **93a:82045** 82C32 (68T05, 92B20)
Falcolini, Corrado (*with* Celletti, Alessandra) Construction of invariant tori for the spin-orbit problem in the Mercury-Sun system. *Celestial Mech. Dynam. Astronom.* **53** (1992), *no.* 2, 113–127. (Summary) **93a:70011** 70F15 (58F05, 58F40, 70H05)
— (*with* Berretti, A.; Celletti, Alessandra; Chierchia, L.) Natural boundaries for area-preserving twist maps. *J. Statist. Phys.* **66** (1992), *no.* 5-6, 1613–1630. (Helmut Rüssmann) **93b:58121** 58F27 (58F05, 70K50)
— (*with* de la Llave, Rafael) A rigorous partial justification of Greene's criterion. *J. Statist. Phys.* **67** (1992), *no.* 3-4, 609–643. (Alessandra Celletti) **93f:58210** 58F27 (70H05)
— (*with* de la Llave, Rafael) Numerical calculation of domains of analyticity for perturbation theories in the presence of small divisors. *J. Statist. Phys.* **67** (1992), *no.* 3-4, 645–666. (Alessandra Celletti) **93d:58145** 58F30 (70H05, 70K99)
Falcon, Sergio (*with* Hayek Calil, Nácere; González Rodríguez, José Manuel) An existence and uniqueness theorem for linear ordinary differential equations of the first order in aleph. (English summary) *J. Inst. Math. Comput. Sci. Math. Ser.* **6** (1993), *no.* 1, 83–85. 34A12 (34A34)
Falcone, M. (*with* Capuzzo-Dolcetta, I.) Discrete dynamic programming and viscosity solutions of the Bellman equation. (English summary) *Analyse non linéaire* (*Perpignan*, 1987), 161–183, *Univ. Montréal, Montreal, PQ*, 1989. (*see* **93h:49003**) 49L20 (35B37)
Falconer, K. J. Wavelet transforms and order-two densities of fractals. *J. Statist. Phys.* **67** (1992), *no.* 3-4, 781–793. (Miguel Angel Martín) **93d:28015** 28A80
— (*with* Marsh, D. T.) On the Lipschitz equivalence of Cantor sets. (English summary) *Mathematika* **39** (1992), *no.* 2, 223–233. (Hermann Haase) **93m:28011** 28A80 (28A78)
Falgarone, E. (*with* Bonazzola, S.; Pérault, M.; Puget, J. L.; Heyvaerts, J.; Panis, J. F.) Jeans collapse of turbulent gas clouds: tentative theory. (English summary) *J. Fluid Mech.* **245** (1992), 1–28. (Summary) **93i:85005** 85A30 (76E20, 76N15)
de Falguerolles, Antoine (*with* Baccini, Alain; Qannari, El Mostafa) Approche exploratoire de l'inégalité en situation multivariée. (English and French summaries) [Empirical multivariate analysis of income inequality] *Ann. Économ. Statist.* **1991,** *no.* 24, 61–87. (Summary) **93e:62159** 62H25 (62–07)
— (*with* Besse, Philippe) Application of resampling methods to the choice of dimension in principal component analysis. (English summary) *Computer intensive methods in statistics* (*Louvain-la-Neuve*, 1991), 167–176, *Statist. Comput., Physica, Heidelberg*, 1993. (*see* **93m:62004**) 62H25
Falin, G. I. Models of circuit-switching ISDN with distributed control. *Analysis and geometry* 1991 (*Taejŏn*, 1991), 1–19, *Korea Adv. Inst. Sci. Tech., Taejŏn*, 1991. (*see* **93k:00029**) 60K25 (68M10)
— Phase transitions in overloaded computer and communication systems. *Analysis and geometry* 1991 (*Taejŏn*, 1991), 21–34, *Korea Adv. Inst. Sci. Tech., Taejŏn*, 1991. (*see* **93k:00029**) 60K25 (68M10, 90B12)
— Space-heterogeneous random walks on semi-strips associated with retrial queues. *Analysis and geometry* 1991 (*Taejŏn*, 1991), 35–45, *Korea Adv. Inst. Sci. Tech., Taejŏn*, 1991. (*see* **93k:00029**) 60K25
— (*with* Khalil, Zohel; Yang, Tao) Some analytical results for congestion in subscriber line modules. *Queueing Systems Theory Appl.* **10** (1992), *no.* 4, 381–402. (Summary) **93c:60146** 60K25 (90B06)
— (*with* Choi, Bong Dae; Han, Dong Hwan) On the virtual waiting time for an $M/G/1$ retrial queue with two types of calls. (English summary) *J. Appl. Math. Stochastic Anal.* **6** (1993), *no.* 1, 11–23. (Summary) **93m:60180** 60K25 (60J20, 90B22)
Falissard, Bruno (*with* Lellouch, Joseph) A new procedure for group sequential analysis in clinical trials. (French summary) *Biometrics* **48** (1992), *no.* 2, 373–388. 62P10
Falk, Harold (*with* Dyson, Freeman J.) Period of a discrete cat mapping. *Amer. Math. Monthly* **99** (1992), *no.* 7, 603–614. (Frederick R. Marotto) **93k:58177** 58F15 (11B39, 11Z50)
Falk, James E. (*with* Palocsay, Susan W.) Optimizing the sum of linear fractional functions. *Recent advances in global optimization* (*Princeton, NJ*, 1991), 221–258, *Princeton Ser. Comput. Sci., Princeton Univ. Press, Princeton, NJ*, 1992. (Joachim Hirche) **93a:90067** 90C32 (65K10, 90C30)
Falk, M. *see* **Falk, Michael**
Falk, Michael (*with* Reiss, Rolf-Dieter) Statistical inference for conditional curves: Poisson process approach. *Ann. Statist.* **20** (1992), *no.* 2, 779–796. (Wolfgang Wertz) **93h:62075** 62G05 (60G55, 62J99)
— Bootstrap optimal bandwidth selection for kernel density estimates. *J. Statist. Plann. Inference* **30** (1992), *no.* 1, 13–22. (M. A. Mirzakhmedov) **93f:62050** 62G05
— (*with* Janas, Daniel) Edgeworth expansions for Studentized and prepivoted sample quantiles. *Statist. Probab. Lett.* **14** (1992), *no.* 1, 13–24. (Gutti J. Babu) **93h:62027** 62E20
— (*with* Reiss, Rolf-Dieter) Poisson approximation of empirical processes. *Statist. Probab. Lett.* **14** (1992), *no.* 1, 39–48. (A. N. Al-Hussaini) **93k:60121** 60G55
Falk, Michael J. Homotopy types of line arrangements. (English summary) *Invent. Math.* **111** (1993), *no.* 1, 139–150. (Hiroaki Terao) **93j:52020** 52B30 (32S40, 52B40)
Falk, Richard S. (*with* Richter, Gerard R.) Local error estimates for a finite element method for hyperbolic and convection-diffusion equations. *SIAM J. Numer. Anal.* **29** (1992), *no.* 3, 730–754. (Dietmar Kröner) **93e:65137** 65N30 (65M15, 76M10, 76Rxx)
Falk, S. Hauptvektoren: ja oder nein? [Principal vectors: yes or no?] *Z. Angew. Math. Mech.* **72** (1992), *no.* 3, 230–231. (Gerd M. Krause) **93e:15010** 15A72
Fal'kovich, G. E. (*with* L'vov, V. S.) Conservation laws and two-flux spectra of hydrodynamic convective turbulence. *Phys. D* **57** (1992), *no.* 1-2, 85–95. (Summary) **93c:76052** 76F99
Fal'kovich, S. E. (*with* Volosyuk, V. K.; Kravchenko, V. F.) Optimization of estimates for spatially distributed parameters of electrodynamic models of surfaces in inverse interpretation problems of active remote sounding. (Russian) *Dokl. Akad. Nauk SSSR* **322** (1992), *no.* 2, 277–280; *translation in Soviet Phys. Dokl.* **37** (1992), *no.* 1, 23–24. (Introduction) **93e:78002** 78A40 (78A45)
Faller, J. E. Earth-based gravitational experiments. *General relativity and gravitation*, 1989 (*Boulder, CO*, 1989), 345–348, *Cambridge Univ. Press, Cambridge*, 1990. (*see* **93b:83002**) 83B05
Falomir, H. (*with* Barraza, O.; Gamboa Saraví, R. E.; Santangelo, E. M.) p determinants and boundary values. *J. Math. Phys.* **33** (1992), *no.* 6, 2046–2052. (Akira Asada) **93d:58183** 58G26 (58G20, 81T16)
— *see also* **Festschrift: Giambiagi, J. J., 93b:81004**

Falqués, A. (*with* Iranzo, V.) Some spectral approximations for differential equations in unbounded domains. *Comput. Methods Appl. Mech. Engrg.* **98** (1992), *no.* 1, 105–126. (Summary) **93d:65103** 65N35

garcía Falset, J. *see* **García Falset, J.**

Falsone, G. Stochastic linearization of MDOF systems under parametric excitations. (English summary) *Internat. J. Non-Linear Mech.* **27** (1992), *no.* 6, 1025–1037. (Summary) **93g:70029** 70L05 (34L05)

Faltings, Boi A symbolic approach to qualitative kinematics. (English summary) *Artificial Intelligence* **56** (1992), *no.* 2-3, 139–170. (Summary) **93g:68124** 68T20 (68Q40, 70B15)

Faltings, Gerd Diophantine approximation on abelian varieties. *Ann. of Math.* (2) **133** (1991), *no.* 3, 549–576. (Joseph H. Silverman) **93d:11066** 11G10 (11J99)

— ★ Lectures on the arithmetic Riemann-Roch theorem. Notes taken by Shouwu Zhang. Annals of Mathematics Studies, 127. *Princeton University Press, Princeton, NJ*, 1992. x+100 *pp. ISBN* 0-691-08771-7; 0-691-02544-4 (Bruce Hunt) **93f:14006** 14C40 (14G40, 14J20, 58G26)

— (*with* Wüstholz, Gisbert; Grunewald, Fritz; Schappacher, Norbert; Stuhler, Ulrich) ★ Rational points. Third edition. Papers from the seminar held at the Max-Planck-Institut für Mathematik, Bonn/Wuppertal, 1983/1984. With an appendix by Wüstholz. Aspects of Mathematics, E6. *Friedr. Vieweg & Sohn, Braunschweig*, 1992. x+311 *pp. ISBN* 3-528-28593-1 (Kenneth A. Ribet) **93k:11060** 11G35 (11D41, 14C17, 14G05, 14G40)

— Crystalline cohomology of semistable curves, and p-adic Galois-representations. *J. Algebraic Geom.* **1** (1992), *no.* 1, 61–81. (From the introduction) **93e:14025** 14F30

— Correction to: "Crystalline cohomology of semistable curves, and p-adic Galois-representations" [J. Algebraic Geom. **1** (1992), no. 1, 61–81; MR 93e:14025]. *J. Algebraic Geom.* **1** (1992), *no.* 3, 427. (Editors) **93k:14028** 14F30 (11F80, 11F85)

Falzarano, Jeffrey M. (*with* Shaw, Steven W.; Troesch, Armin W.) Application of global methods for analyzing dynamical systems to ship rolling motion and capsizing. *Internat. J. Bifur. Chaos Appl. Sci. Engrg.* **2** (1992), *no.* 1, 101–115. (Summary) **93b:76016** 76B99 (58F40, 73K12)

Family, Fereydoon *see* **Dynamics of fractal surfaces, 93i:82039**

Faminskiĭ, A. V. The Cauchy problem for the generalized Kadomtsev-Petviashvili equation. (Russian) *Sibirsk. Mat. Zh.* **33** (1992), *no.* 1, 160–172, 221; *translation in Siberian Math. J.* **33** (1992), *no.* 1, 133–143. (Summary) **93b:35127** 35Q58 (35D05)

Fam Khyu T'ep *see* **Phạm Hữu Tiệp**

Fam Ki An' *see* **Phạm Kỳ Anh**

Fam Le Kien *see* **Pham Le Kien**

Fam Ngok An' Kyong Browder-Livesay groups. (Russian) *Mat. Zametki* **51** (1992), *no.* 3, 122–127; *translation in Math. Notes* **51** (1992), *no.* 3-4, 307–311. (A. A. Ranicki) **93e:57059** 57R67 (19J25)

Fam Shu Vin' (*with* Martynenko, Mikhaĭlo D.) Existence of solitary waves in a prestressed nonlinear thermoelastic medium with dry friction. (English summary) *J. Engrg. Phys. Thermophys.* **62** (1992), *no.* 1, 114–119. (Summary) **93f:73016** 73B30 (35Q99, 73D15, 73T05)

Fan, Ai Hua Équirépartition des orbites d'un endomorphisme de $\mathbf{R}^d$. (English summary) [Uniform distribution of an endomorphism's orbits in $\mathbf{R}^d$] *C. R. Acad. Sci. Paris Sér. I Math.* **313** (1991), *no.* 11, 735–738. (Christian Mauduit) **93b:11097** 11K06 (28A78)

— Équivalence et orthogonalité des mesures aléatoires engendrées par martingales positives homogènes. (English summary) [Equivalence and orthogonality of random measures generated by homogeneous positive martingales] *Studia Math.* **98** (1991), *no.* 3, 249–266. (Summary) **93d:60082** 60G42 (28A99, 42A55, 60G57)

— α-dimensionalité des mesures auto-similaires ergodiques. (English and French summaries) [α-dimensionality of ergodic self-similar measures] *C. R. Acad. Sci. Paris Sér. I Math.* **316** (1993), *no.* 7, 647–652. (Summary) **93k:28008** 28A80 (28A78)

Fan, C. Kenneth (*with* Chislenko, J.) On representations of graphs of type A. (English summary) *Proc. Roy. Soc. London Ser. A* **439** (1992), *no.* 1907, 687–690. (Summary) **93k:16022** 16G20

Fan, Da Shan A characterization of the atomic Hardy space H^1_0 on a compact Lie group. (Chinese. Chinese summary) *Chinese Ann. Math. Ser. A* **13** (1992), *no.* 3, 281–288. (Li Zhong Peng) **93j:43015** 43A77 (22E30, 42B30)

— (*with* Blank, Brian E.; Klein, David; Krantz, Steven G.; Ma, Dao Wei; Pang, Myung-Yull) The Kobayashi metric of a complex ellipsoid in $\mathbf{C}^2$. (English summary) *Experiment. Math.* **1** (1992), *no.* 1, 47–55. (Ian Graham) **93h:32032** 32H15

Fan, Da Xiang (*with* Tan, He Liang; Tan, Nai Wen) Real-time tracking of time-varying time-delay. (Chinese. English and Chinese summaries) *Control Theory Appl.* **9** (1992), *no.* 6, 592–598. 93B52

Fan, Da Yin A discussion of the probability field of a denumerable equiprobable scheme. (Chinese. English and Chinese summaries) *J. Math. Res. Exposition* **12** (1992), *no.* 3, 463–468. 60C05

— Some problems on multivariate random variables. (Chinese. Chinese summary) *Math. Practice Theory* **1992,** *no.* 4, 15–20. 62H10

— A bootstrap confidence limit for reliability of parallel systems with pass-fail components tested by inspections with a known probability of being correct. (Chinese. English and Chinese summaries) *Zhejiang Daxue Xuebao Ziran Kexue Ban* **26** (1992), *no.* 3, 334–340. 62N05 (62G09)

— Estimation of reliability of log-normal series systems on the basis of complete samples of components and systems. (Chinese. English and Chinese summaries) *Zhejiang Daxue Xuebao Ziran Kexue Ban* **26** (1992), *no.* 6, 621–626. 62M05

Fan, Guangwei (*with* Zhao, Renhong; Govind, Rakesh) The complete decision set of the generalized symmetrical fuzzy linear programming problem. (English summary) *Fuzzy Sets and Systems* **51** (1992), *no.* 1, 53–65. (Róbert Fullér) **93j:90129** 90C70 (04A72)

Fan, Gui Fen (*with* Wang, Yu Cheng) Idempotent-preserving linear operators on triangular matrix spaces over fields of characteristic $\neq 2$. (Chinese. English summary) *Heilongjiang Daxue Ziran Kexue Xuebao* **9** (1992), *no.* 1, 35–38. (Shao Kuan Li) **93d:15003** 15A04

Fan, Haitao A limiting "viscosity" approach to the Riemann problem for materials exhibiting a change of phase. II. *Arch. Rational Mech. Anal.* **116** (1992), *no.* 4, 317–337. (M. Shearer) **93a:35102** 35L65 (35M10, 73C50, 76L05)

Fan, Hong Bing Calculation of curves with strictly monotone curvature that pass two triple points. (Chinese. English summary) *Shandong Daxue Xuebao Ziran Kexue Ban* **26** (1991), *no.* 2, 154–163. (Summary) **93d:53005** 53A04 (65D17)

Fan, Hong Yi[1] (*with* Jing, Si Cong) Some representations for time-dependent harmonic oscillator. (English summary) *Comm. Theoret. Phys.* **10** (1988), *no.* 3, 363–369. (K. Wódkiewicz) **93k:81039** 81Q05

— The technique of inner integration for regular products and generalized quantum rotations. (Chinese. Chinese summary) *Acta Math. Sci. (Chinese)* **11** (1991), *no.* 4, 409–412. (Summary) **93g:81044** 81R30 (81R05)

— General formalism for mapping of two-mode classical canonical transformations to quantum unitary operators. (English summary) *Comm. Theoret. Phys.* **17** (1992), *no.* 3, 355–360. (Summary) **93i:81097** 81S05 (81R30)

— Density matrix and squeezed state of the two coupled harmonic oscillators. (English summary) *Europhys. Lett.* **19** (1992), *no.* 6, 443–449. 81Q05

— Similarity transformation for Fermi operators. Addendum: "Similarity transformations in one- and two-mode Fock space" [J. Phys. A **24** (1991), no. 11, 2529–2538; MR 92d:81057] by Fan and J. VanderLinde. (English summary) *J. Phys. A* **25** (1992), *no.* 15, 4269–4274. (Summary) **93g:81045** 81R30

— (*with* Zhang, Zhong Xi) Properties of states generated by excitations on a squeezed vacuum state. *Phys. Lett. A* **165** (1992), *no.* 1, 14–18. (Summary) **93b:81104** 81R30 (81V80)

— (*with* Weng, Hai Guang) Simple approach for discussing the properties of displaced Fock states. (English summary) *Quantum Opt.* **4** (1992), *no.* 5, 265–270. 81V80 (81R30)

Fan, J. F. (*with* Xie, Guang Zhong; Tang, Zhi Ming; Wang, Yong Jiu) The exact solution of Einstein's disc. (English summary) *Astrophys. Space Sci.* **192** (1992), *no.* 2, 325–328. (Carl Brans) **93e:83015** 83C15

Fan, Jia Rang (*with* Zhang, Ju Yong) Exact solutions for thick laminated shells. (English summary) *Sci. China Ser. A* **35** (1992), *no.* 11, 1343–1355. 73K15 (73H05, 73K12)

Fan, Jiangping (*with* Cao, Yu Lin; Gard, Thomas C.) The effects of state-dependent time delay on a stage-structured population growth model. *Nonlinear Anal.* **19** (1992), *no.* 2, 95–105. (Lai Fu Liu) **93g:92019** 92D25 (34K20, 92D40)

Fan, Jianqing On the optimal rates of convergence for nonparametric deconvolution problems. *Ann. Statist.* **19** (1991), *no.* 3, 1257–1272. (M. A. Mirzakhmedov) **93d:62061** 62G05

— Asymptotic normality for deconvolution kernel density estimators. (English summary) *Sankhya Ser. A* **53** (1991), *no.* 1, 97–110. (M. A. Mirzakhmedov) **93k:62086** 62G05

— (*with* Marron, J. Stephen) Best possible constant for bandwidth selection. (English summary) *Ann. Statist.* **20** (1992), *no.* 4, 2057–2070. (Michael Falk) **93j:62093** 62G05

— Deconvolution with supersmooth distributions. (English and French summaries) *Canad. J. Statist.* **20** (1992), *no.* 2, 155–169. (Margaret P. Gessaman) **93j:62137** 62G20 (62G05)

— Design-adaptive nonparametric regression. (English summary) *J. Amer. Statist. Assoc.* **87** (1992), *no.* 420, 998–1004. (Summary) **93k:62087** 62G05

— (*with* Hu, Tien Chung) Bias correction and higher order kernel functions. *Statist. Probab. Lett.* **13** (1992), *no.* 3, 235–243. (M. A. Mirzakhmedov) **93f:62051** 62G05

Fan, Jin Jun Existence of solutions of nonlinear integral equations of Volterra type in a Banach space. *J. Math. Phys. Sci.* **25** (1991), *no.* 4, 451–455. (Summary) **93f:45004** 45D05 (47H15, 47N20)

Fan, Michael K. H. On design of robust controllers with unstructured uncertainty. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, I (Kobe,* 1991), 371–376, *Mita, Tokyo*, 1992. (*see* **93g:93005**) 93D21 (93B36)

— (*with* Panier, Eliane R.; Tits, André L.) Comments on: "On the stability of uncertain polynomials with dependent coefficients" [IEEE Trans. Automat. Control **35** (1990), no. 6, 756–759] by L. R. Pujara. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 8, *part I*, 1201. 93D99

— (*with* Tits, André L.) A measure of worst-case H_∞ performance and of largest acceptable uncertainty. *Systems Control Lett.* **18** (1992), *no.* 6, 409–421. (Ian Petersen) **93g:93030** 93B36 (93B40, 93C80, 93D22)

Fan, Qi Hong On width of resonance for one-dimensional differential operators. *Approx. Theory Appl.* **7** (1991), *no.* 4, 6–27. (Horst Behncke) **93g:47058** 47E05 (34L40, 47N50, 81Q15)

Fan, Ru Zong Decomposition of a class of functionals. A Chinese summary appears in Acta Math. Sinica **35** (1992), no. 4, 576. *Acta Math. Sinica (N.S.)* **7** (1991), *no.* 3, 224–240. (T. J. Lyons) **93a:60122** 60J60 (60G44)

Fan, Tai He The spectral theory of completely distributive lattices and topological molecular lattices. (Chinese. Chinese summary) *Acta Math. Sinica* **35** (1992), *no.* 5, 598–605. 54A40

Fan, Tsai Hung (*with* Berger, James O.) Behaviour of the posterior distribution and inferences for a normal mean with t prior distributions. *Statist. Decisions* **10** (1992), *no.* 1-2, 99–120. (Summary) **93k:62065** 62F15 (62F35)

Fan, Wen Ning (*with* Deng, Ji Xian; Song, Xin Yuan) Application of the first-order closed cycle TAR model and asymptotic properties of its coefficient estimates. (Chinese. English and Chinese summaries) *Acta Sci. Natur. Univ. Sunyatseni* **31** (1992), *no.* 1, 21–27. 90A20

Fan, Xian Ling A Viterbo-Hofer-Zehnder type result for Hamiltonian inclusions. (English and French summaries) *Ann. Fac. Sci. Toulouse Math.* (5) **12** (1991), *no.* 3, 365–372. (Michel Willem) **93k:58044** 58E05 (34A60, 34C25, 58F05, 58F22)

— The necessary and sufficient conditions for Lipschitz local homeomorphism. A Chinese summary appears in Chinese Ann. Math. Ser. A **13** (1992), no. 1, 132. *Chinese Ann. Math. Ser. B* **13** (1992), *no.* 1, 40–45. (Miodrag Perović) **93h:58020** 58C30 (26B35, 49J52)

— Existence of multiple periodic orbits on star-shaped Lipschitz-Hamiltonian surfaces. *J. Differential Equations* **98** (1992), *no.* 1, 91–110. (Vittorio Coti Zelati) **93m:58090** 58F22 (34A60, 34C25, 58F05, 70H05)

Fan, Yu Bin The Bayesian statistical method for estimating the OD trip matrix from link volumes. (Chinese. English summary) *Tongji Daxue Xuebao Ziran Kexue Ban* **19** (1991), *no.* 2, 227–233. 90C15

Fan, Yu Shun (*with* Gao, Long; Chen, Lin[3]; Ma, Hai Wu) A nonlinear control design for power systems. (English summary) *Automatica J. IFAC* **28** (1992), *no.* 5, 975–979. 93C95

— (*with* Wu, Qi; Wang, En Ping) Nonuniqueness of H^∞ optimal controllers and design of stable optimal controllers. (Chinese. English summary) *J. Systems Sci. Math. Sci.* **12** (1992), *no.* 1, 48–51. 93B36

Fan, Yun Permutation modules, p-permutation modules and Conlon species. *Sci. China Ser. A* **34** (1991), *no.* 11, 1290–1301. (David Benson) **93f:20015** 20C20

— (*with* Zhou, Bo Rong) Some remarks on filtrations for projective modules. *Bull. London Math. Soc.* **24** (1992), *no.* 5, 431–436. (Cao Yu Chen) **93e:16056** 16W50 (16D10, 16S34, 20C20)

— Local characterizations of block covers and their applications. *J. Algebra* **152** (1992), *no.* 2, 397–416. (Burkhard Külshammer) **93k:20020** 20C20 (16S34, 20C05)

Fan, Zhong Chun (*with* Xing, Han Cheng) DKLFRS: a default knowledge logical framework representation system. *J. Comput. Sci. Tech.* (*English Ed.*) **7** (1992), *no.* 2, 136–142. 68T27 (03B60, 03B70)

Fang, Bi Qi (*with* Dawid, A. Philip) Conjugate Bayes discrimination with infinitely many variables. *J. Multivariate Anal.* **41** (1992), *no.* 1, 27–42. (Chien-Pai Han) **93e:62163** 62H30

Fang, C.-H. *see* **Fang, Chün Hsiung**

Fang, Chong Zhi (*with* Sun, Xi; Jin, Yi Hui) Globally convergent adaptive control of linear systems with dead-zone nonlinearity. (Chinese. English and Chinese summaries) *Inform. and Control* (*Shenyang*) **21** (1992), *no.* 6, 326–331. 93C40

— (*with* Jin, Yi Hui; Sun, Xi) Minimum variance control of a class of bilinear systems and its application. (Chinese. English and Chinese summaries) *J. Tsinghua Univ.* **32** (1992), *no.* 1, 9–16. (Summary) **93h:93039** 93C40 (93B40, 93C10)

Fang, Chün Hsiung (*with* Chang, Fan Jên; Wang, Chi Hui; Wang, Shêng Tê) Solving the generalized Bezout identity by a state space approach. (English summary) *Control Theory Adv. Tech.* **8** (1992), *no.* 2, 269–287. (Summary) **93e:93008** 93B06 (93B25, 93B55, 93C05)

— (*with* Chang, Fan Jên; Huang, Wen Liang) Application of singular system feedback to polynomial matrices and system transformation. (English summary) *Control Theory Adv. Tech.* **8** (1992), *no.* 3, 677–686. 93B17

Fang, Dao Yuan Nonlinear superposition of delta waves in multi-dimensional space. (English summary) *J. Partial Differential Equations* **5** (1992), *no.* 3, 72–84. (Cai Zhong Li) **93h:35120** 35L45 (35L60)

Fang, Deixiong *see* **Feng, De Xiong**

Fang, Dzh. *see* **Fang, Joon**

Fang, G. (*with* Ghoussoub, N.) Second-order information on Palais-Smale sequences in the mountain pass theorem. *Manuscripta Math.* **75** (1992), *no.* 1, 81–95. (Wen Zhao Lu) **93b:58028** 58E05 (49Q99)

Fang, Gen Sun (*with* Liu, Yong Ping) On the optimal quadrature least L_∞-norm of monosplines with free knots on the real axis. (English summary) *J. Complexity* **8** (1992), *no.* 4, 467–487. (Georgi Grozev) **93j:65039** 65D32 (41A55)

Fang, Hao (*with* Wang, En Fu; He, Yin Yun) Further research on parallel memories without access conflict and cell redundancy. (Chinese. English and Chinese summaries) *J. Wuhan Univ. Natur. Sci. Ed.* **1992**, *no.* 2, 25–30. 68P20 (68Q10)

Fang, Hong Jin (*with* Liu, Shao Xue; Beattie, Margaret) Graded division rings and the Jacobson density theorem. (Chinese summary) *Beijing Shifan Daxue Xuebao* **27** (1991), *no.* 2, 129–134. (Patrick J. Morandi) **93a:16032** 16W50 (16K99)

— Normalizing extensions and modules. (Chinese summary) *J. Math. Res. Exposition* **12** (1992), *no.* 3, 401–406. (Zi Mei Jiang) **93j:16013** 16S20 (16D40, 16D50)

Fang, Hua Jing (*with* Tu, Jian) A simplification of the restrictive conditions for the l^1 optimal design problem for multivariable systems when the full rank condition is not satisfied. (Chinese. English and Chinese summaries) *Control Theory Appl.* **9** (1992), *no.* 2, 161–167. 93B36 (93C05)

Fang, Hua Peng Estimates for exponential sums over an algebraic number field. (Chinese. English summary) *J. Math.* (*Wuhan*) **12** (1992), *no.* 2, 121–129. (Ping Ding) **93k:11072** 11L07

Fang, Jia Lin Compactness of families of set-valued mappings. (Chinese. English summary) *J. Math. Res. Exposition* **11** (1991), *no.* 3, 349–353. (Hong Kun Xu) **93a:47058** 47H04 (49J45, 54C60)

— (*with* Wang, Fang) Topological convergence of set-valued mappings. (Chinese. Chinese summary) *J. Math.* (*Wuhan*) **11** (1991), *no.* 4, 368–377. (Summary) **93m:54034** 54C60 (54A20)

Fang, Jin Xuan (*with* Wu, Cong Xin) Fuzzy continuous linear operators on fuzzy topological linear spaces. (Chinese. English summary) *Mohu Xitong yu Shuxue* **5** (1991), *no.* 2, 10–19. (Zuo Shu Liu) **93d:47150** 47S40 (04A72)

— A note on fixed point theorems of Hadžić. (English summary) *Fuzzy Sets and Systems* **48** (1992), *no.* 3, 391–395. (Summary) **93e:54033** 54H25 (04A72, 54A40, 54E70)

Fang, Joon Between philosophy and mathematics: their parallelism in "parallax". (Russian. English summary) With an afterword by A. G. Barabashev. *Voprosy Istor. Estestvoznan. i Tekhn.* **1992**, *no.* 2, 3–19, 173. (Roman Murawski) **93g:00013** 00A30

— *see also* **Anellis, Irving H., 93m:01049**

Fang, Kai Tai (*with* Wang, Yuan[1]) A sequential algorithm for optimization and its applications to regression analysis. (English summary) *Lecture notes in contemporary mathematics*, 1989, 17–28, *Science Press, Beijing*, 1990. (Summary) **93e:90045** 90C15 (62J05, 65K10, 65U05)

— (*with* Wang, Yuan[1]) Number-theoretic method in applied statistics. I, II. (English summary) *Lecture notes in contemporary mathematics*, 1989, 117–142, *Science Press, Beijing*, 1990. (*see* **93d:00033**) 62E99 (65C05, 65U05)

— (*with* Kotz, Samuel; Ng, Kai W.) On the L_1-norm distributions. (English summary) *L_1-statistical analysis and related methods* (*Neuchâtel*, 1992), 401–413, *North-Holland, Amsterdam*, 1992. (*see* **93k:62005**) 62H05 (60E05)

— (*with* Yuan, Ke Hai; Bentler, Peter M.) Applications of sets of points uniformly distributed on a sphere to testing multinormality and robust estimation. (English summary) *Probability and statistics* (*Tianjin*, 1988/1989), 56–73, *Nankai Ser. Pure Appl. Math. Theoret. Phys., World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93b:60004**) 62F99 (62H99)

— (*with* Wang, Shou Ren; Chen, Xi Ru) Statistics in China: a brief account of the past and present. *The development of statistics: recent contributions from China*, 1–5, *Pitman Res. Notes Math. Ser.*, 258, *Longman Sci. Tech., Harlow*, 1992. (*see* **93e:62004**) 62–03

— (*with* Anderson, T. W.) Theory and applications of elliptically contoured and related distributions. *The development of statistics: recent contributions from China*, 41–62, *Pitman Res. Notes Math. Ser.*, 258, *Longman Sci. Tech., Harlow*, 1992. (*see* **93e:62004**) 62H05 (62H10, 62H12, 62H15)

— (*with* Wang, Yuan[1]) A sequential number-theoretic method for optimization and its applications in statistics. *The development of statistics: recent contributions from China*, 139–156, *Pitman Res. Notes Math. Ser.*, 258, *Longman Sci. Tech., Harlow*, 1992. (J. Sándor) **93g:65088** 65K10 (11Z50, 65U05)

— (*with* Zheng, Hu Ling) A new measure of uniformity—the principle of maximum symmetrical difference. (Chinese. English and Chinese summaries) *Chinese J. Appl. Probab. Statist.* **8** (1992), *no.* 1, 10–16. (Summary) **93j:05009** 05B05

— *see also* **Development of statistics: recent contributions from China, 93e:62004**

Fang, Kui C^1 polynomial interpolation over an arbitrary triangle. *Computer-aided design & computer graphics* (*Hangzhou*, 1991), 211–214, *Internat. Acad. Publ., Beijing*, 1991. (Summary) **93f:41005** 41A05 (65D05)

Fang, Li Ping Complex dynamical systems on $\mathbf{C}^*$. (Chinese) *Acta Math. Sinica* **34** (1991), *no.* 5, 611–621. (Fuyao Ren) **93b:30023** 30D05 (58F23)

Fang, Li Zhi (*with* Li, Shu Xian) ★ Creation of the Universe. Translated from the Chinese by T. Kiang. *World Scientific Publishing Co., Inc., River Edge, NJ*, 1989. xii+180 *pp. ISBN* 9971-50-600-9; 9971-50-601-7 (Kenneth Dunn) **93b:83065** 83F05 (83–01)

— Absorption cross section of a mini black hole. *Quantum mechanics in curved space-time* (*Erice*, 1989), 135–139, *NATO Adv. Sci. Inst. Ser. B Phys.*, 230, *Plenum, New York*, 1990. (*see* **93d:83003**) 83C57

Fang, Qi Qin Path limits and zero functions. (Chinese. English and Chinese summaries) *Beijing Daxue Xuebao* **26** (1990), *no.* 5, 564–568. 30D40 (30C99)

— The integral form of Hadamard's theorem. (Chinese) *Acta Math. Sinica* **34** (1991), *no.* 4, 470–478. (Lo Yang) **93d:30001** 30A10

Fang, S. C. (*with* Rajasekera, J. R.) Deriving an unconstrained convex program for linear programming. (English summary) *J. Optim. Theory Appl.* **75** (1992), *no.* 3, 603–612. (S. R. Mohan) **93k:90049** 90C05 (49N15, 90C25, 90C28)

— An unconstrained convex programming view of linear programming. *Z. Oper. Res.* **36** (1992), *no.* 2, 149–161. (Tamás Terlaky) **93e:90034** 90C05 (49N15, 90C25)

— (*with* Sheu, R.-L.) Insights into the interior-point methods. *Z. Oper. Res.* **36** (1992), *no.* 3, 227–257. (Georgi Khristov) **93f:90109** 90C05 (65K05, 90C30)

Fang, Shi Zan (*with* Ren, Jia Gang) Quelques propriétés des fonctions holomorphes sur un espace de Wiener complexe. (English and French summaries) [Some fundamental properties of holomorphic functions defined on a complex Wiener space] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 4, 447–450. (Summary) **93h:46052** 46G20 (60H07)

— Analyse quasi-sure et l'estimation du noyau de la chaleur pour temps petit. (English summary) [Quasisure analysis and estimation of the heat kernel in small time] *Trans. Amer. Math. Soc.* **339** (1993), *no.* 1, 221–241. (Gérard Ben Arous) **93k:60161** 60H30 (58G32, 60H07)

Fang, Wei Fu (*with* Cumberbatch, Ellis) Inverse problems for metal oxide semiconductor field-effect transistor contact resistivity. *SIAM J. Appl. Math.* **52** (1992), *no.* 3, 699–709. (Hideo Soga) **93f:35049** 35J25 (35R05, 35R30, 78A55)

— (*with* Ito, Kazufumi) Identifiability of semiconductor defects from LBIC images. (English summary) *SIAM J. Appl. Math.* **52** (1992), *no.* 6, 1611–1626. (J. W. Jerome) **93j:35186** 35R30 (82D20)

— (*with* Busenberg, Stavros N.; Ito, Kazufumi) Modeling and analysis of laser-beam-induced current images in semiconductors. (English summary) *SIAM J. Appl. Math.* **53** (1993), *no.* 1, 187–204. (Summary) **93j:35171** 35Q60

Fang, Xiao Chun Completely bounded mappings and uniform tensor norms. (Chinese. English summary) *J. Fudan Univ. Natur. Sci.* **30** (1991), *no.* 2, 158–165. (Sze-Kai Tsui) **93a:46113** 46L05 (46M05)

Fang, Xiao Wei (*with* Xu, Bao Zhi) The expression of soliton solution for sine-Gordon equation. *Appl. Math. Mech.* (*English Ed.*) **13** (1992), *no.* 6, 533–536; *translated from Appl. Math. Mech.* **13** (1992), *no.* 6, 515–518 (*Chinese. English and Chinese summaries*). (Summary) **93f:35210** 35Q53

Fang, Xin Gui Abelian 3-DCI groups of even order. *Ars Combin.* **32** (1991), 263–267. (Joseph B. Klerlein) **93c:20085** 20K01 (05C25)

— (*with* Wang, Min) Packing (p, p) graph pairs without K_3. (Chinese. English summary) *Gaoxiao Yingyong Shuxue Xuebao* **6** (1991), *no.* 1, 66–70. (Gui Zhen Liu) **93d:05123** 05C70 (05C35)

Fang, Xing (*with* Wu, Cheng Ou; Zhang, Rong Qing) Inference distribution theory. (Chinese. English and Chinese summaries) *Chinese J. Appl. Probab. Statist.* **8** (1992), *no.* 4, 429–436. 62A30

Fang, Yun (*with* Zhou, Ji[1]; Wang, Jian Hua[4]; Cha, Jian Zhong; Dai, Zuo) The discrete recursive quadratic programming with artificial intelligence strategy. (English summary) *Optimization, Vol.* 1, 2 (*Singapore*, 1992), 159–166, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93d:90005**) 90C20

Fang, Zhao Ben (*with* Block, Henry W.; Chhetry, D.; Sampson, Allan R.) Partial orderings on permutations. (English summary) *Topics in statistical dependence* (*Somerset, PA*, 1987), 45–55, *IMS Lecture Notes Monograph Ser.*, 16, *Inst. Math. Statist., Hayward, CA*, 1990. (Summary) **93i:62015** 62E10

— (*with* Joe, Harry) Further developments on some dependence orderings for continuous bivariate distributions. (English summary) *Ann. Inst. Statist. Math.* **44** (1992), *no.* 3, 501–517. (Ramesh C. Gupta) **93j:62038** 62E15 (60E15, 62H20)

— (*with* Block, Henry W.; Chhetry, D.; Sampson, Allan R.) Some new partial orderings on S_n and $S_n \times S_n$. *J. Statist. Plann. Inference* **30** (1992), *no.* 3, 351–357. (Moshe Shaked) **93c:60020** 60E15 (05A05)

Fania, M. Lucia (*with* Beltrametti, Mauro C.; Sommese, Andrew J.) On the discriminant variety of a projective manifold. (English summary) *Forum Math.* **4** (1992), *no.* 6, 529–547. (Jarosław A. Wiśniewski) **93k:14049** 14J40 (14C20, 14N05)

Fanjul, R. (*with* Shivamoggi, Bhimsen K.; Rollins, David K.) Analytic aspects of the Zakharov-Kuznetsov equation. (English summary) *Phys. Scripta* **47** (1993), *no.* 1, 15–17. (Summary) **93h:35205** 35Q99 (82D10)

— (*with* Shivamoggi, Bhimsen K.; Rollins, David K.) Erratum on: "Analytic aspects of the Zakharov-Kuznetsov equation" [Phys. Scripta **47** (1993), no. 1, 15–17; MR 93h:35205]. *Phys. Scripta* **47** (1993), *no.* 5, 704. 35Q99 (82D10)

Fannes, M. (*with* Nachtergaele, Bruno; Werner, R. F.) Entropy estimates for finitely correlated states. (English and French summaries) *Ann. Inst. H. Poincaré Phys. Théor.* **57** (1992), *no.* 3, 259–277. (Lech Jakóbczyk) **93i:82005** 82B10 (46L60, 82B20)

— (*with* Nachtergaele, Bruno; Werner, R. F.) Finitely correlated states on quantum spin chains. *Comm. Math. Phys.* **144** (1992), *no.* 3, 443–490. (Guido A. Raggio) **93i:82006** 82B10 (46L60, 82B23)

— (*with* Nachtergaele, Bruno; Werner, R. F.) Ground states of VBS models on Cayley trees. *J. Statist. Phys.* **66** (1992), *no.* 3-4, 939–973. (Lech Jakóbczyk) **93a:82011** 82B20 (82B10)

— (*with* Nachtergaele, Bruno; Werner, R. F.) Abundance of translation invariant pure states on quantum spin chains. (English summary) *Lett. Math. Phys.* **25** (1992), *no.* 3, 249–258. (H. Araki) **93j:82006** 82B20 (46L60)

— (*with* Nachtergaele, Bruno; Slegers, L.) Functions of Markov processes and algebraic measures. *Rev. Math. Phys.* **4** (1992), *no.* 1, 39–64. (Aernout C. D. van Enter) **93g:82010** 82B10 (28D20, 60J99, 82B20)

Fanti, M. P. (*with* Maione, B.; Piscitelli, G.; Turchiano, B.) System approach to a generic software specification for flexible manufacturing system job flow management. (English summary) *Internat. J. Systems Sci.* **23** (1992), *no.* 11, 1889–1902. 93C83

Fantz, M. (*with* Friedrich, R.; Bestehorn, M.; Haken, H.) Evolution of patterns in rotating Bénard convection. *From phase transitions to chaos*, 118–127, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93b:58001**) 76E15

Faour, N. S. A class of operators associated with L_b^2. *Acta Math. Hungar.* **60** (1992), *no.* 3-4, 247–250. (Robert C. Smith) **93m:47037** 47B38 (47B35)

Farach, Martin (*with* Amir, Amihood) Two-dimensional dictionary matching. (English summary) *Inform. Process. Lett.* **44** (1992), *no.* 5, 233–239. (Summary) **93k:68111** 68U15

Faradzhev, I. A. *see* **Interactions between algebra and combinatorics, 93f:00008**

Faradzhev, R. G. (*with* Aslanova, N. Kh.) On the block approach to problems in the theory of sequential machines. (Russian) *Avtomat. i Telemekh.* **1992**, *no.* 1, 123–131; *translation in Automat. Remote Control* **53** (1992), *no.* 1, *part* 2, 100–107. (Summary) **93b:93067** 93C55 (68Q68)

— (*with* Aslanova, N. Kh.) Arithmetic representation of functions of many-valued logic and a parallel algorithm for finding such a representation. (Russian. Russian summary) *Avtomat. i Telemekh.* **1992**, *no.* 2, 120–131; *translation in Automat. Remote Control* **53** (1992), *no.* 2, *part* 2, 251–261. (Summary) **93j:03016** 03B50 (03B35)

Farag, S. F. (*with* Mostafa, Samy M.) On fuzzy partial differentiation. (English summary) *Proc. Pakistan Acad. Sci.* **28** (1991), *no.* 4, 407–418. (T. M. G. Ahsanullah) **93i:26024** 26E50 (04A72)

— A note on Polish structure of topological groups. (English summary) *Proc. Pakistan Acad. Sci.* **29** (1992), *no.* 3, 263–266. (Summary) **93i:22001** 22A05 (54H11)

Faraggi, D. (*with* Reiser, B.; Guttman, Irwin) Choice of sample size for testing the $P(X > Y)$. *Comm. Statist. Theory Methods* **21** (1992), *no.* 3, 559–569. (Summary) **93f:62136** 62N10 (62F03)

Faragó, A. (*with* Linder, T.; Lugosi, Gábor) Nearest neighbor search and classification in $O(1)$ time. (Russian summary) *Problems Control Inform. Theory/Problemy Upravlen. Teor. Inform.* **20** (1991), *no.* 6, 383–395. (Summary) **93a:68056** 68Q25 (65Y20, 68T10)

Farahani, A. M. (*with* Grove, E. A.) A simple model for price fluctuations in a single commodity market. *Oscillation and dynamics in delay equations* (*San Francisco, CA*, 1991), 97–103, *Contemp. Math.*, 129, *Amer. Math. Soc., Providence, RI*, 1992. (J. C. Hwang) **93g:90019** 90A16 (34K15, 90A14)

Farahi, F. (*with* Aktas, Y.; Evans, M. W.) On the relativistic theory of charge. (English summary) *Modern Phys. Lett. B* **7** (1993), *no.* 6, 413–419. 78A25 (78A35)

Farahmand, K. Number of real roots of a random trigonometric polynomial. (English summary) *J. Appl. Math. Stochastic Anal.* **5** (1992), *no.* 4, 307–313. (V. Thangaraj) **93m:60101** 60G99 (42A61)

Farassat, F. (*with* Myers, M. K.) Aeroacoustics of high speed rotating blades: the mathematical aspect. (English summary) *Computational acoustics, Vol. 2* (*Cambridge, MA*, 1991), 117–148, *North-Holland, Amsterdam*, 1993. (*see* **93j:76002**) 76Q05

Faraut, Jacques Quelques applications de la convexité à l'étude des fonctions sphériques sur un espace symétrique. [Some applications of convexity to the study of spherical functions on a symmetric space] Seminar Sophus Lie (Darmstadt, 1991). *Sem. Sophus Lie* **1** (1991), *no.* 2, 153–162. (Joachim Hilgert) **93a:43010** 43A90 (22E30)

— Prolongement analytique des series de Taylor spheriques. [Analytic extension of spherical Taylor series] *Hypergeometric functions on domains of positivity, Jack polynomials, and applications* (*Tampa, FL*, 1991), 139–149, *Contemp. Math.*, 138, *Amer. Math. Soc., Providence, RI*, 1992. (A. Korányi) **93k:22005** 22E30 (22E45, 32M15, 33C80)

Faraway, Julian J. Smoothing in adaptive estimation. *Ann. Statist.* **20** (1992), *no.* 1, 414–427. (Lionel Weiss) **93b:62049** 62F35 (62E25, 62F11, 62G20)

Farb, Benson Automatic groups: a guided tour. *Enseign. Math.* (2) **38** (1992), *no.* 3-4, 291–313. (D. F. Holt) **93k:20052** 20F10 (20F32, 57M05, 57M07)

Farber, M. Sh. Hermitian forms on periodic modules and even-dimensional links. *Knots* 90 (*Osaka*, 1990), 67–91, *de Gruyter, Berlin*, 1992. (C. Kearton) **93k:57054** 57Q45

— (*with* Vogel, Pierre) The Cohn localization of the free group ring. *Math. Proc. Cambridge Philos. Soc.* **111** (1992), *no.* 3, 433–443. (Wolfgang Grölz) **93b:16049** 16S34 (16U99)

— Stable-homotopy and homology invariants of boundary links. *Trans. Amer. Math. Soc.* **334** (1992), *no.* 1, 455–477. (C. Kearton) **93a:57023** 57Q45 (55P42)

Farber, V. E. Distribution moments of amplitude-quantified processes in rounding by the use of correcting signals. (Russian. Russian summary) *Avtomat. i Telemekh.* **1992**, *no.* 8, 91–97; *translation in Automat. Remote Control* **53** (1992), *no.* 8, *part* 1, 1210–1216 (1993). 93C57 (93B52)

Farber, V. Sh. Gravitational field energy and the symmetry group of the general theory of relativity. (Russian. English and Azerbaijani summaries) *Izv. Akad. Nauk Azerbaĭdzhan. SSR Ser. Fiz.-Tekhn. Mat. Nauk* **10** (1989), *no.* 1, 71–75 (1991). (From the text) **93g:83040** 83C40

Fărcaş, Gh. Idéaux en treillis non-commutatifs de type (G). (Romanian summary) [Ideals in noncommutative lattices of type (G)] *Studia Univ. Babeş-Bolyai Math.* **35** (1990), *no.* 4, 9–12 (1992). 06B99 (06B10)

— Sur les treillis non-commutatifs de type (G). [On noncommutative lattices of type (G)] *Mathematica (Cluj)* **33(56)** (1991), *no.* 1-2, 59–62. 06B99

Farcy, A. (*with* Alziary de Roquefort, T.) Pseudospectral multi-domain method for incompressible viscous flow computation. (English summary) *Spectral and high order methods for partial differential equations* (*Como*, 1989), 337–346, *North-Holland, Amsterdam*, 1990. (*see* **93d:65005**) 65N35 (76M25)

Fardigola, L. V. Well-posed problems in a layer with differential operators in the boundary condition. (Russian. Russian and Ukrainian summaries) *Ukrain. Mat. Zh.* **44** (1992), *no.* 8, 1083–1090; *translation in Ukrainian Math. J.* **44** (1992), *no.* 8, 983–989 (1993). (Nicolai N. Shopolov) **93k:35127** 35K30 (35E15)

Farenick, D. R. C^*-convexity and matricial ranges. *Canad. J. Math.* **44** (1992), *no.* 2, 280–297. (Victor Kaftal) **93j:46060** 46L05 (47A12, 47A13, 47B99, 47D20)

— (*with* Morenz, Phillip B.) C^*-extreme points of some compact C^*-convex sets. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 3, 765–775. (Cho Ho Chu) **93i:46096** 46L05 (47A12, 47D20)

esposito-Farese, Gilles *see* **Esposito-Farese, Gilles**

Farge, Marie Wavelet transforms and their applications to turbulence. *Annual review of fluid mechanics, Vol.* 24, 395–457, *Annual Reviews, Palo Alto, CA*, 1992. (Eugene L. Wachspress) **93b:76066** 76M25 (42C15, 65R99, 76Fxx)

Farhane, Lotfi Espacements multivariés généralisés et recouvrements aléatoires. [Generalized multivariate spacings and random coverings] *Ann. Sci. Univ. Clermont-Ferrand II Probab. Appl. No.* 9 (1991), 15–31. (J. Hüsler) **93g:60020** 60D05 (60F15)

Farhat, Charbel A saddle-point principle domain decomposition method for the solution of solid mechanics problems. (English summary) *Fifth International Symposium on Domain Decomposition Methods for Partial Differential Equations* (*Norfolk, VA*, 1991), 271–292, *SIAM, Philadelphia, PA*, 1992. (Summary) **93h:73038** 73V05 (65N30, 73V25)

— (*with* Chen, Po-Shu; Roux, François-Xavier) The dual Schur complement method with well-posed local Neumann problems: regularization with a perturbed Lagrangian formulation. (English summary) *SIAM J. Sci. Comput.* **14** (1993), *no.* 3, 752–759. 65N55 (65Y05)

Farhi, Edward (*with* Gutmann, Sam) The functional integral constructed directly from the Hamiltonian. *Ann. Physics* **213** (1992), *no.* 1, 182–203. (Takashi Ichinose) **93c:81096** 81S40 (58D30)

— (*with* Carroll, Sean M.; Guth, Alan H.) An obstacle to building a time machine. *Phys. Rev. Lett.* **68** (1992), *no.* 3, 263–266. (Laszlo B. Szabados) **93e:83048a** 83C75

— (*with* Carroll, Sean M.; Guth, Alan H.) Errata: "An obstacle to building a time machine". *Phys. Rev. Lett.* **68** (1992), *no.* 22, 3368. (Laszlo B. Szabados) **93e:83048b** 83C75

lima-de-Faria, J. *see* **Lima-de-Faria, J.**

Faria, Luis (*with* Devloo, Philippe R.) Discretization vs modelling error for a class of beam elements. (English and Portuguese summaries) *Mat. Apl. Comput.* **10** (1991), *no.* 3, 195–205. (Summary) **93c:73059** 73K05 (73V05)

de Faria, M. (*with* Potthoff, Jürgen; Streit, Ludwig) The Feynman integrand as a Hida distribution. *J. Math. Phys.* **32** (1991), *no.* 8, 2123–2127. (Summary) **93f:81068** 81S40 (60G20, 60H05)

de Faria Campos, Edison The flow of delayed functional-differential equations. (Spanish. English summary) *Cienc. Tecn.* **14** (1990), *no.* 1-2, 7–13 (1992). (Waldyr M. Oliva) **93d:34112** 34K05 (34C35, 58F32)

Farid, F. O. The spectral variation for two matrices with spectra on two intersecting lines. (English summary) *Linear Algebra Appl.* **177** (1992), 251–273. (Summary) **93k:15041** 15A60

Faridani, Adel (*with* Ritman, Erik L.; Smith, Kennan T.) Local tomography. *SIAM J. Appl. Math.* **52** (1992), *no.* 2, 459–484. (Fritz Keinert) **93b:92008** 92C55 (44A12, 65R10)

— (*with* Ritman, Erik L.; Smith, Kennan T.) Examples of local tomography. *SIAM J. Appl. Math.* **52** (1992), *no.* 4, 1193–1198. 45L10 (65R10)

Farin, Gerald Degree reduction fairing of cubic B-spline curves. *Geometry processing for design and manufacturing*, 87–99, *SIAM, Philadelphia, PA*, 1992. (*see* **93b:65035**) 65D17 (41A15, 65D07)

— (*with* Hagen, Hans) A local twist estimator. *Topics in surface modeling*, 79–84, *Geom. Des. Publ., SIAM, Philadelphia, PA*, 1992. (*see* **93c:65026**) 65D17 (65K10)

— Commutativity of Coons and tensor product operators. (English summary) *Rocky Mountain J. Math.* **22** (1992), *no.* 2, 541–546. (T. Hermann) **93g:65026** 65D17

— ★ Curves and surfaces for computer aided geometric design. (English. English summary) A practical guide. Third edition. With 1 IBM-PC floppy disk (5.25 inch; DD). Computer Science and Scientific Computing. *Academic Press, Inc., Boston, MA*, 1993. xviii+473 *pp. ISBN* 0-12-249052-5 (Editors) **93k:65016** 65D17 (65Dxx, 65Nxx)

— Tighter convex hulls for rational Bézier curves. (English summary) *Comput. Aided Geom. Design* **10** (1993), *no.* 2, 123–125. 65Y25 (65D17)

Farina de Souza, Carlos (*with* Alves, M. S.) Trace anomaly in a scalar theory with an auxiliary external field. (English summary) *Classical Quantum Gravity* **9** (1992), *no.* 8, 1841–1850. (Summary) **93e:81133** 81T50

— (*with* Gamboa, Jorge) The Faddeev-Popov method for the relativistic Landau problem. *Internat. J. Modern Phys. A* **7** (1992), *no.* 12, 2825–2839. (Summary) **93b:81293** 81T99 (81S40)

— (*with* Boschi Filho, H.; Natividade, C. P.) Heat-kernel expansion at finite temperature. *Phys. Rev. D* (3) **45** (1992), *no.* 2, 586–594. (Yi-Gao Liang) **93a:81132** 81T16 (58G11)

Farinola, A. (*with* Falcitelli, M.) Locally conformal Kähler manifolds with pointwise constant antiholomorphic sectional curvature. (Italian summary) *Riv. Mat. Univ. Parma* (4) **17** (1991), 295–314 (1992). (Marisa Fernández) **93h:53070** 53C55 (53C15, 53C21)

Farison, James B. (*with* Kolla, Sri R.) Stability robustness bounds for discrete-time linear regulators. *Internat. J. Systems Sci.* **22** (1991), *no.* 11, 2285–2298. (Summary) **93f:93100** 93D09 (49N10, 93C55)

— (*with* Kolla, Sri R.) Techniques in stability robustness bounds for linear discrete-time systems. *Robust control system techniques and applications, Part* 1, 395–454, *Control Dyn. Syst. Adv. Theory Appl.*, 50, *Academic Press, San Diego, CA*, 1992. (From the introduction) **93h:93054** 93D09 (93–02, 93C55)

dror Farjoun, Emmanuel *see* **Dror Farjoun, Emmanuel**

Farkas, Daniel R. The Anick resolution. *J. Pure Appl. Algebra* **79** (1992), *no.* 2, 159–168. (Ellen E. Kirkman) **93h:16007** 16E10 (16S15, 18G10)

— (*with* Green, Edward L.) Do subspaces have distinguished bases? *Rocky Mountain J. Math.* **22** (1992), *no.* 4, 1295–1302. (Henri Lombardi) **93m:13012** 13P10 (15A21, 68Q40)

Farkas, Henrik (*with* Dancsó, András; Farkas, Miklós; Szabó, György) Investigations into a class of generalized two-dimensional Lotka-Volterra schemes. *Acta Appl. Math.* **23** (1991), *no.* 2, 103–127. (John H. Swart) **93a:92008** 92D25 (92B05)

— (*with* Simon, Peter L.) Use of the parametric representation method in revealing the root structure and Hopf bifurcation. *J. Math. Chem.* **9** (1992), *no.* 4, 323–339. (Edoardo Beretta) **93h:34055** 34C23 (34A47, 34C35, 58F14)

Farkas, Hershel M. (*with* Kra, I.) ★ Riemann surfaces. Second edition. Graduate Texts in Mathematics, 71. *Springer-Verlag, New York*, 1992. xvi+363 *pp. ISBN* 0-387-97703-1 (Editors) **93a:30047** 30Fxx (14–01, 14H55)

— The trisecant formula and hyperelliptic surfaces. *Curves, Jacobians, and abelian varieties (Amherst, MA, 1990)*, 161–169, *Contemp. Math.*, 136, *Amer. Math. Soc., Providence, RI*, 1992. (*see* **93f:14001**) 30F10 (14J27, 30F30)

Farkas, Miklós (*with* Dancsó, András; Farkas, Henrik; Szabó, György) Investigations into a class of generalized two-dimensional Lotka-Volterra schemes. *Acta Appl. Math.* **23** (1991), *no.* 2, 103–127. (John H. Swart) **93a:92008** 92D25 (92B05)

Farkasovsky, Pavol Ground state properties of the simplified Hubbard model. (English summary) *Modern Phys. Lett. B* **6** (1992), *no.* 20, 1245–1253. (Summary) **93h:82061** 82C41 (82D35)

Farmaki, Vassiliki Convergence of series and isomorphic embeddings in Banach spaces. *Czechoslovak Math. J.* **42(117)** (1992), *no.* 3, 433–444. (Bor-Luh Lin) **93h:46011** 46B15 (46B03)

Farmakis, Nikos On constructibility of A-optimal weighing designs $(n, k, 5)$, when $n \equiv 3 \pmod 4$ and $k = n - 1, n$. (English summary) *J. Statist. Plann. Inference* **33** (1992), *no.* 2, 275–283. (Bhagwandas) **93k:62153** 62K10 (62K05)

Farmer, J. Doyne (*with* Casdagli, Martin; Eubank, Stephen; Gibson, John F.) State space reconstruction in the presence of noise. Nonlinear science: the next decade (Los Alamos, NM, 1990). *Phys. D* **51** (1991), *no.* 1-3, 52–98. (C. Eugene Wayne) **93a:58112** 58F12 (34C35, 34D45, 58F13)

— (*with* Gibson, John F.; Časdagli, Martin; Eubank, Stephen) An analytic approach to practical state space reconstruction. *Phys. D* **57** (1992), *no.* 1-2, 1–30. (Summary) **93c:58200** 58F40 (58F13)

Farmer, William M. Simple second-order languages for which unification is undecidable. *Theoret. Comput. Sci.* **87** (1991), *no.* 1, 25–41. (P. Turakainen) **93h:03061** 03D35 (03D05, 03D40, 68Q45)

Farnbacher, E. (*with* Tinhofer, G.) A new lower bound for the makespan of a single machine scheduling problem. *System modelling and optimization (Zurich, 1991)*, 209–218, *Lecture Notes in Control and Inform. Sci.*, 180, *Springer, Berlin*, 1992. (*see* **93e:90003**) 90B35

Farnsteiner, Rolf Recent developments in the cohomology theory of modular Lie algebras. *Nonassociative algebras and related topics (Hiroshima, 1990)*, 19–46, *World Sci. Publishing, River Edge, NJ*, 1991. (Guang Yu Shen) **93b:17064** 17B56 (17B50)

— (*with* Bell, Allen D.) On the theory of Frobenius extensions and its application to Lie superalgebras. *Trans. Amer. Math. Soc.* **335** (1993), *no.* 1, 407–424. (Joris Van der Jeugt) **93c:17049** 17B70 (17A70, 17B55)

Faro, Emilio *see* **Lawvere, F. William, 93m:18001**

lo Faro, Giovanni *see* **Lo Faro, Giovanni**

Farooq, A. (*with* Owens, David H.; Lokowandt, B.; Pfeiffer, B. M.) Model-based expert system for computer aided design of feedback controllers. (English summary) *Control '91, Vol.* 1, 2 (*Edinburgh*, 1991), 1246–1250, *IEE Conf. Publ. Ser.*, 332, *IEE, London*, 1991. (*see* **93h:93007**) 93B40 (93B52)

Faroughi, M. Uncountable chains and antichains of varieties of Banach algebras. *J. Math. Anal. Appl.* **168** (1992), *no.* 1, 184–194. (James Bell Cooper) **93f:46113** 46M99 (08C05, 46H05)

Farouki, Rida T. Pythagorean-hodograph curves in practical use. *Geometry processing for design and manufacturing*, 3–33, *SIAM, Philadelphia, PA*, 1992. (*see* **93b:65035**) 65D17

— (*with* Chastang, Jean-Claude A.) Curves and surfaces in geometrical optics. *Mathematical methods in computer aided geometric design, II (Biri, 1991)*, 239–260, *Academic Press, Boston, MA*, 1992. (Summary) **93f:78001** 78A05 (65D17)

Farr, W. W. (*with* Fitzgibbon, W. E.; Morgan, Jeff J.; Waggoner, S. J.) Asymptotic convergence for a class of autocatalytic chemical systems. *Differential equations with applications in biology, physics, and engineering (Leibnitz, 1989)*, 121–128, *Lecture Notes in Pure and Appl. Math.*, 133, *Dekker, New York*, 1991. (*see* **93a:00021**) 34A34 (34C11, 92E20)

Farran, Hani (*with* Elaydi, Saber) Weakly-Anosov diffeomorphisms and exponential trichotomy. *Libertas Math.* **12** (1992), 99–107. (Romeo F. Thomas) **93m:58082** 58F15

Farran, T. (*with* Braithwaite, M.; Gladwell, Ian; et al.) A detonation problem posed as a differential/algebraic boundary value problem. *Math. Engrg. Indust.* **3** (1990), *no.* 1, 45–57. (Summary) **93c:80012** 80A25 (34A09, 34B15)

Farré, Rafel A positivstellensatz for chain-closed fields, $\mathbf{R}((t))$ and some related fields. *Arch. Math. (Basel)* **57** (1991), *no.* 5, 446–455. (Mieczysław Kula) **93e:12003** 12D15

Farrell, Brian F. (*with* Rivest, Chantal; Davis, Christopher A.) Upper-tropospheric syntopic-scale waves. I. Maintenance as Eady normal modes. (English summary) *J. Atmospheric Sci.* **49** (1992), *no.* 22, 2108–2119. (Summary) **93k:86007** 86A10 (76C15, 76E20)

— (*with* Rivest, Chantal) Upper-tropospheric synoptic-scale waves. II. Maintenance and excitation of quasi modes. (English summary) *J. Atmospheric Sci.* **49** (1992), *no.* 22, 2120–2138. (Summary) **93k:86008** 86A10 (76C15, 76E20)

Farrell, Edward J. (*with* Whitehead, Earl Glen, Jr.) Connections between the matching and chromatic polynomials. (English summary) *Internat. J. Math. Math. Sci.* **15** (1992), *no.* 4, 757–766. (Charles H. C. Little) **93h:05125** 05C70 (05C15)

— (*with* Grell, J. C.) On cocircuit graphs. (English summary) *J. Combin. Math. Combin. Comput.* **12** (1992), 7–15. (Summary) **93f:05070** 05C75 (05C38)

— On the theory of matching equivalent graphs and rook equivalent chessboards. *J. Franklin Inst.* **329** (1992), *no.* 1, 45–64. (Dennis White) **93b:05132** 05C70 (05A15)

— (*with* Kennedy, John W.; Quintas, Louis V.; Wahid, Shanaz A.) Graphs with palindromic matching and characteristic polynomials. (English summary) *Vishwa Internat. J. Graph Theory* **1** (1992), *no.* 1, 59–76. (Norbert Seifter) **93m:05150** 05C70 (05C15)

— The impact of F-polynomials in graph theory. (English summary) *Quo vadis, graph theory?*, 173–178, *Ann. Discrete Math.*, 55, *North-Holland, Amsterdam*, 1993. (*see* **93k:05003**) 05C70

Farrell, F. Thomas (*with* Jones, Lowell Edwin) Rigidity in geometry and topology. *Proceedings of the International Congress of Mathematicians, Vol. I, II (Kyoto, 1990)*, 653–663, *Math. Soc. Japan, Tokyo*, 1991. (Christopher W. Stark) **93g:57041** 57R67 (19J10, 53C21, 57N37, 57Q10, 57R55, 57R80)

— (*with* Jones, Lowell Edwin) Stable pseudoisotopy spaces of compact non-positively curved manifolds. *J. Differential Geom.* **34** (1991), *no.* 3, 769–834. (Ian Hambleton) **93b:57020** 57N15 (19B28, 19D10, 53C21, 57N37)

— (*with* Stark, C. W.) Cocompact spherical-Euclidean spaceform groups of infinite VCD. (English summary) *Bull. London Math. Soc.* **25** (1993), *no.* 2, 189–192. (Yoshinobu Kamishima) **93k:57071** 57S30

— (*with* Jones, Lowell Edwin) Isomorphism conjectures in algebraic K-theory. *J. Amer. Math. Soc.* **6** (1993), *no.* 2, 249–297. (Masayuki Yamasaki) **93h:57032** 57N37 (19D55)

Farrell, Paul A. (*with* Buoni, John J.; Ruttan, Arden) Parallel LU decomposition of upper Hessenberg matrices on a shared memory muitiprocessor. (English summary) *Computational and applied mathematics, I (Dublin, 1991)*, 61–69, *North-Holland, Amsterdam*, 1992. (*see* **93j:00007**) 65Y05 (65F30)

Farrell, Roger H. (*with* Brown, Lawrence D.) A lower bound for the risk in estimating the value of a probability density. *J. Amer. Statist. Assoc.* **85** (1990), *no.* 412, 1147–1153. (Wolfgang Wertz) **93e:62102** 62G05

— (*with* Hwang, Jiunn Tzon; Casella, George; Robert, Christian P.; Wells, Martin T.) Estimation of accuracy in testing. *Ann. Statist.* **20** (1992), *no.* 1, 490–509. (A. L. Rukhin) **93a:62020** 62F03 (62A99, 62C07, 62C15)

Farrell, Tom (*with* Jones, Lowell Edwin) Markov cell structures near a hyperbolic set. *Mem. Amer. Math. Soc.* **103** (1993), *no.* 491, vi+138 *pp.* (Christopher W. Stark) **93j:58102** 58F15 (57Q15, 57R20, 58F12)

Farrier, D. R. (*with* Prior-Wandesforde, A. R.) A maximum likelihood algorithm for estimating damped sinusoids. (English summary) *Adaptive systems in control and signal processing, 1989 (Glasgow)*, 601–605, *IFAC Sympos. Ser.*, 1990, *No.* 1, *Pergamon, Oxford*, 1990. (*see* **93j:93007**) 93E10 (93B40)

Farshadnia, R. (*with* Crummey, T. P.; Fleming, Philip Joseph; Grace, A. C. W.; Hancock, S. D.) An optimization toolbox for MATLAB. *Control '91, Vol.* 1, 2 (*Edinburgh*, 1991), 744–749, *IEE Conf. Publ. Ser.*, 332, *IEE, London*, 1991. (*see* **93h:93007**) 90C30

Farsi, Carla A note on K-theoretical index theorems for orbifolds. *Proc. Roy. Soc. London Ser. A* **437** (1992), *no.* 1900, 429–431. (John Roe) **93g:58136** 58G10 (19K56, 46L80, 58G12)

— K-theoretical index theorems for orbifolds. *Quart. J. Math. Oxford Ser.* (2) **43** (1992), *no.* 170, 183–200. (Hiroshi Takai) **93f:58231** 58G12 (19K35, 19K56, 46L87, 57R57)

— Equivariant spin bordism in low dimensions. *Topology Appl.* **43** (1992), *no.* 2, 167–180. (José Carlos de Souza Kiihl) **93f:57044** 57R85 (57R20, 57S17)

Farwell, R. S. (*with* Chisholm, J. S. R.) Tetrahedral structure of idempotents of the Clifford algebra $C_{3,1}$. *Clifford algebras and their applications in mathematical physics (Montpellier, 1989)*, 27–32, *Fund. Theories Phys.*, 47, *Kluwer Acad. Publ., Dordrecht*, 1992. (*see* **93f:00011**) 81R25 (15A66)

— (*with* Chisholm, J. S. R.) Unified spin gauge theories of the four fundamental forces. *Clifford algebras and their applications in mathematical physics (Montpellier, 1989)*, 363–370, *Fund. Theories Phys.*, 47, *Kluwer Acad. Publ., Dordrecht*, 1992. (*see* **93f:00011**) 81V22

meier zu Farwig, H. *see* **Meier zu Farwig, H.**

Farwig, Reinhard A variational approach in weighted Sobolev spaces to the operator $-\Delta + \partial/\partial x_1$ in exterior domains of $\mathbf{R}^3$. *Math. Z.* **210** (1992), *no.* 3, 449–464. (Laurent Véron) **93f:35088** 35K20 (35A15, 35Q30)

— The stationary exterior 3D-problem of Oseen and Navier-Stokes equations in anisotropically weighted Sobolev spaces. *Math. Z.* **211** (1992), *no.* 3, 409–447. (Rodolfo Salvi) **93k:35204** 35Q30

Farzan, Ruszlán H. Approximation of a three-dimensional singular integral equation. (Russian. Russian summary) *Vestnik Moskov. Univ. Ser. XV Vychisl. Mat. Kibernet.* **1992**, *no.* 3, 34–42, 64; *translation in Moscow Univ. Comput. Math. Cybernet.* **47** (1992), *no.* 3, 30–36. (Summary) **93m:78014** 78A45

Fasano, Antonio (*with* Primicerio, Mario) On the problem of outgassing and contamination of surfaces in a rarefied atmosphere. (Italian) Memoirs of mathematical physics in honor of Giovanni Carini on his 70th birthday (Italian). *Atti Accad. Peloritana Pericolanti Cl. Sci. Fis. Mat. Natur.* **68** (1990), *suppl.* 1, 473–490 (1991). (Ioannis G. Stratis) **93a:82055** 82C70 (35Q99)

— (*with* Beretta, Edoardo) Mathematical model for the dynamics of a phytoplankton population. *Differential equations models in biology, epidemiology and ecology (Claremont, CA, 1990)*, 161–176, *Lecture Notes in Biomath.*, 92, *Springer, Berlin*, 1991. (J. M. Cushing) **93j:92026** 92D25

— (*with* Primicerio, Mario; Rosso, F.) On quasi-steady axisymmetric flows of Bingham type with stress-induced degradation. (English and German summaries) *Computing* **49** (1992), *no.* 3, 213–237. (Michael Renardy) **93j:76009** 76A05 (35Q35, 76M99)

— (*with* Beretta, Edoardo; Hosono, Yuzo) Equilibrium of a phytoplankton population in a laboratory controlled system. *Surveys Math. Indust.* **1** (1992), *no.* 4, 283–336. (József Terjéki) **93e:92008** 92D25 (45J05)

— (*with* Díaz Díaz, Jesús Ildefonso; Meirmanov, A. M.) On the disappearance of the mushy region in multidimensional Stefan problems. *Free boundary problems involving solids (Montreal, PQ, 1990)*, 124–129, *Pitman Res. Notes Math. Ser.*, 281, *Longman Sci. Tech., Harlow*, 1993. (*see* **93k:00037**) 35R35 (80A22)

— (*with* Comparini, Elena) The effect of temperature on the dynamics of a phytoplankton population. *Nonlinear Anal.* **20** (1993), *no.* 11, 1355–1367. 92D25

— *see also* **Mathematical modelling of industrial processes, 93c:00007**

Fashoro, M. (*with* Hájek, O.; Loparo, Kenneth A.) Controllability properties of constrained linear systems. *J. Optim. Theory Appl.* **73** (1992), *no.* 2, 329–346. (F. S. Van Vleck) **93i:93017** 93B05 (93C05, 93C15)

Fasol, K. H. (*with* Gehre, H. G.) Order reduction, model approximation, and controller design. A survey on some known methods and recommendation of a new approach. (English summary) *Computational systems analysis*, 153–178, *Elsevier, Amsterdam*, 1992. (*see* **93b:93006**) 93B51 (93B11, 93C70)

Fassbender, Bert A sufficient condition on degree sums of independent triples for Hamiltonian cycles in 1-tough graphs. (English summary) *Ars Combin.* **33** (1992), 300–304. (Summary) **93d:05100** 05C45

Fässler, A. (*with* Stiefel, E.) ★ Group theoretical methods and their applications. Translated from the German by Baoswan Dzung Wong. *Birkhäuser Boston, Inc., Boston, MA*, 1992. xii+296 *pp. ISBN* 0-8176-3527-0 (From the preface) **93a:20023** 20C35 (22E70, 81R05)

Fassò, Alessandro Statistical diagnostic in the closed loop autoregressive model. (Italian summary) *Statistica (Bologna)* **51** (1991), *no.* 2, 247–257. 62M10

Fateev, V. A. (*with* Luk'yanov, S. L.) Vertex operators and representations of quantum universal enveloping algebras. *Internat. J. Modern Phys. A* **7** (1992), *no.* 7, 1325–1359. (Vladimir A. Stukopin) **93g:17024** 17B37 (81R50, 81T40)

— (*with* de Vega, H. J.) Factorizable S-matrices from nonlocal Z_N charges. *J. Phys. A* **25** (1992), *no.* 9, 2693–2709. (Filippo Colomo) **93e:81131** 81T40

Fateman, Richard J. A review of Mathematica. *J. Symbolic Comput.* **13** (1992), *no.* 5, 545–579. (D. Z. Spicer) **93f:68049** 68Q40 (68–04, 68N99)

ibn al-Fath, Sinān *see* **Ibn al-Fath, Sinān**

Fathi, Albert Démonstration d'un théorème de Penner sur la composition des twists de Dehn. (English and French summaries) [Proof of a theorem of Penner on the composition of Dehn twists] *Bull. Soc. Math. France* **120** (1992), *no.* 4, 467–484. (Darryl McCullough) **93j:57005** 57M50 (30F99, 57N05, 57R30)

Fathi, Zohreh (*with* Ramirez, W. Fred; Aarna, O.) Joint state and parameter estimation for a nuclear reactor with fast and slow modes. (English summary) *Optimal Control Appl. Methods* **13** (1992), *no.* 2, 105–120. 93C95 (93B30)

— (*with* Korbicz, Józef; Ramirez, W. Fred) State estimation schemes for fault detection and diagnosis in dynamic systems. (English summary) *Internat. J. Systems Sci.* **24** (1993), *no.* 5, 985–1000. 93E10

Faticoni, Theodore G. E-rings as localizations of orders. *Acta Math. Hungar.* **57** (1991), *no.* 3-4, 265–274. (Mary H. Wright) **93a:16013** 16H05 (16D70)

— Categories of modules over endomorphism rings. *Mem. Amer. Math. Soc.* **103** (1993), *no.* 492, xii+140 *pp.* (J. L. Gómez Pardo) **93j:16015** 16S50 (16D40, 16D90)

Fatkić, Huse Note on weakly mixing transformations. *Aequationes Math.* **43** (1992), *no.* 1, 38–44. (Mariusz Lemańczyk) **93g:28012** 28D05

Fatmi, H. A. (*with* Resconi, G.; Pessa, G.) A computational field theory for adaptive control of neural networks and systems. *Control* '91, *Vol.* 1, 2 (*Edinburgh*, 1991), 155–160, *IEE Conf. Publ. Ser.*, 332, *IEE, London*, 1991. (*see* **93h:93007**) 93C40

— (*with* Lee, Ching-Cheng) An adaptive control model for parallel program scheduling. *Control* '91, *Vol.* 1, 2 (*Edinburgh*, 1991), 871–874, *IEE Conf. Publ. Ser.*, 332, *IEE, London*, 1991. (*see* **93h:93007**) 93C40

— (*with* Oliver, A.) Nonlinear adaptive filtering by the Gabor-Kolmogorov method. *Control* '91, *Vol.* 1, 2 (*Edinburgh*, 1991), 1105–1110, *IEE Conf. Publ. Ser.*, 332, *IEE, London*, 1991. (*see* **93h:93007**) 93E35

abdel-Fattah, A. M. *see* **Abdel-Fattah, A. M.**

Fattorini, H. O. (*with* Frankowska, Halina) Infinite-dimensional control problems with state constraints. (English summary) *Modelling and inverse problems of control for distributed parameter systems* (*Laxenburg*, 1989), 52–62, *Lecture Notes in Control and Inform. Sci.*, 154, *Springer, Berlin*, 1991. (*see* **93d:93006**) 49K20 (93C20)

— Optimal control problems for distributed parameter systems governed by semilinear parabolic equations in L^1 and L^∞ spaces. (English summary) *Optimal control of partial differential equations* (*Irsee*, 1990), 68–80, *Lecture Notes in Control and Inform. Sci.*, 149, *Springer, Berlin*, 1991. (Urszula Ledzewicz) **93k:49019** 49K20 (49K27, 90C48)

— (*with* Sritharan, S. S.) Existence of optimal controls for viscous flow problems. (English summary) *Proc. Roy. Soc. London Ser. A* **439** (1992), *no.* 1905, 81–102. (N. U. Ahmed) **93h:49014** 49J20 (76D05, 76M99)

Fat'yanov, A. G. (*with* Alekseev, A. S.; Avdeev, A. V.; Cheverda, V. A.) A closed cycle of the mathematical modeling of wave processes in vertically inhomogeneous media (direct and inverse problems). (Russian. English summary) *Mat. Model.* **3** (1991), *no.* 10, 80–94. (Summary) **93b:86003** 86A15 (73D50)

Faucette, William M. Higher-dimensional harmonic volume can be computed as an iterated integral. (English summary) *Canad. Math. Bull.* **35** (1992), *no.* 3, 328–340. (V. V. Chueshev) **93k:14060** 14K20 (14H40, 14H42, 30F10, 30F30, 32G20)

— Harmonic volume, symmetric products, and the Abel-Jacobi map. *Trans. Amer. Math. Soc.* **335** (1993), *no.* 1, 303–327. (José M. Muñoz Porras) **93c:14027** 14H40 (14C34, 14K20, 32G20)

Fauci, Lisa J. Computational modeling of the swimming of biflagellated algal cells. (English summary) *Fluid dynamics in biology* (*Seattle, WA*, 1991), 91–102, *Contemp. Math.*, 141, *Amer. Math. Soc., Providence, RI*, 1993. (*see* **93j:76003**) 76Z05 (76M25)

Faudree, Ralph J. (*with* Erdős, Paul; Gyárfás, András; Schelp, Richard H.) Odd cycles in graphs of given minimum degree. *Graph theory, combinatorics, and applications, Vol.* 1 (*Kalamazoo, MI*, 1988), 407–418, *Wiley-Intersci. Publ., Wiley, New York*, 1991. (Summary) **93d:05085** 05C38

— (*with* Erdős, Paul; Rousseau, C. C.; Schelp, Richard H.) Edge conditions for the existence of minimal degree subgraphs. *Graph theory, combinatorics, and applications, Vol.* 1 (*Kalamazoo, MI*, 1988), 419–434, *Wiley-Intersci. Publ., Wiley, New York*, 1991. (Summary) **93c:05062** 05C35

— (*with* Gould, Ronald J.; Lindquester, Terri E.) Hamiltonian properties and adjacency conditions in $K(1,3)$-free graphs. *Graph theory, combinatorics, and applications, Vol.* 1 (*Kalamazoo, MI*, 1988), 467–479, *Wiley-Intersci. Publ., Wiley, New York*, 1991. (Summary) **93c:05079** 05C45

— (*with* Gould, Ronald J.; Jacobson, Michael S.; Lesniak, Linda M.) Generalized degrees, connectivity and Hamiltonian properties in graphs. (English summary) *J. Combin. Inform. System Sci.* **16** (1991), *no.* 1, 93–105. (Summary) **93c:05078** 05C40 (05C45)

— (*with* Gyárfás, András; Lehel, Jenő) Minimal path pairable graphs. (English summary) Proceedings of the Twenty-third Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, FL, 1992). *Congr. Numer.* **88** (1992), 111–128. (Summary) **93j:05085** 05C35

— (*with* Gould, Ronald J.; Lesniak, Linda M.) Generalized degrees and Menger path systems. (English summary) *Discrete Appl. Math.* **37/38** (1992), 179–191. (László Pyber) **93d:05092** 05C40 (05C10)

— (*with* Erdős, Paul; Rousseau, C. C.) Extremal problems involving vertices and edges on odd cycles. Special volume to mark the centennial of Julius Petersen's "Die Theorie der regulären Graphs", Part II. *Discrete Math.* **101** (1992), *no.* 1-3, 23–31. (Douglas B. West) **93g:05074** 05C35

— (*with* Gould, Ronald J.; Jacobson, Michael S.; Lesniak, Linda M.; Lindquester, Terri E.) On independent generalized degrees and independence numbers in $K(1,m)$-free graphs. *Discrete Math.* **103** (1992), *no.* 1, 17–24. (Douglas F. Rall) **93d:05115** 05C70

— (*with* Gould, Ronald J.; Jacobson, Michael S.; Lesniak, Linda M.) Neighborhood unions and a generalization of Dirac's theorem. (English summary) *Discrete Math.* **105** (1992), *no.* 1-3, 61–71. (Stanislav Jendrol') **93g:05094** 05C45 (05C38)

— (*with* Simonovits, Miklós) Ramsey problems and their connection to Turán-type extremal problems. *J. Graph Theory* **16** (1992), *no.* 1, 25–50. (A. G. Thomason) **93b:05120** 05C55 (05C35)

— Complete subgraphs with large degree sums. *J. Graph Theory* **16** (1992), *no.* 4, 327–334. (Yair Caro) **93g:05075** 05C35

— (*with* Csaba, László; Gyárfás, András; Lehel, Jenő; Schelp, Richard H.) Networks communicating for each pairing of terminals. (English summary) *Networks* **22** (1992), *no.* 7, 615–626. (Summary) **93h:05097** 05C35 (68M10, 90B10)

— Properties in pairable graphs. New Zealand Mathematics Colloquium (Dunedin, 1991). *New Zealand J. Math.* **21** (1992), 91–106. (András Gyárfás) **93d:05069** 05C35 (90B12)

— (*with* McKay, Brendan D.) A conjecture of Erdős: the Ramsey number $r(W_6)$. (English summary) *J. Combin. Math. Combin. Comput.* **13** (1993), 23–31. (Summary) **93m:05137** 05C55

Faulkenberry, Richard E. The continuous kernel of a nonsquare rational matrix function. Second NIU Conference on Linear Algebra, Numerical Linear Algebra and Applications (DeKalb, IL, 1991). *Linear Algebra Appl.* **172** (1992), 85–96. (A. Barraud) **93e:93014** 93B25 (93C15, 93C35)

Faulkner, Gary D. (*with* Caterino, Alessandro; Vipera, Maria Cristina) Two applications of singular sets to the theory of compactifications. (Italian summary) *Rend. Istit. Mat. Univ. Trieste* **21** (1989), *no.* 2, 248–258 (1991). (Eric E. Robinson) **93f:54034** 54D35 (06B30, 54C40)

— (*with* Caterino, Alessandro; Vipera, Maria Cristina) Construction of compactifications using essential semilattice homomorphisms. *Proc. Amer. Math. Soc.* **116** (1992), *no.* 3, 851–860. (Don A. Mattson) **93a:54023** 54D35 (54C10, 54D40)

Faulkner, John R. Planes with non-division coordinate rings. *Proceedings of the International Conference on Algebra, Part* 1 (*Novosibirsk*, 1989), 513–520, *Contemp. Math.*, 131, *Part* 1, *Amer. Math. Soc., Providence, RI*, 1992. (Günter Törner) **93f:51008** 51C05

— (*with* Allison, B. N.) Norms on structurable algebras. *Comm. Algebra* **20** (1992), *no.* 1, 155–188. (Michel L. Racine) **93b:17005** 17A30 (17A40)

Faure, Henri Good permutations for extreme discrepancy. (English summary) *J. Number Theory* **42** (1992), *no.* 1, 47–56. (Jau-Shyong Shiue) **93j:11049** 11K38

— Suggestions for quasi-Monte Carlo users. *Finite fields, coding theory, and advances in communications and computing* (*Las Vegas, NV*, 1991), 269–278, *Lecture Notes in Pure and Appl. Math.*, 141, *Dekker, New York*, 1993. (Mary E. Flahive) **93m:11074** 11K45 (65C05)

Faure, O. (*with* Gaines, J.) Simulation trajectorielle des diffusions. (French summary) [Pathwise simulation of diffusions] *Probabilités numériques*, 54–60, *Collect. Didact.*, 10, *INRIA, Rocquencourt*, 1992. (*see* **93k:65002**) 65C20

Faure, Robert[1] Neuronal networks and percussions. *Conference on Differential Equations and Applications* (*Ruse*, 1989), 479–487, *Tech. Univ., Ruse*, 1991. (*see* **93f:34004**) 92B20 (34A99)

Fausett, D. W. (*with* Murty, K. N.; Fausett, L. V.) On dichotomy and well conditioning in Kronecker product two-point boundary value problems. *Appl. Anal.* **46** (1992), *no.* 3-4, 145–155. (Lucas Jódar) **93f:34034** 34B05 (34A45, 65L10)

— (*with* Murty, K. N.; Fausett, L. V.) Solution of two-point boundary value problems involving Kronecker products. *Appl. Math. Comput.* **50** (1992), *no.* 2-3, 145–156. (W. C. Rheinboldt) **93e:65105** 65L10 (15A69, 34B15)

— (*with* Murty, K. N.; Fausett, L. V.) Transformation of a class of nonselfadjoint systems into selfadjoint Hamiltonian systems. (English summary) *J. Math. Anal. Appl.* **174** (1993), *no.* 1, 1–21. (Anton Zettl) **93m:34024** 34B05 (34A30, 34L05, 34L15)

Fausett, L. V. (*with* Murty, K. N.; Fausett, D. W.) On dichotomy and well conditioning in Kronecker product two-point boundary value problems. *Appl. Anal.* **46** (1992), *no.* 3-4, 145–155. (Lucas Jódar) **93f:34034** 34B05 (34A45, 65L10)

— (*with* Murty, K. N.; Fausett, D. W.) Solution of two-point boundary value problems involving Kronecker products. *Appl. Math. Comput.* **50** (1992), *no.* 2-3, 145–156. (W. C. Rheinboldt) **93e:65105** 65L10 (15A69, 34B15)

— (*with* Murty, K. N.; Fausett, D. W.) Transformation of a class of nonselfadjoint systems into selfadjoint Hamiltonian systems. (English summary) *J. Math. Anal. Appl.* **174** (1993), *no.* 1, 1–21. (Anton Zettl) **93m:34024** 34B05 (34A30, 34L05, 34L15)

Faust, Gunter (*with* Argyris, John; Haase, Maria) Χάoς—an adventure in chaos. Second World Congress on Computational Mechanics, Part III (Stuttgart, 1990). *Comput. Methods Appl. Mech. Engrg.* **91** (1991), *no.* 1-3, 997–1091. (Helena E. Nusse) **93f:58142** 58F13 (34C99, 70K50)

Faust, Jon When are variance ratio tests for serial dependence optimal? (English summary) *Econometrica* **60** (1992), *no.* 5, 1215–1226. (Summary) **93e:62230** 62M10 (62P20)

Faustino, Ana M. (*with* Júdice, Joaquím J.; Machado, J.) An extension of Lemke's method for the solution of a generalized linear complementarity problem. (English summary) *System modelling and optimization* (*Zurich*, 1991), 221–230, *Lecture Notes in Control and Inform. Sci.*, 180, *Springer, Berlin*, 1992. (*see* **93e:90003**) 90C33

— (*with* Júdice, Joaquím J.) A sequential LCP method for bilevel linear programming. Hierarchical optimization. *Ann. Oper. Res.* **34** (1992), *no.* 1-4, 89–106. (Klaus Tammer) **93b:90096** 90C33 (65K10, 90C08)

Fauvet, Frédéric Résurgence et bifurcations dans des familles à un paramètre. (English and French summaries) [Resurgence and bifurcations in some one-parameter families] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 12, 1283–1286. (J. S. Joel) **93i:58115; EA 93m** 58F14 (34C23)

Favaron, O. (*with* Heydemann, M.-C.; Meyer, J.-C.; Sotteau, D.) A parameter linked with G-factors and the binding number. *Discrete Math.* **91** (1991), *no.* 3, 311–316. (From the introduction) **93c:05053** 05C20

— (*with* Delorme, C.; Mahéo, M.) Isomorphisms of Cayley multigraphs of degree 4 on finite abelian groups. *European J. Combin.* **13** (1992), *no.* 1, 59–61. (Tomaž Pisanski) **93c:05056** 05C25 (05C20, 20K01)

Favati, P. (*with* Lotti, Grazia; Romani, Francesco; Rózsa, Pál) Generalized band matrices and their inverses. (English summary) *Calcolo* **28** (1991), *no.* 1-2, 45–92 (1992). (Summary) **93d:15006** 15A09 (65F05)

— (*with* Lotti, Grazia; Romani, Francesco) Asymptotic expansion of error in interpolatory quadrature. (English summary) *Comput. Math. Appl.* **24** (1992), *no.* 10, 99–104. (Summary) **93e:65016** 65D05 (65G05)

Favier, G. (*with* Arruda, L. V. R.) A review and a comparison of robust estimation methods. (English summary) *Identification and system parameter estimation* 1991, *Vol.* 1,2 (*Budapest*, 1991), 247–253, *IFAC Sympos. Ser.*, 3, *Pergamon, Oxford*, 1992. (*see* **93h:93009**) 93B30

— (*with* Settineri, R.; Dembélé, D.; Peyre, J. L.) ARMA identification: a survey. (English summary) *Identification and system parameter estimation* 1991, *Vol.* 1,2 (*Budapest*, 1991), 349–353, *IFAC Sympos. Ser.*, 3, *Pergamon, Oxford*, 1992. (*see* **93h:93009**) 93E12 (93–02)

Favini, Angelo Second order parabolic equations in Banach space. *Differential equations with applications in biology, physics, and engineering* (*Leibnitz*, 1989), 129–137, *Lecture Notes in Pure and Appl. Math.*, 133, *Dekker, New York*, 1991. (Alexei I. Filinkov) **93h:34109** 34G20 (34A12, 35K55)

— (*with* Barbu, Viorel) Existence for implicit differential equations in Banach spaces. (English and Italian summaries) *Atti Accad. Naz. Lincei Cl. Sci. Fis. Mat. Natur. Rend. Lincei* (9) *Mat. Appl.* **3** (1992), *no.* 3, 203–215. (Sadakazu Aizawa) **93m:34093** 34G20 (34A09, 34A12, 47H15, 47N20)

— (*with* Yagi, Atsushi) Space and time regularity for degenerate evolution equations. *J. Math. Soc. Japan* **44** (1992), *no.* 2, 331–350. (Yuri Sil'chenko) **93d:47139** 47N20 (34G10, 35K65, 47D06)

— (*with* Venni, Alberto) On the Cauchy problem for a second order semilinear parabolic equation with factored linear part. *Semigroup Forum* **45** (1992), *no.* 2, 135–147. (Alexei I. Filinkov) **93g:34096** 34G20 (47H99, 47N20)

Favorov, S. Yu. (*with* Logvinenko, V. N.) Lacunary series and Fourier integrals of functions of several variables. *Entire and subharmonic functions*, 223–235, *Adv. Soviet Math.*, 11, *Amer. Math. Soc., Providence, RI*, 1992. (Yi Biao Pan) **93j:42005** 42B10

Favorskiĭ, A. P. (*with* Samarskiĭ, A. A.; Tishkin, V. F.; Vasilevskiĭ, V. F.; Vyaznikov, K. V.) Construction high order monotonous difference schemes on nonregular grids. *Twelfth International Conference on Numerical Methods in Fluid Dynamics* (*Oxford*, 1990), 219–222, *Lecture Notes in Phys.*, 371, *Springer, Berlin*, 1990. (*see* **93e:76002**) 76M20 (65N06)

Favreau, Luc (*with* Dulucq, Serge) Un modèle combinatoire pour les polynômes de Bessel. (English summary) [A combinatorial model for Bessel polynomials] *Séminaire Lotharingien de Combinatoire* (*Salzburg*, 1990), 83–100, *Publ. Inst. Rech. Math. Av.*, 462, *Univ. Louis Pasteur, Strasbourg*, 1991. (Volker Strehl) **93j:05173** 05E35 (33C45)

Favretti, Marco (*with* Bressan, Aldo) On motions with bursting characters for Lagrangian mechanical systems with a scalar control. I. Existence of a wide class of Lagrangian systems capable of motions with bursting characters. (Italian summary) *Atti Accad. Naz. Lincei Cl. Sci. Fis. Mat. Natur. Rend. Lincei* (9) *Mat. Appl.* **2** (1991), *no.* 4, 339–343. (Summary) **93b:93054** 93C15 (58F05, 70H35, 70Q05)

— (*with* Bressan, Aldo) On motions with bursting characters for Lagrangian mechanical systems with a scalar control. II. A geodesic property of motions with bursting characters for Lagrangian systems. (Italian summary) *Atti Accad. Naz. Lincei Cl. Sci. Fis. Mat. Natur. Rend. Lincei* (9) *Mat. Appl.* **3** (1992), *no.* 1, 35–42. (Summary) **93d:93045** 93C15 (34H05, 70H35, 70Q05)

Fawcett, R. J. B. Compact classical systems: so(n) systems. *J. Math. Phys.* **33** (1992), *no.* 6, 2126–2137. (Jair Koiller) **93f:58087** 58F06 (58F05, 70H05, 81S10)

— The classical limit of so(3) compact quantum systems. *J. Phys. A* **25** (1992), *no.* 6, 1685–1702. (A. O. Barut) **93d:81058** 81R05 (22E70)

Fay, John D. Kernel functions, analytic torsion, and moduli spaces. *Mem. Amer. Math. Soc.* **96** (1992), *no.* 464, vi+123 *pp.* (Colette Anné) **93e:58192** 58G26 (14H60, 30C40, 32G15, 32G81, 81T30)

Fayazov, K. S. An ill-posed Cauchy problem for a differential equation with operator coefficients. (Russian) *Dokl. Akad. Nauk* **324** (1992), *no.* 4, 751–753; *translation in Russian Acad. Sci. Dokl. Math.* **45** (1992), *no.* 3, 635–637 (1993). (From the text) **93k:34133** 34G10 (34A12, 47N20)

Faybusovich, Leonid *see* **Faibusovich, L. E.**

Fayolle, G. (*with* Ignatyuk, I. A.; Malyshev, V. A.; Men'shikov, M. V.) Random walks in two-dimensional complexes. *Queueing Systems Theory Appl.* **9** (1991), *no.* 3, 269–300. (Kyle Siegrist) **93a:60101** 60J15 (60K25)

— (*with* Borovkov, A. A.; Korshunov, D. A.) Transient phenomena for Markov chains and applications. *Adv. in Appl. Probab.* **24** (1992), *no.* 2, 322–342. (Stig I. Rosenlund) **93f:60100** 60J10

— (*with* Malyshev, V. A.; Men'shikov, M. V.) Random walks in a quarter plane with zero drifts. I. Ergodicity and null recurrence. (French summary) *Ann. Inst. H. Poincaré Probab. Statist.* **28** (1992), *no.* 2, 179–194. (Arthur O. Pittenger) **93g:60149** 60J15 (60J10)

Fazekas, István Convergence rates in the law of large numbers for arrays. *Publ. Math. Debrecen* **41** (1992), *no.* 1-2, 53–71. (Thomas Mikosch) **93j:60005** 60B12 (60F15, 60G50)

Fazekas, Patrik Ground state phase diagram of strongly interacting electron systems: the Kondo lattice. *From phase transitions to chaos*, 153–163, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93c:82070** 82D40 (82B20)

Fazelpour, S. (*with* Dümcke, R.; Reichl, H.) Solution of two-dimensional electrostatic and eddy current problems based on BEM for modelling of interconnects on multichip modules. (English summary) *Boundary element technology, VII* (*Albuquerque, NM*, 1992), 305–318, *Comput. Mech., Southampton*, 1992. (*see* **93b:65002**) 65N38 (78A25)

Fazio, C. J. *see* **Valanis, K. C., 93b:73020**

di Fazio, G. *see* **Di Fazio, G.**

Fazio, Riccardo The iterative transformation method: free or moving boundary value problems. (English summary) *Computational and applied mathematics, I* (*Dublin*, 1991), 147–152, *North-Holland, Amsterdam*, 1992. (*see* **93j:00007**) 65L10 (65P05)

— Similarity analysis for moving boundary parabolic problems. (English summary) *Computational and applied mathematics, II* (*Dublin*, 1991), 153–162, *North-Holland, Amsterdam*, 1992. (Summary) **93j:35194** 35R35 (35K55)

— The Blasius problem formulated as a free boundary value problem. (English summary) *Acta Mech.* **95** (1992), *no.* 1-4, 1–7. (Summary) **93f:76030** 76D10 (76M25)

— Numerical length estimation for tubular flow reactors. (English summary) *J. Comput. Appl. Math.* **41** (1992), *no.* 3, 313–321. (Summary) **93h:80007** 80A32

— A moving boundary hyperbolic problem for a stress impact in a bar of rate-type material. (English summary) *Wave Motion* **16** (1992), *no.* 4, 299–305. (Summary) **93j:73021** 73D05 (35Q72, 35R35, 73D40)

Feauveau, Jean-Christophe Nonorthogonal multiresolution analysis using wavelets. *Wavelets*, 153–178, *Wavelet Anal. Appl.*, 2, *Academic Press, Boston, MA*, 1992. (W. R. Madych) **93h:42022** 42C15 (94A11)

— Wavelets for the quincunx pyramid. *Wavelets and their applications*, 53–66, *Jones and Bartlett, Boston, MA*, 1992. (*see* **93e:00031**) 94A12

— (*with* Cohen, Albert; Daubechies, Ingrid) Biorthogonal bases of compactly supported wavelets. *Comm. Pure Appl. Math.* **45** (1992), *no.* 5, 485–560. (W. R. Madych) **93e:42044** 42C15 (94A12)

di Febbraro, Angela *see* **Di Febbraro, Angela**

espinel Febles, Ma. Candelaria *see* **Espinel Febles, Ma. Candelaria**

Febres de Power, B. *see* **de Power, B. F.**

Fechter, Ronald (*with* Davis, Martin) A free variable version of the first-order predicate calculus. *J. Logic Comput.* **1** (1991), *no.* 4, 431–451. (Henry Africk) **93i:03009** 03B10 (03B35, 68T15)

Fečkan, Michal A remark on the shadowing lemma. *Funkcial. Ekvac.* **34** (1991), *no.* 3, 391–402. (Romeo F. Thomas) **93b:58110** 58F15 (34C35)

— Singular perturbed problems in ordinary differential equations. *J. Math. Anal. Appl.* **163** (1992), *no.* 1, 38–46. (Jesús Hernández) **93a:34066** 34E15 (34B15, 47H15, 47N20, 58E07)

— Singularly perturbed ordinary differential equations. (English summary) *J. Math. Anal. Appl.* **170** (1992), *no.* 1, 214–224. (Maria Patrizia Pera) **93i:47100** 47H15 (34C25, 34E15, 47H11, 47N20)

— Singularly perturbed variational problems. (English summary) *J. Math. Anal. Appl.* **171** (1992), *no.* 2, 352–360. (Jean Mawhin) **93k:47064** 47H17 (34B15, 47H11, 47N20)

— A certain type of partial differential equations on tori. (English and Czech summaries) *Math. Bohem.* **117** (1992), *no.* 4, 365–372. (From the introduction) **93j:35024** 35B10 (35B25, 47N20)

— The relation between a flow and its discretization. *Math. Slovaca* **42** (1992), *no.* 1, 123–127. (Roman Srzednicki) **93f:34071** 34C35

— On a theorem of L. Lefton. *Math. Slovaca* **42** (1992), *no.* 2, 195–200. (Tassilo Küpper) **93e:34030** 34B15

— Mel'nikov functions for singularly perturbed ordinary differential equations. *Nonlinear Anal.* **19** (1992), *no.* 4, 393–401. (Eyad H. Abed) **93h:34075** 34C37 (34C25, 34E15)

— Discretization of second-order variational systems. *Proc. Amer. Math. Soc.* **117** (1993), *no.* 2, 575–581. (Reiner Lauterbach) **93d:58130** 58F22 (34C25, 58F20)

Fecko, Marián On geometrical formulation of the Nambu dynamics. *J. Math. Phys.* **33** (1992), *no.* 3, 926–929. (Frans Cantrijn) **93a:58057** 58F05 (70G99, 70H99)

— On a variational principle for the Nambu dynamics. *J. Math. Phys.* **33** (1992), *no.* 3, 930–933. (Frans Cantrijn) **93a:58058** 58E30 (58F05, 70G99, 70H30)

Feddersen, H. Solitary wave solutions to the discrete nonlinear Schrödinger equation. (English summary) *Nonlinear coherent structures in physics and biology* (*Dijon*, 1991), 159–167, *Lecture Notes in Phys.*, 393, *Springer, Berlin*, 1991. (*see* **93e:00025**) 81Q05 (39A12)

Fedelich, B. (*with* Zanzotto, Giovanni) Hysteresis in discrete systems of possibly interacting elements with a double-well energy. (English summary) *J. Nonlinear Sci.* **2** (1992), *no.* 3, 319–342. (Summary) **93g:73026** 73B99 (73B30, 73E99, 73V25, 80A22)

Fedenya, O. A. The permanent of multidimensional matrices, and some combinatorial problems. (Russian) *Permanents: theory and applications* (*Russian*), 88–96, *Krasnoyarsk. Politekhn. Inst., Krasnoyarsk*, 1990. (Béla Uhrin) **93g:15003** 15A15

Feder, Jens *see* **Fractals in physics, 93d:58004**

Feder, Meir (*with* Merhav, Neri; Gutman, Michael) Universal prediction of individual sequences. *IEEE Trans. Inform. Theory* **38** (1992), *no.* 4, 1258–1270. (Summary) **93b:94019** 94A55 (94A29)

Feder, Tomás A new fixed point approach for stable networks and stable marriages. (English summary) Twenty-first Symposium on the Theory of Computing (Seattle, WA, 1989). *J. Comput. System Sci.* **45** (1992), *no.* 2, 233–284. (O. D'Antona) **93j:68154** 68R10 (03B35, 03D15, 05C70, 68M07, 68Q15, 68Q25)

— (*with* Dolev, Danny) Determinism vs. nondeterminism in multiparty communication complexity. (English summary) *SIAM J. Comput.* **21** (1992), *no.* 5, 889–895. (Summary) **93i:68019** 68M10 (68Q25, 90B12)

Federgruen, Awi (*with* Queyranne, Maurice; Zheng, Yu-Sheng) Simple power-of-two policies are close to optimal in a general class of production/distribution networks with general joint setup costs. (English summary) *Math. Oper. Res.* **17** (1992), *no.* 4, 951–963. (Summary) **93j:90045** 90B30 (90C25, 90C39)

— (*with* Tzur, Michal) The dynamic lot-sizing model with backlogging: a simple $O(n \log n)$ algorithm and minimal forecast horizon procedure. (English summary) *Naval Res. Logist.* **40** (1993), *no.* 4, 459–478. (Summary) **93k:90098** 90C35

— (*with* Anily, S.) Two-echelon distribution systems with vehicle routing costs and central inventories. (English summary) *Oper. Res.* **41** (1993), *no.* 1, 37–47. (Summary) **93i:90039** 90B05

Federici Vescovini, Graziella La place privilégiée de l'astronomie-astrologie dans l'encyclopédie des sciences théoriques de Pierre d'Abano. [The privileged place of astronomy/astrology in Pierre d'Abano's encyclopedia of theoretical sciences] *Historia philosophiae medii aevi, Band I, II*, 259–269, *Grüner, Amsterdam*, 1991. (*see* **93e:01001**) 01A35 (01A30)

le Fe Do *see* **Le Fe Do**

Fedorchuk, I. M. (*with* Fedorchuk, V. M.; Leĭbov, O. S.) Reduction of the Born-Infeld, the Monge-Ampère and the eikonal equation to linear equations. (Russian. English summary) *Dokl. Akad. Nauk Ukrainy* **1991**, *no.* 11, 24–27, 173. (Summary) **93b:35091** 35L70 (35A30, 35C05, 35J60)

Fedorchuk, V. M. (*with* Fedorchuk, I. M.; Leĭbov, O. S.) Reduction of the Born-Infeld, the Monge-Ampère and the eikonal equation to linear equations. (Russian. English summary) *Dokl. Akad. Nauk Ukrainy* **1991**, *no.* 11, 24–27, 173. (Summary) **93b:35091** 35L70 (35A30, 35C05, 35J60)

— (*with* Leĭbov, O. S.) Separation of the variables of a five-dimensional wave equation. (Russian. English and Russian summaries) *Dokl. Akad. Nauk Ukrainy* **1992**, *no.* 5, 32–35, 159. 35A30 (35L05)

Fedorchuk, V. V. (*with* Odintsov, A. A.) Theory of continua. I. (Russian) *Algebra. Topology. Geometry, Vol.* 29 (*Russian*), 63–119, *Itogi Nauki i Tekhniki, Akad. Nauk SSSR, Vsesoyuz. Inst. Nauchn. i Tekhn. Inform., Moscow*, 1991. (P. Krupski) **93d:54050** 54F15 (54–02)

— On the mapping of the barycenter of probability measures. (Russian. Russian summary) *Vestnik Moskov. Univ. Ser. I Mat. Mekh.* **1992**, *no.* 1, 42–47, 111–112; *translation in Moscow Univ. Math. Bull.* **47** (1992), *no.* 1, 39–43. (Summary) **93m:54021** 54B20

Fedorenko, A. D. (*with* Karpinskaya, L. V.) Ordering algorithms for symbolic calculations with matrices that reduce to block-triangular form. (Russian. Russian summary) *Filtering and control in mechanical systems* (*Russian*), 22–27, *Akad. Nauk Ukrain. SSR, Inst. Mat., Kiev*, 1991. (Summary) **93h:65059** 65F30 (15A21)

Fedorenko, L. G. (*with* Bozhko, V. O.) Periodic solutions of singularly perturbed differential equations. (Russian. Russian summary) *Boundary value problems* (*Russian*), 200–206, *Perm. Politekh. Inst., Perm'*, 1990. (*see* **93g:00023**) 34C25 (34E15)

Fedorenko, R. P. Stiff systems of ordinary differential equations and their numerical integration. (Russian) *Computational processes and systems, No. 8* (*Russian*), 328–380, "*Nauka*", *Moscow*, 1991. (Zdzisław W. Trzaska) **93c:65001** 65–02 (34A50, 34A65, 65Lxx)

Fedorov, Alexandre V. (*with* Gutov, B. I.) Vasiliĭ Mikhaĭlovich Fomin (on the occasion of his fiftieth birthday). (Russian) *Model. Mekh.* **4** (1990), *no.* 4, 1–2. 01A70

— (*with* Varlamov, E. V.) A traveling wave in a nonisothermic mixture of two solids. (Russian) *Model. Mekh.* **5** (1991), *no.* 3, 14–26. (Summary) **93d:73032** 73D40 (73B27, 73B30, 73D05, 76L05, 76T05)

— The structure of a shock wave in a mixture of two solid bodies (hydrodynamic approximation). (Russian. Russian summary) *Model. Mekh.* **5** (1991), *no.* 4, 135–158. (Alexander Schmidt) **93k:73024** 73D05 (76L05)

— (*with* Zhidkov, E. P.; Yuldashev, O. I.) Application of the Galerkin method for solving an integral equation of magnetostatics with respect to vector potential. (Russian. Russian summary) *Differentsial'nye Uravneniya* **28** (1992), *no.* 10, 1821–1828, 1840; *translation in Differential Equations* **28** (1992), *no.* 10, 1487–1492 (1993). (Summary) **93m:65185** 65R20

— (*with* Khokhlov, A. P.) Sensitivity of a supersonic boundary layer to acoustic disturbances. *Fluid Dynamics* **27** (1992), *no.* 1, 29–34; *translated from Izv. Ross. Akad. Nauk Mekh. Zhidk. Gaza* **1992**, *no.* 1, 40–47 (*Russian. Russian summary*). (Summary) **93k:76071** 76J20 (76E99, 76N20)

— (*with* Tetenov, E. V.) Propagation of shock waves in a medium with a nonmonotone rheological equation. (Russian. Russian summary) *Model. Mekh.* **6** (1992), *no.* 2, 128–136. (Summary) **93m:73010** 73D05 (35Q72, 73D40)

— (*with* Fedorova, N. N.) The structure, propagation and reflection of shock waves in a mixture of solid bodies (hydrodynamic approximation). (Russian) *Prikl. Mekh. Tekhn. Fiz.* **1992**, *no.* 4, 10–18; *translation in J. Appl. Mech. Tech. Phys.* **33** (1992), *no.* 4, 487–494 (1993). (Mark S. Ramm) **93m:76056** 76L05 (73D40, 76T05)

— The structure of a combined discontinuity in gas suspensions in the presence of chaotic pressure of particles. (Russian) *Prikl. Mekh. Tekhn. Fiz.* **1992**, *no.* 5, 36–41; *translation in J. Appl. Mech. Tech. Phys.* **33** (1992), *no.* 5, 648–652 (1993). 76N15 (76L05)

Fedorov, E. I. (*with* Fedorov, L. I.; Kakutashvili, Sh. D.) Calculation of structures for the action of random stochastically dependent loads. (Russian. Russian summary) *Numerical mathematics and mathematical physics* (*Russian*), 73–81, 188, "*Prometeĭ*", *Moscow*, 1988. (*see* **93m:00032**) 73K99 (62N05)

— (*with* Radzhapov, K. A.; Fedorov, L. I.) Investigation of the equations of the dynamics of a knowledge base as a training model. (Russian. Russian summary) *Numerical mathematics and mathematical physics* (*Russian*), 168–173, 192, "*Prometeĭ*", *Moscow*, 1988. (*see* **93m:00032**) 68T30

Fedorov, E. L. (*with* Medvedev, Vladislav Sergeevich) On the structure of the bifurcation set of bifurcating separatrices. (Russian) *Differentsial'nye Uravneniya* **27** (1991), *no.* 8, 1357–1363, 1469; *translation in Differential Equations* **27** (1991), *no.* 8, 957–963 (1992). (Georgiĭ Osipenko) **93e:58143** 58F14 (34C23)

Fedorov, F. I. (*with* Berezin, A. V.; Kuvshinov, V. I.) Vector parametrizations of groups of space-time symmetry and the Poincaré supergroup. (Russian) *Current group analysis* (*Russian*) (*Baku*, 1988), 41–47, "*Èlm*", *Baku*, 1989. (*see* **93d:58002**) 81R05 (22E70)

— Approximate solution of cubic equations. (Russian. English and Russian summaries) *Dokl. Akad. Nauk Belarusi* **36** (1992), *no.* 6, 497–499, 572. (Summary) **93g:65061** 65H05 (65Q05)

Fedorov, L. I. (*with* Fedorov, E. I.; Kakutashvili, Sh. D.) Calculation of structures for the action of random stochastically dependent loads. (Russian. Russian summary) *Numerical mathematics and mathematical physics* (*Russian*), 73–81, 188, "*Prometeĭ*", *Moscow*, 1988. (*see* **93m:00032**) 73K99 (62N05)

— (*with* Radzhapov, K. A.; Fedorov, E. I.) Investigation of the equations of the dynamics of a knowledge base as a training model. (Russian. Russian summary) *Numerical mathematics and mathematical physics* (*Russian*), 168–173, 192, "*Prometeĭ*", *Moscow*, 1988. (*see* **93m:00032**) 68T30

Fedorov, V. E. A uniqueness theorem for a generalized solution of a boundary value problem for an equation of mixed type. (Russian) *Boundary value problems for nonclassical equations in mathematical physics* (*Russian*) (*Novosibirsk*, 1989), 193–196, *Akad. Nauk SSSR Sibirsk. Otdel., Inst. Mat., Novosibirsk*, 1989. (*see* **93d:35001**) 35M10

Fedorov, Yu. N. (*with* Bolsinov, A. V.) Multidimensional integrable generalizations of Steklov-Lyapunov systems. (Russian) *Vestnik Moskov. Univ. Ser. I Mat. Mekh.* **1992**, *no.* 6, 53–56. (From the text) **93k:70023** 70H05 (58F07, 70E15)

Fedorova, N. N. (*with* Fedorov, Alexandre V.) The structure, propagation and reflection of shock waves in a mixture of solid bodies (hydrodynamic approximation). (Russian) *Prikl. Mekh. Tekhn. Fiz.* **1992**, *no.* 4, 10–18; *translation in J. Appl. Mech. Tech. Phys.* **33** (1992), *no.* 4, 487–494 (1993). (Mark S. Ramm) **93m:76056** 76L05 (73D40, 76T05)

Fedortsov, S. P. (*with* Tsybakov, B. S.; Ryleeva, N. A.) Multiple access with conflict resolution by means of station numbers. (Russian. Russian summary) *Problemy Peredachi Informatsii* **28** (1992), *no.* 3, 27–39; *translation in Problems Inform. Transmission* **28** (1992), *no.* 3, 221–231 (1993). (Summary) **93g:94009** 94A40

Fedoryaev, S. T. Some properties of algebraic reducibility of constructivizations. (Russian) *Algebra i Logika* **29** (1990), *no.* 5, 597–612, 627; *translation in Algebra and Logic* **29** (1990), *no.* 5, 395–405 (1991). (Alexandre Ivanov) **93b:03054** 03C57

Fedoryuk, M. V. Asymptotics of spheroidal functions in the complex domain. (Russian) *Differentsial'nye Uravneniya* **27** (1991), *no.* 5, 801–809, 918; *translation in Differential Equations* **27** (1991), *no.* 5, 551–558. (R. K. Gupta) **93b:33014** 33C55

— Asymptotics of the spectrum of the Heune equation and of Heune functions. (Russian) *Izv. Akad. Nauk SSSR Ser. Mat.* **55** (1991), *no.* 3, 631–646; *translation in Math. USSR-Izv.* **38** (1992), *no.* 3, 621–635. (Andreĭ Bolibrukh) **93d:34003** 34A20 (33E30, 34B30, 34L20)

— Estimates for spheroidal functions. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **32** (1992), *no.* 5, 692–706; *translation in Comput. Math. Math. Phys.* **32** (1992), *no.* 5, 595–609. (A. Haimovici) **93d:33007** 33C50 (35B99)

Fedoseev, V. G. (*with* Shapovalov, A. V.; Shirokov, I. V.) Noncommutative integration of the Dirac equation in Riemannian spaces with a group of motions. (Russian. Russian summary) *Izv. Vyssh. Uchebn. Zaved. Fiz.* **34** (1991), *no.* 9, 43–46; *translation in Soviet Phys. J.* **34** (1991), *no.* 9, 777–781 (1992). (Summary) **93j:58145** 58G35 (81R20)

Fedosov, B. V. An index theorem in the algebra of quantum observables. (Russian) *Some questions of mathematics in problems of physics and mechanics* (*Russian*), 83–90, *Moskov. Fiz.-Tekhn. Inst., Moscow*, 1988. (*see* **93m:00036**) 58G10 (58G15)

Fedotov, A. M. Construction of optimal solutions of linear reconstruction problems. (Russian. Russian summary) *Complex analysis and mathematical physics* (*Russian*) (*Divnogorsk*, 1987), 107–112, 159, *Akad. Nauk SSSR Sibirsk. Otdel., Inst. Fiz., Krasnoyarsk*, 1988. (*see* **93b:32001**) 65K10

— Theoretical justification of computational algorithms for problems of analytic continuation. (Russian. Russian summary) *Sibirsk. Mat. Zh.* **33** (1992), *no.* 3, 175–185, 221; *translation in Siberian Math. J.* **33** (1992), *no.* 3, 511–519 (1993). (Summary) **93k:30069** 30E99 (30B40, 30D55, 65E05, 65Y10)

— Minimax regularization for operator equations with random errors in the data. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **32** (1992), *no.* 4, 490–511; *translation in Comput. Math. Math. Phys.* **32** (1992), *no.* 4, 423–432. (Anton Suhadolc) **93f:47009** 47A50 (65J10)

Fedotov, S. A. Evolution operator and the dynamics of model systems. (Russian) Translated in Proc. Steklov Inst. Math. **1991**, no. 2, 147–176. Theory of operators with a random potential and some problems in statistical physics (Russian). *Trudy Mat. Inst. Steklov.* **184** (1990), 130–158. (M. Lawrence Glasser) **93a:82034** 82C05

— (*with* Popov, V. N.) The diagram technique for ferromagnetic systems with spin 1/2. (Russian) Translated in Proc. Steklov Inst. Math. **1991**, no. 2, 177–187. Theory of operators with a random potential and some problems in statistical physics (Russian). *Trudy Mat. Inst. Steklov.* **184** (1990), 159–169. (Volker Warstat) **93a:82014** 82B20 (81S40, 82B31)

Fedotov, S. P. Stochastic ignition of a distributed reacting system. (Russian) *Dokl. Akad. Nauk* **327** (1992), *no.* 2, 214–217; *translation in Soviet Phys. Dokl.* **37** (1992), *no.* 11, 560–562 (1993). (From the text) **93m:80013** 80A32

Fedotov, V. P. Generalizations of permanents: multilinear functionals and their diagonals. (Russian) *Permanents: theory and applications* (*Russian*), 96–109, *Krasnoyarsk. Politekhn. Inst., Krasnoyarsk*, 1990. (Jorma Kaarlo Merikoski) **93f:15004** 15A15

Fedotova, E. L. (*with* Kiselëv, Yu. N.; Orlov, M. V.) Projection of a point on an ellipsoid. (Russian. Russian summary) *Vestnik Moskov. Univ. Ser. XV Vychisl. Mat. Kibernet.* **1993**, *no.* 1, 45–50, 64. 65K05

Fedotova, I. A. On an integral transformation with generalized associated Legendre functions. (Russian) *Vychisl. Prikl. Mat.* (*Kiev*) *No.* 71 (1990), 33–43. (Summary) **93c:44011** 44A15 (33C45)

Fedotova, Z. I. (*with* Shokin, Yu. I.; Urusov, A. I.) Differential representation and investigation of the stability of difference schemes. (Russian. Russian summary) *Model. Mekh.* **5** (1991), *no.* 2, 138–157. (Summary) **93j:65140** 65M12 (65M06)

Fedou, J. M. (*with* Delest, M.-P.) Attribute grammars are useful for combinatorics. Second Workshop on Algebraic and Computer-theoretic Aspects of Formal Power Series (Paris, 1990). *Theoret. Comput. Sci.* **98** (1992), *no.* 1, 65–76. (Ranjan Chaudhuri) **93e:68059** 68Q50 (05A15, 33D99, 39B99, 68R05)

Fedrizzi, Mario (*with* Esogbue, Augustine O.; Kacprzyk, Janusz) Fuzzy dynamic programming with stochastic systems. *Combining fuzzy imprecision with probabilistic uncertainty in decision making*, 266–285, *Lecture Notes in Econom. and Math. Systems*, 310, *Springer, Berlin*, 1988. (*see* **93c:90002**) 90C70 (04A72)

— (*with* Kacprzyk, Janusz) Brief introduction to fuzzy sets and fuzzy arithmetic. (English summary) *Fuzzy regression analysis*, 14–20, *Stud. Fuzziness*, 1, *Omnitech Press, Warsaw*, 1992. (*see* **93k:62004**) 04A72

— (*with* Fullér, Róbert) Stability in possibilistic linear programming with continuous fuzzy number parameters. *Fuzzy Sets and Systems* **47** (1992), *no.* 2, 187–191. (Zheng-Shu Huang) **93g:90088** 90C70 (04A72)

— (*with* Kacprzyk, Janusz; Nurmi, Hannu) Group decision making and consensus under fuzzy preferences and fuzzy majority. (English summary) *Fuzzy Sets and Systems* **49** (1992), *no.* 1, 21–31. (Summary) **93d:90006** 90A05 (04A72)

— (*with* Fedrizzi, Michele; Ostasiewicz, Walenty) Towards fuzzy modelling in economics. (English summary) *Fuzzy Sets and Systems* **54** (1993), *no.* 3, 259–268. 90A15 (04A72, 90C70)

— *see also* **Combining fuzzy imprecision with probabilistic uncertainty in decision making, 93c:90002** *and* **Fuzzy regression analysis, 93k:62004**

Fedrizzi, Michele (*with* Fedrizzi, Mario; Ostasiewicz, Walenty) Towards fuzzy modelling in economics. (English summary) *Fuzzy Sets and Systems* **54** (1993), *no.* 3, 259–268. 90A15 (04A72, 90C70)

Fedyk, S. M. (*with* Spivakovskiĭ, V. B.) Oscillations of a mathematical pendulum of variable length in the case of plane displacements of the point of suspension. (Russian. Russian summary) *Differential equations and their applications in physics* (*Russian*), 30–35, 107, *Dnepropetrovsk. Gos. Univ., Dnepropetrovsk*, 1989. (*see* **93g:00024**) 70K99

Fee, Greg J. (*with* Carminati, John; Devitt, John S.) Isogroups of differential equations using algebraic computing. (English summary) *J. Symbolic Comput.* **14** (1992), *no.* 1, 103–120. (Summary) **93f:35004** 35–04 (35A30, 35Q99)

Feely, Orla (*with* Chua, Leon O.) Nonlinear dynamics of a class of analog-to-digital converters. (English summary) *Internat. J. Bifur. Chaos Appl. Sci. Engrg.* **2** (1992), *no.* 2, 325–340. 94C10

Feeny, Brian A nonsmooth Coulomb friction oscillator. (English summary) *Phys. D* **59** (1992), *no.* 1-3, 25–38. (Summary) **93j:34046** 34C15 (58F13, 70K40, 70K50)

Feferman, Anita Burdman ★ Politics, logic, and love. The life of Jean van Heijenoort. With an appendix by Solomon Feferman. *Jones and Bartlett Publishers, Boston, MA*, 1993. xvi+415 *pp. ISBN* 0-86720-286-6 (D. J. Struik) **93j:01010** 01A70 (03–03)

Feferman, Solomon Proofs of termination and the "91" function. *Artificial intelligence and mathematical theory of computation*, 47–63, *Academic Press, Boston, MA*, 1991. (William Gasarch) **93a:68092** 68Q60 (03B70, 03D20)

— Reflecting on incompleteness. *J. Symbolic Logic* **56** (1991), *no.* 1, 1–49. (Anthony M. Ungar) **93b:03097; EA 93m** 03F03 (03A05, 03F35)

— A new approach to abstract data types. I. Informal development. International Conference on Symbolic Computation (Zurich, 1990). *Math. Structures Comput. Sci.* **2** (1992),

no. 2, 193–229. (Horst Reichel) **93m:68120** 68Q65 (03D70, 68Q05)
— *see also* **Feferman, Anita Burdman, 93j:01010**
Fefferman, Charles Atoms and analytic number theory. *American Mathematical Society centennial publications, Vol. II* (*Providence, RI*, 1988), 27–36, *Amer. Math. Soc., Providence, RI*, 1992. (Mary Beth Ruskai) **93g:81017** 81Q05 (11Z50, 81–02, 81V45)
— (*with* Ivriĭ, V. Ya.; Seco, Luis A.; Sigal, I. M.) The energy asymptotics of large Coulomb systems. *Schrödinger operators (Aarhus, 1991)*, 79–99, *Lecture Notes in Phys.*, 403, *Springer, Berlin*, 1992. (Introduction) **93h:81150** 81V35 (47N50, 81Q10, 81V45)
— (*with* Seco, Luis A.) Eigenvalues and eigenfunctions of ordinary differential operators. *Adv. Math.* **95** (1992), *no.* 2, 145–305. (Horst Behncke) **93j:34121** 34L40 (34E20, 47E05, 81Q20)
— (*with* Donnelly, Harold) Nodal domains and growth of harmonic functions on non-compact manifolds. *J. Geom. Anal.* **2** (1992), *no.* 1, 79–93. (Robert Brooks) **93b:58150** 58G25 (53C21)
Fefferman, R. A. (*with* Kenig, Carlos E.; Pipher, J.) The theory of weights and the Dirichlet problem for elliptic equations. *Ann. of Math.* (2) **134** (1991), *no.* 1, 65–124. (Gottfried Anger) **93h:31010** 31B35 (35B20, 35J25, 35J40)
Fegan, H. D. Second order operators with nonzero eta invariant. (English summary) *Canad. Math. Bull.* **35** (1992), *no.* 3, 341–353. (Haruo Kitahara) **93i:58155** 58G25 (58G10, 58G15)
— (*with* Steer, Brian) Spectral symmetry of the Dirac operator in the presence of a group action. *Trans. Amer. Math. Soc.* **335** (1993), *no.* 2, 631–647. (Stephen Slebarski) **93d:58175** 58G25 (22E46)
Fehér, János (*with* Bui Minh Phong) Note on multiplicative functions satisfying a congruence property. *Ann. Univ. Sci. Budapest. Eötvös Sect. Math.* **33** (1990), 261–265 (1991). (Jean-Marie De Koninck) **93d:11008** 11A25
Fehér, László (*with* Horváthy, P. A.) Particle in a self-dual monopole field. *Differential geometric methods in theoretical physics* (*Chester*, 1988), 130–137, *World Sci. Publishing, Teaneck, NJ*, 1989. (Mark Temple-Raston) **93d:81053** 81Q99 (53C80, 81–04)
— (*with* Balog, J.; Dąbrowski, Ludwik) Nonstandard quantum group in Toda and WZNW theories. (English summary) *Nonperturbative methods in low-dimensional quantum field theories* (*Debrecen*, 1990), 279–293, *World Sci. Publishing, River Edge, NJ*, 1991. (*see* **93f:81005**) 81T40 (17B37, 81R10)
— (*with* O'Raifeartaigh, Lochlainn; Ruelle, Philippe; Tsutsui, Izumi) Rational versus polynomial character of W_n^l-algebras. *Phys. Lett. B* **283** (1992), *no.* 3-4, 243–251. (Robert B. Mann) **93k:17054** 17B68 (17B81, 81R40, 81T40)
— (*with* Tsutsui, Izumi) On the Lagrangian realization of the WZNW reductions. (English summary) *Phys. Lett. B* **294** (1992), *no.* 2, 209–216. (Mohammed Zakkari) **93k:81224** 81T40 (81R10)
— (*with* O'Raifeartaigh, Lochlainn; Ruelle, Philippe; Tsutsui, Izumi; Wipf, Andreas) On Hamiltonian reductions of the Wess-Zumino-Novikov-Witten theories. (English summary) *Phys. Rep.* **222** (1992), *no.* 1, 64 *pp.* (Henrik Aratyn) **93i:81225** 81T40 (58F07, 81R10)
Fehlmann, R. On the trace dilatation and Teichmueller's problem in n-space. *Geometric function theory and applications of complex analysis to mechanics: studies in complex analysis and its applications to partial differential equations*, 2 (*Halle*, 1988), 27–39, *Pitman Res. Notes Math. Ser.*, 257, *Longman Sci. Tech., Harlow*, 1991. (S. B. Agard) **93d:30030** 30C65
Fehribach, J. D. A continuation method for a self-similar moving boundary problem. *Free boundary problems involving solids* (*Montreal, PQ*, 1990), 170–176, *Pitman Res. Notes Math. Ser.*, 281, *Longman Sci. Tech., Harlow*, 1993. (*see* **93k:00037**) 35R35
Fei, He Liang (*with* Xu, Xiao Ling) Simultaneous confidence regions for the parameters of the three-parameter Weibull distribution. (Chinese. English and Chinese summaries) *Chinese J. Appl. Probab. Statist.* **8** (1992), *no.* 4, 398–402. 62F25 (62N05)
Fei, Qi (*with* Dai, Jian She) An information selection model for the design of optimal distributed decision support systems. (Chinese. Chinese summary) *Inform. and Control* (*Shenyang*) **21** (1992), *no.* 6, 378–382. 90C90
Fei, Qing Yun (*with* Shen, Guang Yu) Universal graded Lie algebras. (English summary) *J. Algebra* **152** (1992), *no.* 2, 439–453. (Hiroshi Asano) **93k:17057** 17B70
Fei, Shao Ming (*with* Guo, Han Ying; Yu, Yue) Supermanifold, symplectic structure and geometric quantization of BRST systems. *Differential geometric methods in theoretical physics* (*Davis, CA*, 1988), 603–619, *NATO Adv. Sci. Inst. Ser. B Phys.*, 245, *Plenum, New York*, 1990. (Summary) **93c:58078** 58F06 (58A50, 81T70)
— (*with* Guo, Han Ying; Shi, He) Multiparameter solutions of the Yang-Baxter equation. *J. Phys. A* **25** (1992), *no.* 9, 2711–2720. (Summary) **93d:82028** 82B23 (16W30, 17B37)
Fei, W. (*with* Moser, B. K.) A new sequential design based on the Robbins-Monro procedure. *Metrika* **38** (1991), *no.* 6, 321–333. (Anatoliĭ B. Juditsky) **93a:62112** 62L12 (62F12, 62L20)
Fei, Zhi Ling A criterion for uniqueness of honest Q-processes with only one instantaneous state. (Chinese. English and Chinese summaries) *Chinese J. Appl. Probab. Statist.* **7** (1991), *no.* 3, 225–230. 60J27
Feichtinger, Gustav (*with* Dockner, Engelbert J.) On the optimality of limit cycles in dynamic economic systems. *Z. Nationalökonom.* **53** (1991), *no.* 1, 31–50. (Jun Ping Chen) **93c:90024** 90A16 (34C05, 49K15)
— Rational addictive cycles ("binges") under a budget constraint. (English summary) *Optimal Control Appl. Methods* **13** (1992), *no.* 2, 95–104. 90A16 (49K30)
— *see also* **Nonlinear methods in economic dynamics and optimal control, 93d:90004**
Feichtinger, Hans G. New results on regular and irregular sampling based on Wiener amalgams. *Function spaces* (*Edwardsville, IL*, 1990), 107–121, *Lecture Notes in Pure and Appl. Math.*, 136, *Dekker, New York*, 1992. (Gilbert Walter) **93c:46038a** 46E10 (42B99, 46F10, 47B38)
— Wiener amalgams over Euclidean spaces and some of their applications. *Function spaces* (*Edwardsville, IL*, 1990), 123–137, *Lecture Notes in Pure and Appl. Math.*, 136, *Dekker, New York*, 1992. (Gilbert Walter) **93c:46038b** 46E10 (42B99, 46F10, 47B38)
— (*with* Gröchenig, Karlheinz) Gabor wavelets and the Heisenberg group: Gabor expansions and short time Fourier transform from the group theoretical point of view. *Wavelets*, 359–397, *Wavelet Anal. Appl.*, 2, *Academic Press, Boston, MA*, 1992. (G. C. Bohnké) **93i:42020** 42C15 (22D10, 22E25, 46E35, 65D15)
— (*with* Gröchenig, Karlheinz) Nonorthogonal wavelet and Gabor expansions, and group representations. *Wavelets and their applications*, 353–375, *Jones and Bartlett, Boston, MA*, 1992. (Michael Dellomo) **93k:42017** 42C15 (46E99, 81R30)
— (*with* Gröchenig, Karlheinz) Irregular sampling theorems and series expansions of band-limited functions. *J. Math. Anal. Appl.* **167** (1992), *no.* 2, 530–556. (Gilbert Walter) **93g:41003** 41A05 (41A58, 41A63)
— (*with* Gröchenig, Karlheinz) Iterative reconstruction of multivariate band-limited functions from irregular sampling values. *SIAM J. Math. Anal.* **23** (1992), *no.* 1, 244–261. (Dale H. Mugler) **93a:94006** 94A12 (00A69, 42A65, 65D15)
Feig, Ephraim (*with* Winograd, Shmuel) On the multiplicative complexity of discrete cosine transforms. *IEEE Trans. Inform. Theory* **38** (1992), *no.* 4, 1387–1391. (Summary) **93a:65188** 65Y20 (65T20)
— (*with* Linzer, Elliot) Modified FFTs for fused multiply-add architectures. *Math. Comp.* **60** (1993), *no.* 201, 347–361. (Dale H. Mugler) **93d:65118** 65T20
Feige, Uriel On the complexity of finite random functions. (English summary) *Inform. Process. Lett.* **44** (1992), *no.* 6, 295–296. (Summary) **93j:68079** 68Q30
— (*with* Shamir, Adi) Multi-oracle interactive protocols with constant space verifiers. *J. Comput. System Sci.* **44** (1992), *no.* 2, 259–271. (Summary) **93j:68174** 68T15
Feigelson, Eric D. (*with* Babu, Gutti Jogesh) Analytical and Monte Carlo comparisons of six different linear least squares fits. *Comm. Statist. Simulation Comput.* **21** (1992), *no.* 2, 533–549. (Summary) **93e:62167** 62J05
Feigelstock, Shalom (*with* Muskat, Joseph B.) On the additive groups of m-rings. *Acta Sci. Math.* (*Szeged*) **56** (1992), *no.* 1-2, 43–45. 16U99
— Rings whose additive endomorphisms are n-multiplicative. II. (English summary) *Period. Math. Hungar.* **25** (1992), *no.* 1, 21–26. (Fred W. Roush) **93j:16018** 16S99 (20K99)
— (*with* Raphael, R.) Distributive multiplication rings. (English summary) *Period. Math. Hungar.* **25** (1992), *no.* 2, 161–165. (Summary) **93j:16025** 16U99
— On fissible modules. *Acta Math. Hungar.* **61** (1993), *no.* 1-2, 61–64. (From the text) **93k:16009** 16D80
Feigenbaum, Joan (*with* Beigel, Richard; Bellare, Mihir; Goldwasser, Shafi) Languages that are easier than their proofs. (English summary) 32*nd Annual Symposium on Foundations of Computer Science* (*San Juan, PR*, 1991), 19–28, *IEEE Comput. Soc. Press, Los Alamitos, CA*, 1991. (*see* **93d:68005**) 68Q45 (68Q15, 68Q60)
— Lexicographically factorable extensions of irreducible graphs. *Graph theory, combinatorics, and applications, Vol. 1* (*Kalamazoo, MI*, 1988), 481–491, *Wiley-Intersci. Publ., Wiley, New York*, 1991. (Summary) **93c:05093** 05C70 (05C85)
— Overview of interactive proof systems and zero-knowledge. (English summary) *Contemporary cryptology*, 423–439, *IEEE, New York*, 1992. (*see* **93k:94009**) 94A60 (68Q15)
— *see also* **Crypto '89, 93i:94001**
Feigenbaum, Lenore The fragmentation of the European mathematical community. *The investigation of difficult things*, 383–397, *Cambridge Univ. Press, Cambridge*, 1992. (Craig G. Fraser) **93k:01095** 01A80 (01A45, 01A50)
Feigenbaum, Mitchell J. *see* **Peitgen, Heinz-Otto et al., 93g:00005b; 93i:00002b** *and* **93k:58157**
Feighn, M. (*with* Bestvina, Mladen) A combination theorem for negatively curved groups. *J. Differential Geom.* **35** (1992), *no.* 1, 85–101. (Tadeusz Januszkiewicz) **93d:53053** 53C23 (57M50)
Feigin, B. L. The conformal field theory from the view of the cohomology theory of the Lie algebras. A plenary address presented at the International Congress of Mathematicians held in Kyoto, August 1990. ICM-90. *Mathematical Society of Japan, Tokyo; distributed outside Asia by the American Mathematical Society, Providence, RI*, 1990. 1 *videocassette* (*NTSC*; 1/2 *inch*; *VHS*) (60 *min.*); *sd., col. ISBN* 0-8218-8050-0 (Editors) **93b:17065** 17B56 (17B81, 81R05, 81T40)
— Conformal field theory and cohomologies of the Lie algebra of holomorphic vector fields on a complex curve. *Proceedings of the International Congress of Mathematicians, Vol. I, II* (*Kyoto*, 1990), 71–85, *Math. Soc. Japan, Tokyo*, 1991. (Janusz Grabowski) **93e:17033** 17B66 (17B56, 17B68, 81R10, 81T40)
— Differential operators on the moduli space of G-bundles on algebraic curve and Lie algebra cohomologies. *Special functions* (*Okayama*, 1990), 90–103, *ICM-90 Satell. Conf. Proc., Springer, Tokyo*, 1991. (D. V. Yur'ev) **93g:17038** 17B56 (14D20, 17B67, 81R10)
— (*with* Frenkel, Edward) Affine Kac-Moody algebras at the critical level and Gel'fand-Dikiĭ algebras. (English summary) *Infinite analysis, Part A, B* (*Kyoto*, 1991), 197–215, *Adv. Ser. Math. Phys.*, 16, *World Sci. Publishing, River Edge, NJ*, 1992. (A. Hamid Bougourzi) **93j:17049** 17B67 (81R10)
— (*with* Frenkel, Edward) Erratum: "Semi-infinite Weil complex and the Virasoro algebra" [Comm. Math. Phys. **137** (1991), no. 3, 617–639; MR 92h:17028]. *Comm. Math. Phys.* **147** (1992), *no.* 3, 647–648. (Editors) **93d:17031** 17B68 (17B56, 17B81, 81R10)
— (*with* Frenkel, Edward) Free field resolutions in affine Toda field theories. *Phys. Lett. B* **276** (1992), *no.* 1-2, 79–86. (Giuseppe Mussardo) **93e:81106** 81T40 (17B81, 81R10)
Feigin, Paul D. (*with* Resnick, Sidney I.) Estimation for autoregressive processes with positive innovations. (English summary) *Comm. Statist. Stochastic Models* **8** (1992), *no.* 3, 479–498. (Raúl Pedro Mentz) **93m:62195** 62M10
Feijóo, Raúl A. (*with* Zouain, Néstor) Elastic-plastic potential functionals for rates and increments of stress and strain. (English and Portuguese summaries) *Mat. Apl. Comput.* **10** (1991), *no.* 3, 207–228. (Summary) **93f:73044** 73E05 (73V25)
Fein, Burton (*with* Schacher, Murray) Q-admissibility questions for alternating groups. *J. Algebra* **142** (1991), *no.* 2, 360–382. (Jack Sonn) **93g:12004** 12E15 (12F12)
— (*with* Saltman, David J.; Schacher, Murray) Brauer-Hilbertian fields. *Trans. Amer. Math. Soc.* **334** (1992), *no.* 2, 915–928. (F. DeMeyer) **93b:12006** 12E25 (12G05, 13A20)
Feinberg, Eugene A. A Markov decision model of a search process. *Strategies for sequential search and selection in real time* (*Amherst, MA*, 1990), 87–96, *Contemp. Math.*, 125, *Amer. Math. Soc., Providence, RI*, 1992. (Alexander Sokolichin) **93c:90101** 90C40 (90B40)
— On stationary strategies in Borel dynamic programming. *Math. Oper. Res.* **17** (1992), *no.* 2, 392–397. (Gerhard Hübner) **93c:90102** 90C40 (90C39)
Feinberg, Joshua String field theory for $d \leq 0$ matrix models via Marinari-Parisi. *Phys. Lett. B* **281** (1992), *no.* 3-4, 225–232. (Summary) **93b:81213** 81T30
Feinberg, Martin (*with* Terman, David) Traveling composition waves on isothermal catalyst surfaces. *Arch. Rational Mech. Anal.* **116** (1991), *no.* 1, 35–69. (Aleksandr A. Papin) **93a:35082** 35K57 (34D30, 35Q99, 76R50, 80A30, 80A32)
Feingold, Mario Banded random matrix ensembles. *Quantum chaos—quantum measurement* (*Copenhagen*, 1991), 167–176, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 358,

Kluwer Acad. Publ., Dordrecht, 1992. (Eugen Belokolos) **93b:82033** 82B44 (81Q50, 82D30)

Feingold, Mordechai *see* **Before Newton, 93h:01002**

Feinsilver, Philip Lie algebras and recurrence relations. II. *Symmetries in science, III (Vorarlberg*, 1988), 163–179, *Plenum, New York*, 1989. (Kurt Bernardo Wolf) **93k:33009** 33C80 (17B10, 22E45, 42C15)

— Lie algebras and recurrence relations. III. q-analogs and quantized algebras. *Acta Appl. Math.* **19** (1990), *no.* 3, 207–251. (Kurt Bernardo Wolf) **93k:33012** 33D80 (16W30, 17B37, 20G99)

— Orthogonal polynomials and coherent states. *Symmetries in science, V (Lochau*, 1990), 159–172, *Plenum, New York*, 1991. (G. C. Bohnké) **93a:22018** 22E70 (22E46, 33C80, 81R30)

— (*with* Schott, René) Appell systems on Lie groups. *J. Theoret. Probab.* **5** (1992), *no.* 2, 251–281. (Albert Raugi) **93i:60014** 60B15 (22E46, 33C80)

— (*with* Schott, René) On Bessel functions and rate of convergence of zeros of Lommel polynomials. *Math. Comp.* **59** (1992), *no.* 199, 153–156. (Boro Döring) **93a:33007** 33C10 (33C45)

Feinstein, Alexander (*with* Ibañez, J.) Potential flow around a massless particle in general relativity. (English summary) *Phys. Lett. A* **171** (1992), *no.* 1-2, 3–6. (Summary) **93i:83057** 83C55

— (*with* Ibañez, J.) Exact anisotropic scalar field cosmologies. (English summary) *Classical Quantum Gravity* **10** (1993), *no.* 1, 93–98. (Summary) **93i:83020** 83C15 (83C20)

Feinstein, C. (*with* Maronna, Ricardo A.; Clocchiatti, A.) Optimal estimation of Stokes' parameters. (English summary) *Astronom. and Astrophys.* **260** (1992), *no.* 1-2, 525–532. (Summary) **93f:78003** 78A10

Feinstein, Joel F. A nontrivial, strongly regular uniform algebra. *J. London Math. Soc.* (2) **45** (1992), *no.* 2, 288–300. (Pamela Gorkin) **93i:46086** 46J10

Feintuch, Avraham Graphs of time varying linear systems and coprime factorizations. *J. Math. Anal. Appl.* **163** (1992), *no.* 1, 79–85. (Introduction) **93h:93019** 93B28 (47N70, 93C50)

Feireisl, Eduard Forced vibrations in one-dimensional nonlinear viscoelasticity. *J. Integral Equations Appl.* **3** (1991), *no.* 2, 321–341. (R. C. MacCamy) **93a:45009a** 45K05 (35R10, 73D35, 73F15)

— Errata: "Forced vibrations in one-dimensional nonlinear viscoelasticity". *J. Integral Equations Appl.* **3** (1991), *no.* 3, 472–473. (R. C. MacCamy) **93a:45009b** 45K05 (35R10, 73D35, 73F15)

— Errata: "Forced vibrations in one-dimensional nonlinear viscoelasticity". *J. Integral Equations Appl.* **3** (1991), *no.* 4, 625. (R. C. MacCamy) **93a:45009c** 45K05 (35R10, 73D35, 73F15)

— (*with* Herrmann, Leopold) Oscillations of a non-linearly damped extensible beam. (English summary) *Appl. Math.* **37** (1992), *no.* 6, 469–478. (Takashi Narazaki) **93k:35013** 35B05 (35Q99, 73D35, 73K05, 73K12)

— A priori estimates for the stationary equations of electrohydrodynamics. (Italian summary) *Boll. Un. Mat. Ital. A* (7) **6** (1992), *no.* 3, 431–435. (P. L. Sulem) **93k:35211** 35Q35 (35B45, 76E25, 76W05)

— The monotonicity method and free vibrations of extensible beams. *Differential Integral Equations* **5** (1992), *no.* 3, 671–681. (Summary) **93b:35092** 35L70 (35B10, 73D35, 73K05, 73K12)

— Exponential attractors for nonautonomous systems: long-time behaviour of vibrating beams. *Math. Methods Appl. Sci.* **15** (1992), *no.* 4, 287–297. (Takashi Narazaki) **93h:35136** 35L75 (35Q72, 35R10, 58F39, 73D35, 73K12)

— Spatially localized free vibrations for a nonlinear string model. *Math. Methods Appl. Sci.* **15** (1992), *no.* 5, 331–343. (Muthiah Daniel) **93h:35197** 35Q58 (73D35, 73K03)

Feistauer, Miloslav (*with* Ženíšek, Alexander) Finite element variational crimes in nonlinear elliptic problems. *Proceedings of the Second International Symposium on Numerical Analysis (Prague*, 1987), 28–35, *Teubner-Texte Math.*, 107, *Teubner, Leipzig*, 1988. (*see* **93b:65007**) 65N30

Feit, Paul Poles of Eisenstein series on SL_n induced from maximal parabolics. (English summary) *Pacific J. Math.* **155** (1992), *no.* 2, 229–250. (Jeff Hakim) **93f:11038** 11F30 (11F55)

Feix, M. R. (*with* Cairó, L.) Families of invariants of the motion for the Lotka-Volterra equations: the linear polynomials family. *J. Math. Phys.* **33** (1992), *no.* 7, 2440–2455. (J. M. Cushing) **93e:92010** 92D25 (34C05, 34C99)

— (*with* Cairó, L.) On the Hamiltonian structure of 2D ODE possessing an invariant. (English summary) *J. Phys. A* **25** (1992), *no.* 23, L1287–L1293. (Summary) **93i:34014** 34A26 (34C99, 58F05)

Fejes Tóth, László (*with* Andrica, Dorin) Some remarks on Stieltjes constants of the zeta function. *Stud. Cerc. Mat.* **43** (1991), *no.* 1-2, 3–9. (Daniel A. Goldston) **93c:11066** 11M06

— Flight in a packing of disks. (English summary) *Discrete Comput. Geom.* **9** (1993), *no.* 1, 1–9. (A. Florian) **93j:52030** 52C15 (90C35)

Fejzić, Hajrudin Decomposition of Peano derivatives. *Proc. Amer. Math. Soc.* **119** (1993), *no.* 2, 599–609. (A. M. Bruckner) **93k:26003** 26A24

Fekak, Azzeddine Exposants de Łojasiewicz pour les fonctions semi-algébriques. (English summary) [Łojasiewicz exponents for semi-algebraic functions] *Ann. Polon. Math.* **56** (1992), *no.* 2, 123–131. (Jesús M. Ruiz) **93d:14084** 14P10

Felbin, Clementina Finite-dimensional fuzzy normed linear space. (English summary) *Fuzzy Sets and Systems* **48** (1992), *no.* 2, 239–248. (Summary) **93f:46117** 46S40 (04A72)

Fel'd, Ya. N. Diffraction of electromagnetic waves by magnetodielectric bodies. (Russian) *Dokl. Akad. Nauk* **323** (1992), *no.* 6, 1092–1096; *translation in Soviet Phys. Dokl.* **37** (1992), *no.* 4, 181–183. (Introduction) **93m:78015** 78A45

— On the quadratic lemma in electrodynamics. (Russian) *Dokl. Akad. Nauk* **324** (1992), *no.* 2, 321–324; *translation in Soviet Phys. Dokl.* **37** (1992), *no.* 5, 235–236. (From the text) **93m:78010** 78A35

Felder, G. (*with* Wieczerkowski, C.) Topological representations of the quantum group $U_q(\mathrm{sl}_2)$. *Comm. Math. Phys.* **138** (1991), *no.* 3, 583–605. (From the text) **93c:17024** 17B37 (81R50)

— (*with* LeClair, André) Restricted quantum affine symmetry of perturbed minimal conformal models. (English summary) *Infinite analysis, Part A, B (Kyoto*, 1991), 239–278, *Adv. Ser. Math. Phys.*, 16, *World Sci. Publishing, River Edge, NJ*, 1992. (Niall J. MacKay) **93i:81226** 81T40 (81R50, 81T70)

— (*with* Silvotti, R.) Conformal blocks of minimal models on a Riemann surface. *Comm. Math. Phys.* **144** (1992), *no.* 1, 17–40. (Toshitake Kohno) **93i:81227** 81T40 (17B68, 30F10, 32G81, 81R10)

Felderhof, B. U. (*with* Hinsen, K.) Reduced description of electric multipole potential in Cartesian coordinates. (English summary) *J. Math. Phys.* **33** (1992), *no.* 11, 3731–3735. (Summary) **93g:78011** 78A30

Feldman, David Victor (*with* Propp, James Gary) A linear Ramsey theorem. (English summary) *Adv. Math.* **95** (1992), *no.* 1, 1–7. (J. E. Graver) **93g:05141** 05D10 (15A69)

— Families of paths in the plane that connect all point pairs. (English summary) *Geom. Dedicata* **43** (1992), *no.* 2, 181–206. (L. M. Kelly) **93k:52005** 52A37

Feldman, Edgar A. (*with* Chavel, Isaac) Isoperimetric constants, the geometry of ends, and large time heat diffusion in Riemannian manifolds. *Proc. London Math. Soc.* (3) **62** (1991), *no.* 2, 427–448. (From the text) **93c:58209** 58G11 (58G18, 58G32)

Fel'dman, G. M. The Cauchy distribution on abelian groups and its characterization. (Russian) *Teor. Veroyatnost. i Primenen.* **36** (1991), *no.* 4, 711–723; *translation in Theory Probab. Appl.* **36** (1991), *no.* 4, 670–681 (1992). (A. L. Rukhin) **93a:60015** 60B15 (62A05, 62E10)

— ★ Arithmetic of probability distributions, and characterization problems on abelian groups. (English. English summary) Translated from the Russian by Yu. Lyubarskii. Translations of Mathematical Monographs, 116. *American Mathematical Society, Providence, RI*, 1993. vi+223 *pp. ISBN* 0-8218-4593-4 (Editors) **93m:60022** 60B15 (22B05, 43A35, 60E05)

Feldman, Hume A. (*with* Mukhanov, V. F.; Brandenberger, Robert H.) Theory of cosmological perturbations. *Phys. Rep.* **215** (1992), *no.* 5-6, 203–333. (Summary) **93d:83073** 83F05 (83C25)

Feldman, Israel Constrained minimax estimation of the mean of the normal distribution with known variance. *Ann. Statist.* **19** (1991), *no.* 4, 2259–2265. (Dipak K. Dey) **93d:62107** 62H12 (62C20, 62F15)

Feldman, Jacob Changing orbit equivalences of $\mathbf{R}^d$ actions, $d \geq 2$, to be $\mathscr{E}^\infty$ on orbits. *Internat. J. Math.* **2** (1991), *no.* 4, 409–427. (A. I. Danilenko) **93e:58108a** 58F11 (28D99)

— Correction to: "Changing orbit equivalences of $\mathbf{R}^d$ actions, $d \geq 2$, to be $\mathscr{E}^\infty$ on orbits". *Internat. J. Math.* **3** (1992), *no.* 3, 349–350. (A. I. Danilenko) **93e:58108b** 58F11 (28D99)

Feldman, Joel Introduction to constructive quantum field theory. *Proceedings of the International Congress of Mathematicians, Vol. I, II (Kyoto*, 1990), 1335–1341, *Math. Soc. Japan, Tokyo*, 1991. (Horacio Alberto Falomir) **93i:81123** 81T08 (81–02)

— (*with* Knörrer, Horst; Trubowitz, Eugene) There is no two-dimensional analogue of Lamé's equation. *Math. Ann.* **294** (1992), *no.* 2, 295–324. (Eugen Belokolos) **93m:35133** 35P05 (34L40, 35J10, 81Q05)

Fel'dman, M. A. (*with* Shimansky, Yu. P.) Optimal control system based on a neural network. *Neurocomputers and attention, Vol. II (Moscow*, 1989), 703–713, *Proc. Nonlinear Sci., Manchester Univ. Press, Manchester*, 1991. (*see* **93j:92001b**) 93B51 (93C05)

Feldman, Marcus W. (*with* Zhivotovskiĭ, L. A.) On the probability of loss of new mutations in the presence of linkage disequilibrium. (English summary) *J. Math. Biol.* **31** (1993), *no.* 2, 177–188. 92D10

epstein-Feldman, Raisa *see* **Epstein-Feldman, Raisa**

Feldman, William A. (*with* Carothers, David C.) Sums of homomorphisms on Banach lattices. *J. Operator Theory* **24** (1990), *no.* 2, 337–349. (C. D. Aliprantis) **93a:47039** 47B65 (46B42, 47B60)

Feldmann, Anja (*with* Sgall, Jiří; Teng, Shang-Hua) Dynamic scheduling on parallel machines. (English summary) 32*nd Annual Symposium on Foundations of Computer Science (San Juan, PR*, 1991), 111–120, *IEEE Comput. Soc. Press, Los Alamitos, CA*, 1991. (*see* **93d:68005**) 68M20

Feldmann, Tova (*with* Burrows, B. L.; Cohen, Maurice) Lower bounds for quartic anharmonic and double-well potentials. (English summary) *J. Math. Phys.* **34** (1993), *no.* 1, 1–11. (M. Znojil) **93k:81034** 81Q05 (65L99, 81–08)

Feldmann, Uwe Partial distributional canonical discriminant analysis. (English summary) *Biometrical J.* **35** (1993), *no.* 4, 427–443. 62P15

Felgner, Ulrich Pseudo-endliche Gruppen. [Pseudofinite groups] *Jahrb. Kurt-Gödel-Ges.* **1990**, 94–108 (1991). (D. J. S. Robinson) **93a:20065** 20F99

Feliachi, Ali Distributed filtering. (English summary) *Internat. J. Systems Sci.* **23** (1992), *no.* 11, 1857–1869. (Vivek S. Borkar) **93j:93144** 93E11 (60G35)

de Felice, Clelia *see* **De Felice, Clelia**

de Felice, Fernando (*with* Curir, Anna) Axial collimation in the Kerr metric. *Classical Quantum Gravity* **9** (1992), *no.* 5, 1303–1307. (Summary) **93a:83005** 83C10

— (*with* Usseglio-Tomasset, Stefano) Circular orbits and relative strains in Schwarzschild space-time. (English summary) *Gen. Relativity Gravitation* **24** (1992), *no.* 10, 1091–1100. (Summary) **93f:83007** 83C10 (83C15)

— (*with* Usseglio-Tomasset, Stefano; Bradley, Michael) Singularities inside matter: the static case. *J. Math. Phys.* **33** (1992), *no.* 2, 712–720. (R. N. Tiwari) **93c:83085** 83C75 (83C15)

— (*with* Usseglio-Tomasset, Stefano) Schwarzschild spacetime: measurements in orbiting space-stations. (English summary) *Classical Quantum Gravity* **10** (1993), *no.* 2, 353–364. (Summary) **93k:83004** 83B05 (83C10)

gonzales Felipe, R. *see* **Gonzales Felipe, R.**

Felippa, C. A. Parametrized variational principles for micropolar elasticity. (Spanish. English and Spanish summaries) *Rev. Internac. Métod. Numér. Cálc. Diseñ. Ingr.* **8** (1992), *no.* 3, 267–281. 73B25 (73V25)

Feliu, Vincente (*with* Rattan, Kuldip S.; Brown, H. Benjamin, Jr.) Tip position control of flexible arms. (English and Polish summaries) *Systems Sci.* **18** (1992), *no.* 4, 55–63 (1993). 93C85

Felix, Rene P. The permutation of shoes in a rack and related groups. *Matimyás Mat.* **14** (1991), *no.* 1-2, 24–33. 05A05 (20D60)

Félix, Yves (*with* Tanré, Daniel) Sur l'homologie de l'espace des lacets d'une variété compacte. (French summary) [On the homology of the loop space of a compact manifold] *Ann. Sci. École Norm. Sup.* (4) **25** (1992), *no.* 6, 617–627. (J. Aguadé) **93m:55019** 55P62 (57T25)

— (*with* Baues, Hans Joachim; Thomas, Jean-Claude) Presentations of algebras and the Whitehead Γ-functor for chain algebras. *J. Algebra* **148** (1992), *no.* 1, 123–134. (From the

text) **93k:55017** 55P99 (16E30, 55U99)
— (*with* Halperin, Stephen; Thomas, Jean-Claude) Torsion in loop space homology. *J. Reine Angew. Math.* **432** (1992), 77–92. (John F. Oprea) **93i:55012** 55P35 (57T05)
— (*with* Thomas, Jean-Claude) On the homology of Postnikov fibres. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 1, 255–258. (John F. Oprea) **93f:55022** 55S45 (55S35, 57T05)
— (*with* Thomas, Jean-Claude) Homology and homotopy groups of mapping spaces at large primes. *Topology* **32** (1993), *no.* 1, 1–4. (Donald M. Davis) **93m:55018** 55P60 (55M30)
— (*with* Thomas, Jean-Claude) Loop space homology of spaces of small category. *Trans. Amer. Math. Soc.* **338** (1993), *no.* 2, 711–721. (Marc Aubry) **93j:55011** 55P35 (16E10, 55P62, 57T25)
Fellenberg, Benno (*with* vom Scheidt, Jürgen) Linear Fredholm integral equations of the 2nd kind with weakly correlated influences on kernel and forcing functions. *Math. Nachr.* **153** (1991), 57–68. (B. G. Pachpatte) **93e:60126** 60H20 (45A05)
Feller, M. N. The scope of harmonic functions of an infinite number of variables. III. (Russian. Russian and Ukrainian summaries) *Ukraïn. Mat. Zh.* **44** (1992), *no.* 3, 417–423; *translation in Ukrainian Math. J.* **44** (1992), *no.* 3, 362–367. (Summary) **93g:46041** 46G05 (31C05, 31C45, 35R15)
Fellmann, E. A. (*with* Im Hof, H.-C.) Die Euler-Ausgabe—ein Bericht zu ihrer Geschichte und ihrem aktuellen Stand. [The edition of Euler's works—a report on its history and its current state] *Jahrbuch Überblicke Mathematik*, 1993, 185–198, *Vieweg, Braunschweig*, 1993. (*see* **93j:00006**) 01A50
Fellows, Michael R. (*with* Barefoot, C. A.; Clark, L. H.; Douthett, Jack; Entringer, R. C.) Cycles of length 0 modulo 3 in graphs. *Graph theory, combinatorics, and applications, Vol. 1 (Kalamazoo, MI, 1988)*, 87–101, *Wiley-Intersci. Publ., Wiley, New York*, 1991. (Summary) **93c:05067** 05C38
— (*with* Abrahamson, Karl; Langston, Michael A.; Moret, Bernard M. E.) Constructive complexity. Combinatorics and theoretical computer science (Washington, DC, 1989). *Discrete Appl. Math.* **34** (1991), *no.* 1-3, 3–16. (Lane Hemaspaandra) **93a:68042** 68Q15
— (*with* Downey, Rodney) Fixed-parameter tractability and completeness. Proceedings of the Twenty-first Manitoba Conference on Numerical Mathematics and Computing (Winnipeg, MB, 1991). *Congr. Numer.* **87** (1992), 161–178. (Summary) **93b:05074** 05C35 (05C85, 68Q25)
— (*with* Koblitz, Neal) Self-witnessing polynomial-time complexity and prime factorization. (English summary) *Des. Codes Cryptogr.* **2** (1992), *no.* 3, 231–235. (Summary) **93e:68032** 68Q25 (03D15)
— (*with* Kratochvíl, Jan; Middendorf, Matthias; Pfeiffer, Frank) Induced minors and related problems. (English summary) *Graph structure theory (Seattle, WA, 1991)*, 179–182, *Contemp. Math.*, 147, *Amer. Math. Soc., Providence, RI*, 1993. (*see* **93m:05004**) 05C85 (68Q25, 68R10)
Felmer, Patricio L. Heteroclinic orbits for spatially periodic Hamiltonian systems. (French summary) *Ann. Inst. H. Poincaré Anal. Non Linéaire* **8** (1991), *no.* 5, 477–497. (Vittorio Coti Zelati) **93d:58024** 58E05 (34C37, 58F05, 70H05)
— Periodic solutions of spatially periodic Hamiltonian systems. *J. Differential Equations* **98** (1992), *no.* 1, 143–168. (Gabriella Tarantello) **93d:58131** 58F22 (34C25, 58E05, 58F05, 70H05)
— Rotation type solutions for spatially periodic Hamiltonian systems. *Nonlinear Anal.* **19** (1992), *no.* 5, 409–425. (Jean Mawhin) **93j:58024** 58E05 (34C25, 47H15, 58F22, 58F25, 70H05)
Felsenthal, Dan S. (*with* Machover, Moshé) Sequential voting by veto: making the Mueller-Moulin algorithm more versatile. (English summary) *Theory and Decision* **33** (1992), *no.* 3, 223–240. (Summary) **93k:90027** 90A28
Fel'shtyn, A. L. The Rokhlin invariant, the η-invariant and Reidemeister torsion. (Russian) *Algebra i Analiz* **3** (1991), *no.* 4, 198–207; *translation in St. Petersburg Math. J.* **3** (1992), *no.* 4, 893–902. (P. S. Landweber) **93d:57040** 57Q10 (55M20, 57R20, 58F20)
— Reidemeister and Nielsen zeta functions and Reidemeister torsion in the theory of dynamical systems. (Russian. English summary) *Zap. Nauchn. Sem. Leningrad. Otdel. Mat. Inst. Steklov. (LOMI)* **193** (1991), *Geom. i Topol.* 1, 119–142, 163. (Summary) **93c:58167** 58F20
Felten, Edward W. (*with* Martin, Olivier; Otto, Steve W.) Large-step Markov chains for the TSP incorporating local search heuristics. (English summary) *Oper. Res. Lett.* **11** (1992), *no.* 4, 219–224. 90C27 (90C15)
Feluch, W. (*with* Koronacki, J.) A note on modified cross-validation in density estimation. *Comput. Statist. Data Anal.* **13** (1992), *no.* 2, 143–151. (Summary) **93c:62067** 62G05
Fenaroli, Fatima *see* **Lawvere, F. William, 93m:18001**
Fenchel, Werner *see* **Monna, A. F.**
Fendick, Kerry W. (*with* Rodrigues, Manoel A.; Weiss, Alan) Analysis of a rate-based feedback control strategy for long haul data transport. (English summary) *Performance Evaluation* **16** (1992), *no.* 1-3, 67–84. 93B51 (68M20, 93E03)
Fendley, Paul (*with* Intriligator, K.) Scattering and thermodynamics of fractionally-charged supersymmetric solitons. *Nuclear Phys. B* **372** (1992), *no.* 3, 533–558. (Summary) **93m:81143** 81T60 (81T40)
— Excited-state thermodynamics. *Nuclear Phys. B* **374** (1992), *no.* 3, 667–691. (Summary) **93k:81162** 81T27 (81T40, 82B23)
— (*with* Intriligator, K.) Scattering and thermodynamics in integrable $N = 2$ theories. (English summary) *Nuclear Phys. B* **380** (1992), *no.* 1-2, 265–290. (Summary) **93h:81114** 81T40
Fendrik, A. J. (*with* Vega, J. L.; Dorso, C. O.; Bernath, M.) Chaos in billiards of nuclear interest. *Nonlinear phenomena in fluids, solids and other complex systems (Santiago, 1990)*, 447–459, *North-Holland Delta Ser., North-Holland, Amsterdam*, 1991. (Summary) **93b:58098** 58F13 (81Q50, 81V35)
Feng, Bei Ye The stability of a heteroclinic cycle for the critical case. *Sci. China Ser. A* **34** (1991), *no.* 8, 920–934. (Eugene K. Ershov) **93b:34057** 34C37 (34C23, 34D99, 58F21)
Feng, Bin Lu Instability of two classes of nonlinear systems. (Chinese. English and Chinese summaries) *Shandong Kuangye Xueyuan Xuebao* **11** (1992), *no.* 2, 200–203. 34D05
Feng, Chao Kang The local and far field approximate solutions of the heat conduction equation with cylindrical symmetry. *Approximation, optimization and computing*, 77–80, *North-Holland, Amsterdam*, 1990. (*see* **93a:41001**) 65M99 (35K05)
Feng, Cheng Tian (*with* Qi, Han Qing) A study on gauge transformations of singular potentials of magnetic monopoles. (Chinese. English and Chinese summaries) *Shanghai Shifan Daxue Xuebao Ziran Kexue Ban* **21** (1992), *no.* 2, 24–27. 81V10
Feng, Chun Bo (*with* Xu, Li Hong) A self-tuning robust controller based on a normalized parameter estimation model. (Chinese. English summary) *Inform. and Control (Shenyang)* **20** (1991), *no.* 6, 7–12. 93B36 (93E10)
— (*with* Xu, Li Hong) LQG control based on compensation of the unmodelled dynamics. (Chinese. English and Chinese summaries) *J. Southeast Univ.* **22** (1992), *no.* 1, 64–72. 93E03 (93B36)
— (*with* Wu, Yu Qiang) Robust stabilization of two-parameter compensators for systems with uncertain structure. (Chinese. English and Chinese summaries) *Qufu Shifan Daxue Xuebao Ziran Kexue Ban* **18** (1992), *suppl.*, 77–80. 93D15
Feng, Ci Huang Ky Fan's inequality for positive-definite matrices. (Chinese. English summary) *J. Hangzhou Univ. Natur. Sci. Ed.* **19** (1992), *no.* 2, 129–131. (Shao Kuan Li) **93f:15012** 15A42 (15A15)
Feng, Dagan (*with* Wang, Zhi Zhong) Continuous-time system modelling using the weighted-parabola-overlapping numerical integration method. (English summary) *Internat. J. Systems Sci.* **23** (1992), *no.* 8, 1361–1369. 93B40 (93C83)
Feng, De Guang (*with* Wang, Gao Feng; Hou, Jie Chang) The interaction of EM wave with dielectric bodies: hybrid equation finite element method. *Sci. China Ser. A* **35** (1992), *no.* 1, 110–121. (Summary) **93a:78018** 78A45 (78–08)
Feng, De Xing (*with* Zhang, Wei Tao) A remark about Tartar's lemma. (English summary) *Systems Sci. Math. Sci.* **5** (1992), *no.* 4, 312–315. (Summary) **93i:49009** 49J20 (35J25, 49K20, 49R20)
Feng, De Xiong General reversion and its transformation. (Chinese. English summary) *Sichuan Shifan Daxue Xuebao Ziran Kexue Ban* **14** (1991), *no.* 5, 123–128. (Ji Zhong) **93e:51034** 51N10 (51N15, 51N25)
Feng, De Yi (*with* Lin, Ming Zhou; Chen, Rong Hua; Jiang, Chun) Application of fuzzy statistical decision making in countermeasures against great earthquakes. *Combining fuzzy imprecision with probabilistic uncertainty in decision making*, 374–388, *Lecture Notes in Econom. and Math. Systems*, 310, *Springer, Berlin*, 1988. (*see* **93c:90002**) 90A05 (04A72, 90C70)
Feng, En Min (*with* Chen, Guo Qing; Teng, Hong Fei) A study on optimal models of geometric layouts with behavioral constraints. (Chinese. English and Chinese summaries) *J. Dalian Univ. Tech.* **32** (1992), *no.* 4, 378–384. 90C90 (65K05)
— (*with* Xu, Guang Jian; Teng, Hong Fei) Optimization layout models for rectangular elements with behavior constraints and an algorithm for judging noninterference. (Chinese. English and Chinese summaries) *Gaoxiao Yingyong Shuxue Xuebao* **8** (1993), *no.* 1, *Ser. A*, 53–60. 90C90
Feng, G. *see* **Feng, Gang**
Feng, G. L. *see* **Feng, Gui Liang**
Feng, Gang (*with* Palaniswami, M.) A stable adaptive implementation of the internal model principle. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 8, *part I*, 1220–1225. (Summary) **93d:93078** 93E10 (93B40)
— (*with* Palaniswami, M.) Adaptive control of robot manipulators in task space. (English summary) *IEEE Trans. Automat. Control* **38** (1993), *no.* 1, 100–104. (De Xing Feng) **93k:93071** 93C85 (93C40)
Feng, Gang (*with* Zhou, Shu Zi) The convergence of nonconforming elements for variational inequalities. (English and Chinese summaries) *Hunan Daxue Xuebao* **19** (1992), *no.* 5, 6–14. (Introduction) **93i:49017** 49J40 (49J45, 65K10, 65N30)
Feng, Gui Liang (*with* Tzeng, K. K.; Wei, Victor K.) On the generalized Hamming weights of several classes of cyclic codes. *IEEE Trans. Inform. Theory* **38** (1992), *no.* 3, 1125–1130. (Summary) **93b:94025** 94B15
— (*with* Rao, T. R. N.) Decoding algebraic-geometric codes up to the designed minimum distance. (English summary) *IEEE Trans. Inform. Theory* **39** (1993), *no.* 1, 37–45. (Summary) **93m:94031** 94B27 (94B35)
Feng, Gui Yan Entropy and component properties of mixed traffic. (Chinese. English and Chinese summaries) *Hunan Daxue Xuebao* **19** (1992), *no.* 2, 56–62. 94A17
Feng, Guo Chen (*with* Zhang, Shu Gong) A new type of reduced dimension path following methods. *J. Comput. Math.* **10** (1992), *no.* 3, 263–272. (G. J. Miel) **93i:65063** 65H20
Feng, Guo Sheng *see* **Gao, Tang An, 93g:90067**
Feng, Hai Bo (*with* Zhou, Xi Reng; Chen, Huo Kun) The least criterion error principle on Laplace numerical inversion transformation. *Theory and applications of boundary element methods (Beijing, 1991)*, 129–134, *Internat. Acad. Publ., Beijing*, 1991. (*see* **93b:65008**) 65R10
Feng, Han Qiao (*with* Li, Yuan Zhong) On the asymptotic behavior of the intermediate point in the higher-order Lagrange mean value theorem. *J. Math. (Wuhan)* **11** (1991), *no.* 3, 298–300. (Xing Wei Zhou) **93j:26001** 26A06
Feng, Hui Tao Lie groups with a bi-invariant pseudo-Riemannian metric. (Chinese. English summary) *Nei Mongol Daxue Xuebao Ziran Kexue* **23** (1992), *no.* 2, 144–147. (Xue Shan Zhang) **93c:53035** 53C30 (53C35)
— (*with* Bao, Jun Dong) Oscillation of a class of second-order nonlinear neutral functional-differential equations. (Chinese. English and Chinese summaries) *Neimenggu Daxue Xuebao Ziran Kexue* **24** (1993), *no.* 2, 126–130. 34K15 (34K40)
Fêng, I Kang (*with* Ts'ai, Shu Ch'uan; Kuo, Tê Shêng) Robust observer design for nonlinear uncertain systems with LQ regulators. (English summary) *Internat. J. Systems Sci.* **23** (1992), *no.* 11, 1937–1952. 93B51 (93E03)
— (*with* Wu, Chin Fu; Heh, Jia Sheng; Kuo, Tê Shêng) Optimal pi-coefficients of second-order systems. *J. Chinese Inst. Engrs.* **15** (1992), *no.* 2, 179–187. (Summary) **93e:93055** 93D21 (93C55, 93D09)
Feng, Jian Feng (*with* Lei, Gong Yan; Qian, Min Ping) Second-order methods for solving stochastic differential equations. (English summary) *J. Comput. Math.* **10** (1992), *no.* 4, 376–387. (G. N. Mil'shtein) **93j:60074** 60H10 (65L99, 65U05)
Feng, Kang (*with* Wang, Dao Liu) Symplectic difference schemes for Hamiltonian systems in general symplectic structure. *J. Comput. Math.* **9** (1991), *no.* 1, 86–96. (N. Gass) **93a:65100** 65L12 (58F05, 70–08, 70H05)
— (*with* Wang, Dao Liu) A note on conservation laws of symplectic difference schemes for Hamiltonian systems. *J. Comput. Math.* **9** (1991), *no.* 3, 229–237. (Daniel Stoffer) **93b:65113** 65L12 (58F05, 70H05)
— Formal power series and numerical algorithms for dynamical systems. (English summary) *Proceedings of International Conference on Scientific Computation (Hangzhou, 1991)*, 28–35, *Ser. Appl. Math.*, 1, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93f:58207** 58F25 (65Lxx)

Feng, Ke Qin A new family of binary sequences with optimal autocorrelation values and nice pseudo-random properties. (English summary) *Gaoxiao Yingyong Shuxue Xuebao* **7** (1992), *no.* 3, 433–442. (Summary) **93j:94015** 94A55

— *see also* **Li, Wen-Ch'ing Winnie, 93h:11092**

Feng, Kui Yan *see* **Feng, Gui Yan**

Feng, Li Sheng *Jiu zhang suanshu* and Hui Liu's theory of similar right triangles. (Chinese) *Collected research papers on the history of mathematics, Vol.* 1 (*Chinese*), 37–45, *Inner Mongolia Univ. Press, Hohhot*, 1990. (*see* **93i:01004**) 01A25

— The problem of the dating of the *Qiu Jian Zhang suanjing*. (Chinese) *Collected research papers on the history of mathematics, Vol.* 1 (*Chinese*), 46–49, *Inner Mongolia Univ. Press, Hohhot*, 1990. (*see* **93i:01004**) 01A25

— A study on the measurement method of Hui Liu's *Haidao suanjing*. (Chinese) *Collected research papers on the history of mathematics, Vol.* 2 (*Chinese*), 43–50, *Inner Mongolia Univ. Press, Hohhot*, 1991. (*see* **93i:01005**) 01A25

— Studies on spheres and problems of partial volume and surface area in the Qing dynasty. (Chinese) *Collected research papers on the history of mathematics, Vol.* 2 (*Chinese*), 113–122, *Inner Mongolia Univ. Press, Hohhot*, 1991. (*see* **93i:01005**) 01A25

— (*with* Li, Di) An investigation of the *Xie cha wei suanjing*. (Chinese) *Collected research papers on the history of mathematics, Vol.* 3 (*Chinese*), 58–65, *Inner Mongolia Univ. Press, Hohhot*, 1992. (*see* **93i:01006**) 01A25

— (*with* Niu, Ya Hua) A study on ellipses and their applications by Shan Lan Li. (Chinese) *Collected research papers on the history of mathematics, Vol.* 3 (*Chinese*), 100–111, *Inner Mongolia Univ. Press, Hohhot*, 1992. (*see* **93i:01006**) 01A25

Feng, Long Long (*with* Carini, Paolo; Li, Miao; Ruffini, Remo) Phase evolution of the photon in Kerr spacetime. (English summary) *Phys. Rev. D* (3) **46** (1992), *no.* 12, 5407–5413. (Summary) **93g:83028** 83C22 (83C57)

Feng, Min Fu (*with* Zhou, Tian Xiao; Xiong, Hua Xin) A new approach to stability of finite elements under divergence constraints. *J. Comput. Math.* **10** (1992), *no.* 3, 209–223. (A. Jami) **93g:65149** 65N30 (76D05, 76M10)

— (*with* Zhou, Tian Xiao) A penalty stabilized finite element method for the Navier-Stokes equations. (Chinese. English summary) *Numer. Math. J. Chinese Univ.* **14** (1992), *no.* 2, 179–182. 76M10 (65N99, 76D05)

— Streamline diffusion finite element methods for nonlinear neutron transport equations. (Chinese) *Xi'an Jiaotong Daxue Xuebao* **26** (1992), *no.* 3, 123–126. 65M60 (82D75)

— (*with* Zhou, Tian Xiao) A least squares Petrov-Galerkin finite element method for the stationary Navier-Stokes equations. *Math. Comp.* **60** (1993), *no.* 202, 531–543. (Bruce A. Finlayson) **93h:65141** 65N30 (76D05, 76M10)

Feng, Ping (*with* Tsygan, B. L.) Hochschild and cyclic homology of quantum groups. *Comm. Math. Phys.* **140** (1991), *no.* 3, 481–521. (Benjamin David Enriquez) **93e:19006** 19D55 (16E20, 16W30, 17B37)

Feng, Q. (*with* Pesch, W.; Decker, W.; Kaiser, M.; Kramer, Lorenz; Weber, A.) Weakly nonlinear analysis of pattern formation in nematic liquid crystals. *Nematics* (*Orsay*, 1990), 291–301, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 332, *Kluwer Acad. Publ., Dordrecht*, 1991. (*see* **93d:58007**) 76A15

Feng, Qi (*with* Magidor, Menachem) On reflection of stationary sets. *Fund. Math.* **140** (1992), *no.* 2, 175–181. (Peter Vojtáš) **93e:03069** 03E05 (03C20, 03E35, 03E55)

— Homogeneity for open partitions of pairs of reals. *Trans. Amer. Math. Soc.* **339** (1993), *no.* 2, 659–684. (Jakub Jasiński) **93m:03081** 03E05 (03E15, 03E60)

Feng, Ru Peng (*with* Duan, Guang Ren; Qiang, Wen Yi) A parametric approach to eigenstructure assignment for linear systems via dynamical compensators. (Chinese. English and Chinese summaries) *Control Theory Appl.* **9** (1992), *no.* 6, 652–654. 93B55

Feng, Shui Large deviations for Markov processes with mean field interaction and unbounded jumps. *C. R. Math. Rep. Acad. Sci. Canada* **14** (1992), *no.* 1, 37–42. (Summary) **93a:60039** 60F10 (60J05)

Feng, Tian Qiu (*with* Han, Zheng Zhi; Zhang, Zhong Jun) An investigation of the structure of (A, B) invariant subspaces and its application. (Chinese. English summary) *J. Shanghai Jiaotong Univ.* **25** (1991), *no.* 3, 57–66. (Zhenyue Zhang) **93c:93015** 93B10 (15A24, 47A15)

Feng, Wei (*with* Chen, Yun Min; Wu, Shi Ming) Bump response of an elastic half-space by time-domain BEM. *Theory and applications of boundary element methods* (*Beijing*, 1991), 247–252, *Internat. Acad. Publ., Beijing*, 1991. (*see* **93b:65008**) 73V10 (65N38)

Feng, X. *see* **Feng, Xiangbo**

Feng, Xi Sheng (*with* Sun, Mao Xiang; Wang, Shu Guang; Wu, Xue Man; Guan, Yu Lin) An algorithm for generalized predictive pole-placement feedforward control. (Chinese. English and Chinese summaries) *Inform. and Control* (*Shenyang*) **21** (1992), *no.* 6, 338–342. 93B55 (93B40)

Feng, Xiangbo (*with* Ji, Yuandong; Chizeck, Howard Jay; Loparo, Kenneth A.) Stability and control of discrete-time jump linear systems. *Control Theory Adv. Tech.* **7** (1991), *no.* 2, 247–270. (Summary) **93a:93071** 93C55 (93D05)

— (*with* Loparo, Kenneth A.; Ji, Yuandong; Chizeck, Howard Jay) Stochastic stability properties of jump linear systems. *IEEE Trans. Automat. Control* **37** (1992), *no.* 1, 38–53. (Summary) **93a:93110** 93E15

— (*with* Loparo, Kenneth A.) A nonrandom spectrum theorem for products of random matrices and linear stochastic systems. *J. Math. Systems Estim. Control* **2** (1992), *no.* 3, 323–338. (Hubert Hennion) **93f:60087** 60H10 (34D08, 34F05)

— (*with* Loparo, Kenneth A.) Chaotic motion and its probabilistic description in a family of two-dimensional nonlinear systems with hysteresis. (English summary) *J. Nonlinear Sci.* **2** (1992), *no.* 4, 417–452. (Hans-Peter Herzel) **93j:58088** 58F13 (34D45, 34H05, 58F40)

— (*with* Loparo, Kenneth A.) Lyapunov exponent and rotation number of two-dimensional linear stochastic systems with telegraphic noise. (English summary) *SIAM J. Appl. Math.* **53** (1993), *no.* 1, 283–300. (Wolfgang Kliemann) **93m:60120** 60H10 (34D08, 34F05)

Feng, Xue Shang Solutions of the Benjamin-Ono equation in fractional order Sobolev spaces. (English summary) *Acta Math. Sci.* (*English Ed.*) **12** (1992), *no.* 3, 286–291. (Xian Guo Geng) **93m:35151** 35Q35

Feng, Yan Fa (*with* Chen, Bao Yao) Everywhere regularity of weak solutions to degenerate triangular variational inequalities. (Chinese. Chinese summary) *Chinese Ann. Math. Ser. A* **13** (1992), *no.* 5, 555–565. (Jie Yang) **93k:49006** 49J40

Feng, Yong Cheng (*with* Wang, Xi Liang; Qing, Xian Ming) Numerical computation of cylindrical functions for complex arguments. (Chinese. English and Chinese summaries) *Dianzi Keji Daxue Xuebao* **21** (1992), *no.* 2, 152–157. (Summary) **93j:65031** 65D20 (65–04)

Feng, Yu Lin (*with* Zhao, Xu Dong) Automatic and hierarchical verification for concurrent systems. *J. Comput. Sci. Tech.* (*English Ed.*) **5** (1990), *no.* 3, 241–249. (G. Mirkowska) **93e:68074** 68Q60 (68Q10)

Feng, Yu You (*with* Wang, Hao^2) Some cardinal problems for universal algebras. (Chinese. English and Chinese summaries) *J. Northwest Univ.* **22** (1992), *no.* 4, 379–381. (Summary) **93j:06020** 06F35 (08A05)

Feng, Yue Cai The asymptotic properties of solutions to a class of second-order functional-differential equations. (Chinese. English summary) *J. South China Normal Univ. Natur. Sci. Ed.* **1991**, *no.* 1, 104–113. (Jun Jie Wei) **93c:34141** 34K15 (34K20)

Feng, Zaichun (*with* Leal, L. G.) On energy transfer in resonant bubble oscillations. (English summary) *Phys. Fluids A* **5** (1993), *no.* 4, 826–836. 76Q05 (76N99)

Feng, Zhao Shu (*with* Liu, Yong Qing; Guo, Feng Wei) Criteria for practical stability in the pth mean of nonlinear stochastic systems. *Appl. Math. Comput.* **49** (1992), *no.* 2-3, 251–260. (Arcady Ponosov) **93f:34130** 34K20 (34F05, 34K50, 60H10)

Feng, Zhen Dong (*with* Lü, Zhen Hua) Perturbation method for reanalysis of the matrix singular value decomposition. *Appl. Math. Mech.* (*English Ed.*) **12** (1991), *no.* 7, 705–715; *translated from Appl. Math. Mech.* **12** (1991), *no.* 7, 661–670 (*Chinese. English summary*). (Summary) **93c:15012** 15A18 (70J99)

Feng, Zhen Xing (*with* Liu, Yu Qi) An unified treatment of the singular integrals in BEM model for 3-D elastoplastic crack analysis. *Theory and applications of boundary element methods* (*Beijing*, 1991), 279–286, *Internat. Acad. Publ., Beijing*, 1991. (*see* **93b:65008**) 65R20 (73V10)

Feng, Zheng Liang A discussion on occurrence of an extra (or a missing) solution when using the Laplace transform to solve differential equations. (Chinese. English summary) *Shanghai Shifan Daxue Xuebao Ziran Kexue Ban* **21** (1992), *no.* 1, 86–89. (Summary) **93b:34016** 34A25 (35A22)

Feng, Ziding (*with* McCulloch, Charles E.) Statistical inference using maximum likelihood estimation and the generalized likelihood ratio when the true parameter is on the boundary of the parameter space. *Statist. Probab. Lett.* **13** (1992), *no.* 4, 325–332. (František Rublík) **93m:62046** 62F03 (62F25)

Feng, Zu Ren (*with* Jiang, Fan; Shi, Ren) A study on adaptive impedance control of robots. (Chinese. English summary) *Xi'an Jiaotong Daxue Xuebao* **26** (1992), *no.* 1, 29–38, 46. (Summary) **93b:70032** 70Q05 (70B15, 93C85)

Fenley, Sérgio R. Asymptotic properties of depth one foliations in hyperbolic 3-manifolds. (English summary) *J. Differential Geom.* **36** (1992), *no.* 2, 269–313. (Athanase Papadopoulos) **93k:57030** 57M50 (57N10, 57R30, 58F18)

Fenn, Roger (*with* Hilton, Peter) On links with one codimension two component. *Forum Math.* **4** (1992), *no.* 2, 175–185. (Washington Mio) **93c:57017** 57Q45

Fenrick, Maureen H. ★ Introduction to the Galois correspondence. *Birkhäuser Boston, Inc., Boston, MA*, 1992. xii+195 *pp. ISBN* 0-8176-3522-X (B. Heinrich Matzat) **93f:12001** 12–01 (12F10)

Fenstad, Grete (*with* Hjort, Nils Lid) On the last time and the number of times an estimator is more than ε from its target value. *Ann. Statist.* **20** (1992), *no.* 1, 469–489. (Tapas K. Chandra) **93f:60029** 60F05 (62F12)

Fenstad, Jens Erik (*with* Albeverio, Sergio; Høegh-Krohn, Raphael; Karwowski, Witold; Lindstrøm, Tom) Schrödinger operators with potentials supported by null sets. (English summary) *Ideas and methods in quantum and statistical physics* (*Oslo*, 1988), 63–95, *Cambridge Univ. Press, Cambridge*, 1992. (Sylvie Paycha) **93m:81025** 81Q10 (31B99, 35J10, 47F05, 47N50, 81Q15)

— *see also* **Ideas and methods in mathematical analysis, stochastics, and applications, 93e:00033** *and* **Ideas and methods in quantum and statistical physics, 93e:00034**

Fenton, N. E. (*with* Whitty, R. W.) Program structures: some new characterisations. *J. Comput. System Sci.* **43** (1991), *no.* 3, 467–483. (Summary) **93a:68020** 68N05

Fenton, P. C. Line integrals of subharmonic functions. *J. Math. Anal. Appl.* **168** (1992), *no.* 1, 108–110. (P. Agranovich) **93h:31011** 31C05

Fenyes, Peter A. (*with* Coleman, Thomas F.) Partitioned quasi-Newton methods for nonlinear equality constrained optimization. *Math. Programming* **53** (1992), *no.* 1, *Ser. A*, 17–44. (Nada I. Djuranović-Miličič) **93a:90059** 90C30 (65H10, 65K10)

Fenyő, István *see* **Aczél, János, (93k:26001)**

Feodoritova, O. B. (*with* Zhukov, V. T.; Zabrodin, A. V.) A scheme for solving nonstationary two-dimensional equations of gas dynamics with heat conduction on moving curvilinear grids. (Russian) *Akad. Nauk SSSR Inst. Prikl. Mat. Preprint* **1991**, *no.* 18, 28 *pp.* (Summary) **93c:76070** 76M25 (65M60, 76M20, 76N15, 80–08)

Feofanova, V. A. The one-dimensional inverse dynamical Lamb problem for a three-layer medium. (Russian. Russian summary) *Questions of well-posedness in problems of analysis* (*Russian*), 141–153, 186, *Akad. Nauk SSSR Sibirsk. Otdel., Inst. Mat., Novosibirsk*, 1989. (*see* **93e:00018**) 35R30 (73C99, 73D50)

Feoktistov, L. P. (*with* Sena, L. A.; Smirnov, Yu. N.; Gershtein, S. S.; Arnol'd, V. I.; Dolgov, A. D.) Master. (Russian) *Priroda* **1992**, *no.* 2, 84–111. (Editors) **93g:01083** 01A70

Ferapontov, E. V. Differential geometry of nonlocal Hamiltonian operators of hydrodynamic type. (Russian) *Funktsional. Anal. i Prilozhen.* **25** (1991), *no.* 3, 37–49, 95; *translation in Functional Anal. Appl.* **25** (1991), *no.* 3, 195–204 (1992). (Ya. L. Umanskiĭ) **93a:58059** 58F05 (35Q35, 58F07)

— Equations of hydrodynamic type from the standpoint of web theory. (Russian) *Mat. Zametki* **50** (1991), *no.* 5, 97–108; *translation in Math. Notes* **50** (1991), *no.* 5-6, 1162–1170 (1992). (J. Chrastina) **93b:35110** 35Q30 (53A60)

— *see also* **Akivis, M. A., 93k:53021**

Feraudi, F. (*with* Pennati, V.; De Biase, L.) A generalized finite-difference solution of parabolic 3-D problems of multi-connected regions. (English summary) *Comm. Appl. Numer. Methods* **8** (1992), *no.* 6, 361–371. (Summary) **93b:65113** 65M06

von Ferber, Christian (*with* Schäfer, Lothar; Lehr, Ulrike; Duplantier, Bertrand) Renormalization of polymer networks and stars. *Nuclear Phys. B* **374** (1992), *no.* 3, 473–495. (Summary) **93a:82072** 82D60 (82B28)

Ferber, Reginald Cellular automata are the continuous self-mappings of configuration spaces. (English summary) *European Conference on Iteration Theory* (*Batschuns*, 1989), 79–85, *World Sci. Publishing, River Edge, NJ*, 1991. (R. Dilão) **93j:58068** 58F08 (68Q80)

Ferdinand, Christian (*with* Seidl, Helmut; Wilhelm, Reinhard) Baumautomaten zur Codeselektion. (German summary) [Tree automata for code selection] *Informatik*,

121–144, *Teubner-Texte Inform.*, 1, *Teubner, Stuttgart*, 1992. (Summary) **93e:94012** 94B05 (94B60)

Ferenczi, Miklós Measures defined on free products of formula algebras and the analogies with cylindric homomorphisms. *Algebraic logic (Budapest*, 1988), 173–181, *Colloq. Math. Soc. János Bolyai*, 54, *North-Holland, Amsterdam*, 1991. (D. Monk) **93c:03080** 03G15

Ferenczi, Sébastien (*with* Lemańczyk, Mariusz) Rank is not a spectral invariant. *Studia Math.* **98** (1991), *no.* 3, 227–230. (S. I. Bezuglyi) **93d:28021** 28D05

— Bounded remainder sets. *Acta Arith.* **61** (1992), *no.* 4, 319–326. (Christian Mauduit) **93f:11059** 11K55

— (*with* Kwiatkowski, Jan) Rank and spectral multiplicity. *Studia Math.* **102** (1992), *no.* 2, 121–144. (Wojciech Bartoszek) **93g:28013** 28D05 (47A35)

— Tiling the Morse sequence. Discrete mathematics and applications to computer science (Marseille, 1989). *Theoret. Comput. Sci.* **94** (1992), *no.* 2, 215–221. (Véronique Bruyère) **93e:68104** 68R15

Ferenstein, Elżbieta Z. Two-person non-zero-sum sequential games with priorities. *Strategies for sequential search and selection in real time (Amherst, MA*, 1990), 119–133, *Contemp. Math.*, 125, *Amer. Math. Soc., Providence, RI*, 1992. (Summary) **93k:60109** 60G40

Feres, Renato Geodesic flows on manifolds of negative curvature with smooth horospheric foliations. *Ergodic Theory Dynamical Systems* **11** (1991), *no.* 4, 653–686. (M. Rees) **93f:58187** 58F17

Ferfera, Abdelhak (*with* Chabour, Rachid) Noninteracting control and disturbance decoupling with singularity for two-dimensional bilinear systems. *J. Math. Systems Estim. Control* **2** (1992), *no.* 4, 429–444. (Xiao Yun Lu) **93f:93110** 93D15 (93B17, 93B52, 93C10)

Fergani, H. A. (*with* El-Rayes, A. B.; Abd El-Moneim, M. A.) On the generalized linear search problem. (English and Arabic summaries) *Delta J. Sci.* **16** (1992), *no.* 2, 1–10. 90B40

Ferger, Dietmar (*with* Stute, Winfried) Convergence of changepoint estimators. (English summary) *Stochastic Process. Appl.* **42** (1992), *no.* 2, 345–351. (Wen Tao Huang) **93m:62071** 62G05 (62G20)

Fergola, P. (*with* Rionero, Salvatore; Tenneriello, C.) On the stability of Lotka-Volterra perturbed equations. Memoirs of mathematical physics in honor of Giovanni Carini on his 70th birthday (Italian). *Atti Accad. Peloritana Pericolanti Cl. Sci. Fis. Mat. Natur.* **68** (1990), *suppl.* 1, 235–256 (1991). (T. J. Mahar) **93e:92011** 92D25 (34D20)

— (*with* Rionero, Salvatore; Tenneriello, C.) Asymptotic stability of a perturbed Lotka-Volterra model. (English summary) *Waves and stability in continuous media (Sorrento*, 1989), 419–425, *Ser. Adv. Math. Appl. Sci.*, 4, *World Sci. Publishing, River Edge, NJ*, 1991. (*see* **93g:00030**) 34D05 (34D10, 92D25)

Ferguson, H. (*with* Reid, N.; Cox, D. R.) Estimating equations from modified profile likelihood. *Estimating functions*, 279–293, *Oxford Statist. Sci. Ser.*, 7, *Oxford Univ. Press, New York*, 1991. (Summary) **93a:62003** 62A10 (62F10)

— Asymptotic properties of a conditional maximum-likelihood estimator. (French summary) *Canad. J. Statist.* **20** (1992), *no.* 1, 63–75. (Masafumi Akahira) **93j:62072** 62F12 (62F10)

Ferguson, M. J. (*with* Jalali, Ahmad) Computationally efficient algorithms for on-line optimization of Markov decision processes. *Automatica J. IFAC* **28** (1992), *no.* 1, 107–118. (Peter Köchel) **93b:90105** 90C40

Ferguson, Pamela A. Lengths of conjugacy classes of finite solvable groups. *J. Algebra* **146** (1992), *no.* 1, 77–84. (David Gluck) **93b:20033** 20D10 (20D60)

— Lengths of conjugacy classes of finite solvable groups. II. *J. Algebra* **154** (1993), *no.* 1, 223–227. (David Gluck) **93m:20029** 20D60 (20D10)

Ferguson, Thomas S. (*with* Phadia, Eswar G.; Tiwari, Ram C.) Bayesian nonparametric inference. *Current issues in statistical inference: essays in honor of D. Basu*, 127–150, *IMS Lecture Notes Monograph Ser.*, 17, *Inst. Math. Statist., Hayward, CA*, 1992. (Introduction) **93i:62028** 62G05 (62C10)

— (*with* Hardwick, J. P.; Tamaki, M.) Maximizing the duration of owning a relatively best object. *Strategies for sequential search and selection in real time (Amherst, MA*, 1990), 37–57, *Contemp. Math.*, 125, *Amer. Math. Soc., Providence, RI*, 1992. (Minoru Sakaguchi) **93h:60066** 60G40 (62L15)

— Best-choice problems with dependent criteria. *Strategies for sequential search and selection in real time (Amherst, MA*, 1990), 135–151, *Contemp. Math.*, 125, *Amer. Math. Soc., Providence, RI*, 1992. (Alexander V. Gnedin) **93g:60086** 60G40 (62L15)

— Mate with bishop and knight in kriegspiel. *Theoret. Comput. Sci.* **96** (1992), *no.* 2, 389–403. (Summary) **93a:90098** 90D40

Ferianc, P. (*with* Sloboda, F.; Zaťko, B.) Minimum perimeter polygon and its application. (English summary) *Theoretical foundations of computer vision (Buckow*, 1992), 59–70, *Math. Res.*, 69, *Akademie-Verlag, Berlin*, 1992. (Summary) **93k:68107** 68U05

Ferland, Jacques A. (*with* Crouzeix, Jean-Pierre; Schaible, Siegfried) Generalized convexity on affine subspaces with an application to potential functions. (English summary) *Math. Programming* **56** (1992), *no.* 2, *Ser. A*, 223–232. (Petra Weidner) **93h:90055** 90C05 (26B25, 26B35, 90C20)

Ferland, René Fluctuations pour des équations de Boltzmann scalaires. [Fluctuations for scalar Boltzmann equations] *Canad. J. Math.* **43** (1991), *no.* 5, 975–984. (Luisa Arlotti) **93d:82066** 82C40 (35Q99, 76P05)

de Fermat, Pierre ★ Исследования по теории чисел и диофантову анализу. (Russian. Russian summary) [Investigations in number theory and Diophantine analysis] Перевод текстов и комментарии. [Translation of texts and commentaries] Translated from the French and Latin by T. A. Bobrovnikova. Translation edited and with a foreword by I. G. Bashmakova. With commentaries by Bashmakova and T. A. Lavrinenko. "*Nauka*", *Moscow*, 1992. 320 *pp. ISBN* 5-02-014121-6 (B. Rosenfeld) **93m:01023** 01A45 (01A75, 11-03)

— *see also* **Brassinne, E., 93h:01062**

Fermigier, Stéfane Un exemple de courbe elliptique définie sur **Q** de rang ≥ 19. (English and French summaries) [An example of an elliptic curve defined over **Q** with rank ≥ 19] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 6, 719–722. (Salvador Comalada) **93i:11067** 11G05

Fermüller, Christian Deciding some Horn clause sets by resolution. Proceedings of the First Kurt Gödel Colloquium (Salzburg, 1989). *Jahrb. Kurt-Gödel-Ges.* **1989**, 60–73. (Introduction) **93c:68088** 68T15 (03B25, 03B35)

Fernandes, José C. Mean value and Harnack inequalities for a certain class of degenerate parabolic equations. *Rev. Mat. Iberoamericana* **7** (1991), *no.* 3, 247–286. (Bruno Franchi) **93g:35080** 35K65 (35B05)

Fernandes, Olga On Pascal ovals. (English summary) *J. Austral. Math. Soc. Ser. A* **54** (1993), *no.* 1, 61–69. (R. Artzy) **93i:51012** 51E15 (51A25)

Fernandes, Ryan I. (*with* Bialecki, Bernard) Orthogonal spline collocation Laplace-modified and alternating-direction methods for parabolic problems on rectangles. (English summary) *Math. Comp.* **60** (1993), *no.* 202, 545–573. (Howard Swann) **93h:65142** 65N35 (65M12, 65M70, 65N12)

Fernandes, Teresa Monteiro *see* ***D*-modules and microlocal geometry, 93j:58001**

Fernández, Antonio *see* **Fernández López, Antonio²**

sabater Fernández, Armando Antonio *see* **Sabater Fernández, Armando Antonio**

Fernández, Begoña (*with* Gorostiza, Luis G.) Hydrodynamic and fluctuation limits of branching particle systems with changes of mass. *Bol. Soc. Mat. Mexicana* (2) **35** (1990), *no.* 1, 25–37. (Gail Ivanoff) **93f:60066** 60G57 (60F17)

— (*with* Gorostiza, Luis G.) A criterion of convergence of generalized processes and an application to a supercritical branching particle system. *Canad. J. Math.* **43** (1991), *no.* 5, 985–997. (Thomas G. Kurtz) **93d:60054** 60F17 (60G20, 60J80)

— (*with* Gorostiza, Luis G.) Stability of a class of transformations of distribution-valued processes and stochastic evolution equations. (English summary) *J. Theoret. Probab.* **5** (1992), *no.* 4, 661–678. (P. Kotelenez) **93m:60064** 60F17 (60G20, 60H15)

Fernández, Carmen A note on nondistinguished Köthe spaces of infinite type. *Bull. Soc. Roy. Sci. Liège* **60** (1991), *no.* 6, 405–408. (Klaus-Dieter Bierstedt) **93d:46015** 46A45 (46A04, 46A08)

— (*with* Bonet, José; Dierolf, S.) On two classes of LF-spaces. *Portugal. Math.* **49** (1992), *no.* 1, 109–130. (Paweł Domański) **93f:46002** 46A13

rodríguez-Fernández, Celso *see* **Rodríguez-Fernández, Celso**

garcía-rodeja Fernández, Eduardo *see* **García-Rodeja Fernández, Eduardo**

Fernández, F. J. *see* **Fernández y Fernández-Arroyo, Fidel José**

sánchez Fernández, Fernando *see* **Sánchez Fernández, Fernando**

Fernández, Francisco M. (*with* Arteca, G. A.; Castro, E. A.) ★ Large order perturbation theory and summation methods in quantum mechanics. Lecture Notes in Chemistry, 53. *Springer-Verlag, Berlin*, 1990. xii+644 *pp. ISBN* 3-540-52847-4 (K. Kumar) **93b:81003** 81-02 (81Q15, 81V45, 81V55)

— (*with* Echave, Julián) Baker-Campbell-Hausdorff relations for finite-dimensional Lie algebras. *J. Math. Chem.* **9** (1992), *no.* 1, 87–95. (F. W. Lemire) **93b:17062** 17B40 (81R05)

— (*with* Aguilera-Navarro, V. C.; Guardiola, R.; Ros, J.) Large-order perturbation expansions for the charged harmonic oscillator. (English summary) *J. Phys. A* **25** (1992), *no.* 23, 6379–6392. (Summary) **93k:81049** 81Q15

menéndez Fernández, J. A. *see* **Menéndez Fernández, J. A.**

Fernandez, J.-C. (*with* Bouajjani, A.; Halbwachs, N.; Raymond, P.; Ratel, C.) Minimal state graph generation. *Sci. Comput. Programming* **18** (1992), *no.* 3, 247–269. (Summary) **93a:68091** 68Q60 (68R10)

Fernández, José L. (*with* Pestana, Domingo) Distortion of boundary sets under inner functions and applications. *Indiana Univ. Math. J.* **41** (1992), *no.* 2, 439–448. (D. H. Hamilton) **93k:30014** 30C35 (30C85)

— (*with* Llorente, J. G.) A note on the boundary behaviour of harmonic functions. *J. London Math. Soc.* (2) **46** (1992), *no.* 2, 295–300. (A. Yu. Rashkovskii) **93h:31002** 31A20 (30D40)

Fernández, Luis Alberto (*with* Casas Rentería, Eduardo) State-constrained control problems of quasilinear elliptic equations. *Optimal control of partial differential equations (Irsee*, 1990), 11–25, *Lecture Notes in Control and Inform. Sci.*, 149, *Springer, Berlin*, 1991. (Karsten Eppler) **93g:49014** 49K20 (49J20)

— (*with* Casas Rentería, Eduardo) Optimal control of semilinear elliptic equations with pointwise constraints on the gradient of the state. (Spanish. Spanish summary) *Proceedings of the XII Congress on Differential Equations and Applications/II Congress on Applied Mathematics (Spanish) (Oviedo*, 1991), 307–312, *Univ. Oviedo, Oviedo*, 1991. (*see* **93j:00009**) 49K20 (35J65)

— (*with* Casas Rentería, Eduardo) Choosing L^q controls to deal with pointwise state constraints. *System modelling and optimization (Zurich*, 1991), 490–499, *Lecture Notes in Control and Inform. Sci.*, 180, *Springer, Berlin*, 1992. (From the introduction) **93e:49027** 49K20 (49Q10)

— (*with* Casas Rentería, Eduardo) Optimal control of semilinear elliptic equations with pointwise constraints on the gradient of the state. (English summary) *Appl. Math. Optim.* **27** (1993), *no.* 1, 35–56. (H. O. Fattorini) **93h:49012** 49J20 (35B37, 35J60, 49K20)

Fernández, Luis M. (*with* Cabrerizo, José L.; Fernandez Andrés, Manuel) A classification of totally f-umbilical submanifolds of an S-manifold. *Soochow J. Math.* **18** (1992), *no.* 2, 211–221. (Liviu Ornea) **93e:53059** 53C40 (53C25)

Fernández, M. *see* **Fernández, Marisa Luisa**

Fernández, M. J. (*with* Suárez García, Fermín; Gil Álvarez, Pedro Ángel) Equations of fuzzy relations defined on fuzzy subsets. (English summary) *Fuzzy Sets and Systems* **52** (1992), *no.* 3, 319–336. (Summary) **93m:04010** 04A72

sobrón Fernández, Ma. Inés *see* **Sobrón Fernández, Ma. Inés**

Fernández, Manuel *see* **Fernandez Andrés, Manuel**

Fernández, Marisa Luisa (*with* de León, Manuel; Rozas, J. Iñaki) A remark on compact symplectic manifolds not admitting complex structures. (English summary) *Arch. Math. (Brno)* **26** (1990), *no.* 1, 49–54. (Mark J. Gotay) **93f:53024** 53C15

— (*with* de Andrés, Luis C.; Gray, Alfred; Mencía, José J.) Moduli spaces of complex structures on compact four-dimensional nilmanifolds. (Italian summary) *Boll. Un. Mat. Ital. A* (7) **5** (1991), *no.* 3, 381–389. (Elsa Abbena) **93e:58022** 58D27 (53C15, 53C50)

— (*with* de Andrés, Luis C.; de León, Manuel; Mencía, José J.) Some six-dimensional compact symplectic and complex solvmanifolds. (English and Italian summaries) *Rend. Mat. Appl.* (7) **12** (1992), *no.* 1, 59–67. (Elsa Abbena) **93h:53030** 53C15 (53C55)

legua Fernández, Matilde *see* **Legua Fernández, Matilde**

Fernandez, Raquel Terms-of-trade uncertainty, incomplete markets and unemployment. (English summary) *Internat. Econom. Rev.* **33** (1992), *no.* 4, 881–894. 90A50 (90A60)

Fernández, Roberto (*with* van Enter, Aernout C. D.; Sokal, Alan D.) Regularity properties and pathologies of position-space renormalization-group transformations. Lattice 90

(Tallahassee, FL, 1990). *Nuclear Phys. B Proc. Suppl.* **20** (1991), 48–52. (Summary) **93d:82043** 82B28 (81T17)

pérez Fernández, T. *see* **Pérez Fernández, T.**

Fernández-Alcober, Gustavo A. (*with* Vera López, Antonio) On p-groups of maximal class. II. *J. Algebra* **143** (1991), *no.* 1, 179–207. (Richard Davitt) **93b:20038** 20D15 (20D10)

— (*with* Vera López, Antonio) Centralizers of small order in p-groups of maximal class. *Comm. Algebra* **20** (1992), *no.* 4, 1051–1059. (Avinoam Mann) **93b:20039** 20D15

Fernandez Andrés, Manuel (*with* Cabrerizo, José L.; Fernández, Luis M.) A classification of totally f-umbilical submanifolds of an S-manifold. *Soochow J. Math.* **18** (1992), *no.* 2, 211–221. (Liviu Ornea) **93e:53059** 53C40 (53C25)

Fernández Arias, Arturo (*with* Alonso Gomez, Angel J.) On extensions of Klein surfaces. Proceedings of the Colloquium on Complex Analysis and the Sixth Romanian-Finnish Seminar. *Rev. Roumaine Math. Pures Appl.* **36** (1991), *no.* 9-10, 529–535. (Daniel M. Gallo) **93i:30035** 30F50

fernández y Fernández-Arroyo, Fidel José *see* **Fernández y Fernández-Arroyo, Fidel José**

Fernández C., David J. (*with* Nieto, Luis M.; del Olmo, Mariano A.; Santander, Mariano) Aharonov-Anandan geometric phase for spin-$\frac{1}{2}$ periodic Hamiltonians. (English summary) *J. Phys. A* **25** (1992), *no.* 19, 5151–5163. (Shinichi Tajima) **93i:81295** 81V10 (81Q99)

Fernández-Canteli, A. (*with* Castillo, Enrique; Ruiz Cobo, María Reyes) Design of statistical lifetime models by functional equations. *Probability theory and applications*, 279–287, *Math. Appl.*, 80, *Kluwer Acad. Publ., Dordrecht*, 1992. (*see* **93i:60005**) 62N05 (73K99, 73M25)

Fernández Cara, Enrique Some remarks about Navier-Stokes equations. (Spanish. Spanish summary) *Proceedings of the XII Congress on Differential Equations and Applications/II Congress on Applied Mathematics* (*Spanish*) (*Oviedo*, 1991), 21–39, *Univ. Oviedo, Oviedo*, 1991. (Summary) **93j:35132** 35Q30 (76D05)

— (*with* Calzada Canalejo, M. C.; Cruz Soto, J. L.; Marín Beltrán, M.) Positivity of k and ε in the k-ε turbulence model. (Spanish) *Proceedings of the XII Congress on Differential Equations and Applications/II Congress on Applied Mathematics* (*Spanish*) (*Oviedo*, 1991), 405–408, *Univ. Oviedo, Oviedo*, 1991. (*see* **93j:00009**) 76F05

— (*with* González Burgos, M.) A new proof of the existence of solutions for weak conservation laws. (Spanish. Spanish summary) *Proceedings of the XII Congress on Differential Equations and Applications/II Congress on Applied Mathematics* (*Spanish*) (*Oviedo*, 1991), 447–452, *Univ. Oviedo, Oviedo*, 1991. (Summary) **93j:35110** 35L65

— (*with* Bello, Juan A.; Simon, Jacques) Optimal shape design for Navier-Stokes flow. (English summary) *System modelling and optimization* (*Zurich*, 1991), 481–489, *Lecture Notes in Control and Inform. Sci.*, 180, *Springer, Berlin*, 1992. (Sergei Pavlovich Ohezin) **93h:49010** 49J20 (49K20, 49Q10)

— (*with* Guillén, F.) The existence of nonhomogeneous, viscous and incompressible flow in unbounded domains. (English summary) *Comm. Partial Differential Equations* **17** (1992), *no.* 7-8, 1253–1265. (Long An Ying) **93h:35157** 35Q30 (76D05)

— (*with* Cruz Soto, J. L.; Calzada Canalejo, M. C.; Marín Beltrán, M.) A parallel algorithm for solving the incompressible Navier-Stokes problem. (English summary) *Comput. Math. Appl.* **25** (1993), *no.* 9, 51–58. 65M99 (65Y05, 76D05, 76M25)

Fernández Carrión, Antonio Finitely generated extension of a separable B_0-algebra. (Spanish. English summary) *Proceedings of the XVth Portuguese-Spanish Conference on Mathematics, Vol. II* (*Portuguese*) (*Évora*, 1990), 291–296, *Univ. Évora, Évora*, 1991. (Summary) **93a:46090** 46H05

Fernández de la Vega, W. (*with* Manoussakis, Yannis) The forwarding index of communication networks with given connectivity. (English summary) *Discrete Appl. Math.* **37/38** (1992), 147–155. (Summary) **93i:90042** 90B12 (68M10)

Fernández-Ferreiros, Ana *see* **Fernández-Ferreirós Erviti, Ana**

Fernández-Ferreirós, P. *see* **Fernández-Ferreirós Erviti, Pilar**

Fernández-Ferreirós Erviti, Ana (*with* Ferrándiz Leal, José Manuel) Exact linearization of nonplanar intermediary orbits in the satellite theory. *Celestial Mech. Dynam. Astronom.* **52** (1991), *no.* 1, 1–12. (Bruno Cordani) **93b:70012** 70F15 (70M20)

Fernández-Ferreirós Erviti, Pilar (*with* Araujo, Jesús; Martínez-Maurica, J.) Pseudocompact and P-spaces in non-Archimedean functional analysis. *p-adic functional analysis* (*Laredo*, 1990), 13–21, *Lecture Notes in Pure and Appl. Math.*, 137, *Dekker, New York*, 1992. (From the text) **93a:54021** 54D30 (46S10)

Fernández García-Hierro, Manuel (*with* Soriano, M. Luisa) Simultaneous approximations in pre-Hilbert spaces. (Spanish. English summary) *Proceedings of the XVth Portuguese-Spanish Conference on Mathematics, Vol. II* (*Portuguese*) (*Évora*, 1990), 107–112, *Univ. Évora, Évora*, 1991. (Summary) **93a:41064** 41A65 (46C15, 46C50)

Fernández-Gaucherand, Emmanuel (*with* Arapostathis, Aristotle; Marcus, Steven I.) Adaptive control of a partially observed controlled Markov chain. (English summary) *Stochastic theory and adaptive control* (*Lawrence, KS*, 1991), 161–171, *Lecture Notes in Control and Inform. Sci.*, 184, *Springer, Berlin*, 1992. (*see* **93g:93007**) 93E35

— (*with* Marcus, Steven I.; Arapostathis, Aristotle) Structured solutions for stochastic control problems. (English summary) *Stochastic theory and adaptive control* (*Lawrence, KS*, 1991), 172–184, *Lecture Notes in Control and Inform. Sci.*, 184, *Springer, Berlin*, 1992. (*see* **93g:93007**) 93E20

Fernández López, Antonio[1] Noncommutative Jordan algebras containing minimal inner ideals. *Ann. Sci. Univ. Clermont-Ferrand II Math. No.* 27 (1991), 153–176 (1992). (Horst Behncke) **93c:46090** 46H70 (17C65)

— (*with* García Rus, Eulalia; Sánchez Campos, Esperanza) Prime nondegenerate Jordan triple systems with minimal inner ideals. *Nonassociative algebraic models* (*Zaragoza*, 1989), 143–166, *Nova Sci. Publ., Commack, NY*, 1992. (Erhard Neher) **93k:17004** 17A40 (17C10)

— (*with* García Rus, Eulalia; Sánchez Campos, Esperanza; Siles Molina, M.) Strong regularity and generalized inverses in Jordan systems. *Comm. Algebra* **20** (1992), *no.* 7, 1917–1936. (Erhard Neher) **93h:17072** 17C10

— (*with* García Rus, Eulalia; Rodríguez-Palacios, Ángel) A Zel′manov prime theorem for JB*-algebras. *J. London Math. Soc.* (2) **46** (1992), *no.* 2, 319–335. (Khristo N. Boyadzhiev) **93h:46098** 46L70 (17C10, 46H70)

Fernández López, Antonio[2] (*with* Diaz Madrigal, Santiago; Drewnowski, Lech; Florencio, Miguel; Paúl, Pedro J.) Barrelledness and bornological conditions on spaces of vector-valued μ-simple functions. *Results Math.* **21** (1992), *no.* 3-4, 289–298. (Miguel Caldas Cueva) **93d:46060** 46E40 (46A08)

Fernandez-Martinez, Pedro (*with* Cobos, Fernando) Reiteration and a Wolff theorem for interpolation methods defined by means of polygons. *Studia Math.* **102** (1992), *no.* 3, 239–256. (L. Ì. Nikolova) **93i:46140** 46M35 (46B70)

Fernández Miranda, Mercedes Characterization of closed-image operators. (Spanish) *Proyecciones* **10** (1991), *no.* 17, 43–51. (Raúl E. Curto) **93c:46107** 46L05 (47A10, 47B15, 47D20)

Fernández Rodríguez, C. A. (*with* Schönefeld, K.; Kleinmichel, H.) Algorithm for the solution of nonlinear constrained optimization problems. (Spanish. English and Spanish summaries) *Investigación Oper.* **12** (1991), *no.* 1, 3–9. (Summary) **93k:90083** 90C30 (65K05)

Fernandez Rodriguez, Fernando (*with* Llerena Achutegui, Agustín) On fields having the extension property. *J. Pure Appl. Algebra* **77** (1992), *no.* 2, 183–187. (Guang Xing Zeng) **93f:12008** 12F20 (12D15, 12J10)

Fernández y Fernández-Arroyo, Fidel José (*with* Escribano, Ma. del Carmen; Jiménez Guerra, P.) On the Orlicz spaces of functions valued in locally convex spaces. (English summary) *Comment. Math. Prace Mat.* **32** (1992), 33–44. (M. M. Popov) **93m:46038** 46E40 (46E30)

— Integration in locally convex spaces. (Spanish. English summary) *Rev. Roumaine Math. Pures Appl.* **37** (1992), *no.* 1, 43–58. (Summary) **93c:28011** 28B05 (46G10)

Fernée, M. (*with* Drummond, P. D.) Dynamical renormalization of the Jaynes-Cummings model. (English summary) *Quantum Opt.* **5** (1993), *no.* 1, 1–8. (Summary) **93i:81313** 81V80

Ferng, William R. An iterative Lanczos-based condition estimator. (English summary) *Parallel processing for scientific computing* (*Houston, TX*, 1991), 144–149, *SIAM, Philadelphia, PA*, 1992. (*see* **93g:65178**) 65F10 (65F35, 65Y10)

Fernholz, Luisa Turrin Almost sure convergence of smoothed empirical distribution functions. *Scand. J. Statist.* **18** (1991), *no.* 3, 255–262. (S. A. Venetiaan) **93d:62029** 62E20 (62G30)

Fernique, Xavier Les fonctions aléatoires à valeurs dans les espaces lusiniens et leurs modifications régulières. [Random functions with values in a Luzin space and their regular modifications] *Probability theory and mathematical statistics, Vol. I* (*Vilnius*, 1989), 332–349, "*Mokslas*", *Vilnius*, 1990. (R. M. Dudley) **93e:60078** 60G17 (60G05, 60G20)

— À propos d'un exemple d'équation différentielle stochastique en dimension infinie. [On an example of an infinite-dimensional stochastic differential equation] *Stochastic partial differential equations and their applications* (*Charlotte, NC*, 1991), 62–69, *Lecture Notes in Control and Inform. Sci.*, 176, *Springer, Berlin*, 1992. (*see* **93b:60006**) 60H10 (60G17)

— (*with* Bézandry, Paul Hubert) Sur la propriété de la limite centrale dans $\mathscr{D}[0,1]$. (English summary) [On the central limit property in $\mathscr{D}[0,1]$] *Ann. Inst. H. Poincaré Probab. Statist.* **28** (1992), *no.* 1, 31–46. (Evarist Giné) **93j:60004** 60B12 (60G17)

— Sur la régularité des fonctions aléatoires D'Ornstein-Uhlenbeck à valeurs dans l_p, $p \in [1,\infty)$. (English and French summaries) [On the regularity of Ornstein-Uhlenbeck random functions with values in l_p, $p \in [1,\infty)$] *Ann. Probab.* **20** (1992), *no.* 3, 1441–1449. (Wlodzimierz Smolenski) **93i:60079** 60G17 (60B11, 60G15)

— Sur l'équivalence de certaines mesures produit. (English and French summaries) [On the equivalence of some product measures] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 5, 593–598. (Summary) **93e:60083** 60G30

— Sur les espaces de Fréchet ne contenant pas c_0. [On Fréchet spaces that do not contain c_0] *Studia Math.* **101** (1992), *no.* 3, 299–309. (Werner Linde) **93d:60005** 60B11 (42A20, 46A04)

Ferone, Vincenzo (*with* Posteraro, M. Rosaria) A remark on a comparison theorem. *Comm. Partial Differential Equations* **16** (1991), *no.* 8-9, 1255–1262. (I. N. Tavkhelidze) **93c:35030** 35J25 (35B45)

— (*with* Posteraro, M. Rosaria) Symmetrization for a class of nonlinear elliptic equations. *Progress in partial differential equations: elliptic and parabolic problems* (*Pont-à-Mousson*, 1991), 142–148, *Pitman Res. Notes Math. Ser.*, 266, *Longman Sci. Tech., Harlow*, 1992. (Filomena Pacella) **93k:35088** 35J60

— (*with* Posteraro, M. Rosaria) Symmetrization results for elliptic equations with lower-order terms. (English summary) *Atti Sem. Mat. Fis. Univ. Modena* **40** (1992), *no.* 1, 47–61. (Rodolfo Salvi) **93f:35050** 35J25

Ferraioli, F. (*with* Virgopia, N.) The perturbed Korteweg-de Vries equation: evolution of solitons. (English summary) *Nuovo Cimento D* (1) **14** (1992), *no.* 8, 821–832. (Summary) **93k:35236** 35Q53 (76B25)

Ferrández, Angel (*with* Garay, Oscar J.; Lucas, Pascual) On a certain class of conformally flat Euclidean hypersurfaces. *Global differential geometry and global analysis* (*Berlin*, 1990), 48–54, *Lecture Notes in Math.*, 1481, *Springer, Berlin*, 1991. (Bang-yen Chen) **93h:53059** 53C40

— (*with* Lucas, Pascual) Ruled surfaces of finite type. (Spanish. English summary) *Proceedings of the XVth Portuguese-Spanish Conference on Mathematics, Vol. III* (*Portuguese*) (*Évora*, 1990), 167–172, *Univ. Évora, Évora*, 1991. (Summary) **93a:53046** 53C40 (53A25)

— (*with* Lucas, Pascual) Null finite type hypersurfaces in space forms. *Kodai Math. J.* **14** (1991), *no.* 3, 406–419. (P. J. Ryan) **93a:53047** 53C40

— (*with* Lucas, Pascual) Null 2-type hypersurfaces in a Lorentz space. (English summary) *Canad. Math. Bull.* **35** (1992), *no.* 3, 354–360. (Bang-yen Chen) **93g:53079** 53C40 (53C50)

— (*with* Alías, Luis J.; Lucas, Pascual) Submanifolds in pseudo-Euclidean spaces satisfying the condition $\Delta x = Ax + B$. *Geom. Dedicata* **42** (1992), *no.* 3, 345–354. (Thomas Hasanis) **93d:53066** 53C40 (53C50)

— (*with* Lucas, Pascual) Classifying hypersurfaces in the Lorentz-Minkowski space with a characteristic eigenvector. *Tokyo J. Math.* **15** (1992), *no.* 2, 451–459. (P. J. Ryan) **93m:53058** 53C40

Ferrandiz, J. *see* **Ferrándiz, Juan**

Ferrándiz, José M. *see* **Ferrándiz Leal, José Manuel**

Ferrándiz, José-Manuel *see* **Ferrándiz Leal, José Manuel**

Ferrandiz, Josep M. (*with* Lazar, Aurel A.) Monitoring the packet gap of real-time packet traffic. (English summary) *Queueing Systems Theory Appl.* **12** (1992), *no.* 3-4, 231–242. (Summary) **93i:60170** 60K25 (68M10, 90B12)

Ferrándiz, Juan (*with* Ayala, G.; Montes, F.) On parametric estimation in Boolean models. (English summary) *Survey of statistical methods and applications*, 8 (*Italian*) (*Cagliari*,

1989–1990), 1–17, *Coll. Atti Congr., Pitagora, Bologna*, 1993. (*see* **93m:62007**) 62M99 (60D05)

Ferrándiz Leal, José Manuel (*with* Floría Gimeno, Luis) Poincaré-similar variables including J_2-secular effects. (English summary) *Predictability, stability, and chaos in N-body dynamical systems* (*Cortina d'Ampezzo*, 1990), 297–303, *NATO Adv. Sci. Inst. Ser. B Phys.*, 272, *Plenum, New York*, 1991. (*see* **93i:70002**) 70F15

— (*with* Vigo, Jesús) Precise numerical integration of long-term perturbed oscillators. (Spanish. Spanish summary) *Proceedings of the XII Congress on Differential Equations and Applications/II Congress on Applied Mathematics* (*Spanish*) (*Oviedo*, 1991), 123–128, *Univ. Oviedo, Oviedo*, 1991. (*see* **93j:00009**) 34A50 (34C15, 65L99)

— (*with* Getino, J. M.) A Hamiltonian theory for an elastic Earth: elastic energy of deformation. *Celestial Mech. Dynam. Astronom.* **51** (1991), *no.* 1, 17–34. (Summary) **93d:73062a** 73N20 (70H05, 86A60)

— (*with* Getino, J. M.) A Hamiltonian theory for an elastic Earth: first order analytical integration. *Celestial Mech. Dynam. Astronom.* **51** (1991), *no.* 1, 35–65. (Summary) **93d:73062b** 73N20 (70H05, 86A60)

— (*with* Fernández-Ferreirós Erviti, Ana) Exact linearization of nonplanar intermediary orbits in the satellite theory. *Celestial Mech. Dynam. Astronom.* **52** (1991), *no.* 1, 1–12. (Bruno Cordani) **93b:70012** 70F15 (70M20)

— (*with* Getino, J. M.) A Hamiltonian theory for an elastic Earth: secular rotational acceleration. *Celestial Mech. Dynam. Astronom.* **52** (1991), *no.* 4, 381–396. (Summary) **93d:73062c** 73N20 (70H05, 86A60)

— (*with* San Saturio Lapeña, María Eugenia; Pojman, Joseph R.) Increased accuracy of computations in the main satellite problem through linearization methods. (English summary) *Celestial Mech. Dynam. Astronom.* **53** (1992), *no.* 4, 347–363. (Summary) **93f:70001** 70–08 (70F05, 70M20)

Ferrando, J. C. (*with* Sánchez Ruiz, Luis M.) Some barrelled spaces of class $\aleph_0$. (Spanish. English summary) *Proceedings of the XVth Portuguese-Spanish Conference on Mathematics, Vol. II* (*Portuguese*) (*Évora*, 1990), 267–271, *Univ. Évora, Évora*, 1991. (Summary) **93a:46004** 46A08

— (*with* López Pellicer, M.) Vector valued function spaces which are barrelled of class $\aleph_0$ but not totally barrelled. *Math. Japon.* **37** (1992), *no.* 1, 117–121. (James Bell Cooper) **93a:46067** 46E40 (46A08)

— (*with* López Pellicer, M.) Barrelled spaces of class $\aleph_0$ which are not totally barrelled. *Math. Japon.* **37** (1992), *no.* 3, 465–471. (P. P. Narayanaswami) **93d:46007** 46A08

— (*with* López Pellicer, M.) A note on a theorem of J. Diestel and B. Faires. *Proc. Amer. Math. Soc.* **115** (1992), *no.* 4, 1077–1081. (Summary) **93c:46078** 46G10 (46A08)

— (*with* Sánchez Ruiz, Luis M.) A maximal class of spaces with strong barrelledness conditions. *Proc. Roy. Irish Acad. Sect. A* **92** (1992), *no.* 1, 69–75. (P. P. Narayanaswami) **93d:46008** 46A08

— The closed-graph theorem with weak continuity conditions. (Spanish. English summary) *Rev. Mat. Univ. Complut. Madrid* **5** (1992), *no.* 2-3, 185–191. (Summary) **93m:46006** 46A30

Ferrando, Joan Josep (*with* Morales, Juan Antonio; Portilla, Miquel) Inhomogeneous space-times admitting isotropic radiation: vorticity-free case. *Phys. Rev. D* (3) **46** (1992), *no.* 2, 578–584. (Summary) **93e:83028** 83C30 (83F05)

Ferrara, A. (*with* Casalino, G.; Minciardi, Riccardo) On stability analysis of equilibrium points of variational adaptive control schemes. (English summary) *Adaptive systems in control and signal processing*, 1989 (*Glasgow*), 229–234, *IFAC Sympos. Ser.*, 1990, *No.* 1, *Pergamon, Oxford*, 1990. (*see* **93j:93007**) 93C40 (93B30)

— (*with* Bartolini, G.) A direct adaptive pole assignment control scheme for non-necessarily stably invertible discrete-time plants. (English summary) *Intelligent tuning and adaptive control* (*Singapore*, 1991), 387–392, *IFAC Sympos. Ser.*, 1991, *No.* 7, *Pergamon, Oxford*, 1991. (*see* **93i:93007**) 93D21

Ferrara, Sergio Space-time duality and gaugino condensation in superstring theory. *Particles, strings and cosmology* (*Boston, MA*, 1990), 426–432, *World Sci. Publishing, River Edge, NJ*, 1991. (*see* **93a:81004**) 81T30

— Calabi-Yau moduli space, special geometry and mirror symmetry. *Modern Phys. Lett. A* **6** (1991), *no.* 24, 2175–2180. (Tristan Hübsch) **93d:32026** 32G05 (14J30, 32G81, 32J17, 81T30, 81T40)

— (*with* Frè, Pietro; Soriani, Paolo) On the moduli space of the T^6/Z_3 orbifold and its modular group. *Classical Quantum Gravity* **9** (1992), *no.* 7, 1649–1661. (Summary) **93g:32033** 32G81 (32J27, 32J81, 81T30)

— (*with* Louis, Jan) Flat holomorphic connections and Picard-Fuchs identities from $N = 2$ supergravity. *Phys. Lett. B* **278** (1992), *no.* 3, 240–245. (Summary) **93k:32065** 32J81 (32C17, 32G81, 53C55, 81T60)

— (*with* Porrati, Massimo) Supersymmetric sum rules on magnetic dipole moments of arbitrary-spin particles. (English summary) *Phys. Lett. B* **288** (1992), *no.* 1-2, 85–89. (Summary) **93e:81149** 81V25 (81T60)

Ferrarese, Giorgio Intrinsic formulation of the Cauchy problem in general relativity. (Italian. English summary) *Atti Accad. Naz. Lincei Rend. Cl. Sci. Fis. Mat. Natur.* (8) **82** (1988), *no.* 3, 497–506 (1990). (V. A. Golubeva) **93e:83008** 83C05 (58G16)

— On the unified theory of Einstein and Schrödinger. (Italian. English summary) *Rend. Sem. Mat. Fis. Milano* **59** (1989), 37–47 (1992). (Matej Pavšič) **93f:83071** 83D05

— (*with* Cattani, Carlo) Intrinsic formulation of the Cauchy problem in general relativity: the case of the vacuum. (Italian) Memoirs of mathematical physics in honor of Giovanni Carini on his 70th birthday (Italian). *Atti Accad. Peloritana Pericolanti Cl. Sci. Fis. Mat. Natur.* **68** (1990), *suppl.* 1, 517–534 (1991). (Agostino Prástaro) **93h:83005** 83C05

— Kaluza-Klein theories and projection techniques. (English summary) *Classical mechanics and relativity: relationship and consistency* (*Elba*, 1989), 9–19, *Monographs Textbooks Phys. Sci. Lecture Notes*, 20, *Bibliopolis, Naples*, 1991. (Carl Brans) **93m:83073** 83E15 (53C80)

— *see also* **Classical mechanics and relativity: relationship and consistency, 93h:83001**

Ferrari, André (*with* Galperin, Efim A.) Numerical experiments with one-dimensional adaptive cubic algorithm. (English summary) *Comput. Math. Appl.* **25** (1993), *no.* 10-11, 47–56. 90C30 (90–08)

Ferrari, Ezio A simultaneous Maclaurin expansion of all powers of an elliptic function. *Rend. Sem. Mat. Univ. Politec. Torino* **47** (1989), *no.* 2, 139–151 (1992). (J. M. H. Peters) **93i:33013** 33E05 (33E30, 34A34, 41A58)

Ferrari, Franco On a new hyperelliptic formula. *Lett. Math. Phys.* **24** (1992), *no.* 2, 165–172. (Summary) **93b:14046** 14H15

— Conformal field theories with nonabelian symmetry group. *Phys. Lett. B* **277** (1992), *no.* 4, 423–434. (Toshitake Kohno) **93i:81228** 81T40 (14H30)

Ferrari, Gian Luigi (*with* Montanari, Ugo) The observation algebra of spatial pomsets. *CONCUR '91* (*Amsterdam*, 1991), 188–202, *Lecture Notes in Comput. Sci.*, 527, *Springer, Berlin*, 1991. (Summary) **93a:68038** 68Q10 (06A06, 08A70)

Ferrari, José A. On the homogeneity of space and time in special relativity. *J. Gen. Philos. Sci.* **22** (1991), *no.* 1, 169–171. (J. A. Lester) **93e:83005a** 83A05

Ferrari, Pablo Augusto (*with* Martínez, Servet A.; Picco, Pierre) Some properties of quasi-stationary distributions in the birth and death chains: a dynamical approach. (English summary) *Instabilities and nonequilibrium structures, III* (*Valparaíso*, 1989), 177–187, *Math. Appl.*, **64**, *Kluwer Acad. Publ., Dordrecht*, 1991. (E. Seneta) **93h:60111** 60J15 (60J80)

— Microscopic shocks in one-dimensional driven systems. (French summary) Multiscale phenomena (São Paulo, 1990). *Ann. Inst. H. Poincaré Phys. Théor.* **55** (1991), *no.* 2, 637–655. (Claudio Landim) **93e:82032** 82C22 (60K35, 82C32)

— (*with* Presutti, Errico; Scacciatelli, E.; Vares, M. E.) The symmetric simple exclusion process. I. Probability estimates. *Stochastic Process. Appl.* **39** (1991), *no.* 1, 89–105. (Mu Fa Chen) **93d:60164** 60K35

— (*with* Presutti, Errico; Scacciatelli, E.; Vares, M. E.) The symmetric simple exclusion process. II. Applications. *Stochastic Process. Appl.* **39** (1991), *no.* 1, 107–115. (Mu Fa Chen) **93d:60165** 60K35

— (*with* Martínez, Servet A.; Picco, Pierre) Existence of nontrivial quasi-stationary distributions in the birth-death chain. (English summary) *Adv. in Appl. Probab.* **24** (1992), *no.* 4, 795–813. (E. Seneta) **93i:60133** 60J15 (60J80)

— (*with* Ravishankar, Krishnamurthi) Shocks in asymmetric exclusion automata. (English summary) *Ann. Appl. Probab.* **2** (1992), *no.* 4, 928–941. (T. M. Liggett) **93k:60235** 60K35 (82C32)

— (*with* Martínez, Servet A.; Picco, Pierre) A lower bound for the memory capacity in the Potts-Hopfield model. *J. Statist. Phys.* **66** (1992), *no.* 5-6, 1643–1652. (Dimitri Petritis) **93d:82063** 82C32

— Shock fluctuations in asymmetric simple exclusion. *Probab. Theory Related Fields* **91** (1992), *no.* 1, 81–101. (T. M. Liggett) **93b:60228** 60K35 (82C21)

Ferrari, Pieralda A multidimensional model for discrete random variables. (Italian. English summary) *Statistica* (*Bologna*) **51** (1991), *no.* 2, 205–218. (Summary) **93a:62026** 62F10

Ferrari, Valeria Colliding waves in general relativity. *General relativity and gravitation*, 1989 (*Boulder, CO*, 1989), 3–20, *Cambridge Univ. Press, Cambridge*, 1990. (*see* **93b:83002**) 83C35

— (*with* Chandrasekhar, Subrahmanyan) On the nonradial oscillations of a star. III. A reconsideration of the axial modes. (English summary) *Proc. Roy. Soc. London Ser. A* **434** (1991), *no.* 1891, 449–457. (Summary) **93j:85001** 85A05

— (*with* Martellini, Maurizio) Scattering of massless particles and spacetime shifts. (English summary) *Nuclear Phys. B* **385** (1992), *no.* 3, 604–622. (Tevian Dray) **93j:83012** 83C10 (83C15, 83C35)

— (*with* Chandrasekhar, Subrahmanyan) On the nonradial oscillations of a star. IV. An application of the theory of Regge poles. (English summary) *Proc. Roy. Soc. London Ser. A* **437** (1992), *no.* 1899, 133–149. (Summary) **93j:85002** 85A05

Ferrario, Carlo (*with* Passerini, Arianna) Dynamical symmetries in constrained systems: a Lagrangian analysis. *J. Geom. Phys.* **9** (1992), *no.* 2, 121–148. (Yihren Wu) **93g:58048** 58F05 (70H33, 70H35)

— (*with* Passerini, Arianna) Compatibility conditions for gauge transformations. *Nuovo Cimento B* (11) **107** (1992), *no.* 3, 289–295. (Jesús Muciño) **93e:58044** 58E30 (58F05, 70G99, 70H30, 70H35, 81T13)

Ferraris, Marco (*with* Francaviglia, Mauro) Conservation laws in general relativity. Les Journées Relativistes (Cargèse, 1991). *Classical Quantum Gravity* **9** (1992), *suppl.*, S79–S95. (Jan Novotný) **93b:83021** 83C40

— (*with* Francaviglia, Mauro; Sinicco, I.) Covariant ADM formulation applied to general relativity. (English summary) *Nuovo Cimento B* (11) **107** (1992), *no.* 11, 1303–1311. (Agostino Prástaro) **93m:83003** 83C05

Ferraro, Rafael (*with* Castagnino, Mario A.; Sztrajman, Jorge) Hamiltonian diagonalization in curved space. *Quantum gravity* (*Moscow*, 1990), 391–403, *World Sci. Publishing, River Edge, NJ*, 1991. (Michael B. Mensky) **93i:81163** 81T20 (83C47)

— Path integral for the relativistic particle in curved space. *Phys. Rev. D* (3) **45** (1992), *no.* 4, 1198–1209. (E. Wieczorek) **93i:81118** 81S40 (81T20)

Ferrarotti, M. (*with* Vanhecke, Lieven) Locally symmetric spaces and the volume conjecture for geodesic balls. *Math. J. Toyama Univ.* **14** (1991), 89–93. (From the text) **93a:53029** 53C21 (53C35)

— (*with* Vanhecke, Lieven) Curvature invariants and symmetric spaces. (Italian summary) *Boll. Un. Mat. Ital. B* (7) **6** (1992), *no.* 3, 597–612. (Jürgen Berndt) **93i:53051** 53C35 (53C25)

Ferraz-Mello, S. (*with* Tsuchida, M.; Klafke, J. C.) On symmetrical planetary corotations. (English summary) *Celestial Mech. Dynam. Astronom.* **55** (1993), *no.* 1, 25–45. (Summary) **93k:70013** 70F07 (70F15)

Ferreira, Afonso G. (*with* Cosnard, Michel) Designing parallel nonnumerical algorithms. (English summary) *Parallel computing '91* (*London*, 1991), 3–18, *Adv. Parallel Comput.*, 4, *North-Holland, Amsterdam*, 1992. (*see* **93f:00016**) 68Q05 (68Q20, 68Q22)

— (*with* Dehne, Frank; Rau-Chaplin, Andrew) Parallel fractional cascading on hypercube multiprocessors. (English summary) *Comput. Geom.* **2** (1992), *no.* 3, 141–167. (Summary) **93i:68171** 68U05 (68Q22, 68Q25)

— (*with* Akl, Selim G.; Cosnard, Michel) Data-movement-intensive problems: two folk theorems in parallel computation revisited. (French summary) *Theoret. Comput. Sci.* **95** (1992), *no.* 2, 323–337. (Summary) **93a:68035** 68Q10

— (*with* Žerovnik, Janez) Bounding the probability of success of stochastic methods for global optimization. (English summary) *Comput. Math. Appl.* **25** (1993), *no.* 10-11, 1–8. (Summary) **93k:90061** 90C15

Ferreira, Arturo Vaz Giuseppe Vitali and the mathematical research at Bologna. *Geometry and complex variables* (*Bologna*, 1988/1990), 375–395, *Lecture Notes in Pure and Appl. Math.*, 132, *Dekker, New York*, 1991. (Umberto Bottazzini) **93d:01090** 01A73 (01A70, 30–03)

Ferreira, Erasmo (*with* Ananias Neto, Jorge) Movable singularities in sigma and Skyrme models. *J. Math. Phys.* **33** (1992), *no.* 3, 1185–1199. (Claus Montonen) **93g:81077** 81T10

— (*with* Ananias Neto, Jorge) Singularities in the solutions of the massive Skyrme model. *J. Math. Phys.* **33** (1992), *no.* 7, 2626–2632. (Summary) **93b:81305** 81V05 (58Z05, 81T13)

Ferreira, Hendrik C. (*with* Helberg, Albertus S. J.) On the complete decoding of constrained codes. (English summary) *IEEE Trans. Inform. Theory* **39** (1993), *no.* 1, 228–232. (Summary) **93m:94035** 94B35

Ferreira, Jorge (*with* Pereira, Ducival Carvalho) Existence of global weak solutions for equation of nonlinear vibrations. (English summary) *Bol. Soc. Paran. Mat.* (2) **11** (1990), *no.* 2, 79–90 (1992). (Summary) **93f:35151** 35L70 (35D05, 73D35)

— (*with* Pereira, Ducival Carvalho) On a nonlinear degenerate evolution equation with strong damping. *Internat. J. Math. Math. Sci.* **15** (1992), *no.* 3, 543–552. (A. S. Berdyshev) **93f:35156** 35L80

Ferreira, José da Silva Exponential decay for a nonlinear system of hyperbolic equations with locally distributed dampings. *Nonlinear Anal.* **18** (1992), *no.* 11, 1015–1032. (Sergio Spagnolo) **93h:35122** 35L55 (35L70)

Ferreira, L. A. (*with* Gomes, J. F.; Zimerman, A. H.) Jordan algebras in conformal field theories. *J. J. Giambiagi Festschrift*, 125–143, *World Sci. Publishing, River Edge, NJ*, 1990. (Mehmet Koca) **93g:81036** 81R10 (17C90, 81T40)

— (*with* Gomes, J. F.; Zimerman, A. H.; Schwimmer, Adam) Comments on two-loop Kac-Moody algebras. *Phys. Lett. B* **274** (1992), *no.* 1, 65–71. (Robert E. C. Perret) **93b:81093** 81R10 (17B65, 17B67, 81T40)

— (*with* Aratyn, Henrik; Constantinidis, C. P.; Gomes, J. F.; Zimerman, A. H.) Higher spin symmetries and w_∞ algebra in the conformal affine Toda model. *Phys. Lett. B* **281** (1992), *no.* 3-4, 245–253. (Summary) **93b:81238** 81T40 (81R10)

— (*with* Aratyn, Henrik; Gomes, J. F.; Zimerman, A. H.) A new deformation of W-infinity and applications to the two-loop WZNW and conformal affine Toda models. (English summary) *Phys. Lett. B* **293** (1992), *no.* 1-2, 67–71. (Summary) **93j:81027** 81R10 (17B68, 17B81, 81T40)

— (*with* Constantinidis, C. P.; Gomes, J. F.; Zimerman, A. H.) Connection between the affine and conformal affine Toda models and their Hirota solution. (English summary) *Phys. Lett. B* **298** (1993), *no.* 1-2, 88–94. (Henrik Aratyn) **93j:81088** 81T40 (58F07)

Ferreira, M. Luisa (*with* Perali, C. Federico) Barten group equivalence scales and Barten group indexes. (English summary) *Econom. Lett.* **40** (1992), *no.* 1, 13–18. 90A19

leal Ferreira, P. *see* **Leal Ferreira, P.**

garcía-Ferreira, Salvador *see* **García-Ferreira, Salvador**

fernández-Ferreirós Erviti, Ana *see* **Fernández-Ferreirós Erviti, Ana**

fernández-Ferreirós Erviti, Pilar *see* **Fernández-Ferreirós Erviti, Pilar**

Ferrell, Robert C. (*with* Traschen, Jennie) Quantum-mechanical scattering of charged black holes. *Quantum gravity (Moscow, 1990)*, 365–384, *World Sci. Publishing, River Edge, NJ*, 1991. (Summary) **93d:83050** 83C57 (83C47)

— (*with* Richardson, John L.; Long, Lyle N.) Unconditionally stable explicit algorithms for nonlinear fluid dynamics problems. (English summary) *J. Comput. Phys.* **104** (1993), *no.* 1, 69–74. (Summary) **93g:76088** 76M20 (76Rxx)

Ferrer, È. J. (*with* Fradkin, E. S.; de la Incera, V.) Thermodynamics of the neutral string gas in electromagnetic background. *Quantum gravity (Moscow, 1990)*, 553–563, *World Sci. Publishing, River Edge, NJ*, 1991. (Summary) **93d:83067** 83E30 (81T30)

Ferrer, J. R. *see* **Ferrer Villanueva, José R.**

Ferrer, Josep *see* **Ferrer Llop, Josep**

Ferrer, Sebastián (*with* Miller, Bruce R.) Coordinates for perturbed Keplerian systems with axial symmetry. *Celestial Mech. Dynam. Astronom.* **53** (1992), *no.* 1, 3–10. (Summary) **93a:70006** 70F05 (70F15, 70H05)

Ferrer Llop, Josep (*with* Puerta Sales, Fernando) Similarity of non-everywhere defined linear maps. *Linear Algebra Appl.* **168** (1992), 27–55. (Ion Zaballa) **93b:15010** 15A21 (15A04, 93B10)

Ferrero, Miguel A. (*with* Nowicki, Andrzej Władysław) Locally integral derivations and endomorphisms. *Math. J. Okayama Univ.* **33** (1991), 103–114. (Yasunori Ishibashi) **93b:13006** 13B10

— (*with* Paques, Antonio; Solecki, Andrzej) On cyclic quartic extensions with normal basis. (English summary) *Bull. Sci. Math.* (2) **116** (1992), *no.* 4, 487–500. (Xianke Zhang) **93i:13005** 13B05

— Closed and prime ideals in free centred extensions. *J. Algebra* **148** (1992), *no.* 1, 1–16. (M. M. Parmenter) **93i:16005** 16D30

— (*with* Lequain, Yves; Nowicki, Andrzej Władysław) A note on locally nilpotent derivations. *J. Pure Appl. Algebra* **79** (1992), *no.* 1, 45–50. (Summary) **93b:13007** 13B10

— (*with* Törner, Günter) Rings with annihilator chain conditions and right distributive rings. *Proc. Amer. Math. Soc.* **119** (1993), *no.* 2, 401–405. (Yonghua Xu) **93k:16044** 16P60 (16D30)

Ferrer Villanueva, José R. (*with* Sánchez Ruiz, Luis M.) Linearly convex spaces. (Spanish. English summary) *Proceedings of the XVth Portuguese-Spanish Conference on Mathematics, Vol. II (Portuguese) (Évora, 1990)*, 279–284, *Univ. Évora, Évora*, 1991. (From the text) **93b:46014** 46A16 (46A08)

— (*with* López Pellicer, M.; Sánchez Ruiz, Luis M.) Some properties of $C_S(K)$. (Serbo-Croatian summary) *Rad. Mat.* **7** (1991), *no.* 1, 99–102. (J. Schmets) **93a:46039** 46E10 (46A19, 54D60)

— (*with* López Pellicer, M.; Sánchez Ruiz, Luis M.) Some properties of continuous function spaces. *Portugal. Math.* **49** (1992), *no.* 1, 23–28. (J. Schmets) **93d:46040** 46E10 (46A19, 57N17)

Ferretti, G. (*with* Rajeev, S. G.) $\mathbf{CP}^{N-1}$ model with a Chern-Simons term. *Modern Phys. Lett. A* **7** (1992), *no.* 23, 2087–2094. (Summary) **93c:81137** 81T15 (81T18)

— Chiral symmetry breaking in matrix quantum mechanics. *Phys. Lett. B* **284** (1992), *no.* 3-4, 325–330. (Summary) **93g:81030** 81Q99 (81R40, 81V15)

— (*with* Rajeev, S. G.) Current algebra in three dimensions. (English summary) *Phys. Rev. Lett.* **69** (1992), *no.* 14, 2033–2036. (Summary) **93e:81038** 81R10 (17B67, 81T13)

Ferri, G. (*with* Faccio, M.; D'Amico, A.) A new numerical triangle showing links with Fibonacci numbers. *Fibonacci Quart.* **29** (1991), *no.* 4, 316–321. (From the text) **93d:11015** 11B37 (05A10, 11B39)

Ferri, Massimo *see* **Seminar: Geometry, 93f:53003**

Ferris, Michael C. (*with* Burke, James V.; Qian, Maijian) On the Clarke subdifferential of the distance function of a closed set. *J. Math. Anal. Appl.* **166** (1992), *no.* 1, 199–213. (Lionel Thibault) **93f:49018** 49J52 (58C20)

— (*with* Mangasarian, O. L.) Minimum principle sufficiency. *Math. Programming* **57** (1992), *no.* 1, *Ser. B*, 1–14. (Wu Li) **93c:90058** 90C25 (65K10)

Ferriz-Mas, A. (*with* Moreno-Insertis, F.) Shock wave propagation in a magnetic flux tube. (English summary) *Phys. Fluids A* **4** (1992), *no.* 12, 2700–2714. (Summary) **93h:76077** 76W05 (76L05)

Ferro, Giuseppe (*with* Romano, Giovanni; Rosati, Luciano) Theorems of the alternative in unilateral structural mechanics. *Unilateral problems in structural analysis, IV (Capri, 1989)*, 183–197, *Internat. Ser. Numer. Math.*, 101, *Birkhäuser, Basel*, 1991. (P. D. Panagiotopoulos) **93h:73029** 73K99 (73C50, 73V25, 90C48)

Ferro, Ruggero Strong Maehara and Takeuti type interpolation theorems for $L^{2+}_{k,k}$. *Rend. Sem. Mat. Univ. Padova* **85** (1991), 291–307. (Henry Africk) **93c:03040** 03C40 (03C75, 03C85)

— Strong Maehara and Takeuti type interpolation theorems for $L^{2+}_{k,k}$. *Rend. Sem. Mat. Univ. Padova* **86** (1991), 57–73 (1992). (Yu. G. Ventsov) **93j:03021** 03C75 (03C40)

Ferron, John R. A mathematical problem of rotary kiln reactors. (English summary) *Computational and applied mathematics, II (Dublin, 1991)*, 163–172, *North-Holland, Amsterdam*, 1992. (Summary) **93k:80016** 80A32

Ferry, D. K. (*with* Masani, P.; Randell, B.; Saeks, R.) The Wiener memorandum on the mechanical solution of partial differential equations. *Ann. Hist. Comput.* **9** (1987), *no.* 2, 183–197. 01A60 (65–03)

potier-Ferry, M. *see* **Potier-Ferry, M.**

Ferry, Steven C. (*with* Pedersen, Erik Kjaer) Some mildly wild circles in S^n arising from algebraic K-theory. *K-Theory* **4** (1991), *no.* 5, 479–499. (C. Bruce Hughes) **93a:57021** 57N15 (19J05, 57N35, 57Q12)

— (*with* Bryant, John Logan; Mio, Washington; Weinberger, Shmuel) Topology of homology manifolds. (English summary) *Bull. Amer. Math. Soc. (N.S.)* **28** (1993), *no.* 2, 324–328. (A. A. Ranicki) **93h:57034** 57P10 (57N15, 57P05, 57R67)

Ferscha, A. A Petri net approach for performance oriented parallel program design. *J. Parallel Distrib. Comput.* **15** (1992), *no.* 3, 188–206. 68Q90

Ferus, D. (*with* Pedit, Franz J.; Pinkall, Ulrich; Sterling, I.) Minimal tori in S^4. *J. Reine Angew. Math.* **429** (1992), 1–47. (Reiko Miyaoka) **93h:53008** 53A10 (53C42)

— *see also* **Global differential geometry and global analysis, 93b:53002**

Ferzaliev, A. S. Metric spaces of linear elements of associated connection. (Russian) *Trudy Geom. Sem. Kazan. Univ. No.* 21 (1991), 93–103. (D. I. Papuc) **93k:53074** 53C60

Fesenko, I. B. (*with* Vostokov, S. V.) Basic concepts in class field theory and reciprocity law. (Russian) *Mathematics today '90, No.* 6 (*Russian*), 8–31, "*Vishcha Shkola*", *Kiev*, 1990. (J. Browkin) **93m:11124** 11S31 (11A15, 11R37)

— Class field theory of multidimensional local fields of characteristic 0 with residue field of positive characteristic. (Russian) *Algebra i Analiz* **3** (1991), *no.* 3, 165–196; *translation in St. Petersburg Math. J.* **3** (1992), *no.* 3, 649–678. (Ernst-Wilhelm Zink) **93e:11146** 11S70 (11S31, 19F05)

— A multidimensional local theory of class fields. II. (Russian. Russian summary) *Algebra i Analiz* **3** (1991), *no.* 5, 168–189; *translation in St. Petersburg Math. J.* **3** (1992), *no.* 5, 1103–1126. (Ernst-Wilhelm Zink) **93k:11110** 11S70 (11S31, 19F05)

— (*with* Bekker, B. M.; Benna, D. G.; Vostokov, S. V.; Zhukov, I. B.; Smirnov, A. L.) The seminar "Constructive Class Field Theory". (Russian) *Algebra i Analiz* **4** (1992), *no.* 1, 177–193. (Štefan Porubský) **93i:11003** 11–02 (01A65, 01A72, 11R37, 11S31)

— Theory of local fields. Local class field theory. Multidimensional local class field theory. (Russian. Russian summary) *Algebra i Analiz* **4** (1992), *no.* 3, 1–41; *translation in St. Petersburg Math. J.* **4** (1993), *no.* 3, 403–438. (J. Browkin) **93i:11138** 11S31 (11S70)

Feshbach, M. (*with* Benson, David John) Stable splittings of classifying spaces of finite groups. *Topology* **31** (1992), *no.* 1, 157–176. (John C. Harris) **93d:55013** 55P42

Fessas, P. On pole placement with decentralized static feedback. (English summary) *Automatica J. IFAC* **29** (1993), *no.* 2, 465–467. 93B55 (93A14)

Fesseha, K. Evaluation of the propagator for a quadratic Hamiltonian with arbitrary ordering. *J. Math. Phys.* **33** (1992), *no.* 6, 2179–2184. (Introduction) **93b:81133** 81S40

Fet, Ya. I. ★ Анализ и синтез распределенных функциональных структур. (Russian. English and Russian summaries) [Analysis and synthesis of distributed functional structures] Препринт [Preprint], 942. *Akad. Nauk SSSR Sibirsk. Otdel., Vychisl. Tsentr, Novosibirsk*, 1991. 65 *pp.* (Summary) **93f:68025** 68Q05

Fetecău, Constantin Thermal influence on the propagation of cylindrical waves in simple fluids. (Romanian) *Stud. Cerc. Mec. Apl.* **49** (1990), *no.* 4, 343–353. (Summary) **93a:76034** 76D33 (76A10, 76E99, 80A20)

Fetterolf, Peter C. (*with* Anandalingam, G.) A Lagrangian relaxation technique for optimizing interconnection of local area networks. (English summary) *Oper. Res.* **40** (1992), *no.* 4, 678–688. 90C35

Fetzer, James H. *see* **Definitions and definability: philosophical perspectives, 93e:03004**

Feudel, Ulrike (*with* Jansen, Wolfgang) CANDYS/QA—a software system for qualitative analysis of nonlinear dynamical systems. (English summary) *Internat. J. Bifur. Chaos Appl. Sci. Engrg.* **2** (1992), *no.* 4, 773–794. (Summary) **93k:65001** 65–04 (34–04, 34C23, 58F14)

Feuer, Arie (*with* Goodwin, Graham C.) Linear periodic control: a frequency domain viewpoint. (English summary) *Systems Control Lett.* **19** (1992), *no.* 5, 379–390. (Summary) **93f:93085** 93C62

Feuerverger, Andrey (*with* Rahman, Sheikh) Some aspects of probability forecasting. *Comm. Statist. Theory Methods* **21** (1992), *no.* 6, 1615–1632. (Summary) **93a:62019** 62F03 (62F15, 62H17)

Feyel, Denis (*with* de La Pradelle, Arnaud) Capacités gaussiennes. (English summary) [Gaussian capacities] *Ann. Inst. Fourier (Grenoble)* **41** (1991), *no.* 1, 49–76. (Hélène Airault) **93b:60174** 60J45 (28A12, 31C15, 60B11, 60H07)

— (*with* de La Pradelle, Arnaud) Opérateurs linéaires et espaces de Sobolev sur l'espace de Wiener. (English summary) [Linear operators and Sobolev spaces on Wiener space] *C. R. Acad. Sci. Paris Sér. I Math.* **313** (1991), *no.* 11, 727–729. (T. V. Panchapagesan) **93b:46066** 46E50 (46G12, 47N99)

— (*with* de La Pradelle, Arnaud) Sur les processus browniens de dimension infinie. (English and French summaries) [Infinite-dimensional Brownian martingales] *C. R. Acad. Sci. Paris Sér. I Math.* **316** (1993), *no.* 2, 149–152. (Summary) **93j:60115** 60J65 (60H05)

— (*with* de La Pradelle, Arnaud) Démonstration géométrique d'une loi de tout ou rien. (English and French summaries) [A geometric proof of a zero-one law] *C. R. Acad. Sci. Paris Sér. I Math.* **316** (1993), *no.* 3, 229–232. (Summary) **93k:31009** 31C45 (46G12, 60H07)

Feynman, Richard *see* **Gleick, James**

Feyzioğlu, Ahmet K. A very simple proof that $\mathbf{Z}[(1+\sqrt{19}i)/2]$ is a principal ideal domain. (Turkish summary) *Doğa Mat.* **16** (1992), *no.* 1, 62–68. (W. Narkiewicz) **93d:11109** 11R04 (11R11, 13F10)

Fezoui, L. (*with* Ciccoli, M. C.; Désidéri, J.-A.) Efficient methods for inviscid nonequilibrium hypersonic flow fields. *Rech. Aérospat.* (*English Edition*) **1992**, *no.* 1, 37–52; *translated from Rech. Aérospat.* **1992**, *no.* 1, 37–52 (*French. English and French summaries*). (Summary) **93f:76066** 76M10 (76K05, 80–08, 80A32)

— (*with* Chargy, D.; Abgrall, Rémi; Larrouturou, Bernard) Conservative numerical schemes for multicomponent inviscid flows. *Rech. Aérospat.* (*English Edition*) **1992**, *no.* 2, 61–80; *translated from Rech. Aérospat.* **1992**, *no.* 2, 61–80 (*French. English and French summaries*). (Summary) **93g:76083** 76M20

Ffowcs Williams, J. E. Computing the sources of sound. (English summary) *Computational acoustics, Vol.* 1 (*Cambridge, MA*, 1991), 9–17, *North-Holland, Amsterdam*, 1993. (*see* **93j:76001**) 76Q05

Fiadeiro, José (*with* Sernadas, Amílcar) Logics of modal terms for systems specification. *J. Logic Comput.* **1** (1990), *no.* 2, 187–227. (Summary) **93a:68094** 68Q60 (03B45, 03B70)

— (*with* Maibaum, T.) Temporal reasoning over deontic specifications. *J. Logic Comput.* **1** (1991), *no.* 3, 357–395. (Summary) **93b:68046** 68Q60 (03B45, 03B70)

Fialka, Miloslav On the position of nodes of associated equations to the differential equation $y'' - q(t)y = r(t)$. *Acta Univ. Palack. Olomuc. Fac. Rerum Natur. Math.* **30** (1991), 107–119. (Moulay Lhassan Hbid) **93k:34071** 34C10 (34A30)

Fialkow, Lawrence A. (*with* Curto, Raúl E.) Recursiveness, positivity, and truncated moment problems. *Houston J. Math.* **17** (1991), *no.* 4, 603–635. (Vladimir Derkach) **93a:47016** 47A57 (42A70, 47A60, 47B35)

— Structural properties of elementary operators. (English summary) *Elementary operators and applications* (*Blaubeuren*, 1991), 55–113, *World Sci. Publishing, River Edge, NJ*, 1992. (F.-H. Vasilescu) **93i:47042** 47B47 (46L57, 47–02, 47A65)

— (*with* Eschmeier, Jörg; Harte, Robin E.; Magajna, Bojan; Mathieu, Martin; Smith, Roger R.) Open problems. *Elementary operators and applications* (*Blaubeuren*, 1991), 249–251, *World Sci. Publishing, River Edge, NJ*, 1992. (F.-H. Vasilescu) **93i:47043** 47B47 (01A67, 47–02)

— (*with* Salas, Héctor) Data exchange and permutation length. *Math. Mag.* **65** (1992), *no.* 3, 188–193. 68Q25

Fialowski, A. On the cohomology $H^*(L_k, L_s)$. *Studia Sci. Math. Hungar.* **27** (1992), *no.* 1-2, 189–200. (Jörg Feldvoss) **93k:17043** 17B56 (17B65, 17B66)

Fiat, Amos (*with* Foster, Dean P.; Karloff, Howard; Rabani, Yuval; Ravid, Yiftach; Vishwanathan, Sundar) Competitive algorithms for layered graph traversal. (English summary) 32*nd Annual Symposium on Foundations of Computer Science* (*San Juan, PR*, 1991), 288–297, *IEEE Comput. Soc. Press, Los Alamitos, CA*, 1991. (Summary) **93e:68100** 68R10 (05C85, 68Q25)

— (*with* Naor, Moni; Schmidt, Jeanette P.; Siegel, Alan) Nonoblivious hashing. (English summary) *J. Assoc. Comput. Mach.* **39** (1992), *no.* 4, 764–782. (Summary) **93h:68023** 68P05 (68Q25)

Fichera, Gaetano On elastic materials with memory. (Italian. English summary) *Atti Accad. Naz. Lincei Rend. Cl. Sci. Fis. Mat. Natur.* (8) **82** (1988), *no.* 3, 473–478 (1990). (Summary) **93a:73035** 73F15 (73G25)

— The Severi and Severi-Kneser theorems for analytic functions of several complex variables and their extensions. (Italian) Recent developments in mathematical analysis and its applications (Italian) (Bari, 1990). *Confer. Sem. Mat. Univ. Bari No.* 237-244 (1991), 13–25. (Daniele Struppa) **93k:32002** 32A10

— Is the Fourier theory of heat propagation paradoxical? (Italian summary) *Rend. Circ. Mat. Palermo* (2) **41** (1992), *no.* 1, 5–28. (B. Vujanović) **93f:80003** 80A05 (01A55)

Fichtenholz, G. M. ★ Differential- und Integralrechnung. III. (German) [Differential and integral calculus. III] Translated from the 1960 Russian original by Ludwig Boll and Konrad Gröger. Twelfth edition. Hochschulbücher für Mathematik [University Books for Mathematics], 63. *Johann Ambrosius Barth Verlag GmbH, Leipzig*, 1992. 564 *pp. ISBN* 3-335-00324-1 (Editors) **93h:26001** 26–01 (00A05)

Fichtner, Karl-Heinz (*with* Freudenberg, Wolfgang) Characterization of states of infinite boson systems. I. On the construction of states of boson systems. *Comm. Math. Phys.* **137** (1991), *no.* 2, 315–357. (W. Slowikowski) **93a:81056** 81Q99 (81S05, 81T05, 81V70)

— Random permutations of countable sets. *Probab. Theory Related Fields* **89** (1991), *no.* 1, 35–60. (Anton Wakolbinger) **93a:60157** 60K35 (60G55, 82B10)

Fidan, Zeynep An explicit Runge-Kutta-Bel'tyukov method for Volterra integral equation of second kind with weakly singular kernels. (English and Turkish summaries) *Doğa Mat.* **16** (1992), *no.* 2, 159–168. 65R20 (45L05)

Fidel, Manuel (*with* Brignole, Diana) Algebraic study of some nonclassical logics using product algebras. (Spanish) *Proceedings of the First "Dr. Antonio A. R. Monteiro" Congress on Mathematics* (*Spanish*) (*Bahía Blanca*, 1991), 23–38, *Univ. Nac. del Sur, Bahía Blanca*, 1991. (S. Rudeanu) **93j:06012** 06D30 (03G10)

Fidelis, Eugeniusz Tadeusz Iwiński and his work in the area of applications of mathematics (on the occasion of his 85th birthday). (Polish) *Wiadom. Mat.* **29** (1992), *no.* 2, 253–257. (Editors) **93m:01067** 01A70

Fiebig, Denzil G. (*with* McAleer, Michael; Bartels, Robert) Properties of ordinary least squares estimators in regression models with nonspherical disturbances. (English summary) *J. Econometrics* **54** (1992), *no.* 1-3, 321–334. (D. S. Tracy) **93k:62136** 62J05

Fiebig, Doris (*with* Fiebig, Ulf-Rainer) Covers for coded systems. (English summary) *Symbolic dynamics and its applications* (*New Haven, CT*, 1991), 139–179, *Contemp. Math.*, 135, *Amer. Math. Soc., Providence, RI*, 1992. (François Blanchard) **93m:54068** 54H20 (68Q45)

— Mixing properties of a class of Bernoulli-processes. *Trans. Amer. Math. Soc.* **338** (1993), *no.* 1, 479–493. (George L. O'Brien) **93j:60040** 60G10 (28D05)

Fiebig, Ulf-Rainer (*with* Fiebig, Doris) Covers for coded systems. (English summary) *Symbolic dynamics and its applications* (*New Haven, CT*, 1991), 139–179, *Contemp. Math.*, 135, *Amer. Math. Soc., Providence, RI*, 1992. (François Blanchard) **93m:54068** 54H20 (68Q45)

— Gyration numbers for involutions of subshifts of finite type. I. *Forum Math.* **4** (1992), *no.* 1, 77–108. (Fred W. Roush) **93g:58041** 58F03 (28D20, 54H20)

— Gyration numbers for involutions of subshifts of finite type. II. *Forum Math.* **4** (1992), *no.* 2, 187–215. (Fred W. Roush) **93g:58042** 58F03 (20B27, 28D20, 54H20, 58F20)

Fiedler, Bernold (*with* Mischaikow, Konstantin) Dynamics of bifurcations for variational problems with O(3) equivariance: a Conley index approach. *Arch. Rational Mech. Anal.* **119** (1992), *no.* 2, 145–196. (Christopher K. McCord) **93h:58110** 58F14 (35B32, 47H15, 58E09)

— (*with* Sandstede, Björn) Dynamics of periodically forced parabolic equations on the circle. (English summary) *Ergodic Theory Dynamical Systems* **12** (1992), *no.* 3, 559–571. (Summary) **93h:35103** 35K57 (35B40, 58F39)

— (*with* Vanderbauwhede, André) Homoclinic period blow-up in reversible and conservative systems. *Z. Angew. Math. Phys.* **43** (1992), *no.* 2, 292–318. (Stanisław Sędziwy) **93f:58209** 58F25 (34C25, 34C37, 58F22, 70K99)

Fiedler, Frank (*with* Došlý, Ondřej) A remark on Nehari-type oscillation criteria for selfadjoint linear differential equations. *Comment. Math. Univ. Carolin.* **32** (1991), *no.* 3, 447–462. (A. Halanay) **93d:34056** 34C10 (34A30)

Fiedler, Miroslav An extremal problem for the spectral radius of a graph. (English summary) Topological, algebraical and combinatorial structures. Frolík's memorial volume. *Discrete Math.* **108** (1992), *no.* 1-3, 149–158. (Jean H. Bevis) **93i:05075** 05C35 (05C50)

— (*with* Vavřín, Zdeněk) A subclass of symmetric Loewner matrices. *Linear Algebra Appl.* **170** (1992), 47–51. (Mihail Voicu) **93b:15026** 15A57 (15A09, 15A27)

— Structure ranks of matrices. (English summary) *Linear Algebra Appl.* **179** (1993), 119–127. (Thomas L. Markham) **93k:15001** 15A03

— (*with* Markham, Thomas L.) A characterization of the Moore-Penrose inverse. (English summary) *Linear Algebra Appl.* **179** (1993), 129–133. (R. Kala) **93m:15006** 15A09

— *see also* **Symposium: Combinatorics, Graphs and Complexity, 93i:05004**

Fiedler, Olga (*with* Römisch, Werner) Weak convergence of approximate solutions of random equations. (English summary) *Numer. Funct. Anal. Optim.* **13** (1992), *no.* 5-6, 495–511. (A. Nowak) **93m:60139** 60H25 (47H17, 47H40, 65J15, 65R20)

Fiedorowicz, Z. (*with* Burghelea, D.; Gajda, W.) Adams operations in Hochschild and cyclic homology of de Rham algebra and free loop spaces. *K-Theory* **4** (1991), *no.* 3, 269–287. (Ulrike Tillmann) **93b:55025a** 55S25 (19D55, 55N91, 58B05)

— (*with* Burghelea, D.; Gajda, W.) Erratum: "Adams operations in Hochschild and cyclic homology of de Rham algebra and free loop space". *K-Theory* **5** (1991), *no.* 3, 293. (Ulrike Tillmann) **93b:55025b** 55S25 (19D55, 55N91, 58B05)

— (*with* Schwänzl, R.; Vogt, Rainer M.) Hermitian A_∞ rings and their K-theory. *Adams Memorial Symposium on Algebraic Topology*, 1 (*Manchester*, 1990), 67–81, *London Math. Soc. Lecture Note Ser.*, 175, *Cambridge Univ. Press, Cambridge*, 1992. (Ulrike Tillmann) **93g:19009** 19G38 (55N15, 57N70)

Fieger, W. (*with* Bischoff, Wolfgang) Minimax estimators and Γ-minimax estimators for a bounded normal mean under the loss $l_p(\theta, d) = |\theta - d|^p$. *Metrika* **39** (1992), *no.* 3-4, 185–197. (Lionel Weiss) **93g:62016** 62C20 (62H12)

Field, David A. (*with* Bisset, Edward J.; Meyer, W. Weston; Glander, Donn W.) An application of continued fractions in elastohydrodynamic lubrication. *Comm. Anal. Theory Contin. Fractions* **1** (1992), 32–34. 11A55

Field, Hartry A nominalistic proof of the conservativeness of set theory. *J. Philos. Logic* **21** (1992), *no.* 2, 111–123. (George F. Schumm) **93d:03007** 03A05 (00A30)

— The conceptual contingency of mathematical objects. *Mind* **102** (1993), *no.* 406, 285–299. 00A30 (03A05)

Field, J. V. In memoriam: E. J. Aiton (1920–1991). *Arch. Internat. Hist. Sci.* **41** (1991), *no.* 127, 356–358. 01A70

Field, M. J. Local structure of equivariant dynamics. *Singularity theory and its applications, Part II* (*Coventry*, 1988/1989), 142–166, *Lecture Notes in Math.*, 1463, *Springer, Berlin*, 1991. (From the introduction) **93e:58157** 58F22 (58E40, 58F25)

— (*with* Richardson, Roger) Symmetry-breaking and branching patterns in equivariant bifurcation theory. I. *Arch. Rational Mech. Anal.* **118** (1992), *no.* 4, 297–348. (Ian Melbourne) **93f:58166** 58F14 (34C23, 58E09)

— (*with* Richardson, Roger) Symmetry breaking and branching patterns in equivariant bifurcation theory. II. *Arch. Rational Mech. Anal.* **120** (1992), *no.* 2, 147–190. (Ian Melbourne) **93h:58111** 58F14 (34C23, 58E09)

Fielder, Daniel C. (*with* Alford, Cecil O.) Pascal's triangle: top gun or just one of the gang? *Applications of Fibonacci numbers, Vol.* 4 (*Winston-Salem, NC*, 1990), 77–90, *Kluwer Acad. Publ., Dordrecht*, 1991. (Piero Filipponi) **93i:11021** 11B65 (05A10)

Fieldsteel, Adam Poorly approximated Z_2-cocycles for transformations with rational discrete spectrum. *Canad. Math. Bull.* **34** (1991), *no.* 3, 338–342. (G. R. Goodson) **93a:28013** 28D05

— (*with* Rudolph, Daniel J.) An ergodic transformation with trivial Kakutani centralizer. (English summary) *Ergodic Theory Dynamical Systems* **12** (1992), *no.* 3, 459–478. (Nathaniel Friedman) **93g:28014** 28D05

Fienberg, Stephen E. (*with* Douglas, Ruth) An overview of dependency models for cross-classified categorical data involving ordinal variables. (English summary) *Topics in statistical dependence* (*Somerset, PA*, 1987), 167–188, *IMS Lecture Notes Monograph Ser.*, 16, *Inst. Math. Statist., Hayward, CA*, 1990. (Summary) **93g:62079** 62H17

— (*with* Douglas, Ruth; Lee, Mei Ling Ting; Sampson, Allan R.; Whitaker, Lyn R.) Positive dependence concepts for ordinal contingency tables. (English summary) *Topics in statistical dependence* (*Somerset, PA*, 1987), 189–202, *IMS Lecture Notes Monograph Ser.*, 16, *Inst. Math. Statist., Hayward, CA*, 1990. (Summary) **93g:62080** 62H17

— (*with* Epstein, Leonardo D.) Bayesian estimation in multidimensional contingency tables. (English summary) *Bayesian analysis in statistics and econometrics* (*Bangalore*, 1988), 27–41, *Lecture Notes in Statist.*, 75, *Springer, New York*, 1992. (Summary) **93i:62050** 62H17 (62F15)

— A brief history of statistics in three and one-half chapters: a review essay. *Statist. Sci.* **7** (1992), *no.* 2, 208–225. 62–03

Fierros Palacios, Ángel Balance equations for a viscous fluid based on a Hamilton-type variational principle. (Spanish. English and Spanish summaries) *Rev. Mexicana Fís.* **38** (1992), *no.* 4, 518–531. (Summary) **93h:76004a** 76A02 (76M30)

— Obtaining the differential field equations for potential flow via a Hamilton variational principle. (Spanish. English and Spanish summaries) *Rev. Mexicana Fís.* **38** (1992), *no.* 5,

764–777. (Summary) **93j:76007** 76A02 (76M30)
— Errata: "Balance equations for a viscous fluid based on a Hamilton-type variational principle". (Spanish) *Rev. Mexicana Fís.* **38** (1992), *no.* 5, 862. (Summary) **93h:76004b** 76A02 (76M30)
Fieseler, Karl-Heinz (*with* Kaup, Ludger) Quasi-isomorphic perversities and obstruction theory for pseudomanifolds. *Singularities (Warsaw*, 1985), 169–193, *Banach Center Publ.*, 20, *PWN, Warsaw*, 1988. (M. Oka (Zbl 664:32006)) **93i:32052** 32S60 (55N30, 57R19)
— (*with* Kaup, Ludger) The vanishing invariants in intersection homology of complex spaces. *Singularities (Warsaw*, 1985), 195–205, *Banach Center Publ.*, 20, *PWN, Warsaw*, 1988. (M. Oka (Zbl 664:32007)) **93i:32053** 32S60 (55N30, 57R19)
— (*with* Barthel, Gottfried; Brasselet, Jean-Paul) Classes de Chern des variétés toriques singulières. (English and French summaries) [Chern classes of singular toric varieties] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 2, 187–192. (G. K. Sankaran) **93k:14029** 14F32 (14M25)
Fiestras-Janeiro, G. (*with* García-Jurado, I.) A new geometric approach to bimatrix games. (English summary) *Qüestiió* **15** (1991), *no.* 3, 299–306. (Summary) **93e:90071** 90D06 (90D44)
Fieux, Etienne Classes caractéristiques d'une Π-algèbre et suite spectrale en K-théorie bivariante. (English summary) [Characteristic classes of a Π-algebra and a spectral sequence in bivariant K-theory] *K-Theory* **5** (1991), *no.* 1, 71–96. (Summary) **93f:46103** 46L80 (19K99, 46L85)
Fife, Paul C. (*with* Hastings, Stuart P.; Lu, Chun Qing) An asymptotic and rigorous study of flames with reversible chain branching. *Asymptotic Anal.* **5** (1991), *no.* 1, 1–26. (Riccardo Ricci) **93a:80009** 80A25 (34E15, 80A32)
— (*with* Brauner, C.-M.; Namah, G.; Schmidt-Lainé, Cl.) Homogenization of propagative combustion processes. *Progress in partial differential equations: calculus of variations, applications (Pont-à-Mousson*, 1991), 139–149, *Pitman Res. Notes Math. Ser.*, 267, *Longman Sci. Tech., Harlow*, 1992. (G. Namah) **93m:80011** 80A25 (35B27, 35R35, 73B27)
Figala, Karin (*with* Harrison, John; Petzold, Ulrich) *De scriptoribus chemicis*: sources for the establishment of Isaac Newton's (al)chemical library. *The investigation of difficult things*, 135–179, *Cambridge Univ. Press, Cambridge*, 1992. (*see* **93g:01002**) 01A45
Figallo, Aldo (*with* Ziliani, Alicia) On the propositional system $\mathscr{A}$ of Sobociński. *Portugal. Math.* **49** (1992), *no.* 1, 11–22. (János Bagyinszki) **93g:03022** 03B50
Figari, R. (*with* Teta, A.) Effective potential and fluctuations for a boundary value problem on a randomly perforated domain. (English summary) *Lett. Math. Phys.* **26** (1992), *no.* 4, 295–305. (Summary) **93m:35192** 35R60 (35B27, 35J05, 73B27)
Figà-Talamanca, Alessandro (*with* Nebbia, Claudio) ★ Harmonic analysis and representation theory for groups acting on homogeneous trees. London Mathematical Society Lecture Note Series, 162. *Cambridge University Press, Cambridge*, 1991. x+151 *pp. ISBN* 0-521-42444-5 (Nobuaki Obata) **93f:22004** 22D12 (20E08, 22E50, 43A85, 43A90, 57M07)
Figol', V. V. (*with* Ptashnik, B. I.; Shtabalyuk, P. I.) Solvability, stability and regularization of a multipoint problem for hyperbolic equations. (Ukrainian. Russian summary) *Mathematical investigations (Ukrainian)*, 16–32, 115–116, *Zb. Nauk. Prats' L'viv. Mat. Tov., 1, L'viv. Mat. Tov., L'viv*, 1991. (Summary) **93i:35150** 35R25 (35B35, 35L25)
Figotin, Alexander The localization properties of a random steady flow on a lattice. *J. Statist. Phys.* **66** (1992), *no.* 5-6, 1599–1612. (Aernout C. D. van Enter) **93g:82055** 82B44 (82D30)
Figueira, Mário (*with* Dias, João-Paulo) On the existence of weak solutions for a semilinear singular hyperbolic system. *Rev. Mat. Univ. Complut. Madrid* **4** (1991), *no.* 1, 137–146. (Michael Oberguggenberger) **93g:35091** 35L60 (35D05, 35L45, 47N20)
Figueiredo, B. D. B. (*with* Soares, Ivano Damião; Tiomno, J.) Gravitational coupling of Klein-Gordon and Dirac particles to matter vorticity and spacetime torsion. *Classical Quantum Gravity* **9** (1992), *no.* 6, 1593–1617. (Yu. N. Obukhov) **93h:83030** 83D05 (81T20)
de Figueiredo, Djairo G. (*with* Gossez, Jean-Pierre) Strict monotonicity of eigenvalues and unique continuation. *Comm. Partial Differential Equations* **17** (1992), *no.* 1-2, 339–346. (V. S. Rabinovich) **93b:35098** 35P05 (35J25, 47F05)
— (*with* Clément, Philippe; Mitidieri, Enzo) Positive solutions of semilinear elliptic systems. (English summary) *Comm. Partial Differential Equations* **17** (1992), *no.* 5-6, 923–940. (A. P. Soldatov) **93i:35054** 35J65 (35B05, 35B45)
— (*with* Costa, David Goldstein; Srikanth, P. N.) The exact number of solutions for a class of ordinary differential equations through Morse index computation. *J. Differential Equations* **96** (1992), *no.* 1, 185–199. (Jean Mawhin) **93c:34050** 34B15 (58E05)
— (*with* Ruf, Bernhard) On the periodic Fučik spectrum and a superlinear Sturm-Liouville equation. (English summary) *Proc. Roy. Soc. Edinburgh Sect. A* **123** (1993), *no.* 1, 95–107. (Patricio L. Felmer) **93m:34027** 34B15 (34C25, 47H12, 47H15, 47N20)
Figueiredo, Isabel M. N. (*with* Trabucho, L.) A Galerkin approximation for linear elastic shallow shells. (English summary) *Comput. Mech.* **10** (1992), *no.* 2, 107–119. (L. P. Lebedev) **93i:73034** 73K15 (73C02, 73V20)
— (*with* Trabucho, L.) A Galerkin approximation for curved beams. (English summary) *Comput. Methods Appl. Mech. Engrg.* **102** (1993), *no.* 2, 235–253. (Juan M. Viaño Rey) **93k:73048** 73K05 (65N30, 73V25)
de Figueiredo, Rui J. P. (*with* Yu, Yao Qi) Convergence of the calculation of the innovation process. (English summary) *IEEE Trans. Inform. Theory* **39** (1993), *no.* 1, 283–288. (Summary) **93m:94009** 94A12 (60G35)
Figueroa, H. (*with* Cariñena, José F.) Moyal quantization and wave equations. (English summary) *Fortschr. Phys.* **40** (1992), *no.* 7, 615–630. (Nicolaas P. Landsman) **93k:81127** 81S30 (22E70, 81R20)
Figueroa-O'Farrill, José M. (*with* Mas, Javier; Ramos, Eduardo) Bi-Hamiltonian structure of the KP hierarchy and the W_{KP} algebra. *Phys. Lett. B* **266** (1991), *no.* 3-4, 298–302. (Allan P. Fordy) **93a:58079** 58F07 (17B65)
— (*with* Ramos, Eduardo; Mas, Javier) Integrability and bi-Hamiltonian structure of the even order SKdV hierarchies. *Rev. Math. Phys.* **3** (1991), *no.* 4, 479–501. (Summary) **93g:58058** 58F07 (35Q53)
— (*with* Ramos, Eduardo) Classical $N = 1$ W-superalgebras from Hamiltonian reduction. *Comm. Math. Phys.* **145** (1992), *no.* 1, 43–55. (Hugo H. Torriani) **93g:58059** 58F07 (17B81, 81R10)
— (*with* Schrans, Stany) The conformal bootstrap and super W algebras. *Internat. J. Modern Phys. A* **7** (1992), *no.* 3, 591–617. (Nigel B. Backhouse) **93b:81094** 81R10 (17B68)
— (*with* Ramos, Eduardo) The classical limit of W-algebras. *Phys. Lett. B* **282** (1992), *no.* 3-4, 357–364. (Olga Kravchenko) **93h:17067** 17B68 (58F07, 81R10)
— (*with* Mas, Javier; Ramos, Eduardo) On the two-boson picture of the KP hierarchy. (English summary) *Phys. Lett. B* **292** (1992), *no.* 3-4, 337–340. (Summary) **93f:58097** 58F07 (17B65)
— (*with* Ramos, Eduardo) Erratum: "Existence and uniqueness of the universal W algebra" [J. Math. Phys. **33** (1992), no. 3, 833–839; MR 92m:17042]. *J. Math. Phys.* **34** (1993), *no.* 2, 887. (Editors) **93k:17055** 17B68 (81R10)
Figwer, J. (*with* Niederliński, A.; Kasprzyk, J.) A new approach to the identification of linear discrete-time MISO systems. (English summary) *Identification and system parameter estimation* 1991, *Vol.* 1,2 (*Budapest*, 1991), 145–150, *IFAC Sympos. Ser.*, 3, *Pergamon, Oxford*, 1992. (*see* **93h:93009**) 93B30 (93C55)
Fijałkowski, Piotr On the solvability of nonlinear elliptic equations in Sobolev spaces. *Ann. Polon. Math.* **56** (1992), *no.* 2, 149–156. (Ricardo S. Kubrusly) **93h:35063** 35J60 (47H15, 47N20)
Fikar, Miroslav (*with* Jørgensen, Sten Bay) Multivariable constrained adaptive predictive control based on pole placement design. (English summary) *Mutual impact of computing power and control theory (Prague*, 1992), 215–220, *Czech. Acad. Sci., Prague*, 1992. (*see* **93f:93005**) 93C40 (93B55)
Fila, Marek (*with* Hulshof, Josephus; Quittner, Pavol) The quenching problem on the N-dimensional ball. *Nonlinear diffusion equations and their equilibrium states*, 3 (*Gregynog*, 1989), 183–196, *Progr. Nonlinear Differential Equations Appl.*, 7, *Birkhäuser Boston, Boston, MA*, 1992. (Editors) **93c:35078** 35K60 (35B05)
— (*with* Kawohl, Bernhard; Levine, Howard A.) Quenching for quasilinear equations. *Comm. Partial Differential Equations* **17** (1992), *no.* 3-4, 593–614. (Zhen Chao Cao) **93f:35101** 35K55 (35B05, 35B30, 35K60)
— Boundedness of global solutions of nonlinear diffusion equations. *J. Differential Equations* **98** (1992), *no.* 2, 226–240. (Roger Lui) **93g:35065** 35K55 (35B35, 35K57)
— (*with* Kawohl, Bernhard) Asymptotic analysis of quenching problems. *Rocky Mountain J. Math.* **22** (1992), *no.* 2, 563–577. (Victor A. Galaktionov) **93h:35093** 35K55 (35B40)
— (*with* Levine, Howard A.; Vázquez, Juan Luis) Stabilization of solutions of weakly singular quenching problems. *Proc. Amer. Math. Soc.* **119** (1993), *no.* 2, 555–559. (Yisong Yang) **93k:35146** 35K60 (35B65, 35D05)
Filali, M. The ideal structure of some Banach algebras. *Math. Proc. Cambridge Philos. Soc.* **111** (1992), *no.* 3, 567–576. (Paul Milnes) **93e:22005** 22B10 (43A15, 46H10)
Filanovskiĭ, I. A. (*with* Lyakhovskiĭ, V. D.) Reduction of representations of unitary Lie algebras. (Russian. English summary) Quasigroups and nonassociative algebras in physics (Russian) (Tartu, 1989). *Eesti NSV Tead. Akad. Füüs. Inst. Uurim. No.* 66 (1990), 213–222. (J. Lõhmus) **93b:17024** 17B10 (17B81, 22E70)
Filar, Jerzy A. (*with* Abbad, Mohammed) Perturbation and stability theory for Markov control problems. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 9, 1415–1420. (Summary) **93f:93132** 93E20 (90C40)
— (*with* Abbad, Mohammed; Bielecki, Tomasz R.) Algorithms for singularly perturbed limiting average Markov control problems. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 9, 1421–1425. (Masami Yasuda) **93i:93128** 93E20 (90C40)
— (*with* Sznajder, R.) Some comments on a theorem of Hardy and Littlewood. (English summary) *J. Optim. Theory Appl.* **75** (1992), *no.* 1, 201–208. (Onésimo Hernández Lerma) **93i:90110** 90C40 (40E05, 90D15, 93E05)
— (*with* Vrieze, O. J.) Weighted reward criteria in competitive Markov decision processes. (English summary) *Z. Oper. Res.* **36** (1992), *no.* 4, 343–358. (Heinz-Uwe Küenle) **93h:90101** 90C40 (90D15, 93E05)
Filar, Maria (*with* Szałajko, Krystyna) The limit problem for the equation $D_x^{2(m-1)}Pu = f$ in the strip. (Polish summary) *Opuscula Math.* **1991,** *no.* 10, 45–58. (From the introduction) **93d:35060** 35K35
— (*with* Szałajko, Krystyna) A boundary problem for a certain factorised elliptic equation. (Polish summary) *Opuscula Math.* **1991,** *no.* 10, 59–68. (From the introduction) **93d:35040** 35J40
Filaseta, Michael (*with* Trifonov, Ognian) On gaps between squarefree numbers. II. *J. London Math. Soc.* (2) **45** (1992), *no.* 2, 215–221. (S. W. Graham) **93h:11103** 11N25 (11B05)
Filatov, A. N. (*with* Gorelov, A. S.) Inertial manifolds of barotropic atmosphere equations. (Russian) *Dokl. Akad. Nauk SSSR* **318** (1991), *no.* 6, 1355–1358; *translation in Soviet Phys. Dokl.* **36** (1991), *no.* 6, 439–440. (From the text) **93d:35168** 35Q99 (76C05, 86A10)
— (*with* Gorelov, A. S.) Inertial manifolds for equations of barotropic atmosphere. *Russian J. Numer. Anal. Math. Modelling* **7** (1992), *no.* 1, 25–43. (Piotr Biler) **93f:35182** 35Q35 (58F39, 76D99, 76U05)
Filatov, O. P. Estimates for support functions of averaged differential inclusions. (Russian) *Mat. Zametki* **50** (1991), *no.* 3, 135–142, 160; *translation in Math. Notes* **50** (1991), *no.* 3-4, 970–975 (1992). (From the text) **93i:34025** 34A60 (34C29)
Filatova, S. A. (*with* Golubtsov, P. V.) Multivalued measurement-computer systems. (Russian. English and Russian summaries) *Mat. Model.* **4** (1992), *no.* 7, 79–94. (Summary) **93h:00013** 00A69 (68U05, 92J45)
Filep, László Structure and construction of fuzzy subgroups of a group. (English summary) *Fuzzy Sets and Systems* **51** (1992), *no.* 1, 105–109. (Summary) **93h:20080** 20N25 (04A72)
— Studies in fuzzy relations using triangular norms. (English summary) *Inform. Sci.* **67** (1993), *no.* 1-2, 127–135. (Summary) **93i:04003** 04A72
Filev, Dimiter (*with* Angelov, Plamen) Fuzzy optimal control. *Fuzzy Sets and Systems* **47** (1992), *no.* 2, 151–156. (J. J. Buckley) **93d:93050** 93C42 (04A72, 49K30, 90C70)
— (*with* Angelov, Plamen) Optimal control in a fuzzy environment. (English summary) *Yugosl. J. Oper. Res.* **2** (1992), *no.* 1, 33–43. (J. J. Buckley) **93i:93080** 93C42
— (*with* Yager, Ronald R.) Three models of fuzzy logic controllers. (English summary) *Cybernet. Systems* **24** (1993), *no.* 2, 91–114. 93C42
— (*with* Yager, Ronald R.) An adaptive approach to defuzzification based on level sets. (English summary) *Fuzzy Sets and Systems* **54** (1993), *no.* 3, 355–360. (Summary) **93m:04011** 04A72 (93C42)
roque da silva Filho, Antônio C. *see* **Roque Da Silva Filho, Antônio C.**

Filho, Clovis Perin *see* **Perin, Clovis**
drigo Filho, Elso *see* **Drigo Filho, Elso**
boschi Filho, H. *see* **Boschi Filho, H.**
karam Filho, José *see* **Karam Filho, José**
Filho, José Karam *see* **Karam Filho, José**
dos santos Filho, José Ruidival *see* **dos Santos Filho, José Ruidival**
lima-Filho, Paulo *see* **Lima-Filho, Paulo**

Filimonenkov, D. O. Error estimates for some piecewise-polynomial approximations in the plane. (Russian. Russian summary) *Zh. Vychisl. Mat. i Mat. Fiz.* **32** (1992), *no.* 10, 1545–1553; *translation in Comput. Math. Math. Phys.* **32** (1992), *no.* 10, 1391–1398 (1993). (Summary) **93i:65023** 65D07 (65G05, 73V05)

Filimonov, A. M. (*with* Kurchanov, P. F.; Myshkis, A. D.) Some unexpected results in the classical problem of vibrations of the string with n beads when n is large. (French summary) *C. R. Acad. Sci. Paris Sér. I Math.* **313** (1991), *no.* 13, 961–965. (Summary) **93a:73026** 73D30 (35L05, 70K99, 73K05, 73K12)

— Some unexpected results on the classical problem of vibrations of the string with N beads. The case of multiple frequencies. (English and French summaries) *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 8, 957–961. (P. Hagedorn) **93i:70003** 70D05 (34C15, 70J05, 73K12)

Filimonov, P. E. On the ordering in $\mathbf{R}^n$ of a set of permutations. (Russian. Russian summary) *Zh. Vychisl. Mat. i Mat. Fiz.* **32** (1992), *no.* 11, 1834–1836; *translation in Comput. Math. Math. Phys.* **32** (1992), *no.* 11, 1667–1669 (1993). (Alexander I. Barvinok) **93j:05003** 05A05 (68R05)

Filin, A. P. The almost physical field of Valentin Valentinovich Novozhilov. (Russian) *Issled. Teor. Plastin i Obolochek No.* 23 (1991), 3–16. 01A70

Filipczak, Małgorzata A note on intersections of certain topologies on $\mathbf{R}$. (Polish summary) *Acta Univ. Lodz. Folia Math. No.* 4 (1991), 37–40. (Jack B. Brown) **93a:28002** 28A05 (03E15, 54E52, 54H99)

— Two theorems on measurable sets and sets having the Baire property. *Czechoslovak Math. J.* **42(117)** (1992), *no.* 4, 631–634. (William Eames) **93i:28002** 28A12 (26A21)

Filipović, V. Ž. (*with* Kovačević, Branko) Direct adaptive control with the robust least squares method. (English summary) *Adaptive systems in control and signal processing*, 1989 (*Glasgow*), 455–459, *IFAC Sympos. Ser.*, 1990, *No.* 1, *Pergamon, Oxford*, 1990. (*see* **93j:93007**) 93E24

— Robust real-time power spectrum estimation. *Control '91, Vol.* 1, 2 (*Edinburgh*, 1991), 229–233, *IEE Conf. Publ. Ser.*, 332, *IEE, London*, 1991. (*see* **93h:93007**) 93E12

Filipp, K. V. (*with* Mustyatsè, A. F.) Propagation of waves on the surface of a fluid of finite little-changing depth. (Russian) *Mat. Issled. No.* 122, *Prikl. Zadach. Voln. Dinam.* (1991), 32–41, 121. (Vladan D. Djordjević) **93f:76014** 76B15

Filippakis, P. (*with* Filippakis, T.; Vavougios, D.; Jannussis, A.) Positive Wigner distribution function as the common base of new creation and annihilation operators in phase space. *Hadronic J.* **13** (1990), *no.* 1, 1–21. (Summary) **93b:81130** 81S30 (81R30)

Filippakis, T. (*with* Filippakis, P.; Vavougios, D.; Jannussis, A.) Positive Wigner distribution function as the common base of new creation and annihilation operators in phase space. *Hadronic J.* **13** (1990), *no.* 1, 1–21. (Summary) **93b:81130** 81S30 (81R30)

Filippas, Stathis (*with* Kohn, Robert V.) Refined asymptotics for the blowup of $u_t - \Delta u = u^p$. *Comm. Pure Appl. Math.* **45** (1992), *no.* 7, 821–869. (Victor A. Galaktionov) **93g:35066** 35K55 (35B40, 35K65)

Filippenko, I. (*with* Morris, F. L.) Domains for logic programming. *Theoret. Comput. Sci.* **94** (1992), *no.* 1, 63–99. (C. Masalagiu) **93m:68029** 68N17 (06A06, 68Q55)

Filippenko, V. I. On the spectrum of two-term differential operators in a space of vector functions. (Russian) *Functional analysis, No.* 29 (*Russian*), 122–128, *Ul'yanovsk. Gos. Ped. Inst., Ul'yanovsk*, 1989. (A. A. Shkalikov) **93j:47067** 47E05 (34L05, 47A10)

— Countable sets of commuting selfadjoint operators. (Russian) *Functional analysis, No.* 30 (*Russian*), 95–100, *Ul'yanovsk. Gos. Ped. Inst., Ul'yanovsk*, 1989. (From the text) **93k:47030** 47A70 (47A13, 47B25)

Filippi, Siegfried Direkte, spezielle, verallgemeinerte k-Schrittverfahren der Ordnung $p = 2k - m + 1$ bzw. $p = 2k - m$ für Differentialgleichungen der Form $y^{(m)} = f(x, y)$, $m \geq 2$. [Direct, special, generalized k-step methods of the order $p = 2k - m + 1$, resp. $p = 2k - m$ for differential equations of the form $y^{(m)} = f(x, y)$, $m \geq 2$] *Z. Angew. Math. Mech.* **72** (1992), *no.* 7, 310–312. 65L06

Filippin, C. G. (*with* Barbieri, R.; de Barcellos, C. S.) Numerical results for h- and p-convergences for the modified local Green's function method. (English summary) *Boundary element technology, VII* (*Albuquerque, NM*, 1992), 887–904, *Comput. Mech., Southampton*, 1992. (*see* **93b:65002**) 65N38 (65N12)

de Filippo, Sergio *see* **De Filippo, Sergio**

Filipponi, Piero (*with* Brugia, Odoardo; Mazzarella, Francesco) The ring of Fibonacci (Fibonacci "numbers" with matrix subscript). *Applications of Fibonacci numbers, Vol.* 4 (*Winston-Salem, NC*, 1990), 51–62, *Kluwer Acad. Publ., Dordrecht*, 1991. (Mao Hua Le) **93i:11012** 11B39 (11C20)

— (*with* Freitag, Herta T.) Conversion of Fibonacci identities into hyperbolic identities valid for an arbitrary argument. *Applications of Fibonacci numbers, Vol.* 4 (*Winston-Salem, NC*, 1990), 91–98, *Kluwer Acad. Publ., Dordrecht*, 1991. (Padmavathamma) **93j:11011** 11B39

— (*with* Horadam, Alwyn F.) Derivative sequences of Fibonacci and Lucas polynomials. *Applications of Fibonacci numbers, Vol.* 4 (*Winston-Salem, NC*, 1990), 99–108, *Kluwer Acad. Publ., Dordrecht*, 1991. (Pentti Haukkanen) **93i:11014** 11B39

— Waring's formula, the binomial formula, and generalized Fibonacci matrices. *Fibonacci Quart.* **30** (1992), *no.* 3, 225–231. (David Singmaster) **93h:11016** 11B39 (11B65)

— (*with* Di Porto, Adina) Generating M-strong Fibonacci pseudoprimes. *Fibonacci Quart.* **30** (1992), *no.* 4, 339–343. (Krassimir Atanassov) **93i:11013** 11B39

— (*with* Brugia, Odoardo; Horadam, Alwyn F.) A note on the improper use of a formula for Fibonacci numbers. (English summary) *Internat. J. Math. Ed. Sci. Tech.* **24** (1993), *no.* 1, 9–21. (Pentti Haukkanen) **93m:11013** 11B39 (11B65)

Filippov, A. È. On the solution of the exact (local) equation of the renormalization group. (Russian. English and Russian summaries) *Teoret. Mat. Fiz.* **91** (1992), *no.* 2, 320–333; *translation in Theoret. and Math. Phys.* **91** (1992), *no.* 2, 551–560. (Summary) **93m:82014** 82B28

Filippov, A. T. ★ Многоликий солитон. (Russian) [The many faces of the soliton] Second edition. Библиотечка "Квант" [Library "Kvant"], 48. "*Nauka*", *Moscow*, 1990. 288 *pp.* *ISBN* 5-02-014405-3 (Yuri Kivshar) **93e:35093** 35Q51 (01A55, 01A60, 35–01, 58F39, 58F40, 70Kxx, 76B25)

— (*with* Gangopadhyay, Debashis; Isaev, A. P.) Quantum discrete gauge models with bosonic and fermionic degrees of freedom. *Internat. J. Modern Phys. A* **7** (1992), *no.* 11, 2487–2507. (M. Carmeli) **93c:81108** 81T10

— (*with* Gangopadhyay, Debashis; Isaev, A. P.) Discrete "strings" and gauge model of three confined relativistic particles. *Internat. J. Modern Phys. A* **7** (1992), *no.* 15, 3639–3663. (Aleksandar R. Miković) **93k:81176** 81T30 (81V05)

— (*with* Isaev, A. P.; Kurdikov, A. B.) Para-Grassmann analysis and quantum groups. *Modern Phys. Lett. A* **7** (1992), *no.* 23, 2129–2141. (Arne Schirrmacher) **93m:81059** 81R50 (15A75, 17B37)

Filippov, G. F. (*with* Blokhin, A. L.) Effective Hamiltonian within the microscopic unitary nuclear model. I. Coherent-state restriction technique for microscopic Hamiltonian. *J. Math. Phys.* **32** (1991), *no.* 7, 1683–1695. (David J. Rowe) **93b:81309** 81V35 (22E70, 81R05)

Filippov, M. G. On the reducibility of systems of linear differential equations with quasiperiodic coefficients. (Russian. Russian summary) *Nonlinear problems in the theory of differential equations* (*Russian*), 112–117, *Akad. Nauk Ukrain. SSR, Inst. Mat., Kiev*, 1991. (F. Neuman) **93k:34009** 34A20 (34C20)

— On the reducibility of linear systems of differential equations with quasiperiodic coefficients. (Russian. Russian summary) *Asymptotic integration of nonlinear equations* (*Russian*), 119–123, *Akad. Nauk Ukrainy, Inst. Mat., Kiev*, 1992. (*see* **93m:00016**) 34A30 (34C20)

Filippov, S. I. (*with* Lotfullin, M. V.) Modeling of interfaces in problems on the flow of a heavy fluid around a wing profile. (Russian) *Prikl. Mekh. Tekhn. Fiz.* **1992**, *no.* 4, 84–89; *translation in J. Appl. Mech. Tech. Phys.* **33** (1992), *no.* 4, 552–557 (1993). (From the text) **93j:76012** 76B05 (76B15)

Filippov, V. I. Subsystems of the Haar system in the spaces E_φ with $\liminf_{t\to\infty} \varphi(t)/t = 0$. (Russian. Russian summary) *Mat. Zametki* **51** (1992), *no.* 6, 97–106, 159; *translation in Math. Notes* **51** (1992), *no.* 5-6, 593–599. (I. Ya. Novikov) **93j:46033** 46E30 (42C10, 42C30)

Filippov, V. M. (*with* Tishchenko, A. N.) The direct variational method for operator equations $u^{(k)} + C^m u = f$, $k = 1, 2$; $m \in \mathbf{N}$. (Russian. Russian summary) *Differentsial'nye Uravneniya* **28** (1992), *no.* 9, 1642–1643, 1656. (Summary) **93k:34134** 34G10 (34A12, 47A50, 47N20)

Filippov, V. T. Binary Lie algebras without strong zero divisors. *Algebra and Logic* **30** (1991), *no.* 2, 149–166 (1992). (Yuri Medvedev) **93b:17087** 17D10

— Binary Lie algebras without strong zero divisors [MR 93b:17087]. (Russian. Russian summary) The English translation has been reviewed. *Algebra i Logika* **30** (1991), *no.* 2, 226–251, 255. 17D10

— Local finiteness of Mal'tsev algebras. (Russian) *Dokl. Akad. Nauk SSSR* **319** (1991), *no.* 3, 574–577; *translation in Soviet Math. Dokl.* **44** (1992), *no.* 1, 179–182. (Vesselin Drensky) **93c:17058** 17D10

— On the Lie center of semisimple binary-Lie algebras. (Russian) *Sibirsk. Mat. Zh.* **32** (1991), *no.* 3, 166–171; *translation in Siberian Math. J.* **32** (1991), *no.* 3, 490–495 (1992). (D. B. Persits) **93f:17049** 17D99 (17D10)

— On the R-center of Mal'tsev algebras. (Russian) *Sibirsk. Mat. Zh.* **32** (1991), *no.* 6, 169–177, 206; *translation in Siberian Math. J.* **32** (1991), *no.* 6, 1038–1044 (1992). (S. M. Vovsi) **93c:17057** 17D10

Filippov, V. V. On an investigation of ordinary differential equations "with respect to the first approximation". (Russian. Russian summary) *Differentsial'nye Uravneniya* **28** (1992), *no.* 8, 1351–1355, 1468; *translation in Differential Equations* **28** (1992), *no.* 8, 1096–1100 (1993). (J. Jarník) **93m:34012** 34A34

— Asymptotics of solutions of quasilinear ordinary differential equations. (Russian. Russian summary) *Differentsial'nye Uravneniya* **28** (1992), *no.* 10, 1747–1751, 1839; *translation in Differential Equations* **28** (1992), *no.* 10, 1425–1428 (1993). (From the text) **93k:34024** 34A34 (34C99, 34E99)

Filippova, O. L. Stability of plane MHD shock waves in an ideal gas. *Fluid Dynamics* **26** (1991), *no.* 6, 897–904 (1992); *translated from Izv. Akad. Nauk SSSR Mekh. Zhidk. Gaza* **1991**, *no.* 6, 128–136 (*Russian*). (From the text) **93d:76076** 76W05 (76L05)

Filippova, T. F. (*with* Kurzhanskiĭ, A. B.) On the set-valued calculus in problems of viability and control for dynamic processes: the evolution equation. *Analyse non linéaire* (*Perpignan*, 1987), 339–363, *Univ. Montréal, Montreal, PQ*, 1989. (*see* **93h:49003**) 93B03 (34A60, 34H05, 49K15)

— (*with* Kurzhanskiĭ, A. B.) The method of singular perturbations for differential inclusions. (Russian) *Dokl. Akad. Nauk SSSR* **321** (1991), *no.* 3, 454–459; *translation in Soviet Math. Dokl.* **44** (1992), *no.* 3, 705–710. (Iordan I. Slavov) **93a:34022** 34A60 (34E15, 49K24, 93C41)

— (*with* Kurzhanskiĭ, A. B.) Perturbation techniques for viability and control. (English summary) *System modelling and optimization* (*Zurich*, 1991), 394–403, *Lecture Notes in Control and Inform. Sci.*, 180, *Springer, Berlin*, 1992. (*see* **93e:90003**) 49J24 (93B03)

— A note on the evolution property of the assembly of viable solutions to a differential inclusion. (English summary) *Comput. Math. Appl.* **25** (1993), *no.* 2, 115–121. (Michel Valadier) **93k:34037** 34A60 (34H05, 49J24)

Filippovich, A. P. (*with* Kobozeva, A. A.) Frontal and profile methods for solving systems of linear algebraic equations in mixed finite-element methods. (Russian. Russian summary) *Zh. Vychisl. Mat. i Mat. Fiz.* **32** (1992), *no.* 11, 1697–1708; *translation in Comput. Math. Math. Phys.* **32** (1992), *no.* 11, 1523–1532 (1993). 65F99

Filk, Thomas Field theory on the quantum plane. (English summary) *Nonperturbative methods in low-dimensional quantum field theories* (*Debrecen*, 1990), 437–448, *World Sci. Publishing, River Edge, NJ*, 1991. (Summary) **93i:81229** 81T40 (81R50)

— Noncommutative random walks. Lattice 90 (Tallahassee, FL, 1990). *Nuclear Phys. B Proc. Suppl.* **20** (1991), 762–765. (Summary) **93d:82046** 82B41 (60J15, 81R50)

Fill, James Allen Time to stationarity for a continuous-time Markov chain. (English summary) *Probab. Engrg. Inform. Sci.* **5** (1991), *no.* 1, 61–76. (David J. Aldous) **93h:60117** 60J27

— (*with* Diaconis, Persi; Pitman, James W.) Analysis of top to random shuffles. (English summary) *Combin. Probab. Comput.* **1** (1992), *no.* 2, 135–155. (Robin Pemantle) **93f:60011** 60C05 (20C30, 60B15)

— Strong stationary duality for continuous-time Markov chains. I. Theory. *J. Theoret. Probab.* **5** (1992), *no.* 1, 45–70. (David J. Aldous) **93b:60163** 60J27 (60G40)

Fillatre, O. Identification of weakly nonlinear dynamic systems by means of random excitations. *Rech. Aérospat. (English Edition)* **1992**, *no.* 3, 11–22; *translated from Rech. Aérospat.* **1992**, *no.* 3, 11–22 (*French. English and French summaries*). (Summary) **93h:73027** 73K35 (34F05, 70L05, 93B30, 93E12)

Filliman, P. The volume of duals and sections of polytopes. (English summary) *Mathematika* **39** (1992), *no.* 1, 67–80. (Keith Ball) **93g:52005** 52A38

— Rigidity and the Alexandrov-Fenchel inequality. *Monatsh. Math.* **113** (1992), *no.* 1, 1–22. (Robert Connelly) **93c:52020** 52C25 (52A39, 52B05, 52B11)

Filo, Ján L^∞-estimate for nonlinear diffusion equation. *Appl. Anal.* **37** (1990), *no.* 1-4, 49–61. (Ross Pinsky) **93a:35086** 35K60 (35B45)

Fil'shtinskii, M. L. (*with* Parton, V. Z.) A stationary wave process in a piezo-electric layer and half-layer that are weakened by tunnel cuts (antiplanar deformation). (Russian. Russian summary) *Prikl. Mat. Mekh.* **56** (1992), *no.* 3, 510–518; *translation in J. Appl. Math. Mech.* **56** (1992), *no.* 3, 424–431. (Summary) **93f:73091** 73R05 (73C02, 73D99, 73M25)

Filter, Wolfgang (*with* Abramovich, Yu. A.) A remark on the representation of vector lattices as spaces of continuous real-valued functions. (English summary) Positive operators and semigroups on Banach lattices (Curaçao, 1990). *Acta Appl. Math.* **27** (1992), *no.* 1-2, 23–26. (W. A. Feldman) **93k:46003** 46A40 (46E05)

— Representations of Riesz spaces as spaces of measures. I. *Czechoslovak Math. J.* **42(117)** (1992), *no.* 3, 415–432. (C. B. Huijsmans) **93j:46009** 46A40 (28A33, 46E27)

— Representations of Riesz spaces as spaces of measures. II. *Czechoslovak Math. J.* **42(117)** (1992), *no.* 4, 635–648. (C. B. Huijsmans) **93j:46010** 46A40 (28A33, 46E27)

— Measurability and decomposition properties in the dual of a Riesz space. Measure theory (Oberwolfach, 1990). *Rend. Circ. Mat. Palermo* (2) *Suppl. No.* 28 (1992), 21–33. (C. B. Huijsmans) **93i:46016** 46A40 (28A20)

Finance, Jean-Pierre (*with* Perrin, Guy-René) Communication relations: a paradigm for parallel program design. (English summary) *Sci. Comput. Programming* **19** (1992), *no.* 1, 25–59. 68N17 (68Q22)

Finardi, M. (*with* Badii, R.; Broggi, G.) Unfolding complexity and modelling asymptotic scaling behavior. (English summary) *Chaos, order, and patterns* (*Lake Como*, 1990), 259–275, *NATO Adv. Sci. Inst. Ser. B Phys.*, 280, *Plenum, New York*, 1991. (Summary) **93k:58075** 58F03

Finashin, S. M. Finite differences of the Rokhlin function. (Russian. English summary) *Zap. Nauchn. Sem. Leningrad. Otdel. Mat. Inst. Steklov.* (*LOMI*) **193** (1991), *Geom. i Topol.* 1, 143–148, 163. (P. S. Landweber) **93d:57050** 57R15 (57R90)

Finbow, A. (*with* Hartnell, Bert L.; Nowakowski, Richard J.) A characterization of well covered graphs of girth 5 or greater. (English summary) *J. Combin. Theory Ser. B* **57** (1993), *no.* 1, 44–68. (E. J. Janse van Rensburg) **93k:05126** 05C70

Finch, Steven R. Patterns in 1-additive sequences. (English summary) *Experiment. Math.* **1** (1992), *no.* 1, 57–63. (Les Davison) **93h:11014** 11B13

— On the regularity of certain 1-additive sequences. *J. Combin. Theory Ser. A* **60** (1992), *no.* 1, 123–130. (Rudolf Lidl) **93c:11009** 11B39 (11B83)

Finck, Tilo (*with* Heinig, Georg; Rost, Karla) An inversion formula and fast algorithms for Cauchy-Vandermonde matrices. (English summary) *Linear Algebra Appl.* **183** (1993), 179–191. (Zeng Rong Chen) **93m:65034** 65F05 (15A09)

Findley, David F. Counterexamples to parsimony and BIC. *Ann. Inst. Statist. Math.* **43** (1991), *no.* 3, 505–514. (J. Panaretos) **93e:62061** 62F07 (62J15)

Fine, Arthur Resolving the measurement problem. Reply to A. Stairs: "On Arthur Fine's solution to the measurement problem" [Found. Phys. Lett. **5** (1992), no. 2, 105–124; MR 93d:81020]. *Found. Phys. Lett.* **5** (1992), *no.* 2, 125–139. (Lawrence Sklar) **93d:81021** 81P15

Fine, Benjamin (*with* Rosenberger, Gerhard) On restricted Gromov groups. *Comm. Algebra* **20** (1992), *no.* 8, 2171–2181. (Graham A. Niblo) **93j:20078** 20F32 (20E06)

Fine, Dana S. Quantum Yang-Mills on a Riemann surface. *Comm. Math. Phys.* **140** (1991), *no.* 2, 321–338. (Jan Segert) **93a:58034** 58D30 (58D19, 58D20, 58Z05, 81T13)

Fine, J. M. (*with* Sharp, P. W.) Some Nyström pairs for the general second-order initial value problem. (English summary) *J. Comput. Appl. Math.* **42** (1992), *no.* 3, 279–291. (Summary) **93h:65097** 65L06

— (*with* Sharp, P. W.) A contrast of direct and transformed Nyström pairs. (English summary) *J. Comput. Appl. Math.* **42** (1992), *no.* 3, 293–308. (Summary) **93h:65098** 65L06

Fine, Jonathan Another proof of Sumihiro's theorem on torus embeddings. *Duke Math. J.* **69** (1993), *no.* 1, 243–245. (From the introduction) **93k:14069** 14M25

Finesso, Lorenzo Estimation of the order of a finite Markov chain. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, I* (*Kobe*, 1991), 643–645, *Mita, Tokyo*, 1992. (*see* **93g:93005**) 93E10

— (*with* Baras, John S.) Consistent estimation of the order of hidden Markov chains. (English summary) *Stochastic theory and adaptive control* (*Lawrence, KS*, 1991), 26–39, *Lecture Notes in Control and Inform. Sci.*, 184, *Springer, Berlin*, 1992. (Summary) **93h:62154** 62M05

Finet, Catherine Ensembles lacunaires dans le dual d'hypergroupes compacts. [Lacunary sets in the dual of compact hypergroups] *Séminaire d'Initiation à l'Analyse, Exp. No.* 11, 7 *pp.*, *Publ. Math. Univ. Pierre et Marie Curie*, 95, *Univ. Paris VI, Paris*, 199?. (*see* **93d:00039**) 43A62 (43A46)

— (*with* Tardivel-Nachef, Valérie) A variant of a Yamaguchi's result. *Hokkaido Math. J.* **21** (1992), *no.* 3, 483–489. (Nakhlé Asmar) **93k:43004** 43A17

— Lacunary sets for groups and hypergroups. (English summary) *J. Austral. Math. Soc. Ser. A* **54** (1993), *no.* 1, 39–60. (Françoise Lust-Piquard) **93j:43012** 43A46 (43A40, 43A62, 43A77)

Finizio, Norman J. (*with* Anderson, Ian) A generalization of a construction of E. H. Moore. (English summary) *Bull. Inst. Combin. Appl.* **6** (1992), 39–46. (Summary) **93g:05058** 05C20

— (*with* Anderson, Ian) An infinite class of cyclic triplewhist tournaments. (English summary) Proceedings of the Twenty-third Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, FL, 1992). *Congr. Numer.* **91** (1992), 7–18. (Summary) **93j:05064** 05C20

Fink, A. M. (*with* Mitrinović, Dragoslav S.; Pečarić, Josip E.) ★ Inequalities involving functions and their integrals and derivatives. Mathematics and its Applications (East European Series), 53. *Kluwer Academic Publishers Group, Dordrecht*, 1991. xvi+587 *pp. ISBN* 0-7923-1330-5 (Ion Raşa) **93m:26036** 26D10 (34A40, 45K05)

— (*with* Bass, Ludvik) Hidden variables of longevity under almost periodic influences. *J. Differential Equations* **94** (1991), *no.* 2, 292–314. (H. I. Freedman) **93a:92009** 92D25 (34C27)

— The radial Laplacian Gel'fand problem. *Delay and differential equations* (*Ames, IA*, 1991), 93–98, *World Sci. Publishing, River Edge, NJ*, 1992. (Man Kam Kwong) **93g:34029** 34B15 (34L40, 35J60)

— (*with* Gatica, Juan A.) For every answer there are two questions. *Math. Mag.* **65** (1992), *no.* 3, 182–185. (Juan-Enrique Martínez-Legaz) **93d:90061** 90C30 (49N15)

— Crinkled functions and intersections with polynomials. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 3, 797–799. (Doru Ştefănescu) **93i:26002** 26A15 (26A24, 26C05, 26D10)

— *see also* **Delay and differential equations, 93a:34003**

martínez Finkelshtein, Andrei *see* **Martínez Finkelshtein, Andrei**

Finkel'shtein, M. S. A restoration process with dependent cycles. (Russian. Russian summary) *Avtomat. i Telemekh.* **1992**, *no.* 7, 183–189; *translation in Automat. Remote Control* **53** (1992), *no.* 7, *part* 2, 1115–1120. (Summary) **93f:90080** 90B25

Finkelstein, David Higher-order quantum logics. (English summary) Quantum logics, Part I (Gdańsk, 1990). *Internat. J. Theoret. Phys.* **31** (1992), *no.* 9, 1627–1638. (Summary) **93f:03041** 03G12 (81P10)

Finkelstein, J. Covariant collapse of the state vector and realism. *Found. Phys. Lett.* **5** (1992), *no.* 4, 383–392. 81P10

Finkelstein, Larry (*with* Cooperman, Gene) A strong generating test and short presentations for permutation groups. Computational group theory, Part 2. *J. Symbolic Comput.* **12** (1991), *no.* 4-5, 475–497. (Mark R. Jerrum) **93d:68037** 68Q40 (20B40, 68Q20)

— (*with* Cooperman, Gene) Random algorithms for permutation groups. (English summary) *CWI Quarterly* **5** (1992), *no.* 2, 107–125. (J. D. Dixon) **93k:20005** 20B40 (20H30, 68Q22)

— (*with* Cooperman, Gene) New methods for using Cayley graphs in interconnection networks. (English summary) *Discrete Appl. Math.* **37/38** (1992), 95–118. (Max Garzon) **93j:05077** 05C25 (05C85, 20B40, 68M10)

Finkelstein, Robert J. Modular invariance of the propagator of an extended particle. *J. Math. Phys.* **33** (1992), *no.* 3, 1141–1147. (From the introduction) **93a:81064** 81R10 (11F22, 17B67, 81T99)

— (*with* Chan, Fuk-Lok; Lau, Kim-Ming) Grassmannian Legendre functions. *J. Math. Phys.* **33** (1992), *no.* 8, 2688–2696. (Summary) **93f:33010** 33C50

— q deformations of the oscillator. (English summary) *J. Math. Phys.* **33** (1992), *no.* 12, 4259–4266. (A. U. Klimyk) **93j:81050** 81S05 (33D80)

Finley, J. D., III (*with* Plebański, Jerzy) Equations for twisting, type-N, vacuum Einstein spaces without a need for Killing vectors. *J. Geom. Phys.* **8** (1992), *no.* 1-4, 173–193. (Garry Ludwig) **93f:83019** 83C20 (83C15)

Finn, John M. (*with* Lau, Yun-Tung) Dynamics of a three-dimensional incompressible flow with stagnation points. (English summary) *Phys. D* **57** (1992), *no.* 3-4, 283–310. (Helmut Rüssmann) **93h:58133** 58F27 (58F14, 76C99)

Finner, Helmut A generalization of Hölder's inequality and some probability inequalities. (English summary) *Ann. Probab.* **20** (1992), *no.* 4, 1893–1901. (Moshe Shaked) **93k:60047** 60E15 (26D15)

Finol, Carlos E. (*with* Echandia, Ventura; Maligranda, Lech) Interpolation of some spaces of Orlicz type. I. (English summary) *Bull. Polish Acad. Sci. Math.* **38** (1990), *no.* 1-12, 125–134. (Lars Erik Persson) **93i:46141** 46M35 (46B70, 46E30)

— (*with* Maligranda, Lech; Persson, Lars-Erik) Reiteration for and exact relations between some real interpolation spaces. *Function spaces* (*Poznań*, 1989), 238–247, *Teubner-Texte Math.*, 120, *Teubner, Stuttgart*, 1991. (N. Ya. Kruglyak) **93d:46128** 46M35

Finster, Mark (*with* Carriere, Jacques) Statistical theory for the ratio model of paired comparisons. (English summary) *J. Math. Psych.* **36** (1992), *no.* 3, 450–460. 92J45 (62J15, 62P15)

Fintushel, Ronald (*with* Stern, Ronald John) Invariants for homology 3-spheres. *Geometry of low-dimensional manifolds*, 1 (*Durham*, 1989), 125–148, *London Math. Soc. Lecture Note Ser.*, 150, *Cambridge Univ. Press, Cambridge*, 1990. (Terry Lawson) **93e:57025** 57N10 (57N13, 57R57)

— (*with* Stern, Ronald John) Integer graded instanton homology groups for homology three-spheres. *Topology* **31** (1992), *no.* 3, 589–604. (Terry Lawson) **93f:57018** 57N10 (57N13)

— (*with* Stern, Ronald John) 2-torsion instanton invariants. *J. Amer. Math. Soc.* **6** (1993), *no.* 2, 299–339. (Ian Hambleton) **93f:57038** 57R55 (57N13, 58D29)

Finzi Vita, S. Numerical shape optimization for relaxed Dirichlet problems. (English summary) *Math. Models Methods Appl. Sci.* **3** (1993), *no.* 1, 19–34. (Summary) **93j:49042** 49Q10 (73K40, 73V05)

Fiocchi, Cristina Variation of order α and Hausdorff dimension of Cantor sets. (Italian) *Atti Sem. Mat. Fis. Univ. Modena* **39** (1991), *no.* 2, 649–667. (U. D'Ambrosio) **93e:28009** 28A78 (49Q20)

Fiol, M. L. (*with* Fiol, Miguel A.; Yebra, J. L. A.) When the arc-colored line digraph of a Cayley colored digraph is again a Cayley colored digraph. (English summary) *Ars Combin.* **34** (1992), 65–73. (Summary) **93m:05088** 05C25 (05C15, 05C20)

Fiol, Miguel A. (*with* Escudero, M.; Fàbrega, J.; Homobono, N.) On surviving route graphs of iterated line digraphs. *Graph theory, combinatorics, and applications, Vol.* 1 (*Kalamazoo, MI*, 1988), 451–466, *Wiley-Intersci. Publ., Wiley, New York*, 1991. (Summary) **93c:05052** 05C20

— A Boolean algebra approach to the construction of snarks. *Graph theory, combinatorics, and applications, Vol.* 1 (*Kalamazoo, MI*, 1988), 493–524, *Wiley-Intersci. Publ., Wiley, New York*, 1991. (Summary) **93c:05097** 05C75 (05C15)

— (*with* Fiol, M. L.; Yebra, J. L. A.) When the arc-colored line digraph of a Cayley colored digraph is again a Cayley colored digraph. (English summary) *Ars Combin.* **34** (1992), 65–73. (Summary) **93m:05088** 05C25 (05C15, 05C20)

— (*with* Lladó, Anna S.) The partial line digraph technique in the design of large interconnection networks. (English summary) *IEEE Trans. Comput.* **41** (1992), *no.* 7, 848–857. (Wiktor Kulesza) **93j:68011** 68M10 (05C20)

— On super-edge-connected digraphs and bipartite digraphs. (English summary) *J. Graph Theory* **16** (1992), *no.* 6, 545–555. (Linda Lesniak) **93i:05083** 05C40 (05C20)

— The connectivity of large digraphs and graphs. (English summary) *J. Graph Theory* **17** (1993), *no.* 1, 31–45. (Georg Günther) **93m:05115** 05C40 (05C20, 05C38)

Fiore, Gaetano (*with* Abud, Mario) Batalin-Vilkovisky approach to the metric independence of TQFT. (English summary) *Phys. Lett. B* **293** (1992), *no.* 1-2, 89–93. 81T40 (81T70)

Fiorentini, Mario (*with* Vogel, Wolfgang) Old and new results and problems on Buchsbaum modules. I. *Geometry Seminars, 1988–1991 (Italian)* (*Bologna, 1988–1991*), 53–61, *Univ. Stud. Bologna, Bologna*, 1991. (Mei Chu Chang) **93d:13019** 13C13 (13D45)

Fiorentino, Giuseppe (*with* Di Benedetto, Fabio; Serra, Stefano) CG preconditioning for Toeplitz matrices. (English summary) *Comput. Math. Appl.* **25** (1993), *no.* 6, 35–45. (Summary) **93h:65063** 65F35

Fiorenza, Alberto Some remarks on Stein's $L \log L$ result. (English summary) *Differential Integral Equations* **5** (1992), *no.* 6, 1355–1362. (Satoru Igari) **93k:42013** 42B25

Fiori, Carla (*with* Rosati, Luigi Antonio; Quattrocchi, Pasquale) Sharply k-transitive permutation sets in which the stabilizer of an element is a group. (Italian. English summary) *Atti Sem. Mat. Fis. Univ. Modena* **39** (1991), *no.* 2, 591–595. (From the summary) **93c:20002** 20B20 (51E25)

Fiorio, Giovanni (*with* Milanese, M.; Vicino, Antonio) Robust stability and performance in the presence of parametric and norm bounded uncertainty. *Systems, models and feedback: theory and applications* (*Capri*, 1992), 229–248, *Progr. Systems Control Theory*, 12, *Birkhäuser Boston, Boston, MA*, 1992. (Antonis I. G. Vardulakis) **93f:93101** 93D09 (93–02, 93B36)

Fiorot, J.-C. (*with* Jeannin, P.) ★ Rational curves and surfaces. Applications to CAD. Translated from the 1989 French original by M. C. Harrison. *John Wiley & Sons, Ltd., Chichester*, 1992. xiv+322 *pp. ISBN* 0-471-93092-X (Editors) **93f:65023** 65D17

— (*with* Jeannin, P.) ★ Courbes splines rationnelles. (French) [Rational spline curves] Applications à la CAO. [Applications to CAD] Recherches en Mathématiques Appliquées [Research in Applied Mathematics], 24. *Masson, Paris*, 1992. 275 *pp. ISBN* 2-225-82825-3 (Ewald Quak) **93j:65025** 65D17 (41A15)

Fırat, F. Gülay (*with* Hacınlıyan, Avadis; Özel, R. Mert) Chaotic behavior in a class of one-dimensional maps. (English and Turkish summaries) *Doğa Mat.* **16** (1992), *no.* 3, 210–217. (Frederick R. Marotto) **93m:58073** 58F13 (58F14)

Firby, P. A. (*with* Gardiner, C. F.) ★ Surface topology. Second edition. Ellis Horwood Series: Mathematics and its Applications. *Ellis Horwood, New York; distributed by Prentice Hall, Inc., Englewood Cliffs, NJ*, 1991. 220 *pp. ISBN* 0-13-855321-1 (From the preface) **93f:57001** 57–01 (05–01, 57Mxx)

Firlej, Barbara (*with* Rempulska, Lucyna) On approximation of functions by n-harmonic means of Fourier series in Orlicz spaces. *Fasc. Math. No.* 21 (1990), 99–107 (1991). (V. V. Zhuk) **93e:42004** 42A10

Firmani, B. Continuous dependence on the data of the solution of a singular Goursat problem. (Italian. English and Italian summaries) *Rend. Mat. Appl.* (7) **12** (1992), *no.* 3, 749–768. (Anton S. Mureşan) **93m:35024** 35B30 (35L15, 35L20, 35L70)

First, Z. (*with* Hackman, S. T.; Passy, U.) Local-global properties of bifunctions. *J. Optim. Theory Appl.* **73** (1992), *no.* 2, 279–297. (Ivan Ginchev) **93c:90060** 90C26 (49N15)

Fisch, Robert Clustering in the one-dimensional three-color cyclic cellular automaton. (English summary) *Ann. Probab.* **20** (1992), *no.* 3, 1528–1548. (Pablo A. Ferrari) **93j:60155** 60K35

Fischer, Anat (*with* Gilboa, Itzhak; Shpitalni, Moshe) A polynomial algorithm for minimal interval representation. (English summary) *J. Algorithms* **13** (1992), *no.* 4, 546–563. (Summary) **93h:68056** 68Q25 (68U10)

Fischer, Arthur E. Riemannian maps between Riemannian manifolds. (English summary) *Mathematical aspects of classical field theory* (*Seattle, WA*, 1991), 331–366, *Contemp. Math.*, 132, *Amer. Math. Soc., Providence, RI*, 1992. (Yi Bing Shen) **93k:53035** 53C20 (53C12, 53C21)

Fischer, Bernd Chebyshev polynomials for disjoint compact sets. *Constr. Approx.* **8** (1992), *no.* 3, 309–329. (Ralitza Kovacheva) **93e:30080** 30E10 (41A50)

— (*with* Golub, Gene H.) How to generate unknown orthogonal polynomials out of known orthogonal polynomials. (English summary) Orthogonal polynomials and numerical methods. *J. Comput. Appl. Math.* **43** (1992), *no.* 1-2, 99–115. (Zhong De Wang) **93m:42011** 42C05 (65D15)

Fischer, H.-J. (*with* Lanckau, Eberhard) On the representation of solutions to linear partial differential equations of mixed type. (English summary) *Partial differential equations with complex analysis*, 29–34, *Pitman Res. Notes Math. Ser.*, 262, *Longman Sci. Tech., Harlow*, 1992. (Summary) **93j:35043** 35C15 (35M10)

Fischer, Hans Christoph Automatic differentiation and applications. *Scientific computing with automatic result verification*, 105–142, *Math. Sci. Engrg.*, 189, *Academic Press, Boston, MA*, 1993. (Ian Gladwell) **93j:65032** 65D25 (65–04, 65G10, 65Y10, 68Q40)

Fischer, Herbert (*with* Schäffler, Stefan; Warsitz, Hubert) Parameter estimation in linear regression models with stationary ARMA(p, q)-errors using automatic differentiation. (English summary) *Yugosl. J. Oper. Res.* **2** (1992), *no.* 1, 55–68. (Summary) **93i:62080** 62M10 (68Q40)

Fischer, I. (*with* Frenzen, C. L.) On a conjecture of Pierce for permanents of singular correlation matrices. (English summary) *SIAM J. Matrix Anal. Appl.* **14** (1993), *no.* 1, 74–81. (Robert Grone) **93k:15010** 15A15

Fischer, K. H. (*with* Hertz, J. A.) ★ Spin glasses. Cambridge Studies in Magnetism, 1. *Cambridge University Press, Cambridge*, 1991. x+408 *pp. ISBN* 0-521-34296-1 (Muthiah Daniel) **93m:82019** 82B44 (82–02, 82B28, 82D30)

Fischer, Klaus G. (*with* Shapiro, Jay) The prime ideal structure of the Minkowski ring of polytopes. *J. Pure Appl. Algebra* **78** (1992), *no.* 3, 239–251. (P. McMullen) **93e:52029** 52B45

Fischer, Michael J. (*with* Paleologou, Sophia A.) Decision making in the presence of noise. *Informatik*, 145–168, *Teubner-Texte Inform.*, 1, *Teubner, Stuttgart*, 1992. (Summary) **93g:90005** 90A05 (90D40)

Fischer, Pal (*with* Stegeman, J. D.) Functions operating on positive-definite symmetric matrices. *J. Math. Anal. Appl.* **171** (1992), *no.* 2, 461–470. (John Chollet) **93k:15009** 15A15 (15A03, 15A48)

Fischer, Patrick (*with* Defranceschi, Mireille; Delhalle, Joseph) Molecular Hartree-Fock equations for iteration-variation calculations in momentum space. (English summary) *Numer. Math.* **63** (1992), *no.* 1, 67–82. (A. Ventura) **93j:81114** 81V55 (65P05, 81–08, 81V70)

Fischer, Paul (*with* Simon, Hans-Ulrich) On learning ring-sum-expansions. *SIAM J. Comput.* **21** (1992), *no.* 1, 181–192. (Summary) **93a:68122** 68T05

Fischer, Paul F. Analysis and application of a parallel spectral element method for the solution of the Navier-Stokes equations. (English summary) *Spectral and high order methods for partial differential equations* (*Como*, 1989), 483–491, *North-Holland, Amsterdam*, 1990. (*see* **93d:65005**) 65N35 (65Y05, 76D05, 76M25)

Fischer, Roland Mathematics as a means and as a system. *Math worlds*, 113–133, *SUNY Ser. Sci. Tech. Soc., SUNY Press, Albany, NY*, 1993. (*see* **93m:00025**) 00A69 (00A30)

— Mathematics and social change. *Math worlds*, 197–218, *SUNY Ser. Sci. Tech. Soc., SUNY Press, Albany, NY*, 1993. (*see* **93m:00025**) 00A69 (00A30)

— *see also* **Math worlds, 93m:00025**

Fischer, Werner (*with* Leschke, Hajo; Müller, Peter) Changing dimension and time: two well-founded and practical techniques for path integration in quantum physics. *J. Phys. A* **25** (1992), *no.* 13, 3835–3853. (Horacio Alberto Falomir) **93j:81062** 81S40 (58D30)

Fischetti, Matteo (*with* Balas, Egon) The fixed-outdegree 1-arborescence polytope. (English summary) *Math. Oper. Res.* **17** (1992), *no.* 4, 1001–1018. (András Faragó) **93m:90088** 90C35 (68R10, 90C05)

— (*with* Toth, Paolo) An additive bounding procedure for the asymmetric travelling salesman problem. *Math. Programming* **53** (1992), *no.* 2, *Ser. A*, 173–197. (I. V. Romanovskii) **93b:90100** 90C35 (05C45, 90C10, 90C27)

Fischler, W. (*with* Dine, Michael; Seiberg, Nathan) Small handles and auxiliary fields. *Quantum mechanics of fundamental systems*, 2 (*Santiago*, 1987), 59–71, *Ser. Cent. Estud. Cient. Santiago, Plenum, New York*, 1989. (*see* **93e:81005**) 81T40 (81T60)

Fischman, Davida (*with* Cohen, Miriam) Semisimple extensions and elements of trace 1. *J. Algebra* **149** (1992), *no.* 2, 419–437. (E. J. Taft) **93c:16038** 16W30

Fišer, Kurt (*with* Rosquist, Kjell; Uggla, Claes) Bianchi type V perfect fluid cosmologies. *Gen. Relativity Gravitation* **24** (1992), *no.* 6, 679–686. (Nora Bretón Báez) **93d:83018** 83C20 (83C15)

Fishburn, Peter C. Uncertainty aversion and separated effects in decision making under uncertainty. *Combining fuzzy imprecision with probabilistic uncertainty in decision making*, 10–25, *Lecture Notes in Econom. and Math. Systems*, 310, *Springer, Berlin*, 1988. (*see* **93c:90002**) 90A05

— (*with* Trotter, William T.) Angle orders and zeros. *Order* **7** (1990), *no.* 3, 213–237. (E. C. Milner) **93b:06005** 06A07

— (*with* Shepp, Larry A.) On the FKB conjecture for disjoint intersections. *Discrete Math.* **98** (1991), *no.* 2, 105–122. (Ákos Seress) **93a:05124** 05D05 (60E15)

— On the theory of ambiguity. (English summary) *Internat. J. Inform. Management Sci.* **2** (1991), *no.* 2, 1–16. (Petra Weidner) **93h:90052** 90B50 (03B48, 03B65, 90A05)

— (*with* Lavalle, Irving H.) Nonstandard nontransitive utility on mixture sets. *Math. Social Sci.* **21** (1991), *no.* 3, 233–244. (Frank Wattenberg) **93c:90010** 90A06 (03H05, 03H10)

— Correlation in partially ordered sets. (English summary) *Discrete Appl. Math.* **39** (1992), *no.* 2, 173–191. (Graham Brightwell) **93k:06005** 06A07 (06–02, 60C05)

— (*with* Trotter, William T.) Linear extensions of semiorders: a maximization problem. *Discrete Math.* **103** (1992), *no.* 1, 25–40. (Summary) **93c:06005** 06A07

— Signed orders and power set extensions. *J. Econom. Theory* **56** (1992), *no.* 1, 1–19. (Rubin Saposnik) **93b:90013** 90A06 (90A08)

— On nonstandard nontransitive additive utility. (English summary) *J. Econom. Theory* **56** (1992), *no.* 2, 426–433. (Summary) **93e:90004** 90A05 (90A10)

— (*with* Gehrlein, William V.) Niche numbers. *J. Graph Theory* **16** (1992), *no.* 2, 131–139. (J. Richard Lundgren) **93d:05070** 05C35

— (*with* Monjardet, Bernard) Norbert Wiener on the theory of measurement (1914, 1915, 1921). *J. Math. Psych.* **36** (1992), *no.* 2, 165–184. (Reinhard Suck) **93e:92001** 92–03 (01A60, 92J45)

— (*with* Lavalle, Irving H.) Multiattribute expected utility without the Archimedean axiom. (English summary) *J. Math. Psych.* **36** (1992), *no.* 4, 573–591. (Reinhard Suck) **93j:90007** 90A05 (90A10, 92G05)

— (*with* Brams, Steven J.) Coalition voting. (English summary) Formal theories of politics, II. *Math. Comput. Modelling* **16** (1992), *no.* 8-9, 15–26. (Summary) **93f:90043** 90A28 (90D12)

— A general axiomatization of additive measurement with applications. (English summary) *Naval Res. Logist.* **39** (1992), *no.* 6, 741–755. (K. Zimmermann) **93f:90020** 90A10 (90A05)

— Notes on: "Craven's conjecture" [Soc. Choice Welf. **8** (1991), no. 3, 269–274; MR 92j:90007] by J. S. Kelly. (English summary) *Soc. Choice Welf.* **9** (1992), *no.* 3, 259–262. (Summary) **93g:90006** 90A05 (90A06, 90A08)

Fishelov, Dalia Vortex schemes for viscous flow. *Vortex dynamics and vortex methods* (*Seattle, WA*, 1990), 153–164, *Lectures in Appl. Math.*, 28, *Amer. Math. Soc., Providence, RI*, 1991. (A. J. Meir) **93a:76075** 76M25 (65M12, 76C05, 76D05)

Fisher, Anthony J. A "yo-yo" parsing algorithm for a large class of van Wijngaarden grammars. (English summary) *Acta Inform.* **29** (1992), *no.* 5, 461–481. (Summary) **93f:68064** 68Q52

Fisher, Brian (*with* Li, Zhi Shen) The product of the distributions x_+^λ and $x_-^{-\lambda-p}$ defined by a distribution vector. (Serbo-Croatian summary) *Zb. Rad. Prirod.-Mat. Fak. Ser. Mat.* **20** (1990), *no.* 2, 81–89. (Stevan Pilipović) **93a:46072** 46F10

— (*with* Özçağ, Emin) Some results on the product of distributions and the change of variable. *Comment. Math. Univ. Carolin.* **32** (1991), *no.* 4, 677–685. (Arpad Takači) **93g:46038** 46F10

— (*with* Kuan, Li Chen) On defining a noncommutative product of distributions in m variables. *J. Natur. Sci. Math.* **31** (1991), *no.* 2, 95–102. (Bl. P. Damyanov) **93a:46073** 46F10 (44A35, 46F12)

— (*with* Özçağ, Emin) On partial derivatives of the beta function. *Rostock. Math. Kolloq. No.* 45 (1991), 43–56. (Jean Lavoine) **93g:33002** 33B15

— (*with* Kuan, Li Chen) A noncommutative neutrix product of distributions on $\mathbf{R}^m$. (Serbo-Croatian summary) *Zb. Rad. Prirod.-Mat. Fak. Ser. Mat.* **21** (1991), *no.* 1, 135–146. (Bl. P. Damyanov) **93b:46070** 46F10

— (*with* Özçağ, Emin) A result on the commutative neutrix convolution product of distributions. (Turkish summary) *Doğa Mat.* **16** (1992), *no.* 1, 33–45. (Summary) **93a:46074** 46F10

— (*with* Kou, Huai Zhong) On compositions of distributions. (English summary) *Publ. Math. Debrecen* **40** (1992), *no.* 3-4, 279–290. (Bl. P. Damyanov) **93i:46069** 46F10

Fisher, D. Grant (*with* Niu, Shao Hua; Xiao, De Yun) An augmented UD identification algorithm. *Internat. J. Control* **56** (1992), *no.* 1, 193–211. 93B30 (93B40)

Fisher, David C. (*with* Lee, Roderick N.; Knowles, Elizabeth) If f has Lipschitz constant less than 2.17008, then $x_{i+1} = x_i + f(x_i)$ has no odd periodic solutions. *J. Math. Anal. Appl.* **160** (1991), *no.* 2, 459–467. (C. Praagman) **93b:39004** 39B12 (58F08, 58F22)

— (*with* Ryan, Jennifer) Optimal strategies for a generalized "scissors, paper, and stone" game. *Amer. Math. Monthly* **99** (1992), *no.* 10, 935–942. (J. W. Moon) **93i:05067** 05C20 (90D40)

— (*with* Marchant, Melanie A.; Ryan, Jennifer) A column generating algorithm for finding fractional colorings of random graphs. (English summary) Proceedings of the Twenty-third Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, FL, 1992). *Congr. Numer.* **89** (1992), 245–253. (Summary) **93j:05137** 05C80 (05C15)

— (*with* Ryan, Jennifer) Bounds on the number of complete subgraphs. *Discrete Math.* **103** (1992), *no.* 3, 313–320. (Summary) **93c:05063** 05C35

— (*with* Ryan, Jennifer) Bounds on the largest root of the matching polynomial. (English summary) *Discrete Math.* **110** (1992), *no.* 1-3, 275–278. (Summary) **93i:05098** 05C70

Fisher, Eric O'N. Sustained growth in the model of overlapping generations. (English summary) *J. Econom. Theory* **58** (1992), *no.* 1, 77–92. (Summary) **93f:90028** 90A14 (90A56)

Fisher, Evan On the law of the iterated logarithm for martingales. *Ann. Probab.* **20** (1992), *no.* 2, 675–680. (R. J. Tomkins) **93d:60043** 60F15 (60G42)

— A Skorohod representation and an invariance principle for sums of weighted i.i.d. random variables. *Rocky Mountain J. Math.* **22** (1992), *no.* 1, 169–179. (Andrew Rosalsky) **93e:60065** 60F17 (60F15, 60G50)

Fisher, Franklin M. ★ Econometrics. Essays in theory and applications. *MIT Press, Cambridge, MA*, 1992. xxiv+408 *pp. ISBN* 0-262-06146-5 (Winston T. Lin) **93d:01093** 01A75 (62P20)

Fisher, J. Chris (*with* Bruen, A. A.) The Jamison method in Galois geometries. *Des. Codes Cryptogr.* **1** (1991), *no.* 3, 199–205. (Norbert Knarr) **93a:51004** 51E20

— (*with* Fuller, Norma) How to inscribe a dodecahedron in a sphere. *Fivefold symmetry*, 167–170, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93i:52002**) 51M15

— (*with* Bruen, A. A.) An observation on certain point-line configurations in classical planes. (English summary) A collection of contributions in honour of Jack van Lint. *Discrete Math.* **106/107** (1992), 93–96. (J. W. P. Hirschfeld) **93k:51013** 51E21

Fisher, M. E. *see* **Fisher, Michael Ernest**

Fisher, Michael Ellis (*with* Mikheev, Lev V.) Microcanonical density functionals for critical systems: an exact one-dimensional example. *J. Statist. Phys.* **66** (1992), *no.* 5-6, 1225–1244. (Flora Koukiou) **93b:82017** 82B20

Fisher, Michael Ernest (*with* Jennings, L. S.) Discrete-time optimal control problems with general constraints. (English summary) *ACM Trans. Math. Software* **18** (1992), *no.* 4, 401–413. 49M05 (65K99)

Fisher, Nicholas I. (*with* Hall, Peter Gavin) Bootstrap methods for directional data. (English summary) *The art of statistical science*, 47–63, *Wiley Ser. Probab. Math. Statist. Probab. Math. Statist., Wiley, Chichester*, 1992. (*see* **93b:62003**) 62G09 (62H11)

— (*with* Lee, A. J.) Regression models for an angular response. (English and French summaries) *Biometrics* **48** (1992), *no.* 3, 665–677. (Summary) **93f:62079** 62H11 (62J05)

— (*with* Mammen, Enno; Marron, J. Stephen) Some asymptotics for multimodality tests based on kernel density estimates. *Probab. Theory Related Fields* **91** (1992), *no.* 1, 115–132. (Margaret P. Gessaman) **93c:62083** 62G10 (62E20)

— (*with* Lunn, A. D.; Davies, S. J.) Spherical median axes. (English summary) *J. Roy. Statist. Soc. Ser. B* **55** (1993), *no.* 1, 117–124. (Summary) **93k:62118** 62H05 (62H11)

Fisher, P. G. (*with* Hughes-Hallett, A. J.) Nonstationary model solution techniques and the USA algorithm. (English summary) *Computational economics and econometrics* (*Minneapolis, MN*, 1990), 107–119, *Adv. Stud. Theoret. Appl. Econometrics*, 22, *Kluwer Acad. Publ., Dordrecht*, 1992. (*see* **93b:90009**) 65H10 (65F10)

Fisher, R. A. *see* **Fisher, Ronald Aylmer**

Fisher, Robert J., Jr. *see* **Yang, Kichoon, 93d:14001**

Fisher, Ronald Aylmer *see* **Seidenfeld, Teddy, 93j:62009**; **Karlin, Samuel, 93k:01051** *and* **Rao, Calyampudi Radhakrishna**

Fisher, Shalom M. (*with* Augestein, Donald R.; Baras, John S.) Parameter identification of large spacecraft systems based on frequency characteristics. (English summary) *Analysis and optimization of systems: state and frequency domain approaches for infinite-dimensional systems* (*Sophia-Antipolis*, 1992), 624–635, *Lecture Notes in Control and Inform. Sci.*, 185, *Springer, Berlin*, 1993. (*see* **93i:93005**) 93B30 (73K50, 93C95)

Fisher, Stephen D. (*with* Stessin, M. I.) The n-width of the unit ball of H^q. *J. Approx. Theory* **67** (1991), *no.* 3, 347–356. (Mariya Mitreva) **93c:41042** 41A46 (30D55)

— (*with* Arazy, Jonathan; Janson, Svante; Peetre, Jaak) Membership of Hankel operators on the ball in unitary ideals. *J. London Math. Soc.* (2) **43** (1991), *no.* 3, 485–508. (Ke He Zhu) **93c:47030** 47B35 (47B10, 47G10)

— Ralph P. Boas, Jr. (1912–1992). *Notices Amer. Math. Soc.* **39** (1992), *no.* 10, 1189–1190. (Editors) **93m:01068** 01A70

— (*with* Spencer, Bruce D.) On comparing distributions of poverty gaps. (English summary) *Sankhyā Ser. B* **54** (1992), *no.* 1, 114–126. 90A19 (62P20, 62P25)

Fisher, Yuval (*with* Bielefeld, Ben; Hubbard, John) The classification of critically preperiodic polynomials as dynamical systems. *J. Amer. Math. Soc.* **5** (1992), *no.* 4, 721–762. (Feliks Przytycki) **93h:58128** 58F23 (30D05)

— *see also* **Peitgen, Heinz-Otto et al., 93i:00001** *and* **93k:58157**

Fishman, George S. Sensitivity analysis for the system reliability function. (English summary) *Probab. Engrg. Inform. Sci.* **5** (1991), *no.* 2, 185–213. 90B25

— (*with* Rubin, David S.) Bounding the variance in Monte Carlo experiments. (English summary) *Oper. Res. Lett.* **11** (1992), *no.* 4, 243–248. (Summary) **93f:90066** 90B15 (65C05, 90C15)

— (*with* Granovsky, Boris L.; Rubin, David S.) Evaluating best-case and worst-case variances when bounds are available. (English summary) *SIAM J. Sci. Statist. Comput.* **13** (1992), *no.* 6, 1347–1360. (Summary) **93f:62024** 62E25 (62N05)

Fishman, L. Z. Stability of a fixed point of a point mapping of a plane in a certain critical case. (Russian) *Dinamika Sistem* **1990**, *Dinam. Stokh. Bifur.*, 54–59. (Summary) **93a:58140** 58F20 (34C99, 34D05, 58F10)

— Determination of saddle limit cycles born from the saddle equilibrium state of equations with delay. (Russian) *Dinamika Sistem* **1990**, *Dinam. Stokh. Bifur.*, 147–157. (Tadeusz Dłotko) **93c:34142** 34K15

— Conditions for the stability of a fixed point of point mappings in the critical case of a pair of complex-conjugate roots on the unit circle. (Russian. Russian summary) *Mat. Zametki* **52** (1992), *no.* 6, 131–139, 160; *translation in Math. Notes* **52** (1992), *no.* 5-6, 1265–1271 (1993). (J. S. Joel) **93m:34063** 34D08 (34A50, 34C05)

Fishman, Louis (*with* Brent, Ronald I.) Derivation of extended parabolic theories for vector and electromagnetic wave propagation. (English summary) *Invariant imbedding and inverse problems* (*Albuquerque, NM*, 1990), 90–102, *SIAM, Philadelphia, PA*, 1992. (Summary) **93g:78006** 78A25 (35Q60)

— Exact and operator rational approximate solutions of the Helmholtz, Weyl composition equation in underwater acoustics—the quadratic profile. *J. Math. Phys.* **33** (1992), *no.* 5, 1887–1914. (V. H. Weston) **93e:76064** 76Q05 (35Q35, 35S99, 86A05)

Fitch, Frederic B. Self-reference in philosophy. *Reflexivity*, 221–230, *North-Holland, Amsterdam*, 1992. (*see* **93g:03005**) 03A05

— Universal metalanguages for philosophy. *Reflexivity*, 231–237, *North-Holland, Amsterdam*, 1992. (*see* **93g:03005**) 03A05

Fitt, A. D. (*with* Wilmott, P.) A composite cavity model for axisymmetric high Reynolds number separated flow. I. Modelling and analysis. (English summary) *J. Engrg. Math.* **26** (1992), *no.* 4, 539–555. (James C. Williams III) **93i:76030** 76D25 (76B10, 76C05, 76D15)

Fitting, Melvin C. Destructive modal resolution. *J. Logic Comput.* **1** (1990), *no.* 1, 83–97. (Neculai Curteanu) **93e:03024** 03B45 (03B35, 68T15, 68T27)

— Well-founded semantics, generalized. (English summary) *Logic programming* (*San Diego, CA*, 1991), 71–84, *MIT Press Ser. Logic Program., MIT Press, Cambridge, MA*, 1991. (Summary) **93m:68111** 68Q55 (03B50, 03B70, 68N17)

— Many-valued modal logics. *Fund. Inform.* **15** (1991), *no.* 3-4, 235–254. (Summary) **93a:03016** 03B45

— Kleene's logic, generalized. *J. Logic Comput.* **1** (1991), *no.* 6, 797–810. (János Bagyinszki) **93d:03032** 03B50 (06A23)

— (*with* Marek, Wiktor; Truszczyński, Miroslaw) The pure logic of necessitation. (English summary) *J. Logic Comput.* **2** (1992), *no.* 3, 349–373. (Frans Voorbraak) **93i:03022** 03B45 (03B60, 68T27)

Fitzgerald, Robert W. Half factorial Witt rings. *J. Algebra* **155** (1993), *no.* 1, 127–136. (Thomas C. Craven) **93k:11031** 11E81 (12D15)

— Witt rings under odd degree extensions. (English summary) *Pacific J. Math.* **158** (1993), *no.* 1, 121–143. (Murray Marshall) **93k:11032** 11E81 (12D15)

Fitzgibbon, W. E. (*with* Farr, W. W.; Morgan, Jeff J.; Waggoner, S. J.) Asymptotic convergence for a class of autocatalytic chemical systems. *Differential equations with applications in biology, physics, and engineering* (*Leibnitz*, 1989), 121–128, *Lecture Notes in Pure and Appl. Math.*, 133, *Dekker, New York*, 1991. (*see* **93a:00021**) 34A34 (34C11, 92E20)

— (*with* Morgan, Jeff J.; Waggoner, S. J.) Weakly coupled semilinear parabolic evolution systems. (English summary) *Ann. Mat. Pura Appl.* (4) **161** (1992), 213–229. (L. Hsiao) **93h:35094** 35K55 (35K50)

— (*with* Morgan, Jeff J.; Waggoner, S. J.) Forward containment for semilinear parabolic systems. *J. Differential Equations* **97** (1992), *no.* 2, 233–245. (G. Albinus) **93d:35062** 35K50 (35K60)

— (*with* Martin, C. B.) The longtime behavior of solutions to a quasilinear combustion model. *Nonlinear Anal.* **19** (1992), *no.* 10, 947–961. (Riccardo Ricci) **93m:80012** 80A25 (35B40, 35K60)

— *see also* **Modeling and analysis of diffusive and advective processes in geosciences, 93b:86001**; **Wave propagation and inversion, 93d:73004** *and* **Computational methods in geosciences, 93d:86001**

Fitzmorris, Alan (*with* Ghorbel, Fathi; Spong, Mark W.) Robustness of adaptive control of robots: theory and experiment. (English summary) *Advanced robot control* (*Grenoble*, 1990), 1–29, *Lecture Notes in Control and Inform. Sci.*, 162, *Springer, Berlin*, 1991. (Summary) **93f:70033** 70Q05 (70B15, 93C85)

Fitzpatrick, Ben G. (*with* Yin, Gang George) Sample distributions of identification algorithms for distributed parameter systems. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, I* (*Kobe*, 1991), 569–574, *Mita, Tokyo*, 1992. (*see* **93g:93005**) 93B30 (93C20)

— (*with* Berkan, R. C.; Upadhyaya, B. R.; Kisner, R. A.) Inverse dynamics paradigm: adaptive nonlinear control and identification of large-scale power systems. (English summary) *Control Theory Adv. Tech.* **8** (1992), *no.* 3, 465–477. 93C40 (93C95)

— Approximation and control in integral equations of nonlinear viscoelasticity. *J. Math. Systems Estim. Control* **2** (1992), *no.* 4, 483–501. (Summary) **93d:73042** 73F15 (73B30, 73K50, 73V25, 93B40, 93C22)

— Modeling and estimation problems for structured heterogeneous populations. (English summary) *J. Math. Anal. Appl.* **172** (1993), *no.* 1, 73–91. (G. F. Webb) **93m:92016** 92D25 (35Q80, 47D03, 47N20)

Fitzpatrick, Ben, Jr. (*with* Zhou, Hao Xuan) Countable dense homogeneity and the Baire property. *Topology Appl.* **43** (1992), *no.* 1, 1–14. (R. M. Stephenson, Jr.) **93b:54030** 54E52 (54A35, 54E35)

— (*with* White, James M. S.; Zhou, Hao Xuan) Homogeneity and σ-discrete sets. Proceedings of the Symposium on General Topology and Applications (Oxford, 1989). *Topology Appl.* **44** (1992), *no.* 1-3, 143–147. (Klára Császár) **93k:54050** 54D10 (54C99, 54D15, 54D65, 54E35)

— (*with* Gruenhage, Gary F.; Ott, James W.) Topological completions of metrizable spaces. *Proc. Amer. Math. Soc.* **117** (1993), *no.* 1, 259–267. (Dimitrina Stavrova) **93c:54023** 54E20 (54A25, 54D40, 54D45)

Fitzpatrick, Kathy E. (*with* Dave, Dinesh S.; Korukonda, A. Rao) Implementing optimization methods in network crashing: an illustration. (English summary) *Optimization, Vol.* 1, 2 (*Singapore*, 1992), 275–283, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93d:90005**) 90C90

Fitzpatrick, Patrick (*with* Flynn, John) A Gröbner basis technique for Padé approximation. *J. Symbolic Comput.* **13** (1992), *no.* 2, 133–138. (Summary) **93b:68037** 68Q40 (41A21)

Fitzpatrick, Patrick M. (*with* Pejsachowicz, Jacobo; Rabier, P. J.) The degree of proper C^2 Fredholm mappings. I. *J. Reine Angew. Math.* **427** (1992), 1–33. (Christian Fenske)

93d:47108 47H11 (58C30)
— (*with* Pejsachowicz, Jacobo) Orientation and the Leray-Schauder theory for fully nonlinear elliptic boundary value problems. *Mem. Amer. Math. Soc.* **101** (1993), *no.* 483, vi+131 *pp.* (Jean Mawhin) **93f:47077** 47H11 (35J65, 47H15, 47N20, 58C30, 58E07, 58G25)
Fitzpatrick, Simon (*with* Calvert, Bruce) Sets invariant under projections onto one-dimensional subspaces. *Comment. Math. Univ. Carolin.* **32** (1991), *no.* 2, 227–232. (A. G. Netrebin) **93e:46009a** 46A55 (52A07)
— (*with* Calvert, Bruce) Sets invariant under projections onto two-dimensional subspaces. *Comment. Math. Univ. Carolin.* **32** (1991), *no.* 2, 233–239. (A. G. Netrebin) **93e:46010** 46A55 (46C15, 52A07)
— (*with* Phelps, R. R.) Bounded approximants to monotone operators on Banach spaces. (English and French summaries) *Ann. Inst. H. Poincaré Anal. Non Linéaire* **9** (1992), *no.* 5, 573–595. (S. Simons) **93j:47076** 47H05 (47N10)
— (*with* Calvert, Bruce) Correction: "Sets invariant under projections onto one-dimensional subspaces". *Comment. Math. Univ. Carolin.* **33** (1992), *no.* 1, 182. (A. G. Netrebin) **93e:46009b** 46A55 (52A07)
Fitzsimmons, P. J. Skorokhod embedding by randomized hitting times. *Seminar on Stochastic Processes*, 1990 (*Vancouver, BC*, 1990), 183–191, *Progr. Probab.*, 24, *Birkhäuser Boston, Boston, MA*, 1991. (Arthur O. Pittenger) **93d:60120** 60J45 (60J25)
— Harmonic morphisms and the resurrection of Markov processes. *Stochastic analysis* (*Durham*, 1990), 71–90, *London Math. Soc. Lecture Note Ser.*, 167, *Cambridge Univ. Press, Cambridge*, 1991. (Klaus Janssen) **93k:31011** 31D05 (60J40, 60J45)
— (*with* Getoor, R. K.) A fine domination principle for excessive measures. *Math. Z.* **207** (1991), *no.* 1, 137–151. (Jutta Steffens) **93e:60157** 60J45 (60J40)
— On the martingale problem for measure-valued Markov branching processes. *Seminar on Stochastic Processes*, 1991 (*Los Angeles, CA*, 1991), 39–51, *Progr. Probab.*, 29, *Birkhäuser Boston, Boston, MA*, 1992. (Thomas G. Kurtz) **93k:60188** 60J27 (60J35, 60J80)
— (*with* Getoor, R. K.) Limit theorems and variation properties for fractional derivatives of the local time of a stable process. (French summary) *Ann. Inst. H. Poincaré Probab. Statist.* **28** (1992), *no.* 2, 311–333. (Toshio Yamada) **93j:60105** 60J30 (60J55)
— (*with* Kanda, Mamoru) On Choquet's dichotomy of capacity for Markov processes. *Ann. Probab.* **20** (1992), *no.* 1, 342–349. (Klaus Janssen) **93b:60172** 60J40 (31C15, 60J30, 60J45)
— (*with* Getoor, R. K.) On the distribution of the Hilbert transform of the local time of a symmetric Lévy process. (English summary) *Ann. Probab.* **20** (1992), *no.* 3, 1484–1497. (Toshio Yamada) **93j:60112** 60J55 (60J30)
Fitzsimons, Conor J. (*with* Liu, Fa Wang; Miller, John J. H.) A second-order *L*-stable time discretisation of the semiconductor device equations. (English summary) *J. Comput. Appl. Math.* **42** (1992), *no.* 2, 175–186. (G. W. Hedstrom) **93i:65100** 65M99 (62L99)
Fivel, Daniel I. Errata: "Interpolation between Fermi and Bose statistics using generalized commutators" [Phys. Rev. Lett. **65** (1990), no. 27, 3361–3364; MR 91m:81108]. *Phys. Rev. Lett.* **69** (1992), *no.* 13, 2020. 81S05 (81R50)
Fix, George J. (*with* Chang, Ching Lung) A mixed finite element method for Stokes problem—acceleration, pressure, formulation. (English summary) *Integral methods in science and engineering—90* (*Arlington, TX*, 1990), 240–248, *Ser. Comput. Phys. Process. Mech. Thermal Sci., Hemisphere, New York*, 1991. (Summary) **93h:76046** 76M10 (65N30, 76D07)
— (*with* Kannan, Rangachary) A random direction algorithm for an intersection problem. (English and German summaries) *Computing* **48** (1992), *no.* 3-4, 381–385. (H. R. Shen) **93g:65085** 65J15 (65F10, 65K10)
— (*with* Kannan, Rangachary) Nonplanar oscillation of beams under periodic forcing. *J. Differential Equations* **96** (1992), *no.* 2, 419–429. (Takashi Narazaki) **93f:35226** 35Q72 (35B10, 35L75, 35R10, 73K12)
Fixman, Uri (*with* Okoh, Frank) Extensions of modules characterized by finite sequences of linear functionals. *Rocky Mountain J. Math.* **21** (1991), *no.* 4, 1235–1258. (R. Göbel) **93e:16048** 16S70 (16D99, 16G99)
— (*with* Okoh, Frank) Preorders on canonical families of modules of finite length. *J. Austral. Math. Soc. Ser. A* **53** (1992), *no.* 1, 64–77. (J. Hausen) **93f:16004** 16D70 (15A21)
Fixot, N. (*with* Canudas de Wit, Carlos) Adaptive control of robot manipulators via velocity estimated feedback. (English summary) *Advanced robot control* (*Grenoble*, 1990), 69–82, *Lecture Notes in Control and Inform. Sci.*, 162, *Springer, Berlin*, 1991. (Summary) **93f:70031** 70Q05 (70B15, 93C85)
— (*with* Canudas de Wit, Carlos) Adaptive control of robot manipulators via velocity estimated feedback. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 8, *part I*, 1234–1237. 93C85
Flå, Tor A numerical energy conserving method for the DNLS equation. *J. Comput. Phys.* **101** (1992), *no.* 1, 71–79. (Summary) **93d:65080** 65M12 (35Q55)
fon-der-Flaass, D. G. *see* **Fon-Der-Flaass, D. G.**
Flach, Matthias A finiteness theorem for the symmetric square of an elliptic curve. *Invent. Math.* **109** (1992), *no.* 2, 307–327. (Bas Edixhoven) **93g:11066** 11G40 (11F80, 11G05, 19F27)
Flaherty, Francis J. Einstein-Hermitian bundles over complex surfaces. *Differential geometric methods in theoretical physics* (*Davis, CA*, 1988), 689–692, *NATO Adv. Sci. Inst. Ser. B Phys.*, 245, *Plenum, New York*, 1990. (Robert J. Fisher, Jr.) **93e:53035** 53C07 (14K99, 32L07, 32L25)
Flaherty, Joseph E. (*with* Baehmann, Peggy L.; Shephard, Mark S.) A posteriori error estimation for triangular and tetrahedral quadratic elements using interior residuals. The Second World Congress of Computational Mechanics, Part III (Stuttgart, 1990). *Internat. J. Numer. Methods Engrg.* **34** (1992), *no.* 3, 979–996. (Summary) **93a:73076** 73V05
— (*with* Adjerid, S.; Moore, P. K.; Wang, Yun J.) High-order adaptive methods for parabolic systems. (English summary) Experimental mathematics: computational issues in nonlinear science (Los Alamos, NM, 1991). *Phys. D* **60** (1992), *no.* 1-4, 94–111. (Summary) **93i:65092** 65M60
— (*with* Biswas, Rupak; Arney, David C.) An adaptive mesh-moving and refinement procedure for one-dimensional conservation laws. (English summary) *Appl. Numer. Math.* **11** (1993), *no.* 4, 259–282. 65M50
Flaisher, N. M. *see* **Fleischer, Norbert M.**
Flajolet, Philippe (*with* Gardy, Danièle; Thimonier, Loÿs) Birthday paradox, coupon collectors, caching algorithms and self-organizing search. (English summary) *Discrete Appl. Math.* **39** (1992), *no.* 3, 207–229. (Guy Jumarie) **93i:68107** 68Q45 (60C05, 90B99)
— (*with* Richmond, L. Bruce) Generalized digital trees and their difference-differential equations. *Random Structures Algorithms* **3** (1992), *no.* 3, 305–320. (Peter Kirschenhofer) **93f:05086** 05C80 (68P05, 68Q25)
Flåm, Sjur D. Approaching core solutions by means of continuous bargaining. (English summary) *Dynamic games in economic analysis* (*Espoo*, 1990), 239–248, *Lecture Notes in Control and Inform. Sci.*, 157, *Springer, Berlin*, 1991. (Summary) **93e:90075** 90D12 (90A60)
— (*with* Greco, Gabriele H.) Minimax and intersection theorems. (French summary) *Fixed point theory and applications* (*Marseille*, 1989), 123–140, *Pitman Res. Notes Math. Ser.*, 252, *Longman Sci. Tech., Harlow*, 1991. (Summary) **93c:47081** 47H99 (47N10, 49J35)
— (*with* Zowe, Jochem) A primal-dual differential method for convex programming. *Optimization and nonlinear analysis* (*Haifa*, 1990), 119–129, *Pitman Res. Notes Math. Ser.*, 244, *Longman Sci. Tech., Harlow*, 1992. (Vladimir I. Venets) **93k:90071** 90C25 (49M30)
— Solving convex programs by means of ordinary differential equations. *Math. Oper. Res.* **17** (1992), *no.* 2, 290–302. (Summary) **93j:90075** 90C25 (65K05, 90C30)
— Lagrange multipliers in stochastic programming. *SIAM J. Control Optim.* **30** (1992), *no.* 1, 1–10. (Alexei Gaivoronski) **93c:90051** 90C15 (49K45, 49N15)
Flaminio, L. (*with* Katok, A.) Rigidity of symplectic Anosov diffeomorphisms on low-dimensional tori. *Ergodic Theory Dynamical Systems* **11** (1991), *no.* 3, 427–441. (Nicolai T. A. Haydn) **93a:58133** 58F15 (53C05, 58F05)
— Mixing *k*-fold independent processes of zero entropy. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 4, 1263–1269. (Dalibor Volný) **93j:60041** 60G10 (28D05, 28D20)
Flamm, David S. A new shift-invariant representation for periodic linear systems. *Systems Control Lett.* **17** (1991), *no.* 1, 9–14. (Summary) **93a:93105** 93E11
— (*with* Klipec, Kathy) Numerical methods for H^∞ control of distributed parameter systems. (English summary) *Analysis and optimization of systems: state and frequency domain approaches for infinite-dimensional systems* (*Sophia-Antipolis*, 1992), 598–609, *Lecture Notes in Control and Inform. Sci.*, 185, *Springer, Berlin*, 1993. (*see* **93i:93005**) 93B36 (93B40, 93C20)
Flamm, Dieter Neueres zum Weltbild der Quantenmechanik. [Recent remarks on the conception of the world of quantum mechanics] *Naturwissenschaft und Weltbild*, 122–146, *Hölder-Pichler-Tempsky, Vienna*, 1992. (*see* **93b:00009**) 01A60 (00A30, 81–03)
Flammenkamp, Achim Progress in the no-three-in-line problem. *J. Combin. Theory Ser. A* **60** (1992), *no.* 2, 305–311. (Glenn H. Hurlbert) **93d:05040** 05B99
Flanagan, Eanna Trapped surfaces in nonspherical initial data sets and the hoop conjecture. (English summary) *Phys. Rev. D* (3) **46** (1992), *no.* 4, 1429–1439. (Francis Cagnac) **93j:83062** 83C75
Flandoli, Franco (*with* Brzeźniak, Zdzisław; Capiński, Marek) Approximation of white noise in stochastic partial differential equations. *Stochastic processes, physics and geometry* (*Ascona and Locarno*, 1988), 256–268, *World Sci. Publishing, Teaneck, NJ*, 1990. (Jan Ubøe) **93b:60128** 60H15 (35R60)
— (*with* Schaumlöffel, Kay-Uwe) Stochastic parabolic equations in bounded domains: random evolution operator and Lyapunov exponents. *Stochastics Stochastics Rep.* **29** (1990), *no.* 4, 461–485. (Summary) **93f:60093** 60H15 (35K10, 35R60)
— Stochastic flow and Lyapunov exponents for abstract stochastic PDEs of parabolic type. *Lyapunov exponents* (*Oberwolfach*, 1990), 196–205, *Lecture Notes in Math.*, 1486, *Springer, Berlin*, 1991. (Bohdan Maslowski) **93j:60083** 60H15 (35R60)
— Stochastic evolution equations with noncoercive monotone operators. *Stochastic partial differential equations and their applications* (*Charlotte, NC*, 1991), 70–80, *Lecture Notes in Control and Inform. Sci.*, 176, *Springer, Berlin*, 1992. (B. G. Pachpatte) **93j:60075** 60H10 (34F05, 34G10, 35R60, 47H20, 47N20, 60H25)
— (*with* Tessitore, Gianmario) Riccati equations in stochastic boundary control theory. *System modelling and optimization* (*Zurich*, 1991), 510–519, *Lecture Notes in Control and Inform. Sci.*, 180, *Springer, Berlin*, 1992. (*see* **93e:90003**) 93E20
— On the semigroup approach to stochastic evolution equations. *Stochastic Anal. Appl.* **10** (1992), *no.* 2, 181–203. (Yu. L. Daletskii) **93c:34126** 34G10 (34F05, 47D06, 47N20, 60H15)
— (*with* Brzeźniak, Zdzisław; Capiński, Marek) Stochastic Navier-Stokes equations with multiplicative noise. (English summary) *Stochastic Anal. Appl.* **10** (1992), *no.* 5, 523–532. (Ana Bela Cruzeiro) **93m:35140** 35Q30 (35R60, 60H15, 76D05, 76M35)
Flandrin, E. (*with* Fouquet, J.-L.; Li, Hao[1]) On Hamiltonian claw-free graphs. (English summary) Graph theory and combinatorics (Marseille-Luminy, 1990). *Discrete Math.* **111** (1993), *no.* 1-3, 221–229. (Summary) **93m:05121** 05C45
Flannery, Brian P. (*with* Press, William H.; Teukolsky, Saul A.; Vetterling, William T.) ★ Numerical recipes in FORTRAN. The art of scientific computing. Second edition. With a separately available computer disk. *Cambridge University Press, Cambridge*, 1992. xxvi+963 *pp. ISBN* 0-521-43064-X (From the preface) **93i:65001a** 65-00 (62-04, 65-04)
— (*with* Press, William H.; Teukolsky, Saul A.; Vetterling, William T.) ★ Numerical recipes in C. (English. English summary) The art of scientific computing. Second edition. *Cambridge University Press, Cambridge*, 1992. xxvi+994 *pp. ISBN* 0-521-43108-5 (From the preface) **93i:65001b** 65-00 (62-04, 65-04)
Flaquer, J. (*with* Rodil, J. L.) Implementation of an algorithm for parametrizing the envelope of a family of quadrics. (Spanish) *II Meeting on Computational Geometry* (*Spanish*) (*Madrid*, 1991), 101–118, *Univ. Politéc. Madrid, Madrid*, 1992. (Summary) **93f:51025** 51N10
— (*with* Gárate, G.; Pargada, M.) Envelopes of moving quadric surfaces. (English summary) *Comput. Aided Geom. Design* **9** (1992), *no.* 4, 299–312. (Zong Min Wu) **93h:65024** 65D17 (53A05)
Flasch, Kurt *see* **Historia philosophiae medii aevi, 93e:01001**
Flaschel, Peter Dressing the emperor in a new dynamic outfit. (English summary) Nonlinear methods in economic dynamics and optimal control (Vienna, 1990). *Ann. Oper. Res.* **37** (1992), *no.* 1-4, 33–49. (Summary) **93f:90029** 90A14
Flaschka, Hermann (*with* Haine, Luc) Variétés de drapeaux et réseaux de Toda. [Flag manifolds and Toda lattices] *Math. Z.* **208** (1991), *no.* 4, 545–556. (Introduction) **93e:58080** 58F07 (17B20, 22E60)
Flath, Daniel E. (*with* Peele, Rhodes) A carry theorem for rational binomial coefficients. *Applications of Fibonacci numbers, Vol.* 4 (*Winston-Salem, NC*, 1990), 109–120, *Kluwer Acad. Publ., Dordrecht*, 1991. (F. T. Howard) **93i:11022** 11B65

— (*with* Wagon, Stan) How to pick out the integers in the rationals: an application of number theory to logic. *Amer. Math. Monthly* **98** (1991), *no.* 9, 812–823. (James P. Jones) **93b:03076** 03D35 (03B25, 03C40, 11U05)

— (*with* Towber, Jacob) Generators and relations for the affine rings of the classical groups. *Comm. Algebra* **20** (1992), *no.* 10, 2877–2902. (Mihalis Maliakas) **93j:20094** 20G20

— (*with* Towber, Jacob) Tensor operators. II. The algebra of tensor operators. *Comm. Algebra* **20** (1992), *no.* 10, 2903–2917. (A. U. Klimyk) **93h:22038** 22E70 (81R05)

Flato, Moshé (*with* Harun-ar Rashid, A. M.; Fronsdal, C.) Three-D singletons and 2-D C.F.T. *Internat. J. Modern Phys. A* **7** (1992), *no.* 10, 2193–2206. (Summary) **93e:81072** 81T13 (81T40)

— (*with* Connes, Alain; Sternheimer, Daniel) Closed star products and cyclic cohomology. *Lett. Math. Phys.* **24** (1992), *no.* 1, 1–12. (Benjamin David Enriquez) **93d:19003** 19D55 (17B65, 19K56, 58F05, 58G15)

— (*with* Bonneau, Philippe; Pinczon, Georges) A natural and rigid model of quantum groups. (English summary) *Lett. Math. Phys.* **25** (1992), *no.* 1, 75–84. (D. A. Jordan) **93k:17025** 17B37 (16W30, 81R50)

Flatto, Leopold (*with* Coffman, Edward G., Jr.; Wright, Paul E.) Optimal stochastic allocation of machines under waiting-time constraints. (English summary) *SIAM J. Comput.* **22** (1993), *no.* 2, 332–348. (Summary) **93k:90040** 90B35

Flavell, Paul Nilpotent injectors in finite groups all of whose local subgroups are $\mathcal{N}$-constrained. *J. Algebra* **149** (1992), *no.* 2, 405–418. (David Chillag) **93i:20027** 20D99

Flavin, J. N. Convexity considerations for the biharmonic equation in plane polars with applications to elasticity. (English summary) *Quart. J. Mech. Appl. Math.* **45** (1992), *no.* 4, 555–566. (Summary) **93k:73015** 73C02 (35J30, 73C10)

— (*with* Knops, R. J.; Payne, L. E.) Asymptotic and other estimates for a semilinear elliptic equation in a cylinder. (English summary) *Quart. J. Mech. Appl. Math.* **45** (1992), *no.* 4, 617–627. (Summary) **93k:35089** 35J60 (73C02)

— (*with* Knops, R. J.; Payne, L. E.) Asymptotic behaviour of solutions to semi-linear elliptic equations on the half-cylinder. *Z. Angew. Math. Phys.* **43** (1992), *no.* 3, 405–421. (Allan L. Edelson) **93k:35102** 35J65 (35B40)

Fleck, B. (*with* Schmitz, F.) On the reflection of linear hydrodynamic waves at continuous temperature steps in stellar atmospheres. (English summary) *Astronom. and Astrophys.* **260** (1992), *no.* 1-2, 447–454. (Summary) **93d:85002** 85A20 (76N99)

Fleckinger, Jacqueline Pellé (*with* Abakhti-Mchachti, A.) Existence of positive solutions for noncooperative semilinear elliptic system defined on an unbounded domain. *Progress in partial differential equations: elliptic and parabolic problems* (*Pont-à-Mousson*, 1991), 92–106, *Pitman Res. Notes Math. Ser.*, 266, *Longman Sci. Tech., Harlow*, 1992. (Yasuhiro Furusho) **93m:35076** 35J65 (35B05, 35J60)

— (*with* Hernández, Jesús; de Thélin, François) Principe du maximum pour un système elliptique non linéaire. (English summary) [The maximum principle for some cooperative elliptic systems] *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 9, 665–668. (Summary) **93a:35052** 35J65 (35B50)

— (*with* Manásevich, Raúl F.; de Thélin, François) Un résultat de bifurcation globale à partir de la première valeur propre pour un système de p-laplaciens. (English and French summaries) [A result of global bifurcation from the first eigenvalue for a system of p-Laplacians] *C. R. Acad. Sci. Paris Sér. I Math.* **316** (1993), *no.* 2, 161–164. (Summary) **93k:35027** 35B32 (35B30, 47H15, 47N20, 58G28)

— (*with* Vasil'ev, D. G.) An example of a two-term asymptotics for the "counting function" of a fractal drum. (English summary) *Trans. Amer. Math. Soc.* **337** (1993), *no.* 1, 99–116. (Robert Brooks) **93g:58147** 58G18 (58G25)

Fleischer, A. Algebras of metric connections on homogeneous spaces. *Proceedings of the 3rd Congress of Geometry* (*Thessaloniki*, 1991), 152–158, *Aristotle Univ. Thessaloniki, Thessaloniki*, 1992. (Monica Radivoiovici-Tatoiu) **93g:53069** 53C30 (53C05)

Fleischer, Isidore (*with* Bulman-Fleming, Sydney) Amalgamation for direct systems. *Algebra Universalis* **28** (1991), *no.* 3, 377–388. (Ralph Freese) **93f:08009** 08B25 (06A12, 08C05)

— (*with* Scott, Philip J.) An algebraic treatment of the Barwise compactness theory [theorem]. *Studia Logica* **50** (1991), *no.* 2, 217–223. (K. J. Barwise) **93b:03060** 03C75 (03C70)

— A lattice-theoretic look at some ring theoretical radicals. *Comm. Algebra* **20** (1992), *no.* 3, 733–747. (Edmund R. Puczyłowski) **93b:16029** 16N20 (16N40, 16N80)

— The polyadic completion of a transformation algebra. *Proc. Amer. Math. Soc.* **117** (1993), *no.* 2, 511–514. (S. Comer) **93j:03028** 03G15

Fleischer, Norbert M. *see* **Purkert, Walter, 93d:01074**

Fleischer, Rudolf (*with* Sinha, Bhabani P.; Uhrig, Christian) A lower bound for the worst case of bottom-up-heapsort. (English summary) *National Seminar on Theoretical Computer Science* (*Madras*, 1991), 34–43, *IMS Rep.*, 115, *Inst. Math. Sci., Madras*, 199?. (*see* **93b:68006**) 68P10

— (*with* Mehlhorn, Kurt; Rote, Günter; Welzl, Emo; Yap, Chee-Keng) Simultaneous inner and outer approximation of shapes. (English summary) 1990 Computational Geometry Symposium (Berkeley, CA, 1990). *Algorithmica* **8** (1992), *no.* 5-6, 365–389. (Summary) **93j:68213** 68U05 (52B55)

— (*with* Alt, Helmut; Kaufmann, Michael; Mehlhorn, Kurt; Näher, Stefan; Schirra, Stefan; Uhrig, Christian) Approximate motion planning and the complexity of the boundary of the union of simple geometric figures. (English summary) 1990 Computational Geometry Symposium (Berkeley, CA, 1990). *Algorithmica* **8** (1992), *no.* 5-6, 391–406. (Summary) **93k:68097** 68U05 (52B55, 68Q25)

— (*with* Sinha, Bhabani P.; Uhrig, Christian) A lower bound for the worst case of bottom-up-heapsort. (English summary) *Inform. and Comput.* **102** (1993), *no.* 2, 263–279. (Summary) **93j:68042** 68P10 (68Q25)

Fleischer, V. The center and commutativity of wreath products of monoids with categories. (Russian. English and Estonian summaries) *Tartu Ül. Toimetised No.* 953 (1992), 83–94. (Summary) **93k:18012** 18B99 (20M99)

Fleischmann, Klaus Critical branching caused by interaction with point catalysts. *Probability theory and mathematical statistics, Vol. I* (*Vilnius*, 1989), 350–359, "*Mokslas*", *Vilnius*, 1990. (Luis G. Gorostiza) **93c:60129** 60J80 (60G57)

— (*with* Dawson, Donald A.) Critical branching in a highly fluctuating random medium. *Probab. Theory Related Fields* **90** (1991), *no.* 2, 241–274. (Luis G. Gorostiza) **93a:60130** 60J80 (60G57, 82C44)

— (*with* Greven, Andreas) Localization and selection in a mean field branching random walk in a random environment. (English summary) *Ann. Probab.* **20** (1992), *no.* 4, 2141–2163. (T. M. Liggett) **93k:60236** 60K35 (82C32)

— (*with* Dawson, Donald A.) Diffusion and reaction caused by point catalysts. *SIAM J. Appl. Math.* **52** (1992), *no.* 1, 163–180. (Ya. I. Bilopol'ska) **93e:35055** 35K55 (60G57, 82C70)

Fleischmann, Peter (*with* Janiszczak, Ingo) The semisimple conjugacy classes of finite groups of Lie type E_6 and E_7. *Comm. Algebra* **21** (1993), *no.* 1, 93–161. (Jamshid Moori) **93k:20029** 20D06 (20G40)

Fleischner, Herbert (*with* Wenger, Emanuel) D_0-favouring Eulerian trails in digraphs. (English summary) *Arch. Math.* (*Brno*) **25** (1989), *no.* 1-2, 55–60. (S. F. Kapoor) **93j:05067** 05C20 (05C45)

— (*with* Fulmek, Markus) $P(D)$-compatible Eulerian trails in digraphs and a new splitting lemma. *Contemporary methods in graph theory*, 291–303, *Bibliographisches Inst., Mannheim*, 1990. (Feng Tian) **93a:05083** 05C45

— Spanning Eulerian subgraphs, the splitting lemma, and Petersen's theorem. Special volume to mark the centennial of Julius Petersen's "Die Theorie der regulären Graphs", Part II. *Discrete Math.* **101** (1992), *no.* 1-3, 33–37. (Paul A. Catlin) **93k:05105** 05C45

— (*with* Stiebitz, Michael) A solution to a colouring problem of P. Erdős. Special volume to mark the centennial of Julius Petersen's "Die Theorie der regulären Graphs", Part II. *Discrete Math.* **101** (1992), *no.* 1-3, 39–48. (H. L. Abbott) **93g:05050** 05C15 (05C20, 05C45)

— (*with* Sabidussi, Gert; Wenger, Emanuel) Transforming Eulerian trails. (English summary) Algebraic graph theory (Leibnitz, 1989). *Discrete Math.* **109** (1992), *no.* 1-3, 103–116. (Ortrud R. Oellermann) **93m:05122** 05C45

Fleishman, S. B. Assignments with a given order of succession. (Russian) *Dokl. Akad. Nauk SSSR* **319** (1991), *no.* 3, 581–584; *translation in Soviet Phys. Dokl.* **36** (1991), *no.* 7, 507–509 (1992). (Nikolay N. Ivanov) **93a:90041a** 90C08 (90B80)

— Errata: "Assignments with a given order of succession". (Russian) *Dokl. Akad. Nauk SSSR* **321** (1991), *no.* 1, 10. (Nikolay N. Ivanov) **93a:90041b** 90C08 (90B80)

Fleissner, William Forcing and topological properties. (English summary) *Topology Proc.* **16** (1991), 41–43. (Klaas Pieter Hart) **93m:54009** 54A35 (54D15, 54D20, 54E35)

Fleming, Henrique (*with* Resek, E. O.) Conservation laws for fermions in spaces with torsion. (English summary) *J. J. Giambiagi Festschrift*, 144–160, *World Sci. Publishing, River Edge, NJ*, 1990. (Summary) **93d:83027** 83C40 (83D05)

Fleming, P. (*with* Lawrie, D. I.) Fine-grain parallel processing implementations of Kalman filter algorithms. *Control '91, Vol.* 1, 2 (*Edinburgh*, 1991), 867–870, *IEE Conf. Publ. Ser.*, 332, *IEE, London*, 1991. (*see* **93h:93007**) 93E11

Fleming, Philip Joseph (*with* Crummey, T. P.; Farshadnia, R.; Grace, A. C. W.; Hancock, S. D.) An optimization toolbox for MATLAB. *Control '91, Vol.* 1, 2 (*Edinburgh*, 1991), 744–749, *IEE Conf. Publ. Ser.*, 332, *IEE, London*, 1991. (*see* **93h:93007**) 90C30

Fleming, Richard J. (*with* Jamison, J. E.; Kamińska, A.) Isometries of Musielak-Orlicz spaces. *Function spaces* (*Edwardsville, IL*, 1990), 139–154, *Lecture Notes in Pure and Appl. Math.*, 136, *Dekker, New York*, 1992. (Ehrhard Behrends) **93b:47059** 47B38 (46E30)

— (*with* Narayan, Sivaram K.; Ong, Sing-Cheong) A note on operator norm inequalities. (English summary) *Integral Equations Operator Theory* **15** (1992), *no.* 5, 722–729. (P. Rosenthal) **93j:47009** 47A30

bulman-Fleming, Sydney *see* **Bulman-Fleming, Sydney**

Fleming, Wendell H. (*with* Zhang, Qing[1]) Piecewise monotone filtering with small observation noise: numerical simulations. *Applied stochastic analysis* (*New Brunswick, NJ*, 1991), 108–120, *Lecture Notes in Control and Inform. Sci.*, 177, *Springer, Berlin*, 1992. (Summary) **93c:93049** 93E11 (65U05)

— (*with* James, Matthew R.) Asymptotic series and exit time probabilities. (English summary) *Ann. Probab.* **20** (1992), *no.* 3, 1369–1384. (Patrick Cattiaux) **93k:60069** 60F10 (35Q99, 35R60, 60J60)

— *see also* **Berkovitz, Leonard D. et al., 93m:01058**

Flemmig, U. (*with* Poppe, Harry) On an algorithm for optimal control using an augmented Hamiltonian. *Z. Anal. Anwendungen* **10** (1991), *no.* 3, 407–414. (J. Frédéric Bonnans) **93e:49045** 49M05 (34H05, 65K10)

Flenner, Hubert Babylonian tower theorems for coverings. *Arch. Math.* (*Basel*) **57** (1991), *no.* 3, 299–304. (I. Dolgachev) **93a:14044** 14M10 (14E40)

— (*with* van Gastel, Leendert J.; Vogel, Wolfgang) Joins and intersections. *Math. Ann.* **291** (1991), *no.* 4, 691–704. (Rüdiger Achilles) **93e:14006** 14C17 (14E10, 14E22)

— (*with* Sundararaman, D.) Analytic geometry of complex superspaces. *Trans. Amer. Math. Soc.* **330** (1992), *no.* 1, 1–40. (Christian Lyubenov Yankov) **93k:32009** 32C11 (32G05, 32G13, 58A50)

Flensted-Jensen, Mogens A simple approach to D_k-modules. (English summary) *Representation theory of groups and algebras*, 229–235, *Contemp. Math.*, 145, *Amer. Math. Soc., Providence, RI*, 1993. (*see* **93k:00028**) 43A85 (20G20, 22E46)

Flesher, G. I. (*with* Zhukova, I. N.) An electromagnetic field of a linear current pulse. (Russian) *Izv. Vyssh. Uchebn. Zaved. Fiz.* **35** (1992), *no.* 2, 104–109; *translation in Soviet Phys. J.* **35** (1992), *no.* 2, 187–192. 78A55

Fletcher, L. R. (*with* Ho, Daniel W. C.) Extending partial pole placement. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, I* (*Kobe*, 1991), 209–214, *Mita, Tokyo*, 1992. (*see* **93g:93005**) 93B55

Fletcher, P. *see* **Fletcher, Peter**

Fletcher, Paul (*with* Fairlie, David B.) Infinite-dimensional algebras, a trigonometric basis for the classical Lie algebras, and SU(∞). *Supermembranes and physics in* 2+1 *dimensions* (*Trieste*, 1989), 378–389, *World Sci. Publishing, River Edge, NJ*, 1990. (*see* **93g:81003**) 17B65 (17B20, 81R10)

Fletcher, Peter (*with* Hunsaker, W.) Entourage uniformities for frames. *Monatsh. Math.* **112** (1991), *no.* 4, 271–279. (Summary) **93c:54020** 54E15

— (*with* Hunsaker, W.) Completeness using pairs of filters. Proceedings of the Symposium on General Topology and Applications (Oxford, 1989). *Topology Appl.* **44** (1992), *no.* 1-3, 149–155. (Hans-Peter A. Künzi) **93g:54040** 54E15 (54E52)

— (*with* Hunsaker, W.) Symmetry conditions in terms of open sets. *Topology Appl.* **45** (1992), *no.* 1, 39–47. (G. D. Dimov) **93h:54020** 54E05 (54E15)

Fleurent, Gilbert M. Pentagon and decagon designs in Islamic art. *Fivefold symmetry*, 263–281, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93i:52002**) 01A30 (00A30,

52C20)

Fleury, Françoise Sédimentation d'une suspension de gouttelettes visqueuses sphériques. (French summary) [Sedimentation of a suspension of spherical viscous droplets] *Rev. Roumaine Math. Pures Appl.* **37** (1992), *no.* 5, 397–405. (From the text) **93g:76045** 76D99 (76D45, 76T05)

Fleury, N. (*with* Rausch de Traubenberg, M.) Linearization of polynomials. (English summary) *J. Math. Phys.* **33** (1992), *no.* 10, 3356–3366. (Summary) **93k:15044** 15A63

Flicker, Yuval Z. Distinguished representations and a Fourier summation formula. (English and French summaries) *Bull. Soc. Math. France* **120** (1992), *no.* 4, 413–465. (Jeff Hakim) **93j:22033** 22E55 (11F70, 22E50)

— (*with* Mars, J. G. M.) Summation formulae, automorphic realizations and a special value of Eisenstein series. *J. Math. Kyoto Univ.* **32** (1992), *no.* 4, 715–729. (David Joyner) **93i:11054** 11F27 (11F70)

— The adjoint representation L-function for GL(n). *Pacific J. Math.* **154** (1992), *no.* 2, 231–244. (David Manderscheid) **93a:11045** 11F70 (22E55)

Fliegner, Thomas (*with* Steigenberger, Joachim) Stability of a disturbance decoupled rigid body. (English summary) *Systems Control Lett.* **19** (1992), *no.* 3, 249–254. (Gennady Victorovich Gorr) **93i:70007** 70E15 (70K20, 70Q05, 93C85, 93D05)

van de Fliert, B. W. (*with* van Groesen, E.) Monopolar vortices as relative equilibria and their dissipative decay. *Nonlinearity* **5** (1992), *no.* 2, 473–495. (Summary) **93a:76024** 76D05 (35R35)

Fliess, Michel (*with* Lévine, Jean; Rouchon, Pierre) Index of a general differential-algebraic implicit system. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, II* (*Kobe*, 1991), 289–294, *Mita, Tokyo*, 1992. (Summary) **93k:93029** 93B28 (34A09, 34A34)

— (*with* Delaleau, Emmanuel) Algorithme de structure, filtrations et découplage. (English summary) [Structure algorithm, filtrations and decoupling] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 1, 101–106. (Summary) **93c:93016** 93B25 (93B15)

— (*with* Lévine, Jean; Martin, Philippe; Rouchon, Pierre) Sur les systèmes non linéaires différentiellement plats. (English and French summaries) [On differentially flat nonlinear systems] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 5, 619–624. (Izabela Steckiewicz) **93j:93029** 93B18 (12H05, 34A34, 34H05, 93B25)

— Reversible linear and nonlinear discrete-time dynamics. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 8, *part I*, 1144–1153. (Vũ Ngoc Phát) **93f:93037** 93B25 (93B05, 93B10, 93C10, 93C55)

— (*with* Abu el Ata-Doss, S.; Coïc, A.) Nonlinear predictive control by inversion: discontinuities for critical behaviour. *Internat. J. Control* **55** (1992), *no.* 6, 1521–1533. 93B25 (93C10)

— A remark on Willems' trajectory characterization of linear controllability. *Systems Control Lett.* **19** (1992), *no.* 1, 43–45. (Giuseppe Conte) **93g:93022** 93B25 (93A05, 93B05, 93C05)

— (*with* Lévine, Jean; Martin, Philippe; Rouchon, Pierre) Défaut d'un système non linéaire et commande haute fréquence. (English and French summaries) [Defect of a nonlinear system and high-frequency control] *C. R. Acad. Sci. Paris Sér. I Math.* **316** (1993), *no.* 5, 513–518. (Summary) **93j:93070** 93C10

Fließbach, Torsten ★ Quantenmechanik. (German) [Quantum mechanics] *Bibliographisches Institut, Mannheim*, 1991. 383 *pp. ISBN* 3-411-14971-X (Julio Alcántara-Bode) **93f:81001** 81-01

— ★ Mechanik. (German) [Mechanics] *Bibliographisches Institut, Mannheim*, 1992. 382 *pp. ISBN* 3-411-15401-2 (Ll. G. Chambers) **93j:70001** 70-01 (73-01, 76-01)

Flippen, L. D., Jr. Abstract Zwanzig model reduction theory with application to discretized linear systems. (English summary) *Math. Comput. Modelling* **16** (1992), *no.* 10, 121–134. (B. H. Lavenda) **93j:82001** 82B03 (00A71)

— Fundamental law preservation in model reduction. (English summary) *Math. Comput. Modelling* **16** (1992), *no.* 11, 171–182. (Gérard A. Maugin) **93j:73002** 73A05 (73B99)

— Polynomial-basis model reduction. (English summary) *Math. Comput. Modelling* **16** (1992), *no.* 12, 121–132. 00A71

Floater, Michael S. Evaluation and properties of the derivative of a NURBS curve. *Mathematical methods in computer aided geometric design, II* (*Biri*, 1991), 261–274, *Academic Press, Boston, MA*, 1992. (*see* **93d:65022**) 65D07 (65D17)

— Derivatives of rational Bézier curves. (English summary) *Comput. Aided Geom. Design* **9** (1992), *no.* 3, 161–174. (Summary) **93d:65020** 65D17

Flockerzi, Dietrich (*with* Knobloch, Hans-W.) Invariant manifolds, zero dynamics and stability. *Nonlinear synthesis* (*Sopron*, 1989), 132–140, *Progr. Systems Control Theory*, 9, *Birkhäuser Boston, Boston, MA*, 1991. (P. Brunovský) **93c:34106** 34C30 (34D45, 93D05)

Floer, Andreas Instanton homology, surgery, and knots. *Geometry of low-dimensional manifolds*, 1 (*Durham*, 1989), 97–114, *London Math. Soc. Lecture Note Ser.*, 150, *Cambridge Univ. Press, Cambridge*, 1990. (Ronald J. Stern) **93h:57049** 57R57 (57N10, 57R65, 58G05)

— Instanton homology. Notes by Dieter Kotschick. *Geometry of low-dimensional manifolds*, 1 (*Durham*, 1989), 115–124, *London Math. Soc. Lecture Note Ser.*, 150, *Cambridge Univ. Press, Cambridge*, 1990. (From the text) **93e:57054** 57R57 (55N35, 58D29)

— Elliptic methods in variational problems. *Proceedings of the International Congress of Mathematicians, Vol. I, II* (*Kyoto*, 1990), 87–97, *Math. Soc. Japan, Tokyo*, 1991. (Paul A. Kirk) **93d:58025** 58E05 (57R70, 58D27, 58D29)

— *see also* **Hofer, Helmut**, (**93m:81008**)

Flohr, M. (*with* Blumenhagen, R.; Kliem, A.; Nahm, Werner; Recknagel, A.; Varnhagen, R.) $\mathscr{W}$-algebras with two and three generators. *Nuclear Phys. B* **361** (1991), *no.* 1, 255–289. (Edward P. Osipov) **93a:81063** 81R10 (17B65, 17B81, 81T40)

— (*with* Eholzer, W.; Honecker, A.; Hübel, R.; Nahm, Werner; Varnhagen, R.) Representations of W-algebras with two generators and new rational models. (English summary) *Nuclear Phys. B* **383** (1992), *no.* 1-2, 249–288. (A. Hamid Bougourzi) **93i:81061** 81R10 (81T40)

Floratos, E. G. The many-body problem for q-oscillators. *J. Phys. A* **24** (1991), *no.* 20, 4739–4750. (A. J. Coleman) **93a:81221** 81V70 (81R50)

— A Lagrangian resolution of the momentum problem for two-dimensional ferromagnets. *Phys. Lett. B* **279** (1992), *no.* 1-2, 117–123. (Summary) **93b:82038** 82C05 (82D40)

Florchinger, Patrick (*with* Le Gland, François) Particle approximation for first order stochastic partial differential equations. *Applied stochastic analysis* (*New Brunswick, NJ*, 1991), 121–133, *Lecture Notes in Control and Inform. Sci.*, 177, *Springer, Berlin*, 1992. (Jan I. Seidler) **93f:35252** 35R60 (65U05)

— Analyse numérique de l'équation de Zakai. [Numerical analysis of Zakai's equation] *Probabilités numériques*, 99–111, *Collect. Didact.*, 10, *INRIA, Rocquencourt*, 1992. (*see* **93k:65002**) 65U05

— Existence of a smooth density for the filter in nonlinear filtering on manifolds. (English summary) *Stochastic partial differential equations and their applications* (*Charlotte, NC*, 1991), 81–91, *Lecture Notes in Control and Inform. Sci.*, 176, *Springer, Berlin*, 1992. (Summary) **93d:60099** 60H07 (60G35)

Florea, Răzvan (*with* Chiujdea, Cornelia; Georgescu, Adelina) Linear stability of a turbulent flow of Maxwell fluids in pipes. (English summary) *Rev. Roumaine Math. Pures Appl.* **37** (1992), *no.* 7, 579–586. (Summary) **93h:76039** 76E99 (76A10)

Floreanini, Roberto (*with* Vinet, Luc) q-orthogonal polynomials and the oscillator quantum group. *Lett. Math. Phys.* **22** (1991), *no.* 1, 45–54. (P. D. F. Ion) **93g:33015** 33D45

— (*with* Vinet, Luc) Braid group action on the q-Weyl algebra. *Lett. Math. Phys.* **23** (1991), *no.* 2, 151–158. (Andrew Pressley) **93b:17041** 17B37 (20F36)

— (*with* Vinet, Luc) The metaplectic representation of $\mathrm{su}_q(1,1)$ and the q-Gegenbauer polynomials. *J. Math. Phys.* **33** (1992), *no.* 4, 1358–1362. (David M. Bressoud) **93f:33020** 33D80 (17B10, 33D45)

— (*with* Vinet, Luc) q-conformal quantum mechanics and q-special functions. *Phys. Lett. B* **277** (1992), *no.* 4, 442–446. (Summary) **93b:81113** 81R50 (33D15)

— (*with* Percacci, R.) Mean-field quantum gravity. (English summary) *Phys. Rev. D* (3) **46** (1992), *no.* 4, 1566–1579. (Summary) **93f:83038** 83C45

Florek, W. (*with* Lulek, T.) Combinatorial analysis of magnetic configurations. (English summary) *Séminaire Lotharingien de Combinatoire* (*Thurnau*, 1991), 17–28, *Publ. Inst. Rech. Math. Av.*, 476, *Univ. Louis Pasteur, Strasbourg*, 1992. (A. Kerber) **93i:05134** 05E15 (82B20)

— (*with* Lulek, T.) Gauge symmetries in the Heisenberg model of a magnet. (English summary) *Séminaire Lotharingien de Combinatoire* (*Thurnau*, 1991), 63–67, *Publ. Inst. Rech. Math. Av.*, 476, *Univ. Louis Pasteur, Strasbourg*, 1992. (*see* **93g:00029**) 82B20

Florencio, Miguel (*with* Drewnowski, Lech; Paúl, Pedro J.) Barrelled function spaces. *Progress in functional analysis* (*Peñíscola*, 1990), 191–199, *North-Holland Math. Stud.*, 170, *North-Holland, Amsterdam*, 1992. (James Bell Cooper) **93a:46066** 46E40 (46A08)

— (*with* Drewnowski, Lech; Paúl, Pedro J.) Some new classes of Banach-Mackey spaces. (English summary) *Manuscripta Math.* **76** (1992), *no.* 3-4, 341–351. (P. Pérez Carreras) **93i:46008** 46A08 (46A35)

— (*with* Paúl, Pedro J.; Sáez Agulló, Carmen) Duals of vector-valued Köthe function spaces. *Math. Proc. Cambridge Philos. Soc.* **112** (1992), *no.* 1, 165–174. (R. Anantharaman) **93g:46034** 46E40 (46A45, 46E30)

— (*with* Díaz Madrigal, Santiago; Drewnowski, Lech; Fernández López, Antonio[2]; Paúl, Pedro J.) Barrelledness and bornological conditions on spaces of vector-valued μ-simple functions. *Results Math.* **21** (1992), *no.* 3-4, 289–298. (Miguel Caldas Cueva) **93d:46060** 46E40 (46A08)

Florens-Zmirou, D. Statistics on crossings of discretized diffusions and local time. *Stochastic Process. Appl.* **39** (1991), *no.* 1, 139–151. (Summary) **93i:60149** 60J60 (62M05)

rubio Flores, Agripina *see* **Rubio Flores, Agripina**

Flores, Christopher Diffusion approximations for computer communications networks. *Stochastic analysis of computer and communication systems*, 173–213, *North-Holland, Amsterdam*, 1990. (Summary) **93c:60144** 60K25 (60J60, 68M10, 90B12)

Flores, Fabián (*with* Cellina, Arrigo) Radially symmetric solutions of a class of problems of the calculus of variations without convexity assumptions. (English and French summaries) *Ann. Inst. H. Poincaré Anal. Non Linéaire* **9** (1992), *no.* 4, 465–477. (Françoise Berquier) **93i:49005** 49J10 (49Q20)

Flores, J. (*with* Atkinson, Kendall E.) The discrete collocation method for nonlinear integral equations. (English summary) *IMA J. Numer. Anal.* **13** (1993), *no.* 2, 195–213. (Summary) **93m:65180** 65R20 (45L05)

Flores, J. C. Diffusion in momentum space for systems in a random time-dependent electric field: the 1D hydrogen atom. *J. Phys. A* **25** (1992), *no.* 12, L727–L732. (Summary) **93c:81049** 81Q50 (81V10)

Flores, Manuel T. (*with* Betancor, Jorge J.) A Parseval equation and a generalized finite Hankel transformation. *Comment. Math. Univ. Carolin.* **32** (1991), *no.* 4, 627–638. (E. L. Koh) **93f:46061** 46F12 (44A15)

Floret, Klaus (*with* Defant, Andreas) Continuity of tensor product operators between spaces of Bochner integrable functions. *Progress in functional analysis* (*Peñíscola*, 1990), 367–381, *North-Holland Math. Stud.*, 170, *North-Holland, Amsterdam*, 1992. (Summary) **93c:47036** 47B38 (46E40, 46M05, 47A80, 47B10)

Floría Gimeno, Luis (*with* Ferrándiz Leal, José Manuel) Poincaré-similar variables including J_2-secular effects. (English summary) *Predictability, stability, and chaos in N-body dynamical systems* (*Cortina d'Ampezzo*, 1990), 297–303, *NATO Adv. Sci. Inst. Ser. B Phys.*, 272, *Plenum, New York*, 1991. (*see* **93i:70002**) 70F15

— Generalized Poincaré-similar variables of an arbitrary order. (English summary) *Proceedings of the XII Congress on Differential Equations and Applications/II Congress on Applied Mathematics* (*Spanish*) (*Oviedo*, 1991), 607–613, *Univ. Oviedo, Oviedo*, 1991. (Summary) **93k:70019** 70F15 (70F05)

Florian, Helmut (*with* Püngel, Jürgen) Differentialtransformationen bei quasilinearen Gleichungen zweiter Ordnung. (English summary) [Differential transformations in second-order quasilinear equations] *Partial differential equations with complex analysis*, 14–22, *Pitman Res. Notes Math. Ser.*, 262, *Longman Sci. Tech., Harlow*, 1992. (Summary) **93j:35016** 35A30 (35C05, 35L70)

— (*with* Püngel, Jürgen) Differentialtransformationen von Lösungen partieller Differentialgleichungen. (English summary) [Differential transformations of solutions of partial differential equations] *Complex Variables Theory Appl.* **18** (1992), *no.* 1-2, 125–134. (Hideo Yamagata) **93b:35006** 35A30 (35C05, 35L70, 35Q53)

Florio, A. (*with* Lavenda, B. H.) Derivation of a new class of distributions for the microcanonical ensemble. (English summary) *Found. Phys. Lett.* **5** (1992), *no.* 5, 457–467. (Kurt Johansson) **93g:82049** 82B30 (60E07, 82B05, 82D99)

— (*with* Lavenda, B. H.) Thermodynamics of rare events. (English summary) *Internat. J. Theoret. Phys.* **31** (1992), *no.* 8, 1455–1475. (Lamberto Rondoni) **93h:82023** 82B30 (82B20, 82B41)

Flournoy, Nancy Bivariate Markov chains containing a failure process. (English summary) *Topics in statistical dependence* (*Somerset, PA*, 1987), 207–222, *IMS Lecture Notes*

Monograph Ser., 16, *Inst. Math. Statist., Hayward, CA*, 1990. (Summary) **93g:60158** 60J27

Fluch, Wolfgang Vermutungen über die G-Operatoren. [Conjectures on the G-operators] *Anz. Österreich. Akad. Wiss. Math.-Natur. Kl.* **128** (1991), 57–62 (1992). (Igor M. Novitskii) **93j:47044** 47B38

— Über die Existenz des zweiten Eigenwertes der G_N-Operatoren bei großem N. [On the existence of the second eigenvalue of the G_N-operators at large N] *Anz. Österreich. Akad. Wiss. Math.-Natur. Kl.* **128** (1991), 97–101 (1992). (Igor M. Novitskii) **93j:47045** 47B38

Flucher, Martin Extremal functions for the Trudinger-Moser inequality in 2 dimensions. *Comment. Math. Helv.* **67** (1992), *no.* 3, 471–497. (Helmut Kaul) **93k:58073** 58E35 (49Q15)

Flume, Rainald The conformal block structure of perturbation theory in two dimensions. (English summary) *Quantum groups and related topics (Wroclaw, 1991)*, 153–163, *Math. Phys. Stud.*, 13, *Kluwer Acad. Publ., Dordrecht*, 1992. (Summary) **93k:81202** 81T40

Flury, Bernhard (*with* Schmid, Martin J.) Quadratic discriminant functions with constraints on the covariance matrices: some asymptotic results. *J. Multivariate Anal.* **40** (1992), *no.* 2, 244–261. (Raúl Pedro Mentz) **93d:62114** 62H30

— Estimation of principal points. (English summary) *J. Roy. Statist. Soc. Ser. C* **42** (1993), *no.* 1, 139–151. (Summary) **93m:62137** 62H30

Flyaisher, V. *see* **Fleischer, V.**

Flynn, E. V. Sequences of rational torsions on abelian varieties. *Invent. Math.* **106** (1991), *no.* 2, 433–442. (David Grant) **93b:11075** 11G10 (14H45)

Flynn, J. *see* **Flynn, John**

Flynn, James Computing efficient steady state policies for deterministic dynamic programs. I. *J. Math. Anal. Appl.* **166** (1992), *no.* 1, 175–191. (From the introduction) **93a:90078** 90C39

Flynn, John (*with* MacHale, Desmond) Determining all finite groups whose automorphism group is a p-group. *Proc. Roy. Irish Acad. Sect. A* **91** (1991), *no.* 2, 259–264. (Richard Davitt) **93i:20042** 20F28

— (*with* Fitzpatrick, Patrick) A Gröbner basis technique for Padé approximation. *J. Symbolic Comput.* **13** (1992), *no.* 2, 133–138. (Summary) **93b:68037** 68Q40 (41A21)

Flynn, Michael J. (*with* Lee, Fung F.; Morf, Martin) Design of compact high performance processing elements for the FCHC lattice gas models. (English summary) *Parallel processing for scientific computing (Houston, TX, 1991)*, 616–622, *SIAM, Philadelphia, PA*, 1992. (*see* **93g:65178**) 65Y10 (76M25)

— (*with* Wong, Derek) Fast division using accurate quotient approximations to reduce the number of iterations. (English summary) *IEEE Trans. Comput.* **41** (1992), *no.* 8, 981–995. (Summary) **93i:68015** 68M07

Flynn, William G. (*with* Littlejohn, Robert G.) Phase integral theory, coupled wave equations, and mode conversion. *Chaos* **2** (1992), *no.* 1, 149–158. (Summary) **93a:81043** 81Q20 (81R20)

— (*with* Littlejohn, Robert G.) Semiclassical theory of spin-orbit coupling. *Phys. Rev. A* (3) **45** (1992), *no.* 11, 7697–7717. (Summary) **93a:81044** 81Q20 (81V35, 81V70)

Flytzanis, E. (*with* Avgerinos, Evgenios P.; Papageorgiou, Nikolaos S.) On $U(\cdot)$-invariance for finite- and infinite-dimensional control systems. *Acta Math. Hungar.* **59** (1992), *no.* 3-4, 309–318. (Krystyn Styczeń) **93f:93014** 93B03 (34G20, 34H05, 47N70, 49K15, 93C15, 93C25)

Flytzanis, N. (*with* Caputo, J. G.) Collective coordinates by a variational approach: problems for sine-Gordon and φ^4 models. (English summary) *Nonlinear coherent structures in physics and biology (Dijon, 1991)*, 343–350, *Lecture Notes in Phys.*, 393, *Springer, Berlin*, 1991. (*see* **93e:00025**) 35Q53 (81T10)

Foale, S. (*with* Bishop, S. R.) Dynamical complexities of forced impacting systems. *Philos. Trans. Roy. Soc. London Ser. A* **338** (1992), *no.* 1651, 547–556. (Martin Kummer) **93i:70023** 70K50 (34C15, 58F13, 70K40)

Foata, Dominique (*with* Désarménien, Jacques) The signed Eulerian numbers. *Discrete Math.* **99** (1992), *no.* 1-3, 49–58. (David M. Bressoud) **93e:11030a** 11B68 (05A15, 05A30, 05E05)

Fock, V. V. *see* **Fok, V. V.**

Foda, Omar (*with* Miwa, Tetsuji) Corner transfer matrices and quantum affine algebras. (English summary) *Infinite analysis, Part A, B (Kyoto, 1991)*, 279–302, *Adv. Ser. Math. Phys.*, 16, *World Sci. Publishing, River Edge, NJ*, 1992. (Kailash C. Misra) **93k:82014** 82B23 (17B67, 81R50)

— Conformal field theories on Riemann surfaces. (English summary) *Mark Kac Seminar on Probability and Physics. Syllabus 1987–1992 (Amsterdam, 1987–1992)*, 27–69, *CWI Syllabi*, 32, *Math. Centrum, Centrum Wisk. Inform., Amsterdam*, 1992. (Summary) **93i:81230** 81T40 (81–02)

Fodchuk, V. I. (*with* Bigun, Ya. I.) The averaging method and stability in a single-frequency system with delay. (Russian. Russian summary) *Asymptotic integration of nonlinear equations (Russian)*, 32–35, *Akad. Nauk Ukrainy, Inst. Mat., Kiev*, 1992. (*see* **93m:00016**) 34K15

— (*with* Cherevko, I. M.) Investigation of singularly perturbed functional-differential equations by the method of integral manifolds. (Russian. Russian summary) *Asymptotic integration of nonlinear equations (Russian)*, 124–127, *Akad. Nauk Ukrainy, Inst. Mat., Kiev*, 1992. (*see* **93m:00016**) 34K15

Fodor, G. (*with* Perjés, Zoltán) Ashtekar variables without hypersurfaces. *Quantum gravity (Moscow, 1990)*, 183–187, *World Sci. Publishing, River Edge, NJ*, 1991. (Jorge A. Pullin) **93e:83009** 83C05 (83C60)

Fodor, János C. Traces of fuzzy binary relations. (English summary) *Fuzzy Sets and Systems* **50** (1992), *no.* 3, 331–341. 04A72

— An axiomatic approach to fuzzy preference modelling. (English summary) *Fuzzy Sets and Systems* **52** (1992), *no.* 1, 47–52. (J. J. Buckley) **93j:90010** 90A06 (04A72, 90A05)

Fodor, Jerry A. Why there still has to be a language of thought. *The foundations of artificial intelligence*, 289–305, *Cambridge Univ. Press, Cambridge*, 1990. (*see* **93b:68073**) 68T30

Foerster, A. (*with* Girotti, H. O.) Statistical transmutation in 2 + 1 dimensions. (English summary) *J. J. Giambiagi Festschrift*, 161–168, *World Sci. Publishing, River Edge, NJ*, 1990. (Summary) **93c:81123** 81T13

Fogden, A. (*with* Hyde, S. T.) Parametrization of triply periodic minimal surfaces. I. Mathematical basis of the construction algorithm for the regular class. *Acta Cryst. Sect. A* **48** (1992), *no.* 4, 442–451. (Summary) **93c:53002** 53A10

Fogedby, Hans C. On the phase space approach to complexity. (English summary) *J. Statist. Phys.* **69** (1992), *no.* 1-2, 411–425. (Dimitri Petritis) **93i:82042** 82B28

Fogel, David B. Applying evolutionary programming to selected traveling salesman problems. (English summary) *Cybernet. Systems* **24** (1993), *no.* 1, 27–36. 90C27

Fogelson, Aaron L. Particle-method solution of two-dimensional convection-diffusion equations. *J. Comput. Phys.* **100** (1992), *no.* 1, 1–16. (Summary) **93b:76081** 76R99 (76M25, 76U05)

— Continuum models of platelet aggregation: formulation and mechanical properties. *SIAM J. Appl. Math.* **52** (1992), *no.* 4, 1089–1110. (G. Eason) **93e:92005** 92C35 (65C20, 76Z05)

Fogg, Iain (*with* Orlowska, Maria E.) Valid unbiased fragmentation for distributed database design. (English summary) *Comput. Math. Appl.* **25** (1993), *no.* 9, 97–106. (Summary) **93j:68046** 68P15

Foguel, Tuval Galois-theoretical groups. (English summary) *J. Algebra* **150** (1992), *no.* 2, 321–323. (Summary) **93e:20032** 20D30 (20D45)

— Addendum: "Galois-theoretical groups" [J. Algebra **150** (1992), no. 2, 321–323; MR 93e:20032]. *J. Algebra* **157** (1993), *no.* 2, 574. 20D30 (20D45)

Foias, Ciprian (*with* Bercovici, Hari; Tannenbaum, Allen R.) On the optimal solutions in spectral commutant lifting theory. *J. Funct. Anal.* **101** (1991), *no.* 1, 38–49. (Daniel Alpay) **93a:47005** 47A20 (30E05, 47A57)

— (*with* Manley, Oscar P.; Temam, Roger) Approximate inertial manifolds and effective viscosity in turbulent flows. (English summary) *Phys. Fluids A* **3** (1991), *no.* 5, *part* 1, 898–911. (Piotr Biler) **93m:76052** 76F99 (35Q30, 65M99, 76D05)

— (*with* Frazho, Arthur E.) Commutant lifting and simultaneous H^∞ and L^2 suboptimization. *SIAM J. Math. Anal.* **23** (1992), *no.* 4, 984–994. (Joseph A. Ball) **93e:47011** 47A20 (47A57, 47N70, 93B36)

— (*with* Becker, Robert A.; Bercovici, Hari) Weak Pareto optimality and the approximate support property. (English summary) *J. Math. Econom.* **22** (1993), *no.* 1, 61–71. (Summary) **93h:90016** 90A14 (90A53)

Fok, V. V. (*with* Bilal, Adel; Kogan, Ya. I.) On the origin of W-algebras. *Nuclear Phys. B* **359** (1991), *no.* 2-3, 635–672. (Vladimir A. Stukopin) **93b:81090** 81R10 (17B68, 81T40)

— (*with* Nekrasov, N. A.; Roslyĭ, A. A.; Selivanov, K. G.) What we think about the higher-dimensional Chern-Simons theories. *Sakharov Memorial Lectures in Physics, Vol. 1, 2 (Moscow, 1991)*, 465–471, *Nova Sci. Publ., Commack, NY*, 1992. (*see* **93h:81003**) 81T40

Fokas, A. S. (*with* Santini, Paolo Maria) An initial-boundary value problem for the Davey-Stewartson 1 equation and coherent structures in multidimensions. *Nonlinear world, Vol. 1 (Kiev, 1989)*, 315–340, *World Sci. Publishing, River Edge, NJ*, 1990. (*see* **93b:00012**) 35Q55 (76B15, 76X05, 78A60)

— (*with* It-s, A. R.; Kitaev, A. V.) Discrete Painlevé equations and their appearance in quantum gravity. *Comm. Math. Phys.* **142** (1991), *no.* 2, 313–344. (Nikolai A. Kostov) **93a:58080** 58F07 (81T40)

— (*with* It-s, A. R.; Kitaev, A. V.) Matrix models of two-dimensional quantum gravity, and isomonodromic solutions of Painlevé "discrete equations". (Russian. English summary) *Zap. Nauchn. Sem. Leningrad. Otdel. Mat. Inst. Steklov. (LOMI)* **187** (1991), *Differentsial'naya Geom. Gruppy Li i Mekh.* 12, 3–30, 171, 174. (Alexander R. Kavalov) **93e:81114** 81T40 (39A12, 58F07, 83C45)

— (*with* Tu, Gui Zhang) A residue representation for integrable equations in multidimensions. (English summary) *Nonlinear dispersive wave systems (Orlando, FL, 1991)*, 13–22, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93m:58048** 58F07 (35Q58)

— (*with* Zhou, Xin) On the solvability of Painlevé II and IV. *Comm. Math. Phys.* **144** (1992), *no.* 3, 601–622. (Andrei Bolibrukh) **93d:34004** 34A20 (34A12, 34B30)

— (*with* It-s, A. R.; Kitaev, A. V.) The isomonodromy approach to matrix models in 2D quantum gravity. *Comm. Math. Phys.* **147** (1992), *no.* 2, 395–430. (Yolanda Lozano) **93h:81115** 81T40 (58F07)

— (*with* Sung, Li-Yeng) On the solvability of the N-wave, Davey-Stewartson and Kadomtsev-Petviashvili equations. (English summary) *Inverse Problems* **8** (1992), *no.* 5, 673–708. (Summary) **93h:35177** 35Q53 (34A55, 34L25)

— (*with* Muğan, Ugurhan; Zhou, Xin) On the solvability of Painlevé I, III and V. (English summary) *Inverse Problems* **8** (1992), *no.* 5, 757–785. (Summary) **93h:35154** 35Q15 (34A20, 35Q58, 58F07)

— (*with* Muğan, Ugurhan) Schlesinger transformations of Painlevé II–V. *J. Math. Phys.* **33** (1992), *no.* 6, 2031–2045. (Andrei Bolibrukh) **93g:34012** 34A20 (34A12, 34B30)

— (*with* Dorfman, I. Ya.) Hamiltonian theory over noncommutative rings and integrability in multidimensions. *J. Math. Phys.* **33** (1992), *no.* 7, 2504–2514. (I. S. Krasil'shchik) **93c:58085** 58F07

— (*with* Zakharov, V. E.) The dressing method and nonlocal Riemann-Hilbert problems. *J. Nonlinear Sci.* **2** (1992), *no.* 1, 109–134. (Tuncay Aktosun) **93c:58086** 58F07 (35Q15, 35Q55, 58F19)

— (*with* It-s, A. R.) Soliton generation for initial-boundary value problems. *Phys. Rev. Lett.* **68** (1992), *no.* 21, 3117–3120. (Summary) **93a:35130** 35Q51

Fokin, D. A. (*with* Elizarov, A. M.; Il'inskiĭ, A. N.; Il'inskiĭ, N. B.; Potashev, A. V.) Aerohydrodynamically appropriate velocity distributions in inverse boundary value problems of subsonic aerohydrodynamics. (Russian) *Trudy Sem. Kraev. Zadacham No.* 26 (1991), 115–137. 76B05 (76G25)

— (*with* Elizarov, A. M.) An inverse boundary value problem in aerodynamics with specification of the velocity distribution for two angles of attack. (Russian) *Trudy Sem. Kraev. Zadacham No.* 26 (1991), 137–148. 76G25

Fokin, M. V. Smoothness of solutions of the Dirichlet problem for an equation of the oscillation of a string. (Russian) *Boundary value problems for nonclassical equations in mathematical physics (Russian) (Novosibirsk, 1989)*, 57–59, *Akad. Nauk SSSR Sibirsk. Otdel., Inst. Mat., Novosibirsk*, 1989. (*see* **93d:35001**) 35L35 (35B65)

Fokkink, Robbert J. (*with* Aarts, Jan M.) On composants of the bucket handle. *Fund. Math.* **139** (1991), *no.* 3, 193–208. (Edward D. Tymchatyn) **93a:54030** 54F15 (54H20)

Folacci, A. Quantum field theory of p-forms in curved space-time. *J. Math. Phys.* **32** (1991), *no.* 10, 2813–2827. (Summary) **93g:81108** 81T20 (58A10)

— Two-point functions and stress-energy tensors of p-forms in de Sitter and anti-de Sitter spaces. *J. Math. Phys.* **32** (1991), *no.* 10, 2828–2838. (Summary) **93i:81164a** 81T20 (81T15, 83C47)

— Erratum: "Two-point functions and stress-energy tensors of p-forms in de Sitter and anti-de Sitter spaces". *J. Math. Phys.* **33** (1992), *no.* 5, 1932. (Summary) **93i:81164b**

81T20 (81T15, 83C47)
— Green functions of the de Rham Laplacian in maximally symmetric spaces. *J. Math. Phys.* **33** (1992), *no.* 6, 2228–2231. (Akira Asada) **93f:58222** 58G03 (58G40)
— Zero modes, Euclideanization, and quantization. (English summary) *Phys. Rev. D* (3) **46** (1992), *no.* 6, 2553–2559. 81T20 (81T70)
— Averaged-null-energy condition for electromagnetism in Minkowski spacetime. (English summary) *Phys. Rev. D* (3) **46** (1992), *no.* 6, 2726–2729. (Summary) **93e:81153** 81V80
Földes, Antónia (*with* Csáki, Endre; Csörgő, Miklós; Révész, Pál) Strong approximation of additive functionals. (English summary) *J. Theoret. Probab.* **5** (1992), *no.* 4, 679–706. (Karl Grill) **93k:60073** 60F15 (60J15)
— (*with* Révész, Pál) On hardly visited points of the Brownian motion. *Probab. Theory Related Fields* **91** (1992), *no.* 1, 71–80. (F. B. Knight) **93b:60182** 60J65
— (*with* Puri, Madan L.) The time spent by the Wiener process in a narrow tube before leaving a wide tube. *Proc. Amer. Math. Soc.* **117** (1993), *no.* 2, 529–536. (Guang Lu Gong) **93d:60131** 60J65 (60G17)
Foldes, Stephan Obstruction graphs and sequential separability of directionally convex objects. Proceedings of the Twenty-first Southeastern Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, FL, 1990). *Congr. Numer.* **77** (1990), 97–100. (Editors) **93f:05071** 05C75
— Lexicographic sums of ordered sets and hypergroupoids. *Algebraic hyperstructures and applications* (*Xánthi*, 1990), 97–101, *World Sci. Publishing, Teaneck, NJ*, 1991. (Thomas N. Vougiouklis) **93c:06003** 06A06 (20N20)
— Lattices and obstruction relations. *Contributions to general algebra*, 7 (*Vienna*, 1990), 149–158, *Hölder-Pichler-Tempsky, Vienna*, 1991. (From the introduction) **93c:06012** 06B99 (52B55)
— Conditions for the separability of objects in two-dimensional velocity fields. (English summary) *Canad. Math. Bull.* **35** (1992), *no.* 4, 484–491. (K. Jay Bagga) **93m:05079** 05C20 (06A07, 68R10, 76A02)
— (*with* Rival, Ivan; Urrutia, Jorge) Light sources, obstructions and spherical orders. *Discrete Math.* **102** (1992), *no.* 1, 13–23. (Summary) **93c:68100** 68U05 (52B55)
Földesi, I. (*with* Adam, P.; Janszky, J.) Antisymmetric straight line superposition of coherent states. (English summary) *Phys. Lett. A* **173** (1993), *no.* 2, 97–100. (Summary) **93j:81040** 81R30 (81V80)
— (*with* Janszky, J.; Adam, P.) Sudden mass changes of a quantum oscillator and squeezing. (English summary) *Phys. Lett. A* **174** (1993), *no.* 5-6, 368–370. (Summary) **93k:81278** 81V80
Foley, R. D. (*with* Klutke, Georgia-Ann; König, Dieter) Stationary increments of accumulation processes in queues and generalized semi-Markov schemes. *J. Appl. Probab.* **28** (1991), *no.* 4, 864–872. (Masakiyo Miyazawa) **93b:60212** 60K25 (60J25)
Foley, Thomas A. (*with* Opitz, Karsten) Hybrid cubic Bézier triangle patches. *Mathematical methods in computer aided geometric design, II* (*Biri*, 1991), 275–286, *Academic Press, Boston, MA*, 1992. (*see* **93d:65022**) 65D05 (65D17)
— (*with* Barnhill, Robert E.; Lane, David A.) Interpolating scattered multivariate data as a function of time. (English summary) *Comput. Aided Geom. Design* **9** (1992), *no.* 5, 337–348. (Summary) **93i:65014** 65D05
— (*with* Shen, Cherng-Yeu; Reed, Helen L.) Shepard's interpolation for solution-adaptive methods. (English summary) *J. Comput. Phys.* **106** (1993), *no.* 1, 52–61. (Summary) **93k:76092** 76M25
Fol'gardt, A. V. Solution of a game with resource allocation. (Russian. Russian summary) *Computer systems and problems in decision making* (*Russian*), 180–183, 213, *Moskov. Gos. Univ., Moscow*, 1991. (*see* **93g:90002**) 90D46
Folkerts, Menso The Arabic Euclid in the Latin West. (Arabic summary) *Deuxième Colloque Maghrebin sur l'Histoire des Mathématiques Arabes* (*Tunis*, 1988), 85–94, A175–A176, *Maghreb, Tunis*, 19??. (H. L. L. Busard) **93f:01006** 01A30 (01A35)
— (*with* Demidov, S. S.; Rowe, David E.; Scriba, Christoph J.) Hans Wußing zum 65. Geburtstag. [To Hans Wußing on his 65th birthday] *Amphora*, ix–xi, *Birkhäuser, Basel*, 1992. (*see* **93g:01001**) 01A70 (01A80)
— Conrad Landvogt, ein bisher unbekannter Algebraiker um 1500. [Conrad Landvogt, a so far unknown algebraist from around 1500] *Amphora*, 229–259, *Birkhäuser, Basel*, 1992. (Warren Van Egmond) **93m:01018** 01A40 (01A70)
— *see also* **Amphora**, **93g:01001**
Folland, Gerald B. ★ Fourier analysis and its applications. The Wadsworth & Brooks/Cole Mathematics Series. *Wadsworth & Brooks/Cole Advanced Books & Software, Pacific Grove, CA*, 1992. x+433 *pp. ISBN* 0-534-17094-3 (Jean Lavoine) **93f:42001** 42–01 (00A05, 33–01, 34B05, 34L10, 44A10, 46–01)
Föllinger, O. Eine Beziehung zwischen den Algebren verallgemeinerter Distributionen von Colombeau und Ivanov. (English summary) [A relation between the algebras of generalized distributions defined by Colombeau and Ivanov] *Z. Anal. Anwendungen* **10** (1991), *no.* 2, 225–230. (Michael Oberguggenberger) **93g:46037** 46F10
Föllmer, Hans Martin boundaries on Wiener space. *Diffusion processes and related problems in analysis, Vol. I* (*Evanston, IL*, 1989), 3–16, *Progr. Probab.*, 22, *Birkhäuser Boston, Boston, MA*, 1990. (J. C. Taylor) **93d:60121** 60J50 (60H30)
Folta, Jaroslav Notes on the history of numerical analysis in its connections with Prague. *Proceedings of the Second International Symposium on Numerical Analysis* (*Prague*, 1987), 36–50, *Teubner-Texte Math.*, 107, *Teubner, Leipzig*, 1988. (*see* **93b:65007**) 01A05 (65–03)
— The history of mathematics at regular international symposia. (Czech) *Pokroky Mat. Fyz. Astronom.* **37** (1992), *no.* 6, 339–341. 01A05
Foltyńska, Izabela Oscillatory solutions to a system of nonlinear integrodifferential equations. (English summary) Third International Seminar on Ordinary Differential Equations (Poznań, 1990). *Fasc. Math. No.* 23 (1991), 61–66 (1992). (J. S. W. Wong) **93f:45012** 45J05 (34K15)
— Comparison theorems for systems [of] integro-differential equations with advance arguments. *Demonstratio Math.* **25** (1992), *no.* 1-2, 219–227. (S. G. Deo) **93h:45003** 45J05 (34K15, 45M15)
Fomenko, A. T. (*with* Kalashnikov, V. V.; Nosovskiĭ, G. V.) Statistical analysis and dating of the observations on which Ptolemy's *Almagest* star catalogue is based. *Probability theory and mathematical statistics, Vol. I* (*Vilnius*, 1989), 360–374, "*Mokslas*", *Vilnius*, 1990. (R. Nadal) **93a:01007** 01A20 (00A69, 85–03)
— (*with* Tuzhilin, Alekseĭ Avgustinovich) ★ Элементы геометрии и топологии минимальных поверхностей. (Russian) [Elements of the geometry and topology of minimal surfaces] Современная Математика для Студентов [Contemporary Mathematics for Students], 2. "*Nauka*", *Moscow*, 1991. 175 *pp. ISBN* 5-02-014811-3 (Yi Bing Shen) **93a:53009** 53A10 (49Q05, 53C42, 58E12)
— (*with* Matveev, S. V.) ★ Алгоритмические и компьютерные методы в трехмерной топологии. (Russian) [Algorithmic and computer methods in three-dimensional topology] *Moskov. Gos. Univ., Moscow*, 1991. 303 *pp. ISBN* 5-211-01743-9 (Jože Vrabec) **93f:57002** 57–01 (57–02, 57M25, 57M35, 57M40, 57N05, 57N10)
— Topological classification of all integrable Hamiltonian differential equations of general type with two degrees of freedom. *The geometry of Hamiltonian systems* (*Berkeley, CA*, 1989), 131–339, *Math. Sci. Res. Inst. Publ.*, 22, *Springer, New York*, 1991. (Charles-Michel Marle) **93e:58081** 58F07 (57R70, 58F05, 70H05)
— The theory of invariants of multidimensional integrable Hamiltonian systems (with arbitrary [arbitrarily] many degrees of freedom). Molecular table of all integrable systems with two degrees of freedom. *Topological classification of integrable systems*, 1–35, *Adv. Soviet Math.*, 6, *Amer. Math. Soc., Providence, RI*, 1991. (Galina G. Okuneva) **93c:58087** 58F07 (58F05, 70H05)
— (*with* Nguyen Tien Zung) Topological classification of integrable nondegenerate Hamiltonians on the isoenergy three-dimensional sphere. *Topological classification of integrable systems*, 267–296, *Adv. Soviet Math.*, 6, *Amer. Math. Soc., Providence, RI*, 1991. (Galina G. Okuneva) **93a:58060** 58F05 (57N12, 58F07, 70H05)
— (*with* Chacon, R. V.) Recursion formulas for the Lie integral. *Adv. Math.* **88** (1991), *no.* 2, 200–257. (Dominique Lambert) **93e:22013** 22E15 (17B10, 65D30)
— Bordism theory of integrable nondegenerate Hamiltonian systems with two degrees of freedom. A new topological invariant of multidimensional integrable systems. (Russian) *Izv. Akad. Nauk SSSR Ser. Mat.* **55** (1991), *no.* 4, 747–779; *translation in Math. USSR-Izv.* **39** (1992), *no.* 1, 731–759. (P. S. Landweber) **93d:57064** 57R90 (57M50, 57N10, 57N37, 57R95, 58F05)
— (*with* Kalashnikov, V. V.; Nosovskiĭ, G. V.) The dating of Ptolemy's *Almagest* based on the coverings of the stars and on lunar eclipses. (English summary) *Acta Appl. Math.* **29** (1992), *no.* 3, 281–298. (J. S. Joel) **93m:01010** 01A20 (01A35)
— (*with* Nosovskiĭ, G. V.) Identifying duplicates in chronological lists (the method of frequency histograms for the spread of related names). Stability problems for stochastic models. *J. Soviet Math.* **59** (1992), *no.* 4, 980–991. (J. S. Joel) **93f:92031** 92K10 (01A99)
— (*with* Goldberg, Vladislav V.; Kirichenko, V. F.; Ryzhkov, V. V.; Shelekhov, A. M.) Maks Aizikovich Akivis. *Webs & quasigroups*, 4–8, *Tver. Gos. Univ., Tver'*, 1993. (*see* **93m:53002**) 01A70
Fomenko, I. V. (*with* Krasnosel'skiĭ, M. A.; Pokrovskiĭ, A. V.) Self-induced oscillations in systems with hysteresis. (Russian) *Conference on Differential Equations and Applications* (*Ruse*, 1989), 2–11, *Tech. Univ., Ruse*, 1991. (*see* **93f:34004**) 34C15 (47H30)
— (*with* Diamond, Phil) Robustness of representations in multilayer feedforward neural networks. (English summary) Networks for neural processing. *Circuits Systems Signal Process.* **12** (1993), *no.* 2, 211–221. (Philippe De Wilde) **93m:41020** 41A30 (42A10, 68T05, 92B20)
— (*with* Asarin, E.; Diamond, Phil; Pokrovskiĭ, A. V.) Chaotic phenomena in desynchronized systems and stability analysis. *Comput. Math. Appl.* **25** (1993), *no.* 1, 81–87. (Peter E. Kloeden) **93k:58144** 58F13 (58F03, 58F10, 93D05)
Fomenko, O. M. Sums of three squares in imaginary quadratic fields. (Russian. Russian summary) *Algebra i Analiz* **3** (1991), *no.* 5, 190–212; *translation in St. Petersburg Math. J.* **3** (1992), *no.* 5, 1127–1147. (Ekkehard Krätzel) **93h:11126** 11R47
— (*with* Golubeva, E. P.) On Yu. V. Linnik's conjecture connected with the distribution of lattice points on the three-dimensional sphere. (Russian) *Zap. Nauchn. Sem. Leningrad. Otdel. Mat. Inst. Steklov.* (*LOMI*) **196** (1991), *Modul. Funktsii Kvadrat. Formy.* 2, 31–34, 172. (Hartmut Menzer) **93e:11116** 11P21 (11N37)
Fomenko, T. N. Algebraic characteristics of equivariant mappings. (Russian) *Algebraic problems in analysis and topology* (*Russian*), 152–158, 163, *Novoe Global. Anal., Voronezh. Gos. Univ., Voronezh*, 1990. (Jack Weinstein) **93d:55004** 55M25 (55M35)
Fomin, A. A. (*with* Rychkov, S. V.) Abelian groups with a countable number of subgroups. (Russian. English and Russian summaries) *Abelian groups and modules, No.* 10 (*Russian*), 99–105, 185, 191, *Tomsk. Gos. Univ., Tomsk*, 1991. (L. Bican) **93k:20079** 20K27
— The category of quasi-homomorphisms of abelian torsion free groups of finite rank. *Proceedings of the International Conference on Algebra, Part* 1 (*Novosibirsk*, 1989), 91–111, *Contemp. Math.*, 131, *Part* 1, *Amer. Math. Soc., Providence, RI*, 1992. (Ulrich Albrecht) **93j:20108** 20K15
Fomin, A. N. Properties of suborbits of finite primitive permutation groups. (Russian) *Group-theoretic investigations* (*Russian*), 87–94, *Akad. Nauk SSSR Ural. Otdel., Sverdlovsk*, 1990. (V. D. Mazurov) **93b:20003** 20B15
Fomin, D. V. Stiefel orientations: existence and constructions. (Russian. English summary) *Zap. Nauchn. Sem. Leningrad. Otdel. Mat. Inst. Steklov.* (*LOMI*) **193** (1991), *Geom. i Topol.* 1, 149–160, 164. (Donald W. Kahn) **93e:55020** 55R40 (57R20)
Fomin, G. A. Lebesgue constants in linear methods of summation of multiple Fourier series. (Russian) *Application of functional analysis in approximation theory* (*Russian*), 138–147, *Tver. Gos. Univ., Tver'*, 1990. (*see* **93k:00021**) 42B08
Fomin, S. V. (*with* Daletskiĭ, Yu. L.) ★ Measures and differential equations in infinite-dimensional space. Translated from the Russian. With additional material by V. R. Steblovskaya, Yu. V. Bogdansky [Yu. V. Bogdanskiĭ] and N. Yu. Goncharuk. Mathematics and its Applications (Soviet Series), 76. *Kluwer Academic Publishers Group, Dordrecht*, 1991. xvi+337 *pp. ISBN* 0-7923-1517-0 (E. Gerlach) **93c:46071** 46Gxx (28C20, 34Gxx, 35R15, 35R60, 60B11)
Fomin, V. E. (*with* Men'shikov, G. G.) Numerical realization of the Fourier method in one of the initial-boundary value problems for the diffusion equation. (Russian. English and Russian summaries) *Vestnik Leningrad. Univ. Mat. Mekh. Astronom.* **1991,** *vyp.* 3, 82–87, 133. 65P05
Fomin, V. I. A singular differential equation with a small parameter in the case of a variable unbounded operator coefficient. (Russian. Russian summary) *Boundary value problems* (*Russian*), 106–109, *Perm. Politekh. Inst., Perm'*, 1989. (*see* **93k:00022**) 34G10 (34E99, 47N20)
Fomin, V. M. *see* **Fomin, Vasiliĭ Mikhaĭlovich**

Fomin, V. N. ★ Discrete linear control systems. Translated from the 1985 Russian original. Mathematics and its Applications (Soviet Series), 67. *Kluwer Academic Publishers Group, Dordrecht*, 1991. xiv+302 *pp. ISBN* 0-7923-1248-1 (Bojan Popović) **93d:93002** 93–02 (49–02, 93C55, 93E20)

Fomin, Vasilii Mikhaĭlovich (*with* Kovenya, V. M.; Kuznetsov, B. G.; Sleptsov, A. G.) Nikolai Nikolaevich Yanenko (1921–1984). (Russian) *Model. Mekh.* **5** (1991), *no.* 2, 3–6. 01A70

— *see also* **Numerical methods for solving problems in elasticity and plasticity theory, 93k:73001** *and* **Gutov, B. I.**

Fomina, T. P. (*with* Gorelik, V. A.) Turnpike properties for a two-sector model with a nonsmooth functional. (Russian. Russian summary) *Decomposition and optimization in complex systems* (*Russian*), 14–26, 77, *Akad. Nauk SSSR, Vychisl. Tsentr, Moscow*, 1991. (*see* **93c:49002**) 90A16

Fonarëv, A. A. Solution of equations with potential operators. (Russian) *Some questions of mathematics in problems of physics and mechanics* (*Russian*), 91–94, *Moskov. Fiz.-Tekhn. Inst., Moscow*, 1988. (*see* **93m:00036**) 65J15 (47H17)

Fonarev, O. A. (*with* Bukhbinder, I. L.; Odintsov, S. D.) Two-loop approach to the effective action in quantum gravity. *Internat. J. Modern Phys. A* **7** (1992), *no.* 14, 3203–3233. (Summary) **93d:83030** 83C45

Fonda, Alessandro (*with* Gossez, Jean-Pierre; Zanolin, Fabio) On a nonresonance condition for a semilinear elliptic problem. *Differential Integral Equations* **4** (1991), *no.* 5, 945–951. (Nguyên-Phuong-Các) **93e:35033** 35J65 (35B05, 47H15, 47N20)

— (*with* Mawhin, Jean) Critical point theory and multiple periodic solutions of conservative systems with periodic nonlinearity. (English summary) *The problem of Plateau*, 111–128, *World Sci. Publishing, River Edge, NJ*, 1992. (Pavel Drábek) **93k:58045** 58E05 (34C25, 58F05, 58F22)

— (*with* Zanolin, Fabio) On the use of time-maps for the solvability of nonlinear boundary value problems. *Arch. Math.* (*Basel*) **59** (1992), *no.* 3, 245–259. (A. I. Perov) **93i:34035** 34B15 (34C25)

— (*with* Mawhin, Jean) Iterative and variational methods for the solvability of some semilinear equations in Hilbert spaces. *J. Differential Equations* **98** (1992), *no.* 2, 355–375. (P. W. Bates) **93h:47071** 47H15 (35L70, 47H17, 47N20)

— (*with* Fabry, C.) Nonlinear equations at resonance and generalized eigenvalue problems. *Nonlinear Anal.* **18** (1992), *no.* 5, 427–444. (R. Kent Nagle) **93i:47099** 47H15 (34B15, 34C25, 35J65, 47N20)

— On the existence of periodic solutions for scalar second order differential equations when only the asymptotic behaviour of the potential is known. *Proc. Amer. Math. Soc.* **119** (1993), *no.* 2, 439–445. (Fabio Zanolin) **93k:34090** 34C25 (34B15)

Fon-Der-Flaass, D. G. (*with* Erdős, Paul; Kostochka, A. V.; Tuza, Zsolt) Small transversals in uniform hypergraphs. Siberian Advances in Mathematics. *Siberian Adv. Math.* **2** (1992), *no.* 1, 82–88. (Daniel Turzík) **93b:05076** 05C35 (05C65)

— Orbits of antichains in ranked posets. (English summary) *European J. Combin.* **14** (1993), *no.* 1, 17–22. (Konrad Engel) **93k:06006** 06A07

Fonf, V. P. Sets of super-first category in Banach spaces. (Russian) *Funktsional. Anal. i Prilozhen.* **25** (1991), *no.* 4, 66–69; *translation in Functional Anal. Appl.* **25** (1991), *no.* 4, 285–286 (1992). (G. J. O. Jameson) **93d:46023** 46B03

— One property of families of imbedded Banach spaces. *J. Soviet Math.* **59** (1992), *no.* 1, 687–690. (Fernando Cobos) **93e:46014** 46B15 (46M35)

Fong, Duncan K. H. (*with* Chow, Mo Suk) Simultaneous estimation of the Hardy-Weinberg proportions. (English and French summaries) *Canad. J. Statist.* **20** (1992), *no.* 3, 291–296. (Summary) **93h:62042** 62F10 (62C15)

— Ranking and estimation of related means in the presence of a covariate—a Bayesian approach. (English summary) *J. Amer. Statist. Assoc.* **87** (1992), *no.* 420, 1128–1136. 62F07 (62F15)

— A Bayesian approach to the estimation of the largest normal mean. (English summary) *J. Statist. Comput. Simulation* **40** (1992), *no.* 1-2, 119–133. (Friedrich Liese) **93j:62079** 62F15 (62F07)

Fong, I-Kong *see* **Fêng, I Kang**

Fong, Yuen Rings and near-rings generated by group mappings. (English summary) *Proceedings of the First China-Japan International Symposium on Ring Theory* (*Guilin*, 1991), 46–48, *Okayama Univ., Okayama*, 1992. (*see* **93k:16001**) 16Y30

— (*with* Xu, Yong Hua[1]) On the decomposition of coalgebras. *Words, languages and combinatorics* (*Kyoto*, 1990), 504–522, *World Sci. Publishing, River Edge, NJ*, 1992. (Richard K. Molnar) **93h:16070** 16W30

— (*with* van Wyk, Leon) Semi-homomorphisms of near-rings. *Math. Pannon.* **3** (1992), *no.* 1, 3–17. (Summary) **93d:16061** 16Y30 (20K01)

— (*with* Huang, F. K.; K'o, Wên Fêng) Syntactic linear[near]-rings associated with groups semiautomata. *Pure Math. Appl. Ser. A* **2** (1992), *no.* 3-4, 187–204. (Günter Pilz) **93i:16061** 16Y30 (16N80, 68Q70)

— (*with* Clay, J. R.) On syntactic nearrings of even dihedral groups. *Results Math.* **23** (1993), *no.* 1-2, 23–44. (Gary L. Peterson) **93k:16082** 16Y30 (20M35, 68Q70)

Fonlupt, Jean (*with* Mahjoub, A. R.; Uhry, J.-P.) Compositions in the bipartite subgraph polytope. (English summary) *Discrete Math.* **105** (1992), *no.* 1-3, 73–91. (Summary) **93g:05129** 05C85 (05C35, 68R10)

— (*with* Naddef, Denis) The traveling salesman problem in graphs with some excluded minors. *Math. Programming* **53** (1992), *no.* 2, *Ser. A*, 147–172. (Guntram Scheithauer) **93b:90101** 90C35 (05C35, 65S05, 90C10)

Fonseca, Irene (*with* Müller, Stefan) A uniqueness proof for the Wulff theorem. *Proc. Roy. Soc. Edinburgh Sect. A* **119** (1991), *no.* 1-2, 125–136. (Summary) **93c:49026** 49Q05 (58E12)

— (*with* Dacorogna, Bernard) A minimization problem involving variation of the domain. *Comm. Pure Appl. Math.* **45** (1992), *no.* 7, 871–897. (Gianfranco Bottaro) **93i:49053** 49Q10 (49J10)

— (*with* Parry, Gareth P.) On a class of invariant functionals. (English summary) *Proc. Roy. Soc. London Ser. A* **436** (1992), *no.* 1897, 317–329. (Cesare Davini) **93i:73045** 73S10 (49J10, 73B99, 73V25)

— (*with* Müller, Stefan) Quasi-convex integrands and lower semicontinuity in L^1. (English summary) *SIAM J. Math. Anal.* **23** (1992), *no.* 5, 1081–1098. (Anna Salvadori) **93i:49020** 49J45 (49Q20)

Fonseca-Neto, J. B. (*with* Rebouças, M. J.; Teixeira, A. F. F.) The equivalence problem in torsion theories of gravitation. *J. Math. Phys.* **33** (1992), *no.* 7, 2574–2577. (Yu. N. Obukhov) **93i:53069** 53C80 (83D05)

Font, Anamaría Automorphism fixed points and exceptional modular invariants. *Modern Phys. Lett. A* **6** (1991), *no.* 35, 3265–3272. (Uwe Grimm) **93e:17035** 17B67 (11F22, 81R10, 81T40)

— (*with* Aldazabal, G.; Allekotte, I.; Núñez, Carmen A.) $N = 2$ coset compactifications with nondiagonal invariants. (English summary) *Internat. J. Modern Phys. A* **7** (1992), *no.* 25, 6273–6297. (Eric J. Raiten) **93i:81180** 81T30 (11F22, 81T40)

Font, Joaquim *see* **Font Arjó, Joaquín**

Fontaine, Fred L. (*with* Basu, Sankar) Formal power series representation of lossless distributed multiports in terms of Padé approximants. *Algorithms and parallel VLSI architectures, Vol. B* (*Pont-à-Mousson*, 1990), 99–108, *Elsevier, Amsterdam*, 1991. (Summary) **93c:94012** 94C12 (41A21, 65B99, 94A12)

Fontaine, Jean-Marc (*with* Perrin-Riou, Bernadette) Autour des conjectures de Bloch et Kato. I. Cohomologie galoisienne. (English summary) [On the conjectures of Bloch and Kato. I. Galois cohomology] *C. R. Acad. Sci. Paris Sér. I Math.* **313** (1991), *no.* 5, 189–196. (Takeshi Ooe) **93i:11074** 11G40 (11R34, 11S25)

— (*with* Perrin-Riou, Bernadette) Autour des conjectures de Bloch et Kato. II. Structures motiviques f-closes. [On the conjectures of Bloch and Kato. II. f-closed motivic structures] *C. R. Acad. Sci. Paris Sér. I Math.* **313** (1991), *no.* 6, 349–356. (Takeshi Ooe) **93i:11075** 11G40 (11G09, 19F27)

— (*with* Perrin-Riou, Bernadette) Autour des conjectures de Bloch et Kato. III. Le cas général. (English summary) [On the conjectures of Bloch and Kato. III. The general situation] *C. R. Acad. Sci. Paris Sér. I Math.* **313** (1991), *no.* 7, 421–428. (Takeshi Ooe) **93i:11076** 11G40 (11G09, 19F27)

Fontana, Marco (*with* Pappalardi, Francesco) The prime spaces as spectral spaces. *Ann. Mat. Pura Appl.* (4) **160** (1991), 331–345 (1992). (C. P. L. Rhodes) **93d:13005** 13A18 (13B02, 14A05)

— (*with* Anderson, David F.; Dobbs, David E.) Hilbert rings arising as pullbacks. (English summary) *Canad. Math. Bull.* **35** (1992), *no.* 4, 431–438. (Salah-Eddine Kabbaj) **93j:13003** 13A15 (13G05)

— (*with* Anderson, David F.; Dobbs, David E.; Khalis, Mohammed) Catenarity of formal power series rings over a pullback. *J. Pure Appl. Algebra* **78** (1992), *no.* 2, 109–122. (J. W. Brewer) **93d:13022** 13C15 (13J05)

paveri-Fontana, S. *see* **Paveri-Fontana, S.**

Fontana, Walter Functional self-organization in complex systems. (English summary) 1990 *lectures in complex systems* (*Santa Fe, NM*, 1990), 407–426, *Santa Fe Inst. Stud. Sci. Complexity Lectures, III, Addison-Wesley, Redwood City, CA*, 1991. (*see* **93h:68003**) 68T05 (92B05, 92C05)

Font Arjó, Joaquín (*with* Simó, Carles) Are there irregular families of characteristic curves? (English summary) *Predictability, stability, and chaos in N-body dynamical systems* (*Cortina d'Ampezzo*, 1990), 531–540, *NATO Adv. Sci. Inst. Ser. B Phys.*, 272, *Plenum, New York*, 1991. (Summary) **93k:70024** 70H05 (34C23, 34C25, 58F05, 58F22, 70F15)

Fonte, G. (*with* Borzi, A. E.) On variational principles for nonlinear partial differential equations in complex spaces. *Nuovo Cimento B* (11) **107** (1992), *no.* 2, 189–201. (Jaime Muñoz Masqué) **93d:58041** 58E30 (35Q55, 46G99)

de Fontenelle, Bernard *see* **Mortureux, Marie-Françoise, 93b:01020** *and* **Blay, Michel, (93e:01009)**

galaz Fontes, Fernando *see* **Galaz Fontes, Fernando**

Fontich, E. (*with* Casasayas, Josefina; Nunes, Ana) Invariant manifolds for a class of parabolic points. (English summary) *Nonlinearity* **5** (1992), *no.* 5, 1193–1210. (Richard C. Churchill) **93i:58052** 58F05 (34C30, 70F15)

Foo, C. (*with* Wong, Yan Loi) The Alexander-Conway polynomial of the generalized Hopf link. *Math. Medley* **19** (1991), *no.* 1, 1–5. (Wilbur Whitten) **93a:57006** 57M25

Foo, Y. K. (*with* Soh, Y. C.) Edge theorem for a family of analytic functions. *Control Theory Adv. Tech.* **8** (1992), *no.* 1, 233–237. (Lin Huang) **93b:93092** 93D09 (30C15)

— (*with* Soh, Y. C.) Characterization of zero locations of polytopes of real polynomials. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 8, *part I*, 1227–1230. (Takehiro Mori) **93f:93102** 93D09 (12D10, 93B55)

— (*with* Soh, Y. C.) Strong Kharitonov theorems for low-order polynomials. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 11, 1816–1820. (Summary) **93i:93096** 93D09

— (*with* Soh, Y. C.) Robustness analysis of matrices with highly structured uncertainties. *IEEE Trans. Automat. Control* **37** (1992), *no.* 12, 1974–1976. (Guang Xiong Wang) **93k:93082** 93D09 (93D05)

— (*with* Soh, Y. C.) Strict positive realness of a family of polytopic plants. (English summary) *IEEE Trans. Automat. Control* **38** (1993), *no.* 2, 287–289. (Summary) **93j:93102** 93D09

— *see also* **Kim, Jin-Hoon, 93j:93107**

Fook, Leong *see* **Leong, Fook**

Foong, See Kit (*with* DeWitt-Morette, Cécile) Kac's solution of the telegrapher equation, revisited. I. *Developments in general relativity, astrophysics and quantum theory* (*Jerusalem and Haifa*, 1989), 351–366, *Ann. Israel Phys. Soc.*, 9, *IOP, Bristol*, 1990. (Claus Montonen) **93c:81095a** 81S40 (35L15)

— Kac's solution of the telegrapher equation, revisited. II. *Developments in general relativity, astrophysics and quantum theory* (*Jerusalem and Haifa*, 1989), 367–377, *Ann. Israel Phys. Soc.*, 9, *IOP, Bristol*, 1990. (Claus Montonen) **93c:81095b** 81S40 (35L15)

— (*with* DeWitt, Bryce S.; deLyra, Jorge L.; Gallivan, Timothy; et al.) Lattice quantization of the $O(1,2)/O(2) \times Z_2$ sigma model in 4 dimensions. *Quantum gravity* (*Moscow*, 1990), 18–26, *World Sci. Publishing, River Edge, NJ*, 1991. (Ilya Shapiro) **93m:81112** 81T25 (81T13)

— First-passage time, maximum displacement, and Kac's solution of the telegrapher equation. (English summary) *Phys. Rev. A* (3) **46** (1992), *no.* 2, R707–R710. 60J15 (82C70)

— (*with* deLyra, Jorge L.; DeWitt, Bryce S.; et al.) The quantized $O(1,2)/O(2) \times Z_2$ sigma model has no continuum limit in four dimensions. I. Theoretical framework. (English summary) *Phys. Rev. D* (3) **46** (1992), *no.* 6, 2527–2537. 81T13 (81T27)

— (*with* deLyra, Jorge L.; DeWitt, Bryce S.; et al.) The quantized $O(1,2)/O(2) \times Z_2$ sigma model has no continuum limit in four dimensions. II. Lattice simulation. (English

summary) *Phys. Rev. D* (3) **46** (1992), *no.* 6, 2538–2552. 81T13 (81–04, 81T80)
— (*with* van Kolck, U.) Poisson random walk for solving wave equations. *Progr. Theoret. Phys.* **87** (1992), *no.* 2, 285–292. (Summary) **93b:81043** 81Q05 (81S40)
Foot, R. (*with* Joshi, G. C.) Symmetries of certain physical theories and the Jordan algebras. *Internat. J. Modern Phys. A* **7** (1992), *no.* 15, 3623–3637. (Dominique Lambert) **93c:81169** 81T30 (17C99, 81R05, 81T60)
— (*with* Joshi, G. C.) An application of the division algebras, Jordan algebras and split composition algebras. (English summary) *Internat. J. Modern Phys. A* **7** (1992), *no.* 18, 4395–4413. (P. D. Jarvis) **93m:17018** 17C90 (17C40, 17C60, 81R25, 81T30)
Foran, James Sequence conditions which imply approximate continuity. *Real Anal. Exchange* **17** (1991/92), *no.* 2, 728–736. (Ludèk Zajíček) **93h:26003** 26A15 (28A99)
Forbes, Anthony D. Congruence properties of functions related to the partition function. (English summary) *Pacific J. Math.* **158** (1993), *no.* 1, 145–156. (Richard P. Lewis) **93m:11105** 11P83
Forbes, G. W. (*with* Stone, Bryan D.) Foundations of second-order layout for asymmetric systems. (English summary) *J. Opt. Soc. Amer. A* **9** (1992), *no.* 11, 2067–2082. (Summary) **93i:78003** 78A05
Forbes, Graeme Melia on modalism. *Philos. Stud.* **68** (1992), *no.* 1, 57–63. (Steve Kuhn) **93k:03017** 03B45 (03A05)
— Reply to Marks. *Philos. Stud.* **69** (1993), *no.* 2-3, 281–295. 03A05 (03B45)
Forbes, Lawrence K. (*with* Hocking, Graeme C.) Subcritical free-surface flow caused by a line source in a fluid of finite depth. (English summary) *J. Engrg. Math.* **26** (1992), *no.* 4, 455–466. (Summary) **93g:76021** 76B15
— (*with* Hocking, Graeme C.) Flow induced by a line sink in a quiescent fluid with surface-tension effects. (English summary) *J. Austral. Math. Soc. Ser. B* **34** (1993), *no.* 3, 377–391. (Summary) **93k:76009** 76B10 (76B45)
Forcina, A. Modelling balanced longitudinal data: maximum likelihood estimation and analysis of variance. (English and French summaries) *Biometrics* **48** (1992), *no.* 3, 743–750. (Summary) **93f:62144** 62P10
Ford, Charles (*with* Buddenhagen, Jim; May, Mike) Nice cubic polynomials, Pythagorean triples, and the law of cosines. *Math. Mag.* **65** (1992), *no.* 4, 244–249. 11-01
Ford, David J. Enumeration of totally complex quartic fields of small discriminant. *Computational number theory (Debrecen, 1989)*, 129–138, *de Gruyter, Berlin*, 1991. (Joe P. Buhler) **93b:11140** 11R21 (11Y40)
— (*with* Pohst, Michael) The totally real A_5 extension of degree 6 with minimum discriminant. (English summary) *Experiment. Math.* **1** (1992), *no.* 3, 231–235. (Duncan A. Buell) **93k:11108** 11R80 (11R29, 11Y40)
Ford, Joseph (*with* Mantica, Giorgio) On the completeness of the classical limit of quantum mechanics. *Quantum chaos—quantum measurement (Copenhagen, 1991)*, 241–248, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 358, *Kluwer Acad. Publ., Dordrecht*, 1992. (Lawrence Sklar) **93a:81014** 81P05 (81Q50)
— The Fermi-Pasta-Ulam problem: paradox turns discovery. *Phys. Rep.* **213** (1992), *no.* 5, 271–310. (Helmut Rüssmann) **93h:58052** 58F05 (58F13, 70H05)
Ford, Kevin B. Some infinite series identities. *Proc. Amer. Math. Soc.* **119** (1993), *no.* 3, 1019–1020. (From the text) **93m:33014** 33D20
Ford, L. H. Inequalities which constrain negative energy in quantum field theory. *Quantum gravity (Moscow, 1990)*, 330–341, *World Sci. Publishing, River Edge, NJ*, 1991. (Summary) **93c:81147** 81T20 (83C47)
— (*with* Roman, Thomas A.) "Cosmic flashing" in four dimensions. (English summary) *Phys. Rev. D* (3) **46** (1992), *no.* 4, 1328–1339. (Enric Verdaguer) **93i:83067** 83C75 (81T20, 83C47)
Ford, Neville J. (*with* Baker, Christopher T. H.) Stability properties of a scheme for the approximate solution of a delay-integro-differential equation. International Conference on the Numerical Solution of Volterra and Delay Equations (Tempe, AZ, 1990). *Appl. Numer. Math.* **9** (1992), *no.* 3-5, 357–370. (Summary) **93c:65161** 65R20
Ford, Roseanne M. (*with* Cummings, Peter T.) On the relationship between cell balance equations for chemotactic cell populations. (English summary) *SIAM J. Appl. Math.* **52** (1992), *no.* 5, 1426–1441. (Summary) **93h:92018** 92C45 (60J10, 92C10)
Ford, Timothy J. (*with* DeMeyer, Frank R.) Nontrivial, locally trivial Azumaya algebras. *Azumaya algebras, actions, and modules (Bloomington, IN, 1990)*, 39–49, *Contemp. Math.*, 124, *Amer. Math. Soc., Providence, RI*, 1992. (Lindsay N. Childs) **93a:13001** 13A20 (14M25, 16H05)
— On the Brauer group of a desingularization of a normal surface. (English summary) *Comm. Algebra* **20** (1992), *no.* 12, 3785–3791. (George Szeto) **93j:13005** 13A20 (14F20, 16H05)
— The Brauer group and ramified double covers of surfaces. (English summary) *Comm. Algebra* **20** (1992), *no.* 12, 3793–3803. (Murray M. Schacher) **93m:14013** 14E22 (13A20, 14F20, 14J25)
— On the Brauer group of a localization. *J. Algebra* **147** (1992), *no.* 2, 365–378. (Summary) **93c:13004** 13A20
— Products of symbol algebras that ramify only on a nonsingular plane elliptic curve. (English summary) *Ulam Quart.* **1** (1992), *no.* 1, 12*ff., approx.* 6 *pp.* (*electronic only*). (David J. Saltman) **93m:12004** 12G05 (12E15)
— (*with* DeMeyer, Frank R.; Miranda, Rick) The cohomological Brauer group of a toric variety. *J. Algebraic Geom.* **2** (1993), *no.* 1, 137–154. (T. Oda) **93i:14051** 14M25 (14F20)
— (*with* DeMeyer, Frank R.) On the Brauer group of toric varieties. *Trans. Amer. Math. Soc.* **335** (1993), *no.* 2, 559–577. (Andy R. Magid) **93d:14077** 14M25 (13A20, 14F20, 16H05)
Fordy, Allan P. Hamiltonian structures, master symmetries and Miura maps of integrable nonlinear evolution equations. *Nonlinear world, Vol. 1 (Kiev, 1989)*, 84–105, *World Sci. Publishing, River Edge, NJ*, 1990. (*see* **93b:00012**) 58F07 (35Q53, 35Q58, 58F37)
Foreman, Matthew (*with* Dougherty, Randall) Banach-Tarski paradox using pieces with the property of Baire. (English summary) *Proc. Nat. Acad. Sci. U.S.A.* **89** (1992), *no.* 22, 10726–10728. (Eva Coplakova) **93j:04001** 04A20 (03E15, 03E25, 04A15, 54H05)
Forest, Etienne Sixth-order Lie group integrators. *J. Comput. Phys.* **99** (1992), *no.* 2, 209–213. (Summary) **93b:70003** 70–08 (65P05, 70–04, 70H05, 70H33)
Forest, M. Gregory (*with* Camassa, Roberto; Knapp, Robert) Enhancement of optical bistability by periodic layering. *Nonlinearity* **5** (1992), *no.* 3, 721–742. (Summary) **93b:78014** 78A60
— (*with* Sheu, S.-P.; Sinha, Amarendra) Frequency and phase locking of spatially periodic perturbed sine-Gordon breather trains. *SIAM J. Appl. Math.* **52** (1992), *no.* 3, 746–761. (Summary) **93a:35134** 35Q53 (35B20)
Forfar, D. O. The origins of the Clerk (Maxwell) genius. *Bull. Inst. Math. Appl.* **28** (1992), *no.* 1-2, 4–16. (Gérard Jorland) **93d:01066** 01A70 (01A55)
Forge, A. (*with* Elitzur, S.; Rabinovici, E.) Comments on the importance of being over-constrained. (English summary) *Phys. Lett. B* **289** (1992), *no.* 1-2, 45–50. (Summary) **93f:81151** 81T99 (81T40, 81V10, 81V17)
Forger, M. (*with* Abdalla, Elcio) Current algebra of WZNW models at and away from criticality. (English summary) *Modern Phys. Lett. A* **7** (1992), *no.* 26, 2437–2447. (Summary) **93g:81136** 81T40 (81R10)
Förg-Rob, Wolfgang (*with* Schwaiger, Jens) On a generalization of the cosine equation. *Contributions to the theory of functional equations (Graz, 1991)*, 25–34, *Grazer Math. Ber.*, 315, *Karl-Franzens-Univ. Graz, Graz*, 1991. (J. Aczél) **93d:39012** 39B32
— (*with* Schwaiger, Jens) Stability and superstability of the addition and subtraction formulae for the trigonometric and hyperbolic functions. *Contributions to the theory of functional equations (Graz, 1991)*, 35–44, *Grazer Math. Ber.*, 315, *Karl-Franzens-Univ. Graz, Graz*, 1991. (Dagmar Henney) **93i:39004** 39B05 (33B10)
— The Pilgerschritt transform in solvable Lie groups. (English summary) *European Conference on Iteration Theory (Batschuns, 1989)*, 107–116, *World Sci. Publishing, River Edge, NJ*, 1991. (K. H. Hofmann) **93k:22004** 22E05 (22E15, 22E25, 34A99)
Foriero, A. (*with* Ladanyi, B.) The use of fractional exponential creep kernels for long-term behavior of laterally loaded piles in permafrost. *J. Engrg. Math.* **26** (1992), *no.* 2, 281–295. (Summary) **93c:73087** 73Q05 (73N20, 73V25)
Forker, E. L. (*with* Chicone, Carmen; Cai, Z.-S.; King, P. D.) A parameter identification problem arising from a model of canalicular bile formation. (English summary) *J. Math. Biol.* **31** (1993), *no.* 3, 273–289. (Summary) **93m:92010** 92C30 (34B15, 34C99)
Forman, Robin Sequences with many primes. *Amer. Math. Monthly* **99** (1992), *no.* 6, 548–557. (B. Garrison) **93e:11104** 11N05 (11N32)
— Determinants, finite-difference operators and boundary value problems. (English summary) *Comm. Math. Phys.* **147** (1992), *no.* 3, 485–526. (Friedbert Prüfer) **93i:58162** 58G26 (39A12)
— Erratum: "Functional determinants and geometry" [Invent. Math. **88** (1987), no. 3, 447–493; MR 89b:58212]. *Invent. Math.* **108** (1992), *no.* 2, 453–454. (From the text) **93c:58216** 58G20 (58G26)
Formanek, Edward (*with* Procesi, Claudio) The automorphism group of a free group is not linear. *J. Algebra* **149** (1992), *no.* 2, 494–499. (Alexander Lubotzky) **93h:20038** 20F28
Formisano, Maria Rosaria On the number of partially abelian square-free words for a three-letter alphabet. (Italian. Italian summary) *Séminaire Lotharingien de Combinatoire (Salzburg, 1990)*, 101–109, *Publ. Inst. Rech. Math. Av.*, 462, *Univ. Louis Pasteur, Strasbourg*, 1991. (Summary) **93g:20060** 20F10
Fornæss, John Erik (*with* Sibony, Nessim) Random iterations of rational functions. *Ergodic Theory Dynamical Systems* **11** (1991), *no.* 4, 687–708. (M. Rees) **93c:58173** 58F23 (30D05, 58F11, 58F30)
— (*with* Sibony, Nessim) Critically finite rational maps on $\mathbf{P}^2$. *The Madison Symposium on Complex Analysis (Madison, WI, 1991)*, 245–260, *Contemp. Math.*, 137, *Amer. Math. Soc., Providence, RI*, 1992. (Marco Abate) **93j:32034** 32H50
— (*with* Sibony, Nessim) Complex Hénon mappings in $\mathbf{C}^2$ and Fatou-Bieberbach domains. *Duke Math. J.* **65** (1992), *no.* 2, 345–380. (Marco Abate) **93d:32040** 32H50
— (*with* Gavosto, Estela A.) Existence of generic homoclinic tangencies for Hénon mappings. (English summary) *J. Geom. Anal.* **2** (1992), *no.* 5, 429–444. (Marco Abate) **93j:58089** 58F13 (32H50)
— *see also* **Several complex variables**, **93j:32002**
Fornari, Susana (*with* Frensel, Katia; Ripoll, Jaime) Hypersurfaces with constant mean curvature in the complex hyperbolic space. *Trans. Amer. Math. Soc.* **339** (1993), *no.* 2, 685–702. (Guo Ying Jiang) **93m:53065** 53C42 (53C40)
Fornasini, E. (*with* Zampieri, S.) Algebraic aspects of 2D singular systems. (English summary) *Computational and applied mathematics, II (Dublin, 1991)*, 33–38, *North-Holland, Amsterdam*, 1992. (*see* **93j:00008**) 93B25 (39A10)
— Asymptotic behaviour of 2D Markov chains. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, II (Kobe, 1991)*, 215–220, *Mita, Tokyo*, 1992. (Andor Dobó) **93j:93138** 93E03 (60J10, 93E15)
— (*with* Marchesini, Giovanni) Topics in 2D systems theory. *Systems, models and feedback: theory and applications (Capri, 1992)*, 95–110, *Progr. Systems Control Theory*, 12, *Birkhäuser Boston, Boston, MA*, 1992. (*see* **93a:93006**) 93C55 (93–02, 93C10)
Fornberg, Bengt (*with* Meyer-Spasche, Rita) A finite difference procedure for a class of free boundary problems. (English summary) *J. Comput. Phys.* **102** (1992), *no.* 1, 72–77. (Summary) **93e:65127** 65N06
Forney, G. David, Jr. On the Hamming distance properties of group codes. (English summary) *IEEE Trans. Inform. Theory* **38** (1992), *no.* 6, 1797–1801. (Eugene Spiegel) **93j:94036** 94B60
Forni, Giovanni Homology and cohomology with compact supports for q-convex spaces. *Ann. Mat. Pura Appl.* (4) **159** (1991), 229–254. (Giuseppe Tomassini) **93b:32020** 32F10
Foroozanfar, A. M. Closed ideals in semigroups of continuous self-maps. *Proceedings of the 21st. Annual Iranian Mathematics Conference (Isfahan, 1990)*, 149–157, *Univ. Isfahan, Isfahan*, 199?. (K. D. Magill, Jr.) **93b:54038a** 54H15 (20M20)
— Closed ideals in semigroups of continuous self-maps. *Semigroup Forum* **44** (1992), *no.* 2, 221–228. (K. D. Magill, Jr.) **93b:54038b** 54H15 (20M20)
Forrest, A. H. The construction of a set of recurrence which is not a set of strong recurrence. (English summary) *Israel J. Math.* **76** (1991), *no.* 1-2, 215–228. (Peter J. Hellekalek) **93j:28023** 28D05 (28D15)
Forrest, B. M. (*with* Mehlig, B.; Heermann, D. W.) Exact Langevin algorithms. (English summary) *Molecular Phys.* **76** (1992), *no.* 6, 1347–1357. (Summary) **93d:65009** 65C05
Forrest, Brian Arens regularity and discrete groups. *Pacific J. Math.* **151** (1991), *no.* 2, 217–227. (Robert S. Doran) **93c:43001** 43A15 (43A30, 46H05)
— Amenability and ideals in $A(G)$. (English summary) *J. Austral. Math. Soc. Ser. A* **53** (1992), *no.* 2, 143–155. (Rodney Nillsen) **93i:43002** 43A07 (46J20)
— Arens regularity and the $A_p(G)$ algebras. *Proc. Amer. Math. Soc.* **119** (1993), *no.* 2, 595–598. (Ali Ülger) **93k:43003** 43A15

Forrester, P. J. Solvable model of the pairing transition in a two-dimensional one-component plasma/metal interface model. (English summary) *Infinite analysis, Part A, B (Kyoto, 1991)*, 303–315, *Adv. Ser. Math. Phys.*, 16, *World Sci. Publishing, River Edge, NJ*, 1992. (M. Lawrence Glasser) **93i:82073** 82D10 (15A52, 82B24)

— Some multidimensional integrals related to many-body systems with the $1/r^2$ potential. *J. Phys. A* **25** (1992), *no.* 10, L607–L614. (Summary) **93a:81057** 81Q99 (33C70, 81V70, 82B20)

— Exact eigenstates of some spin-$\frac{1}{2}$ Heisenberg chains with $1/r^2$ exchange. (English summary) *J. Phys. A* **25** (1992), *no.* 21, 5447–5462. (Ladislav Šamaj) **93k:82015** 82B23 (81Q99, 82B20)

— Surface tension for the two-component plasma at $\Gamma = 2$ near an interface. *J. Statist. Phys.* **67** (1992), *no.* 3-4, 433–448. (Claus Montonen) **93j:82014** 82B21 (82B23, 82B24)

— (*with* Jancovici, B.; Madore, J.) The two-dimensional Coulomb gas on a sphere: exact results. (English summary) *J. Statist. Phys.* **69** (1992), *no.* 1-2, 179–192. (M. Lawrence Glasser) **93h:82018** 82B23 (82D10)

— (*with* Pisani, C.) The hole probability in log-gas and random matrix systems. *Nuclear Phys. B* **374** (1992), *no.* 3, 720–740. (M. Lawrence Glasser) **93c:82017** 82B21 (15A15, 15A52)

— A constant term identity and its relationship to the log-gas and some quantum many-body systems. *Phys. Lett. A* **163** (1992), *no.* 1-2, 121–126. (Azer Kerimov) **93b:82021** 82B21

— Some statistical properties of the eigenvalues of complex random matrices. (English summary) *Phys. Lett. A* **169** (1992), *no.* 1-2, 21–24. (Pierre Moussa) **93h:82030** 82B44 (15A52, 81Q10)

Forsgren, A. L. (*with* Gill, P. E.; Murray, Walter) On the identification of local minimizers in inertia-controlling methods for quadratic programming. *SIAM J. Matrix Anal. Appl.* **12** (1991), *no.* 4, 730–746. (J. R. Rajasekera) **93c:90055** 90C20 (49M45, 65K05)

Forsman, Gösta (*with* Biemer, Paul P.) On the quality of reinterview data with application to the current population survey. (English summary) *J. Amer. Statist. Assoc.* **87** (1992), *no.* 420, 915–923. (Summary) **93j:62020** 62D05

Forsman, K. (*with* Ljung, Lennart) On the dead-zone in system identification. (English summary) *Identification and system parameter estimation* 1991, *Vol.* 1,2 (*Budapest*, 1991), 959–963, *IFAC Sympos. Ser.*, 3, *Pergamon, Oxford*, 1992. (*see* **93h:93009**) 93B30

Fŏrste, Stefan Generalized conformal invariance conditions on a sigma model of the open bosonic string including the first massive mode. *Ann. Physik* (8) **1** (1992), *no.* 2, 98–105. (Summary) **93a:81153** 81T30 (81T17)

— String amplitudes in arbitrary dimensions. (English summary) *Z. Phys. C* **55** (1992), *no.* 3, 525–530. (Summary) **93f:81108** 81T30

Fŏrster, K.-H. (*with* Nagy, Béla) The imaginary part of the Cesàro operator in l^p spaces. *Arch. Math. (Basel)* **59** (1992), *no.* 4, 379–382. (B. E. Rhoades) **93h:47034** 47B37 (47A10, 47A30)

— (*with* Nagy, Béla) Lie and Jordan ideals in $B(c_0)$ and $B(l_p)$. *Proc. Amer. Math. Soc.* **117** (1993), *no.* 3, 673–677. (A. R. Sourour) **93d:47086** 47D50 (46L70, 47B37, 47D30)

Forster, Otto ★ Lectures on Riemann surfaces. Translated from the 1977 German original by Bruce Gilligan. Reprint of the 1981 English translation. Graduate Texts in Mathematics, 81. *Springer-Verlag, New York*, 1991. viii+254 *pp. ISBN* 0-387-90617-7 (Editors) **93h:30061** 30Fxx (14H55, 32-01)

Forster, Thomas (*with* Kaye, Richard William) End-extensions preserving power set. *J. Symbolic Logic* **56** (1991), *no.* 1, 323–328. (A. Lévy) **93b:03086** 03E47 (03C62, 03E55, 03E70)

Forstnerič, Franc Intersections of analytic and smooth discs. (English summary) *The Madison Symposium on Complex Analysis (Madison, WI*, 1991), 235–244, *Contemp. Math.*, 137, *Amer. Math. Soc., Providence, RI*, 1992. (Marek Jarnicki) **93k:32026** 32F15

— Complex tangents of real surfaces in complex surfaces. *Duke Math. J.* **67** (1992), *no.* 2, 353–376. (Zai Fei Ye) **93g:32025** 32F25 (53C42)

— An elementary proof of Fefferman's theorem. *Exposition. Math.* **10** (1992), *no.* 2, 135–149. (Mario Landucci) **93m:32039** 32H40 (32H02)

— The length of a set in the sphere whose polynomial hull contains the origin. *Indag. Math. (N.S.)* **3** (1992), *no.* 2, 169–172. (Herbert Alexander) **93g:32019** 32E20

— Mappings of quadric Cauchy-Riemann manifolds. *Math. Ann.* **292** (1992), *no.* 1, 163–180. (Harold P. Boas) **93e:32033** 32H35 (32C16, 32D99)

Forsyth, Bruce (*with* Schmidt, Jeffrey Robert) Eigenvalues and invariants for gauged fermions in a gravitational field. (English summary) *Phys. Rev. D* (3) **47** (1993), *no.* 2, 566–569. (Summary) **93j:81064** 81T13 (58Z05, 81V17)

Forsyth, P. A. (*with* D'Azevedo, E. F.; Tang, Wei Pai) Towards a cost-effective ILU preconditioner with high level fill. (English summary) *BIT* **32** (1992), *no.* 3, 442–463. (Summary) **93e:65051** 65F10 (76M25)

— (*with* Chin, P.; D'Azevedo, E. F.; Tang, Wei Pai) Preconditioned conjugate gradient methods for the incompressible Navier-Stokes equations. *Internat. J. Numer. Methods Fluids* **15** (1992), *no.* 3, 273–295. 76D05 (65N22, 76M25)

— (*with* D'Azevedo, E. F.; Tang, Wei Pai) Ordering methods for preconditioned conjugate gradient methods applied to unstructured grid problems. Iterative methods in numerical linear algebra (Copper Mountain, CO, 1990). *SIAM J. Matrix Anal. Appl.* **13** (1992), *no.* 3, 944–961. (Summary) **93b:65054** 65F10 (65M50, 76M25, 76S05)

Fort, Bernard Observations of gravitational lenses. *General relativity and gravitation*, 1989 (*Boulder, CO*, 1989), 153–175, *Cambridge Univ. Press, Cambridge*, 1990. (*see* **93b:83002**) 83B05

Fort, Jean-Claude (*with* Prum, Bernard) ★ Stochastic processes on a lattice and Gibbs measures. Translated from the French by Bertram Eugene Schwarzbach and revised by the authors. Mathematical Physics Studies, 11. *Kluwer Academic Publishers Group, Dordrecht*, 1991. x+220 *pp. ISBN* 0-7923-1069-1 (Hans-Otto Georgii) **93k:82001** 82-02 (60K35, 82B05, 82B20)

Forte, Bruno (*with* Cabrelli, Carlos A.; Molter, Ursula M.; Vrscay, Edward R.) Iterated fuzzy set systems: a new approach to the inverse problem for fractals and other sets. (English summary) *J. Math. Anal. Appl.* **171** (1992), *no.* 1, 79–100. (Summary) **93j:28010** 28A80 (00A69, 04A72)

Forte, Stefano Relativistic theories of particles and fields with fractional spin and statistics. *Acta Phys. Polon. B* **22** (1991), *no.* 11-12, 983–1000. (Summary) **93a:81106** 81S99

— Relativistic particles with fractional spin and statistics. *Internat. J. Modern Phys. A* **7** (1992), *no.* 5, 1025–1057. (Tuan W. Chen) **93c:81097** 81S40 (81T99)

Forte Cunto, Ana Continuity of the visibility function. (English summary) *Publ. Mat.* **35** (1991), *no.* 2, 323–332. (Gerald Beer) **93m:52007** 52A30

— (*with* Toranzos, Fausto A.) Clear visibility strikes again. *Arch. Math. (Basel)* **58** (1992), *no.* 3, 307–312. (Dagmar Henney) **93d:46019** 46A50 (52A07)

borelli Forti, C. *see* **Borelli Forti, C.**

Forti, M. (*with* Dvornicich, R.) Elements of large orders in (p, q)-groups. (Italian summary) *Boll. Un. Mat. Ital. B* (7) **5** (1991), *no.* 3, 589–618. (Michael E. Mays) **93c:20045** 20D60

— (*with* Honsell, Furio) Weak foundation and antifoundation properties of positively comprehensive hyperuniverses. *L'anti-fondation en logique et en théorie des ensembles*, 31–43, *Cahiers Centre Logique*, 7, *Univ. Catholique Louvain, Louvain-la-Neuve*, 1992. (A. Lévy) **93i:03076** 03E70

Forti, Umberto *see* **Newton, Isaac, 93d:01020**

Fortier, Jean-J. Best linear corrector of classification estimates of proportions of objects in several unknown classes. (French summary) *Canad. J. Statist.* **20** (1992), *no.* 1, 23–33. (Summary) **93g:62085** 62H30 (62F10)

Fortin, Michel (*with* Mghazli, Z.) Analyse d'un élément mixte pour le problème de Stokes. I. Résultats généraux. (English summary) [Analysis of a mixed element for the Stokes problem. I. General results] *Numer. Math.* **62** (1992), *no.* 2, 149–160. (J. T. Oden) **93g:76078** 76M10 (65N30, 76D07)

— (*with* Mghazli, Z.) Analyse d'un élément mixte pour le problème de Stokes. II. Construction et estimations d'erreur. (English summary) [Analysis of a mixed element for the Stokes problem. II. Construction and error estimates] *Numer. Math.* **62** (1992), *no.* 2, 161–188. (J. T. Oden) **93i:76054** 76M10 (65N30, 76D07)

— (*with* Pierre, R.) Stability analysis of discrete generalized Stokes problems. *Numer. Methods Partial Differential Equations* **8** (1992), *no.* 4, 303–323. (Summary) **93b:65139** 65M60 (65M12, 76D07, 76M10)

— (*with* Strigberger, J.; Baruzzi, G.; Habashi, W. G.) Some special purpose preconditioners for conjugate gradient-like methods applied to CFD. (English summary) *Internat. J. Numer. Methods Fluids* **16** (1993), *no.* 7, 581–596. (Summary) **93k:76093** 76M25 (76M10, 76M20)

Fortnow, Lance (*with* Babai, László) Arithmetization: a new method in structural complexity theory. *Comput. Complexity* **1** (1991), *no.* 1, 41–66. (Marius Zimand) **93c:68027** 68Q15 (68Q60)

— (*with* Babai, László; Lund, Carsten) Addendum to: "Nondeterministic exponential time has two-prover interactive protocols" [Comput. Complexity **1** (1991), no. 1, 3–40; MR 92h:68031]. *Comput. Complexity* **2** (1992), *no.* 4, 374. 68Q15 (68Q60)

— (*with* Szegedy, Márió) On the power of two-local random reductions. (English summary) *Inform. Process. Lett.* **44** (1992), *no.* 6, 303–306. (Summary) **93k:68032** 68Q15 (03D15, 68Q45)

Fortuna, E. (*with* Galbiati, M.) A counterexample to the separation of semialgebraic sets. *Math. Scand.* **69** (1991), *no.* 2, 161–165 (1992). (Jesús M. Ruiz) **93d:14085** 14P10

Fortuna, L. (*with* Dorato, P.; Muscato, G.) ★ Robust control for unstructured perturbations—an introduction. Lecture Notes in Control and Information Sciences, 168. *Springer-Verlag, Berlin*, 1992. vi+118 *pp. ISBN* 3-540-54920-X (Andrzej W. Olbrot) **93h:93002** 93–02 (93B36, 93D09, 93D15)

— (*with* Gallo, Antonio; Muscato, G.; Nunnari, G.) Multivariable adaptive control by a transputer based architecture. (English summary) *Identification and system parameter estimation* 1991, *Vol.* 1,2 (*Budapest*, 1991), 1043–1047, *IFAC Sympos. Ser.*, 3, *Pergamon, Oxford*, 1992. (*see* **93h:93009**) 93C30 (93C83)

Fortunato, Donato (*with* Benci, Vieri; Giannoni, Fabio) Some results on the existence of geodesics in static Lorentz manifolds with singular boundary. (Italian summary) *Atti Accad. Naz. Lincei Cl. Sci. Fis. Mat. Natur. Rend. Lincei* (9) *Mat. Appl.* **2** (1991), *no.* 1, 17–23. (László Szabó) **93b:53052** 53C50 (53C22, 58E10)

— (*with* Benci, Vieri; Giannoni, Fabio) Geodesics on static Lorentz manifolds with convex boundary. *Progress in variational methods in Hamiltonian systems and elliptic equations (L'Aquila*, 1990), 21–41, *Pitman Res. Notes Math. Ser.*, 243, *Longman Sci. Tech., Harlow*, 1992. (Anders Linnér) **93j:58027** 58E10 (53C50)

— (*with* Benci, Vieri; Giannoni, Fabio) On the existence of geodesics in static Lorentz manifolds with singular boundary. *Ann. Scuola Norm. Sup. Pisa Cl. Sci.* (4) **19** (1992), *no.* 2, 255–289. (Wen Zhao Lu) **93j:58028** 58E10 (83C15)

Fortune, Steven (*with* Aronov, Boris; Wilfong, Gordon) The furthest-site geodesic Voronoĭ diagram. *Proceedings of the Fourth Annual Symposium on Computational Geometry (Urbana, IL*, 1988), 229–240, *ACM, New York*, 1988. (*see* **93k:68003**) 68U05

— (*with* Wilfong, Gordon) Planning constrained motion. (English summary) Algorithmic motion planning in robotics. *Ann. Math. Artificial Intelligence* **3** (1991), *no.* 1, 21–82. (Summary) **93m:68165** 68U05 (68Q25)

Foryś, Wit On equality sets of morphisms in topological free monoids. (French summary) *RAIRO Inform. Théor. Appl.* **25** (1991), *no.* 1, 39–42. (Summary) **93c:20095** 20M05 (68Q45)

— A characterization of the +-variety of finite and cofinite languages. *Univ. Iagel. Acta Math. No.* 28 (1991), 7–10. (Heinrich Seidel) **93c:20107** 20M35 (20M07, 68Q45)

Fosco, C. (*with* Demarco, G. L.; Trinchero, R. C.) Nonlinear σ model as a local polynomial field theory. *Phys. Rev. D* (3) **45** (1992), *no.* 10, 3701–3705. (Summary) **93a:81131** 81T15 (81T10)

Fosdick, Roger (*with* MacSithigh, Gearoid P.) Minimization in nonlinear elasticity theory for bodies reinforced with inextensible cords. *J. Elasticity* **26** (1991), *no.* 3, 239–289. (Cornelius O. Horgan) **93e:73012** 73C50 (73G05, 73V25)

— (*with* Volkmann, Eric) Normality and convexity of the yield surface in nonlinear plasticity. (English summary) *Quart. Appl. Math.* **51** (1993), *no.* 1, 117–127. (Miroslav Šilhavý) **93m:73013** 73G20 (73E05)

Foss, B. A. (*with* Lund, E. J.; Balchen, Jens Glad) Multiple model estimation with inter-residual distance feedback. (English summary) *Identification and system parameter estimation* 1991, *Vol.* 1,2 (*Budapest*, 1991), 889–894, *IFAC Sympos. Ser.*, 3, *Pergamon, Oxford*, 1992. (*see* **93h:93009**) 93B52

Foss, S. G. Ergodicity of queueing networks. (Russian) *Sibirsk. Mat. Zh.* **32** (1991), *no.* 4, 184–203, 229; *translation in Siberian Math. J.* **32** (1991), *no.* 4, 690–705 (1992). (W. Szczotka) **93a:60145** 60K25

— On the ergodicity conditions for stochastically recursive sequences. (English summary) *Queueing Systems Theory Appl.* **12** (1992), *no.* 3-4, 287–296. (Volker Schmidt)

93m:60071 60G10 (60K25)
— (*with* Borovkov, A. A.) Stochastically recursive sequences and their generalizations. Siberian Advances in Mathematics. *Siberian Adv. Math.* **2** (1992), *no.* 1, 16–81. (Esa Nummelin) **93f:60097** 60J05 (60G10)
Fossard, A. J. Some reflexions about nonlinear control. (English summary) *Mathematics of the analysis and design of process control (Dublin, 1991/Lille, 1991)*, 25–39, *North-Holland, Amsterdam*, 1992. (*see* **93g:93004**) 93C10
— Helicopter control law based on sliding mode with model following. (English summary) *Internat. J. Control* **57** (1993), *no.* 5, 1221–1235. 93C95 (93B12)
Fossen, Thor I. Comments on: "Hamiltonian adaptive control of spacecraft" [IEEE Trans. Automat. Control **35** (1990), no. 7, 848–852; 1 058 372] by J.-J. E. Slotine and M. D. Di Benedetto. (English summary) *IEEE Trans. Automat. Control* **38** (1993), *no.* 4, 671–672. 93C95 (70Q05)
Fossum, Robert (*with* Haboush, William) The cohomology algebra of a commutative group scheme. *Trans. Amer. Math. Soc.* **339** (1993), *no.* 2, 553–565. (R. T. Hoobler) **93m:14041** 14L17 (14L15, 16E40)
Foster, D. M. E. Averaging the sum of digits function to an even base. (English summary) *Proc. Edinburgh Math. Soc.* (2) **35** (1992), *no.* 3, 449–455. (Roger Paysant-Le Roux) **93j:11006** 11A63
Foster, Damien P. (*with* Vanderzande, Carlo; Yeomans, Julia) Zero-temperature properties of randomly self-interacting polymers. (English summary) *J. Statist. Phys.* **69** (1992), *no.* 3-4, 857–868. (J. Štastna) **93j:82031** 82B41 (60F05, 82D60)
Foster, Dean P. (*with* Fiat, Amos; Karloff, Howard; Rabani, Yuval; Ravid, Yiftach; Vishwanathan, Sundar) Competitive algorithms for layered graph traversal. (English summary) *32nd Annual Symposium on Foundations of Computer Science (San Juan, PR, 1991)*, 288–297, *IEEE Comput. Soc. Press, Los Alamitos, CA*, 1991. (Summary) **93e:68100** 68R10 (05C85, 68Q25)
Foster, E. A. D. (*with* Eddy, Roland H.) An optimization approach to a certain class of geometric inequalities. *Nieuw Arch. Wisk.* (4) **9** (1991), *no.* 3, 253–262. (Murray S. Klamkin) **93i:51044** 51M16 (90C90)
Foster, Ian (*with* Chern, I-Liang) Parallel implementation of a control volume method for solving PDEs on the sphere. (English summary) *Parallel processing for scientific computing (Houston, TX, 1991)*, 301–306, *SIAM, Philadelphia, PA*, 1992. (*see* **93g:65178**) 65N22 (65Y05, 76M25, 86A10)
— (*with* Gropp, William D.; Stevens, Rick L.) Parallel scalability of the spectral transform method. (English summary) *Parallel processing for scientific computing (Houston, TX, 1991)*, 307–312, *SIAM, Philadelphia, PA*, 1992. (*see* **93g:65178**) 65M70 (65Y05, 76M25, 86A10)
Foster, Lorraine L. (*with* Alex, Leo J.) On the Diophantine equation $1 + x + y = z$. *Rocky Mountain J. Math.* **22** (1992), *no.* 1, 11–62. (A. Pethő) **93e:11040** 11D61
Foster, M. R. (*with* Jacqmin, David) Nonparallel effects in the instability of Long's vortex. (English summary) *J. Fluid Mech.* **244** (1992), 289–306. (Summary) **93h:76028** 76E10 (76D25, 76E99)
Foster, Thomas R. (*with* Buller, David J.) The new paradox of temporal transience. *Philos. Quart.* **42** (1992), *no.* 168, 357–366. (Steve Kuhn) **93k:03014** 03B45 (03A05)
Fotiu, P. A. Elastodynamics of thin plates with internal dissipative processes. I. Theoretical foundations. (English summary) *Acta Mech.* **95** (1992), *no.* 1-4, 29–50. (Summary) **93g:73076** 73K10 (73B30, 73E50, 73E60, 73K12, 73M25)
Fo Tkhi Nguet Khang (*with* Barkovskiĭ, L. M.) Geometro-optic reflection and transmission operators for stratified anisotropic media. (Russian. English summary) *Vestsī Akad. Navuk BSSR Ser. Fīz.-Mat. Navuk* **1991**, *no.* 5, 74–78, 126. (Summary) **93a:78002** 78A05 (78A45)
Fotopoulos, S. B. On the rate of convergence for sequential density estimation. *Yokohama Math. J.* **39** (1992), *no.* 2, 89–105. (M. Hušková) **93d:62062** 62G05 (62E20)
— A note on the Doeblin-Lévy-Kolmogorov-Rogozin inequality for concentration functions with stationary random variables. (English summary) *Yokohama Math. J.* **40** (1992), *no.* 1, 11–18. (Summary) **93j:60017** 60E15 (60G10)
Foucault, François Équations de Picard-Fuchs et invariants des courbes de genre 2. (English summary) [Picard-Fuchs equations and invariants of curves of genus two] *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 8, 617–619. (José M. Muñoz Porras) **93b:14025** 14D05 (14H10)
Foucquet, Jean-François *see* **Jami, Catherine**, (**93i:01004**)
Fougères, A. (*with* Noh, J. W.; Mandel, L.) Further investigations of the operationally defined quantum phase. (English summary) *Phys. Rev. A* (3) **46** (1992), *no.* 5, 2840–2852. (Summary) **93e:81157** 81V80 (81P15)
Fouke, Daniel Leibniz's opposition to Cartesian bodies during the Paris period (1672–1676). (French summary) *Studia Leibnitiana* **23** (1991), *no.* 2, 195–206. (Summary) **93a:01015** 01A45 (00A30)
Fouks, Jean-Denis Tseitin's formulas revisited. *Theoret. Comput. Sci.* **99** (1992), *no.* 2, 315–326. (Richard M. Thomas) **93m:68146** 68T15 (03B35, 68R10)
Fouladi, Kamran (*with* Baysal, Oktay; Newman, James C.) Hybrid domain decomposition for configurations with multiple nonsimilar components. *Fifth International Symposium on Domain Decomposition Methods for Partial Differential Equations (Norfolk, VA, 1991)*, 476–484, *SIAM, Philadelphia, PA*, 1992. (*see* **93g:65009**) 65M55
Foulis, D. J. (*with* Greechie, Richard J.; Rüttimann, G. T.) Filters and supports in orthoalgebras. *Internat. J. Theoret. Phys.* **31** (1992), *no.* 5, 789–807. (Gudrun Kalmbach) **93c:06014** 06C15 (03G12, 81P10)
Foulon, Patrick (*with* Delyon, F.) Complex entropy for dynamical systems. (French summary) *Ann. Inst. H. Poincaré Phys. Théor.* **55** (1991), *no.* 4, 891–902. (Valery Covachev) **93b:58051** 58F05 (58F25)
— Estimation de l'entropie des systèmes lagrangiens sans points conjugués. (English and French summaries) [Estimation of the entropy of Lagrangian systems without conjugate points] With an appendix, "About Finsler geometry", in English. *Ann. Inst. H. Poincaré Phys. Théor.* **57** (1992), *no.* 2, 117–146. (Viviane Baladi) **93k:58178** 58F17 (58F05, 58F11, 58F15)
— (*with* Labourie, François) Sur les variétés compactes asymptotiquement harmoniques. [On asymptotically harmonic compact manifolds] *Invent. Math.* **109** (1992), *no.* 1, 97–111. (Steven E. Hurder) **93g:58114** 58F17 (53C35)
— (*with* Benoist, Yves; Labourie, François) Flots d'Anosov à distributions stable et instable différentiables. (English summary) [Anosov flows with stable and unstable differentiable distributions] *J. Amer. Math. Soc.* **5** (1992), *no.* 1, 33–74. (Nicolaï T. A. Haydn) **93b:58112** 58F17 (58F15)
Foulser, David E. (*with* Li, Ming[1]; Yang, Qiang) Theory and algorithms for plan merging. (English summary) *Artificial Intelligence* **57** (1992), *no.* 2-3, 143–181. (Summary) **93e:68115** 68T20
Foundas, E. (*with* Alexandris, N.) Algorithms and properties on balanced permutations. (English summary) *J. Inform. Optim. Sci.* **13** (1992), *no.* 2, 219–229. 05A05
Fountain, D. W. (*with* Lewis, Frank L.) Walsh function analysis of bilinear implicit systems with split boundary conditions. (English summary) *Computational and applied mathematics, II (Dublin, 1991)*, 25–31, *North-Holland, Amsterdam*, 1992. (Summary) **93j:65119** 65L10
— (*with* Özçaldiran, Kadri; Lewis, Frank L.) Some generalized notions of observability. *IEEE Trans. Automat. Control* **37** (1992), *no.* 6, 856–860. (Boris G. Zaslavskiĭ) **93a:93021** 93B07
Fountain, John B. (*with* Gould, Victoria) Orders in regular rings with minimal condition for principal right ideals. *Comm. Algebra* **19** (1991), *no.* 5, 1501–1527. (Donald S. Passman) **93b:16044** 16P60
— Products of idempotent integer matrices. *Math. Proc. Cambridge Philos. Soc.* **110** (1991), *no.* 3, 431–441. (William H. Gustafson) **93a:15017** 15A23 (20M20)
— (*with* Gomes, Gracinda M. S.) Left proper E-dense monoids. *J. Pure Appl. Algebra* **80** (1992), *no.* 1, 1–27. (Francis Pastijn) **93c:20099** 20M10
— (*with* Lewin, Andrew) Products of idempotent endomorphisms of an independence algebra of finite rank. (English summary) *Proc. Edinburgh Math. Soc.* (2) **35** (1992), *no.* 3, 493–500. (A. Schleiermacher) **93m:20101** 20M20
— (*with* Gould, Victoria) Orders in semiprime rings with minimal condition for principal right ideals. (English summary) *Proc. Roy. Soc. Edinburgh Sect. A* **121** (1992), *no.* 3-4, 375–380. (Donald S. Passman) **93h:16033** 16N60 (16P60)
— (*with* Gould, Victoria) Straight left orders in rings. *Quart. J. Math. Oxford Ser.* (2) **43** (1992), *no.* 171, 303–311. (K. C. O'Meara) **93h:16024** 16H05 (16U20, 20M25)
Fountain, Robert L. (*with* Keating, Jerome P.; Rao, Calyampudi Radhakrishna) An example arising from Berkson's conjecture. Pitman's measure of closeness. *Comm. Statist. Theory Methods* **20** (1991), *no.* 11, 3457–3472. (Summary) **93a:62027** 62F10 (62J02, 62P10)
— Pitman closeness comparison of linear estimators: a canonical form. Pitman's measure of closeness. *Comm. Statist. Theory Methods* **20** (1991), *no.* 11, 3535–3550. (Dipak K. Dey) **93a:62036** 62F12
Fouque, Jean-Pierre Hydrodynamical behavior of asymmetric attractive particle systems. One example: one-dimensional nearest-neighbors asymmetric simple exclusion process. *Mathematics of random media (Blacksburg, VA, 1989)*, 97–107, *Lectures in Appl. Math.*, 27, *Amer. Math. Soc., Providence, RI*, 1991. (Pablo A. Ferrari) **93c:60159** 60K35 (82C22)
— (*with* Benassi, Albert; Saada, E.; Vares, M. E.) Asymmetric attractive particle systems on **Z**: hydrodynamic limit for monotone initial profiles. *J. Statist. Phys.* **63** (1991), *no.* 3-4, 719–735. (From the introduction) **93d:82065** 82C40
Fouquet, J.-L. (*with* Flandrin, E.; Li, Hao[1]) On Hamiltonian claw-free graphs. (English summary) Graph theory and combinatorics (Marseille-Luminy, 1990). *Discrete Math.* **111** (1993), *no.* 1-3, 221–229. (Summary) **93m:05121** 05C45
Fourcade, B. Theoretical results on toroidal vesicles. (English and French summaries) *J. Physique II* **2** (1992), *no.* 9, 1705–1724. (Ivan Sterling) **93h:82073** 82D15 (92C15)
Fourdrinier, Dominique (*with* Cellier, Dominique) Estimation du paramètre de position d'une loi à symétrie sphérique: une condition générale de domination de l'estimateur des moindres carrés. (English and French summaries) [Estimation of the location parameter of a spherically symmetric distribution: a general condition of domination of the least-squares estimator] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 11, 1203–1206. (Summary) **93j:62151** 62H12 (62C15)
— (*with* Wells, Martin T.) Estimation d'un coût quadratique pour des lois à symétrie sphérique. (English and French summaries) [Estimation of a quadratic loss under spherically symmetric distribution] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 12, 1305–1308. (Summary) **93h:62008** 62C15 (62H12)
Fourer, Robert A simplex algorithm for piecewise-linear programming. III. Computational analysis and applications. *Math. Programming* **53** (1992), *no.* 2, *Ser. A*, 213–235. (Summary) **93a:65086** 65K10 (90C08)
— (*with* Marsten, Roy E.) Solving piecewise-linear programs: experiments with a simplex approach. (English summary) *ORSA J. Comput.* **4** (1992), *no.* 1, 16–31. 90C05
Fourier, Jean Baptiste Joseph *see* **González-Velasco, Enrique A.**, **93c:01020**
Fourman, M. P. *see* **Applications of categories in computer science**, **93d:68001**
Fourneau, Jean Michel (*with* Gelenbe, Erol) Random neural networks with multiple classes of signals. (English summary) *Neural networks: advances and applications*, 2, 83–93, *North-Holland, Amsterdam*, 1992. (Summary) **93k:92002** 92B20
Fournelle, Thomas A. (*with* Weston, Kenneth W.) A generalization of Malʹcev's correspondence between rings and groups and a class of Lie groups. *Proceedings of the International Conference on Algebra, Part* 1 (*Novosibirsk*, 1989), 113–121, *Contemp. Math.*, 131, *Part* 1, *Amer. Math. Soc., Providence, RI*, 1992. (From the introduction) **93j:17045** 17B65 (22E65)
Fournier, Gilles (*with* Willem, Michel) Multiple solutions of the forced double pendulum equation. *Analyse non linéaire (Perpignan, 1987)*, 259–281, *Univ. Montréal, Montreal, PQ*, 1989. (*see* **93h:49003**) 34B15 (34A47, 34C25, 47H15, 47N20, 58E05)
— (*with* Willem, Michel) Relative category and the calculus of variations. *Variational methods (Paris, 1988)*, 95–104, *Progr. Nonlinear Differential Equations Appl.*, 4, *Birkhäuser Boston, Boston, MA*, 1990. (C. S. Sharma) **93k:58046** 58E05 (34C25, 49Q20, 58F22)
— (*with* Violette, Donald) Applications multivoques différentiables et la formule de Leray-Schauder. (English summary) [Differentiable multivalued mappings and the Leray-Schauder formula] *Fixed point theory and applications (Marseille, 1989)*, 425–436, *Pitman Res. Notes Math. Ser.*, 252, *Longman Sci. Tech., Harlow*, 1991. (Summary) **93a:58017** 58C06 (47H04, 58C30)
— (*with* Belley, J.-M.; Saadi Drissi, K.) Almost periodic weak solutions to forced pendulum type equations without friction. *Aequationes Math.* **44** (1992), *no.* 1, 100–108. (Joël Blot) **93h:34069** 34C27 (34C15)
— (*with* Violette, Donald) Fixed point principles for cones of a Banach space for the multivalued maps differentiable at the origin and infinity. (English summary) *Canad. J.*

Math. **44** (1992), *no.* 4, 888–896. (Louis A. Talman) **93j:47085** 47H09 (47H04, 47H10, 54C60, 54H25)

Fournier, Irène (*with* Germa, Anne; Hudry, Olivier) Encadrement de l'indice de Slater d'un tournoi à l'aide de ses scores. (English and French summaries) [Bounds of Slater's index of a tournament from its scores] *Math. Inform. Sci. Humaines No.* 118 (1992), 53–68. (J. W. Moon) **93h:05083** 05C20

— (*with* Germa, Anne; Hudry, Olivier) Utilisation des scores dans des méthodes exactes déterminant les ordres médians de tournois. (English and French summaries) [On the use of scores in exact methods computing the median orders of tournaments] *Math. Inform. Sci. Humaines No.* 119 (1992), 53–74. (Summary) **93j:05068** 05C20 (68R10)

Fournier, Jean-Daniel (*with* Tabor, M.) Psi-series and their summability for nonintegrable dynamical systems. *Large scale structures in nonlinear physics* (*Villefranche-sur-Mer*, 1991), 278–287, *Lecture Notes in Phys.*, 392, *Springer, Berlin*, 1991. (W.-H. Steeb) **93g:34014** 34A30 (34A34)

— *see also* **Large scale structures in nonlinear physics, 93d:00036**

Fournier, Richard (*with* Silverman, Herb) On generalized sections of univalent functions. *Complex Variables Theory Appl.* **17** (1992), *no.* 3-4, 141–147. (Shelton Perera) **93d:30013** 30C45 (30C50)

Fournier-Prunaret, Danièle The bifurcation structure of a family of degree one circle endomorphisms. *Internat. J. Bifur. Chaos Appl. Sci. Engrg.* **1** (1991), *no.* 4, 823–838. (Frederick R. Marotto) **93d:58109** 58F14

Foussats, A. (*with* Repetto, C.; Zandron, O. P.; Zandron, O. S.) Conformal supersymmetry of the $d = 3$ Chern-Simons theory. Canonical formalism. (English summary) *Classical Quantum Gravity* **9** (1992), *no.* 10, 2217–2229. (Alexander W. Smith) **93m:81127** 81T40 (81T60)

Fouvry, Étienne (*with* Tenenbaum, Gérald) Entiers sans grand facteur premier en progressions arithmetiques. [Integers free of large prime factors in arithmetical progressions] *Proc. London Math. Soc.* (3) **63** (1991), *no.* 3, 449–494. (Andrew Granville) **93c:11074** 11N25 (11N35)

— (*with* Iwaniec, Henryk) The divisor function over arithmetic progressions. With an appendix by Nicholas Katz. *Acta Arith.* **61** (1992), *no.* 3, 271–287. (Claudia A. Spiro-Silverman) **93g:11089** 11L05 (11N56, 11N64)

Fowler, A. C. Homoclinic bifurcations in ordinary and partial differential equations. *New trends in nonlinear dynamics and pattern-forming phenomena* (*Cargèse*, 1988), 295–303, *NATO Adv. Sci. Inst. Ser. B Phys.*, 237, *Plenum, New York*, 1990. (Summary) **93a:58129** 58F14 (34C23, 34C37, 58F27, 58F39)

— (*with* Sparrow, Colin) Bifocal homoclinic orbits in four dimensions. *Nonlinearity* **4** (1991), *no.* 4, 1159–1182. (Mikhail B. Sevryuk) **93c:34108** 34C37 (34C23, 34C25, 58F14, 58F22, 58F30)

— Modelling ice sheet dynamics. *Geophys. Astrophys. Fluid Dynamics* **63** (1992), *no.* 1-4, 29–65. (Summary) **93a:86002** 86A40 (73N20)

— (*with* Frigaard, I.; Howison, Sam D.) Temperature surges in current-limiting circuit devices. *SIAM J. Appl. Math.* **52** (1992), *no.* 4, 998–1011. (Summary) **93c:80005** 80A20 (78A55)

— Toward a description of convection with temperature-and-pressure-dependent viscosity. (English summary) *Stud. Appl. Math.* **88** (1993), *no.* 2, 113–139. (Jiří Nedoma) **93m:86009** 86A60 (76R99)

Fowler, David H. Ratio and proportion in early Greek mathematics. *Science and philosophy in classical Greece*, 98–118, *Sources Stud. Hist. Philos. Class. Sci.*, 2, *Garland, New York*, 1991. (*see* **93g:01015**) 01A20

— Newton, Cotes, and $\sqrt{\sqrt{2}}$: a footnote to Newton's theory of the resistance of fluids. *The investigation of difficult things*, 355–368, *Cambridge Univ. Press, Cambridge*, 1992. (Massimo Galuzzi) **93m:01029** 01A50

— Dedekind's theorem: $\sqrt{2} \times \sqrt{3} = \sqrt{6}$. *Amer. Math. Monthly* **99** (1992), *no.* 8, 725–733. (Detlef Laugwitz) **93h:01022** 01A55 (26–03)

— An invitation to read Book X of Euclid's *Elements*. (English, French and German summaries) *Historia Math.* **19** (1992), *no.* 3, 233–264. (B. Artmann) **93k:01003** 01A20

— Dýnamis, mithartum, and square. *Historia Math.* **19** (1992), *no.* 4, 418–419. (Richard L. Francis) **93m:01108** 01A99 (01A17, 01A20, 01A35)

Fox, Bennett L. (*with* Glasserman, Paul) Estimating derivatives via Poisson's equation. (English summary) *Probab. Engrg. Inform. Sci.* **5** (1991), *no.* 4, 415–428. (Summary) **93g:60140** 60J10 (62F10)

Fox, D. D. (*with* Simo, Juan C.) A drill rotation formulation for geometrically exact shells. (English summary) *Comput. Methods Appl. Mech. Engrg.* **98** (1992), *no.* 3, 329–343. (Summary) **93c:73068** 73K15 (73G05, 73V25)

— (*with* Simo, Juan C.; Rifai, M. S.) On a stress resultant geometrically exact shell model. VI. Conserving algorithms for nonlinear dynamics. The Second World Congress of Computational Mechanics, Part I (Stuttgart, 1990). *Internat. J. Numer. Methods Engrg.* **34** (1992), *no.* 1, 117–164. (Summary) **93e:73027** 73K15 (73G05, 73K12, 73V05)

Fox, Geoffrey C. Approaches to physical optimization. (English summary) *Parallel processing for scientific computing* (*Houston, TX*, 1991), 153–162, *SIAM, Philadelphia, PA*, 1992. (*see* **93g:65178**) 65K10 (65Y05, 90C30)

Fox, Glenn J. (*with* Parker, Phillip E.) The Lorentzian modular group and nonlinear lattices. *The mathematical heritage of C. F. Gauss*, 282–303, *World Sci. Publishing, River Edge, NJ*, 1991. (Summary) **93f:11035** 11F06 (11H06, 11Y70, 20H25)

Fox, J. *see* **Fox, Jeffrey S.**

Fox, James W. (*with* Lindsey, J. P.) A method of factoring long z-transform polynomials. (English summary) *Computational methods in geosciences*, 78–90, *SIAM, Philadelphia, PA*, 1992. (*see* **93d:86001**) 86–08

Fox, Jeffrey S. (*with* Haskell, P.) K-theory and the spectrum of discrete subgroups of spin(4, 1). *Operator algebras and topology* (*Craiova*, 1989), 30–44, *Pitman Res. Notes Math. Ser.*, 270, *Longman Sci. Tech., Harlow*, 1992. (Alain Valette) **93m:46087** 46L80 (19K35, 22D25)

Fox, Leslie *see* **Duff, I. S. et al.**

Fox, Thomas F. An introduction to algebraic deformation theory. (English summary) *J. Pure Appl. Algebra* **84** (1993), *no.* 1, 17–41. (V. S. Retakh) **93k:16055** 16S80 (13D10, 16W30, 18C15, 18G50)

Foxby, Hans-Bjørn (*with* Avramov, Luchezar L.) Homological dimensions of unbounded complexes. *J. Pure Appl. Algebra* **71** (1991), *no.* 2-3, 129–155. (M. H. Bijan-Zadeh) **93g:18017** 18G20 (13D05, 18E25, 18G15, 55U25)

— (*with* Avramov, Luchezar L.) Locally Gorenstein homomorphisms. *Amer. J. Math.* **114** (1992), *no.* 5, 1007–1047. (Rafael H. Villarreal) **93i:13019** 13H10 (13D03, 13D25)

— (*with* Avramov, Luchezar L.; Lescot, Jack) Bass series of local ring homomorphisms of finite flat dimension. *Trans. Amer. Math. Soc.* **335** (1993), *no.* 2, 497–523. (Marc Aubry) **93d:13026** 13D03 (13C11, 13D25, 18G15, 55T20)

del Fra, Alberto *see* **Del Fra, Alberto**

van Fraassen, Bas C. Presupposition, implication, and self-reference. *Reflexivity*, 153–169, *North-Holland, Amsterdam*, 1992. (*see* **93g:03005**) 03A05

Fracchia, F. David (*with* de Boer, Martin J. M.; Prusinkiewicz, Przemysław) A model for cellular development in morphogenetic fields. (English summary) *Lindenmayer systems*, 351–370, *Springer, Berlin*, 1992. (*see* **93m:68004**) 92C15

Fradkin, E. S. (*with* Linetskiĭ, V. Ya.) Higher spin symmetry in lower dimensions. *Supermembranes and physics in 2+1 dimensions* (*Trieste*, 1989), 390–417, *World Sci. Publishing, River Edge, NJ*, 1990. (*see* **93g:81003**) 81R10

— (*with* Ferrer, È. J.; de la Incera, V.) Thermodynamics of the neutral string gas in electromagnetic background. *Quantum gravity* (*Moscow*, 1990), 553–563, *World Sci. Publishing, River Edge, NJ*, 1991. (Summary) **93d:83067** 83E30 (81T30)

— (*with* Linetskiĭ, V. Ya.) On the anti-de Sitter quantum (super)strings. *Phys. Lett. B* **261** (1991), *no.* 1-2, 26–34. (Summary) **93f:81109** 81T30 (83E30)

— (*with* Gitman, D. M.) Path-integral representation for the relativistic particle propagators and BFV quantization. *Phys. Rev. D* (3) **44** (1991), *no.* 10, 3230–3236. (Summary) **93b:81134** 81S40 (81T70)

— (*with* Linetskiĭ, V. Ya.) Results of the classification of superconformal algebras in two dimensions. *Phys. Lett. B* **282** (1992), *no.* 3-4, 352–356. (Summary) **93e:81039** 81R10 (17A70)

— (*with* Linetskiĭ, V. Ya.) Classification of superconformal and quasisuperconformal algebras in two dimensions. (English summary) *Phys. Lett. B* **291** (1992), *no.* 1-2, 71–76. (Summary) **93h:17068** 17B70 (17A70, 81R10)

Fradkin, Eduardo Anyons for beginners. (English summary) *J. J. Giambiagi Festschrift*, 169–189, *World Sci. Publishing, River Edge, NJ*, 1990. (*see* **93b:81004**) 81V25 (82D55)

Fradkin, M. A. Special algorithm for computer calculation of the point group invariants. (English summary) *Comput. Phys. Comm.* **73** (1992), *no.* 1-3, 197–204. (Summary) **93j:20036** 20C40 (82D25)

Fradkina, T. E. An operator-generalized canonical formalism and a series of general relations in the framework of quantum gauge theories. (Russian. Russian summary) *Trudy Fiz. Inst. Lebedev.* **191** (1989), 133–149, 246. (Andrew Zardecki) **93h:81083** 81T13 (81–02)

— Quantum superparticle in $D = 10$. (English summary) *Phys. Lett. B* **292** (1992), *no.* 1-2, 83–86. (Summary) **93i:81277** 81T70

Fradkov, A. (*with* Lublinsky, B.) A comparison of adaptive and nonadaptive feedback for discrete-time plants with dead time. (English summary) *IEEE Trans. Automat. Control* **38** (1993), *no.* 3, 492–495. 93C40 (93B52)

Fraenkel, Aviezri S. (*with* Simpson, R. Jamie) On infinite disjoint covering systems. *Proc. Amer. Math. Soc.* **119** (1993), *no.* 1, 5–9. (Š. Znám) **93k:11006** 11B25

— *see also* **Combinatorics and algorithms, 93k:00032**

Fraenkel, L. E. On steady vortex rings with swirl and a Sobolev inequality. *Progress in partial differential equations: calculus of variations, applications* (*Pont-à-Mousson*, 1991), 13–26, *Pitman Res. Notes Math. Ser.*, 267, *Longman Sci. Tech., Harlow*, 1992. (J. Thomas Beale) **93k:76020** 76C05 (35Q35, 46E35)

Fraga, Eric S. (*with* Morris, John Ll.) An adaptive mesh refinement method for nonlinear dispersive wave equations. *J. Comput. Phys.* **101** (1992), *no.* 1, 94–103. 35Q53 (65M50)

Fragela Kol'yar, A. *see* **Fraguela Collar, Andrés**

Fragoso, Marcelo D. (*with* Hemerly, E. M.) Strongly consistent estimation of the order of stochastic control systems (CARMA model). *J. Math. Anal. Appl.* **166** (1992), *no.* 2, 404–427. (H. Vincent Poor) **93f:93145** 93E24

— (*with* de Souza, Carlos E.) Maximal solution of a certain class of periodic Riccati differential equations. *Linear Algebra Appl.* **169** (1992), 61–73. (Krishnan Balachandran) **93c:34092** 34C25 (15A06, 34A34, 93B40)

Fragoulopoulou, Maria Tensor products of locally C^*-algebras and applications. *Math. Nachr.* **153** (1991), 321–331. (Robert S. Doran) **93g:46054** 46L05 (46K05, 46M05, 47D40)

— Symmetric topological *-algebras. II. *Atti Sem. Mat. Fis. Univ. Modena* **40** (1992), *no.* 1, 149–157. (Robert S. Doran) **93g:46050** 46K05 (46K10)

— Concerning my papers "Symmetry and $\mathscr{P}$-commutativity of topological *-algebras" and "Symmetric topological *-algebras". *Period. Math. Hungar.* **24** (1992), *no.* 3, 203–207. (T. W. Palmer) **93j:46057** 46K05 (46H05)

— A characterization of maximal regular ideals in lmc algebras. (English summary) *Studia Math.* **103** (1992), *no.* 1, 41–49. (Robert S. Doran) **93h:46059** 46H10 (46J20, 46K05)

— Uniqueness of topology for semisimple LFQ-algebras. *Proc. Amer. Math. Soc.* **117** (1993), *no.* 4, 963–969. (W. Żelazko) **93e:46052** 46H20

Fraguela Collar, Andrés Limiting-amplitude principle for some abstract hyperbolic equations in Hilbert spaces. (Spanish) *An. Inst. Mat. Univ. Nac. Autónoma México* **31** (1991), 21–37 (1992). (J. A. Donaldson) **93h:34103** 34G10 (34A12, 47N20)

— Some spectral questions in the problem of small oscillations of a rotating fluid. (Russian. Russian summary) *Vestnik Moskov. Univ. Ser. I Mat. Mekh.* **1991**, *no.* 4, 41–44, 103; *translation in Moscow Univ. Math. Bull.* **46** (1991), *no.* 4, 39–41. (Summary) **93j:76062** 76U05 (35Q35, 47N20, 76B15, 76C10, 76E10)

Frahm, Holger Integrable spin-$\frac{1}{2}$ XXZ Heisenberg chain with competing interactions. *J. Phys. A* **25** (1992), *no.* 6, 1417–1427. (Ladislav Šamaj) **93b:82022** 82B23 (81T40, 82B20)

Fraiman, Ricardo (*with* Pérez Iribarren, Gonzalo) Conservative confidence bands for nonparametric regression. *Nonparametric functional estimation and related topics* (*Spetses*, 1990), 45–66, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 335, *Kluwer Acad. Publ., Dordrecht*, 1991. (Ulrich Stadtmüller) **93e:62130** 62G15

— (*with* Boente, Graciela) Strong order of convergence and asymptotic distribution of nearest neighbor density estimates from dependent observations. (English summary) *Sankhyā Ser. A* **53** (1991), *no.* 2, 194–205. (Michael Falk) **93h:62069** 62G05

Fraisse, Pierre *see* **Tian, Feng, 93k:05112**

Fraïssé, Roland (*with* Lygerōs, Nik) Petits posets: dénombrement, représentabilité par cercles et "compenseurs". (English summary) [Small posets: enumeration, circle orders, and "compensors"] *C. R. Acad. Sci. Paris Sér. I Math.* **313** (1991), *no.* 7, 417–420. (Ira Gessel) **93c:06006** 06A07 (05A15)

Fraley, Chris (*with* Vial, Jean-Philippe) Alternative approaches to feasibility in projective methods for linear programming. (English summary) *ORSA J. Comput.* **4** (1992), *no.* 3, 285–299. (Summary) **93i:90060** 90C05

Frampton, Paul H. Non-Archimedian geometry and applications to particle theory. *Differential geometric methods in theoretical physics (Davis, CA, 1988)*, 399–408, *NATO Adv. Sci. Inst. Ser. B Phys.*, 245, *Plenum, New York*, 1990. (Daniel Barsky) **93h:81116** 81T40 (11S80, 11S85, 81Q99)

— (*with* Ng, Y. Jack; van Dam, Hendrik) Possible solution of strong CP problem in generalized unimodular gravity. (English summary) *J. Math. Phys.* **33** (1992), *no.* 11, 3881–3882. (Summary) **93i:81300** 81V17 (83C45)

Franaszek, M. Long-lived periodic transients. *Acta Phys. Polon. B* **22** (1991), *no.* 9, 747–759. (Summary) **93f:58137** 58F12 (58F30)

Franca, Leopoldo P. (*with* Chalot, Frédéric L.; Harari, Isaac; et al.) Calculation of two-dimensional compressible Euler flows with a new Petrov-Galerkin finite element method. *Numerical simulation of compressible Euler flows (Rocquencourt, 1986)*, 88–104, *Notes Numer. Fluid Mech.*, 26, *Vieweg, Braunschweig*, 1989. (*see* **93b:76056**) 76M10 (76N10)

— (*with* Karam Filho, José; Loula, Abimael F. D.; Stenberg, R.) A convergence analysis of a stabilized method for the Stokes flow. (Portuguese summary) *Mat. Apl. Comput.* **10** (1991), *no.* 1, 19–26. (Rolf Rannacher) **93b:65168** 65N30 (76D07, 76M10)

— (*with* Frey, Sérgio L.) Stabilized finite element methods. II. The incompressible Navier-Stokes equations. (English summary) *Comput. Methods Appl. Mech. Engrg.* **99** (1992), *no.* 2-3, 209–233. (Summary) **93i:76055** 76M10 (76D05)

Francaviglia, Mauro Alternative gravity theories. *General relativity and gravitation*, 1989 (*Boulder, CO*, 1989), 99–104, *Cambridge Univ. Press, Cambridge*, 1990. (*see* **93b:83002**) 83D05

— (*with* Ferraris, Marco) Conservation laws in general relativity. Les Journées Relativistes (Cargèse, 1991). *Classical Quantum Gravity* **9** (1992), *suppl.*, S79–S95. (Jan Novotný) **93b:83021** 83C40

— (*with* Ferraris, Marco; Sinicco, I.) Covariant ADM formulation applied to general relativity. (English summary) *Nuovo Cimento B* (11) **107** (1992), *no.* 11, 1303–1311. (Agostino Prástaro) **93m:83003** 83C05

France-Jackson, Halina On rings generating atoms of lattices of special and supernilpotent radicals. *Bull. Austral. Math. Soc.* **44** (1991), *no.* 2, 203–205. (J. F. Watters) **93b:16035** 16N80

Francés, A. *see* **Frances Román, Ángel Ramón**

Francés, Ángel *see* **Frances Román, Ángel Ramón**

Franceschetti, Donald R. (*with* Jones, D. Wayne; Campbell, Bruce W.; Hanneken, John W.) Hamming sets, Ising sets, cellular automata, neural nets, and the random walk. (English summary) *Amer. J. Phys.* **61** (1993), *no.* 1, 50–53. 82C32 (68Q90, 82B20, 92B20)

Franceschini, V. (*with* Zanasi, R.) Three-dimensional Navier-Stokes equations truncated on a torus. *Nonlinearity* **5** (1992), *no.* 1, 189–209. (Athanase Cotsiolis) **93e:58169** 58F40 (35Q30, 58F13, 76D05)

di Francesco, Ph. *see* **Di Francesco, Ph.**

Francesconi, Stefano The teaching of mathematics at the University of Bologna from 1860 to 1940. (Italian. English summary) *Geometry and complex variables (Bologna, 1988/1990)*, 415–474, *Lecture Notes in Pure and Appl. Math.*, 132, *Dekker, New York*, 1991. (Umberto Bottazzini) **93d:01091** 01A73

Francese, R. (*with* Pagli, Linda; Parente, D.; Talamo, M.) A new model for large memories. (English summary) *Calcolo* **29** (1992), *no.* 1-2, 143–155 (1993). 68M07

Frances Román, Ángel Ramón A new algorithm for coding segments. (Spanish) With the collaboration of E. Domínguez. *II Meeting on Computational Geometry (Spanish) (Madrid, 1991)*, 55–65, *Univ. Politéc. Madrid, Madrid*, 1992. (*see* **93b:68004**) 68U05

— *see also* **Domínguez Murillo, Eladio**, (**93b:68004**)

Francfort, G. A. (*with* Brahim-Otsmane, S.; Murat, François) Correctors for the homogenization of the wave and heat equations. *J. Math. Pures Appl.* (9) **71** (1992), *no.* 3, 197–231. (Summary) **93d:35012** 35B27 (35K05, 35L05)

— Homogenisation of a class of fourth order equations with application to incompressible elasticity. *Proc. Roy. Soc. Edinburgh Sect. A* **120** (1992), *no.* 1-2, 25–46. (Alexander Belyaev) **93d:73006** 73B27 (35Q30, 49J45, 73C99, 73K20)

Franchetta, Anna (*with* Ciliberto, Ciro) The Gauss mapping for trivalent graphs. (Italian. English and Italian summaries) *Rend. Mat. Appl.* (7) **12** (1992), *no.* 1, 165–196. (Luca Chiantini) **93k:14074** 14N10

Franchetti, Carlo Lower bounds for the norms of projections with small kernels. *Bull. Austral. Math. Soc.* **45** (1992), *no.* 3, 507–511. (G. Godini) **93i:46026** 46B20 (41A65)

Franchi, F. (*with* Straughan, Brian) A nonlinear energy stability analysis of a model for deep convection. *Internat. J. Engrg. Sci.* **30** (1992), *no.* 6, 739–745. (Summary) **93c:76033** 76E15 (76E30)

de Franchis, Michele Collected works of Michele de Franchis. (Italian) Edited by C. Ciliberto and E. Sernesi. *Rend. Circ. Mat. Palermo* (2) *Suppl. No.* 27 (1991), vii+636 *pp.* (Luca Chiantini) **93i:01031** 01A75 (14–03)

Franchuk, O. V. (*with* Zaslavskiĭ, V. A.) Optimal backup of a multifunctional system taking into account several criteria. (Russian. Russian summary) *Vestnik Kiev. Univ. Model. Optim. Slozhn. Sist. No.* 9 (1990), 78–81. 90C29 (93A14)

Franci, Raffaella (*with* Bartolozzi, Margherita) A fragment of the history of algebra: Newton's rule on the number of imaginary roots in an algebraic equation. (Italian. English summary) *Rend. Accad. Naz. Sci. XL Mem. Sci. Fis. Natur.* (5) **14** (1990), *no.* 2, *part II*, 69–85 (1992). (P. Bockstaele) **93g:01032** 01A50 (01A55)

— On the axiomatization of group theory by American mathematicians: 1902–1905. *Amphora*, 261–277, *Birkhäuser, Basel*, 1992. (B. H. Neumann) **93i:01018** 01A60 (20–03)

rubio de Francia, José Luis *see* **Rubio de Francia, José Luis**

Franciosa, Paolo Giulio (*with* d'Amore, Fabrizio) On the optimal binary plane partition for sets of isothetic rectangles. (English summary) *Inform. Process. Lett.* **44** (1992), *no.* 5, 255–259. (Summary) **93k:68098** 68U05

Franciosi, Michelangelo Weak weighted reverse integral inequalities. (Italian summary) *Rend. Accad. Naz. Sci. XL Mem. Mat.* (5) **15** (1991), 203–211. (Summary) **93g:26028** 26D15 (42B25)

— (*with* Chiarenza, Filippo) A generalization of a theorem by C. Miranda. (English summary) *Ann. Mat. Pura Appl.* (4) **161** (1992), 285–297. (Rafael Ortega) **93e:35024** 35J25 (46E35)

Franciosi, Silvana (*with* de Giovanni, Francesco) On automorphisms fixing subnormal subgroups of soluble groups. (Italian summary) *Atti Accad. Naz. Lincei Rend. Cl. Sci. Fis. Mat. Natur.* (8) **82** (1988), *no.* 2, 217–222 (1989). (J. Wiegold) **93d:20064** 20E36 (20F19)

— (*with* Amberg, B.; de Giovanni, Francesco) Rank formulae for factorized groups. (Russian and Ukrainian summaries) *Ukrain. Mat. Zh.* **43** (1991), *no.* 7-8, 1078–1084; *reprinted in Ukrainian Math. J.* **43** (1991), *no.* 7-8, 1012–1018 (1992). (John S. Wilson) **93b:20064** 20F16 (20E15)

— (*with* de Giovanni, Francesco) Groups whose finite quotients have a transitive normality relation. (Italian summary) *Boll. Un. Mat. Ital. B* (7) **6** (1992), *no.* 2, 329–350. (Martyn R. Dixon) **93g:20062** 20F16 (20E26)

— (*with* de Giovanni, Francesco) On the Hirsch-Plotkin radical of a factorized group. *Glasgow Math. J.* **34** (1992), *no.* 2, 193–199. (M. J. Tomkinson) **93g:20066** 20F19

Francis, Bruce Allen (*with* Chen, Tongwen) Linear time-varying $\mathscr{H}_2$-optimal control of sampled-data systems. *Automatica J. IFAC* **27** (1991), *no.* 6, 963–974. (Fikret A. Aliev) **93a:93040** 93B36 (93B51, 93C57)

— (*with* Bamieh, Bassam A.; Pearson, J. Boyd, Jr.; Tannenbaum, Allen R.) A lifting technique for linear periodic systems with applications to sampled-data control. *Systems Control Lett.* **17** (1991), *no.* 2, 79–88. (Summary) **93c:93018** 93B28 (47N70, 93C57)

— (*with* Doyle, John C.; Tannenbaum, Allen R.) ★ Feedback control theory. *Macmillan Publishing Company, New York*, 1992. xii+227 *pp. ISBN* 0-02-330011-6 (Petko Petkov) **93k:93002** 93-02 (49-01, 93-01, 93B52, 93C05)

— (*with* Dullerud, Geir E.) $\mathscr{L}_1$-performance in sampled-data systems. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, I (Kobe*, 1991), 493–498, *Mita, Tokyo*, 1992. (*see* **93g:93005**) 93C57

— (*with* Dullerud, Geir E.) $\mathscr{L}_1$ analysis and design of sampled-data systems. *IEEE Trans. Automat. Control* **37** (1992), *no.* 4, 436–446. (Han Sheng Wu) **93a:93074** 93C57 (49N35, 93B36, 93D09)

Francis, Richard Lane (*with* Lowe, Timothy J.) On worst-case aggregation analysis for network location problems. (English summary) Locational decisions (Fullerton, CA, 1990). *Ann. Oper. Res.* **40** (1992), *no.* 1-4, 229–246 (1993). (Summary) **93m:90030** 90B10 (90B80)

Francken, P. (*with* Deville, M. O.; Mund, E. H.) On the spectrum of the iteration operator associated to the finite element preconditioning of Chebyshev collocation calculations. (English summary) *Spectral and high order methods for partial differential equations (Como*, 1989), 295–304, *North-Holland, Amsterdam*, 1990. (*see* **93d:65005**) 65L60

gavilanes-Franco, Antonio *see* **Gavilanes-Franco, Antonio**

Franco, John Probabilistic analysis of algorithms for stuck-at test generation in PLAs. *Optimization-based computer-aided modelling and design (The Hague*, 1991), 56–75, *Lecture Notes in Control and Inform. Sci.*, 174, *Springer, Berlin*, 1992. (Summary) **93c:68008** 68M15 (94C05)

— On the occurrence of null clauses in random instances of satisfiability. (English summary) *Discrete Appl. Math.* **41** (1993), *no.* 3, 203–209. (Summary) **93m:68074** 68Q25 (03B35, 68T15)

Franco Coronil, D. (*with* Chacón Rebollo, Tomás; Ortegón, F.) An isotropic version of the MPP model of turbulence. (Spanish) *Proceedings of the XII Congress on Differential Equations and Applications/II Congress on Applied Mathematics (Spanish) (Oviedo*, 1991), 427–432, *Univ. Oviedo, Oviedo*, 1991. (*see* **93j:00009**) 76F05

Françoise, Jean-Pierre (*with* Calogero, Francesco) Integrable dynamical systems obtained by duplication. (English and French summaries) *Ann. Inst. H. Poincaré Phys. Théor.* **57** (1992), *no.* 2, 167–181. (Tudor S. Ratiu) **93k:58109** 58F07 (70H05)

— (*with* Novikov, R. G.) Solutions rationnelles des équations de type Korteweg-de Vries en dimension $2+1$ et problèmes à m corps sur la droite. (English summary) [Rational solutions of KdV-type equations in dimension $2+1$ and m-body problems on the line] *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 2, 109–113. (Chris Athorne) **93g:58060** 58F07 (35Q58, 70F10, 70H05)

Frandsen, Gudmund (*with* Boyar, Joan; Sturtivant, Carl) An arithmetic model of computation equivalent to threshold circuits. *Theoret. Comput. Sci.* **93** (1992), *no.* 2, 303–319. (Friedhelm Meyer auf der Heide) **93f:68023** 68Q05 (94C05)

Franek, Frantisek (*with* Rödl, Vojtěch) Ramsey problem on multiplicities of complete subgraphs in nearly quasirandom graphs. (English summary) *Graphs Combin.* **8** (1992), *no.* 4, 299–308. (A. G. Thomason) **93k:05118** 05C55 (05C80)

— (*with* Mathon, Rudolf; Rosa, Alexander) Maximal partial triple systems of order 13 with a quadratic leave: the case of nine edges. *J. Combin. Math. Combin. Comput.* **11** (1992), 55–60. (Charles J. Colbourn) **93b:05019** 05B07 (05B30)

Frangos, C. (*with* Yavin, Yaakov) Optimal control of a manufacturing system which consists of three assembly machines. (English summary) *Internat. J. Systems Sci.* **23** (1992), *no.* 12, 2407–2412. 49N55

— (*with* Yavin, Yaakov) The performance of some manufacturing queueing networks when some of the machines are in the failure mode. (English summary) *Comput. Math. Appl.* **25** (1993), *no.* 4, 47–54. (Summary) **93j:90043** 90B22

Frangos, Nikos E. (*with* Imkeller, Peter) Adaptedness and existence of occupation densities for stochastic integral processes in the second Wiener chaos. *Stochastic analysis*, 189–212, *Academic Press, Boston, MA*, 1991. (A. Badrikian) **93b:60113** 60H05 (60H07)

— (*with* Nualart, David; Sanz, Marta) On the Itô formula for two-parameter martingales. *Stochastic partial differential equations and their applications (Charlotte, NC*, 1991), 92–100, *Lecture Notes in Control and Inform. Sci.*, 176, *Springer, Berlin*, 1992. (Peter Imkeller) **93i:60101** 60H05 (60G44)

Franjou, V. (*with* Benson, David John) Séries de compositions de modules instables et injectivité de la cohomologie du groupe $\mathbf{Z}/2$. [Unstable composition series of modules and injectivity of the group $\mathbf{Z}/2$] *Math. Z.* **208** (1991), *no.* 3, 389–399. (Haynes R. Miller) **93b:55022** 55S10 (16D90, 20J05)

Frank, András On a theorem of Mader. Special volume to mark the centennial of Julius Petersen's "Die Theorie der regulären Graphs", Part II. *Discrete Math.* **101** (1992), *no.* 1-3, 49–57. (Cun-Quan Zhang) **93g:05090** 05C40

— (*with* Schrijver, Alexander) Edge-disjoint circuits in graphs on the torus. *J. Combin. Theory Ser. B* **55** (1992), *no.* 1, 9–17. (E. Jucovič) **93d:57007** 57M15 (05C10, 05C38)

— Submodular functions in graph theory. (English summary) Graph theory and combinatorics (Marseille-Luminy, 1990). *Discrete Math.* **111** (1993), *no.* 1-3, 231–243. (Summary) **93j:05154** 05C99

Frank, B. (*with* Bassias, K. V.) The Hopfield model as the minimum noise model for neurons with variable firing strength. (English summary) *Modern Phys. Lett. B* **6** (1992), *no.* 27, 1761–1764. 82C32

Frank, Günter (*with* Schwick, Wilhelm) Meromorphe Funktionen, die mit einer Ableitung drei Werte teilen. (English summary) [Meromorphic functions that share three values with a derivative] *Results Math.* **22** (1992), *no.* 3-4, 679–684. (A. Edrei) **93j:30027** 30D30 (30D35)

Frank, Ove (*with* Nowicki, Krzysztof) Exploratory statistical analysis of networks. (English summary) *Quo vadis, graph theory?*, 349–365, *Ann. Discrete Math.*, 55, *North-Holland, Amsterdam*, 1993. (*see* **93k:05003**) 62–07 (05C80, 62H99, 62P25)

Frank, Paul M. (*with* Ding, Xianchun) Robust model-based fault detection and isolation for uncertain dynamical systems. (English summary) *Mathematics of the analysis and design of process control (Dublin, 1991/Lille, 1991)*, 655–664, *North-Holland, Amsterdam*, 1992. (*see* **93g:93004**) 93B36

— (*with* Piechottka, U.) Controllability of bilinear systems. (English summary) *Automatica J. IFAC* **28** (1992), *no.* 5, 1043–1045. 93B05

— (*with* Wang, Yue Yun; Clements, David J.) The robustness properties of the linear quadratic regulators for singular systems. (English summary) *IEEE Trans. Automat. Control* **38** (1993), *no.* 1, 96–100. (Summary) **93j:93048** 93B36 (49N10, 93C05)

Frank, Reinhard M. (*with* Auzinger, W.; Kirlinger, G.) Modern convergence theory for stiff initial value problems. (English summary) *J. Comput. Appl. Math.* **45** (1993), *no.* 1-2, 5–16. (Summary) **93j:65124** 65L20 (65L05, 65L70)

Frank, Rolfdieter Ein lokaler Fundamentalsatz für Projektionen. (English summary) [A local fundamental theorem for projections] *Geom. Dedicata* **44** (1992), *no.* 1, 53–66. (Rainer Löwen) **93i:51031** 51H10

Frank, Wilhelm Direkte Herleitung von notwendigen Bedingungen der Varationsrechnung bei Mehrfachintegralen im Sinne von Carathéodory. (English summary) [Direct derivation of necessary conditions in the calculus of variations for multiple integrals in the sense of Carathéodory] *Monatsh. Math.* **114** (1992), *no.* 2, 89–96. (Summary) **93g:49031** 49Q15

Franke, B. (*with* Löhnberg, Peter) Model quality and optimal identification for control. (English summary) *Identification and system parameter estimation* 1991, *Vol.* 1,2 (*Budapest*, 1991), 817–822, *IFAC Sympos. Ser.*, 3, *Pergamon, Oxford*, 1992. (*see* **93h:93009**) 93B30

Franke, Dieter Shaping the reference input response of linear distributed parameter systems via output feedback. *Optimal control of partial differential equations (Irsee, 1990)*, 81–92, *Lecture Notes in Control and Inform. Sci.*, 149, *Springer, Berlin*, 1991. (*see* **93b:49002**) 93C20 (93B51)

Franke, J. *see* **Franke, Jürgen**

Franke, John E. (*with* Yakubu, Abdul-Aziz) Mutual exclusion versus coexistence for discrete competitive systems. *J. Math. Biol.* **30** (1991), *no.* 2, 161–168. (Yin Shui Fan) **93a:92010** 92D25 (39A10, 92B05)

— (*with* Yakubu, Abdul-Aziz) Geometry of exclusion principles in discrete systems. (English summary) *J. Math. Anal. Appl.* **168** (1992), *no.* 2, 385–400. (T. J. Mahar) **93g:39002** 39A10 (92D25)

Franke, Jürgen (*with* Härdle, Wolfgang) On bootstrapping kernel spectral estimates. *Ann. Statist.* **20** (1992), *no.* 1, 121–145. (Friedrich Liese) **93b:62129** 62M15 (62G09)

— (*with* Kreiss, Jens-Peter) Bootstrapping stationary autoregressive moving-average models. *J. Time Ser. Anal.* **13** (1992), *no.* 4, 297–317. (Zuzana Prášková) **93h:62162** 62M10 (62E20, 62G09)

Franke, V. A. (*with* Tapia, V.) The ADM Lagrangian in extrinsic gravity. *Nuovo Cimento B* (11) **107** (1992), *no.* 6, 611–630. (Agostino Pràstaro) **93g:83085** 83D05 (83C99)

Frankel, M. L. (*with* Sivashinsky, Gregory I.) Surface evolution equations modelling intrinsic dynamics of premixed flames. *Fluid dynamical aspects of combustion theory*, 30–42, *Pitman Res. Notes Math. Ser.*, 223, *Longman Sci. Tech., Harlow*, 1991. (Alexandre Fedorov) **93j:80006** 80A25 (76N15, 80A32)

Frankel, Norman E. (*with* Taucher, T.) Annealed n-vector p-spin model. (English summary) *J. Statist. Phys.* **68** (1992), *no.* 5-6, 925–976. (Boris A. Khoruzhenko) **93k:82035** 82B44 (82B27, 82D30)

— (*with* Ninham, Barry W.; Hughes, Barry D.; Glasser, M. Lawrence) Möbius, Mellin, and mathematical physics. (English summary) *Phys. A* **186** (1992), *no.* 3-4, 441–481. (D. R. Heath-Brown) **93h:11143** 11Z50 (11M99, 82B05)

— (*with* Dettmann, C. P.) Potential theory and analytic properties of a Cantor set. (English summary) *J. Phys. A* **26** (1993), *no.* 5, 1009–1022. (Summary) **93k:78007** 78A30 (28A75, 31A15)

— (*with* Daicic, J.) Relativistic spin-1 bosons in a magnetic field. (English summary) *J. Phys. A* **26** (1993), *no.* 6, 1397–1408. 81V10

— (*with* Cornish, N. J.) Universal mass in 2 + 1 dimensions. (English summary) *Phys. Rev. D* (3) **47** (1993), *no.* 2, 714–717. (Michael O. Katanaev) **93m:83048** 83C55 (83C99)

Frankiewicz, R. (*with* Zbierski, P.) On a theorem of Baumgartner and Weese. *Fund. Math.* **139** (1991), *no.* 3, 167–175. (W. W. Comfort) **93f:03032** 03E35 (03E50, 06E05)

Frankl, Peter (*with* Burr, Stefan A.; Erdős, Paul; Sós, Vera T.; Graham, R. L.) Further results on maximal anti-Ramsey graphs. *Graph theory, combinatorics, and applications, Vol.* 1 (*Kalamazoo, MI*, 1988), 193–206, *Wiley-Intersci. Publ., Wiley, New York*, 1991. (Summary) **93i:05093** 05C55

— (*with* Erdős, Péter L.; Kleitman, Daniel J.; Saks, Michael E.; Székely, László A.) Sharpening the LYM inequality. (English summary) *Combinatorica* **12** (1992), *no.* 3, 287–293. (G. F. Clements) **93m:05198** 05D05

— The convex hull of antichains in posets. (English summary) *Combinatorica* **12** (1992), *no.* 4, 493–496. (Douglas B. West) **93k:06007** 06A07

— On cross-intersecting families. (English summary) Topological, algebraical and combinatorial structures. Frolík's memorial volume. *Discrete Math.* **108** (1992), *no.* 1-3, 291–295. (Glenn H. Hurlbert) **93i:05005** 05A05

— (*with* Tokushige, Norihide) Some best possible inequalities concerning cross-intersecting families. (English summary) *J. Combin. Theory Ser. A* **61** (1992), *no.* 1, 87–97. (Dumitru Acu) **93j:05158** 05D05

Franklin, Allan *see* **Maher, Patrick**

Franklin, Gene F. (*with* Al-Rahmani, Hamed M.) Multirate control: a new approach. *Automatica J. IFAC* **28** (1992), *no.* 1, 35–44. (Hisham M. Soliman) **93b:93074** 93C83 (93B51)

Franklin, Susan (*with* Marcus, Marvin) Rank and inertia of a complex Hadamard power. (English summary) *Linear and Multilinear Algebra* **32** (1992), *no.* 2, 149–166. (Richard D. Hill) **93m:15002** 15A03 (15A18)

Franková, Dana Substitution method for generalized linear differential equations. (Czech summary) *Math. Bohem.* **116** (1991), *no.* 4, 337–359. (B. B. Pakholok) **93g:34015** 34A30 (34D05)

Frankowicz, M. (*with* Górecki, J.; Kawczyński, A. L.) Molecular dynamics simulations of oscillations in thermochemical systems. *Stochastic methods in experimental sciences (Szklarska Poręba*, 1989), 167–187, *World Sci. Publishing, River Edge, NJ*, 1990. (*see* **93a:60004**) 82C99 (82–04)

Frankowska, Halina High order inverse function theorems. (English summary) *Analyse non linéaire (Perpignan*, 1987), 282–303, *Univ. Montréal, Montreal, PQ*, 1989. (*see* **93h:49003**) 49J52 (26B10)

— (*with* Fattorini, H. O.) Infinite-dimensional control problems with state constraints. (English summary) *Modelling and inverse problems of control for distributed parameter systems (Laxenburg*, 1989), 52–62, *Lecture Notes in Control and Inform. Sci.*, 154, *Springer, Berlin*, 1991. (*see* **93d:93006**) 49K20 (93C20)

— (*with* Aubin, Jean-Pierre) Viability kernel of control systems. *Nonlinear synthesis (Sopron*, 1989), 12–33, *Progr. Systems Control Theory*, 9, *Birkhäuser Boston, Boston, MA*, 1991. (Summary) **93e:49008** 49J24 (93B52)

— (*with* Aubin, Jean-Pierre) Hyperbolic systems of partial differential inclusions. *Ann. Scuola Norm. Sup. Pisa Cl. Sci.* (4) **18** (1991), *no.* 4, 541–562. (Manfred W. Kracht) **93c:35167** 35R70 (35L40)

— (*with* Cannarsa, Piermarco) Value function and optimality conditions for semilinear control problems. *Appl. Math. Optim.* **26** (1992), *no.* 2, 139–169. (Philip D. Loewen) **93h:49040** 49K27 (34G20, 34H05, 47N70, 49J27, 49L25)

— (*with* Aubin, Jean-Pierre) Unicité des solutions optimales et absence de chocs pour les équations d'Hamilton-Jacobi-Bellman et de Riccati. (English and French summaries) [Uniqueness of optimal trajectories and the nonexistence of shocks for Hamilton-Jacobi-Bellman and Riccati PDE] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 4, 427–431. (E. N. Barron) **93h:49042** 49K40 (49K15, 49L20)

Frankowski, K. (*with* Pekeris, C. L.) Note on the form of the metric for an isolated vortex in general relativity. *Proc. Nat. Acad. Sci. U.S.A.* **89** (1992), *no.* 15, 6703–6705. (Summary) **93d:83013** 83C15

— (*with* Pekeris, C. L.) Correction: "Note on the form of the metric for an isolated vortex in general relativity" [Proc. Nat. Acad. Sci. U.S.A. **89** (1992), no. 15, 6703–6705; MR 93d:83013]. *Proc. Nat. Acad. Sci. U.S.A.* **89** (1992), *no.* 24, 12209. (Editors) **93i:83023** 83C15

Franks, John Rotation numbers for area preserving homeomorphisms of the open annulus. *Dynamical systems and related topics (Nagoya*, 1990), 123–127, *Adv. Ser. Dyn. Syst.*, 9, *World Sci. Publishing, River Edge, NJ*, 1991. (Summary) **93e:58153** 58F20

— A new proof of the Brouwer plane translation theorem. (English summary) *Ergodic Theory Dynamical Systems* **12** (1992), *no.* 2, 217–226. (Edward Slaminka) **93m:58059** 58F08 (54H20)

— Geodesics on S^2 and periodic points of annulus homeomorphisms. *Invent. Math.* **108** (1992), *no.* 2, 403–418. (Vladislav S. Medvedev) **93f:58192** 58F20 (58E10)

del castillo Franquet, Joan *see* **del Castillo Franquet, Joan**

Franses, Philip Hans A model selection test for an AR(1) versus an MA(1) model. (English summary) *Statist. Probab. Lett.* **15** (1992), *no.* 4, 281–284. 62M10

— Modeling seasonality in bimonthly time series. (English summary) *Statist. Probab. Lett.* **15** (1992), *no.* 5, 407–415. 62M10

Frantsuzov, S. B. (*with* Kondrashkov, A. V.) A plane problem on the strong bending of an elastic curvilinear rod. (Russian. English and Ukrainian summaries) *Prikl. Mekh.* **28** (1992), *no.* 4, 48–56; *translation in Internat. Appl. Mech.* **28** (1992), *no.* 4, 245–251. (From the text) **93f:73077** 73K50 (73G05, 73H05)

Frantz, Marc On Sierpiński's nonmeasurable set. *Fund. Math.* **139** (1991), *no.* 1, 17–22. (B. Rodríguez-Salinas) **93a:28006** 28A20

Franzese, P. (*with* Zannetti, L.) Advection by a point vortex in closed domains. (English summary) *European J. Mech. B Fluids* **12** (1993), *no.* 1, 43–67. (Summary) **93i:76020** 76C05 (58F40)

Franzkeit, Reinhard A binary search problem on graphs. *Discrete Appl. Math.* **36** (1992), *no.* 1, 83–86. (Summary) **93a:05074** 05C35

Frápolli, María J. Identity, necessity and a prioricity: the fallacy of equivocation. *Hist. Philos. Logic* **13** (1992), *no.* 1, 91–109. (Steve Kuhn) **93b:03004** 03A05 (03B45)

Frappat, L. (*with* Sciarrino, A.; Sorba, P.) Dynkin-like diagrams and representations of the strange superalgebra $P(n)$. *J. Math. Phys.* **32** (1991), *no.* 12, 3268–3277. (Hartmut Schlosser) **93g:17005a** 17A70 (17B20)

— (*with* Sciarrino, A.; Sorba, P.) Erratum: "Dynkin-like diagrams and representations of the strange superalgebra $P(n)$". *J. Math. Phys.* **33** (1992), *no.* 8, 2937. (Hartmut Schlosser) **93g:17005b** 17A70 (17B20)

— (*with* Sciarrino, A.) Oscillator realization of the strange superalgebras $P(n)$ and $Q(n)$. (English summary) *J. Math. Phys.* **33** (1992), *no.* 11, 3911–3917. (Hartmut Schlosser) **93i:81053** 81R05 (17A70)

— (*with* Sciarrino, A.) A quasi-parafermionic realization of G_2 and $U_q(G_2)$. *J. Phys. A* **25** (1992), *no.* 8, L383–L388. (Nathalie Debergh) **93d:81087** 81R50 (16W30, 17B25, 17B37)

Frappier, Clément (*with* Olivier, Patrick) A quadrature formula involving zeros of Bessel functions. *Math. Comp.* **60** (1993), *no.* 201, 303–316. (Hans Strauss) **93d:41025** 41A55 (65D32)

Frasca, M. Quantum harmonic oscillator in a strong electrostatic wave. (English summary) *Nuovo Cimento B* (11) **107** (1992), *no.* 7, 845–847. 81Q05

Frasca, Michele (*with* Chiarenza, Filippo; Longo, Placido) Interior $W^{2,p}$ estimates for nondivergence elliptic equations with discontinuous coefficients. (English summary) *Ricerche Mat.* **40** (1991), *no.* 1, 149–168. (Michelangelo Franciosi) **93k:35051** 35B45 (35J30, 35R05)

— (*with* Chiarenza, Filippo; Longo, Placido) $W^{2,p}$-solvability of the Dirichlet problem for nondivergence elliptic equations with VMO coefficients. *Trans. Amer. Math. Soc.* **336** (1993), *no.* 2, 841–853. (Ya. A. Roitberg) **93f:35232** 35R05 (35J25)

Fraser, Craig G. Mathematical technique and physical conception in Euler's investigation of the elastica. *Centaurus* **34** (1991), *no.* 3, 211–246. (Peeter Müürsepp) **93c:01017** 01A50 (73–03)

— Differential equations in Lagrange's theory of planetary perturbations. (Spanish) 2nd International Colloquium on Philosophy and History of Mathematics (Spanish) (México City, 1990). *Mathesis* **7** (1991), *no.* 3, 339–350. (I. Grattan-Guinness) **93a:01021** 01A50 (70–03)

— Isoperimetric problems in the variational calculus of Euler and Lagrange. (French and German summaries) *Historia Math.* **19** (1992), *no.* 1, 4–23. (I. Grattan-Guinness) **93a:01022** 01A50 (01A55, 49–03)

Fraser, D. A. S. (*with* Guttman, Irwin; Srivastava, M. S.) Conditional inference for treatment and error in multivariate analysis. *Biometrika* **78** (1991), *no.* 3, 565–572. (Jack C. Lee) **93c:62102** 62H15 (62J10)

— Statistical inference: likelihood to significance. *J. Amer. Statist. Assoc.* **86** (1991), *no.* 414, 258–265. (D. A. Sprott) **93c:62006** 62A10 (62A20, 62F05, 62F12)

— (*with* Cheah, P. K.; Reid, N.; Tapia, A.) Third order asymptotics: connections among test quantities. (English summary) *Comm. Statist. Theory Methods* **21** (1992), *no.* 8, 2127–2133. (Summary) **93f:62022** 62E20

— (*with* Ennis, M.) Higher order local unbiasedness with computer algebra. (English summary) *Comm. Statist. Theory Methods* **21** (1992), *no.* 11, 3171–3176. (Summary) **93k:62050** 62F10

Fraser, W. B. (*with* Ghosh, T. K.; Batra, S. K.) On unwinding yarn from a cylindrical package. (English summary) *Proc. Roy. Soc. London Ser. A* **436** (1992), *no.* 1898, 479–498. (Summary) **93e:73031** 73K99

Fraska, M. (*with* Ivanov, A. V.) Partial regularity for quasilinear non-uniformly elliptic systems of total type. (Russian. English and Russian summaries) *Zap. Nauchn. Sem. S.-Peterburg. Otdel. Mat. Inst. Steklov. (POMI)* **200** (1992), *Kraev. Zadachi Mat. Fiz. Smezh. Voprosy Teor. Funktsii.* 24, 62–70, 188. (Summary) **93h:35066** 35J60 (35J50)

alpuente Frasnedo, María *see* **Alpuente Frasnedo, María**

Fratini, A. (*with* Jetto, L.; Longhi, Sauro) Adaptive deadbeat trajectory tracking for robotic manipulators. (English summary) *Mathematics of the analysis and design of process control* (*Dublin, 1991/Lille, 1991*), 483–492, *North-Holland, Amsterdam*, 1992. (*see* **93g:93004**) 93C40 (70B15, 70Q05, 93C85)

Frauendiener, Jörg (*with* Newman, Ezra T.) Thoughts and speculations on the question: is space-time turbulent? *Developments in general relativity, astrophysics and quantum theory* (*Jerusalem and Haifa, 1989*), 51–63, *Ann. Israel Phys. Soc.*, 9, *IOP, Bristol*, 1990. (Charles G. Torre) **93d:83007** 83C05 (58F13, 58F39)

— Note on the memory effect. *Classical Quantum Gravity* **9** (1992), *no.* 6, 1639–1641. (J. B. Griffiths) **93d:83022** 83C30

— (*with* Sparling, George A. J.) On the symplectic formalism for general relativity. (English summary) *Proc. Roy. Soc. London Ser. A* **436** (1992), *no.* 1896, 141–153. (Ingemar Bengtsson) **93g:83008** 83C05 (58F05)

— (*with* Schmidt, B. G.) Numerical evolution, linear and nonlinear, of spherically symmetric deviations from an isotropic universe. (English summary) *Gen. Relativity Gravitation* **25** (1993), *no.* 4, 373–397. (Summary) **93k:83001** 83–08 (83F05)

Frauendorfer, Karl On the value of perfect information and approximate solutions in convex stochastic two-stage optimization. (English summary) *System modelling and optimization* (*Zurich, 1991*), 564–573, *Lecture Notes in Control and Inform. Sci.*, 180, *Springer, Berlin*, 1992. (*see* **93e:90003**) 90C15 (90C20)

Fray, R. L. On group distributively generated near-rings. *J. Austral. Math. Soc. Ser. A* **52** (1992), *no.* 1, 40–56. (Simonetta Di Sieno) **93e:16061** 16Y30

— On group near-ring modules. (English summary) *Quaestiones Math.* **15** (1992), *no.* 2, 213–223. (Günter Pilz) **93i:16062** 16Y30 (16S34)

— On a relationship between group- and matrix near-rings. (English summary) *Quaestiones Math.* **15** (1992), *no.* 2, 225–231. (Günter Pilz) **93i:16063** 16Y30 (16S34, 16S50)

Frazho, Arthur E. (*with* Rotea, Mario A.) A remark on mixed L^2/L^∞ bounds. *Integral Equations Operator Theory* **15** (1992), *no.* 2, 343–348. (Tiberiu Constantinescu) **93b:47029** 47A57 (47B99)

— (*with* Foias, Ciprian) Commutant lifting and simultaneous H^∞ and L^2 suboptimization. *SIAM J. Math. Anal.* **23** (1992), *no.* 4, 984–994. (Joseph A. Ball) **93e:47011** 47A20 (47A57, 47N70, 93B36)

— (*with* Rotea, Mario A.) Bounds on solutions to $\mathscr{H}_\infty$ algebraic Riccati equations and $\mathscr{H}_2$ properties of $\mathscr{H}_\infty$ central solutions. (English summary) *Systems Control Lett.* **19** (1992), *no.* 5, 341–352. (Vladimir B. Larin) **93m:93031** 93B36 (47N70)

Fré, Pietro (*with* Ferrara, Sergio; Soriani, Paolo) On the moduli space of the T^6/Z_3 orbifold and its modular group. *Classical Quantum Gravity* **9** (1992), *no.* 7, 1649–1661. (Summary) **93g:32033** 32G81 (32J27, 32J81, 81T30)

— (*with* Soriani, Paolo) Symplectic embeddings, special Kähler geometry and automorphic functions: the case of $SK(n+1) = SU(1,1)/U(1) \otimes SO(2,n)/SO(2) \otimes SO(n)$. *Nuclear Phys. B* **371** (1992), *no.* 3, 659–679. (Krzysztof Galicki) **93e:53054** 53C25 (32C17, 32N05, 53C55, 53C80, 81T30)

Fréchet, Maurice ★ Les espaces abstraits. (French) [Abstract spaces] Reprint of the 1928 original. Les Grands Classiques Gauthier-Villars. [Gauthier-Villars Great Classics] *Éditions Jacques Gabay, Sceaux*, 1989. xii+297 *pp. ISBN* 2-87647-056-X (Editors) **93g:01098** 01A75 (46–03, 54–03)

Fredenhagen, Klaus Structure of superselection sectors in low-dimensional quantum field theory. *Differential geometric methods in theoretical physics* (*Davis, CA, 1988*), 95–104, *NATO Adv. Sci. Inst. Ser. B Phys.*, 245, *Plenum, New York*, 1990. (Stephen J. Summers) **93e:81066** 81T05 (46L60, 81–02)

— Localizability of particle states. *The algebraic theory of superselection sectors* (*Palermo, 1989*), 215–229, *World Sci. Publishing, River Edge, NJ*, 1990. (*see* **93i:81122**) 81T05

— Generalizations of the theory of superselection sectors. *The algebraic theory of superselection sectors* (*Palermo, 1989*), 379–387, *World Sci. Publishing, River Edge, NJ*, 1990. (*see* **93i:81122**) 81T05 (81T40)

Frederickson, Greg N. Ambivalent data structures for dynamic 2-edge-connectivity and k smallest spanning trees. (English summary) *32nd Annual Symposium on Foundations of Computer Science* (*San Juan, PR, 1991*), 632–641, *IEEE Comput. Soc. Press, Los Alamitos, CA*, 1991. (Summary) **93i:68043** 68P05 (05C05, 05C40, 05C85, 68R10)

— (*with* Guan, D. J.) Preemptive ensemble motion planning on a tree. (English summary) *SIAM J. Comput.* **21** (1992), *no.* 6, 1130–1152. (Summary) **93k:68043** 68Q25 (68R10, 90B06, 90B10)

— A data structure for dynamically maintaining rooted trees. (English summary) *Proceedings of the Fourth Annual ACM-SIAM Symposium on Discrete Algorithms* (*Austin, TX, 1993*), 175–184, *ACM, New York*, 1993. (*see* **93k:05002**) 68P05

— A note on the complexity of a simple transportation problem. (English summary) *SIAM J. Comput.* **22** (1993), *no.* 1, 57–61. (Summary) **93m:90031** 90B10 (68Q25, 90B06)

Fredman, M. L. (*with* Johnson, David Stifler; McGeoch, L. A.; Ostheimer, G.) Data structures for traveling salesmen. (English summary) *Proceedings of the Fourth Annual ACM-SIAM Symposium on Discrete Algorithms* (*Austin, TX*, 1993), 145–154, *ACM, New York*, 1993. (*see* **93k:05002**) 68P05 (90B10)

Fredricksen, Harold A new look at the de Bruijn graph. (English summary) *Discrete Appl. Math.* **37/38** (1992), 193–203. (Qing De Kang) **93g:05061** 05C20 (05C45)

— Gray codes and the Thue-Morse-Hedlund sequence. *J. Combin. Math. Combin. Comput.* **11** (1992), 3–11. (From the introduction) **93a:94038** 94B60

Freed, Daniel S. (*with* Gompf, Robert E.) Computer calculation of Witten's 3-manifold invariant. *Comm. Math. Phys.* **141** (1991), *no.* 1, 79–117. (Ronald J. Stern) **93d:57027** 57N10 (11L03, 57M25, 58D30, 58G26, 81T13, 81T40)

— (*with* Melrose, Richard B.) A mod k index theorem. *Invent. Math.* **107** (1992), *no.* 2, 283–299. (John Roe) **93c:58212** 58G12 (19L10, 57R15)

— Reidemeister torsion, spectral sequences, and Brieskorn spheres. *J. Reine Angew. Math.* **429** (1992), 75–89. (Laurence R. Taylor) **93k:57052** 57Q10 (55T99, 58G26)

Freed, Denise (*with* Callan, Curtis G., Jr.) Phase diagram of the dissipative Hofstadter model. *Nuclear Phys. B* **374** (1992), *no.* 3, 543–566. (Summary) **93e:81146** 81V10 (81T30)

Freed, Nathan (*with* Ofer, Dror; Shvarts, Dov; Orszag, Steven A.) Two-phase flow analysis of self-similar turbulent mixing by Rayleigh-Taylor instability. (English summary) *Phys. Fluids A* **3** (1991), *no.* 5, *part* 1, 912–918. 76F99 (76T05)

Freedman, Daniel Z. (*with* Johnson, Kenneth A.; Latorre, José Ignacio) Differential regularization and renormalization: a new method of calculation in quantum field theory. *Nuclear Phys. B* **371** (1992), *no.* 1-2, 353–414. (Piotr Kosiński) **93b:81172** 81T15 (81T18)

Freedman, H. I. (*with* Baggs, I.) Convergence to equilibria in general models of unilingual-bilingual interactions. (English summary) *Differential equations models in biology, epidemiology and ecology* (*Claremont, CA*, 1990), 28–33, *Lecture Notes in Biomath.*, 92, *Springer, Berlin*, 1991. (*see* **93g:92001**) 92D20 (34C25)

— (*with* Ruan, Shi Gui) Persistence in three-species food chain models with group defense. *Math. Biosci.* **107** (1991), *no.* 1, 111–125. (G. W. Harrison) **93c:92008** 92D25 (34D99)

— (*with* Sree Hari Rao, V.; Jaya Lakshmi, K.) Stability, persistence, and extinction in a predator-prey system with discrete and continuous time delays. (English summary) *Recent trends in differential equations*, 221–238, *World Sci. Ser. Appl. Anal.*, 1, *World Sci. Publishing, River Edge, NJ*, 1992. (Pauline van den Driessche) **93h:34137** 34K20 (34K15, 92D25)

— (*with* Ruan, Shi Gui) Hopf bifurcation in three-species food chain models with group defense. (English summary) *Math. Biosci.* **111** (1992), *no.* 1, 73–87. (D. O. Logofet) **93h:92026** 92D25 (34C23)

— (*with* Wu, Jian Hong) Steady-state analysis in a model for population diffusion in a multi-patch environment. *Nonlinear Anal.* **18** (1992), *no.* 6, 517–542. (L. E. Bobisud) **93b:92011** 92D25 (34B15, 35K57)

— (*with* Aiello, Walter G.; Wu, Jian Hong) Analysis of a model representing stage-structured population growth with state-dependent time delay. *SIAM J. Appl. Math.* **52** (1992), *no.* 3, 855–869. (Ovide Arino) **93j:92025** 92D25 (34K15, 34K20)

— (*with* Wu, Jian Hong) Periodic solutions of single-species models with periodic delay. *SIAM J. Math. Anal.* **23** (1992), *no.* 3, 689–701. (J. Milota) **93e:92012** 92D25 (34K15)

— *see also* **Turyn, L., 93c:92010**

Freedman, Laurence S. Obituary: David Peery Byar (1938–1991). *J. Roy. Statist. Soc. Ser. A* **155** (1992), *no.* 3, 464–465. 01A70

Freedman, Michael H. (*with* He, Zheng-Xu) Divergence-free fields: energy and asymptotic crossing number, *Ann. of Math.* (2) **134** (1991), *no.* 1, 189–229. (Anders Linnér) **93a:58040** 58E15 (57M25)

— Working and playing with the 2-disk. *American Mathematical Society centennial publications, Vol. II* (*Providence, RI*, 1988), 37–47, *Amer. Math. Soc., Providence, RI*, 1992. (Christopher W. Stark) **93j:57012** 57N50 (30C30, 30C62, 57N05, 57N15)

— (*with* De Michelis, Stefano) Uncountably many exotic $\mathbf{R}^4$'s in standard 4-space. *J. Differential Geom.* **35** (1992), *no.* 1, 219–254. (Ronald J. Stern) **93d:57036** 57N13 (57R55, 57R57)

— (*with* Bryson, Steve; He, Zheng-Xu; Wang, Zhenghan) Möbius invariance of knot energy. *Bull. Amer. Math. Soc. (N.S.)* **28** (1993), *no.* 1, 99–103. (Anders Linnér) **93d:57010** 57M25 (57N45, 58E10)

Freeman, A. J. (*with* Badralexe, Eugene; Marksteiner, P.; Oh, Y.) Computation of the Kummer functions and Whittaker functions by using Neumann type series expansions. (English summary) *Comput. Phys. Comm.* **71** (1992), *no.* 1-2, 47–55. (Summary) **93e:65033** 65D20 (33–04)

Freeman, D. Kent Generalization of the pseudopotential to an interaction with nonzero range. *J. Math. Phys.* **33** (1992), *no.* 6, 2215–2227. (Summary) **93b:81057** 81Q10 (78A25, 81U99)

Freeman, Geoffrey H. Orthogonal partitions of 6×6 Latin squares of Set X. *Utilitas Math.* **41** (1992), 139–149. (Summary) **93a:05034** 05B15

Freeman, R. A. (*with* Kokotović, P. V.) Design and comparison of globally stabilizing controllers for an uncertain nonlinear system. *Systems, models and feedback: theory and applications* (*Capri*, 1992), 249–264, *Progr. Systems Control Theory*, 12, *Birkhäuser Boston, Boston, MA*, 1992. (*see* **93a:93006**) 93D15

Freeny, Anne E. (*with* Nair, Vijayan N.) Robust parameter design with uncontrolled noise variables. (English summary) *Statist. Sinica* **2** (1992), *no.* 2, 313–334. 62N10

Frees, Edward W. Linear regression and U-statistics. (English summary) *Sankhyā Ser. A* **53** (1991), *no.* 1, 84–96. (Lin-Cheng Zhao) **93g:60046** 60F05 (62G05, 62J05)

Freese, R. W. (*with* Cho, Yeol Je; Kim, S. S.) Strictly 2-convex linear 2-normed spaces. *J. Korean Math. Soc.* **29** (1992), *no.* 2, 391–400. (Wolfgang Lusky) **93h:46010** 46A99 (15A03, 46B20, 52A07)

Freese, Ralph (*with* Pickering, Douglas; Roddy, Michael Stewart) Obituary: R. Alan Day. *Order* **8** (1991/92), *no.* 4, 319–324. (Editors) **93f:01019** 01A70

— Free and finitely presented lattices. (Russian summary) *Proceedings of the International Conference on Algebra, Part* 3 (*Novosibirsk*, 1989), 85–97, *Contemp. Math.*, 131, *Part* 3, *Amer. Math. Soc., Providence, RI*, 1992. (Joel Berman) **93k:06016** 06B25 (06–02, 06B20)

Frege, Gottlob *see* **Dummett, Michael, 93g:03001** *and* **Hintikka, Jaakko, 93i:03005**

Frehse, J. (*with* Dolzmann, G.) Optimale asymptotische Konvergenz linearer finiter Elemente bei elliptischen Problemen mit Hilfe von Campanato-Abschätzungen. [Optimal asymptotic convergence of linear finite elements in elliptical problems with the aid of Campanato estimates] *Extrapolation and defect correction* (1990), 95–120, *Bonner Math. Schriften*, 228, *Univ. Bonn, Bonn*, 1991. (Juhani Pitkäranta) **93j:65177** 65N30 (65N12)

— (*with* Bensoussan, Alain) On Bellman equations of ergodic control in $\mathbf{R}^n$. *Applied stochastic analysis* (*New Brunswick, NJ*, 1991), 21–29, *Lecture Notes in Control and Inform. Sci.*, 177, *Springer, Berlin*, 1992. (From the introduction) **93f:93135** 93E20 (49K45, 49L20)

— (*with* Bensoussan, Alain) On Bellman equations of ergodic control in $\mathbf{R}^n$. *J. Reine Angew. Math.* **429** (1992), 125–160. (Tamer Başar) **93h:49046** 49L20 (35B37, 49K45, 93E20)

Frei, Armin On complete Saks spaces. *Cahiers Topologie Géom. Différentielle Catégoriques* **33** (1992), *no.* 2, 177–189. (James Bell Cooper) **93f:46108** 46M15 (18B99, 46A70)

Frei, Günther (*with* Stammbach, Urs) ★ Hermann Weyl und die Mathematik an der ETH Zürich, 1913–1930. (German) [Hermann Weyl and mathematics at the ETH Zürich, 1913–1930] *Birkhäuser Verlag, Basel*, 1992. xvi+181 *pp. ISBN* 3-7643-2729-4 (H.-J. Vollrath) **93d:01092** 01A73 (01A70, 01A80)

— Bartel Leendert van der Waerden zum 90. Geburtstag. [Bartel Leendert van der Waerden on his 90th birthday] *Historia Math.* **20** (1993), *no.* 1, 5–11. (Editors) **93m:01069** 01A70

Freiberg, A. Yu. (*with* Al′shanskiĭ, M. A.; Mel′nikova, I. V.) Numerical realization of the method of boundary value problems. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **31** (1991), *no.* 6, 929–933; *translation in Comput. Math. Math. Phys.* **31** (1991), *no.* 6, 108–111 (1992). (J. Mikliček) **93c:65095** 65L10 (34A50, 65N06)

Freiberger, Thomas S. (*with* Mathieu, Martin) Uniqueness of a Lindblad decomposition. (English summary) *Elementary operators and applications* (*Blaubeuren*, 1991), 179–187, *World Sci. Publishing, River Edge, NJ*, 1992. (Yoshikazu Katayama) **93j:46061** 46L05 (46L57, 47N50)

Freidel, Laurent (*with* Maillet, Jean-Michel) The universal R-matrix and its associated quantum algebra as functionals of the classical r-matrix. The sl_2 case. (English summary) *Phys. Lett. B* **296** (1992), *no.* 3-4, 353–360. (Hong Yan) **93k:81095** 81R50 (17B37)

Freidlin, Mark I. (*with* Sowers, Richard B.) Central limit theorem results for a reaction-diffusion equation with fast-oscillating boundary perturbations. *Stochastic partial differential equations and their applications* (*Charlotte, NC*, 1991), 101–112, *Lecture Notes in Control and Inform. Sci.*, 176, *Springer, Berlin*, 1992. (Hisao Watanabe) **93i:60150** 60J60 (60B12, 60F05, 60G20, 60H30)

— (*with* Venttsel′, A. D.) Reaction-diffusion equations with randomly perturbed boundary conditions. *Ann. Probab.* **20** (1992), *no.* 2, 963–986. (Krystyna Twardowska) **93c:35071** 35K57 (35R60, 60H15)

Freije, Margaret N. Kummer congruences and formal groups. (English summary) *J. Number Theory* **43** (1993), *no.* 1, 31–42. (Joseph H. Silverman) **93m:11123** 11S31 (11R58)

— The formal group of the Jacobian of an algebraic curve. (English summary) *Pacific J. Math.* **157** (1993), *no.* 2, 241–255. (Montserrat Teixidor i Bigas) **93k:14062** 14L05 (11G20, 14H25, 14H40)

Freije, Richard M. Intersection formulas for Mumford curves. (English summary) *p-adic methods in number theory and algebraic geometry*, 103–118, *Contemp. Math.*, 133, *Amer. Math. Soc., Providence, RI*, 1992. (Frank Herrlich) **93h:14016** 14G20 (11G20, 14H25)

Freiling, Chris (*with* Humke, Paul D.) The exact Borel class where a density completeness axiom holds. *Real Anal. Exchange* **17** (1991/92), *no.* 1, 272–281. (Elżbieta Wagner) **93b:28006** 28A12 (26A21, 28A05)

— (*with* Ash, J. Marshall; Cohen, Jonathan; Gatto, A. E.; Rinne, Dan) Generalized derivatives. *Partial differential equations with minimal smoothness and applications* (*Chicago, IL*, 1990), 25–32, *IMA Vol. Math. Appl.*, 42, *Springer, New York*, 1992. (G. Petruska) **93c:26009** 26B05 (35J99, 42B05)

— (*with* Ash, J. Marshall; Rinne, Dan) Uniqueness of rectangularly convergent trigonometric series. *Ann. of Math.* (2) **137** (1993), *no.* 1, 145–166. (R. L. Cooke) **93m:42002** 42B05 (42A63, 42B99)

— (*with* Ash, J. Marshall; Cohen, Jonathan; Rinne, Dan) Generalizations of the wave equation. *Trans. Amer. Math. Soc.* **338** (1993), *no.* 1, 57–75. (Summary) **93j:35104** 35L05 (26B40, 42B99)

Freiling, G. (*with* Eberhard, W.) Necessary conditions for the convergence and summability of eigenfunction expansions in the complex domain. *Differential Integral Equations* **4** (1991), *no.* 6, 1217–1232. (Nikolai Bozhinov) **93e:34107** 34L10 (34B05)

— (*with* Eberhard, W.) The distribution of the eigenvalues for second order eigenvalue problems in the presence of an arbitrary number of turning points. *Results Math.* **21** (1992), *no.* 1-2, 24–41. (Angelo B. Mingarelli) **93e:34108** 34L20 (34B24)

Freiman, Gregory A. (*with* Berkovich, Yakov G.; Praeger, Cheryl E.) Small squaring and cubing properties for finite groups. *Bull. Austral. Math. Soc.* **44** (1991), *no.* 3, 429–450. (W. E. Deskins) **93b:20045** 20D60

— (*with* Schein, Boris M.) Structure of $R(3,3)$-groups. (English summary) *Israel J. Math.* **77** (1992), *no.* 1-2, 17–31. (M. Herzog) **93m:20038** 20F05

— (*with* Halberstam, H.; Ruzsa, Imre Z.) Integer sum sets containing long arithmetic progressions. *J. London Math. Soc.* (2) **46** (1992), *no.* 2, 193–201. (Les Davison) **93j:11008** 11B13 (11B25)

Frein, Yannick (*with* Dallery, Yves) On decomposition methods for tandem queueing networks with blocking. (English summary) *Oper. Res.* **41** (1993), *no.* 2, 386–399. 90B22

Freire, Alexandre S. (*with* Adams, S. R.) Nonnegatively curved leaves in foliations. *J. Differential Geom.* **34** (1991), *no.* 3, 681–700. (Joan Girbau) **93c:53018** 53C12 (57R30)

— (*with* Escobar, José F.) The spectrum of the Laplacian of manifolds of positive curvature. *Duke Math. J.* **65** (1992), *no.* 1, 1–21. (Stig I. Andersson) **93d:58174** 58G25 (35P05, 53C21)

Freire, E. *see* **Freire Macías, Emilio**

Freire, Nuno C. On the exponential of a bounded linear operator in a $L(E,E)$ algebra. *Portugal. Math.* **48** (1991), *no.* 4, 363–382. (Ioana Cioränescu) **93d:47034** 47A60 (46A32, 46H99, 47D99)

Freire Macías, Emilio (*with* Rodríguez-Luis, A. J.; Gamero, E.; Ponce, E.) A case study for homoclinic chaos in an autonomous electronic circuit. A trip from Takens-Bogdanov to Hopf-Šil′nikov. (English summary) Homoclinic chaos (Brussels, 1991). *Phys. D* **62** (1993), *no.* 1-4, 230–253. (Summary) **93m:58071** 58F13 (34C15, 34C23, 58F14, 58F40, 94C05)

Freistühler, Heinrich Dynamical stability and vanishing viscosity: a case study of a non-strictly hyperbolic system. *Comm. Pure Appl. Math.* **45** (1992), *no.* 5, 561–582. (G. A. Nariboli) **93b:35085** 35L65 (35L67, 73D40, 76L05)

— (*with* Pitman, E. Bruce) A numerical study of a rotationally degenerate hyperbolic system. I. The Riemann problem. *J. Comput. Phys.* **100** (1992), *no.* 2, 306–321. (Summary) **93a:65132** 65M99 (35L65)

Freitag, E. (*with* Busam, R.; Karcher, W.) Ein Ring elliptischer Modulformen. [A ring of elliptic modular forms] *Arch. Math. (Basel)* **59** (1992), *no.* 2, 157–164. (Harvey Cohn) **93g:11036** 11F06 (11F11)

Freitag, Herta T. On the representation of $\{F_{kn}/F_n\}$, $\{F_{kn}/L_n\}$, $\{L_{kn}/L_n\}$, and $\{L_{kn}/F_n\}$ as Zeckendorf sums. *Applications of Fibonacci numbers, Vol.* 3 (*Pisa*, 1988), 107–114, *Kluwer Acad. Publ., Dordrecht*, 1990. (From the introduction) **93e:11019** 11B34 (11B39)

— (*with* Filipponi, Piero) Conversion of Fibonacci identities into hyperbolic identities valid for an arbitrary argument. *Applications of Fibonacci numbers, Vol.* 4 (*Winston-Salem, NC*, 1990), 91–98, *Kluwer Acad. Publ., Dordrecht*, 1991. (Padmavathamma) **93j:11011** 11B39

de Freitas, J. A. Teixeira (*with* de Almeida, J. P. Moitinho) Continuity conditions for finite element analysis of solids. *Internat. J. Numer. Methods Engrg.* **33** (1992), *no.* 4, 845–853. (Summary) **93b:73035** 73V05

de Freitas, Lima Notes on some pentagonal "mysteries" in Egyptian and Christian iconography. *Fivefold symmetry*, 307–332, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93i:52002**) 00A69 (01A16)

de Freitas, Luciane R. (*with* Novello, M.; Neto, N. P.; Svaiter, N. F.) Quantization of spin-two field in terms of Fierz variables—the linear case. *Fortschr. Phys.* **40** (1992), *no.* 3, 195–209. (Summary) **93d:83032** 83C45

Freivalds, Rūsiņš Complexity of probabilistic versus deterministic automata. *Baltic computer science*, 565–613, *Lecture Notes in Comput. Sci.*, 502, *Springer, Berlin*, 1991. (Hans Daduna) **93b:68060** 68Q75 (68Q05, 68Q45, 68Q70)

Frelek, B. (*with* Kwiatkowski, M.) PD controllers for nonlinear systems. (English summary) *Mathematics of the analysis and design of process control* (*Dublin*, 1991/*Lille*, 1991), 41–52, *North-Holland, Amsterdam*, 1992. (*see* **93g:93004**) 93B52 (93C10)

Fremlin, D. H. On the average of inner and outer measures. *Fund. Math.* **139** (1991), *no.* 1, 9–15. (S. A. Peregudov) **93b:28007** 28A12

— Covering squares with independent squares. *Mathematika* **38** (1991), *no.* 2, 329–333 (1992). (Donald L. Cohn) **93f:28002** 28A35

— Spaces of finite length. *Proc. London Math. Soc.* (3) **64** (1992), *no.* 3, 449–486. (Klaas Pieter Hart) **93c:28006** 28A75 (54E35, 54F50, 54H05)

Frémond, M. (*with* Costa Mattos, H.; Mamiya, E. N.) A simple model of the mechanical behavior of ceramic-like materials. (English summary) *Internat. J. Solids Structures* **29** (1992), *no.* 24, 3185–3200. (Summary) **93f:73086** 73M25 (73B05, 73B30, 73K20)

— On the flattening of materials. *Free boundary problems involving solids* (*Montreal, PQ*, 1990), 20–27, *Pitman Res. Notes Math. Ser.*, 281, *Longman Sci. Tech., Harlow*, 1993. (*see* **93k:00037**) 73B99 (73G05)

French, Donald A. Long time behavior of a numerical approximation to a nonlinear evolution problem in viscoelasticity. (English summary) *Transactions of the Tenth Army Conference on Applied Mathematics and Computing* (*West Point, NY*, 1992), 23–28, *ARO Rep.*, 93-1, *U.S. Army Res. Office, Research Triangle Park, NC*, 1993. (*see* **93m:00047**) 65M60 (73F15, 73V05)

— (*with* King, J. Thomas) Analysis of a robust finite element approximation for a parabolic equation with rough boundary data. *Math. Comp.* **60** (1993), *no.* 201, 79–104. (Georges A. Lebaud) **93d:65098** 65N30

French, Simon Recent mathematical developments in decision analysis. *IMA J. Math. Appl. Bus. Indust.* **3** (1991), *no.* 1, 1–12. 90A05 (90B50)

French, Steven Rationality, consistency and truth. (English summary) *J. Non-Classical Logic* **7** (1990), *no.* 1-2, 51–71. 03A05

Frenk, J. B. G. (*with* Hansen, B. G.) Some monotonicity properties of the delayed renewal function. *J. Appl. Probab.* **28** (1991), *no.* 4, 811–821. (Laurence A. Baxter) **93a:60138** 60K05

— A general framework for stochastic one-machine scheduling problems with zero release times and no partial ordering. (English summary) *Probab. Engrg. Inform. Sci.* **5** (1991), *no.* 3, 297–315. 90B35

— A note on one-machine scheduling problems with imperfect information. (English summary) *Probab. Engrg. Inform. Sci.* **5** (1991), *no.* 3, 317–331. (Summary) **93f:90086** 90B35

— (*with* Galambos, G.) A simple proof of Liang's lower bound for on-line bin packing and the extension to the parametric case. (English summary) *Discrete Appl. Math.* **41** (1993), *no.* 2, 173–178. (Summary) **93m:05053** 05B40

Frenkel, Alexander L. Stability of an oscillating Kolmogorov flow. *Phys. Fluids A* **3** (1991), *no.* 7, 1718–1729. (Summary) **93b:76040** 76E99

— (*with* Sivashinsky, Gregory I.) On negative eddy viscosity under conditions of isotropy. *Phys. Fluids A* **4** (1992), *no.* 8, 1608–1610. (Summary) **93d:76021** 76D99 (76F05)

Frenkel, Edward (*with* Feigin, B. L.) Affine Kac-Moody algebras at the critical level and Gel′fand-Dikiĭ algebras. (English summary) *Infinite analysis, Part A, B* (*Kyoto*, 1991), 197–215, *Adv. Ser. Math. Phys.*, 16, *World Sci. Publishing, River Edge, NJ*, 1992. (A. Hamid Bougourzi) **93j:17049** 17B67 (81R10)

— (*with* Kac, Victor G.; Wakimoto, Minoru) Characters and fusion rules for W-algebras via quantized Drinfel′d-Sokolov reduction. *Comm. Math. Phys.* **147** (1992), *no.* 2, 295–328. (D. V. Yur′ev) **93i:17029** 17B68 (58F07, 81R10)

— (*with* Feigin, B. L.) Erratum: "Semi-infinite Weil complex and the Virasoro algebra" [Comm. Math. Phys. **137** (1991), no. 3, 617–639; MR 92h:17028]. *Comm. Math. Phys.* **147** (1992), *no.* 3, 647–648. (Editors) **93d:17031** 17B68 (17B56, 17B81, 81R10)

— (*with* Feigin, B. L.) Free field resolutions in affine Toda field theories. *Phys. Lett. B* **276** (1992), *no.* 1-2, 79–86. (Giuseppe Mussardo) **93e:81106** 81T40 (17B81, 81R10)

— Determinant formulas for the free field representations of the Virasoro and Kac-Moody algebras. (English summary) *Phys. Lett. B* **286** (1992), *no.* 1-2, 71–77. (Yu Ting Jia) **93k:17056** 17B68 (17B67)

Frenkel, Igor B. (*with* Zhu, Yongchang) Vertex operator algebras associated to representations of affine and Virasoro algebras. *Duke Math. J.* **66** (1992), *no.* 1, 123–168. (Geoffrey

Mason) **93g:17045** 17B68 (17B67)

Frenkin, A. R. (*with* Gostev, V. B.) An inverse problem for a one-dimensional singular oscillator. (Russian) *Vestnik Moskov. Univ. Ser. III Fiz. Astronom.* **33** (1992), *no.* 1, 7–11. (V. S. Ol'khovskiĭ) **93h:81147** 81U40 (34A55, 34L25)

Frensel, Katia (*with* Alencar, Hilário) Hypersurfaces whose tangent geodesics omit a nonempty set. *Differential geometry*, 1–13, *Pitman Monographs Surveys Pure Appl. Math.*, 52, *Longman Sci. Tech., Harlow*, 1991. (Thomas Hasanis) **93f:53048** 53C42 (53C40)

— (*with* Fornari, Susana; Ripoll, Jaime) Hypersurfaces with constant mean curvature in the complex hyperbolic space. *Trans. Amer. Math. Soc.* **339** (1993), *no.* 2, 685–702. (Guo Ying Jiang) **93m:53065** 53C42 (53C40)

Frenz, Michael (*with* Schmidt, Volker) An insensitivity property of ladder height distributions. *J. Appl. Probab.* **29** (1992), *no.* 3, 616–624. (Jan Grandell) **93j:60062** 60G55 (60K05, 62P05)

Frenz, Timothy C. (*with* Kreher, Donald L.) An algorithm for enumerating distinct cyclic Steiner systems. *J. Combin. Math. Combin. Comput.* **11** (1992), 23–32. (Summary) **93a:05040** 05B30 (15A24)

Frenzen, C. L. Error bounds for the asymptotic expansion of the ratio of two gamma functions with complex argument. *SIAM J. Math. Anal.* **23** (1992), *no.* 2, 505–511. (A. Reinfelds) **93g:33001** 33B15 (41A60)

— (*with* Fischer, I.) On a conjecture of Pierce for permanents of singular correlation matrices. (English summary) *SIAM J. Matrix Anal. Appl.* **14** (1993), *no.* 1, 74–81. (Robert Grone) **93k:15010** 15A15

Frery, Alejandro C. (*with* Bustos, Oscar H.) ★ Simulação estocástica: teoria e algoritmos. (Portuguese) [Stochastic simulation: theory and algorithms] Versão completa. [Complete version] Monografias de Matemática [Mathematical Monographs], 49. *Instituto de Matemática Pura e Aplicada, Rio de Janeiro*, 1992. viii+148 *pp. ISBN* 85-244-0053-6 (From the preface) **93f:65011** 65C20 (65-01)

— (*with* Bustos, Oscar H.) A contribution to the study of Markovian degraded images: an extension of a theorem by Geman and Geman. (English and Portuguese summaries) *Mat. Apl. Comput.* **11** (1992), *no.* 1, 17–29. (Summary) **93i:68187** 68U10 (60G10, 62F15, 62M40)

Frésard, R. (*with* Wölfle, P.) Unified slave boson representation of spin and charge degrees of freedom for strongly correlated Fermi systems. *Internat. J. Modern Phys. B* **6** (1992), *no.* 5-6, 685–704. (Guang Shan Tian) **93k:81266a** 81V70 (82D25, 82D40)

— (*with* Wölfle, P.) Errata: "Unified slave boson representation of spin and charge degrees of freedom for strongly correlated Fermi systems". *Internat. J. Modern Phys. B* **6** (1992), *no.* 18, 3087–3088. (Guang Shan Tian) **93k:81266b** 81V70 (82D25, 82D40)

Fressengeas, Claude (*with* Molinari, Alain) The time development of Eulerian/Lagrangian perturbations to simple shear and its applications to shear banding. (English summary) *J. Mech. Phys. Solids* **40** (1992), *no.* 8, 1735–1756. (Summary) **93i:73025** 73E60 (73E05, 73E50)

Freud, Róbert Sind Gleichungen lösbar? [Can equations be solved?] *Große Augenblicke aus der Geschichte der Mathematik*, 51–80, *Bibliographisches Inst., Mannheim*, 1990. (*see* **93g:01004**) 01A05

— *see also* **Great moments in the history of mathematics, 93g:01004** *and* **Stewart, Ian N., 93k:00004b**

Freudenberg, J. S. (*with* Zhang, Zhihong) Formulas for minimum-phase/all-pass factorization of discrete-time transfer functions. (English summary) *Control Theory Adv. Tech.* **8** (1992), *no.* 4, 743–754. (Abdellah Benzaouia) **93m:93047** 93C05 (93C35, 93C45, 93C55, 93C60)

— Algebraic versus analytic design limitations imposed by ill-conditioned plants. (English summary) *IEEE Trans. Automat. Control* **38** (1993), *no.* 4, 625–629. 93B50 (93C80)

— *see also* **Chen, Jie**

Freudenberg, Wolfgang (*with* Fichtner, Karl-Heinz) Characterization of states of infinite boson systems. I. On the construction of states of boson systems. *Comm. Math. Phys.* **137** (1991), *no.* 2, 315–357. (W. Słowikowski) **93a:81056** 81Q99 (81S05, 81T05, 81V70)

— Characterization of states of infinite boson systems. II. On the existence of the conditional reduced density matrix. *Comm. Math. Phys.* **137** (1991), *no.* 3, 461–472. (Summary) **93d:82013** 82B10

Freudenthal, Hans Nichteuklidische Geometrie im Altertum? (German summary) [Non-Euclidean geometry in antiquity?] *Mathematikdidaktik, Bildungsgeschichte, Wissenschaftsgeschichte, II (Georgsmarienhütte*, 1986), 3–13, *IDM-Reihe*, 15, *Aulis/Deubner, Cologne*, 1990. (H. W. Guggenheimer) **93k:01004** 01A20

— ★ Revisiting mathematics education. China lectures. With a preface by Alan J. Bishop. Mathematics Education Library, 9. *Kluwer Academic Publishers Group, Dordrecht*, 1991. xii+200 *pp. ISBN* 0-7923-1299-6 (Michael Otte) **93j:00001** 00A35

— Nichteuklidische Geometrie im Altertum? [Non-Euclidean geometry in antiquity?] *Arch. Hist. Exact Sci.* **43** (1991), *no.* 3, 189–197. (Dan Brânzei) **93g:01009** 01A20 (51–03)

— *see also* **Hans Freudenthal, 93k:01081**; **Monna, A. F.** *and* **Hogendijk, Jan P.**

Freuder, Eugene C. (*with* Wallace, Richard J.) Partial constraint satisfaction. (English summary) *Artificial Intelligence* **58** (1992), *no.* 1-3, 21–70. 68T27

Freund, Peter G. O. (*with* Zabrodin, A. V.) Z_n-Baxter models and quantum symmetric spaces. *Phys. Lett. B* **284** (1992), *no.* 3-4, 283–288. (Summary) **93d:82029** 82B23 (33D80)

— (*with* Zabrodin, A. V.) Excitation scattering in integrable models and Hall-Littlewood-Kerov polynomials. (English summary) *Phys. Lett. B* **294** (1992), *no.* 3-4, 347–353. (Anni Koubek) **93k:82016** 82B23 (05E35, 33C80, 46L60)

Freund, Robert M. A potential-function reduction algorithm for solving a linear program directly from an infeasible "warm start". Interior point methods for linear programming: theory and practice (Scheveningen, 1990). *Math. Programming* **52** (1991), *no.* 3, *Ser. B*, 441–466 (1992). (Tamás Terlaky) **93a:90035** 90C05

— (*with* Birge, John R.; Vanderbei, Robert J.) Prior reduced fill-in in solving equations in interior point algorithms. (English summary) *Oper. Res. Lett.* **11** (1992), *no.* 4, 195–198. (Summary) **93e:90033** 90C05 (65K05)

Freund, Roland W. (*with* Golub, Gene H.; Nachtigal, Noël M.) Iterative solution of linear systems. *Acta numerica*, 1992, 57–100, *Cambridge Univ. Press, Cambridge*, 1992. (L. Hageman) **93g:65046** 65F10

— (*with* Hochbruck, M.) A biconjugate gradient-type algorithm for the iterative solution of non-Hermitian linear systems on massively parallel architectures. (English summary) *Computational and applied mathematics, I (Dublin*, 1991), 169–178, *North-Holland, Amsterdam*, 1992. (*see* **93j:00007**) 65Y05 (65F10)

— (*with* Huckle, Thomas) A restricted signature normal form for Hermitian matrices, quasi-spectral decompositions, and applications. (English summary) *Linear Algebra Appl.* **184** (1993), 165–186. (E. W. Ellers) **93m:15037** 15A57 (15A09)

— (*with* Zha, Hong Yuan) A look-ahead algorithm for the solution of general Hankel systems. (English summary) *Numer. Math.* **64** (1993), *no.* 3, 295–321. (Ilmar Arro) **93m:65035** 65F05 (15A57, 42C05)

— (*with* Gutknecht, Martin H.; Nachtigal, Noël M.) An implementation of the look-ahead Lanczos algorithm for non-Hermitian matrices. (English summary) *SIAM J. Sci. Comput.* **14** (1993), *no.* 1, 137–158. (Summary) **93h:65048** 65F15

— A transpose-free quasi-minimal residual algorithm for non-Hermitian linear systems. (English summary) *SIAM J. Sci. Comput.* **14** (1993), *no.* 2, 470–482. (Summary) **93m:65058** 65F30

Fréville, Arnaud (*with* Plateau, G.) Sac à dos multidimensionnel en variables 0-1: encadrement de la somme des variables à l'optimum. (English and French summaries) [The 0-1 multidimensional knapsack problem: fixing the sum of the variables at the optimum] *RAIRO Rech. Opér.* **27** (1993), *no.* 2, 169–187. 90C09 (90–08)

malott Frey, Carolin *see* **Malott Frey, Carolin**

Frey, Gerhard (*with* Perret, Marc; Stichtenoth, Henning) On the different of abelian extensions of global fields. *Coding theory and algebraic geometry (Luminy*, 1991), 26–32, *Lecture Notes in Math.*, 1518, *Springer, Berlin*, 1992. (Martha Rzedowski-Calderón) **93h:11129** 11R58 (14H05)

Frey, H.-D. (*with* Glöckle, W. G.; Nonnenmacher, Theo F.) Symmetries and integrability of generalized diffusion reaction equations. (English summary) *J. Phys. A* **26** (1993), *no.* 3, 665–679. (Summary) **93m:35103** 35K57 (58D25)

Frey, Michael (*with* Simiu, Emil) Noise-induced chaos and phase space flux. (English summary) *Phys. D* **63** (1993), *no.* 3-4, 321–340. (Summary) **93k:58150** 58F13 (34C99, 34F05)

Frey, Sérgio L. (*with* Franca, Leopoldo P.) Stabilized finite element methods. II. The incompressible Navier-Stokes equations. (English summary) *Comput. Methods Appl. Mech. Engrg.* **99** (1992), *no.* 2-3, 209–233. (Summary) **93i:76055** 76M10 (76D05)

Frey, William H. (*with* Sapidis, Nickolas S.) Controlling the curvature of a quadratic Bézier curve. *Comput. Aided Geom. Design* **9** (1992), *no.* 2, 85–91. (Summary) **93b:65033** 65D17

Freyberger, M. (*with* Baumann, Gerd) Generalized symmetries and integrals of motion for the Hénon-Heiles model. *Z. Angew. Math. Phys.* **43** (1992), *no.* 3, 584–588. (Summary) **93b:85001** 85A05 (70F15, 70H35)

Freyd, Peter J. (*with* Scedrov, Andre) ★ Categories, allegories. North-Holland Mathematical Library, 39. *North-Holland Publishing Co., Amsterdam*, 1990. xviii+296 *pp. ISBN* 0-444-70368-3; 0-444-70367-5 (Walter Tholen) **93c:18001** 18–02 (18Bxx)

— Algebraically complete categories. *Category theory (Como*, 1990), 95–104, *Lecture Notes in Math.*, 1488, *Springer, Berlin*, 1991. (R. H. Street) **93g:18005** 18A30

— Remarks on algebraically compact categories. *Applications of categories in computer science (Durham*, 1991), 95–106, *London Math. Soc. Lecture Note Ser.*, 177, *Cambridge Univ. Press, Cambridge*, 1992. (Kimmo I. Rosenthal) **93h:18013** 18D05

— (*with* Mulry, Philip S.; Rosolini, G.; Scott, Dana S.) Extensional PERs. Selections from the 1990 IEEE Symposium on Logic in Computer Science. *Inform. and Comput.* **98** (1992), *no.* 2, 211–227. (Ana Pasztor) **93f:68065** 68Q55 (06A06, 18B25)

— (*with* Yetter, David N.) Coherence theorems via knot theory. *J. Pure Appl. Algebra* **78** (1992), *no.* 1, 49–76. (R. H. Street) **93d:18013** 18D10 (57M25)

Freymuth, Peter (*with* Gustafson, Karl E.; Leben, Robert) Visualization and computation of hovering mode vortex dynamics. *Vortex methods and vortex motion*, 143–169, *SIAM, Philadelphia, PA*, 1991. (*see* **93f:76078**) 76M25 (76C05, 76D05)

Freysz, E. (*with* Arneodo, Alain; Argoul, F.; Muzy, J. F.; Pouligny, B.) The optical wavelet transform. *Wavelets and their applications*, 241–273, *Jones and Bartlett, Boston, MA*, 1992. (*see* **93e:00031**) 78A55

Frěze, R. *see* **Froese, Richard**

Frezza, R. Noncausal representations of unilateral Markov random fields. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, II (Kobe*, 1991), 95–100, *Mita, Tokyo*, 1992. (*see* **93g:93006**) 93E14

— Models of Gaussian higher order reciprocal processes. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, II (Kobe*, 1991), 197–202, *Mita, Tokyo*, 1992. (*see* **93g:93006**) 93E03

Fribourg, Laurent Automatic generation of simplification lemmas for inductive proofs. (English summary) *Logic programming (San Diego, CA*, 1991), 103–116, *MIT Press Ser. Logic Program., MIT Press, Cambridge, MA*, 1991. (*see* **93i:68009**) 68Q60 (03B70)

— (*with* Cheong, Pui Hung) Implementation of narrowing: the Prolog-based approach. (English summary) *Logic programming languages*, 1–20, *MIT Press, Cambridge, MA*, 1993. (*see* **93k:68020**) 68N17

Frič, Roman (*with* Kent, D. C.) Regular $\mathscr{L}$-spaces. *Czechoslovak Math. J.* **42(117)** (1992), *no.* 3, 475–486. (Vinodkumar) **93k:54003** 54A05 (18A40, 54A20, 54B30)

— (*with* Zanolin, Fabio) Strict completions of $\mathscr{L}_0^*$-groups. *Czechoslovak Math. J.* **42(117)** (1992), *no.* 4, 589–598. (Jeong S. Yang) **93m:54063** 54H11 (22A99)

— (*with* Kent, D. C.) Regularity and extension of maps. (English summary) *Math. Slovaca* **42** (1992), *no.* 3, 349–357. (Richard Wilson) **93k:54004** 54A05 (54C20, 54D10)

— (*with* Gerlits, János) On the sequential order. (English summary) *Math. Slovaca* **42** (1992), *no.* 4, 505–512. (Klaas Pieter Hart) **93k:54007** 54A20 (54H11, 54H13)

— On ring convergences. (English summary) *Riv. Mat. Pura Appl. No.* 11 (1992), 125–138. (Douglass L. Grant) **93k:54070** 54H13 (16W60, 22A30, 54A20, 54D25, 54D35)

Frick, Hans On Lachin's formulae for sample sizes of survival tests. *Comm. Statist. Theory Methods* **20** (1991), *no.* 7, 2267–2280. (M. M. Siddiqui) **93c:62159** 62N05 (62F03)

Frick, Marietjie (*with* Broere, Izak) A characterization of the sequence of generalized chromatic numbers of a graph. *Graph theory, combinatorics, and applications, Vol.* 1 (*Kalamazoo, MI*, 1988), 179–186, *Wiley-Intersci. Publ., Wiley, New York*, 1991. (Summary) **93c:05048** 05C15

— On replete graphs. *J. Graph Theory* **16** (1992), *no.* 2, 165–175. (Mukkai S. Krishnamoorthy) **93d:05071** 05C35

Frick, P. A. (*with* Stech, D. F.) The epsilon-Ritz method for solving optimal control problems on parallel computers. (English summary) *Mutual impact of computing power*

and control theory (*Prague*, 1992), 221–233, *Czech. Acad. Sci., Prague*, 1992. (Asen L. Dontchev) **93h:49051** 49M30

Fricke, Gerd (*with* Domke, Gayla S.; Hedetniemi, Stephen T.; Laskar, Renu C.) Relationships between integer and fractional parameters of graphs. *Graph theory, combinatorics, and applications, Vol. 1* (*Kalamazoo, MI*, 1988), 371–387, *Wiley-Intersci. Publ., Wiley, New York*, 1991. (Summary) **93c:05060** 05C35

— (*with* Laskar, Renu C.) Strong matchings on trees. (English summary) Proceedings of the Twenty-third Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, FL, 1992). *Congr. Numer.* **89** (1992), 239–243. (Summary) **93k:05127** 05C70 (05C05, 68R10)

Frid, Hermano *see* **Frid Neto, Hermano**

Fridman, È. M. Decomposition of boundary value problems for singularly perturbed systems of neutral type in the conditionally stable case. (Russian. Russian summary) *Differentsial'nye Uravneniya* **28** (1992), *no.* 6, 997–1009, 1101; *translation in Differential Equations* **28** (1992), *no.* 6, 800–810. (Alexander I. Domoshnitsky) **93k:34152** 34K10 (34C45, 34E15, 34K40)

Fridman, L. M. (*with* Bogatyrev, S. V.) Singular correction of the method of equivalent control. (Russian. Russian summary) *Differentsial'nye Uravneniya* **28** (1992), *no.* 6, 930–943, 1100; *translation in Differential Equations* **28** (1992), *no.* 6, 741–751. (Grigory M. Sklyar) **93k:34039** 34A99 (34C45, 34E15, 34H05, 93C15)

Fridman, O. N. A lower bound for a function that is subharmonic in a half-plane. (Ukrainian) *Visnik L'viv. Derzh. Univ. Ser. Mekh.-Mat. No.* 32 (1989), 53–56. 30D99 (31A05)

Frid Neto, Hermano (*with* Thayer, F. Javier) An abstract version of the Morse index theorem and its application to hypersurfaces of constant mean curvature. *Bol. Soc. Brasil. Mat. (N.S.)* **20** (1990), *no.* 2, 59–68. (Xiao Wei Peng) **93c:58043** 58E05 (58E12)

Fried, E. *see* **Fried, Ervin**

Fried, Eliot Stability of a two-phase process involving a planar phase boundary in a thermoelastic solid. *Contin. Mech. Thermodyn.* **4** (1992), *no.* 1, 59–79. (J. Ignaczak) **93d:73011** 73B30 (73H99)

Fried, Ervin (*with* Sós, Vera T.) A generalization of the three-distance theorem for groups. *Algebra Universalis* **29** (1992), *no.* 1, 136–149. (James J. Madden) **93i:06007** 06F20 (05B10)

— (*with* Grätzer, George) Corrections to: "The unique amalgamation property for lattices" [Ann. Univ. Sci. Budapest. Eötvös Sect. Math. **33** (1990), 167–176 (1991); MR 92m:06015]. *Ann. Univ. Sci. Budapest. Eötvös Sect. Math.* **35** (1992), 271. (Editors) **93k:06013** 06B05 (08B25)

— *see also* **Schmidt, Tamás, 93d:01077**

Fried, H. M. ★ Basics of functional methods and eikonal models. (English. English summary) *Editions Frontières, Gif-sur-Yvette*, 1990. vi+326 *pp. ISBN* 2-86332-075-0; 2-86332-085-8 00A79 (81Q99, 82B99, 82C99)

Fried, Michael D. (*with* Völklein, Helmut) The inverse Galois problem and rational points on moduli spaces. *Math. Ann.* **290** (1991), *no.* 4, 771–800. (B. Heinrich Matzat) **93a:12004** 12F12 (12L10, 14E22, 14H10, 14H30)

— (*with* Völklein, Helmut) The embedding problem over a Hilbertian PAC-field. *Ann. of Math.* (2) **135** (1992), *no.* 3, 469–481. (Chr. U. Jensen) **93f:12005** 12E25 (12F12)

Friedberg, Solomon (*with* Bump, Daniel) The exterior square automorphic L-functions on GL(n). *Festschrift in honor of I. I. Piatetski-Shapiro on the occasion of his sixtieth birthday, Part II* (*Ramat Aviv*, 1989), 47–65, *Israel Math. Conf. Proc.*, 3, *Weizmann, Jerusalem*, 1990. (Dipendra Prasad) **93d:11050** 11F55 (11F70, 22E55)

— (*with* Bump, Daniel; Ginzburg, David) Whittaker-orthogonal models, functoriality, and the Rankin-Selberg method. *Invent. Math.* **109** (1992), *no.* 1, 55–96. (David Joyner) **93e:11066** 11F70 (22E50, 22E55)

Friedberg, Stephen H. (*with* Insel, Arnold J.) Hyponormal 2×2 matrices are subnormal. (English summary) *Linear Algebra Appl.* **175** (1992), 31–38. (Fuad Kittaneh) **93i:15001** 15A03 (15A15, 15A18, 15A57)

Frieden, B. Roy Fisher information and uncertainty complementarity. (English summary) *Phys. Lett. A* **169** (1992), *no.* 3, 123–130. (Paul Busch) **93k:81022** 81P15 (82B05, 94A17)

Friedl, Katalin (*with* Babai, László) Approximate representation theory of finite groups. (English summary) 32*nd Annual Symposium on Foundations of Computer Science* (*San Juan, PR*, 1991), 733–742, *IEEE Comput. Soc. Press, Los Alamitos, CA*, 1991. (Ralph W. Wilkerson) **93i:68098** 68Q40 (20C40, 68Q25)

— (*with* Boyar, Joan; Lund, Carsten) Practical zero-knowledge proofs: giving hints and using deficiencies. (English summary) *J. Cryptology* **4** (1991), *no.* 3, 185–206. (Hans B. Sieburg) **93m:68144** 68T15 (94A60)

Friedland, Bernard (*with* Park, Young-Jin) On adaptive friction compensation. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 10, 1609–1612. 93D15

— (*with* Mentzelopoulou, Sophia E.; Antoniou, George E.) On a property of compensators designed by the separation principle. (English summary) *IEEE Trans. Automat. Control* **38** (1993), *no.* 2, 370–373. 93B51 (93C80)

Friedland, Lazar (*with* Bers, A.) Hermitian description of interacting inhomogeneous electron beams. *Phys. Fluids B* **4** (1992), *no.* 6, 1457–1464. (Summary) **93b:76088** 76X05

Friedland, Shmuel Quadratic forms and the graph isomorphism problem. Proceedings of the First Conference of the International Linear Algebra Society (Provo, UT, 1989). *Linear Algebra Appl.* **150** (1991), 423–442. (Summary) **93b:11044** 11E12 (05C60)

— Lower bounds for the first eigenvalue of certain M-matrices associated with graphs. Second NIU Conference on Linear Algebra, Numerical Linear Algebra and Applications (DeKalb, IL, 1991). *Linear Algebra Appl.* **172** (1992), 71–84. (Jeffrey Stuart) **93i:15026** 15A42 (05C50, 15A48)

— Inverse eigenvalue problems for symmetric Toeplitz matrices. (English summary) *SIAM J. Matrix Anal. Appl.* **13** (1992), *no.* 4, 1142–1153. (Zhenyue Zhang) **93j:15009** 15A18 (15A57, 65F15)

Friedlander, A. (*with* Martínez, José Mario) New algorithmns for maximization of concave functions with box constraints. (English and French summaries) *RAIRO Rech. Opér.* **26** (1992), *no.* 3, 209–236. (Rumena Kaltinska) **93i:90089** 90C30 (65K05, 90C26)

Friedlander, Eric Mark (*with* Lawson, H. Blaine, Jr.) A theory of algebraic cocycles. *Ann. of Math.* (2) **136** (1992), *no.* 2, 361–428. (Stefan Müller-Stach) **93g:14013** 14C25 (55P15, 55P20, 55Q52)

— (*with* Dwyer, W. G.; Mitchell, Stephen A.) The generalized Burnside ring and the K-theory of a ring with roots of unity. (English summary) *K-Theory* **6** (1992), *no.* 4, 285–300. (V. P. Snaith) **93m:19010** 19F99 (55P42)

Friedlander, John (*with* Granville, Andrew) Limitations to the equi-distribution of primes. IV. *Proc. Roy. Soc. London Ser. A* **435** (1991), *no.* 1893, 197–204. (S. W. Graham) **93g:11098** 11N32

— (*with* Granville, Andrew) Limitations to the equi-distribution of primes. III. *Compositio Math.* **81** (1992), *no.* 1, 19–32. (S. W. Graham) **93g:11097** 11N13

— (*with* Iwaniec, Henryk) Estimates for character sums. *Proc. Amer. Math. Soc.* **119** (1993), *no.* 2, 365–372. (Ronald J. Evans) **93k:11074** 11L40

Friedlander, Leonid Some inequalities between Dirichlet and Neumann eigenvalues. *Arch. Rational Mech. Anal.* **116** (1991), *no.* 2, 153–160. (From the introduction) **93h:35146** 35P15 (47F05, 58G25)

— (*with* Burghelea, D.; Kappeler, Thomas) Erratum: "On the determinant of elliptic differential and finite difference operators in vector bundles over S^1" [Comm. Math. Phys. **138** (1991), no. 1, 1–18, MR 92f:58193]. *Comm. Math. Phys.* **150** (1992), *no.* 2, 431. (Editors) **93k:58231** 58G26 (58G03)

— On the second eigenvalue of the Dirichlet Laplacian. (English summary) *Israel J. Math.* **79** (1992), *no.* 1, 23–32. (M. S. Agranovich) **93k:58223** 58G25 (35P15, 47F05)

— (*with* Burghelea, D.; Kappeler, Thomas) Meyer-Vietoris type formula for determinants of elliptic differential operators. *J. Funct. Anal.* **107** (1992), *no.* 1, 34–65. (Steven Rosenberg) **93f:58242** 58G26 (35S15, 58G20)

— *see also* **Mazzeo, Rafe, 93h:35147**

Friedlander, Susan (*with* Vishik, M. M.) Instability criteria for steady flows of a perfect fluid. (English summary) *Chaos* **2** (1992), *no.* 3, 455–460. (Paolo Maremonti) **93j:76034** 76E99 (58F40, 76C99, 76E30, 76F20)

Friedler, Louis M. (*with* Willard, Stephen) $\aleph$-projective spaces in noncompact categories. *Rocky Mountain J. Math.* **21** (1991), *no.* 4, 1259–1277. (I. W. Alderton) **93d:54055** 54G05

Friedli, C. (*with* Aguirre, Manuel; Krause, Jorge) SL(3, $\mathbb{R}$) as the group of symmetry transformations for all one-dimensional linear systems. III. Equivalent Lagrangian formalisms. *J. Math. Phys.* **33** (1992), *no.* 5, 1571–1578. (M. I. Monastyrskii) **93g:58128** 58F35 (34A26, 70H33, 70J05)

Friedman, Avner ★ Mathematics in industrial problems. Part 4. The IMA Volumes in Mathematics and its Applications, 38. *Springer-Verlag, New York*, 1991. xiv+197 *pp. ISBN* 0-387-97680-9 (Andrew C. Fowler) **93e:00009** 00A69 (00A71)

— Elliptic and parabolic systems associated with semiconductor modeling. *Progress in partial differential equations: elliptic and parabolic problems* (*Pont-à-Mousson*, 1991), 17–23, *Pitman Res. Notes Math. Ser.*, 266, *Longman Sci. Tech., Harlow*, 1992. (*see* **93f:35007**) 82D99 (35J60, 35K55, 35Q99)

— (*with* Hu, Bei) The Stefan problem with kinetic condition at the free boundary. *Ann. Scuola Norm. Sup. Pisa Cl. Sci.* (4) **19** (1992), *no.* 1, 87–111. (Li Shang Jiang) **93k:35277** 35R35 (35J05, 80A22)

— (*with* Hu, Bei; Velázquez, Juan J. L.) A free-boundary problem modeling loop dislocations in crystals. *Arch. Rational Mech. Anal.* **119** (1992), *no.* 3, 229–291. (Ján Lovíšek) **93h:35217** 35R35 (35K85, 73B99, 73S10)

— (*with* Hu, Bei) A free boundary problem arising in superconductor modeling. (English summary) *Asymptotic Anal.* **6** (1992), *no.* 2, 109–133. (J. W. Jerome) **93k:82071** 82D55 (35Q60, 35R35)

— (*with* Knabner, Peter) A transport model with micro- and macro-structure. *J. Differential Equations* **98** (1992), *no.* 2, 328–354. (Adrian Carabineanu) **93g:35114** 35Q35 (76S05, 80A30)

— (*with* Herrero, Miguel A.) Extinction and positivity for a system of semilinear parabolic variational inequalities. *J. Math. Anal. Appl.* **167** (1992), *no.* 1, 167–175. (Shuzi Zhou) **93a:35096** 35K85 (49J40)

— (*with* Liu, Wen Xiong) An augmented drift-diffusion model in a semiconductor device. (English summary) *J. Math. Anal. Appl.* **168** (1992), *no.* 2, 401–412. (Summary) **93d:35162** 35Q60 (82D99)

— (*with* Chen, Xinfu) The thermistor problem for conductivity which vanishes at large temperature. (English summary) *Quart. Appl. Math.* **51** (1993), *no.* 1, 101–115. (Graeme C. Wake) **93m:35188** 35R35 (35J45, 80A20)

— (*with* Bruno, Oscar P.; Reitich, Fernando) Asymptotic behavior for a coalescence problem. *Trans. Amer. Math. Soc.* **338** (1993), *no.* 1, 133–158. (Piotr Biler) **93j:35174** 35Q99 (35B40, 35R10, 82C99)

Friedman, Eduardo (*with* Costa, Antone) Ratios of regulators in extensions of number fields. *Proc. Amer. Math. Soc.* **119** (1993), *no.* 2, 381–390. (T. Metsänkylä) **93k:11099** 11R27 (11R29)

Friedman, Harvey The incompleteness phenomena. *American Mathematical Society centennial publications, Vol. II* (*Providence, RI*, 1988), 49–84, *Amer. Math. Soc., Providence, RI*, 1992. (Wim Veldman) **93m:03085** 03E35 (03A05, 03C62, 03D35, 03F03, 03F35)

Friedman, Jane (*with* Zeilberger, Doron) A generalization of Odlyzko's conjecture: the coefficients of $(1-q)^j/((1-q^{2n})\cdots(1-q^{2n+2j}))$ alternate in sign. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 3, 1013. (David M. Bressoud) **93i:05011** 05A30 (11B65)

Friedman, Joel On the second eigenvalue and random walks in random d-regular graphs. *Combinatorica* **11** (1991), *no.* 4, 331–362. (Lane Clark) **93i:05115** 05C80 (05C50)

— A note on poset geometries. (English summary) *SIAM J. Comput.* **22** (1993), *no.* 1, 72–78. (F. D. Veldkamp) **93m:06006** 06A07 (68P10)

Friedman, John L. How fast can pulsars spin? *General relativity and gravitation*, 1989 (*Boulder, CO*, 1989), 21–39, *Cambridge Univ. Press, Cambridge*, 1990. (*see* **93b:83002**) 83B05

— Is physics consistent with closed timelike curves? *Proceedings of the 4th Canadian Conference on General Relativity and Relativistic Astrophysics* (*Winnipeg, MB*, 1991), 183–199, *World Sci. Publishing, River Edge, NJ*, 1992. (Lawrence Sklar) **93d:83060** 83E05 (83C45)

— (*with* Papastamatiou, Nicolas J.; Simon, Jonathan Z.) Unitarity of interacting fields in curved spacetime. (English summary) *Phys. Rev. D* (3) **46** (1992), *no.* 10, 4442–4455. (Summary) **93g:81109** 81T20 (81T15)

— (*with* Papastamatiou, Nicolas J.; Simon, Jonathan Z.) Failure of unitarity for interacting fields on spacetimes with closed timelike curves. (English summary) *Phys. Rev. D* (3) **46**

(1992), *no.* 10, 4456–4469. (Summary) **93g:81110** 81T20

Friedman, Lea A note on estimation in a minimum type model. *Comm. Statist. Theory Methods* **21** (1992), *no.* 3, 749–763. 62F10

Friedman, Menahem (*with* Kandel, Abraham) On the design of a fuzzy intelligent differential equation solver. *Fuzzy expert systems*, 203–212, *CRC, Boca Raton, FL*, 1992. (*see* **93g:68133**) 68T35 (03B52)

Friedman, Michael Epistemology in the *Aufbau*. Carnap: a centenary reappraisal. *Synthese* **93** (1992), *no.* 1-2, 15–57. (Siegfried Gottwald) **93m:03008** 03A05 (01A60, 03–03)

— Remarks on the history of science and the history of philosophy. *World changes* (*Cambridge, MA*, 1990), 37–54, *Bradford Book, MIT Press, Cambridge, MA*, 1993. (*see* **93m:01003**) 01A99 (00A30)

Friedman, Morton B. (*with* Dellwo, David R.; Aggarwal, Rajesh) Computational aspects of accelerated projection methods for nonlinear integral equations. (English summary) *Integral methods in science and engineering*—90 (*Arlington, TX*, 1990), 158–169, *Ser. Comput. Phys. Process. Mech. Thermal Sci., Hemisphere, New York*, 1991. (*see* **93f:00014**) 65R20

Friedman, Nathaniel A. Replication and stacking in ergodic theory. *Amer. Math. Monthly* **99** (1992), *no.* 1, 31–41. (Mariusz Lemańczyk) **93d:28022** 28D05

Friedman, Yaakov (*with* Russo, Bernard) Geometry of the dual ball of the spin factor. *Proc. London Math. Soc.* (3) **65** (1992), *no.* 1, 142–174. (Horst Behncke) **93i:46085** 46H70 (46B20, 46L30)

Friedrich, Helmut Global properties of solutions of Einstein's field equations. *General relativity and gravitation*, 1989 (*Boulder, CO*, 1989), 41–60, *Cambridge Univ. Press, Cambridge*, 1990. (*see* **93b:83002**) 83C05

— Asymptotic structure of space-time. *Recent advances in general relativity* (*Pittsburgh, PA*, 1990), 146–181, *Einstein Stud.*, 4, *Birkhäuser Boston, Boston, MA*, 1992. (Garry Ludwig) **93c:83036** 83C30 (83–02)

— (*with* Andersson, Lars Åke; Chruściel, Piotr T.) On the regularity of solutions to the Yamabe equation and the existence of smooth hyperboloidal initial data for Einstein's field equations. (English summary) *Comm. Math. Phys.* **149** (1992), *no.* 3, 587–612. (Robert McOwen) **93i:53040** 53C21 (58G16, 58G30, 83C05)

Friedrich, Jürgen Extension of positive definite functions on Lie groups. Seminar Sophus Lie (Darmstadt, 1991). *Sem. Sophus Lie* **1** (1991), *no.* 2, 225–233. (Yu. M. Berezanskiĭ) **93e:43007** 43A35 (47A57)

Friedrich, R. (*with* Fantz, M.; Bestehorn, M.; Haken, H.) Evolution of patterns in rotating Bénard convection. *From phase transitions to chaos*, 118–127, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93b:58001**) 76E15

Friedrich, Thomas Die Fisher-Information und symplektische Strukturen. [The Fisher information and symplectic structures] *Math. Nachr.* **153** (1991), 273–296. (Gudlaugur Thorbergsson) **93e:58008** 58B20 (62B99)

Friedrichsdorf, Ulf ★ Einführung in die klassische und intensionale Logik. (German) [Introduction to classical and intensional logic] *Friedr. Vieweg & Sohn, Braunschweig*, 1992. ix+354 *pp. ISBN* 3-528-06489-7 (Charles F. Kielkopf) **93m:03001** 03–01 (03B15, 03B45, 03B60)

Friesecke, Gero Exponentially growing solutions for a delay-diffusion equation with negative feedback. *J. Differential Equations* **98** (1992), *no.* 1, 1–18. (Gaston E. Hernandez) **93k:35131** 35K55 (35R10)

Friesen, Christian Class number divisibility in real quadratic function fields. (English summary) *Canad. Math. Bull.* **35** (1992), *no.* 3, 361–370. (Amara Hédi) **93h:11130** 11R58 (11R29)

Friesz, Terry L. (*with* Bernstein, David; Smith, Tony E.; Tobin, Roger L.; Wie, B.-W.) A variational inequality formulation of the dynamic network user equilibrium problem. (English summary) *Oper. Res.* **41** (1993), *no.* 1, 179–191. (Summary) **93j:90038** 90B10 (49J40)

Frieze, A. M. (*with* Dyer, Martin) Computing the volume of convex bodies: a case where randomness provably helps. *Probabilistic combinatorics and its applications* (*San Francisco, CA*, 1991), 123–169, *Proc. Sympos. Appl. Math.*, 44, *Amer. Math. Soc., Providence, RI*, 1991. (Summary) **93a:52004** 52A22 (52A38, 60D05, 68Q25)

— On small subgraphs of random graphs. *Random graphs, Vol.* 2 (*Poznań*, 1989), 67–90, *Wiley-Intersci. Publ., Wiley, New York*, 1992. (Andrzej Ruciński) **93f:05087** 05C80

— (*with* McDiarmid, Colin J. H.; Reed, Bruce) On a conjecture of Bondy and Fan. (English summary) *Ars Combin.* **33** (1992), 329–336. (Genghua Fan) **93g:05079** 05C38

— (*with* Calkin, Neil J.; McKay, Brendan D.) On subgraph sizes in random graphs. (English summary) *Combin. Probab. Comput.* **1** (1992), *no.* 2, 123–134. (E. M. Palmer) **93g:05122** 05C80

— (*with* Dyer, Martin) Probabilistic analysis of the generalised assignment problem. *Math. Programming* **55** (1992), *no.* 2, *Ser. A*, 169–181. (Günther Ruhe) **93d:90042** 90C10 (90C15, 90C27)

— (*with* Calkin, Neil J.; Kučera, L.) On the expected performance of a parallel algorithm for finding maximal independent subsets of a random graph. *Random Structures Algorithms* **3** (1992), *no.* 2, 215–221. (Summary) **93d:68027** 68Q22 (05C80, 05C85, 68R10)

— (*with* Suen, Stephen) Counting the number of Hamilton cycles in random digraphs. *Random Structures Algorithms* **3** (1992), *no.* 3, 235–241. (Mark R. Jerrum) **93f:05088** 05C80 (05C45, 60J20, 68Q20)

Frigaard, I. (*with* Fowler, A. C.; Howison, Sam D.) Temperature surges in current-limiting circuit devices. *SIAM J. Appl. Math.* **52** (1992), *no.* 4, 998–1011. (Summary) **93c:80005** 80A20 (78A55)

Frigerio, Alberto (*with* Grillo, Gabriele) Time-dependent Schrödinger operators and simulated annealing. *Semigroup theory and evolution equations* (*Delft*, 1989), 165–179, *Lecture Notes in Pure and Appl. Math.*, 135, *Dekker, New York*, 1991. (Nariyuki Minami) **93i:82053** 82C31 (35R60, 81Q05, 82C80, 90C27)

— (*with* Accardi, Luigi; Lu, Yun Gang) On the relation between the singular and the weak coupling limits. Application of statistical methods in theoretical physics and fluid mechanics (Calcutta, 1991). *Acta Appl. Math.* **26** (1992), *no.* 3, 197–208. (Kalyanapuram R. Parthasarathy) **93i:81109** 81S25 (81–02, 82C99)

Frigessi, Arnoldo (*with* Huang, Ch'i Jui; Younes, Laurent) Optimal spectral structure of reversible stochastic matrices, Monte Carlo methods and the simulation of Markov random fields. (English summary) *Ann. Appl. Probab.* **2** (1992), *no.* 3, 610–628. (Summary) **93e:60133** 60J10 (15A51, 60G60, 65C05)

— *see also* **Stochastic models, statistical methods, and algorithms in image analysis**, **93e:62005**

Frigon, M. (*with* Granas, Andrzej) Problèmes aux limites pour des inclusions différentielles de type semi-continues inférieurement. (English summary) [Boundary value problems for lower semicontinuous differential inclusions] *Riv. Mat. Univ. Parma* (4) **17** (1991), 87–97 (1992). (Salvatore A. Marano) **93e:34026** 34A60 (34B15)

Frih, El Mostapha (*with* Gauthier, Paul M.) Polynomial approximation on certain Lipschitz graphs in $\mathbf{C}^n$. *Complex Variables Theory Appl.* **18** (1992), *no.* 1-2, 55–61. (Harold P. Boas) **93a:32020** 32E30

Frincu, Guerino The solution of Stokes equation by the boundary element method. (English summary) *An. Univ. Timişoara Ser. Ştiinţ. Mat.* **27** (1989), *no.* 3, 39–50. (Summary) **93g:65152** 65N38 (76D05, 76D07, 76M15)

— Stokes equation study by integral equations method. (English summary) *An. Univ. Timişoara Ser. Ştiinţ. Mat.* **27** (1989), *no.* 3, 51–56. (Summary) **93g:65153** 65N38 (76D05, 76D07, 76M15)

Fringuelli, Bruno (*with* Marcugini, Stefano; Milani, Alfredo; Rivoira, Silvano) FTMS: a fuzzy truth maintenance system. (English summary) *Comput. Artificial Intelligence* **11** (1992), *no.* 3, 229–239. (Summary) **93g:68126** 68T27 (03B52)

Fripertinger, Harald Enumeration in musical theory. (English summary) *Séminaire Lotharingien de Combinatoire* (*Thurnau*, 1991), 29–42, *Publ. Inst. Rech. Math. Av.*, 476, *Univ. Louis Pasteur, Strasbourg*, 1992. (Christian Krattenthaler) **93j:05007** 05A15 (00A69, 05A05, 11A99)

Frisch, T. (*with* Coullet, Pierre; Plaza, Frédéric) Sources and sinks of wave patterns. (English summary) Homoclinic chaos (Brussels, 1991). *Phys. D* **62** (1993), *no.* 1-4, 75–79. (Summary) **93k:58204** 58F40 (35Q35, 58F13, 76E15, 76E30)

Frisch, Uriel (*with* She, Zhen Su; Aurell, Erik) The inviscid Burgers equation with initial data of Brownian type. (English summary) *Comm. Math. Phys.* **148** (1992), *no.* 3, 623–641. (Cun-Zheng Wang) **93h:35182** 35Q53 (60H15, 76B15, 76L05)

— (*with* Aurell, Erik; Lutsko, J.; Vergassola, M.) On the multifractal properties of the energy dissipation derived from turbulence data. *J. Fluid Mech.* **238** (1992), 467–486. (Summary) **93b:76043** 76F05

— *see also* **Nonlinear dynamics of structures**, **93g:76004**

Frischmuth, K. (*with* Maess, G.) Parametric quadratic splines with minimal curvature. *Z. Anal. Anwendungen* **10** (1991), *no.* 2, 255–262. (Summary) **93b:65017** 65D07 (41A15, 65D05)

— (*with* Kosiński, Witold; Lekszycki, T.) Free vibrations of finite-memory material beams. (English summary) *Internat. J. Engrg. Sci.* **31** (1993), *no.* 3, 385–395. (Summary) **93m:73022** 73K12 (73F15, 73K05)

Frisk, Hans (*with* Guhr, Thomas) Spin-orbit coupling in semiclassical approximation. (English summary) *Ann. Physics* **221** (1993), *no.* 2, 229–257. 81Q20

Fristedt, Bert E. (*with* Taylor, Samuel James) The packing measure of a general subordinator. *Probab. Theory Related Fields* **92** (1992), *no.* 4, 493–510. (Ditlev Monrad) **93e:60150** 60J30 (28A78, 60G17)

— The structure of random partitions of large integers. *Trans. Amer. Math. Soc.* **337** (1993), *no.* 2, 703–735. (Jean-Loup Mauclaire) **93h:11090** 11K99 (05A17, 11P82)

Fristot, Danièle (*with* Charlier, Alphonse; Bérard, Alain; Charlier, Marie-France) ★ Tensors and the Clifford algebra. Application to the physics of bosons and fermions. Monographs and Textbooks in Pure and Applied Mathematics, 163. *Marcel Dekker, Inc., New York*, 1992. x+323 *pp. ISBN* 0-8247-8666-1 (Dominique Lambert) **93g:15018** 15A66 (53A50, 81R05, 81R25)

Fritsch, Frederick N. (*with* Nielson, Gregory M.) On the problem of determining the distance between parametric curves. *Curve and surface design* (*Tempe, AZ*, 1989), 123–141, *Geom. Des. Publ., SIAM, Philadelphia, PA*, 1992. (*see* **93g:65027**) 65D17

Frittelli, Simonetta (*with* Moreschi, Osvaldo M.) Study of the Robinson-Trautman metrics in the asymptotic future. *Gen. Relativity Gravitation* **24** (1992), *no.* 6, 575–597. (M. A. J. Vandyck) **93f:83011** 83C15 (83C30)

Fritts, M. J. *see* **Advances in the free-Lagrange method**, **93g:76001**

Fritz, J. Derivation of hydrodynamic equations from microscopic principles. *From phase transitions to chaos*, 567–579, *World Sci. Publishing, River Edge, NJ*, 1992. (From the text) **93d:82067** 82C40 (76A02)

Fritzsch, H. The spins inside the proton and chiral symmetry breaking. *Recent aspects of quantum fields* (*Schladming*, 1991), 39–49, *Lecture Notes in Phys.*, 396, *Springer, Berlin*, 1991. (*see* **93d:81005**) 81V25 (81R05)

Fritzsche, Bernd (*with* Dubovoĭ, V. K.; Kirstein, Bernd) ★ Matricial version of the classical Schur problem. With German, French and Russian summaries. Teubner-Texte zur Mathematik [Teubner Texts in Mathematics], 129. *B. G. Teubner Verlagsgesellschaft mbH, Stuttgart*, 1992. 355 *pp. ISBN* 3-8154-2015-6 (Joseph A. Ball) **93e:47021** 47A57 (30E05, 47A56, 47B50, 47N70)

— (*with* Arov, D. Z.; Kirstein, Bernd) Completion problems for j_{pq}-inner functions. I. (English summary) *Integral Equations Operator Theory* **16** (1993), *no.* 2, 155–185. (Joseph A. Ball) **93k:47027** 47A57 (47A56)

— (*with* Kirstein, Bernd) Inverse problems for positive Hermitian block Toeplitz matrices and nondegenerate Schur sequences. (English summary) *Linear Algebra Appl.* **179** (1993), 237–270. (Hugo Jan Woerdeman) **93j:47021** 47A57 (15A57)

— *see also* **Herglotz, G. et al.**, **93d:01095**

Frizzell, Peter W. (*with* Giffin, J. W.) The bounded split delivery vehicle routing problem with grid network distances. (English summary) *Asia-Pacific J. Oper. Res.* **9** (1992), *no.* 1, 101–116. 90B06

Fröberg, Ralf On Stanley-Reisner rings. *Topics in algebra, Part* 2 (*Warsaw*, 1988), 57–70, *Banach Center Publ.*, 26, *Part* 2, *PWN, Warsaw*, 1990. (Summary) **93f:13009** 13D25 (13H10)

— (*with* Löfwall, Clas) On Hilbert series for commutative and noncommutative graded algebras. *J. Pure Appl. Algebra* **76** (1991), *no.* 1, 33–38. (Rafael H. Villarreal) **93a:13008** 13D40 (16W50)

— (*with* Lê Tuấn Hoa) Segre products and Rees algebras of face rings. *Comm. Algebra* **20** (1992), *no.* 11, 3369–3380. (Gert Naudé) **93j:13006** 13A30 (13H10)

— A characterization of k-trees. *Discrete Math.* **104** (1992), *no.* 3, 307–309. (Summary) **93c:05038** 05C05 (05C75)

Froelich, John Unital multiplications on a Hilbert space. *Proc. Amer. Math. Soc.* **117** (1993), *no.* 3, 757–759. (Jaroslav Zemánek) **93d:46081** 46H20 (47D25)

Froeschlé, Claude (*with* Laskar, Jacques; Celletti, Alessandra) The measure of chaos by the numerical analysis of the fundamental frequencies. Application to the standard mapping.

Phys. D **56** (1992), *no.* 2-3, 253–269. (Summary) **93c:58140** 58F13

Froese, Richard (*with* Cycon, Hans L.; Kirsch, Werner; Simon, Barry) ★ Операторы Шрёдингера с приложениями к квантовой механике и глобальной геометрии. (Russian. Russian summary) [Schrödinger operators with applications to quantum mechanics and global geometry] Translated from the English by A. V. Sobolev. Translation edited and with a preface by D. R. Yafaev. "*Mir*", *Moscow*, 1990. 408 *pp. ISBN* 5-03-001422-5 (Editors) **93k:35002** 35-02 (35J10, 47F05, 47N50, 58G40, 81Q10)

— Eigenfunction expansions for hyperbolic Laplacians. *Recent developments in quantum mechanics* (*Poiana Braşov*, 1989), 265–277, *Math. Phys. Stud.*, 12, *Kluwer Acad. Publ., Dordrecht*, 1991. (Jonathan Huntley) **93j:58136** 58G25 (57M50)

— (*with* Hislop, Peter D.; Perry, Peter A.) The Laplace operator on hyperbolic three manifolds with cusps of nonmaximal rank. *Invent. Math.* **106** (1991), *no.* 2, 295–333. (Shin-ya Koyama) **93b:11065** 11F72 (47F05, 58G25)

Fröhlich, Albrecht Units in real abelian fields. *J. Reine Angew. Math.* **429** (1992), 191–217. (Jorge F. Morales) **93i:11129** 11R33

Fröhlich, J. (*with* Peyret, Roger) Calculations of non-Boussinesq convection by a pseudospectral method. (English summary) *Spectral and high order methods for partial differential equations* (*Como*, 1989), 425–433, *North-Holland, Amsterdam*, 1990. (*see* **93d:65005**) 65M70 (76E15, 76M25, 76R99)

— (*with* Peyret, Roger) Direct spectral methods for the low Mach number equations. (English summary) *Internat. J. Numer. Methods Heat Fluid Flow* **2** (1992), *no.* 3, 195–213. (Summary) **93f:76075** 76M25 (76N10, 80A25)

Fröhlich, Jürg (*with* Gabbiani, F.; Marchetti, P. A.) Superselection structure and statistics in three-dimensional local quantum theory. *Knots, topology and quantum field theories* (*Florence*, 1989), 335–415, *World Sci. Publishing, River Edge, NJ*, 1989. (Stephen J. Summers) **93c:81102** 81T05 (46L60, 81-04, 81R05, 81T10)

— (*with* King, Christopher K.) Two-dimensional conformal field theory and three-dimensional topology. *Constructive quantum field theory, II* (*Erice*, 1988), 121–199, *NATO Adv. Sci. Inst. Ser. B Phys.*, 234, *Plenum, New York*, 1990. (*see* **93g:81074**) 81T40 (57M25)

— (*with* Gabbiani, F.; Marchetti, P. A.) Braid statistics in three-dimensional local quantum theory. *Physics, geometry, and topology* (*Banff, AB*, 1989), 15–79, *NATO Adv. Sci. Inst. Ser. B Phys.*, 238, *Plenum, New York*, 1990. (Summary) **93a:81112** 81T05 (81R50, 81T13, 81V70, 82D55)

— (*with* Gabbiani, F.; Marchetti, P. A.) Braid statistics in three-dimensional local quantum theory. *The algebraic theory of superselection sectors* (*Palermo*, 1989), 259–332, *World Sci. Publishing, River Edge, NJ*, 1990. (*see* **93i:81122**) 81T05 (57M25, 81R50)

— (*with* Marchetti, P. A.) Superselection sectors in quantum field models: kinks in Φ^4_2 and charged states in lattice $(Q.E.D.)_4$. *The algebraic theory of superselection sectors* (*Palermo*, 1989), 428–484, *World Sci. Publishing, River Edge, NJ*, 1990. (*see* **93i:81122**) 81T10 (81T25)

— (*with* Zegarliński, Bogusław) The phase transition in the discrete Gaussian chain with $1/r^2$ interaction energy. *J. Statist. Phys.* **63** (1991), *no.* 3-4, 455–485. (Michael K.-H. Kiessling) **93g:82043** 82B26

— (*with* Chamseddine, A. H.) Two-dimensional Lorentz-Weyl anomaly and gravitational Chern-Simons theory. (English summary) *Comm. Math. Phys.* **147** (1992), *no.* 3, 549–562. (Michael Ringe) **93g:81181** 81T50 (58Z05, 81T40)

— (*with* Studer, U. M.) Gauge invariance in nonrelativistic many-body theory. (English summary) Topological and quantum group methods in field theory and condensed matter physics. *Internat. J. Modern Phys. B* **6** (1992), *no.* 11-12, 2201–2208. (Summary) **93h:81153** 81V70 (81-02, 82D99)

— (*with* Kerler, T.; Marchetti, P. A.) Nonabelian bosonization in two-dimensional condensed matter physics. *Nuclear Phys. B* **374** (1992), *no.* 3, 511–542. (Ilya Shapiro) **93i:82007** 82B10 (81V70)

— *see also* **New symmetry principles in quantum field theory, 93h:81002**

Frohman, Charles D. (*with* Nicas, Andrew) The Alexander polynomial via topological quantum field theory. *Differential geometry, global analysis, and topology* (*Halifax, NS*, 1990), 27–40, *CMS Conf. Proc.*, 12, *Amer. Math. Soc., Providence, RI*, 1991. (Yongwu Rong) **93a:57007** 57M25 (14D20, 55N22, 81T13)

— (*with* Klassen, Eric P.) Deforming representations of knot groups in SU(2). *Comment. Math. Helv.* **66** (1991), *no.* 3, 340–361. (Daniel Lines) **93a:57001** 57M05 (57M25)

Fröjdh, Per (*with* Johannesson, Henrik) The two-dimensional tricritical Ising model in restricted domains with free boundaries. *Nuclear Phys. B* **366** (1991), *no.* 3, 429–466. (Giuseppe Mussardo) **93e:81107** 81T40 (81T27)

Frölicher, Alfred On jets of infinite order and on smooth differential operators. Differential spaces and their applications (Pasierbiec, 1990). *Demonstratio Math.* **24** (1991), *no.* 3-4, 459–464. (V. Oproiu) **93b:58006** 58A20 (35B65)

Frolík, Zdeněk *see* **Hušek, Miroslav, 93d:01068**; **Holický, P., 93e:54027**; **Nešetřil, Jaroslav, 93h:01045**; **Topological, algebraical and combinatorial structures, 93m:05001** *and* **Topological, algebraical and combinatorial structures. Frolík's memorial volume**

Frolov, A. N. The Erdős-Rényi law of large numbers when the Cramér condition is violated. (Russian. English summary) *Vestnik Leningrad. Univ. Mat. Mekh. Astronom.* **1990,** *vyp.* 4, 26–31, 117; *translation in Vestnik Leningrad Univ. Math.* **23** (1990), *no.* 4, 30–35. (S. A. Book) **93b:60063** 60F15 (60F10)

— On the Erdős-Rényi law of large numbers for non-identically distributed random variables under violation of Cramér's condition. (Russian. English summary) *Vestnik Leningrad. Univ. Mat. Mekh. Astronom.* **1991,** *vyp.* 2, 57–61, 125; *translation in Vestnik Leningrad Univ. Math.* **24** (1991), *no.* 2, 66–70. (S. A. Book) **93m:60058** 60F15 (60F10)

Frolov, B. N. (*with* Karbanovski, Valeri) The asymptotical solutions near the singular points for perfect fluid configurations in the conformal Poincaré-gauge theory of gravitation. (English summary) *Phys. Lett. A* **169** (1992), *no.* 1-2, 1–4. (Kishore Marathe) **93g:83086** 83D05

Frolov, S. A. *see* **Frolov, Sergei Anatol'evich**

Frolov, S. I. Poisson plans for random walks and the Kolmogorov-Smirnov criterion for goodness of fit. (Russian) *Probabilistic processes and their applications* (*Russian*), 131–136, *Moskov. Inst. Èlektron. Mashinostroeniya, Moscow*, 1989. (*see* **93b:60003**) 60J15 (62G10)

Frolov, S. V. A spectral identity for a multidimensional Schrödinger equation with periodic potential. (Russian. English and Russian summaries) *Teoret. Mat. Fiz.* **91** (1992), *no.* 3, 524–528; *translation in Theoret. and Math. Phys.* **91** (1992), *no.* 3, 692–695. (Eugen Belokolos) **93j:35060** 35J10 (47F05, 47N50, 81Q10)

Frolov, Sergei Anatol'evich BRST-quantization of gauge theories in Hamiltonian-like gauges. (Russian. English summary) *Teoret. Mat. Fiz.* **87** (1991), *no.* 2, 188–206; *translation in Theoret. and Math. Phys.* **87** (1991), *no.* 2, 464–477. (Summary) **93h:81144** 81T70 (81T13)

— (*with* Slavnov, A. A.; Sochichiu, C.) On the SO(N) symmetry of the chiral SU(N) Yang-Mills model. (English summary) *Phys. Lett. B* **301** (1993), *no.* 1, 59–66. (Henrik Aratyn) **93k:81140** 81T13 (81T50, 81T70)

Frolov, V. P. Particle creation and vacuum polarization near black holes. *Quantum mechanics in curved space-time* (*Erice*, 1989), 141–201, *NATO Adv. Sci. Inst. Ser. B Phys.*, 230, *Plenum, New York*, 1990. (*see* **93d:83003**) 83C57 (83C47)

— (*with* Novikov, Igor D.) Physical effects in wormholes and time machine. *Quantum gravity* (*Moscow*, 1990), 266–284, *World Sci. Publishing, River Edge, NJ*, 1991. (Claus Kiefer) **93f:83075** 83E05 (83B05, 83C75)

— Vacuum polarization in a locally static multiply-connected spacetime and a time machine problem. *Quantum gravity* (*Moscow*, 1990), 285–329, *World Sci. Publishing, River Edge, NJ*, 1991. (Enric Verdaguer) **93f:83048** 83C47 (81T20, 83E05)

— (*with* Castagnino, Mario A.; Domenech, G.; Noriega, R. J.; Schifini, G.) Concomitants theory and renormalization in even dimensions. *J. Math. Phys.* **33** (1992), *no.* 3, 1097–1102. (R. J. McKellar) **93b:83030** 83C47 (81T16, 81T20)

— (*with* Massacand, Christophe M.; Schmid, Christoph) Quantum fluctuations around a two-dimensional black hole. *Phys. Lett. B* **279** (1992), *no.* 1-2, 29–33. (Derek Raine) **93j:81090** 81T40

— *see also* **Quantum gravity, 93b:83004**

Frolov, Yu. N. Duality in series of generalized exponentials. (Russian. Russian summary) *Ordered spaces and operator equations* (*Russian*), 33–35, 159, *Syktyvkar. Gos. Univ., Syktyvkar*, 1989. (*see* **93m:00034**) 30B50 (41A58)

Frolova, A. A. Computation of radiative gas flows in axisymmetric nozzles of a given shape. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **31** (1991), *no.* 9, 1381–1391; *translation in Comput. Math. Math. Phys.* **31** (1991), *no.* 9, 84–92 (1992). (Summary) **93b:76071** 76N15 (76M25)

— On the effect of heat supply on the gas dynamic parameters of a gas flow in Laval nozzles. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **32** (1992), *no.* 3, 472–477; *translation in Comput. Math. Math. Phys.* **32** (1992), *no.* 3, 413–417. (Summary) **93b:76074** 76N99

Frolovichev, S. M. Global asymptotics of solutions of the first and second boundary value problems for Kolmogorov equation with small diffusion. *Probability theory and mathematical statistics, Vol. I* (*Vilnius*, 1989), 375–381, "*Mokslas*", *Vilnius*, 1990. (Summary) **93a:35019** 35B40 (35K20, 60J60)

Fröman, Nanny (*with* Fröman, Per Olof) Phase-integral approximation of arbitrary order generated from an unspecified base function. (English summary) *Forty more years of ramifications: spectral asymptotics and its applications*, 121–159, *Discourses Math. Appl.*, 1, *Texas A & M Univ., College Station, TX*, 1991. (Summary) **93h:81028** 81Q20 (81-02)

Fröman, Per Olof (*with* Fröman, Nanny) Phase-integral approximation of arbitrary order generated from an unspecified base function. (English summary) *Forty more years of ramifications: spectral asymptotics and its applications*, 121–159, *Discourses Math. Appl.*, 1, *Texas A & M Univ., College Station, TX*, 1991. (Summary) **93h:81028** 81Q20 (81-02)

Fromm, Stephen J. Potential space estimates for Green potentials in convex domains. *Proc. Amer. Math. Soc.* **119** (1993), *no.* 1, 225–233. (Yehuda Pinchover) **93k:35076** 35J25 (35B65)

Frommer, Andreas Generalized nonlinear diagonal dominance and applications to asynchronous iterative methods. Proceedings of the International Symposium on Computational Mathematics (Matsuyama, 1990). *J. Comput. Appl. Math.* **38** (1991), *no.* 1-3, 105–124. (W. C. Rheinboldt) **93a:65069** 65H10 (65H17)

— (*with* Mayer, Günter) On the theory and practice of multisplitting methods in parallel computation. (English and German summaries) *Computing* **49** (1992), *no.* 1, 63–74. (Summary) **93e:65158** 65Y05 (65F10, 65N22)

— (*with* Szyld, Daniel B.) H-splittings and two-stage iterative methods. (English summary) *Numer. Math.* **63** (1992), *no.* 3, 345–356. (S. Galanis) **93j:65048** 65F10

— Verallgemeinerte Diagonaldominanz bei nichtlinearen Funktionen. I. (English, German and Russian summaries) [Generalized diagonal dominance in nonlinear functions. I] *Z. Angew. Math. Mech.* **72** (1992), *no.* 9, 431–444. (W. C. Rheinboldt) **93h:65074** 65H10 (15A57, 65F30)

— Verallgemeinerte Diagonaldominanz bei nichtlinearen Funktionen. II. Anwendung auf asynchrone Iterationsverfahren und Beispiele. (English, German and Russian summaries) [Generalized diagonal dominance in nonlinear functions. II. Applications to asynchronous iteration methods and examples] *Z. Angew. Math. Mech.* **72** (1992), *no.* 11, 591–605. (W. C. Rheinboldt) **93j:65080** 65H10 (65F10)

Fronček, Dalibor Realizability of some starlike trees. (English summary) *Fourth Czechoslovakian Symposium on Combinatorics, Graphs and Complexity* (*Prachatice*, 1990), 81–83, *Ann. Discrete Math.*, 51, *North-Holland, Amsterdam*, 1992. (Summary) **93j:05039** 05C05

— Graphs with constant neighbourhoods of two independent vertices. *Quart. J. Math. Oxford Ser.* (2) **43** (1992), *no.* 171, 313–317. (B. Zelinka) **93e:05080** 05C75

— e-locally acyclic graphs. (English summary) *Zastos. Mat.* **21** (1992), *no.* 3, 437–440. (Summary) **93e:05045** 05C35

Fronk, T. H. (*with* Mahan, J. R.) Fully-coupled fluid-structure formulation of a baffled rectangular orthotropic plate using the boundary element and finite element methods. (English summary) *Boundary element technology, VII* (*Albuquerque, NM*, 1992), 259–273, *Comput. Mech., Southampton*, 1992. (*see* **93b:65002**) 73V10 (65N30, 65N38, 73K10, 73K70, 73V05)

Fronsdal, C. (*with* Heidenreich, W. F.) Infrared regularization of quantum gravity. *Ann. Physics* **215** (1992), *no.* 1, 51–62. (Yu. N. Obukhov) **93f:83039** 83C45 (81T70)

— (*with* Harun-ar Rashid, A. M.; Flato, Moshé) Three-D singletons and 2-D C.F.T. *Internat. J. Modern Phys. A* **7** (1992), *no.* 10, 2193–2206. (Summary) **93e:81072** 81T13 (81T40)

— $\mathrm{gl}_q(n)$ and quantum monodromy. *Lett. Math. Phys.* **24** (1992), *no.* 1, 73–78. (Vladimir A. Stukopin) **93f:58098** 58F07 (17B37, 81R50)

Frontczak, Maria Integral representations of Cauchy type for holomorphic functions on Weil's domains. (Polish summary) *Bull. Soc. Sci. Lett. Łódź* **40** (1990), *no.* 11-20, 85–90. (Harold P. Boas) **93f:32003a** 32A25 (32A07)

— A new simple proof of Weil's integral formula for canonical domains. (Polish summary) *Bull. Soc. Sci. Lett. Łódź* **40** (1990), *no.* 11-20, 91–108. (Harold P. Boas) **93f:32003b**

32A25 (32A07)

Frosali, Giovanni (*with* van der Mee, Cornelis) Mathematical study of the runaway process in particle swarms. Memoirs of mathematical physics in honor of Giovanni Carini on his 70th birthday (Italian). *Atti Accad. Peloritana Pericolanti Cl. Sci. Fis. Mat. Natur.* **68** (1990), *suppl.* 1, 623–649 (1991). (Carlo Cercignani) **93b:82053** 82C22 (76P05, 76X05)

— (*with* Arlotti, Luisa) Runaway particles for a Boltzmann-like transport equation. *Math. Models Methods Appl. Sci.* **2** (1992), *no.* 2, 203–221. (Carlo Cercignani) **93g:82078** 82C40 (47N55, 76P05, 82D10)

— (*with* Busoni, Giorgio) Asymptotic behaviour for a charged particle transport problem with time-varying acceleration field. (English summary) Proceedings of the Fourth International Workshop on Mathematical Aspects of Fluid and Plasma Dynamics (Kyoto, 1991). *Transport Theory Statist. Phys.* **21** (1992), *no.* 4-6, 713–732. (Summary) **93k:82058** 82C70

Frost, Todd M. (*with* Barnhill, Robert E.; Kersey, Scott N.) Self-intersections and offset surfaces. *Geometry processing for design and manufacturing*, 35–44, *SIAM, Philadelphia, PA*, 1992. (*see* **93b:65035**) 65D17

Frostig, Esther A note on stochastic scheduling on a single machine subject to breakdown—the preemptive repeat model. (English summary) *Probab. Engrg. Inform. Sci.* **5** (1991), *no.* 3, 349–354. (Summary) **93f:90087** 90B35

— On the optimal assignment of servers in a two stations tandem queue with no intermediate waiting room. (English summary) *Oper. Res. Lett.* **13** (1993), *no.* 1, 13–18. (Summary) **93k:90037** 90B22 (60K25)

Frougny, Christiane Representations of numbers and finite automata. *Math. Systems Theory* **25** (1992), *no.* 1, 37–60. (Krassimir Atanassov) **93b:68054** 68Q70 (11A67, 11Y16)

— Systèmes de numération linéaires et θ-représentations. (English summary) [Linear numeration systems and θ-representations] Discrete mathematics and applications to computer science (Marseille, 1989). *Theoret. Comput. Sci.* **94** (1992), *no.* 2, 223–236. (Jeffrey O. Shallit) **93g:11013** 11A67 (11A63, 68R15)

— Confluent linear numeration systems. (English summary) *Theoret. Comput. Sci.* **106** (1992), *no.* 2, 183–219. (Yves Metivier) **93j:68092** 68Q42

Frouzakis, C. E. (*with* Adomaitis, R. A.; Kevrekidis, I. G.; Golden, M. P.; Ydstie, B. Erik) The structure of basin boundaries in a simple adaptive control system. (English summary) *Chaotic dynamics* (*Patras*, 1991), 195–210, *NATO Adv. Sci. Inst. Ser. B Phys.*, 298, *Plenum, New York*, 1992. (Summary) **93k:58205** 58F40 (58F13, 93C40)

Frøyland, Jan ★ Introduction to chaos and coherence. *Institute of Physics, Bristol*, 1992. x+130 *pp. ISBN* 0-7503-0194-5; 0-7503-0195-3 (Helmut Rüssmann) **93h:58096** 58F13 (34C23, 34C37, 34D45)

Frøyland, Lars A. (*with* Lakså, Arne; Pajchel, Jan) Modelling geological structures using splines. *Mathematical methods in computer aided geometric design, II* (*Biri*, 1991), 287–296, *Academic Press, Boston, MA*, 1992. (*see* **93d:65022**) 86A15 (65D07)

Fruchard, Augustin Existence of bifurcation delay: the discrete case. *Dynamic bifurcations* (*Luminy*, 1990), 87–106, *Lecture Notes in Math.*, 1493, *Springer, Berlin*, 1991. (J. S. Joel) **93e:58140** 58F14 (03H05, 39A12)

Fruchter, Gila (*with* Ben-Haim, Shlomo) Dynamic properties of cardiovascular systems. *Math. Biosci.* **110** (1992), *no.* 1, 103–117. (Summary) **93a:92004** 92C50 (92C05, 92C30)

Frühwirth-Schnatter, Sylvia *see* **Schnatter, Sylvia**

Frunză, Monica Möbius transformations in infinite dimension. Analyse complexe (Bucharest, 1989). *Rev. Roumaine Math. Pures Appl.* **36** (1991), *no.* 7-8, 369–376. (Introduction) **93a:58016** 58B99 (30G99)

Fruth, M. The remainder formula of Knapp for multidimensional Lie series. *Geometric function theory and applications of complex analysis to mechanics: studies in complex analysis and its applications to partial differential equations*, 2 (*Halle*, 1988), 150–156, *Pitman Res. Notes Math. Ser.*, 257, *Longman Sci. Tech., Harlow*, 1991. (Harold P. Boas) **93f:32002** 32A20 (32A05, 35A30)

de Frutos, Javier (*with* Ortega, Tomás; Sanz-Serna, J. M.) A Hamiltonian, explicit algorithm with spectral accuracy for the "good" Boussinesq system. (English summary) *Spectral and high order methods for partial differential equations* (*Como*, 1989), 417–423, *North-Holland, Amsterdam*, 1990. (*see* **93d:65005**) 65M70 (76M25)

— A tau-pseudospectral scheme for the numerical solution of fourth-order problems. (Spanish. Spanish summary) *Proceedings of the XII Congress on Differential Equations and Applications/II Congress on Applied Mathematics* (*Spanish*) (*Oviedo*, 1991), 233–238, *Univ. Oviedo, Oviedo*, 1991. (*see* **93j:00009**) 65N35

— (*with* Sanz-Serna, J. M.) An easily implementable fourth-order method for the time integration of wave problems. (English summary) *J. Comput. Phys.* **103** (1992), *no.* 1, 160–168. (Summary) **93h:65117** 65M20 (65L99, 76M99)

Fry, John L. *see* **Integral methods in science and engineering—90, 93f:00014**

Fry, M. P. Fermionic determinant of the massive Schwinger model. (English summary) *Phys. Rev. D* (3) **47** (1993), *no.* 6, 2629–2632. 81T40 (58G26)

Fryant, Allan Integral operators for harmonic functions. *The mathematical heritage of C. F. Gauss*, 304–320, *World Sci. Publishing, River Edge, NJ*, 1991. (D. G. Natroshvili) **93d:31003** 31B05

Fryazinov, I. V. (*with* Goncharov, A. L.; Devdariani, M. T.; Prostomolotov, A. I.) Approximation and a numerical method for the solution of three-dimensional Navier-Stokes equations on orthogonal grids. (Russian. English summary) *Mat. Model.* **3** (1991), *no.* 5, 89–109. (Summary) **93b:76024** 76D05 (65M06, 76M20, 76R05, 76W05)

— (*with* Weinelt, Wilfried; Goncharov, A. L.; Hartwig, Karl-Heinz) Numerical methods for solving the problem of injection of plastic into thin forms. (Russian. Russian summary) *Zh. Vychisl. Mat. i Mat. Fiz.* **32** (1992), *no.* 11, 1790–1802; *translation in Comput. Math. Math. Phys.* **32** (1992), *no.* 11, 1617–1628 (1993). (From the introduction) **93k:76031** 76D05 (65P05, 73E50, 76M25, 76M30)

Frycz, P. (*with* Infeld, E.; Rowlands, George) Can the dynamics of structural change be treated theoretically? *Nonlinear dispersive wave systems* (*Orlando, FL*, 1991), 575–589, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93f:00015**) 76E99

Frydrychowicz, W. (*with* Axelrad, D. R.; Kamal, M. R.) Stochastic analysis of polymer melts with a binary structure. *Z. Angew. Math. Phys.* **43** (1992), *no.* 3, 536–552. (Yurii Raikher) **93e:82056** 82D60 (60J99, 82C41)

Fryntov, A. E. Subharmonic functions and $\cos(\pi\lambda)$-theorems for entire functions represented by gap series. *Entire and subharmonic functions*, 205–222, *Adv. Soviet Math.*, 11, *Amer. Math. Soc., Providence, RI*, 1992. (D. Drasin) **93j:30026** 30D20 (30B10, 31A05)

Fryska, Slawomir T. (*with* Zohdy, Mohamed A.) Computer dynamics and shadowing of chaotic orbits. *Phys. Lett. A* **166** (1992), *no.* 5-6, 340–346. (Summary) **93d:58081** 58F08 (58F13, 65L99)

Fryska, T. L. Von der Reihe $\sum_\rho x^\rho/\rho$. (Russian and Lithuanian summaries) [Concerning the series $\sum_\rho x^\rho/\rho$] *Litovsk. Mat. Sb.* **31** (1991), *no.* 1, 187–204. (M. J. Narlikar) **93e:11137** 11R42 (11M41, 11S40)

— On some formulae in analytic number theory. II. (English summary) *New trends in probability and statistics, Vol. 2* (*Palanga*, 1991), 319–334, *VSP, Utrecht*, 1992. (A. Perelli) **93m:11118** 11R42 (11M41)

Fryszkowski, Andrzej (*with* Cellina, Arrigo; Rzeżuchowski, Tadeusz) Upper semicontinuity of Nemytskij operators. *Ann. Mat. Pura Appl.* (4) **160** (1991), 321–330 (1992). (From the introduction) **93d:47131** 47H30 (34A60, 47H04, 47N20)

— (*with* Bartuzel, Grzegorz) Abstract differential inclusions with some applications to partial differential ones. *Ann. Polon. Math.* **53** (1991), *no.* 1, 67–78. (Evgenios P. Avgerinos) **93e:47094** 47N20 (34A60, 34G20, 35R70, 47H15, 49J24)

— (*with* Colombo, R. M.; Rzeżuchowski, Tadeusz; Staicu, Vasile) Continuous selections of solution sets of Lipschitzean differential inclusions. *Funkcial. Ekvac.* **34** (1991), *no.* 2, 321–330. (Péter Tallós) **93i:34022** 34A60 (47H04, 49J24, 54C65)

Ftáčnik, Milan (*with* Kelemen, Jozef; Kalaš, Ivan; Mikulecký, Peter) ★ Základy umelej inteligencie. (Slovak. Slovak summary) [Fundamentals of artificial intelligence] *Alfa—Vydavateľstvo Technickej a Ekonomickej Literatúry, Bratislava*, 1992. 400 *pp. ISBN* 80-05-00957-7 68-01 (68Txx)

Fu, Chang Lin (*with* Yuan, Yong Jiu) Derivations and adjoint ideal semigroups of prime rings. (Chinese. English summary) *Acta Sci. Natur. Univ. Jilin.* **1991,** *no.* 4, 15–18. 16N60 (16W25)

— PI-rings and rings satisfying variable identities. *Proceedings of the First China-Japan International Symposium on Ring Theory* (*Guilin*, 1991), 49–51, *Okayama Univ., Okayama*, 1992. (*see* **93k:16001**) 16R50

— (*with* Li, Yun Long; Zou, Dang Rong) Some commutativity theorems for rings. (Chinese. English and Chinese summaries) *Heilongjiang Daxue Ziran Kexue Xuebao* **9** (1992), *no.* 4, 24–27. 16U80

Fu, Chongyau (*with* Drane, J. Wanzer; Postelnicu, Tiberiu) Theorems on binary responses to combinations of stimuli. (English summary) *Biometrical J.* **34** (1992), *no.* 5, 605–615. (Summary) **93d:62171** 62P10

Fu, Chu Li The Plancherel formula on the nilpotent Lie group $H_n \otimes \mathbf{R}^k$ and its application. (Chinese) *Chinese Ann. Math. Ser. A* **12** (1991), *no.* 6, 660–668. (Zi-Xin Hou) **93c:22013** 22E25 (22E30)

Fu, Enzhong (*with* Markham, Thomas L.) On the eigenvalues and diagonal entries of a Hermitian matrix. (English summary) *Linear Algebra Appl.* **179** (1993), 7–10. (Zhenyue Zhang) **93k:15012** 15A18 (15A42)

Fu, Guo Yao An algorithm for computing the transitive closure of a fuzzy similarity matrix. (English summary) *Fuzzy Sets and Systems* **51** (1992), *no.* 2, 189–194. 15A99 (04A72)

Fu, Hêng Lin (*with* Wu, Shung Liang) New results on graceful graphs. Graphs, designs and combinatorial geometries (Catania, 1989). *J. Combin. Inform. System Sci.* **15** (1990), *no.* 1-4, 170–177. (Prabir Das) **93f:05079** 05C78

— (*with* Chiang, Nam Po) On the achromatic number of the Cartesian product $G_1 \times G_2$. (English summary) *Australas. J. Combin.* **6** (1992), 111–117. (Summary) **93h:05073** 05C15

— (*with* Hu, Wei Hsin) A special partition of the set I_n. (English summary) *Bull. Inst. Combin. Appl.* **6** (1992), 57–60. (Summary) **93g:05014** 05A18

— (*with* Ch'ên, Po Liang) Total colorings of graphs of order $2n$ having maximum degree $2n-2$. *Graphs Combin.* **8** (1992), *no.* 2, 119–123. (Gary MacGillivray) **93h:05071** 05C15

Fu, Hong Chen (*with* Ge, Mo Lin) Verma module of the quantum group $\mathrm{GL}(n)_q$ and its q-boson and Heisenberg-Weyl relation realizations. *J. Phys. A* **25** (1992), *no.* 8, L389–L395. (Benjamin David Enriquez) **93i:17016** 17B37 (81R50)

— (*with* Ge, Mo Lin) q-boson realization of quadratic algebra $\mathcal{A}_1$ and its representations. (English summary) *J. Phys. A* **25** (1992), *no.* 22, L1233–L1238. (Marco Tarlini) **93j:17024** 17B37 (16W30, 81R50)

— (*with* Ge, Mo Lin) Construction of cyclic representations of quantum algebras at $q^p = 1$ from their regular representations. (English summary) *Lett. Math. Phys.* **25** (1992), *no.* 4, 277–286. (Michael Schlieker) **93k:17028** 17B37 (81R50)

Fu, Hung-Lin *see* **Fu, Hêng Lin**

Fu, James C. (*with* Chao, Min Te) The reliability of a large series system under Markov structure. *Adv. in Appl. Probab.* **23** (1991), *no.* 4, 894–908. (Ross P. Kindermann) **93a:90025** 90B25 (60J20, 62N05)

— (*with* Li, Lung An) Method of pao-zhuan yin-yu: a method of stochastic point estimation. *Statist. Sinica* **2** (1992), *no.* 1, 171–188. (Michael R. Chernick) **93d:62083** 62G09 (62G20, 62L20)

Fu, Jyun-Horng (*with* Abed, Eyad H.) Families of Lyapunov functions for nonlinear systems in critical cases. (English summary) *IEEE Trans. Automat. Control* **38** (1993), *no.* 1, 3–16. (Wei Bing Gao) **93k:93073** 93D05 (34D20, 93C10)

Fu, Li (*with* Wang, Yong[1]; Yan, Zhi Bin) On the resolvent of the two-parameter semigroup. I. *J. Harbin Inst. Tech.* **1991,** *no.* 1, 102–105. (A. B. Buche) **93d:47080** 47D03

— (*with* Wang, Yong[1]; Yan, Zhi Bin) On the resolvent of the two-parameter semigroup. II. *J. Harbin Inst. Tech.* **1991,** *no.* 2, 97–100. (A. B. Buche) **93d:47081** 47D03

Fu, Li Ch'êng A new robust MRAC using variable structure design for relative degree two plants. (English summary) *Automatica J. IFAC* **28** (1992), *no.* 5, 911–925. 93B12 (93B52)

Fu, M. *see* **Fu, Minyue**

Fu, Michael C. (*with* Hu, Jian Qiang) Extensions and generalizations of smoothed perturbation analysis in a generalized semi-Markov process framework. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 10, 1483–1500. (Summary) **93i:60171** 60K25 (90B22, 93E14)

Fu, Minyue (*with* de Souza, Carlos E.; Xie, Lihua) Quadratic stabilization and H_∞ control of discrete-time uncertain systems. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, I* (*Kobe*, 1991), 269–274, *Mita, Tokyo*, 1992. (*see* **93g:93005**) 93B36 (93C55)

— (*with* de Souza, Carlos E.) H_∞ filtering and loop transfer recovery. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, I* (*Kobe*, 1991), 311–316, *Mita, Tokyo*, 1992. (*see* **93g:93005**) 93B36 (93E11)

— (*with* Xie, Lihua; de Souza, Carlos E.) H_∞-control and quadratic stabilization of systems with parameter uncertainty via output feedback. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 8, *part I*, 1253–1256. 93B36

— Robust positive realness of functions with dependent parameter uncertainty in numerator and denominator. *Internat. J. Control* **55** (1992), *no.* 5, 1279–1284. (Summary) **93b:93073** 93C80 (93B30)

Fu, Wen Jun Using Newton's method and the improved Brauer method to compute the maximum eigenvalue of nonnegative irreducible matrices. (Chinese. English and Chinese summaries) *Nei Mongol Daxue Xuebao Ziran Kexue* **23** (1992), *no.* 3, 317–324. (Summary) **93i:65044** 65F15

— A note on diagonal transformation methods for computing the maximum eigenvalue and corresponding eigenvector of nonnegative irreducible matrices. (Chinese. English and Chinese summaries) *Nei Mongol Daxue Xuebao Ziran Kexue* **23** (1992), *no.* 4, 519–524. (Summary) **93j:65052** 65F15 (15A18)

Fu, X. C. *see* **Fu, Xin Chu**

Fu, Xi Lin (*with* Zhang, Li Qin) Oscillation of a class of even order nonlinear delay differential equations. *Math. J. Toyama Univ.* **15** (1992), 15–24. (Hiroshi Onose) **93m:34108** 34K15

Fu, Xin Chu (*with* Zhou, Huan Wen) Chaotic behaviour of the general symbolic dynamics. *Appl. Math. Mech.* (*English Ed.*) **13** (1992), *no.* 2, 117–123; *translated from Appl. Math. Mech.* **13** (1992), *no.* 2, 103–109 (*Chinese. English summary*). (Helena E. Nusse) **93e:58052** 58F03 (54H20, 58F13)

— (*with* Xu, K. H.) The Conley index and bifurcation points. *Nonlinear Anal.* **19** (1992), *no.* 12, 1137–1142. (Christopher K. McCord) **93j:58096** 58F14 (34C23, 58F25)

Fu, Y. *see* **Fu, Yibin**

Fu, Ye (*with* Dumont, G. A.; Elshafei, A.-L.) Orthonormal functions in identification and adaptive control. (English summary) *Intelligent tuning and adaptive control* (*Singapore*, 1991), 193–198, *IFAC Sympos. Ser.*, 1991, *No.* 7, *Pergamon, Oxford*, 1991. (*see* **93i:93007**) 93B30 (93C40)

Fu, Yibin (*with* Hall, Philip[2]) Nonlinear development and secondary instability of large-amplitude Görtler vortices in hypersonic boundary layers. (English summary) *European J. Mech. B Fluids* **11** (1992), *no.* 4, 465–510. (Summary) **93i:76050** 76K05 (76E30, 76N20)

— (*with* Hall, Philip[2]) Effects of Görtler vortices, wall cooling and gas dissociation on the Rayleigh instability in a hypersonic boundary layer. (English summary) *J. Fluid Mech.* **247** (1993), 503–525. (Summary) **93m:76043** 76E99 (76K05, 76N20)

Fu, Yuan Lāe Stable weak convergence of random elements. (Chinese. English summary) *Xiamen Daxue Xuebao Ziran Kexue Ban* **31** (1992), *no.* 3, 225–229. 60B10

Fu, Yun-Xin (*with* Li, Wen Hsiung) Necessary and sufficient conditions for the existence of linear invariants in phylogenetic inference. *Math. Biosci.* **108** (1992), *no.* 2, 203–218. (James L. Cornette) **93d:92011** 92D20

— (*with* Li, Wen Hsiung) Construction of linear invariants of phylogenetic inference. *Math. Biosci.* **109** (1992), *no.* 2, 201–228. (Lisa Sattenspiel) **93f:92003** 92B10 (15A99, 92D15, 92D20)

Fubini, Sergio (*with* de Alfaro, Vittorio; Furlan, Giuseppe) Why we like octonions. (Italian summary) *Mem. Accad. Sci. Torino Cl. Sci. Fis. Mat. Natur.* (5) **10** (1986), *no.* 2, 57–76 (1987). (Dominique Lambert) **93d:17002** 17A35 (81T13)

— Finite Euclidean magnetic group and theta functions. (English summary) *Internat. J. Modern Phys. A* **7** (1992), *no.* 19, 4671–4691. (Shinichi Tajima) **93j:14058** 14K25 (82D99)

Fuchino, Sakaé (*with* Koppelberg, Sabine; Takahashi, Makoto[1]) On $L_{\infty\kappa}$-free Boolean algebras. *Ann. Pure Appl. Logic* **55** (1992), *no.* 3, 265–284. (Bienvenido F. Nebres) **93i:03053** 03C75 (03C65, 03G05, 06E05)

— On the simplicity of the automorphism group of $\mathcal{P}(\omega)/\mathrm{fin}$. *Arch. Math. Logic* **31** (1992), *no.* 5, 319–330. (Summary) **93b:20001** 20A10 (03E35, 20B27)

Fuchs, Aimé (*with* Letta, Giorgio) Un résultat élémentaire de fiabilité. Application à la formule de Weierstrass sur la fonction gamma. (French summary) [An elementary reliability result. Application to the Weierstrass formula on the gamma function] *Séminaire de Probabilités, XXV*, 316–323, *Lecture Notes in Math.*, 1485, *Springer, Berlin*, 1991. (Walter Schlee) **93k:60034** 60E05 (33B15, 60G30, 60G70, 60K05)

Fuchs, Andreas (*with* Varghese, Matthew; Mukundan, Rangaswamy) New perspectives on zero dynamics: complicated behavior in redundant links. (English summary) *J. Math. Systems Estim. Control* **3** (1993), *no.* 1, 107–128. (Emilia Petrisor) **93i:93066** 93C10 (58F13)

Fuchs, D. (*with* Drunk, W.; Zirnbauer, Martin R.) Migdal-Kadanoff renormalization of a nonlinear supervector model with hyperbolic symmetry. *Ann. Physik* (8) **1** (1992), *no.* 2, 134–150. (H. S. Green) **93g:82027** 82B21 (82-04, 82B28)

Fuchs, Jean-Jacques (*with* Delyon, Bernard) Adaptive control of a simple time-varying system. *IEEE Trans. Automat. Control* **37** (1992), *no.* 7, 1037–1040. (Summary) **93f:93148** 93E35 (93C40, 93C50)

Fuchs, Jürgen Quantum dimensions. (English summary) *Comm. Theoret. Phys.* (*Allahabad*) **1** (1991), 59–109. (Stanislav Z. Pakuliak) **93k:81077** 81R10 (17B67, 17B68, 17B81, 81-02, 81T40)

— From tensor products to the modular matrix S and back. (English summary) *Sakharov Memorial Lectures in Physics, Vol.* 1, 2 (*Moscow*, 1991), 493–503, *Nova Sci. Publ., Commack, NY*, 1992. (*see* **93h:81003**) 81T40

— (*with* Klemm, Albrecht; Schmidt, Michael G.) Orbifolds by cyclic permutations in Gepner type superstrings and in the corresponding Calabi-Yau manifolds. *Ann. Physics* **214** (1992), *no.* 2, 221–257. (Tristan Hübsch) **93b:81247** 81T40 (14J30, 32J17, 32J25)

— (*with* Ganchev, Alexander Ch.; Vecsernyés, Peter) Level 1 WZW superselection sectors. *Comm. Math. Phys.* **146** (1992), *no.* 3, 553–583. (Stephen J. Summers) **93e:81108** 81T40 (46L60, 81T05)

— (*with* Klemm, Albrecht; Schmidt, Michael G.; Verstegen, Dirk) New exceptional $(A_1^{(1)})^{\oplus r}$ invariants and the associated Gepner models. *Internat. J. Modern Phys. A* **7** (1992), *no.* 10, 2245–2264. (Mehmet Koca) **93i:81062** 81R10 (17B67, 17B81, 32J81, 81T30, 81T40)

— WZW quantum dimensions. (English summary) Topological and quantum group methods in field theory and condensed matter physics. *Internat. J. Modern Phys. B* **6** (1992), *no.* 11-12, 1951–1965. (Stanislav Z. Pakuliak) **93i:81231** 81T40 (17B67, 81R10, 81R50)

Fuchs, László[1] (*with* Metelli, C.) Countable Butler groups. (English summary) *Abelian groups and noncommutative rings*, 133–143, *Contemp. Math.*, 130, *Amer. Math. Soc., Providence, RI*, 1992. (Mark Lane) **93g:20103** 20K20 (20K15)

— (*with* Salce, Luigi) S-divisible modules over domains. *Forum Math.* **4** (1992), *no.* 4, 383–394. (From the summary) **93b:13001** 13A05 (13G05)

— (*with* Bican, Ladislav) On abelian groups by which balanced extensions of a rational group split. *J. Pure Appl. Algebra* **78** (1992), *no.* 3, 221–238. (Ulrich Albrecht) **93d:20098** 20K20

— *see also* **Abelian groups and noncommutative rings, 93d:20001** *and* **Abelian groups, 93m:20075**

Fuchs, Martin[2] (*with* Duzaar, Frank) On removable singularities of p-harmonic maps. (French summary) *Ann. Inst. H. Poincaré Anal. Non Linéaire* **7** (1990), *no.* 5, 385–405. (Helmut Kaul) **93e:58035** 58E20 (35A20, 49N60)

— (*with* Duzaar, Frank) Existence and regularity of functions which minimize certain energies in homotopy classes of mappings. *Asymptotic Anal.* **5** (1991), *no.* 2, 129–144. (Guojun Liao) **93b:58039** 58E20

— (*with* Duzaar, Frank) A general existence theorem for integral currents with prescribed mean curvature form. (Italian summary) *Boll. Un. Mat. Ital. B* (7) **6** (1992), *no.* 4, 901–912. (J. S. Joel) **93m:49022** 49Q20

— Smoothness for systems of degenerate variational inequalities with natural growth. *Comment. Math. Univ. Carolin.* **33** (1992), *no.* 1, 33–41. (Summary) **93e:49015** 49J40 (35J85)

Fuchs, P. M. Algebraische Approximationen hoher Ordnung an die Exponentialfunktion. (English, German and Russian summaries) [Higher-order algebraic approximations to the exponential function] *Z. Angew. Math. Mech.* **72** (1992), *no.* 10, 507–516. (Summary) **93j:65113** 65L06 (34A50, 41A20)

Fuchs, P. R. A decoding method for planar near-ring codes. (English summary) *Riv. Mat. Univ. Parma* (4) **17** (1991), 325–331 (1992). (Gordon Mason) **93g:16055** 16Y30 (05B05)

Fuchs, W. H. J. (*with* Hayman, Walter K.) Rational approximation to the Fresnel integral. *Approximation by solutions of partial differential equations* (*Hanstholm*, 1991), 69–77, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 365, *Kluwer Acad. Publ., Dordrecht*, 1992. (Tord H. Ganelius) **93d:30047** 30E10 (41A20)

Fuchssteiner, Benno (*with* Zhang, Hong Wei[1]; Tu, Gui Zhang; Oevel, Walter) Symmetries, conserved quantities, and hierarchies for some lattice systems with soliton structure. *J. Math. Phys.* **32** (1991), *no.* 7, 1908–1918. (Mayer Humi) **93c:58096** 58F07 (58–04)

— An alternative dynamical description of quantum systems. *Quantum groups and related topics* (*Wrocław*, 1991), 165–178, *Math. Phys. Stud.*, 13, *Kluwer Acad. Publ., Dordrecht*, 1992. (Summary) **93k:81078** 81R10 (58F37, 81P99)

— (*with* Oevel, Gudrun) Unified approach to action-angle representation of real and complex multisolitons. *Phys. A* **181** (1992), *no.* 3-4, 364–384. (Vadim G. Bakurov) **93c:58091** 58F07 (35Q51, 58F05)

— *see also* **Yearbook: Surveys on mathematics, 93j:00006**

Fucito, F. (*with* Martellini, Maurizio) Renormalization group flows in nonperturbative 2D quantum gravity. *Internat. J. Modern Phys. A* **7** (1992), *no.* 7, 1361–1374. (Alexander W. Smith) **93d:81122** 81T17 (81T30, 81T40)

— (*with* Martellini, Maurizio) Loop equations and KdV hierarchy in 2-D quantum gravity. *Internat. J. Modern Phys. A* **7** (1992), *no.* 10, 2285–2293. (Summary) **93a:81171** 81T40 (58F07, 81R10)

— (*with* Gamba, Andrea; Martellini, Maurizio; Ragnisco, Orlando) Nonlinear WKB analysis of the string equation. (English summary) Topological and quantum group methods in field theory and condensed matter physics. *Internat. J. Modern Phys. B* **6** (1992), *no.* 11-12, 2123–2147. (V. A. Golubeva) **93m:58049** 58F07 (81Q20, 81T40)

— (*with* Carlini, A.; Martellini, Maurizio) On the stability of a stringy black hole. (English summary) *Phys. Lett. B* **289** (1992), *no.* 1-2, 35–44. (Marc Henneaux) **93k:83045** 83C57 (81T40, 83E30)

Fuda, Michael G. Angular momentum and light-front scattering theory. *Phys. Rev. D* (3) **44** (1991), *no.* 6, 1880–1890. (Summary) **93a:81205** 81U20 (81S99)

Fudali, Stanisław Georg Cantor (1845–1918). (Polish) *Mathematics at the turn of the twentieth century* (*Polish*) (*Jaworze*, 1988), 140–148, *Prace Nauk. Uniw. Śląsk. Katowic.*, 1253, *Uniw. Śląski, Katowice*, 1992. (Marek Balcerzak) **93k:01066** 01A70

Fudenberg, Drew (*with* Harris, Christopher J.) Evolutionary dynamics with aggregate shocks. (English summary) *J. Econom. Theory* **57** (1992), *no.* 2, 420–441. (Andor Dobó) **93g:92016** 92D15 (90A16)

— (*with* Levine, David K.) Maintaining a reputation when strategies are imperfectly observed. *Rev. Econom. Stud.* **59** (1992), *no.* 3, 561–579. (Jos Potters) **93i:90115** 90D05 (90D40)

— (*with* Levine, David K.) Self-confirming equilibrium. (English summary) *Econometrica* **61** (1993), *no.* 3, 523–545. (Summary) **93m:90114** 90D10

— (*with* Levine, David K.) Steady state learning and Nash equilibrium. (English summary) *Econometrica* **61** (1993), *no.* 3, 547–573. (Summary) **93m:90115** 90D10

Fuentes, Alberto *see* **Fuentes Rodríguez, Alberto**

Fuentes, Olac (*with* Kreinovich, V. Ya.; Quintana, Chris) Genetic algorithms: what fitness scaling is optimal? (English summary) *Cybernet. Systems* **24** (1993), *no.* 1, 9–26. (Chae Y. Lee) **93m:90063** 90C27

Fuentes Rodríguez, Alberto (*with* Arocha Pérez, Jorge Luis; Leont'ev, V. K.; Ruiz Shulcloper, José) On a certain metric in the n-dimensional unit cube. (Spanish. English summary) *An. Inst. Mat. Univ. Nac. Autónoma México* **31** (1991), 1–20 (1992). (Summary) **93e:52033** 52C07

Fuentes y Martínez, G. J. (*with* Macías, A.; Obregón, O.) The Dirac equation in 5-dimensional Wesson gravity. (English summary) *Gen. Relativity Gravitation* **25** (1993), *no.* 6, 549–560. (Summary) **93m:83070** 83D05 (83E15)

Fuertes Martínez, J. Félix (*with* López García, José) Roger Boscovich: precursor of field theory? (Spanish. English summary) Theory, history and foundations of the natural and social sciences (Spanish). *Theoria* (*San Sebastián*) (2) **7** (1992), *no.* 16-18, *B*, 687–701. (Summary) **93k:01029** 01A50

Fufaev, N. A. (*with* Butenin, N. V.) ★ Введение в аналитическую механику. (Russian. English and Russian summaries) [Introduction to analytical mechanics] Second edition. "*Nauka*", *Moscow*, 1991. 256 *pp. ISBN* 5-02-014221-2 (Ll. G. Chambers) **93i:70001** 70–01 (70F25, 70G10, 70H35, 70Hxx)

Fuglede, B. *see* **Approximation by solutions of partial differential equations, 93a:31001**

Fuglister, Frederick J. Singular Moore geometries. (English summary) Proceedings of the Twenty-third Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, FL, 1992). *Congr. Numer.* **88** (1992), 129–138. (Summary) **93j:51009** 51E30 (05B25)

Fuh, C. D. (*with* Athreya, K. B.) Bootstrapping Markov chains. (English summary) *Exploring the limits of bootstrap* (*East Lansing, MI*, 1990), 49–64, *Wiley Ser. Probab. Math. Statist. Probab. Math. Statist., Wiley, New York*, 1992. (Summary) **93h:62153** 62M05 (62G09)

— Bootstrapping the autocorrelation coefficient of finite Markov chains. (English summary) *J. Statist. Plann. Inference* **32** (1992), *no.* 3, 291–302. (Michael R. Chernick) **93j:62209** 62M05 (62F05, 62G07)

— (*with* Athreya, K. B.) Bootstrapping Markov chains: countable case. (English summary) *J. Statist. Plann. Inference* **33** (1992), *no.* 3, 311–331. (Thomas Mikosch) **93j:62113** 62G09 (60F05, 60J10, 62M99)

al-Fuhaid, A. S. *see* **Al-Fuhaid, A. S.**

Fuhr, Richard D. (*with* Kallay, Michael) Monotone linear rational spline interpolation. (English summary) *Comput. Aided Geom. Design* **9** (1992), *no.* 4, 313–319. (Summary) **93g:65018** 65D07 (65D17)

Fuhrken, G. (*with* Richter, M. K.) Polynomial utility. *Econom. Theory* **1** (1991), *no.* 3, 231–249. (Ghanshyam Mehta) **93i:90017** 90A10

Fuhrmann, Daniel R. (*with* Barton, Timothy A.) Covariance structures for multidimensional data. (English summary) *Multidimens. Systems Signal Process.* **4** (1993), *no.* 2, 111–123. (Summary) **93i:94003** 94A12

Fuhrmann, P. A. (*with* Willems, Jan C.) Stability theory for high order equations. Sixth Haifa Conference on Matrix Theory (Haifa, 1990). *Linear Algebra Appl.* **167** (1992), 131–149. (Wolfdietrich Müller) **93b:93078** 93D05 (34D05)

Fuhrmann, Steve W. A decomposition result for a class of polling models. (English summary) *Queueing Systems Theory Appl.* **11** (1992), *no.* 1-2, 109–120. (Summary) **93g:60191** 60K25 (68M20)

— (*with* Sidi, Moshe; Levy, Hanoch) A queueing network with a single cyclically roving server. (English summary) *Queueing Systems Theory Appl.* **11** (1992), *no.* 1-2, 121–144. (Summary) **93g:60198** 60K25 (68M20, 90B22)

— (*with* Iliadis, I.) Moment relationships for queues with Poisson input. (English summary) *Queueing Systems Theory Appl.* **12** (1992), *no.* 3-4, 243–256. (Summary) **93h:60152** 60K25 (90B22)

Fujigaki, M. (*with* Hagiwara, Tomomichi; Araki, Mituhiko) Optimal robust servo controllers with two degrees of freedom and application to the control of electric power generators. (English summary) *Control Theory Adv. Tech.* **8** (1992), *no.* 2, 289–314. 93B36 (93C95)

Fuji-Hara, Ryoh (*with* Kamimura, Shuichi) Orthogonal arrays from Baer subplanes. (English summary) *Utilitas Math.* **43** (1993), 65–70. (Summary) **93m:05036** 05B15 (51E20)

Fujii, Akio On a theorem of Landau. II. *Proc. Japan Acad. Ser. A Math. Sci.* **66** (1990), *no.* 9, 291–296. (From the introduction) **93d:11090** 11M26

— Some observations concerning the distribution of the zeros of the zeta functions. II. *Comment. Math. Univ. St. Paul.* **40** (1991), *no.* 2, 125–231. (Daniel A. Goldston) **93d:11091** 11M26

— An additive problem of prime numbers. II. *Proc. Japan Acad. Ser. A Math. Sci.* **67** (1991), *no.* 7, 248–252. (Daniel A. Goldston) **93b:11132a** 11P32 (11M26)

— An additive problem of prime numbers. III. *Proc. Japan Acad. Ser. A Math. Sci.* **67** (1991), *no.* 8, 278–283. (Daniel A. Goldston) **93b:11132b** 11P32 (11M26)

— Some observations concerning the distribution of the zeros of the zeta functions. III. *Proc. Japan Acad. Ser. A Math. Sci.* **68** (1992), *no.* 5, 105–110. (Daniel A. Goldston) **93m:11087** 11M26

— Some problems of Diophantine approximation in the theory of the Riemann zeta function. *Proc. Japan Acad. Ser. A Math. Sci.* **68** (1992), *no.* 6, 131–136. (D. R. Heath-Brown) **93g:11093** 11M26 (11J86)

— On a problem of Dinaburg and Sinaĭ. *Proc. Japan Acad. Ser. A Math. Sci.* **68** (1992), *no.* 7, 198–203. (Armel Mercier) **93i:11092** 11K50 (11L05)

Fujii, Akira (*with* Deguchi, Tetsuo) IRF models associated with representations of the Lie superalgebras $\mathrm{gl}(m|n)$ and $\mathrm{sl}(m|n)$. *Modern Phys. Lett. A* **6** (1991), *no.* 37, 3413–3426. (Ladislav Šamaj) **93a:82017** 82B23 (17B70, 81R10)

Fujii, Hiroshi (*with* Hiraishi, Hiromi; Hamaguchi, Kiyoharu; Yajima, Shuzo) Regular temporal logic expressively equivalent to finite automata and its application to logic design verification. (English summary) *J. Inform. Process.* **15** (1992), *no.* 1, 129–138. (Summary) **93e:68072** 68Q60 (03B45, 03B70)

Fujii, J. *see* **Fujii, Junji**

Fujii, Junichi Operator means and range inclusion. *Linear Algebra Appl.* **170** (1992), 137–146. (George E. Trapp) **93d:47035** 47A63 (47A05)

— (*with* Fujii, Masatoshi; Izumino, Saichi; Kubo, Fumio; Nakamoto, Ritsuo) Strang's inequality. *Math. Japon.* **37** (1992), *no.* 3, 479–486. (Frank Hansen) **93h:47020** 47A63 (47A10, 47B15)

— (*with* Izumino, Saichi; Nakamura, Masahiro) On Hummel's theorem. (English summary) *Math. Japon.* **37** (1992), *no.* 5, 985–986. (Summary) **93g:47023** 47B07 (47A99)

— (*with* Fujii, Masatoshi; Furuta, Takayuki; Nakamoto, Ritsuo) Norm inequalities related to McIntosh type inequality. *Nihonkai Math. J.* **3** (1992), *no.* 1, 67–72. (Fuad Kittaneh) **93i:47022** 47A63 (47A30, 47B15, 47B20)

— (*with* Fujii, Masatoshi) Theorems of Williams and Prasanna. (English summary) *Math. Japon.* **38** (1993), *no.* 1, 35–37. (Summary) **93k:47013** 47A30 (47A99)

— (*with* Fujii, Masatoshi; Furuta, Takayuki; Nakamoto, Ritsuo) Norm inequalities equivalent to Heinz inequality. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 3, 827–830. (Fumio Hiai) **93i:47008** 47A30 (47B15)

Fujii, Junji Partitions of sample space and smallest pairwise sufficient subfields. *Statist. Decisions* **9** (1991), *no.* 4, 393–400. (Dieter Mussmann) **93e:62015** 62B05 (62B20)

Fujii, Kanji (*with* Ogawa, Naohisa) Quantization of chiral solitons in collective-coordinate approach. (English summary) *Progr. Theoret. Phys. Suppl. No.* 109 (1992), 1–17. (Summary) **93k:81131** 81S99 (81T13)

Fujii, Kazuyuki A relation between instantons of Grassmann σ-models and Toda equations. II. (English summary) *Lett. Math. Phys.* **25** (1992), *no.* 3, 203–211. (R. S. Ward) **93k:58113** 58F07 (58E20, 81T27, 81T40)

Fujii, Kimiko Certain vectors in a G.H. manifold. *Natur. Sci. Rep. Ochanomizu Univ.* **42** (1991), *no.* 2, 15–25. (Marisa Fernández) **93d:53088** 53C56 (53C55)

Fujii, Mamoru (*with* Seki, Hiroyuki; Matsumura, Takashi; Kasami, Tadao) On multiple context-free grammars. *Theoret. Comput. Sci.* **88** (1991), *no.* 2, 191–229. (François Lepage) **93d:68041** 68Q50

Fujii, Masatoshi (*with* Furuta, Takayuki; Kamei, Eizaburo) Operator functions associated with Furuta's inequality. *Functional analysis & related topics* (*Sapporo*, 1990), 148–151, *World Sci. Publishing, River Edge, NJ*, 1991. (Fuad Kittaneh) **93a:47022** 47A63 (47B15)

— (*with* Kamei, Eizaburo) Furuta's inequality for the chaotic order. I, II. *Math. Japon.* **36** (1991), *no.* 4, 603–606, 717–722. (Frank Hansen) **93f:47017** 47A63 (47B15)

— (*with* Fujii, Junichi; Izumino, Saichi; Kubo, Fumio; Nakamoto, Ritsuo) Strang's inequality. *Math. Japon.* **37** (1992), *no.* 3, 479–486. (Frank Hansen) **93h:47020** 47A63 (47A10, 47B15)

— (*with* Yamada, Hideo) Around the Bessel inequality. (English summary) *Math. Japon.* **37** (1992), *no.* 5, 979–983. (Vitali V. Shevchik) **93j:46027** 46C99 (47A99)

— (*with* Fujii, Junichi; Furuta, Takayuki; Nakamoto, Ritsuo) Norm inequalities related to McIntosh type inequality. *Nihonkai Math. J.* **3** (1992), *no.* 1, 67–72. (Fuad Kittaneh) **93i:47022** 47A63 (47A30, 47B15, 47B20)

— (*with* Furuta, Takayuki; Kamei, Eizaburo) Furuta's inequality and its application to Ando's theorem. (English summary) *Linear Algebra Appl.* **179** (1993), 161–169. (Summary) **93j:47026** 47A63 (47B15)

— (*with* Fujii, Junichi) Theorems of Williams and Prasanna. (English summary) *Math. Japon.* **38** (1993), *no.* 1, 35–37. (Summary) **93k:47013** 47A30 (47A99)

— (*with* Kubo, Fumio) Buzano's inequality and bounds for roots of algebraic equations. *Proc. Amer. Math. Soc.* **117** (1993), *no.* 2, 359–361. (From the text) **93d:47014** 47A30 (15A63, 26D99, 47A99)

— (*with* Fujii, Junichi; Furuta, Takayuki; Nakamoto, Ritsuo) Norm inequalities equivalent to Heinz inequality. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 3, 827–830. (Fumio Hiai) **93i:47008** 47A30 (47B15)

— (*with* Furuta, Takayuki; Seo, Yûki) An inequality for some nonnormal operators—extension to normal approximate eigenvalues. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 3, 899–902. (Alan L. Andrew) **93i:47023** 47A63 (47A75, 65F15, 65J10)

Fujii, Michihiko On totally geodesic boundaries of hyperbolic 3-manifolds. *Kodai Math. J.* **15** (1992), *no.* 2, 244–257. (Michael Kapovich) **93i:57018** 57M50 (30F40)

Fujii, Nobuo (*with* Masanao, T.) Second-order necessary conditions for domain optimization problems in elastic structures. I. Surface traction given as a field. *J. Optim. Theory Appl.* **72** (1992), *no.* 2, 355–382. (Bernard Rousselet) **93b:49043** 49Q12 (49K20, 73K40)

— (*with* Masanao, T.) Second-order necessary conditions for domain optimization problems in elastic structures. II. Surface traction dependent on the shape. *J. Optim. Theory Appl.* **72** (1992), *no.* 2, 383–401. (Bernard Rousselet) **93b:49044** 49Q12 (49K20, 73K40)

Fujii, Seizo (*with* Sasaki, Motofumi; Hayakawa, Yoshikazu; Koizumi, Kunio; Iwaki, Toshihiro) Finite-dimensional model reference adaptive control of a class of nonlinear distributed systems with quasi-sliding mode. (English summary) *Internat. J. Systems Sci.* **24** (1993), *no.* 2, 387–402. 93C40 (93C20)

Fujii, Takao (*with* Tsujino, Taro) An inverse LQ based approach to the design of robust tracking controllers for linear uncertain systems. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, I* (*Kobe*, 1991), 391–396, *Mita, Tokyo*, 1992. (*see* **93g:93005**) 93B51 (93D21)

— (*with* Tsujino, Taro) An inverse LQ based approach to the design of robust tracking system with quadratic stability. (English summary) *Robust control* (*Tokyo*, 1991), 106–113, *Lecture Notes in Control and Inform. Sci.*, 183, *Springer, Berlin*, 1992. (*see* **93f:93006**) 93B36 (93B52)

— (*with* Tsujino, Taro; Wei, Ke Hui) On the connection between controllability and stabilizability of linear systems with structural uncertain parameters. (English summary) *Automatica J. IFAC* **29** (1993), *no.* 1, 7–12. (Zheng Zhi Han) **93m:93016** 93B05 (93B36, 93D15)

Fujii, Yoshio (*with* Yamamoto, Sumiyasu; Namikawa, Tetsuroh; Mitsuoka, Motohiro) Three-symbol orthogonal arrays of strength t having $t+2$ constraints. (English summary) *SUT J. Math.* **27** (1991), *no.* 1, 93–111. (Bhagwandas) **93k:05032** 05B15

— (*with* Yamamoto, Sumiyasu; Hyodo, Yoshifumi; Yumiba, Hiromu) Classification of two-symbol orthogonal arrays of strength 2, size 16, 15 (maximal) constraints and index 4. *SUT J. Math.* **28** (1992), *no.* 1, 47–59. (I. M. Chakravarti) **93m:62176** 62K10 (05B15)

— (*with* Yamamoto, Sumiyasu; Hyodo, Yoshifumi; Yumiba, Hiromu) Classification of two-symbol orthogonal arrays of strength 2, size 20 and 19 (maximal) constraints. (English summary) *SUT J. Math.* **28** (1992), *no.* 2, 191–209. (Summary) **93k:62158** 62K10 (05B15)

Fujikawa, Kazuo Reparametrization BRS cohomology in two-dimensional gravity and noncritical string theories. *Superstrings '89* (*Trieste*, 1989), 457–486, *World Sci. Publishing, River Edge, NJ*, 1990. (Alexander W. Smith) **93c:81246** 81T70 (81T30, 81T40)

Fujikawa, T. A method of discretization in the boundary element method for analysis of a sound field having adjacent elements. *Theory and applications of boundary element methods* (*Beijing*, 1991), 229–234, *Internat. Acad. Publ., Beijing*, 1991. (*see* **93b:65008**) 76M15 (65N38, 76Q05)

Fujikoshi, Yasunori (*with* Rao, Calyampudi Radhakrishna) Selection of covariables in the growth curve model. *Biometrika* **78** (1991), *no.* 4, 779–785. (M. S. Srivastava) **93e:62147** 62H15

— (*with* Yokoyama, Takahisa) Tests for random-effects covariance structures in the growth curve model with covariates. *Hiroshima Math. J.* **22** (1992), *no.* 1, 195–202. (M. S. Srivastava) **93d:62110** 62H15 (62H10)

— On confidence regions in canonical discriminant analysis. *Hiroshima Math. J.* **22** (1992), *no.* 3, 469–477. (S. John) **93k:62119** 62H10 (62H30)

— (*with* Watamori, Yoko) Tests for the mean direction of the Langevin distribution with large concentration parameter. (English summary) *J. Multivariate Anal.* **42** (1992), *no.* 2, 210–225. (Wanxi Chen) **93h:62112** 62H15 (62E20)

Fujimoto, Hirotaka On the Gauss curvature of minimal surfaces. *J. Math. Soc. Japan* **44** (1992), *no.* 3, 427–439. (Kichoon Yang) **93d:53009** 53A10

Fujimura, Yushi (*with* Tajiri, Masayoshi; Murakami, Youichi) Resonant interactions between Y-periodic soliton and algebraic soliton: solutions to the Kadomtsev-Petviashvili

equation with positive dispersion. *J. Phys. Soc. Japan* **61** (1992), *no.* 3, 783–790. (Summary) **93d:35138** 35Q51

Fujinaka, T. (*with* Shibata, H.; Fukudome, Y.; Furumoto, N.) Some aspects on the accuracy of system identification. (English summary) *Identification and system parameter estimation* 1991, *Vol.* 1,2 (*Budapest*, 1991), 737–741, *IFAC Sympos. Ser.*, 3, *Pergamon, Oxford*, 1992. (*see* **93h:93009**) 93B30

Fujino, Seiji Modified incomplete decomposition method for time dependent problems. (Japanese. English summary) *Parallel processing for matrix computation* (*Yokohama*, 1991), 28–35, *Adv. Numer. Methods Large Sparse Sets Linear Equations*, 7, *Keio Univ., Yokohama*, 1991. (*see* **93e:65040**) 65M55

— (*with* Zhang, Shao Liang; Oyanagi, Yoshio) Conjugate residual method for solving singular systems. (Japanese) *Parallel processing for matrix computation* (*Yokohama*, 1991), 50–57, *Adv. Numer. Methods Large Sparse Sets Linear Equations*, 7, *Keio Univ., Yokohama*, 1991. (*see* **93e:65040**) 65F10 (65M06)

— (*with* Zhang, Shao Liang) Analysis on convergence behavior of the CGS and BI-CG STAB methods. (English summary) *Computer arithmetic and enclosure methods* (*Oldenburg*, 1991), 381–390, *North-Holland, Amsterdam*, 1992. (*see* **93i:65006**) 65F10

— (*with* Zhang, Shao Liang) Visualization of convergence behavior of Bi-CG STAB method. II. (Japanese. English summary) *Parallel processing for scientific computing* (*Yokohama*, 1992), 40–46, *Adv. Numer. Methods Large Sparse Sets Linear Equations*, 8, *Keio Univ., Yokohama*, 1992. (*see* **93f:65027**) 65F10 (65M06)

Fujioka, Jorge (*with* Espinosa, Aurea) Similarity reductions of a simplified version of the Hirota-Satsuma equation by means of the Clarkson-Kruskal method. *J. Phys. Soc. Japan* **60** (1991), *no.* 12, 4071–4075. (Summary) **93c:35134** 35Q35 (58F37)

Fujioka, Ryosuke (*with* Ishibuchi, Hisao; Tanaka, Hideo) Possibility and necessity pattern classification using neural networks. (English summary) *Fuzzy Sets and Systems* **48** (1992), *no.* 3, 331–340. 68T05

Fujisaka, Hirokazu A contribution to statistical nonlinear dynamics. *From phase transitions to chaos*, 434–448, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93c:58134** 58F13

— (*with* Just, Wolfram) On the scaling laws of higher-order q-phase transitions. *J. Phys. A* **25** (1992), *no.* 12, 3567–3592. (Summary) **93g:82070** 82C26 (58F40)

— (*with* Inoue, Masayoshi; Anai, Hirokazu; Hata, Hiroki) Synchronized states in asymmetric coupled map systems. *Progr. Theoret. Phys.* **87** (1992), *no.* 1, 103–110. (Summary) **93g:58075** 58F10 (58F14)

Fujisaka, Hisato (*with* Sato, Chikara) An algebraic analysis for bifurcation problems. *Electron. Comm. Japan Part III Fund. Electron. Sci.* **74** (1991), *no.* 9, 22–32 (1992). (Summary) **93f:34064** 34C23 (13P10, 34–04, 34A50, 58F14, 68Q40)

— (*with* Sato, Chikara) Analysis of periodic oscillations with computer algebra. *Electron. Comm. Japan Part III Fund. Electron. Sci.* **75** (1992), *no.* 2, 92–106. (D. Z. Spicer) **93h:34003** 34–04 (34A47, 34C23, 68Q40)

Fujisaki, H. Comments on the thermal Virasoro amplitude. *Europhys. Lett.* **19** (1992), *no.* 2, 73–77. (Piret Kuusk) **93g:81124** 81T30 (81U20, 81U30)

Fujisaki, Tsunehiro (*with* Yamato, Hajime) A probabilistic approach to expressions of Stirling numbers of the first kind. *Rep. Fac. Sci. Kagoshima Univ. Math. Phys. Chem. No.* 24 (1991), 27–31. (F. T. Howard) **93d:11025** 11B73 (05A10, 11K99)

Fujisaki, Y. (*with* Yasuda, Kazunori) State space parametrization of robust servo systems. *Recent advances in mathematical theory of systems, control, networks and signal processing, I* (*Kobe*, 1991), 397–402, *Mita, Tokyo*, 1992. (*see* **93g:93005**) 93B36 (93D21)

Fujise, Tetsuro (*with* Murao, Hirokazu; Kobayashi, Hidetsune) Evaluation of symbolic expression of the first derivative of determinant. (English summary) *J. Inform. Process.* **15** (1992), *no.* 2, 195–201. 68Q40

— (*with* Murao, Hirokazu; Kobayashi, Hidetsune) On factorizing the symbolic U-resultant—application of the ddet operator. (English summary) *J. Symbolic Comput.* **15** (1993), *no.* 2, 123–142. (Summary) **93m:68095** 68Q40

Fujishige, Satoru (*with* Zhang, Xiaodong) New algorithms for the intersection problem of submodular systems. (English summary) *Japan J. Indust. Appl. Math.* **9** (1992), *no.* 3, 369–382. (Rainer Burkard) **93m:90032** 90B10 (68R05, 90C27)

Fujishiro, Takehiko T. (*with* Hayashi, Mitsuo J.) Review of the $N = 2$ superconformal field theory. *Proc. Fac. Sci. Tokai Univ.* **25** (1990), 39–68. (Vladimir Souček) **93b:81248** 81T40 (11F22, 17B67, 17B81, 81–02, 81R10)

Fujishiro, Yuko A new approach to the decision theory of model selections. (English summary) *SUT J. Math.* **28** (1992), *no.* 2, 165–189. (Summary) **93m:62017** 62C05

Fujita, Hiroshi P. Mansfield and Solovay type results on covering plane sets by lines. *Nagoya Math. J.* **124** (1991), 145–155. (Jakub Jasiński) **93a:03051** 03E15 (04A15)

Fujita, Hiroyuki The minimum discriminant of totally real algebraic number fields of degree 9 with cubic subfields. II. *Saitama Math. J.* **9** (1991), 9–18. (Michel Olivier) **93j:11072** 11R29 (11R16, 11R80, 11Y40)

— The minimum discriminant of totally real algebraic number fields of degree 9 with cubic subfields. (English summary) *Math. Comp.* **60** (1993), *no.* 202, 801–810. (Michel Olivier) **93h:11118** 11R16 (11R29, 11R80, 11Y40)

Fujita, Hisaaki A construction of tilting modules associated with a simple module. *J. Algebra* **145** (1992), *no.* 1, 224–230. (Ibrahim Assem) **93a:16012** 16G99 (16D90)

— (*with* Yoshimura, Hiroshi) A criterion for isomorphic tiled orders over a local Dedekind domain. *Tsukuba J. Math.* **16** (1992), *no.* 1, 107–111. (Juliusz Brzeziński) **93i:16023** 16G30

Fujita, Ken-etsu (*with* Tonino, Hans) On the adequacy of representing higher order intuitionistic logic as a pure type system. *Ann. Pure Appl. Logic* **57** (1992), *no.* 3, 251–276. (Edmund Robinson) **93c:03011** 03B15 (03B40, 03F55)

Fujita, Masayuki (*with* Uchida, Kenko) Controllers attenuating disturbances and initial-uncertainties for time-varying systems. (English summary) *Differential games—developments in modelling and computation* (*Espoo*, 1990), 187–196, *Lecture Notes in Control and Inform. Sci.*, 156, *Springer, Berlin*, 1991. (Kathryn E. Lenz) **93j:93047** 93B36 (90D25, 93B51, 93C50, 93E10)

— (*with* Uchida, Kenko) H^2 optimality of the H^∞ central controller for time varying systems. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, I* (*Kobe*, 1991), 147–152, *Mita, Tokyo*, 1992. (*see* **93g:93005**) 93B36

— (*with* Uchida, Kenko) H^∞ state feedback with cheap control. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, I* (*Kobe*, 1991), 275–280, *Mita, Tokyo*, 1992. (Frank Uhlig) **93j:93041** 93B36 (93B52)

— (*with* Matsumura, F.; Zhou, T.) Robust control of a MIMO flexible magnetic suspension system—an experimental case study for magnetic bearing. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, II* (*Kobe*, 1991), 585–590, *Mita, Tokyo*, 1992. (*see* **93g:93006**) 93C95

— (*with* Sugie, Toshiharu; Hara, Shinji) H_∞-suboptimal controller design of robust tracking systems. *Robust control* (*Tokyo*, 1991), 162–169, *Lecture Notes in Control and Inform. Sci.*, 183, *Springer, Berlin*, 1992. (*see* **93f:93006**) 93B36

— (*with* Uchida, Kenko) Finite horizon H^∞ control problems with terminal penalties. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 11, 1762–1767. (Summary) **93i:93049** 93B36

— Robust performance and μ-synthesis. (Japanese) *Systems Control Inform.* **37** (1993), *no.* 2, 93–101. 93B36

Fujita, Shigeji (*with* Godoy, S.) Reflection principles for biased correlated walks. Simple applications. (English summary) *J. Math. Phys.* **33** (1992), *no.* 9, 2998–3003. 60J15 (82C41)

— (*with* Godoy, S.) Newtonian equations of motion for a Bloch electron. (Spanish summary) *Rev. Mexicana Fís.* **38** (1992), *no.* 1, 134–141. (Kuppuswamy Porsezian) **93g:82105** 82D35 (70D05, 78A15)

Fujita, T. (*with* Tomachi, T.) Fermion condensate and the spectrum of massive Schwinger model in Bogoliubov transformed vacuum. (English summary) *Ann. Physics* **223** (1993), *no.* 2, 197–215. 81V05 (81T10)

Fujita, Takao ★ Classification theories of polarized varieties. London Mathematical Society Lecture Note Series, 155. *Cambridge University Press, Cambridge*, 1990. xiv+205 *pp. ISBN* 0-521-39202-0 (Elvira Laura Livorni) **93e:14009** 14C20 (14J40, 14J60)

— On adjoint bundles of ample vector bundles. *Complex algebraic varieties* (*Bayreuth*, 1990), 105–112, *Lecture Notes in Math.*, 1507, *Springer, Berlin*, 1992. (Laurent Manivel) **93j:14052** 14J60 (14J45)

— On Kodaira energy and adjoint reduction of polarized manifolds. *Manuscripta Math.* **76** (1992), *no.* 1, 59–84. (Marco Andreatta) **93i:14032** 14J10 (14E30)

Fujita, Yasuhiro A probabilistic approach to Volterra equations in Banach spaces. *Differential Integral Equations* **5** (1992), *no.* 4, 769–776. (Elaïdi Hanebaly) **93g:45016** 45N05 (47D03, 47N20, 60H20)

— Energy inequalities for integro-partial differential equations with Riemann-Liouville integrals. (English summary) *SIAM J. Math. Anal.* **23** (1992), *no.* 5, 1182–1188. (Tie Hu Qin) **93h:45004** 45K05 (26A33, 35R10)

Fujiwara, Daisuke The stationary phase method with an estimate of the remainder term on a space of large dimension. *Nagoya Math. J.* **124** (1991), 61–97. (Hideo Soga) **93d:58166** 58G18 (35Q40, 35S30, 41A80, 58D30, 81S40)

— 1991 Japanese Mathematical Society Fall Prize awarded to Akihiro Tsuchiya (Nagoya Univ., Science Dept.) for his research on the structure of conformal field theories. (Japanese) *Sūgaku* **44** (1992), *no.* 2, 161. 01A70

— Award of the Spring, 1992 prize of the Mathematical Society of Japan to Haruzo Hida (University of California) for his work on p-adic L-functions of algebraic groups and p-adic Hecke rings. (Japanese) *Sūgaku* **44** (1992), *no.* 4, 343. (Editors) **93m:01070a** 01A70

okuno-Fujiwara, Masahiro *see* **Okuno-Fujiwara, Masahiro**

Fujiwara, Takanori (*with* Igarashi, Yuji; Kubo, J.) Anomaly in the Schrödinger representation of QFT. (English summary) *Nuclear Phys. B* **387** (1992), *no.* 2, 447–463. (Silvio Paolo Sorella) **93m:81142** 81T50 (81T70)

Fujiwara, Toru (*with* Kasami, Tadao; Takata, Toyoo; Lin, Shu) On the optimum bit orders with respect to the state complexity of trellis diagrams for binary linear codes. (English summary) *IEEE Trans. Inform. Theory* **39** (1993), *no.* 1, 242–245. (Summary) **93m:94027** 94B05

Fujiwara, Tsukasa (*with* Kunita, Hiroshi) Limit theorems for stochastic difference-differential equations. *Nagoya Math. J.* **127** (1992), 83–116. (Leszek Słomiński) **93m:60132** 60H20 (60F17, 60H10)

Fujiwara, Tsuyoshi² Varieties of small Kodaira dimension whose cotangent bundles are semiample. *Compositio Math.* **84** (1992), *no.* 1, 43–52. (Daniel Mall) **93j:14041** 14J10 (14J60)

Fujiwara, Yoshihisa (*with* Higuchi, Saburo; Hosoya, Akio; Mishima, Takashi; Siino, Masaru) Nucleation of a universe in $(2 + 1)$-dimensional gravity with a negative cosmological constant. *Phys. Rev. D* (3) **44** (1991), *no.* 6, 1756–1762. (Ruth M. Williams) **93a:83017a** 83C45

— (*with* Higuchi, Saburo; Hosoya, Akio; Mishima, Takashi; Siino, Masaru) Topology changes in $(2 + 1)$-dimensional quantum gravity. *Phys. Rev. D* (3) **44** (1991), *no.* 6, 1763–1768. (Ruth M. Williams) **93a:83017b** 83C45

— (*with* Higuchi, Saburo; Hosoya, Akio; Mishima, Takashi; Siino, Masaru) Point particles as defects in $(2 + 1)$-dimensional quantum gravity. *Classical Quantum Gravity* **9** (1992), *no.* 4, 867–872. (Michael O. Katanaev) **93b:83022** 83C45

Fujiwara, Yuzuru (*with* Chen, Hanxiong; Xu, Yu; Yamaguchi, Kazunori; Kitagawa, Hiroyuki; Ohbo, Nobuo) Decomposition—an approach for optimizing queries including ADT functions. *Inform. Process. Lett.* **43** (1992), *no.* 6, 327–333. 68P15

Fuka, M. (*with* Becker, Wilhelm; McIver, J. K.; Orszag, M.; Ramirez, Ricardo) Hamiltonian chaos in a laser damage model. (English summary) *Instabilities and nonequilibrium structures, III* (*Valparaíso*, 1989), 43–57, *Math. Appl.*, 64, *Kluwer Acad. Publ., Dordrecht*, 1991. (Helmut Rüssmann) **93g:58125** 58F27 (58F40, 78–05)

Fukai, T. (*with* Shiino, M.) Comparative study of spurious-state distribution in analogous neural networks and the Boltzmann machine. *J. Phys. A* **25** (1992), *no.* 10, 2873–2887. (Min Ping Qian) **93g:82074** 82C32

— (*with* Shiino, M.) Study of self-inhibited analogue neural networks using the self-consistent signal-to-noise analysis. (English summary) *J. Phys. A* **25** (1992), *no.* 18, 4799–4811. (Summary) **93g:92004** 92B20 (82C32)

Fukami, Satoru (*with* Yoneda, Minoru; Grabisch, Michel) Interactive determination of a utility function represented as a fuzzy integral. (English summary) *Inform. Sci.* **71** (1993), *no.* 1-2, 43–64. (Summary) **93m:90013** 90A10 (04A72)

Fukao, Takeshi (*with* Harada, Tetsuya; Wu, Jijun) Continuous modelling of discrete optimization problems. (English summary) *System modelling and optimization* (*Zurich*, 1991), 165–174, *Lecture Notes in Control and Inform. Sci.*, 180, *Springer, Berlin*, 1992. (*see* **93e:90003**) 90C27 (90C10)

Fukaya, Kenji Collapsing Riemannian manifolds and its applications. *Proceedings of the International Congress of Mathematicians, Vol. I, II (Kyoto, 1990)*, 491–500, *Math. Soc. Japan, Tokyo*, 1991. (Takao Yamaguchi) **93e:53049** 53C23 (53–02)
— (*with* Yamaguchi, Takao) The fundamental groups of almost non-negatively curved manifolds. *Ann. of Math.* (2) **136** (1992), *no.* 2, 253–333. (Viktor Schroeder) **93h:53041** 53C23 (53C21)
— (*with* Cheeger, Jeff; Gromov, Mikhael L.) Nilpotent structures and invariant metrics on collapsed manifolds. *J. Amer. Math. Soc.* **5** (1992), *no.* 2, 327–372. (Viktor Schroeder) **93a:53036** 53C23 (53C20)
Fukuda, Komei (*with* Avis, David) A pivoting algorithm for convex hulls and vertex enumeration of arrangements and polyhedra. ACM Symposium on Computational Geometry (North Conway, NH, 1991). *Discrete Comput. Geom.* **8** (1992), *no.* 3, 295–313. (Henk J. A. M. Heijmans) **93h:68137** 68U05 (52B55, 65Y25)
— (*with* Terlaky, Tamás) Linear complementarity and oriented matroids. *J. Oper. Res. Soc. Japan* **35** (1992), *no.* 1, 45–61. (Summary) **93j:90115** 90C33 (90C10, 90C27)
— (*with* Matsui, Tomomi) Finding all minimum-cost perfect matchings in bipartite graphs. *Networks* **22** (1992), *no.* 5, 461–468. (Summary) **93c:05104** 05C85 (05C70, 68Q20, 68R05)
— (*with* Handa, Keiichi) Antipodal graphs and oriented matroids. (English summary) Graph theory and combinatorics (Marseille-Luminy, 1990). *Discrete Math.* **111** (1993), *no.* 1-3, 245–256. (Summary) **93j:05127** 05C75 (05B35)
— (*with* Cordovil, Raul) Oriented matroids and combinatorial manifolds. (English summary) *European J. Combin.* **14** (1993), *no.* 1, 9–15. (Egon Schulte) **93m:52016** 52B40 (05B35, 05C40, 52B70)
Fukuda, Reijiro (*with* Sumino, Masayoshi; Higurashi, Hitoshi) The generating functional of the nonequilibrium process. The case of macrovariable. *Progr. Theoret. Phys.* **86** (1991), *no.* 3, 617–651. (Claus Montonen) **93g:82063** 82C10
— (*with* Komachiya, M.) On-shell expansion and different vacua. *Phys. Rev. D* (3) **45** (1992), *no.* 12, 4724–4727. 81T15
Fukuda, Shigetaka A note on T. Ando's paper "Pluricanonical systems of algebraic varieties of general type of dimension ≤ 5" [in *Algebraic geometry (Sendai, 1985)*, 1–10, Adv. Stud. Pure Math., 10, North-Holland, Amsterdam, 1987; MR 90c:14024]. *Tokyo J. Math.* **14** (1991), *no.* 2, 479–487. (Harry D'Souza) **93g:14011** 14C20 (14E05)
Fukuda, T. *see* **Fukuda, Tokuo**
Fukuda, Takashi Computation of unit group for Z_3-extensions of real quadratic fields. *Bull. Yamagata Univ. Natur. Sci.* **13** (1992), *no.* 1, 27–33. (Robert Gold) **93g:11108** 11R23 (11R27, 11Y40)
Fukuda, Tokuo Statistical properties of fuzzy stochastic processes. (English summary) *Systems and control*, 61–72, *Mita, Tokyo*, 1991. (*see* **93f:93007**) 60G99
— (*with* Sunahara, Yoshifumi) Fuzzy stochastic processes and their applications to parameter identification. (English summary) *Identification and system parameter estimation* 1991, *Vol.* 1,2 (*Budapest*, 1991), 871–876, *IFAC Sympos. Ser.*, 3, *Pergamon, Oxford*, 1992. (*see* **93h:93009**) 93E03 (93E12)
Fukuda, Toshio (*with* Watanabe, Keigo; Tzafestas, Spyros G.) An adaptive control for CARMA systems using linear neural networks. (English summary) *Mathematics of the analysis and design of process control (Dublin, 1991/Lille, 1991)*, 525–534, *North-Holland, Amsterdam*, 1992. (*see* **93g:93004**) 93C40 (68T05, 92B20)
— (*with* Watanabe, Keigo; Tzafestas, Spyros G.) An adaptive control for CARMA systems using linear neural networks. (English summary) *Internat. J. Control* **56** (1992), *no.* 2, 483–497. 93C40 (93E35)
— (*with* Watanabe, Keigo; Tzafestas, Spyros G.) Sliding mode control and variable structure system observer as a dual problem for systems with nonlinear uncertainties. (English summary) *Internat. J. Systems Sci.* **23** (1992), *no.* 11, 1991–2001. (Summary) **93h:93016** 93B12 (93C10, 93C41)
Fukuda, Toyoo (*with* Tsukiyama, Makoto; Mori, Kazuyuki) Dynamic scheduling with Petri-net modeling and constraint-based schedule editing for flexible manufacturing systems. (English summary) *System modelling and optimization (Zurich, 1991)*, 913–922, *Lecture Notes in Control and Inform. Sci.*, 180, *Springer, Berlin*, 1992. (*see* **93e:90003**) 90B35
Fukudome, Kimitoshi (*with* Furuya, Ken'ichi; Date, Hikaru) Effects of finite register length in the fast Hartley transform. *Electron. Comm. Japan Part III Fund. Electron. Sci.* **75** (1992), *no.* 1, 76–86. 65T20
Fukudome, Y. (*with* Shibata, H.; Fujinaka, T.; Furumoto, N.) Some aspects on the accuracy of system identification. (English summary) *Identification and system parameter estimation* 1991, *Vol.* 1,2 (*Budapest*, 1991), 737–741, *IFAC Sympos. Ser.*, 3, *Pergamon, Oxford*, 1992. (*see* **93h:93009**) 93B30
Fukugita, M. *see* **Lattice 91, 93d:81130**
Fukuhara, Kenzo Relations among fibres and cofibres of induced maps derived from a homotopy commutative square. *Mem. College Ed. Akita Univ. Natur. Sci. No.* 43 (1992), 37–52. (John F. Oprea) **93f:55011** 55P99
Fukuhara, Nobuhiko (*with* Higaki, Nobuo; Kuriyagawa, Akira) Mode-matching analysis of electromagnetic waves scattered by a rotating dielectric cylinder. (Japanese. English summary) *Rep. Fac. Engrg. Oita Univ. No.* 24 (1991), 27–35. (Summary) **93f:78012** 78A45 (78–08)
Fukui, Seiichi Linear combinations of starlike and convex functions of order α with complex coefficients. (English summary) *Univalent functions, fractional calculus, and their applications (Kōriyama, 1988)*, 39–48, *Ellis Horwood Ser. Math. Appl., Horwood, Chichester*, 1989. (Summary) **93h:30006** 30C45
Fukui, Toshizumi (*with* Tani, Katsunori) On truncation scheme for time marching BEM in two-dimensional wave problems. *Theory and applications of boundary element methods (Beijing, 1991)*, 103–110, *Internat. Acad. Publ., Beijing*, 1991. (*see* **93b:65008**) 65N38
— Modified analytic trivialization via weighted blowing up. *J. Math. Soc. Japan* **44** (1992), *no.* 3, 455–459. (Piotr Jaworski) **93e:32043** 32S15 (32S45, 58C27)
Fukuma, Masafumi (*with* Kawai, Hikaru; Nakayama, Ryuichi) Infinite-dimensional Grassmannian structure of two-dimensional quantum gravity. *Comm. Math. Phys.* **143** (1992), *no.* 2, 371–403. (Andrei D. Mironov) **93j:81030** 81R10 (58B25, 58F07, 81T40)
Fukuma, Yoshiaki (*with* Hosono, Kiyoshi) Cover and partition of pre-maximal plane graphs. *Proc. Fac. Sci. Tokai Univ.* **26** (1991), 5–13. (Peter Mihók) **93b:05133** 05C70 (05C85)
Fukumi, Toshio White-noise calculation of annihilation and creation operators in stochastic mechanics. (English summary) *J. Math. Phys.* **33** (1992), *no.* 11, 3822–3825. (Gennady Berman) **93m:81016** 81P20
Fukumoto, Satoshi (*with* Kaio, Naoto; Osaki, Shunji) Optimal checkpointing policies using the checkpointing density. (English summary) *J. Inform. Process.* **15** (1992), *no.* 1, 87–92. 90C90
Fukunaga, Kunio (*with* Guo-Li, Ao; Cui, Yu Jun; Izumi, Masao) Structural representation of the outline and its application. (English summary) *Bull. Univ. Osaka Prefect. Ser. A* **40** (1991), *no.* 1, 43–59. 94A12
Fukuoka, N. (*with* Ishibuchi, Hisao; Tanaka, Hideo) Discriminant analysis of fuzzy data and its application to a gas sensor system. (English summary) *Japanese J. Fuzzy Theory Systems* **1** (1989), *no.* 1, 27–46 (1992). 90C90 (04A72, 90C70)
Fukushima, M. *see* **Fukushima, Masatoshi**
Fukushima, Masao (*with* Ibaraki, Satoru; Ibaraki, Toshihide) Dual-based Newton methods for nonlinear minimum cost network flow problems. *J. Oper. Res. Soc. Japan* **34** (1991), *no.* 3, 263–286. (Edward Minieka) **93f:90172** 90C35 (90B10)
— (*with* Takazawa, Keiichi; Ohsaki, Shuichi; Ibaraki, Toshihide) Successive linearization methods for large-scale nonlinear programming problems. *Japan J. Indust. Appl. Math.* **9** (1992), *no.* 1, 117–132. (Nada I. Djuranović-Miličić) **93a:90062** 90C30 (65K05)
Fukushima, Masatoshi (*with* Sato, Ken-iti; Taniguchi, Setsuo) On the closable parts of pre-Dirichlet forms and the fine supports of underlying measures. *Osaka J. Math.* **28** (1991), *no.* 3, 517–535. (T. J. Lyons) **93e:31012** 31C25
— (*with* Le Jan, Yves) On quasi-supports of smooth measures and closability of pre-Dirichlet forms. *Osaka J. Math.* **28** (1991), *no.* 4, 837–845. (T. J. Lyons) **93e:31013** 31C25
— (*with* Albeverio, Sergio; Hansen, Wolfhard; Ma, Zhi Ming; Röckner, Michael) An invariance result for capacities on Wiener space. *J. Funct. Anal.* **106** (1992), *no.* 1, 35–49. (Denis Feyel) **93f:28013** 28C20 (31C25, 46G12, 60H07)
— (*with* Jacob, Niels; Kaneko, Hiroshi[2]) On $(r, 2)$-capacities for a class of elliptic pseudo differential operators. *Math. Ann.* **293** (1992), *no.* 2, 343–348. (Yves Le Jan) **93i:31006** 31C25 (35C15, 35S99)
— *see also* **Probability theory and mathematical statistics, 93k:60008**
Fukutake, Takayoshi On $(\mathcal{I}_i, \mathcal{J}_j)$-Baire spaces. *Bull. Fukuoka Univ. Ed. III* **41** (1992), 35–40. 54E55 (54E52)
Fukuyama, Takeshi (*with* Kamimura, Kiyoshi; Makita, Shinobu) Metric from nonmetric action of gravity. (English summary) *Internat. J. Modern Phys. D* **1** (1992), *no.* 2, 363–370. (Peter Peldán) **93k:83007** 83C05
Fuller, A. T. *see* **Lyapunov, A. M., 93e:01035**
Fuller, K. R. (*with* Saorín Castaño, Manuel) On the finitistic dimension conjecture for Artinian rings. *Manuscripta Math.* **74** (1992), *no.* 2, 117–132. (Birge Zimmermann-Huisgen) **93f:16011** 16E10 (16P20)
— (*with* Burgess, W. D.) Left almost serial rings and the Cartan determinant conjecture. (English summary) *Methods in module theory (Colorado Springs, CO, 1991)*, 19–28, *Lecture Notes in Pure and Appl. Math.*, 140, *Dekker, New York*, 1993. (Mary H. Wright) **93k:16040** 16P20
Fuller, Norma (*with* Fisher, J. Chris) How to inscribe a dodecahedron in a sphere. *Fivefold symmetry*, 167–170, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93i:52002**) 51M15
Fullér, Róbert On the generalized method-of-case inference rule. Third IFSA-EC and EURO-WGFS Workshop on Fuzzy Sets (Visegrád, 1990). *Ann. Univ. Sci. Budapest. Sect. Comput.* **12** (1991), 107–112. (Summary) **93b:03036** 03B52
— (*with* Fedrizzi, Mario) Stability in possibilistic linear programming with continuous fuzzy number parameters. *Fuzzy Sets and Systems* **47** (1992), *no.* 2, 187–191. (Zheng-Shu Huang) **93g:90088** 90C70 (04A72)
— (*with* Keresztfalvi, Tibor) t-norm-based addition of fuzzy intervals. (English summary) *Fuzzy Sets and Systems* **51** (1992), *no.* 2, 155–159. (W. J. Kotzé) **93k:04004** 04A72 (26E50)
— (*with* Zimmermann, H.-J.) On computation of the compositional rule of inference under triangular norms. (English summary) *Fuzzy Sets and Systems* **51** (1992), *no.* 3, 267–275. (Summary) **93k:03026** 03B52
— (*with* Triesch, Eberhard) A note on the law of large numbers for fuzzy variables. (English summary) *Fuzzy Sets and Systems* **55** (1993), *no.* 2, 235–236. 60F99 (04A72)
Fuller, Robert W. (*with* Byron, Frederick W., Jr.) ★ Mathematics of classical and quantum physics. Corrected reprint of the 1969 (Vol. 1) and 1970 (Vol. 2) originals. *Dover Publications, Inc., New York*, 1992. x+661 *pp. ISBN* 0-486-67164-X (Editors) **93h:00001** 00A05 (00A06)
Fuller, William Roger A discussion of the quasi-Euler-Lagrange equation. *SIAM J. Appl. Math.* **52** (1992), *no.* 3, 870–882. (Summary) **93b:35128** 35Q72 (70H35)
Fulling, Stephen A. (*with* Gilkey, Peter B.; Branson, Thomas P.) Heat equation asymptotics of "nonminimal" operators on differential forms. *J. Math. Phys.* **32** (1991), *no.* 8, 2089–2091. (Summary) **93d:58156** 58G11
— (*with* Molzahn, F. H.; Osborn, T. A.) Multi-scale semiclassical approximations for Schrödinger propagators on manifolds. *Ann. Physics* **214** (1992), *no.* 1, 102–141. (H. Hogreve) **93j:81020** 81Q20 (35Q40, 81T20)
— (*with* King, Ronald Curtis; Wybourne, B. G.; Cummins, C. J.) Normal forms for tensor polynomials. I. The Riemann tensor. *Classical Quantum Gravity* **9** (1992), *no.* 5, 1151–1197. (J. F. Cornwell) **93j:53084** 53C80 (20C30, 22E70, 81T15, 83C47)
— *see also* **Forty more years of ramifications: spectral asymptotics and its applications, 93d:58003**
Fullwood, D. T. A new topology on space-time. *J. Math. Phys.* **33** (1992), *no.* 6, 2232–2241. (J. K. Beem) **93b:53053** 53C50 (53C80, 83C99)
Fulmek, Markus (*with* Fleischner, Herbert) $P(D)$-compatible Eulerian trails in digraphs and a new splitting lemma. *Contemporary methods in graph theory*, 291–303, *Bibliographisches Inst., Mannheim*, 1990. (Feng Tian) **93a:05083** 05C45
Fülöp, Ágnes Determination of fractal dimensions and generalized entropies for strange attractors. (English summary) *Chaotic dynamics (Patras, 1991)*, 49–52, *NATO Adv. Sci. Inst. Ser. B Phys.*, 298, *Plenum, New York*, 1992. (*see* **93i:58004**) 58F13 (28D20)
Fülöp, Géza Transformations and BRST-charges in $(2+1)$-dimensional gravitation. (English summary) *Modern Phys. Lett. A* **7** (1992), *no.* 37, 3495–3502. (Viqar Husain) **93j:81101** 81T70 (81V17, 83C05)
Fülöp, J. A semi-infinite programming method for approximating load duration curves by polynomials. (English and German summaries) *Computing* **49** (1992), *no.* 3, 201–212. (Summary) **93j:90116** 90C33 (65D15, 90C90)

Fülöp, Zoltán Decidability questions in monoids generated by tree transformation classes. (Hungarian. English and Hungarian summaries) *Alkalmaz. Mat. Lapok* **15** (1990/91), *no.* 3-4, 219–266. (Summary) **93g:68094** 68Q70 (68Q20)

Fulton, Chandler Tessellations. *Amer. Math. Monthly* **99** (1992), *no.* 5, 442–445. (A. Florian) **93f:52023** 52C20 (05B45)

Fulton, Scott R. A semi-implicit spectral method for the anelastic equations. (English summary) *J. Comput. Phys.* **106** (1993), *no.* 2, 299–305. (Summary) **93m:86002** 86A10 (86–08)

Fulton, William (*with* Harris, Joseph Daniel) ★ Representation theory. A first course. Graduate Texts in Mathematics, 129. Readings in Mathematics. *Springer-Verlag, New York*, 1991. xvi+551 *pp. ISBN* 0-387-97527-6; 0-387-97495-4 (James E. Humphreys) **93a:20069** 20G05 (17B10, 20G20, 22E46)

— Flags, Schubert polynomials, degeneracy loci, and determinantal formulas. *Duke Math. J.* **65** (1992), *no.* 3, 381–420. (Piotr Pragacz) **93e:14007** 14C17 (14M12, 14M15)

— *see also* **Algebraic geometry, 93d:14004**

Funahashi, Yasuyuki (*with* Auba, T.) The structure of all-pass matrices that satisfy directional interpolation requirements. *IEEE Trans. Automat. Control* **36** (1991), *no.* 12, 1485–1489. (Yun Zou) **93d:93029** 93B36 (15A54, 41A05)

— (*with* Auba, T.) The structure of all-pass matrices that satisfy two-sided interpolation requirements. *IEEE Trans. Automat. Control* **36** (1991), *no.* 12, 1489–1493. (Yun Zou) **93d:93030** 93B36 (15A54, 41A05)

— (*with* Yamada, Manabu) Explicit parametrization of state deadbeat controllers. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 10, 1584–1588. (Summary) **93g:93013** 93B05 (93C55)

— (*with* Auba, T.) Upper and lower bounds of Gramian for a class of perturbed linear systems. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 10, 1659–1661. 93B25 (93B60)

— (*with* Katoh, Hisao) Robust-tracking deadbeat control. *Internat. J. Control* **56** (1992), *no.* 1, 213–225. 93B51

— (*with* Katoh, Hisao) Input/output deadbeat control. (English summary) *Internat. J. Control* **56** (1992), *no.* 3, 515–530. (Summary) **93f:93064** 93B51 (93C40)

— (*with* Auba, T.) A note on Kharitonov's theorem. (English summary) *IEEE Trans. Automat. Control* **38** (1993), *no.* 4, 663–664. 93D09

Funaki, Tadahisa Hydrodynamic limit for Ginzburg-Landau type continuum model. *Probability theory and mathematical statistics, Vol. I (Vilnius*, 1989), 382–390, "*Mokslas*", *Vilnius*, 1990. (Pablo A. Ferrari) **93f:60094** 60H15 (60K35, 82C40)

— The reversible measures of multi-dimensional Ginzburg-Landau type continuum model. *Osaka J. Math.* **28** (1991), *no.* 3, 463–494. (Min Ping Qian) **93d:60105** 60H15 (60K35, 82C05)

— Regularity properties for stochastic partial differential equations of parabolic type. *Osaka J. Math.* **28** (1991), *no.* 3, 495–516. (Krystyna Twardowska) **93e:60118** 60H15 (35B65, 35K55, 35R60)

— The hydrodynamic limit for a system with interactions prescribed by Ginzburg-Landau type random Hamiltonian. *Probab. Theory Related Fields* **90** (1991), *no.* 4, 519–562. (Dimitri Petritis) **93e:82031** 82C21 (60K35)

— On the stochastic partial differential equations of Ginzburg-Landau type. *Stochastic partial differential equations and their applications (Charlotte, NC*, 1991), 113–122, *Lecture Notes in Control and Inform. Sci.*, 176, *Springer, Berlin*, 1992. (Nicola Bellomo) **93g:35152** 35R60 (35Q55, 60H15, 82C10)

— A stochastic partial differential equation with values in a manifold. (English summary) *J. Funct. Anal.* **109** (1992), *no.* 2, 257–288. (Hélène Airault) **93m:58124** 58G32 (60H15)

Funakoshi, Mitsuaki (*with* Inoue, Susumu) Bifurcations and chaos in resonantly forced water waves. (English summary) *Nonlinear dispersive wave systems (Orlando, FL*, 1991), 635–666, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93f:00015**) 76B15 (58F13, 58F40, 76F20)

Funakura, Takeo A generalization of the Chowla-Mordell theorem on Gaussian sums. *Bull. London Math. Soc.* **24** (1992), *no.* 5, 424–430. (Summary) **93e:11094** 11L05

Funar, Louis (*with* Boju, Valentin) Generalized Hadwiger numbers for symmetric ovals. *Proc. Amer. Math. Soc.* **119** (1993), *no.* 3, 931–934. (Peter M. Gruber) **93m:52019** 52C15 (52A10, 52C17)

Funaro, Daniele (*with* Coulaud, Olivier; Kavian, Otared) Laguerre spectral approximation of elliptic problems in exterior domains. *Spectral and high order methods for partial differential equations (Como*, 1989), 451–458, *North-Holland, Amsterdam*, 1990. (*see* **93d:65005**) 65N35

— Approximation by the Legendre collocation method of a model problem in electrophysiology. (English summary) Orthogonal polynomials and numerical methods. *J. Comput. Appl. Math.* **43** (1992), *no.* 1-2, 261–271. (Summary) **93h:92014** 92C20 (65P05)

Fung, A. K. (*with* Chen, K. S.) A comparison between a frequency domain method and the standard moment method in surface scattering. (English summary) *Integral methods in science and engineering—90 (Arlington, TX*, 1990), 411–422, *Ser. Comput. Phys. Process. Mech. Thermal Sci., Hemisphere, New York*, 1991. (*see* **93f:00014**) 78–08 (78A45)

Fung, David T. (*with* Chan, Chiu Yeung) Dead cores and effectiveness of semilinear reaction-diffusion systems. *J. Math. Anal. Appl.* **171** (1992), *no.* 2, 498–515. (Chunqing Lu) **93k:35137** 35K57

Fung, Gilbert (*with* Granville, Andrew; Williams, Hugh Cowie) Computation of the first factor of the class number of cyclotomic fields. (English summary) *J. Number Theory* **42** (1992), *no.* 3, 297–312. (Joe P. Buhler) **93k:11097** 11R18 (11R29, 11Y40)

Fung, K. C. Economic integration as competitive discipline. (English summary) *Internat. Econom. Rev.* **33** (1992), *no.* 4, 837–847. 90A53 (90A60)

Fung, Karen Yuen (*with* Huang, Mei-Ling) Intervened truncated Poisson distribution. (English summary) *Sankhyā Ser. B* **51** (1989), *no.* 3, 302–310. 62E15

— (*with* Bass, Thomas A.) A two-stage test for the mean of a multivariate normal distribution with known covariance matrix. (English summary) *Sankhyā Ser. B* **51** (1989), *no.* 3, 425–428. 62H15

— (*with* Krewski, Daniel; Smythe, Robert T.; Burnett, Richard) Conditional and unconditional tests with historical controls. (French summary) *Canad. J. Statist.* **19** (1991), *no.* 4, 407–423. (István Ratkó) **93g:62034** 62F03 (62P10)

Fung, P. C. W. (*with* Cheng, K. M.) Certain properties of Berry's phases in supersymmetric quantum mechanics. *J. Phys. A* **25** (1992), *no.* 6, 1745–1756. (Nathalie Debergh) **93a:81052** 81Q60

— (*with* Cheng, K. M.) Certain properties of Berry's phases in supersymmetric quantum mechanics. II. (English summary) *J. Phys. A* **25** (1992), *no.* 16, 4471–4481. (Nathalie Debergh) **93m:81038** 81Q60 (81V99)

Funk, Martin (*with* Strambach, Karl) On free constructions. *Manuscripta Math.* **72** (1991), *no.* 4, 335–374. (W. Rautenberg) **93j:03019** 03C60 (03B30, 03C65, 51A05, 51B05)

Furbank, P. N. *see* **Turing, A. M., 93b:01050** *and* **93k:01094**

Füredi, Zoltán (*with* Lagarias, Jeffrey C.; Morgan, Frank) Singularities of minimal surfaces and networks and related extremal problems in Minkowski space. *Discrete and computational geometry (New Brunswick, NJ*, 1989/1990), 95–109, *DIMACS Ser. Discrete Math. Theoret. Comput. Sci.*, 6, *Amer. Math. Soc., Providence, RI*, 1991. (Roland Durier) **93d:52009** 52A37 (49Q05, 52A21, 53A10)

— Turán type problems. *Surveys in combinatorics*, 1991 (*Guildford*, 1991), 253–300, *London Math. Soc. Lecture Note Ser.*, 166, *Cambridge Univ. Press, Cambridge*, 1991. (W. G. Brown) **93d:05072** 05C35 (05C65, 05C80, 05D05)

— (*with* Spissich, L.) The minimum size of a maximal partial plane. (English summary) *Ars Combin.* **34** (1992), 143–145. (Summary) **93i:05037** 05B25

— Indecomposable regular graphs and hypergraphs. Special volume to mark the centennial of Julius Petersen's "Die Theorie der regulären Graphs", Part II. *Discrete Math.* **101** (1992), *no.* 1-3, 59–64. (Bruno D'Amore) **93d:05128** 05C75 (05C65)

— (*with* Hajnal, Péter) Davenport-Schinzel theory of matrices. *Discrete Math.* **103** (1992), *no.* 3, 233–251. (K. Vijayan) **93g:05026** 05B20 (15A45)

— (*with* Linial, Nathan) A geometric parallel search problem related to group testing. (English summary) *J. Combin. Math. Combin. Comput.* **12** (1992), 3–6. (Summary) **93g:68019** 68P10 (68Q25)

— (*with* Kleitman, Daniel J.) On zero-trees. *J. Graph Theory* **16** (1992), *no.* 2, 107–120. (A. D. Korshunov) **93c:05039** 05C05

— The second and the third smallest distances on the sphere. (English summary) *J. Geom.* **46** (1993), *no.* 1-2, 55–65. (G. D. Chakerian) **93m:52013** 52A40

Fürer, Martin (*with* Raghavachari, Balaji) Approximating the minimum degree spanning tree to within one from the optimal degree. *Proceedings of the Third Annual ACM-SIAM Symposium on Discrete Algorithms (Orlando, FL*, 1992), 317–324, *ACM, New York*, 1992. (*see* **93b:68005**) 05C85 (68Q25)

Furi, Massimo (*with* Pera, Maria Patrizia) The forced spherical pendulum does have forced oscillations. *Delay differential equations and dynamical systems (Claremont, CA*, 1990), 176–182, *Lecture Notes in Math.*, 1475, *Springer, Berlin*, 1991. (Michele Matzeu) **93b:34052** 34C25 (34C15, 58E07, 58F22, 70K40)

Furlan, Giuseppe (*with* de Alfaro, Vittorio; Fubini, Sergio) Why we like octonions. (Italian summary) *Mem. Accad. Sci. Torino Cl. Sci. Fis. Mat. Natur.* (5) **10** (1986), *no.* 2, 57–76 (1987). (Dominique Lambert) **93d:17002** 17A35 (81T13)

Furlan, Paolo (*with* Ganchev, Alexander Ch.; Petkova, Valentina B.) Tensor products of $q^p = 1$ quantum groups and WZW fusion rules. *Differential geometric methods in theoretical physics (Rapallo*, 1990), 379–381, *Lecture Notes in Phys.*, 375, *Springer, Berlin*, 1991. (Roland Koberle) **93a:17012** 17B37 (81R10, 81T40)

— (*with* Ganchev, Alexander Ch.; Petkova, Valentina B.) Fusion rules, quantum groups and the Coulomb gas. *Nonperturbative methods in low-dimensional quantum field theories (Debrecen*, 1990), 107–111, *World Sci. Publishing, River Edge, NJ*, 1991. (*see* **93f:81005**) 81R50 (82B20)

— (*with* Ganchev, Alexander Ch.; Petkova, Valentina B.) Remarks on the quantum group structure of the rational $c < 1$ conformal theories. *Internat. J. Modern Phys. A* **6** (1991), *no.* 27, 4859–4884. (Summary) **93h:81117** 81T40 (17B37, 81R50)

— (*with* Paunov, R. R.; Todorov, Ivan T.) Extended U(1) conformal field theories and Z_k-parafermions. *Fortschr. Phys.* **40** (1992), *no.* 3, 211–271. (Nikolai A. Kostov) **93c:81203** 81T40 (14K25, 17B81, 81R10)

— (*with* Khadzhiivanov, L. K.; Todorov, Ivan T.) Quantum deformation of the ladder representations of U(1, 1) for $|q| = 1$. (English summary) *J. Math. Phys.* **33** (1992), *no.* 12, 4255–4258. (Branislav Jurčo) **93j:17025** 17B37 (81R50)

Furletov, D. G. (*with* Ionkin, N. I.; Makarov, Vladimir Leonidovich) Stability and convergence in the C-norm of difference schemes for a parabolic equation with a nonlocal boundary condition. (Russian. Russian summary) *Mat. Model.* **4** (1992), *no.* 4, 63–73. (I. P. Gavrilyuk) **93m:65131** 65M12

Fursevich, L. V. Properties of the fundamental solution of an evolution equation with attenuating memory. (Russian. Russian summary) *Mathematical methods for studying applied problems of the dynamics of fluid-carrying bodies (Russian)*, 98–103, *Akad. Nauk Ukrainy, Inst. Mat., Kiev*, 1992. (*see* **93m:00027**) 35K10 (73B30)

Fursikov, A. V. On the problem of closure of a chain of moment equations in the case of large Reynolds numbers. (Russian) *Nonclassical equations and equations of mixed type (Russian)*, 231–250, *Akad. Nauk SSSR Sibirsk. Otdel., Inst. Mat., Novosibirsk*, 1990. (Yoshikazu Giga) **93f:76024** 76D05 (35Q35, 76M35)

— The problem of closure of the chains of moment equations corresponding to the three-dimensional Navier-Stokes system in the case of large Reynolds numbers. (Russian) *Dokl. Akad. Nauk SSSR* **319** (1991), *no.* 1, 83–87; *translation in Soviet Math. Dokl.* **44** (1992), *no.* 1, 80–85. (Cun-Zheng Wang) **93b:35111** 35Q30 (76D05)

— The moment theory for Navier-Stokes equations with a random right-hand side. (Russian. Russian summary) *Izv. Ross. Akad. Nauk Ser. Mat.* **56** (1992), *no.* 6, 1273–1315. (Igor D. Chueshov) **93m:35142** 35Q30 (35R60, 76D05, 76M35)

— Lagrange principle for problems of optimal control of ill-posed or singular distributed systems. *J. Math. Pures Appl.* (9) **71** (1992), *no.* 2, 139–195. (Fredi Tröltzsch) **93e:49028** 49K20 (49J20, 49N15)

— (*with* Èmanuilov, O. Yu.) ε-controllability of the Stokes problem with distributed control concentrated in a subdomain. (Russian) *Uspekhi Mat. Nauk* **47** (1992), *no.* 1(283), 217–218; *translation in Russian Math. Surveys* **47** (1992), *no.* 1, 255–257. 93C20 (35B37, 76D07, 93B05)

Fursov, V. A. Accuracy analysis and construction of identification algorithms based on few observations. *J. Comput. Systems Sci. Internat.* **31** (1993), *no.* 2, 89–94; *translated from Izv. Akad. Nauk SSSR Tekhn. Kibernet.* **1991**, *no.* 6, 130–135 (*Russian*). 93B30 (93E12)

Furstenberg, Hillel Recurrent ergodic structures and Ramsey theory. *Proceedings of the International Congress of Mathematicians, Vol. I, II (Kyoto*, 1990), 1057–1069, *Math. Soc. Japan, Tokyo*, 1991. (V. S. Prasad) **93d:28023** 28D05 (05D10)

Furta, Stanislav D. Asymptotic trajectories of natural systems under the action of forces of viscous friction. (Russian) *Analytic and numerical methods for studying mechanical*

systems (*Russian*), 35–38, *Moskov. Aviatsion. Inst., Moscow*, 1989. (*see* **93e:00015**) 70H35 (34D05, 70K20)

— Asymptotic trajectories of mechanical systems and the problem of the inversion of the Routh theorem on stability of equilibrium. (Russian) *Differential and integral equations* (*Russian*), 80–86, *Gor'kov. Gos. Univ., Gorki*, 1989. (*see* **92f:00018**) 70K20 (34D05)

— Motions of an axisymmetric gyroscope subject to the action of small random perturbations. (Russian) *Analysis and design of dynamical systems under conditions of uncertainty* (*Russian*), 75–78, *Moskov. Aviatsion. Inst., Moscow*, 1990. (*see* **93g:00022**) 70E15 (70L05)

— Asymptotic trajectories of dynamical systems. (Russian) *Dinamika Sistem* **1990**, *Dinam. Stokh. Bifur.*, 89–101. (Summary) **93j:34070** 34C99 (34C05)

— On the instability of "folded" equilibria of a flexible nonstretchable thread attached to the satellite in a circular orbit. *Celestial Mech. Dynam. Astronom.* **53** (1992), *no.* 3, 255–266. (Summary) **93b:70029** 70M20 (70K15, 73H10)

Furter, J. E. (*with* Grinfeld, Michael; Eilbeck, J. C.) A monotonicity theorem and its application to stationary solutions of the phase field model. (English summary) *IMA J. Appl. Math.* **49** (1992), *no.* 1, 61–72. (J. R. Ockendon) **93j:80003** 80A22 (34B15)

— (*with* Brown, K. J.) A singularity theory approach to a semilinear boundary value problem. *J. Math. Anal. Appl.* **166** (1992), *no.* 2, 485–506. (Jolanta Przybycin) **93d:34030** 34B15 (34A47, 47H15, 47N20, 58C27)

Furth, D. Equilibria in markets with product differentiation and free entry. *Pure Math. Appl. Ser. B* **2** (1991), *no.* 2-3, 163–187. (Suchan Chae) **93j:90022** 90A12 (90A14, 90D40)

Furuhashi, T. (*with* Naitoh, Y.; Uchikawa, Y.) Variable ordinal structure model for fuzzy reasoning and its application to operational decision priority in product assembly. (English summary) *Japanese J. Fuzzy Theory Systems* **3** (1991), *no.* 4, 329–342 (1992). (Summary) **93h:03025** 03B52 (90A05)

Furukawa, Nagata A second-order extension of Ljusternik's theorem without twice Fréchet differentiability condition. *Bull. Inform. Cybernet.* **25** (1992), *no.* 1-2, 53–59. (Andreas Kriegl) **93i:58016** 58C15 (58C20)

— An order relation and fundamental operations on fuzzy numbers and their applications to fuzzy linear programming. (English summary) *Bull. Inform. Cybernet.* **25** (1993), *no.* 3-4, 161–179. (Summary) **93m:04012** 04A72 (90C70)

Furumoto, N. (*with* Shibata, H.; Fujinaka, T.; Fukudome, Y.) Some aspects on the accuracy of system identification. (English summary) *Identification and system parameter estimation* 1991, *Vol.* 1,2 (*Budapest*, 1991), 737–741, *IFAC Sympos. Ser.*, 3, *Pergamon, Oxford*, 1992. (*see* **93h:93009**) 93B30

Furusawa, M. (*with* Tezuka, M.; Yagita, Nobuaki) Note on Hecke operators and cohomology of $PSL_2(\mathbf{Z})$. *Kodai Math. J.* **14** (1991), *no.* 2, 173–180. (Kazuyuki Hatada) **93c:11025** 11F25 (11F30, 11F75)

Furushima, Mikio (*with* Tada, Minoru) Nonnormal Del Pezzo surfaces and Fano threefolds of the first kind. *J. Reine Angew. Math.* **429** (1992), 183–190. (I. Dolgachev) **93i:14035** 14J45

— Mukai-Umemura's example of the Fano threefold with genus 12 as a compactification of $\mathbf{C}^3$. *Nagoya Math. J.* **127** (1992), 145–165. (C. A. M. Peters) **93j:14050** 14J45 (14J30)

— The structure of compactifications of $\mathbf{C}^3$. *Proc. Japan Acad. Ser. A Math. Sci.* **68** (1992), *no.* 2, 33–36. (Jarosław A. Wiśniewski) **93c:32039** 32J05 (14E05, 14J30, 32J17)

Furusho, Yasuhiro (*with* Ebihara, Yukiyoshi; Nagai, Toshitaka) Singular solutions of traveling waves in a chemotactic model. *Bull. Kyushu Inst. Tech. Math. Natur. Sci. No.* 39 (1992), 29–38. (Roger Lui) **93f:92012** 92C15 (35K40)

— Note on singular semilinear elliptic equations. *Hiroshima Math. J.* **22** (1992), *no.* 3, 591–596. (C. A. Swanson) **93m:35073** 35J60 (35B05, 35Q55)

Furuta, Katsuhisa (*with* Yamakita, M.; Hoshino, Y.; Morimoto, K.) Parallel implementation of Newton-Euler algorithm with one step ahead predictions. *Control '91, Vol.* 1, 2 (*Edinburgh*, 1991), 364–369, *IEE Conf. Publ. Ser.*, 332, *IEE, London*, 1991. (*see* **93h:93007**) 93B40

— Intelligent control in robotics. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, II* (*Kobe*, 1991), 565–571, *Mita, Tokyo*, 1992. (*see* **93g:93006**) 93C85 (70B15, 70Q05)

— (*with* Phoojaruenchanachai, Suthee) Memoryless stabilization of uncertain linear systems including time-varying state delays. *IEEE Trans. Automat. Control* **37** (1992), *no.* 7, 1022–1026. (Alexander N. Shoshitaishvili) **93j:93130** 93D15 (93C30)

Furuta, Mikio Z_a-invariant SU(2) instantons over the four sphere. *Geometry of low-dimensional manifolds*, 1 (*Durham*, 1989), 161–174, *London Math. Soc. Lecture Note Ser.*, 150, *Cambridge Univ. Press, Cambridge*, 1990. (Ronald J. Stern) **93g:57040** 57R57 (53C07, 57N13, 57R90, 58D19)

— (*with* Steer, Brian) Seifert fibred homology 3-spheres and the Yang-Mills equations on Riemann surfaces with marked points. *Adv. Math.* **96** (1992), *no.* 1, 38–102. (Stefan A. Bauer) **93m:57034** 57R57 (14D20, 57N10, 58E15)

— On self-dual pseudo-connections on some orbifolds. *Math. Z.* **209** (1992), *no.* 3, 319–337. (Ronald J. Stern) **93c:57023** 57R57 (53C07, 57N13, 58D29)

Furuta, Takayuki (*with* Fujii, Masatoshi; Kamei, Eizaburo) Operator functions associated with Furuta's inequality. *Functional analysis & related topics* (*Sapporo*, 1990), 148–151, *World Sci. Publishing, River Edge, NJ*, 1991. (Fuad Kittaneh) **93a:47022** 47A63 (47B15)

— (*with* Bach, Edward) Counterexample to a question on the operator equation $T(H^{1/n}T)^n = K$. (English summary) *Linear Algebra Appl.* **177** (1992), 157–162. (Summary) **93i:47020** 47A62 (47B15)

— (*with* Nakamura, Masahiro) An operator version of the Enestrőm-Kakeya theorem. *Math. Japon.* **37** (1992), *no.* 3, 495–497. (Fuad Kittaneh) **93h:47009** 47A50 (30C15, 47A62)

— (*with* Fujii, Junichi; Fujii, Masatoshi; Nakamoto, Ritsuo) Norm inequalities related to McIntosh type inequality. *Nihonkai Math. J.* **3** (1992), *no.* 1, 67–72. (Fuad Kittaneh) **93i:47022** 47A63 (47A30, 47B15, 47B20)

— (*with* Fujii, Masatoshi; Kamei, Eizaburo) Furuta's inequality and its application to Ando's theorem. (English summary) *Linear Algebra Appl.* **179** (1993), 161–169. (Summary) **93j:47026** 47A63 (47B15)

— (*with* Fujii, Junichi; Fujii, Masatoshi; Nakamoto, Ritsuo) Norm inequalities equivalent to Heinz inequality. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 3, 827–830. (Fumio Hiai) **93i:47008** 47A30 (47B15)

— (*with* Fujii, Masatoshi; Seo, Yûki) An inequality for some nonnormal operators—extension to normal approximate eigenvalues. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 3, 899–902. (Alan L. Andrew) **93i:47023** 47A63 (47A75, 65F15, 65J10)

Furutsu, Hirotoshi (*with* Nishiyama, Kyo) Realization of irreducible unitary representations of $\mathfrak{osp}(M/N;\mathbf{R})$ on Fock spaces. *Representation theory of Lie groups and Lie algebras* (*Fuji-Kawaguchiko*, 1990), 1–21, *World Sci. Publishing, River Edge, NJ*, 1992. (Hartmut Schlosser) **93k:17005** 17A70 (17B10, 17B81, 81R10)

Furuya, K. *see* **Furuya, Kyoko**

Furuya, Ken'ichi (*with* Date, Hikaru; Fukudome, Kimitoshi) Effects of finite register length in the fast Hartley transform. *Electron. Comm. Japan Part III Fund. Electron. Sci.* **75** (1992), *no.* 1, 76–86. 65T20

Furuya, Kiyoko (*with* Kōmura, Yukio) Wave equations in nonreflexive spaces. *Functional analysis and related topics*, 1991 (*Kyoto*), 235–238, *Lecture Notes in Math.*, 1540, *Springer, Berlin*, 1993. (*see* **93m:00049**) 35L05 (35K22, 35K55, 47N20)

Furuya, Kyoko (*with* de Aguiar, M. A. M.; Lewenkopf, C. H.; Nemes, M. C.) Chaos in a spin-boson system: classical analysis. *Ann. Physics* **216** (1992), *no.* 2, 291–312. (Alfredo M. Ozorio de Almeida) **93c:81279** 81V80 (58F13, 58F40)

Furuya, M. (*with* Sano, A.; Ohmori, Hiromitsu) Least square type of adaptive filter with optimally stabilized convergency based on eigen-structure approach. (English summary) *Adaptive systems in control and signal processing*, 1989 (*Glasgow*), 443–448, *IFAC Sympos. Ser.*, 1990, *No.* 1, *Pergamon, Oxford*, 1990. (*see* **93j:93007**) 93E12 (93E11)

Furuya, Shinji (*with* Miyano, Satoru) Analogy is NP-hard. (English summary) *Algorithmic learning theory, II* (*Tokyo*, 1991), 207–212, *Ohm, Tokyo*, 1992. (Summary) **93k:03037** 03D15 (03B35, 68T27)

— (*with* Miyano, Satoru) NP-complete problems on label updating calculation in ATMS. *Bull. Inform. Cybernet.* **25** (1992), *no.* 1-2, 1–5. (From the text) **93h:68057** 68Q25 (68T30)

Furuya, Tatsumi (*with* Nitta, Tohru) An analysis of a stochastic resource allocation model with a nonnegative production function. (Japanese. English summary) *J. Oper. Res. Soc. Japan* **35** (1992), *no.* 1, 15–30. (Summary) **93h:90013** 90A10 (90B50)

Fuschi, P. (*with* Polizzotto, C.; Borino, G.; Caddemi, S.) Shakedown problems for material models with internal variables. *European J. Mech. A Solids* **10** (1991), *no.* 6, 621–639. (Z. Mróz) **93a:73031** 73E05 (73B30, 73E99)

Fuschich, W. I. *see* **Fushchich, V. I.**

Fusco, D. (*with* Manganaro, N.) Some classes of nonautonomous nonlinear models reducible to linear form. Memoirs of mathematical physics in honor of Giovanni Carini on his 70th birthday (Italian). *Atti Accad. Peloritana Pericolanti Cl. Sci. Fis. Mat. Natur.* **68** (1990), *suppl.* 1, 81–92 (1991). (Summary) **93b:35028** 35F20 (35A30, 73K70)

— (*with* Manganaro, N.) Exact solutions to flows in fluid filled elastic tubes. (English summary) *Differential equations with applications to mathematical physics*, 87–99, *Math. Sci. Engrg.*, 192, *Academic Press, Boston, MA*, 1993. (Summary) **93k:35212** 35Q35 (73K70, 76D99, 76Z05)

Fusco Girard, M. On the semiclassical propagator for the anharmonic oscillator. (English summary) *J. Phys. A* **25** (1992), *no.* 15, 4199–4209. (Summary) **93f:81036** 81Q20

Fushchich, V. I. (*with* Nikitin, A. G.) ★ Симметрия уравнений квантовой механики. (Russian) [Symmetry of equations of quantum mechanics] "*Nauka*", *Moscow*, 1990. 400 *pp. ISBN* 5-02-013944-0 (Ivailo M. Mladenov) **93c:81059** 81R05 (22E70, 35Q40, 81-02, 81Q05)

— (*with* Revenko, I. V.; Zhdanov, R. Z.) An asymmetric approach to the construction of exact solutions of a nonlinear wave equation. (Russian. English summary) *Dokl. Akad. Nauk Ukrain. SSR* **1991**, *no.* 7, 15–19, 177. (Hideo Yamagata) **93b:35016** 35C05 (35L70)

— (*with* Serov, N. I.) Nongroup symmetry of some nonlinear wave equations. (Russian. English summary) *Dokl. Akad. Nauk Ukrain. SSR* **1991**, *no.* 9, 45–49, 176. (J. S. Joel) **93d:58193** 58G35 (35A30, 35Q99, 58G37)

— (*with* Serov, N. I.; Repeta, V. K.) Non-Lie symmetry and exact solutions of one-dimensional equations of gas dynamics. (Russian. English summary) *Dokl. Akad. Nauk Ukrainy* **1991**, *no.* 11, 27–33, 173. (Summary) **93d:35166** 35Q99 (35C05, 76N15)

— (*with* Serov, N. I.; Amerov, T. K.) On the conditional symmetry of the generalized Korteweg-de Vries equation. (Russian. English and Russian summaries) *Dokl. Akad. Nauk Ukrainy* **1991**, *no.* 12, 15–18, 169. (Summary) **93d:35143** 35Q53 (35C05)

— (*with* Zhdanov, R. Z.; Egorchenko, I. A.) On the reduction of the nonlinear multi-dimensional wave equations and compatibility of the D'Alembert-Hamilton system. *J. Math. Anal. Appl.* **161** (1991), *no.* 2, 352–360. (J. Chrastina) **93c:35103** 35L70 (35A20, 35L05)

— (*with* Zhdanov, R. Z.) On the non-Lie reduction of the nonlinear Dirac equation. *J. Math. Phys.* **32** (1991), *no.* 12, 3488–3490. (Niky Kamran) **93b:58168** 58G35 (35A30, 35Q40, 81Q05)

— (*with* Barannik, A. F.; Barannik, L. F.) Connected subgroups of the conformal group $C(1,4)$. (Russian. Ukrainian summary) *Ukrain. Mat. Zh.* **43** (1991), *no.* 7-8, 870–884; *translation in Ukrainian Math. J.* **43** (1991), *no.* 7-8, 813–826 (1992). (Dao Ji Meng) **93b:17014** 17B05 (22E70)

— Conditional symmetry of equations of nonlinear mathematical physics. (Russian. Ukrainian summary) *Ukrain. Mat. Zh.* **43** (1991), *no.* 11, 1456–1470; *translation in Ukrainian Math. J.* **43** (1991), *no.* 11, 1350–1364 (1992). (Vladimir Stefanov Gerdjikov) **93d:35007** 35A30 (35Q53, 58F37)

— (*with* Egorchenko, I. A.) Non-Lie ansätze and conditional symmetry of the nonlinear Schrödinger equation. (Russian. Ukrainian summary) *Ukrain. Mat. Zh.* **43** (1991), *no.* 12, 1620–1628; *translation in Ukrainian Math. J.* **43** (1991), *no.* 12, 1507–1515 (1992). (Victor V. Zharinov) **93f:35215** 35Q55 (58G37)

— (*with* Egorchenko, I. A.) Second-order differential invariants of the rotation group $O(n)$ and of its extensions: $E(n)$, $P(1,n)$, $G(1,n)$. (English summary) *Acta Appl. Math.* **28** (1992), *no.* 1, 69–92. (J. Chrastina) **93i:53016** 53A55 (35A30)

— (*with* Serov, N. I.; Amerov, T. K.) Nonlocal ansätze for a nonlinear one-dimensional heat equation. (Russian. English and Russian summaries) *Dokl. Akad. Nauk Ukrainy* **1992**, *no.* 1, 26–30, 176. (Summary) **93g:35067** 35K55 (80A20)

— (*with* Shtelen', V. M.; Popovich, R. E.) On the reduction of Navier-Stokes equations to linear heat equations. (Russian. Russian summary) *Dokl. Akad. Nauk Ukrainy* **1992**, *no.* 2, 23–30, 169. (Summary) **93f:35016** 35A30 (35Q30)

— New nonlinear equations for electromagnetic field having velocity different from c. (Russian summary) *Dokl. Akad. Nauk Ukrainy* **1992**, *no.* 4, 24–27, 166. (Summary) **93g:78007** 78A25

— (*with* Serov, N. I.; Amerov, T. K.) Conditional invariance and exact solutions of gas dynamics equations. (Russian summary) *Dokl. Akad. Nauk Ukrainy* **1992**, *no.* 5, 35–40,

159. (Summary) **93g:35008** 35A30 (35C05, 35Q35, 76N15)

— (*with* Serov, N. I.; Vorob'eva, A. Z.) Conditional symmetry and exact solutions of equations of nonstationary filtration. (Russian summary) *Dokl. Akad. Nauk Ukrainy* **1992**, *no.* 6, 22–26, 171. (Summary) **93c:35017** 35C05 (76S05)

— (*with* Tychinin, V. A.) Generating solutions for nonlinear equations by the Legendre transformation. (Russian summary) *Dokl. Akad. Nauk Ukrainy* **1992**, *no.* 7, 20–25, 177. (From the text) **93j:35013** 35A30 (58G37)

— (*with* Popovich, R. O.) Symmetry reduction of the Navier-Stokes equations to linear two-dimensional systems of equations. (Russian summary) *Dokl. Akad. Nauk Ukrainy* **1992**, *no.* 8, 29–37, 169. (Summary) **93i:35103** 35Q30 (58G35, 76D05)

— (*with* Zhdanov, R. Z.; Smalii, V. F.) On the new exact solutions of the nonlinear Maxwell-Born-Infeld equations. (Russian summary) *Dokl. Akad. Nauk Ukrainy* **1992**, *no.* 10, 28–33, 170. (Summary) **93i:35143** 35Q60 (35C05)

— (*with* Serov, N. I.; Tychinin, V. A.; Amerov, T. K.) On nonlocal symmetries of nonlinear heat equation. (Russian summary) *Dokl. Akad. Nauk Ukrainy* **1992**, *no.* 11, 27–33, 171. (Summary) **93k:35010** 35A30 (35A25, 35K55)

— (*with* Shtelen', V. M.; Serov, N. I.; Popovich, R. O.) *Q*-conditional symmetry of the linear heat equation. (Russian summary) *Dokl. Akad. Nauk Ukrainy* **1992**, *no.* 12, 28–33, 170. (Summary) **93k:35011** 35A30 (35A25, 35K05)

— (*with* Basarab-Horwath, P.; Serov, N. I.) A simple method of finding solutions of the nonlinear d'Alembert equation. *J. Phys. A* **25** (1992), *no.* 14, L871–L877. (Hideo Yamagata) **93g:35014** 35C05 (35L70)

— (*with* Nikitin, A. G.; Onufriichuk, S. P.) Higher symmetries of the Schrödinger equation. (Russian. English and Russian summaries) *Teoret. Mat. Fiz.* **91** (1992), *no.* 2, 268–278; *translation in Theoret. and Math. Phys.* **91** (1992), *no.* 2, 514–521. (A. M. Gavrilik) **93m:81039** 81Q60 (35A30, 35J10, 58G35)

— (*with* Tychinin, V. A.; Serov, N. I.) A formula for multiplication of solutions of Korteweg-de Vries equations. (Russian. Russian and Ukrainian summaries) *Ukraïn. Mat. Zh.* **44** (1992), *no.* 5, 716–719; *translation in Ukrainian Math. J.* **44** (1992), *no.* 5, 649–651 (1993). (Summary) **93h:35178** 35Q53

— (*with* Zhdanov, R. Z.) Conditional symmetry and reduction of partial differential equations. (English and Ukrainian summaries) *Ukraïn. Mat. Zh.* **44** (1992), *no.* 7, 970–982; *reprinted in Ukrainian Math. J.* **44** (1992), *no.* 7, 875–886 (1993). (Summary) **93h:35011** 35A30

Fushimi, Masanori (*with* Tezuka, Shu) Calculation of Fibonacci polynomials for GFSR sequences with low discrepancies. *Math. Comp.* **60** (1993), *no.* 202, 763–770. (Péter Kiss) **93h:65009** 65C10 (11B39, 11Y99)

llorens Fuster, E. *see* **Llorens Fuster, E.**

romero Fuster, M. Carmen *see* **Romero Fuster, M. Carmen**

Futagami, Kahoru An efficient method for searching characteristic patterns of a subset in a large set of character sequences. *Hiroshima Math. J.* **22** (1992), *no.* 3, 597–629. (Dietmar Dorninger) **93j:92023** 92D20 (68U10)

Futaki, Akito (*with* Tsuboi, Kenji) Eta invariants and automorphisms of compact complex manifolds. *Recent topics in differential and analytic geometry*, 251–270, *Adv. Stud. Pure Math.*, 18-I, *Academic Press, Boston, MA*, 1990. (Ruishi Kuwabara) **93b:58137** 58G10 (32L07, 53C25)

— Kähler geometries and integral invariants. (Japanese) *Sūgaku* **44** (1992), *no.* 1, 44–56. (Hajime Tsuji) **93h:53044** 53C25 (32L07, 53C55, 58E11)

Futornyĭ, V. M. (*with* Drozd, Yu. A.; Ovsienko, S. A.) On Gel'fand-Zetlin modules. Proceedings of the Winter School on Geometry and Physics (Srní, 1990). *Rend. Circ. Mat. Palermo* (2) *Suppl. No.* 26 (1991), 143–147. (F. W. Lemire) **93b:17021** 17B10

— The graded representations of an affine Lie algebra. Proceedings of the Winter School on Geometry and Physics (Srní, 1990). *Rend. Circ. Mat. Palermo* (2) *Suppl. No.* 26 (1991), 155–161. (Mohammad Hailat) **93c:17042** 17B67 (17B10)

— (*with* Drozd, Yu. A.; Ovsienko, S. A.) Gel'fand-Zetlin modules over Lie algebra SL(3). *Proceedings of the International Conference on Algebra, Part 2* (*Novosibirsk*, 1989), 23–29, *Contemp. Math.*, 131, *Part* 2, *Amer. Math. Soc., Providence, RI*, 1992. (*see* **93b:00030**) 17B10

— The parabolic subsets of root system and corresponding representations of affine Lie algebras. *Proceedings of the International Conference on Algebra, Part* 2 (*Novosibirsk*, 1989), 45–52, *Contemp. Math.*, 131, *Part* 2, *Amer. Math. Soc., Providence, RI*, 1992. (*see* **93b:00030**) 17B67

— (*with* Saifi, Halip) Modules of Verma type and new irreducible representations for affine Lie algebras. (English summary) *Proceedings of the Sixth International Conference on Representations of Algebras* (*Ottawa, ON*, 1992), 7 *pp.*, *Carleton-Ottawa Math. Lecture Note Ser.*, 14, *Carleton Univ., Ottawa, ON*, 1992. (*see* **93j:16001**) 17B67

— Imaginary Verma modules for affine Lie algebras. *C. R. Math. Rep. Acad. Sci. Canada* **14** (1992), *no.* 2-3, 115–117. (Thomas N. Vougiouklis) **93d:17028** 17B67

— (*with* Tutov, A. A.) Partitions of root systems of Kac-Moody algebras of rank 2. (Russian. Russian and Ukrainian summaries) *Ukraïn. Mat. Zh.* **44** (1992), *no.* 12, 1712–1715. (Yuliy Billig) **93m:17015** 17B67 (17B10)

chan Fyong Zung *see* **Chan Fyong Zung**

–G–

Gaál, István On the resolution of some Diophantine equations. *Computational number theory* (*Debrecen*, 1989), 261–280, *de Gruyter, Berlin*, 1991. (Nikos Tzanakis) **93e:11039** 11D57 (11D25, 11Y50)

Gabai, David Foliations and 3-manifolds. *Proceedings of the International Congress of Mathematicians, Vol. I, II* (*Kyoto*, 1990), 609–619, *Math. Soc. Japan, Tokyo*, 1991. (Martin Scharlemann) **93d:57013** 57M25 (57M50, 57R30)

— Taut foliations of 3-manifolds and suspensions of S^1. (French summary) *Ann. Inst. Fourier* (*Grenoble*) **42** (1992), *no.* 1-2, 193–208. (William Dunbar) **93d:57028** 57N10 (57M25, 57R30)

— Convergence groups are Fuchsian groups. *Ann. of Math.* (2) **136** (1992), *no.* 3, 447–510. (Alan W. Reid) **93m:20065** 20H10 (57M07)

Gabardo, Jean-Pierre A maximum entropy approach to the classical moment problem. *J. Funct. Anal.* **106** (1992), *no.* 1, 80–94. (Mihai Putinar) **93c:47023** 47A57 (44A60)

— Two problems in multidimensional prediction theory. *Michigan Math. J.* **39** (1992), *no.* 2, 173–187. (Lutz Peter Klotz) **93f:42026** 42B05 (60G25)

— Extension of positive-definite distributions and maximum entropy. *Mem. Amer. Math. Soc.* **102** (1993), *no.* 489, x+94 *pp.* (Jürgen Friedrich) **93g:42005** 42A82 (42A70, 46F10)

Gabasov, R. F. (*with* Kirillova, F. M.) Dual optimization of dynamical systems. (Russian) *Dokl. Akad. Nauk SSSR* **317** (1991), *no.* 1, 15–19; *translation in Soviet Math. Dokl.* **43** (1991), *no.* 2, 306–310. (From the introduction) **93d:49042** 49N15 (49M35)

— (*with* Gaĭshun, P. V.; Kirillova, F. M.) Optimal estimator for linear systems. (Russian and Lithuanian summaries) *Informatica* **2** (1991), *no.* 2, 195–220, 313, 321. (Srinivasu Maka) **93c:93025** 93B40 (49J35, 93C55, 93C60, 93E10)

— (*with* Kirillova, F. M.; Prishchepova, S. V.) Optimal identificator of dynamic systems. (English, Russian and Lithuanian summaries) *Informatica* **2** (1991), *no.* 3, 367–377, 457, 464. (Nikolai N. Sal'nikov) **93h:93020** 93B30 (49K05, 49M35)

— (*with* Kirillova, F. M.) Optimization of dynamical systems with identification of input perturbations. (Russian summary) *Problems Control Inform. Theory/Problemy Upravlen. Teor. Inform.* **20** (1991), *no.* 3, 233–244. (Stefan Mirică) **93c:49021** 49N05 (49N30, 93B30, 93C41)

— (*with* Gaĭshun, P. V.; Kirillova, F. M.; Prishchepova, S. V.) Optimal feedback for a discrete system with disturbance compensation. I. Synthesis of an optimal estimator. (Russian) *Avtomat. i Telemekh.* **1992**, *no.* 1, 52–62; *translation in Automat. Remote Control* **53** (1992), *no.* 1, *part* 1, 44–51. (Summary) **93b:49041** 49N35 (93B51)

— (*with* Gaĭshun, P. V.; Kirillova, F. M.; Prishchepova, S. V.) Optimal feedback for a discrete system with disturbance compensation. II. Synthesis of an optimal regulator. (Russian. Russian summary) *Avtomat. i Telemekh.* **1992**, *no.* 4, 33–39; *translation in Automat. Remote Control* **53** (1992), *no.* 4, *part* 1, 500–505. (From the introduction) **93f:49032** 49N35 (93B51)

— (*with* Kirillova, F. M.; Kostyukova, O. I.) Construction of optimal estimators for linear dynamical systems. (Russian. Russian summary) *Vestnik Beloruss. Gos. Univ. Ser. I Fiz. Mat. Mekh.* **1992**, *no.* 2, 45–49, 80. (Ognyan Kounchev) **93k:93020** 93B07 (93B30, 93C05)

— (*with* Kirillova, F. M.; Kostina, E. A.) Global maximization of special classes of convex functions on a convex polyhedral set. (Russian. Russian summary) *Zh. Vychisl. Mat. i Mat. Fiz.* **32** (1992), *no.* 8, 1313–1320; *translation in Comput. Math. Math. Phys.* **32** (1992), *no.* 8, 1171–1177. (From the text) **93h:90069** 90C20 (90C08)

Gabba, Emilio *see* **Cinquini, Silvio, 93m:01065**

Gabbay, D. M. (*with* Hodkinson, I. M.) An axiomatization of the temporal logic with Until and Since over the real numbers. *J. Logic Comput.* **1** (1990), *no.* 2, 229–259. (N. B. Cocchiarella) **93h:03015** 03B45

Gabber, Ofer *K*-theory of Henselian local rings and Henselian pairs. *Algebraic K-theory, commutative algebra, and algebraic geometry* (*Santa Margherita Ligure*, 1989), 59–70, *Contemp. Math.*, 126, *Amer. Math. Soc., Providence, RI*, 1992. (Sue Geller) **93c:19005** 19D99 (13B40, 18F25)

Gabbiani, F. (*with* Fröhlich, Jürg; Marchetti, P. A.) Superselection structure and statistics in three-dimensional local quantum theory. *Knots, topology and quantum field theories* (*Florence*, 1989), 335–415, *World Sci. Publishing, River Edge, NJ*, 1989. (Stephen J. Summers) **93c:81102** 81T05 (46L60, 81–04, 81R05, 81T10)

— (*with* Fröhlich, Jürg; Marchetti, P. A.) Braid statistics in three-dimensional local quantum theory. *Physics, geometry, and topology* (*Banff, AB*, 1989), 15–79, *NATO Adv. Sci. Inst. Ser. B Phys.*, 238, *Plenum, New York*, 1990. (Summary) **93a:81112** 81T05 (81R50, 81T13, 81V70, 82D55)

— (*with* Fröhlich, Jürg; Marchetti, P. A.) Braid statistics in three-dimensional local quantum theory. *The algebraic theory of superselection sectors* (*Palermo*, 1989), 259–332, *World Sci. Publishing, River Edge, NJ*, 1990. (*see* **93i:81122**) 81T05 (57M25, 81R50)

Gabbrielli, Maurizio (*with* Bossi, A.; Levi, Giorgio; Meo, M. C.) Contributions to the semantics of open logic programs. (English summary) *Fifth generation computer systems, Vol.* 1, 2 (*Tokyo*, 1992), 570–580, *Ohm, Tokyo*, 1992. (*see* **93i:68007**) 68N17 (68Q55)

— (*with* Levi, Giorgio) Unfolding and fixpoint semantics of concurrent constraint logic programs. (English summary) Second International Conference on Algebraic and Logic Programming (Nancy, 1990). *Theoret. Comput. Sci.* **105** (1992), *no.* 1, 85–128. (Gabriel Ciobanu) **93m:68030** 68N17 (68Q55)

— (*with* Alpuente Frasnedo, María; Falaschi, Moreno; Levi, Giorgio) The semantics of equational logic programming as an instance of CLP. (English summary) *Logic programming languages*, 49–81, *MIT Press, Cambridge, MA*, 1993. (*see* **93k:68020**) 68N17

Gabelaya, A. G. A new invariance criterion for spectral values of linear autonomous systems. *Soviet J. Comput. Systems Sci.* **30** (1992), *no.* 1, 159–163; *translated from Izv. Akad. Nauk SSSR Tekhn. Kibernet.* **1991**, *no.* 1, 206–209 (*Russian*). (Summary) **93b:93051** 93B55 (93C41)

Gabella, W. E. (*with* Ruth, R. D.; Warnock, R. L.) Iterative determination of invariant tori for a time-periodic Hamiltonian with two degrees of freedom. (English summary) *Phys. Rev. A* (3) **46** (1992), *no.* 6, 3493–3512. (Summary) **93g:70004** 70–08 (58F05, 65P05, 70H05, 70H20, 78A35)

Gabelli, Stefania Domains with the radical trace property and their complete integral closure. *Comm. Algebra* **20** (1992), *no.* 3, 829–845. (Daniel D. Anderson) **93d:13003** 13A15 (13B21, 13G05)

— (*with* Barucci, Valentina; Roitman, Moshe) On semi-Krull domains. *J. Algebra* **145** (1992), *no.* 2, 306–328. (David F. Anderson) **93a:13011** 13G05 (13A15, 13E99, 13F05)

Gabet, Lionel The decomposition method and linear partial differential equations. (English summary) *Math. Comput. Modelling* **17** (1993), *no.* 6, 11–22. (Summary) **93m:65173** 65P05 (35A35)

Gabetta, Ester Probabilistic aspects of the relationships between the discrete kinetic theory and lattice model. (Italian summary) *Ann. Univ. Ferrara Sez. VII* (*N.S.*) **36** (1990), 223–235 (1991). (Carlo Cercignani) **93a:82047** 82C40

— (*with* Monaco, Roberto) The discrete Boltzmann equation for gases with bi-molecular chemical reactions. (English summary) *Discrete models of fluid dynamics* (*Figueira da Foz*, 1990), 22–34, *Ser. Adv. Math. Appl. Sci.*, 2, *World Sci. Publishing, River Edge, NJ*, 1991. (Carlo Cercignani) **93k:82052** 82C40 (76P05, 80A32)

— On a Broadwell-like lattice in a box. (English summary) *Discrete models of fluid dynamics (Figueira da Foz, 1990)*, 218–229, *Ser. Adv. Math. Appl. Sci.*, 2, *World Sci. Publishing, River Edge, NJ*, 1991. (*see* **93f:82001**) 82C40

— Some remarks on a spatial lattice model. (English summary) *Waves and stability in continuous media (Sorrento, 1989)*, 123–128, *Ser. Adv. Math. Appl. Sci.*, 4, *World Sci. Publishing, River Edge, NJ*, 1991. (*see* **93g:00030**) 82C20 (82C40)

Gabisoniya, O. D. On a dependence between Fourier and Fejér sums. (Russian) *Mat. Zametki* **50** (1991), *no.* 1, 19–33, 158; *translation in Math. Notes* **50** (1991), *no.* 1-2, 674–682 (1992). (S. Aljančić) **93c:42004** 42A20 (42A24)

Gabov, S. A. The Cauchy-Poisson problem in the theory of a floating liquid. (Russian. Russian summary) *Ordered spaces and operator equations (Russian)*, 112–117, 163, *Syktyvkar. Gos. Univ., Syktyvkar*, 1989. (*see* **93m:00034**) 76B10 (35Q35)

Gabow, Harold N. Applications of a poset representation to edge connectivity and graph rigidity. (English summary) *32nd Annual Symposium on Foundations of Computer Science (San Juan, PR, 1991)*, 812–821, *IEEE Comput. Soc. Press, Los Alamitos, CA*, 1991. (*see* **93d:68005**) 05C40

— (*with* Westermann, Herbert H.) Forests, frames, and games: algorithms for matroid sums and applications. *Algorithmica* **7** (1992), *no.* 5-6, 465–497. (Ulrich Faigle) **93f:90133** 90C27 (05B35, 68Q25, 68R10, 90D46)

— A representation for crossing set families with applications to submodular flow problems. (English summary) *Proceedings of the Fourth Annual ACM-SIAM Symposium on Discrete Algorithms (Austin, TX, 1993)*, 202–211, *ACM, New York*, 1993. (Summary) **93m:05182** 05C85 (68Q25, 68R10)

Gabr, M. M. Recursive estimation of bilinear time series models. (English summary) *Comm. Statist. Theory Methods* **21** (1992), *no.* 8, 2261–2277. 62M10

— Nonlinearity tests for bilinear systems. *J. Comput. Appl. Math.* **40** (1992), *no.* 3, 313–322. (Peter A. Cook) **93e:62231** 62M10 (93E12)

Gabrani, Naveen (*with* Shankar, Priti) A note on the reconstruction of a binary tree from its traversals. *Inform. Process. Lett.* **42** (1992), *no.* 2, 117–119. 68Q20 (68Q25, 68R10)

Gabriel, M. D. (*with* Palmer, J. H.; Mann, Robert B.; Haugan, M. P.) Polarization shifts in nonsymmetric theories of gravity. *Proceedings of the 4th Canadian Conference on General Relativity and Relativistic Astrophysics (Winnipeg, MB, 1991)*, 40–44, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93b:83003**) 83D05

— (*with* Palmer, J. H.; Mann, Robert B.; Haugan, M. P.) Electromagnetism in nonsymmetric theories of gravity: gravitationally induced polarization shifts. *Proceedings of the 4th Canadian Conference on General Relativity and Relativistic Astrophysics (Winnipeg, MB, 1991)*, 350–354, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93c:83102** 83D05 (83B05)

Gabriel, P. *see* **Gabriel, Peter**

Gabriel, Patrick (*with* Lemańczyk, Mariusz; Liardet, Pierre) Ensemble d'invariants pour les produits croisés de Anzai. (English summary) [Set of invariants for Anzai skew products] *Mém. Soc. Math. France (N.S.) No.* 47 (1991), 102 *pp.* (Andrés del Junco) **93b:28042** 28D05

Gabriel, Peter (*with* Nazarova, L. A.; Roĭter, A. V.; Vossieck, D.) Tame and wild subspace problems. *Proceedings of the International Conference on Algebra, Part 2 (Novosibirsk, 1989)*, 317–325, *Contemp. Math.*, 131, *Part* 2, *Amer. Math. Soc., Providence, RI*, 1992. (*see* **93b:00030**) 16G60

Gabriel, Steven A. (*with* Pang, Jong-Shi) An inexact NE/SQP method for solving the nonlinear complementarity problem. (English summary) *Comput. Optim. Appl.* **1** (1992), *no.* 1, 67–91. (Joaquím J. Júdice) **93j:90117** 90C33 (65K05)

Gabrielyan, S. S. Characterization of the Cauchy distribution on abelian groups. (Russian. English summary) *Dokl. Akad. Nauk Ukrain. SSR* **1991**, *no.* 10, 44–46, 181. (Summary) **93b:60021** 60B15 (62E10)

le Gac, B. *see* **Le Gac, B.**

Gachkevich, A. R. ★ Термомеханика электропроводных тел при воздействии квазиустановившихся электромагнитных полей. (Russian. Russian summary) [The thermomechanics of electroconducting bodies under the effect of quasisteady electromagnetic fields] "*Naukova Dumka*", *Kiev*, 1992. 192 *pp. ISBN* 5-12-002194-8 (Publisher's description) **93k:73072** 73R05 (73B30, 78A99)

Gacki, H. (*with* Janus, J.) On periodic solutions of second order nonlinear differential equations with singularities. *Comment. Math. Prace Mat.* **30** (1991), *no.* 2, 293–299. (Anthony Uyi Afuwape) **93a:34050** 34C25

Gács, Péter (*with* Dhagat, Aditi; Winkler, Peter M.) On playing "twenty questions" with a liar. *Proceedings of the Third Annual ACM-SIAM Symposium on Discrete Algorithms (Orlando, FL, 1992)*, 16–22, *ACM, New York*, 1992. (Allen Klinger) **93f:68022** 68P99 (62C99, 62L99, 68Q99)

Gadag, V. G. (*with* Gupta, Rajenda P.) On the properties of processes associated with a Markov branching process. *J. Appl. Probab.* **28** (1991), *no.* 3, 520–528. (Summary) **93f:60126** 60J80 (62M05)

— (*with* Gupta, Rajenda P.) A study of the behaviour of certain known estimators on the nonextinction path of a branching process. *Statist. Probab. Lett.* **12** (1991), *no.* 2, 135–139. (Summary) **93e:62214** 62M05

Gadam, Sudhasree Symmetry breaking for a class of semilinear elliptic problems and the bifurcation diagram for a 1-dimensional problem. (English summary) *Rend. Circ. Mat. Palermo* (2) **41** (1992), *no.* 2, 209–220. (Jesús Hernández) **93k:35028** 35B32 (35J65, 47H15, 47N20)

Gade, E., III (*with* Gade, S.) Natural frequencies of the classical two-spin XXZ system. (English summary) *J. Statist. Phys.* **68** (1992), *no.* 5-6, 1143–1145. (Flora Koukiou) **93h:82019** 82B23

Gade, S. (*with* Gade, E., III) Natural frequencies of the classical two-spin XXZ system. (English summary) *J. Statist. Phys.* **68** (1992), *no.* 5-6, 1143–1145. (Flora Koukiou) **93h:82019** 82B23

santa-Gadea, Nicolas *see* **Santa-Gadea, Nicolas**

Gadea, Pedro Martínez (*with* Oubiña, J. A.) Homogeneous pseudo-Riemannian structures and homogeneous almost para-Hermitian structures. (English summary) *Houston J. Math.* **18** (1992), *no.* 3, 449–465. (Elsa Abbena) **93h:53047** 53C30 (53C50)

— (*with* Montesinos Amilibia, Angel) The paracomplex projective spaces as symmetric and natural spaces. *Indian J. Pure Appl. Math.* **23** (1992), *no.* 4, 261–275. (José A. Oubiña) **93g:53095** 53C56 (53C15)

Gadiyar, G. H. (*with* Sharatchandra, H. S.) The missing link: operators for labelling multiplicity in the Clebsch-Gordan series. *J. Phys. A* **25** (1992), *no.* 3, L85–L88. (M. A. Rashid) **93e:22039** 22E70 (20C15, 81R05)

Gadoev, M. G. (*with* Iskhokov, S. A.) A Hardy-type inequality for bounded domains that satisfy a cone condition. (Russian. Tajiki summary) *Dokl. Akad. Nauk Tadzhik. SSR* **34** (1991), *no.* 3, 146–151. (Vladimir D. Stepanov) **93c:46050** 46E35 (26D10)

Gadyl'shin, R. R. The spectrum of elliptic boundary value problems in the case of singular perturbation of the boundary conditions. (Russian) *Asymptotic properties of solutions of differential equations (Russian)*, 4–16, *Akad. Nauk SSSR Ural. Otdel., Bashkir. Nauchn. Tsentr, Ufa*, 1988. (*see* **93m:35033**) 35J25

— Surface potentials and the method of matching asymptotic expansions in the Helmholtz resonator problem. (Russian. Russian summary) *Algebra i Analiz* **4** (1992), *no.* 2, 88–115; *translation in St. Petersburg Math. J.* **4** (1993), *no.* 2, 273–296. (Alexander Belyaev) **93j:35053** 35J05 (35B25, 35C20)

— On a system of embedded resonators. (Russian) *Dokl. Akad. Nauk* **326** (1992), *no.* 6, 939–942. 35J05 (35P20)

— The method of matched asymptotic expansions in a problem on the acoustic Helmholtz resonator. (Russian. Russian summary) *Prikl. Mat. Mekh.* **56** (1992), *no.* 3, 412–418; *translation in J. Appl. Math. Mech.* **56** (1992), *no.* 3, 340–345. (Summary) **93h:35048** 35J05 (35C20, 76Q05)

— The Helmholtz resonator with a small hole. (Russian. Russian summary) *Zh. Vychisl. Mat. i Mat. Fiz.* **32** (1992), *no.* 9, 1464–1475; *translation in Comput. Math. Math. Phys.* **32** (1992), *no.* 9, 1311–1321 (1993). (Summary) **93g:35104** 35P20 (35J05)

Gadzhiev, A. D. Exact theorems on multipliers of spherical expansions and some of their applications. (Russian) *Special problems in function theory, No. IV (Russian)*, 73–100, "*Élm*", *Baku*, 1989. (*see* **93m:00037**) 42B15

— *see also* **Special problems in function theory, 93m:00037**

Gadzhiev, T. S. On the behavior of solutions and their derivatives in domains with corner points for quasilinear equations. (Russian. English and Azerbaijani summaries) *Izv. Akad. Nauk Azerbaidzhan. SSR Ser. Fiz.-Tekhn. Mat. Nauk* **10** (1989), *no.* 2-3, 27–32 (1992). (From the introduction) **93f:35065** 35J60 (35B05, 35F30)

Gaede, Karl-Walter Stochastic orderings in reliability. (English summary) *Stochastic orders and decision under risk (Hamburg, 1989)*, 123–140, *IMS Lecture Notes Monograph Ser.*, 19, *Inst. Math. Statist., Hayward, CA*, 1991. (*see* **93g:60003**) 60K10 (60E15, 60K20, 62N05, 90B25)

Gaenssler, Peter *see* **Gänssler, Peter**

Gaeta, Federico Associate forms, joins, multiplicities and an intrinsic elimination theory. *Topics in algebra, Part* 2 (*Warsaw*, 1988), 71–108, *Banach Center Publ.*, 26, *Part* 2, *PWN, Warsaw*, 1990. (Gary P. Kennedy) **93g:14006** 14C05 (14N05)

— An intrinsic elimination theory by means of forms associated to algebraic varieties. (English summary) *Proceedings of the International Conference on Algebra, Part* 3 (*Novosibirsk*, 1989), 419–438, *Contemp. Math.*, 131, *Part* 3, *Amer. Math. Soc., Providence, RI*, 1992. (Raquel Mallavibarrena) **93i:14005** 14C05 (14N05)

Gaeta, Giuseppe A simple model of DNA dynamics. *Nonlinear coherent structures in physics and biology (Dijon, 1991)*, 95–100, *Lecture Notes in Phys.*, 393, *Springer, Berlin*, 1991. (*see* **93e:00025**) 92D30

— Reduction and equivariant branching lemma: dynamical systems, evolution PDEs, and gauge theories. (English summary) *Acta Appl. Math.* **28** (1992), *no.* 1, 43–68. (Reiner Lauterbach) **93k:58168** 58F14 (34C23, 35A30, 58G35)

— (*with* Cicogna, G.) Lie-point symmetries in bifurcation problems. (English and French summaries) *Ann. Inst. H. Poincaré Phys. Théor.* **56** (1992), *no.* 4, 375–414. (A. Vanderbauwhede) **93i:58134** 58F35 (58F14)

— Forced periodic oscillations and the Jones polynomial. *Internat. J. Theoret. Phys.* **31** (1992), *no.* 2, 221–228. (Summary) **93i:58132** 58F30 (34C15, 57M25, 70K40)

— (*with* Cicogna, G.) Lie point-symmetries for autonomous systems and resonance. *J. Phys. A* **25** (1992), *no.* 6, 1535–1538. (Wen Xiu Ma) **93c:58193** 58F35

— Autonomous systems, dynamical systems, LPTI symmetries, topology of trajectories, and periodic solutions. (English summary) *Internat. J. Theoret. Phys.* **32** (1993), *no.* 1, 191–199. (Agostino Pràstaro) **93m:58095** 58F25 (34C25, 34C35, 58F22)

— (*with* Cicogna, G.) Nonlinear Lie symmetries in bifurcation theory. (English summary) *Phys. Lett. A* **172** (1993), *no.* 5, 361–364. (Summary) **93i:58113** 58F14 (34C23, 34C35)

Gaffney, Terence Integral closure of modules and Whitney equisingularity. *Invent. Math.* **107** (1992), *no.* 2, 301–322. (Paulo Ferreira da Silva Porto, Jr.) **93d:32055** 32S15 (13C99, 14B10, 58C27)

Gafiichuk, V. V. (*with* Shcherbachenko, T. M.; Vasyunyk, Z. I.) Mathematical modeling of space-time self-organization in systems of reaction-diffusion type. (Russian. English and Russian summaries) *Dokl. Akad. Nauk Ukrainy* **1992**, *no.* 7, 14–20, 177. (Summary) **93f:35109** 35K57

— (*with* Lubashevskiĭ, I. A.) Analysis of dissipative structures based on the Gaussian variational principle. (Ukrainian. Russian and Ukrainian summaries) *Ukraïn. Mat. Zh.* **44** (1992), *no.* 9, 1186–1192. (Summary) **93m:58031** 58E30 (35K57, 49S05, 58F05, 58F39)

Gaforov, A. Linear methods for the summation of Fourier series that have the class W_p^r as a saturation class. (Russian. Tajiki summary) *Dokl. Akad. Nauk Tadzhik. SSR* **33** (1990), *no.* 10, 641–644 (1991). (T. I. Akhobadze) **93f:42014** 42A24 (41A40)

Gafurov, D. Z. ★ Отделимость образов в пространстве объектов. (Russian. English summary) [Separability of images in an object space] Препринт [Preprint], 914. *Akad. Nauk SSSR Sibirsk. Otdel., Vychisl. Tsentr, Novosibirsk*, 1991. 30 *pp.* (Summary) **93i:68153** 68T10

Gafurov, M. B. (*with* Abdrashitov, D. V.) Investigation of nonreflecting conditions on the boundaries of a computational domain for elastoplastic media. (Russian) *Numerical methods for solving boundary value problems (Russian)*, 4–11, *Akad. Nauk SSSR Ural. Otdel., Bashkir. Nauchn. Tsentr, Ufa*, 1989. (*see* **93m:00033**) 73V20 (73E99)

— *see also* **Numerical methods for solving boundary value problems, 93m:00033**

Gafurov, N. On the number of divisors of a quadratic form. (Russian) *Trudy Mat. Inst. Steklov.* **200** (1991), 124–135; *translation in Proc. Steklov Inst. Math.* **1993**, *no.* 2, 137–148. (Hartmut Menzer) **93a:11079** 11N37 (11L07)

Gage, Jennifer *see* **Weil, André, 93j:01015b**

Gage, Michael E. On the size of the blow-up set for a quasilinear parabolic equation. *Geometry and nonlinear partial differential equations (Fayetteville, AR, 1990)*, 41–58,

Contemp. Math., 127, *Amer. Math. Soc., Providence, RI*, 1992. (Zhen Chao Cao) **93c:35066** 35K55 (35B05)

lopes Gagean, David *see* **Lopes Gagean, David**

Gagneux, Gérard (*with* Madaune-Tort, Monique) Sur la question de l'unicité pour des inéquations des milieux poreux. (English summary) [On uniqueness for the inequalities governing processes in porous media] *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 8, 605–608. (Summary) **93g:76105** 76S05 (35K10, 35Q35, 76M30)

Gagnidze, A. G. Uniqueness classes for solutions of the Cauchy problem for higher-order parabolic equations with unbounded coefficients. I. (Russian. English and Georgian summaries) *Trudy Tbiliss. Univ. Mat. Mekh. Astronom. No.* 27 (1990), 97–133 (1991). (Summary) **93j:35087** 35K30

Gagnon, Langis Self-similar solutions for a coupled system of nonlinear Schrödinger equations. *J. Phys. A* **25** (1992), *no.* 9, 2649–2667. (Summary) **93c:35145** 35Q55

Gahinet, P. (*with* Laub, Alan J.) Algebraic Riccati equations and the distance to the nearest uncontrollable pair. *SIAM J. Control Optim.* **30** (1992), *no.* 4, 765–786. (Petko Petkov) **93d:93028** 93B35 (93B05, 93B06, 93B40)

Gähler, Werner (*with* Eklund, P.) Fuzzy filter functors and convergence. *Applications of category theory to fuzzy subsets* (*Linz*, 1989), 109–136, *Theory Decis. Lib. Ser. B Math. Statist. Methods*, 14, *Kluwer Acad. Publ., Dordrecht*, 1992. (Introduction) **93h:18005** 18A99 (04A72)

— *see also* **Recent developments of general topology and its applications, 93m:54004**

Gaida, R. P. (*with* Tretyak, V. I.; Yaremko, Yu. G.) Center of mass variables in the relativistic Lagrangian mechanics of a system of particles. (Ukrainian. English, Russian and Ukrainian summaries) *Ukrain. Fiz. Zh.* **36** (1991), *no.* 12, 1807–1818. (Summary) **93d:70032** 70H40 (70F99, 70G50, 70H33, 70H35, 78A25)

Gaidenko, P. P. On the history of problems in continuity: transformations and traditions. (Russian) *Traditions and revolutions in the history of science* (*Russian*), 166–187, "*Nauka*", *Moscow*, 1991. (*see* **93b:01003**) 01A05 (00A30)

— *see also* **Traditions and revolutions in the history of science, 93b:01003**

Gaidis, Ya. Yu. 3-planar curves on the canonical realization of the Grassmannian $G_{6,3}$ in CP^{19}. (Russian) *Problems in group theory and homological algebra* (*Russian*), 10–18, *Matematika, Yaroslav. Gos. Univ., Yaroslavl'*, 1988. (*see* **93b:00020**) 14M15

Gaiduk, A. R. Analytical synthesis of controls for nonlinear objects of a certain class. (Russian. Russian summary) *Avtomat. i Telemekh.* **1993**, *no.* 2, 64–76; *translation in Automat. Remote Control* **54** (1993), *no.* 2, *part* 1, 227–237. 93B50 (93C10)

Gaiduk, S. I. Application of the contour integral method to the solution of a problem on transverse vibrations of a viscoelastic membrane caused by an impact. (Russian) *Differentsial'nye Uravneniya* **27** (1991), *no.* 8, 1377–1387, 1469; *translation in Differential Equations* **27** (1991), *no.* 8, 977–985 (1992). (Ján Lovíšek) **93b:73017** 73D05 (35L35, 73D30, 73F15, 73K12, 73K15)

Gaiduk, Yu. M. The scientific merits of P. Bohl in the estimation of his contemporaries. (Russian) *Istor.-Mat. Issled. No.* 32-33 (1990), 120–137. (A. Reinfelds) **93d:01067** 01A70

Gaier, Dieter (*with* Hayman, Walter K.) Moduli of long quadrilaterals and thick ring domains. (Italian summary) *Rend. Mat. Appl.* (7) **10** (1990), *no.* 4, 809–834 (1991). (N. Papamichael) **93b:30007** 30C35 (30C30)

— (*with* Hayman, Walter K.) On the computation of modules of long quadrilaterals. *Constr. Approx.* **7** (1991), *no.* 4, 453–467. (N. Papamichael) **93a:30006** 30C30 (30C35, 30E10)

— Conformal mapping of analytic corners in a generalized sense. *Analysis* **12** (1992), *no.* 1-2, 187–193. (Robin J. Cunningham) **93d:30009** 30C35

— On the convergence of the Bieberbach polynomials in regions with piecewise analytic boundary. *Arch. Math.* (*Basel*) **58** (1992), *no.* 5, 462–470. (Frank D. Lesley) **93c:30006** 30C10 (30C35, 30E10)

— Abraham Ezechiel Plessner (1900–1961): his work and his life. *Math. Intelligencer* **14** (1992), *no.* 3, 31–36. (F. Smithies) **93i:01024** 01A70 (01A72)

— (*with* Andrievskiĭ, V. V.) Uniform convergence of Bieberbach polynomials in domains with piecewise quasianalytic boundary. *Mitt. Math. Sem. Giessen No.* 211 (1992), 49–60. (N. Papamichael) **93k:30013** 30C30 (30C35)

Gaifman, Haim Pointers to truth. *J. Philos.* **89** (1992), *no.* 5, 223–261. (Mohamed Amer) **93h:03002** 03A05 (00A30)

Gaignebet, Alain Équation de Schrödinger unidimensionnelle stationnaire. Quantification dans le cas d'un double puits de potentiel symétrique. (English and French summaries) [The one-dimensional stationary Schrödinger equation: quantization in the case of a double well with symmetrical potential] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 2, 113–118. (Eric Benoît) **93m:34137** 34L40 (03H05, 34E15, 34E20, 81Q05)

Gail, H. R. (*with* Hantler, S. L.; Taylor, B. A.) On a preemptive Markovian queue with multiple servers and two priority classes. *Math. Oper. Res.* **17** (1992), *no.* 2, 365–391. (Summary) **93b:90028** 90B22 (60K25)

Gaillard, A. (*with* Cochand, M.; Gröflin, H.) Lattice matrices, intersection of ring families and dicuts. (English summary) *Discrete Math.* **110** (1992), *no.* 1-3, 61–80. (Joseph Zaks) **93j:90060** 90C08 (90C10, 90C27, 90C35)

Gaillard, Pierre-Yves Invariant syzygies and semisimple groups. *Adv. Math.* **92** (1992), *no.* 1, 27–46. (Jorge A. Vargas) **93c:17014** 17B10 (22E45)

— Koszul algebras of invariants. *J. Algebra* **146** (1992), *no.* 1, 85–95. (Luchezar L. Avramov) **93b:16063** 16W20 (16E99)

Gaines, J. (*with* Faure, O.) Simulation trajectorielle des diffusions. (French summary) [Pathwise simulation of diffusions] *Probabilités numériques*, 54–60, *Collect. Didact.*, 10, *INRIA, Rocquencourt*, 1992. (*see* **93k:65002**) 65C20

Gainov, A. T. Maximal spaces of skew-symmetric and symmetric anticommuting matrices. (Russian) *Sibirsk. Mat. Zh.* **32** (1991), *no.* 6, 30–41, 203; *translation in Siberian Math. J.* **32** (1991), *no.* 6, 924–933 (1992). (From the text) **93c:16028** 16S50 (15A30)

Gairola, U. C. (*with* Singh, Shyam Lal) Coordinatewise commuting and weakly commuting maps, and extension of Jungck and Matkowski contraction principles. *J. Math. Phys. Sci.* **25** (1991), *no.* 4, 305–318. 54H25

Gaishun, I. V. (*with* Hoang Van Quang) Conditions for complete controllability and observability of discrete two-parameter systems. (Russian) *Differentsial'nye Uravneniya* **27** (1991), *no.* 2, 187–193, 363; *translation in Differential Equations* **27** (1991), *no.* 2, 125–130. (From the introduction) **93a:93016** 93B05 (93C55, 93C95)

— (*with* Hoang Van Quang) Controllability of Roesser systems in a global state space. (Russian. Russian summary) *Differentsial'nye Uravneniya* **28** (1992), *no.* 11, 1871–1881, 2021. (From the introduction) **93m:93011** 93B05 (93C55)

— (*with* Borovik, P. P.) Stabilization of two-parametric differential-difference systems. (Russian. English and Russian summaries) *Dokl. Akad. Nauk Belarusi* **36** (1992), *no.* 5, 389–392, 476. (Summary) **93f:93112** 93D15 (34K35)

— Topological properties of two-parameter discrete control systems. (Russian. English and Russian summaries) *Dokl. Akad. Nauk Belarusi* **36** (1992), *no.* 9-10, 773–776, 859. (Summary) **93j:93015** 93B05 (93B07, 93B35, 93C55)

— (*with* Hoang Van Quang) Solvability of a class of operator equations and controllability of the Roesser system. (Russian) *Dokl. Akad. Nauk SSSR* **322** (1992), *no.* 1, 16–19; *translation in Soviet Math. Dokl.* **45** (1992), *no.* 1, 7–11. (Mietek Brdyś) **93e:47095** 47N20 (47N70, 93B05)

— (*with* Burakov, V. S.; Yanovich, L. A.; Bobkov, V. V.; Monastyrnyĭ, P. I.) Vladimir Ivanovich Krylov (on the occasion of his 90th birthday). (Russian) *Vestsī Akad. Navuk Belarusī Ser. Fīz. Mat. Navuk* **1992**, *no.* 5-6, 117–119. (Editors) **93m:01064** 01A70

Gaishun, P. V. (*with* Gabasov, R. F.; Kirillova, F. M.) Optimal estimator for linear systems. (Russian and Lithuanian summaries) *Informatica* **2** (1991), *no.* 2, 195–220, 313, 321. (Srinivasu Maka) **93c:93025** 93B40 (49J35, 93C55, 93C60, 93E10)

— (*with* Gabasov, R. F.; Kirillova, F. M.; Prishchepova, S. V.) Optimal feedback for a discrete system with disturbance compensation. I. Synthesis of an optimal estimator. (Russian) *Avtomat. i Telemekh.* **1992**, *no.* 1, 52–62; *translation in Automat. Remote Control* **53** (1992), *no.* 1, *part* 1, 44–51. (Summary) **93b:49041** 49N35 (93B51)

— (*with* Gabasov, R. F.; Kirillova, F. M.; Prishchepova, S. V.) Optimal feedback for a discrete system with disturbance compensation. II. Synthesis of an optimal regulator. (Russian. Russian summary) *Avtomat. i Telemekh.* **1992**, *no.* 4, 33–39; *translation in Automat. Remote Control* **53** (1992), *no.* 4, *part* 1, 500–505. (From the introduction) **93f:49032** 49N35 (93B51)

Gaishyn, I. V. *see* **Gaishun, I. V.**

Gaisin, A. M. A uniqueness theorem for Dirichlet series. (Russian) *Mat. Zametki* **50** (1991), *no.* 2, 54–60; *translation in Math. Notes* **50** (1991), *no.* 1-2, 807–812 (1992). (Jia Rong Yu) **93d:30004** 30B50 (30D10)

— The behavior of the sum of a Dirichlet series of a given growth. (Russian) *Mat. Zametki* **50** (1991), *no.* 4, 47–56, 158; *translation in Math. Notes* **50** (1991), *no.* 3-4, 1018–1024 (1992). (W. H. J. Fuchs) **93g:30005** 30B50 (30D35)

Gaite, José Symmetry in catastrophe theory, phase diagrams and two-dimensional conformal field theories. *J. Phys. A* **25** (1992), *no.* 10, 3051–3062. (D. R. J. Chillingworth) **93j:58015** 58C28 (81T40, 82B26)

Gaitsgori, V. G. ★ Управление системами с быстрыми и медленными движениями. (Russian) [Control of systems with fast and slow motions] With an English summary. "*Nauka*", *Moscow*, 1991. 224 *pp. ISBN* 5-02-014280-8 (Iordan I. Slavov) **93f:49001** 49–02 (34E15, 34H05, 49K40, 93C70)

— Some asymptotic properties of optimal control problems with averaged performance indices considered on unbounded time intervals. *Optimization and nonlinear analysis* (*Haifa*, 1990), 130–141, *Pitman Res. Notes Math. Ser.*, 244, *Longman Sci. Tech., Harlow*, 1992. (*see* **93d:49004**) 49K40 (49K10)

— Suboptimization of singularly perturbed control systems. (English summary) *SIAM J. Control Optim.* **30** (1992), *no.* 5, 1228–1249. (T. R. Gichev) **93h:49044** 49K40 (34E15, 34H05, 49K24)

Gaĭvoronskiĭ, A. A. (*with* Ermol'ev, Yu. M.) Stochastic quasigradient methods for optimization of discrete event systems. (English summary) *Ann. Oper. Res.* **39** (1992), *no.* 1-4, 1–39 (1993). (Kurt Marti) **93k:90060** 90C15

Gaĭvoronskiĭ, È. I. (*with* Ostrovskiĭ, E. I.) Nonasymptotic estimation of the deviation of a multidimensional empirical distribution function. (Russian) *Teor. Veroyatnost. i Primenen.* **36** (1991), *no.* 3, 570–571; *translation in Theory Probab. Appl.* **36** (1991), *no.* 3, 592–594 (1992). (Sándor Csörgő) **93a:60040** 60F10 (62E17, 62G05)

Gajda, W. (*with* Burghelea, D.; Fiedorowicz, Z.) Adams operations in Hochschild and cyclic homology of de Rham algebra and free loop spaces. *K-Theory* **4** (1991), *no.* 3, 269–287. (Ulrike Tillmann) **93b:55025a** 55S25 (19D55, 55N91, 58B05)

— (*with* Burghelea, D.; Fiedorowicz, Z.) Erratum: "Adams operations in Hochschild and cyclic homology of de Rham algebra and free loop space". *K-Theory* **5** (1991), *no.* 3, 293. (Ulrike Tillmann) **93b:55025b** 55S25 (19D55, 55N91, 58B05)

Gajda, Zbigniew (*with* Kominek, Zygfryd) On separation theorems for subadditive and superadditive functionals. *Studia Math.* **100** (1991), *no.* 1, 25–38. (Summary) **93h:39003** 39B52 (22A15)

— Note on decomposition of bounded functions into the sum of periodic terms. *Acta Math. Hungar.* **59** (1992), *no.* 1-2, 103–106. (M. Laczkovich) **93d:39001** 39A10 (26B40, 39A70)

— On functional equations associated with characters of unitary representations of groups. *Aequationes Math.* **44** (1992), *no.* 1, 109–121. (Harkrishan Vasudeva) **93e:39012** 39B52 (43A60, 43A65)

Gajek, Lesław The rate of strong consistency of a class of nonparametric hazard function estimators. (English summary) *Sankhyā Ser. A* **54** (1992), *no.* 1, 97–106. (Margaret P. Gessaman) **93j:62094** 62G05 (62G20)

Gajewski, H. (*with* Sommrey, J.) On the uniqueness of solutions of van Roosbroeck equations. *Z. Angew. Math. Mech.* **72** (1992), *no.* 2, 151–153. (Summary) **93a:34036** 34B99 (34E15, 78A99)

Gajic, Zoran (*with* Petkovski, Dj.) Recursive reduced-order solution of linear-quadratic output control problems with small parameters. (English summary) *Computational systems analysis*, 133–152, *Elsevier, Amsterdam*, 1992. (*see* **93b:93006**) 93C70 (49N10)

— (*with* Su, Wu Chung; Shen, Xuemin) The recursive reduced-order solution of an open-loop control problem of linear singularly perturbed systems. *IEEE Trans. Automat. Control* **37** (1992), *no.* 2, 279–281. (T. R. Gichev) **93a:93075** 93C70 (34E15)

— (*with* Qureshi, Muhammad T.) A new version of the Chang transformation. *IEEE Trans. Automat. Control* **37** (1992), *no.* 6, 800–801. (Summary) **93b:93072** 93C70 (93B17, 93B40)

— (*with* Su, Wu Chung; Shen, Xuemin) The exact slow-fast decomposition of the algebraic Riccati equation of singularly perturbed systems. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 9, 1456–1459. (G. A. Kurina) **93h:34114** 34H05 (34E15, 49K40, 93B11)

Gajjar, Amrutbhai V. (*with* Patel, Manharlal N.) Type I progressively censored samples from power series distribution. (Italian summary) *Statistica* (*Bologna*) **51** (1991), *no.* 2, 259–266. 62N05

Gakis, K. G. (*with* Sivazlian, B. D.) The use of multiple integrals in the study of the backward and forward recurrence times for the ordinary renewal process. (English summary) *Stochastic Anal. Appl.* **10** (1992), *no.* 4, 409–416. 60K05
— (*with* Sivazlian, B. D.) A generalization of the inspection paradox in an ordinary renewal process. (English summary) *Stochastic Anal. Appl.* **11** (1993), *no.* 1, 43–48. (Summary) **93j:60124** 60K05
Gál, Anna Lower bounds for the complexity of reliable Boolean circuits with noisy gates. (English summary) 32*nd Annual Symposium on Foundations of Computer Science* (*San Juan, PR*, 1991), 594–601, *IEEE Comput. Soc. Press, Los Alamitos, CA*, 1991. (Summary) **93k:68044** 68Q25
Gal, Sorin Gh. Approximation of continuous functions on [0, 1] by monotone sequences of polynomials having interpolating properties at 0 and 1. *Seminar on Mathematical Analysis* (*Cluj-Napoca*, 1989–1990), 45–52, *Preprint*, 90-7, "*Babeş-Bolyai*" *Univ., Cluj-Napoca*, 1990. (Ryozi Sakai) **93e:41011** 41A10
Gal, Tomas (*with* Geue, Ferdinand) A new pivoting rule for solving various degeneracy problems. *Oper. Res. Lett.* **11** (1992), *no.* 1, 23–32. (Summary) **93b:90046** 90C08 (90C35)
Galaktionov, V. A. (*with* Posashkov, S. A.) Lower bounds for unbounded solutions of a parabolic system of quasilinear equations. (Russian) *Conference on Differential Equations and Applications* (*Ruse*, 1989), 160–171, *Tech. Univ., Ruse*, 1991. (*see* **93f:34004**) 35K40 (35K55)
— On a blow-up set for the quasilinear heat equation $u_t = (u^\sigma u_x)_x + u^{\sigma+1}$. *J. Differential Equations* **101** (1993), *no.* 1, 66–79. (Song Mu Zheng) **93m:35030** 35B40 (35K55)
Galambos, G. (*with* Frenk, J. B. G.) A simple proof of Liang's lower bound for on-line bin packing and the extension to the parametric case. (English summary) *Discrete Appl. Math.* **41** (1993), *no.* 2, 173–178. (Summary) **93m:05053** 05B40
Galambos, Janos (*with* Xu, Yuan) Regularly varying expected residual life and domains of attraction of extreme value distributions. *Ann. Univ. Sci. Budapest. Eötvös Sect. Math.* **33** (1990), 105–108 (1991). (Charles M. Goldie) **93c:60074** 60G70 (60E05)
— The extension of Williams' method to the metric theory of general Oppenheim expansions. *Studia Sci. Math. Hungar.* **26** (1991), *no.* 2-3, 321–327. (B. Volkmann) **93i:11093** 11K55 (60J10)
— (*with* Hagwood, Robert Charles) The characterization of a distribution function by the second moment of the residual life. *Comm. Statist. Theory Methods* **21** (1992), *no.* 5, 1463–1468. (Summary) **93e:62040** 62E10
— (*with* Indlekofer, Karl-Heinz) Additive functions vanishing outside a given set of primes. I. Limiting distribution on short intervals. *Publ. Math. Debrecen* **40** (1992), *no.* 3-4, 211–217. (Tian Ze Wang) **93h:11106** 11N60 (11K65)
— (*with* Xu, Yuan) Some optimal bivariate Bonferroni-type bounds. *Proc. Amer. Math. Soc.* **117** (1993), *no.* 2, 523–528. (E. Seneta) **93d:60026** 60E15 (60C05)
— *see also* **Probability theory and applications, 93i:60005**
Galán, R. (*with* Matía, F.; Jiménez, A.; Sanz, R.) Fuzzy controllers: lifting the linear-nonlinear frontier. (English summary) *Fuzzy Sets and Systems* **52** (1992), *no.* 2, 113–128. 93C42 (04A72)
Galanin, M. P. Estimation of the closeness of solutions of a system of Maxwell equations and of its quasistationary approximation. (Russian. English summary) *Akad. Nauk SSSR Inst. Prikl. Mat. Preprint* **1990**, *no.* 129, 27 *pp.* (Summary) **93b:78002** 78A25 (35Q60)
— Comparison between solutions of the Maxwell system of equations and its quasi-stationary approximation. (English, Russian and Lithuanian summaries) *Informatica* **2** (1991), *no.* 3, 378–402, 458, 465. 78A25
Galanis, Sofoklis (*with* Hadjidimos, Apostolos) Best cyclic repartitioning for optimal successive overrelaxation convergence. *SIAM J. Matrix Anal. Appl.* **13** (1992), *no.* 1, 102–120. (Summary) **93g:65047** 65F10
Galant, David Algebraic methods for modified orthogonal polynomials. *Math. Comp.* **59** (1992), *no.* 200, 541–546. (John B. Kioustelidis) **93b:42036** 42C05 (65D20)
Galanti, B. (*with* Sulem, Pierre-Louis) Large-scale instabilities and inverse cascades in ordinary and MHD flows at low Reynolds numbers. (English summary) *Large scale structures in nonlinear physics* (*Villefranche-sur-Mer*, 1991), 126–146, *Lecture Notes in Phys.*, 392, *Springer, Berlin*, 1991. (*see* **93d:00036**) 76E25 (76D99, 76W05)
Galas, F. New nonlocal symmetries with pseudopotentials. (English summary) *J. Phys. A* **25** (1992), *no.* 15, L981–L986. (Naruyoshi Asano) **93i:35122** 35Q53 (35Q55, 58F35, 58F37)
Galaz Fontes, Fernando Measures of noncompactness and upper semi-Fredholm perturbation theorems. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 3, 891–897. (Hans-Olav Tylli) **93i:47015** 47A55 (47A53, 47H09)
Galbiati, G. (*with* Camerini, P. M.; Maffioli, F.) The image of weighted combinatorial problems. Topological network design (Copenhagen, 1989). *Ann. Oper. Res.* **33** (1991), *no.* 1-4, 181–197. (Gerald Hammer) **93b:90070** 90C27 (05B35)
— (*with* Camerini, P. M.; Maffioli, F.) Random pseudo-polynomial algorithms for exact matroid problems. *J. Algorithms* **13** (1992), *no.* 2, 258–273. (Charles J. Colbourn) **93c:68034** 68Q20 (05B35, 68R05)
— *see also* **Combinatorial structures and algorithms, 93k:90004**
Galbiati, M. (*with* Fortuna, E.) A counterexample to the separation of semialgebraic sets. *Math. Scand.* **69** (1991), *no.* 2, 161–165 (1992). (Jesús M. Ruiz) **93d:14085** 14P10
Galbis, Antonio (*with* Bonet, José; Defant, Andreas) Tensor products of Fréchet or (DF)-spaces with a Banach space. *J. Math. Anal. Appl.* **166** (1992), *no.* 2, 305–318. (Klaus-Dieter Bierstedt) **93e:46006** 46A32 (46A08, 46B08, 46M05)
Galbraith, Harold W. (*with* Louck, James D.) Canonical solution of the SU(3) ↓ SO(3) reduction problem from the SU(3) pattern calculus. *Acta Appl. Math.* **24** (1991), *no.* 1, 59–108. (Mariano A. del Olmo) **93a:20024** 20C35 (20G05, 20G45)
Galbraith, John W. (*with* Zinde-Walsh, Victoria) The GLS transformation matrix and a semi-recursive estimator for the linear regression model with ARMA errors. *Econometric Theory* **8** (1992), *no.* 1, 95–111. (Luis Firinguetti) **93d:62159** 62M10 (62J05, 62P20)
Galdi, Giovanni Paolo *see* **Mathematical problems relating to the Navier-Stokes equation, 93e:35003** *and* **Developments in partial differential equations and applications to mathematical physics, 93j:35004**
Gale, David Mathematical entertainments. *Math. Intelligencer* **14** (1992), *no.* 4, 58–62. (L. M. Kelly) **93m:00010** 00A35 (51–02, 52–02)
Gale, Douglas Standard securities. (English summary) *Rev. Econom. Stud.* **59** (1992), *no.* 4, 731–755. (Summary) **93f:90021** 90A11
Galé, José E. Weakly compact homomorphisms and semigroups in Banach algebras. *J. London Math. Soc.* (2) **45** (1992), *no.* 1, 113–125. (George A. Willis) **93d:46076** 46H05 (43A20)
Galeana-Sánchez, H. On the existence of kernels and h-kernels in directed graphs. (English summary) *Discrete Math.* **110** (1992), *no.* 1-3, 251–255. (Summary) **93h:05084** 05C20
Galeeva, R. F. (*with* Uherka, David J.; Tresser, Charles; Campbell, David K.) Solvable models for the quasi-periodic transition to chaos. (English summary) *Phys. Lett. A* **170** (1992), *no.* 3, 189–194. (Arkady S. Pikovsky) **93h:58106** 58F13 (58F14, 58F27)
— (*with* Tresser, Charles) Piecewise linear discontinuous double coverings of the circle. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 1, 285–291. (Arkady S. Pikovsky) **93f:58123** 58F08 (58F03)
Galeotti, Marcello (*with* Villarini, Massimo) Some properties of planar polynomial systems of even degree. (English summary) *Ann. Mat. Pura Appl.* (4) **161** (1992), 299–313. (Jinghuang Tian) **93j:58114** 58F21 (34C05)
Galetti, D. (*with* de Toledo Piza, A. F. R.) Discrete quantum phase spaces and the mod N invariance. (English summary) *Phys. A* **186** (1992), *no.* 3-4, 513–523. (Günter Brauns) **93h:81070** 81S30 (81R05, 81R30)
— (*with* Cândido Ribeiro, M. A.) A semiclassical description of nonlocal effects on barrier transmission. *Phys. Scripta* **45** (1992), *no.* 5, 417–421. (Summary) **93b:81068** 81Q20 (81S30, 81V35)
Gal-Ezer, Judith (*with* Zwas, Gideon) Corrected summation of alternating series. (English summary) *Internat. J. Math. Ed. Sci. Tech.* **24** (1993), *no.* 2, 171–176. 40–01
Galgani, Luigi The quest for Planck's constant in classical physics. (English summary) *Probabilistic methods in mathematical physics* (*Siena*, 1991), 209–221, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93g:81002**) 81P05 (81–01, 81–03, 81V10)
— (*with* Giorgilli, Antonio; Martinoli, Andrea; Vanzini, Stefano) On the problem of energy equipartition for large systems of the Fermi-Pasta-Ulam type: analytical and numerical estimates. (English summary) *Phys. D* **59** (1992), *no.* 4, 334–348. (Summary) **93h:58135** 58F30 (58F05, 58F27, 70H05)
Gali, I. M. (*with* El-Zahaby, S. A.) Optimal control of a system governed by variational inequalities for infinite order elliptic operator. *Kyungpook Math. J.* **31** (1991), *no.* 2, 193–200. (Igor Bock) **93e:49016** 49J40 (35J85, 47H19, 49J20)
Galias, Z. (*with* Ogorzałek, Maciej J.) Limit sets of trajectories in a nonlinear digital system. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, II* (*Kobe*, 1991), 389–394, *Mita, Tokyo*, 1992. (*see* **93g:93006**) 93C62 (93C10)
Galicki, Krzysztof (*with* Nitta, Takashi) Nonzero scalar curvature generalizations of the ALE hyper-Kähler metrics. *J. Math. Phys.* **33** (1992), *no.* 5, 1765–1771. (Henrik Pedersen) **93d:53056** 53C25 (32L25, 53C55)
Galiev, Sh. I. Directions of descent for minimax problems. (Russian. Russian summary) *Zh. Vychisl. Mat. i Mat. Fiz.* **33** (1993), *no.* 1, 22–34; *translation in Comput. Math. Math. Phys.* **33** (1993), *no.* 1, 19–28. (Summary) **93j:90097** 90C30 (49K35, 65K05)
Galiev, V. I. (*with* Polupanov, A. F.; Shparlinskii, I. E.) Distances from differences of roots of polynomials to the nearest integers. (English summary) *Inform. Process. Lett.* **43** (1992), *no.* 3, 143–146. (Summary) **93j:68072** 68Q25 (34A99, 34E05, 65Y20)
— (*with* Polupanov, A. F.; Shparlinskiĭ, I. E.) On the construction of solutions of systems of linear ordinary differential equations in the neighbourhood of a regular singularity. *J. Comput. Appl. Math.* **39** (1992), *no.* 2, 151–163. (Bernard J. Harris) **93a:34010** 34A20 (34E05, 65L99)
Galil, Zvi (*with* Dubiner, Moshe; Magen, Edith) Faster tree pattern matching. 31*st Annual Symposium on Foundations of Computer Science, Vol. I, II* (*St. Louis, MO*, 1990), 145–150, *IEEE Comput. Soc. Press, Los Alamitos, CA*, 1990. (Summary) **93a:68048** 68Q20 (68Q25)
— (*with* Alon, Noga; Margalit, Oded) On the exponent of the all pairs shortest path problem. (English summary) 32*nd Annual Symposium on Foundations of Computer Science* (*San Juan, PR*, 1991), 569–575, *IEEE Comput. Soc. Press, Los Alamitos, CA*, 1991. (Summary) **93e:68029** 68Q25 (05C85)
— (*with* Giancarlo, Raffaele) On the exact complexity of string matching: lower bounds. *SIAM J. Comput.* **20** (1991), *no.* 6, 1008–1020. (D. M. Campbell) **93a:68049** 68Q20 (68Q25, 68U15)
— (*with* Averbuch, Amir; Winograd, Shmuel) Classification of all the minimal bilinear algorithms for computing the coefficients of the product of two polynomials modulo a polynomial. II. The algebra $G[u]/(u^n)$. *Theoret. Comput. Sci.* **86** (1991), *no.* 2, 143–203. (Hans F. de Groote) **93a:68065** 68Q40 (12D05)
— (*with* Eppstein, David; Giancarlo, Raffaele; Italiano, Giuseppe F.) Sparse dynamic programming. I. Linear cost functions. (English summary) *J. Assoc. Comput. Mach.* **39** (1992), *no.* 3, 519–545. (Moshe Sniedovich) **93i:90107a** 90C39 (49L20)
— (*with* Eppstein, David; Giancarlo, Raffaele; Italiano, Giuseppe F.) Sparse dynamic programming. II. Convex and concave cost functions. (English summary) *J. Assoc. Comput. Mach.* **39** (1992), *no.* 3, 546–567. (Moshe Sniedovich) **93i:90107b** 90C39 (49L20)
— (*with* Ben-Amram, Amir M.) On pointers versus addresses. (English summary) *J. Assoc. Comput. Mach.* **39** (1992), *no.* 3, 617–648. (Julian Padget) **93k:68027** 68Q05 (68P20, 68Q30)
— (*with* Giancarlo, Raffaele) On the exact complexity of string matching: upper bounds. *SIAM J. Comput.* **21** (1992), *no.* 3, 407–437. (D. M. Campbell) **93g:68051** 68Q20 (68Q25, 68U15)
— (*with* Breslauer, Dany) A lower bound for parallel string matching. (English summary) *SIAM J. Comput.* **21** (1992), *no.* 5, 856–862. (Summary) **93j:68064** 68Q22 (68Q25, 68U15)
— (*with* Italiano, Giuseppe F.) Fully dynamic algorithms for 2-edge connectivity. (English summary) *SIAM J. Comput.* **21** (1992), *no.* 6, 1047–1069. (Summary) **93i:68142** 68R10 (68P05, 68Q25)
— (*with* Italiano, Giuseppe F.) Maintaining the 3-edge-connected components of a graph on-line. (English summary) *SIAM J. Comput.* **22** (1993), *no.* 1, 11–28. (Narsingh Deo) **93m:68075** 68Q25 (05C40, 68P05, 68R10)
Galilei, Galileo *see* **Margolis, Howard, 93a:01018; Biagioli, Mario, 93b:01036; Selleri, Franco, 93f:01010** *and* **Contemporary portraits of Galileo**
Galimov, A. A. Mathematical modeling of electric fields and mass transport processes in electrochemical systems. (Russian) *Numerical methods for solving boundary value*

problems (*Russian*), 47–58, *Akad. Nauk SSSR Ural. Otdel., Bashkir. Nauchn. Tsentr, Ufa*, 1989. (*see* **93m:00033**) 78A99 (80A20, 82C70)

Galiņa, Inese Existenz des Fixpunktes für die Familie der Abbildungen in einem metrischen Raum. (English, German and Russian summaries) [Existence of the fixed point for the family of mappings in a metric space] *Mathematics* (*Russian*), 161–162, *Latv. Univ. Zināt. Raksti*, 562, *Latv. Univ., Riga*, 1991. (*see* **93f:00009**) 54H25

— Existence of a common fixed point for a commutative family of nonexpansive mappings in a metric space. (Latvian. English and Russian summaries) *Mathematics* (*Russian*), 163–166, *Latv. Univ. Zināt. Raksti*, 562, *Latv. Univ., Riga*, 1991. (*see* **93f:00009**) 54H25

— Existence of a common fixed point for a family of mappings of nonexpansive type on a metric space. (English summary) *Internat. J. Math. Ed. Sci. Tech.* **23** (1992), *no.* 6, 861–864. 54H25 (47H10)

corona-Galindo, M. G. *see* **Corona-Galindo, M. G.**

Galindo, Pablo (*with* García, Domingo; Maestre, Manuel) A remark on locally determining sequences in infinite-dimensional spaces. (English summary) *Note Mat.* **10** (1990), *no.* 2, 267–272. (Richard M. Aron) **93k:46036** 46G20 (46A03)

— (*with* García, Domingo; Maestre, Manuel) The coincidence of τ_0 and τ_ω for spaces of holomorphic functions on some Fréchet-Montel spaces. *Proc. Roy. Irish Acad. Sect. A* **91** (1991), *no.* 2, 137–143. (Luiza Amália de Moraes) **93h:46053** 46G20 (46A11, 46E50)

— (*with* García, Domingo; Maestre, Manuel) Holomorphic mappings of bounded type on (DF)-spaces. *Progress in functional analysis* (*Peñíscola*, 1990), 135–148, *North-Holland Math. Stud.*, 170, *North-Holland, Amsterdam*, 1992. (Luiza Amália de Moraes) **93b:46085** 46G20 (46A13)

— (*with* Dineen, Seán; García, Domingo; Maestre, Manuel) Linearity and holomorphy on fully nuclear spaces with a basis. (French summary) *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 10, 715–718. (Summary) **93a:46084** 46G20 (46A11, 46A13)

Galitskiĭ, L. Yu. On the existence of Galois sections. *Lie groups, their discrete subgroups, and invariant theory*, 65–68, *Adv. Soviet Math.*, 8, *Amer. Math. Soc., Providence, RI*, 1992. (R. T. Hoobler) **93d:14068** 14L30 (11E72, 20G05)

Galitsyn, V. K. (*with* Lavinskiĭ, G. V.) Combinatorial algorithms for compressing the recording of ordered sequences. (Russian. English and Ukrainian summaries) *Kibernet. Sistem. Anal.* **1991,** *no.* 6, 121–128, 190; *translation in Cybernet. Systems Anal.* **27** (1991), *no.* 6, 902–908 (1992). 68P20

Galiullin, I. A. Construction of dynamical systems on manifolds. (Russian) *Differentsial'nye Uravneniya* **27** (1991), *no.* 12, 2053–2058, 2204; *translation in Differential Equations* **27** (1991), *no.* 12, 1441–1445 (1992). (Summary) **93c:34107** 34C35 (54H20, 58F25)

Gałka, A. (*with* Telega, Józef Joachim; Wojnar, R.) Homogenization of thermoelastic solid in the presence of diffusion. *Thermodynamics and kinetic theory* (*Mądralin*, 1990), 35–48, *Ser. Adv. Math. Appl. Sci.*, 12, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93d:73012** 73B30 (73B27)

— (*with* Telega, Józef Joachim) The complementary energy principle as a dual problem for a specific model of geometrically nonlinear elastic shells with an independent rotation vector: general results. *European J. Mech. A Solids* **11** (1992), *no.* 2, 245–270. (L. P. Lebedev) **93c:73069** 73K15 (73V25)

— (*with* Telega, Józef Joachim; Wojnar, R.) Homogenization and thermopiezoelectricity. *Mech. Res. Comm.* **19** (1992), *no.* 4, 315–324. (Introduction) **93d:73063** 73R05 (73B27, 73B30, 73K20)

Galkin, O. G. Phase capture for Mathieu-type vector fields on a torus. (Russian) *Funktsional. Anal. i Prilozhen.* **26** (1992), *no.* 1, 1–8; *translation in Functional Anal. Appl.* **26** (1992), *no.* 1, 1–6. (Si Ming Zhu) **93h:58130** 58F25 (34C99)

— Phase-locking for maps of a torus: a computer assisted study. (English summary) *Chaos* **3** (1993), *no.* 1, 73–82. (Summary) **93k:58141** 58F12 (58–04)

Galkin, S. A. (*with* Drozdov, V. V.; Martynov, A. A.) A variational approach to constructing of approximate models for MHD equilibrium and stability. *Akad. Nauk SSSR Inst. Prikl. Mat. Preprint* **1991,** *no.* 52, 34 *pp.* (Summary) **93c:76084** 76W05 (76E25, 76M30)

Galkin, V. A. (*with* Dubovskiĭ, P. B.; Stewart, I. W.) Exact solutions for the coagulation-fragmentation equation. (English summary) *J. Phys. A* **25** (1992), *no.* 18, 4737–4744. (Carlo Cercignani) **93h:82052** 82C40

Galkin, V. M. (*with* Stepan'yants, Yu. A.) On the analytical description of multisolitons within the KP1 equation. *Phys. Lett. A* **167** (1992), *no.* 2, 172–174. (Summary) **93d:35144** 35Q53 (58F07)

Galkin, V. Ya. (*with* Karpenko, V. A.; Pliskin, S. Yu.) The accuracy of spectral estimates in problems of the identification of signals of a certain class. (Russian. Russian summary) *Direct and inverse problems in mathematical physics* (*Russian*), 39–45, 260, *Moskov. Gos. Univ., Moscow*, 1991. (*see* **93f:00006**) 94A13

— (*with* Karpenko, V. A.) A unified approach to the creation of knowledge-based systems for identification of some classes of nonstationary processes. (English summary) *Ill-posed problems in natural sciences* (*Moscow*, 1991), 525–534, *VSP, Utrecht*, 1992. (*see* **93m:00041**) 68T35

— (*with* Karpenko, V. A.) The maximum entropy principle in problems of the identification of nonstationary processes of a certain class. (Russian. Russian summary) *Vestnik Moskov. Univ. Ser. XV Vychisl. Mat. Kibernet.* **1993,** *no.* 1, 35–42, 64. 62M15

Galkina, S. Yu. Fourier-Haar coefficients of functions of bounded variation. (Russian) *Mat. Zametki* **51** (1992), *no.* 1, 42–54, 160; *translation in Math. Notes* **51** (1992), *no.* 1-2, 27–36. (J. Musielak) **93e:42038** 42C10 (26A45)

Galkina, V. G. (*with* Galunova, K. V.) Construction of a piecewise-continuous programmed control for a linear system with delay. (Russian) *Mathematical analysis* (*Russian*), 88–97, *Ross. Gos. Ped. Univ., Leningrad*, 1991. (*see* **93d:00034**) 49K25

— (*with* Shalyapina, O. V.) Construction of impulse controls in systems with delay. (Russian. English and Russian summaries) *Vestnik Leningrad. Univ. Mat. Mekh. Astronom.* **1991,** *vyp.* 3, 117–119, 134; *translation in Vestnik Leningrad Univ. Math.* **24** (1991), *no.* 3, 61–63. (From the introduction) **93m:93060** 93C57 (34K35)

Gałkowski, Krzysztof The similarity transformation of the Roesser model-minimization of the dimension. (English summary) *Computational systems analysis* 1992 (*Berlin*, 1992), 319–324, *Elsevier, Amsterdam*, 1992. (*see* **93e:00021**) 93B15

le Gall, Jean-François *see* **Le Gall, Jean-François**

Gallagher, Richard J. (*with* Saleh, Ossama A.) Two generalizations of a theorem of Arrow, Barankin, and Blackwell. (English summary) *SIAM J. Control Optim.* **31** (1993), *no.* 1, 247–256. (Andrzej Wieczorek) **93k:90078** 90C29 (52A05)

Gallai, Tibor (*with* Erdős, Paul; Tuza, Zsolt) Covering the cliques of a graph with vertices. (English summary) Topological, algebraical and combinatorial structures. Frolík's memorial volume. *Discrete Math.* **108** (1992), *no.* 1-3, 279–289. (David Burns) **93h:05124** 05C70 (68R10)

— *see also* **Babai, László, 93m:01054a; Erdős, Paul, 93m:01054b**

Gallant, A. Ronald (*with* Eastwood, Brian J.) Adaptive rules for seminonparametric estimators that achieve asymptotic normality. *Econometric Theory* **7** (1991), *no.* 3, 307–340. (Thomas W. Sager) **93g:62053** 62G05 (62P20, 90A19)

— (*with* De Souza, Geraldo Soares) On the asymptotic normality of Fourier flexible form estimates. *J. Econometrics* **50** (1991), *no.* 3, 329–353. (Summary) **93d:62174** 62P20 (62E20, 62F12)

— (*with* McCaffrey, Daniel F.; Ellner, Stephen; Nychka, Douglas W.) Estimating the Lyapunov exponent of a chaotic system with nonparametric regression. (English summary) *J. Amer. Statist. Assoc.* **87** (1992), *no.* 419, 682–695. (Jan Beran) **93k:62092** 62G05

Gallarati, D. (*with* Bonardi, M. T.; Casazza, E.) Introduction to conic fibrations. (Italian. English and French summaries) *Studies and research collection* (*Italian*), 3–54, *Coll. Studi Ricerche, VIII, IX, Accad. Ligure Sci. Lett., Genoa*, 1988. (Antonio Lanteri) **93e:14049** 14J40 (14E30, 14J45)

Gallardo, Léonard Sur quelques transformations intégrales multidimensionnelles et leur lien avec la théorie des hypergroupes. (English summary) [On some multidimensional integral transforms and their connection with the theory of hypergroups] *Probability measures on groups, X* (*Oberwolfach*, 1990), 137–144, *Plenum, New York*, 1991. (Richard C. Vrem) **93j:43009** 43A30 (43A62, 44A15)

— (*with* Bouhaik, Mostafa) Un théorème limite central dans un hypergroupe bidimensionnel. (English summary) [A central limit theorem in a two-dimensional hypergroup] *Ann. Inst. H. Poincaré Probab. Statist.* **28** (1992), *no.* 1, 47–61. (H. Heyer) **93e:43001** 43A05 (43A62, 60B99, 60F05)

— Le théorème de continuité de Paul Lévy dans un espace produit. (English summary) [Paul Lévy's continuity theorem on a product space] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 1, 73–77. (Yoshiaki Okazaki) **93m:60018** 60B10

Gallarta Campo, Tomás Application of the theory of levels to logical structures. (Spanish. Spanish summary) Theory, history and foundations of the formal sciences (Spanish). *Theoria* (*San Sebastián*) (2) **7** (1992), *no.* 16-18, *A*, 91–103. (José Miguel Sagüillo) **93m:03009** 03A05

Gallas, Jason A. C. Feigenbaum's constant for meromorphic functions. *Internat. J. Modern Phys. C* **3** (1992), *no.* 3, 553–560. (Gong Fu Liao) **93f:58204** 58F23 (58F13)

Gallavotti, Giovanni The beta-function method for resummations in field theory. *Constructive quantum field theory, II* (*Erice*, 1988), 69–88, *NATO Adv. Sci. Inst. Ser. B Phys.*, 234, *Plenum, New York*, 1990. (*see* **93g:81074**) 81T15

— Quasi-particles and scaling properties at the Fermi surface. *Probabilistic methods in mathematical physics* (*Siena*, 1991), 222–232, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93g:81002**) 82B10 (82–02)

Gallawa, R. L. (*with* Goyal, I. C.; Ghatak, A. K.) Accuracy of eigenvalues: a comparison of two methods. (English summary) *J. Math. Phys.* **34** (1993), *no.* 3, 1169–1175. (Summary) **93m:65113** 65L15 (34L15, 34L40, 81Q20)

balibrea Gallego, Francisco *see* **Balibrea Gallego, Francisco**

Gallego, Guillermo (*with* Roundy, Robin) The economic lot scheduling problem with finite backorder costs. *Naval Res. Logist.* **39** (1992), *no.* 5, 729–739. (Summary) **93a:90030** 90B35

— A minmax distribution free procedure for the (Q, R) inventory model. *Oper. Res. Lett.* **11** (1992), *no.* 1, 55–60. (Summary) **93a:90021** 90B05

— (*with* Shaw, Dong; Simchi-Levi, David) The complexity of the staggering problem, and other classical inventory problems. (English summary) *Oper. Res. Lett.* **12** (1992), *no.* 1, 47–52. (Summary) **93f:90053** 90B05

Gallet, François *see* **Stewart, Ian N., 93k:00004a**

Galley, H. (*with* Chévrier, P.) A van Leer finite volume scheme for the Euler equations on unstructured meshes. (English and French summaries) *RAIRO Modél. Math. Anal. Numér.* **27** (1993), *no.* 2, 183–201. (Summary) **93k:76080** 76M20 (65M99, 76N15)

Galli, Adriana C. (*with* Sagastume, Marta) Kernels in n-normal symmetric Heyting algebras. (English summary) *J. Non-Classical Logic* **6** (1989), *no.* 2, 5–17. 06D20 (03G25)

— (*with* Sagastume, Marta) n-normal factors in finite symmetric Heyting algebras. (English summary) *J. Non-Classical Logic* **7** (1990), *no.* 1-2, 43–50. 06D20 (03G25)

Gallian, Joseph A. (*with* Beals, Robert; Headley, Patrick; Jungreis, Douglas S.) Harmonious groups. *J. Combin. Theory Ser. A* **56** (1991), *no.* 2, 223–238. (F. Pérez Monasor) **93a:20033** 20D60 (05C25, 20F05)

— (*with* Moulton, David) The classification of minimal non-prime-power order groups. *Arch. Math.* (*Basel*) **59** (1992), *no.* 6, 521–524. (Marian Deaconescu) **93j:20051** 20D99

— (*with* Prout, John; Winters, Steven) Graceful and harmonious labelings of prism related graphs. (English summary) *Ars Combin.* **34** (1992), 213–222. (Summary) **93i:05112** 05C78

mas-Gallic, S. *see* **Mas-Gallic, S.**

Gallier, Jean H. What's so special about Kruskal's theorem and the ordinal Γ_0? A survey of some results in proof theory. *Ann. Pure Appl. Logic* **53** (1991), *no.* 3, 199–260. (H. Schwichtenberg) **93b:03096** 03Fxx (03F15, 03F35)

— (*with* Narendran, Paliath; Raatz, Stan; Snyder, Wayne) Theorem proving using equational matings and rigid E-unification. *J. Assoc. Comput. Mach.* **39** (1992), *no.* 2, 377–429. (From the summary) **93a:03012** 03B35 (68T15)

— (*with* Narendran, Paliath; Plaisted, David A.; Raatz, Stan; Snyder, Wayne) An algorithm for finding canonical sets of ground rewrite rules in polynomial time. (English summary) *J. Assoc. Comput. Mach.* **40** (1993), *no.* 1, 1–16. (Summary) **93j:68093** 68Q42

Galliers, Julia Rose Autonomous belief revision and communication. *Belief revision*, 220–246, *Cambridge Tracts Theoret. Comput. Sci.*, 29, *Cambridge Univ. Press, Cambridge*, 1992. (*see* **93g:68131**) 68T30 (03B60, 03B70)

Galligani, Emanuele (*with* Ruggiero, Valeria) Computation of minimal eigenpair in the large sparse generalized eigen-problem using vector computers. (English summary) *Parallel computing '91* (*London*, 1991), 193–201, *Adv. Parallel Comput.*, 4, *North-Holland, Amsterdam*, 1992. (*see* **93f:00016**) 65F15 (65Y05)

— (*with* Ruggiero, Valeria) A parallel algorithm for solving block tridiagonal linear systems. *Comput. Math. Appl.* **24** (1992), *no.* 4, 15–21. (Summary) **93b:65060** 65F10 (65Y05)

montero-Galliguez, Thelma C. *see* **Montero-Galliguez, Thelma C.**

Gallivan, Timothy (*with* DeWitt, Bryce S.; deLyra, Jorge L.; Foong, See Kit; et al.) Lattice quantization of the $O(1,2)/O(2) \times Z_2$ sigma model in 4 dimensions. *Quantum gravity* (*Moscow*, 1990), 18–26, *World Sci. Publishing, River Edge, NJ*, 1991. (Ilya Shapiro) **93m:81112** 81T25 (81T13)

Gallo, A. *see* **Gallo, Antonio**

Gallo, Angela (*with* Piccirillo, Anna Maria) Existence theorem for a second-order unilateral Cauchy problem. (Italian. English summary) *Matematiche* (*Catania*) **44** (1989), *no.* 2, 311–332 (1990). (Francesco Zirilli) **93f:35009** 35A05 (35J85, 73D99)

Gallo, Antonio (*with* Fortuna, L.; Muscato, G.; Nunnari, G.) Multivariable adaptive control by a transputer based architecture. (English summary) *Identification and system parameter estimation* 1991, *Vol.* 1,2 (*Budapest*, 1991), 1043–1047, *IFAC Sympos. Ser.*, 3, *Pergamon, Oxford*, 1992. (*see* **93h:93009**) 93C30 (93C83)

Gallo, G. *see* **Gallo, Giovanni**

Gallo, Giorgio (*with* Scutellà, Maria Grazia) Toward a programming environment for combinatorial optimization: a case study oriented to max-flow computations. (English summary) *ORSA J. Comput.* **5** (1993), *no.* 2, 120–133. 90C35

Gallo, Giovanni (*with* Mishra, Bhubaneswar) Wu-Ritt characteristic sets and their complexity. *Discrete and computational geometry* (*New Brunswick, NJ*, 1989/1990), 111–136, *DIMACS Ser. Discrete Math. Theoret. Comput. Sci.*, 6, *Amer. Math. Soc., Providence, RI*, 1991. (Daniel Lazard) **93d:68039** 68Q40 (13P10, 14Q20, 68Q25)

Galloonov, G. V. *see* **Galunov, G. V.**

Gallopoulos, E. (*with* Saad, Youcef) Efficient solution of parabolic equations by Krylov approximation methods. (English summary) *SIAM J. Sci. Statist. Comput.* **13** (1992), *no.* 5, 1236–1264. (Summary) **93d:65085** 65M20 (65F10, 65Y05)

Gallouët, Thierry (*with* Boccardo, Lucio; Vázquez, Juan Luis) Some regularity results for some nonlinear parabolic equations in L^1. Some topics in nonlinear PDEs (Turin, 1989). *Rend. Sem. Mat. Univ. Politec. Torino* **1989**, *Special Issue*, 69–74 (1991). (Xiang Sheng Xu) **93d:35063** 35K55 (35B65)

— (*with* Boccardo, Lucio; Murat, François) Unicité de la solution de certaines équations elliptiques non linéaires. (English and French summaries) [Uniqueness of the solution of some nonlinear elliptic equations] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 11, 1159–1164. (Nguyên-Phuong-Các) **93k:35085** 35J60 (35B30)

— (*with* Boccardo, Lucio) Strongly nonlinear elliptic equations having natural growth terms and L^1 data. *Nonlinear Anal.* **19** (1992), *no.* 6, 573–579. (Ya Zhe Chen) **93h:35060** 35J60

— (*with* Champier, S.) Convergence d'un schéma décentré amont sur un maillage triangulaire pour un problème hyperbolique linéaire. (English and French summaries) [Convergence of an upwind uncentered scheme on a triangular mesh for a linear hyperbolic problem] *RAIRO Modél. Math. Anal. Numér.* **26** (1992), *no.* 7, 835–853. (G. W. Hedstrom) **93m:65129** 65M12

Galloway, Gregory J. (*with* Eschenburg, J.-H.) Lines in space-times. (English summary) *Comm. Math. Phys.* **148** (1992), *no.* 1, 209–216. (J. K. Beem) **93i:53064** 53C50 (53C80, 83C99)

— On the topology of black holes. (English summary) *Comm. Math. Phys.* **151** (1993), *no.* 1, 53–66. (Alan D. Rendall) **93k:83047** 83C57 (53C80)

Galmiche, Didier Program development in constructive type theory. Discrete mathematics and applications to computer science (Marseille, 1989). *Theoret. Comput. Sci.* **94** (1992), *no.* 2, 237–259. (Summary) **93c:68066** 68Q60 (03B70)

Galois, Évariste ★ Œuvres mathématiques. (French) [Mathematical works] Publiées en 1846 dans le Journal de Liouville, suivies d'une étude par Sophus Lie, "Influence de Galois sur le développement des mathématiques" (1895). [Published in 1846 in the Journal de Liouville, followed by a study by Sophus Lie, "Influence of Galois on the development of mathematics" (1895)] With a foreword by J. Liouville. *Éditions Jacques Gabay, Sceaux*, 1989. 78 *pp. ISBN* 2-87647-052-7 (Karl-Heinz Schlote) **93k:01091** 01A75 (01A55, 12-03, 12F10)

Galor, Oded A two-sector overlapping-generations model: a global characterization of the dynamical system. (English summary) *Econometrica* **60** (1992), *no.* 6, 1351–1386. (Jeffrey L. Coles) **93h:90021** 90A16

— (*with* Tsiddon, Daniel) Transitory productivity shocks and long-run output. (English summary) *Internat. Econom. Rev.* **33** (1992), *no.* 4, 921–933. (Summary) **93f:90022** 90A11 (90A16)

Gal'perin, A. S. (*with* Ogievetskiĭ, V. I.) On isometries relating noncompact σ-models and supergravity. *Classical Quantum Gravity* **9** (1992), *no.* 6, 1425–1432. (Mark D. Roberts) **93c:83119** 83E50 (53C55, 53C80, 81T40)

— (*with* Howe, P. S.; Stelle, K. S.) The superparticle and the Lorentz group. *Nuclear Phys. B* **368** (1992), *no.* 2, 248–280. (Raiko Zaikov) **93c:81170** 81T30 (81R25, 81T60, 83E50)

— (*with* Sokatchev, E. S.) Twistorlike $D = 10$ superparticle action with manifest $N = 8$ world-line supersymmetry. *Phys. Rev. D* (3) **46** (1992), *no.* 2, 714–725. (Alexander A. Zheltukhin) **93i:81271** 81T60 (81R25)

— (*with* Delduc, François; Howe, P. S.; Sokatchev, E. S.) Twistor formulation of the heterotic $D = 10$ superstring with manifest (8, 0) world-sheet supersymmetry. (English summary) *Phys. Rev. D* (3) **47** (1993), *no.* 2, 578–593. (Sergey Merkulov) **93m:81050** 81R25 (81T30, 83E30)

Galperin, Efim A. Nonscalarized multiobjective global optimization. (English summary) *J. Optim. Theory Appl.* **75** (1992), *no.* 1, 69–85. (Dorel Duca) **93m:90068** 90C29 (90C31)

— (*with* Ferrari, André) Numerical experiments with one-dimensional adaptive cubic algorithm. (English summary) *Comput. Math. Appl.* **25** (1993), *no.* 10-11, 47–56. 90C30 (90–08)

— Validity of feedback controls depending on higher order derivatives. (English summary) *Comput. Math. Appl.* **25** (1993), *no.* 10-11, 173–185. 93B52 (49N35)

Gal'perin, G. A. (*with* Vorobets, Ya. B.; Stěpin, A. M.) Periodic billiard trajectories in polygons. (Russian) *Uspekhi Mat. Nauk* **46** (1991), *no.* 5(281), 165–166; *translation in Russian Math. Surveys* **46** (1991), *no.* 5, 204–205. (Valery Covachev) **93b:58119** 58F22 (58F10, 58F25)

— On the Lyusternik-Shnirel'man theorem for polyhedra. (Russian) *Uspekhi Mat. Nauk* **46** (1991), *no.* 6(282), 207–208; *translation in Russian Math. Surveys* **46** (1991), *no.* 6, 219–220. (From the text) **93e:58028** 58E10 (57Q99, 58F05)

— Asymptotic behavior of a particle in a Lorentz gas. (Russian) *Uspekhi Mat. Nauk* **47** (1992), *no.* 1(283), 209–210; *translation in Russian Math. Surveys* **47** (1992), *no.* 1, 258–259. (J. S. Joel) **93e:82033** 82C22 (58F11, 58F40, 70F99)

— (*with* Vorobets, Ya. B.; Stěpin, A. M.) Periodic billiard trajectories in polygons: generation mechanisms. (Russian. Russian summary) *Uspekhi Mat. Nauk* **47** (1992), *no.* 3(285), 9–74, 207; *translation in Russian Math. Surveys* **47** (1992), *no.* 3, 5–80. (András Krámli) **93h:58088** 58F11

Gal'perin, I. I. (*with* Rivest, Ronald L.) Scapegoat trees. (English summary) *Proceedings of the Fourth Annual ACM-SIAM Symposium on Discrete Algorithms* (*Austin, TX*, 1993), 165–174, *ACM, New York*, 1993. (Summary) **93m:68034** 68P05 (68P10)

Galstyan, L. A. (*with* Dubovoi, V. K.) A generalization of the Schur interpolation problem. (Russian. English and Armenian summaries) *Izv. Akad. Nauk Armyan. SSR Ser. Mat.* **25** (1990), *no.* 2, 171–181, 211. (Victor Katsnelson) **93a:30044** 30E05

Gal'tsov, D. V. (*with* Grats, Yu. V.; Zhukovskiĭ, V. Ch.) ★ Классические поля. (Russian) [Classical fields] *Moskov. Gos. Univ., Moscow*, 1991. 152 *pp. ISBN* 5-211-01587-8 (Henryk Arodź) **93g:70015** 70G50 (70–01, 78–01, 81T13, 83–01)

— (*with* Matyukhin, A. A.) Matrix WKB method for black hole normal modes and quasibound states. (English summary) *Classical Quantum Gravity* **9** (1992), *no.* 9, 2039–2055. (Enric Verdaguer) **93i:83032** 83C25 (81Q20, 83C57)

— (*with* Xanthopoulos, Basilis C.) A generating technique for Einstein gravity conformally coupled to a scalar field with Higgs potential. *J. Math. Phys.* **33** (1992), *no.* 1, 273–277. (Summary) **93b:83009** 83C15 (83C20)

— (*with* Volkov, M. S.) Instability of Einstein-Yang-Mills black holes. *Phys. Lett. A* **162** (1992), *no.* 2, 144–148. (Kishin Mariwalla) **93d:83044** 83C57 (81T13)

— (*with* Donets, E. E.) Continuous family of Einstein-Yang-Mills wormholes. (English summary) *Phys. Lett. B* **294** (1992), *no.* 1, 44–48. (Summary) **93i:83027** 83C20 (81V17, 83E05)

— (*with* Donets, E. E.) Continuous family of Einstein-Yang-Mills wormholes. (English summary) *Phys. Lett. B* **296** (1992), *no.* 3-4, 311–315. (Summary) **93k:83015** 83C20 (81T13, 81V17)

Galué, Leda (*with* Kalla, Shyam L.; Kiryakova, Virginia S.) Some expansions related to a family of generalized radiation integrals. *Math. Balkanica* (*N.S.*) **5** (1991), *no.* 3, 190–202. (T. Erber) **93c:33002** 33C10

— (*with* Kalla, Shyam L.; Nishimoto, Katsuyuki) Application of fractional calculus to infinite sums. *J. Fract. Calc.* **1** (1992), 17–21. (B. P. Parashar) **93g:26011c** 26A33 (33B15)

Galunov, G. V. (*with* Oleĭnik, V. L.) Analysis of the dispersion equation for a negative Dirac "comb". (Russian. Russian summary) *Algebra i Analiz* **4** (1992), *no.* 4, 94–109. (Boris Skachek) **93i:34153** 34L20 (47E05, 81Q10)

— (*with* Oleĭnik, V. L.; Pavlov, B. S.) Estimations for negative spectral bands of three-dimensional periodical Schrödinger operator. (English summary) *J. Math. Phys.* **34** (1993), *no.* 3, 936–942. (Summary) **93k:35194** 35P05 (35J10, 47F05, 81Q10)

Galunova, K. V. (*with* Galkina, V. G.) Construction of a piecewise-continuous programmed control for a linear system with delay. (Russian) *Mathematical analysis* (*Russian*), 88–97, *Ross. Gos. Ped. Univ., Leningrad*, 1991. (*see* **93d:00034**) 49K25

Galushkin, A. I. (*with* Sudarikov, V. A.; Shabanov, E. V.) Neuromathematics: methods for solving problems on neurocomputers. (Russian. English summary) *Mat. Model.* **3** (1991), *no.* 8, 93–111. (Summary) **93b:68020** 68Q05 (68T05, 92B20)

Galuzzi, Massimo *see* **Conference: History of Mathematics, 93m:01001**

Gálvez, F. J. (*with* Porras, I.) Spatial generalizations of Kato's cusp condition for atoms. Applications. *Phys. Rev. A* (3) **46** (1992), *no.* 1, 105–112. (Summary) **93f:81162** 81V45

padilla-Gálvez, Jesús *see* **Padilla-Gálvez, Jesús**

Galvin, Fred (*with* Scheepers, Marion) A Ramseyan theorem and an infinite game. *J. Combin. Theory Ser. A* **59** (1992), *no.* 1, 125–129. (From the introduction) **93b:90129** 90D46 (05D10)

saldanha da Gama, Rogério Martins *see* **Saldanha da Gama, Rogério Martins**

el-Gamal, Mahmoud A. *see* **El-Gamal, Mahmoud A.**

Gamaleya, R. V. (*with* Virchenko, N. A.) On an integral transformation. (Russian) *Mat. Fiz. Nelinein. Mekh. No.* 16(50) (1991), 21–29. (Hans-Jürgen Glaeske) **93c:44013** 44A15 (45H05)

Gamba, Andrea (*with* Fucito, F.; Martellini, Maurizio; Ragnisco, Orlando) Nonlinear WKB analysis of the string equation. (English summary) Topological and quantum group methods in field theory and condensed matter physics. *Internat. J. Modern Phys. B* **6** (1992), *no.* 11-12, 2123–2147. (V. A. Golubeva) **93m:58049** 58F07 (81Q20, 81T40)

— (*with* Bonacina, Giuseppe; Martellini, Maurizio) Interacting Euclidean three-dimensional quantum gravity. *Phys. Rev. D* (3) **45** (1992), *no.* 10, 3577–3583. (Michael O. Katanaev) **93f:83035** 83C45

martínez-Gamba, Irene *see* **Martínez-Gamba, Irene**

Gamba, Irene Martínez *see* **Martínez-Gamba, Irene**

Gambardella, Lucia A continuous state feedback control for uncertain dynamical systems. (English summary) *Waves and stability in continuous media* (*Sorrento*, 1989), 129–134, *Ser. Adv. Math. Appl. Sci.*, 4, *World Sci. Publishing, River Edge, NJ*, 1991. (*see* **93g:00030**) 93B52 (93C40)

Gambaryan, Kh. P. Properties of CR-functions and their restrictions to submanifolds. (Russian) *Mat. Zametki* **50** (1991), *no.* 2, 61–66; *translation in Math. Notes* **50** (1991), *no.* 1-2, 813–816 (1992). (Harold P. Boas) **93f:32010** 32C16 (32D15)

Gambaudo, Jean-Marc Boundary of Morse-Smale surface diffeomorphisms: an obstruction to smoothness. *Dynamical systems and related topics* (*Nagoya*, 1990), 141–152, *Adv. Ser. Dyn. Syst.*, 9, *World Sci. Publishing, River Edge, NJ*, 1991. (S. Yu. Pilyugin) **93e:58102** 58F09 (58F12, 58F15)

— (*with* Tresser, Charles) How horseshoes are created. *Instabilities and nonequilibrium structures, III* (*Valparaíso*, 1989), 13–25, *Math. Appl.*, 64, *Kluwer Acad. Publ., Dordrecht*, 1991. (Romeo F. Thomas) **93m:58083** 58F15 (58F10, 58F20)

— (*with* Tresser, Charles) A monotonicity property in one-dimensional dynamics. (English summary) *Symbolic dynamics and its applications* (*New Haven, CT*, 1991), 213–222, *Contemp. Math.*, 135, *Amer. Math. Soc., Providence, RI*, 1992. (Frederick R. Marotto) **93i:58087** 58F10 (54H20, 58F03, 58F22)

— (*with* Alsedà i Soler, Lluís; Mumbrú, Pere) Sur la reconnaissance des itinéraires de rotations. (English summary) [On the recognition of itineraries of rotations] *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 6, 467–470. (Summary) **93b:58044** 58F03

— (*with* Tresser, Charles) Self-similar constructions in smooth dynamics: rigidity, smoothness and dimension. (English summary) *Comm. Math. Phys.* **150** (1992), *no.* 1, 45–58. (Remo Badii) **93j:58084** 58F12 (28A50, 58F13, 58F20)

Gambí, J. M. (*with* San Miguel, A.; Vicente Ruiz, Francisco) Geometry of geodesic triangles and relation between moving frames on time-like curves. (Spanish. English summary) *Proceedings of the XVth Portuguese-Spanish Conference on Mathematics, Vol. V (Portuguese)* (*Évora*, 1990), 275–280, *Univ. Évora, Évora*, 1991. (Summary) **93a:83006** 83C10 (70H40)

— (*with* Vicente Ruiz, Francisco; San Miguel, A.) Doppler effect in weak gravitational fields. (Spanish. English summary) *Proceedings of the XVth Portuguese-Spanish Conference on Mathematics, Vol. V (Portuguese)* (*Évora*, 1990), 293–297, *Univ. Évora, Évora*, 1991. (Summary) **93b:83018** 83C25

— (*with* Romero, P.; San Miguel, A.; Vicente Ruiz, Francisco) Fermi coordinate transformation under baseline change in relativistic celestial mechanics. *Internat. J. Theoret. Phys.* **30** (1991), *no.* 8, 1097–1116. (George Contopoulos) **93e:70004** 70F15 (70H40)

Gambin, B. (*with* Bytner, S.) Homogenization of heterogeneous elastic conductor in a magnetic field. (English summary) *J. Tech. Phys.* **33** (1992), *no.* 2, 219–223. 73R05 (73B27, 73K20, 78A25)

Gambin, W. Plasticity of crystals with interacting slip systems. (English, Russian and Polish summaries) *Engrg. Trans.* **39** (1991), *no.* 3-4, 303–324 (1992). 73E05

Gambini, Rodolfo (*with* Brügmann, Bernd; Pullin, Jorge) How the Jones polynomial gives rise to physical states of quantum general relativity. (English summary) *Gen. Relativity Gravitation* **25** (1993), *no.* 1, 1–6. (Peter Peldán) **93m:83027** 83C45 (57M25)

Gamble, Rose F. (*with* Roman, Gruia-Catalin; Ball, William E.) Formal verification of pure production system programs. (English summary) *AAAI-91. Proceedings, Ninth National Conference on Artificial Intelligence, Vol.* 1, 2, 329–334, *AAAI Press, Menlo Park, CA*, 1991. (Summary) **93j:68129** 68Q60

Gamboa, F. (*with* Gassiat, Élisabeth) Maximum d'entropie et problème des moments: cas multidimensionnel. (English summary) [Maximum entropy and the moment problem: the multidimensional case] *Probab. Math. Statist.* **12** (1991), *no.* 1, 67–83 (1992). (Kurt Marti) **93g:44018** 44A60 (62G05)

Gamboa, J. *see* **Gamboa, Jorge**

Gamboa, J. M. Compact Klein surfaces with boundary viewed as real compact smooth algebraic curves. (Spanish summary) *Mem. Real Acad. Cienc. Exact. Fís. Natur. Madrid* **27** (1991), iv+96 *pp.* (E. Bujalance) **93f:14028** 14P05 (30F10)

— On prime ideals in rings of semialgebraic functions. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 4, 1037–1041. (Charles N. Delzell) **93j:14069** 14P10 (14P05)

Gamboa, Jorge (*with* Seguí-Santonja, Antonio J.) Motion of test particles around cosmic strings. (English summary) *Classical Quantum Gravity* **9** (1992), *no.* 9, L111–L114. (A. H. Taub) **93h:83008** 83C10 (83F05)

— General covariance, topological quantum field theories and fractional statistics. *Internat. J. Modern Phys. A* **7** (1992), *no.* 2, 209–234. (Summary) **93h:81084** 81T13 (81S99, 81T70)

— (*with* Farina de Souza, Carlos) The Faddeev-Popov method for the relativistic Landau problem. *Internat. J. Modern Phys. A* **7** (1992), *no.* 12, 2825–2839. (Summary) **93b:81293** 81T99 (81S40)

— (*with* Cortés, J. L.; Velázquez, L.) Electromagnetic interaction of anyons. (English summary) *Phys. Lett. B* **286** (1992), *no.* 1-2, 105–108. (Summary) **93e:81147** 81V10 (81T13)

carrillo-Gamboa, Olivia *see* **Carrillo-Gamboa, Olivia**

Gamboa Saraví, R. E. (*with* Barraza, O.; Falomir, H.; Santangelo, E. M.) *p* determinants and boundary values. *J. Math. Phys.* **33** (1992), *no.* 6, 2046–2052. (Akira Asada) **93d:58183** 58G26 (58G20, 81T16)

— *see also* **Festschrift: Giambiagi, J. J., 93b:81004**

Gamelin, T. W. (*with* Cole, B. J.; Johnson, William B.) Analytic disks in fibers over the unit ball of a Banach space. *Michigan Math. J.* **39** (1992), *no.* 3, 551–569. (Richard M. Aron) **93i:46090** 46J15 (46B20, 46G20, 46M20)

Gamero, E. (*with* Freire Macías, Emilio; Rodríguez-Luis, A. J.; Ponce, E.) A case study for homoclinic chaos in an autonomous electronic circuit. A trip from Takens-Bogdanov to Hopf-Šil'nikov. (English summary) Homoclinic chaos (Brussels, 1991). *Phys. D* **62** (1993), *no.* 1-4, 230–253. (Summary) **93m:58071** 58F13 (34C15, 34C23, 58F14, 58F40, 94C05)

Gamkrelidze, N. G. On an inequality for a multidimensional characteristic function. (Russian) *Teor. Veroyatnost. i Primenen.* **36** (1991), *no.* 3, 602–604; *translation in Theory Probab. Appl.* **36** (1991), *no.* 3, 594–596 (1992). (Gabriele Laue) **93e:60034** 60E10 (60F05)

Gamkrelidze, R. V. (*with* Agrachëv, A. A.) Volterra series and permutation groups. (Russian) *Current problems in mathematics. Newest results, Vol.* 39 (*Russian*), 3–40, 180, *Itogi Nauki i Tekhniki, Akad. Nauk SSSR, Vsesoyuz. Inst. Nauchn. i Tekhn. Inform., Moscow*, 1991. (Antoni Wawrzynczyk) **93m:58099** 58F30 (22E70, 34C40, 93C10)

— *see also* **Probability theory. Mathematical statistics. Theoretical cybernetics, 93b:00019**; **Current problems in mathematics. Fundamental directions, 93d:00032a** *and* **93d:46058a**

Gammerman, A. J. The representation and manipulation of the algorithmic probability measure for problem solving. *Ann. Math. Artificial Intelligence* **4** (1991), *no.* 3-4, 281–300. (From the text) **93a:68062** 68Q30 (68T20)

Gamova, A. N. Effective oracles. *Algebra and Logic* **29** (1990), *no.* 6, 418–423 (1991). (Editors) **93h:03067** 03D60

Gan, Dan Yan (*with* Guo, Jian Han) Embeddings and immersions of a 2-sphere in 4-manifolds. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 4, 1323–1330. (Elmer G. Rees) **93j:57018** 57R40 (57R42)

Gan, H. (*with* Beatovic, D.; Levin, P. L.; Kokernak, J. M.; Hansen, A. J.) Numerical analysis of open boundary problems using finite element substructuring and Galerkin boundary elements. *COMPEL* **11** (1992), *no.* 2, 295–309. (Summary) **93c:65139** 65N30 (65N38)

Gan, Qiang (*with* Wei, Yu) A model for non-fully interconnected neural networks. (Chinese. English and Chinese summaries) *J. Southeast Univ.* **22** (1992), *no.* 5, 1–6. 92B20

Gan, Shi Xin (*with* Liu, Pei De) A uniform integrability condition for *B*-valued martingales and geometric properties of Banach spaces. (Chinese. English and Chinese summaries) *Chinese J. Appl. Probab. Statist.* **7** (1991), *no.* 1, 18–23. (Summary) **93m:46007** 46B09 (60B11, 60G42)

— Transformations of martingale sequences and their convergence. (Chinese. English and Chinese summaries) *J. Math. (Wuhan)* **11** (1991), *no.* 3, 275–286. (Summary) **93k:60117** 60G48 (46B09)

— (*with* Hu, Yi Jun) The convex Φ-inequality and a characterization of Hilbert spaces. (Chinese. English summary) *J. Wuhan Univ. Natur. Sci. Ed.* **1991,** *no.* 3, 29–34. (Summary) **93d:46038** 46C15 (60B11, 60G42)

— (*with* Ren, Yao Feng) *B*-valued uniform asymptotic martingales over directed sets. (Chinese. Chinese summary) *Acta Math. Sci. (Chinese)* **12** (1992), *no.* 1, 105–114. (Summary) **93m:60087** 60G48 (60B11)

— Banach space valued quasi-eventual martingales. (English summary) *Acta Math. Sci. (English Ed.)* **12** (1992), *no.* 2, 163–170. (Summary) **93i:60088** 60G48 (60B11)

— Invariance of bounded linear operators and local convergence of quasimartingale transforms. (Chinese. English and Chinese summaries) *J. Wuhan Univ. Natur. Sci. Ed.* **1992,** *no.* 1, 1–10. (Summary) **93i:46023** 46B09 (47N30, 60B11, 60G48)

Ganapol, B. D. (*with* Spiga, Giampiero; Zanette, Damián H.) An accurate evaluation of the distribution functions of nonlinear extended kinetic theory. *Math. Models Methods Appl. Sci.* **2** (1992), *no.* 2, 223–237. (Carlo Cercignani) **93f:82042** 82C40

— An investigation of a simple transport model. *Transport Theory Statist. Phys.* **21** (1992), *no.* 1-2, 1–37. (D. A. Shulaia) **93c:82059** 82C70 (82C80)

Ganchev, Alexander Ch. (*with* Petkova, Valentina B.) $U_q(\mathrm{sl}(2))$ invariant operators and reduced polynomial identities. (English summary) *Quantum groups (Clausthal*, 1989), 96–106, *Lecture Notes in Phys.*, 370, *Springer, Berlin*, 1990. (Summary) **93h:17027** 17B37 (17B81)

— (*with* Furlan, Paolo; Petkova, Valentina B.) Tensor products of $q^p = 1$ quantum groups and WZW fusion rules. *Differential geometric methods in theoretical physics (Rapallo*, 1990), 379–381, *Lecture Notes in Phys.*, 375, *Springer, Berlin*, 1991. (Roland Koberle) **93a:17012** 17B37 (81R10, 81T40)

— (*with* Furlan, Paolo; Petkova, Valentina B.) Fusion rules, quantum groups and the Coulomb gas. *Nonperturbative methods in low-dimensional quantum field theories (Debrecen*, 1990), 107–111, *World Sci. Publishing, River Edge, NJ*, 1991. (*see* **93f:81005**) 81R50 (82B20)

— (*with* Furlan, Paolo; Petkova, Valentina B.) Remarks on the quantum group structure of the rational $c < 1$ conformal theories. *Internat. J. Modern Phys. A* **6** (1991), *no.* 27, 4859–4884. (Summary) **93h:81117** 81T40 (17B37, 81R50)

— (*with* Fuchs, Jürgen; Vecsernyés, Peter) Level 1 WZW superselection sectors. *Comm. Math. Phys.* **146** (1992), *no.* 3, 553–583. (Stephen J. Summers) **93e:81108** 81T40 (46L60, 81T05)

— (*with* Petkova, Valentina B.) Reduction of the Knizhnik-Zamolodchikov equation. A way of producing Virasoro singular vectors. (English summary) *Phys. Lett. B* **293** (1992), *no.* 1-2, 56–66. (Stanislav Z. Pakuliak) **93i:81063** 81R10 (17B68, 81T40)

Gandarias-Núñez, M. L. (*with* Pérez Cuéllar, A.; Ramírez-Labrador, J.) Generalized symmetries for a Fokker-Planck equation with potential depending on the Airy functions. (Spanish. English summary) *Proceedings of the XII Congress on Differential Equations and Applications/II Congress on Applied Mathematics (Spanish)* (*Oviedo*, 1991), 275–280, *Univ. Oviedo, Oviedo*, 1991. (Summary) **93k:35258** 35Q72

Gandge, S. N. (*with* Prabhu-Ajgaonkar, S. G.) The Searls technique in the regression method of estimation. (English and Italian summaries) *Metron* **49** (1991), *no.* 1-4, 255–262 (1992). 62D05

Gandhi, S. K. Fixing the light-cone gauge. *Supermembranes and physics in* 2+1 *dimensions (Trieste*, 1989), 71–95, *World Sci. Publishing, River Edge, NJ*, 1990. (*see* **93g:81003**) 81T30

Gandhi Prasad, N. S. (*with* Gupta, Vinod Kumar) On construction of general efficiency balanced block designs. (English summary) *Sankhyā Ser. B* **53** (1991), *no.* 1, 89–96. 62K10

Gandini, Pier Mario (*with* Zucco, Andreana) A nowhere dense but not porous set in the space of convex bodies. (Italian summary) *Rend. Accad. Naz. Sci. XL Mem. Mat.* (5) **15** (1991), 213–218. (Wolfgang Lusky) **93a:52003** 52A21 (52A20, 54E35)

— (*with* Wills, J. M.) On finite sphere-packings. *Math. Pannon.* **3** (1992), *no.* 1, 19–29. (A. Florian) **93k:52019** 52C17 (52C07)

Gandjbakhche, A. H. (*with* Bonner, R. F.; Nossal, R.) Scaling relationships for anisotropic random walks. (English summary) *J. Statist. Phys.* **69** (1992), *no.* 1-2, 35–53. (Summary) **93h:82062** 82C41

Gandolfi, Alberto (*with* Bertuzzi, Alessandro) Ridge regression versus OLS by Pitman's closeness under quadratic and Fisher's loss. Pitman's measure of closeness. *Comm. Statist. Theory Methods* **20** (1991), *no.* 11, 3581–3590. (Khursheed Alam) **93e:62177** 62J07 (62C15, 62J05)

— (*with* Keane, Michael S.; Newman, Charles M.) Uniqueness of the infinite component in a random graph with applications to percolation and spin glasses. *Probab. Theory Related Fields* **92** (1992), *no.* 4, 511–527. (G. R. Grimmett) **93f:60149** 60K35 (05C80, 82B43, 82B44, 82D30)

— (*with* De Santis, Alberto; Germani, Alfredo; Tardelli, Paola) A representation theorem for Radon-Nikodým derivatives in the white-noise theory. (English summary) *Mathematical theory of control (Bombay*, 1990), 109–123, *Lecture Notes in Pure and Appl. Math.*, 142, *Dekker, New York*, 1993. (Summary) **93h:60006** 60B11 (60G20, 60H99, 93E11)

Gandolfo, Daniel (*with* Albeverio, Sergio; Blanchard, Philippe; Høegh-Krohn, Raphael; Mebkhout, Mohammed) Morphology and classification of galaxies. A stochastic model. (English summary) *Ideas and methods in quantum and statistical physics (Oslo*, 1988), 447–460, *Cambridge Univ. Press, Cambridge*, 1992. (Summary) **93g:85005** 85A35

watson-Gandy, C. D. T. *see* **Watson-Gandy, C. D. T.**

Ganeeva, M. S. ★ Прочность и устойчивость оболочек вращения. (Russian. English and Russian summaries) [Strength and stability of shells of revolution] "*Nauka*", *Moscow*, 1992. 161 *pp. ISBN* 5-02-006757-1 (Publisher's description) **93g:73088** 73K15 (73H05, 73V20)

Ganesan, K. (*with* Homer, Steven) Complete problems and strong polynomial reducibilities. *SIAM J. Comput.* **21** (1992), *no.* 4, 733–742. (Summary) **93f:68034** 68Q15 (03D15, 03D25)

Gangopadhyay, Ashis K. (*with* Sen, Pranab Kumar) Bootstrap confidence intervals for conditional quantile functions. (English summary) *Sankhyā Ser. A* **52** (1990), *no.* 3, 346–363. (Summary) **93f:62063** 62G09 (62E20, 62F25)

— (*with* Pawitan, Y.) Efficient bias corrected nonparametric spectral estimation. *Biometrika* **78** (1991), *no.* 4, 825–832. (Pham Dinh Tuan) **93e:62242** 62M15 (62G05)

Gangopadhyay, Debashis On canonical q-transformations with two q-oscillators. *Modern Phys. Lett. A* **6** (1991), *no.* 31, 2909–2916. (A. M. Gavrilik) **93g:81048** 81R50
— (*with* Filippov, A. T.; Isaev, A. P.) Quantum discrete gauge models with bosonic and fermionic degrees of freedom. *Internat. J. Modern Phys. A* **7** (1992), *no.* 11, 2487–2507. (M. Carmeli) **93c:81108** 81T10
— (*with* Filippov, A. T.; Isaev, A. P.) Discrete "strings" and gauge model of three confined relativistic particles. *Internat. J. Modern Phys. A* **7** (1992), *no.* 15, 3639–3663. (Aleksandar R. Miković) **93k:81176** 81T30 (81V05)
Gangopadhyay, Subrata (*with* Datta, K. B.) Coprime matrix fraction description via orthogonal structure theorem. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 10, 1517–1520. 93B40
Ganguly, Keshab (*with* Gupta, A. S.; Bhattacharyya, S. N.) On the onset of thermal instability in fluid-filled porous spheres and spherical shells. *Stability Appl. Anal. Contin. Media* **1** (1991), *no.* 3, 213–241. (D. A. Nield) **93d:76025** 76E15 (76E20, 86A60)
Ganguly, Sobhakar (*with* Basu, C. K.) Further characterizations of s-closed spaces. (English summary) *Indian J. Pure Appl. Math.* **23** (1992), *no.* 9, 635–641. (T. R. Hamlett) **93k:54058** 54D99 (54C08)
Ganguly, Sumit (*with* Silberschatz, Avi; Tsur, Shalom) Parallel bottom-up processing of Datalog queries. (English summary) *J. Logic Programming* **14** (1992), *no.* 1-2, 101–126. 68P10 (68Q22)
Gani, Joseph Mark Generating function methods in a random allocation problem of epidemics. *Bull. Inst. Combin. Appl.* **3** (1991), 43–50. (Tenko Raykov) **93a:62138** 62P10 (92D30)
Ganigi, M. D. (*with* Uralegaddi, B. A.) On Ruscheweyh derivatives. *Ganita* **40** (1989), *no.* 1-2, 87–93 (1990). (Khalida Inayat Noor) **93e:30024** 30C45
— (*with* Uralegaddi, B. A.) Meromorphic starlike functions with alternating coefficients. (Italian summary) *Rend. Mat. Appl.* (7) **11** (1991), *no.* 3, 441–446. (Carl P. McCarty) **93c:30020** 30C45
Ganikhodzhaev, R. N. Quadratic stochastic operators, Lyapunov functions and tournaments. (Russian. Russian summary) *Mat. Sb.* **183** (1992), *no.* 8, 119–140. (M. Iosifescu) **93k:58126** 58F08 (05C20)
Ganjoo, D. K. (*with* Tezduyar, T. E.; Liou, Jianntyng; Behr, M.; Glowinski, Roland) Unsteady incompressible flow computations with the finite-element method. *Finite elements in fluids, Vol.* 8 (*Huntsville, AL*, 1989), 177–209, *Ser. Comput. Phys. Process. Mech. Thermal Sci., Hemisphere, Washington, DC*, 1992. (Max D. Gunzburger) **93h:76050** 76M10 (65M60, 76D05)
Gannon, Terry (*with* Lam, C. S.) Gluing and shifting lattice constructions and rational equivalence. *Rev. Math. Phys.* **3** (1991), *no.* 3, 331–369. (Rainer Schulze-Pillot) **93i:11079** 11H55 (11E12, 81T30)
— (*with* Lam, C. S.) Lattices and θ-function identities. I. Theta constants. *J. Math. Phys.* **33** (1992), *no.* 3, 854–870. (Rolf Berndt) **93d:14063** 14K25 (11E45, 11F27, 33C80)
— (*with* Lam, C. S.) Lattices and θ-function identities. II. Theta series. *J. Math. Phys.* **33** (1992), *no.* 3, 871–887. (Rolf Berndt) **93d:14064** 14K25 (11E45, 11F27, 33C80)
— (*with* Lam, C. S.) Can a lattice string have a vanishing cosmological constant? (English summary) *Phys. Rev. D* (3) **46** (1992), *no.* 4, 1710–1720. (Stanislav Z. Pakuliak) **93i:83088** 83E30 (11H06, 81T30)
Ganov, V. A. (*with* Belyakin, N. V.) ★ Общая теория вычислений с оракулами. (Russian. Russian summary) [A general theory of calculations with oracles] *Akad. Nauk SSSR Sibirsk. Otdel., Inst. Mat., Novosibirsk*, 1989. 136 *pp.* (Marat M. Arslanov) **93j:03022** 03D10
Gans, Werner *see* **Large-scale molecular systems, 93c:82001**
Gânscă, I. (*with* Coman, Gh.; Ţâmbulea, L.) On the shape of Bézier surfaces. (Romanian summary) *Studia Univ. Babeş-Bolyai Math.* **35** (1990), *no.* 3, 37–42. 65D17
Gänssler, Peter (*with* Joos, Konrad) Another view on martingale central limit theorems. *Stochastic Process. Appl.* **40** (1992), *no.* 2, 181–197. (N. C. Weber) **93f:60026** 60F05 (60G42)
Ganster, Maximilian On covering properties and generalized open sets in topological spaces. *Math. Chronicle* **19** (1990), 27–33. (C. R. Borges) **93f:54028** 54D20
— (*with* Gressl, F.; Reilly, Ivan L.) On a decomposition of continuity. *General topology and applications* (*Staten Island, NY*, 1989), 67–72, *Lecture Notes in Pure and Appl. Math.*, 134, *Dekker, New York*, 1991. (S. A. Naimpally) **93b:54012** 54C08 (46A30)
— A note on simple extensions and semi-compact topologies. *Tamkang J. Math.* **22** (1991), *no.* 4, 343–345. (Cosimo Guido) **93f:54002** 54A10 (54D20)
— (*with* Dlaska, Karin) S-sets and co-S-closed topologies. (English summary) *Indian J. Pure Appl. Math.* **23** (1992), *no.* 10, 731–737. (Summary) **93f:54010** 54A99
— (*with* Reilly, Ivan L.) On pairwise paracompactness. (English summary) *J. Austral. Math. Soc. Ser. A* **53** (1992), *no.* 2, 281–285. (O. T. Alas) **93h:54016** 54D20 (54E55)
— (*with* Gressl, F.) On some questions concerning co-N-closed topologies. *Questions Answers Gen. Topology* **10** (1992), *no.* 1, 63–66. (Introduction) **93a:54001** 54A10 (54D10)
— (*with* Dlaska, Karin) On the questions of Jiang and Reilly. (English summary) *Questions Answers Gen. Topology* **10** (1992), *no.* 2, 187–190. (Summary) **93g:54035** 54D20
Ganter, Bernhard (*with* Reuter, Klaus) Finding all closed sets: a general approach. *Order* **8** (1991), *no.* 3, 283–290. (Introduction) **93b:06010** 06A15 (68R99)
Gantert, Nina ★ Einige grosse Abweichungen der Brownschen Bewegung. (German) [Some large deviations of Brownian motion] Dissertation, Rheinische Friedrich-Wilhelms-Universität Bonn, Bonn, 1991. Bonner Mathematische Schriften [Bonn Mathematical Publications], 224. *Universität Bonn, Mathematisches Institut, Bonn*, 1991. ii+95 *pp.* (Dominique Lépingle) **93h:60040** 60F10 (60J65)
Gantsog, Ts. (*with* Miranowicz, A.; Tanaś, R.) Phase properties of real field states: the Garrison-Wong versus Pegg-Barnett predictions. (English summary) *Phys. Rev. A* (3) **46** (1992), *no.* 5, 2870–2876. (Summary) **93f:81169** 81V80 (81P15)
Ganz, Aura (*with* Koren, Zahava) Efficient performance analysis of asymmetric finite buffer multichannel networks. (English summary) *Comm. Statist. Stochastic Models* **8** (1992), *no.* 3, 599–616. (Summary) **93e:60182** 60K25
Ganzburg, M. I. On the best approximation of infinitely differentiable functions. (Russian) *Sibirsk. Mat. Zh.* **32** (1991), *no.* 5, 12–28, 207; *translation in Siberian Math. J.* **32** (1991), *no.* 5, 733–749 (1992). (A. Kroó) **93d:41023** 41A50 (41A25)
— Limit theorems for best polynomial approximations in the L_∞ metric. (Russian. Ukrainian summary) *Ukrain. Mat. Zh.* **43** (1991), *no.* 3, 336–342; *translation in Ukrainian Math. J.* **43** (1991), *no.* 3, 299–305. (K. G. Ivanov) **93a:41008** 41A10 (41A25, 41A63)
Ganzinger, Harald (*with* Stuber, Jürgen) Inductive theorem proving by consistency for first-order clauses. (English summary) *Informatik*, 441–461, *Teubner-Texte Inform.*, 1, *Teubner, Stuttgart*, 1992. (Sauro Tulipani) **93m:68147** 68T15 (03B35, 03C05, 68Q40)
— *see also* **Computer science, 93d:68002**
Gao, Ai Jun (*with* Chen, Han Fu; Zhu, Yun Min) Improved results on the robustness of stochastic approximation algorithms. (English summary) *Acta Math. Appl. Sinica* (*English Ser.*) **8** (1992), *no.* 2, 124–130. (Summary) **93m:62186** 62L20
Gao, Dao De (*with* Wang, Jing Long) Measures of inefficiency for generalized least square estimates of the Euclidean norms of matrices. (Chinese. English and Chinese summaries) *Chinese J. Appl. Probab. Statist.* **7** (1991), *no.* 4, 361–366. (Summary) **93m:62160** 62J05
— Estimation of the deviation between the least squares and the best linear unbiased estimators of the mean vector in a linear model. (Chinese. English and Chinese summaries) *Chinese J. Appl. Probab. Statist.* **8** (1992), *no.* 4, 391–397. (Song Gui Wang) **93m:62150** 62J05
Gao, De Ping (*with* Wen, Wei Dong) A numerical integration approach for the integrals with singularity $1/r^2$ in 3-D elastoplastic BEM. *Theory and applications of boundary element methods* (*Beijing*, 1991), 67–72, *Internat. Acad. Publ., Beijing*, 1991. (*see* **93b:65008**) 73V10 (65N38, 65R20)
— (*with* Wen, Wei Dong) Stochastic boundary element method and the numerical analysis of reliability of structural strength. *Theory and applications of boundary element methods* (*Beijing*, 1991), 295–300, *Internat. Acad. Publ., Beijing*, 1991. (*see* **93b:65008**) 73V10 (65N38)
Gao, En Wei Prime ideal decompositions in $F(\mu^{1/l})$. (Chinese. Chinese summary) *J. Math.* (*Wuhan*) **11** (1991), *no.* 4, 431–435. (Hong Wen Lu) **93m:11122** 11S15 (11S20)
Gao, Feng[1] (*with* Han, Zheng Zhi) Almost disturbance decoupling for nonlinear control systems. (Chinese. English and Chinese summaries) *J. Shanghai Jiaotong Univ.* **26** (1992), *no.* 2, 35–40. 93B52
Gao, Fu Qing Large deviations for stationary Gaussian fields. (English summary) *Probability and statistics* (*Tianjin*, 1988/1989), 74–90, *Nankai Ser. Pure Appl. Math. Theoret. Phys., World Sci. Publishing, River Edge, NJ*, 1992. (Christian Maes) **93i:60051** 60F10 (60G10, 60G15, 60K35)
— Large deviation of a capacity related to the Ornstein-Uhlenbeck operator. *Adv. in Math.* (*China*) **21** (1992), *no.* 1, 113–118. (Byron Schmuland) **93c:60110** 60J45 (60H99)
Gao, Guo-Gang Divisibility properties of a Fibonacci-like sequence. *Appl. Math. Lett.* **5** (1992), *no.* 3, 21–24. (Péter Kiss) **93d:11019** 11B39
Gao, Hang Shan (*with* Zhang, Ru Qing) The random variational principle and finite element method. *Appl. Math. Mech.* (*English Ed.*) **13** (1992), *no.* 5, 401–406; *translated from Appl. Math. Mech.* **13** (1992), *no.* 5, 383–388 (*Chinese. English and Chinese summaries*). (Summary) **93f:73107** 73V05 (65K10, 65N30, 73V25, 73V30)
Gao, Hong Bo (*with* Chen, Yi Xin) Classical exchange algebra in Liouville theory on a Riemann surface. *J. Phys. A* **25** (1992), *no.* 1, 123–133. (V. V. Chueshev) **93e:32025** 32G15 (14H42, 30F10, 32G81, 34A20, 81R10, 81T40)
Gao, Hong Zhu On normal Euler numbers of embedding $\mathbf{RP}^2$ in indefinite 4-manifolds. *Chinese Sci. Bull.* **36** (1991), *no.* 23, 1940–1942. (V. P. Snaith) **93c:57016** 57N35 (57R20, 57R40)
Gao, Huajian Stress analysis of holes in anisotropic elastic solids: conformal mapping and boundary perturbation. (English summary) *Quart. J. Mech. Appl. Math.* **45** (1992), *no.* 2, 149–168. (Summary) **93c:73102** 73V35 (73B40, 73C02)
Gao, Hui Zhen The limit cycle of trimolecular saturated response model. *Ann. Differential Equations* **8** (1992), *no.* 1, 18–24. (From the text) **93c:92013** 92E20 (34C05)
Gao, Ji Ti (*with* Hong, Sheng Yan) The rate of convergence of the nearest neighbour regression function estimator. (Chinese. English and Chinese summaries) *Chinese J. Appl. Probab. Statist.* **8** (1992), *no.* 3, 247–255. (Summary) **93m:62077** 62G05 (60F15, 62E20)
— Convergence rates of some estimators for a semiparametric regression model. (English and Chinese summaries) *J. China Univ. Sci. Tech.* **22** (1992), *no.* 2, 129–137. (Summary) **93h:62076** 62G05 (62J02)
Gao, Jian *see* **Gao, Jian**[2]
Gao, Jian[1] Using lower-order spline-on-spline functions to approximate the derivatives of a function. (Chinese. English summary) *Gaoxiao Yingyong Shuxue Xuebao* **7** (1992), *no.* 2, 240–249. (Jian Zhong Wang) **93f:41016** 41A15 (65D07, 65D15)
Gao, Jian[2] (*with* Chen, Zhi Da) Theory of nonlocal asymmetric elastic solids. *Appl. Math. Mech.* (*English Ed.*) **13** (1992), *no.* 9, 793–804; *translated from Appl. Math. Mech.* **13** (1992), *no.* 9, 765–774 (*Chinese. English and Chinese summaries*). (E. S. Şuhubi) **93k:73004** 73B18 (73B25)
Gao, Jing Zhen (*with* Zhu, Yong Jin) Implicit degrees and Chvátal's condition for Hamiltonicity. *Systems Sci. Math. Sci.* **2** (1989), *no.* 4, 353–363. (Arthur M. Hobbs) **93b:05114** 05C45
— Degree sums and dominating longest paths in claw-free graphs. (Chinese. English summary) *Gaoxiao Yingyong Shuxue Xuebao* **7** (1992), *no.* 2, 315–316. 05C38
Gao, Jun (*with* Gao, Xiao Chun; Xu, Jing Bo) A new approach to the study of Noether invariants and symmetry algebras. *Progr. Theoret. Phys.* **87** (1992), *no.* 4, 861–870. (A. O. Barut) **93k:81070** 81R05 (81Q05)
Gao, Jun Bin A new finite element of C^1 cubic splines. *J. Comput. Appl. Math.* **40** (1992), *no.* 3, 305–312. (Summary) **93c:65016** 65D07
Gao, Li Qun A kind model of smuggling. (English summary) *Mathematical and intelligent models in system simulation, I, II* (*Brussels*, 1990), 39–44, *IMACS Ann. Comput. Appl. Math.*, 10, 11, *Baltzer, Basel*, 1991. (*see* **93c:93005**) 90D60
Gao, Long (*with* Chen, Lin[3]; Fan, Yu Shun; Ma, Hai Wu) A nonlinear control design for power systems. (English summary) *Automatica J. IFAC* **28** (1992), *no.* 5, 975–979. 93C95
Gao, Pu Yun (*with* Guo, Zhong Heng) Lagrange equation of another class of nonholonomic systems. *Appl. Math. Mech.* (*English Ed.*) **12** (1991), *no.* 8, 727–732; *translated from Appl. Math. Mech.* **12** (1991), *no.* 8, 679–684 (*Chinese. English summary*). (Larisa E. Veselova) **93d:70022** 70F25 (70H35)
Gao, Qi Ren (*with* Wu, Jiong Qi) On potential extension and capacity on harmonic spaces. *Potential theory* (*Nagoya*, 1990), 361–365, *de Gruyter, Berlin*, 1992. (Lucian Beznea) **93g:31016** 31C15 (31D05)

Gao, Shaodi (*with* Jerrum, Mark; Kaufmann, Michael; Mehlhorn, Kurt; Rülling, Wolfgang; Storb, Christoph) On continuous homotopic one layer routing. (English summary) *Proceedings of the Fourth Annual Symposium on Computational Geometry (Urbana, IL, 1988)*, 392–402, *ACM, New York*, 1988. (*see* **93k:68003**) 68U05 (68Q25)

Gao, Shi An (*with* Chen, Zong Xuan) On the complex oscillation of nonhomogeneous linear differential equations with meromorphic coefficients. *Kodai Math. J.* **15** (1992), *no.* 1, 65–78. (Günter Frank) **93c:34011** 34A20 (30D35)

Gao, Shi Bao (*with* Zhang, Ke Feng; Wang, Shu Yu) Explicit sensitivity analysis and its applications in 2-D structural optimization. *Approximation, optimization and computing*, 357–360, *North-Holland, Amsterdam*, 1990. (*see* **93a:41001**) 49Q12 (90C31)

Gao, Shu Dong Using the axiomatic method to define the cotangent space. (Chinese. English and Chinese summaries) *Natur. Sci. J. Harbin Normal Univ.* **8** (1992), *no.* 1, 1–5. 58A05

Gao, Shuhong *see* **Gao, Xu Hong**

Gao, Sui Xiang Properties of line-clique graphs. (Chinese. English summary) *J. Xinjiang Univ. Natur. Sci.* **9** (1992), *no.* 1, 11–15. (Jing Zhong Mao) **93g:05118** 05C75 (05C40)

Gao, Tang An (*with* Wang, Ze Ke) A perturbation free PL homotopy method for economic equilibria. (English summary) *Fixed point theory and applications (Halifax, NS, 1991)*, 112–121, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93i:90019** 90A14 (65H20)

— (*with* Yi, Yan Chun) Computational complexity of the KNA algorithm for locating all zeros of polynomials with simple zeros. (Chinese. English and Chinese summaries) *Acta Sci. Natur. Univ. Sunyatseni* **31** (1992), *no.* 3, 120–123. 65Y20 (65H05)

— (*with* Wang, Ze Ke) Several results on the number of zeroes of nonlinear mappings on bounded regions. (Chinese summary) *Chinese Quart. J. Math.* **7** (1992), *no.* 1, 44–47. (Summary) **93c:26010** 26B10

— (*with* Yi, Yan Chun; Wang, Ze Ke) Monotonicity of the KNA algorithm for polynomials with simple zeros. (Chinese. Chinese summary) *J. Math. (Wuhan)* **12** (1992), *no.* 1, 117–120. 65H05

— A counterexample to a convergence theorem. Comment on: "A method for solving systems of nonlinear equations by a fixed-point algorithm" [Numer. Math. J. Chinese Univ. **6** (1984), no. 1, 8–16; MR 86d:90124] by G. S. Feng. (Chinese. English and Chinese summaries) *Numer. Math. J. Chinese Univ.* **14** (1992), *no.* 1, 92–94. (Summary) **93g:90067** 90C30 (55M20, 65H10, 65H17)

Gao, Wei Bing (*with* Li, Yong Hua) Heuristic supervision of discrete event systems. (English summary) *Systems Sci. Math. Sci.* **3** (1990), *no.* 4, 298–307. 93C55 (93A30)

— (*with* Zheng, Feng; Cheng, Mian) Variable structure control of nonlinear systems and its implementation. (Chinese. English and Chinese summaries) *Control Theory Appl.* **9** (1992), *no.* 6, 617–624. 93B12

— (*with* Yao, B.; Chan, S. P.; Cheng, Mian) VSC coordinated control of two manipulator arms in the presence of environmental constraints. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 11, 1806–1812. 93C85

— (*with* Jia, Ying Min; Cheng, Mian) Robust strict positive real stabilization criteria for SISO uncertain systems. (English summary) *Systems Control Lett.* **19** (1992), *no.* 2, 111–117. (Jacob Hammer) **93g:93074** 93D15 (93D09, 93D21)

— (*with* Song, Yong Duan; Cheng, Mian) Asymptotically stabilizing strategy for a class of disturbed-uncertain linear systems. (English and Polish summaries) *Systems Sci.* **18** (1992), *no.* 1-2, 51–60 (1993). 93D15 (93C20)

Gao, Wei Dong (*with* Liu, Gui Long) Congruence and the chromatic number. (Chinese. English summary) *Acta Sci. Natur. Univ. Jilin.* **1991**, *no.* 4, 30–32. (Summary) **93c:05049** 05C15

Gao, Wei Fu A generalization of Dini's theorem. (Chinese. English summary) *Sichuan Shifan Daxue Xuebao Ziran Kexue Ban* **14** (1991), *no.* 5, 73–75. (Summary) **93b:26033** 26E15

Gao, Wen Feng Coincidence points of principal bundles. *Topology Appl.* **43** (1992), *no.* 2, 131–139. (S. Y. Husseini) **93f:55004** 55M20 (55R05)

Gao, Xiao Chun (*with* Xu, Jing Bo; Qian, Tie Zheng) Invariants and solution-generating technique for the quantum singular time-dependent harmonic oscillator. *Europhys. Lett.* **17** (1992), *no.* 6, 485–490. (M. Combescure) **93a:81032** 81Q05

— (*with* Xu, Jing Bo; Xu, Dong Hui) Invariant theory and superadiabatic bases. *Europhys. Lett.* **19** (1992), *no.* 2, 69–72. (Summary) **93b:81080** 81Q99

— (*with* Xu, Jing Bo; Gao, Jun) A new approach to the study of Noether invariants and symmetry algebras. *Progr. Theoret. Phys.* **87** (1992), *no.* 4, 861–870. (A. O. Barut) **93k:81070** 81R05 (81Q05)

Gao, Xiao Shan (*with* Chou, Shang-Ching) Implicitization of rational parametric equations. (English summary) *J. Symbolic Comput.* **14** (1992), *no.* 5, 459–470. (Summary) **93h:68065** 68Q40

— Transformation theorems among Cayley-Klein geometries. (English summary) *Systems Sci. Math. Sci.* **5** (1992), *no.* 3, 260–273. (E. J. F. Primrose) **93j:51018** 51M10 (03B35, 68T15)

Gao, Xie Ping The convergence rate of the Bernstein-Durrmeyer operator for functions of bounded variation. (Chinese. English and Chinese summaries) *Natur. Sci. J. Xiangtan Univ.* **14** (1992), *no.* 1, 16–22. (Guo Hua Min) **93f:41033** 41A36 (41A25)

Gao, Xu Hong (*with* Lenstra, Hendrik W., Jr.) Optimal normal bases. (English summary) *Des. Codes Cryptogr.* **2** (1992), *no.* 4, 315–323. (Summary) **93j:12003** 12F10

Gao, Yang (*with* Yau, Shing-Tung) Obstacle problem for von Kármán equations. *Adv. in Appl. Math.* **13** (1992), *no.* 2, 123–141. (Ján Lovišek) **93b:73027** 73K10 (35R35, 73G05, 73V25)

Gao, Yi Ming (*with* Wang, Xiao Hui) Criteria for generalized diagonally dominant matrices and M-matrices. *Linear Algebra Appl.* **169** (1992), 257–268. (Ernie S. Solheid) **93i:15033** 15A57 (15A21)

Gao, Yong (*with* Zhang, Wen Xiu) A convergence theorem for set-valued supermartingales and Riesz decomposition. (Chinese) *Acta Math. Sinica* **35** (1992), *no.* 1, 112–120. (Xing Wu Zhuang) **93g:60098** 60G48 (46G10)

Gao, Yu Huan Existence of multiple periodic solutions to a class of nonlinear integral equations. (Chinese. English summary) *Acta Sci. Natur. Univ. Jilin.* **1991**, *no.* 4, 46–50. (Zhanhai Gao) **93f:45022** 45M15 (45G05)

Gao, Zhi (*with* Chen, Guo Qian; Yang, Zhi Feng) A perturbational h^4 exponential finite difference scheme for the convective diffusion equation. (English summary) *J. Comput. Phys.* **104** (1993), *no.* 1, 129–139. (Summary) **93g:76084** 76M20 (76Rxx)

Gao, Zhi-Cheng (*with* Bender, Edward A.; Richmond, L. Bruce) Submaps of maps. I. General 0-1 laws. *J. Combin. Theory Ser. B* **55** (1992), *no.* 1, 104–117. (Summary) **93k:52016a** 52B70 (05C10, 57M15)

— (*with* Bender, Edward A.; McCuaig, William D.; Richmond, L. Bruce) Submaps of maps. II. Cyclically k-connected planar cubic maps. *J. Combin. Theory Ser. B* **55** (1992), *no.* 1, 118–124. (Summary) **93k:52016b** 52B70 (05C10, 57M15)

Gao, Zhi Min A relation between Fréchet alef-spaces and Lasnev spaces. (English summary) *Questions Answers Gen. Topology* **10** (1992), *no.* 2, 137–141. (Gary Gruenhage) **93m:54046** 54E20

Gao, Zhiqiang (*with* Antsaklis, Panos J.) Reconfigurable control system design via perfect model following. (English summary) *Internat. J. Control* **56** (1992), *no.* 4, 783–798. (Summary) **93e:93031** 93B50 (93B52)

— (*with* Antsaklis, Panos J.) Explicit asymmetric bounds for robust stability of continuous and discrete-time systems. (English summary) *IEEE Trans. Automat. Control* **38** (1993), *no.* 2, 332–335. (Summary) **93j:93103** 93D09 (93C55, 93C60)

Gao, Zi You (*with* Lu, Xin Ming; Zhao, Mao Xian) Some effective algorithms for linear programming. (Chinese. English summary) *J. Numer. Methods Comput. Appl.* **12** (1991), *no.* 4, 228–236. (Chang Yu Wang) **93j:90053** 90C05

— (*with* He, Guo Ping) A parallel algorithm for a class of quadratic programming problems. (Chinese. English and Chinese summaries) *Shandong Kuangye Xueyuan Xuebao* **11** (1992), *no.* 2, 209–212. 65K05 (90C20)

Gao, Zong Sheng (*with* Chen, Zong Xuan) Complex oscillation of solutions to nonhomogeneous linear differential equations. (Chinese. Chinese summary) *Acta Math. Sinica* **35** (1992), *no.* 2, 196–203. (Shu Pei Wang) **93i:34010** 34A20 (30D35, 34C10)

Gapaillard, Jacques Galilée et l'accélération de la pesanteur. (English and French summaries) [Galileo and the acceleration of free fall] *Physis Riv. Internaz. Storia Sci. (N.S.)* **29** (1992), *no.* 2, 319–374. (Summary) **93m:01024** 01A45

— Galilée et le principe du chasseur. (English and French summaries) [Galileo and the principle of the hunter] *Rev. Histoire Sci.* **45** (1992), *no.* 2-3, 281–306. (William R. Shea) **93m:01025** 01A45

Gaponenko, I. V. (*with* Muchnik, I. B.) Construction of decision rules in a pattern recognition problem using expect information. (Russian. Russian summary) *Avtomat. i Telemekh.* **1992**, *no.* 8, 118–126; *translation in Automat. Remote Control* **53** (1992), *no.* 8, *part* 2, 1237–1243 (1993). 68T10

Gaponov-Grekhov, A. V. (*with* Lomov, A. S.; Osipov, G. V.; Rabinovich, M. I.) Generation and dynamics of two-dimensional structures in nonequilibrium dissipative media. (Russian) *Nonlinear waves (Russian)*, 61–83, "*Nauka*", *Moscow*, 1989. (From the introduction) **93f:58220** 58F40 (35Q55, 76E20, 76E99)

Gaposhkin, V. F. (*with* Rosenblatt, Joseph) Almost everywhere convergence of subsequences of powers. *Probability theory and mathematical statistics, Vol. I (Vilnius*, 1989), 391–400, "*Mokslas*", *Vilnius*, 1990. (R. E. Bradley) **93e:28020** 28D05 (47A35)

Gaprindashvili, G. D. Solvability of the Dirichlet boundary value problem for systems of nonlinear ordinary differential equations with singularities. (Russian) *Differentsial'nye Uravneniya* **27** (1991), *no.* 9, 1521–1525, 1652; *translation in Differential Equations* **27** (1991), *no.* 9, 1074–1077 (1992). (L. J. Grimm) **93c:34052** 34B15 (34A40)

Garadzhaev, A. (*with* Orazov, M. B.) Spectral theory of a problem on normal oscillations of an ideal compressible fluid in a rotating elastic vessel. (Russian) *Nonclassical equations and equations of mixed type (Russian)*, 57–70, *Akad. Nauk SSSR Sibirsk. Otdel., Inst. Mat., Novosibirsk*, 1990. (Oleg Limarchenko) **93f:76082** 76N10 (35Q30, 73K70, 76U05)

Garaizar, Xabier Solution of a Riemann problem for elasticity. *J. Elasticity* **26** (1991), *no.* 1, 43–63. (Akira Tsutsumi) **93g:73048** 73D35 (35L60, 65M99, 73C99, 73G05, 73V99)

Garasim, Ya. S. (*with* Ostudin, B. A.) Investigation of an algorithm for calculating a class of two-dimensional improper integrals. (Ukrainian) *Vtsnik L'viv. Derzh. Univ. Ser. Mekh.-Mat. No.* 33 (1990), 40–45. 65D30

Gárate, G. (*with* Flaquer, J.; Pargada, M.) Envelopes of moving quadric surfaces. (English summary) *Comput. Aided Geom. Design* **9** (1992), *no.* 4, 299–312. (Zong Min Wu) **93h:65024** 65D17 (53A05)

Garay, Barnabas M. Chain recurrent subsets of $\partial \mathbf{R}^n_+$ as ω-limit sets. *Comment. Math. Univ. St. Paul.* **41** (1992), *no.* 1, 23–34. (Christian Fenske) **93d:54060** 54H20

Garay, Juan A. (*with* Berman, Piotr) Cloture votes: $n/4$-resilient distributed consensus in $t+1$ rounds. (English summary) *Math. Systems Theory* **26** (1993), *no.* 1, 3–19. (Summary) **93i:68017** 68M10

Garay, Oscar J. (*with* Ferrández, Angel; Lucas, Pascual) On a certain class of conformally flat Euclidean hypersurfaces. *Global differential geometry and global analysis (Berlin*, 1990), 48–54, *Lecture Notes in Math.*, 1481, *Springer, Berlin*, 1991. (Bang-yen Chen) **93h:53059** 53C40

— How can one distinguish between an elephant herd and a herd of 2-dimensional spheres? (English summary) *Internat. J. Math. Ed. Sci. Tech.* **24** (1993), *no.* 2, 183–190. 57M05

Garazo, Alfredo N. (*with* Velarde, Manuel G.) Solitary waves driven by capillarity and Marangoni forces. (English summary) *Nonlinear dynamics of structures (Vladimir Maiakovskiĭ*, 1990), 117–125, *World Sci. Publishing, River Edge, NJ*, 1991. (*see* **93g:76004**) 76E15

Garbaczewski, Piotr On the concepts of stochastic mechanics: random versus deterministic paths. *Stochastic methods in experimental sciences (Szklarska Poręba*, 1989), 159–166, *World Sci. Publishing, River Edge, NJ*, 1990. (Koichiro Matsuno) **93c:81024** 81P20

— Nelson's stochastic mechanics as the problem of random flights and rotations. *Nonlinear fields: classical, random, semiclassical (Karpacz*, 1991), 455–477, *World Sci. Publishing, River Edge, NJ*, 1991. (A. Blaquière) **93b:81034** 81P20 (70G99, 70H40)

— Rotational diffusions as seen by relativistic observers. (English summary) *J. Math. Phys.* **33** (1992), *no.* 10, 3393–3401. (Yu. E. Gliklikh) **93k:81029** 81P20 (58G32)

— Derivation of the quantum potential from realistic Brownian particle motions. *Phys. Lett. A* **162** (1992), *no.* 2, 129–136. (Yu. E. Gliklikh) **93d:81024** 81P20

— Relativistic problem of random flights and Nelson's stochastic mechanics. *Phys. Lett. A* **164** (1992), *no.* 1, 6–16. (G. A. Skorobogatov) **93j:81054** 81S20 (81P20)

— (*with* Vigier, Jean-Pierre) Brownian motion and its descendants according to Schrödinger. *Phys. Lett. A* **167** (1992), *no.* 5-6, 445–451. (Koichiro Matsuno) **93i:81018** 81P20 (81S20)

— Physical significance of the Nelson-Newton laws. (English summary) *Phys. Lett. A* **172** (1993), *no.* 4, 208–214. (Gennady Berman) **93m:81017** 81P20

Garbey, Marc Domain decomposition to solve layers and singular perturbation problems. (English summary) *Fifth International Symposium on Domain Decomposition Methods for Partial Differential Equations (Norfolk, VA, 1991)*, 293–305, *SIAM, Philadelphia, PA*, 1992. (Summary) **93h:65120** 65M55 (76M25)
— (*with* Kaper, Hans G.; Leaf, Gary K.; Matkowsky, Bernard J.) Quasi-periodic waves and the transfer of stability in condensed-phase surface combustion. *SIAM J. Appl. Math.* **52** (1992), *no.* 2, 384–395. (V. A. Sobolev) **93f:80019** 80A25 (35B32)
— *see also* **Asymptotic and numerical methods for partial differential equations with critical parameters, 93m:65006**
Garbiero, S. (*with* Abbena, E.) Einstein metrics on some special manifolds. (Italian summary) *Riv. Mat. Univ. Parma* (4) **17** (1991), 29–39 (1992). (Wolfgang Ziller) **93h:53042** 53C25
— (*with* Abbena, E.; Vanhecke, Lieven) Einstein-like metrics on three-dimensional Riemannian homogeneous manifolds. (English summary) *Simon Stevin* **66** (1992), *no.* 1-2, 173–183. (Oleg K. Mushkarov) **93m:53044** 53C30 (53C25)
Garcia, A. *see* **García, Arnaldo**
García, Alberto *see* **García Díaz, Alberto**
García, Alvaro Homage to a pioneer: Yu Takeuchi. (Spanish. Spanish summary) *Rev. Integr. Temas Mat.* **7** (1989), *no.* 2, 65–75 (1990). 01A70
García, Arnaldo (*with* Voloch, José Felipe) Duality for projective curves. *Bol. Soc. Brasil. Mat. (N.S.)* **21** (1991), *no.* 2, 159–175. (H.-G. Rück) **93g:14039** 14H99 (14N05)
— (*with* Lax, R. F.) Goppa codes and Weierstrass gaps. *Coding theory and algebraic geometry (Luminy, 1991)*, 33–42, *Lecture Notes in Math.*, 1518, *Springer, Berlin*, 1992. (Stefan Dodunekov) **93m:94032** 94B27 (11G20, 11T71, 94B65)
pérez-García, Carlos *see* **Pérez-García, Carlos**
García, Carlos E. (*with* Rivera, Daniel E.; Pollard, James F.) Control-relevant prefiltering: a systematic design approach and case study. *IEEE Trans. Automat. Control* **37** (1992), *no.* 7, 964–974. 93B30 (93E11)
García, Christine (*with* Solé, Patrick) Diameter lower bounds for Waring graphs and multi-loop networks. (English summary) Graph theory and combinatorics (Marseille-Luminy, 1990). *Discrete Math.* **111** (1993), *no.* 1-3, 257–261. (Summary) **93m:05097** 05C35
pérez-García, Cristina *see* **Pérez-García, Cristina**
García, Domingo (*with* Galindo, Pablo; Maestre, Manuel) A remark on locally determining sequences in infinite-dimensional spaces. (English summary) *Note Mat.* **10** (1990), *no.* 2, 267–272. (Richard M. Aron) **93k:46036** 46G20 (46A03)
— (*with* Galindo, Pablo; Maestre, Manuel) The coincidence of τ_0 and τ_ω for spaces of holomorphic functions on some Fréchet-Montel spaces. *Proc. Roy. Irish Acad. Sect. A* **91** (1991), *no.* 2, 137–143. (Luiza Amália de Moraes) **93h:46053** 46G20 (46A11, 46E50)
— (*with* Galindo, Pablo; Maestre, Manuel) Holomorphic mappings of bounded type on (DF)-spaces. *Progress in functional analysis (Peñíscola, 1990)*, 135–148, *North-Holland Math. Stud.*, 170, *North-Holland, Amsterdam*, 1992. (Luiza Amália de Moraes) **93b:46085** 46G20 (46A13)
— (*with* Dineen, Seán; Galindo, Pablo; Maestre, Manuel) Linearity and holomorphy on fully nuclear spaces with a basis. (French summary) *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 10, 715–718. (Summary) **93a:46084** 46G20 (46A11, 46A13)
hernández-García, E. *see* **Hernández-García, E.**
García, F. (*with* Naveira, A. M.) Some general remarks about real and complex integral geometry. *Proceedings of the 3rd Congress of Geometry (Thessaloniki, 1991)*, 306–318, *Aristotle Univ. Thessaloniki, Thessaloniki*, 1992. (L. A. Santaló) **93e:53085** 53C65 (52A22, 52A39)
suárez García, Fermín *see* **Suárez García, Fermín**
García, G. *see* **García Lomba, Guillermo**
montero García, Gustavo *see* **Montero García, Gustavo**
rojo García, Jesús *see* **Rojo García, Jesús**
lópez García, José *see* **López García, José**
de abreu-Garcia, Jose A. *see* **De Abreu-Garcia, Jose A.**
álvarez García, José Antonio *see* **Álvarez García, José Antonio**
García, José Luis *see* **García Hernández, José Luis**
rueda García, M. *see* **Rueda García, M.**
cabrera García, Miguel *see* **Cabrera García, Miguel**
obaya García, Rafael *see* **Obaya García, Rafael**
pérez-García, V. M. *see* **Pérez-García, V. M.**
Garcia-Aguado, C. (*with* Verdegay, J. L.) On the sensitivity of membership functions for fuzzy linear programming problems. (English summary) *Fuzzy Sets and Systems* **56** (1993), *no.* 1, 47–49. 90C70 (04A72)
García-Archilla, B. (*with* Mackenzie, J. A.) Supraconvergence analysis for a cell-vertex scheme for the convection-diffusion equation. (English summary) *Proceedings of the XII Congress on Differential Equations and Applications/II Congress on Applied Mathematics (Spanish) (Oviedo, 1991)*, 471–476, *Univ. Oviedo, Oviedo*, 1991. (Summary) **93k:65074** 65M12 (65N12, 76M25, 76Rxx)
García Azorero, J. (*with* Peral Alonso, I.) On limits of solutions of elliptic problems with nearly critical exponent. *Comm. Partial Differential Equations* **17** (1992), *no.* 11-12, 2113–2126. (Xin Kang Guo) **93m:35036** 35B99 (35J65)
— (*with* Peral Alonso, I.) On an Emden-Fowler type equation. *Nonlinear Anal.* **18** (1992), *no.* 11, 1085–1097. (Gianfranco Bottaro) **93h:35074** 35J70 (35P30)
García-Bellido, Juan (*with* Casas, J. A.; Quirós, Mariano) Scalar-tensor theories of gravity with Φ-dependent masses. *Classical Quantum Gravity* **9** (1992), *no.* 5, 1371–1384. (Carl Brans) **93d:83054** 83D05 (83F05)
— (*with* Quirós, Mariano) String effective actions and cosmological stability of scalar potentials. (English summary) *Nuclear Phys. B* **385** (1992), *no.* 3, 558–570. (C. Gauthier) **93m:81117** 81T30 (81V17, 83E30, 83F05)
García Ben, Marta (*with* Yohai, Víctor J.) Robust analysis of variance for a randomized block design. *Comm. Statist. Theory Methods* **21** (1992), *no.* 6, 1779–1798. (S. K. Tharthare) **93h:62133** 62K10
García-Colín, L. S. (*with* Velasco, R. M.) The kinetic foundations of extended irreversible thermodynamics revisited. (English summary) *J. Statist. Phys.* **69** (1992), *no.* 1-2, 217–229. (Lamberto Rondoni) **93i:82059** 82C35 (82C03, 82C40)
García-Cuerva, José Factorization of operators and weighted norm inequalities. *Nonlinear analysis, function spaces and applications, Vol. 4 (Roudnice nad Labem, 1990)*, 5–41, *Teubner-Texte Math.*, 119, *Teubner, Leipzig*, 1990. (Javier Duoandikoetxea) **93f:42032** 42B20 (42B25, 46E30, 47A99, 47B38)
— (*with* Harboure, E.; Segovia, Carlos; Torrea Hernández, José Luis) Weighted norm inequalities for commutators of strongly singular integrals. *Indiana Univ. Math. J.* **40** (1991), *no.* 4, 1397–1420. (Kenneth F. Andersen) **93f:42031** 42B20 (47G10)
— (*with* Torrea Hernández, José Luis; Duoandikoetxea, Javier; Carbery, Anthony) The work of José Luis Rubio de Francia. I, II, III, IV. Conference on Mathematical Analysis (El Escorial, 1989). *Publ. Mat.* **35** (1991), *no.* 1, 9–25, 27–63, 65–80, 81–93. (J. Horváth) **93b:01044** 01A70 (42–03, 43–03, 44–03, 46–03)
García de Andrade, L. C. Torsion, massive electrodynamics and gravitation induced by scalar fields. (English summary) *Astrophys. Space Sci.* **198** (1992), *no.* 1, 79–83. (Summary) **93g:83058** 83C50 (83F05)
— Torsion, superconductivity, and massive electrodynamics. *Internat. J. Theoret. Phys.* **31** (1992), *no.* 7, 1221–1227. (Summary) **93b:82087** 82D55 (78A99)
García Díaz, Alberto (*with* Téllez, Jorge) Stationary axisymmetric charged perfect fluid type *D* solutions. *J. Math. Phys.* **33** (1992), *no.* 6, 2254–2257. (Enric Verdaguer) **93g:83016** 83C15 (83C20)
Garciadiego, Alejandro R. An introspective: questioning the influence of the paradoxes of set theory. (Spanish) Translated by Rodrigo Cambray Núñez. Mathesis. *Mathesis* **7** (1991), *no.* 4, 507–529. (Ignacio Angelelli) **93h:03003** 03A05 (01A55, 01A60, 03–03)
García Falset, J. (*with* Jiménez-Melado, A.; Llorens Fuster, E.) A characterization of normal structure in Banach spaces. (English summary) *Fixed point theory and applications (Halifax, NS, 1991)*, 122–129, *World Sci. Publishing, River Edge, NJ*, 1992. (Józef Banaś) **93j:46019** 46B20
— (*with* Llorens Fuster, E.) A geometric property of Banach spaces related to the fixed point property. (English summary) *J. Math. Anal. Appl.* **172** (1993), *no.* 1, 39–52. (H. H. Bauschke) **93m:46009** 46B20 (47H10)
García-Ferreira, Salvador Some remarks on initial α-compactness, $< \alpha$-boundedness and p-compactness. *Topology Proc.* **15** (1990), 11–28. (W. W. Comfort) **93e:54013** 54D20 (03E35, 04A20, 54D80)
— (*with* Tamariz-Mascarúa, Angel) The α-boundification of α. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 4, 1301–1311. (V. Kannan) **93m:54008** 54A25 (54D30, 54D40)
García Hernández, José Luis (*with* Simón Pinero, Juan Jacobo) Morita equivalence for idempotent rings. *J. Pure Appl. Algebra* **76** (1991), *no.* 1, 39–56. (Robert Wisbauer) **93b:16010** 16D90
fernández García-Hierro, Manuel *see* **Fernández García-Hierro, Manuel**
García-Jurado, I. (*with* Fiestras-Janeiro, G.) A new geometric approach to bimatrix games. (English summary) *Qüestiió* **15** (1991), *no.* 3, 299–306. (Summary) **93e:90071** 90D06 (90D44)
García Lomba, Guillermo (*with* Durany, J.; Vázquez, C.) Numerical solution of free-boundary problems in piezoviscous lubrication. (Spanish. English summary) *Proceedings of the XII Congress on Differential Equations and Applications/II Congress on Applied Mathematics (Spanish) (Oviedo, 1991)*, 441–446, *Univ. Oviedo, Oviedo*, 1991. (*see* **93j:00009**) 76D08 (65N99, 65P05)
García López, Ricardo On the number of generators of modules over polynomial affine rings. *Math. Z.* **208** (1991), *no.* 1, 11–21. (N. Mohan Kumar) **93b:13033** 13F20 (13B25)
— On the number of generators of modules over Laurent rings. *Manuscripta Math.* **76** (1992), *no.* 1, 45–57. (Gert Naudé) **93e:13029** 13E15
Garcia-Margallo, J. (*with* Díaz Bejarano, José) The limit cycles of the generalized Rayleigh-Liénard oscillator. (English summary) *J. Sound Vibration* **156** (1992), *no.* 2, 283–301. (Sui Lin Cai) **93g:34053** 34C15 (34C05, 34C25, 34C29, 70K10)
García Nogales, Agustín Statistical models strongly-invariant under the action of a group. *Qüestiió* **14** (1990), *no.* 1-3, 3–9. (Summary) **93b:62007** 62A05 (62B05)
García Pérez, P. L. (*with* Muñoz Masqué, J.) Higher order regular variational problems. *Symplectic geometry and mathematical physics (Aix-en-Provence, 1990)*, 136–159, *Progr. Math.*, 99, *Birkhäuser Boston, Boston, MA*, 1991. (Frans Cantrijn) **93c:58057** 58E30 (58A20, 58F05)
García Pupo, Mauro Atypical deductive databases. (Spanish. English and Spanish summaries) *Cienc. Mat. (Havana)* **12** (1991), *no.* 2-3, 119–135. 68P15 (68P20)
— Cartesian dependencies and a new variant of normal form for relational databases. (Spanish. English and Spanish summaries) *Cienc. Mat. (Havana)* **12** (1991), *no.* 2-3, 137–153. 68P15
— Additional rules for the decomposition of functional and multivalued dependencies in relational databases. (Spanish. English and Spanish summaries) *Cienc. Mat. (Havana)* **13** (1992), *no.* 2, 134–137. 68P15
García-Río, Eduardo (*with* Bonome, Agustín; Castro, Regina; Hervella, Luis M.) On the holomorphic sectional curvature on an indefinite Kähler manifold. (English and French summaries) *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 11, 1183–1187. (Demir N. Kupeli) **93j:53079** 53C50 (53B30, 53B35, 53C55)
García-Rodeja Fernández, Eduardo (*with* Rodríguez-Fernández, Celso) The exact sequence in the homology of groups with integral coefficients modulo q associated to two normal subgroups. (French summary) *Cahiers Topologie Géom. Différentielle Catégoriques* **32** (1991), *no.* 2, 113–129. (Graham J. Ellis) **93a:20079** 20J05
García Roig, J.-L. (*with* Alsina, Claudi) On some inequalities characterizing the exponential function. (English summary) *Arch. Math. (Brno)* **26** (1990), *no.* 2-3, 67–71. (B. Crstici) **93k:39007** 39B72
— (*with* Alsina, Claudi; Targoński, Gy.) A remark on Pythagoras theorem and functional conjugacy. *European Conference on Iteration Theory (Batschuns, 1989)*, 6–8, *World Sci. Publishing, River Edge, NJ*, 1991. (*see* **93e:58001**) 51M04 (39B99)
— (*with* Alsina, Claudi) On a functional equation characterizing inner product spaces. *Publ. Math. Debrecen* **39** (1991), *no.* 3-4, 299–304. (Sever S. Dragomir) **93c:46036** 46C15 (39B52)
García-Ruiz, Juan M. (*with* Otálora, Fermín) Fractal trees and Horton's laws. *Math. Geol.* **24** (1992), *no.* 1, 61–71. (Summary) **93b:86010** 86A99
García Rus, Eulalia (*with* Fernández López, Antonio[1]; Sánchez Campos, Esperanza) Prime nondegenerate Jordan triple systems with minimal inner ideals. *Nonassociative algebraic models (Zaragoza, 1989)*, 143–166, *Nova Sci. Publ., Commack, NY*, 1992. (Erhard Neher) **93k:17004** 17A40 (17C10)
— (*with* Fernández López, Antonio[1]; Sánchez Campos, Esperanza; Siles Molina, M.) Strong regularity and generalized inverses in Jordan systems. *Comm. Algebra* **20** (1992), *no.* 7,

1917–1936. (Erhard Neher) **93h:17072** 17C10
— (*with* Fernández López, Antonio[1]; Rodríguez-Palacios, Ángel) A Zel'manov prime theorem for JB*-algebras. *J. London Math. Soc.* (2) **46** (1992), *no.* 2, 319–335. (Khristo N. Boyadzhiev) **93h:46098** 46L70 (17C10, 46H70)
Garcia Santos, Florentino *see* **Santos, Florentino Garcia**
García-Sucre, M. (*with* Percoco, U.; Núñez, L. A.) An example of a general class of symmetries of Lagrangians and their equations of motion. (French summary) *Canad. J. Phys.* **69** (1991), *no.* 10, 1217–1220. (P. G. L. Leach) **93e:70009** 70H33 (58F05, 70H35)
Gard, Thomas C. (*with* Cao, Yu Lin; Fan, Jiangping) The effects of state-dependent time delay on a stage-structured population growth model. *Nonlinear Anal.* **19** (1992), *no.* 2, 95–105. (Lai Fu Liu) **93g:92019** 92D25 (34K20, 92D40)
Gardashov, T. B. Solution of inverse problems for the quasilinear heat conduction equation in the self-similar mode for the multidimensional case. *J. Engrg. Phys.* **61** (1991), *no.* 3, 1157–1162 (1992); *translated from Inzh.-Fiz. Zh.* **61** (1991), *no.* 3, 472–478 (*Russian*). (Ulrich Tautenhahn) **93c:35160** 35R30 (35K60, 49N45, 80A23)
Gärdenfors, Peter Belief revision: an introduction. *Belief revision*, 1–28, *Cambridge Tracts Theoret. Comput. Sci.*, 29, *Cambridge Univ. Press, Cambridge*, 1992. (*see* **93g:68131**) 68T30 (03B60, 03B70)
— *see also* **Belief revision, 93g:68131**
Gardies, Jean-Louis La proposition 14 du livre V dans l'économie des *Éléments* d'Euclide. [Proposition 14 of Book V in the organization of Euclid's *Elements*] *Rev. Histoire Sci.* **44** (1991), *no.* 3-4, 457–467. (B. Artmann) **93g:01010** 01A20
Gardiner, A. D. (*with* Godsil, C. D.; Hensel, A. D.; Royle, Gordon F.) Second neighbourhoods of strongly regular graphs. *Discrete Math.* **103** (1992), *no.* 2, 161–170. (M. D. Hestenes) **93k:05183** 05E30
— Almost rank three graphs. *Discrete Math.* **103** (1992), *no.* 3, 253–257. (W. Dörfler) **93f:05048** 05C25
Gardiner, C. F. (*with* Firby, P. A.) ★ Surface topology. Second edition. Ellis Horwood Series: Mathematics and its Applications. *Ellis Horwood, New York*; *distributed by Prentice Hall, Inc., Englewood Cliffs, NJ*, 1991. 220 *pp. ISBN* 0-13-855321-1 (From the preface) **93f:57001** 57-01 (05-01, 57Mxx)
Gardiner, C. W. (*with* Parkins, A. S.; Zoller, P.) Wave-function quantum stochastic differential equations and quantum-jump simulation methods. (English summary) *Phys. Rev. A* (3) **46** (1992), *no.* 7, 4363–4381. (K. Wódkiewicz) **93k:81277** 81V80 (60H99, 81S25)
Gardiner, Frederick P. On Teichmüller contraction. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 3, 865–875. (Steffen Timmann) **93i:30036** 30F60 (32G15)
Gardiner, John Richard (*with* Silverberg, Larry) Simulation of the mechanics of water-skier motion. (English summary) *Math. Comput. Simulation* **34** (1992), *no.* 2, 163–181. 00A72 (65C20, 70B15, 70B99)
Gardiner, Joseph C. (*with* Susarla, V.) Time-sequential estimation. *Handbook of sequential analysis*, 613–631, *Statist. Textbooks Monographs*, 118, *Dekker, New York*, 1991. (*see* **93g:62102**) 62L12
Gardiner, Stephen J. Integrals of subharmonic functions. *Irish Math. Soc. Bull. No.* 22 (1989), 33–41. (Vladimir Logvinenko) **93g:31004** 31B05
— A short proof of Burdzy's theorem on the angular derivative. *Bull. London Math. Soc.* **23** (1991), *no.* 6, 575–579. (N. V. Rao) **93a:31006** 31B05 (31C40)
— A fine limit property of functions superharmonic outside a manifold. *Compositio Math.* **83** (1992), *no.* 2, 239–249. (D. H. Armitage) **93i:31001** 31B05 (31B25)
— (*with* Armitage, D. H.; Netuka, Ivan) Separation of points by classes of harmonic functions. *Math. Proc. Cambridge Philos. Soc.* **113** (1993), *no.* 3, 561–571. (David A. Herron) **93m:31004** 31B05
— Positive harmonic majorization of the real part of a holomorphic function. *Proc. Amer. Math. Soc.* **117** (1993), *no.* 3, 767–770. (P. Lappan) **93d:30038** 30D35
— Sets of determination for harmonic functions. *Trans. Amer. Math. Soc.* **338** (1993), *no.* 1, 233–243. (T. J. Lyons) **93j:31005** 31B05
Gårding, Lars Abel and solvable equations of prime degree. (Swedish. English summary) *Normat* **40** (1992), *no.* 1, 1–13, 56. (Jesper Lützen) **93g:01038** 01A55 (12–03, 12F10)
Gardini, Laura Some global bifurcations of two-dimensional endomorphisms by use of critical lines. *Nonlinear Anal.* **18** (1992), *no.* 4, 361–399. (Helena E. Nusse) **93e:58141** 58F14 (34C23)
Gardner, B. J. Radicals which define factorization systems. *Comment. Math. Univ. Carolin.* **32** (1991), *no.* 4, 601–607. (Edmund R. Puczyłowski) **93e:16030** 16N80 (18A20)
— Some nil ring properties related to T-nilpotence. (English summary) *Bull. Austral. Math. Soc.* **46** (1992), *no.* 3, 519–523. (Shi Zhong Pan) **93i:16031** 16N40
— (*with* Liang, Zhi An) Small and large radical classes. *Comm. Algebra* **20** (1992), *no.* 9, 2533–2551. (Chuan He Li) **93g:16027** 16N80 (06B20)
— Strong semi-simplicity. *Period. Math. Hungar.* **24** (1992), *no.* 1, 23–35. (Stefan Veldsman) **93c:16022** 16N80
— Some cardinality conditions for ring radicals. *Quaestiones Math.* **15** (1992), *no.* 1, 27–37. (Edmund R. Puczyłowski) **93b:16036** 16N80
Gardner, Carl L. (*with* Wang, Feng; Schaeffer, David G.) Steady-state computations of granular flow in an axisymmetric hopper. *SIAM J. Appl. Math.* **52** (1992), *no.* 4, 1076–1088. (Summary) **93c:73040** 73E50 (76A99, 76M20)
Gardner, G. A. (*with* Ali, A. H. A.; Gardner, L. R. T.) A collocation solution for Burgers' equation using cubic B-spline finite elements. (English summary) *Comput. Methods Appl. Mech. Engrg.* **100** (1992), *no.* 3, 325–337. (Summary) **93j:65156** 65M70 (35Q53, 76M25)
— (*with* Gardner, L. R. T.) Solitary waves of the equal width wave equation. *J. Comput. Phys.* **101** (1992), *no.* 1, 218–223. (Summary) **93c:65116** 65M60 (35Q53)
Gardner, L. R. T. (*with* Ali, A. H. A.; Gardner, G. A.) A collocation solution for Burgers' equation using cubic B-spline finite elements. (English summary) *Comput. Methods Appl. Mech. Engrg.* **100** (1992), *no.* 3, 325–337. (Summary) **93j:65156** 65M70 (35Q53, 76M25)
— (*with* Gardner, G. A.) Solitary waves of the equal width wave equation. *J. Comput. Phys.* **101** (1992), *no.* 1, 218–223. (Summary) **93c:65116** 65M60 (35Q53)
Gardner, Martin ★ Путешествие во времени. (Russian) [Time travel] Translated from the English and with a preface by Yu. A. Danilov. "*Mir*", *Moscow*, 1990. 337 *pp. ISBN* 5-03-001166-8 (Editors) **93m:00004** 00A08
— (*with* Sallows, Lee C. F.; Guy, Richard K.; Knuth, Donald E.) Serial isogons of 90 degrees. *Math. Mag.* **64** (1991), *no.* 5, 315–324. (From the text) **93h:05050** 05B50
— ★ Mathematical circus. More puzzles, games, paradoxes, and other mathematical entertainments from Scientific American. Revised reprint of the 1981 edition. With a preface by Donald Knuth. MAA Spectrum. *Mathematical Association of America, Washington, DC*, 1992. xvi+279 *pp. ISBN* 0-88385-506-2 00A08
— *see also* **Stewart, Ian N., 93i:00003** *and* **Penrose, Roger, 93k:00013**
Gardner, R. *see* **Gardner, Robert Alan**
Gardner, Richard J. X-rays of polygons. *Discrete Comput. Geom.* **7** (1992), *no.* 3, 281–293. (L. A. Santaló) **93f:52008** 52A22
— (*with* Kallay, Michael) Subdivision algorithms and the kernel of a polyhedron. (English summary) *Discrete Comput. Geom.* **8** (1992), *no.* 4, 417–427. (Béla Uhrin) **93k:52014** 52B55 (52A10)
— Sets determined by finitely many X-rays. *Geom. Dedicata* **43** (1992), *no.* 1, 1–16. (L. A. Santaló) **93e:52002** 52A05 (52A10, 92C55)
Gardner, Robert Alan A stability index for steady state solutions and applications. Some topics in nonlinear PDEs (Turin, 1989). *Rend. Sem. Mat. Univ. Politec. Torino* **1989**, *Special Issue*, 95–111 (1991). (Qi Xiao Ye) **93f:35024** 35B35 (35K50, 35K60)
— (*with* Jones, C. K. R. T.) A stability index for steady state solutions of boundary value problems for parabolic systems. *J. Differential Equations* **91** (1991), *no.* 2, 181–203. (Roger Lui) **93c:35009** 35B35 (35K50, 35K60, 58C40)
Gardner, Robert B. The geometry of nonlinear control systems. *Differential geometry*, 179–198, *Pitman Monographs Surveys Pure Appl. Math.*, 52, *Longman Sci. Tech., Harlow*, 1991. (Henry Hermes) **93e:93016** 93B29 (58A15, 93B18, 93C10)
— (*with* Shadwick, William F.) An equivalence problem for a two-form and a vector field on $\mathbf{R}^3$. *Differential geometry, global analysis, and topology* (*Halifax, NS*, 1990), 41–50, *CMS Conf. Proc.*, 12, *Amer. Math. Soc., Providence, RI*, 1991. (Irl Bivens) **93e:58004** 58A15 (58F35)
Gardner, Robert B. (*with* Calahan, Rebecca) A special case of bicyclic Steiner triple systems. (English summary) Proceedings of the Twenty-third Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, FL, 1992). *Congr. Numer.* **88** (1992), 77–80. (Summary) **93j:05016** 05B07
— Transrotational directed triple systems. (English summary) Proceedings of the Twenty-third Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, FL, 1992). *Congr. Numer.* **90** (1992), 97–102. (Summary) **93m:05030** 05B07
— Steiner triple systems with near-rotational automorphisms. (English summary) *J. Combin. Theory Ser. A* **61** (1992), *no.* 2, 322–327. (Summary) **93g:05021** 05B07
Gardy, Danièle (*with* Flajolet, Philippe; Thimonier, Loÿs) Birthday paradox, coupon collectors, caching algorithms and self-organizing search. (English summary) *Discrete Appl. Math.* **39** (1992), *no.* 3, 207–229. (Guy Jumarie) **93i:68107** 68Q45 (60C05, 90B99)
— (*with* Gouyou-Beauchamps, D.) Enumerating Davenport-Schinzel sequences. (English and French summaries) *RAIRO Inform. Théor. Appl.* **26** (1992), *no.* 5, 387–402. (A. Pethő) **93k:05011** 05A15 (11B75, 68R15)
— Normal limiting distributions for projection and semijoin sizes. *SIAM J. Discrete Math.* **5** (1992), *no.* 2, 219–248. (E. Rodney Canfield) **93a:05011** 05A16 (60F05, 68P15)
— Méthode de col et lois limites en analyse combinatoire. [The saddle method and limit laws in combinatorial analysis] Discrete mathematics and applications to computer science (Marseille, 1989). *Theoret. Comput. Sci.* **94** (1992), *no.* 2, 261–280. (Summary) **93f:60012** 60C05 (05A15, 60F05, 68R05)
Garey, L. E. (*with* Gladwin, C. J.) Multi-step methods for first kind singular Volterra integral equations. *J. Integral Equations Appl.* **3** (1991), *no.* 4, 515–525. (M. S. Abou El-Seoud) **93b:65208** 65R20
— (*with* Shaw, R. E.) Monotonic approximations for nonlinear second order Volterra integro-differential equations with two-point boundary conditions. (English summary) *Utilitas Math.* **42** (1992), 129–136. (Summary) **93k:65110** 65R20 (45L05)
Garfield, Richard (*with* Wilf, Herbert S.) The distribution of the binomial coefficients modulo p. *J. Number Theory* **41** (1992), *no.* 1, 1–5. (Andrew Granville) **93f:11016** 11B65 (11A07, 11B83)
Garfinkle, David Black string traveling waves. (English summary) *Phys. Rev. D* (3) **46** (1992), *no.* 10, 4286–4288. (Charles G. Torre) **93j:83074** 83E30 (81V17, 83C20)
Garfinkle, Devra On the classification of primitive ideals for complex classical Lie algebra. II. *Compositio Math.* **81** (1992), *no.* 3, 307–336. (Anthony Joseph) **93g:17018** 17B35 (05E10)
Garg, Devendra P. Supervisory control for coordination of multiple robots. (English summary) *Internat. J. Systems Sci.* **23** (1992), *no.* 10, 1703–1715. 93C85
Garg, K. M. Relativization of some aspects of the theory of functions of bounded variation. (English summary) *Dissertationes Math.* (*Rozprawy Mat.*) **320** (1992), 123 *pp.* (A. Precupanu) **93i:26011** 26A45 (26A42)
Garg, M. S. (*with* Bhandari, M. C.) Optimum codes of dimension 3 and 4 over GF(4). (English summary) *IEEE Trans. Inform. Theory* **38** (1992), *no.* 5, 1564–1567. (Piroska Lakatos) **93g:94031** 94B65 (94B05)
Garg, Mridula (*with* Garg, Sheekha) A general class of multidimensional fractional integral operators. (English summary) *Bull. Calcutta Math. Soc.* **82** (1990), *no.* 6, 537–546. (Summary) **93h:44007** 44A30 (26A33)
Garg, Naveen (*with* Santosh, Vempala S.; Singla, Aman) Improved approximation algorithms for biconnected subgraphs via better lower bounding techniques. (English summary) *Proceedings of the Fourth Annual ACM-SIAM Symposium on Discrete Algorithms* (*Austin, TX*, 1993), 103–111, *ACM, New York*, 1993. (Summary) **93k:05169** 05C85 (68Q25, 68R10)
Garg, S. K. (*with* Narang, T. D.) On the uniqueness of best approximation in non-Archimedian spaces. *Period. Math. Hungar.* **22** (1991), *no.* 2, 121–124. (S. Venkata Ratnam Naidu) **93a:41052** 41A52 (41A65, 46S10)
Garg, Sanjay Robust integrated flight/propulsion control design for a STOVL aircraft using H-infinity control design techniques. (English summary) *Automatica J. IFAC* **29** (1993), *no.* 1, 129–145. 93B36 (93C95)
Garg, Sheekha (*with* Garg, Mridula) A general class of multidimensional fractional integral operators. (English summary) *Bull. Calcutta Math. Soc.* **82** (1990), *no.* 6, 537–546. (Summary) **93h:44007** 44A30 (26A33)
— The distribution of the sum of mixed independent random variables. (English summary) *Ganita Sandesh* **6** (1992), *no.* 2, 78–82. 62E15 (33C60)

Garg, Usha (*with* Khanduja, Sudesh K.) On residually generic prolongations of a valuation to a simple transcendental extension. *J. Indian Math. Soc.* (*N.S.*) **57** (1991), *no.* 1-4, 101–108. (M. Hajja) **93g:12010** 12J20

Garg, Vijay Kumar (*with* Kumar, Ratnesh; Marcus, Steven I.) On supervisory control of sequential behaviors. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 12, 1978–1985. (Summary) **93j:93076** 93C30 (93A30, 93B05)

— Some optimal algorithms for decomposed partially ordered sets. (English summary) *Inform. Process. Lett.* **44** (1992), *no.* 1, 39–43. (Summary) **93h:68109** 68R05 (06A07, 68Q25)

— (*with* Ragunath, M. T.) Concurrent regular expressions and their relationship to Petri nets. *Theoret. Comput. Sci.* **96** (1992), *no.* 2, 285–304. (Ryszard Janicki) **93h:68106** 68Q90 (68Q10, 68Q45)

— (*with* Kumar, Ratnesh; Marcus, Steven I.) Stable behavior and stabilizing supervisor for discrete event dynamical systems. (English summary) *Mathematical theory of control* (*Bombay*, 1990), 185–203, *Lecture Notes in Pure and Appl. Math.*, 142, *Dekker, New York*, 1993. (*see* **93g:93003**) 93C83

Gargano, Luisa (*with* Capocelli, Renato M.; Vaccaro, Ugo) Efficient q-ary immutable codes. Applied algebra, algebraic algorithms, and error-correcting codes (Toulouse, 1989). *Discrete Appl. Math.* **33** (1991), *no.* 1-3, 25–41. (Summary) **93a:68034** 68P25 (94A60)

— (*with* Körner, János; Vaccaro, Ugo) Search problems for two irregular coins with incomplete feedback: the underweight model. *Discrete Appl. Math.* **36** (1992), *no.* 2, 191–197. (Summary) **93b:90036** 90B40 (05A99, 90B90)

— (*with* Capocelli, Renato M.; De Santis, Alfredo; Vaccaro, Ugo) On the construction of statistically synchronizable codes. *IEEE Trans. Inform. Theory* **38** (1992), *no.* 2, *part* 1, 407–414. (Summary) **93a:94037** 94B35 (94A45)

— (*with* Körner, János; Vaccaro, Ugo) Qualitative independence and Sperner problems for directed graphs. (English summary) *J. Combin. Theory Ser. A* **61** (1992), *no.* 2, 173–192. (Konrad Engel) **93h:05165** 05D05 (05A18, 05C20)

— Tighter time bounds on fault-tolerant broadcasting and gossiping. *Networks* **22** (1992), *no.* 5, 469–486. (D. M. Topkis) **93e:68006** 68M10 (90B12)

— (*with* Vaccaro, Ugo) Minimum time broadcast networks tolerating a logarithmic number of faults. *SIAM J. Discrete Math.* **5** (1992), *no.* 2, 178–198. (A. T. Amin) **93f:90064** 90B12 (05C90, 68M10, 94C15)

Garguichevich, Graciela G. (*with* Tarzia, Domingo A.) The steady-state two-phase Stefan problem with an internal energy and some related problems. *Atti Sem. Mat. Fis. Univ. Modena* **39** (1991), *no.* 2, 615–634. (Bishun Pandey) **93e:80003** 80A22 (35R35, 76T05)

Garibaldi, Ubaldo (*with* Costantini, Domenico) The nonfrequency approach to elementary particle statistics. *Statistics in science*, 167–181, *Boston Stud. Philos. Sci.*, 122, *Kluwer Acad. Publ., Dordrecht*, 1990. (Andrèj K. Kwaśniewski) **93a:81009** 81P05

— (*with* Costantini, Domenico) A probabilistic formulation of Pauli's exclusion principle in the context of predictive inference. (Italian. English and Italian summaries) *Statistica* (*Bologna*) **51** (1991), *no.* 1, 21–34. (Summary) **93f:81008** 81P05 (60A99, 60G05, 82B03)

Gariepy, Ronald F. (*with* Evans, Lawrence C.) Partial regularity for constrained minimizers of convex or quasiconvex functionals. Some topics in nonlinear PDEs (Turin, 1989). *Rend. Sem. Mat. Univ. Politec. Torino* **1989**, *Special Issue*, 75–93 (1991). (Summary) **93a:35060** 35J85

— (*with* Evans, Lawrence C.) ★ Measure theory and fine properties of functions. Studies in Advanced Mathematics. *CRC Press, Boca Raton, FL*, 1992. viii+268 *pp. ISBN* 0-8493-7157-0 (R. G. Bartle) **93f:28001** 28–02 (26–02, 26Bxx, 46E35)

Garif'yanov, F. N. Integral representation of an analytic function inside a parallelogram and its application. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* **1991**, *no.* 12, 8–12; *translation in Soviet Math.* (*Iz. VUZ*) **35** (1991), *no.* 12, 8–11. 30E25

jiménez Garijo, Pedro *see* **Jiménez Garijo, Pedro**

Garimella, Ramesh V. On nilpotency of the separating ideal of a derivation. *Proc. Amer. Math. Soc.* **117** (1993), *no.* 1, 167–174. (Peter Dixon) **93g:46046** 46H40 (46J05)

Garist, V. È. On properties of finite p-constrained groups. II. (Russian. English and Russian summaries) *Vestst Akad. Navuk Belarust Ser. Fiz. Mat. Navuk* **1992**, *no.* 3-4, 39–41, 124. (Summary) **93m:20028** 20D25

Garitagoitia, Jose R. (*with* González de Mendívil, Jose R.) A model for deadlock detection based on automata and languages theory. (English summary) *Comput. Math. Appl.* **25** (1993), *no.* 6, 47–55. (Summary) **93k:68008** 68M10

Garkusha, N. I. Investigation of the adaptive properties of production-transportation systems by means of stochastic models. (Russian) *Issled. Operatsii i ASU No.* 35 (1991), 11–20. 90C90 (90C15)

Garland, H. (*with* Zuckerman, Gregg J.) Representations of Heisenberg systems and vertex operators. *Complex geometry and Lie theory* (*Sundance, UT*, 1989), 135–150, *Proc. Sympos. Pure Math.*, 53, *Amer. Math. Soc., Providence, RI*, 1991. (Alex Jay Feingold) **93k:17046** 17B65 (22E65, 81R10)

Garlauskas, Algis (*with* Shimoliunas, Algirdas; Gutman, Aron) Some logic functions realized on a stationary nonlinear dendrite. I. Exciting synapses. (English, Russian and Lithuanian summaries) *Informatica* **2** (1991), *no.* 3, 403–413, 459, 466. 94C10 (92B20)

Garling, D. J. H. (*with* Montgomery-Smith, Stephen) Complemented subspaces of spaces obtained by interpolation. *J. London Math. Soc.* (2) **44** (1991), *no.* 3, 503–513. (Fernando Cobos) **93c:46137** 46M35 (46B70)

Garma Pons, Santiago Mathematics in Spain in the first half of the twentieth century. (Spanish) *Proceedings of the XVth Portuguese-Spanish Conference on Mathematics, Vol. VI* (*Portuguese*) (*Évora*, 1990), 3–65, *Univ. Évora, Évora*, 1991. (J. Dieudonné) **93c:01019** 01A55 (01A60)

Garner, J. B. (*with* Asaithambi, N. S.) Taylor series solution of a class of diffusion problems in physiology. (English summary) *Math. Comput. Simulation* **34** (1992), *no.* 6, 563–570. (Summary) **93g:92009** 92C30 (65L99)

Garnett, Geoffrey P. (*with* Swinton, Jonathan; Brunham, Robert C.; Anderson, Roy M.) Gonococcal infection, infertility, and population growth. I. Endemic states in behaviourally homogeneous growing populations. (English summary) *IMA J. Math. Appl. Med. Biol.* **9** (1992), *no.* 2, 107–126. 92C60 (92D30)

— (*with* Swinton, Jonathan; Brunham, Robert C.; Anderson, Roy M.) Gonococcal infection, infertility, and population growth. II. The influence of heterogeneity in sexual behaviour. (English summary) *IMA J. Math. Appl. Med. Biol.* **9** (1992), *no.* 2, 127–144. 92C60

Garnett, John B. (*with* Jones, Peter Wilcox; Marshall, Donald E.) A Lipschitz decomposition of minimal surfaces. *J. Differential Geom.* **35** (1992), *no.* 3, 659–673. (Ivan Sterling) **93d:53010** 53A10 (49Q05)

Garnick, David K. (*with* Nieuwejaar, Nils A.) Nonisomorphic extremal graphs without three-cycles or four-cycles. (English summary) *J. Combin. Math. Combin. Comput.* **12** (1992), 33–56. (Summary) **93f:05050** 05C35 (05C30, 05C38)

— (*with* Dinitz, Jeffrey H.; Gyárfás, András) On the irregularity strength of the $m \times n$ grid. *J. Graph Theory* **16** (1992), *no.* 4, 355–374. (Michael Jacobson) **93i:05074** 05C35

Garnick, Eric Niche breadth in parasites: an evolutionarily stable strategy model, with special reference to the protozoan parasite *Leishmania*. (English summary) *Theoret. Population Biol.* **42** (1992), *no.* 1, 62–103. 92D30 (92C60, 92D15)

Garnier, C. Symbolic formulation of dynamic equations for interconnected flexible bodies: the GEMMES software. (English summary) *Stabilization of flexible structures* (*Montpellier*, 1989), 17–27, *Lecture Notes in Control and Inform. Sci.*, 147, *Springer, Berlin*, 1990. (*see* **93c:93006**) 70E99 (70–04, 70B15)

Garnier, Rowan (*with* Taylor, John) ★ Discrete mathematics for new technology. *Adam Hilger, Ltd., Bristol*, 1992. xviii+678 *pp. ISBN* 0-7503-0135-X (From the preface) **93g:00004** 00A05 (00A06, 05–01, 68–01)

Garofalo, F. (*with* Celentano, Giovanni; Glielmo, Luigi) Stability robustness of interval matrices via Lyapunov quadratic forms. (English summary) *IEEE Trans. Automat. Control* **38** (1993), *no.* 2, 281–284. (Summary) **93j:93104** 93D09

Garofalo, Nicola (*with* Lanconelli, Ermanno) Existence and nonexistence results for semilinear equations on the Heisenberg group. *Indiana Univ. Math. J.* **41** (1992), *no.* 1, 71–98. (Jana D. Madjarova) **93h:35071** 35J65 (22E25)

— (*with* Donnelly, Harold) Riemannian manifolds whose Laplacians have purely continuous spectrum. *Math. Ann.* **293** (1992), *no.* 1, 143–161. (Johan Tysk) **93c:58219** 58G25

Garola, Claudio Truth versus testability in quantum logic. (English summary) *Erkenntnis* **37** (1992), *no.* 2, 197–222. (V. Ya. Kreĭnovich) **93m:03101** 03G12 (03A05, 81P10)

— Semantic incompleteness of quantum physics. *Internat. J. Theoret. Phys.* **31** (1992), *no.* 5, 809–824. (Carol Sisson Regehr) **93k:81015a** 81P10 (03G12)

— Erratum: "Semantic incompleteness of quantum physics". *Internat. J. Theoret. Phys.* **32** (1993), *no.* 1, 217. (Carol Sisson Regehr) **93k:81015b** 81P10 (03G12)

Garrard, William L. (*with* Enns, Dale F.; Snell, S. Antony) Nonlinear feedback control of highly manoeuvrable aircraft. (English summary) *Internat. J. Control* **56** (1992), *no.* 4, 799–812. 93C95 (70Q05, 93B52)

Garrett, A. J. M. Ockham's razor. *Maximum entropy and Bayesian methods* (*Laramie, WY*, 1990), 357–364, *Fund. Theories Phys.*, 43, *Kluwer Acad. Publ., Dordrecht*, 1991. (*see* **93b:00011**) 01A99

Garrett, Brett T. Circle packings and polyhedral surfaces. (English summary) *Discrete Comput. Geom.* **8** (1992), *no.* 4, 429–440. (Oded Schramm) **93g:52014** 52C15 (57M50, 68U05)

Garrett, Paul B. On the arithmetic of Siegel-Hilbert cuspforms: Petersson inner products and Fourier coefficients. *Invent. Math.* **107** (1992), *no.* 3, 453–481. (K.-B. Gundlach) **93e:11060** 11F41 (11F30)

Garrido, M. I. *see* **Garrido Carballo, María Isabel**

caraballo Garrido, Tomás *see* **Caraballo Garrido, Tomás**

Garrido Carballo, María Isabel (*with* Montalvo Durán, Francisco) Uniform approximation theorems for real-valued continuous functions. *Extracta Math.* **6** (1991), *no.* 2-3, 152–155. (From the introduction) **93j:54004** 54C30 (46E25, 54C40)

— (*with* Montalvo Durán, Francisco) On some generalizations of the Kakutani-Stone and Stone-Weierstrass theorems. *Extracta Math.* **6** (1991), *no.* 2-3, 156–159. (From the introduction) **93g:54021** 54C30 (41A65, 54C40)

— (*with* Gómez Gil, J.; Jaramillo, Jesús A.) Homomorphisms on some function algebras. *Extracta Math.* **7** (1992), *no.* 1, 46–52. (W. A. Feldman) **93m:46058** 46J10 (46E25, 54C40)

Garriga, Jaume (*with* Vilenkin, Alexander) Quantum fluctuations on domain walls, strings, and vacuum bubbles. *Phys. Rev. D* (3) **45** (1992), *no.* 10, 3469–3486. (Summary) **93b:83031** 83C47 (83F05)

Garroni, M. G. (*with* Solonnikov, V. A.; Vivaldi, M. A.) Quasi-linear, integro-differential, parabolic problems with nonhomogeneous conditions. *Houston J. Math.* **18** (1992), *no.* 4, 481–532. (Wojciech Okrasiński) **93k:45002** 45K05 (35K55, 47G20)

Garsia, Adriano M. (*with* Procesi, Claudio) On certain graded S_n-modules and the q-Kostka polynomials. *Adv. Math.* **94** (1992), *no.* 1, 82–138. (Leonid Krop) **93j:20030** 20C30 (05E10, 05E35)

— (*with* Bergeron, Nantel) Zonal polynomials and domino tableaux. *Discrete Math.* **99** (1992), *no.* 1-3, 3–15. (Witold Kraśkiewicz) **93e:20006** 20C05 (05E10)

— Orthogonality of Milne's polynomials and raising operators. *Discrete Math.* **99** (1992), *no.* 1-3, 247–264. (Christian Krattenthaler) **93m:05201** 05E05 (05A30, 05E35, 11B65, 33D45)

— (*with* Bergeron, François; Reutenauer, Christophe) Homomorphisms between Solomon's descent algebras. (English summary) *J. Algebra* **150** (1992), *no.* 2, 503–519. (Witold Kraśkiewicz) **93i:20013** 20C30 (05E05)

Gart, John J. (*with* Nam, J.) Correction to: "Approximate interval estimation of the difference in binomial parameters: correction for skewness and extension to multiple tables" [Biometrics **46** (1990), no. 3, 637–643]. *Biometrics* **48** (1992), *no.* 3, 979. 62F25

— Pooling 2×2 tables: asymptotic moments of estimators. *J. Roy. Statist. Soc. Ser. B* **54** (1992), *no.* 2, 531–539. (Summary) **93a:62088** 62H17 (62F12)

Garthwaite, Paul H. (*with* Dickey, James M.) Elicitation of prior distributions for variable-selection problems in regression. (English summary) *Ann. Statist.* **20** (1992), *no.* 4, 1697–1719. (I. Guttman) **93k:62066** 62F15 (62J05)

Gartland, E. C., Jr. (*with* Grossmann, Christian) Semianalytic solution of boundary value problems by using approximated operators. (English, German and Russian summaries) *Z. Angew. Math. Mech.* **72** (1992), *no.* 12, 615–619. (I. Norman Katz) **93m:34016** 34A45 (41A65, 65L10)

Garuccio, Augusto (*with* De Caro, Liberato) Quantum mechanics versus local realism: the importance of the wave function normalization. *Found. Phys. Lett.* **5** (1992), *no.* 4, 393–398. 81P10

Garus, Rainer (*with* Küpper, Tassilo) Computation of the smallest positive eigenvalue of a quadratic λ-matrix. *Proceedings of the Second International Symposium on Numerical Analysis* (*Prague*, 1987), 139–149, *Teubner-Texte Math.*, 107, *Teubner, Leipzig*, 1988. (*see* **93b:65007**) 65F15

Garzón, Antonio R. (*with* Cegarra, Antonio M.) A long exact sequence in nonabelian cohomology. *Category theory* (*Como*, 1990), 79–94, *Lecture Notes in Math.*, 1488, *Springer, Berlin*, 1991. (Graham J. Ellis) **93g:18018** 18G50

Garzon, Max (*with* Botelho, Fernanda) On dynamical properties of neural networks. *Complex Systems* **5** (1991), *no.* 4, 401–413. (Summary) **93h:68101** 68Q80 (58F40, 92B20)

— Graphical words and languages. *Words, languages and combinatorics* (*Kyoto*, 1990), 160–178, *World Sci. Publishing, River Edge, NJ*, 1992. (Ryszard Janicki) **93h:68070** 68Q45 (68Q10, 68Q70)

— (*with* Muganda, Godfrey C.) Free fuzzy groups and fuzzy group presentations. (English summary) *Fuzzy Sets and Systems* **48** (1992), *no.* 2, 249–255. (Summary) **93e:20104** 20N25 (04A72)

Gasanenko, V. A. Applications of thinning processes. *Ann. Univ. Sci. Budapest. Sect. Comput.* **11** (1991), 35–51. (Richard F. Serfozo) **93g:60101** 60G55 (60K25)

Gasanov, È. È. Optimal informational networks for search relations that are linear quasi-order relations. (Russian) *Constructions in algebra and logic* (*Russian*), 11–17, *Tver. Gos. Univ., Tver'*, 1990. (*see* **93m:00021**) 68M10 (68P20)

Gasanov, M. G. (*with* Maksudov, F. G.) On the variational theory of the spectrum of operator pencils. (Russian) *Dokl. Akad. Nauk* **325** (1992), *no.* 5, 915–918; *translation in Russian Acad. Sci. Dokl. Math.* **46** (1993), *no.* 1, 126–130. (Branko Najman) **93j:47020** 47A56 (47A75, 49R05)

Gasanov, Z. M. (*with* Semenets', G. I.) Identification of some oscillatory systems by means of function series. (Russian. Russian summary) *Differential equations and their applications in physics* (*Russian*), 71–76, 109–110, *Dnepropetrovsk. Gos. Univ., Dnepropetrovsk*, 1989. (*see* **93g:00024**) 34C99 (93B30)

Gasarch, William I. (*with* Beigel, Richard) The mapmaker's dilemma. Combinatorics and theoretical computer science (Washington, DC, 1989). *Discrete Appl. Math.* **34** (1991), *no.* 1-3, 37–48. (Summary) **93e:05029** 05C15

— (*with* Smith, Carl H.) Learning via queries. (English summary) *J. Assoc. Comput. Mach.* **39** (1992), *no.* 3, 649–674. (Alexey P. Stolboushkin) **93k:68084** 68T05 (03D20, 03D80)

— (*with* Pleszkoch, Mark G.; Solovay, Robert) Learning via queries in [+, <]. *J. Symbolic Logic* **57** (1992), *no.* 1, 53–81. (Summary) **93j:03024** 03D20 (03B25, 03F30, 68T05)

Gasca, Mariano (*with* Mühlbach, G.) Multivariate polynomial interpolation under projectivities. I. Lagrange and Newton interpolation formulas. *Numer. Algorithms* **1** (1991), *no.* 4, 375–399. (Annie A. M. Cuyt) **93a:65011** 65D05 (41A05)

— (*with* Peña, Juan Manuel) On the characterization of totally positive matrices. *Approximation theory, spline functions and applications* (*Maratea*, 1991), 357–364, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 356, *Kluwer Acad. Publ., Dordrecht*, 1992. (Thomas L. Markham) **93i:15029** 15A48

— (*with* Peña, Juan Manuel) Total positivity and Neville elimination. *Linear Algebra Appl.* **165** (1992), 25–44. (Ji Cheng Chen) **93d:15031** 15A48

— (*with* Micchelli, Charles A.; Peña, Juan Manuel) Almost strictly totally positive matrices. *Numer. Algorithms* **2** (1992), *no.* 2, 225–236. (Summary) **93b:65015** 65D07 (15A48, 65F40)

— (*with* Martínez, José J.) Bivariate Hermite-Birkhoff interpolation and Vandermonde determinants. (English summary) Extrapolation and rational approximation (Puerto de la Cruz, 1992). *Numer. Algorithms* **3** (1992), *no.* 1-4, 193–199. (Summary) **93h:65013** 65D05 (41A05, 41A63, 65F99)

Gascuel, O. (*with* Caraux, G.) Bounds on distribution functions of order statistics for dependent variates. *Statist. Probab. Lett.* **14** (1992), *no.* 2, 103–105. (Summary) **93e:62135** 62G30 (62E15)

— (*with* Caraux, G.) Bounds on expectations of order statistics via extremal dependences. (English summary) *Statist. Probab. Lett.* **15** (1992), *no.* 2, 143–148. (Summary) **93m:62120** 62G30

Gashenenko, I. N. A case of the integrability of equations of motion of a gyrostat. (Russian. Russian summary) *Mekh. Tverd. Tela No.* 24 (1992), 1–4. (Summary) **93m:70007** 70E15 (70E05)

Gaskell, R. W. (*with* Burdík, Č.; Cummins, C. J.; Sharp, R. T.) Complete branching rules generating function for $SO(7) \supset SU(2)^3$ and polynomial basis states. (English summary) *J. Phys. A* **25** (1992), *no.* 18, 4835–4846. (Hartmut Schlosser) **93j:22036** 22E70 (20C35, 81R05)

Gaşpar, D. (*with* Suciu, N.; Valuşescu, I.) On a certain class of operator valued analytic functions on the bidisc. *An. Univ. Timişoara Ser. Ştiinţ. Mat.* **27** (1989), *no.* 1, 41–48. (E. Durszt) **93b:47023** 47A56 (46J99, 47A45)

Gaspar, F. (*with* Meddahi, S.) A domain-decomposition method for a linear parabolic problem. (Spanish. English summary) *Proceedings of the XII Congress on Differential Equations and Applications/II Congress on Applied Mathematics* (*Spanish*) (*Oviedo*, 1991), 251–256, *Univ. Oviedo, Oviedo*, 1991. (Summary) **93j:65204** 65N55 (65M55)

Gaspard, Pierre From dynamical chaos to diffusion. *From phase transitions to chaos*, 322–334, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93c:58168** 58F20 (58F13)

— Dynamical chaos and many-body quantum systems. *Quantum chaos—quantum measurement* (*Copenhagen*, 1991), 19–42, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 358, *Kluwer Acad. Publ., Dordrecht*, 1992. (M. Combescure) **93a:81048** 81Q50 (58F13, 81V70)

— (*with* Cvitanović, Predrag; Schreiber, Thomas) Investigation of the Lorentz gas in terms of periodic orbits. *Chaos* **2** (1992), *no.* 1, 85–90. (Dieter H. Mayer) **93h:82024** 82B40 (58F20, 82B21, 82B80)

— r-adic one-dimensional maps and the Euler summation formula. *J. Phys. A* **25** (1992), *no.* 8, L483–L485. (Summary) **93a:58138** 58F19 (58F13)

— Diffusion in uniformly hyperbolic one-dimensional maps and Appell polynomials. (English summary) *Phys. Lett. A* **168** (1992), *no.* 1, 13–17. (Summary) **93c:58062** 58F03 (33C65, 58F15)

— (*with* Ramirez, D. Alonso) Ruelle classical resonances and dynamical chaos: the three- and four-disk scatterers. *Phys. Rev. A* (3) **45** (1992), *no.* 12, 8383–8397. (Summary) **93d:58125** 58F20 (58F13, 70F99, 82C05)

— (*with* Nakamura, Katsuhiro; Lakshmanan, M.; Rice, S. A.) Field-theoretical model inspired by adiabatic-ansatz eigenvalue problems. (English summary) *Phys. Rev. A* (3) **46** (1992), *no.* 10, 6311–6314. (Summary) **93j:81022** 81Q50

— *see also* **Homoclinic chaos, 93i:58005**

Gasparian, G. S. *see* **Gasparyan, G. S.**

cattaneo Gasparini, I. *see* **Cattaneo Gasparini, I.**

Gasparo, M. G. (*with* Macconi, M.) Numerical solution of second-order nonlinear singularly perturbed boundary value problems by initial value methods. *J. Optim. Theory Appl.* **73** (1992), *no.* 2, 309–327. (Fu Ming Ma) **93c:65085** 65L05 (34A50, 34B15, 34E15, 65L10)

— (*with* Macconi, M.) Parallel initial value algorithms for singularly perturbed boundary value problems. *J. Optim. Theory Appl.* **73** (1992), *no.* 3, 501–517. (Summary) **93b:65217** 65Y05 (34E15, 65L10)

Gasparski, Wojciech *see* **Kotarbiński, Tadeusz, 93e:01034**

Gasparyan, G. S. (*with* Markosyan, S. E.; Markosyan, A. S.) On a conjecture of Berge. *J. Combin. Theory Ser. B* **56** (1992), *no.* 1, 97–107. (Chinh T. Hoang) **93h:05078** 05C15

Gasper, George (*with* Trebels, Walter) On necessary multiplier conditions for Laguerre expansions. *Canad. J. Math.* **43** (1991), *no.* 6, 1228–1242. (Boris Petrovich Osilenker) **93g:42017** 42C05 (33C45, 42C10)

— In memoriam: Ralph P. Boas, Jr. (1912–1992). *J. Math. Anal. Appl.* **173** (1993), *no.* 1, 1–2. 01A70

Gasperini, M. (*with* Giovannini, M.) Gravity waves from primordial dimensional reduction. (English summary) *Classical Quantum Gravity* **9** (1992), *no.* 10, L137–L141. (Summary) **93f:83086** 83F05 (83C35, 83E15)

— (*with* Maharana, Jnanadeva; Veneziano, G.) Boosting away singularities from conformal string backgrounds. (English summary) *Phys. Lett. B* **296** (1992), *no.* 1-2, 51–57. (Introduction) **93k:81156** 81T20 (81R05, 81T30)

Gassendi, Pierre *see* **Beaulieu, Armand, 93k:01018**

Gasser, Theo (*with* Herrmann, Eva) Data-adaptive kernel estimation. *Nonparametric functional estimation and related topics* (*Spetses*, 1990), 67–79, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 335, *Kluwer Acad. Publ., Dordrecht*, 1991. (Summary) **93a:62054** 62G05

— (*with* Kneip, Alois) Analysis of samples of curves. *Nonparametric functional estimation and related topics* (*Spetses*, 1990), 99–110, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 335, *Kluwer Acad. Publ., Dordrecht*, 1991. (Summary) **93a:62055** 62G05

— (*with* Kneip, Alois; Köhler, Walter) A flexible and fast method for automatic smoothing. *J. Amer. Statist. Assoc.* **86** (1991), *no.* 415, 643–652. (G. Roussas) **93d:62063** 62G05 (62G20, 62J02)

— (*with* Kneip, Alois) Statistical tools to analyze data representing a sample of curves. (English summary) *Ann. Statist.* **20** (1992), *no.* 3, 1266–1305. (Ulrich Stadtmüller) **93h:62084** 62G05

Gassiat, Élisabeth (*with* Gamboa, F.) Maximum d'entropie et problème des moments: cas multidimensionnel. (English summary) [Maximum entropy and the moment problem: the multidimensional case] *Probab. Math. Statist.* **12** (1991), *no.* 1, 67–83 (1992). (Kurt Marti) **93g:44018** 44A60 (62G05)

— Estimation adaptive d'un processes AR non causal. (English summary) [Adaptative estimation in noncausal stationary AR processes] *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 6, 475–478. (Summary) **93b:62126** 62M10

— (*with* Doukhan, Paul) Quadratic deviation of penalized mean squares regression estimates. *J. Multivariate Anal.* **41** (1992), *no.* 1, 89–101. (Arup Bose) **93i:62042** 62G10 (60F05, 62J02)

Gassó, Ma. Teresa Algebras with the local interpolation property. *Rocky Mountain J. Math.* **22** (1992), *no.* 1, 181–196. (Robert F. Wheeler) **93f:28004** 28A60 (06E15, 46J99, 54H10)

Gastaldi, F. (*with* Quarteroni, Alfio; Sacchi Landriani, Giovanni) Coupling of two-dimensional hyperbolic and elliptic equations. (English summary) *Spectral and high order methods for partial differential equations* (*Como*, 1989), 347–354, *North-Holland, Amsterdam*, 1990. (*see* **93d:65005**) 65N35 (76D05, 76M25)

Gastaldi, Lucia A domain decomposition method associated with the streamline diffusion FEM for linear hyperbolic systems. (English summary) *Appl. Numer. Math.* **10** (1992), *no.* 5, 357–380. (Hong Yuan Fu) **93j:65144** 65M55 (76M10, 76M20)

Gastaldi, Tommaso On the mean and the variance of a generalized oscillation index derived via the Minkowski metric, and of a spatial correlation index. (Italian. English and Italian summaries) *Metron* **49** (1991), *no.* 1-4, 363–372 (1992). 62E15 (60D05, 62G10)

— Testing a censoring hypothesis through an identity test. *Comm. Statist. Theory Methods* **21** (1992), *no.* 5, 1267–1272. 62G10

— Optimal reconstruction of a generally censored sample. (English summary) *Statist. Probab. Lett.* **14** (1992), *no.* 5, 393–399. (Summary) **93e:62137** 62G30

— A Kolmogorov-Smirnov test procedure involving a possibly censored or truncated sample. (English summary) *Comm. Statist. Theory Methods* **22** (1993), *no.* 1, 31–39. 62G10

— Interpolating missing values in a censored sample. (English summary) *J. Statist. Plann. Inference* **35** (1993), *no.* 2, 189–199. 62G10

Gastel, Andreas Regularity of minimizing harmonic mappings into ellipsoids and similar other manifolds. *Manuscripta Math.* **77** (1992), *no.* 1, 97–104. (Hongcang Yang) **93j:58033** 58E20

van Gastel, Leendert J. Excess intersections in projective space. *Topics in algebra, Part* 2 (*Warsaw*, 1988), 109–124, *Banach Center Publ.*, 26, *Part* 2, *PWN, Warsaw*, 1990. (Aigli Papantonopoulou) **93g:14010** 14C17

— Characteristic numbers of plane curves: an excess intersection theoretical approach. *Enumerative algebraic geometry* (*Copenhagen*, 1989), 259–265, *Contemp. Math.*, 123, *Amer. Math. Soc., Providence, RI*, 1991. (Paolo Aluffi) **93d:14081** 14N10 (14C17)

— Degenerations of conormal varieties. *Enumerative algebraic geometry* (*Copenhagen*, 1989), 267–278, *Contemp. Math.*, 123, *Amer. Math. Soc., Providence, RI*, 1991. (Sheldon H. Katz) **93b:14013** 14C17 (14N10)

— (*with* Flenner, Hubert; Vogel, Wolfgang) Joins and intersections. *Math. Ann.* **291** (1991), *no.* 4, 691–704. (Rüdiger Achilles) **93e:14006** 14C17 (14E10, 14E22)

Gastin, Paul (*with* Ochmański, Edward; Petit, Antoine; Rozoy, Brigitte) Decidability of the star problem in $A^* \times \{b\}^*$. (English summary) *Inform. Process. Lett.* **44** (1992), *no.* 2, 65–71. (Summary) **93i:68108** 68Q45

Gaston, F. M. F. (*with* Kadlec, Jan; Irwin, G. W.) Regularised lattice-ladder adaptive filter. (English summary) *Mutual impact of computing power and control theory* (*Prague*, 1992), 143–149, *Czech. Acad. Sci., Prague*, 1992. (*see* **93f:93005**) 93E11 (93C83)

Gasull, Armengol (*with* Cima, Anna; Mañosas, Francesc) Some applications of the Euler-Jacobi formula to differential equations. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 1, 151–163. (Carmen Chicone) **93f:58199** 58F21 (34C05)

Gasymov, È. A. Application of integral transformations to the solution of some mixed problems. (Russian. Russian summary) *Differentsial'nye Uravneniya* **28** (1992), *no.* 3, 521–522, 550. (Summary) **93i:35008** 35A22 (35G10)

Gát, Gy. Orthonormal systems on Vilenkin groups. *Acta Math. Hungar.* **58** (1991), *no.* 1-2, 193–198. (Wo-Sang Young) **93e:42039** 42C10 (43A15, 43A50)

Gat, Omri Symmetry algebras of third-order ordinary differential equations. (English summary) *J. Math. Phys.* **33** (1992), *no.* 9, 2966–2971. (Niky Kamran) **93j:34001** 34A05 (34A25, 58F35, 58F37)

Gątarek, Dariusz Impulsive control of piecewise-deterministic processes. (English summary) *Stochastic systems and optimization* (*Warsaw*, 1988), 298–308, *Lecture Notes in Control and Inform. Sci.*, 136, *Springer, Berlin*, 1989. (*see* **93d:93009**) 49K45 (93E20)

— (*with* Sokołowski, Jan) Shape sensitivity analysis for stochastic evolution equations. *Boundary control and boundary variation* (*Sophia-Antipolis*, 1990), 215–220, *Lecture Notes in Control and Inform. Sci.*, 178, *Springer, Berlin*, 1992. (*see* **93b:49001**) 49Q15 (93C20)

— (*with* Sokołowski, Jan) Shape sensitivity analysis for stochastic PDEs. (English summary) *Modelling uncertain data* (*Freiberg*, 1992), 12–21, *Math. Res.*, 68, *Akademie-Verlag, Berlin*, 1992. (Summary) **93i:49054** 49Q10 (35R60, 60H15)

— (*with* Da Prato, Giuseppe; Zabczyk, Jerzy) Invariant measures for semilinear stochastic equations. *Stochastic Anal. Appl.* **10** (1992), *no.* 4, 387–408. (Bohdan Maslowski) **93g:60130** 60H15 (60H10)

Gatermann, Karin (*with* Hohmann, Andreas) Symbolic exploitation of symmetry in numerical pathfollowing. *Impact Comput. Sci. Engrg.* **3** (1991), *no.* 4, 330–365. (Timothy Sauer) **93d:65052** 65H17 (47H15, 47H17, 58F36, 65H20)

Gates, D. J. (*with* Westcott, Mark) Markov models of steady crystal growth. (English summary) *Ann. Appl. Probab.* **3** (1993), *no.* 2, 339–355. (Summary) **93m:60151** 60J20

Gates, S. James, Jr. (*with* Nishino, Hitoshi; Oerter, Robert N.) The first-ilk superparticle in second-order Lagrangian and backgrounds. *Phys. Lett. B* **265** (1991), *no.* 3-4, 278–286. (Summary) **93b:81214** 81T30

— (*with* Nishino, Hitoshi) Remarks on $N = 2$ supersymmetric Chern-Simons theories. *Phys. Lett. B* **281** (1992), *no.* 1-2, 72–80. (Summary) **93i:81272** 81T60

— (*with* Majumdar, Parthasarathi) Toward a (supersymmetry)^2 particle model of the First Ilk. *Phys. Lett. B* **284** (1992), *no.* 1-2, 71–76. (Summary) **93c:81238** 81T60 (81T30, 83E30)

— (*with* Solov'ev, O. A.) On universality of the SU(2) bosonized Thirring model. (English summary) *Phys. Lett. B* **294** (1992), *no.* 3-4, 342–346. (Summary) **93i:81136** 81T13 (81T40)

— (*with* Nishino, Hitoshi; Ketov, S. V.) Extended supersymmetry and self-duality in $2 + 2$ dimensions. (English summary) *Phys. Lett. B* **297** (1992), *no.* 1-2, 99–104. (Summary) **93j:81099** 81T60 (81V17, 83E50)

— (*with* Nishino, Hitoshi) Supersymmetric integrable systems embedded in supersymmetric self-dual Yang-Mills theory. (English summary) *Phys. Lett. B* **299** (1993), *no.* 3-4, 255–261. 81T60 (81T40)

Gather, U. (*with* Kale, B. K.) Outlier generating models—a review. *Contributions to stochastics*, 57–86, *Wiley, New York*, 1992. (*see* **93m:60007**) 62E15 (62F99)

Gatica, Gabriel N. An equivalent formulation for variational problems with constraints. *Proyecciones* **8/9** (1989/90), *no.* 16, 17–39. (Ilmar Arro) **93a:49003** 49J27 (49M25)

— (*with* Hsiao, George C.) The coupling of boundary integral and finite element methods for nonmonotone nonlinear problems. (English summary) *Numer. Funct. Anal. Optim.* **13** (1992), *no.* 5-6, 431–447. (Weimin Han) **93j:65194** 65N38 (47H17, 65J15)

Gatica, Juan A. (*with* Rivero Mendoza, Jesús) Qualitative behavior of solutions of some state-dependent delay equations. *Delay and differential equations* (*Ames, IA*, 1991), 36–56, *World Sci. Publishing, River Edge, NJ*, 1992. (D. N. Cheban) **93h:34116** 34K05 (34K15, 45J05)

— (*with* Fink, A. M.) For every answer there are two questions. *Math. Mag.* **65** (1992), *no.* 3, 182–185. (Juan-Enrique Martínez-Legaz) **93d:90061** 90C30 (49N15)

Gatignol, Renée (*with* Chauvat, Philippe) Macroscopic variables in discrete kinetic theory. (English summary) *Discrete models of fluid dynamics* (*Figueira da Foz*, 1990), 1–11, *Ser. Adv. Math. Appl. Sci.*, 2, *World Sci. Publishing, River Edge, NJ*, 1991. (Giuseppe Toscani) **93j:82059** 82C40 (76P05)

— (*with* Chauvat, Philippe) Euler and Navier-Stokes description for a class of discrete models of gases with different moduli. (English summary) Proceedings of the Fourth International Workshop on Mathematical Aspects of Fluid and Plasma Dynamics (Kyoto, 1991). *Transport Theory Statist. Phys.* **21** (1992), *no.* 4-6, 417–435. (Jian Ning Chen) **93m:82037** 82C40 (76N15, 76P05)

Gato-Rivera, B. (*with* Schellekens, A. N.) Complete classification of simple current modular invariants for RCFTs with a center $(\mathbf{Z}_p)^k$. *Comm. Math. Phys.* **145** (1992), *no.* 1, 85–121. (Eric J. Raiten) **93d:81155** 81T40 (11F99, 81R10)

— (*with* Semikhatov, A. M.) Minimal models from W-constrained hierarchies via the Kontsevich-Miwa transform. (English summary) *Phys. Lett. B* **288** (1992), *no.* 1-2, 38–46. (Summary) **93g:81148** 81T40 (17B81, 58F07, 81R10)

— (*with* Semikhatov, A. M.) $d \leq 1 \cup d \geq 25$ and W constraints from BRST invariance in the $c \neq 3$ topological algebra. (English summary) *Phys. Lett. B* **293** (1992), *no.* 1-2, 72–80. (Summary) **93j:81102** 81T70 (17B68, 81R10)

Gatski, T. B. (*with* Yakhot, Victor; Orszag, Steven A.; Thangam, S.; Speziale, Charles G.) Development of turbulence models for shear flows by a double expansion technique. *Phys. Fluids A* **4** (1992), *no.* 7, 1510–1520. (Summary) **93e:76041** 76F10

Gatterdam, R. W. Algorithms for splicing systems. *SIAM J. Comput.* **21** (1992), *no.* 3, 507–520. (Summary) **93f:92017** 92D20 (68Q20, 68Q45)

Gatteschi, Luigi (*with* Cravero, Isabella) Uniform approximation of Christoffel numbers for Laguerre weight. *Approximation, optimization and computing*, 59–62, *North-Holland, Amsterdam*, 1990. (*see* **93a:41001**) 41A55

Gatto, A. E. (*with* Ash, J. Marshall; Cohen, Jonathan; Freiling, Chris; Rinne, Dan) Generalized derivatives. *Partial differential equations with minimal smoothness and applications* (*Chicago, IL*, 1990), 25–32, *IMA Vol. Math. Appl.*, 42, *Springer, New York*, 1992. (G. Petruska) **93c:26009** 26B05 (35J99, 42B05)

Gatto, Letterio (*with* Greco, Silvio) Algebraic curves and differential equations: an introduction. *The Curves Seminar at Queen's, Vol. VIII* (*Kingston, ON*, 1990/1991), *Exp.* B, 69 *pp., Queen's Papers in Pure and Appl. Math.*, 88, *Queen's Univ., Kingston, ON*, 1991. (José M. Muñoz Porras) **93d:58069** 58F07 (14H40, 34L05, 35Q53, 70H05)

Gatto, Romano (*with* Palladino, Franco) The "Dutch's problems" and Leibniz's point of view on the "analytic art". (German summary) *Studia Leibnitiana* **24** (1992), *no.* 1, 73–92. (Luigi Pepe) **93i:01015** 01A45

Gatzouras, Dimitrios (*with* Lalley, Steven P.) Hausdorff and box dimensions of certain self-affine fractals. (English summary) *Indiana Univ. Math. J.* **41** (1992), *no.* 2, 533–568. (Miguel Angel Martín) **93j:28011** 28A80

Gaucher, Philippe ★ Opérations sur l'homologie d'algèbres de matrices et homologie cyclique. (French. English and French summaries) [Operations on matrix algebra homology and cyclic homology] Dissertation, Université Louis Pasteur, Strasbourg, 1992. Publication de l'Institut de Recherche Mathématique Avancée [Publication of the Institute of Advanced Mathematical Research], 467. *Université Louis Pasteur, Département de Mathématique, Institut de Recherche Mathématique Avancée, Strasbourg*, 1992. 123 *pp.* (Guillermo Cortiñas) **93f:19003** 19D55 (18G99)

fernández-Gaucherand, Emmanuel *see* **Fernández-Gaucherand, Emmanuel**

Gaudenzi, Marcellino (*with* Andres, Ján; Zanolin, Fabio) A transformation theorem for periodic solutions of nondissipative systems. *Rend. Sem. Mat. Univ. Politec. Torino* **48** (1990), *no.* 2, 171–186 (1992). (Bogdan Przeradzki) **93h:34059** 34C25

— (*with* Zanolin, Fabio) On the solvability of nth order boundary value problems between two eigenvalues. *Differential Integral Equations* **5** (1992), *no.* 3, 591–613. (Uri Elias) **93g:34030** 34B15 (34B05)

Gaudiello, Antonio Convergence of the minimum points of nonequicoercive degenerate functionals. (Italian. English summary) *Rend. Accad. Sci. Fis. Mat. Napoli* (4) **57** (1990), 125–168 (1991). (Summary) **93a:49007** 49J45

Gaudin, Claude Un point de logique aristotélicienne: le "définitionnel". (English summary) [A point of Aristotelian logic: definition as a "formula"] *Math. Inform. Sci. Humaines No.* 116 (1991), 47–55 (1992). (James Gasser) **93d:03008** 03A05 (01A20, 03–03)

Gaudin, M. La relation étoile-triangle d'un modèle elliptique $\mathbf{Z}_N$. (English and French summaries) [The star-triangle relation for an elliptic model $\mathbf{Z}_N$] *J. Physique I* **1** (1991), *no.* 3, 351–361. (H. N. V. Temperley) **93i:82031** 82B23

Gaudron, Isabelle (*with* Trouvé, Alain) Massive parallelization of simulated annealing: an experimental and theoretical approach for spin glass models. *Simulated annealing*, 163–186, *Wiley-Intersci. Ser. Discrete Math., Wiley, New York*, 1992. (Dimitri Petritis) **93i:82071** 82C80 (82C44)

Gaudry, Garth I. Clifford martingales, the $T(b)$ theorem and Cauchy integrals. *Miniconference on probability and analysis* (*Sydney*, 1991), 92–106, *Proc. Centre Math. Appl. Austral. Nat. Univ.*, 29, *Austral. Nat. Univ., Canberra*, 1992. (*see* **93e:00024**) 31B05 (30G35, 42C15)

Gauduchon, Paul Structures de Weyl et théorèmes d'annulation sur une variété conforme autoduale. [Weyl structures and vanishing theorems on a self-dual conformal manifold] *Ann. Scuola Norm. Sup. Pisa Cl. Sci.* (4) **18** (1991), *no.* 4, 563–629. (J. T. Davidov) **93d:32046** 32L20 (32L25, 53C56)

— (*with* Bourguignon, Jean-Pierre) Spineurs, opérateurs de Dirac et variations de métriques. (English summary) [Spinors, Dirac operators and variations of metrics] *Comm. Math. Phys.* **144** (1992), *no.* 3, 581–599. (Oussama Hijazi) **93h:58164** 58G30 (58G03, 58G25)

Gaujal, Bruno (*with* Bonopera, Alain) Inference of reversible languages. (English summary) *Internat. J. Algebra Comput.* 2 (1992), *no.* 3, 327–349. (Sanjay Jain) **93j:68096** 68Q45 (68Q70, 68T05, 68T10)

Gaukroger, Stephen ★ Cartesian logic. An essay on Descartes's conception of inference. *The Clarendon Press, Oxford University Press, New York*, 1989. xii+145 *pp. ISBN* 0-19-824825-3 (From the preface) **93j:03002** 03–03 (01A45, 03A05)

Gaultier, Maurice (*with* Lezaun Iturralde, Mikel) Quelques propriétés du spectre de l'opérateur $-\mathrm{div}(-\Delta)^{-1}\mathrm{grad}$ dans $L^2(\Omega)/\mathbf{R}$. (English and French summaries) [Spectral properties of the operator $-\mathrm{div}(-\Delta)^{-1}\mathrm{grad}$ in $L^2(\Omega)/\mathbf{R}$] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 7, 799–802. (Summary) **93g:47061** 47F05 (35P05)

— (*with* Lezaun Iturralde, Mikel) An existence and uniqueness theorem for the transfer of mass and heat in a rectangular cavity. *IMA J. Appl. Math.* **48** (1992), *no.* 2, 125–148. (Summary) **93c:35156** 35Q99 (80A20)

alvarez-Gaumé, Luis *see* **Alvarez-Gaumé, Luis**

Gaunersdorfer, Andrea Time averages for heteroclinic attractors. (English summary) *SIAM J. Appl. Math.* **52** (1992), *no.* 5, 1476–1489. (Miklós Farkas) **93j:34068** 34C37 (34D45, 58F12, 92D25)

Gaunet, M.-L. (*with* Paysant-Le Roux, R.; Dubois, Eugène) Sur la spécialisation des points extrémaux cubiques. [On the specialization of cubic extremal points] *Acta Arith.* **59** (1991), *no.* 3, 221–242. (From the introduction) **93c:11099** 11R27 (11J70)

Gaur, A. K. (*with* Kovářík, Z. V.) Norms on unitizations of Banach algebras. *Proc. Amer. Math. Soc.* **117** (1993), *no.* 1, 111–113. (T. W. Palmer) **93c:46082** 46H05

Gaur, Neelima (*with* Goyal, S. P.; Jain, R. M.) Fractional integral operators involving a product of generalized hypergeometric functions and a general class of polynomials. II. *Indian J. Pure Appl. Math.* **23** (1992), *no.* 2, 121–128. (Summary) **93a:33011** 33C20

— On finite double integrals involving a general multivariable polynomial and Fox's H-function. (English summary) *Pure Appl. Math. Sci.* **36** (1992), *no.* 1-2, 59–66. (Summary) **93k:33006** 33C60

Gauß, Carl Friedrich *see* **Shen, Kang Shen, 93b:01009; Josephy, Michael, 93b:01026; Schroeder, Manfred R., 93b:01027; Biermann, Kurt-R., 93j:01008; Dick, Wolfgang R., 93j:01009; Michling, Horst, 93j:01012; Markvorsen, Steen, 93k:01038** *and* **Rojas, Pedro Javier**

Gausterer, H. *see* **Recent aspects of quantum fields, 93d:81005**

Gautero, Jean-Luc (*with* Souffrin, Pierre) Note sur la démonstration "mécanique" du théorème de l'isochronisme des cordes du cercle dans les *Discorsi* de Galilée. (English and French summaries) [Note on the "mechanical" proof of the theorem on the isochronism of the chords of the circle in the *Discorsi* of Galileo] *Rev. Histoire Sci.* **45** (1992), *no.* 2-3, 269–280. (Summary) **93k:01023** 01A45

Gautesen, A. K. On the solution to a class of strongly singular linear integral equations. *Quart. Appl. Math.* **50** (1992), *no.* 1, 129–140. (P. Uba) **93c:45009** 45G05

Gautheron, Véronique (*with* Isambert, Emmanuel) Fleuves. (English summary) [Rivers] 2° *Colloque "Phénomènes Micro et Macroscopiques"* (*Oran*, 1987), 78–96, *Publ. Inst. Rech. Math. Av.*, 424, *Univ. Louis Pasteur, Strasbourg*, 1990. (J. S. Joel) **93a:58113** 58F12 (03H05, 26E35, 34C35, 34E15)

— (*with* Isambert, Emmanuel) Finitely differentiable ducks and finite expansions. *Dynamic bifurcations* (*Luminy*, 1990), 40–56, *Lecture Notes in Math.*, 1493, *Springer, Berlin*, 1991.

(J. S. Joel) **93d:58110** 58F14 (03H05, 34C23, 34E15)

Gauthier, Jean-Paul (*with* Deza, François; Busvelle, Éric; Rakotopara, Daniel) Un résultat de stabilité des filtres de Kalman étendu continu-continu et continu-discret. (English summary) [A stability result for continuous-continuous and continuous-discrete extended Kalman filters] *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 4, 321–324. (Introduction) **93f:93126** 93E11

— (*with* Bossanne, Denis; Deza, François; Rakotopara, Daniel) Un résultat de stabilité du filtre de Kalman étendu pour une large classe de systèmes multi-sorties. (English summary) [A stability result on the extended Kalman filter for a large class of multi-output systems] *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 9, 683–685. (Introduction) **93d:93081** 93E11

— (*with* Hammouri, H.) Global time-varying linearization up to output injection. (English summary) *SIAM J. Control Optim.* **30** (1992), *no.* 6, 1295–1310. (David L. Elliott) **93i:93064** 93C10 (93B07)

— (*with* Deza, François; Busvelle, Éric; Rakotopara, Daniel) High gain estimation for nonlinear systems. *Systems Control Lett.* **18** (1992), *no.* 4, 295–299. (Yuandong Ji) **93b:93106** 93E10 (93C10, 93E11)

— (*with* Deza, François; Bossanne, Denis; Busvelle, Éric; Rakotopara, Daniel) Exponential observers for nonlinear systems. (English summary) *IEEE Trans. Automat. Control* **38** (1993), *no.* 3, 482–484. 93B07

Gauthier, Paul M. (*with* Bagby, T.) Uniform approximation by global harmonic functions. *Approximation by solutions of partial differential equations* (*Hanstholm*, 1991), 15–26, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 365, *Kluwer Acad. Publ., Dordrecht*, 1992. (Manfred Stoll) **93g:31015** 31C12 (30F15)

— (*with* Heinonen, J.; Zwick, D.) Axiomatic approximation. *Approximation by solutions of partial differential equations* (*Hanstholm*, 1991), 79–85, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 365, *Kluwer Acad. Publ., Dordrecht*, 1992. (*see* **93a:31001**) 41A30 (31B35, 35J99)

— Approximation by (pluri)subharmonic functions: fusion and localization. (English summary) *Canad. J. Math.* **44** (1992), *no.* 5, 941–950. (J. Siciak) **93i:32018** 32F05 (31B05, 31C10)

— (*with* Chen, Huai Hui) A maximum principle for subharmonic and plurisubharmonic functions. *Canad. Math. Bull.* **35** (1992), *no.* 1, 34–39. (A. Yu. Rashkovskiĭ) **93a:31013** 31C10 (31C05, 58C05)

— (*with* Frih, El Mostapha) Polynomial approximation on certain Lipschitz graphs in $\mathbf{C}^n$. *Complex Variables Theory Appl.* **18** (1992), *no.* 1-2, 55–61. (Harold P. Boas) **93a:32020** 32E30

— (*with* Ladouceur, S.) Uniform approximation and fine potential theory. (English summary) *J. Approx. Theory* **72** (1993), *no.* 2, 138–140. (Summary) **93j:31006** 31B05

Gauthier, Serge A semi-implicit collocation method: application to two-dimensional compressible convection. (English summary) *Spectral and high order methods for partial differential equations* (*Como*, 1989), 435–442, *North-Holland, Amsterdam*, 1990. (*see* **93d:65005**) 65N35 (76M25, 76N10, 76R99)

— (*with* Morchadi, R.) A selection of convex-compact-valued multi-functions with remarkable properties: the Steiner selection. (English summary) *Numer. Funct. Anal. Optim.* **13** (1992), *no.* 5-6, 513–522. (P. Maritz) **93j:49014** 49J45 (28B20, 54C60, 54C65, 58C06)

Gautier, Antoine (*with* Granot, Frieda) A parametric analysis of a nonlinear asset allocation management model. (English summary) *Oper. Res. Lett.* **11** (1992), *no.* 5, 273–279. (Summary) **93f:90059** 90B10 (90C31)

Gautier, S. *see* **Gauthier, Serge**

Gautschi, Walter On the remainder term for analytic functions of Gauss-Lobatto and Gauss-Radau quadratures. Proceedings of the U.S.-Western Europe Regional Conference on Padé Approximants and Related Topics (Boulder, CO, 1988). *Rocky Mountain J. Math.* **21** (1991), *no.* 1, 209–226. (Gradimir V. Milovanović) **93a:41071a** 41A80 (41A55, 65D30)

— Corrections to: "On the remainder term for analytic functions of Gauss-Lobatto and Gauss-Radau quadratures". *Rocky Mountain J. Math.* **21** (1991), *no.* 3, 1143. (Gradimir V. Milovanović) **93a:41071b** 41A80 (41A55, 65D30)

— Spline approximation and quadrature formulae. *Atti Sem. Mat. Fis. Univ. Modena* **40** (1992), *no.* 1, 169–182. (Stephen W. Brady) **93h:65016** 65D07 (65D32)

— On mean convergence of extended Lagrange interpolation. (English summary) Orthogonal polynomials and numerical methods. *J. Comput. Appl. Math.* **43** (1992), *no.* 1-2, 19–35. (Mircea Ivan) **93j:41003** 41A05 (42C05, 65D05)

— On the computation of generalized Fermi-Dirac and Bose-Einstein integrals. (English summary) *Comput. Phys. Comm.* **74** (1993), *no.* 2, 233–238. (Summary) **93m:33018** 33E20 (82B99)

Gautschy, Alfred (*with* Glatzel, Wolfgang) The treatment of highly nonadiabatic, nonradial pulsations by application of the Riccati method to the example of hydrogen-deficient carbon stars. *Monthly Notices Roy. Astronom. Soc.* **256** (1992), *no.* 2, 209–218. (From the summary) **93b:85002** 85A15 (34A46)

Gauvin, J. (*with* Janin, R.) Directional Lipschitzian optimal solutions and directional derivative for the optimal value function in nonlinear mathematical programming. (English summary) *Analyse non linéaire* (*Perpignan*, 1987), 304–324, *Univ. Montréal, Montreal, PQ*, 1989. (*see* **93h:49003**) 90C31 (49J52, 49K45)

Gava, E. (*with* Antoniadis, Ignatios; Narain, K. S.) Moduli corrections to gauge and gravitational couplings in four-dimensional superstrings. (English summary) *Nuclear Phys. B* **383** (1992), *no.* 1-2, 93–109. (C. Gauthier) **93i:81181** 81T30

— (*with* Antoniadis, Ignatios; Narain, K. S.) Moduli corrections to gravitational couplings from string loops. *Phys. Lett. B* **283** (1992), *no.* 3-4, 209–212. (Summary) **93c:81159** 81T30 (81V17)

Gavazzi, A. C. (*with* Lagoudas, D. C.; Nigam, H.) Elastoplastic behavior of metal matrix composites based on incremental plasticity and the Mori-Tanaka averaging scheme. (English summary) *Comput. Mech.* **8** (1991), *no.* 3, 193–203. (Summary) **93g:73055** 73E05 (73B27, 73K20)

Gaveau, Bernard (*with* Debiard, Amédée) Hypergeometric ladders and spherical polynomials for root systems *BC* of rank 2. I. Series expansions. *Ann. Mat. Pura Appl.* (4) **160** (1991), 235–301 (1992). (Jean-Claude Lucquiaud) **93i:33010** 33C80 (43A90)

— Développements asymptotiques de certaines intégrales évanescentes. I. (English summary) [Asymptotic expansions of some vanishing integrals. I] *Bull. Sci. Math.* (2) **115** (1991), *no.* 4, 451–468. (Aleksandr G. Aleksandrov) **93g:32050** 32S30 (32S25, 41A60, 44A10)

— (*with* Ancona, Vincenzo) Differential forms and resolutions on certain analytic spaces. I. Irreducible exceptional divisor. *Bull. Sci. Math.* (2) **116** (1992), *no.* 3, 307–324. (Tosiaki Kori) **93g:32013** 32C35 (32C15, 32S45)

— (*with* Ancona, Vincenzo) Formes différentielles et résolutions de faisceaux sur certains espaces analytiques. (English summary) [Differential forms and resolution of sheaves of holomorphic functions on certain analytic spaces] *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 2, 133–138. (Giuseppe Tomassini) **93a:32012** 32C35

— (*with* Ancona, Vincenzo) Modules plats de différentielles et résolutions de faisceaux sur certains espaces analytiques. (English summary) [Flat modules of differentials and resolution of sheaves on certain analytic spaces] *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 3, 223–225. (Giuseppe Tomassini) **93c:32015** 32C35

— (*with* Ancona, Vincenzo) Le complexe de de Rham d'un espace analytique normal. (English and French summaries) [The de Rham complex of a normal analytic space] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 5, 577–581. (Luis Narváez Macarro) **93h:32014** 32C20 (14F40, 32C35)

— (*with* Ancona, Vincenzo) Differential forms and resolutions on certain analytic spaces. II. Flat resolutions. *Canad. J. Math.* **44** (1992), *no.* 4, 728–749. (Tosiaki Kori) **93j:32018** 32C35 (32L05)

Gavelek, D. (*with* Erber, T.) Shadowing and iterative interpolation for Čebyšev mixing transformations. *J. Comput. Phys.* **101** (1992), *no.* 1, 25–50. (Summary) **93d:65015** 65D05 (58F13)

Gavete, Luis (*with* Alonso Martínez, J.; Herranz Calzada, J.) A conformal mapping for the generation of singular elements. (Spanish) *Proceedings of the XII Congress on Differential Equations and Applications/II Congress on Applied Mathematics* (*Spanish*) (*Oviedo*, 1991), 477–483, *Univ. Oviedo, Oviedo*, 1991. (*see* **93j:00009**) 65N50

Gavilanes-Franco, Antonio (*with* Lucio-Carrasco, Francisca) A first order logic for partial functions. *Theoret. Comput. Sci.* **74** (1990), *no.* 1, 37–69. (Summary) **93c:03029** 03B50 (03B70, 03C07, 68Q60)

Gavioli, Andrea Some bounds on the bulk conductivity of a two-phase medium: a comparison between periodic and random structure. (English summary) *Math. Models Methods Appl. Sci.* **2** (1992), *no.* 3, 283–294. (Massimo Campanino) **93k:82032** 82B43 (60K35, 73B27)

Gavosto, Estela A. (*with* Fornæss, John Erik) Existence of generic homoclinic tangencies for Hénon mappings. (English summary) *J. Geom. Anal.* **2** (1992), *no.* 5, 429–444. (Marco Abate) **93j:58089** 58F13 (32H50)

Gavril, F. (*with* Urrutia, Jorge) An algorithm for fraternal orientation of graphs. *Inform. Process. Lett.* **41** (1992), *no.* 5, 271–274. (Hortensia Galeana-Sánchez) **93d:05060** 05C20 (05C85, 68R10)

Gavrilă, Caius Data dependence of the solution of the equation $x = f(x, \cdots, x)$. *Seminar on Fixed Point Theory*, 21–24, *Preprint*, 91-3, "*Babeş-Bolyai*" *Univ., Cluj-Napoca*, 1992. (*see* **93i:00014**) 54H25

Gavrilets, S. (*with* Zhivotovskiĭ, L. A.) Quantitative variability and multilocus polymorphism under epistatic selection. (English summary) *Theoret. Population Biol.* **42** (1992), *no.* 3, 254–283. 92D15

Gavrilik, A. M. Bifurcation behavior of Stiefel nonlinear quantum-field models and fractionalization of their effective coupling constants. (Ukrainian. English, Russian and Ukrainian summaries) *Ukrain. Fiz. Zh.* **36** (1991), *no.* 12, 1801–1807. (Summary) **93g:81106** 81T17 (58Z05)

Gavrilkin, V. N. Solution of a problem for a layered hollow cylinder with supporting ring elements by the method of integral equations. (Russian. Russian summary) *Differential equations and their applications in physics* (*Russian*), 80–86, 110, *Dnepropetrovsk. Gos. Univ., Dnepropetrovsk*, 1989. (*see* **93g:00024**) 73K99

Gavrilov, A. V. (*with* Domoshnitskiĭ, A. I.; Ershov, A. V.; Moshchenkov, I. A.; Sheina, M. V.) On an automatic control problem. (Russian. Russian summary) *Boundary value problems* (*Russian*), 46–53, *Perm. Politekh. Inst., Permʹ*, 1990. (Summary) **93h:93058** 93D15 (93C95)

Gavrilov, G. P. (*with* Muzychuk, I. A.) On the nonexistence of 4-critical graphs of twelfth order. (Russian. Russian summary) *Diskret. Mat.* **4** (1992), *no.* 2, 99–114. (Felix Lazebnik) **93h:05075** 05C15 (05C35)

Gavrilov, Ljubomir Nedjalkov (*with* Ouazzani-Jamil, Mohammed; Caboz, Régis) Bifurcations des tores de Liouville du potentiel de Kolossoff $U = \rho + (1/\rho) - k\cos\varphi$. (English and French summaries) [Bifurcations of the Liouville tori of the Kolossoff potential $U = \rho + (1/\rho) - k\cos\varphi$] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 3, 289–294. (Summary) **93f:58167** 58F14 (58F05, 70E15, 70H05)

— Nonintegrability of the equations of heavy gyrostat. *Compositio Math.* **82** (1992), *no.* 3, 275–291. (Galina G. Okuneva) **93d:70008** 70E15 (58F05, 70H05)

— Remark on the number of critical points of the period. *J. Differential Equations* **101** (1993), *no.* 1, 58–65. (Ramajayam Sahadevan) **93m:58091** 58F22 (34C25)

Gavrilov, S. P. Interaction representation in the formalism of operator BRST-quantization for the standard electroweak theory in the R_ξ-gauge. (Russian. Russian summary) *Izv. Vyssh. Uchebn. Zaved. Fiz.* **35** (1992), *no.* 7, 79–83; *translation in Russian Phys. J.* **35** (1992), *no.* 7, 652–655 (1993). (Gheorghe Zet) **93m:81146** 81T70 (81V15)

Gavrilyako, V. M. Numerical solution of a time-optimality problem for an oscillatory system. (Russian) *Vestnik Kharʹkov. Univ. No.* 361, *Prikl. Mat. Mekh.* (1991), 78–80. 49M05 (65K10)

Gavrilyuk, I. P. (*with* Kopystyra, N. P.) On the error of interpolation and mean-square approximation by algebraic polynomials. (Ukrainian. Russian and Ukrainian summaries) *Visnik Kiïv. Univ. Mat. Mekh. No.* 32 (1990), 7–14. (Summary) **93d:41001** 41A05 (41A10)

— (*with* Grekov, L. D.) A difference scheme for the biharmonic equation with a nonlinear boundary condition. (Russian) *Vychisl. Prikl. Mat.* (*Kiev*) *No.* 71 (1990), 3–14. (Summary) **93b:65155** 65N06

— Estimates for the penalty method for variational inequalities under cone-type constraints. (Russian) *Vychisl. Prikl. Mat.* (*Kiev*) *No.* 75 (1991), 3–11. (Summary) **93d:49039** 49M30 (47H19, 49J40, 65K10)

Gavrilyuk, S. L. Existence, uniqueness, and Lax stability of traveling waves in a polydisperse bubbly medium with dissipation. *Partial differential equations* (*Russian*), 33–53,

142, *Akad. Nauk SSSR Sibirsk. Otdel., Inst. Mat., Novosibirsk*, 1989. (Introduction) **93c:76081** 76T05 (34C35, 35Q35, 58F40, 76E99, 76L05)

— Propagation of a signal in a polydispersive bubbly fluid with continuous distribution of bubbles by size. (Russian) *Prikl. Mekh. Tekhn. Fiz.* **1992**, *no.* 4, 54–60; *translation in J. Appl. Mech. Tech. Phys.* **33** (1992), *no.* 4, 526–531 (1993). (Alexander Schmidt) **93k:76117** 76T05

Gavrilyuk, V. T. (*with* Stepanets, A. I.) Problems of saturation of linear methods. (Russian. Ukrainian summary) *Ukrain. Mat. Zh.* **43** (1991), *no.* 3, 291–308; *translation in Ukrainian Math. J.* **43** (1991), *no.* 3, 255–272. (Shun Sheng Guo) **93b:42005** 42A10 (41A40)

Găvruţa, P. (*with* Crstici, B.; Neagu, Mihai) About a functional inequality. (Romanian summary) *Inst. Politehn. "Traian Vuia" Timişoara Lucrăr. Sem. Mat. Fiz.* **1988**, *November*, 66–68. 39B72

abdel-Gawad, H. R. *see* **Abdel-Gawad, H. R.**

Gawędzki, Krzysztof Wess-Zumino-Witten conformal field theory. *Constructive quantum field theory, II* (*Erice*, 1988), 89–120, *NATO Adv. Sci. Inst. Ser. B Phys.*, 234, *Plenum, New York*, 1990. (*see* **93g:81074**) 81T40

Gawinecki, Jerzy A. On thermoelastic potential in three-dimensional hyperbolic thermoelasticity theory. *Potential theory* (*Nagoya*, 1990), 193–199, *de Gruyter, Berlin*, 1992. (From the summary) **93c:35096** 35L40 (35Q99, 73B30)

— Global solution to the Cauchy problem in nonlinear hyperbolic thermoelasticity. *Math. Methods Appl. Sci.* **15** (1992), *no.* 4, 223–237. (Andrzej Chrzęszczyk) **93e:35111** 35Q72 (73B30)

Gawlick, Thomas Taut, pseudotaut and equisingularly rigid singularities. *Manuscripta Math.* **74** (1992), *no.* 1, 25–38. (Philippe Carbonne) **93c:14004** 14B05 (14J70)

Gawronski, Wlodzimierz (*with* Hadaegh, F. Y.) Balanced input-output assignment. (English summary) *Internat. J. Systems Sci.* **24** (1993), *no.* 6, 1027–1036. 93B55

Gawronski, Wolfgang (*with* Wiessner, Martin) Asymptotics and inequalities for the mode of stable laws. *Statist. Decisions* **10** (1992), *no.* 1-2, 183–197. (Claudia Klüppelberg) **93d:60021** 60E07 (60E10)

Gawthrop, P. J. (*with* Demircioğlu, H.) Continuous-time generalized predictive control (CGPC). (English summary) *Adaptive systems in control and signal processing*, 1989 (*Glasgow*), 67–72, *IFAC Sympos. Ser.*, 1990, *No.* 1, *Pergamon, Oxford*, 1990. (*see* **93j:93007**) 93C40

— (*with* Jones, Richard W.; MacKenzie, S. A.) Identification of partially-known systems. (English summary) *Identification and system parameter estimation* 1991, *Vol.* 1,2 (*Budapest*, 1991), 319–324, *IFAC Sympos. Ser.*, 3, *Pergamon, Oxford*, 1992. (*see* **93h:93009**) 93B30

— (*with* Nihtilä, M. T.) Identification of distributed parameter systems using polynomial identification techniques. (English summary) *Identification and system parameter estimation* 1991, *Vol.* 1,2 (*Budapest*, 1991), 1145–1150, *IFAC Sympos. Ser.*, 3, *Pergamon, Oxford*, 1992. (*see* **93h:93009**) 93C20 (93B30)

— (*with* Sbarbaro, D.; Hunt, K. J.) Designing nonlinear controllers using connectionist networks. (English summary) *Mathematics of the analysis and design of process control* (*Dublin*, 1991/*Lille*, 1991), 535–540, *North-Holland, Amsterdam*, 1992. (*see* **93g:93004**) 93B52 (68T05)

— (*with* Demircioğlu, H.) Multivariable continuous-time generalized predictive control (MCGPC). *Automatica J. IFAC* **28** (1992), *no.* 4, 697–713. 93B51 (93C60)

— (*with* Jones, Richard W.; MacKenzie, S. A.) Identification of partially-known systems. *Automatica J. IFAC* **28** (1992), *no.* 4, 831–836. 93E10

— (*with* Hunt, K. J.; Sbarbaro, D.; Żbikowski, R.) Neural networks for control systems—a survey. (English summary) *Automatica J. IFAC* **28** (1992), *no.* 6, 1083–1112. (Summary) **93i:93002** 93–02 (68T05, 92B20, 93C10, 93C83)

Gay, David M. (*with* Kaufman, Linda) Tradeoffs in algorithms for separable nonlinear least squares. (English summary) *Computational and applied mathematics, I* (*Dublin*, 1991), 179–183, *North-Holland, Amsterdam*, 1992. (*see* **93j:00007**) 65K05

Gayrard, Véronique Thermodynamic limit of the q-state Potts-Hopfield model with infinitely many patterns. (English summary) *J. Statist. Phys.* **68** (1992), *no.* 5-6, 977–1011. (Dimitri Petritis) **93g:82075** 82C32 (92B20)

— (*with* Bovier, Anton) Rigorous bounds on the storage capacity of the dilute Hopfield model. (English summary) *J. Statist. Phys.* **69** (1992), *no.* 3-4, 597–627. (Philippe De Wilde) **93k:82049** 82C32 (92B20)

Gazeau, Jean-Pierre (*with* Ali, S. Twareque; Antoine, Jean-P.) Square integrability of group representations on homogeneous spaces. I. Reproducing triples and frames. (French summary) *Ann. Inst. H. Poincaré Phys. Théor.* **55** (1991), *no.* 4, 829–855. (Palle E. T. Jørgensen) **93a:22002** 22D10 (22E70, 46E22, 81R30)

— (*with* Ali, S. Twareque; Antoine, Jean-P.) Square integrability of group representations on homogeneous spaces. II. Coherent and quasi-coherent states. The case of the Poincaré group. (French summary) *Ann. Inst. H. Poincaré Phys. Théor.* **55** (1991), *no.* 4, 857–890. (Palle E. T. Jørgensen) **93a:22003** 22D10 (22E70, 46E22, 81R30)

— (*with* Ali, S. Twareque; Antoine, Jean-P.) Square integrability of group representations on homogeneous spaces and generalized coherent states. Proceedings of the Winter School on Geometry and Physics (Srní, 1990). *Rend. Circ. Mat. Palermo* (2) *Suppl. No.* 26 (1991), 47–56. (A. O. Barut) **93d:81080** 81R30

— (*with* Winternitz, Pavel) Symmetries of variable coefficient Korteweg-de Vries equations. (English summary) *J. Math. Phys.* **33** (1992), *no.* 12, 4087–4102. (Summary) **93j:35014** 35A30 (35Q53, 58F35, 58F37)

— (*with* Balbinot, Roberto; El Gradechi, Amine M.; Giorgini, Bruno) Phase spaces for quantum elementary systems in anti-de Sitter and Minkowski spacetimes. *J. Phys. A* **25** (1992), *no.* 5, 1185–1210. (J.-P. Antoine) **93j:81058** 81S30 (22E70, 81R05, 81S10)

— (*with* Hussin, V.) Poincaré contraction of SU(1, 1) Fock-Bargmann structure. *J. Phys. A* **25** (1992), *no.* 6, 1549–1573. (J.-P. Antoine) **93k:81128** 81S30 (22E70, 81R05, 81S10)

— (*with* Winternitz, Pavel) Allowed transformations and symmetry classes of variable coefficient Korteweg-de Vries equations. *Phys. Lett. A* **167** (1992), *no.* 3, 246–250. (Summary) **93d:35149** 35Q53 (58F07, 58F37)

Gazit, Hillel A deterministic parallel algorithm for planar graphs isomorphism. (English summary) 32*nd Annual Symposium on Foundations of Computer Science* (*San Juan, PR*, 1991), 723–732, *IEEE Comput. Soc. Press, Los Alamitos, CA*, 1991. (Summary) **93f:05093** 05C85 (68Q22, 68R10)

Gazizov, R. K. (*with* Baikov, V. A.; Khasanov, M. M.) Formation of stationary structures in anisotropic filtration of a fluid with negative viscosity. (Russian) *Nu nerical methods for solving boundary value problems* (*Russian*), 30–36, *Akad. Nauk SSSR Ural. Otdel., Bashkir. Nauchn. Tsentr, Ufa*, 1989. (*see* **93m:00033**) 76S05

Ge, Mo Lin (*with* Piao, Fan; Wang, Lu Yu; Xue, Kang) Witten's approach, braid group representations and x-deformations. *Nonlinear physics* (*Shanghai*, 1989), 152–164, *Res. Rep. Phys., Springer, Berlin*, 1990. (Tetsuo Deguchi) **93b:20070** 20F36 (17B37, 82B23)

— (*with* Wu, Yong Shi[1]; Xue, Kang) Explicit trigonometric Yang-Baxterization. *Internat. J. Modern Phys. A* **6** (1991), *no.* 21, 3735–3779. (Peter J. Forrester) **93b:82023** 82B23 (20F55)

— (*with* Sun, Chang Pu; Xue, Kang; Liu, Xu Feng) Boson realization of nongeneric $\mathrm{sl}_q(2)$-R matrices for the Yang-Baxter equation. *J. Phys. A* **24** (1991), *no.* 10, L545–L548. (Summary) **93a:81084** 81R50 (17B37, 82B23)

— (*with* Liu, Xu Feng; Sun, Chang Pu; Xue, Kang) General solutions of $R^{\frac{1}{2}\frac{1}{2}}(x)$ and quantum group structure. *J. Phys. A* **24** (1991), *no.* 21, 4955–4963. (A. U. Klimyk) **93d:82030** 82B23 (17B37)

— (*with* Liu, Xu Feng; Sun, Chang Pu) New boson representations of the $\mathrm{sl}_q(2)$ with multiplicity two and new solutions to the Yang-Baxter equation at $q^p = 1$. *Lett. Math. Phys.* **23** (1991), *no.* 3, 169–178. (Dmitrii I. Gurevich) **93b:17042** 17B37 (81R50, 82B23)

— (*with* Liu, Xu Feng; Sun, Chang Pu) The q-boson realization of new solutions for the Yang-Baxter equation associated with the quantum algebra $U_q\mathrm{sl}(3)$ at $q^p = 1$. *Phys. Lett. A* **160** (1991), *no.* 5, 433–436. (Chang Pu Sun) **93c:17025** 17B37 (16W30, 82B23)

— (*with* Sun, Chang Pu; Lü, Jing Fa) q-deformed Verma representations of quantum algebra $\mathrm{sl}_q(3)$ and new type Yang-Baxter matrices. *Sci. China Ser. A* **34** (1991), *no.* 12, 1474–1483. (Vladimir A. Stukopin) **93f:17026** 17B37

— (*with* Pang, Lin; Sun, Chang Pu) Topological action for one-dimensional antiferromagnet as superposition of Berry's phase for coherent states. (English summary) *Comm. Theoret. Phys.* **18** (1992), *no.* 1, 41–48. (Summary) **93m:81056** 81R30 (81S40, 82C10)

— (*with* Sun, Chang Pu; Xue, Kang) Construction of general colored R matrices for the Yang-Baxter equation and q-boson realization of quantum algebra $\mathrm{sl}_q(2)$ when q is a root of unity. (English summary) *Internat. J. Modern Phys. A* **7** (1992), *no.* 26, 6609–6622. (Roland Berger) **93k:81096** 81R50 (17B37, 82B23)

— (*with* Cheng, Yi[1]; Liu, Guang Chun; Xue, Kang) New solutions of Yang-Baxter equation and new link polynomials. *J. Knot Theory Ramifications* **1** (1992), *no.* 1, 31–46. (Summary) **93d:57012** 57M25 (20F36, 82B23)

— (*with* Lü, Jing Fa; Liu, Chao) On the group aspects of Riemann-Hilbert transformations. *J. Math. Phys.* **33** (1992), *no.* 1, 56–63. (Tuncay Aktosun) **93e:17036** 17B67 (58F07, 58G37, 81T13)

— (*with* Liu, Xu Feng; Sun, Chang Pu) Representations of quantum matrix algebra $M_q(2)$ and its q-boson realization. *J. Math. Phys.* **33** (1992), *no.* 7, 2541–2545. (A. M. Gavrilik) **93e:17017** 17B37 (81R50)

— (*with* Fu, Hong Chen) Verma module of the quantum group $\mathrm{GL}(n)_q$ and its q-boson and Heisenberg-Weyl relation realizations. *J. Phys. A* **25** (1992), *no.* 8, L389–L395. (Benjamin David Enriquez) **93i:17016** 17B37 (81R50)

— (*with* Liu, Xu Feng; Sun, Chang Pu) The cyclic representations of the quantum algebra $U_q(\mathrm{osp}(2, 1))$ in terms of the Z^n-algebra. *J. Phys. A* **25** (1992), *no.* 10, 2907–2909. (A. M. Gavrilik) **93j:17026** 17B37 (17A70, 81R50)

— (*with* Jing, Nai Huan; Liu, G.-Q.) On quantum groups for Z_N models. *J. Phys. A* **25** (1992), *no.* 13, L799–L806. (Summary) **93d:82031** 82B23 (17B37, 81R50)

— (*with* Wu, A. C. T.) Quantum groups constructed from the nonstandard braid group representations in the Faddeev-Reshetikhin-Takhtajan approach. II. *J. Phys. A* **25** (1992), *no.* 13, L807–L816. (Satoru Saito) **93h:81059** 81R50 (17B37, 20F36, 81–02)

— (*with* Fu, Hong Chen) q-boson realization of quadratic algebra $\mathscr{A}_1^i$ and its representations. (English summary) *J. Phys. A* **25** (1992), *no.* 22, L1233–L1238. (Marco Tarlini) **93j:17024** 17B37 (16W30, 81R50)

— (*with* Liu, Xu Feng) Construction of a new quantum double and new solutions to the Yang-Baxter equation. *Lett. Math. Phys.* **24** (1992), *no.* 3, 197–203. (Dmitrii I. Gurevich) **93g:17025** 17B37 (16W30)

— (*with* Fu, Hong Chen) Construction of cyclic representations of quantum algebras at $q^p = 1$ from their regular representations. (English summary) *Lett. Math. Phys.* **25** (1992), *no.* 4, 277–286. (Michael Schlieker) **93k:17028** 17B37 (81R50)

— (*with* Sun, Chang Pu; Xue, Kang) New R-matrices for the Yang-Baxter equation associated with the representations of the quantum superalgebra $U_q\mathrm{osp}(1, 2)$ with q a root of unity. *Phys. Lett. A* **163** (1992), *no.* 3, 176–180. (Summary) **93d:17020** 17B37 (81R50, 82B23)

— (*with* Liu, Xu Feng) A new kind of R-matrix associated with the Hopf algebra $U_q(A_2(\mu))$. *Phys. Lett. A* **167** (1992), *no.* 2, 161–164. (Roland Berger) **93i:81092** 81R50 (17B37, 82B23)

— (*with* Sun, Chang Pu) q-deformed boson representations of universal enveloping algebras in the case where q is a root of unity. (English summary) *Sci. China Ser. A* **35** (1992), *no.* 8, 944–956. (Jia-Chen Ye) **93k:17038** 17B37 (81R50)

— (*with* Su, Gang) Thermodynamic characteristics of the q-deformed ideal Bose gas. (English summary) *Phys. Lett. A* **173** (1993), *no.* 1, 17–20. (Summary) **93k:82008** 82B10 (81R50)

Ge, Xiang Yu Conormal singularities for solution of semilinear partial differential equations. *Acta Math. Sci.* (*English Ed.*) **11** (1991), *no.* 4, 425–432. (Todor V. Gramchev) **93h:35008** 35A20 (35L75, 35S50)

Ge, Y. C. *see* **Ge, Yan Chao**

Ge, Y. F. Hidden topological Z_n symmetry and fractional statistics. *Phys. Lett. A* **166** (1992), *no.* 3-4, 185–187. (From the text) **93f:81057** 81S05

Ge, Yan Chao (*with* Leng, Xiaoling) An alternative deduction of the Hill-type surfaces of the spatial 3-body problem. *Celestial Mech. Dynam. Astronom.* **53** (1992), *no.* 3, 233–254. (George Bozis) **93c:70003** 70F07

— From Newton to chaos and modern physics. I. (English summary) *Vistas Astronom.* **35** (1992), *no.* 3, 281–314. (Summary) **93i:58104** 58F13 (01A99, 58–01, 70F10, 70H05, 70K50)

Ge, Yan Xiang (*with* Zhang, Xiao Ling; Zhang, Cheng Jin) Nonlinear dynamic models and Bayesian forecasting. (Chinese. Chinese summary) *Math. Practice Theory* **1992**, *no.* 4, 26–31. 62M20

Ge, Ying Closed mapping images of countably paracompact spaces. (Chinese. English and Chinese summaries) *Nanjing Daxue Xuebao Ziran Kexue Ban* **28** (1992), *no.* 3, 368–371. (Summary) **93m:54040** 54D20

Ge, Zhong (*with* Benzel, Steve; Scovel, Clint) Elementary construction of higher-order Lie-Poisson integrators. (English summary) *Phys. Lett. A* **174** (1993), *no.* 3, 229–232. (Summary) **93k:58084** 58F05 (58–04)

Ge, Zu Guang (*with* Hu, Yang Zeng; Gu, Xing Sheng; Lu, Jun^2) A piecewise multiple general orthogonal polynomial method for identifying parameters of a class of systems. (Chinese. English summary) *Inform. and Control (Shenyang)* **20** (1991), *no.* 3, 25–32. (De Xing Feng) **93c:93020** 93B30

Gear, C. W. Invariants and numerical methods for ODEs. (English summary) Experimental mathematics: computational issues in nonlinear science (Los Alamos, NM, 1991). *Phys. D* **60** (1992), *no.* 1-4, 303–310. (Summary) **93j:65128** 65L70 (34A50, 65L20)

— (*with* Skeel, Robert D.) Does variable step size ruin a symplectic integrator? (English summary) Experimental mathematics: computational issues in nonlinear science (Los Alamos, NM, 1991). *Phys. D* **60** (1992), *no.* 1-4, 311–313. (Timothy Sauer) **93j:65133** 65L99 (58F05)

— Massive parallelism across space in ODEs. (English summary) Parallel methods for ordinary differential equations (Grado, 1991). *Appl. Numer. Math.* **11** (1993), *no.* 1-3, 27–43. (Summary) **93m:65088** 65L05 (65Y05)

— (*with* Xu, Xu Hai) Parallelism across time in ODEs. (English summary) Parallel methods for ordinary differential equations (Grado, 1991). *Appl. Numer. Math.* **11** (1993), *no.* 1-3, 45–68. (Summary) **93m:65089** 65L05 (65Y05)

Geatti, Laura (*with* Abate, Marco) Cohomogeneity two hyperbolic acyclic Stein manifolds. *Internat. J. Math.* **3** (1992), *no.* 5, 591–608. (B. Gilligan) **93i:32015** 32E10 (32H20, 32M05)

Gęba, K. (*with* Erbe, Lynn H.; Krawcewicz, W.; Wu, Jian Hong) S^1-degree and global Hopf bifurcation theory of functional-differential equations. *J. Differential Equations* **98** (1992), *no.* 2, 277–298. (From the summary) **93f:58034** 58E07 (34K15, 47H15, 47N20, 58F14, 58F32)

Gębarowski, Andrzej On homogeneous conformally recurrent Ricci-recurrent manifolds. *Tensor (N.S.)* **50** (1991), *no.* 1, 12–17. (From the introduction) **93j:53051** 53C21 (53C30)

— On conformal collineations in a Lorentzian para-Sasakian manifold. *Tensor (N.S.)* **50** (1991), *no.* 3, 183–185. (Ion Mihai) **93g:53090** 53C50 (53C15, 53C25)

— Nearly conformally symmetric warped product manifolds. *Bull. Inst. Math. Acad. Sinica* **20** (1992), *no.* 4, 359–377. (Maria Helena Noronha) **93m:53032** 53C20

el-Gebeily, Mohamed *see* **El-Gebeily, Mohamed**

richter-Gebert, Jürgen *see* **Richter-Gebert, Jürgen**

Gebhard, F. (*with* Janiš, Vladimír; Strack, R.; Vollhardt, D.) Comment on: "Interacting-electron model exactly solvable in any dimension" [Phys. Rev. Lett. **66** (1991), no. 11, 1383–1387; MR 92b:82032] by A. Montorsi and M. Rasetti. *Phys. Rev. Lett.* **69** (1992), *no.* 16, 2443. (Editors) **93h:82007** 82B20 (82B23)

Gebhardt, Ute (*with* Kiessling, Michael K.-H.) The structure of ideal magnetohydrodynamics with incompressible steady flow. *Phys. Fluids B* **4** (1992), *no.* 7, *part* 1, 1689–1701. (Summary) **93a:76107** 76W05

Gebizlioğlu, Ömer L. Spatial processes: modelling, estimation, and hypothesis testing. (English summary) *Comm. Fac. Sci. Univ. Ankara Ser. A_1 Math. Statist.* **37** (1988), *no.* 1-2, 67–94 (1991). 62M40

Gebuhrer, Marc-Olivier Critère de transience d'un semi groupe de probabilités sur une classe d'hypergroupes commutatifs. (English summary) [The transience criterion for semigroups of probability measures on a class of commutative hypergroups] *Probability measures on groups, X (Oberwolfach, 1990)*, 145–154, *Plenum, New York*, 1991. (K. A. Ross) **93i:60015** 60B15 (43A30, 43A35)

Geck, Meinolf Generalized Gel'fand-Graev characters for Steinberg's triality groups and their applications. *Comm. Algebra* **19** (1991), *no.* 12, 3249–3269. (Demetris I. Deriziotis) **93a:20022** 20C33 (20G05)

— On the classification of l-blocks of finite groups of Lie type. *J. Algebra* **151** (1992), *no.* 1, 180–191. (Donald L. White) **93g:20029** 20C33 (20C20)

— (*with* Pfeiffer, Götz) Unipotent characters of the Chevalley groups $D_4(q)$, q odd. *Manuscripta Math.* **76** (1992), *no.* 3-4, 281–304. (Gerhard Hiss) **93j:20035** 20C33 (20C40)

Gécseg, F. (*with* Imreh, B.) Finite isomorphically complete systems. *Discrete Appl. Math.* **36** (1992), *no.* 3, 307–311. (Summary) **93b:68055** 68Q70

— (*with* Dömösi, P.) Simulation and representation by ν_1^*-products of automata. *Publ. Math. Debrecen* **40** (1992), *no.* 1-2, 75–83. (Summary) **93d:68049** 68Q70

Geddes, E. J. M. (*with* Tsai, Mi Ching; Postlethwaite, Ian) Pole-zero cancellations and closed-loop properties of an H^∞ mixed sensitivity design problem. *Automatica J. IFAC* **28** (1992), *no.* 3, 519–530. (Summary) **93d:93034** 93B36 (93B55)

Geddis, Donald F. (*with* Ginsberg, Matthew L.) Is there any need for domain-dependent control information? *AAAI-91. Proceedings, Ninth National Conference on Artificial Intelligence, Vol.* 1, 2, 452–457, *AAAI Press, Menlo Park, CA*, 1991. (*see* **93i:68011**) 68T15

Geelen, J. F. (*with* Achuthan, N. R.; Caccetta, L.; Caccetta, P.) Algorithms for the minimum weight spanning tree with bounded diameter problem. (English summary) *Optimization, Vol.* 1, 2 (*Singapore*, 1992), 297–304, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93d:90005**) 90C35

van Geemen, Bert Projective models of Picard modular varieties. *Classification of irregular varieties (Trento*, 1990), 68–99, *Lecture Notes in Math.*, 1515, *Springer, Berlin*, 1992. (H. Lange) **93i:14041** 14K05 (14K20, 14K22)

— (*with* Previato, Emma) Prym varieties and the Verlinde formula. *Math. Ann.* **294** (1992), *no.* 4, 741–754. (Michael Thaddeus) **93j:14037** 14H60 (14D20, 14H42)

van der Geer, Gerard (*with* Ciliberto, Ciro) On the Jacobian of a hyperplane section of a surface. *Classification of irregular varieties (Trento*, 1990), 33–40, *Lecture Notes in Math.*, 1515, *Springer, Berlin*, 1992. (From the introduction) **93f:14015** 14H40 (14J70)

— (*with* Ciliberto, Ciro) Subvarieties of the moduli space of curves parametrizing Jacobians with nontrivial endomorphisms. *Amer. J. Math.* **114** (1992), *no.* 3, 551–570. (H. Lange) **93d:14044** 14H40 (14H10)

— (*with* van der Vlugt, Marcel) Reed-Muller codes and supersingular curves. I. *Compositio Math.* **84** (1992), *no.* 3, 333–367. (R. F. Lax) **93k:14038** 14H25 (11G20, 94B27)

— (*with* van der Vlugt, Marcel) Weight distributions for a certain class of codes and maximal curves. (English summary) A collection of contributions in honour of Jack van Lint. *Discrete Math.* **106/107** (1992), 209–218. (Bhaskar Bagchi) **93i:94020** 94B27 (11T71)

— (*with* Ciliberto, Ciro; Teixidor i Bigas, Montserrat) On the number of parameters of curves whose Jacobians possess nontrivial endomorphisms. *J. Algebraic Geom.* **1** (1992), *no.* 2, 215–229. (H. Lange) **93c:14025** 14H10 (14H40)

— (*with* van der Vlugt, Marcel) Trace codes and families of algebraic curves. *Math. Z.* **209** (1992), *no.* 2, 307–315. (J. A. Thiong-Ly) **93c:14023** 14G15 (11G20, 11T71, 94B27)

Geerts, Ton A priori results in linear-quadratic optimal control theory. *Kybernetika (Prague)* **27** (1991), *no.* 5, 446–457. (Summary) **93e:49051** 49N10

Geertsema, J. C. (*with* Govindarajulu, Z.) Sequential confidence intervals for the common mean of a set of heteroscedastic normal populations. Modern sequential analysis (SSA), Vol. I (Syracuse, NY, 1989). *Amer. J. Math. Management Sci.* **11** (1991), *no.* 1-2, 55–77. (I. D. Dhariyal) **93b:62116** 62L12

Geetha, S. (*with* Nair, K. P. K.) Markovian assignment decision process. (English and French summaries) *RAIRO Rech. Opér.* **26** (1992), *no.* 4, 421–428. 90C40 (90A05)

Geetha, S. K. F-semigroup compactifications. (English summary) *Fuzzy Sets and Systems* **52** (1992), *no.* 2, 223–227. (Summary) **93m:22004** 22A15 (04A72, 54A40, 54H99)

Geffner, Hector ★ Default reasoning. Causal and conditional theories. ACM Doctoral Dissertation Awards, 1990. *MIT Press, Cambridge, MA*, 1992. xii+222 *pp. ISBN* 0-262-07137-1 (Xiang Li) **93e:68126** 68T30 (03B60, 03B70, 68T20, 68T27)

Gegenberg, J. (*with* Carlip, S.) Gravitating topological matter. *Proceedings of the* 4*th Canadian Conference on General Relativity and Relativistic Astrophysics (Winnipeg, MB*, 1991), 71–75, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93c:81196** 81T40 (58D29, 81S10)

— (*with* Kunstatter, G.) Quantum theory of black holes. (English summary) *Phys. Rev. D* (3) **47** (1993), *no.* 10, R4192–R4195. (Summary) **93m:83029** 83C45 (83C57)

Gehre, H. G. (*with* Fasol, K. H.) Order reduction, model approximation, and controller design. A survey on some known methods and recommendation of a new approach. (English summary) *Computational systems analysis*, 153–178, *Elsevier, Amsterdam*, 1992. (*see* **93b:93006**) 93B51 (93B11, 93C70)

Gehring, F. W. (*with* Martin, Gaven J.) Some universal constraints for discrete Möbius groups. *Paul Halmos*, 205–220, *Springer, New York*, 1991. (Peter J. Nicholls) **93a:30049** 30F35

— (*with* Martin, Gaven J.) 6-torsion and hyperbolic volume. *Proc. Amer. Math. Soc.* **117** (1993), *no.* 3, 727–735. (Ara Basmajian) **93d:30056** 30F40 (20H10, 57S30)

Gehrlein, William V. Condorcet efficiency of simple voting rules for large electorates. (English summary) *Econom. Lett.* **40** (1992), *no.* 1, 61–66. (Summary) **93i:90031** 90A28

— (*with* Fishburn, Peter C.) Niche numbers. *J. Graph Theory* **16** (1992), *no.* 2, 131–139. (J. Richard Lundgren) **93d:05070** 05C35

— (*with* Berg, Sven) The effect of social homogeneity on coincidence probabilities for pairwise proportional lottery and simple majority rules. (English summary) *Soc. Choice Welf.* **9** (1992), *no.* 4, 361–372. 90A28 (60C05)

Geiger, J. P. (*with* Chadœuf, J.; Nandris, D.; Nicole, M.; Pierrat, J. C.) Modélisation spatio-temporelle d'une epidémie par un processus de Gibbs: estimation et tests. (English and French summaries) [Spatiotemporal modelling of an epidemic using a Gibbs process: estimation and tests] *Biometrics* **48** (1992), *no.* 4, 1165–1175. 62M40

Geiges, Hansjörg Contact structures on 1-connected 5-manifolds. *Mathematika* **38** (1991), *no.* 2, 303–311 (1992). (Stere Ianus) **93e:57042** 57R15 (53C15)

— Symplectic structures on T^2-bundles over T^2. *Duke Math. J.* **67** (1992), *no.* 3, 539–555. (Marisa Fernández) **93i:57036** 57R22 (53C15, 57R15, 58F05)

Geigle, Werner (*with* Lenzing, Helmut) Perpendicular categories with applications to representations and sheaves. *J. Algebra* **144** (1991), *no.* 2, 273–343. (Jeremy Rickard) **93b:16011** 16D90 (16G20, 18E10, 18E30, 18E35)

van de Geijn, Robert A. (*with* Dongarra, Jack J.) Reduction to condensed form for the eigenvalue problem on distributed memory architectures. (English summary) *Parallel Comput.* **18** (1992), *no.* 9, 973–982. 65Y05 (65F15)

— Deferred shifting schemes for parallel QR methods. (English summary) *SIAM J. Matrix Anal. Appl.* **14** (1993), *no.* 1, 180–194. (James Weldon Demmel) **93k:65031** 65F15 (15A18, 65Y05)

Geiler, V. A. The two-dimensional Schrödinger operator with a homogeneous magnetic field and its perturbations by periodic zero-range potentials. (Russian) *Algebra i Analiz* **3** (1991), *no.* 3, 1–48; *translation in St. Petersburg Math. J.* **3** (1992), *no.* 3, 489–532. (M. Znojil) **93b:35121** 35Q40 (35J10, 47F05, 47N50, 81Q15)

Gein, A. G. (*with* Varea, Vicente R.) Solvable Lie algebras and their subalgebra lattices. *Comm. Algebra* **20** (1992), *no.* 8, 2203–2217. (Serge M. Skryabin) **93h:17017** 17B30

Geiringer, Hilda *see* **Binder, Christa, 93k:01062**

Geise, G. (*with* Martini, Horst) Klassische Beleuchtungsgeometrie im E^d ($d \geq 2$). I. Bekannte Kurvenklassen in der Beleuchtungsgeometrie des E^d ($d \geq 2$). [Classical illumination geometry in E^d ($d \geq 2$). I. Well-known classes of curves in the illumination geometry of E^d ($d \geq 2$)] *Elem. Math.* **46** (1991), *no.* 3, 73–78. (Hellmuth Stachel) **93a:51016** 51N20 (53A04)

— (*with* Martini, Horst) Klassische Beleuchtungsgeometrie im E^d ($d \geq 2$). II. Kinematik in der Beleuchtungsgeometrie des E^d ($d \geq 2$). [Classical illumination geometry in E^d ($d \geq 2$). II. Kinematics in the illumination geometry of E^d ($d \geq 2$)] *Elem. Math.* **46** (1991), *no.* 6, 158–165. (Hellmuth Stachel) **93a:51017** 51N20 (53A04)

Geisler, Michael H. G. *see* **Klein, Felix, 93a:01065**

Geiss, Christof A decomposition theorem for tensor products with bimodules. *Comm. Algebra* **20** (1992), *no.* 10, 2991–2998. (Andrzej Skowroński) **93h:16002** 16D20 (16G20)

Geisser, Seymour Bayesian perturbation diagnostics and robustness. (English summary) *Bayesian analysis in statistics and econometrics (Bangalore*, 1988), 289–301, *Lecture Notes in Statist.*, 75, *Springer, New York*, 1992. (Summary) **93i:62025** 62F15 (62F35)

— On the curtailment of sampling. (English and French summaries) *Canad. J. Statist.* **20** (1992), *no.* 3, 297–309. (Summary) **93h:62058** 62F15 (62L10)

Geisser, Th. Galoiskohomologie reeller halbeinfacher algebraischer Gruppen. [Galois cohomology of real semisimple algebraic groups] *Abh. Math. Sem. Univ. Hamburg* **61** (1991), 231–242. (James E. Humphreys) **93a:20074** 20G20

Geist, Daniel (*with* Rodin, Ervin Y.) Adjacency of the 0-1 knapsack problem. (English summary) *Comput. Oper. Res.* **19** (1992), *no.* 8, 797–800. (Summary) **93d:90043** 90C10 (90C27)

Geist, G. A. (*with* Jessup, E. R.) Parallel implementation of a nonsymmetric tridiagonal eigensolver. (English summary) *Parallel processing for scientific computing (Houston, TX, 1991)*, 11–15, *SIAM, Philadelphia, PA*, 1992. (*see* **93g:65178**) 65F15 (65Y05)

Geist, Karlheinz (*with* Lauterborn, Werner) The nonlinear dynamics of the damped and driven Toda chain. III. Classification of the nonlinear resonances and local bifurcations. *Phys. D* **52** (1991), *no.* 2-3, 551–559. (Summary) **93a:58130** 58F14 (58F27, 70H05, 70K40, 82C44)

Gekeler, Ernst-Ulrich de Rham cohomology for Drinfel'd modules. *Séminaire de Théorie des Nombres, Paris 1988–1989*, 57–85, *Progr. Math.*, 91, *Birkhäuser Boston, Boston, MA*, 1990. (C.-G. Schmidt (Zbl 728:14024)) **93a:14020** 14F40 (11G09)

— Moduli for Drinfel'd modules. *The arithmetic of function fields (Columbus, OH, 1991)*, 153–170, *Ohio State Univ. Math. Res. Inst. Publ.*, 2, *de Gruyter, Berlin*, 1992. (Yuichiro Taguchi) **93m:11049** 11G09 (11G18, 11R58, 14G20)

— On the arithmetic of some division algebras. *Comment. Math. Helv.* **67** (1992), *no.* 2, 316–333. (David Goss) **93b:11074** 11G09 (11R58)

Gekhtman, M. I. On the selfadjointness of operators for the representation of the quantum $*$-algebras $\mathrm{sl}_t(N+1,\mathbf{R})$. (Russian. Russian summary) *Applications of the methods of functional analysis in mathematical physics (Russian)*, 59–65, *Akad. Nauk Ukrainy, Inst. Mat., Kiev*, 1991. (Branislav Jurčo) **93j:17027** 17B37 (47B25, 81R50)

Gekhtman, Moisei Meerovich (*with* Zagirov, Yu. M.) On the maximum possible growth rate of orthonormal eigenfunctions of the Sturm-Liouville operator with a continuous positive weight function. (Russian) *Uspekhi Mat. Nauk* **47** (1992), *no.* 3(285), 157–158; *translation in Russian Math. Surveys* **47** (1992), *no.* 3, 176–177. (Branko Ćurgus) **93g:34133** 34L20 (34B24, 47E05)

Gekker, Ruvin On the strategic inconsistency of the meta-rights approach. (English summary) *Z. Nationalökonom.* **55** (1992), *no.* 3, 265–275. (Summary) **93f:90030** 90A14

Gelashvili, T. Radicals in lattices of representations of Lie algebras. (Russian and Georgian summaries) *Soobshch. Akad. Nauk Gruzii* **143** (1991), *no.* 1, 9–11 (1992). (Summary) **93m:17006** 17B10

Gelbart, Stephen S. (*with* Rogawski, Jonathan D.) Exceptional representations and Shimura's integral for the local unitary group U(3). *Festschrift in honor of I. I. Piatetski-Shapiro on the occasion of his sixtieth birthday, Part I (Ramat Aviv, 1989)*, 19–75, *Israel Math. Conf. Proc.*, 2, *Weizmann, Jerusalem*, 1990. (Joe Repka) **93h:22029** 22E50 (11S37, 22E55)

— (*with* Rogawski, Jonathan D.) *L*-functions and Fourier-Jacobi coefficients for the unitary group U(3). *Invent. Math.* **105** (1991), *no.* 3, 445–472. (From the introduction) **93b:11059** 11F70 (11F30, 11R39)

— *see also* **Festschrift: Piatetski-Shapiro, Ilya Iosifovitch, 93b:00038** *and* **93b:00039**

Gelbrich, Götz On pointwise conjugate homomorphisms of compact Lie groups. Seminar Sophus Lie (Darmstadt, 1991). *Sem. Sophus Lie* **1** (1991), *no.* 2, 217–223. (Samuel Evens) **93c:55017** 55R35 (55N15)

Gelbrich, Matthias On a formula for the L^2 Wasserstein metric between measures on Euclidean and Hilbert spaces. *Math. Nachr.* **147** (1990), 185–203. (Juan A. Cuesta-Albertos) **93a:62081** 62H05 (60B11, 62E10)

van Gelder, Boudewijn H. W. (*with* Soler, Tomás) On covariances of eigenvalues and eigenvectors of second-rank symmetric tensors. *Geophys. J. Internat.* **105** (1991), *no.* 2, 537–546. (B. Reichstein) **93c:15020** 15A63 (15A69, 15A90, 65F15)

Gelenbe, Erol (*with* Fourneau, Jean Michel) Random neural networks with multiple classes of signals. (English summary) *Neural networks: advances and applications*, 2, 83–93, *North-Holland, Amsterdam*, 1992. (Summary) **93k:92002** 92B20

— Une généralisation probabiliste du problème SAT. (English and French summaries) [A probabilistic generalization of the SAT problem] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 3, 339–342. (Summary) **93i:68086** 68Q25 (94C10)

— *see also* **Neural networks: advances and applications, 93f:92011** *and* **Neural networks, 93i:68010**

Geletukha, V. V. (*with* Mikhalochkin, N. A.) The dispersion matrix of a multidimensional random process of a stochastic differential system. (Russian) *Vychisl. Prikl. Mat. (Kiev) No.* 71 (1990), 102–106. 34F05 (60H10)

— (*with* Mikhalochkin, N. A.) A dispersion and a correlation matrix of an optimal stochastic system. (Russian) *Vychisl. Prikl. Mat. (Kiev) No.* 72 (1990), 88–94 (1991). (Summary) **93d:93089** 93E20 (49K45)

— (*with* Mikhalochkin, N. A.) Synthesis of a linear stochastic differential system for optimal two-step processing of information. (Russian) *Vychisl. Prikl. Mat. (Kiev) No.* 72 (1990), 94–101 (1991). 93E11

Gelfand, Alan E. (*with* Dey, Dipak K.) On Bayesian robustness of contaminated classes of priors. *Statist. Decisions* **9** (1991), *no.* 1-2, 63–80. (Summary) **93a:62042** 62F15 (62A15)

— (*with* Smith, Adrian F. M.; Lee, Tai-Ming) Bayesian analysis of constrained parameter and truncated data problems using Gibbs sampling. *J. Amer. Statist. Assoc.* **87** (1992), *no.* 418, 523–532. 62F15

Gel'fand, I. M. (*with* Graev, M. I.; Retakh, V. S.) Reduction formulas for hypergeometric functions on the Grassmannian $G_{k,n}$ and the description of hypergeometric functions on strata of small codimensions. (Russian) *Dokl. Akad. Nauk SSSR* **318** (1991), *no.* 4, 793–797; *translation in Soviet Math. Dokl.* **43** (1991), *no.* 3, 757–761 (1992). (Michael M. Kapranov) **93b:33015** 33C80 (14M15)

— (*with* Graev, M. I.; Retakh, V. S.) Hypergeometric functions on the kth exterior power of the space $\mathbf{C}^n$ and the Grassmannian $G_{k,n}$ and the connection between them. (Russian) *Dokl. Akad. Nauk SSSR* **320** (1991), *no.* 1, 20–24; *translation in Soviet Math. Dokl.* **44** (1992), *no.* 2, 375–380. (J. S. Joel) **93e:22022** 22E45 (32M10, 32S45, 32S60, 33C70, 33C80)

— (*with* Graev, M. I.) The Crofton function and inversion formulas in real integral geometry. (Russian) *Funktsional. Anal. i Prilozhen.* **25** (1991), *no.* 1, 1–6; *translation in Functional Anal. Appl.* **25** (1991), *no.* 1, 1–5. (R. G. Mukhometov) **93e:53083** 53C65 (52A22)

— (*with* Zakharevich, I. S.) Webs, Veronese curves, and bi-Hamiltonian systems. *J. Funct. Anal.* **99** (1991), *no.* 1, 150–178. (Malcolm Adams) **93d:58070** 58F07 (14C21)

— Two archetypes in the psychology of Man. *Nonlinear Sci. Today* **1** (1991), *no.* 4, 11–16. (Pierre Crépel) **93i:00011** 00A99 (01A67)

— (*with* MacPherson, Robert D.) A combinatorial formula for the Pontrjagin classes. *Bull. Amer. Math. Soc. (N.S.)* **26** (1992), *no.* 2, 304–309. (Norman Levitt) **93d:57054** 57R20 (05B35)

— (*with* Mathieu, Olivier) On the cohomology of the Lie algebra of Hamiltonian vector fields. (English summary) *J. Funct. Anal.* **108** (1992), *no.* 2, 347–360. (Janusz Grabowski) **93g:17039** 17B56 (17B66, 58F05)

— (*with* Billera, Louis J.; Sturmfels, Bernd) Duality and minors of secondary polyhedra. (English summary) *J. Combin. Theory Ser. B* **57** (1993), *no.* 2, 258–268. (Margaret M. Bayer) **93m:52014** 52B05 (52B35, 52B40)

Gel'fand, M. S. (*with* Goncharov, A. B.) Spatial rotational alignment of identical particles given their projections: theory and practice. *Mathematical problems of tomography*, 97–122, *Transl. Math. Monographs*, 81, *Amer. Math. Soc., Providence, RI*, 1990. (M. Reimer (Zbl 729:65109)) **93c:44006** 44A12 (92C55)

Gel'fand, S. I. (*with* Kazhdan, David) Extensions of representations of p-adic nilpotent groups. *Adv. Math.* **94** (1992), *no.* 2, 240–255. (Alain Valette) **93i:22021** 22E50 (18G15, 22E27)

— (*with* Kazhdan, David) Examples of tensor categories. *Invent. Math.* **109** (1992), *no.* 3, 595–617. (H. H. Andersen) **93m:20057** 20G05 (17B37, 57M25)

— (*with* Bassalygo, L. A.; Pinsker, M. S.) Bounds for codes with separately localized errors. (Russian) *Problemy Peredachi Informatsii* **28** (1992), *no.* 1, 14–21; *translation in Problems Inform. Transmission* **28** (1992), *no.* 1, 11–17. (Summary) **93d:94025** 94B50 (93B05)

Gelfand, Saul B. (*with* Doerschuk, Peter C.; Nahhas-Mohandes, Mohamed) Simulated annealing algorithms for continuous optimization. (English summary) *Transactions of the Tenth Army Conference on Applied Mathematics and Computing (West Point, NY, 1992)*, 273–281, *ARO Rep.*, 93-1, *U.S. Army Res. Office, Research Triangle Park, NC*, 1993. (*see* **93m:00047**) 65K99 (65C05, 65U05)

Gelfand, Sergei *see* **Gel'fand, S. I.**

Gelfond, Michael (*with* Przymusińska, Halina) On consistency and completeness of autoepistemic theories. *Fund. Inform.* **16** (1992), *no.* 1, 59–92. (Summary) **93d:03037** 03B70 (68T27, 68T30)

Gelfreich, V. G. (*with* Lazutkin, V. F.; Simó, Carles; Tabanov, M. B.) Fern-like structures in the wild set of the standard and semistandard maps in $\mathbf{C}^2$. (English summary) *Internat. J. Bifur. Chaos Appl. Sci. Engrg.* **2** (1992), *no.* 2, 353–370. (Tim Bedford) **93f:58074** 58F05 (58F15)

Geller, A. S. (*with* Mondy, L. A.; Rader, D. J.) Application of boundary element techniques to the motion of aerosol particles. (English summary) *Boundary element technology, VII (Albuquerque, NM, 1992)*, 105–116, *Comput. Mech., Southampton*, 1992. (*see* **93b:65002**) 76M15 (65N38)

Geller, Daryl (*with* Christ, Michael) Counterexamples to analytic hypoellipticity for domains of finite type. *Ann. of Math.* (2) **135** (1992), *no.* 3, 551–566. (Makhlouf Derridj) **93i:35034** 35H05

Geller, Nancy L. (*with* Tang, Dei-In; Pocock, Stuart J.) On the design and analysis of randomized clinical trials with multiple endpoints. (English and French summaries) *Biometrics* **49** (1993), *no.* 1, 23–30. 62P10

Gellert, M. (*with* Harbord, R.) A simple least-squares method for FE analysis of the Navier-Stokes problem. (English summary) *Comput. Mech.* **8** (1991), *no.* 1, 19–24. (Summary) **93g:76080** 76M10 (76D05)

Gellhaus, Christoph (*with* Wurzbacher, Tilmann) The Albanese mapping for compact almost complex manifolds. *Math. Z.* **210** (1992), *no.* 3, 339–346. (Marisa Fernández) **93i:53043** 53C23 (32M05, 53C15, 53C56)

Gel'man, B. D. (*with* Obukhovskiĭ, V. V.) Some fixed-point theorems for condensing-type multivalued mappings. (Russian) *Algebraic problems in analysis and topology (Russian)*, 110–115, 161, *Novoe Global. Anal., Voronezh. Gos. Univ., Voronezh*, 1990. (K. Goebel) **93a:47062** 47H10 (47H04, 47H09, 54H25)

— (*with* Obukhovskiĭ, V. V.) New results in the theory of multivalued mappings. II. Analysis and applications. (Russian) Translated in J. Soviet Math. **64** (1993), no. 2, 854–883. *Mathematical analysis, Vol.* 29 (*Russian*), 107–159, *Itogi Nauki i Tekhniki, Akad. Nauk SSSR, Vsesoyuz. Inst. Nauchn. i Tekhn. Inform., Moscow*, 1991. (Christian Fenske) **93a:58025** 58C30 (47H04, 47H10, 49J24, 54C60, 58C06)

— Generalized degree of multivalued mappings. (Russian) *Nonlinear operators in global analysis (Russian)*, **34–51**, 161, *Novoe Global. Anal., Voronezh. Gos. Univ., Voronezh*, 1991. (Christian Fenske) **93d:55005** 55M25 (47H11)

Gel'man, E. A. (*with* Tishakova, R. S.; Vol'pert, A. I.) A comparison theorem for linear parabolic systems. (Russian. Russian summary) *Some applications of functional analysis to problems of mathematical physics (Russian)*, 56–63, 143, *Akad. Nauk SSSR Sibirsk. Otdel., Inst. Mat., Novosibirsk*, 1988. (*see* **93b:00021**) 35K40

Geluk, J. L. Second order tail behaviour of a subordinated probability distribution. *Stochastic Process. Appl.* **40** (1992), *no.* 2, 325–337. (E. Omey) **93e:60028** 60E05

— (*with* Marić, Vojislav; Tomić, Miodrag) On regularly varying solutions of second order linear differential equations. (English summary) *Differential Integral Equations* **6** (1993), *no.* 2, 329–336. (Bernard J. Harris) **93m:34081** 34E99 (34A30)

Geman, Hélyette (*with* Yor, Marc) Quelques relations entre processus de Bessel, options asiatiques et fonctions confluentes hypergéométriques. (English summary) [Some relations between Bessel processes, Asian options, and confluent hypergeometric functions] *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 6, 471–474. (Summary) **93b:60183** 60J65 (33C10, 90A09)

van Gemert, D. *see* **Van Gemert, D.**

Gemignani, Luca (*with* Bini, Dario) On the complexity of polynomial zeros. *SIAM J. Comput.* **21** (1992), *no.* 4, 781–799. (Summary) **93c:65066** 65H05 (65Y20, 68Q25)

Gemmell, Peter (*with* Sudan, Madhu) Highly resilient correctors for polynomials. (English summary) *Inform. Process. Lett.* **43** (1992), *no.* 4, 169–174. (Summary) **93h:68066** 68Q40

Gencay, Ramazan (*with* Dechert, W. Davis) An algorithm for the n Lyapunov exponents of an n-dimensional unknown dynamical system. (English summary) *Phys. D* **59** (1992), *no.* 1-3, 142–157. (Timothy Sauer) **93j:58090** 58F13 (58F10)

Genchev, Ts. R. (*with* Chak''ryan, Kerope B.) Factorizations of simple groups of order up to 10^{12}. *C. R. Acad. Bulgare Sci.* **45** (1992), *no.* 2, 9–12. (Jian Hua Huang) **93i:20033** 20E32 (20D08)

el-Gendi, S. *see* **El-Gendi, S.**

Gendler, M. B. (*with* Zaretskiĭ, L. S.) An exact algorithm for solving a multidimensional problem of resource allocation. (Russian. Russian summary) *Avtomat. i Telemekh.* **1992,**

no. 6, 138–145; *translation in Automat. Remote Control* **53** (1992), *no.* 6, *part* 2, 906–911. 90C39 (90C10)

Gendreau, Michel (*with* Eiselt, Horst A.; Laporte, Gilbert) Location of facilities on a network subject to a single-edge failure. *Networks* **22** (1992), *no.* 3, 231–246. (Summary) **93b:90039** 90B80 (05C35, 05C85, 90B10, 90B25)

— (*with* Hertz, Alain; Laporte, Gilbert) New insertion and postoptimization procedures for the traveling salesman problem. (English summary) *Oper. Res.* **40** (1992), *no.* 6, 1086–1094. 90C10 (90C27)

Generalov, A. I. Derived categories of an additive category. (Russian. Russian summary) *Algebra i Analiz* **4** (1992), *no.* 5, 91–103. (Summary) **93j:18009** 18E30

Genesio, R. (*with* Tesi, Alberto) A harmonic balance approach for chaos prediction: Chua's circuit. *Internat. J. Bifur. Chaos Appl. Sci. Engrg.* **2** (1992), *no.* 1, 61–79. (Iuliana Oprea) **93e:58128** 58F13 (34C99, 58F40, 94C05)

Genest, Christian Vincentization revisited. *Ann. Statist.* **20** (1992), *no.* 2, 1137–1142. (Detlef Plachky) **93e:62014** 62A99 (62E10)

Geng, Di (*with* Qu, Chang Zheng) On nonlinear hyperbolic equation in unbounded domain. *Appl. Math. Mech. (English Ed.)* **13** (1992), *no.* 3, 255–261; *translated from Appl. Math. Mech.* **13** (1992), *no.* 3, 237–243 (*Chinese. English summary*). (Summary) **93c:35104** 35L70 (73D35, 73K05)

Geng, Xian Guo (*with* Cao, Ce Wen) Classical integrable systems generated through nonlinearization of eigenvalue problems. *Nonlinear physics* (*Shanghai*, 1989), 68–78, *Res. Rep. Phys., Springer, Berlin*, 1990. (Alexander P. Veselov) **93a:58137** 58F19 (58F07)

— (*with* Xu, Tai Xi) A completely integrable Neumann system in Liouville sense. *Chinese Sci. Bull.* **35** (1990), *no.* 22, 1859–1861. (Ramajayam Sahadevan) **93m:58057** 58F07 (35Q58)

— Involutive solutions for Toda and Langmuir lattices through nonlinearization of Lax pairs. A Chinese summary appears in Acta Math. Sinica **36** (1993), no. 2, 288. *Acta Math. Sinica (N.S.)* **8** (1992), *no.* 1, 78–90. (Summary) **93a:35144** 35Q58 (39A12)

— (*with* Cao, Ce Wen) A Bargmann system and involutive representations of solutions to a class of evolution equations. (Chinese. Chinese summary) *Chinese Ann. Math. Ser. A* **13** (1992), *suppl.*, 92–98. (Guo Cheng Zhu) **93m:35173** 35Q58 (58F05, 58F07)

— A hierarchy of nonlinear evolution equations, its Hamiltonian structure and classical integrable system. *Phys. A* **180** (1992), *no.* 1-2, 241–251. (Gui Zhang Tu) **93c:58088** 58F07 (35Q55)

— A new hierarchy of nonlinear evolution equations and corresponding finite-dimensional completely integrable systems. *Phys. Lett. A* **162** (1992), *no.* 5, 375–380. (Vadim G. Bakurov) **93b:58065** 58F07 (35Q58)

Geng, Zheng (*with* Carroll, Robert L.; Jamshidi, M.; Kisner, R. A.) An adaptive learning control approach with application to water tank level control. (English summary) *Control Theory Adv. Tech.* **8** (1992), *no.* 3, 577–592. 93C95

Geng, Zhi Collapsibility of relative risk in contingency tables with a response variable. *J. Roy. Statist. Soc. Ser. B* **54** (1992), *no.* 2, 585–593. (Graham J. G. Upton) **93h:62116** 62H17

Genk, A. V. The motion of particles in a centrally symmetric field in the relativistic theory of gravitation. (Russian. English summary) *Teoret. Mat. Fiz.* **88** (1991), *no.* 1, 122–134; *translation in Theoret. and Math. Phys.* **88** (1991), *no.* 1, 759–769 (1992). (Alexander N. Petrov) **93c:83095** 83D05

— A nonstatic centrally symmetric vacuum solution in RTG. (Russian. English summary) *Teoret. Mat. Fiz.* **88** (1991), *no.* 2, 272–285; *translation in Theoret. and Math. Phys.* **88** (1991), *no.* 2, 866–875 (1992). (Jan Novotný) **93b:83052** 83D05 (83C15)

— Spherical gravitational waves in the relativistic theory of gravitation. (Russian. English and Russian summaries) *Teoret. Mat. Fiz.* **91** (1992), *no.* 2, 346–352; *translation in Theoret. and Math. Phys.* **91** (1992), *no.* 2, 570–574. (Dmitri V. Vassilevich) **93i:83075** 83D05

Genna, Francesco (*with* Corradi, Leone; Annovazzi, Lorella) Holonomic versus rate relations in plasticity. *Unilateral problems in structural analysis, IV* (*Capri*, 1989), 29–38, *Internat. Ser. Numer. Math.*, 101, *Birkhäuser, Basel*, 1991. (*see* **93a:73001**) 73E05

di Gennaro, Vincenzo *see* **Di Gennaro, Vincenzo**

de Gennes, Pierre-Gilles ★ Introduction to polymer dynamics. With a foreword by Giuseppe Allegra. Lezioni Lincee. [Lincei Lectures] *Cambridge University Press, Cambridge*, 1990. viii+58 *pp. ISBN* 0-521-38172-X; 0-521-38849-X (Yurii Raikher) **93i:82084** 82D60 (76A99, 76N99, 82B21)

Genon, A. (*with* Nicolet, A.; Dular, P.; Legros, W.) Boundary element singularities in 3D magnetostatic problems based on the vector potential. (English summary) *Boundary element technology, VII* (*Albuquerque, NM*, 1992), 319–329, *Comput. Mech., Southampton*, 1992. (*see* **93b:65002**) 65N38 (78A25)

— (*with* Nicolet, A.; Legros, W.; Umé, M.; Delincé, F.) An optimal adaptative numerical integral method. (English summary) *Boundary element technology, VII* (*Albuquerque, NM*, 1992), 919–933, *Comput. Mech., Southampton*, 1992. (*see* **93b:65002**) 65D30

Gentchev, Ts. R. *see* **Genchev, Ts. R.**

Gentle, Ronald T.T.F. theories for left and right exact sequences. *J. Pure Appl. Algebra* **75** (1991), *no.* 3, 237–258. (Harvey Wolff) **93c:18011** 18E40 (16S90)

Genz, Alan Statistics applications of subregion adaptive multiple numerical integration. (English summary) *Numerical integration* (*Bergen*, 1991), 267–280, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 357, *Kluwer Acad. Publ., Dordrecht*, 1992. (*see* **93f:65006**) 65U05 (65D30)

— *see also* **Numerical integration, 93f:65006**

Genz, Henning (*with* Decker, Roger) ★ Symmetrie und Symmetriebrechung in der Physik. (German) [Symmetry and symmetry-breaking in physics] Facetten. [Facets] *Friedr. Vieweg & Sohn, Braunschweig*, 1991. xiv+376 *pp. ISBN* 3-528-08558-4 (Piotr Kosiński) **93a:81001** 81–01 (81R40, 81R99, 81V99)

Geoffard, Pierre-Yves (*with* Chiappori, Pierre-André; Guesnerie, Roger) Sunspot fluctuations around a steady state: the case of multidimensional, one-step forward looking economic models. (English summary) *Econometrica* **60** (1992), *no.* 5, 1097–1126. (Summary) **93e:90016** 90A16 (90A14)

Geogyaev, V. V. New integrals of motion for the Benney equations. *Phys. Lett. A* **165** (1992), *no.* 2, 111–116. (Junkichi Satsuma) **93g:35131** 35Q58 (35Q55, 58F07)

Georg, Kurt (*with* Allgower, Eugene L.; Böhmer, Klaus; Miranda, Rick) Exploiting symmetry in boundary element methods. *SIAM J. Numer. Anal.* **29** (1992), *no.* 2, 534–552. (Johannes Elschner) **93b:65184** 65N38 (45L10, 65R20, 65Y20)

— (*with* Allgower, Eugene L.; Miranda, Rick) The method of resultants for computing real solutions of polynomial systems. *SIAM J. Numer. Anal.* **29** (1992), *no.* 3, 831–844. (Gerd Pönisch) **93e:65079** 65H10 (15A15, 26C10, 65H20)

Geörg, Stefan Typical numerical problems arising with the treatment of ill conditioned partial differential equations by the example of the MHD-equations. (English summary) *Computer arithmetic and enclosure methods* (*Oldenburg*, 1991), 361–370, *North-Holland, Amsterdam*, 1992. (*see* **93i:65006**) 65P05 (76M20, 76W05)

Georgakopoulos, G. (*with* Stafylopatis, A.) An approach to parallel algorithm design. (English and French summaries) *RAIRO Inform. Théor. Appl.* **27** (1993), *no.* 2, 85–95. (Summary) **93m:68050** 68Q10 (68M20)

Georgalas, B. C. (*with* Diamandis, G. A.; Lahanas, A. B.) Does σ-model conformal invariance imply a Robertson-Walker universe? (English summary) *Phys. Lett. B* **287** (1992), *no.* 1-3, 69–72. (Summary) **93d:83066** 83E30 (81T30, 83C15)

George, Alan (*with* Chu, Eleanor) Parallel algorithms and subcube embedding on a hypercube. (English summary) *SIAM J. Sci. Comput.* **14** (1993), *no.* 1, 81–94. (Summary) **93i:65133** 65Y05 (65F99)

George, Alexander How not to refute realism. *J. Philos.* **90** (1993), *no.* 2, 53–72. 03A05

George, E. Olusegun (*with* Deng, Lih-Yuan) Some characterizations of the uniform distribution with applications to random number generation. (English summary) *Ann. Inst. Statist. Math.* **44** (1992), *no.* 2, 379–385. (A. H. Khan) **93j:62028** 62E10 (65C10)

George, Edward I. (*with* Casella, George) Explaining the Gibbs sampler. (English summary) *Amer. Statist.* **46** (1992), *no.* 3, 167–174. 62G09 (62E25)

— (*with* Robert, Christian P.) Capture-recapture estimation via Gibbs sampling. (English summary) *Biometrika* **79** (1992), *no.* 4, 677–683. 62P10

George, P. L. ★ Automatic mesh generation. Application to finite element methods. Translated from the 1990 French original by the author. *John Wiley & Sons, Ltd., Chichester; Masson, Paris*, 1991. x+334 *pp. ISBN* 0-471-93097-0 (Weimin Han) **93f:65002** 65–02 (65N30, 65N50)

— (*with* Hermeline, F.) Delaunay's mesh of a convex polyhedron in dimension d. Application to arbitrary polyhedra. *Internat. J. Numer. Methods Engrg.* **33** (1992), *no.* 5, 975–995. (H. P. Dikshit) **93e:65117** 65M50 (68U30)

George, Raju K. (*with* Joshi, Mohan C.) On the controllability of predator-prey systems. *J. Optim. Theory Appl.* **74** (1992), *no.* 2, 243–258. (Jerzy Klamka) **93f:93023** 93B05 (34H05, 92D25, 93C10)

— Observability of a class of nonlinear abstract systems. (English summary) *Mathematical theory of control* (*Bombay*, 1990), 143–160, *Lecture Notes in Pure and Appl. Math.*, 142, *Dekker, New York*, 1993. (*see* **93g:93003**) 93B07

George, Varghese T. (*with* Johnson, William D.) Effect of regression to the mean in multivariate distributions. *Comm. Statist. Theory Methods* **21** (1992), *no.* 2, 333–350. (Summary) **93c:62095** 62H12

George, William K. The decay of homogeneous isotropic turbulence. *Phys. Fluids A* **4** (1992), *no.* 7, 1492–1509. (Summary) **93a:76050** 76F05

Georgelin, Y. (*with* Leblanc, Y.) New nonequilibrium regimes of the reservoir model. *Thermal field theories* (*Ibaraki*, 1990), 529–538, *North-Holland Delta Ser., North-Holland, Amsterdam*, 1991. (Summary) **93b:82044** 82C10 (81T99)

— (*with* Wallet, J.-C.) On Maxwell-Chern-Simons theory with anomalous magnetic moment. *Modern Phys. Lett. A* **7** (1992), *no.* 13, 1149–1156. (Summary) **93a:81127** 81T13 (81V70)

Georgeot, B. (*with* Bogomol'nyĭ, E. B.; Giannoni, M.-J.; Schmit, C.) Chaotic billiards generated by arithmetic groups. (English summary) *Phys. Rev. Lett.* **69** (1992), *no.* 10, 1477–1480. (Summary) **93g:81025** 81Q50 (20H15, 58F17, 82B05)

Georges, Antoine (*with* Kotliar, Gabriel; Si, Qimiao) Strongly correlated systems in infinite dimensions and their zero-dimensional counterparts. *Internat. J. Modern Phys. B* **6** (1992), *no.* 5-6, 705–730. (Summary) **93f:82062** 82D40

Georges, D. (*with* Carrière, A.; Merigot, J. C.) Commande avec rejet asymptotique de biais constants: l'approche d'état et l'approche polynômiale. (English and French summaries) [Control with asymptotic rejection of perturbations constant in time: the state approach and the polynomial approach] *RAIRO Automat.-Prod. Inform. Ind.* **26** (1992), *no.* 4, 295–313. 93C05 (93B51)

Georges, Marcel K. (*with* Shephard, Mark S.) Reliability of automatic 3D mesh generation. (English summary) Reliability in computational mechanics (Kraków, 1991). *Comput. Methods Appl. Mech. Engrg.* **101** (1992), *no.* 1-3, 443–462. (Summary) **93h:73040** 73V05

Georgescu, Adelina (*with* Dragoş, Lazăr; Homentcovschi, Dorel) In memoriam. Caius Jacob (1912–1992). *Rev. Roumaine Math. Pures Appl.* **37** (1992), *no.* 7, 537–538. 01A70

— (*with* Chiujdea, Cornelia; Florea, Răzvan) Linear stability of a turbulent flow of Maxwell fluids in pipes. (English summary) *Rev. Roumaine Math. Pures Appl.* **37** (1992), *no.* 7, 579–586. (Summary) **93h:76039** 76E99 (76A10)

— (*with* Marinoschi, Gabriela) Models of asymptotic approximation governing the atmospheric motion over a low obstacle. (English summary) *Stud. Cerc. Mat.* **44** (1992), *no.* 3, 237–252. (Summary) **93e:86003** 86A10

Georgescu, George $\mathcal{F}$-multipliers and the localization of distributive lattices. II. *Z. Math. Logik Grundlag. Math.* **37** (1991), *no.* 4, 293–300. (Michael E. Detlefsen) **93d:06004** 06B10 (06D05, 06E05)

— Finite products of local maximal lattices. (English summary) *Math. Japon.* **37** (1992), *no.* 5, 913–917. (Summary) **93h:06014** 06D05

— Compact representations of centerless congruence modular algebras. (English summary) *Stud. Cerc. Mat.* **44** (1992), *no.* 6, 465–470. (James B. Nation) **93k:08008** 08B10 (54C40)

Georgescu, Vladimir (*with* Boutet de Monvel-Berthier, Anne-Marie; Purice, Radu) A boundary value problem related to the Ginzburg-Landau model. *Comm. Math. Phys.* **142** (1991), *no.* 1, 1–23. (Ioan Bâldea) **93a:82067** 82D55 (58E50)

Georgiades, Jean Some remarks on the security of the identification scheme based on permuted kernels. *J. Cryptology* **5** (1992), *no.* 2, 133–137. 94A60

Georgiadis, H. G. A correspondence principle connecting IBVPs of wave propagation and heat conduction. (English summary) *Z. Angew. Math. Phys.* **43** (1992), *no.* 4, 742–755. (Kuppalapalle Vajravelu) **93f:80006** 80A20 (35K05)

Georgiadis, Leonidas (*with* Szpankowski, Wojciech) Stability of token passing rings. (English summary) *Queueing Systems Theory Appl.* **11** (1992), *no.* 1-2, 7–33. (Summary) **93f:60137** 60K25 (68M20)

Georgiev, Alexander A. Corrections to: "Speed of convergence in nonparametric kernel estimation of a regression function and its derivatives" [Ann. Inst. Statist. Math. **36**

(1984), no. 3, 455–462; MR 86j:62086]. *Ann. Inst. Statist. Math.* **44** (1992), *no.* 4, 799. (Editors) **93m:62072** 62G05

Georgiev, Christo (*with* Atanassov, Krassimir T.) Intuitionistic fuzzy Prolog. (English summary) *Fuzzy Sets and Systems* **53** (1993), *no.* 2, 121–128. 68N17 (03B52, 03B70, 03E72, 03F55, 68T25)

Georgiev, G. Kh. (*with* Grigorov, Kh.) Third- and higher-order Cremona fiber transformations in $\mathbf{P}_4$. (Bulgarian. English and Russian summaries) *Godishnik Vissh. Uchebn. Zaved. Prilozhna Mat.* **23** (1987), *no.* 4, 141–148 (1989). (Summary) **93e:51037** 51N35

Georgiev, Galin (*with* Mathieu, Olivier) Catégorie de fusion pour les groupes de Chevalley. (English and French summaries) [Fusion categories for Chevalley groups] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 6, 659–662. (Summary) **93f:20020** 20C33 (17B65)

Georgiev, Krassimir (*with* Margenov, Svetozar) On domain decomposition methods for problems with discontinuous coefficients. (English summary) *Computer arithmetic, scientific computation and mathematical modelling* (*Albena*, 1990), 281–292, *IMACS Ann. Comput. Appl. Math.*, 12, *Baltzer, Basel*, 1991. (*see* **93e:00022**) 65N55 (65F10, 65N22, 65N30)

— (*with* Margenov, Svetozar) On domain decomposition preconditioning of plane elasticity problems. (English summary) *Math. Balkanica* (*N.S.*) **6** (1992), *no.* 2, 173–181. (Summary) **93f:73102** 73V05

Georgiev, Neko N. On a third-order nonlinear differential system. (Russian) *Serdica* **17** (1991), *no.* 2-3, 99–103 (1992). (Marian Mureşan) **93b:34053** 34C25

Georgiev, P. G. *see* **Georgiev, Peter Georgiev**

Georgiev, Pando Gr. On the residuality of the set of norms having Mazur's intersection property. *Math. Balkanica* (*N.S.*) **5** (1991), *no.* 1, 20–26. (Stephen J. Dilworth) **93b:46029** 46B20

Georgiev, Peter Georgiev Algorithm for numerical conform transformation based on analogies with electrostatics. (Russian summary) *Bulgar. J. Phys.* **17** (1990), *no.* 5, 386–401 (1991). 30C30 (65E05)

Georgiev, Vladimir (*with* Grigorov, A.; Martinov, Nikolai Konstantinov; Ouroushev, D.) A method for generating exact solutions of the nonlinear Klein-Gordon equation. (English and French summaries) *Canad. J. Phys.* **70** (1992), *no.* 6, 467–469. (Summary) **93j:35146** 35Q40 (35L70, 81Q05)

— (*with* Schirmer, Pedro Paulo) The asymptotic behavior of Yang-Mills fields in the large. (English summary) *Comm. Math. Phys.* **148** (1992), *no.* 3, 425–444. (Philippe-A. Dionne) **93j:58132** 58G16 (58E15, 81T13)

— (*with* Evtimova, E. N.) Critical points of the "entropy"-like functional for the quantum distribution functions. (English summary) *Helv. Phys. Acta* **65** (1992), *no.* 4, 596–610. (Matthew J. Donald) **93i:81115** 81S30

— (*with* Arnaudov, Ya. N.; Dassios, George) High-frequency asymptotics in inverse scattering by ellipsoids. (English summary) *Math. Methods Appl. Sci.* **16** (1993), *no.* 1, 1–12. (Summary) **93j:35181** 35R30 (35J05, 76Q05)

Georgiou, Christos G. (*with* Krikelis, N. J.) Constrained regulation design of linear discrete-time descriptor systems. (English summary) *Control Theory Adv. Tech.* **8** (1992), *no.* 2, 257–268. 93B50 (93C55)

Georgiou, D. A. (*with* Ladas, G.; Vlahos, P. N.) Oscillation and asymptotic behavior of a system of linear difference equations. *Appl. Anal.* **46** (1992), *no.* 3-4, 241–248. (Helmut Länger) **93d:39002** 39A10

Georgiou, E. (*with* Maldarelli, C.; Papageorgiou, D. T.; Rumschitzki, D. S.) An asymptotic theory for the linear stability of a core-annular flow in the thin annular limit. (English summary) *J. Fluid Mech.* **243** (1992), 653–677. (Summary) **93g:76062** 76E99 (76D08, 76D45)

Georgiou, M. (*with* Erneux, T.; Reiss, E. L.; Holden, L. J.) Slow passage through bifurcation and limit points. Asymptotic theory and applications. *Dynamic bifurcations* (*Luminy*, 1990), 14–28, *Lecture Notes in Math.*, 1493, *Springer, Berlin*, 1991. (Miklós Farkas) **93f:34063** 34C23 (58F14)

Georgiou, Tryphon T. (*with* Smith, Malcolm Clive) Robust stabilization in the gap metric. (English summary) *Control of uncertain systems* (*Bremen*, 1989), 69–82, *Progr. Systems Control Theory*, 6, *Birkhäuser Boston, Boston, MA*, 1990. (Summary) **93i:93110** 93D21 (93D09, 93D15)

— (*with* Smith, Malcolm Clive) Linear systems and robustness: a graph point of view. (English summary) *Robust control* (*Tokyo*, 1991), 114–121, *Lecture Notes in Control and Inform. Sci.*, 183, *Springer, Berlin*, 1992. (*see* **93f:93006**) 93C05 (93B36)

— (*with* Smith, Malcolm Clive) Robust stabilization in the gap metric: controller design for distributed plants. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 8, *part I*, 1133–1143. (Summary) **93h:93071** 93D21 (93B25)

— (*with* Chang, Chin) On a Schur-algorithm based approach to spectral factorization: connection with the Riccati equation. *Linear Algebra Appl.* **171** (1992), 233–247. (John Maroulas) **93k:15016** 15A23

— (*with* Smith, Malcolm Clive) Topological approaches to robustness. (English summary) *Analysis and optimization of systems: state and frequency domain approaches for infinite-dimensional systems* (*Sophia-Antipolis*, 1992), 222–241, *Lecture Notes in Control and Inform. Sci.*, 185, *Springer, Berlin*, 1993. (Kathryn E. Lenz) **93k:93038** 93B36 (93–02, 93B51, 93C05)

— (*with* Buddie, Scott A.; Özgüner, Ümit; Smith, Malcolm Clive) Flexible structure experiments at JPL and WPAFB: H_∞ controller designs. (English summary) *Internat. J. Control* **58** (1993), *no.* 1, 1–19. 93C95 (93B36)

Gepner, Doron Lectures on $N = 2$ string theory. *Superstrings* '89 (*Trieste*, 1989), 238–302, *World Sci. Publishing, River Edge, NJ*, 1990. (Summary) **93e:81094** 81T30 (81T40)

— On the algebraic structure of $N = 2$ string theory. *Comm. Math. Phys.* **142** (1991), *no.* 3, 433–491. (Stanislav Z. Pakuliak) **93b:81215** 81T30 (17B81, 81R10, 81T40, 82B21)

Ger, Roman Marek Kuczma, 1935–1991. *Aequationes Math.* **44** (1992), *no.* 1, 1–10. (Editors) **93c:01038** 01A70

Gera, B. V. (*with* Kostenko, V. G.; Gubal', L. O.) Determination of the heat emission coefficient in an inverse problem for the heat equation. (Ukrainian) *Mat. Metody i Fiz.-Mekh. Polya No.* 33 (1991), 9–13; *translation in J. Soviet Math.* **65** (1993), *no.* 5, 1814–1817. (S. T. Tikhonchuk) **93d:35176** 35R30 (35K05, 80A23)

Gera, Milan (*with* Šeda, Valter; Nieto, Juan J.) Periodic boundary value problems for nonlinear higher order ordinary differential equations. *Appl. Math. Comput.* **48** (1992), *no.* 1, 71–82. (S. R. Bernfeld) **93a:34031** 34B15 (34C25)

— (*with* Sadyrbaev, F. Zh.) Multiple solutions of a third order boundary value problem. *Math. Slovaca* **42** (1992), *no.* 2, 173–180. (Donal O'Regan) **93g:34031** 34B15

Géradin, M. (*with* Cardona, A.) A superelement formulation for mechanism analysis. (English summary) *Comput. Methods Appl. Mech. Engrg.* **100** (1992), *no.* 1, 1–29. (Summary) **93g:73108** 73V05 (73G05, 73K12)

Geramita, Anthony V. (*with* Kreuzer, Martin; Robbiano, Lorenzo) Cayley-Bacharach schemes and their canonical modules. *Trans. Amer. Math. Soc.* **339** (1993), *no.* 1, 163–189. (Luca Chiantini) **93k:14065** 14M05 (13D40)

Gérard, C. (*with* Martinez, André; Sjöstrand, Johannes) A mathematical approach to the effective Hamiltonian in perturbed periodic problems. *Comm. Math. Phys.* **142** (1991), *no.* 2, 217–244. (George D. Raikov) **93a:47079** 47N50 (35P05, 47F05, 81Q10)

— (*with* Knauf, Andreas) Collisions for the quantum Coulomb Hamiltonian. *Comm. Math. Phys.* **143** (1991), *no.* 1, 17–26. (Evgeni L. Korotyaev) **93f:81155** 81U05 (35P25, 70H05, 81Q20)

— (*with* Sigal, I. M.) Space-time picture of semiclassical resonances. *Comm. Math. Phys.* **145** (1992), *no.* 2, 281–328. (P. A. Mishnayevskiy) **93b:35105** 35P25 (35J10, 47N50, 81Q20)

— Sharp propagation estimates for N-particle systems. *Duke Math. J.* **67** (1992), *no.* 3, 483–515. (Tuncay Aktosun) **93j:35061** 35J10 (35Q40, 47F05, 47N50, 81Q10, 81U10)

Gérard, Patrick (*with* Alinhac, Serge) ★ Opérateurs pseudo-différentiels et théorème de Nash-Moser. (French) [Pseudodifferential operators and the Nash-Moser theorem] Savoirs Actuels. [Current Scholarship] *InterEditions, Paris*; *Éditions du Centre National de la Recherche Scientifique* (*CNRS*), *Meudon*, 1991. 190 *pp. ISBN* 2-7296-0364-6 (Luigi Rodino) **93g:35001** 35-02 (35Sxx, 47G30, 47H15, 47N20, 58G15)

— (*with* Leichtnam, Éric) Équirépartition de fonctions propres pour des problèmes aux limites. [Uniform distribution of eigenfunctions for boundary value problems] *Journées "Équations aux Dérivées Partielles"* (*Saint-Jean-de-Monts*, 1992), *Exp. No. XI*, 7 *pp., École Polytech., Palaiseau*, 1992. (*see* **93e:35005**) 58G18 (58G25)

— (*with* Lebeau, Gilles) Diffusion d'une onde par un coin. (English summary) [Diffusion of a wave by a corner] *J. Amer. Math. Soc.* **6** (1993), *no.* 2, 341–424. (Peter R. Popivanov) **93f:35130** 35L05 (35A27, 35B40, 35S15, 58G07)

Gérard, R. (*with* Jurkat, W. B.) Asymptotic implicit function theorems. I. The preparation theorem and division theorem. (English summary) *Asymptotic Anal.* **6** (1992), *no.* 1, 45–71. (Donald A. Lutz) **93j:32012** 32B05 (58C15)

Gerardi, A. (*with* Del Grosso, G.; Koch, Giorgio) Optimality in accelerated life tests. (English summary) *Math. Oper. Res.* **17** (1992), *no.* 4, 866–881. (Harshinder Singh) **93k:62202** 62N05 (90B25)

Gerards, A. M. H. On shortest T-joins and packing T-cuts. *J. Combin. Theory Ser. B* **55** (1992), *no.* 1, 73–82. (Kevin Lawrence McAvaney) **93d:05093** 05C40

Gerasimenko, V. I. (*with* Gorunovich, V. V.) A discrete model of Bogolyubov equations. (Russian. Russian summary) *Methods of mathematical physics in infinite systems* (*Russian*), 44–52, *Akad. Nauk Ukrainy, Inst. Mat., Kiev*, 1991. (Summary) **93h:82039** 82C21

— (*with* Gorunovich, V. V.) Bogolyubov equations for a discrete model of a one-dimensional system of particles. (Russian. English summary) *Dokl. Akad. Nauk Ukrain. SSR* **1991**, *no.* 8, 34–38, 183. (Boris A. Khoruzhenko) **93a:82048** 82C40 (82C21)

— On the existence of global solutions of the Cauchy problem for Bogolyubov equations. (Russian. English summary) *Dokl. Akad. Nauk Ukrain. SSR* **1991**, *no.* 9, 41–45, 176. (M. Lawrence Glasser) **93b:82045** 82C10

— Solutions of Bogolyubov equations for a one-dimensional system of elastic balls. (Russian. English and Russian summaries) *Teoret. Mat. Fiz.* **91** (1992), *no.* 1, 120–128; *translation in Theoret. and Math. Phys.* **91** (1992), *no.* 1, 410–417. (Robert Alicki) **93h:82053** 82C40 (35Q72)

Gerasimov, A. A. (*with* Marshakov, A. V.; Mironov, A. D.; Morozov, A. Yu.; Orlov, A. Yu.) Matrix models of two-dimensional gravity and Toda theory. *Nuclear Phys. B* **357** (1991), *no.* 2-3, 565–618. (Summary) **93h:81118** 81T40 (17B81, 33C45, 58F07, 81T30)

Gerasimov, A. I. An integral method for computation of closed queueing networks. (Russian. Russian summary) *Problemy Peredachi Informatsii* **28** (1992), *no.* 2, 96–108; *translation in Problems Inform. Transmission* **28** (1992), *no.* 2, 184–195. (Summary) **93f:60138** 60K25 (68M20)

Gerasimov, O. I. (*with* Yunger, I. B.) Frequency-algebraic analysis of the absolute stability of nonlinear automatic control systems. *J. Comput. Systems Sci. Internat.* **30** (1992), *no.* 6, 151–156; *translated from Izv. Ross. Akad. Nauk Tekhn. Kibernet.* **1992**, *no.* 1, 213–217 (*Russian. Russian summary*). (Summary) **93h:93056** 93D10 (93B40)

— (*with* Yunger, I. B.) A matrix criterion for the absolute stability of impulse automatic control systems. (Russian. Russian summary) *Avtomat. i Telemekh.* **1993**, *no.* 2, 134–139. 93D05 (93C55)

Gerasimov, V. A. (*with* Dobronets, B. S.; Shustrov, M. Yu.) Numerical operations for histogram arithmetic and their applications. (Russian) *Avtomat. i Telemekh.* **1991**, *no.* 2, 83–88; *translation in Automat. Remote Control* **52** (1991), *no.* 2, *part* 1, 208–212. (Introduction) **93b:65216** 65U05 (65G10)

Gerasoulis, Apostolos (*with* Yang, Tao) A comparison of clustering heuristics for scheduling directed acyclic graphs on multiprocessors. (English summary) *J. Parallel Distrib. Comput.* **16** (1992), *no.* 4, 276–291. 68M20

Gerber, Hans U. From the generalized gamma to the generalized negative binomial distribution. *Insurance Math. Econom.* **10** (1992), *no.* 4, 303–309. 62E15

— On the probability of ruin for infinitely divisible claim amount distributions. (English summary) *Insurance Math. Econom.* **11** (1992), *no.* 2, 163–166. (Summary) **93g:62130** 62P05

— (*with* Dufresne, F.) The probability of ruin for the inverse Gaussian and related processes. (English summary) *Insurance Math. Econom.* **12** (1993), *no.* 1, 9–22. 62P05

Gerber, Marius The interaction of deep-water gravity waves and an annular current: linear theory. (English summary) *J. Fluid Mech.* **248** (1993), 153–172. (Summary) **93k:76013** 76B15 (86A05)

Gerber, P. D. LIP loops and quadratic differential equations. *Quasigroups and loops: theory and applications*, 431–443, *Sigma Ser. Pure Math.*, 8, *Heldermann, Berlin*, 1990. (*see* **93g:20133**) 17A01 (17A99, 20N05)

Gerbi, S. (*with* Claus, G.) An asymptotic model for a detonation in ducts. *Computational and applied mathematics, II* (*Dublin*, 1991), 127–130, *North-Holland, Amsterdam*, 1992. (*see* **93j:00008**) 80A25

Gerchak, Yigal (*with* Kilgour, D. Marc) Sequential competitions with nondecreasing levels of difficulty. (English summary) *Oper. Res. Lett.* **13** (1993), *no.* 1, 49–58. (Summary) **93k:90106** 90C90 (90C39)

Gerdes, Paulus Fivefold symmetry and (basket) weaving in various cultures. *Fivefold symmetry*, 245–261, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93i:52002**) 52B99 (01A07)

Gerdjikov, V. S. *see* **Gerdzhikov, V. S.**

Gerdt, V. P. (*with* Lassner, W.) ★ Verifying isomorphisms of finite-dimensional Lie algebras by Gröbner basis technique. (English. English and Russian summaries) Сообщения Объединенного Института Ядерных Исследований. Дубна [Communications of the Joint Institute for Nuclear Research. Dubna], E5-92-145. *Joint Inst. Nuclear Res., Dubna*, 1992. 13 *pp.* (From the introduction) **93h:17003** 17–08 (13P10)

Gerdzhikov, V. S. Lax representation does not mean complete integrability. (English summary) *Nonlinear evolution equations and dynamical systems (Baia Verde, 1991)*, 288–296, *World Sci. Publishing, River Edge, NJ*, 1992. (Jérôme Leon) **93i:35130** 35Q55 (58F07)

— (*with* Ivanov, Mikhail Ivanov) Expansions over the "squared" solutions and the inhomogeneous nonlinear Schrödinger equation. (English summary) *Inverse Problems* **8** (1992), *no.* 6, 831–847. (Summary) **93j:35187** 35R30 (34A55, 34L25, 34L40, 35Q55)

Gerencsér, László Strong approximation results in estimation and adaptive control. *Topics in stochastic systems: modelling, estimation and adaptive control*, 268–299, *Lecture Notes in Control and Inform. Sci.*, 161, *Springer, Berlin*, 1991. (From the introduction) **93e:93074** 93E35 (93E10)

— A computable criterion for model selection for linear stochastic systems. (English summary) *Identification and system parameter estimation 1991, Vol. 1,2 (Budapest, 1991)*, 67–72, *IFAC Sympos. Ser.*, 3, *Pergamon, Oxford*, 1992. (*see* **93h:93009**) 93E12

— (*with* Baikovicius, Jimmy) Change-point detection using stochastic complexity. (English summary) *Identification and system parameter estimation 1991, Vol. 1,2 (Budapest, 1991)*, 73–78, *IFAC Sympos. Ser.*, 3, *Pergamon, Oxford*, 1992. (*see* **93h:93009**) 93E12

— The law of the cubic root. (English summary) *Identification and system parameter estimation 1991, Vol. 1,2 (Budapest, 1991)*, 93–95, *IFAC Sympos. Ser.*, 3, *Pergamon, Oxford*, 1992. (*see* **93h:93009**) 93E10

— Fixed gain estimation and tracking. (English summary) *Stochastic theory and adaptive control (Lawrence, KS, 1991)*, 198–209, *Lecture Notes in Control and Inform. Sci.*, 184, *Springer, Berlin*, 1992. (*see* **93g:93007**) 93E10 (93B52)

— AR(∞) estimation and nonparametric stochastic complexity. (English summary) *IEEE Trans. Inform. Theory* **38** (1992), *no.* 6, 1768–1778. 62M10

— (*with* Baikovicius, Jimmy) Change-point detection as model selection. (English, Russian and Lithuanian summaries) *Informatica* **3** (1992), *no.* 1, 3–20, 119, 127. 62M10 (93E03)

— (*with* Vágó, Zsuzsanna) A strong approximation theorem for parameter estimators in continuous time. *J. Math. Systems Estim. Control* **2** (1992), *no.* 2, 191–204. (T. J. Sweeting) **93c:62047** 62F12 (60G10, 62A10, 93E10)

— Rate of convergence of recursive estimators. (English summary) *SIAM J. Control Optim.* **30** (1992), *no.* 5, 1200–1227. (Katsuji Uosaki) **93i:93124** 93E12 (62F12, 62L20, 93E35)

Gergel', V. P. (*with* Grishagin, V. A.; Kukhtin, V. V.; Rogatneva, E. A.; Strongin, R. G.; Vysotskaya, I. N.) ★ A software system for multiextremal optimization. (English. English and Russian summaries) Сообщения Объединенного Института Ядерных Исследований. Дубна [Communications of the Joint Institute for Nuclear Research. Dubna], E11-92-252. *Joint Inst. Nuclear Res., Dubna*, 1992. 19 *pp.* (Rumena Kaltinska) **93i:90005** 90–04 (65K10, 90C29, 90C30)

— (*with* Grishagin, V. A.; Kukhtin, V. V.; Rogatneva, E. A.; Strongin, R. G.; Vysotskaya, I. N.) ★ Complicated problem solution techniques in optimal parameter searching. (English. English and Russian summaries) Сообщения Объединенного Института Ядерных Исследований. Дубна [Communications of the Joint Institute for Nuclear Research. Dubna], E11-92-218. *Joint Inst. Nuclear Res., Dubna*, 1992. 21 *pp.* 90C29 (90A05)

Gergó, Lajos Generalisation of the Goetschel-Voxman embedding. *Fuzzy Sets and Systems* **47** (1992), *no.* 1, 105–108. 54A40 (04A72)

— Some remarks on the topological properties of fuzzy numbers in $\mathbf{R}^n$. (English summary) *Fuzzy Sets and Systems* **48** (1992), *no.* 2, 275–277. (Summary) **93e:54004** 54A40 (04A72)

Gerhard, W. D. The probabilistic solution of the Dirichlet problem for $\frac{1}{2}\Delta + \langle a, \nabla\rangle + b$ with singular coefficients. (English summary) *J. Theoret. Probab.* **5** (1992), *no.* 3, 503–520. (Jörg-Uwe Löbus) **93i:60141** 60J45 (35J25)

Gerko, A. I. $\tau(A)$-topology and some properties of groups associated with topological semigroups of transformations. (Russian. English and Moldavian summaries) *Izv. Akad. Nauk Respub. Moldova Mat.* **1991**, *no.* 2, 26–31, 93. (Summary) **93i:54033** 54H15 (22A15)

— The property of PE-pairs of extensions of minimal transformation semigroups. (Russian) *Mat. Issled. No.* 124, *Funktsional. Metod. Teorii Differ. Uravn.* (1992), 36–42, 142. (From the text) **93d:54058** 54H15

Gerla, Giangiacomo Pointless metric spaces and fuzzy spaces. *Applications of category theory to fuzzy subsets (Linz, 1989)*, 235–244, *Theory Decis. Lib. Ser. B Math. Statist. Methods*, 14, *Kluwer Acad. Publ., Dordrecht*, 1992. (A. Shostak) **93d:54013** 54A40 (04A72, 54E35)

— Distances, diameters and verisimilitude of theories. *Arch. Math. Logic* **31** (1992), *no.* 6, 407–414. (Stewart Shapiro) **93j:03010** 03B30 (03A05)

Gerla, Mario (*with* Camarda, Pietro) Design and analysis of fault-tolerant multibus interconnection networks. (English summary) *Discrete Appl. Math.* **37/38** (1992), 45–64. 94C12 (68M15)

Gerlach, Ulrich H. (*with* Alexander, Francis J.) Coulomb field of an accelerated charge: physical and mathematical aspects. *Phys. Rev. D* (3) **44** (1991), *no.* 12, 3887–3898. (N. V. Mitskevich) **93a:83022** 83C50 (78A35)

— Cavity quantum-electrodynamical response to a gravitational wave. (English summary) *Phys. Rev. D* (3) **46** (1992), *no.* 4, 1239–1262. (Enric Verdaguer) **93i:83037** 83C35 (81V10, 81V17, 83C50)

Gerlich, Gerhard Axioms for quantum theory. *Internat. J. Theoret. Phys.* **31** (1992), *no.* 7, 1103–1129. (S. Gudder) **93f:81017** 81P10

Gerling, Jürgen (*with* Schmidt, Heinz-Jürgen) Self-similar drums and generalized Weierstrass functions. (English summary) Fractals and disorder (Hamburg, 1992). *Phys. A* **191** (1992), *no.* 1-4, 536–539. (Summary) **93i:58156** 58G25 (35P20)

Gerlits, János (*with* Bella, Angelo) On a condition for the pseudo radiality of a product. (English summary) *Comment. Math. Univ. Carolin.* **33** (1992), *no.* 2, 311–313. (Summary) **93h:54001** 54A25 (54B10, 54D55)

— (*with* Hajnal, András; Szentmiklóssy, Z.) On the cardinality of certain Hausdorff spaces. (English summary) Topological, algebraical and combinatorial structures. Frolík's memorial volume. *Discrete Math.* **108** (1992), *no.* 1-3, 31–35. (Summary) **93k:54009** 54A25

— (*with* Frič, Roman) On the sequential order. (English summary) *Math. Slovaca* **42** (1992), *no.* 4, 505–512. (Klaas Pieter Hart) **93k:54007** 54A20 (54H11, 54H13)

Gerll, D. *see* **Sierpiński, Wacław, 93h:11001**

Germa, Anne (*with* Fournier, Irène; Hudry, Olivier) Encadrement de l'indice de Slater d'un tournoi à l'aide de ses scores. (English and French summaries) [Bounds of Slater's index of a tournament from its scores] *Math. Inform. Sci. Humaines No.* 118 (1992), 53–68. (J. W. Moon) **93h:05083** 05C20

— (*with* Fournier, Irène; Hudry, Olivier) Utilisation des scores dans des méthodes exactes déterminant les ordres médians de tournois. (English and French summaries) [On the use of scores in exact methods computing the median orders of tournaments] *Math. Inform. Sci. Humaines No.* 119 (1992), 53–74. (Summary) **93j:05068** 05C20 (68R10)

Germain, Paul La vie et l'œuvre de Lucien Malavard. [The life and works of Lucien Malavard] *C. R. Acad. Sci. Paris Sér. Gén. Vie Sci.* **8** (1991), *no.* 5, 425–433 (1992). (Editors) **93c:01039** 01A70

— *see also* **Duhem, Pierre-Maurice-Marie, 93k:01089**

Germain, Sophie *see* **Truesdell, Clifford A., III, 93m:01039**

Germán, G. (*with* Macías, A.; Obregón, O.) Kaluza-Klein approach in higher-dimensional theories of gravity with torsion. (English summary) *Classical Quantum Gravity* **10** (1993), *no.* 5, 1045–1053. (Summary) **93m:83074** 83E15 (83D05)

German, O. V. (*with* Germanovich, E. I.; Naïdenko, V. G.) An algorithm for Boolean optimization on (0, 1)-matrices. (Russian. Russian summary) *Zh. Vychisl. Mat. i Mat. Fiz.* **32** (1992), *no.* 7, 1114–1125; *translation in Comput. Math. Math. Phys.* **32** (1992), *no.* 7, 995–1005. (Valentin E. Brimkov) **93j:90064** 90C09

German, Steven M. Semantics and reasoning with free procedures. *Theoret. Comput. Sci.* **97** (1992), *no.* 1, 67–81. (A. Pliuškevičienė) **93m:68112** 68Q55 (03B70)

Germani, Alfredo (*with* De Santis, Alberto; Gandolfi, Alberto; Tardelli, Paola) A representation theorem for Radon-Nikodým derivatives in the white-noise theory. (English summary) *Mathematical theory of control (Bombay, 1990)*, 109–123, *Lecture Notes in Pure and Appl. Math.*, 142, *Dekker, New York*, 1993. (Summary) **93h:60006** 60B11 (60G20, 60H99, 93E11)

— (*with* De Santis, Alberto; Scoglio, Caterina) Kalman filter approach to solution of rational expectations models. (English summary) *Comput. Math. Appl.* **25** (1993), *no.* 12, 39–47. 90A16 (93E11)

— (*with* Ciccarella, G.; Dalla Mora, M.) A Luenberger-like observer for nonlinear systems. (English summary) *Internat. J. Control* **57** (1993), *no.* 3, 537–556. (Xiao Ping Liu) **93k:93019** 93B07 (93C10, 93E10)

Germano, M. Turbulence: the filtering approach. *J. Fluid Mech.* **238** (1992), 325–336. (Summary) **93i:76044** 76F05

Germanovich, E. I. (*with* German, O. V.; Naïdenko, V. G.) An algorithm for Boolean optimization on (0, 1)-matrices. (Russian. Russian summary) *Zh. Vychisl. Mat. i Mat. Fiz.* **32** (1992), *no.* 7, 1114–1125; *translation in Comput. Math. Math. Phys.* **32** (1992), *no.* 7, 995–1005. (Valentin E. Brimkov) **93j:90064** 90C09

Germogenova, T. A. *see* **Frontiers in numerical transport theory, 93i:82070**

Geroldinger, Alfred (*with* Schneider, Rudolf) On Davenport's constant. *J. Combin. Theory Ser. A* **61** (1992), *no.* 1, 147–152. (Zhi Wei Sun) **93i:20024** 20D60 (05D10, 11B75)

— (*with* Halter-Koch, Franz) On the asymptotic behaviour of lengths of factorizations. *J. Pure Appl. Algebra* **77** (1992), *no.* 3, 239–252. (David F. Anderson) **93c:13001** 13A05 (13G05, 20M99)

— (*with* Halter-Koch, Franz) Nonunique factorizations in block semigroups and arithmetical applications. (English summary) *Math. Slovaca* **42** (1992), *no.* 5, 641–661. (W. Narkiewicz) **93k:11106** 11R44 (11R27, 20M14)

— (*with* Halter-Koch, Franz) Realization theorems for semigroups with divisor theory. *Semigroup Forum* **44** (1992), *no.* 2, 229–237. (Št. Schwarz) **93c:20096** 20M05

Geromel, J. C. (*with* Dias Peres, Pedro Luis; Souza, S. R.) $\mathscr{H}_2$ guaranteed cost control for uncertain continuous-time linear systems. *Systems Control Lett.* **19** (1992), *no.* 1, 23–27. (Leslie R. Fletcher) **93e:93024** 93B36 (93C05)

— (*with* Dias Peres, Pedro Luis) $\mathscr{H}_2$ control for discrete-time systems optimality and robustness. (English summary) *Automatica J. IFAC* **29** (1993), *no.* 1, 225–228. 93B36 (93C55)

— (*with* Dias Peres, Pedro Luis; Bernussou, J.) Quadratic stabilizability of linear uncertain systems in convex-bounded domains. (English summary) *Automatica J. IFAC* **29** (1993), *no.* 2, 491–493. 93D15 (93D21)

Geronimo, Jeffrey S. (*with* Erdélyi, Tamás; Nevai, Paul; Zhang, John) A simple proof of "Favard's theorem" on the unit circle. *Atti Sem. Mat. Fis. Univ. Modena* **39** (1991), *no.* 2, 551–556. (Walter Van Assche) **93a:42010** 42C05

— (*with* Van Assche, Walter) Approximating the weight function for orthogonal polynomials on several intervals. *J. Approx. Theory* **65** (1991), *no.* 3, 341–371. (V. Totik) **93b:42037** 42C05

— (*with* Smith, Dale T.) WKB (Liouville-Green) analysis of second order difference equations and applications. *J. Approx. Theory* **69** (1992), *no.* 3, 269–301. (Evangelos Ifantis) **93f:39010** 39A12

Gerontidis, Ioannis I. Cyclic strong ergodicity in nonhomogeneous Markov systems. *SIAM J. Matrix Anal. Appl.* **13** (1992), *no.* 2, 550–566. (Summary) **93b:60156** 60J20 (90B70)

Gerow, Ken (*with* Castillo-Chavez, Carlos; Busenberg, Stavros N.) Pair formation in structured populations. *Differential equations with applications in biology, physics, and engineering (Leibnitz, 1989)*, 47–65, *Lecture Notes in Pure and Appl. Math.*, 133, *Dekker, New York*, 1991. (Marc Artzrouni) **93c:92005** 92D25 (92–04, 92C60, 92D30)

Gerritzen, L. Theta functions of totally degenerate curves. *Arch. Math. (Basel)* **59** (1992), *no.* 3, 302–312. (John B. Little) **93h:14020** 14H42 (14H20, 14K25)

— (*with* Brinkmann, Bernd) The lowest term of the Schottky modular form. *Math. Ann.* **292** (1992), *no.* 2, 329–335. (Rolf Berndt) **93b:14050** 14H42 (11F30, 11F46, 14K25)

Gerry, Christopher C. (*with* Hach, Edwin E., III) Four-photon coherent states. Properties and generation. (English summary) *J. Modern Opt.* **39** (1992), *no.* 12, 2501–2517. 81R30

(81V80)

Gershtein, S. S. (*with* Sena, L. A.; Feoktistov, L. P.; Smirnov, Yu. N.; Arnol'd, V. I.; Dolgov, A. D.) Master. (Russian) *Priroda* **1992**, *no.* 2, 84–111. (Editors) **93g:01083** 01A70

Gershuni, D. S. The problem of two periodic tasks. (Russian) *Diskret. Mat.* **3** (1991), *no.* 4, 16–23. (Summary) **93b:90032** 90B35 (68M20)

— (*with* Kasrashvili, I. S.) Investigation of the characteristics of an algorithm for the configuration of a local rigid real-time computer network. (Russian. Russian summary) *Avtomat. i Telemekh.* **1992**, *no.* 8, 175–186; *translation in Automat. Remote Control* **53** (1992), *no.* 8, *part* 2, 1286–1296 (1993). 68M10

Gershuni, G. Z. (*with* Nepomnyashchiĭ, A. A.; Velarde, Manuel G.) On dynamic excitation of Marangoni instability. (English summary) *Phys. Fluids A* **4** (1992), *no.* 11, 2394–2398. 76E15

Gerst, Irving (*with* Blecksmith, Richard; Brillhart, John) New proofs for two infinite product identities. *Rocky Mountain J. Math.* **22** (1992), *no.* 3, 819–823. (Liang-Cheng Zhang) **93h:11114** 11P83

Gersten, S. M. The double exponential theorem for isodiametric and isoperimetric functions. *Internat. J. Algebra Comput.* **1** (1991), *no.* 3, 321–327. (D. E. Cohen) **93b:20058** 20F05 (20F32, 57M07)

— (*with* Stallings, John R.) Casson's idea about 3-manifolds whose universal cover is $\mathbf{R}^3$. *Internat. J. Algebra Comput.* **1** (1991), *no.* 4, 395–406. (Bruno Zimmermann) **93b:57018** 57N10 (20F32, 57M05, 57M20)

— (*with* Baumslag, G.; Shapiro, Michael David; Short, Hamish) Automatic groups and amalgams. *J. Pure Appl. Algebra* **76** (1991), *no.* 3, 229–316. (D. F. Holt) **93a:20048** 20F10 (20F32, 57M07)

— Bounded cocycles and combings of groups. (English summary) *Internat. J. Algebra Comput.* **2** (1992), *no.* 3, 307–326. (Stephan Rosebrock) **93i:20029** 20E06 (20F05, 57M05, 57M50)

Gerstenhaber, Murray (*with* Giaquinto, Anthony; Schack, Samuel D.) Quantum symmetry. *Quantum groups* (*Leningrad*, 1990), 9–46, *Lecture Notes in Math.*, 1510, *Springer, Berlin*, 1992. (E. J. Taft) **93j:17028** 17B37 (16W30)

— *see also* **Deformation theory and quantum groups with applications to mathematical physics, 93e:17001**

Gerstenkorn, Tadeusz Application of the compounding of distributions to the determination of characteristic function. (English summary) *Fasc. Math. No.* 22 (1991), 147–150 (1992). (Summary) **93e:60035** 60E10

Gerstle, W. H. (*with* Prasad, N. N. V.; Xie, M.) Solution method for coupled elastostatic BEM and FEM domains. (English summary) *Boundary element technology, VII* (*Albuquerque, NM*, 1992), 213–226, *Comput. Mech., Southampton*, 1992. (*see* **93b:65002**) 73V10 (65N30, 65N38, 73V05)

bunse-Gerstner, Angelika *see* **Bunse-Gerstner, Angelika**

Gerstner, Doris *see* **Devlin, Keith, 93m:00001b**

Gerth, Frank, III On p-class groups of cyclic extensions of prime degree p of number fields. *Acta Arith.* **60** (1991), *no.* 1, 85–92. (Norikata Nakagoshi) **93b:11146** 11R29 (11R20, 11R45)

Gervais, Jean-Loup Solving the strongly coupled 2D gravity. I. Unitary truncation and quantum group structure. *Comm. Math. Phys.* **138** (1991), *no.* 2, 301–338. (Satoru Saito) **93b:81249** 81T40 (17B68, 81R50)

— (*with* Rostand, Bruno) On two-dimensional supergravity and the quantum super-Möbius group. *Comm. Math. Phys.* **143** (1991), *no.* 1, 175–199. (Summary) **93h:81119** 81T40 (17B37, 81R50, 83E50)

— Quantum group symmetry of 2D gravity. (English summary) *Quantum groups* (*Leningrad*, 1990), 259–276, *Lecture Notes in Math.*, 1510, *Springer, Berlin*, 1992. (Summary) **93h:81120** 81T40 (17B37, 81R50, 81V17)

— (*with* Cremmer, Eugène) The quantum strip: Liouville theory for open strings. *Comm. Math. Phys.* **144** (1992), *no.* 2, 279–301. (Uwe Grimm) **93i:81214** 81T40 (81R50)

— 2D gravity-matter couplings from quantum group. (English summary) Random surfaces and 2D quantum gravity (Barcelona, 1991). *Nuclear Phys. B Proc. Suppl.* **25A** (1992), 122–136. (Summary) **93e:81109** 81T40 (17B37, 81–02, 81R50)

— (*with* Matsuo, Yutaka) W-geometries. *Phys. Lett. B* **274** (1992), *no.* 3-4, 309–316. (Nigel B. Backhouse) **93d:81068** 81R10 (53C80, 81T40)

— (*with* Savel'ev, M. V.) Black holes from nonabelian Toda theories. (English summary) *Phys. Lett. B* **286** (1992), *no.* 3-4, 271–278. (W. Cox) **93h:81121** 81T40 (83C57)

— (*with* Delduc, François; Savel'ev, M. V.) Supersymmetric black holes from Toda theories. (English summary) *Phys. Lett. B* **292** (1992), *no.* 3-4, 295–297. (Summary) **93i:81220** 81T40 (83C57)

— (*with* O'Raifeartaigh, Lochlainn; Razumov, A. V.; Savel'ev, M. V.) Gauge conditions for the constrained-WZNW-Toda reductions. (English summary) *Phys. Lett. B* **301** (1993), *no.* 1, 41–48. (C. Gauthier) **93m:81128** 81T40 (17B70, 58F07, 81–02)

Gervasio, P. (*with* Carlenzoli, Claudio) Effective numerical algorithms for the solution of algebraic systems arising in spectral methods. *Appl. Numer. Math.* **10** (1992), *no.* 2, 87–113. (Summary) **93b:65220** 65Y10 (65N35, 65N55)

Gerver, Joseph L. On moving a sofa around a corner. *Geom. Dedicata* **42** (1992), *no.* 3, 267–283. (Oded Schramm) **93d:51040** 51M16

Gerver, M. L. On the matrix $F = \{1/[f_i f_j (f_i + f_j)]\}$. (Russian) *Dokl. Akad. Nauk SSSR* **319** (1991), *no.* 3, 535–538; *translation in Soviet Math. Dokl.* **44** (1992), *no.* 1, 136–140. (Anna Lee) **93a:15016** 15A21 (86–08)

Gessel, Ira M. Super ballot numbers. (English summary) *J. Symbolic Comput.* **14** (1992), *no.* 2-3, 179–194. (R. A. Askey) **93k:05009** 05A10

Gessing, R. A transformation for solving a discrete-time singular LQ problem. (English summary) *System modelling and optimization* (*Zurich*, 1991), 25–34, *Lecture Notes in Control and Inform. Sci.*, 180, *Springer, Berlin*, 1992. (*see* **93e:90003**) 49N10

Gessler, D. M. (*with* Verbovetskiĭ, A. M.; Vinogradov, A. M.) Scalar differential invariants and characteristic classes of homogeneous geometric structures. (Russian. Russian summary) *Mat. Zametki* **51** (1992), *no.* 6, 15–26, 156; *translation in Math. Notes* **51** (1992), *no.* 5-6, 543–549. (Mark V. Losik) **93m:58127** 58H10 (58A20)

Gesztesy, F. On the modified Korteweg-de Vries equation. *Differential equations with applications in biology, physics, and engineering* (*Leibnitz*, 1989), 139–183, *Lecture Notes in Pure and Appl. Math.*, 133, *Dekker, New York*, 1991. (Jacek Szmigielski) **93i:35123** 35Q53 (34A55, 34L25, 47N20)

— (m)KdV-soliton solutions on quasi-periodic finite-gap backgrounds. *Nonlinear fields: classical, random, semiclassical* (*Karpacz*, 1991), 171–194, *World Sci. Publishing, River Edge, NJ*, 1991. (From the introduction) **93e:58082** 58F07 (35Q51, 35Q53)

— (*with* Zhao, Zhong Xin) On critical and subcritical Sturm-Liouville operators. *J. Funct. Anal.* **98** (1991), *no.* 2, 311–345. (J. K. Shaw) **93f:34146** 34L40 (34B24, 34B27, 35Q53, 47E05)

— (*with* Holden, Helge) A new representation of soliton solutions of the Kadomtsev-Petviashvili equation. (English summary) *Ideas and methods in mathematical analysis, stochastics, and applications* (*Oslo*, 1988), 472–479, *Cambridge Univ. Press, Cambridge*, 1992. (Summary) **93i:35124** 35Q53 (58F07)

— (*with* Karwowski, Witold; Zhao, Zhong Xin) New types of soliton solutions. *Bull. Amer. Math. Soc.* (*N.S.*) **27** (1992), *no.* 2, 266–272. (James Powell) **93c:35138** 35Q51 (35Q53)

— (*with* Bulla, W.; Unterkofler, K.) Holomorphy of the scattering matrix with respect to c^{-2} for Dirac operators and an explicit treatment of relativistic corrections. *Comm. Math. Phys.* **144** (1992), *no.* 2, 391–416. (Wolfgang Lücke) **93b:81302** 81U20 (47A40)

— (*with* Graf, Gian Michele; Simon, Barry) The ground state energy of Schrödinger operators. (English summary) *Comm. Math. Phys.* **150** (1992), *no.* 2, 375–384. (Takashi Ichinose) **93j:47070** 47F05 (47N50, 81Q10)

— (*with* Weikard, Rudi) Spectral deformations and soliton equations. *Differential equations with applications to mathematical physics*, 101–139, *Math. Sci. Engrg.*, 192, *Academic Press, Boston, MA*, 1993. (Tuncay Aktosun) **93m:34138** 34L40 (34L25, 35Q51, 58F19)

— (*with* Simon, Barry) A short proof of Zheludev's theorem. *Trans. Amer. Math. Soc.* **335** (1993), *no.* 1, 329–340. (P. A. Kuchment) **93c:34162** 34L40 (34L10, 47E05, 49R05, 81Q10)

— (*with* Holden, Helge; Simon, Barry; Zhao, Zhong Xin) On the Toda and Kac-van Moerbeke systems. *Trans. Amer. Math. Soc.* **339** (1993), *no.* 2, 849–868. (C. Tomei) **93m:58050** 58F07 (35Q58)

Geszti, Tamás Hydrodynamics of learning vector quantization. *From phase transitions to chaos*, 210–216, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93c:82039** 82C32 (92B20)

Getaldić, Marin *see* **Žarković, Radmila, 93d:01015**

Getino, J. M. (*with* Ferrándiz Leal, José Manuel) A Hamiltonian theory for an elastic Earth: elastic energy of deformation. *Celestial Mech. Dynam. Astronom.* **51** (1991), *no.* 1, 17–34. (Summary) **93d:73062a** 73N20 (70H05, 86A60)

— (*with* Ferrándiz Leal, José Manuel) A Hamiltonian theory for an elastic Earth: first order analytical integration. *Celestial Mech. Dynam. Astronom.* **51** (1991), *no.* 1, 35–65. (Summary) **93d:73062b** 73N20 (70H05, 86A60)

— (*with* Ferrándiz Leal, José Manuel) A Hamiltonian theory for an elastic Earth: secular rotational acceleration. *Celestial Mech. Dynam. Astronom.* **52** (1991), *no.* 4, 381–396. (Summary) **93d:73062c** 73N20 (70H05, 86A60)

— (*with* Esebbag, C.; de Llano, M.; et al.) Cooper pairing in one, two, and three dimensions. *J. Math. Phys.* **33** (1992), *no.* 3, 1221–1223. (Guang Shan Tian) **93a:82068** 82D55

Getman, I. P. (*with* Mol'kov, V. A.) On effective characteristics of piezoactive composites with cylindrical inclusions. (Russian. Russian summary) *Prikl. Mat. Mekh.* **56** (1992), *no.* 3, 501–509; *translation in J. Appl. Math. Mech.* **56** (1992), *no.* 3, 415–423. (Ekaterina Guibianskaya) **93g:73090** 73K20 (73B27, 73R05)

Getmanov, B. S. N-monopole-soliton-type solutions of the self-dual equations for an SU(2) gauge theory in Minkowski space time. *Nonlinear world, Vol.* 1 (*Kiev*, 1989), 116–120, *World Sci. Publishing, River Edge, NJ*, 1990. (*see* **93b:00012**) 81T13

— (*with* Barashenkov, I. V.; Kovtun, V. E.) The unified approach to integrable relativistic equations: soliton solutions over nonvanishing backgrounds. *Nonlinear fields: classical, random, semiclassical* (*Karpacz*, 1991), 617–654, *World Sci. Publishing, River Edge, NJ*, 1991. (Summary) **93i:58067** 58F07 (81T10)

Getoor, R. K. (*with* Fitzsimmons, P. J.) A fine domination principle for excessive measures. *Math. Z.* **207** (1991), *no.* 1, 137–151. (Jutta Steffens) **93e:60157** 60J45 (60J40)

— (*with* Fitzsimmons, P. J.) Limit theorems and variation properties for fractional derivatives of the local time of a stable process. (French summary) *Ann. Inst. H. Poincaré Probab. Statist.* **28** (1992), *no.* 2, 311–333. (Toshio Yamada) **93j:60105** 60J30 (60J55)

— (*with* Fitzsimmons, P. J.) On the distribution of the Hilbert transform of the local time of a symmetric Lévy process. (English summary) *Ann. Probab.* **20** (1992), *no.* 3, 1484–1497. (Toshio Yamada) **93j:60112** 60J55 (60J30)

Gettse, F. *see* **Götze, Friedrich**

Getu, Seyoum (*with* Shapiro, Louis W.; Woan, Wen Jin; Woodson, Leon C.) How to guess a generating function. (English summary) *SIAM J. Discrete Math.* **5** (1992), *no.* 4, 497–499. (Stephen Tanny) **93h:05009** 05A15

Getzler, Ezra An extension of Gross's log-Sobolev inequality for the loop space of a compact Lie group. *Probability models in mathematical physics* (*Colorado Springs, CO*, 1990), 73–97, *World Sci. Publishing, Teaneck, NJ*, 1991. (Hélène Airault) **93f:58247** 58G32 (22E67, 46E35, 46E50)

Geue, Ferdinand (*with* Gal, Tomas) A new pivoting rule for solving various degeneracy problems. *Oper. Res. Lett.* **11** (1992), *no.* 1, 23–32. (Summary) **93b:90046** 90C08 (90C35)

Geva, Shai (*with* Brookes, Stephen) Towards a theory of parallel algorithms on concrete data structures. (English summary) Selected papers of the International BCS-FACS Workshop on Semantics for Concurrency (Leicester, 1990). *Theoret. Comput. Sci.* **101** (1992), *no.* 2, 177–221. (Siegmar Gerber) **93m:68063** 68Q22 (68P05, 68Q10)

Gévay, Gábor Icosahedral morphology. *Fivefold symmetry*, 177–203, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93i:52002**) 52B15

Geveci, Tunc (*with* Stewart, Kris) Numerical experiments with a nonlinear evolution equation which exhibits blow-up. *Appl. Numer. Math.* **10** (1992), *no.* 2, 139–147. (Summary) **93b:65213** 65R20 (76–04, 76C05)

Gevers, Michel (*with* Bitmead, Robert R.; Wertz, V.) Optimal control redesign of generalized predictive control. (English summary) *Adaptive systems in control and signal processing*, 1989 (*Glasgow*), 49–54, *IFAC Sympos. Ser.*, 1990, *No.* 1, *Pergamon, Oxford*, 1990. (*see* **93j:93007**) 93E20 (93E35)

— Connecting identification and robust control: a new challenge. (English summary) *Identification and system parameter estimation* 1991, *Vol.* 1,2 (*Budapest*, 1991), 1–10, *IFAC Sympos. Ser.*, 3, *Pergamon, Oxford*, 1992. (*see* **93h:93009**) 93B30 (93–02)

— (*with* De Moor, Bart L. R.; Goodwin, Graham C.) Overbiased, underbiased and unbiased estimation of transfer functions. (English summary) *Identification and system parameter*

estimation 1991, *Vol.* 1,2 (*Budapest*, 1991), 805–810, *IFAC Sympos. Ser.*, 3, *Pergamon, Oxford*, 1992. (*see* **93h:93009**) 93B30 (93C80)

— (*with* Goodwin, Graham C.; Mayne, David Q.) Bias and variance distribution in transfer function estimation. (English summary) *Identification and system parameter estimation* 1991, *Vol.* 1,2 (*Budapest*, 1991), 811–816, *IFAC Sympos. Ser.*, 3, *Pergamon, Oxford*, 1992. (*see* **93h:93009**) 93C20

— (*with* Dasgupta, Soura; Bastin, G.; Campion, Guy; Chen, L.) Identifiability of scalar linearly parametrized polynomial systems. (English summary) *Identification and system parameter estimation* 1991, *Vol.* 1,2 (*Budapest*, 1991), 835–839, *IFAC Sympos. Ser.*, 3, *Pergamon, Oxford*, 1992. (*see* **93h:93009**) 93C10 (93B30)

— (*with* Anderson, Brian D. O.; Li, Gang) Optimal FWL design of state-space digital systems with weighted sensitivity minimization and sparseness consideration. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, I* (*Kobe*, 1991), 549–554, *Mita, Tokyo*, 1992. (*see* **93g:93005**) 93B51 (93C57)

— (*with* Verriest, E. I.; Li, Gang) Computationally optimal implementations via polynomial operators. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, I* (*Kobe*, 1991), 555–560, *Mita, Tokyo*, 1992. (*see* **93g:93005**) 93B40

— (*with* Goodwin, Graham C.; Ninness, Brett) Quantifying the error in estimated transfer functions with application to model order selection. *IEEE Trans. Automat. Control* **37** (1992), *no.* 7, 913–928. (Summary) **93c:93037** 93C80 (93B36)

— (*with* De Nicolao, Giuseppe) Difference and differential Riccati equations: a note on the convergence to the strong solution. *IEEE Trans. Automat. Control* **37** (1992), *no.* 7, 1055–1057. (M. M. Konstantinov) **93i:93051** 93B40 (34H05, 39A10, 93B50)

— (*with* Bastin, G.; Bitmead, Robert R.; Campion, Guy) Identification of linearly-overparametrized nonlinear systems. *IEEE Trans. Automat. Control* **37** (1992), *no.* 7, 1073–1078. (P. Bertrand) **93g:93027** 93B30 (93C10)

Gevirtz, Julian On planar mappings with prescribed principal strains. *Arch. Rational Mech. Anal.* **117** (1992), *no.* 4, 295–320. (Juan J. Manfredi) **93f:73054** 73G05 (35A30, 35L40, 73B99)

Gevorgyan, N. A. (*with* Musoyan, V. Kh.) Summation of a bi-orthogonal expansion in an incomplete system of rational functions in the disk. (Russian. English and Armenian summaries) *Erevan. Gos. Univ. Uchen. Zap. Estestv. Nauki* **1990**, *no.* 2, 3–10 (1991). (Summary) **93d:42035** 42C15

Gevorgyan, O. V. (*with* Akopyan, A. A.; Saakyan, A. A.) Two-dimensional polynomial interpolation. (Russian. Russian summary) *Mat. Sb.* **183** (1992), *no.* 6, 111–126. (R. A. Lorentz) **93k:41003** 41A05 (41A63, 65D05)

Gevorkyan, D. Z. (*with* Agayan, S. S.; Bayadyan, G. L.) Problems in the stability of orthogonal series summation, and calculations of linear transforms. (Russian) *Cybernetics and computer technology, No.* 5 (*Russian*), 132–168, "*Nauka*", *Moscow*, 1991. (Radomir S. Stanković) **93k:65102** 65R10 (94A11)

Gewali, Laxmi P. (*with* Venkatasubramanian, R.) The external grazing problem. (English summary) Proceedings of the Twenty-third Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, FL, 1992). *Congr. Numer.* **90** (1992), 225–230. (Summary) **93k:90107** 90C90 (65K10, 93C85)

— (*with* Keil, J. Mark; Ntafos, Simeon) On covering orthogonal polygons with star-shaped polygons. *Inform. Sci.* **65** (1992), *no.* 1-2, 45–63. (Summary) **93b:68021** 68Q05 (68T10)

— (*with* Lombardo, Rocky) Watchman routes for a pair of convex polygons. (English summary) *Finite fields, coding theory, and advances in communications and computing* (*Las Vegas, NV*, 1991), 279–289, *Lecture Notes in Pure and Appl. Math.*, 141, *Dekker, New York*, 1993. (Nikolaj M. Korneenko) **93m:68166** 68U05 (52B55)

Gewert, Marian A linear differential system with two-point boundary conditions. (English summary) *Fasc. Math. No.* 22 (1991), 95–100 (1992). (Lucas Jódar) **93g:34027** 34B05

Geyer, H. B. (*with* Klein, Abraham; Walet, Niels R.; Hahne, F. J. W.) Vector coherent state, quantized Bogoliubov transformation, and boson expansions. (English summary) *Group theory and special symmetries in nuclear physics* (*Ann Arbor, MI*, 1991), 233–247, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93e:81150**) 81R05 (81V35)

Geyer, W.-D. (*with* Jarden, Moshe) The Henselian closures of a PpC field. *Abh. Math. Sem. Univ. Hamburg* **61** (1991), 63–71. (Luc Bélair) **93a:12009** 12J12 (12F05, 12J10)

Geyer-Schulz, Andreas On the specification of fuzzy data in management. (English summary) *Modelling uncertain data* (*Freiberg*, 1992), 105–110, *Math. Res.*, 68, *Akademie-Verlag, Berlin*, 1992. (*see* **93i:00021**) 68T35 (04A72)

Geymayer, G. (*with* Kunisch, K.) Convergence rates for regularized nonlinear ill-posed problems. (English summary) *Modelling and inverse problems of control for distributed parameter systems* (*Laxenburg*, 1989), 81–92, *Lecture Notes in Control and Inform. Sci.*, 154, *Springer, Berlin*, 1991. (*see* **93d:93006**) 65J15 (49N45, 93C20)

Geymonat, Giuseppe (*with* Bourquin, Frédéric; Ciarlet, Philippe G.; Raoult, Annie) Γ-convergence et analyse asymptotique des plaques minces. (English and French summaries) [Γ-convergence and asymptotic analysis of thin plates] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 9, 1017–1024. (Luis Trabucho) **93g:73008** 73B27 (49J45, 73K10, 73V25)

Ghafoor, Arif (*with* Solé, Patrick) The covering radius of doubled 2-designs in $2O_k$. Applied algebra, algebraic algorithms, and error-correcting codes (Toulouse, 1989). *Discrete Appl. Math.* **33** (1991), *no.* 1-3, 215–224. (Jean-Claude Bermond) **93e:05017** 05B30 (05C99, 94B25, 94B75)

— Connectivity, persistence and fault diagnosis of interconnection networks based on O_k and $2O_k$ graphs. (English summary) *Discrete Appl. Math.* **37/38** (1992), 205–226. (L. W. Beineke) **93g:05091** 05C40 (05C38, 68R10, 94C15)

— (*with* Solé, Patrick; Sheikh, Sohail A.) The covering radius of Hadamard codes in odd graphs. (English summary) *Discrete Appl. Math.* **37/38** (1992), 501–510. (Michio Ozeki) **93h:94035** 94B75 (05B20, 05C12, 94B60)

Ghahramani, Fereidoun Isomorphisms between semisimple weighted measure algebras. *Bull. London Math. Soc.* **23** (1991), *no.* 5, 465–469. (Sandy Grabiner) **93c:43004** 43A22 (46J99)

— (*with* McClure, J. P.) Module homomorphisms of the dual modules of convolution Banach algebras. *Canad. Math. Bull.* **35** (1992), *no.* 2, 180–185. (Michael M. Neumann) **93f:43004** 43A22 (46H05, 46H25, 47B48)

— (*with* Grabiner, S.) Standard homomorphisms and convergent sequences in weighted convolution algebras. *Illinois J. Math.* **36** (1992), *no.* 3, 505–527. (Michael M. Neumann) **93d:46089** 46J40 (43A10, 43A22)

— (*with* Lau, Anthony To Ming) Isomorphisms and multipliers on second dual algebras of Banach algebras. *Math. Proc. Cambridge Philos. Soc.* **111** (1992), *no.* 1, 161–168. (R. J. Loy) **93b:46089** 46H05 (43A22, 46H10)

— (*with* McClure, J. P.) Automorphisms and derivations of a Fréchet algebra of locally integrable functions. (English summary) *Studia Math.* **103** (1992), *no.* 1, 51–69. (R. J. Loy) **93j:46055** 46J20 (46J99)

Ghaleb, A. F. (*with* El-Sayed, M. A.) Qualitative analysis of a problem of extended thermodynamics. *Z. Angew. Math. Mech.* **72** (1992), *no.* 3, 219–220. (From the introduction) **93c:80004** 80A20

el Ghali, A. *see* **El Ghali, A.**

el Ghali, Badia *see* **El Ghali, Badia**

Ghali, Khalifa (*with* Aigner, Dennis J.) Data pooling and self-selection: a mixed effects hierarchical approach. (English summary) *Readings in econometric theory and practice*, 103–141, *Contrib. Econom. Anal.*, 209, *North-Holland, Amsterdam*, 1992. (*see* **93m:62006**) 62J05 (62F15, 62P20)

Ghalieh, K. (*with* Al-Dhahir, M. W.) On minor forms of Desargues and Pappus. *Geom. Dedicata* **42** (1992), *no.* 3, 329–344. (Ferenc Wettl) **93c:51001** 51A30 (51A20, 51A25)

Ghandehari, Mostafa Steinhardt's inequality in the Minkowski plane. *Bull. Austral. Math. Soc.* **45** (1992), *no.* 2, 261–266. (W. J. Firey) **93c:52004** 52A38 (52A10, 52A40)

Ghandeharizadeh, Shahram (*with* Meyer, Robert R.; Schultz, Gary L.; Yackel, Jonathan) Optimal processor assignment for parallel database design. (English summary) *Parallel processing for scientific computing* (*Houston, TX*, 1991), 456–461, *SIAM, Philadelphia, PA*, 1992. (*see* **93g:65178**) 68P20

Ghanim, M. H. (*with* Mashhour, Ali S.; Sidky, F. I.) Normal fuzzy subgroups. (Serbo-Croatian summary) *Zb. Rad. Prirod.-Mat. Fak. Ser. Mat.* **20** (1990), *no.* 2, 53–59. (From the text) **93b:20116** 20N25 (04A72)

— (*with* Morsi, Nehad N.) Pseudo-closure operators in fuzzy neighbourhood-base spaces. *Fuzzy Sets and Systems* **47** (1992), *no.* 1, 109–116. (Summary) **93a:54004** 54A40 (04A72)

el Ghaoui, Laurent *see* **El Ghaoui, Laurent**

Gharavi, Reza (*with* Anantharam, Venkat) Effect of noise on long-term memory in cellular automata with asynchronous delays between the processors. *Complex Systems* **6** (1992), *no.* 3, 287–300. (Katsushi Inoue) **93h:68102** 68Q80 (68T99)

Ghatage, Pratibha G. (*with* Sun, Shun Hua) Duality and multiplication operators. *Integral Equations Operator Theory* **14** (1991), *no.* 2, 213–228. (Vadim A. Tolokonnikov) **93a:47032** 47B38 (30H05, 46E15)

Ghatak, A. K. (*with* Goyal, I. C.; Gallawa, R. L.) Accuracy of eigenvalues: a comparison of two methods. (English summary) *J. Math. Phys.* **34** (1993), *no.* 3, 1169–1175. (Summary) **93m:65113** 65L15 (34L15, 34L40, 81Q20)

Ghazal, Tahsin (*with* Deshmukh, Sharief) 3-dimensional minimal submanifolds of a sphere. *Soochow J. Math.* **18** (1992), *no.* 2, 159–162. (Irl Bivens) **93g:53086** 53C42 (53C40)

— (*with* Deshmukh, Sharief; Hashem, Huda) Submersions of CR-submanifolds on an almost Hermitian manifold. (English summary) *Yokohama Math. J.* **40** (1992), *no.* 1, 45–57. (Bang-yen Chen) **93h:53058** 53C40 (53C55)

Ghelardoni, P. (*with* Lombardi, G.) On some Toeplitz and Haenkel [Hankel] matrices with elements 0, 1 and −1. (Italian summary) *Rend. Istit. Mat. Univ. Trieste* **21** (1989), *no.* 1, 105–121 (1991). (Israel Koltracht) **93a:15025** 15A57 (15A09)

Ghelli, Giorgio (*with* Curien, Pierre-Louis) Coherence of subsumption, minimum typing and type-checking in $F_{\leq}$. *Math. Structures Comput. Sci.* **2** (1992), *no.* 1, 55–91. (John C. Mitchell) **93i:68120** 68Q55 (03B40)

Gheondea, Aurelian (*with* Constantinescu, Tiberiu) Minimal signature in lifting of operators. II. *J. Funct. Anal.* **103** (1992), *no.* 2, 317–351. (T. Ya. Azizov) **93c:47041** 47B50 (47A20)

— One-step completions of Hermitian partial matrices with minimal negative signature. *Linear Algebra Appl.* **173** (1992), 99–114. (Vladimir Derkach) **93h:47018** 47A57 (15A57)

Gheorghe, Alexandru Cezar (*with* Berceanu, S.) On equations of motion on compact Hermitian symmetric spaces. *J. Math. Phys.* **33** (1992), *no.* 3, 998–1007. (Mauro Spera) **93a:81076** 81R30 (53C80)

Gheorghe, Amuraritei Éléments complètement continus dans des algèbres m-convexes. (Romanian summary) [Completely continuous elements in m-convex algebras] *Bul. Univ. Braşov Ser. C* **32** (1990), 13–16. (Maria Fragoulopouiou) **93b:46090** 46H05

Gheorghe, C. (*with* Popescu, Dumitru; Giurescu, N.) Control with gradient systems. (English summary) *Computational systems analysis* 1992 (*Berlin*, 1992), 45–54, *Elsevier, Amsterdam*, 1992. (*see* **93e:00021**) 93C10 (93D05)

Gherardelli, Francesco Biholomorphic invariants of real submanifolds of $\mathbf{C}^n$. *Geometry and complex variables* (*Bologna*, 1988/1990), 189–194, *Lecture Notes in Pure and Appl. Math.*, 132, *Dekker, New York*, 1991. (Alexander Nagel) **93c:32027** 32F25

— (*with* Cinquini, Silvio) ★ In memoria di Felice Casorati (1890–1990). (Italian) [In memory of Felice Casorati (1890–1990)] With an introduction by Gianni Gilardi and Emilio Gabba. Fonti e Studi per la Storia dell'Università di Pavia [Sources and Studies in the History of the University of Pavia], 17. *Cisalpino—Istituto Editoriale Universitario S.r.l., Milan*, 1992. 84 *pp. ISBN* 88-205-0693-9 (F. Smithies) **93m:01065** 01A70 (01A60, 30-03, 34-03)

Gheri, G. Pointwise and nodal error estimation in linear boundary value problems solved by the standard parallel shooting. *Approximation, optimization and computing*, 81–83, *North-Holland, Amsterdam*, 1990. (*see* **93a:41001**) 65L10

Ghez, Jean-Michel (*with* Vaienti, Sandro) Integrated wavelets on fractal sets. I. The correlation dimension. *Nonlinearity* **5** (1992), *no.* 3, 777–790. (Colleen D. Cutler) **93k:44004** 44A15 (42C15, 58F11, 58F12)

— (*with* Vaienti, Sandro) Integrated wavelets on fractal sets. II. The generalized dimensions. *Nonlinearity* **5** (1992), *no.* 3, 791–804. (Colleen D. Cutler) **93k:44005** 44A15 (42C15, 58F11, 58F12)

— (*with* Béllissard, Jean; Bovier, Anton) Gap labelling theorems for one-dimensional discrete Schrödinger operators. *Rev. Math. Phys.* **4** (1992), *no.* 1, 1–37. (G. V. Rozenblyum) **93f:47090** 47N50 (19K33, 39A12, 46L99, 47B39, 81Q10)

el-Ghezawi, Omar M. *see* **El-Ghezawi, Omar M.**

Ghezzi, C. *see* **Workshop: Software Specification and Design, 93m:68008**

Ghezzi, Luca Luigi Bifurcations in a stock market model. (English summary) *Systems Control Lett.* **19** (1992), *no.* 5, 371–378. (Summary) **93h:90010** 90A09 (34C23)

Ghidaglia, Jean-Michel (*with* Bethuel, Fabrice; Coron, Jean-Michel; Soyeur, Alain) Heat flows and relaxed energies for harmonic maps. *Nonlinear diffusion equations and their equilibrium states*, 3 (*Gregynog*, 1989), 99–109, *Progr. Nonlinear Differential Equations Appl.*, 7, *Birkhäuser Boston, Boston, MA*, 1992. (Wei Yue Ding) **93d:58036** 58E20 (35K05, 58G11)

— (*with* Saut, Jean-Claude) On the Zakharov-Schulman equations. (English summary) *Nonlinear dispersive wave systems* (*Orlando, FL*, 1991), 83–97, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93i:35110** 35Q35

— (*with* Quivy, Laure) Comportement asymptotique pour l'équation des télégraphistes avec conditions aux limites non linéaires. (English and French summaries) [Asymptotic behavior for the telegraph equation with nonlinear boundary conditions] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 8, 931–936. (Summary) **93i:35021** 35B40 (35L70)

— *see also* **Nematics, 93d:58007**

Ghil, M. (*with* Wolansky, Gershon) Non-Hamiltonian perturbations of integrable systems and resonance trapping. *SIAM J. Appl. Math.* **52** (1992), *no.* 4, 1148–1171. (James A. Murdock) **93g:34066** 34C29 (34D10, 58F30, 70F15, 70K30)

— *see also* **Ripa, P., 93c:76036**

Ghilardi, Silvio Incompleteness results in Kripke semantics. *J. Symbolic Logic* **56** (1991), *no.* 2, 517–538. (Alexander V. Chagrov) **93b:03020** 03B45 (03B55)

— Free Heyting algebras as bi-Heyting algebras. (English summary) *C. R. Math. Rep. Acad. Sci. Canada* **14** (1992), *no.* 6, 240–244. 06D20 (03G25)

Ghinelli-Smit, Dina (*with* De Clerck, F.; Del Fra, Alberto) Pointsets in partial geometries. *Advances in finite geometries and designs* (*Chelwood Gate*, 1990), 93–110, *Oxford Sci. Publ., Oxford Univ. Press, New York*, 1991. (W. M. Kantor) **93a:51003** 51E14

— (*with* Del Fra, Alberto; Payne, Stanley E.) $(0, n)$-sets in a generalized quadrangle. (English summary) *Combinatorics* '90 (*Gaeta*, 1990), 139–157, *Ann. Discrete Math.*, 52, *North-Holland, Amsterdam*, 1992. (Ferenc Wettl) **93j:51004** 51E12 (51E20)

— (*with* Del Fra, Alberto) Classification of extended generalized quadrangles with maximum diameter. (English summary) *Discrete Math.* **105** (1992), *no.* 1-3, 13–23. (Stanley E. Payne) **93h:51010** 51E12 (05B25, 51E25)

— Regular groups on generalized quadrangles and nonabelian difference sets with multiplier -1. *Geom. Dedicata* **41** (1992), *no.* 2, 165–174. (Stanley E. Payne) **93c:51006** 51E12 (05B10, 20B25)

— (*with* Del Fra, Alberto) Truncated D_n Coxeter complexes as extended partial geometries with maximum diameter. *J. Geom.* **43** (1992), *no.* 1-2, 75–94. (Norbert Knarr) **93d:51013** 51E14

Ghione, Franco The Weil zeta function in the study of moduli of bundles over an algebraic curve. (Italian) *Atti Accad. Peloritana Pericolanti Cl. Sci. Fis. Mat. Natur.* **68** (1990), 139–158 (1992). (J. W. P. Hirschfeld) **93j:14021** 14G10 (11G20, 14D10, 14D20, 14G15)

— (*with* Ottaviani, Giorgio) A tribute to Corrado Segre. *Complex projective geometry* (*Trieste*, 1989/*Bergen*, 1989), 175–188, *London Math. Soc. Lecture Note Ser.*, 179, *Cambridge Univ. Press, Cambridge*, 1992. (Gerhard Pfister) **93k:14003** 14–03 (01A55, 14H45, 14N05)

— (*with* Letizia, M.) Effective divisors of higher rank on a curve and the Siegel formula. *Compositio Math.* **83** (1992), *no.* 2, 147–159. (Nitin Nitsure) **93j:14022** 14G10 (14C20, 14G15, 14H60)

Ghirardi, Gian Carlo The dynamical reduction program. *Quantum chaos—quantum measurement* (*Copenhagen*, 1991), 305–323, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 358, *Kluwer Acad. Publ., Dordrecht*, 1992. (Andrzej Luczak) **93e:81014** 81P15 (81P10, 81P20)

Ghiuş, Viorel La circulation admissible dans une somme directe de graphes. (Romanian summary) [Admissible flow in a direct sum of graphs] *Bul. Inst. Politehn. Iaşi Secţ. I* **36(40)** (1990), *no.* 1-4, 53–55. 05C99

Ghoniem, Ahmed F. Numerical simulation of combustion in reacting shear flow. *Fluid dynamical aspects of combustion theory*, 305–326, *Pitman Res. Notes Math. Ser.*, 223, *Longman Sci. Tech., Harlow*, 1991. (From the introduction) **93j:80001** 80–08 (76M25, 76N99, 80A25)

— (*with* Knio, Omar M.) The three-dimensional structure of periodic vorticity layers under nonsymmetric conditions. (English summary) *J. Fluid Mech.* **243** (1992), 353–392. (Summary) **93g:76030** 76C05 (76F10)

Ghorai, J. K. Estimation of a smooth quantile function under the proportional hazards model. *Ann. Inst. Statist. Math.* **43** (1991), *no.* 4, 747–760. (William D. Kaigh) **93c:62068** 62G05 (62G20, 62G30)

Ghorashi, M. (*with* Mehri, B.) Conditions for the existence of periodic solutions for Hill's equation. Bericht über die Wissenschaftliche Jahrestagung der GAMM (Kraków, 1991). *Z. Angew. Math. Mech.* **72** (1992), *no.* 6, T590–T593. (V. Šeda) **93h:34065** 34C25

Ghorbanzadeh, Dariush (*with* Picard, Dominique) Étude asymptotique et pratique du comportement de deux tests de détection de rupture. (French summary) [Asymptotic study and application of the behavior of two change-point-detection tests] *Statist. Anal. Données* **16** (1991), *no.* 3, 63–84. 62G10

Ghorbel, Fathi (*with* Fitzmorris, Alan; Spong, Mark W.) Robustness of adaptive control of robots: theory and experiment. (English summary) *Advanced robot control* (*Grenoble*, 1990), 1–29, *Lecture Notes in Control and Inform. Sci.*, 162, *Springer, Berlin*, 1991. (Summary) **93f:70033** 70Q05 (70B15, 93C85)

Ghoroku, Kazuo (*with* Soma, Teruhiko) Lorentzian wormholes in higher-derivative gravity and the weak energy condition. (English summary) *Phys. Rev. D* (3) **46** (1992), *no.* 4, 1507–1516. (Summary) **93e:83060** 83D05

Ghorpade, Sudhir R. (*with* Abhyankar, Shreeram S.) Young tableaux and linear independence of standard monomials in multiminors of a multimatrix. *Discrete Math.* **96** (1991), *no.* 1, 1–32. (Alexander I. Barvinok) **93b:15033** 15A72 (05E10)

Ghose, S. (*with* Sarkar, U. K.; Chakrabarti, P. P.; De Sarkar, S. C.) A simple 0.5-bounded greedy algorithm for the 0/1 knapsack problem. *Inform. Process. Lett.* **42** (1992), *no.* 3, 173–177. 90C10 (68Q25)

— (*with* Chakrabarti, P. P.) A general best first search algorithm in AND/OR graphs. *J. Algorithms* **13** (1992), *no.* 2, 177–187. (Italo José Dejter) **93i:68084** 68Q25 (05C85, 68R10, 68T20)

Ghosh, A. K. (*with* Mandal, B. N.) A note on a preemptive priority queue. *Pure Appl. Math. Sci.* **35** (1992), *no.* 1-2, 143–149. 60K25

Ghosh, Ashish (*with* Pal, Sankar Kumar) Fuzzy geometry in image analysis. *Fuzzy Sets and Systems* **48** (1992), *no.* 1, 23–40. 68U05 (04A72)

Ghosh, B. *see* **Ghosh, Banamali**

Ghosh, B. K. *see* **Ghosh, Bhaskar K.**

Ghosh, Banamali (*with* Mukherjee, M. N.) Concerning nearly compact fuzzy topological spaces. (English summary) *Bull. Calcutta Math. Soc.* **83** (1991), *no.* 6, 545–552. 54A40 (04A72)

— Fuzzy extremally disconnected spaces. *Fuzzy Sets and Systems* **46** (1992), *no.* 2, 245–250. (Summary) **93d:54014** 54A40 (04A72)

Ghosh, Bhaskar K. A brief history of sequential analysis. *Handbook of sequential analysis*, 1–19, *Statist. Textbooks Monographs*, 118, *Dekker, New York*, 1991. (*see* **93g:62102**) 62Lxx (62–03)

— (*with* Eisenberg, Bennett) The sequential probability ratio test. *Handbook of sequential analysis*, 47–65, *Statist. Textbooks Monographs*, 118, *Dekker, New York*, 1991. (*see* **93g:62102**) 62L10

— (*with* Huang, Wei-Min) Optimum bandwidths and kernels for estimating certain discontinuous densities. (English summary) *Ann. Inst. Statist. Math.* **44** (1992), *no.* 3, 563–577. (Ulrich Stadtmüller) **93m:62073** 62G05

— *see also* **Handbook of sequential analysis, 93g:62102**

Ghosh, Bimalendu (*with* Bose, M. K.) Modified Cesàro-limit, continuity and derivative. *Soochow J. Math.* **18** (1992), *no.* 1, 9–27. (Karol Baron) **93b:26003** 26A15 (26A24)

Ghosh, Chandana (*with* Roy Chowdhury, A.) Approximate Lie and Lie-Bäcklund symmetry of the Kuramoto-Shivashinsky [Sivashinsky] equation. *J. Phys. A* **25** (1992), *no.* 14, L887–L893. (Summary) **93f:58253** 58G37 (35Q53)

Ghosh, D. K. *see* **Ghosh, Dilip Kumar**

Ghosh, D. T. On the near optimum continuous sampling plan CSP-2 (with $k = i$) to minimise the amount of inspection and its performance as compared to optimum CSP-1 plan. (English summary) *Sankhyā Ser. B* **51** (1989), *no.* 3, 390–415. 62N10

Ghosh, Dilip Kumar (*with* Bhatt, A. B.) Construction of orthogonal main effect plans. (English summary) *J. Statist. Res.* **23** (1989), *no.* 1-2, 5–11. 62K15

— (*with* Das, M. N.) Construction of two way group divisible designs. (English summary) *Sankhyā Ser. B* **51** (1989), *no.* 3, 331–334. 62K10

— (*with* Bhimani, G. C.) Note on some new singular group divisible designs. (English summary) *Sankhyā Ser. B* **52** (1990), *no.* 1, 128–129. 62K10

— (*with* Divecha, Jyoti; Kageyama, Sanpei) Equireplicate variance-balanced designs from group divisible designs. *J. Japan Statist. Soc.* **21** (1991), *no.* 2, 205–209. (N. R. Mohan) **93d:62137** 62K10 (05B05)

— (*with* Divecha, Jyoti; Karmoker, P. K.) On comparison of ternary efficiency balanced and ternary variance balanced designs. *Utilitas Math.* **40** (1991), 257–271. (Summary) **93a:05017** 05B05

Ghosh, Gautam (*with* Datta, Nilanjana) Berry's phase for anharmonic oscillators. (English summary) *Phys. Rev. A* (3) **46** (1992), *no.* 9, 5358–5362. (Piotr Kosiński) **93j:81013** 81Q05 (70H99, 81S99)

Ghosh, Jay B. (*with* De, Prabuddha; Wells, Charles E.) On the general solution for a class of early/tardy problems. (English summary) *Comput. Oper. Res.* **20** (1993), *no.* 2, 141–149. 90B35

Ghosh, Jayanta K. (*with* Mukerjee, Rahul) Improvement in Stein's procedure using a random confidence coefficient. *Calcutta Statist. Assoc. Bull.* **40** (1990/91), *no.* 157-160, 145–152. (J. Glaz) **93g:62049** 62F25 (62F15)

— (*with* Basu, Arup; Bose, Arup) Sequential design and allocation rules. *Handbook of sequential analysis*, 475–501, *Statist. Textbooks Monographs*, 118, *Dekker, New York*, 1991. (*see* **93g:62102**) 62L05

— (*with* Bhattacharyya, Gouri K.) Asymptotic properties of estimators in a binomial reliability growth model and its continuous-time analog. Reliability theory (Columbia, MO, 1988). *J. Statist. Plann. Inference* **29** (1991), *no.* 1-2, 43–53. (H. K. Hsieh) **93b:62043** 62F12 (62N05)

— Higher order asymptotics for the likelihood ratio, Rao's and Wald's tests. *Statist. Probab. Lett.* **12** (1991), *no.* 6, 505–509. (Zhi-Dong Bai) **93a:62023** 62F05 (62F03, 62H15)

— The Horvitz-Thompson estimate and Basu's circus revisited. (English summary) *Bayesian analysis in statistics and econometrics* (*Bangalore*, 1988), 225–228, *Lecture Notes in Statist.*, 75, *Springer, New York*, 1992. (Summary) **93i:62011** 62D05

— (*with* Joshi, S. N.) On the asymptotic distribution of an estimate of the change point in a failure rate. (English summary) *Comm. Statist. Theory Methods* **21** (1992), *no.* 12, 3571–3588. (Guang Ping Ge) **93j:62237** 62N05

— (*with* Bhattacharya, Rabi N.) A class of U-statistics and asymptotic normality of the number of k-clusters. (English summary) *J. Multivariate Anal.* **43** (1992), *no.* 2, 300–330. (N. C. Weber) **93m:60041** 60F05 (62E20)

Ghosh, Joydeep (*with* Das, Sajal K.; Deo, Narsingh) Stirling networks: a versatile combinatorial topology for multiprocessor systems. (English summary) *Discrete Appl. Math.* **37/38** (1992), 119–146. (Mukkai S. Krishnamoorthy) **93g:05133** 05C90 (68M10)

Ghosh, M. K. (*with* Debnath, Lokenath) Approximation of the fixed points of quasi-nonexpansive mappings in a uniformly convex Banach space. *Appl. Math. Lett.* **5** (1992), *no.* 3, 47–50. (Summary) **93b:47117** 47H10 (47H09)

Ghosh, M. L. (*with* Mandal, S. C.) Diffraction of antiplane shear wave by a pair of parallel rigid strips at the interface of two bonded dissimilar elastic media. (English summary) *J. Math. Phys. Sci.* **26** (1992), *no.* 1, 105–119. (Summary) **93j:73029** 73D25

Ghosh, Malay (*with* Datta, Gauri Sankar) On the frequentist properties of some hierarchical Bayes predictors in finite population sampling. *Calcutta Statist. Assoc. Bull.* **40** (1990/91), *no.* 157-160, 207–217. (Glen Meeden) **93i:62010** 62D05

— (*with* Mukhopadhyay, Nitis) Sequential estimation of the location parameter of an exponential distribution. (English summary) *Sankhyā Ser. A* **52** (1990), *no.* 3, 303–313. (Summary) **93f:62116** 62L12

— (*with* Hoekstra, Robert M.) Asymptotically pointwise optimal stopping rules. *Handbook of sequential analysis*, 429–439, *Statist. Textbooks Monographs*, 118, *Dekker, New York*, 1991. (*see* **93g:62102**) 62L15

— Hierarchical and empirical Bayes sequential estimation. *Handbook of sequential analysis*, 441–458, *Statist. Textbooks Monographs*, 118, *Dekker, New York*, 1991. (*see* **93g:62102**) 62L12 (62C12)

— (*with* Sen, Pranab Kumar) Bayesian Pitman closeness. With comments by T. K. Nayak, D. K. Dey and W. E. Strawderman and a rejoinder by the authors. Pitman's measure of closeness. *Comm. Statist. Theory Methods* **20** (1991), *no.* 11, 3659–3695. (Bruno Betrò) **93d:62035** 62F10 (62C10, 62F15)

— (*with* Datta, Gauri Sankar) Asymptotic optimality of hierarchical Bayes estimators and predictors. *J. Statist. Plann. Inference* **29** (1991), *no.* 3, 229–243. (Khursheed Alam) **93c:62052** 62F15 (62C12)
— Constrained Bayes estimation with applications. *J. Amer. Statist. Assoc.* **87** (1992), *no.* 418, 533–540. (Summary) **93c:62053** 62F15
— *see also* **Current issues in statistical inference: essays in honor of D. Basu, 93e:62003**
Ghosh, Mrinal K. (*with* Marcus, Steven I.) Infinite horizon controlled diffusion problems with some nonstandard criteria. *J. Math. Systems Estim. Control* **1** (1991), *no.* 1, 45–69. (Anatolii B. Juditsky) **93a:93114** 93E20 (60J25, 60J60, 93E15)
— (*with* Arapostathis, Aristotle; Marcus, Steven I.) Optimal control of switching diffusions modelling a flexible manufacturing system. (English summary) *Stochastic theory and adaptive control* (*Lawrence, KS*, 1991), 210–224, *Lecture Notes in Control and Inform. Sci.*, 184, *Springer, Berlin*, 1992. (*see* **93g:93007**) 49N55 (93E20)
— (*with* Borkar, Vivek S.) Stochastic differential games: occupation measure based approach. *J. Optim. Theory Appl.* **73** (1992), *no.* 2, 359–385. (Masami Yasuda) **93g:93082** 93E05 (90D15, 90D25)
— (*with* Borkar, Vivek S.) Correction: "Ergodic and adaptive control of nearest-neighbor motions" [Math. Control Signals Systems **4** (1991), no. 1, 81–98; MR 92e:93026]. *Math. Control Signals Systems* **5** (1992), *no.* 4, 453. (From the text) **93i:93072** 93C40 (60J10, 93E20)
— (*with* Marcus, Steven I.) On strong average optimality of Markov decision processes with unbounded costs. *Oper. Res. Lett.* **11** (1992), *no.* 2, 99–104. (Uriel G. Rothblum) **93d:90068** 90C40
Ghosh, Pankaj Multivariate stable distributions, a natural generalization of Cauchy law and some related questions. *Calcutta Statist. Assoc. Bull.* **40** (1990/91), *no.* 157-160, 153–161. (Peter Flusser) **93d:60022** 60E07 (60E10)
Ghosh, Ratan K. (*with* Rajan, Vijayan; Gupta, Phalguni) Parallel generation of combinations and permutations. (English summary) *National Seminar on Theoretical Computer Science* (*Madras*, 1991), 129–135, *IMS Rep.*, 115, *Inst. Math. Sci., Madras*, 199?. (*see* **93b:68006**) 68Q22 (68Q20, 68R05)
— Parallel search algorithms for graphs and trees. (English summary) *Inform. Sci.* **67** (1993), *no.* 1-2, 137–165. (Summary) **93j:68155** 68R10 (05C85, 68Q22)
Ghosh, S. C. (*with* Mazumdar, Himadri Pai) Study of a homogeneous turbulent flow possessing helicity by a correlation method. Application of statistical methods in theoretical physics and fluid mechanics (Calcutta, 1991). *Acta Appl. Math.* **26** (1992), *no.* 3, 315–323. (Summary) **93e:76038** 76F05 (76M35)
Ghosh, Subir (*with* Duh, Yi-Jing) Adjusting residuals in estimation of dispersion effects. *Austral. J. Statist.* **33** (1991), *no.* 1, 65–74. (Summary) **93d:62140** 62K15
— (*with* Mitra, Parthasarathi) Manifest and nonmanifest Lorentz invariance for gauged self-dual bosons. *Modern Phys. Lett. A* **6** (1991), *no.* 32, 2957–2963. (E. M. Santangelo) **93b:81139** 81T08
— (*with* Banerjee, Narayan; Chatterjee, D.) Chiral bosons coupled to Liouville gravity in the Faddeev-Jackiw formalism. (English summary) *Phys. Rev. D* (3) **46** (1992), *no.* 12, 5590–5597. (Summary) **93i:81207** 81T40 (81T50)
— (*with* Banerjee, Rabin) Algebraic approach to anomalous sigma models. *Z. Phys. C* **54** (1992), *no.* 4, 577–579. (Summary) **93d:81109** 81T13 (81R10)
Ghosh, Subir Kumar (*with* Maheshwari, Anil; Pal, Sudebkumar Prasant; Saluja, Sanjeev; Veni Madhavan, C. E.) Computing the shortest path tree in a weak visibility polygon. (English summary) *National Seminar on Theoretical Computer Science* (*Madras*, 1991), 44–56, *IMS Rep.*, 115, *Inst. Math. Sci., Madras*, 199?. (Summary) **93f:68093** 68U05 (68Q20)
— (*with* Maheshwari, Anil) An optimal parallel algorithm for computing furthest neighbors in a tree. (English summary) *Inform. Process. Lett.* **44** (1992), *no.* 3, 155–160. (Summary) **93j:68156** 68R10 (68Q25)
Ghosh, Subrata (*with* Mahanti, Ambuj; Nau, Dana S.; Pal, Asim K.; Kanal, Laveen N.) Performance of IDA* on trees and graphs. (English summary) *AAAI-92. Proceedings, Tenth National Conference on Artificial Intelligence* (*San Jose, CA*, 1992), 539–544, *Amer. Assoc. Artif. Intell., Menlo Park, CA*, 1992. (*see* **93j:68007**) 68T20 (68R10)
Ghosh, Sucharita (*with* Beran, Jan) Slowly decaying correlations, testing normality, nuisance parameters. *J. Amer. Statist. Assoc.* **86** (1991), *no.* 415, 785–791. (Summary) **93g:62061** 62G10
Ghosh, Sutapa (*with* Chakrabarti, C. G.) Stability of two competing species: thermodynamic approach. (English summary) *Bull. Calcutta Math. Soc.* **83** (1991), *no.* 6, 575–580. 92D40 (82C35, 92D25)
— (*with* Chakrabarti, C. G.) On entropy, H-theorem and statistical equilibrium. (English summary) *Bull. Calcutta Math. Soc.* **84** (1992), *no.* 1, 91–96. (Lamberto Rondoni) **93j:82038** 82C03 (82C35)
Ghosh, T. K. (*with* Fraser, W. B.; Batra, S. K.) On unwinding yarn from a cylindrical package. (English summary) *Proc. Roy. Soc. London Ser. A* **436** (1992), *no.* 1898, 479–498. (Summary) **93e:73031** 73K99
Ghoshal, Debashis (*with* Sen, Ashoke) Gauge and general coordinate invariance in nonpolynomial closed string field theory. (English summary) *Nuclear Phys. B* **380** (1992), *no.* 1-2, 103–127. (Piret Kuusk) **93j:81080** 81T30
Ghoussoub, N. (*with* Fang, G.) Second-order information on Palais-Smale sequences in the mountain pass theorem. *Manuscripta Math.* **75** (1992), *no.* 1, 81–95. (Wen Zhao Lu) **93b:58028** 58E05 (49Q99)
— A min-max principle with a relaxed boundary condition. *Proc. Amer. Math. Soc.* **117** (1993), *no.* 2, 439–447. (Yi Hong Du) **93d:58026** 58E05
Ghys, Étienne (*with* de la Harpe, Pierre) Infinite groups as geometric objects (after Gromov). *Ergodic theory, symbolic dynamics, and hyperbolic spaces* (*Trieste*, 1989), 299–314, *Oxford Sci. Publ., Oxford Univ. Press, New York*, 1991. (*see* **93e:58002**) 20F32 (53C23, 57M07, 57S30)
— (*with* Barge, Jean) Cocycles bornés et actions de groupes sur les arbres réels. [Bounded cocycles and actions of groups on real trees] *Group theory from a geometrical viewpoint* (*Trieste*, 1990), 617–621, *World Sci. Publishing, River Edge, NJ*, 1991. (S. Andreadakis) **93f:20033** 20E08 (05C05, 57M07)
— Le cercle à l'infini des surfaces à courbure négative. [The circle at infinity of negatively curved surfaces] *Proceedings of the International Congress of Mathematicians, Vol. I, II* (*Kyoto*, 1990), 501–509, *Math. Soc. Japan, Tokyo*, 1991. (Takashi Tsuboi) **93f:58188** 58F17 (53C23, 57R30, 58F18)
— Déformations de flots d'Anosov et de groupes fuchsiens. (English summary) [Deformations of Anosov flows and Fuchsian groups] *Ann. Inst. Fourier* (*Grenoble*) **42** (1992), *no.* 1-2, 209–247. (Takashi Tsuboi) **93j:58111** 58F18 (58F15, 58F17)
— (*with* Bavard, Christophe) Polygones du plan et polyèdres hyperboliques. (English summary) [Polygons in the plane and hyperbolic polyhedra] *Geom. Dedicata* **43** (1992), *no.* 2, 207–224. (Wolfgang Kühnel) **93k:52009** 52A55
— *see also* **Group theory from a geometrical viewpoint, 93a:20001**
Ghysels, Eric The ET interview: Professor Marc Nerlove. *Econometric Theory* **9** (1993), *no.* 1, 117–143. 01A70
pham-Gia, T. *see* **Pham-Gia, T.**
Giacalone, Ermanno Uniform estimates for harmonic projection operators on compact Lie groups of rank 2. (Italian. English summary) *Boll. Un. Mat. Ital. B* (7) **6** (1992), *no.* 1, 205–216. (Michael Cowling) **93j:22015** 22E30 (43A75)
Giachetta, Giovanni Jet methods in nonholonomic mechanics. *J. Math. Phys.* **33** (1992), *no.* 5, 1652–1665. (Jaime Muñoz Masqué) **93c:58070** 58F05 (58A20, 70F25, 70H30)
Giachetti, Riccardo Algebraic study of the dynamics of a quantum oscillator with reaction. (Italian. English summary) *Rend. Sem. Fac. Sci. Univ. Cagliari* **60** (1990), *no.* 1, 33–46. (Giuseppina Epifanio) **93a:81039** 81Q15
— (*with* Celeghini, E.; Sorace, E.; Tarlini, M.) Contractions of quantum groups. *Quantum groups* (*Leningrad*, 1990), 221–244, *Lecture Notes in Math.*, 1510, *Springer, Berlin*, 1992. (Jörg Feldvoss) **93j:17022** 17B37 (81R50)
— (*with* Bonechi, F.; Celeghini, E.; Sorace, E.; Tarlini, M.) Heisenberg XXZ model and quantum Galilei group. (English summary) *J. Phys. A* **25** (1992), *no.* 15, L939–L943. (Summary) **93f:82018** 82B23 (81R50)
Giacobazzi, Roberto (*with* Debray, Saumya K.; Levi, Giorgio) A generalized semantics for constraint logic programs. (English summary) *Fifth generation computer systems, Vol.* 1, 2 (*Tokyo*, 1992), 581–591, *Ohm, Tokyo*, 1992. (*see* **93i:68007**) 68N17 (68Q55)
— (*with* Barbuti, Roberto) A bottom-up polymorphic type inference in logic programming. (English summary) *Sci. Comput. Programming* **19** (1992), *no.* 3, 281–313. (Zhenyu Qian) **93m:68028** 68N17 (03B70, 68Q55)
Giacometti, A. (*with* Maritan, A.) Self-avoiding walks with curvature energy on fractals. *J. Phys. A* **25** (1992), *no.* 10, 2753–2764. (Hanna Nencka) **93c:82028** 82B41 (82D60)
tràn Gia Lịch *see* **Tràn Gia Lịch**
Giambanco, F. (*with* Palizzolo, L.; Panzeca, T.) A bounding technique for plastic deformations. (English summary) *Comput. Mech.* **9** (1992), *no.* 3, 153–171. (Summary) **93f:73045** 73E05 (73E20)
Giambiagi, J. J. (*with* Bollini, C. G.; Obregón, O.) Criteria to fix the dimensionality corresponding to some higher derivative Lagrangians. *Modern Phys. Lett. A* **7** (1992), *no.* 7, 593–599. (R. Schimming) **93a:35100** 35L30
— Huygens' principle in $(2n+1)$ dimensions for nonlocal pseudo differential operators of the type $\Box^\alpha$. (English and Spanish summaries) *Rev. Mexicana Fís.* **38** (1992), *suppl.* 1, S3–S6. 35S05 (35L99, 58G15)
— *see also* **Festschrift: Giambiagi, J. J., 93b:81004**
Giambò, Sebastiano (*with* Palumbo, Annunziata) Transverse diffraction of nonlinear waves: a covariant formulation. Memoirs of mathematical physics in honor of Giovanni Carini on his 70th birthday (Italian). *Atti Accad. Peloritana Pericolanti Cl. Sci. Fis. Mat. Natur.* **68** (1990), *suppl.* 1, 69–80 (1991). (Piotr T. Chruściel) **93c:35155** 35Q75 (35F20)
Giambrone, Steve Real reduced models for relevant logics without WI. (English summary) *Notre Dame J. Formal Logic* **33** (1992), *no.* 3, 442–449. (Kosta Došen) **93m:03036** 03B46
Gianazza, Ugo Potential estimate for the obstacle problem relative to the sum of squares of vector fields. (English summary) *Riv. Mat. Univ. Parma* (4) **17** (1991), 221–239 (1992). (Shuzi Zhou) **93g:35054** 35J85 (35R35, 49J40)
Giancarlo, Raffaele (*with* Galil, Zvi) On the exact complexity of string matching: lower bounds. *SIAM J. Comput.* **20** (1991), *no.* 6, 1008–1020. (D. M. Campbell) **93a:68049** 68Q20 (68Q25, 68U15)
— (*with* Eppstein, David; Galil, Zvi; Italiano, Giuseppe F.) Sparse dynamic programming. I. Linear cost functions. (English summary) *J. Assoc. Comput. Mach.* **39** (1992), *no.* 3, 519–545. (Moshe Sniedovich) **93i:90107a** 90C39 (49L20)
— (*with* Eppstein, David; Galil, Zvi; Italiano, Giuseppe F.) Sparse dynamic programming. II. Convex and concave cost functions. (English summary) *J. Assoc. Comput. Mach.* **39** (1992), *no.* 3, 546–567. (Moshe Sniedovich) **93i:90107b** 90C39 (49L20)
— (*with* Galil, Zvi) On the exact complexity of string matching: upper bounds. *SIAM J. Comput.* **21** (1992), *no.* 3, 407–437. (D. M. Campbell) **93g:68051** 68Q20 (68Q25, 68U15)
nguyễn văn Giang *see* **Nguyễn Văn Giang**
Giang, N. V. *see* **Nguyễn Văn Giang**
Giannakis, Georgios B. (*with* Swami, Ananthram) Identifiability of general ARMA processes using linear cumulant-based estimators. *Automatica J. IFAC* **28** (1992), *no.* 4, 771–779. (Summary) **93a:93102** 93E10 (93B30)
Giannakis, Ioannis (*with* Evans, Mark) Isolated states and the classical phase space of 2D string theory. *Phys. Lett. B* **278** (1992), *no.* 1-2, 119–124. (Summary) **93c:81168** 81T30
Gianni, Roberto (*with* Hulshof, Josephus) The semilinear heat equation with a Heaviside source term. (English summary) *European J. Appl. Math.* **3** (1992), *no.* 4, 367–379. (Graeme C. Wake) **93k:80008** 80A20 (35K55, 80A25)
Giannoni, Fabio Bounce trajectories with one bounce point. *Ann. Mat. Pura Appl.* (4) **159** (1991), 101–115. (From the introduction) **93i:58054** 58F05 (34C25, 58E05, 70H35)
— (*with* Micheletti, Anna Maria) On the number of solutions of some ordinary periodic boundary value problems by their geometrical properties. *Ann. Mat. Pura Appl.* (4) **160** (1991), 89–127 (1992). (Introduction) **93j:34027** 34B15 (34C25, 47H15)
— (*with* Benci, Vieri; Fortunato, Donato) Some results on the existence of geodesics in static Lorentz manifolds with singular boundary. (Italian summary) *Atti Accad. Naz. Lincei Cl. Sci. Fis. Mat. Natur. Rend. Lincei* (9) *Mat. Appl.* **2** (1991), *no.* 1, 17–23. (László Szabó) **93b:53052** 53C50 (53C22, 58E10)
— (*with* Benci, Vieri; Fortunato, Donato) Geodesics on static Lorentz manifolds with convex boundary. *Progress in variational methods in Hamiltonian systems and elliptic equations* (*L'Aquila*, 1990), 21–41, *Pitman Res. Notes Math. Ser.*, 243, *Longman Sci. Tech., Harlow*, 1992. (Anders Linnér) **93j:58027** 58E10 (53C50)
— (*with* Benci, Vieri; Fortunato, Donato) On the existence of geodesics in static Lorentz manifolds with singular boundary. *Ann. Scuola Norm. Sup. Pisa Cl. Sci.* (4) **19** (1992), *no.* 2, 255–289. (Wen Zhao Lu) **93j:58028** 58E10 (83C15)

— (*with* Benci, Vieri) Morse theory for functionals of class C^1. (English and French summaries) *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 8, 883–888. (Wen Zhao Lu) **93i:58027** 58E05 (49Q10)

— (*with* Benci, Vieri) On the existence of closed geodesics on noncompact Riemannian manifolds. *Duke Math. J.* **68** (1992), *no.* 2, 195–215. (Gudlaugur Thorbergsson) **93i:58030** 58E10 (53C22)

Giannoni, M.-J. (*with* Bogomol'nyĭ, E. B.; Georgeot, B.; Schmit, C.) Chaotic billiards generated by arithmetic groups. (English summary) *Phys. Rev. Lett.* **69** (1992), *no.* 10, 1477–1480. (Summary) **93g:81025** 81Q50 (20H15, 58F17, 82B05)

— *see also* **Chaos and quantum physics, 93e:81003**

Giannopoulos, Abraham (*with* Daftardar, Varsha) Evaluation of the Ashtekar variables for any given metric using the algebraic computing system STENSOR. *Classical Quantum Gravity* **9** (1992), *no.* 7, 1813–1821. (Summary) **93d:83002** 83-04 (83C99)

Giannopoulos, Apostolos A. On the mean value of the area of a random polygon in a plane convex body. *Mathematika* **39** (1992), *no.* 2, 279–290. (G. D. Chakerian) **93m:52004** 52A22 (52A40)

tran ngoc Giao *see* **Tran Ngoc Giao**

Giaquinta, M. (*with* Modica, G.; Souček, Jiří) Cartesian currents and liquid crystals: dipoles, singular lines and singular points. (English summary) *Nematics* (*Orsay*, 1990), 113–127, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 332, *Kluwer Acad. Publ., Dordrecht*, 1991. (J. S. Joel) **93h:49062** 49Q20 (49J30, 49J40, 58E15, 73B99, 76A15, 76M30)

— Variational problems for vector mappings. Geometric and analytic aspects. (Italian) *Boll. Un. Mat. Ital. A* (7) **6** (1992), *no.* 1, 1–34. (U. D'Ambrosio) **93f:58052** 58E30 (28A75, 49J45)

— (*with* Modica, G.; Souček, Jiří) The gap phenomenon for variational integrals in Sobolev spaces. *Proc. Roy. Soc. Edinburgh Sect. A* **120** (1992), *no.* 1-2, 93–98. (Giles Auchmuty) **93c:49003** 49J10 (49Q99, 58E30)

— (*with* Modica, G.; Souček, Jiří) Graphs of finite mass which cannot be approximated in area by smooth graphs. *Manuscripta Math.* **78** (1993), *no.* 3, 259–271. (Summary) **93i:49052** 49Q05 (49J10)

Giaquinta, Paolo V. *see* **Proceedings: Conference on Thermodynamics, 93k:80001**

Giaquinto, Anthony (*with* Gerstenhaber, Murray; Schack, Samuel D.) Quantum symmetry. *Quantum groups* (*Leningrad*, 1990), 9–46, *Lecture Notes in Math.*, 1510, *Springer, Berlin*, 1992. (E. J. Taft) **93j:17028** 17B37 (16W30)

— Quantization of tensor representations and deformation of matrix bialgebras. *J. Pure Appl. Algebra* **79** (1992), *no.* 2, 169–190. (E. J. Taft) **93b:16066** 16W30 (17B37)

Giarré, L. (*with* Mosca, Edoardo; Chisci, L.) Sidestepping the certainty equivalence in 2-DOF adaptive control via multiple implicit identifiers. (English summary) *Mutual impact of computing power and control theory* (*Prague*, 1992), 25–36, *Czech. Acad. Sci., Prague*, 1992. (Summary) **93i:93071** 93C30 (93B30, 93C85, 93C90)

Giavarini, G. (*with* Martín, C. P.; Ruiz Ruiz, F.) The shift of the Chern-Simons parameter beyond one loop. (English summary) *Topological and geometrical methods in field theory* (*Turku*, 1991), 153–162, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93m:81008**) 81T13 (81T15)

— (*with* Martín, C. P.; Ruiz Ruiz, F.) Chern-Simons theory as the large-mass limit of topologically massive Yang-Mills theory. (English summary) *Nuclear Phys. B* **381** (1992), *no.* 1-2, 222–280. (Ilya Shapiro) **93h:81085** 81T13

Gibbard, M. J. (*with* Stefanidis, P.; Papliński, A. P.) ★ Numerical operations with polynomial matrices. Application to multi-variable dynamic compensator design. Lecture Notes in Control and Information Sciences, 171. *Springer-Verlag, Berlin*, 1992. viii+205 *pp. ISBN* 3-540-54992-7 (Petko Petkov) **93a:93004** 93–06 (65F99, 93B40, 93B51, 93C35)

Gibbon, J. D. Weak and strong turbulence in a class of complex Ginzburg-Landau equations. *The global geometry of turbulence* (*Rota*, 1990), 309–317, *NATO Adv. Sci. Inst. Ser. B Phys.*, 268, *Plenum, New York*, 1991. (Georgii A. Sviridyuk) **93g:76071** 76F99 (35Q55, 76E30)

— (*with* Bartuccelli, M. V.; Malham, S. J. A.) Lattice methods and the pressure field for solutions of the Navier-Stokes equations. (English summary) *Nonlinearity* **6** (1993), *no.* 1, 79–91. (Summary) **93j:35128** 35Q30 (76D05)

Gibbons, G. W. (*with* Perry, Malcolm J.) The physics of 2D stringy spacetimes. (English summary) *Internat. J. Modern Phys. D* **1** (1992), *no.* 2, 335–354. (Summary) **93h:83035** 83E30 (81T30)

— Typical states and density matrices. *J. Geom. Phys.* **8** (1992), *no.* 1-4, 147–162. (Akira Yoshioka) **93g:81031** 81Q99 (46N50, 53C80)

— (*with* Hawking, Stephen W.) Kinks and topology change. (English summary) *Phys. Rev. Lett.* **69** (1992), *no.* 12, 1719–1721. (Summary) **93f:83076** 83E05 (57R15, 83C99)

— Topology and topology change in general relativity. (English summary) Les Journées Relativistes (Amsterdam, 1992). *Classical Quantum Gravity* **10** (1993), *suppl.*, S75–S78. (Summary) **93m:83064** 83C99 (57R20)

Gibbons, Jean D. (*with* Chakraborti, S.) Nonparametric comparison of treatments with a standard in the one-way layout: some design considerations. (English summary) *Comm. Statist. Theory Methods* **22** (1993), *no.* 1, 1–14. 62J10

Gibbons, John (*with* Kodama, Yuji) Integrability of the dispersionless KP hierarchy. *Nonlinear world, Vol. 1* (*Kiev*, 1989), 166–180, *World Sci. Publishing, River Edge, NJ*, 1990. (*see* **93b:00012**) 58F07 (35Q58)

— (*with* Kupershmidt, Boris A.) Time discretizations of lattice integrable systems. *Phys. Lett. A* **165** (1992), *no.* 2, 105–110. (Mehmet Can) **93d:58071** 58F07 (35Q58, 39A12, 58G37)

Gibbons, Peter B. (*with* Elliott, J. R.) The construction of subsquare free Latin squares by simulated annealing. *Australas. J. Combin.* **5** (1992), 209–228. (Summary) **93a:05033** 05B15

Gibbs, J. E. (*with* Stanković, Radomir S.) Why IWGD-89? A look at the bibliography of Gibbs derivatives. *Theory and applications of Gibbs derivatives* (*Kupari-Dubrovnik*, 1989), xi–xxiv, *Mat. Inst., Belgrade*, 199?. (*see* **93k:42001**) 42–00 (00A15)

Gibbs, Richard *see* **Gibbs, Richard L.**

Gibbs, Richard A. (*with* Slater, Peter J.) Distinct distance sets in a graph. *Discrete Math.* **93** (1991), *no.* 2-3, 155–165. (Jean-Claude Bermond) **93d:05073** 05C35 (05C78)

Gibbs, Richard L. (*with* Birmingham, Danny; Mokhtari, Soussan) A Kallosh theorem for BF-type topological field theory. *Phys. Lett. B* **273** (1991), *no.* 1-2, 67–73. (Matthias Blau) **93a:81123** 81T13

Gibert, Steve (*with* Massopust, Peter R.) The exact Hausdorff dimension for a class of fractal functions. *J. Math. Anal. Appl.* **168** (1992), *no.* 1, 171–183. (M. Zähle) **93g:28006** 28A80 (58F12)

Gibiansky, L. V. (*with* Cherkaev, A. V.) The exact coupled bounds for effective tensors of electrical and magnetic properties of two-component two-dimensional composites. (English summary) *Proc. Roy. Soc. Edinburgh Sect. A* **122** (1992), *no.* 1-2, 93–125. (Serguei M. Kozlov) **93k:73006** 73B27 (73K20, 73R05, 73V25, 78A30)

Giblin, I. (*with* Alexander, Carol; Newton, Dan) Symmetry groups of fractals. *Math. Intelligencer* **14** (1992), *no.* 2, 32–38. (Colleen D. Cutler) **93g:58123** 58F23 (58F12)

Giblin, P. J. (*with* Tari, F.) Local reflexional and rotational symmetry in the plane. *Singularity theory and its applications, Part I* (*Coventry*, 1988/1989), 154–171, *Lecture Notes in Math.*, 1462, *Springer, Berlin*, 1991. (D. R. J. Chillingworth) **93d:58016** 58C27 (53A04)

— (*with* Bruce, J. W.) ★ Curves and singularities. A geometrical introduction to singularity theory. Second edition. *Cambridge University Press, Cambridge*, 1992. xviii+321 *pp. ISBN* 0-521-41985-9; 0-521-42999-4 (From the preface) **93k:58020** 58C27

Gibson, A. G. (*with* Waters, A. J.; Berthold, G. H.; Chandler, Colston) A new $\mathscr{K}$-matrix approach to N-body scattering. *J. Math. Phys.* **32** (1991), *no.* 11, 3117–3124. (Giorgio Cattapan) **93a:81204** 81U10 (47A40, 47N50)

— (*with* Chandler, Colston) Erratum: "N-body quantum scattering theory in two Hilbert spaces. V. Computation strategy" [J. Math. Phys. **30** (1989), no. 7, 1533–1544; MR 90h:81198]. *J. Math. Phys.* **34** (1993), *no.* 2, 886. (Editors) **93k:81249** 81U10 (81Q15)

Gibson, C. G. (*with* Donelan, P. S.) First-order invariants of Euclidean motions. *Acta Appl. Math.* **24** (1991), *no.* 3, 233–251. (P. E. Newstead) **93e:22038** 22E60 (14L30, 15A72, 22E45, 70B10)

Gibson, Charles (*with* Dapatadu, Rohan; Gregory, John[1]) Numerical methods for nonlinear optimal control problems: application to abnormal problems. *J. Math. Anal. Appl.* **159** (1991), *no.* 1, 27–43. (Editors) **93e:49048** 49M25 (65K10)

Gibson, J. D. (*with* McClellan, S. A.) Block source coding over GF(q). *Finite fields, coding theory, and advances in communications and computing* (*Las Vegas, NV*, 1991), 291–306, *Lecture Notes in Pure and Appl. Math.*, 141, *Dekker, New York*, 1993. (Introduction) **93m:94015** 94A29 (11T71)

Gibson, J. S. (*with* Milman, Mark H.; Salama, M.; Scheid, R. E.; Bruno, R.) Combined control-structural optimization. *Comput. Mech.* **8** (1991), *no.* 1, 1–18. (Kurt Marti) **93g:73096** 73K50 (73K40)

— (*with* Rosen, I. G.; Tao, Gang) Approximation in control of thermoelastic systems. (English summary) *SIAM J. Control Optim.* **30** (1992), *no.* 5, 1163–1189. (N. Gass) **93f:65074** 65M60 (49M15, 65J10, 73B30, 73K50)

Gibson, John F. (*with* Casdagli, Martin; Eubank, Stephen; Farmer, J. Doyne) State space reconstruction in the presence of noise. Nonlinear science: the next decade (Los Alamos, NM, 1990). *Phys. D* **51** (1991), *no.* 1-3, 52–98. (C. Eugene Wayne) **93a:58112** 58F12 (34C35, 34D45, 58F13)

— (*with* Farmer, J. Doyne; Casdagli, Martin; Eubank, Stephen) An analytic approach to practical state space reconstruction. *Phys. D* **57** (1992), *no.* 1-2, 1–30. (Summary) **93c:58200** 58F40 (58F13)

Gichev, Dinko An algorithm for routing messages between processing elements in a multiprocessor system which tolerates a maximal number of faulty links. (English summary) *Math. Comput. Modelling* **16** (1992), *no.* 12, 143–148. (Summary) **93i:68022** 68M15

Gichev, Todor Approximation of an n-person semi-infinite game. (Russian. Russian summary) *Serdica* **17** (1991), *no.* 4, 228–232. (D. Marc Kilgour) **93m:90109** 90D06 (90D10)

Gidas, Basilis (*with* Comets, Francis) Asymptotics of maximum likelihood estimators for the Curie-Weiss model. *Ann. Statist.* **19** (1991), *no.* 2, 557–578. (Summary) **93c:62038** 62F10 (62F12, 62P99, 82B26)

— (*with* Comets, Francis) Parameter estimation for Gibbs distributions from partially observed data. *Ann. Appl. Probab.* **2** (1992), *no.* 1, 142–170. (Christian Maes) **93b:60056** 60F10 (60G60, 62F99, 62M05, 82B99)

Giddings, Steven B. Cohomological field theory from field-space cohomology. *Nuclear Phys. B* **357** (1991), *no.* 1, 271–288. (Viktor A. Abramov) **93g:81190** 81T70 (81T13)

— (*with* Nelson, William M.) Quantum emission from two-dimensional black holes. (English summary) *Phys. Rev. D* (3) **46** (1992), *no.* 6, 2486–2496. (Michael B. Mensky) **93i:81165** 81T20 (81T40, 83C57)

Giedymin, Jerzy Conventionalism, the pluralist conception of theories and the nature of interpretation. *Stud. Hist. Philos. Sci.* **23** (1992), *no.* 3, 423–443. 00A30 (01A60)

Gielerak, Roman (*with* Zagrebnov, V. A.) Analyticity and independence on the classical boundary conditions of the infinite volume thermal KMS states for a class of continuous systems. I. The Maxwell-Boltzmann statistics case. *Helv. Phys. Acta* **64** (1991), *no.* 8, 1225–1246. (Guido A. Raggio) **93b:82008** 82B10 (46N55, 47N55, 82B21)

— Vacuum energy densities in the $\mathscr{S}(\varphi)_2$ Euclidean field theory. (English summary) *Rep. Math. Phys.* **30** (1991), *no.* 2, 177–179 (1992). (Michael Röckner) **93m:81096** 81T08 (60G60, 82B31)

— Verification of the global Markov property for strongly coupled trigonometric interactions. (English summary) *Ideas and methods in quantum and statistical physics* (*Oslo*, 1988), 484–493, *Cambridge Univ. Press, Cambridge*, 1992. (*see* **93e:00034**) 81T08 (82B05)

— Uniqueness theorem for a class of continuous systems. (English summary) *Phys. A* **189** (1992), *no.* 1-2, 348–366. (K. Kumar) **93j:82002** 82B05 (82B21)

— *see also* **Quantum groups and related topics, 93h:00021**

Gieres, François (*with* Ader, Jean-Pierre; Noirot, Yves) Relating Weyl and diffeomorphism anomalies on super Riemann surfaces. (English summary) *Classical Quantum Gravity* **10** (1993), *no.* 1, 1–18. (Sergey Merkulov) **93m:81139** 81T50 (32C11, 58A50, 81T40)

— Maurer-Cartan forms and equations for two-dimensional superdiffeomorphisms. (English summary) *J. Math. Phys.* **34** (1993), *no.* 2, 836–843. (Jaime Muñoz Masqué) **93k:58032** 58C50 (58A50, 81T50, 81T60)

Giering, Oswald Bemerkenswerte Eigenschaften der Hippopeden. [Remarkable properties of the hippopedes] *Proceedings of the 3rd Congress of Geometry* (*Thessaloniki*, 1991), 162–174, *Aristotle Univ. Thessaloniki, Thessaloniki*, 1992. (Hellmuth Stachel) **93i:51047** 51N20 (14H45)

Giertz, Magnus (*with* Bongiorno, Benedetto; Pfeffer, Washek F.) Some nonabsolutely convergent integrals in the real line. (Italian summary) *Boll. Un. Mat. Ital. B* (7) **6** (1992), *no.* 2, 371–402. (J. Jarník) **93h:26017** 26A42 (26A39)

Gierz, Gerhard (*with* Stralka, Albert) A characterization of full sublattices of finite-dimensional Euclidean space. *Topology Appl.* **45** (1992), *no.* 1, 59–72. (Jimmie D. Lawson) **93h:22005** 22A26 (06F30, 54H12)

Gieseker, D. A lattice version of the KP equation. *Acta Math.* **168** (1992), *no.* 3-4, 219–248. (H. Lange) **93e:58083** 58F07 (14H40, 35Q58, 35R10)

Giffin, J. W. (*with* Frizzell, Peter W.) The bounded split delivery vehicle routing problem with grid network distances. (English summary) *Asia-Pacific J. Oper. Res.* **9** (1992), *no.* 1, 101–116. 90B06

Giga, Yoshikazu (*with* Chen, Yun Gang; Goto, Shun'ichi) Analysis toward snow crystal growth. *Functional analysis & related topics (Sapporo,* 1990), 43–57, *World Sci. Publishing, River Edge, NJ,* 1991. (Claudia Simionescu-Badea) **93c:35164** 35R35 (35D05, 80A23)

— (*with* Chen, Yun Gang; Goto, Shun'ichi) Uniqueness and existence of viscosity solutions of generalized mean curvature flow equations. *J. Differential Geom.* **33** (1991), *no.* 3, 749–786. (Ioan I. Vrabie) **93a:35093** 35K65 (35D05, 53C21, 58E12)

— (*with* Chen, Yun Gang; Goto, Shun'ichi) Remarks on viscosity solutions for evolution equations. *Proc. Japan Acad. Ser. A Math. Sci.* **67** (1991), *no.* 10, 323–328. (Bruno Franchi) **93b:35076** 35K65 (35D05)

— (*with* Goto, Shun'ichi) Motion of hypersurfaces and geometric equations. *J. Math. Soc. Japan* **44** (1992), *no.* 1, 99–111. (Irl Bivens) **93b:58025** 58D25 (35K22, 53A07)

— (*with* Goto, Shun'ichi; Ishii, Hitoshi) Global existence of weak solutions for interface equations coupled with diffusion equations. *SIAM J. Math. Anal.* **23** (1992), *no.* 4, 821–835. (Ioan I. Vrabie) **93g:35068** 35K55 (35D05)

Gigante, A. (*with* Guiggiani, M.) A general algorithm for multidimensional Cauchy principal value integrals in the boundary element method. *Trans. ASME J. Appl. Mech.* **57** (1990), *no.* 4, 906–915. (Summary) **93b:73037** 73V10 (65N38)

Gigante, Giuliana On normal mappings. (Italian) *Atti Sem. Mat. Fis. Univ. Modena* **39** (1991), *no.* 1, 235–253. (Stephen M. Zemyan) **93d:32032** 32H02 (30D45, 32A17, 32A20, 32E99, 32H20)

— (*with* Tomassini, Giuseppe) CR-structures on a real Lie algebra. *Adv. Math.* **94** (1992), *no.* 1, 67–81. (B. Gilligan) **93f:32021** 32F40 (17B20, 32M05)

Gignoux, C. (*with* Meplan, O.; Brut, F.) Tangent map for classical billiards in magnetic fields. (English summary) *J. Phys. A* **26** (1993), *no.* 2, 237–246. (Summary) **93k:58155** 58F13 (58F05)

Gikhman, Il. I. ★ Стохастические уравнения и связанные с ними полулинейные стохастические параболические системы. (Russian) [Stochastic equations and related semilinear stochastic parabolic systems] Препринт [Preprint], 89-11. *Akad. Nauk Ukrain. SSR, Inst. Prikl. Mat. Mekh., Donetsk,* 1990. 50 *pp.* (Wilfried Grecksch) **93b:60121** 60H10 (35R60, 60H05, 60H15)

— Probabilistic representation of quantum evolutions. (Russian. Russian and Ukrainian summaries) *Ukraïn. Mat. Zh.* **44** (1992), *no.* 10, 1314–1319; *translation in Ukrainian Math. J.* **44** (1992), *no.* 10, 1203–1208 (1993). (K. Wódkiewicz) **93k:81114** 81S20 (81P20)

Gil, Bernhard Complete extension of general logic programs. Discrete mathematics and applications to computer science (Marseille, 1989). *Theoret. Comput. Sci.* **94** (1992), *no.* 2, 281–294. (F. J. van der Linden) **93e:68012** 68N17 (68Q55)

gómez Gil, J. *see* **Gómez Gil, J.**

Gil, Joseph (*with* Matias, Yossi; Vishkin, Uzi) Towards a theory of nearly constant time parallel algorithms. (English summary) 32*nd Annual Symposium on Foundations of Computer Science (San Juan, PR,* 1991), 698–710, *IEEE Comput. Soc. Press, Los Alamitos, CA,* 1991. (*see* **93d:68005**) 68Q22

Gil', M. I. Solvability of a system of stationary Boussinesq equations. (Russian. Russian summary) *Differentsial'nye Uravneniya* **27** (1991), *no.* 11, 1936–1941, 2022; *translation in Differential Equations* **27** (1991), *no.* 11, 1377–1382 (1992). (Vladimir Mikhalev) **93k:35213** 35Q35 (35Q30)

— Perturbation of the spectra of operators of a certain class. (Russian) *Mat. Zametki* **49** (1991), *no.* 3, 149–151; *translation in Math. Notes* **49** (1991), *no.* 3-4, 328–330. (V. D. Koshmanenko) **93g:47013** 47A55 (47A10)

— Estimate for norm of solutions of nonautonomous equations in Hilbert space. *Math. Balkanica (N.S.)* **5** (1991), *no.* 4, 341–349 (1992). (Zai-Feng Song) **93c:34127** 34G10 (34K05, 35K25, 45J05, 47N20)

— On an estimate for the norm of a function of a quasi-Hermitian operator. (English summary) *Studia Math.* **103** (1992), *no.* 1, 17–24. (S. Kantorovitz) **93h:47008** 47A30 (47A60, 47B10)

Gil, María Angeles Probabilistic-possibilistic approach to some statistical problems with fuzzy experimental observations. *Combining fuzzy imprecision with probabilistic uncertainty in decision making,* 286–306, *Lecture Notes in Econom. and Math. Systems,* 310, *Springer, Berlin,* 1988. (*see* **93c:90002**) 04A72

— Sufficiency and fuzziness in random experiments. (English summary) *Ann. Inst. Statist. Math.* **44** (1992), *no.* 3, 451–462. 62B05 (62B10)

— (*with* Martínez, Ignacio; López, María Teresa) Analysis of mutual information measures in cluster sampling. (English summary) *Appl. Math. Comput.* **52** (1992), *no.* 2-3, 389–402. 62D05 (62B10)

— (*with* Jain, Pramod) Comparison of experiments in statistical decision problems with fuzzy utilities. (English summary) *IEEE Trans. Systems Man Cybernet.* **22** (1992), *no.* 4, 662–670. (Summary) **93g:90007** 90A05 (04A72)

— (*with* Gil Álvarez, Pedro Ángel) Fuzziness in the experimental outcomes: comparing experiments and removing the loss of information. *J. Statist. Plann. Inference* **31** (1992), *no.* 1, 93–111. (From the summary) **93e:62016** 62B10 (04A72, 62A99, 62B15, 94A15)

— (*with* Martínez, Ignacio) On the asymptotic optimum allocation in estimating inequality from complete data. (English summary) *Kybernetika (Prague)* **28** (1992), *no.* 4, 325–332. 62D05

Gil', Michael I. *see* **Gil', M. I.**

Gil Álvarez, Pedro Ángel (*with* Fernández, M. J.; Suárez García, Fermín) Equations of fuzzy relations defined on fuzzy subsets. (English summary) *Fuzzy Sets and Systems* **52** (1992), *no.* 3, 319–336. (Summary) **93m:04010** 04A72

— (*with* Gil, María Angeles) Fuzziness in the experimental outcomes: comparing experiments and removing the loss of information. *J. Statist. Plann. Inference* **31** (1992), *no.* 1, 93–111. (From the summary) **93e:62016** 62B10 (04A72, 62A99, 62B15, 94A15)

Gilardi, Gianni (*with* Carrillo, José) La vitesse de propagation dans le problème de la digue. (English and French summaries) [Rate of propagation in the dam problem] *Ann. Fac. Sci. Toulouse Math.* (5) **11** (1990), *no.* 3, 7–28. (Summary) **93g:35063** 35K55 (76S05)

— (*with* Luckhaus, Stephan) Extension of a regularity result concerning the dam problem. (Italian summary) *Atti Accad. Naz. Lincei Cl. Sci. Fis. Mat. Natur. Rend. Lincei* (9) *Mat. Appl.* **2** (1991), *no.* 4, 287–296. (Charles Bu) **93c:35166** 35R35 (35B65)

— The support of the solution in the dam problem. *Free boundary problems in fluid flow with applications (Montreal, PQ,* 1990), 151–156, *Pitman Res. Notes Math. Ser.,* 282, *Longman Sci. Tech., Harlow,* 1993. (*see* **93k:00036**) 35R35 (76S05)

— *see also* **Cinquini, Silvio, 93m:01065**

Gilat, David Some maximal moment-inequalities for martingales. *Stochastic methods in experimental sciences (Szklarska Poręba,* 1989), 136–147, *World Sci. Publishing, River Edge, NJ,* 1990. (Saul D. Jacka) **93f:60057** 60G40 (60E15)

— (*with* Hill, Theodore P.) One-sided refinements of the strong law of large numbers and the Glivenko-Cantelli theorem. (English summary) *Ann. Probab.* **20** (1992), *no.* 3, 1213–1221. (Endre Csáki) **93g:60064** 60F15 (62G30)

— (*with* Aaronson, Jon; Keane, Michael S.) On the structure of 1-dependent Markov chains. (English summary) *J. Theoret. Probab.* **5** (1992), *no.* 3, 545–561. (Vincent De Valk) **93i:60123** 60J10 (28D05, 54H20, 60G10)

Gilbert, Andrew D. (*with* Bayly, Bruce) Magnetic field intermittency and fast dynamo action in random helical flows. (English summary) *J. Fluid Mech.* **241** (1992), 199–214. (Summary) **93f:76101** 76W05 (76E20, 76E25, 76F99, 85A30)

Gilbert, Edgar N. (*with* Kadota, T. T.) The Lempel-Ziv algorithm and message complexity. (English summary) *IEEE Trans. Inform. Theory* **38** (1992), *no.* 6, 1839–1842. 94A12

— (*with* Boguslavskiĭ, L. B.; Coffman, Edward G., Jr.; Kreinin, A. Ya.) Scheduling checks and saves. (English summary) *ORSA J. Comput.* **4** (1992), *no.* 1, 60–69. 90B22

— (*with* Browne, Sid; Coffman, Edward G., Jr.; Wright, Paul E.) The gated infinite-server queue: uniform service times. (English summary) *SIAM J. Appl. Math.* **52** (1992), *no.* 6, 1751–1762. (Summary) **93h:60146** 60K25 (90B22)

Gilbert, Elmer G. (*with* Tan, Kok Tin) Multi-mode controllers for linear discrete-time systems with general state and control constraints. (English summary) *Optimization, Vol.* 1, 2 (*Singapore,* 1992), 433–442, *World Sci. Publishing, River Edge, NJ,* 1992. (*see* **93d:90005**) 93B03 (93B52, 93C55)

Gilbert, John E. (*with* Murray, Margaret A. M.) ★ Clifford algebras and Dirac operators in harmonic analysis. Cambridge Studies in Advanced Mathematics, 26. *Cambridge University Press, Cambridge,* 1991. viii+334 *pp. ISBN* 0-521-34654-1 (John Ryan) **93e:42027** 42B20 (15A66, 30E10, 30G35, 31B15, 35C15, 58G03)

— Polynomial invariant theory and Taylor series. *Canad. J. Math.* **43** (1991), *no.* 6, 1243–1262. (Piotr Pragacz) **93e:20058** 20G05 (13A50)

Gilbert, John R. (*with* Schreiber, Robert) Optimal data placement for distributed memory architectures. (English summary) *Parallel processing for scientific computing (Houston, TX,* 1991), 462–471, *SIAM, Philadelphia, PA,* 1992. (*see* **93g:65178**) 68P20

— (*with* Bern, Marshall) Drawing the planar dual. (English summary) *Inform. Process. Lett.* **43** (1992), *no.* 1, 7–13. (Summary) **93i:68168** 68U05

— (*with* Schreiber, Robert) Highly parallel sparse Cholesky factorization. *SIAM J. Sci. Statist. Comput.* **13** (1992), *no.* 5, 1151–1172. (Summary) **93g:65040** 65F05 (05C85, 15A23, 65F50, 68M20)

Gilbert, Kenneth E. (*with* Di, Xiao) An exact Laplace transform formulation for a point source above a ground surface. (English summary) *J. Acoust. Soc. Amer.* **93** (1993), *no.* 2, 714–720. (Summary) **93k:76100** 76Q05

Gilbert, N. D. Central extensions of groups and an embedding question of J. H. C. Whitehead. *Arch. Math. (Basel)* **58** (1992), *no.* 2, 114–120. (Stephen J. Pride) **93d:20059** 20E22 (57Q35)

Gilbert, Robert Pertsch (*with* Xu, Yong Zhi) Generalized Herglotz functions and inverse scattering problems in a finite depth ocean. (English summary) *Invariant imbedding and inverse problems (Albuquerque, NM,* 1990), 216–229, *SIAM, Philadelphia, PA,* 1992. (An Sheng Cheng) **93k:86002** 86A05 (76Q05)

— (*with* Xu, Yong Zhi) Acoustic waves and far-field patterns in two-dimensional oceans with porous-elastic seabeds. *Results Math.* **22** (1992), *no.* 3-4, 685–700. (John Brindley) **93k:86003** 86A05 (35Q35, 76Q05)

— *see also* **Partial differential equations with complex analysis, 93h:35005**; **Partial differential equations with real analysis, 93k:35003**; **Biography: Gilbert, Robert Pertsch, 93m:01091a** *and* **93m:01091b**

Gilbert, Shirley M. F. (*with* Zvengrowski, Peter) A relation between S^1 and S^3-invariant homotopy in the stable range. *Canad. Math. Bull.* **35** (1992), *no.* 1, 75–80. (Donald M. Davis) **93a:55008** 55Q70

Gilboa, Itzhak (*with* Fischer, Anat; Shpitalni, Moshe) A polynomial algorithm for minimal interval representation. (English summary) *J. Algorithms* **13** (1992), *no.* 4, 546–563. (Summary) **93h:68056** 68Q25 (68U10)

— (*with* Matsui, Akihiko) A model of random matching. *J. Math. Econom.* **21** (1992), *no.* 2, 185–197. (Marilda de Oliveira Sotomayor) **93a:90101** 90D60

— (*with* Beja, Avraham) Numerical representations of imperfectly ordered preferences (a unified geometric exposition). (English summary) *J. Math. Psych.* **36** (1992), *no.* 3, 426–449. (Summary) **93f:90019** 90A10 (90A43, 92J30)

— (*with* Monderer, Dov) A game-theoretic approach to the binary stochastic choice problem. (English summary) *J. Math. Psych.* **36** (1992), *no.* 4, 555–572. (Hans Peters) **93m:92032** 92J99 (90D40)

— (*with* Schmeidler, David) Updating ambiguous beliefs. (English summary) *J. Econom. Theory* **59** (1993), *no.* 1, 33–49. (Summary) **93k:60009** 60A05 (62A15)

Gilchrist, M. P. (*with* Chatters, A. W.; Wilson, D.) Unique factorisation rings. *Proc. Edinburgh Math. Soc.* (2) **35** (1992), *no.* 2, 255–269. (Kenneth A. Brown) **93j:16019** 16U30 (16P60, 16R99)

Gildenhuys, D. (*with* Kharlampovich, O.) Identities in the variety of center-by-$\mathfrak{N}_2\mathfrak{A}$ Lie algebras. *Internat. J. Algebra Comput.* **1** (1991), *no.* 4, 493–521. (S. P. Mishchenko) **93c:17008** 17B01 (08B05, 17B30)

abdel'-Gilel', Mukhamed Akhmed *see* **Abdel'-Gilel', Mukhamed Akhmed**

Giler, S. (*with* Kosiński, P.; Maślanka, P.) Remarks on differential calculi on Manin's plane. *Modern Phys. Lett. A* **6** (1991), *no.* 35, 3251–3254. (From the text) **93j:58010** 58B30 (17B37)
— (*with* Brihaye, Yves; Maślanka, P.; Kosiński, P.) Real representations of Clifford algebras. *J. Math. Phys.* **33** (1992), *no.* 5, 1579–1581. (Pierre Anglès) **93g:15017** 15A66
Giles, David E. A. (*with* Srivastava, Virendra Kumar) An unbiased estimator of the covariance matrix of the mixed regression estimator. *J. Amer. Statist. Assoc.* **86** (1991), *no.* 414, 441–444. (I. S. Alalouf) **93a:62085** 62H12 (62J05, 62P20)
— The exact distribution of a simple pre-test estimator. (English summary) *Readings in econometric theory and practice*, 57–74, *Contrib. Econom. Anal.*, 209, *North-Holland, Amsterdam*, 1992. (*see* **93m:62006**) 62E15
Giles, John R. (*with* Moors, Warren B.) Differentiability properties of Banach spaces where the boundary of the closed unit ball has denting point properties. *Miniconference on probability and analysis* (*Sydney*, 1991), 107–115, *Proc. Centre Math. Appl. Austral. Nat. Univ.*, 29, *Austral. Nat. Univ., Canberra*, 1992. (P. S. Kenderov) **93k:46009** 46B20
— Obituary notice: Vale Roman Matlak 1912–1992. *Austral. Math. Soc. Gaz.* **19** (1992), *no.* 4, 84. 01A70
Giles, Judith A. Pre-testing for linear restrictions in a regression model with spherically symmetric disturbances. *J. Econometrics* **50** (1991), *no.* 3, 377–398. (V. K. Srivastava) **93a:62096** 62J05
— Estimation of the error variance after a preliminary test of homogeneity in a regression model with spherically symmetric disturbances. (English summary) *J. Econometrics* **53** (1992), *no.* 1-3, 345–361. (C. R. Rao) **93j:62171** 62J05 (62P20)
Giles, Robin A generalization of the theory of subjective probability and expected utility. *Synthese* **90** (1992), *no.* 2, 301–343. (Frada Burstein) **93a:90007** 90A06 (03B48, 54F65, 62C10, 90A43)
Gilfeather, Frank L. (*with* Smith, Roger R.) Cohomology for operator algebras. (English summary) *Elementary operators and applications* (*Blaubeuren*, 1991), 189–195, *World Sci. Publishing, River Edge, NJ*, 1992. (Kenneth R. Davidson) **93h:46106** 46M20 (46L99, 47D25)
— (*with* Smith, Roger R.) Cohomology for operator algebras: cones and suspensions. *Proc. London Math. Soc.* (3) **65** (1992), *no.* 1, 175–198. (Florin Rădulescu) **93i:46137** 46M20 (46H25, 47D25)
Gilkey, Peter B. (*with* Bokan, Neda) Asymptotics of Laplacians defined by symmetric connections. *Affine differential geometry* (*Oberwolfach*, 1991), 589–599, *Tech. Univ. Berlin, Berlin*, 1991. (*see* **93g:53001**) 58G25 (53A15, 58G11)
— The index theorem and Clifford modules. *Forty more years of ramifications: spectral asymptotics and its applications*, 265–317, *Discourses Math. Appl.*, 1, *Texas A & M Univ., College Station, TX*, 1991. (John Roe) **93g:58137** 58G10 (15A66, 57R20, 58G11)
— (*with* Branson, Thomas P.; Fulling, Stephen A.) Heat equation asymptotics of "nonminimal" operators on differential forms. *J. Math. Phys.* **32** (1991), *no.* 8, 2089–2091. (Summary) **93d:58156** 58G11
— (*with* Bokan, Neda) Asymptotics of Laplacians defined by symmetric connections. Affine differential geometry (Oberwolfach, 1991). *Results Math.* **20** (1991), *no.* 3-4, 589–599. (Alejandro Uribe) **93d:58154** 58G11 (58G18, 58G25)
— (*with* Blažić, Novica; Bokan, Neda) Heat equation asymptotics of the form valued Laplacian for manifolds with boundary. *Proceedings of the 3rd Congress of Geometry* (*Thessaloniki*, 1991), 84–95, *Aristotle Univ. Thessaloniki, Thessaloniki*, 1992. (G. Tsagas) **93f:58226** 58G11 (58G18, 58G20, 58G25)
— (*with* Blažić, Novica; Bokan, Neda) Spectral geometry of the form valued Laplacian for manifolds with boundary. *Indian J. Pure Appl. Math.* **23** (1992), *no.* 2, 103–120. (Friedbert Prüfer) **93e:58185** 58G25 (58G11, 58G18)
— (*with* Branson, Thomas P.) Residues of the eta function for an operator of Dirac type. *J. Funct. Anal.* **108** (1992), *no.* 1, 47–87. (Friedbert Prüfer) **93f:58234** 58G25 (58G11, 58G26)
— Manifolds whose higher odd order curvature operators have constant eigenvalues at the basepoint. *J. Geom. Anal.* **2** (1992), *no.* 2, 151–156. (Y. Tashiro) **93b:53031** 53C21
Gill, A. (*with* Bector, C. R.; Hawaleshka, O.) A 0-1 linear programming formulation for solving an equipment replacement problem. (English summary) *Internat. J. Systems Sci.* **23** (1992), *no.* 12, 2393–2399. (Summary) **93h:90043** 90B25 (90C09)
Gill, Amar Nath (*with* Mehta, Gobind P.) Selection procedures for scale parameters using two-sample *U*-statistics. *Austral. J. Statist.* **33** (1991), *no.* 3, 347–362. (Summary) **93b:62032** 62F07
— (*with* Kumar, Narinder; Mehta, Gobind P.) A class of selection procedures for scale parameters. (English summary) *J. Indian Statist. Assoc.* **30** (1992), *no.* 2, 75–88. (Summary) **93j:62055** 62F07
Gill, John (*with* McCabe, John H.) Arne Magnus (August 17, 1922–October 19, 1991). *Comm. Anal. Theory Contin. Fractions* **1** (1992), 4–12. (Editors) **93h:01039** 01A70
— A note on the dynamics of the system $F_n(z) - f_n(F_{n-1}(z))$, $f_n \to f$. *Comm. Anal. Theory Contin. Fractions* **1** (1992), 35–39. (I. N. Baker) **93m:30036** 30D05 (11A55, 58F23)
— A Tannery transformation of continued fractions and other expansions. *Comm. Anal. Theory Contin. Fractions* **1** (1992), 56–60. (Les Davison) **93i:30004** 30B70
Gill, Len (*with* Lewbel, Arthur) Testing the rank and definiteness of estimated matrices with applications to factor, state-space and ARMA models. (English summary) *J. Amer. Statist. Assoc.* **87** (1992), *no.* 419, 766–776. (Raúl Pedro Mentz) **93m:62196** 62M10 (62H15)
Gill, P. E. (*with* Forsgren, A. L.; Murray, Walter) On the identification of local minimizers in inertia-controlling methods for quadratic programming. *SIAM J. Matrix Anal. Appl.* **12** (1991), *no.* 4, 730–746. (J. R. Rajasekera) **93c:90055** 90C20 (49M45, 65K05)
Gill, P. S. Balanced change-over designs for autocorrelated observations. (English summary) *Austral. J. Statist.* **34** (1992), *no.* 3, 415–420. 62K99
— Design and analysis of field experiments incorporating local and remote effects of treatments. (English summary) *Biometrical J.* **35** (1993), *no.* 3, 343–354. 62K99
hans-Gill, R. J. *see* **Hans-Gill, R. J.**
Gill, Richard D. (*with* Doss, Hani) An elementary approach to weak convergence for quantile processes, with applications to censored survival data. (English summary) *J. Amer. Statist. Assoc.* **87** (1992), *no.* 419, 869–877. (Gutti J. Babu) **93j:62144** 62G30 (62N05)
— (*with* Nielsen, Gert G.; Andersen, Per Kragh; Sørensen, Thorkild I. A.) A counting process approach to maximum likelihood estimation in frailty models. *Scand. J. Statist.* **19** (1992), *no.* 1, 25–43. (Summary) **93a:62116** 62M07 (60G55)
— Marginal partial likelihood. *Scand. J. Statist.* **19** (1992), *no.* 2, 133–137. (D. A. Sprott) **93g:62009** 62A10
— (*with* Heesterman, C. C.) A central limit theorem for *M*-estimators by the von Mises method. (English summary) *Statist. Neerlandica* **46** (1992), *no.* 2-3, 165–177. (Xuming He) **93h:62055** 62F12 (60F05, 62E20, 62F35)
Gill, Tepper L. (*with* Zachary, Woodford W.) Dimensionality of invariant sets for nonautonomous processes. (English summary) *SIAM J. Math. Anal.* **23** (1992), *no.* 5, 1204–1229. (Sadakazu Aizawa) **93k:35021** 35B15 (34G20, 35K57, 35L70, 58D25)
Gille, Philippe Un théorème de finitude arithmétique sur les groupes réductifs. (English and French summaries) [An arithmetic finiteness theorem on reductive groups] *C. R. Acad. Sci. Paris Sér. I Math.* **316** (1993), *no.* 7, 701–704. (Summary) **93k:20066** 20G30
Giller, S. (*with* Kosiński, P.; Majewski, Michał; Maślanka, P.; Kunz, Jutta) More about the *q*-deformed Poincaré algebra. (English summary) *Phys. Lett. B* **286** (1992), *no.* 1-2, 57–62. (A. U. Klimyk) **93e:81049** 81R50 (17B37)
Gillespie, Brenda (*with* Gillespie, John V.; Iglewicz, Boris) A comparison of the bias in four versions of the product-limit estimator. *Biometrika* **79** (1992), *no.* 1, 149–155. (Gregory Campbell) **93j:62095** 62G05
Gillespie, Daniel T. ★ Markov processes. An introduction for physical scientists. *Academic Press, Inc., Boston, MA*, 1992. xxiv+565 *pp. ISBN* 0-12-283955-2 (S. K. Srinivasan) **93i:60001** 60–01 (60Jxx)
Gillespie, Frank S. A generalization of Kummer's congruences and related results. *Fibonacci Quart.* **30** (1992), *no.* 4, 349–367. (Armel Mercier) **93i:11026** 11B68 (11A07)
Gillespie, John V. (*with* Gillespie, Brenda; Iglewicz, Boris) A comparison of the bias in four versions of the product-limit estimator. *Biometrika* **79** (1992), *no.* 1, 149–155. (Gregory Campbell) **93j:62095** 62G05
Gillespie, Thomas Alastair Noncommutative variations on theorems of Marcel Riesz and others. *Paul Halmos*, 221–236, *Springer, New York*, 1991. (Mario Milman) **93a:47001** 47–02 (01A60, 46B70, 46M35, 47B10)
— (*with* Asmar, Nakhlé; Berkson, Earl) Transferred bounds for square functions. *Houston J. Math.* **17** (1991), *no.* 4, 525–550. (Mario Milman) **93d:43003** 43A15 (43A25, 43A32)
— (*with* Asmar, Nakhlé; Berkson, Earl) Almost everywhere convergence for transferred convolution operators. *Function spaces* (*Edwardsville, IL*, 1990), 31–44, *Lecture Notes in Pure and Appl. Math.*, 136, *Dekker, New York*, 1992. (Mario Milman) **93g:43002** 43A22 (47B35)
— (*with* Asmar, Nakhlé; Berkson, Earl) Transfert de la convergence presque partout. (English and French summaries) [Transference of almost everywhere convergence] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 13, 1389–1392. (Summary) **93j:43006** 43A22 (28D99, 43A65)
— (*with* Asmar, Nakhlé; Berkson, Earl) Invariant subspaces and harmonic conjugation on compact abelian groups. (English summary) *Pacific J. Math.* **155** (1992), *no.* 2, 201–213. (K. Yale) **93j:43005** 43A17 (47A15, 47B38)
— (*with* Asmar, Nakhlé; Berkson, Earl) Transference of weak type maximal inequalities by distributionally bounded representations. *Quart. J. Math. Oxford Ser.* (2) **43** (1992), *no.* 171, 259–282. (Gerald B. Folland) **93f:43003** 43A22 (42B25, 43A65)
Gillet, Henri A Riemann-Roch theorem in arithmetic geometry. *Proceedings of the International Congress of Mathematicians, Vol. I, II* (*Kyoto*, 1990), 403–412, *Math. Soc. Japan, Tokyo*, 1991. (Bruce Hunt) **93e:14028** 14G40 (14C40)
— (*with* Mazur, Barry C.; Soulé, C.) A note on a classical theorem of Blichfeldt. *Bull. London Math. Soc.* **23** (1991), *no.* 2, 131–132. (Rainer Schulze-Pillot) **93a:11058** 11H06 (11P21, 52C07)
— (*with* Shalen, Peter B.; Skora, Richard K.) Simplicial approximation and low-rank trees. *Comment. Math. Helv.* **66** (1991), *no.* 4, 521–540. (Frédéric Paulin) **93a:20038** 20E08 (57M07)
— (*with* Lluis-Puebla, E.; Loday, Jean-Louis; Soulé, C.; Snaith, Victor P.) ★ Higher algebraic *K*-theory: an overview. Lecture Notes in Mathematics, 1491. *Springer-Verlag, Berlin*, 1992. x+164 *pp. ISBN* 3-540-55007-0 (J. F. Jardine) **93h:19001** 19–02 (11E70, 19D99, 19F99, 20J06)
Gillett, Raphael (*with* English, Brian J.; Phillips, Michael J.) Inequalities concerning the expected selection differentials. *Ann. Inst. Statist. Math.* **44** (1992), *no.* 1, 169–175. (S. Panchapakesan) **93f:62072** 62G30
Gillette, Ann B. (*with* Van Huyck, John B.; Battalio, Raymond C.) Credible assignments in coordination games. (English summary) *Games Econom. Behav.* **4** (1992), *no.* 4, 606–626. (Summary) **93f:90186** 90D05 (90D12)
Gillette, Richard M. (*with* Barge, Marcy M.) A fixed point theorem for plane separating continua. *Topology Appl.* **43** (1992), *no.* 3, 203–212. (L. Janos) **93d:54062** 54H25 (54H20)
Gilli, Manfred Causal ordering and beyond. (English summary) *Internat. Econom. Rev.* **33** (1992), *no.* 4, 957–971. (Summary) **93f:90052** 90A70 (05C90)
Gilliam, D. S. (*with* Schulenberger, J. R.) Steady-state solutions of Maxwell's equations over a three-dimensional conducting half space. *Differential Integral Equations* **5** (1992), *no.* 4, 855–870. (W. E. Williams) **93f:78011** 78A40 (35Q60)
Gillies, Donald A. Intersubjective probability and confirmation theory. *British J. Philos. Sci.* **42** (1991), *no.* 4, 513–533. (D. J. Foulis) **93a:03020** 03B48 (60A05)
Gillies, Donald William A new heuristic for UET and pipeline scheduling. (English summary) *Parallel processing for scientific computing, Vol. I, II* (*Norfolk, VA*, 1993), 983–991, *SIAM, Philadelphia, PA*, 1993. (*see* **93k:65003**) 65Y05 (65Y10)
Gilligan, Bruce On a topological invariant of complex Lie groups and solv-manifolds. *C. R. Math. Rep. Acad. Sci. Canada* **14** (1992), *no.* 2-3, 109–114. (Dennis Snow) **93g:32047** 32M05 (32M10)
— *see also* **Forster, Otto, 93h:30061**
Gillio Berta Mauri, Anna (*with* Bianchi, Maria Grazia; Hauck, Peter) Maximal supersoluble subgroups of symmetric groups. *Ann. Mat. Pura Appl.* (4) **159** (1991), 371–404. (Wolfgang Lempken) **93d:20007** 20B30 (20D10, 20E28)
— (*with* Bianchi, Maria Grazia; Chillag, David; Herzog, Marcel; Scoppola, Carlo M.) Applications of a graph related to conjugacy classes in finite groups. *Arch. Math.* (*Basel*) **58** (1992), *no.* 2, 126–132. (Wolfgang Willems) **93d:20061** 20E34 (20C15, 20D60)
— (*with* Bianchi, Maria Grazia; Verardi, Libero) Groups with small subgroup-permutability diameter. (Italian summary) *Boll. Un. Mat. Ital. B* (7) **6** (1992), *no.* 1, 229–239. (Summary) **93b:20044** 20D40

Gillis, J. T. (*with* McGraw, G. A.; Gustafson, C. L.) Conditions for the equivalence of ARMAX and ARX systems. (English summary) *IEEE Trans. Automat. Control* **38** (1993), *no.* 4, 632–636. 93E03 (93E12)

Gillman, David S. (*with* Rolfsen, Dale) Three-manifolds embed in small 3-complexes. *Internat. J. Math.* **3** (1992), *no.* 2, 179–183. (Sergej V. Matveev) **93b:57017** 57N10 (57M20, 57Q05)

Gillman, Leonard An axiomatic approach to the integral. *Amer. Math. Monthly* **100** (1993), *no.* 1, 16–25. (Frank N. Huggins) **93m:26019** 26A42

Gillman, Richard Alan Some new functions on the mosaic of *n*. *J. Natur. Sci. Math.* **30** (1990), *no.* 1, 47–56. (Armel Mercier) **93a:11005** 11A25

Gil'man, E. A. On coverings in lattices of universal classes. (Russian) *Ordered sets and lattices, No.* 10 (*Russian*), 20–28, *Saratov. Gos. Univ., Saratov*, 1991. (From the text) **93c:08009** 08C10 (03C05, 03C60, 06B99)

Gilman, Robert H. Verifying that a group is virtually free. *Internat. J. Algebra Comput.* **1** (1991), *no.* 3, 339–351. (M. J. Dunwoody) **93d:20068** 20F10

Gil-Medrano, Olga (*with* Michor, Peter W.; Neuwirther, Martin) Pseudo-Riemannian metrics on spaces of bilinear structures. *Quart. J. Math. Oxford Ser.* (2) **43** (1992), *no.* 170, 201–221. (Xiao Wei Peng) **93c:58037** 58D17 (58B20)

Gilmer, Patrick (*with* Livingston, Charles) An algebraic link concordance group for $(p, 2p-1)$-links in S^{2p+1}. *Proc. Edinburgh Math. Soc.* (2) **34** (1991), *no.* 3, 455–462. (Masayuki Yamasaki) **93a:57024** 57Q45 (57M25)

— Real algebraic curves and link cobordism. *Pacific J. Math.* **153** (1992), *no.* 1, 31–69. (Lee Rudolph) **93c:57005** 57M25 (14H45, 57N70)

— (*with* Livingston, Charles) The Casson-Gordon invariant and link concordance. *Topology* **31** (1992), *no.* 3, 475–492. (Daniel Lines) **93h:57037** 57Q45 (57M25, 57N70)

Gilmer, Robert ★ Multiplicative ideal theory. Corrected reprint of the 1972 edition. Queen's Papers in Pure and Applied Mathematics, 90. *Queen's University, Kingston, ON*, 1992. xii+609 *pp.* (Editors) **93j:13001** 13–02 (13A15)

— (*with* Heinzer, William J.) The family of residue fields of a zero-dimensional commutative ring. (English summary) *J. Pure Appl. Algebra* **82** (1992), *no.* 2, 131–153. (Evan G. Houston) **93k:13019** 13C15 (13C05)

— (*with* Heinzer, William J.) An application of Jónsson modules to some questions concerning proper subrings. *Math. Scand.* **70** (1992), *no.* 1, 34–42. (Johnny A. Johnson) **93k:13025** 13E99 (13E05, 13E10)

— (*with* Heinzer, William J.) Primary ideals with finitely generated radical in a commutative ring. (English summary) *Manuscripta Math.* **78** (1993), *no.* 2, 201–221. (L. J. Ratliff, Jr.) **93k:13003** 13A15 (13B25, 13F05)

— (*with* Heinzer, William J.) Artinian subrings of a commutative ring. *Trans. Amer. Math. Soc.* **336** (1993), *no.* 1, 295–310. (Liam O'Carroll) **93e:13028** 13E10 (12D15, 12F99, 13A99)

— (*with* Heinzer, William J.; Lantz, David) The Noetherian property in rings of integer-valued polynomials. *Trans. Amer. Math. Soc.* **338** (1993), *no.* 1, 187–199. (Jean-Luc Chabert) **93j:13027** 13G05 (13B22, 13B25, 13E05)

Gilmore, R. (*with* Mindlin, Gabriel B.) Topological analysis and synthesis of chaotic time series. (English summary) Interpretation of time series from nonlinear systems (Warwick, 1991). *Phys. D* **58** (1992), *no.* 1-4, 229–242. (Hans-Peter Herzel) **93j:58093** 58F13 (80A32)

van Gils, Stephan A. (*with* Salam, Fathi M. A.; Zhang, Zhi Fen) Global bifurcation analysis of an adaptive control system. *Differential Integral Equations* **4** (1991), *no.* 6, 1353–1374. (L. E. Faybusovich) **93a:34048** 34C23 (34H05, 58F14, 93C40)

Gilsdorf, Thomas E. Regular inductive limits of $\mathscr{X}$-spaces. (English summary) *Collect. Math.* **42** (1991), *no.* 1, 45–49. (P. Pérez Carreras) **93i:46011** 46A13

Gilula, Zvi (*with* Ritov, Ya'acov) The order-restricted RC model for ordered contingency tables: estimation and testing for fit. *Ann. Statist.* **19** (1991), *no.* 4, 2090–2101. (Zuzana Prášková) **93a:62089** 62H17

Gimadi, Ė. Kh. (*with* Maksishko, N. K.) Justification of conditions for the asymptotic exactness of an approximate algorithm for solving the traveling salesman problem on a maximum in the case of a discrete distribution. (Russian) *Upravlyaemye Sistemy No.* 30 (1990), 25–29, 83–84. (From the text) **93c:90061** 90C27

Gimbel, John (*with* Thomassen, Carsten) Partial orders on a fixed graph. *Contemporary methods in graph theory*, 305–311, *Bibliographisches Inst., Mannheim*, 1990. (Alan Tucker) **93a:05064** 05C20

— (*with* Erdős, Paul) A note on the largest H-free subgraph in a random graph. *Graph theory, combinatorics, and applications, Vol.* 1 (*Kalamazoo, MI*, 1988), 435–437, *Wiley-Intersci. Publ., Wiley, New York*, 1991. (Summary) **93d:05137** 05C80

— (*with* Palmer, E. M.) Matchings and cycle covers in random digraphs. Combinatorics and theoretical computer science (Washington, DC, 1989). *Discrete Appl. Math.* **34** (1991), *no.* 1-3, 121–128. (Colin J. H. McDiarmid) **93f:05089** 05C80 (05C70)

— *see also* **Quo vadis, graph theory, 93k:05003**

Gimel'farb, G. L. (*with* Zalesnyĭ, A. V.) ★ Цифровая обработка изображений, представленных моделями марковских случайных полей. (Russian. Russian summary) [Digital processing of images that are represented by Markov random field models] Препринт [Preprint], 91-42. *Akad. Nauk Ukrain. SSR, Inst. Kibernet., Kiev*, 1991. 44 *pp.* (Summary) **93g:68147** 68U10 (60G60, 68T10)

Giménez, Fernando Volume estimate for a cone with a submanifold as vertex. (English summary) *J. Geom.* **45** (1992), *no.* 1-2, 63–86. (L. A. Santaló) **93i:53034; EA 93m** 53C20 (53B25)

— On the growth of the relative volume of a tube with its radius. (English summary) *Proc. Roy. Soc. Edinburgh Sect. A* **122** (1992), *no.* 3-4, 255–265. (Lieven Vanhecke) **93j:53068** 53C40 (53C20, 53C55)

floría Gimeno, Luis *see* **Floría Gimeno, Luis**

Gimse, Tore (*with* Risebro, Nils Henrik) Solution of the Cauchy problem for a conservation law with a discontinuous flux function. *SIAM J. Math. Anal.* **23** (1992), *no.* 3, 635–648. (Alberto Valli) **93e:35070** 35L65 (35R05, 76S05, 76T05)

— Conservation laws with discontinuous flux functions. (English summary) *SIAM J. Math. Anal.* **24** (1993), *no.* 2, 279–289. (Summary) **93j:35111** 35L65 (76L05, 76T05)

Gindikin, S. G. Siegel domains etc.... *Festschrift in honor of I. I. Piatetski-Shapiro on the occasion of his sixtieth birthday, Part I* (*Ramat Aviv*, 1989), 5–17, *Israel Math. Conf. Proc.*, 2, *Weizmann, Jerusalem*, 1990. (Editors) **93g:01089c** 01A70 (01A60, 32–03)

— Integral geometry on symmetric manifolds. *Algebra and analysis* (*Kemerovo*, 1988), 29–37, *Amer. Math. Soc. Transl. Ser.* 2, 148, *Amer. Math. Soc., Providence, RI*, 1991. (Eric Grinberg) **93c:53055** 53C65 (22E46, 44A12)

— (*with* Volevich, L. R.) ★ Distributions and convolution equations. Translated from the Russian by V. M. Volosov. *Gordon and Breach Science Publishers, Philadelphia, PA*, 1992. xii+465 *pp. ISBN* 2-88124-753-9 (P. Szeptycki) **93c:46061** 46Fxx (35–02, 35Sxx, 47B38, 47G30)

— Generalized conformal structures on classical real Lie groups and related problems of the theory of representations. (English and French summaries) *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 6, 675–679. (Harald Upmeier) **93h:32045** 32M10 (22E30)

— Fourier transform and Hardy spaces of $\overline{\partial}$-cohomology in tube domains. (English and French summaries) *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 11, 1139–1143. (Salomon Ofman) **93m:32006** 32A25 (42B30)

— *see also* **Mathematical methods of analysis of biopolymer sequences, 93f:92019** *and* **Singularity theory and some problems of functional analysis, 93g:00032**

el-Gindy, Hossam *see* **El-Gindy, Hossam**

Giné, Evarist (*with* Arcones, Miguel A.) On the bootstrap of U and V statistics. *Ann. Statist.* **20** (1992), *no.* 2, 655–674. (Michael R. Chernick) **93f:62021** 62E20 (60F05, 62F05, 62G09)

mora Giné, Xavier *see* **Mora Giné, Xavier**

Giner, V. B. (*with* Azarin, V. S.) Multipliers of entire functions of finite order. (Russian) *Dokl. Akad. Nauk SSSR* **314** (1990), *no.* 5, 1033–1036; *translation in Soviet Math. Dokl.* **42** (1991), *no.* 2, 555–558. (Valentin Napalkov) **93f:30028** 30D20

Gingerich, Owen Victor E. Thoren, 13 May 1935–9 March 1991. *Isis* **82** (1991), *no.* 314, 693–694. (Editors) **93c:01040** 01A70

Gingold, Harry (*with* Hu, Ji Shan) Transcendentally small reflection of waves for problems with/without turning points near infinity: a new uniform approach. *J. Math. Phys.* **32** (1991), *no.* 12, 3278–3284. (Anthony Leung) **93a:34069** 34E20 (34E05, 81Q20)

— A resolution to the inconclusive portion of Kneser's test of oscillation via asymptotics. *Proceedings of Asian Mathematical Conference*, 1990 (*Hong Kong*, 1990), 144–148, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93b:00022**) 34C10

— (*with* Hsieh, Po-Fang) Globally analytic triangularization of a matrix function—an algorithm. *Proceedings of Asian Mathematical Conference*, 1990 (*Hong Kong*, 1990), 149–154, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93b:00022**) 15A21 (47A56)

— (*with* Hsieh, Po-Fang) Globally analytic triangularization of a matrix function. *Linear Algebra Appl.* **169** (1992), 75–101. (L. Rodman) **93f:15007** 15A18 (15A54, 47A56)

— Carlian multisets and totally invertible matrices. (English summary) *Utilitas Math.* **42** (1992), 205–212. (Mu Sheng Wei) **93j:15005** 15A09 (15A03, 15A36)

— (*with* She, Jianming; Zorumski, William E.) Local principles of wave propagation in inhomogeneous media. (English summary) *J. Acoust. Soc. Amer.* **93** (1993), *no.* 2, 599–604. (Peter N. Zhevandrov) **93m:34077** 34E05 (73D25, 73D30)

Gingras, F. (*with* Patera, J.; Sharp, R. T.) Orbit-orbit branching rules between simple low-rank algebras and equal-rank subalgebras. *J. Math. Phys.* **33** (1992), *no.* 5, 1618–1626. (A. J. Coleman) **93c:17015** 17B10 (17B25, 22E46)

Giniatullin, A. I. (*with* Maslennikova, V. N.) On the intrusion problem in a viscous stratified fluid for three space variables. (Russian) *Mat. Zametki* **51** (1992), *no.* 4, 69–77, 141; *translation in Math. Notes* **51** (1992), *no.* 3-4, 374–379. (Summary) **93c:76026** 76D99 (35Q35, 76V05)

Ginibre, J. (*with* Velo, G.) Smoothing properties and existence of solutions for the generalized Benjamin-Ono equation. *J. Differential Equations* **93** (1991), *no.* 1, 150–212. (Summary) **93b:35116** 35Q35 (35Q53)

— (*with* Velo, G.) Conformal invariance and time decay for nonlinear wave equations. *Nonlinear hyperbolic equations and field theory* (*Lake Como*, 1990), 72–86, *Pitman Res. Notes Math. Ser.*, 253, *Longman Sci. Tech., Harlow*, 1992. (Fumioki Asakura) **93h:35132** 35L70 (35B40, 35Q55)

— (*with* Velo, G.) Smoothing properties and retarded estimates for some dispersive evolution equations. *Comm. Math. Phys.* **144** (1992), *no.* 1, 163–188. (Hartmut Pecher) **93a:35065** 35K22 (34G10, 35B65, 35Qxx)

— (*with* Ozawa, Tohru) Long range scattering for nonlinear Schrödinger and Hartree equations in space dimension $n \geq 2$. (English summary) *Comm. Math. Phys.* **151** (1993), *no.* 3, 619–645. (Nakao Hayashi) **93m:35168** 35Q55 (81U05)

Ginisti, Jean-Pierre Les problèmes de la définition. (English summary) [The problems of definition] *Math. Inform. Sci. Humaines No.* 116 (1991), 5–22 (1992). (Summary) **93b:03005** 03A05 (01A05, 03–03)

— La créativité des définitions dans les systèmes para-Euclidiens. (English summary) [The creativity of definitions in para-Euclidean systems] *Math. Inform. Sci. Humaines No.* 116 (1991), 69–88 (1992). (John Bacon) **93f:03013** 03B60 (03A05, 03B05, 03B20, 03B50)

van Ginneken, L. P. P. P. (*with* Otten, R. H. J. M.) ★ The annealing algorithm. The Kluwer International Series in Engineering and Computer Science. VLSI, Computer Architecture and Digital Signal Processing. *Kluwer Academic Publishers, Boston, MA*, 1989. x+201 *pp. ISBN* 0-7923-9022-9 (From the preface) **93h:90001** 90–02 (60J10, 65C05, 65U05, 82C80, 90C27)

Ginsberg, Matthew L. Bilattices and modal operators. *J. Logic Comput.* **1** (1990), *no.* 1, 41–69. (Jian Ming Gao) **93b:03021** 03B45 (03B70, 68T30)

— (*with* Geddis, Donald F.) Is there any need for domain-dependent control information? *AAAI-91. Proceedings, Ninth National Conference on Artificial Intelligence, Vol.* 1, 2, 452–457, *AAAI Press, Menlo Park, CA*, 1991. (*see* **93i:68011**) 68T15

— (*with* Darwiche, Adnan Y.) A symbolic generalization of probability theory. (English summary) *AAAI-92. Proceedings, Tenth National Conference on Artificial Intelligence* (*San Jose, CA*, 1992), 622–627, *Amer. Assoc. Artif. Intell., Menlo Park, CA*, 1992. (Summary) **93j:68200** 68T30 (03B48, 60A99, 62A15, 68T27)

— (*with* Harvey, William D.) Iterative broadening. *Artificial Intelligence* **55** (1992), *no.* 2-3, 367–383. (Summary) **93c:68015** 68P10

Ginsburg, Seymour *see* **Theoretical studies in computer science, 93a:68009**

Ginsparg, P. Some statistical mechanical models and conformal field theories. *Superstrings '89* (*Trieste*, 1989), 130–196, *World Sci. Publishing, River Edge, NJ*, 1990. (Satoru Saito) **93g:82001** 82–02 (81T40, 82B23)

Gintides, Drossos (*with* Kiriaki, Kiriakie) On the continuity dependence of elastic scattering amplitudes upon the shape of the scatterer. *Inverse Problems* **8** (1992), *no.* 1, 95–118. (Gustavo Perla Menzala) **93e:35079** 35P25 (35Q99, 73D25)

Ginzburg, David (*with* Bump, Daniel) Symmetric square L-functions on $GL(r)$. *Ann. of Math.* (2) **136** (1992), *no.* 1, 137–205. (Stephen Gelbart) **93i:11058** 11F66 (11F27, 11F70)
— (*with* Bump, Daniel) Spin L-functions on symplectic groups. *Internat. Math. Res. Notices* **1992**, *no.* 8, 153–160. (Stephen Gelbart) **93i:11060** 11F70 (11F66, 22E50, 22E55)
— (*with* Bump, Daniel; Friedberg, Solomon) Whittaker-orthogonal models, functoriality, and the Rankin-Selberg method. *Invent. Math.* **109** (1992), *no.* 1, 55–96. (David Joyner) **93e:11066** 11F70 (22E50, 22E55)
— On the standard L-function for G_2. *Duke Math. J.* **69** (1993), *no.* 2, 315–333. (David Joyner) **93m:22023** 22E55 (11F27, 11F70, 22E50)
golenko-Ginzburg, Dimitri *see* **Golenko-Ginzburg, Dimitri**
Ginzburg, I. S. (*with* Entov, V. M.; Teodorovich, E. V.) The renormalization group method in a problem of convective diffusion with irreversible sorption. (Russian) *Prikl. Mat. Mekh.* **56** (1992), *no.* 1, 68–76; *translation in J. Appl. Math. Mech.* **56** (1992), *no.* 1, 59–66. (From the text) **93c:76075** 76R50 (76S05, 82C28)
Ginzburg, V. A. Lagrangian construction of the enveloping algebra $U(\mathrm{sl}_n)$. (Russian) *Funktsional. Anal. i Prilozhen.* **26** (1992), *no.* 1, 64–66; *translation in Functional Anal. Appl.* **26** (1992), *no.* 1, 51–52. (J. S. Joel) **93c:17021** 17B35 (17B10, 22E47)
— (*with* Beilinson, A. A.) Infinitesimal structure of moduli spaces of G-bundles. *Internat. Math. Res. Notices* **1992**, *no.* 4, 63–74. (Michael M. Kapranov) **93g:14036** 14H60 (32G08, 32L05)
Ginzburg, Viktor L. (*with* Lu, Jiang-Hua) Poisson cohomology of Morita-equivalent Poisson manifolds. *Internat. Math. Res. Notices* **1992**, *no.* 10, 199–205. (Charles-Michel Marle) **93k:58091** 58F05 (17B56)
— Some remarks on symplectic actions of compact groups. *Math. Z.* **210** (1992), *no.* 4, 625–640. (Nikolai K. Smolentsev) **93h:57053** 57S15 (57R91, 57S25, 58F05)
— Calculation of contact and symplectic cobordism groups. *Topology* **31** (1992), *no.* 4, 767–773. (R. E. Stong) **93j:57020** 57R90
Giona, Massimiliano (*with* Roman, H. Eduardo) Fractional diffusion equation on fractals: one-dimensional case and asymptotic behaviour. *J. Phys. A* **25** (1992), *no.* 8, 2093–2105. (Summary) **93a:82043** 82C31 (82C70, 82D30)
— (*with* Roman, H. Eduardo) Fractional diffusion equation on fractals: three-dimensional case and scattering function. *J. Phys. A* **25** (1992), *no.* 8, 2107–2117. (Summary) **93a:82044** 82C31 (82C70)
Gionfriddo, Mario (*with* Milazzo, Filippo; Vacirca, Vincenzo) Transitive multipermutation graphs: case $4 \le n \le m$. *Discrete Math.* **97** (1991), *no.* 1-3, 191–198. (R. C. Read) **93b:05057** 05C15
— (*with* Lo Faro, Giovanni) On blocking sets in $S_\lambda(t, t+1, v)$. Proceedings of the First International Conference on Blocking Sets (Giessen, 1989). *Mitt. Math. Sem. Giessen No.* 201 (1991), 55–58. (Summary) **93e:51013** 51E21 (05B05)
— (*with* Lo Faro, Giovanni) 2-colourings in $S(t, t+1, v)$. (English summary) Graph theory and combinatorics (Marseille-Luminy, 1990). *Discrete Math.* **111** (1993), *no.* 1-3, 263–268. (Summary) **93j:05028** 05B30
— *see also* **Graphs, designs and combinatorial geometries, 93d:05002**
Giordana, Claudia (*with* Mochi, Marina; Zirilli, Francesco) The numerical solution of an inverse problem for a class of one-dimensional diffusion equations with piecewise constant coefficients. *SIAM J. Appl. Math.* **52** (1992), *no.* 2, 428–441. (Cristina Turner) **93a:35154** 35R30 (35A40, 35C15, 35K20, 35R05, 65M99)
Giordano, Frank R. (*with* Arkin, Joseph; Arney, David C.; Dewald, Lee S.) Supercube. *Applications of Fibonacci numbers, Vol.* 4 (*Winston-Salem, NC*, 1990), 17–32, *Kluwer Acad. Publ., Dordrecht*, 1991. (*see* **93g:11004**) 05B15
— (*with* Arkin, Joseph; Arney, David C.; Kolb, Rickey A.) A note on fundamental properties of recurring series. *Applications of Fibonacci numbers, Vol.* 4 (*Winston-Salem, NC*, 1990), 33–36, *Kluwer Acad. Publ., Dordrecht*, 1991. (Ronald J. Evans) **93m:11004** 11A07 (11B65)
— (*with* Arkin, Joseph; Arney, David C.; Kolb, Rickey A.; Smith, Paul) Reverse digit constructions of perfect, magic, and doubly magic cubes. (English summary) *Transactions of the Tenth Army Conference on Applied Mathematics and Computing* (*West Point, NY*, 1992), 91–101, *ARO Rep.*, 93-1, *U.S. Army Res. Office, Research Triangle Park, NC*, 1993. (*see* **93m:00047**) 05B15
Giordano, Laura (*with* Martelli, Alberto; Rossi, Gianfranco) Extending Horn clause logic with implication goals. *Theoret. Comput. Sci.* **95** (1992), *no.* 1, 43–74. (Summary) **93b:68010** 68N17 (03B70)
Giorgi, Claudio (*with* Lazzari, Barbara) Uniqueness and stability in linear viscoelasticity: some counterexamples. (English summary) *Waves and stability in continuous media* (*Sorrento*, 1989), 146–153, *Ser. Adv. Math. Appl. Sci.*, 4, *World Sci. Publishing, River Edge, NJ*, 1991. (Summary) **93i:73027** 73F15 (73B30, 73H10)
— (*with* Marzocchi, Alfredo) Extremum principles for the quasi-static problem in linear viscoelasticity. *Thermodynamics and kinetic theory* (*Mądralin*, 1990), 49–57, *Ser. Adv. Math. Appl. Sci.*, 12, *World Sci. Publishing, River Edge, NJ*, 1992. (N. Gass) **93f:73053** 73F15 (73B30, 73V25)
— (*with* Marzocchi, Alfredo) A minimum principle for the quasi-static problem in linear viscoelasticity. (Italian summary) *Boll. Un. Mat. Ital. A* (7) **6** (1992), *no.* 2, 255–266. (Kenneth Kuttler) **93f:73052** 73F15 (73B30, 73V25)
— (*with* Morro, Angelo) Viscoelastic solids with unbounded relaxation function. *Contin. Mech. Thermodyn.* **4** (1992), *no.* 2, 151–165. (Summary) **93c:73044** 73F15 (73B05, 73B30)
— (*with* Marzocchi, Alfredo) New variational principles in quasi-static viscoelasticity. (English summary) *J. Elasticity* **29** (1992), *no.* 1, 85–96. (Stan Chiriță) **93g:73064** 73F99 (73V25)
de Giorgi, Ennio *see* **De Giorgi, Ennio**
Giorgi, Giorgio (*with* Guerraggio, A.) On a characterization of Clarke's tangent cone. *J. Optim. Theory Appl.* **74** (1992), *no.* 2, 369–372. 49J52
Giorgi, J.-F. (*with* Le Métayer, D.) Continuation-based compilation of functional languages for parallel machines. (English summary) 1990 ACM Conference on Lisp and Functional Programming (Nice, 1990). *Math. Structures Comput. Sci.* **2** (1992), *no.* 4, 393–414. (Summary) **93j:68057** 68Q10 (68Q45)
Giorgilli, Antonio (*with* Celletti, Alessandra) On the stability of the Lagrangian points in the spatial restricted problem of three bodies. *Celestial Mech. Dynam. Astronom.* **50** (1991), *no.* 1, 31–58. (Summary) **93a:70007** 70F07 (70F15, 70K20)
— (*with* Galgani, Luigi; Martinoli, Andrea; Vanzini, Stefano) On the problem of energy equipartition for large systems of the Fermi-Pasta-Ulam type: analytical and numerical estimates. (English summary) *Phys. D* **59** (1992), *no.* 4, 334–348. (Summary) **93h:58135** 58F30 (58F05, 58F27, 70H05)
— (*with* Zehnder, Eduard) Exponential stability for time dependent potentials. (English summary) *Z. Angew. Math. Phys.* **43** (1992), *no.* 5, 827–855. (L. Håkan Eliasson) **93i:58088** 58F10 (58F05, 70H05)
— (*with* Morbidelli, Alessandro) Quantitative perturbation theory by successive elimination of harmonics. (English summary) *Celestial Mech. Dynam. Astronom.* **55** (1993), *no.* 2, 131–159. (From the introduction) **93i:70017** 70H05 (58F05, 58F40, 70–08, 70F15)
Giorgini, Bruno (*with* Balbinot, Roberto; El Gradechi, Amine M.; Gazeau, Jean-Pierre) Phase spaces for quantum elementary systems in anti-de Sitter and Minkowski space-times. *J. Phys. A* **25** (1992), *no.* 5, 1185–1210. (J.-P. Antoine) **93j:81058** 81S30 (22E70, 81R05, 81S10)
Giorno, F. (*with* da Rocha, Armando Freitas; Leão, B.; Theoto, M.) The physiology of the expert system. *Fuzzy expert systems*, 81–98, *CRC, Boca Raton, FL*, 1992. (*see* **93g:68133**) 68T35
Giorno, Virginia (*with* Ricciardi, Luigi M.; Nobile, Amelia G.) On the asymptotics of first passage time densities. *White noise analysis* (*Bielefeld*, 1989), 344–359, *World Sci. Publishing, River Edge, NJ*, 1990. (Summary) **93d:60128** 60J60
— (*with* Di Crescenzo, A.; Nobile, Amelia G.) On some first-crossing-time probabilities for a two-dimensional random walk with correlated components. *Adv. in Appl. Probab.* **24** (1992), *no.* 2, 441–454. (Sri Gopal Mohanty) **93g:60016** 60C05 (05A15, 60J15)
da sangallo Giovane, Antonio *see* **da Sangallo Giovane, Antonio**
Giovangigli, V. (*with* Smooke, M. D.) Numerical modeling of axisymmetric laminar diffusion flames. *Impact Comput. Sci. Engrg.* **4** (1992), *no.* 1, 46–79. (Summary) **93c:65158** 65P05 (76M25, 76N15, 80A25)
de Giovanni, Francesco (*with* Franciosi, Silvana) On automorphisms fixing subnormal subgroups of soluble groups. (Italian summary) *Atti Accad. Naz. Lincei Rend. Cl. Sci. Fis. Mat. Natur.* (8) **82** (1988), *no.* 2, 217–222 (1989). (J. Wiegold) **93d:20064** 20E36 (20F19)
— (*with* Amberg, B.; Franciosi, Silvana) Rank formulae for factorized groups. (Russian and Ukrainian summaries) *Ukrain. Mat. Zh.* **43** (1991), *no.* 7-8, 1078–1084; *reprinted in Ukrainian Math. J.* **43** (1991), *no.* 7-8, 1012–1018 (1992). (John S. Wilson) **93b:20064** 20F16 (20E15)
— (*with* Franciosi, Silvana) Groups whose finite quotients have a transitive normality relation. (Italian summary) *Boll. Un. Mat. Ital. B* (7) **6** (1992), *no.* 2, 329–350. (Martyn R. Dixon) **93g:20062** 20F16 (20E26)
— (*with* Franciosi, Silvana) On the Hirsch-Plotkin radical of a factorized group. *Glasgow Math. J.* **34** (1992), *no.* 2, 193–199. (M. J. Tomkinson) **93g:20066** 20F19
de Giovanni, L. *see* **De Giovanni, L.**
Giovannini, M. (*with* Gasperini, M.) Gravity waves from primordial dimensional reduction. (English summary) *Classical Quantum Gravity* **9** (1992), *no.* 10, L137–L141. (Summary) **93f:83086** 83F05 (83C35, 83E15)
Giove, Silvio (*with* Canestrelli, Elio) Optimizing a quadratic function with fuzzy linear coefficients. (English, Russian and Polish summaries) *Control Cybernet.* **20** (1991), *no.* 3, 25–36. (Summary) **93h:90103** 90C70 (04A72, 90C20)
Giovine, Pasquale Note on the constitutive equations for superfluid helium. (Italian. Italian summary) *Riv. Mat. Univ. Parma* (4) **17** (1991), 191–198 (1992). (From the introduction) **93g:76014** 76A99 (73B05)
— (*with* Oliveri, Francesco) Wave features related to a model of compressible immiscible mixtures of two perfect fluids. (English summary) *Acta Mech.* **96** (1993), *no.* 1-4, 85–96. (Summary) **93i:76072** 76N10 (76A02, 76D33, 76T05)
Giovini, Alessandro (*with* Astesiano, Egidio; Reggio, Gianna) Observational structures and their logic. Second Workshop on Concurrency and Compositionality (San Miniato, 1990). *Theoret. Comput. Sci.* **96** (1992), *no.* 1, 249–283. (Gabriel Ciobanu) **93e:68075** 68Q65 (03B70)
Giraitis, L. (*with* Surgailis, Donatas) On shot noise processes with long range dependence. *Probability theory and mathematical statistics, Vol. I* (*Vilnius*, 1989), 401–408, "*Mokslas*", *Vilnius*, 1990. (Jozef L. Teugels) **93d:60069** 60G18
— (*with* Surgailis, Donatas) On shot noise processes attracted to fractional Lévy motion. *Stable processes and related topics* (*Ithaca, NY*, 1990), 261–273, *Progr. Probab.*, 25, *Birkhäuser Boston, Boston, MA*, 1991. (Makoto Maejima) **93a:60027** 60F05 (60G18)
sánchez-Giralda, Tomás *see* **Sánchez-Giralda, Tomás**
Giraldes, Emília (*with* Blyth, T. S.) Perfect elements in Dubreil-Jacotin regular semigroups. *Semigroup Forum* **45** (1992), *no.* 1, 55–62. (R. B. McFadden) **93b:06030** 06F05 (20M19, 20M99)
Girard, Didier A. Asymptotic optimality of the fast randomized versions of GCV and C_L in ridge regression and regularization. *Ann. Statist.* **19** (1991), *no.* 4, 1950–1963. (Khursheed Alam) **93b:62096** 62J07 (62G05)
Girard, Jean-Yves Introduction à la logique linéaire. [Introduction to linear logic] *Logique et informatique: une introduction*, 229–256, *Collect. Didact.*, 8, *INRIA, Rocquencourt*, 1991. (*see* **93d:68003**) 03F50 (03B70, 68Q55)
— A new constructive logic: classical logic. *Math. Structures Comput. Sci.* **1** (1991), *no.* 3, 255–296. (Henry Africk) **93e:03080** 03F50 (03B10, 03B70, 03F05, 03F07)
— Logic and exceptions: a few remarks. *J. Logic Comput.* **2** (1992), *no.* 2, 111–118. (Summary) **93i:68162** 68T27 (03B70)
— (*with* Normann, Dag) Embeddability of ptykes. *J. Symbolic Logic* **57** (1992), *no.* 2, 659–676. (Peter Päppinghaus) **93e:03078** 03F15 (03D65, 18A35)
— (*with* Scedrov, Andre; Scott, Philip J.) Bounded linear logic: a modular approach to polynomial-time computability. *Theoret. Comput. Sci.* **97** (1992), *no.* 1, 1–66. (Fangmin Song) **93e:03055** 03D15 (03B70, 68Q15)
fusco Girard, M. *see* **Fusco Girard, M.**
Girardello, L. (*with* Cecotti, Sergio; Pasquinucci, Andrea) Singularity-theory and $N = 2$ supersymmetry. *Internat. J. Modern Phys. A* **6** (1991), *no.* 14, 2427–2496. (Summary) **93a:32055** 32S40 (32G81, 32J81, 81T40, 81T60)
Girardi, M. *see* **Girardi, Mario**
Girardi, Maria (*with* Hu, Zhibao) Errata: "Dentability, trees, and Dunford-Pettis operators on L_1" [Pacific J. Math. **148** (1991), no. 1, 59–79; MR 92e:46030] by Girardi. (English summary) *Pacific J. Math.* **157** (1993), *no.* 2, 389–394. (Summary) **93k:46010** 46B20 (46B22, 46G10, 47D15)

Girardi, Mario (*with* Matzeu, Michele) Essential critical points of linking type and solutions of minimal period to superquadratic Hamiltonian systems. *Nonlinear Anal.* **19** (1992), *no.* 3, 237–247. (Gabriella Tarantello) **93f:58030** 58E05 (34C25, 58F05, 58F22, 70H05)

— *see also* **Progress in variational methods in Hamiltonian systems and elliptic equations, 93b:00036**

Giraud, B. G. (*with* Mantica, Giorgio) Nonlinear forecasting and iterated function systems. *Chaos* **2** (1992), *no.* 2, 225–230. (Summary) **93b:58045** 58F03 (58F13)

— (*with* Mekideche, F.) Symmetry breaking by propagation. (English summary) *J. Math. Phys.* **34** (1993), *no.* 1, 29–49. (Summary) **93i:81286** 81U10 (81U05)

Giraud, L. (*with* Spiteri, P.) Implementations of parallel solutions for nonlinear boundary value problems. (English summary) *Parallel computing* '91 (*London*, 1991), 203–211, *Adv. Parallel Comput.*, 4, *North-Holland, Amsterdam*, 1992. (*see* **93f:00016**) 65Y05 (65N22)

Girault, Vivette (*with* Bernardi, Christine; Coppoletta, Giuseppe; Maday, Yvon) Spectral methods for the Stokes problem in stream-function formulation. (English summary) *Spectral and high order methods for partial differential equations* (*Como*, 1989), 229–236, *North-Holland, Amsterdam*, 1990. (*see* **93d:65005**) 65N35 (76D07, 76M25)

— (*with* Bernardi, Christine; Maday, Yvon) Mixed spectral element approximation of the Navier-Stokes equations in the stream-function and vorticity formulation. (English and French summaries) *IMA J. Numer. Anal.* **12** (1992), *no.* 4, 565–608. (Long An Ying) **93i:65113** 65N35 (35Q30, 76D05, 76M25)

— The gradient, divergence, curl and Stokes operators in weighted Sobolev spaces of $\mathbf{R}^3$. (English summary) *J. Fac. Sci. Univ. Tokyo Sect. IA Math.* **39** (1992), *no.* 2, 279–307. (Yoshikazu Giga) **93h:47060** 47F05 (35Q30, 46E35, 47N20)

— (*with* Giroire, J.; Sequeira, A.) A stream-function–vorticity variational formulation for the exterior Stokes problem in weighted Sobolev spaces. *Math. Methods Appl. Sci.* **15** (1992), *no.* 5, 345–363. (Summary) **93d:35113** 35Q30 (76D07, 76M30)

Girault-Beauquier, Danièle (*with* Nivat, Maurice) Tiling the plane with one tile. *Topology and category theory in computer science* (*Oxford*, 1989), 291–333, *Oxford Sci. Publ., Oxford Univ. Press, New York*, 1991. (*see* **93h:68004**) 05B45

— (*with* Pin, Jean-Eric) Languages and scanners. *Words, languages and combinatorics* (*Kyoto*, 1990), 16–29, *World Sci. Publishing, River Edge, NJ*, 1992. (G. J. Lallement) **93g:20124** 20M35 (20M20, 68Q05, 68Q45, 68Q70)

Girbau, J. A versality theorem for transversely holomorphic foliations of fixed differentiable type. *Illinois J. Math.* **36** (1992), *no.* 3, 428–446. (Aziz El Kacimi Alaoui) **93m:32027** 32G07 (32L30)

Gire, F. (*with* Nivat, Maurice) Langages algébriques de mots biinfinis. [Algebraic languages of bi-infinite words] *Theoret. Comput. Sci.* **86** (1991), *no.* 2, 277–323. (Danièle Beauquier) **93a:68073** 68Q45

Girela, Daniel On Bloch functions and gap series. (English summary) *Publ. Mat.* **35** (1991), *no.* 2, 403–427. (Ke He Zhu) **93m:30044** 30D45 (30D50)

— A note on the radial growth of Bloch functions. *Bull. Austral. Math. Soc.* **45** (1992), *no.* 1, 143–149. (Shamil Makhmutov) **93a:30019** 30C55 (30D45)

— Nontangential limits for analytic functions of slow growth in a disc. (English summary) *J. London Math. Soc.* (2) **46** (1992), *no.* 1, 140–148. (David J. Hallenbeck) **93k:30058** 30D40

— Mean growth of the derivative of certain classes of analytic functions. *Math. Proc. Cambridge Philos. Soc.* **112** (1992), *no.* 2, 335–342. (Miroslav Pavlović) **93k:30060** 30D55 (47B38)

Giri, F. (*with* M'Saad, M.; Dugard, Luc; Dion, Jean Michel) A direct adaptive controller for a class of stable and time-varying plants. (English summary) *Adaptive systems in control and signal processing*, 1989 (*Glasgow*), 195–198, *IFAC Sympos. Ser.*, 1990, *No.* 1, *Pergamon, Oxford*, 1990. (*see* **93j:93007**) 93C40

— *see also* **Kim, Jong-Hwan**

Giri, N. (*with* Das, Kalyan) Locally minimax tests of independence with additional observations. (English summary) *Sankhyā Ser. B* **52** (1990), *no.* 1, 14–22. (Summary) **93e:62148** 62H15 (62C20)

— (*with* Perron, François) Best equivariant estimation in curved covariance models. *J. Multivariate Anal.* **40** (1992), *no.* 1, 46–55. (S. John) **93b:62085** 62H12 (62J05)

— (*with* Behara, M.; Banerjee, Pradeep Kumar) Locally minimax test of independence in elliptically symmetrical distributions with additional observations. *Metrika* **39** (1992), *no.* 2, 75–84. (Minoru Siotani) **93j:62157** 62H15

Giri, R. D. (*with* Rakhunde, R. R.) Two commutativity theorems for associative rings. (English summary) *Bull. Calcutta Math. Soc.* **84** (1992), *no.* 1, 81–84. (Summary) **93j:16024** 16U80

— (*with* Dhoble, Ashok R.) On a commutativity theorem of Quadri. (English summary) *Bull. Calcutta Math. Soc.* **84** (1992), *no.* 4, 294–296. (Summary) **93m:16023** 16U80

— (*with* Rakhunde, R. R.) Some commutativity theorems of nonassociative rings. *Kyungpook Math. J.* **32** (1992), *no.* 1, 111–114. (From the introduction) **93g:17001** 17A01

— (*with* Dhoble, Ashok R.) On a commutativity theorem of quadri for semi-simple rings. *Kyungpook Math. J.* **32** (1992), *no.* 2, 229–232. 16U80

— (*with* Rakhunde, R. R.) Some commutativity theorems on certain rings. (English summary) *Kyungpook Math. J.* **32** (1992), *no.* 2, 233–237. 16U80

— (*with* Wazalwar, A. K.) Prime ideals and prime radicals in noncommutative semigroups. (English summary) *Math. Today* **10** (1992), 17–28. (Summary) **93g:20118** 20M12 (20M11)

— (*with* Dhoble, Ashok R.) Some commutativity theorems for rings. (English summary) *Publ. Math. Debrecen* **41** (1992), *no.* 1-2, 35–40. (Summary) **93d:16040** 16U80

Girko, V. L. ★ Теория эмпирических систем уравнений. (Russian) [Theory of empirical systems of equations] "*Lybid*'", *Kiev*, 1990. 264 *pp. ISBN* 5-11-001515-5 (Summary) **93d:60106** 60H25 (60F99, 62H10)

— *G*-estimates of eigen-values of covariance matrices. *Probability theory and mathematical statistics, Vol. I* (*Vilnius*, 1989), 409–423, "*Mokslas*", *Vilnius*, 1990. (M. Hušková) **93e:62146** 62H12 (62H10)

— Limit theorems for maximal and minimal eigenvalues of random matrices. (Russian) *Teor. Veroyatnost. i Primenen.* **35** (1990), *no.* 4, 677–690; *translation in Theory Probab. Appl.* **35** (1990), *no.* 4, 680–695 (1991). (Zhi-Dong Bai) **93j:62147** 62H10 (60F99)

— (*with* Onsha, Yu. M.) G_{16}-estimate for estimation error in the method of least squares. (Russian. Russian summary) *Vestnik Kiev. Univ. Model. Optim. Slozhn. Sist. No.* 9 (1990), 29–34. (Summary) **93d:62122** 62J05

— *S*-estimates. (Russian) *Vychisl. Prikl. Mat.* (*Kiev*) *No.* 71 (1990), 90–97. (Summary) **93c:62096** 62H12 (62C20)

— (*with* Chaĭka, O. G.) Moments of spectral distribution functions of the distances between neighboring eigenvalues of random matrices. (Russian) *Vychisl. Prikl. Mat.* (*Kiev*) *No.* 71 (1990), 97–102. (Summary) **93d:60058** 60F99 (62H10, 81V35)

— (*with* Smirnova, V. V.) An empirical method for solving problems of linear programming. (Russian) *Issled. Operatsiĭ i ASU No.* 35 (1991), 29–34. 90C05

— Asymptotics of the eigenvalues of empirical covariance matrices. I. (Russian) *Teor. Veroyatnost. i Mat. Statist. No.* 44 (1991), 40–48; *translation in Theory Probab. Math. Statist. No.* 44 (1992), 37–44. (Summary) **93c:62089** 62H10

— Systems of linear algebraic equations with random coefficients. (Russian) *Teor. Veroyatnost. i Primenen.* **36** (1991), *no.* 2, 274–284; *translation in Theory Probab. Appl.* **36** (1991), *no.* 2, 261–271 (1992). (A. Nowak (Zbl 732:60074)) **93e:60128** 60H25 (60F99, 62H10)

— Integral representation and resolvent methods for solving of linear stochastic programming problems of large dimensions. *System modelling and optimization* (*Zurich*, 1991), 574–579, *Lecture Notes in Control and Inform. Sci.*, 180, *Springer, Berlin*, 1992. (*see* **93e:90003**) 90C15

— Asymptotics of the eigenvalues of empirical covariance matrices. II. (Ukrainian. Russian and Ukrainian summaries) *Teor. Ĭmovir. ta Mat. Statist. No.* 46 (1992), 36–42. (Summary) **93j:62148** 62H10 (62H05)

— (*with* Stepakhno, I. V.) Asymptotics of Stieltjes transforms of singular spectral functions. (Ukrainian. Russian and Ukrainian summaries) *Teor. Ĭmovir. ta Mat. Statist. No.* 46 (1992), 42–50. (Summary) **93h:62105** 62H10 (62H15)

Girnyk, M. A. On the approximation of a subharmonic function of infinite order by the logarithm of the modulus of an entire function. (Russian) *Mat. Zametki* **50** (1991), *no.* 4, 57–60, 158; *translation in Math. Notes* **50** (1991), *no.* 3-4, 1025–1027 (1992). (Marek Aleksander Kowalski) **93g:41013** 41A30 (31A05)

Giroire, J. (*with* Girault, Vivette; Sequeira, A.) A stream-function–vorticity variational formulation for the exterior Stokes problem in weighted Sobolev spaces. *Math. Methods Appl. Sci.* **15** (1992), *no.* 5, 345–363. (Summary) **93d:35113** 35Q30 (76D07, 76M30)

Giron-Sierra, Jose M. (*with* Vazquez-Suances, Eduardo) Showing complex dynamics with PCs: a repertory of interesting cases. (English summary) *Internat. J. Math. Ed. Sci. Tech.* **23** (1992), *no.* 6, 831–859. 34-01 (34A34, 34C15, 58-01)

Girosi, Federico Some extensions of radial basis functions and their applications in artificial intelligence. (English summary) Advances in the theory and applications of radial basis functions. *Comput. Math. Appl.* **24** (1992), *no.* 12, 61–80. (Summary) **93j:65041** 65D99 (68T05)

Girotti, H. O. (*with* Foerster, A.) Statistical transmutation in 2 + 1 dimensions. (English summary) *J. J. Giambiagi Festschrift*, 161–168, *World Sci. Publishing, River Edge, NJ*, 1990. (Summary) **93c:81123** 81T13

Girotto, Bruno (*with* Holzer, Silvano) Regular and purely irregular bounded charges: a decomposition theorem. *Proc. Amer. Math. Soc.* **116** (1992), *no.* 3, 683–693. (K. P. S. Bhaskara Rao) **93a:28011** 28C15 (60B05)

Girou, Mike (*with* Shen, Xiao Jun; Hu, Qing; Cong, Bin; Sudborough, Ivan Hal; Bettayeb, Said) The 4-star graph is not a subgraph of any hypercube. (English summary) *Inform. Process. Lett.* **45** (1993), *no.* 4, 199–203. (Summary) **93k:05054** 05C10 (68Q10, 68R10)

Giroux, Emmanuel Convexité en topologie de contact. [Convexity in contact topology] *Comment. Math. Helv.* **66** (1991), *no.* 4, 637–677. (C. B. Thomas) **93b:57029** 57R15 (53C15, 57R70, 58E99, 58F09)

Girs, V. N. (*with* Vaĭnshtein, A. A.; Lokin, V. V.) Tensors of the sixth rank as characteristics of random tensor fields. (Russian) *Dokl. Akad. Nauk* **323** (1992), *no.* 6, 1048–1051; *translation in Soviet Phys. Dokl.* **37** (1992), *no.* 4, 203–204. (From the text) **93i:73007** 73B35 (73B99, 73C99, 73R05)

Girstmair, Kurt The Galois module of a twisted element in the p^mth cyclotomic field. *Acta Arith.* **61** (1992), *no.* 4, 399–403. (Lawrence Washington) **93e:11124** 11R18

— On the branch order of the ring of integers of an abelian number field. *Acta Arith.* **62** (1992), *no.* 3, 297–301. (Jean Cougnard) **93k:11094** 11R04 (11R20, 11R33)

Gisin, Nicolas (*with* Cibils, M. B.) Quantum diffusions, quantum dissipation and spin relaxation. (English summary) *J. Phys. A* **25** (1992), *no.* 19, 5165–5176. (Kalyan B. Sinha) **93j:81055** 81S20 (81P20)

— (*with* Percival, Ian C.) Wave-function approach to dissipative processes: are there quantum jumps? *Phys. Lett. A* **167** (1992), *no.* 4, 315–318. (Summary) **93h:81007** 81P05 (81S25)

Gispert-Chambaz, Hélène Principes de l'analyse chez Darboux et Houël (1870–1880): textes et contextes. (English summary) [Principles of analysis in Darboux and Houël (1870–1880): texts and contexts] *Rev. Hist. Sci.* **43** (1990), *no.* 2-3, 181–220. (R. Siegmund-Schultze (Zbl 718:01021)) **93f:01012** 01A55 (01A35)

— Les débuts des sociétés mathématiques en Europe. [The origins of the mathematical societies in Europe] *Gaz. Math. No.* 53 (1992), 25–30. (Hans Niels Jahnke) **93i:01027** 01A74 (01A55, 01A60, 01A80)

Gitman, D. M. (*with* Fradkin, E. S.) Path-integral representation for the relativistic particle propagators and BFV quantization. *Phys. Rev. D* (3) **44** (1991), *no.* 10, 3230–3236. (Summary) **93b:81134** 81S40 (81T70)

— (*with* Saa, A. V.) Pseudoclassical model of spinning particle with anomalous magnetic momentum. (English summary) *Modern Phys. Lett. A* **8** (1993), *no.* 5, 463–468. (Summary) **93j:81014** 81Q05

Gitterman, Moshe (*with* Dayan, Ido; Weiss, George H.) On the entropy of a class of constrained random walks. *Phys. A* **183** (1992), *no.* 4, 508–518. (Cheng Xun Wu) **93g:82048** 82B30 (60J15)

Gittins, John (*with* Wang, You-Gan) The learning component of dynamic allocation indices. (English summary) *Ann. Statist.* **20** (1992), *no.* 3, 1625–1636. (Elżbieta Ferenstein) **93k:62013** 62C10 (62L05, 90C40, 93E20)

Gittler, Philipp On similarity solutions occurring in the theory of interactive laminar boundary layers. (English summary) *J. Fluid Mech.* **244** (1992), 131–147. (Summary) **93g:76100** 76N20 (76D10, 76E05, 76J20)

Giudici, Reinaldo (*with* Dávila, Jaime; Ruiz, Sergio) Smallest tetravalent graphs with a given cyclic group of automorphisms. (English and Spanish summaries) *Acta Cient. Venezolana* **43** (1992), *no.* 4, 208–212. (Summary) **93j:05078** 05C25

Giuffrida, Salvatore Graded Betti numbers and Rao modules of curves lying on a smooth cubic surface in $\mathbf{P}^3$. *The Curves Seminar at Queen's, Vol. VIII (Kingston, ON, 1990/1991), Exp.* A, 61 *pp., Queen's Papers in Pure and Appl. Math.*, 88, *Queen's Univ., Kingston, ON,* 1991. (A. Hirschowitz) **93g:14035** 14H50

— (*with* Maggioni, Renato) Generators for the ideal of an integral curve lying on a smooth quartic surface. *J. Pure Appl. Algebra* **76** (1991), *no.* 3, 317–332. (Giorgio Bolondi) **93d:14045** 14H45 (14H50, 14J05)

— On the resolution of the Rao module of a curve lying on a smooth cubic surface in $\mathbf{P}^3$. (Italian summary) *Boll. Un. Mat. Ital. A* (7) **6** (1992), *no.* 3, 437–446. (Gunnar Fløystad) **93j:14034** 14H50

— (*with* Maggioni, Renato) On the Rao module of a curve lying on a smooth cubic surface in $\mathbf{P}^3$. II. *Comm. Algebra* **20** (1992), *no.* 2, 329–347. (Mei Chu Chang) **93c:14030** 14H50

— (*with* Maggioni, Renato; Ragusa, A.) On the postulation of 0-dimensional subschemes on a smooth quadric. (English summary) *Pacific J. Math.* **155** (1992), *no.* 2, 251–282. (Ovidiu Păsărescu) **93h:14025** 14J25 (14M07)

Giuli, Eraldo (*with* Brümmer, G. C. L.; Herrlich, Horst) Epireflections which are completions. (French summary) *Cahiers Topologie Géom. Différentielle Catégoriques* **33** (1992), *no.* 1, 71–73. (H. L. Bentley) **93h:18004** 18A40 (18B30, 54B30, 54E15)

— (*with* Brümmer, G. C. L.) A categorical concept of completion of objects. *Comment. Math. Univ. Carolin.* **33** (1992), *no.* 1, 131–147. (Summary) **93c:18005** 18B30 (54B30)

— (*with* Castellini, Gabriele) Hereditarity of closure operators and injectivity. *Comment. Math. Univ. Carolin.* **33** (1992), *no.* 1, 149–157. (Summary) **93e:18003** 18A32 (18A20, 18G05)

Giuliano Antonini, Rita Sur le comportement asymptotique du processus de Ornstein-Uhlenbeck multidimensionnel. [Asymptotic behavior of the multidimensional Ornstein-Uhlenbeck process] *Ann. Sci. Univ. Clermont-Ferrand II Probab. Appl. No.* 9 (1991), 33–44. (Wlodzimierz Smolenski) **93h:60047** 60F15 (60G15, 60G17, 60H10)

Giulini, Domenico (*with* Louko, Jorma) Gravitational theta-states in (2 + 1)-dimensional quantum cosmology. *Proceedings of the 4th Canadian Conference on General Relativity and Relativistic Astrophysics (Winnipeg, MB, 1991), 81–85, World Sci. Publishing, River Edge, NJ,* 1992. (Summary) **93c:83050** 83C45 (81T13)

— On the selection rules for spin-Lorentz cobordisms. (English summary) *Comm. Math. Phys.* **148** (1992), *no.* 2, 353–357. (Randy A. Baadhio) **93k:57066** 57R90 (57R15)

— (*with* Louko, Jorma) No-boundary θ sectors in spatially flat quantum cosmology. (English summary) *Phys. Rev. D* (3) **46** (1992), *no.* 10, 4355–4364. (Vladimir Soloviev) **93m:83030** 83C45

Giulini, Saverio A remark on the asymmetry of convolution operators. (Italian summary) *Atti Accad. Naz. Lincei Rend. Cl. Sci. Fis. Mat. Natur.* (8) **83** (1989), 85–88 (1990). (George A. Willis) **93b:43003** 43A22 (43A15, 43A65)

— (*with* Mauceri, Giancarlo) Almost everywhere convergence of Riesz means on certain noncompact symmetric spaces. *Ann. Mat. Pura Appl.* (4) **159** (1991), 357–369. (Michael Cowling) **93b:43008** 43A85 (22E30)

Giuntini, Roberto ★ Quantum logic and hidden variables. Edited and with a preface by Peter Mittelstaedt. Grundlagen der Exakten Naturwissenschaften [Foundations of the Exact Natural Sciences], 8. *Bibliographisches Institut, Mannheim,* 1991. x+184 *pp. ISBN* 3-411-14831-4 (Carol Sisson Regehr) **93m:81011** 81P10 (03G12, 06C15, 46N50, 81–02)

— Semantic alternatives in Brouwer-Zadeh logics. (English summary) Quantum logics, Part I (Gdańsk, 1990). *Internat. J. Theoret. Phys.* **31** (1992), *no.* 9, 1653–1667. (Mirko Navara) **93i:03087** 03G12 (06C15, 81P10)

— Brouwer-Zadeh logic, decidability and bimodal systems. *Studia Logica* **51** (1992), *no.* 1, 97–112. (Jānis Cīrulis) **93i:03086** 03G12 (03B45, 06C15)

Giurescu, N. (*with* Popescu, Dumitru; Gheorghe, C.) Control with gradient systems. (English summary) *Computational systems analysis* 1992 (*Berlin,* 1992), 45–54, *Elsevier, Amsterdam,* 1992. (*see* **93e:00021**) 93C10 (93D05)

Giusti, Enrico Pietro Mengoli's first research: the sum of series. (Italian) *Geometry and complex variables (Bologna,* 1988/1990), 195–213, *Lecture Notes in Pure and Appl. Math.*, 132, *Dekker, New York,* 1991. (P. Bockstaele) **93b:01016** 01A45 (01A70, 40–03)

— The algebra in the *Trattato d'abaco* of Piero della Francesca: observations and conjectures. (Italian) *Boll. Storia Sci. Mat.* **11** (1991), *no.* 2, 55–83. (Warren Van Egmond) **93m:01019** 01A40

Givan, Robert (*with* McAllester, David A.) Natural language syntax and first-order inference. *Artificial Intelligence* **56** (1992), *no.* 1, 1–20. (Summary) **93j:68179** 68T15 (03B35, 03B65)

Givant, Steven R. Tarski's development of logic and mathematics based on the calculus of relations. *Algebraic logic (Budapest,* 1988), 189–215, *Colloq. Math. Soc. János Bolyai,* 54, *North-Holland, Amsterdam,* 1991. (Marcel Guillaume) **93d:03066** 03G15 (01A60, 03–03, 03B10, 03E30)

— A portrait of Alfred Tarski. *Math. Intelligencer* **13** (1991), *no.* 3, 16–32. (J. Corcoran) **93a:01046** 01A70 (03–03)

Givental', A. B. The nonlinear Maslov index. *Geometry of low-dimensional manifolds,* 2 (*Durham,* 1989), 35–43, *London Math. Soc. Lecture Note Ser.*, 151, *Cambridge Univ. Press, Cambridge,* 1990. (Nikolai K. Smolentsev) **93h:58053** 58F05 (57S05, 58D10)

Giveon, Amit (*with* Smit, Dirk-Jan) Symmetries on the space of (2, 2) superstring vacua and automorphism groups of Calabi-Yau manifolds. (English summary) Common trends in mathematics and quantum field theories (Kyoto, 1990). *Progr. Theoret. Phys. Suppl. No.* 102 (1990), 351–371 (1991). (Summary) **93g:81149** 81T40 (14J30, 32G81, 32J17, 81T30)

— Target space duality and stringy black holes. *Modern Phys. Lett. A* **6** (1991), *no.* 31, 2843–2854. (Piret Kuusk) **93b:81250** 81T40 (81T30, 83C57)

— (*with* Halpern, M. B.; Kiritsis, Elias B.; Obers, N. A.) Exact C-function and C-theorem on affine-Virasoro space. *Nuclear Phys. B* **357** (1991), *no.* 2-3, 655–690. (P. D. Jarvis) **93d:81069** 81R10 (17B65, 17B68, 81T30, 81T40)

— (*with* Roček, Martin) Generalized duality in curved string backgrounds. (English summary) *Nuclear Phys. B* **380** (1992), *no.* 1-2, 128–146. (Alexander A. Zheltukhin) **93m:81129** 81T40 (81T20, 81T30, 83E30)

— (*with* Shapere, Alfred) Gauge symmetries of the $N = 2$ string. (English summary) *Nuclear Phys. B* **386** (1992), *no.* 1, 43–62. (Hitoshi Nishino) **93k:81177** 81T30 (81T40, 83E30)

— (*with* Pasquinucci, Andrea) On cosmological string backgrounds with toroidal isometries. (English summary) *Phys. Lett. B* **294** (1992), *no.* 2, 162–166. (Summary) **93i:83089** 83E30 (81T30)

Givi, Peyman (*with* McMurtry, Patrick A.) Direct numerical simulations of a reacting turbulent mixing layer by a pseudospectral-spectral element method. *Finite elements in fluids, Vol.* 8 (*Huntsville, AL,* 1989), 355–378, *Ser. Comput. Phys. Process. Mech. Thermal Sci., Hemisphere, Washington, DC,* 1992. (*see* **93e:76050**) 80–08 (65M70, 76F99, 76M10, 76M25, 80A32)

Givoli, Dan A spatially exact nonreflecting boundary condition for time dependent problems. *Comput. Methods Appl. Mech. Engrg.* **95** (1992), *no.* 1, 97–113. (Summary) **93a:65151** 65N30 (35L05, 73V05, 76M10)

— (*with* Rivkin, Leonid; Keller, Joseph B.) A finite element method for domains with corners. (English summary) *Internat. J. Numer. Methods Engrg.* **35** (1992), *no.* 6, 1329–1345. (Summary) **93f:65081** 65N30 (73V05)

Gjaja, Ivan M. (*with* Healy, Liam M.; Dragt, Alex J.) Computation of error effects in nonlinear Hamiltonian systems using Lie algebraic methods. *J. Math. Phys.* **33** (1992), *no.* 6, 1948–1963. (Summary) **93b:70018** 70H05 (70–08, 70H33, 78A35)

— (*with* Bhattacharjee, A.) Asymptotics of reflectionless potentials. *Phys. Rev. Lett.* **68** (1992), *no.* 16, 2413–2416. (Summary) **93d:81043** 81Q15 (34E20, 34L25, 34L40, 70H05)

Gjøtterud, O. K. (*with* Andås, H. E.) Quantum theory and questions of reality and completeness. (English summary) *Found. Phys. Lett.* **6** (1993), *no.* 1, 55–74. 81P15

Gkhazal, Mokhamed (*with* Trush, N. N.) An inequality for data view windows. (Russian. Russian summary) *Vestnik Beloruss. Gos. Univ. Ser. I Fiz. Mat. Mekh.* **1992,** *no.* 1, 55–56, 78. 62M15

Gladkii, A. V. (*with* Sergienko, I. V.; Skopetskii, V. V.) Stability of difference schemes for linear-fractional approximations of the Helmholtz equation. (Russian. English and Russian summaries) *Dokl. Akad. Nauk Ukrainy* **1992,** *no.* 9, 31–34, 169. (Summary) **93g:65132** 65N12 (76M20, 76Q05)

Gladkov, A. L. The behavior as $x \to \infty$ of solutions of semilinear parabolic equations. (Russian) *Mat. Zametki* **51** (1992), *no.* 2, 29–34, 156; *translation in Math. Notes* **51** (1992), *no.* 1-2, 124–128. (Summary) **93b:35065** 35K55 (35B05)

Gladwell, G. M. L. On some singular integral equations appearing in contact problems for the elastic cylinder. *J. Elasticity* **28** (1992), *no.* 2, 97–109. (Summary) **93c:73091** 73T05

— (*with* Zhu, Ben Ren) Inverse problems for multidimensional vibrating systems. (English summary) *Proc. Roy. Soc. London Ser. A* **439** (1992), *no.* 1907, 511–530. (Daniel L. Boley) **93m:73023** 73K12 (70J99, 73D50)

— (*with* Chamberland, M.) On transforming three-dimensional inverse scattering problems to one dimension. (English summary) *Inverse Problems* **9** (1993), *no.* 2, 241–249. (Summary) **93k:35156** 35L05 (35R30)

Gladwell, Ian (*with* Braithwaite, M.; Farran, T.; et al.) A detonation problem posed as a differential/algebraic boundary value problem. *Math. Engrg. Indust.* **3** (1990), *no.* 1, 45–57. (Summary) **93c:80012** 80A25 (34A09, 34B15)

— (*with* Paprzycki, Marcin) Using level 3 BLAS to solve almost block diagonal systems. (English summary) *Parallel processing for scientific computing (Houston, TX,* 1991), 52–62, *SIAM, Philadelphia, PA,* 1992. (*see* **93g:65178**) 65L10 (65F10, 65Y10)

— (*with* Zhang, Wen) Bifurcation phenomena in singular free boundary value problems of ordinary differential equations. *Appl. Numer. Math.* **10** (1992), *no.* 2, 149–158. (Summary) **93f:65062** 65L10 (34A47, 34B15)

— (*with* Paprzycki, Marcin) Parallel solution of almost block diagonal systems on the CRAY Y-MP using level 3 BLAS. (English summary) *J. Comput. Appl. Math.* **45** (1993), *no.* 1-2, 181–189. 65Y05

Gladwin, C. J. (*with* Garey, L. E.) Multi-step methods for first kind singular Volterra integral equations. *J. Integral Equations Appl.* **3** (1991), *no.* 4, 515–525. (M. S. Abou El-Seoud) **93b:65208** 65R20

Glaeske, Hans-Jürgen (*with* Vũ Kim Tuấn) Mapping properties and composition structure of a class of integral transforms. *Boundary value and initial value problems in complex analysis: studies in complex analysis and its applications to partial differential equations,* I (*Halle,* 1988), 209–220, *Pitman Res. Notes Math. Ser.*, 256, *Longman Sci. Tech., Harlow,* 1991. (Peter I. Lizorkin) **93h:42010** 42A38 (42B10, 44A35, 47G10)

— (*with* Müller, Dietmar) Abelsche Sätze für die Laplace-Transformation von Distributionen. (English summary) [Abelian theorems for the Laplace transformation of distributions] *Z. Anal. Anwendungen* **10** (1991), *no.* 2, 231–238. (J. Horváth) **93a:46077** 46F12 (40A10, 44A10)

— (*with* Brychkov, Yu. A.; Prudnikov, A. P.; Vũ Kim Tuấn) ★ Multidimensional integral transformations. *Gordon and Breach Science Publishers, Philadelphia, PA,* 1992. xiv+386 *pp. ISBN* 2-88124-839-X (Norbert Ortner) **93j:44002** 44–02 (42B10, 44A10, 44A30, 44A35, 47G10)

— On the convolution structure of integral transforms. (English summary) *Computational and applied mathematics, I (Dublin,* 1991), 185–193, *North-Holland, Amsterdam,* 1992. (Summary) **93j:44009** 44A35

— (*with* Saigo, Megumi) Products of Laplace transform and fractional integrals on spaces of generalized functions. *Math. Japon.* **37** (1992), *no.* 2, 373–382. (W. Kecs) **93e:44002** 44A10 (46F12)

Glagoleva, R. Ya. Behavior as $t \to +\infty$ of positive solutions of the first boundary value problem for a semilinear equation of parabolic type. (Russian) *Qualitative methods in the theory of differential equations and their applications (Russian),* 50–58, *Moskov. Aviatsion. Inst., Moscow,* 1991. (*see* **93j:00004**) 35K60

— The behavior as $t \to +\infty$ of positive solutions of the first boundary value problem for semilinear equations of parabolic type. (Russian) *Mat. Zametki* **50** (1991), *no.* 3, 12–19, 156; *translation in Math. Notes* **50** (1991), *no.* 3-4, 893–898 (1992). (Summary) **93b:35078** 35K85 (35B05)

Glaister, P. A shock capturing scheme for steady, supercritical, free-surface flow. (English summary) *Comput. Mech.* **8** (1991), *no.* 2, 135–144. (Summary) **93f:76071** 76M20 (76L05)

— An algorithm for the shallow water equations with body fitted meshes. (English summary) *Comput. Mech.* **8** (1991), *no.* 5, 313–318. (Summary) **93f:76072** 76M20

— An efficient Riemann solver for unsteady flows with nonideal gases. *Comput. Math. Appl.* **24** (1992), *no.* 3, 77–93. (From the introduction) **93e:76053** 76M20 (65M06, 76N15)

— A finite difference scheme for steady, supersonic, two-dimensional, compressible flow of real gases. *Comput. Math. Appl.* **24** (1992), *no.* 4, 49–59. (Summary) **93b:76060** 76M20 (65N06, 76J20)
— Similarity solutions for multi-component flows. (English summary) *Comput. Math. Appl.* **24** (1992), *no.* 10, 77–88. (Summary) **93f:76083** 76N15 (76L05, 76T05)
— Second order accurate upwind difference schemes for scalar conservation laws with source terms. (English summary) *Comput. Math. Appl.* **25** (1993), *no.* 4, 65–73. (Dietmar Kröner) **93m:65117** 65M06 (35L35, 76M20, 76N15)
— Cylindrically symmetric flows in a Lagrangian frame. (English summary) *Comput. Math. Appl.* **25** (1993), *no.* 8, 41–45. (Summary) **93k:76085** 76M25 (76L05, 76N10)
Glanc, Barbara The structure of the second symmetric tensor of the biconformal mapping. *Demonstratio Math.* **25** (1992), *no.* 1-2, 135–142. (V. Oproiu) **93f:53018** 53B20
le Gland, François *see* **Le Gland, François**
Glander, Donn W. (*with* Field, David A.; Bisset, Edward J.; Meyer, W. Weston) An application of continued fractions in elastohydrodynamic lubrication. *Comm. Anal. Theory Contin. Fractions* **1** (1992), 32–34. 11A55
Glandt, Eduardo D. (*with* Thompson, Aidan P.) The length of intersection lines and the number of cusps in assemblies of interpenetrating spheres. *J. Chem. Phys.* **97** (1992), *no.* 3, 1932–1936. (Summary) **93d:82081** 82D30 (52A22, 60D05)
Glangetas, L. Étude d'une limite singulière d'un modèle intervenant en combustion. (English summary) [Study of a singular limit of a combustion model] *Asymptotic Anal.* **5** (1992), *no.* 4, 317–342. (Riccardo Ricci) **93g:80010** 80A25 (34E15, 35K57)
— Uniqueness of positive solutions of a nonlinear elliptic equation involving the critical exponent. *Nonlinear Anal.* **20** (1993), *no.* 5, 571–603. (Alexandra Kurepa) **93m:35015** 35B05 (35J65)
Glänzel, W. Characterization through some conditional moments of Pearson-type distributions and discrete analogues. (English summary) *Sankhyā Ser. B* **53** (1991), *no.* 1, 17–24. (Summary) **93e:62041** 62E10
Glasby, S. P. (*with* Howlett, R. B.) Extraspecial towers and Weil representations. *J. Algebra* **151** (1992), *no.* 1, 236–260. (Zhi Rang Zhang) **93j:20072** 20F22 (20E15)
Glasko, V. B. (*with* Stepanova, I. È.; Yurasov, S. A.) On the uniqueness of the solution of an inverse problem of nitrocementation. (Russian) *Vestnik Moskov. Univ. Ser. III Fiz. Astronom.* **32** (1991), *no.* 6, 28–32. (Krystyna Twardowska) **93i:35154** 35R30 (35K55, 80A23, 92E20)
— (*with* Shchepetilov, A. V.) On an inverse problem of technology and the uniqueness of its solution. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **31** (1991), *no.* 12, 1826–1834; *translation in Comput. Math. Math. Phys.* **31** (1991), *no.* 12, 47–53 (1992). (V. A. Galkin) **93d:45004** 45D05 (80A23)
— (*with* Stepanova, I. È.) On uniqueness in one of the coefficient problems connected with technological processes. (Russian) *Vestnik Moskov. Univ. Ser. III Fiz. Astronom.* **33** (1992), *no.* 1, 20–23. (Summary) **93e:35118** 35R30 (35K20, 76R50, 80A20)
Glasner, Moses (*with* Yevick, David; Hermansson, Björn) Generalized propagation techniques for longitudinally varying refractive index distributions. (English summary) *Math. Comput. Modelling* **16** (1992), *no.* 10, 177–182. (Summary) **93e:65124** 65M99 (35A35, 35Kxx, 81–08)
Glass, A. M. W. The ubiquity of free groups. *Math. Intelligencer* **14** (1992), *no.* 3, 54–57. (John K. Truss) **93j:20053** 20E05
Glass, E. N. Taub numbers at future null infinity. (English summary) *Phys. Rev. D* (3) **47** (1993), *no.* 2, 474–479. (Summary) **93j:83029** 83C30 (83C20)
Glass, Leon Cardiac arrhythmias and circle maps—a classical problem. *Chaos* **1** (1991), *no.* 1, 13–19. (Wolf-Jürgen Beyn) **93e:92006** 92C50 (58F08)
Glasser, M. Lawrence (*with* Ninham, Barry W.; Hughes, Barry D.; Frankel, Norman E.) Möbius, Mellin, and mathematical physics. (English summary) *Phys. A* **186** (1992), *no.* 3-4, 441–481. (D. R. Heath-Brown) **93h:11143** 11Z50 (11M99, 82B05)
Glasserman, Paul (*with* Gong, Wei Bo) Time-changing and truncating K-capacity queues from one K to another. *J. Appl. Probab.* **28** (1991), *no.* 3, 647–655. (Jian Qiang Hu) **93a:60146** 60K25
— (*with* Hu, Jian Qiang; Strickland, Stephen G.) Strongly consistent steady-state derivative estimates. (English summary) *Probab. Engrg. Inform. Sci.* **5** (1991), *no.* 4, 391–413. (Summary) **93f:60139** 60K25 (60K05, 62M99)
— (*with* Fox, Bennett L.) Estimating derivatives via Poisson's equation. (English summary) *Probab. Engrg. Inform. Sci.* **5** (1991), *no.* 4, 415–428. (Summary) **93g:60140** 60J10 (62F10)
— Smoothing complements and randomized score functions. (English summary) *Ann. Oper. Res.* **39** (1992), *no.* 1-4, 41–67 (1993). (Summary) **93j:60142** 60K25 (93E14)
— Processes with associated increments. *J. Appl. Probab.* **29** (1992), *no.* 2, 313–333. (Summary) **93k:60192** 60J30
— (*with* Yao, David D.) Monotonicity in generalized semi-Markov processes. *Math. Oper. Res.* **17** (1992), *no.* 1, 1–21. (S. Kalpakam) **93e:60178** 60K15 (60K20, 90B22, 90C40)
— (*with* Yao, David D.) Generalized semi-Markov processes: antimatroid structure and second-order properties. *Math. Oper. Res.* **17** (1992), *no.* 2, 444–469. (Summary) **93b:60204** 60K20 (90B22, 90C40)
— Stationary waiting time derivatives. (English summary) *Queueing Systems Theory Appl.* **12** (1992), *no.* 3-4, 369–389. (Summary) **93h:60149** 60K25
Glassey, Robert (*with* Horst, Ernst; Lenard, Andrew; Schaeffer, Jack W.) On the inverse of the discrete two-dimensional wave operator at CFL. *SIAM J. Math. Anal.* **22** (1991), *no.* 6, 1763–1775. (A. O. Oganesyan) **93k:65069** 65M06 (35L05)
— (*with* Schaeffer, Jack W.) The relativistic Vlasov-Maxwell equations in low dimension. *Nonlinear hyperbolic equations and field theory* (*Lake Como*, 1990), 87–101, *Pitman Res. Notes Math. Ser.*, 253, *Longman Sci. Tech., Harlow*, 1992. (Peter L. Christiansen) **93i:82074** 82D10
— Approximate solutions to the Zakharov equations via finite differences. *J. Comput. Phys.* **100** (1992), *no.* 2, 377–383. (Summary) **93a:76071** 76M20 (76W05, 76X05)
— ★ Numerical computation using C. Computer Science and Scientific Computing. *Academic Press, Inc., Boston, MA*, 1993. viii+283 *pp. ISBN* 0-12-286155-8 (Ian Gladwell) **93j:65001** 65–04 (65–01)
Glatzel, Wolfgang (*with* Gautschy, Alfred) The treatment of highly nonadiabatic, nonradial pulsations by application of the Riccati method to the example of hydrogen-deficient carbon stars. *Monthly Notices Roy. Astronom. Soc.* **256** (1992), *no.* 2, 209–218. (From the summary) **93b:85002** 85A15 (34A46)
Glavan, V. A. Linear two-dimensional almost periodic systems with Favard-type conditions. (Russian. English, Russian and Moldavian summaries) *Izv. Akad. Nauk Respub. Moldova Mat.* **1991**, *no.* 3, 25–31, 91. (A. Pelczar) **93h:34017** 34A30 (34C27, 34C40)
— (*with* Samoĭlenko, A. M.) Linear almost periodic systems that admit an almost periodic orthogonalization process. (Russian) *Dokl. Akad. Nauk* **322** (1992), *no.* 5, 855–857; *translation in Soviet Math. Dokl.* **45** (1992), *no.* 1, 198–201. (Alois Klíč) **93f:34018** 34A30 (34C20, 58F27)
— Relatively prime linear extensions of a dynamical system. (Russian. English summary) *Dokl. Akad. Nauk Ukrainy* **1992**, *no.* 4, 5–8, 165. (Summary) **93c:34019** 34A30 (34C35, 54H20, 58F25)
— The structure of linear extensions with Favard-type conditions. (Russian. Russian and Ukrainian summaries) *Ukraïn. Mat. Zh.* **44** (1992), *no.* 5, 596–603; *translation in Ukrainian Math. J.* **44** (1992), *no.* 5, 534–541 (1993). (A. Pelczar) **93h:34018** 34A30 (34C27, 34C99, 58F99)
Glavaški, Sonja (*with* Kovačević, Branko; Djurovic, Željko) On robust Kalman filtering. (English summary) *Internat. J. Control* **56** (1992), *no.* 3, 547–562. (Summary) **93f:93128** 93E11 (93B35)
Glavatskiĭ, S. T. (*with* Arnautov, V. I.; Beĭdar, K. I.; Mikhalëv, A. V.) The intersection property in the theory of radicals of topological algebras. (English summary) *J. Soviet Math.* **60** (1992), *no.* 6, 1782–1789. (Stefan Veldsman) **93h:16036** 16N80 (16W80)
Glaz, Joseph A comparison of Bonferroni-type and product-type inequalities in presence of dependence. (English summary) *Topics in statistical dependence* (*Somerset, PA*, 1987), 223–235, *IMS Lecture Notes Monograph Ser.*, 16, *Inst. Math. Statist., Hayward, CA*, 1990. (Summary) **93j:60018** 60E15 (62E15)
— Approximations for tail probabilities and moments of the scan statistic. (English summary) *Comput. Statist. Data Anal.* **14** (1992), *no.* 2, 213–227. (Dana Vorlíčková) **93i:62043** 62G10 (62G30)
Glaz, Sarah Fixed rings of coherent regular rings. *Comm. Algebra* **20** (1992), *no.* 9, 2635–2651. (Jean-Luc Chabert) **93j:13007** 13A50 (13E15)
— Commutative coherent rings: historical perspective and current developments. (English summary) *Nieuw Arch. Wisk.* (4) **10** (1992), *no.* 1-2, 37–56. (J. W. Brewer) **93j:13024** 13E99 (01A65, 13–02)
Glazatov, S. N. Some quasilinear hyperbolic inequalities. (Russian) *Boundary value problems for nonclassical equations in mathematical physics* (*Russian*) (*Novosibirsk*, 1989), 110–112, *Akad. Nauk SSSR Sibirsk. Otdel., Inst. Mat., Novosibirsk*, 1989. (*see* **93d:35001**) 35L85
— A variational inequality connected with a nonlinear equation of variable type. I. (Russian. Russian summary) *Dinamika Sploshn. Sredy No.* 99 (1990), 18–33, 117. (Summary) **93c:35111** 35M10 (35L85, 35Q99, 49J40)
— On some variational inequalities for nonclassical type operators. (English summary) *Partial differential equations, Part* 1, 2 (*Warsaw*, 1990), 169–174, *Banach Center Publ.*, 27, *Part* 1, 2, *Polish Acad. Sci., Warsaw*, 1992. (Summary) **93m:35129** 35L85 (35L10, 49J40)
Glazebrook, J. F. (*with* Grayson, D. R.; Hewitt, P. R.) Addendum: "Galois representations on holomorphic differentials" [Comm. Algebra **19** (1991), no. 5, 1375–1386; MR 92j:14032]. *Comm. Algebra* **20** (1992), *no.* 9, 2791. 14F10
Glazebrook, Kevin D. On nonpreemptive policies for stochastic single-machine scheduling with breakdowns. (English summary) *Probab. Engrg. Inform. Sci.* **5** (1991), *no.* 1, 77–87. (Summary) **93f:90088** 90B35
— (*with* Whitaker, Lyn R.) Single-machine stochastic scheduling with dependent processing times. *Adv. in Appl. Probab.* **24** (1992), *no.* 3, 635–652. (Summary) **93k:90042** 90B35
— (*with* Boys, Richard J.) A robust design of a screen for a binary response. (English summary) *Biometrika* **79** (1992), *no.* 3, 643–650. (Rahul Mukerjee) **93j:62077** 62F15 (62K99)
— (*with* Bailey, Michael P.; Whitaker, Lyn R.) Cost rate heuristics for semi-Markov decision processes. *J. Appl. Probab.* **29** (1992), *no.* 3, 633–644. (Gerhard Hübner) **93f:90180** 90C40 (90C42, 93E35)
— (*with* Benkherouf, L.; Owen, R. W.) Gittins indices and oil exploration. *J. Roy. Statist. Soc. Ser. B* **54** (1992), *no.* 1, 229–241. (John C. Gittins) **93i:90007** 90A05 (90D40, 90D46)
— Single-machine scheduling of stochastic jobs subject to deterioration or delay. *Naval Res. Logist.* **39** (1992), *no.* 5, 613–633. (Edward J. Anderson) **93i:90051** 90B35
— On permutation policies for the scheduling of deteriorating stochastic jobs on a single machine. (English summary) *J. Appl. Probab.* **30** (1993), *no.* 1, 184–193. (Summary) **93i:90052** 90B35
Głazek, Kazimierz (*with* Kośliński, A.) On the Płonka decomposition of graphs and related algebras. Universal algebra, quasigroups and related systems (Jadwisin, 1989). *Demonstratio Math.* **24** (1991), *no.* 1-2, 207–233. (Samuel Stueckle) **93f:05066** 05C70 (05C30, 08A05)
— On weak automorphisms of some finite algebras. *Proceedings of the International Conference on Algebra, Part* 3 (*Novosibirsk*, 1989), 99–110, *Contemp. Math.*, 131, *Part* 3, *Amer. Math. Soc., Providence, RI*, 1992. (A. Goetz) **93f:08003** 08A35 (03B50, 20B25)
Glazkov, D. Yu. Differential geometric connection of finite order on composite manifold, infinitesimal polygons and geometric interpretation of Bianchi identity. (English summary) *Rep. Math. Phys.* **30** (1991), *no.* 2, 249–258 (1992). (Andrzej Bucki) **93k:53027** 53C05 (53C80)
Glazkov, V. N. On the construction of the Radon measure. (Russian. Russian summary) *Ordered spaces and operator equations* (*Russian*), 48–51, 160, *Syktyvkar. Gos. Univ., Syktyvkar*, 1989. (*see* **93m:00034**) 28C05
Glazkov, Yu. V. (*with* Shcherbak, V. G.) The method of global iterations with respect to the pressure gradient for the solution of parabolized Navier-Stokes equations. (Russian. Russian summary) *Model. Mekh.* **4** (1990), *no.* 5, 75–82. (Summary) **93h:76055** 76M25 (76J20)
— (*with* Shcherbak, V. G.) Solution of parabolized Navier-Stokes equations by the method of iteration with respect to the pressure gradient. (Russian. Russian summary) *Vestnik Moskov. Univ. Ser. I Mat. Mekh.* **1991**, *no.* 4, 52–57, 104. 76N10 (76M25)
Glazman-Nowalski, Mary (*with* Martínez-Villa, Roberto) Polyquivers of finite representation type. *An. Inst. Mat. Univ. Nac. Autónoma México* **31** (1991), 39–95 (1992). (Zygmunt Pogorzały) **93h:16018** 16G20 (16G60, 16G70)
Glazunov, N. M. (*with* Khodzhiev, Sh. Kh.) Interval extensions of direct methods for solving degenerate systems of linear algebraic equations. (Russian. Russian summary) *Kibernet. i Vychisl. Tekhn. No.* 95 (1992), 50–52. 65G10 (65F05)

Glazunov, S. N. (*with* Verbitskaya, L. V.) Single-frequency oscillations in quasilinear systems with impulse action. (Russian. Russian summary) *Asymptotic integration of nonlinear equations* (*Russian*), 35–39, *Akad. Nauk Ukrainy, Inst. Mat., Kiev*, 1992. (*see* **93m:00016**) 34C15 (34A37)

Gleason, Andrew Semigroups of shift register counting matrices. *Math. Systems Theory* **25** (1992), *no.* 4, 253–267. (Zdzisław Grodzki) **93e:68079** 68Q70 (15A30, 20M99)

Glebskaya, O. Yu. (*with* Korolev, V. I.; Rotkov, L. Yu.; Motova, M. I.) Damping of the frequency of oscillations by an external sinusoidal force in a three-frequency generator. (Russian) *Dinamika Sistem* **1990**, *Dinam. Stokh. Bifur.*, 74–83. (Summary) **93a:34043** 34C15

Gledzer, E. B. (*with* Ponomarev, V. M.) Instability of bounded flows with elliptical streamlines. (English summary) *J. Fluid Mech.* **240** (1992), 1–30. (Summary) **93e:76024** 76E10 (76U05, 76V05)

Gleick, James ★ Genius. The life and science of Richard Feynman. *Pantheon Books, New York*, 1992. x+533 *pp. ISBN* 0-679-40836-3 01A70

Gleiser, Reinaldo J. (*with* Dagotto, Andrés D.; Nicasio, Carlos O.) Time shifts and nonlinear interference in cylindrically symmetric Einstein-Maxwell solitons. (English summary) *Classical Quantum Gravity* **9** (1992), *no.* 11, 2449–2460. (Birgitta Alertz) **93m:83017** 83C22

Gleissner, W. A parameterisation of the price indices characterized by the Eichhorn-Voeller axioms. *Statist. Hefte* **33** (1992), *no.* 1, 75–82. (Steven E. Landsburg) **93g:90021** 90A19 (62P25)

— A parameterisation of the price indices characterized by the Eichhorn-Voeller axioms. *Statist. Papers* **33** (1992), *no.* 1, 75–82. (A. F. Gualtierotti) **93i:90030** 90A19

Gleizer, G. D. *see* **Skopets, Z. A., 93g:51001**

Glendinning, Paul Robust new routes to chaos in differential equations. (English summary) *Phys. Lett. A* **168** (1992), *no.* 1, 40–46. (Summary) **93e:58129** 58F13 (34C99)

Glentis, George Othon (*with* Antoniou, George E.; Mentzelopoulou, Sophia E.) Determination of the transfer matrix of multidimensional-singular systems. (English summary) *Internat. J. Systems Sci.* **24** (1993), *no.* 1, 211–218. 93B40 (93C80)

— (*with* Kalouptsidis, Nicholas) Efficient algorithms for the solution of block linear system with Toeplitz entries. (English summary) *Linear Algebra Appl.* **179** (1993), 85–104. (Summary) **93h:65056** 65F30 (15A24, 15A57)

Gleser, Leon Jay A note on the analysis of familial data. (English summary) *Biometrika* **79** (1992), *no.* 2, 412–415. (Summary) **93f:62145** 62P10

— The importance of assessing measurement reliability in multivariate regression. (English summary) *J. Amer. Statist. Assoc.* **87** (1992), *no.* 419, 696–707. (Truc Nguyen) **93j:62172** 62J05 (62H12)

Glesser, Philippe Majoration de la norme des facteurs d'un polynôme. (English and French summaries) [Upper bound for the norm of factors of a polynomial] *Ann. Fac. Sci. Toulouse Math.* (5) **11** (1990), *no.* 1, 67–74. (Summary) **93f:12002** 12D05 (11Y16)

Glielmo, Luigi (*with* Corless, Martin) On the exponential stability of singularly perturbed systems. (English summary) *SIAM J. Control Optim.* **30** (1992), *no.* 6, 1338–1360. (M. M. Khapaev) **93i:34091** 34D15 (34D20, 34E15, 34H05, 73K50, 93D05)

— (*with* Garofalo, F.; Celentano, Giovanni) Stability robustness of interval matrices via Lyapunov quadratic forms. (English summary) *IEEE Trans. Automat. Control* **38** (1993), *no.* 2, 281–284. (Summary) **93j:93104** 93D09

Gliklikh, Yu. E. Diffeomorphism groups and Lagrangian description of the hydrodynamics of a viscous incompressible fluid. (Russian) *Algebraic problems in analysis and topology* (*Russian*), 115–124, 161, *Novoe Global. Anal., Voronezh. Gos. Univ., Voronezh*, 1990. (Liliana Maxim-Râileanu) **93c:58040** 58D30 (35Q30, 58D05, 58F39, 76D05)

— Infinite-dimensional stochastic differential geometry in modern Lagrangian approach to hydrodynamics of viscous incompressible fluid. *Constantin Carathéodory: an international tribute, Vol. I, II*, 344–373, *World Sci. Publishing, Teaneck, NJ*, 1991. (Jacques Vauthier) **93e:58195** 58G32 (76A02, 76D05)

— On the existence of solutions in Nelson's stochastic mechanics. (Russian) *Nonlinear operators in global analysis* (*Russian*), 52–67, 162, *Novoe Global. Anal., Voronezh. Gos. Univ., Voronezh*, 1991. (Summary) **93b:81035** 81P20 (47N50, 60H99)

Glimm, James (*with* Lindquist, W. Brent) Scaling laws for macrodispersion. (English summary) *Computational methods in water resources, IX, Vol. 2* (*Denver, CO*, 1992), 35–49, *Comput. Mech., Southampton*, 1992. (*see* **93g:76003**) 76S05

— (*with* Zhang, Qiang) Inertial range scaling of laminar shear flow as a model of turbulent transport. *Comm. Math. Phys.* **146** (1992), *no.* 2, 217–229. (Introduction) **93g:76068** 76F10 (35Q35, 76M35, 76S05, 82C70)

— *see also* **Steele Prizes, 93m:01098**

Glisson, A. W. Numerical solution of boundary integral equation formulations for electromagnetic scattering problems. (English summary) *Boundary element technology, VII* (*Albuquerque, NM*, 1992), 331–348, *Comput. Mech., Southampton*, 1992. (*see* **93b:65002**) 65N38 (78A45)

Glizburg, V. I. Invariant description of a higher-order ordinary differential system. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* **1992**, *no.* 1, 51–57. (I. S. Krasil'shchik) **93k:58006** 58A30 (34A26, 58F35)

— About the fundamental group G_n^{p-1} of the connection generated by the differential system of higher order. Application of topology in algebra and differential geometry (Tartu, 1991). *Tartu Ül. Toimetised No.* 940 (1992), 41–46. (J. Chrastina) **93e:58005** 58A20 (34A26, 53C05)

Globevnik, Josip (*with* Stout, Edgar Lee) Boundary Morera theorems for holomorphic functions of several complex variables. *Duke Math. J.* **64** (1991), *no.* 3, 571–615. (Guido Lupacciolu) **93b:32018** 32E35 (32D15)

— On moduli of boundary values of holomorphic functions. *Math. Z.* **208** (1991), *no.* 4, 627–633. (Andrei Iordan) **93f:32004** 32A30 (30E25, 32A40)

— A disc in the ball approaching the boundary non-nontangentially. *The Madison Symposium on Complex Analysis* (*Madison, WI*, 1991), 261–265, *Contemp. Math.*, 137, *Amer. Math. Soc., Providence, RI*, 1992. (Joachim Michel) **93j:32010** 32A40 (30B30)

— A support theorem for the X-ray transform. *J. Math. Anal. Appl.* **165** (1992), *no.* 1, 284–287. (Gabor T. Herman) **93g:44004** 44A12

Glock, Hans-Johann Cambridge, Jena or Vienna? The roots of the *Tractatus*. *Ratio* (*N.S.*) **5** (1992), *no.* 1, 1–23. 03A05 (01A60, 03–03)

— The indispensability of translation in Quine and Davidson. *Philos. Quart.* **43** (1993), *no.* 171, 194–209. 03A05 (03B65)

Glöckle, W. *see* **Glöckle, Walter**

Glöckle, W. G. (*with* Baumann, Gerd; Nonnenmacher, Theo F.) Painlevé test and exact similarity solutions of a class of nonlinear diffusion equations. *J. Math. Phys.* **33** (1992), *no.* 7, 2456–2463. (Mehmet Can) **93e:35107** 35Q58 (35Q35)

— (*with* Frey, H.-D.; Nonnenmacher, Theo F.) Symmetries and integrability of generalized diffusion reaction equations. (English summary) *J. Phys. A* **26** (1993), *no.* 3, 665–679. (Summary) **93m:35103** 35K57 (58D25)

Glöckle, Walter (*with* Hamme, B.) Relativistic two-body bound state in motion. (English summary) *Few-Body Systems* **13** (1992), *no.* 1, 1–10. 81V45

Glockner, Peter (*with* Schürmann, Michael; Speicher, Roland) Realization of free white noises. *Arch. Math.* (*Basel*) **58** (1992), *no.* 4, 407–416. (Kalyan B. Sinha) **93e:46075** 46L50 (81S25)

Glonti, O. A. (*with* Dzhamburiya, L. G.) Optimal transmission of Gaussian signals involving cost of feedback. *Ann. Acad. Sci. Fenn. Ser. A I Math.* **17** (1992), *no.* 1, 23–28. (Shunsuke Ihara) **93d:94011** 94A24 (60G35)

Glouberman, M. Objectivity and method: how the *Euthyphro* works. *Logique et Anal.* (*N.S.*) **32** (1989), *no.* 125-126, 41–54. 03A05 (01A20, 03–03)

Glover, H. H. (*with* Mislin, Guido; Xia, Yining) On the Farrell cohomology of mapping class groups. *Invent. Math.* **109** (1992), *no.* 3, 535–545. (Ruth Charney) **93k:57034** 57M60 (20J05, 57S05)

Glover, Jonathani Approximate implementation in the absence of externalities and aggregate feasibility constraints. (English summary) *Econom. Lett.* **39** (1992), *no.* 2, 169–171. (Summary) **93e:90006** 90A08

Glover, Joseph Markov functions. (French summary) *Ann. Inst. H. Poincaré Probab. Statist.* **27** (1991), *no.* 2, 221–238. (Joanna B. Mitro) **93a:60106** 60J25 (60J40)

— (*with* Rao, Murali) Potential densities of symmetric Lévy processes. *Seminar on Stochastic Processes, 1991* (*Los Angeles, CA*, 1991), 53–58, *Progr. Probab.*, 29, *Birkhäuser Boston, Boston, MA*, 1992. (M. G. Shur) **93g:60161** 60J30 (60J15, 60J45)

Glover, Keith State space formulae for the multiplicative approximation of multivariable transfer functions. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, I* (*Kobe*, 1991), 467–472, *Mita, Tokyo*, 1992. (Kimio Kanai) **93k:93030** 93B28 (93B52, 93C80)

— (*with* McFarlane, Duncan) A loop shaping design procedure using H_∞ synthesis. *IEEE Trans. Automat. Control* **37** (1992), *no.* 6, 759–769. (Krzysztof Kuźmiński) **93d:93032** 93B36 (93B50, 93D09)

Glowinski, Roland (*with* Bensoussan, Alain) Approximation of Zakai equation by the splitting up method. (English summary) *Stochastic systems and optimization* (*Warsaw*, 1988), 257–265, *Lecture Notes in Control and Inform. Sci.*, 136, *Springer, Berlin*, 1989. (*see* **93d:93009**) 34F05 (93E10)

— Finite element methods for the numerical simulation of incompressible viscous flow. Introduction to the control of the Navier-Stokes equations. *Vortex dynamics and vortex methods* (*Seattle, WA*, 1990), 219–301, *Lectures in Appl. Math.*, 28, *Amer. Math. Soc., Providence, RI*, 1991. (Lutz Tobiska) **93b:65140** 65M60 (35B37, 65N22, 76D05, 76M10)

— (*with* Atamian, C.; Dinh, G. V.; He, Jiwen; Périaux, Jacques) On some imbedding methods applied to fluid dynamics and electromagnetics. Second World Congress on Computational Mechanics, Part III (Stuttgart, 1990). *Comput. Methods Appl. Mech. Engrg.* **91** (1991), *no.* 1-3, 1271–1299. (Rolf Rannacher) **93c:76066** 76M25 (65K10, 65N30, 65N55, 78–08)

— (*with* Pironneau, Olivier) Finite element methods for Navier-Stokes equations. *Annual review of fluid mechanics, Vol.* 24, 167–204, *Annual Reviews, Palo Alto, CA*, 1992. (Lutz Tobiska) **93c:76059** 76M10 (65M60, 65N22, 76D05, 76N10)

— Boundary controllability problems for the wave and heat equations. *Boundary control and boundary variation* (*Sophia-Antipolis*, 1990), 221–237, *Lecture Notes in Control and Inform. Sci.*, 178, *Springer, Berlin*, 1992. (Sergei A. Avdonin) **93g:93014** 93B05 (35B37)

— (*with* Dinh, Q. V.; He, Jiwen; Kwock, V.; Pan, T. W.; Périaux, Jacques) Lagrange multiplier approach to fictitious domain methods: application to fluid dynamics and electromagnetics. (English summary) *Fifth International Symposium on Domain Decomposition Methods for Partial Differential Equations* (*Norfolk, VA*, 1991), 151–194, *SIAM, Philadelphia, PA*, 1992. (Summary) **93h:65136** 65N30 (65N50, 76M25, 78–08)

— (*with* Dean, E. J.; Dinh, Q. V.; He, Jiwen; Pan, T. W.; Périaux, Jacques) Least squares/domain imbedding methods for Neumann problems: applications to fluid dynamics. (English summary) *Fifth International Symposium on Domain Decomposition Methods for Partial Differential Equations* (*Norfolk, VA*, 1991), 451–475, *SIAM, Philadelphia, PA*, 1992. (Summary) **93h:65152** 65N55 (76M25, 76N10)

— (*with* Dupont, T.; Kinton, W.; Wheeler, Mary Fanett) Mixed finite-element methods for time-dependent problems: application to control. *Finite elements in fluids, Vol.* 8 (*Huntsville, AL*, 1989), 119–136, *Ser. Comput. Phys. Process. Mech. Thermal Sci., Hemisphere, Washington, DC*, 1992. (Introduction) **93h:65122** 65M60 (35A15, 35B37, 93B40, 93C20)

— (*with* Tezduyar, T. E.; Liou, Jianntyng; Ganjoo, D. K.; Behr, M.) Unsteady incompressible flow computations with the finite-element method. *Finite elements in fluids, Vol.* 8 (*Huntsville, AL*, 1989), 177–209, *Ser. Comput. Phys. Process. Mech. Thermal Sci., Hemisphere, Washington, DC*, 1992. (Max D. Gunzburger) **93h:76050** 76M10 (65M60, 76D05)

— (*with* Bristeau, Marie Odile; Dutto, Laura C.; Périaux, Jacques; Rogé, G.) On recent numerical simulations of compressible Navier-Stokes flows. (English summary) *Numerical simulation of unsteady flows and transition to turbulence* (*Lausanne*, 1990), 443–472, *Cambridge Univ. Press, Cambridge*, 1992. (Summary) **93f:76074** 76M25 (76M10, 76M20, 76N10)

— (*with* Cowsar, Lawrence C.; Dean, E. J.; Le Tallec, Patrick; Li, Chin Hsien; Périaux, Jacques; Wheeler, Mary Fanett) Decomposition principles and their applications in scientific computing. (English summary) *Parallel processing for scientific computing* (*Houston, TX*, 1991), 213–237, *SIAM, Philadelphia, PA*, 1992. (Summary) **93j:65200** 65N55 (65K10, 65N22, 65Y05)

— Ensuring well-posedness by analogy: Stokes problem and boundary control for the wave equation. (English summary) *J. Comput. Phys.* **103** (1992), *no.* 2, 189–221. (Summary) **93j:65179** 65N30 (35Q30, 76D07, 76M10, 93E20)

— (*with* Achdou, Yves; Pironneau, Olivier) Tuning the mesh of a mixed method for the stream function. Vorticity formulation of the Navier-Stokes equations. (English summary) *Numer. Math.* **63** (1992), *no.* 2, 145–163. (Lutz Tobiska) **93m:65165** 65N50 (35Q30, 65N30, 76D05, 76D07, 76M10)

— (*with* Bristeau, Marie Odile; Erhel, Jocelyne; Périaux, Jacques) A time dependent approach to the solution of the Helmholtz equation at high wave numbers. (English summary) *Parallel processing for scientific computing, Vol. I, II (Norfolk, VA, 1993)*, 258–261, *SIAM, Philadelphia, PA*, 1993. (*see* **93k:65003**) 65P05 (76Q05)
— *see also* **Barany, Ernest et al., 93i:82079**
Gluck, Herman (*with* DeTurck, Dennis; Gordon, Carolyn S.; Webb, David L.) How can a drum change shape, while sounding the same? *Differential geometry*, 111–122, *Pitman Monographs Surveys Pure Appl. Math.*, 52, *Longman Sci. Tech., Harlow*, 1991. (Robert Brooks) **93f:58236** 58G25 (53C20)
— (*with* DeTurck, Dennis; Gordon, Carolyn S.; Webb, David L.) How can a drum change shape, while sounding the same? II. *Mechanics, analysis and geometry: 200 years after Lagrange*, 335–358, *North-Holland Delta Ser., North-Holland, Amsterdam*, 1991. (Robert Brooks) **93f:58237** 58G25 (53C20)
— (*with* DeTurck, Dennis; Gordon, Carolyn S.; Webb, David L.) Conformal isospectral deformations. *Indiana Univ. Math. J.* **41** (1992), *no.* 1, 99–107. (Robert Brooks) **93c:58218** 58G25 (58G30)
— (*with* DeTurck, Dennis; Gordon, Carolyn S.; Webb, David L.) The inaudible geometry of nilmanifolds. (English summary) *Invent. Math.* **111** (1993), *no.* 2, 271–284. (Robert Brooks) **93k:58222** 58G25
Glukhov, M. M. (*with* Kostrikin, Alekseĭ Ivanovich) On the centenary of the birth of O. Yu. Shmidt. (Russian) *Diskret. Mat.* **4** (1992), *no.* 2, 158–159. 01A70
Glumineau, Alain (*with* Moog, Claude H.) Nonlinear Morgan's problem: case of $(p+1)$ inputs and p outputs. *IEEE Trans. Automat. Control* **37** (1992), *no.* 7, 1067–1072. (Summary) **93d:93041** 93B52 (93B11)
— (*with* Di Benedetto, Maria Domenica; Moog, Claude H.) Découplage entrée-sortie des systèmes non linéaires par retour d'état dynamique pur. (English and French summaries) [Nonlinear input-output decoupling by pure dynamic state feedback] *C. R. Acad. Sci. Paris Sér. I Math.* **316** (1993), *no.* 1, 101–106. (Summary) **93j:93027** 93B17 (93B52)
Gluschankof, Daniel The elementary class of products of totally ordered abelian groups. *J. Symbolic Logic* **56** (1991), *no.* 1, 295–299. (A. M. W. Glass) **93c:06023** 06F20 (03C60)
Glushak, A. V. (*with* Shmulevich, S. D.) Integral representations of solutions of a singular equation containing a sum of commuting operators. (Russian. Russian summary) *Differentsial'nye Uravneniya* **28** (1992), *no.* 5, 831–838, 918; *translation in Differential Equations* **28** (1992), *no.* 5, 676–682. (H. O. Fattorini) **93m:34084** 34G10 (47D09, 47N20)
— (*with* Repnikov, V. D.) Stabilization of the solution of the Cauchy problem for a first-order differential equation in a Banach space. (Russian) *Dokl. Akad. Nauk* **326** (1992), *no.* 2, 224–226. (From the text) **93k:34135** 34G10 (34A12, 34D05, 47D09, 47N20)
Glushak, B. L. (*with* Kuropatenko, V. F.; Novikov, S. A.) ★ Исследование прочности материалов при динамических нагрузках. (Russian. Russian summary) [Research on the strength of materials under dynamic loads] "*Nauka*" *Sibirsk. Otdel., Novosibirsk*, 1992. 295 *pp. ISBN* 5-02-029691-0 (Publisher's description) **93g:73054** 73D99 (73D05, 73M25)
Glushko, A. V. (*with* Rybakov, S. O.) The Dirichlet problem in a half-space for a system of equations of motion of a viscous compressible rotating fluid. (Russian. Russian summary) *Boundary value problems for partial differential equations (Russian)*, 35–55, 138, *Akad. Nauk SSSR Sibirsk. Otdel., Inst. Mat., Novosibirsk*, 1990. (*see* **93d:35002**) 35Q35 (76N10, 76U05)
— (*with* Rybakov, S. O.) A localization theorem for a problem on the dynamics of a rotating viscous compressible fluid. (Russian) *Sibirsk. Mat. Zh.* **33** (1992), *no.* 1, 32–43, 218; *translation in Siberian Math. J.* **33** (1992), *no.* 1, 24–33. (Adrian Carabineanu) **93d:35114** 35Q30 (35B45, 76N10, 76U05)
— (*with* Rybakov, S. O.) Asymptotic behavior with respect to time of the solution of an initial-boundary value problem in a half-space for equations of the dynamics of a rotating viscous compressible fluid. (Russian. Russian summary) *Sibirsk. Mat. Zh.* **33** (1992), *no.* 4, 42–58, 220; *translation in Siberian Math. J.* **33** (1992), *no.* 4, 581–596 (1993). (Adrian Carabineanu) **93i:35022** 35B40 (35C20, 35Q35, 76N10, 76V05)
— The asymptotic behavior as $t \to \infty$ of the solution of the problem of the collapse of an intrusion spot in a viscous stratified fluid. (Russian. Russian summary) *Mat. Zametki* **53** (1993), *no.* 1, 16–24, 154. (Summary) **93k:35042** 35B40 (35Q35, 76D05, 76V05)
Glushko, V. P. (*with* Tkachëva, S. A.) Weighted spaces and operators with weak degeneration of the weight function. (Russian) *Nonclassical equations and equations of mixed type (Russian)*, 70–82, *Akad. Nauk SSSR Sibirsk. Otdel., Inst. Mat., Novosibirsk*, 1990. (Josef Voldřich) **93i:46046** 46E35 (47B38)
Glushkov, E. V. (*with* Babeshko, V. A.; Glushkova, N. V.) Energy vortices and backward fluxes in elastic waveguides. (English summary) *Wave Motion* **16** (1992), *no.* 3, 183–192. (Summary) **93f:73032** 73D15 (73D25)
Glushkova, N. V. (*with* Babeshko, V. A.; Glushkov, E. V.) Energy vortices and backward fluxes in elastic waveguides. (English summary) *Wave Motion* **16** (1992), *no.* 3, 183–192. (Summary) **93f:73032** 73D15 (73D25)
Glymour, Clark (*with* Kelly, Kevin T.) Inductive inference from theory laden data. *J. Philos. Logic* **21** (1992), *no.* 4, 391–444. (Lawrence Sklar) **93i:03029** 03B48 (03B30)
Glynn, D. G. (*with* Steinke, Günter F.) Groups of generalized projectivities in projective planes of odd order. *Australas. J. Combin.* **5** (1992), 121–143. (P. B. Kirkpatrick) **93d:51017** 51E15 (20B27)
Glynn, Peter W. Diffusion approximations. *Stochastic models*, 145–198, *Handbooks Oper. Res. Management Sci.*, 2, *North-Holland, Amsterdam*, 1990. (*see* **93a:60001**) 60J60 (60F17)
— (*with* Whitt, Ward) The asymptotic efficiency of simulation estimators. (English summary) *Oper. Res.* **40** (1992), *no.* 3, 505–520. 62F12
— (*with* Heidelberger, Philip) Jackknifing under a budget constraint. (English summary) *ORSA J. Comput.* **4** (1992), *no.* 3, 226–234. (Summary) **93e:62071** 62F10
— (*with* Heidelberger, Philip) Analysis of initial transient deletion for parallel steady-state simulations. *SIAM J. Sci. Statist. Comput.* **13** (1992), *no.* 4, 904–922. (Summary) **93c:68110** 68U20 (60F05, 60K99, 65C05, 65Y05)
— (*with* Sigman, Karl) Uniform Cesàro limit theorems for synchronous processes with applications to queues. *Stochastic Process. Appl.* **40** (1992), *no.* 1, 29–43. (Richard F. Serfozo) **93b:60041** 60F05 (60K25)
Gmira, Abdelilah (*with* Véron, Laurent) Boundary singularities of solutions of some nonlinear elliptic equations. *Duke Math. J.* **64** (1991), *no.* 2, 271–324. (Maria J. Esteban) **93a:35053** 35J65 (35A20, 35B05)
Gnanadesikan, Ramanathan (*with* Landau, Henry J.) Yueh-Gin Gung and Dr. Charles Y. Hu award for distinguished service to Henry O. Pollak. *Amer. Math. Monthly* **100** (1993), *no.* 2, 115–116. 01A70
Gnana Jothi, R. B. Weakly graceful graphs. (English summary) *Proceedings of the Symposium on Graph Theory and Combinatorics (Cochin, 1991)*, 89–92, *Publication*, 21, *Centre Math. Sci., Trivandrum*, 1991. (Summary) **93k:05162** 05C78
Gnanvo, Cyprien Les tournois (-1)-chaîne. [(-1)-chain tournaments] *Z. Math. Logik Grundlag. Math.* **37** (1991), *no.* 1, 27–37. (Erol Barbut) **93c:05088** 05C60 (05C20)
Gnatienko, G. N. Assignment of preferences on a set of critical functions in problems of multicriterial optimization. (Russian. Russian summary) *Vestnik Kiev. Univ. Model. Optim. Slozhn. Sist. No.* 9 (1990), 87–92. 90C29
Gnativ, L. A. (*with* Kozhukhovskiĭ, A. D.; Litvin, A. I.) Organizing vector calculations of orthogonal Walsh transformations. *Soviet J. Automat. Inform. Sci.* **24** (1991), *no.* 4, 86–90 (1992); *translated from Avtomatika* **1991**, *no.* 4, 87–91, 96 (*Russian. English, Russian and Ukrainian summaries*). 93C55
Gnedenko, B. V. ★ Einführung in die Wahrscheinlichkeitstheorie. (German) [Introduction to probability theory] Translated from the sixth Russian edition by Hans-Joachim Roßberg and Gabriele Laue. Edited and with a foreword and an appendix by Roßberg. Mathematische Lehrbücher und Monographien, I. Abteilung: Mathematische Lehrbücher [Mathematical Textbooks and Monographs, Part I: Mathematical Textbooks], 39. *Akademie-Verlag, Berlin*, 1991. 469 *pp. ISBN* 3-05-501270-4 (Editors) **93h:60001** 60–01
— *see also* **Birthday: Gnedenko, B. V.; Shiryaev, A. N.** *and* **Lupanov, O. B. et al.**
Gnedin, A. V. (*with* Sakaguchi, Minoru) On a best choice problem related to the Poisson process. *Strategies for sequential search and selection in real time (Amherst, MA, 1990)*, 59–64, *Contemp. Math.*, 125, *Amer. Math. Soc., Providence, RI*, 1992. (L. Stettner) **93d:60076** 60G40 (62L15)
— Multicriteria extensions of the best choice problem: sequential selection without linear order. *Strategies for sequential search and selection in real time (Amherst, MA, 1990)*, 153–172, *Contemp. Math.*, 125, *Amer. Math. Soc., Providence, RI*, 1992. (Yuliy M. Baryshnikov) **93g:60087** 60G40 (62L15, 90A28)
— On mean-square epsilon dimension. (English summary) *Math. Japon.* **37** (1992), *no.* 4, 623–627. (Summary) **93i:60011** 60B11 (60G10)
— Stabilization of Euler-Bernoulli beam by a boundary control. (English summary) *Results Math.* **22** (1992), *no.* 1-2, 528–544. (P. K. C. Wang) **93j:93128** 93D15 (73K50, 93C20)
Gnot, Stanisław (*with* Srzednicka, Jolanta; Zmyślony, Roman) Bayes invariant quadratic estimation in general linear regression models. *J. Statist. Plann. Inference* **30** (1992), *no.* 2, 223–236. (Summary) **93k:62137** 62J05
Gnudi, A. (*with* Ventura, D.; Baccarani, G.; Odeh, Farouk) Multidimensional spherical harmonics expansion of Boltzmann equation for transport in semiconductors. *Appl. Math. Lett.* **5** (1992), *no.* 3, 85–90. (Andrzej Palczewski) **93f:82067** 82D99 (78A55)
Göb, R. Type *A* operating characteristic functions of defects sampling plans. *Metrika* **39** (1992), *no.* 3-4, 139–153. (Summary) **93e:62254** 62N10
— An interesting property of the Poisson operating characteristic function. (English summary) *Statist. Papers* **33** (1992), *no.* 3, 273–277. (Summary) **93f:62020** 62E17 (62N10)
Gobechia, M. I. On the triangular multiplication of bi-automata. (Russian. English and Georgian summaries) *Trudy Tbiliss. Univ. Mat. Mekh. Astronom. No.* 26 (1989), 60–77. (Janusz J. Szuster) **93e:68080** 68Q70
Gobedzhishvili, R. M. Uniqueness of solutions of exterior boundary value problems of second-order elliptic equations. (Russian) *Vestnik Moskov. Univ. Ser. I Mat. Mekh.* **1992**, *no.* 6, 45–47. 35J25
Göbel, Rüdiger (*with* Droste, Manfred) Universal information systems. *Internat. J. Found. Comput. Sci.* **1** (1990), *no.* 4, 413–424. (John Shawe-Taylor) **93a:68078** 68Q55
— (*with* Böttinger, Claudia) Endomorphism algebras of modules with distinguished partially ordered submodules over commutative rings. *J. Pure Appl. Algebra* **76** (1991), *no.* 2, 121–141. (Daniel Simson) **93c:16027** 16S50 (16G20)
— (*with* Behler, Raimund; Mines, Ray) Endomorphism rings of p-groups having length cofinal with ω. (English summary) *Abelian groups and noncommutative rings*, 33–48, *Contemp. Math.*, 130, *Amer. Math. Soc., Providence, RI*, 1992. (Mark Lane) **93h:16056** 16S50 (20K30)
— (*with* Droste, Manfred) A categorical theorem on universal objects and its application in abelian group theory and computer science. *Proceedings of the International Conference on Algebra, Part 3 (Novosibirsk, 1989)*, 49–74, *Contemp. Math.*, 131, *Part 3, Amer. Math. Soc., Providence, RI*, 1992. (H.-J. Hoehnke) **93g:18003** 18A15 (20F50, 20K12, 68Q55)
— An easy topological construction for realising endomorphism rings. (English summary) *Proc. Roy. Irish Acad. Sect. A* **92** (1992), *no.* 2, 281–284. (Summary) **93k:16053** 16S50
— *see also* **Abelian groups, 93m:20075**
Goberna, M. A. (*with* López, Marco Antonio) Conditions for the uniqueness of the optimal solution in linear semi-infinite programming. *J. Optim. Theory Appl.* **72** (1992), *no.* 2, 225–246. (Thomas Fischer) **93a:49019** 49M39 (90C34)
Goberstein, S. M. Perfect completely semisimple inverse semigroups. *Semigroup Forum* **45** (1992), *no.* 3, 395–397. (John W. Hogan) **93h:20063** 20M10
Goble, Lou A logic of "better". *Logique et Anal. (N.S.)* **32** (1989), *no.* 127-128, 297–318. 03B45 (03B65)
Gobron, T. On a discrete model of phase separation dynamics. (English summary) *J. Statist. Phys.* **69** (1992), *no.* 5-6, 995–1024. (Summary) **93i:82052** 82C24
Gochev, G. I. Dependence of Regge poles on frequency. (Russian) *Vestnik Moskov. Univ. Ser. I Mat. Mekh.* **1991**, *no.* 3, 58–61; *translation in Moscow Univ. Math. Bull.* **46** (1991), *no.* 3, 44–46. (P. A. Mishnayevskiy) **93k:34055** 34B24 (34L40, 81U20)
Gocho, Toru The topological invariant of three-manifolds based on the U(1) gauge theory. *J. Fac. Sci. Univ. Tokyo Sect. IA Math.* **39** (1992), *no.* 1, 169–184. (Louis Funar) **93d:57029** 57N10 (57M99, 58D29)
Goda, Hiroshi Heegaard splitting for sutured manifolds and Murasugi sum. *Osaka J. Math.* **29** (1992), *no.* 1, 21–40. (Martin Scharlemann) **93d:57014** 57M25 (57M50)
— On handle number of Seifert surfaces in S^3. *Osaka J. Math.* **30** (1993), *no.* 1, 63–80. (Michael Motto) **93k:57010** 57M25 (57N10)
Godambe, V. P. Survey sampling—as I understand it (a development of optimality criterion). *Current issues in statistical inference: essays in honor of D. Basu*, 187–195, *IMS Lecture Notes Monograph Ser.*, 17, *Inst. Math. Statist., Hayward, CA*, 1992. (Introduction) **93m:62031** 62D05

Godara, Lal C. Beamforming in the presence of broadband correlated arrivals. (English summary) *J. Acoust. Soc. Amer.* **92** (1992), *no.* 5, 2702–2708. 94A14

Godart, Odon Contributions of Lemaître to general relativity (1922–1934). (French summary) *Studies in the history of general relativity (Luminy, 1988)*, 437–452, 461, *Einstein Stud.*, 3, *Birkhäuser Boston, Boston, MA*, 1992. (R. N. Tiwari) **93k:01067** 01A70 (83–03)

Godbillon, Claude ★ Feuilletages. (French) [Foliations] Études géométriques. [Geometric studies] With a preface by G. Reeb. Progress in Mathematics, 98. *Birkhäuser Verlag, Basel*, 1991. xiv+474 *pp. ISBN* 3-7643-2638-7 (J. Chrastina (Zbl 724:58002)) **93i:57038** 57R30 (58A17, 58F18)

— *see also* **Schweitzer, Paul A., 93h:01049**

Godbole, Anant P. The exact and asymptotic distribution of overlapping success runs. *Comm. Statist. Theory Methods* **21** (1992), *no.* 4, 953–967. (Andrew D. Barbour) **93h:60016** 60C05 (05A16, 60G70, 62N10)

— (*with* Gornowicz, Michelle C.) Exact and approximate runs distributions. (English summary) *Comm. Statist. Theory Methods* **21** (1992), *no.* 8, 2151–2167. (M. P. Quine) **93m:60026** 60C05 (60F05)

Goddard, Peter (*with* Chu, Meifang; Halliday, Ian; Olive, David; Schwimmer, Adam) Quantization of the Wess-Zumino-Witten model on a circle. *Phys. Lett. B* **266** (1991), *no.* 1-2, 71–81. (Summary) **93c:81199** 81T40 (81R10, 81T70)

— (*with* Sreeram, V.) Model reduction using impulse-response gramians: a frequency-domain approach. (English summary) *Internat. J. Systems Sci.* **23** (1992), *no.* 10, 1745–1759. 93B11 (93C57)

Goddard, Wayne D. (*with* Oellermann, Ortrud R.) On the cycle structure of multipartite tournaments. *Graph theory, combinatorics, and applications, Vol. 1 (Kalamazoo, MI, 1988)*, 525–533, *Wiley-Intersci. Publ., Wiley, New York*, 1991. (Summary) **93b:05062** 05C20 (05C38)

— (*with* Swart, Henda C.) On some extremal problems in connectivity. *Graph theory, combinatorics, and applications, Vol. 1 (Kalamazoo, MI, 1988)*, 535–551, *Wiley-Intersci. Publ., Wiley, New York*, 1991. (Summary) **93b:05077** 05C35 (05C40)

— (*with* Swart, Henda C.) Two results on the binding numbers of product graphs. (English summary) *Ars Combin.* **34** (1992), 119–128. (Summary) **93m:05098** 05C35

— (*with* Henning, Michael A.; Swart, Henda C.) Some Nordhaus-Gaddum-type results. *J. Graph Theory* **16** (1992), *no.* 3, 221–231. (G. Chartrand) **93e:05046** 05C35 (05C70)

— (*with* Chen, Hang; McCanna, Joseph; Poh, Roger K. S.) Path chromatic sequences of graphs. (English summary) *Bull. Inst. Combin. Appl.* **7** (1993), 33–35. (Summary) **93j:05056** 05C15

— (*with* Kenyon, Claire; King, Valerie; Schulman, Leonard J.) Optimal randomized algorithms for local sorting and set-maxima. (English summary) *SIAM J. Comput.* **22** (1993), *no.* 2, 272–283. (Summary) **93j:68043** 68P10 (68Q20)

Gödde, M. Statistical games against a prophet—proof of a minimax conjecture. *Statist. Hefte* **32** (1991), *no.* 1, 75–81. (Elżbieta Ferenstein) **93a:62010** 62C20 (62L15)

Goddu, André Natural classification: Pierre Duhem's continuity thesis and the resolution of positivism. *Historia philosophiae medii aevi, Band I, II*, 329–348, *Grüner, Amsterdam*, 1991. (I. Grattan-Guinness) **93k:01037** 01A55 (00A30)

Godefroy, Gilles Sur la propriété de Namioka. [On the Namioka property] *Séminaire d'Initiation à l'Analyse, Exp. No. 4*, 5 *pp., Publ. Math. Univ. Pierre et Marie Curie*, 95, *Univ. Paris VI, Paris*, 199?. (Dietrich Helmer) **93i:46042** 46E15 (26B05, 46A50, 54C50, 54D30)

— Sur les frontières des boules unités duales. [On the boundaries of dual unit balls] *Séminaire d'Initiation à l'Analyse, Exp. No. 15*, 5 *pp., Publ. Math. Univ. Pierre et Marie Curie*, 95, *Univ. Paris VI, Paris*, 199?. (*see* **93d:00039**) 46B20

— Multiplicateurs relatifs. [Relative multipliers] *Séminaire d'Initiation à l'Analyse, Exp. No.* 20, 6 *pp., Publ. Math. Univ. Pierre et Marie Curie*, 95, *Univ. Paris VI, Paris*, 199?. (Editors) **93h:46014** 46B20 (43A22)

— Five lectures in geometry of Banach spaces. *Seminar on Functional Analysis*, 1987 (*Murcia*, 1987), 9–67, *Notas Mat.*, 1, *Univ. Murcia, Murcia*, 1988. (Giovanni Emmanuele) **93a:46015** 46Bxx (46B22)

— (*with* Kalton, Nigel J.; Saphar, David) Idéaux inconditionnels dans les espaces de Banach. (English summary) [Unconditional ideals in Banach spaces] *C. R. Acad. Sci. Paris Sér. I Math.* **313** (1991), *no.* 12, 845–849. (Ehrhard Behrends) **93h:46013** 46B20 (46B10)

— (*with* Zizler, Václav) Roughness properties of norms on non-Asplund spaces. *Michigan Math. J.* **38** (1991), *no.* 3, 461–466. (Xin Tai Yu) **93e:46018** 46B20

— *see also* **Seminar: Introduction to Analysis, 93d:00039** *and* **93k:00039**

Gödel, Kurt ★ On formally undecidable propositions of *Principia mathematica* and related systems. Translated from the German and with a preface by B. Meltzer. With an introduction by R. B. Braithwaite. Reprint of the 1963 translation. *Dover Publications, Inc., New York*, 1992. viii+72 *pp. ISBN* 0-486-66980-7 (Editors) **93d:01094** 01A75 (03–03, 03D35, 03F35, 03F40)

— *see also* **Tieszen, Richard, 93d:01052**

Goderis, D. (*with* Maes, Christian) Constructing quantum dissipations and their reversible states from classical interacting spin systems. (French summary) *Ann. Inst. H. Poincaré Phys. Théor.* **55** (1991), *no.* 3, 805–828. (H. Araki) **93d:82014** 82B10 (46L60, 82B03)

Godfrey, K. R. (*with* Chappell, M. J.) Structural identifiability of nonlinear systems: application to a batch reactor. (English summary) *Identification and system parameter estimation* 1991, *Vol.* 1,2 (*Budapest*, 1991), 865–870, *IFAC Sympos. Ser.*, 3, *Pergamon, Oxford*, 1992. (*see* **93h:93009**) 93B30 (93C10, 93C95)

Godfrey, L. G. ★ Misspecification tests in econometrics. The Lagrange multiplier principle and other approaches. Reprint of the 1988 original. Econometric Society Monographs, 16. *Cambridge University Press, Cambridge*, 1990. xii+252 *pp. ISBN* 0-521-26616-5 (Baldev Raj) **93h:62192** 62P20

Godfrey, S. E. (*with* Prince, Geoff) A canonical reduction of order for the Kepler problem. *J. Phys. A* **24** (1991), *no.* 23, 5465–5475. (Bruno Cordani) **93b:70007** 70F05

Godin, O. A. Reciprocity relations for acoustic fields in a three-dimensionally nonhomogeneous moving fluid. (Russian) *Dokl. Akad. Nauk SSSR* **322** (1992), *no.* 1, 79–85; *translation in Soviet Phys. Dokl.* **37** (1992), *no.* 1, 44–47. (Alexander Alenitsyn) **93f:76087** 76Q05

Godin, P. Long time existence of radial sound waves for second order quasilinear wave equations. *Nonlinear hyperbolic equations and field theory (Lake Como*, 1990), 102–109, *Pitman Res. Notes Math. Ser.*, 253, *Longman Sci. Tech., Harlow*, 1992. (R. Glassey) **93h:35133** 35L70 (35B45, 35L15)

Godini, G. Normed almost linear algebras. *Rev. Roumaine Math. Pures Appl.* **37** (1992), *no.* 2, 133–151. (Introduction) **93e:46055** 46H99 (46A19)

— On certain subspaces of a normed almost linear space. (English summary) *Rev. Roumaine Math. Pures Appl.* **37** (1992), *no.* 8, 683–690. (David Yost) **93j:46005** 46A19 (41A65, 46B99)

Godlevskii, M. D. (*with* Volkovich, V. L.) Issues in hierarchical system coordination based on system optimization. *Soviet J. Automat. Inform. Sci.* **24** (1991), *no.* 5, 54–60 (1992); *translated from Avtomatika* **1991,** *no.* 5, 56–63, 97 (*Russian. English, Russian and Ukrainian summaries*). 93A13

Godolphin, E. J. (*with* Clarke, Brenton R.) Uncorrelated residuals and an exact test for two variance components in experimental design. (English summary) *Comm. Statist. Theory Methods* **21** (1992), *no.* 9, 2501–2526. (Shahariar Huda) **93i:62058** 62J05 (62J10)

Godovan'chuk, V. V. (*with* Vinogradov, V. V.) On large deviations for trimmed sums of independent random variables. *Probability theory and mathematical statistics, Vol. I (Vilnius*, 1989), 424–432, "*Mokslas*", *Vilnius*, 1990. (W. E. Pruitt) **93f:60035** 60F10

Godoy, S. (*with* Fujita, Shigeji) Reflection principles for biased correlated walks. Simple applications. (English summary) *J. Math. Phys.* **33** (1992), *no.* 9, 2998–3003. 60J15 (82C41)

— (*with* Fujita, Shigeji) Newtonian equations of motion for a Bloch electron. (Spanish summary) *Rev. Mexicana Fís.* **38** (1992), *no.* 1, 134–141. (Kuppuswamy Porsezian) **93g:82105** 82D35 (70D05, 78A15)

Godrèche, C. (*with* Lançon, F.) A simple example of a non-Pisot tiling with five-fold symmetry. (English and French summaries) *J. Physique I* **2** (1992), *no.* 2, 207–220. (Hanna Nencka) **93j:52033** 52C20 (82D25)

— (*with* Kostov, Ivan K.; Yekutieli, I.) Topological correlations in cellular structures and planar graph theory. (English summary) *Phys. Rev. Lett.* **69** (1992), *no.* 18, 2674–2677. 92C15 (05C90)

— *see also* **Solids far from equilibrium, 93g:82042**

Godsil, C. D. Krein covers of complete graphs. (English summary) *Australas. J. Combin.* **6** (1992), 245–255. (Summary) **93j:05116** 05C70

— Walk generating functions, Christoffel-Darboux identities and the adjacency matrix of a graph. *Combin. Probab. Comput.* **1** (1992), *no.* 1, 13–25. (Wenchang Chu) **93d:05106** 05C50

— (*with* Gardiner, A. D.; Hensel, A. D.; Royle, Gordon F.) Second neighbourhoods of strongly regular graphs. *Discrete Math.* **103** (1992), *no.* 2, 161–170. (M. D. Hestenes) **93k:05183** 05E30

— (*with* Seifter, N.) Graphs with polynomial growth are covering graphs. (English summary) *Graphs Combin.* **8** (1992), *no.* 3, 233–241. (Robert Beezer) **93j:05079** 05C25 (05C75)

— (*with* Hensel, A. D.) Distance regular covers of the complete graph. (English summary) *J. Combin. Theory Ser. B* **56** (1992), *no.* 2, 205–238. (Arjeh M. Cohen) **93k:05184** 05E30 (05E20)

Godula, J. (*with* Starkow, V.) Logarithmic coefficients of locally univalent functions. (Polish summary) *Ann. Univ. Mariae Curie-Skłodowska Sect. A* **43** (1989), 9–13 (1991). (Summary) **93b:30010** 30C45

— (*with* Nowak, Maria) On integral means of the convolution. (Polish summary) *Ann. Univ. Mariae Curie-Skłodowska Sect. A* **44** (1990), 9–11 (1991). (Daniel H. Luecking) **93d:32006** 32A35 (46J15)

Godunov, S. K. A survey of criteria for the convergence of orthogonal-power processes. (Russian) *Proceedings of the Second International Symposium on Numerical Analysis (Prague*, 1987), 51–58, *Teubner-Texte Math.*, 107, *Teubner, Leipzig*, 1988. (*see* **93b:65007**) 65F25 (65F10)

— A new criterion for the absence of parametric resonance in Hamiltonian systems. (Russian) *Conference on Differential Equations and Applications (Ruse*, 1989), 35–43, *Tech. Univ., Ruse*, 1991. (*see* **93f:34004**) 34A30 (34D05, 58F05, 70H05)

— Investigation into stability of almost conservative systems by means of Lyapunov functions. Siberian Advances in Mathematics. *Siberian Adv. Math.* **2** (1992), *no.* 1, 89–113. (P. C. Parks) **93b:34063** 34D20 (70H35, 70J25, 73K70, 93D30)

— Norms of solutions to the Lourie-Riccati matrix equations as criteria of the quality of stabilizability and detectability. (English summary) Siberian Advances in Mathematics. *Siberian Adv. Math.* **2** (1992), *no.* 3, 135–157. (Petko Petkov) **93k:93094** 93D15 (34H05, 49N10)

— *see also* **Some applications of functional analysis to problems of mathematical physics, 93b:00021; Boundary value problems for partial differential equations, 93d:35002; Malyshev, A. N., 93j:65043** *and* **Partial differential equations, 93m:35003**

Godwin, H. J. (*with* Smith, J. R.) On the Euclidean nature of four cyclic cubic fields. *Math. Comp.* **60** (1993), *no.* 201, 421–423. (Jonathan W. Sands) **93d:11114** 11R16 (11R04, 11R29, 11Y40)

Goebel, Kazimierz (*with* Komorowski, Tomasz) Retracting balls onto spheres and minimal displacement problem. (French summary) *Fixed point theory and applications (Marseille*, 1989), 155–172, *Pitman Res. Notes Math. Ser.*, 252, *Longman Sci. Tech., Harlow*, 1991. (Y. Benyamini) **93b:47110** 47Hxx (46B20, 54H25)

— (*with* Bruck, Ronald E.) Bizarre fixed-point sets. (English summary) *Fixed point theory and applications (Halifax, NS*, 1991), 67–70, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93h:47064** 47H09 (46B20, 47H10)

— On a problem concerning involutions of Banach spaces. *Optimization and nonlinear analysis (Haifa*, 1990), 142–144, *Pitman Res. Notes Math. Ser.*, 244, *Longman Sci. Tech., Harlow*, 1992. (*see* **93d:49004**) 47H10

Goebel, Manfred (*with* Raitums, Uldis) Erratum to the paper: "The Pontryagin minimum principle for a strongly nonlinear two-point boundary value problem" [Control Cybernet. **20** (1991), no. 2, 7–21; MR 92m:49031]. (Russian summary) *Control Cybernet.* **20** (1991), *no.* 3, 85–86. (Editors) **93k:49017** 49K15

— Continuity and Fréchet-differentiability of Nemytskij operators in Hölder spaces. *Monatsh. Math.* **113** (1992), *no.* 2, 107–119. (Pavel Drábek) **93a:47071** 47H30 (47H15)

Goedde, C. G. (*with* Lichtenberg, Allan J.; Lieberman, M. A.) Chaos and the approach to equilibrium in a discrete sine-Gordon equation. (English summary) *Phys. D* **59** (1992), *no.* 1-3, 200–225. (Bei Ye Feng) **93m:58072** 58F13 (39A12)

de Goede, Erik D. Numerical methods for the 3D shallow water equations on vector and parallel computers. *Appl. Numer. Math.* **10** (1992), *no.* 1, 3–18. (Summary) **93d:76047** 76M25 (65Y05, 76B15)

Goedert, J. (*with* Pereira, L. G.) One-dimensional nonautonomous dynamical systems with exact transcendental invariants. *J. Math. Phys.* **33** (1992), *no.* 8, 2682–2687. (Richard C. Churchill) **93i:58060** 58F05 (58F07)

Goel, Prem K. *see* **Survival analysis: state of the art, 93b:62005** *and* **Bayesian analysis in statistics and econometrics, 93e:62002**

Goel, R. M. (*with* Singh, Vikramaditya[1]) Differential inequalities and local valency. *Houston J. Math.* **18** (1992), *no.* 2, 215–233. (Jan Stankiewicz) **93f:30021** 30C55 (30C10)

Goemans, Michel X. (*with* Williamson, David P.) A general approximation technique for constrained forest problems. *Proceedings of the Third Annual ACM-SIAM Symposium on Discrete Algorithms (Orlando, FL, 1992)*, 307–316, *ACM, New York*, 1992. (*see* **93b:68005**) 05C85 (90C27)

— (*with* Myung, Young-soo) A catalog of Steiner tree formulations. (English summary) *Networks* **23** (1993), *no.* 1, 19–28. (Summary) **93h:05056** 05C05

Goenner, Hubert F. M. The reception of the theory of relativity in Germany as reflected by books published between 1908 and 1945. (French summary) *Studies in the history of general relativity (Luminy, 1988)*, 3–38, 461, *Einstein Stud.*, 3, *Birkhäuser Boston, Boston, MA*, 1992. (From the text) **93d:01039** 01A60 (83–03)

Goerdt, Andreas Unrestricted resolution versus N-resolution. *Theoret. Comput. Sci.* **93** (1992), *no.* 1, 159–167. (Summary) **93c:68089** 68T15 (03B35)

— Characterizing complexity classes by higher type primitive recursive definitions. *Theoret. Comput. Sci.* **100** (1992), *no.* 1, 45–66. (Bruno Poizat) **93i:03042** 03C13 (03C45, 03D15, 68Q15)

Goeree, Jacob (*with* de Boer, Jan) Markov traces and II_1 factors in conformal field theory. *Comm. Math. Phys.* **139** (1991), *no.* 2, 267–304. (Summary) **93i:81211** 81T40 (46L60, 46N50)

— W-constraints in 2D quantum gravity. *Nuclear Phys. B* **358** (1991), *no.* 3, 737–757. (Andrew R. Kavalov) **93e:81110** 81T40 (58F07, 81R10)

— (*with* de Boer, Jan) W-gravity from Chern-Simons theory. (English summary) *Nuclear Phys. B* **381** (1992), *no.* 1-2, 329–359. (From the introduction) **93j:81086** 81T40 (81T13)

— (*with* de Boer, Jan) The covariant W_3 action. *Phys. Lett. B* **274** (1992), *no.* 3-4, 289–297. (From the introduction) **93a:81166** 81T40 (58D27, 81T13)

Goerss, Paul G. (*with* Lannes, Jean; Morel, Fabien) Vecteurs de Witt non commutatifs et représentabilité de l'homologie modulo p. [Noncommutative Witt vectors and representability of homology modulo p] *Invent. Math.* **108** (1992), *no.* 1, 163–227. (Edgar H. Brown, Jr.) **93e:55014** 55P65 (55N99, 55P42)

— Barratt's desuspension spectral sequence and the Lie ring analyzer. *Quart. J. Math. Oxford Ser.* (2) **44** (1993), *no.* 173, 43–85. (Richard John Steiner) **93k:55026** 55T99 (17B55, 55Q20)

Goertzel, Ben Global optimization by multilevel search. (English summary) *J. Optim. Theory Appl.* **75** (1992), *no.* 2, 423–432. 65K10 (65C05)

— On the structural complexity of sequences, images, and automata. (English summary) *Finite fields, coding theory, and advances in communication and computing (Las Vegas, NV, 1991)*, 307–327, *Lecture Notes in Pure and Appl. Math.*, 141, *Dekker, New York*, 1993. (Summary) **93k:68109** 68U10 (68Q80, 94A29)

Goeters, H. Pat Fuchs' problem 43. *Rocky Mountain J. Math.* **22** (1992), *no.* 1, 197–201. (C. Vinsonhaler) **93c:20087** 20K15 (20K30, 20K35)

— (*with* Ullery, William) Almost completely decomposable torsion-free groups. *Rocky Mountain J. Math.* **22** (1992), *no.* 2, 593–600. (Theodore Faticoni) **93j:20109** 20K15 (20K20)

Goetgheluck, P. (*with* Pleśniak, W.) Counter-examples to Markov and Bernstein inequalities. *J. Approx. Theory* **69** (1992), *no.* 3, 318–325. (Summary) **93k:41015** 41A17

Goetschel, Roy, Jr. (*with* Voxman, William) Spanning properties for fuzzy matroids. (English summary) *Fuzzy Sets and Systems* **51** (1992), *no.* 3, 313–321. (Summary) **93i:05043** 05B35 (04A72)

— (*with* Voxman, William) Fuzzy matroid sums and a greedy algorithm. (English summary) *Fuzzy Sets and Systems* **52** (1992), *no.* 2, 189–200. (Summary) **93j:05030** 05B35 (04A72)

Goffman, Casper Approximate continuity and linear approximate continuity. *Proc. Amer. Math. Soc.* **119** (1993), *no.* 1, 339–340. (Luděk Zajíček) **93k:26005** 26B05

Goggin, Eimear M. Convergence of filters with applications to the Kalman-Bucy case. *IEEE Trans. Inform. Theory* **38** (1992), *no.* 3, 1091–1100. (Summary) **93b:94004** 94A12 (94A24)

Gogoladze, L. D. *see* **Reports: Seminar of the I. N. Vekua Institute of Applied Mathematics, Extended Sessions, 93a:00015b**

Gogolla, Martin (*with* Ehrich, Hans-Dieter; Lipeck, Udo Walter) ★ Algebraische Spezifikation abstrakter Datentypen. (German) [Algebraic specification of abstract data types] Eine Einführung in die Theorie [An introduction to the theory]. Leitfäden und Monographien der Informatik. [Guides and Monographs in Information Science] *B. G. Teubner, Stuttgart*, 1989. x+236 *pp. ISBN* 3-519-02266-4 (Eric G. Wagner) **93a:68098** 68Q65

Goguadze, D. F. On iterated integrals. (Russian) *Trudy Inst. Vychisl. Mat. Akad. Nauk Gruzin. SSR* **27** (1987), *no.* 1, 28–43. 28A35

— Infinite products of arbitrary measures. (Russian) *Trudy Inst. Vychisl. Mat. Akad. Nauk Gruzin. SSR* **29** (1990), *no.* 1, 85–100. 28A35

Goguen, Joseph A. Types as theories. *Topology and category theory in computer science (Oxford, 1989)*, 357–390, *Oxford Sci. Publ., Oxford Univ. Press, New York*, 1991. (*see* **93h:68004**) 03G30 (03B40, 03B70, 68Q55)

— (*with* Burstall, Rod M.) Institutions: abstract model theory for specification and programming. *J. Assoc. Comput. Mach.* **39** (1992), *no.* 1, 95–146. (Summary) **93h:03056** 03C95 (03B70, 68Q65, 68T15)

— (*with* Stevens, Andrew; Hilberdink, Hendrik; Hobley, Keith) 2OBJ: a metalogical framework theorem prover based on equational logic. (English summary) *Philos. Trans. Roy. Soc. London Ser. A* **339** (1992), *no.* 1652, 69–86. 68T15 (03B35)

Goh, Bean San Algorithms for unconstrained optimization: a new approach using control theory. (English summary) *Optimization, Vol.* 1, 2 (*Singapore*, 1992), 414–422, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93d:90005**) 90C30 (49M37)

— (*with* Vincent, T. L.; Teo, Kok Lay) Trajectory-following algorithms for min-max optimization problems. (English summary) *J. Optim. Theory Appl.* **75** (1992), *no.* 3, 501–519. 49M30 (49J35, 49K35)

Goh, C. J. (*with* Boland, N. L.; Mees, Alistair) An algorithm for solving quadratic cost network flow optimization problems. (English summary) *Optimization, Vol.* 1, 2 (*Singapore*, 1992), 284–293, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93d:90005**) 90C35

— (*with* Wang, C. M.) A unified approach to optimization of structural elements. (English summary) *Optimization, Vol.* 1, 2 (*Singapore*, 1992), 825–834, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93d:90005**) 90C90

— On the nonlinear optimal regulator problem. (English summary) *Automatica J. IFAC* **29** (1993), *no.* 3, 751–756. 93C10 (49N55, 93D15)

— (*with* Edwards, N. J.; Zomaya, A. Y.) Feedback control of minimum-time optimal control problems using neural networks. (English summary) *Optimal Control Appl. Methods* **14** (1993), *no.* 1, 1–16. 49N35 (93B52, 93C85)

Goh, Chon-Huat (*with* Greenberg, Betsy S.; Matsuo, Hirofumi) Perishable inventory systems with batch demand and arrivals. (English summary) *Oper. Res. Lett.* **13** (1993), *no.* 1, 1–8. 90B05

Goh, William M. Y. (*with* Schmutz, Eric) The expected order of a random permutation. *Bull. London Math. Soc.* **23** (1991), *no.* 1, 34–42. (Andrew Granville) **93a:11080** 11N37

— (*with* Schmutz, Eric) Gap-free set partitions. *Random Structures Algorithms* **3** (1992), *no.* 1, 9–18. (L. Bruce Richmond) **93a:05013** 05A20 (05A18)

— *see also* **Asymptotic methods in analysis and combinatorics**

Gohberg, Israel (*with* Goldberg, Seymour; Kaashoek, Marinus A.) ★ Classes of linear operators. Vol. I. Operator Theory: Advances and Applications, 49. *Birkhäuser Verlag, Basel*, 1990. xiv+468 *pp. ISBN* 3-7643-2531-3 (Henry R. Dowson) **93d:47002** 47–02

— (*with* Kaashoek, Marinus A.; Woerdeman, Hugo J.) Time variant extension problems of Nehari type and the band method. (English summary) *H_∞-control theory (Como*, 1990), 309–323, *Lecture Notes in Math.*, 1496, *Springer, Berlin*, 1991. (Tiberiu Constantinescu) **93g:47017** 47A57 (47N70, 93B36)

— (*with* Ben-Artzi, Asher) Band matrices and dichotomy. *Topics in matrix and operator theory (Rotterdam*, 1989), 137–170, *Oper. Theory Adv. Appl.*, 50, *Birkhäuser, Basel*, 1991. (From the introduction) **93b:47042** 47A99 (15A06, 47B99)

— (*with* Ben-Artzi, Asher) Dichotomy, discrete Bohl exponents, and spectrum of block weighted shifts. *Integral Equations Operator Theory* **14** (1991), *no.* 5, 613–677. (T. A. Gillespie) **93e:47033** 47B37 (39A12, 47A10, 58G25)

— (*with* Ball, Joseph A.; Rodman, Leiba) Boundary Nevanlinna-Pick interpolation for rational matrix functions. *J. Math. Systems Estim. Control* **1** (1991), *no.* 2, 131–164. (Gong Ning Chen) **93g:47016** 47A57 (30E05, 47A56, 93B25)

— (*with* Krupnik, N. Ya.) ★ One-dimensional linear singular integral equations. I. Introduction. Translated from the 1979 German translation by Bernd Luderer and Steffen Roch and revised by the authors. Operator Theory: Advances and Applications, 53. *Birkhäuser Verlag, Basel*, 1992. 266 *pp. ISBN* 3-7643-2584-4 (A. Böttcher) **93c:47061** 47G10 (45E10, 47A53, 47B35, 47N20)

— (*with* Krupnik, N. Ya.) ★ One-dimensional linear singular integral equations. Vol. II. General theory and applications. Translated from the 1979 German translation by S. Roch and revised by the authors. Operator Theory: Advances and Applications, 54. *Birkhäuser Verlag, Basel*, 1992. 232 *pp. ISBN* 3-7643-2796-0 (A. Böttcher) **93k:47059** 47G10 (45E10, 47A50, 47A53, 47B35, 47N20)

— (*with* Ball, Joseph A.; Rodman, Leiba) Interpolation problems for rational matrix functions and systems theory. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, I (Kobe*, 1991), 3–12, *Mita, Tokyo*, 1992. (*see* **93g:93005**) 93B25 (47A57, 47N70)

— (*with* Ball, Joseph A.; Kaashoek, Marinus A.) Time-varying systems: Nevanlinna-Pick interpolation and sensitivity minimization. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, I (Kobe*, 1991), 53–58, *Mita, Tokyo*, 1992. (Summary) **93m:93027** 93B28 (47N70)

— (*with* Ben-Artzi, Asher) A nonstationary analogue of inertia theorems. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, I (Kobe*, 1991), 59–63, *Mita, Tokyo*, 1992. (*see* **93g:93005**) 47A99 (15A18, 47N70)

— (*with* Ben-Artzi, Asher) Time variant analogs of orthogonal polynomials and Stein equation. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, I (Kobe*, 1991), 77–80, *Mita, Tokyo*, 1992. (Summary) **93i:47123** 47N99 (33C45, 42C05, 47A53, 47B35)

— (*with* Ball, Joseph A.; Kaashoek, Marinus A.) Nevanlinna-Pick interpolation for time-varying input-output maps: the discrete case. *Time-variant systems and interpolation*, 1–51, *Oper. Theory Adv. Appl.*, 56, *Birkhäuser, Basel*, 1992. (*see* **93d:47148**) 47A57 (93C50)

— (*with* Ball, Joseph A.; Kaashoek, Marinus A.) Nevanlinna-Pick interpolation for time-varying input-output maps: the continuous time case. *Time-variant systems and interpolation*, 52–89, *Oper. Theory Adv. Appl.*, 56, *Birkhäuser, Basel*, 1992. (*see* **93d:47148**) 47A57 (93C50)

— (*with* Ben-Artzi, Asher) Dichotomy of systems and invertibility of linear ordinary differential operators. *Time-variant systems and interpolation*, 90–119, *Oper. Theory Adv. Appl.*, 56, *Birkhäuser, Basel*, 1992. (*see* **93d:47148**) 47E05 (34L05)

— (*with* Ben-Artzi, Asher) Inertia theorems for block weighted shifts and applications. *Time-variant systems and interpolation*, 120–152, *Oper. Theory Adv. Appl.*, 56, *Birkhäuser, Basel*, 1992. (*see* **93d:47148**) 47B37 (47A53)

— (*with* Kaashoek, Marinus A.; Lerer, L.) Minimality and realization of discrete time-varying systems. *Time-variant systems and interpolation*, 261–296, *Oper. Theory Adv. Appl.*, 56, *Birkhäuser, Basel*, 1992. (*see* **93d:47148**) 93B15 (47N70)

— (*with* Kaashoek, Marinus A.) Asymptotic formulas of Szegő-Kac-Achiezer type. *Asymptotic Anal.* **5** (1992), *no.* 3, 187–220. (Hugo Jan Woerdeman) **93b:47051** 47B35 (47G10)

— (*with* Kaashoek, Marinus A.; Ran, André C. M.) Factorizations of and extensions to J-unitary rational matrix functions on the unit circle. *Integral Equations Operator Theory* **15** (1992), *no.* 2, 262–300. (E. R. Tsekanovs'kiĭ) **93b:47024** 47A56 (30E99, 47A56, 47A68, 47B50)

— (*with* Alpay, Daniel; Ball, Joseph A.; Rodman, Leiba) State space theory of automorphisms of rational matrix functions. *Integral Equations Operator Theory* **15** (1992), *no.* 3, 349–377. (E. R. Tsekanovs'kiĭ) **93d:47029** 47A56 (47N70, 93B28)

— (*with* Ol'shevskiĭ, V. R.) Circulants, displacements and decompositions of matrices. (English summary) *Integral Equations Operator Theory* **15** (1992), *no.* 5, 730–743. (F. W. Fairman) **93i:15015** 15A23 (15A09, 47B35)
— (*with* Kaashoek, Marinus A.; van Schagen, F.) On the local theory of regular analytic matrix functions. (English summary) *Linear Algebra Appl.* **182** (1993), 9–25. (Introduction) **93m:47015** 47A56 (15A60, 47A10)
— *see also* **Continuous and discrete Fourier transforms, extension problems and Wiener-Hopf equations, 93d:47003; Time-variant systems and interpolation, 93d:47148** *and* **Topics in operator theory: Ernst D. Hellinger memorial volume, 93k:47002**
Göhler, Wolfgang *see* **Landau, L. D., 93b:00001d**
Gohsn, Ali Un calcul d'intersection sur une variété projective. (English and French summaries) [Calculation of intersection on a projective variety] *Bull. Sci. Math.* (2) **116** (1992), *no.* 4, 453–463. (Salomon Ofman) **93h:32007** 32A27 (32C30)
Gokhale, D. V. (*with* Inada, Kōichi; Kim, Hea-Jung) A minimum discrimination information estimator of preliminary conjectured normal variance. (English summary) *Ann. Inst. Statist. Math.* **45** (1993), *no.* 1, 129–136. (Summary) **93m:62052** 62F10
Gokhman, A. O. Representation of smooth symmetric functions in different bases. (Russian) *Nonlinear operators in global analysis* (*Russian*), 125–130, 163, *Novoe Global. Anal., Voronezh. Gos. Univ., Voronezh*, 1991. (Summary) **93c:58029** 58C25 (26B40)
Gokhroo, M. K. (*with* Mehra, A. L.) Sphere of variable densities in general relativity. (English summary) *Ganita Sandesh* **6** (1992), *no.* 2, 113–117. (Summary) **93j:83019** 83C15 (83C55)
— (*with* Mehra, A. L.) Static dust sphere in Einstein-Cartan theory. (English summary) *Gen. Relativity Gravitation* **24** (1992), *no.* 9, 1011–1014. 83D05
Gołąb, Jerzy On a certain mixed boundary value problem for the Helmholtz equation. (Polish summary) *Opuscula Math.* **1991,** *no.* 10, 69–76. (Introduction) **93e:35022** 35J05 (35C15)
Golan, Jonathan S. ★ The theory of semirings with applications in mathematics and theoretical computer science. Pitman Monographs and Surveys in Pure and Applied Mathematics, 54. *Longman Scientific & Technical, Harlow*; *copublished in the United States with John Wiley & Sons, Inc., New York*, 1992. xiv+318 *pp. ISBN* 0-582-07855-5 (C. J. Maxson) **93b:16085** 16Y60 (68–01)
Golbabai, A. Nonparallel plane Rayleigh-Bénard convection in cylindrical geometry. (English summary) *Tamkang J. Math.* **23** (1992), *no.* 3, 171–185. (Summary) **93j:76032** 76E15 (35Q35, 76R05)
Gol'berg, A. L. Some classes of plane topological mappings with generalized first derivatives. (Russian. Russian and Ukrainian summaries) *Ukraïn. Mat. Zh.* **44** (1992), *no.* 8, 1114–1116; *translation in Ukrainian Math. J.* **44** (1992), *no.* 8, 1016–1018 (1993). (Summary) **93k:26006** 26B05 (30C62)
Goldbach, R. W. (*with* Claasen, H. L.) A field-like property of finite rings. *Indag. Math. (N.S.)* **3** (1992), *no.* 1, 11–26. (William H. Gustafson) **93b:16038** 16P10 (11T99, 13M05)
Gol'dberg, A. A. (*with* Levin, B. Ya.; Ostrovskiĭ, I. V.) Entire and meromorphic functions. (Russian) *Complex analysis. One variable*, 1 (*Russian*), 5–185, 256, *Itogi Nauki i Tekhniki, Akad. Nauk SSSR, Vsesoyuz. Inst. Nauchn. i Tekhn. Inform., Moscow*, 1991. (W. H. J. Fuchs) **93a:30031** 30D20 (30D30, 30D35)
— Application of C. Carathéodory's theorem to a problem of the theory of entire functions. *Constantin Carathéodory: an international tribute, Vol. I, II*, 374–380, *World Sci. Publishing, Teaneck, NJ*, 1991. (Summary) **93f:30029** 30D20
— On a condition for an entire function of exponential type to belong to the class L^p. (Ukrainian. Russian summary) *Mathematical investigations* (*Ukrainian*), 55–60, 117–118, *Zb. Nauk. Prats' L'vIv. Mat. Tov.*, 1, *L'vIv. Mat. Tov., L'viv*, 1991. (Summary) **93j:30025** 30D15
— (*with* Zarichnyĭ, M. M.; Ptashnik, B. I.) On the history of Ukrainian mathematical culture in Galicia. (Russian. Russian summary) *Ocherki Istor. Estestvoznan. Tekhn. No.* 40 (1991), 8–13. (Summary) **93f:01015** 01A60
— (*with* Aizenberg, L. A.; Levin, B. Ya.; et al.) Lev Isaakovich Ronkin (on the occasion of his sixtieth birthday). (Russian) *Uspekhi Mat. Nauk* **46** (1991), *no.* 5(281), 181–183; *translation in Russian Math. Surveys* **46** (1991), *no.* 5, 207–209. (Editors) **93e:01016** 01A70
— (*with* P'yana, V. A.) Some uniqueness theorems for rational, algebraic and algebroidal functions that take into account only simple A-points. (Russian. English and Russian summaries) *Dokl. Akad. Nauk Ukrainy* **1992,** *no.* 12, 13–15, 169. (Summary) **93k:30044** 30D35
— (*with* Sodin, M. L.; Strochik, N. N.) Meromorphic functions of completely regular growth and their logarithmic derivatives. (Russian) *Sibirsk. Mat. Zh.* **33** (1992), *no.* 1, 44–52, 218; *translation in Siberian Math. J.* **33** (1992), *no.* 1, 34–40. (W. H. J. Fuchs) **93e:30065** 30D30 (30D35)
— (*with* Strochik, N. N.) Letter to the editors: "Asymptotic behavior of meromorphic functions of completely regular growth and their logarithmic derivatives" [Sibirsk. Mat. Zh. **26** (1985), no. 6, 29–38, 188; MR 87c:30043]. (Russian) *Sibirsk. Mat. Zh.* **33** (1992), *no.* 4, 219; *translation in Siberian Math. J.* **33** (1992), *no.* 4, 742 (1993). (From the text) **93g:30039** 30D20 (30D15)
— *see also* **Mathematical investigations, 93e:00014**
Gol'dberg, A. L. (*with* Kud'yavin, V. S.) Mean coefficients of quasiconformality of a pair of domains. (Russian. Ukrainian summary) *Ukrain. Mat. Zh.* **43** (1991), *no.* 12, 1709–1712; *translation in Ukrainian Math. J.* **43** (1991), *no.* 12, 1594–1597 (1992). (Olli Martio) **93i:30018** 30C65 (30C70)
Goldberg, Andrew V. A natural randomization strategy for multicommodity flow and related algorithms. (English summary) *Inform. Process. Lett.* **42** (1992), *no.* 5, 249–256. (Summary) **93g:90032** 90B10 (68Q25)
— (*with* Plotkin, Serge A.; Shmoys, David B.; Tardos, Éva) Using interior-point methods for fast parallel algorithms for bipartite matching and related problems. *SIAM J. Comput.* **21** (1992), *no.* 1, 140–150. (S. S. Chadha) **93d:90036** 90C05 (90C35)
Goldberg, Helmuth (*with* Tröltzsch, Fredi) Second order optimality conditions for nonlinear parabolic boundary control problems. *Optimal control of partial differential equations* (*Irsee*, 1990), 93–103, *Lecture Notes in Control and Inform. Sci.*, 149, *Springer, Berlin*, 1991. (*see* **93b:49002**) 49K20
Goldberg, Joshua N. (*with* Newman, Ezra T.; Rovelli, Carlo) On Hamiltonian systems with first-class constraints. *J. Math. Phys.* **32** (1991), *no.* 10, 2739–2743. (Peter Basarab-Horwath) **93d:70028** 70H05 (58F05, 70G99, 70H15)
— (*with* Robinson, D. C.; Soteriou, C.) Null hypersurfaces and new variables. *Classical Quantum Gravity* **9** (1992), *no.* 5, 1309–1328. (Peter Peldán) **93c:83009** 83C05
— (*with* Lewandowski, Jerzy; Stornaiolo, C.) Degeneracy in loop variables. (English summary) *Comm. Math. Phys.* **148** (1992), *no.* 2, 377–402. (Peter Peldán) **93i:83047** 83C45 (83C05)
— Quantized self-dual Maxwell field on a null surface. *J. Geom. Phys.* **8** (1992), *no.* 1-4, 163–172. (Sergey Merkulov) **93e:81142** 81T99 (83C47)
Goldberg, Lisa R. On the shape of the unit sphere in $Q(\Delta)$. (English summary) *Proc. Amer. Math. Soc.* **118** (1993), *no.* 4, 1179–1185. (Summary) **93m:46019** 46E15 (30Fxx, 46E22)
— *see also* **Topological methods in modern mathematics, 93k:00043**
Goldberg, M. (*with* Adolfsson, Vilhelm; Jawerth, Björn; Lennerstad, H.) Localized Galerkin estimates for boundary integral equations on Lipschitz domains. (English summary) *SIAM J. Math. Anal.* **23** (1992), *no.* 5, 1356–1374. (Weimin Han) **93f:65087** 65N38 (65N30, 65R20)
Goldberg, Mark (*with* Berque, David; Cecchini, Ronald; Rivenburgh, Reid) The SetPlayer system for symbolic computation on power sets. (English summary) *J. Symbolic Comput.* **14** (1992), *no.* 6, 645–662. (Summary) **93m:68090** 68Q40 (04–04, 05C85, 68R05)
Goldberg, Moshe (*with* Arens, Richard F.) A class of seminorms on function algebras. *J. Math. Anal. Appl.* **162** (1991), *no.* 2, 592–609. (M. Abel) **93g:46047** 46J10
— (*with* Arens, Richard F.; Luxemburg, W. A. J.) Multiplicativity factors for seminorms. II. (English summary) *J. Math. Anal. Appl.* **170** (1992), *no.* 2, 401–413. (John Duncan) **93k:46039** 46H05 (46H70)
— (*with* Arens, Richard F.) Quadrative seminorms and Jordan structures on algebras. (English summary) *Linear Algebra Appl.* **181** (1993), 269–278. (Summary) **93m:46055** 46H70 (17C99)
Goldberg, Samuel Irving (*with* Perrone, D.; Tóth, G.) Curvature and torsion of contact Riemannian three-manifolds. *Differential geometry*, 199–210, *Pitman Monographs Surveys Pure Appl. Math.*, 52, *Longman Sci. Tech., Harlow*, 1991. (David Blair) **93g:53063** 53C25 (53C15, 58E11)
— (*with* Perrone, D.) Contact 3-manifolds with positive scalar curvature. *Geometry and nonlinear partial differential equations* (*Fayetteville, AR*, 1990), 59–68, *Contemp. Math.*, 127, *Amer. Math. Soc., Providence, RI*, 1992. (Y. Tashiro) **93d:53046** 53C21 (53C15, 58E11)
Goldberg, Seymour (*with* Gohberg, Israel; Kaashoek, Marinus A.) ★ Classes of linear operators. Vol. I. Operator Theory: Advances and Applications, 49. *Birkhäuser Verlag, Basel*, 1990. xiv+468 *pp. ISBN* 3-7643-2531-3 (Henry R. Dowson) **93d:47002** 47–02
Goldberg, Vladislav V. Local differentiable quasigroups and webs. *Quasigroups and loops: theory and applications*, 263–311, *Sigma Ser. Pure Math.*, 8, *Heldermann, Berlin*, 1990. (*see* **93g:20133**) 53C60 (20N05)
— (*with* Buchner, Klaus; Roşca, Radu) Biconformal cosymplectic manifolds. (English summary) *Riv. Mat. Univ. Parma* (4) **17** (1991), 41–58 (1992). (Zbigniew Olszak) **93i:53046** 53C25 (53C15)
— (*with* Roşca, Radu) The structure conformal vector fields of a Sasakian manifold. *Soochow J. Math.* **18** (1992), *no.* 1, 67–84. (Vesselka Mikhova) **93b:53038** 53C25
— (*with* Fomenko, A. T.; Kirichenko, V. F.; Ryzhkov, V. V.; Shelekhov, A. M.) Maks Aizikovich Akivis. *Webs & quasigroups*, 4–8, *Tver. Gos. Univ., Tver'*, 1993. (*see* **93m:53002**) 01A70
— *see also* **Akivis, M. A., 93k:53021**
Goldberger, Arthur S. ★ A course in econometrics. *Harvard University Press, Cambridge, MA*, 1991. xx+405 *pp. ISBN* 0-674-17544-1 (From the preface) **93d:62175** 62P20
Goldberger, Jacob (*with* Lind, Douglas; Smorodinsky, Meir) The entropies of renewal systems. *Israel J. Math.* **75** (1991), *no.* 1, 49–64. (Summary) **93e:58053** 58F03 (28D20)
Goldblatt, Robert On closure under canonical embedding algebras. *Algebraic logic* (*Budapest*, 1988), 217–229, *Colloq. Math. Soc. János Bolyai*, 54, *North-Holland, Amsterdam*, 1991. (Ivo Düntsch) **93h:03081** 03G05 (03G25, 08B25)
— The McKinsey axiom is not canonical. *J. Symbolic Logic* **56** (1991), *no.* 2, 554–562. (V. V. Rybakov) **93c:03017** 03B45
Golden, Kenneth M. Bulk conductivity of the square lattice for complex volume fraction. (English summary) *Random partial differential equations* (*Oberwolfach*, 1989), 71–83, *Internat. Ser. Numer. Math.*, 102, *Birkhäuser, Basel*, 1991. (*see* **93e:60007**) 82B43
— Exponent inequalities for the bulk conductivity of a hierarchical model. *Comm. Math. Phys.* **143** (1992), *no.* 3, 467–499. (G. R. Grimmett) **93e:82010** 82B20 (82B43)
Golden, M. P. (*with* Frouzakis, C. E.; Adomaitis, R. A.; Kevrekidis, I. G.; Ydstie, B. Erik) The structure of basin boundaries in a simple adaptive control system. (English summary) *Chaotic dynamics* (*Patras*, 1991), 195–210, *NATO Adv. Sci. Inst. Ser. B Phys.*, 298, *Plenum, New York*, 1992. (Summary) **93k:58205** 58F40 (58F13, 93C40)
Golden, Richard M. Stability and optimization analyses of the generalized brain-state-in-a-box neural network model. (English summary) *J. Math. Psych.* **37** (1993), *no.* 2, 282–298. 92B20
Golden, Sidney Irreversible evolution of isolated quantum systems and a discreteness of time. (English summary) *Phys. Rev. A* (3) **46** (1992), *no.* 11, 6805–6816. (Victor I. Gerasimenko) **93k:82038** 82C10
Goldfarb, Donald (*with* Hao, Jianxiu) Polynomial-time primal simplex algorithms for the minimum cost network flow problem. *Algorithmica* **8** (1992), *no.* 2, 145–160. (Santosh Kumar) **93f:90060** 90B10 (68Q25, 68R99, 90C08)
Goldfarb, Warren Herbrand's error and Gödel's correction. (English summary) *Modern Logic* **3** (1993), *no.* 2, 103–118. (Charles F. Kielkopf) **93m:03017** 03B10 (01A60, 03–03)
Goldfeld, David (*with* Etzion, Tuvi) UPP graphs and UMFA networks—architecture for parallel systems. (English summary) *IEEE Trans. Comput.* **41** (1992), *no.* 11, 1479–1483. (Summary) **93j:68012** 68M10 (68R10)
Goldfeld, Dorian On the computational complexity of modular symbols. *Math. Comp.* **58** (1992), *no.* 198, 807–814. (Glenn Stevens) **93a:11042** 11F67 (11Y35)
Goldhirsch, Isaac Spectral degeneracy and hydrodynamic stability. (English summary) *Large scale structures in nonlinear physics* (*Villefranche-sur-Mer*, 1991), 242–251, *Lecture Notes in Phys.*, 392, *Springer, Berlin*, 1991. (Summary) **93g:34078** 34D10 (76E99)
— (*with* Sela, Nathan) Stability theory of an elliptical vortex. (English summary) *Phys. Fluids A* **4** (1992), *no.* 10, 2252–2270. (Summary) **93f:76020** 76C05 (76E99, 76F99)
Goldie, Charles M. (*with* Pinch, Richard G. E.) ★ Communication theory. London Mathematical Society Student Texts, 20. *Cambridge University Press, Cambridge*, 1991.

xiv+210 *pp. ISBN* 0-521-40456-8; 0-521-40606-4 (Julia Abrahams) **93a:94001** 94–01 (94A05, 94A15, 94B05)

— Implicit renewal theory and tails of solutions of random equations. *Ann. Appl. Probab.* **1** (1991), *no.* 1, 126–166. (Summary) **93i:60118** 60H25 (60K05, 60K25)

— (*with* Doney, R. A.) Letter to the editor: "Autoregressive processes and first-hit probabilities for randomized random walks" [J. Appl. Probab. **28** (1991), no. 2, 347–359; MR 93a:60100] by R. Epstein-Feldman. *J. Appl. Probab.* **29** (1992), *no.* 1, 244. (Peter J. Brockwell) **93c:60102** 60J15

Goldin, Gerald A. (*with* Sharp, David H.) Diffeomorphism groups and local symmetries: some applications in quantum physics. *Symmetries in science, III (Vorarlberg,* 1988), 181–205, *Plenum, New York,* 1989. (From the introduction) **93f:22020** 22E65 (58B25, 58D30, 81R10)

— The diffeomorphism group approach to nonlinear quantum systems. (English summary) Topological and quantum group methods in field theory and condensed matter physics. *Internat. J. Modern Phys. B* **6** (1992), *no.* 11-12, 1905–1916. (Summary) **93i:81064** 81R10 (22E65, 22E70, 81–02, 81T99)

Gol′din, V. Ya. (*with* Anistratov, D. Yu.) A two-stage scheme with complex coefficients for systems of first-order nonlinear ordinary differential equations. (Russian. English and Russian summaries) *Mat. Model.* **4** (1992), *no.* 2, 45–50. (Summary) **93f:65053** 65L05 (34A45)

— (*with* Anistratov, D. Yu.) Nonlinear methods for solving particle transport problems. (English summary) Frontiers in numerical transport theory (College Station, TX, 1991). *Transport Theory Statist. Phys.* **22** (1993), *no.* 2-3, 125–163. (Summary) **93m:82042** 82C70 (82–08, 82C80)

Goldman, Alvin I. (*with* Shaked, Moshe) Results on inquiry and truth possession. *Statist. Probab. Lett.* **12** (1991), *no.* 5, 415–420. (D. A. Sprott) **93c:62010** 62A99 (90A11)

Goldman, Jay R. (*with* Sundquist, Thomas) Lattice path enumeration by formal schema. *Adv. in Appl. Math.* **13** (1992), *no.* 2, 216–251. (Heinrich Niederhausen) **93i:05007** 05A15 (05C05)

Goldman, Jerry (*with* Homer, Steven) Doubly-periodic sequences and a class of two-dimensional cyclic codes. *Adv. in Appl. Math.* **13** (1992), *no.* 1, 48–61. (N. L. Manev) **93g:94019** 94B15 (11B37, 16W30)

Goldman, Ronald N. (*with* Chionh, Eng-Wee) Implicitizing rational surfaces with base points by applying perturbations and the factors of zero theorem. *Mathematical methods in computer aided geometric design, II (Biri,* 1991), 101–110, *Academic Press, Boston, MA,* 1992. (*see* **93d:65022**) 65D17

— (*with* Barry, Phillip J.) Wonderful triangle: a simple, unified, algorithmic approach to change of basis procedures in computer aided geometric design. *Mathematical methods in computer aided geometric design, II (Biri,* 1991), 297–320, *Academic Press, Boston, MA,* 1992. (Summary) **93e:65027** 65D17

— (*with* Pfeifle, R.; Bartels, Richard H.) Tensor product slices. *Mathematical methods in computer aided geometric design, II (Biri,* 1991), 431–440, *Academic Press, Boston, MA,* 1992. (*see* **93d:65022**) 65D17

— (*with* Stefanus, Yohanes) Discrete convolution schemes. *Mathematical methods in computer aided geometric design, II (Biri,* 1991), 585–596, *Academic Press, Boston, MA,* 1992. (Summary) **93e:65031** 65D17 (41A10)

— (*with* Stefanus, Yohanes) Blossoming Marsden's identity. *Comput. Aided Geom. Design* **9** (1992), *no.* 2, 73–84. (Summary) **93b:65034** 65D17 (41A15)

— (*with* Chionh, Eng-Wee) Degree, multiplicity, and inversion formulas for rational surfaces using *u*-resultants. *Comput. Aided Geom. Design* **9** (1992), *no.* 2, 93–108. (Summary) **93b:65025** 65D17

Goldman, William M. (*with* Parker, John R.) Complex hyperbolic ideal triangle groups. *J. Reine Angew. Math.* **425** (1992), 71–86. (O. V. Shvartsman) **93c:20076** 20H15 (32H20, 57S30)

— Complex hyperbolic Kleinian groups. (English summary) *Complex geometry (Osaka,* 1990), 31–52, *Lecture Notes in Pure and Appl. Math.*, 143, *Dekker, New York,* 1993. (I. Kra) **93k:32053** 32H20 (20H10, 30F40)

— (*with* Choi, Suhyoung) Convex real projective structures on closed surfaces are closed. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 2, 657–661. (Michael Kapovich) **93g:57017** 57M50 (14P05, 53C15, 58D27)

Goldmann, Helmut Uniform Fréchet algebras with prescribed endomorphism group. *Results Math.* **22** (1992), *no.* 3-4, 701–712. (Toma V. Tonev) **93j:46056** 46J25 (32E25, 46J40)

Goldmann, Mikael (*with* Håstad, Johan) On the power of small-depth threshold circuits. *Comput. Complexity* **1** (1991), *no.* 2, 113–129. (Frederic Green) **93e:68025** 68Q20 (68R10)

— (*with* Håstad, Johan) A simple lower bound for monotone clique using a communication game. *Inform. Process. Lett.* **41** (1992), *no.* 4, 221–226. (Summary) **93a:68115** 68R10 (68Q25, 94C10)

Goldner, Gavrilă (*with* Balázs, Martin) Fréchet derivative as a limit of divided differences. *Seminar on Mathematical Analysis,* 115–120, *Preprint,* 91-7, "*Babeş-Bolyai*" *Univ., Cluj-Napoca,* 1991. (*see* **93i:00015**) 46G05

— (*with* Balázs, Martin) Monotone enclosure by Steffensen's method. *Seminar on Mathematical Analysis (Cluj-Napoca,* 1991–1992), 79–86, *Preprint,* 92-7, "*Babeş-Bolyai*" *Univ., Cluj-Napoca,* 1992. (*see* **93m:26001**) 65J15 (47H17)

Goldreich, Oded (*with* Alon, Noga; Håstad, Johan; Peralta, René) Simple constructions of almost *k*-wise independent random variables. *31st Annual Symposium on Foundations of Computer Science, Vol. I, II (St. Louis, MO,* 1990), 544–553, *IEEE Comput. Soc. Press, Los Alamitos, CA,* 1990. (Summary) **93a:65008** 65C10 (65U05, 68Q25)

— (*with* Micali, Silvio; Wigderson, Avi) Proofs that yield nothing but their validity, or All languages in NP have zero-knowledge proof systems. *J. Assoc. Comput. Mach.* **38** (1991), *no.* 3, 691–729. (Joan Boyar) **93b:68025** 68Q15 (68P25, 94A60)

— (*with* Ben-David, Shai; Chor, Benny; Luby, Michael) On the theory of average case complexity. *J. Comput. System Sci.* **44** (1992), *no.* 2, 193–219. (Helmut Alt) **93d:68020** 68Q15 (03D15, 68Q10)

— (*with* Bar-Yehuda, Reuven; Itai, Alon) On the time-complexity of broadcast in multi-hop radio networks: an exponential gap between determinism and randomization. *J. Comput. System Sci.* **45** (1992), *no.* 1, 104–126. 68M10 (68Q25, 90B12)

— (*with* Krawczyk, Hugo) Sparse pseudorandom distributions. *Random Structures Algorithms* **3** (1992), *no.* 2, 163–174. (Gheorghe Barbu) **93b:68029** 68Q20 (60E99, 94A60)

— (*with* Alon, Noga; Håstad, Johan; Peralta, René) Simple constructions of almost *k*-wise independent random variables. *Random Structures Algorithms* **3** (1992), *no.* 3, 289–304. (Summary) **93k:94006a** 94A55 (65C10, 68Q30)

— (*with* Alon, Noga; Håstad, Johan; Peralta, René) Addendum to: "Simple constructions of almost *k*-wise independent random variables". *Random Structures Algorithms* **4** (1993), *no.* 1, 119–120. (From the text) **93k:94006b** 94A55 (65C10, 68Q30)

Goldring, Noa Projecting precipitousness. *Israel J. Math.* **74** (1991), *no.* 1, 13–31. (Marion Scheepers) **93d:03051** 03E05 (03E35, 03E55, 04A20)

— Woodin cardinals and presaturated ideals. *Ann. Pure Appl. Logic* **55** (1992), *no.* 3, 285–303. (Marion Scheepers) **93b:03087** 03E55 (03E05, 03E35)

Goldschmidt, Yadin Y. (*with* Blum, Thomas) Directed paths with random phases. (English summary) *Nuclear Phys. B* **380** (1992), *no.* 3, 588–600. (Summary) **93c:81094** 81S40 (81–04)

Gol′dsheĭd, I. Ya. (*with* Sorets, Eugene) Lyapunov exponents of the Schrödinger equation with quasi-periodic potential on a strip. *Comm. Math. Phys.* **145** (1992), *no.* 3, 507–513. (André Hautot) **93f:39007** 39A11 (47B39, 47N55, 81Q99)

Gol′dshtein, D. Sh. $\aleph_0$-summability of partial isometries in finite Rickart C^*-algebras. (Russian) *Dokl. Akad. Nauk UzSSR* **1990,** *no.* 10, 7–8. (G. A. Elliott) **93d:46098** 46L05 (46L10)

Gol′dshtein, M. Sh. (*with* Grabarnik, G. Ya.) Almost sure convergence theorems in von Neumann algebras. (English summary) *Israel J. Math.* **76** (1991), *no.* 1-2, 161–182. (Fumio Hiai) **93j:46070** 46L50

Gol′dshtein, R. V. (*with* Zhitnikov, Yu. V.; Morozova, T. M.) Equilibrium of a system of cracks with the formation of overlap and opening regions on them. (Russian) *Prikl. Mat. Mekh.* **55** (1991), *no.* 4, 672–678; *translation in J. Appl. Math. Mech.* **55** (1991), *no.* 4, 539–544 (1992). (From the text) **93c:73082** 73M25 (73C02)

— (*with* Mosolov, A. B.) Flows of fractal-crushed ice. (Russian) *Dokl. Akad. Nauk* **324** (1992), *no.* 3, 576–581; *translation in Soviet Phys. Dokl.* **37** (1992), *no.* 5, 253–256. 76D99 (76A99)

— (*with* Mosolov, A. B.) Fractal cracks. (Russian. Russian summary) *Prikl. Mat. Mekh.* **56** (1992), *no.* 4, 663–671; *translation in J. Appl. Math. Mech.* **56** (1992), *no.* 4, 563–571. (Summary) **93k:73070** 73M25 (28A80)

Gol′dshtein, V. M. (*with* Sobolev, V. A.) Qualitative analysis of singularly perturbed systems in chemical kinetics. (Russian) *Theory of operators in function spaces (Russian) (Kuybyshev,* 1988), 82–107, *Saratov. Gos. Univ., Kuibyshev. Filial, Kuybyshev,* 1989. (From the text) **93c:34118** 34E15 (34C45, 80A30)

— (*with* Kuz′minov, V. I.; Shvedov, I. A.) On the Künneth formula for the L_p-cohomology of warped products. (Russian) *Sibirsk. Mat. Zh.* **32** (1991), *no.* 5, 29–42, 207; *translation in Siberian Math. J.* **32** (1991), *no.* 5, 749–760 (1992). (Józef Dodziuk) **93c:58003** 58A12

— (*with* Kuz′minov, V. I.; Shvedov, I. A.) On Cheeger's theorem: extensions to L_p-cohomology of warped cylinders. Siberian Advances in Mathematics. *Siberian Adv. Math.* **2** (1992), *no.* 1, 114–122. (Józef Dodziuk) **93c:58004** 58A12

— (*with* Kuz′minov, V. I.; Shvedov, I. A.) Approximation of exact and closed differential forms by finite ones. (Russian) *Sibirsk. Mat. Zh.* **33** (1992), *no.* 2, 49–65, 219; *translation in Siberian Math. J.* **33** (1992), *no.* 2, 219–233. (Jürgen Eichhorn) **93j:58002** 58A10 (58A12)

Gol′dshtik, M. A. (*with* Ersh, N. M.) Stability of self-similar pipe flow with suction. *Fluid Dynamics* **26** (1991), *no.* 5, 651–657 (1992); *translated from Izv. Akad. Nauk SSSR Mekh. Zhidk. Gaza* **1991,** *no.* 5, 18–25 (*Russian*). (William H. H. Banks) **93b:76023** 76D05 (76E99)

— *see also* **Sozou, C., 93h:76026**

Goldsmith, B. (*with* Zanardo, Paolo) On the analogue of Corner's finite rank theorem for modules over valuation domains. *Arch. Math. (Basel)* **60** (1993), *no.* 1, 20–24. (Luigi Salce) **93k:13030** 13F30 (13C13, 20K30)

Goldsmith, Michael (*with* Barrett, Geoff) Classifying unbounded nondeterminism in CSP. *Topology and category theory in computer science (Oxford,* 1989), 57–74, *Oxford Sci. Publ., Oxford Univ. Press, New York,* 1991. (*see* **93h:68004**) 68Q05 (54E99, 68M10)

Goldstein, Arthur S. (*with* Alonso, Laurent; Reingold, Edward M.) "Lion and man": upper and lower bounds. (English summary) *ORSA J. Comput.* **4** (1992), *no.* 4, 447–452. 90D40 (90D25)

Goldstein, Bernard R. (*with* Bowen, Alan C.) The introduction of dated observations and precise measurement in Greek astronomy. *Arch. Hist. Exact Sci.* **43** (1991), *no.* 2, 93–132. (Raymond Mercier) **93a:01008** 01A20

— Lunar velocity in the Ptolemaic tradition. *The investigation of difficult things,* 3–17, *Cambridge Univ. Press, Cambridge,* 1992. (Anne Tihon) **93m:01017** 01A35 (01A20)

— (*with* Chabás, José) Nicholaus de Heybech and his table for finding true syzygy. (English, French and Spanish summaries) *Historia Math.* **19** (1992), *no.* 3, 265–289. (Anne Tihon) **93k:01013** 01A35 (85–03)

Goldstein, Catherine Un peu d'histoire. [A little bit of history] *Gaz. Math.* **1991,** *no.* 49, 4–9. (Michael Otte) **93k:01096** 01A80

— On a seventeenth-century version of the "fundamental theorem of arithmetic". (French and German summaries) *Historia Math.* **19** (1992), *no.* 2, 177–187. (Introduction) **93b:01017** 01A45 (11–03)

Goldstein, Dzh. *see* **Goldstein, Jerome A.**

Goldstein, H. F. (*with* Knobloch, Edgar; Mercader, I.; Net, M.) Convection in a rotating cylinder. I. Linear theory for moderate Prandtl numbers. (English summary) *J. Fluid Mech.* **248** (1993), 583–604. 76E15 (76U05)

Goldstein, Harvey (*with* Pan, Huiqi) Percentile smoothing using piecewise polynomials, with covariates. (English and French summaries) *Biometrics* **48** (1992), *no.* 4, 1057–1068. 62G05

Goldstein, Jerome A. ★ Полугруппы линейных операторов и их приложения. (Russian. Russian summary) [Semigroups of linear operators and applications] Translated from the English by V. V. Lyubashenko. Translation edited and with a preface by Yu. L. Daletskiĭ. "*Vyshcha Shkola*", *Kiev,* 1989. 348 *pp. ISBN* 5-11-002073-6 (Editors) **93i:47054** 47D03 (34G10, 34K30, 35R20, 47D06, 47N20)

— (*with* Lin, Chin Yuan) Parabolic problems with strong degeneracy at the spatial boundary. *Semigroup theory and evolution equations (Delft,* 1989), 181–191, *Lecture Notes in Pure and Appl. Math.*, 135, *Dekker, New York,* 1991. (Kazuaki Taira) **93d:35082** 35K65 (47H20, 47N20)

— (*with* Bénilan, Philippe; Rieder, Gisèle Ruiz) A nonlinear elliptic system arising in electron density theory. (English summary) *Comm. Partial Differential Equations* **17** (1992), *no.* 11-12, 2079–2092. (Summary) **93i:35048** 35J60 (35Q60, 81V45)
— *see also* **Differential equations with applications in biology, physics, and engineering, 93a:00021**
Goldstein, Larry Mark (*with* Abramson, Ian) Efficient nonparametric testing by functional estimation. *J. Theoret. Probab.* **4** (1991), *no.* 1, 137–159. (K. C. Chanda) **93d:62084** 62G10 (62G05, 62G20)
— (*with* Messer, Karen) Optimal plug-in estimators for nonparametric functional estimation. (English summary) *Ann. Statist.* **20** (1992), *no.* 3, 1306–1328. (Sh. A. Khashimov) **93k:62088** 62G05
Goldstein, Laurence Inescapable surprises and acquirable intentions. *Analysis (Oxford)* **53** (1993), *no.* 2, 93–99. 03A05
Goldstein, M. *see* **Goldstein, Myron**
Goldstein, M. S. *see* **Gol'dshtein, M. Sh.**
Goldstein, Michael (*with* Howard, J. V.) A likelihood paradox. With comments by G. A. Barnard and M. Stone. *J. Roy. Statist. Soc. Ser. B* **53** (1991), *no.* 3, 619–628. (Summary) **93d:62005** 62A10
Goldstein, Myron Quadrature and harmonic L^1-approximation. *The mathematical heritage of C. F. Gauss*, 321–325, *World Sci. Publishing, River Edge, NJ*, 1991. (Summary) **93a:31007** 31B05 (31B20)
— (*with* Brown, Johnny E.; McDonald, John N.) L_p-norms of polynomials with positive real part. *J. Math. Anal. Appl.* **156** (1991), *no.* 1, 150–153. (Z. Rubinstein) **93b:30004** 30C10
— (*with* Armitage, D. H.) Characterizations of balls and strips via harmonic quadrature. *Approximation by solutions of partial differential equations* (*Hanstholm*, 1991), 1–9, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 365, *Kluwer Acad. Publ., Dordrecht*, 1992. (Steven George Krantz) **93d:31002** 31B05 (31B15)
— (*with* Armitage, D. H.) Better than uniform approximation on closed sets by harmonic functions with singularities and applications. *Approximation by solutions of partial differential equations* (*Hanstholm*, 1991), 11–14, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 365, *Kluwer Acad. Publ., Dordrecht*, 1992. (*see* **93a:31001**) 41A30 (31B20)
— (*with* Haussmann, W.; Rogge, L.) Characterization of open strips by harmonic quadrature. *Approximation by solutions of partial differential equations* (*Hanstholm*, 1991), 87–92, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 365, *Kluwer Acad. Publ., Dordrecht*, 1992. (*see* **93a:31001**) 31B05
— (*with* Haussmann, W.; Rogge, L.) On the inverse mean value property of harmonic functions on strips. *Bull. London Math. Soc.* **24** (1992), *no.* 6, 559–564. (D. H. Armitage) **93h:31005** 31B05
— (*with* Armitage, D. H.) Quadrature and harmonic approximation of subharmonic functions in strips. (English summary) *J. London Math. Soc.* (2) **46** (1992), *no.* 1, 171–179. (Matts Essén) **93j:31003** 31B05
— (*with* Armitage, D. H.) Nonuniqueness for the Radon transform. *Proc. Amer. Math. Soc.* **117** (1993), *no.* 1, 175–178. (P. A. Kuchment) **93c:44004** 44A12 (92C55)
— (*with* Ow, W. H.) A characterization of harmonic Arakelyan sets. *Proc. Amer. Math. Soc.* **119** (1993), *no.* 3, 811–816. (J. Siciak) **93m:31005** 31B05 (30E10, 30F15)
— *see also* **Approximation by solutions of partial differential equations, 93a:31001**
Goldstein, Raymond E. (*with* Petrich, Dean M.) Solitons, Euler's equation, and vortex patch dynamics. *Phys. Rev. Lett.* **69** (1992), *no.* 4, 555–558. (Summary) **93e:76014** 76C05 (58F07)
Goldstein, Sheldon (*with* Kelly, Kevin A.; Speer, Eugene R.) The fractal structure of rarefied sums of the Thue-Morse sequence. (English summary) *J. Number Theory* **42** (1992), *no.* 1, 1–19. (Jau-Shyong Shiue) **93m:11020** 11B75 (11B83)
— (*with* Dürr, Detlef; Zanghì, Nino) Quantum equilibrium and the origin of absolute uncertainty. *J. Statist. Phys.* **67** (1992), *no.* 5-6, 843–907. (Summary) **93k:81006** 81P05 (81P20)
— (*with* Dürr, Detlef; Zanghì, Nino) Quantum chaos, classical randomness, and Bohmian mechanics. *J. Statist. Phys.* **68** (1992), *no.* 1-2, 259–270. (Summary) **93c:81048** 81Q50 (58F13, 81P05)
— (*with* Dürr, Detlef; Zanghì, Nino) David Joseph Bohm: 1917–1992. *Found. Phys. Lett.* **6** (1993), *no.* 1, 1–4. 01A70
Goldstern, Martin (*with* Judah, Haim) Iteration of Souslin forcing, projective measurability and the Borel conjecture. (English summary) *Israel J. Math.* **78** (1992), *no.* 2-3, 335–362. (Miroslav Repický) **93m:03086** 03E35 (03E40, 03E47)
— (*with* Bartoszyński, Tomek; Judah, Haim; Shelah, Saharon) All meager filters may be null. *Proc. Amer. Math. Soc.* **117** (1993), *no.* 2, 515–521. (Krzysztof Ciesielski) **93d:03055** 03E35 (28A05, 28E15, 54A25)
Goldstick, D. When inconsistency is logically impossible. *Logique et Anal. (N.S.)* **32** (1989), *no.* 125-126, 139–142. 03A05
Goldston, D. A. On Bombieri and Davenport's theorem concerning small gaps between primes. *Mathematika* **39** (1992), *no.* 1, 10–17. (Kee Wai Lau) **93h:11102** 11N05
— (*with* Cheer, A. Y.) Simple zeros of the Riemann zeta-function. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 2, 365–372. (Aleksandar Ivić) **93g:11092** 11M26
Goldszmidt, Moisés (*with* Pearl, Judea) System-Z^+: a formalism for reasoning with variable-strength defaults. (English summary) *AAAI-91. Proceedings, Ninth National Conference on Artificial Intelligence, Vol.* 1, 2, 399–404, *AAAI Press, Menlo Park, CA*, 1991. (*see* **93i:68011**) 68T27
Goldwasser, Shafi (*with* Beigel, Richard; Bellare, Mihir; Feigenbaum, Joan) Languages that are easier than their proofs. (English summary) *32nd Annual Symposium on Foundations of Computer Science (San Juan, PR*, 1991), 19–28, *IEEE Comput. Soc. Press, Los Alamitos, CA*, 1991. (*see* **93d:68005**) 68Q45 (68Q15, 68Q60)
Goldwirth, Dalia S. (*with* Perry, Malcolm J.; Piran, Tsvi) The breakdown of quantum mechanics in the presence of time machines. (English summary) *Gen. Relativity Gravitation* **25** (1993), *no.* 1, 7–13. 81P05 (83C47)
Goldwurm, Massimiliano Probabilistic estimation of the number of prefixes of a trace. *Theoret. Comput. Sci.* **92** (1992), *no.* 2, 249–268. (Summary) **93c:68071** 68Q70 (68R15)
Goldys, Beniamin On weak solutions of stochastic evolution equations with unbounded coefficients. *Miniconference on probability and analysis (Sydney*, 1991), 116–128, *Proc. Centre Math. Appl. Austral. Nat. Univ.*, 29, *Austral. Nat. Univ., Canberra*, 1992. (Bohdan Maslowski) **93k:60154** 60H15 (34F05, 34G10, 47N20, 60H10)
Golé, Christophe Ghost circles for twist maps. *J. Differential Equations* **97** (1992), *no.* 1, 140–173. (James D. Meiss) **93h:58115** 58F15 (58F05, 70K50)
— A new proof of the Aubry-Mather's theorem. *Math. Z.* **210** (1992), *no.* 3, 441–448. (Helmut Rüssmann) **93i:58130** 58F27
Golec, J. (*with* Ladde, G. S.) On multitime method and the rate of convergence for a class of singularly perturbed stochastic systems. *J. Math. Systems Estim. Control* **2** (1992), *no.* 2, 245–262. (Wolfgang Kliemann) **93d:34101** 34F05 (34E15, 60H10, 93E03)
— (*with* Ladde, G. S.) On an approximation method for a class of stochastic singularly perturbed systems. (English summary) *Dynamic Systems Appl.* **2** (1993), *no.* 1, 11–19. (Summary) **93j:60076** 60H10 (34E15, 34F05, 65L99, 65U05)
Golenishcheva-Kutuzova, M. (*with* Lebedev, D. R.) Vertex operator representation of some quantum tori Lie algebras. (English summary) *Comm. Math. Phys.* **148** (1992), *no.* 2, 403–416. (Chong Ying Dong) **93j:17046** 17B65 (17B37, 17B67, 81R10)
Golenko-Ginzburg, Dimitri (*with* Sims, Julie A.) Using permutation spaces in job-shop scheduling. (English summary) *Asia-Pacific J. Oper. Res.* **9** (1992), *no.* 2, 183–193. 90B35
Goles Ch., Eric Sand piles, combinatorial games and cellular automata. (English summary) *Instabilities and nonequilibrium structures, III* (*Valparaíso*, 1989), 101–121, *Math. Appl.*, 64, *Kluwer Acad. Publ., Dordrecht*, 1991. (J. S. Joel) **93j:58069** 58F08 (05C85, 68Q80, 90D46)
— (*with* Kiwi, Marcos) One-dimensional sand piles, cellular automata and related models. *Nonlinear phenomena in fluids, solids and other complex systems* (*Santiago*, 1990), 169–185, *North-Holland Delta Ser., North-Holland, Amsterdam*, 1991. (Karel Culik, II) **93c:68074** 68Q80 (82C20)
— (*with* Martínez, Servet A.) Automata networks and optimization. (English summary) *Inform. Process. Lett.* **42** (1992), *no.* 6, 339–343. (Summary) **93f:92007** 92B20 (68T05)
— (*with* Bitar, Javier) Parallel chip firing games on graphs. *Theoret. Comput. Sci.* **92** (1992), *no.* 2, 291–300. (Summary) **93b:68068** 68R10 (05C99)
Goleţ, I. A fixed point theorem in probabilistic 2-metric spaces. (Romanian summary) *Inst. Politehn. "Traian Vuia" Timişoara Lucrăr. Sem. Mat. Fiz.* **1988,** *November*, 21–26. 54E70 (54H25)
— Remarks on the approximation of functions with values in random normed spaces. (Romanian summary) *Inst. Politehn. "Traian Vuia" Timişoara Lucrăr. Sem. Mat. Fiz.* **1989,** *May-November*, 35–39. 60B99 (41A65, 46S50)
— On functions with values in random normed spaces and its applications. (Romanian summary) *Bul. Ştiinţ. Tehn. Inst. Politehn. "Traian Vuia" Timişoara Ser. Mat. Fiz.* **35(49)** (1990), 59–68 (1991). 60B99
Golets, O. B. (*with* Rogol, S. L.) Investigation of stability of linear differential equations with small parameter and Markov coefficients. (English and Latvian summaries) *Proceedings of the Latvian Probability Seminar, Vol.* 1 (*Riga*, 1991), 38–47, *Riga Tech. Univ., Riga*, 1992. (*see* **93e:60006**) 60H10
— (*with* Jonin, L.) The second Lyapunov method as applied to the stability investigation of nonlinear stochastic equation of the same class. (English and Latvian summaries) *Proceedings of the Latvian Probability Seminar, Vol.* 1 (*Riga*, 1991), 90–100, *Riga Tech. Univ., Riga*, 1992. (*see* **93e:60006**) 60H10
Gol'fand, Yu. A. On supergauge field theories. (Russian. Russian summary) *Trudy Fiz. Inst. Lebedev.* **191** (1989), 87–119, 246. (Gheorghe Zet) **93g:81185** 81T60 (81T13)
— On representation of quantum action functional. (English summary) *Modern Phys. Lett. A* **7** (1992), *no.* 40, 3739–3745. 81T99
Golightly, George O. A note on a series of Lidstone polynomials. *J. Math. Anal. Appl.* **158** (1991), *no.* 2, 556–573. (Themistocles M. Rassias) **93g:30003** 30B30 (33C99, 41A58)
Golin, Mordecai J. (*with* Sedgewick, Robert) Analysis of a simple yet efficient convex hull algorithm. (English summary) *Proceedings of the Fourth Annual Symposium on Computational Geometry* (*Urbana, IL*, 1988), 153–163, *ACM, New York*, 1988. (*see* **93k:68003**) 68U05
— Maxima in convex regions. (English summary) *Proceedings of the Fourth Annual ACM-SIAM Symposium on Discrete Algorithms* (*Austin, TX*, 1993), 352–360, *ACM, New York*, 1993. (Summary) **93m:90059** 90C25 (68U05)
Golinskiĭ, L. B. (*with* Chistyakov, G. P.) On stability estimates in the Marcinkiewicz theorem and its generalization. *Entire and subharmonic functions*, 243–250, *Adv. Soviet Math.*, 11, *Amer. Math. Soc., Providence, RI*, 1992. (Gabriele Laue) **93k:60042** 60E10
von Golitschek, M. Weighted polynomials. *Approximation theory, spline functions and applications* (*Maratea*, 1991), 139–161, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 356, *Kluwer Acad. Publ., Dordrecht*, 1992. (Summary) **93c:41013** 41A10
— (*with* Light, W. A.; Cheney, E. W.) Approximation with monotone norms in tensor product spaces. *J. Approx. Theory* **68** (1992), *no.* 2, 183–205. (Dirk Werner) **93b:46139** 46M05 (41A65, 46B28, 46E40)
— (*with* Light, W. A.) Approximation by solutions of the planar wave equation. *SIAM J. Numer. Anal.* **29** (1992), *no.* 3, 816–830. (Alexander Doktor) **93g:35083** 35L05 (35A35, 41A30, 65N99)
Golitsyn, B. B. *see* **Sheinin, O. B., 93g:01050**
Golland, Louise Ahrndt (*with* Golland, Ronald William) Euler's troublesome series: an early example of the use of trigonometric series. (English, French and German summaries) *Historia Math.* **20** (1993), *no.* 1, 54–67. (F. Smithies) **93m:01030** 01A50 (40-03, 42-03, 70-03)
Golland, Ronald William (*with* Golland, Louise Ahrndt) Euler's troublesome series: an early example of the use of trigonometric series. (English, French and German summaries) *Historia Math.* **20** (1993), *no.* 1, 54–67. (F. Smithies) **93m:01030** 01A50 (40-03, 42-03, 70-03)
Gollmann, D. Automata theory and cryptanalysis. *Cryptography and coding, II* (*Cirencester*, 1989), 67–74, *Inst. Math. Appl. Conf. Ser. New Ser.*, 33, *Oxford Univ. Press, New York*, 1992. (Summary) **93a:94023** 94A60 (68Q68)
Gollnick, Johannes (*with* Scheid, Harald; Zöllner, Joachim) Rekursive Erzeugung der primitiven pythagoreischen Tripel. [Recursive generation of primitive Pythagorean triples] *Math. Semesterber.* **39** (1992), *no.* 1, 85–88. (K. Szymiczek) **93c:11012** 11D09
Golodets, V. Ya. (*with* Bezuglyĭ, S. I.) Weak equivalence and the structures of cocycles of an ergodic automorphism. *Publ. Res. Inst. Math. Sci.* **27** (1991), *no.* 4, 577–625. (G. R. Goodson) **93a:28017** 28D15 (22D40)
— (*with* Sokhet, A. M.) On the properties of the joint ergodic action of the direct product of two groups. (Russian. Ukrainian summary) *Ukrain. Mat. Zh.* **43** (1991), *no.* 5,

684–688; *translation in Ukrainian Math. J.* **43** (1991), *no.* 5, 635–639 (1992). (N. N. Ganikhodzhaev) **93b:28046** 28D15

Golomb, D. (*with* Aranson, I.; Sompolinsky, H.) Spatial coherence and temporal chaos in macroscopic systems with asymmetrical couplings. *Phys. Rev. Lett.* **68** (1992), *no.* 24, 3495–3498. (Summary) **93b:58097** 58F13

Golomb, Solomon W. "Periods" of de Bruijn sequences. *Adv. in Appl. Math.* **13** (1992), *no.* 2, 152–159. (Robert P. Kurshan) **93h:94012** 94A55

— (*with* Mayhew, Gregory L.) Characterizations of generators for modified de Bruijn sequences. (English summary) *Adv. in Appl. Math.* **13** (1992), *no.* 4, 454–461. (Summary) **93h:94018** 94A60

— An identity for $\binom{2n}{n}$. *Amer. Math. Monthly* **99** (1992), *no.* 8, 746–748. (H. G. Diamond) **93k:11083** 11N05 (11A41)

— Probability, information theory, and prime number theory. (English summary) A collection of contributions in honour of Jack van Lint. *Discrete Math.* **106/107** (1992), 219–229. (Summary) **93f:94010** 94A24 (11N05)

— The T_4 and G_4 constructions for Costas arrays. *IEEE Trans. Inform. Theory* **38** (1992), *no.* 4, 1404–1406. (Summary) **93b:94005** 94A12 (05B15)

— (*with* Song, H. Y.; Taylor, Herbert) Progressions in every two-coloration of Z_n. (English summary) *J. Combin. Theory Ser. A* **61** (1992), *no.* 2, 211–221. (Jerrold W. Grossman) **93i:05131** 05D10

Goloshubin, G. M. (*with* Krauklis, P. V.; Krauklis, L. A.) A low-velocity wave in a layer of a fluid that models an oilfield stratum. (Russian. English and Russian summaries) *Zap. Nauchn. Sem. S.-Peterburg. Otdel. Mat. Inst. Steklov. (POMI)* **203** (1992), *Mat. Voprosy Teor. Rasprostr. Voln.* 22, 101–112, 175. (Summary) **93g:73099** 73N20 (73D15, 73K70, 76D33, 86A99)

Golota, Ya. Ya. On a formalization of the logic of incomplete knowledge. (Russian) *Investigations in current inductive logic (Russian)*, 69–87, *Akad. Nauk SSSR, Inst. Filos., Moscow*, 1989. (*see* **93m:03039**) 03B48

Golovach, G. P. (*with* Kalaida, A. F.) Fredholm-type linear integro-differential equations of the first kind. (Russian) *Vychisl. Prikl. Mat. (Kiev) No.* 71 (1990), 20–27. (Summary) **93b:45002** 45B05

— Some more general estimates for the remainder term of the Lagrange interpolation formula. (Russian) *Vychisl. Prikl. Mat. (Kiev) No.* 73 (1992), 27–32. (Summary) **93d:41002** 41A05 (65D05)

Golovach, P. A. Minimal trees with a given search number. (Russian. English and Ukrainian summaries) *Kibernet. Sistem. Anal.* **1992**, *no.* 4, 25–31, 187; *translation in Cybernet. Systems Anal.* **28** (1992), *no.* 4, 509–513 (1993). 68R10 (68P10)

Golovachëv, Yu. P. (*with* Zemlyakov, V. V.) Unsteady supersonic flow around a blunt body moving through thermal inhomogeneities in the case of a turbulent flow regime in a shock layer. (Russian. Russian summary) *Zh. Vychisl. Mat. i Mat. Fiz.* **33** (1993), *no.* 1, 151–155; *translation in Comput. Math. Math. Phys.* **33** (1993), *no.* 1, 135–139. 76K05 (76L05)

Golovan, A. A. (*with* Parusnikov, N. A.) Methods for identifying the small parameter in a control system from the point of view of controllability measures. (Russian. Russian summary) *Vestnik Moskov. Univ. Ser. I Mat. Mekh.* **1993**, *no.* 2, 73–77, 113. 93B05

Golovashkin, A. V. An example of a crossed direct sum of free algebras. (Russian) *Constructions in algebra and logic (Russian)*, 20–21, *Tver. Gos. Univ., Tver'*, 1990. (*see* **93m:00021**) 16S35

Golovatyĭ, Yu. D. Some inequalities for natural frequencies of rods and plates. (Russian) *Well-posed boundary value problems for nonclassical equations (Russian)*, 99–102, *Akad. Nauk SSSR Sibirsk. Otdel., Inst. Mat., Novosibirsk*, 1990. (*see* **93m:35006**) 73K12 (73D30, 73K05, 73K10)

Golovchan, V. T. (*with* Kushch, V. I.) Elastic equilibrium and effective moduli of a crosswise-reinforced fibrous composite. (Russian. English and Ukrainian summaries) *Prikl. Mekh.* **28** (1992), *no.* 1, 47–56; *translation in Internat. Appl. Mech.* **28** (1992), *no.* 1, 40–48. 73K20

Golovin, V. D. Fréchet sheaves over a holomorphically complete complex space. (Russian) *Dokl. Akad. Nauk SSSR* **321** (1991), *no.* 3, 446–448; *translation in Soviet Math. Dokl.* **44** (1992), *no.* 3, 697–699. (Jürgen Leiterer) **93a:32018** 32E10 (32C35)

— Criteria for holomorphic completeness. (Russian) *Izv. Akad. Nauk SSSR Ser. Mat.* **55** (1991), *no.* 4, 838–850; *translation in Math. USSR-Izv.* **39** (1992), *no.* 1, 817–827. (S. Dimiev) **93a:32019** 32E10 (32C35)

Golovina, S. G. On an inverse problem of the synthesis of plane optical elements. (Russian. Russian summary) *Direct and inverse problems in mathematical physics (Russian)*, 34–39, 260, *Moskov. Gos. Univ., Moscow*, 1991. (Introduction) **93m:78002** 78A10

Goloviznin, V. V. (*with* Molodtsov, S. V.; Snigirev, A. M.) Classical solutions of the Yang-Mills equations for two sources. *Soviet J. Nuclear Phys.* **55** (1992), *no.* 7, 1117–1118; *translated from Yadernaya Fiz.* **55** (1992), *no.* 7, 2012–2014 (*Russian*). (Summary) **93d:81116** 81T13 (58G03)

Golowich, Steven (*with* Imbrie, John Z.) A new approach to the long-time behavior of self-avoiding random walks. *Ann. Physics* **217** (1992), *no.* 1, 142–169. (Neal Madras) **93h:82025** 82B41 (60J15)

Golse, François (*with* Poupaud, Frédéric) Limite fluide des équations de Boltzmann des semi-conducteurs pour une statistique de Fermi-Dirac. (French summary) [Fluid limit of Boltzmann semiconductor equations for a Fermi-Dirac statistic] *Asymptotic Anal.* **6** (1992), *no.* 2, 135–160. (Carlo Cercignani) **93m:82038** 82C40 (35Q99, 76P05)

— Perturbations de systèmes dynamiques et moyennisation en vitesse des EDP. (English summary) [On perturbations of dynamical systems and the velocity averaging method for PDEs] *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 2, 115–120. (Dario Bambusi) **93a:34054** 34C29 (35B20, 58F30)

— Knudsen layers from a computational viewpoint. *Transport Theory Statist. Phys.* **21** (1992), *no.* 3, 211–236. (G. C. Pomraning) **93e:82043** 82C70 (76P05, 82C40, 82D75, 85A25)

— Incompressible hydrodynamics as a limit of the Boltzmann equation. (English summary) Proceedings of the Fourth International Workshop on Mathematical Aspects of Fluid and Plasma Dynamics (Kyoto, 1991). *Transport Theory Statist. Phys.* **21** (1992), *no.* 4-6, 531–555. (Carlo Cercignani) **93m:82039** 82C40 (76D05, 76P05)

Gol'tsev, A. D. ★ Нейроподобная сеть с ансамблевой организацией, предназначенная для текстурной сегментации изображений. (Russian. Russian summary) [A neural-like network with ensemble organization intended for texture segmentation of images] Препринт [Preprint], 91-31. *Akad. Nauk Ukrain. SSR, Inst. Kibernet., Kiev*, 1991. 22 *pp.* 68U10 (68T05)

— Structured neural-like network with training intended for texture image segmentation. (Russian. English and Ukrainian summaries) *Kibernet. Sistem. Anal.* **1991**, *no.* 6, 149–161, 191; *translation in Cybernet. Systems Anal.* **27** (1991), *no.* 6, 927–936 (1992). 68T05 (68T10)

Golub, A. P. (*with* Bakan, A. G.) Some negative results on sequences of multipliers of the first kind. (Russian. Russian and Ukrainian summaries) *Ukraïn. Mat. Zh.* **44** (1992), *no.* 3, 305–309; *translation in Ukrainian Math. J.* **44** (1992), *no.* 3, 264–268. (Summary) **93m:26030** 26C05 (82B99)

Golub, B. M. (*with* Shcherbina, Yu. N.) Quasi-Newtonian modification of the linearization method using the Cholesky LDL^T-decomposition. (Ukrainian. Russian summary) *Vïsnik L'vïv. Derzh. Unïv. Ser. Mekh.-Mat. No.* 29 (1988), 5–8, 61. 65K05

— The linearization method for solving a system of equalities and inequalities on a simple set of "parallelepiped" type. (Ukrainian. Russian summary) *Vïsnik L'vïv. Derzh. Unïv. Ser. Mekh.-Mat. No.* 29 (1988), 8–10, 61. 65K05

— (*with* Shcherbina, Yu. N.) Conditions for the convergence of a quasi-Newtonian modification of the linearization method. (Ukrainian) *Vïsnik L'vïv. Derzh. Unïv. Ser. Mekh.-Mat. No.* 31 (1989), 19–22. 65K05

— A scheme for constructing quasi-Newtonian algorithms for unconditional minimization of functions. (Ukrainian) *Vïsnik L'vïv. Derzh. Unïv. Ser. Mekh.-Mat. No.* 31 (1989), 22–24. 65K05

Golub, Gene H. A history of modern numerical linear algebra. Mathematische Wissenschaften gestern und heute. 300 Jahre Mathematische Gesellschaft in Hamburg, Teil 4 (Hamburg, 1990). *Mitt. Math. Ges. Hamburg* **12** (1991), *no.* 4, 949–960 (1992). (From the introduction) **93c:65002** 65–03 (01A60, 65Fxx)

— (*with* Boley, Daniel L.; Elhay, Sylvan; Gutknecht, Martin H.) Nonsymmetric Lanczos and finding orthogonal polynomials associated with indefinite weights. *Numer. Algorithms* **1** (1991), *no.* 1, 21–43. (Alexander S. Babanin) **93f:65033** 65F15 (65F30, 65F50, 65G05)

— (*with* Berry, Michael W.) Estimating the largest singular values of large sparse matrices via modified moments. *Numer. Algorithms* **1** (1991), *no.* 4, 353–373. (Cs. J. Hegedűs) **93a:65046** 65F15 (65D32, 65F50, 65Y05)

— (*with* Freund, Roland W.; Nachtigal, Noël M.) Iterative solution of linear systems. *Acta numerica*, 1992, 57–100, *Cambridge Univ. Press, Cambridge*, 1992. (L. Hageman) **93g:65046** 65F10

— (*with* Elhay, Sylvan; Kautský, Jaroslav) Jacobi matrices for sums of weight functions. (English summary) *BIT* **32** (1992), *no.* 1, 143–166. (Summary) **93k:65036** 65F30 (65D15)

— (*with* Fischer, Bernd) How to generate unknown orthogonal polynomials out of known orthogonal polynomials. (English summary) Orthogonal polynomials and numerical methods. *J. Comput. Appl. Math.* **43** (1992), *no.* 1-2, 99–115. (Zhong De Wang) **93m:42011** 42C05 (65D15)

— (*with* Boley, Daniel L.; Brent, Richard P.; Luk, Franklin T.) Algorithmic fault tolerance using the Lanczos method. *SIAM J. Matrix Anal. Appl.* **13** (1992), *no.* 1, 312–332. (Herbert J. Bernstein) **93f:65034** 65F15 (94B05)

— (*with* Kågström, Bo; Van Dooren, Paul) Direct block tridiagonalization of single-input single-output systems. *Systems Control Lett.* **18** (1992), *no.* 2, 109–120. (M. M. Konstantinov) **93b:93021** 93B10 (15A23, 93B40, 93B55)

— *see also* **Van Huffel, Sabine**, **93b:65001**

Golubchik, I. Z. Isomorphisms of the general linear group $\mathrm{GL}_n(R)$, $n \geq 4$, over an associative ring. *Proceedings of the International Conference on Algebra, Part* 1 (*Novosibirsk*, 1989), 123–136, *Contemp. Math.*, 131, *Part* 1, *Amer. Math. Soc., Providence, RI*, 1992. (Alexander W. Mason) **93g:20095** 20H25

Golubev, G. A. (*with* Muravlev, V. F.; Pisarev, O. V.) Design of minimax linear filters of minimal dimension for discrete-time dynamical processes. (Russian) *Avtomat. i Telemekh.* **1991**, *no.* 4, 46–55; *translation in Automat. Remote Control* **52** (1991), *no.* 4, *part* 1, 479–486. (Summary) **93a:93106** 93E11

— (*with* Pisarev, O. V.) Linear filtering of stationary discrete-time processes. (Russian. Russian summary) *Avtomat. i Telemekh.* **1992**, *no.* 7, 55–61; *translation in Automat. Remote Control* **53** (1992), *no.* 7, *part* 1, 1000–1005. (Han Fu Chen) **93k:60104** 60G35 (93E11)

Golubev, G. K. Quasilinear filtering of Gaussian stationary sequences. (Russian) *Teor. Veroyatnost. i Primenen.* **36** (1991), *no.* 4, 764–770; *translation in Theory Probab. Appl.* **36** (1991), *no.* 4, 793–800 (1992). (O. A. Glonti) **93e:60084** 60G35 (93E11)

— Nonparametric estimation of smooth densities of a distribution in L_2. (Russian) *Problemy Peredachi Informatsii* **28** (1992), *no.* 1, 52–62; *translation in Problems Inform. Transmission* **28** (1992), *no.* 1, 44–54. (Sh. A. Khashimov) **93f:62052** 62G05 (94A17)

— Asymptotically minimax estimation of a regression function in an additive model. (Russian. Russian summary) *Problemy Peredachi Informatsii* **28** (1992), *no.* 2, 3–15; *translation in Problems Inform. Transmission* **28** (1992), *no.* 2, 101–112. (Marek Kaluszka) **93k:62089** 62G05 (62C20, 62G20)

— Sequential design of an experiment in the nonparametric estimation of smooth regression functions. (Russian. Russian summary) *Problemy Peredachi Informatsii* **28** (1992), *no.* 3, 76–79; *translation in Problems Inform. Transmission* **28** (1992), *no.* 3, 265–268 (1993). (M. Bertrand-Retali) **93m:62181a** 62L12 (62J02)

— Erratum: "Sequential design of an experiment in the nonparametric estimation of smooth regression functions". (Russian) *Problemy Peredachi Informatsii* **28** (1992), *no.* 4, 109; *translation in Problems Inform. Transmission* **28** (1992), *no.* 4, 395 (1993). (M. Bertrand-Retali) **93m:62181b** 62L12 (62J02)

Golubev, V. K. On an investigation of the stability of motion in a critical case. (Russian) *Differential and integral equations (Russian)*, 27–31, *Gor'kov. Gos. Univ., Gorki*, 1990. (*see* **93g:34001**) 34D10

Golubeva, E. P. Quadratic irrationalities with a fixed length of the period of continued fraction expansion. (Russian) *Zap. Nauchn. Sem. Leningrad. Otdel. Mat. Inst. Steklov. (LOMI)* **196** (1991), *Modul. Funktsii Kvadrat. Formy.* 2, 5–30, 172. (Jaroslav Hančl) **93e:11087** 11J70 (11E41, 11R29)

— (*with* Fomenko, O. M.) On Yu. V. Linnik's conjecture connected with the distribution of lattice points on the three-dimensional sphere. (Russian) *Zap. Nauchn. Sem. Leningrad. Otdel. Mat. Inst. Steklov. (LOMI)* **196** (1991), *Modul. Funktsii Kvadrat. Formy.* 2, 31–34, 172. (Hartmut Menzer) **93e:11116** 11P21 (11N37)

Golubeva, O. V. (*with* Sapiyanov, T. N.) Distortion of two-dimensional flows by a permeable circumference. (Russian) *Dokl. Akad. Nauk* **325** (1992), *no.* 6, 1129–1132; *translation in Soviet Phys. Dokl.* **37** (1992), *no.* 8, 394–395 (1993). (Adrian Carabineanu) **93j:76058** 76S05 (76B99)

Golubitsky, Martin (*with* Aronson, D. G.; Krupa, Martin) Coupled arrays of Josephson junctions and bifurcation of maps with S_N symmetry. *Nonlinearity* **4** (1991), *no.* 3, 861–902. (Michael J. Field) **93d:58107a** 58F14 (34C23, 34C25, 58F22)

— (*with* Aronson, D. G.; Mallet-Paret, John) Ponies on a merry-go-round in large arrays of Josephson junctions. *Nonlinearity* **4** (1991), *no.* 3, 903–910. (Michael J. Field) **93d:58107b** 58F14 (34C23, 34C25, 58F22)

— (*with* Stewart, Ian N.) ★ Fearful symmetry. Is God a geometer? *Blackwell Publishers, Oxford*, 1992. xx+287 *pp. ISBN* 0-631-18251-9 (J. J. Burckhardt) **93k:00005** 00A05 (00A08, 00A69, 92C15)

— (*with* Barany, Ernest; Turski, Jacek) Bifurcations with local gauge symmetries in the Ginzburg-Landau equations. With an appendix by R. Glowinski and H. J. Nussenzveig Lopes. *Phys. D* **56** (1992), *no.* 1, 36–56. (Woodford W. Zachary) **93i:82079** 82D55 (58G28)

— (*with* Dionne, Benoit) Planforms in two and three dimensions. *Z. Angew. Math. Phys.* **43** (1992), *no.* 1, 36–62. (Reiner Lauterbach) **93e:58026** 58E09 (35A30, 47H15, 76E15)

Golubkin, V. N. (*with* Negoda, V. V.) On raising the aerodynamic quality of wings of small span for hypersonic velocities. (Russian. Russian summary) *Prikl. Mat. Mekh.* **56** (1992), *no.* 3, 392–403; *translation in J. Appl. Math. Mech.* **56** (1992), *no.* 3, 324–333. (Summary) **93g:76075** 76K05 (76M30)

Golubov, F. A. A method for the local condensation of a grid by means of rectangular and rectangular-hexagonal finite elements. (Russian. Russian summary) *Izv. Severo-Kavkaz. Nauchn. Tsentra Vyssh. Shkoly Estestv. Nauk.* **1992**, *no.* 1-2, 3–6, 89. (Summary) **93f:65082** 65N30

Golubović, Z. (*with* Jarić, Jovo P.) The balance laws of the interline and the bulk material. *Z. Angew. Math. Mech.* **71** (1991), *no.* 12, 518–521. (From the introduction) **93k:73013** 73B99 (73B30, 73D40)

Golubtsov, P. V. (*with* Filatova, S. A.) Multivalued measurement-computer systems. (Russian. English and Russian summaries) *Mat. Model.* **4** (1992), *no.* 7, 79–94. (Summary) **93h:00013** 00A69 (68U05, 92J45)

— Informativeness in the category of linear measuring systems. (Russian. Russian summary) *Problemy Peredachi Informatsii* **28** (1992), *no.* 2, 30–46; *translation in Problems Inform. Transmission* **28** (1992), *no.* 2, 125–140. (Summary) **93e:00010** 00A69 (18B20, 62B10)

Golubyatnikov, V. P. (*with* Ayupova, N. B.) Algorithms for solving multidimensional inverse problems of integral geometry, and line and plane complexes. (Russian. Russian summary) *Methods for solving inverse problems* (*Russian*), 36–44, 143, *Akad. Nauk SSSR Sibirsk. Otdel., Inst. Mat., Novosibirsk*, 1990. (Summary) **93k:53075** 53C65

— On the unique reconstructibility of convex and visible compact sets from their projections. (Russian) *Mat. Sb.* **182** (1991), *no.* 5, 611–621; *translation in Math. USSR-Sb.* **73** (1992), *no.* 1, 1–10. (Alexander I. Barvinok) **93b:52002** 52A15 (52A20)

— Stability problems of the reconstruction of some compacta from their projections. (Russian) *Dokl. Akad. Nauk SSSR* **322** (1992), *no.* 1, 20–21; *translation in Soviet Math. Dokl.* **45** (1992), *no.* 1, 12–14. (Béla Uhrin) **93e:52009** 52A20

— Stability questions in some inverse problems of the reconstruction of convex compact sets from their projections. (Russian. Russian summary) *Sibirsk. Mat. Zh.* **33** (1992), *no.* 3, 50–57, 218; *translation in Siberian Math. J.* **33** (1992), *no.* 3, 409–415 (1993). (W. J. Firey) **93h:52003** 52A15

Golumbic, Martin Charles (*with* Shamir, Ron) Algorithms and complexity for reasoning about time. (English summary) *AAAI-92. Proceedings, Tenth National Conference on Artificial Intelligence* (*San Jose, CA*, 1992), 741–747, *Amer. Assoc. Artif. Intell., Menlo Park, CA*, 1992. (Summary) **93j:68191** 68T27 (03B45, 03D15, 68Q25)

— *see also* **Combinatorics and algorithms, 93k:00032**

Goluzina, E. G. Some extremal problems in a class of functions with bounded boundary rotation of complex order. (Russian) *Zap. Nauchn. Sem. Leningrad. Otdel. Mat. Inst. Steklov.* (*LOMI*) **196** (1991), *Modul. Funktsii Kvadrat. Formy.* 2, 35–40, 172–173. (R. McLaughlin) **93g:30032** 30C75 (30C45)

Goluzina, M. G. (*with* Makarov, B. M.; Lodkin, A. A.; Podkorytov, A. N.) ★ Selected problems in real analysis. Translated from the Russian by H. H. McFaden. Translations of Mathematical Monographs, 107. *American Mathematical Society, Providence, RI*, 1992. x+370 *pp. ISBN* 0-8218-4559-4 (R. G. Bartle) **93i:26001** 26-01 (00A07)

Gomatam, J. (*with* Grindrod, P.) Three-dimensional waves in excitable reaction-diffusion systems: the eikonal approximation. *Nonlinear wave processes in excitable media* (*Leeds*, 1989), 201–211, *NATO Adv. Sci. Inst. Ser. B Phys.*, 244, *Plenum, New York*, 1991. (*see* **93e:00026**) 35K57

Gombani, A. On some results by Fuhrmann on Hankel operators. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, II* (*Kobe*, 1991), 221–225, *Mita, Tokyo*, 1992. (*see* **93g:93006**) 93B28 (47B35, 47N70)

Gombay, Edit (*with* Csörgő, Miklós; Horváth, Lajos) Central limit theorems for L_p distances of kernel estimators of densities under random censorship. *Ann. Statist.* **19** (1991), *no.* 4, 1813–1831. (Paul Deheuvels) **93d:60032** 60F05 (60G15, 62G10)

— (*with* Burke, M. D.) Tests of fit for Cox's regression model. (English summary) *Probab. Math. Statist.* **13** (1992), *no.* 1, 127–137. (S. N. Alam) **93m:62104** 62G10 (62G20)

— (*with* Horváth, Lajos) A goodness-of-fit test for exponential families. (English summary) *Statist. Probab. Lett.* **15** (1992), *no.* 3, 235–239. (Arnold Janssen) **93m:62107** 62G10

Gomer, V. O. Groups with elements of finite rank. (Russian. Russian and Ukrainian summaries) *Ukraïn. Mat. Zh.* **44** (1992), *no.* 6, 836–839; *translation in Ukrainian Math. J.* **44** (1992), *no.* 6, 753–755 (1993). (Summary) **93g:20083** 20F99

Gomes, F. A. M. (*with* Martínez, José Mario) Parallel implementations of Broyden's method. (German summary) *Computing* **47** (1992), *no.* 3-4, 361–366. (Summary) **93a:65070** 65H10 (65Y05)

Gomes, Gracinda M. S. (*with* Fountain, John B.) Left proper E-dense monoids. *J. Pure Appl. Algebra* **80** (1992), *no.* 1, 1–27. (Francis Pastijn) **93c:20099** 20M10

— (*with* Howie, John M.) On the ranks of certain semigroups of order-preserving transformations. *Semigroup Forum* **45** (1992), *no.* 3, 272–282. (Inessa Levi) **93h:20070** 20M20

— A characterization of the group congruences on a semigroup. (English summary) *Semigroup Forum* **46** (1993), *no.* 1, 48–53. (Summary) **93h:20068** 20M15

Gomes, J. F. (*with* Ferreira, L. A.; Zimerman, A. H.) Jordan algebras in conformal field theories. *J. J. Giambiagi Festschrift*, 125–143, *World Sci. Publishing, River Edge, NJ*, 1990. (Mehmet Koca) **93g:81036** 81R10 (17C90, 81T40)

— (*with* Ferreira, L. A.; Zimerman, A. H.; Schwimmer, Adam) Comments on two-loop Kac-Moody algebras. *Phys. Lett. B* **274** (1992), *no.* 1, 65–71. (Robert E. C. Perret) **93b:81093** 81R10 (17B65, 17B67, 81T40)

— (*with* Aratyn, Henrik; Constantinidis, C. P.; Ferreira, L. A.; Zimerman, A. H.) Higher spin symmetries and w_∞ algebra in the conformal affine Toda model. *Phys. Lett. B* **281** (1992), *no.* 3-4, 245–253. (Summary) **93b:81238** 81T40 (81R10)

— (*with* Aratyn, Henrik; Ferreira, L. A.; Zimerman, A. H.) A new deformation of W-infinity and applications to the two-loop WZNW and conformal affine Toda models. (English summary) *Phys. Lett. B* **293** (1992), *no.* 1-2, 67–71. (Summary) **93j:81027** 81R10 (17B68, 17B81, 81T40)

— (*with* Constantinidis, C. P.; Ferreira, L. A.; Zimerman, A. H.) Connection between the affine and conformal affine Toda models and their Hirota solution. (English summary) *Phys. Lett. B* **298** (1993), *no.* 1-2, 88–94. (Henrik Aratyn) **93j:81088** 81T40 (58F07)

Gomes, Marcelo O. C. On $(2+1)$-dimensional field theories with a Chern-Simons term. (English summary) *J. J. Giambiagi Festschrift*, 207–225, *World Sci. Publishing, River Edge, NJ*, 1990. (*see* **93b:81004**) 81T13 (81–02)

Gomes-Ruggiero, M. A. (*with* Martínez, José Mario) The column-updating method for solving nonlinear equations in Hilbert space. (French summary) *RAIRO Modél. Math. Anal. Numér.* **26** (1992), *no.* 2, 309–330. (A. M. Galperin) **93b:65083** 65J15 (47H17, 65H10)

alonso Gomez, Angel J. *see* **Alonso Gomez, Angel J.**

Gómez, C. *see* **Gómez, César**

munuera Gómez, Carlos *see* **Munuera Gómez, Carlos**

Gómez, César (*with* Sierra, Germán) Comments on rational conformal field theory, quantum groups and tower of algebras. *Quantum groups* (*Clausthal*, 1989), 278–306, *Lecture Notes in Phys.*, 370, *Springer, Berlin*, 1990. (Stanislav Z. Pakuliak) **93m:81130** 81T40 (46L37, 46L60, 81R10, 81R50)

— (*with* Sierra, Germán) Towers of algebras in rational conformal field theories. *Internat. J. Modern Phys. A* **6** (1991), *no.* 12, 2045–2074. (Siddhartha Sen) **93b:81251** 81T40 (46L37, 46L60)

— (*with* Sierra, Germán) Integrability and uniformization in Liouville theory: the geometrical origin of quantized symmetries. *Phys. Lett. B* **255** (1991), *no.* 1, 51–60. (Summary) **93h:81122** 81T40 (32G81, 81R50)

— (*with* Sierra, Germán) Integrability and quantum symmetries [MR 92i:81279]. *Integrable systems and quantum groups* (*Pavia*, 1990), 37–50, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93b:00028**) 81T40 (17B37, 81R50)

— (*with* Berkovich, Alexander; Sierra, Germán) On a new class of integrable models. Topological and quantum group methods in field theory and condensed matter physics. *Internat. J. Modern Phys. B* **6** (1992), *no.* 11-12, 1939–1950. (Emil Vinţeler) **93j:82017** 82B23 (17B37)

— (*with* Alvarez-Gaumé, Luis; Barbón, J. L. F.) Fusion rules in two-dimensional gravity. *Nuclear Phys. B* **368** (1992), *no.* 1, 57–78. (Katsushi Ito) **93b:81236** 81T40

— (*with* Sierra, Germán) A new solution to the star-triangle equation based on $U_q(\mathrm{sl}(2))$ at roots of unity. *Nuclear Phys. B* **373** (1992), *no.* 3, 761–778. (Uwe Grimm) **93d:82032** 82B23 (17B37, 57M25)

Gomez, F. *see* **Gómez Rodríguez, Faustino**

Gómez, Gerard (*with* Jorba, Àngel; Masdemont, Josep; Simó, Carles) Quasiperiodic orbits as a substitute of libration points in the solar system. *Predictability, stability, and chaos in N-body dynamical systems* (*Cortina d'Ampezzo*, 1990), 433–438, *NATO Adv. Sci. Inst. Ser. B Phys.*, 272, *Plenum, New York*, 1991. (*see* **93i:70002**) 70F07

— (*with* Ollé, Merce) Second-species solutions in the circular and elliptic restricted three-body problem. I. Existence and asymptotic approximation. *Celestial Mech. Dynam. Astronom.* **52** (1991), *no.* 2, 107–146. (A. S. Baranov) **93f:70008** 70F07

— (*with* Ollé, Merce) Second-species solutions in the circular and elliptic restricted three-body problem. II. Numerical explorations. *Celestial Mech. Dynam. Astronom.* **52** (1991), *no.* 2, 147–166. (A. S. Baranov) **93f:70009** 70F07

Gómez, Guadalupe (*with* Julià, Olga; Utzet, Frederic) Survival analysis for left censored data. (English summary) With a discussion by Melvin L. Moeschberger and a rejoinder by the authors. *Survival analysis: state of the art* (*Columbus, OH*, 1991), 269–288, *NATO Adv. Sci. Inst. Ser. E Appl. Sci.*, 211, *Kluwer Acad. Publ., Dordrecht*, 1992. (Summary) **93k:62090** 62G05 (62N05)

— (*with* Van Ryzin, John) Estimation of the subsurvival function for time-to-tumor in survival/sacrifice experiments. *Statist. Probab. Lett.* **13** (1992), *no.* 1, 5–13. (Summary) **93a:62139** 62P10 (62G05, 62N05)

sánchez-Gómez, J. L. *see* **Sánchez-Gómez, J. L.**

Gomez, J. R. *see* **Gómez Martin, José Ramon**

Gomez, Jose *see* **Gómez Torrecillas, José**

martín Gómez, José D. *see* **Martín Gómez, José D.**

lópez-Gómez, Julián *see* **López-Gómez, Julián**

Gómez, R. (*with* Winicour, J.) Asymptotics of gravitational collapse of scalar waves. *J. Math. Phys.* **33** (1992), *no.* 4, 1445–1457. (R. N. Tiwari) **93d:83023** 83C30 (83C57)

subit Gómez, Rosa *see* **Subit Gómez, Rosa**

Gomez-Calderon, Javier (*with* Bremser, Priscilla S.) Polynomials and primitive elements in Galois rings. *J. Number Theory* **41** (1992), *no.* 2, 172–177. (Gary L. Mullen) **93d:11129** 11T30

— On the power polynomial x^d over Galois rings. (English summary) *Rocky Mountain J. Math.* **22** (1992), *no.* 3, 861–865. (Summary) **93f:11097** 11T55 (11T06)

— A special class of permutation polynomials over finite fields. (English summary) *Finite fields, coding theory, and advances in communications and computing* (*Las Vegas, NV*, 1991), 81–85, *Lecture Notes in Pure and Appl. Math.*, 141, *Dekker, New York*, 1993. (Gary L. Mullen) **93i:11145** 11T06

Gómez Gil, J. (*with* Garrido Carballo, María Isabel; Jaramillo, Jesús A.) Homomorphisms on some function algebras. *Extracta Math.* **7** (1992), *no.* 1, 46–52. (W. A. Feldman) **93m:46058** 46J10 (46E25, 54C40)

Gómez-Larrañaga, José Carlos (*with* González-Acuña, Francisco Javier) On the homological category of 3-manifolds. *Rev. Mat. Univ. Complut. Madrid* **4** (1991), *no.* 2-3, 213–217. (Kimihiko Motegi) **93c:57014** 57N10 (55M30)

— (*with* Heil, Wolfgang) 3-manifolds that are unions of three handlebodies of genus at most 1. *Knots* 90 (*Osaka*, 1990), 477–487, *de Gruyter, Berlin*, 1992. (Katura Miyazaki) **93i:57024** 57N10 (57M50)

— (*with* González-Acuña, Francisco Javier) Lusternik-Schnirel'mann category of 3-manifolds. *Topology* **31** (1992), *no.* 4, 791–800. (Thomas Bartsch) **93j:55005** 55M30 (57M99)

Gómez Martín, José Ramon (*with* Ancochéa-Bermúdez, José María) On the open subset of the variety of nilpotent filiform Lie algebras of dimension 9. (Spanish. English summary) *Proceedings of the XVth Portuguese-Spanish Conference on Mathematics, Vol. III* (*Portuguese*) (*Évora*, 1990), 95–99, *Univ. Évora, Évora*, 1991. (Summary) **93c:17019** 17B30

— (*with* Echarte Reula, Francisco Javier; Núñez Valdés, J.) On complex filiform Lie algebras derived or not derived from other Lie algebras. (Spanish. English summary) *Proceedings of the XVth Portuguese-Spanish Conference on Mathematics, Vol. III* (*Portuguese*) (*Évora*, 1990), 101–106, *Univ. Évora, Évora*, 1991. (Summary) **93a:17007** 17B30

— (*with* Echarte Reula, Francisco Javier) Classification of complex filiform nilpotent Lie algebras of dimension 9. *Rend. Sem. Fac. Sci. Univ. Cagliari* **61** (1991), *no.* 1, 21–29. (Michel Goze) **93d:17014** 17B30

Gómez-Mont, Xavier (*with* Seade, José A.; Verjovsky, Alberto) The index of a holomorphic flow with an isolated singularity. *Math. Ann.* **291** (1991), *no.* 4, 737–751. (Felipe Cano Torres) **93d:32066** 32S65

— (*with* Luengo, Ignacio) Germs of holomorphic vector fields in $\mathbf{C}^3$ without a separatrix. *Invent. Math.* **109** (1992), *no.* 2, 211–219. (Felipe Cano Torres) **93m:32049** 32S65

Gómez Pardo, J. L. (*with* Guil Asensio, P. A.) Linear compactness and Morita duality for Grothendieck categories. *J. Algebra* **148** (1992), *no.* 1, 53–67. (T. Albu) **93h:18017** 18E15 (16D90)

— (*with* Nguyễn Việt Dũng[2]; Wisbauer, Robert) Complete pure injectivity and endomorphism rings. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 4, 1029–1034. (Ulrich Albrecht) **93j:16003** 16D50 (16D90, 16S50, 18E15)

Gómez Rodríguez, Faustino (*with* Casas, J. A.; Muñoz, Carlos) Complete structure of Z_n Yukawa couplings. (English summary) *Internat. J. Modern Phys. A* **8** (1993), *no.* 3, 455–505. (C. Gauthier) **93k:81171** 81T30 (32J81)

Gómez Torrecillas, José (*with* Asensio, M. Jesus; Torrecillas Jover, Blas) Krull dimensions of divisorially graded rings. *Comm. Algebra* **19** (1991), *no.* 12, 3447–3464. (G. Krause) **93b:16043** 16P60 (16P40, 16S90, 16W50)

Gomilko, A. M. Fractional powers of operators with purely imaginary exponents. (Russian) *Funktsional. Anal. i Prilozhen.* **25** (1991), *no.* 2, 78–80; *translation in Functional Anal. Appl.* **25** (1991), *no.* 2, 148–150. (Alberto Venni) **93b:47033** 47A60

— On the integral Kontorovich-Lebedev transformation. (Russian. Ukrainian summary) *Ukrain. Mat. Zh.* **43** (1991), *no.* 10, 1356–1361; *translation in Ukrainian Math. J.* **43** (1991), *no.* 10, 1259–1263 (1992). (Hans-Jürgen Glaeske) **93b:44005** 44A15 (40G10)

— Inversion of the Kontorovich-Lebedev integral transformation. (Russian. Russian summary) *Mat. Zametki* **51** (1992), *no.* 5, 27–34, 156; *translation in Math. Notes* **51** (1992), *no.* 5-6, 442–447. (Summary) **93g:44012** 44A15 (44A20)

Gomis, Joaquim (*with* París, Jordi) Unitarity and the field-antifield formalism. *Nuclear Phys. B* **368** (1992), *no.* 2, 311–337. (Viktor A. Abramov) **93g:81191** 81T70

— (*with* Suzuki, Hiroshi) $N = 2$ string as a topological conformal theory. *Phys. Lett. B* **278** (1992), *no.* 3, 266–270. (Summary) **93a:81172** 81T40 (81T30)

Gomozov, V. I. (*with* Mitropol'skiĭ, Yu. A.; Loshakov, V. A.; Yatsyuk, V. T.) Problems in the theory of frequency-controllable autogenerators. (Russian. Russian summary) *Akad. Nauk Ukrainy Inst. Mat. Preprint* **1991**, *no.* 45, 17 *pp.* (Summary) **93d:34067** 34C15 (78A55)

Gompf, Robert E. On the topology of algebraic surfaces. *Geometry of low-dimensional manifolds*, 1 (*Durham*, 1989), 41–54, *London Math. Soc. Lecture Note Ser.*, 150, *Cambridge Univ. Press, Cambridge*, 1990. (Ronald J. Stern) **93f:57022** 57N13 (14J27, 32J15, 57-02, 57R10, 57R50, 57R55)

— (*with* Freed, Daniel S.) Computer calculation of Witten's 3-manifold invariant. *Comm. Math. Phys.* **141** (1991), *no.* 1, 79–117. (Ronald J. Stern) **93d:57027** 57N10 (11L03, 57M25, 58D30, 58G26, 81T13, 81T40)

— An exotic menagerie. *J. Differential Geom.* **37** (1993), *no.* 1, 199–223. (Terry Lawson) **93k:57041** 57N13 (57R10, 57R55, 57R65)

basto Gonçalves, J. *see* **Basto Gonçalves, J.**

Gonçalves, J. V. A. (*with* Miyagaki, O. H.) Multiplicity results for semilinear elliptic equations at resonance. *Mathématiques appliquées aux sciences de l'ingénieur* (*Santiago*, 1989), 223–229, *Cépaduès, Toulouse*, 1991. (Filomena Pacella) **93b:35040** 35J60 (35J20, 47H15, 47N20, 58E07)

— (*with* Miyagaki, O. H.) Multiple nontrivial solutions of semilinear strongly resonant elliptic equations. *Nonlinear Anal.* **19** (1992), *no.* 1, 43–52. (Rolando Magnanini) **93h:35064** 35J60 (35B05, 58E07)

Gonçalves, J. Z. (*with* Mandel, Arnaldo) Semigroup identities on units of group algebras. *Arch. Math.* (*Basel*) **57** (1991), *no.* 6, 539–545. (From the introduction) **93g:16049** 16U60 (16S34)

Goncerzewicz, Jan Properties of solutions to the initial-boundary value problem for a porous media-type equation. *Math. Methods Appl. Sci.* **15** (1992), *no.* 5, 299–314. (R. Guenther) **93e:35056** 35K55 (35K65, 76S05)

Gonchar, A. A. (*with* Rakhmanov, E. A.; Suetin, S. P.) On the convergence of Padé approximants of orthogonal expansions. (Russian) *Trudy Mat. Inst. Steklov.* **200** (1991), 136–146; *translation in Proc. Steklov Inst. Math.* **1993**, *no.* 2, 149–159. (Guillermo López Lagomasino) **93e:30081** 30E10 (41A21)

— (*with* Vladimirov, V. S.; Zhizhchenko, A. B.; et al.) Obituary: Nikolaĭ Nikolaevich Bogolyubov. (Russian) *Uspekhi Mat. Nauk* **47** (1992), *no.* 3(285), 5–7; *translation in Russian Math. Surveys* **47** (1992), *no.* 3, 1–3. (Editors) **93h:01043b** 01A70

— (*with* Borovkov, A. V.; Ibragimov, I. A.; Il'in, A. M.; Prokhorov, Yu. V.; Skorokhod, A. V.) Rafail Zalmanovich Khas'minskiĭ (on the occasion of his sixtieth birthday). (Russian) *Uspekhi Mat. Nauk* **47** (1992), *no.* 4(286), 223–225; *translation in Russian Math. Surveys* **47** (1992), *no.* 4, 243–246. (Editors) **93m:01059** 01A70

Gonchar, N. S. ★ Конденсация и кристаллизация. (Russian) [Condensation and crystallization] Математические аспекты теории. [Mathematical aspects of the theory] "*Naukova Dumka*", *Kiev*, 1991. 199 *pp. ISBN* 5-12-002336-3 (L. A. Turski) **93d:82009** 82B05 (82-02, 82D25)

— (*with* Kozyrskiĭ, V. G.) One-parameter group of symmetries of incommensurate structures of the anisotropic Ising model. (Ukrainian. English, Russian and Ukrainian summaries) *Ukrain. Fiz. Zh.* **36** (1991), *no.* 12, 1857–1864. (Summary) **93g:82016** 82B20 (82B26)

— (*with* Kozyrskiĭ, V. G.) Hidden symmetry and small branchings in anisotropic lattice models. (Ukrainian. Russian summary) *Ukrain. Mat. Zh.* **43** (1991), *no.* 11, 1509–1516; *translation in Ukrainian Math. J.* **43** (1991), *no.* 11, 1401–1408 (1992). (Summary) **93a:82012** 82B20 (82B26)

— (*with* Rudyk, A. B.) Oscillation of the radial distribution function. (English summary) *J. Statist. Phys.* **68** (1992), *no.* 5-6, 1065–1087. (M. Lawrence Glasser) **93g:82029** 82B21 (82-04)

Gonchar, V. Yu. (*with* Svirinovskaya, E. Y.; Tur, A. V.; Yanovskiĭ, V. V.) The interaction between resonances and an attractor in a reversible dynamic system. (English summary) *Phys. Lett. A* **174** (1993), *no.* 3, 241–246. 58F13

Goncharenko, V. M. (*with* Rakhmanov, Kh. B.) Generalized solution of a problem that describes the oscillations of elastoplastic bodies. (Ukrainian. Russian and Ukrainian summaries) *Vtsnik Kiïv. Untv. Mat. Mekh. No.* 32 (1990), 15–17. (Summary) **93d:73037** 73E50 (73V25)

— (*with* Lychman, V. V.) Numerical solution of a boundary value problem in the theory of elasticity for a body with an inclusion. (Russian) *Vychisl. Prikl. Mat.* (*Kiev*) *No.* 75 (1991), 83–87. 73D30

— (*with* Orazgulyev, A.) Some problems of the diffraction of elastic waves by inclusions. (Russian. Russian summary) *Akad. Nauk Ukrainy Inst. Mat. Preprint* **1992**, *no.* 9, 32 *pp.* (Summary) **93f:73039** 73D25

Goncharov, A. B. Three-dimensional reconstruction of arbitrarily arranged identical particles given their projections. *Mathematical problems of tomography*, 67–95, *Transl. Math. Monographs*, 81, *Amer. Math. Soc., Providence, RI*, 1990. (M. Reimer (Zbl 729:65108)) **93c:44005** 44A12 (92C55)

— (*with* Gel'fand, M. S.) Spatial rotational alignment of identical particles given their projections: theory and practice. *Mathematical problems of tomography*, 97–122, *Transl. Math. Monographs*, 81, *Amer. Math. Soc., Providence, RI*, 1990. (M. Reimer (Zbl 729:65109)) **93c:44006** 44A12 (92C55)

Goncharov, A. L. (*with* Devdariani, M. T.; Prostomolotov, A. I.; Fryazinov, I. V.) Approximation and a numerical method for the solution of three-dimensional Navier-Stokes equations on orthogonal grids. (Russian. English summary) *Mat. Model.* **3** (1991), *no.* 5, 89–109. (Summary) **93b:76024** 76D05 (65M06, 76M20, 76R05, 76W05)

— (*with* Weinelt, Wilfried; Fryazinov, I. V.; Hartwig, Karl-Heinz) Numerical methods for solving the problem of injection of plastic into thin forms. (Russian. Russian summary) *Zh. Vychisl. Mat. i Mat. Fiz.* **32** (1992), *no.* 11, 1790–1802; *translation in Comput. Math. Math. Phys.* **32** (1992), *no.* 11, 1617–1628 (1993). (From the introduction) **93k:76031** 76D05 (65P05, 73E50, 76M25, 76M30)

Goncharov, A. M. (*with* Kud'yavin, V. S.) Generation of nonlinear internal waves under mixed region collapse in a stratified fluid. (Russian. Russian summary) *Complex analysis and potential theory* (*Russian*), 27–33, *Akad. Nauk Ukrainy, Inst. Mat., Kiev*, 1992. (*see* **93m:00019**) 76F10 (76V05)

Goncharov, V. V. Existence theorems for solutions of differential inclusions with a lower semicontinuous right-hand side on a locally compact set. (Russian) *Differentsial'nye Uravneniya* **27** (1991), *no.* 12, 2058–2065, 2204; *translation in Differential Equations* **27** (1991), *no.* 12, 1446–1452 (1992). (Longin Rybiński) **93f:34027** 34A60 (34G20, 49J24, 54C65)

Goncharov, Yu. P. (*with* Bytsenko, A. A.) Topological Casimir effect for a class of hyperbolic four-dimensional Clifford-Klein spacetimes. *Classical Quantum Gravity* **8** (1991), *no.* 10, L211–L214. (Summary) **93c:81254** 81T99

— (*with* Bytsenko, A. A.) Evaluation of a class of the Laplace operator determinants connected with quantum geometry of p-branes. *Modern Phys. Lett. A* **6** (1991), *no.* 8, 669–675. (Akira Asada) **93b:58163** 58G26 (11F72, 81T30)

Goncharova, O. N. Solvability of a nonstationary problem for equations of free convection with temperature-dependent viscosity. (Russian. Russian summary) *Dinamika Sploshn. Sredy No.* 96 (1990), 35–58, 154. (Andro Mikelić) **93k:76105** 76R10 (35Q35, 76D05)

— On the uniqueness of the solution of a stationary problem for equations of free convection. (Russian. Russian summary) *Dinamika Sploshn. Sredy No.* 97 (1990), 22–28, 212. (Summary) **93d:35167** 35Q99

Goncharskiĭ, A. V. (*with* Kolpakov, A. V.; Stepanov, Alekseĭ Alekseevich) ★ Обратные задачи рентгеновской дифрактометрии. (Russian. Russian summary) [Inverse problems of X-ray diffractometry] *Latv. Univ., Riga*, 1992. 182 *pp.* (Publisher's description) **93m:78016** 78A45 (78A55, 82D25)

Goncharuk, N. Yu. (*with* Daletskiĭ, Yu. L.) Random operator functions defined by stochastic differential equations. *Probability theory and mathematical statistics, Vol. I* (*Vilnius*, 1989), 433–445, "*Mokslas*", *Vilnius*, 1990. (E. Gerlach) **93c:46073** 46Gxx (34F05, 34G10, 47B80, 60H30)

— *see also* **Daletskiĭ, Yu. L., 93c:46071**

Gonchenko, S. V. (*with* Turaev, D. V.; Shil'nikov, L. P.) Models with a structurally unstable homoclinic Poincaré curve. (Russian) *Dokl. Akad. Nauk SSSR* **320** (1991), *no.* 2, 269–272; *translation in Soviet Math. Dokl.* **44** (1992), *no.* 2, 422–426. (Alois Klíč) **93c:58178** 58F25 (34C37, 57R30, 58F14)

Gonchigdorzh, R. Sheaf representations of rings and their rings of quotients. Normal g.p.p. rings with Köthe radical. *Proceedings of Asian Mathematical Conference*, 1990 (*Hong Kong*, 1990), 155–164, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93b:00022**) 16N80

— Normal g.p.p. rings with Köthe radical. *Proceedings of the International Conference on Algebra, Part* 2 (*Novosibirsk*, 1989), 327–343, *Contemp. Math.*, 131, *Part* 2, *Amer. Math. Soc., Providence, RI*, 1992. (W. D. Burgess) **93g:16005** 16D70

Gondard-Cozette, Danielle (*with* Delon, Françoise) XVIIème problème de Hilbert sur les corps chaîne-clos. (English summary) [Hilbert's XVIIth problem for chain-closed fields] *J. Symbolic Logic* **56** (1991), *no.* 3, 853–861. (Jesús M. Ruiz) **93d:12001** 12D15 (03C60, 12J10)

Gondzio, J. Applying Schur complements for handling large, sparse linear programming bases. (English summary) *Computational and applied mathematics, I (Dublin, 1991)*, 195–202, *North-Holland, Amsterdam*, 1992. (*see* **93j:00007**) 65K05
— (*with* Ruszczyński, Andrzej) Sensitivity method for basis inverse representation in multistage stochastic linear programming problems. *J. Optim. Theory Appl.* **74** (1992), *no.* 2, 221–242. (Vlasta Kaňková) **93e:90046** 90C15 (90C08, 90C31)
Gonera, C. (*with* Kosiński, P.) Gauge symmetries in three dimensions. *Phys. Lett. B* **268** (1991), *no.* 1, 81–85. (André Burnel) **93a:81117** 81T10 (81R20)
Gong, Cai Hao (*with* Xia, Xiao Rong) An interactive multiobjective optimization method. (Chinese. English summary) *J. Chengdu Univ. Sci. Tech.* **1991**, *no.* 3, 67–74. 90C29
Gong, Chong Guang (*with* Ye, Xiu Ming; Zhu, Ding Xiang) Sequence enumeration methods for cycles of plane rectangular lattice graphs. (Chinese. English summary) *Nanjing Daxue Xuebao Ziran Kexue Ban* **27** (1991), *Special Issue*, 156–161, 222. 05C30 (05C38)
Gong, Chun (*with* Wing, Jeannette M.) Testing and verifying concurrent objects. (English summary) *J. Parallel Distrib. Comput.* **17** (1993), *no.* 1-2, 164–182. (Summary) **93i:68133** 68Q65 (68Q10)
Gong, Da Ping (*with* Xu, Shu Rong) An interior point algorithm for solving linear programming problems with hybrid constraints. (Chinese. English and Chinese summaries) *Acta Sci. Natur. Univ. Sunyatseni* **31** (1992), *no.* 4, 19–25. 90C05
Gong, Donggeng Bivariant twisted cyclic theory and spectral sequences of crossed products. *J. Pure Appl. Algebra* **79** (1992), *no.* 3, 225–254. (Summary) **93f:16013** 16E40 (19D55, 57M07)
Gong, Fu Zhou (*with* Lin, Qing Rong; Tong, Song Lin; Sun, Wan Gui) Condensation extensions of condensing maps and their multiple fixed points. (Chinese. English summary) *Pure Appl. Math.* **7** (1991), *no.* 1, 34–43. (Hong Kun Xu) **93j:47081** 47H09 (47H10)
— Remarks on probabilistic inner product spaces of convolution type. (Chinese) *J. Math. Res. Exposition* **12** (1992), *no.* 4, 532–534. 46C50 (46C99)
Gong, Guang Lu (*with* Qian, Min Ping; Qian, Min) The reversibility and the entropy production of Markov processes. *Probability theory and its applications in China*, 255–261, *Contemp. Math.*, 118, *Amer. Math. Soc., Providence, RI*, 1991. (Summary) **93a:60108** 60J25 (60J60, 60J65, 82C31)
— (*with* Liu, Pei Dong; Qian, Min) Ruelle's inequality for the entropy of random diffeomorphisms. (English summary) *Sci. China Ser. A* **35** (1992), *no.* 9, 1056–1065. (M. L. Blank) **93j:58072** 58F11 (28D05, 28D20)
Gong, H. Q. SU(2) and SU(1, 1) rotation transformation and pseudo-vector model in quantum optics. (English summary) *J. Modern Opt.* **39** (1992), *no.* 11, 2209–2215. (Alexei D. Kiselev) **93i:81314** 81V80
Gong, Li Qiang Problems on testing equality of scale parameters in a growth curve model. (Chinese. English and Chinese summaries) *Natur. Sci. J. Xiangtan Univ.* **14** (1992), *no.* 2, 100–107. 62H10 (62H15, 62J05)
Gong, Lin Guo Chance-constrained linear programming with location scale distributions. (English summary) *Naval Res. Logist.* **39** (1992), *no.* 7, 997–1007. (Summary) **93j:90061** 90C08 (90C05)
Gong, Ming Peng (*with* Wang, Bo Ying) A high symmetry class of tensors with an orthogonal basis of decomposable symmetrized tensors. *Linear and Multilinear Algebra* **30** (1991), *no.* 1-2, 61–64. (Summary) **93f:15028** 15A72
— (*with* Wang, Bo Ying) The subspaces and orthonormal bases of symmetry classes of tensors. *Linear and Multilinear Algebra* **30** (1991), *no.* 3, 195–204. (Summary) **93a:15026** 15A69
— (*with* Wang, Bo Ying) Some eigenvalue inequalities for positive semidefinite matrix power products. (English summary) *Linear Algebra Appl.* **184** (1993), 249–260. (J. L. Brenner) **93m:15033** 15A42 (47A99)
Gong, Ren Shan The coherent-state method of normally ordering multimode exponential operators. (English summary) *Comm. Theoret. Phys.* **17** (1992), *no.* 3, 373–376. 81R30
— Path integral formalism for $SU_q(2)$ coherent states. (English summary) *J. Phys. A* **25** (1992), *no.* 19, L1145–L1149. (J. F. Cornwell) **93i:81084** 81R30 (17B37, 81R50, 81S40)
Gong, S. *see* **Gong, Sheng**
Gong, Shao Yin More on the double mapping cylinder. (Chinese summary) *Acta Sci. Natur. Univ. Norm. Hunan.* **15** (1992), *no.* 1, 11–14. (Jin Kun Lin) **93d:55010** 55P10
Gong, Sheng (*with* Wang, Shi Kun; Yu, Qi Huang) A necessary and sufficient condition: biholomorphic mappings are starlike on a class of Reinhardt domains. *Chinese Sci. Bull.* **36** (1991), *no.* 14, 1151–1153. (Andrei Iordan) **93f:32024** 32H02 (32A07)
— (*with* Wang, Shi Kun; Yu, Qi Huang) A necessary and sufficient condition that biholomorphic mappings are starlike on a class of Reinhardt domains. A Chinese summary appears in Chinese Ann. Math. Ser. A **13** (1992), no. 1, 133. *Chinese Ann. Math. Ser. B* **13** (1992), *no.* 1, 95–104. (I. P. Ramadanov) **93g:32003** 32A07 (30C80, 32A30, 32H02)
— (*with* Zheng, Xue An) Distortion theorem for biholomorphic mappings in transitive domains. II. (English summary) A Chinese summary appears in Chinese Ann. Math. Ser. A. **13** (1992), no. 5, 654. *Chinese Ann. Math. Ser. B* **13** (1992), *no.* 4, 471–484. (Steven George Krantz) **93k:32046** 32H02 (32H20, 32M10)
— (*with* Yang, Chung-Chun) Preface. *Several complex variables in China*, vii–ix, *Contemp. Math.*, 142, *Amer. Math. Soc., Providence, RI*, 1993. (Editors) **93m:01044** 01A60 (01A25, 32-03)
— *see also* **Several complex variables in China, 93i:32003**
Gong, W.-B. *see* **Gong, Wei Bo**
Gong, Wei Bang (*with* Zhu, Jun^2) Strong-principal bimodules of nest algebras. *Proc. Amer. Math. Soc.* **115** (1992), *no.* 2, 435–440. (Xing De Dai) **93b:47088** 47D25
Gong, Wei Bo (*with* Glasserman, Paul) Time-changing and truncating K-capacity queues from one K to another. *J. Appl. Probab.* **28** (1991), *no.* 3, 647–655. (Jian Qiang Hu) **93a:60146** 60K25
— (*with* Wardi, Y.; Kallmes, M. H.; Cassandras, Christos G.) Smoothed perturbation analysis algorithms for estimating the derivatives of occupancy-related functions in serial queueing networks. (English summary) *Ann. Oper. Res.* **39** (1992), *no.* 1-4, 269–293 (1993). (Summary) **93j:90042** 90B22 (60K25)
— (*with* Yan, Anlu; Cassandras, Christos G.) The $M/G/1$ queue with queue-length dependent arrival rate. (English summary) *Comm. Statist. Stochastic Models* **8** (1992), *no.* 4, 733–741. (Summary) **93i:60172** 60K25
— (*with* Hu, Jian Qiang) The MacLaurin series for the $GI/G/1$ queue. *J. Appl. Probab.* **29** (1992), *no.* 1, 176–184. (Summary) **93b:60213** 60K25 (90B22)
— (*with* Sparaggis, Panayotis D.) Optimal buffer allocation in a two-stage queueing system. (English summary) *J. Appl. Probab.* **30** (1993), *no.* 2, 478–482. 60K25
Gong, Yun Lei (*with* Zhu, Zhi Ping) Sharp estimation of the defect sum of the derivative of a meromorphic function. (Chinese. English and Chinese summaries) *J. East China Norm. Univ. Natur. Sci. Ed.* **1992**, *no.* 4, 25–31. 30D35
Gong, Z. (*with* Aldeen, M.) On the characterization of fixed modes in decentralized control. *IEEE Trans. Automat. Control* **37** (1992), *no.* 7, 1046–1050. (Zoran Gajic) **93f:93009** 93A14 (93B10)
Gong, Zeng Tai On a problem of Skvortsov involving the Perron integral. *Real Anal. Exchange* **17** (1991/92), *no.* 2, 748–750. (Cheng-Ming Lee) **93h:26020** 26B15 (26A39)
Gong, Zhi Min (*with* Wang, Jian) A note on the ideal problem. (Chinese. English and Chinese summaries) *Natur. Sci. J. Xiangtan Univ.* **14** (1992), *no.* 2, 48–51. (Summary) **93h:30054** 30D55 (30H05)
Gonnet, Gaston H. (*with* Baeza-Yates, Ricardo A.; Ziviani, Nivio) Improved bounds for the expected behaviour of AVL trees. *BIT* **32** (1992), *no.* 2, 297–315. (Boris Derzhavets) **93i:68059** 68P20 (05C05, 05C85)
rosales Gonsales, Èrnesto *see* **Rosales Gonsales, Èrnesto**
Gonsales-Felipe, R. *see* **Gonzales Felipe, R.**
vale Gonsalves, María J. *see* **Vale Gonsalves, María J.**
Gonska, Heinz H. (*with* Zhou, Xin Long) A global inverse theorem on simultaneous approximation by Bernstein-Durrmeyer operators. *J. Approx. Theory* **67** (1991), *no.* 3, 284–302. (Wiesław Pleśniak) **93a:41030** 41A28 (41A27, 41A35, 41A40)
— (*with* Cao, Jia Ding) On Butzer's problem concerning approximation by algebraic polynomials. *Approximation theory (Memphis, TN*, 1991), 289–313, *Lecture Notes in Pure and Appl. Math.*, 138, *Dekker, New York*, 1992. (P. L. Butzer) **93f:41034** 41A36 (41A55)
Gonthier, Keith A. (*with* Powers, Joseph M.) Reaction zone structure for strong, weak overdriven, and weak underdriven oblique detonations. (English summary) *Phys. Fluids A* **4** (1992), *no.* 9, 2082–2089. (Summary) **93d:80005** 80A25 (76L05)
Gontineac, M. On a class of multivalued functions defined on $\mathbf{Q}_+^2$. (Romanian summary) *Bul. Inst. Politehn. Iaşi Secţ. I* **36(40)** (1990), *no.* 1-4, 25–28. (Zbigniew Grande) **93j:47046** 47B38 (26E25, 47B99)
Gonzacenco, Florin (*with* Mărgăritescu, Eugen; Vodă, Viorel Gh.) Statistical consequences of some old and new algebraic inequalities. (English summary) *Rev. Roumaine Math. Pures Appl.* **37** (1992), *no.* 10, 877–886. (S. Sridhar) **93k:60048** 60E15 (62E15, 62J10)
Gonzaga, Clovis C. Path-following methods for linear programming. *SIAM Rev.* **34** (1992), *no.* 2, 167–224. (F. Pickel) **93j:90050** 90C05 (90–02)
Gonzaga de Sá, Paula (*with* Maes, Christian) The Gacs-Kurdyumov-Levin automaton revisited. *J. Statist. Phys.* **67** (1992), *no.* 3-4, 507–522. (Summary) **93a:58096** 58F08
Gonzales Felipe, R. (*with* Abramov, A. A.; Alvarez, L. M.; Rodriges, A. R.) Some possibilities of the operator splitting method. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **31** (1991), *no.* 7, 953–961; *translation in Comput. Math. Math. Phys.* **31** (1991), *no.* 7, 8–14 (1992). (K. Balla) **93e:34023a** 34A50 (34B30, 34E99, 65L10)
— (*with* Abramov, A. A.; Alvarez, L. M.; Rodriges, A. R.) Erratum: "Some possibilities of the operator splitting method". (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **32** (1992), *no.* 5, 674. (K. Balla) **93e:34023b** 34A50 (34B30, 34E99, 65L10)
Gonzales Jimenez, Santos *see* **González, Santos**
juan Gonzalez, A. *see* **Juan Gonzalez, A.**
Gonzalez, Antonio *see* **González Muñoz, Antonio**
González, B. J. *see* **González Rodríguez, Benito**
González, Beatríz (*with* Kalla, Shyam L.) Some results involving generalized Laguerre functions. (English summary) *Ganita Sandesh* **6** (1992), *no.* 2, 118–124. (Summary) **93m:33004** 33C45 (33C20)
salvador González, Bonifacio *see* **Salvador González, Bonifacio**
martín González, Cándido *see* **Martín González, Cándido**
González, D. L. (*with* Cecchi, G. A.; Magnasco, M. O.; Mindlin, Gabriel B.; Piro, Oreste; Santillan, A. J.) Periodically kicked hard oscillators. (English summary) *Chaos* **3** (1993), *no.* 1, 51–62. (Summary) **93k:58130** 58F10 (34C15, 58F30, 70K99)
Gonzalez, E. H. A. (*with* Barozzi, E.; Emmer, M.) Lagrange multipliers and variational methods for equilibrium problems of fluids. *Rend. Sem. Mat. Univ. Padova* **85** (1991), 35–53. (Klaus Steffen) **93j:49044** 49Q20 (58E30, 76B45, 76E99, 76M30, 76U05)
pérez-González, Fernando *see* **Pérez-González, Fernando**
Gonzalez, Fulton B. Bi-invariant differential operators on the complex motion group and the range of the d-plane transform on $\mathbf{C}^n$. *Integral geometry and tomography (Arcata, CA*, 1989), 97–110, *Contemp. Math.*, 113, *Amer. Math. Soc., Providence, RI*, 1990. (Eric Grinberg) **93c:44007** 44A12 (43A85, 53C65)
González, J. *see* **González, José**
González, J. M. (*with* Carrera, A. R.; Martinez, M.) Poisson approximation for independent Bernoulli summands using the semi-group operators theory. Proceedings of the Second International Mathematical Miniconference, Part II (Budapest, 1988). *Period. Polytech. Transportation Engrg.* **19** (1991), *no.* 1-2, 23–31. (Dietmar Pfeifer) **93g:60044** 60F05 (47D03, 47N30, 62E20)
González, Jaime (*with* Lacourly, N.) A family of Hamilton type methods for congressional apportionments. (French summary) *RAIRO Rech. Opér.* **26** (1992), *no.* 1, 31–40. (Summary) **93a:90014** 90A28
bustamante González, Jorge *see* **Bustamante González, Jorge**
González, Jorge A. Space-time attractors in perturbed Klein-Gordon equations. (Spanish. English summary) *Rev. Mexicana Fís.* **38** (1992), *no.* 2, 205–214. (Summary) **93d:58150** 58F39 (35L70, 58F12, 81Q99)
González, José (*with* Diego, Oscar) Multicriticality in stabilized 2D quantum gravity. (English summary) *Modern Phys. Lett. A* **7** (1992), *no.* 37, 3465–3477. 81T40
— (*with* Vozmediano, A. H.) On the fusion rules of conformal matter coupled to 2D quantum gravity. *Phys. Lett. B* **278** (1992), *no.* 4, 428–438. (Summary) **93d:81156** 81T40
muñoz-cobo González, José Luis *see* **Muñoz-Cobo González, José Luis**
Gonzalez, Jose M. *see* **González Rodríguez, José Manuel**
navarro González, Juan A. *see* **Navarro González, Juan A.**
González, Lourdes Analysis of the duality between linear and loglinear families of distributions by geometric programming. (Hungarian. English and Hungarian summaries) *Alka-*

Imaz. Mat. Lapok **15** (1990/91), *no.* 3-4, 381–403. (Summary) **93k:62011** 62B10 (62E15, 90C28)

bernal González, Luis *see* **Bernal González, Luis**

González, Manuel (*with* Martinón, Antonio) Operational quantities derived from the norm and generalized Fredholm theory. *Comment. Math. Univ. Carolin.* **32** (1991), *no.* 4, 645–657. (P. Aiena) **93f:47012** 47A53 (46B28, 47A30)

— (*with* Martinón, Antonio) Note on operational quantities and Mil'man isometry spectrum. *Extracta Math.* **6** (1991), *no.* 2-3, 129–131. (R. W. Cross) **93j:47017** 47A53 (46B20)

— (*with* Martinón, Antonio) Operational quantities derived from the norm and generalized Fredholm theory. *Extracta Math.* **6** (1991), *no.* 2-3, 132–134. (R. W. Cross) **93k:47020** 47A53 (47A30, 47A55)

— On essentially incomparable Banach spaces. (English summary) *Extracta Math.* **6** (1991), *no.* 2-3, 135–138. (From the text) **93h:46015** 46B20 (47A53)

— (*with* Castillo, Jesús M. F.) An approach to Schreier's space. *Extracta Math.* **6** (1991), *no.* 2-3, 166–169. (Mikhail Ostrovskiĭ) **93j:46018** 46B20

— (*with* Aiena, Pietro) Inessential operators and incomparability of Banach spaces. (English summary) *Extracta Math.* **6** (1991), *no.* 2-3, 177–180. 47B06 (46B20)

— (*with* Martinón, Antonio) Operational quantities derived from the norm and measures of noncompactness. *Proc. Roy. Irish Acad. Sect. A* **91** (1991), *no.* 1, 63–70. (Hans-Olav Tylli) **93g:47008** 47A30 (47D50, 47H09)

— (*with* Martinón, Antonio) Note on operational quantities and Mil'man isometry spectrum. (English summary) *Rev. Acad. Canaria Cienc.* **3** (1991), *no.* 1, 103–111. (R. W. Cross) **93h:47012** 47A53 (46B20)

— (*with* Álvarez García, José Antonio; Álvarez, Teresa) The gap between subspaces and perturbation of non-semi-Fredholm operators. *Bull. Austral. Math. Soc.* **45** (1992), *no.* 3, 369–376. (R. W. Cross) **93c:47015** 47A55 (46B20)

— On the index of weakly Fredholm operators. *Panamer. Math. J.* **2** (1992), *no.* 1, 57–66. (P. Aiena) **93d:47023** 47A53

— (*with* Gutiérrez del Alamo, Joaquín M.) The compact weak topology on a Banach space. *Proc. Roy. Soc. Edinburgh Sect. A* **120** (1992), *no.* 3-4, 367–379. (Giovanni Emmanuele) **93c:46022** 46B20 (46A03, 46B10)

González, María José Uniformly perfect sets, Green's function, and fundamental domains. *Rev. Mat. Iberoamericana* **8** (1992), *no.* 2, 239–269. (Christopher Bishop) **93k:30029** 30C85 (30F35, 30F45, 31A15)

González, Mario O. ★ Classical complex analysis. Monographs and Textbooks in Pure and Applied Mathematics, 151. *Marcel Dekker, Inc., New York*, 1992. xvi+767 *pp. ISBN* 0-8247-8415-4 (A. K. Agarwal) **93e:30001** 30-01

— ★ Complex analysis. Selected topics. Monographs and Textbooks in Pure and Applied Mathematics, 152. *Marcel Dekker, Inc., New York*, 1992. xiv+518 *pp. ISBN* 0-8247-8416-2 (A. K. Agarwal) **93e:30004** 30-02

castro González, Nieves *see* **Castro González, Nieves**

Gonzalez, Patrick Généralisation d'un résultat de Loxton et van der Poorten. (English summary) [Generalization of a result of Loxton and van der Poorten] *Sém. Théor. Nombres Bordeaux* (2) **4** (1992), *no.* 1, 43–51. (Summary) **93h:11011** 11A63

Gonzalez, Rafael C. (*with* Eason, R. O.) Least-squares fusion of multisensory data. *Data fusion in robotics and machine intelligence*, 367–413, *Academic Press, Boston, MA*, 1992. (*see* **93g:68002**) 68U05 (68T30, 70B15, 70Q05)

— *see also* **Data fusion in robotics and machine intelligence, 93g:68002**

González, Roberto L. V. (*with* Tarzia, Domingo A.) On some thermic flux optimization problems in a domain with Fourier boundary condition and state restrictions. *Math. Notae* **34** (1990), 21–32. (From the introduction) **93e:49058** 49Q10 (49K20)

— (*with* Tidball, Mabel M.) Fast solution of general nonlinear fixed point problems. (English summary) *System modelling and optimization* (*Zurich*, 1991), 35–44, *Lecture Notes in Control and Inform. Sci.*, 180, *Springer, Berlin*, 1992. (Summary) **93e:65092** 65K10 (65J15, 90C30)

— (*with* Muramatsu, Kenji; Rofman, Edmundo) Quasi-variational inequality approach to multi-item single machine lot scheduling problem. *System modelling and optimization* (*Zurich*, 1991), 885–893, *Lecture Notes in Control and Inform. Sci.*, 180, *Springer, Berlin*, 1992. (*see* **93e:90003**) 90B35

González, Santos Jordan algebras and mutation algebras. Homotopy and von Neumann regularity. *Ann. Sci. Univ. Clermont-Ferrand II Math. No.* 27 (1991), 177–191 (1992). (Hyo C. Myung) **93c:17060** 17D25 (17A20)

— (*with* Martínez López, Consuelo) Periodic power-associative rings. Order relation. (English summary) *Nonassociative algebraic models* (*Zaragoza*, 1989), 173–182, *Nova Sci. Publ., Commack, NY*, 1992. (Ernest Stitzinger) **93j:17001** 17A05

— (*with* Martínez López, Consuelo) Periodic Jordan rings of characteristic two. *Proceedings of the International Conference on Algebra, Part 2* (*Novosibirsk*, 1989), 575–585, *Contemp. Math.*, 131, *Part 2, Amer. Math. Soc., Providence, RI*, 1992. (Holger P. Petersson) **93i:17030** 17C10 (17A05)

— *see also* **Nonassociative algebraic models, 93f:17002**

Gonzalez, Teofilo F. The on-line d-dimensional dictionary problem. *Proceedings of the Third Annual ACM-SIAM Symposium on Discrete Algorithms* (*Orlando, FL*, 1992), 376–385, *ACM, New York*, 1992. (*see* **93b:68005**) 68U05

González-Acosta, E. (*with* Corona-Galindo, M. G.) Noether's theorem and the invariants for dissipative and driven dissipative like systems. (English and Spanish summaries) *Rev. Mexicana Fís.* **38** (1992), *no.* 4, 511–517. (P. G. L. Leach) **93k:70031** 70H35 (70D10, 70H33)

González-Acuña, Francisco Javier (*with* Short, Hamish) Cyclic branched coverings of knots and homology spheres. *Rev. Mat. Univ. Complut. Madrid* **4** (1991), *no.* 1, 97–120. (Denis Sjerve) **93g:57004** 57M12 (57M25, 57N10)

— (*with* Gómez-Larrañaga, José Carlos) On the homological category of 3-manifolds. *Rev. Mat. Univ. Complut. Madrid* **4** (1991), *no.* 2-3, 213–217. (Kimihiko Motegi) **93c:57014** 57N10 (55M30)

— (*with* Whitten, Wilbur C.) Imbeddings of three-manifold groups. *Mem. Amer. Math. Soc.* **99** (1992), *no.* 474, viii+55 *pp.* (Klaus Johannson) **93f:57010** 57M25 (57M07, 57M10, 57N10)

— (*with* Gómez-Larrañaga, José Carlos) Lusternik-Schnirel'mann category of 3-manifolds. *Topology* **31** (1992), *no.* 4, 791–800. (Thomas Bartsch) **93j:55005** 55M30 (57M99)

González-Aguilera, Víctor (*with* Rodríguez, Rubí E.) A pencil in $\widetilde{\mathfrak{M}}_6$ with three points at the boundary. *Geom. Dedicata* **42** (1992), *no.* 3, 255–265. (Montserrat Teixidor i Bigas) **93e:14030** 14H10

González-Arroyo, Antonio (*with* Daniel,David; Korthals-Altes, Chris P.) Small volume physics with twisted boundary conditions. Lattice 90 (Tallahassee, FL, 1990). *Nuclear Phys. B Proc. Suppl.* **20** (1991), 16–19. (Summary) **93c:81119** 81T13

González Burgos, M. (*with* Fernández Cara, Enrique) A new proof of the existence of solutions for weak conservation laws. (Spanish. Spanish summary) *Proceedings of the XII Congress on Differential Equations and Applications/II Congress on Applied Mathematics* (*Spanish*) (*Oviedo*, 1991), 447–452, *Univ. Oviedo, Oviedo*, 1991. (Summary) **93j:35110** 35L65

González-Carvajal, Clary C. (*with* Mederos, Otilio B.) Determining the solutions of an ordinary linear differential equation with a special type of variable coefficient in a certain class. (Spanish. English summary) *Cienc. Mat.* (*Havana*) **12** (1991), *no.* 1, 47–56. (Lucas Jódar) **93c:34021** 34A30

González-Concepción, C. (*with* Casasús Latorre, L.; González-Vera, Pablo; Pérez-Acosta, Francisco) Quadrature formulas and convergence of two-point Padé approximants. *Pure Appl. Math. Sci.* **34** (1991), *no.* 1-2, 1–13. (A. J. Rodrigues) **93b:65047** 65D32 (41A21)

González-Dávila, J. C. (*with* González-Dávila, M. C.) Curvature relations in locally Killing transversally symmetric spaces. (Spanish. English summary) *Proceedings of the XVth Portuguese-Spanish Conference on Mathematics, Vol. III* (*Portuguese*) (*Évora*, 1990), 155–160, *Univ. Évora, Évora*, 1991. (Summary) **93a:53042** 53C35

— (*with* González-Dávila, M. C.) The Gel'fand theorem in Killing transversally symmetric spaces. (Spanish. English summary) *Proceedings of the XVth Portuguese-Spanish Conference on Mathematics, Vol. III* (*Portuguese*) (*Évora*, 1990), 185–190, *Univ. Évora, Évora*, 1991. (Summary) **93a:53043** 53C35 (58G30)

González-Dávila, M. C. (*with* González-Dávila, J. C.) Curvature relations in locally Killing transversally symmetric spaces. (Spanish. English summary) *Proceedings of the XVth Portuguese-Spanish Conference on Mathematics, Vol. III* (*Portuguese*) (*Évora*, 1990), 155–160, *Univ. Évora, Évora*, 1991. (Summary) **93a:53042** 53C35

— (*with* González-Dávila, J. C.) The Gel'fand theorem in Killing transversally symmetric spaces. (Spanish. English summary) *Proceedings of the XVth Portuguese-Spanish Conference on Mathematics, Vol. III* (*Portuguese*) (*Évora*, 1990), 185–190, *Univ. Évora, Évora*, 1991. (Summary) **93a:53043** 53C35 (58G30)

González de Mendívil, Jose R. (*with* Garitagoitia, Jose R.) A model for deadlock detection based on automata and languages theory. (English summary) *Comput. Math. Appl.* **25** (1993), *no.* 6, 47–55. (Summary) **93k:68008** 68M10

González-Díaz, Pedro F. Equivalence among wormhole instantons. *Internat. J. Modern Phys. A* **7** (1992), *no.* 10, 2355–2369. (Annalisa Marzuoli) **93j:83037** 83C45 (83E05)

— Nonclassical states in quantum gravity. (English summary) *Phys. Lett. B* **293** (1992), *no.* 3-4, 294–298. (Summary) **93g:83046** 83C45

— Regaining quantum incoherence for matter fields. *Phys. Rev. D* (3) **45** (1992), *no.* 2, 499–506. (Michael O. Katanaev) **93b:83023** 83C45 (83C47)

González Díez, G. (*with* Harvey, W. J.) Moduli of Riemann surfaces with symmetry. *Discrete groups and geometry* (*Birmingham*, 1991), 75–93, *London Math. Soc. Lecture Note Ser.*, 173, *Cambridge Univ. Press, Cambridge*, 1992. (I. Kra) **93k:32042** 32G15 (14J15, 30F10, 32J25)

González-López, Artemio (*with* Kamran, Niky; Olver, Peter J.) Lie algebras of first order differential operators in two complex variables. *Differential geometry, global analysis, and topology* (*Halifax, NS*, 1990), 51–84, *CMS Conf. Proc.*, 12, *Amer. Math. Soc., Providence, RI*, 1991. (Helmut Boseck) **93c:17041** 17B66 (17B56)

— (*with* Kamran, Niky; Olver, Peter J.) Lie algebras of differential operators in two complex variables. *Amer. J. Math.* **114** (1992), *no.* 6, 1163–1185. (S. V. Duzhin) **93k:17047** 17B66 (58H10)

González-López, M. J. (*with* Recio Muñiz, Tomás J.) The modified Laumond algorithm for planning tasks for robots. (Spanish) *II Meeting on Computational Geometry* (*Spanish*) (*Madrid*, 1991), 31–41, *Univ. Politéc. Madrid, Madrid*, 1992. (*see* **93b:68004**) 70B15 (70Q05, 93C85)

González Manteiga, Wenceslao (*with* Cuevas, Antonio) Data-driven smoothing based on convexity properties. *Nonparametric functional estimation and related topics* (*Spetses*, 1990), 225–240, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 335, *Kluwer Acad. Publ., Dordrecht*, 1991. (Margaret P. Gessaman) **93b:62056** 62G05

— (*with* Cadarso Suárez, Carmen) Nonparametric inference with censored data. (Spanish. English summary) *Estadíst. Española* **33** (1991), *no.* 127, 325–362. 62G05

— (*with* Presedo Quindimil, M. A.) Asymptotic properties of minimum-distance estimators dependent on covariables. (Spanish. English summary) *Qüestiió* **15** (1991), *no.* 2, 139–161, 263. (Summary) **93a:62056** 62G05

González Martín, C. (*with* Sánchez García, Miguel) A global optimization algorithm based on the geometric probabilistic model. Application to a classification problem. (Spanish. English summary) *Rev. Acad. Canaria Cienc.* **3** (1991), *no.* 1, 33–44. (Summary) **93d:90047** 90C15

González Muñoz, Antonio (*with* Campos, Lourdes; Vila, Maria Amparo) On the use of the ranking function approach to solve fuzzy matrix games in a direct way. (English summary) *Fuzzy Sets and Systems* **49** (1992), *no.* 2, 193–203. 90C70 (04A72)

— (*with* Vila, Maria Amparo) Dominance relations on fuzzy numbers. *Inform. Sci.* **64** (1992), *no.* 1-2, 1–16. 04A72

— (*with* Delgado, Miguel) An inductive learning procedure to identify fuzzy systems. (English summary) *Fuzzy Sets and Systems* **55** (1993), *no.* 2, 121–132. 93C42 (04A72, 68T05)

González Nicieza, C. (*with* Alvarez Vigil, A. E.; Ordieres Meré, J. B.) Numerical solution of an optimal shape design problem with elastic solids. (English summary) *Comput. Methods Appl. Mech. Engrg.* **99** (1992), *no.* 2-3, 147–170. (Vadim Komkov) **93g:73093** 73K40 (49Q10, 73V05)

González Rodríguez, Benito (*with* Hayek Calil, Nácere) On the Mehler-Fock transform on generalized functions. (English summary) *Bull. Soc. Roy. Sci. Liège* **61** (1992), *no.* 3-4, 315–327. (W. A. Al-Salam) **93g:44013** 44A15 (33C45, 46F12)

— (*with* Hayek Calil, Nácere; Negrín, E. R.) Abelian theorems for the index ${}_2F_1$-transform. (English and Spanish summaries) *Rev. Técn. Fac. Ingr. Univ. Zulia* **15** (1992), *no.* 3, 167–171. (Summary) **93m:44003** 44A15 (33C05)

González Rodríguez, José Manuel A new Watson type integral transformation with the Exton di-Bessel function in its kernel. *J. Inst. Math. Comput. Sci. Math. Ser.* **4** (1991), *no.* 3, 291–303. (M. E. Cohen) **93h:44005** 44A20 (33D15, 46F12)
— Cauchy's problem for partial differential equations with Bessel-type differential operators. *Jñānabha* **21** (1991), 135–149. (Bruno Scheurer) **93b:35056** 35K15 (35Q99, 47D03, 47N20)
— (*with* Hayek Calil, Nácere; Falcon, Sergio) An existence and uniqueness theorem for linear ordinary differential equations of the first order in aleph. (English summary) *J. Inst. Math. Comput. Sci. Math. Ser.* **6** (1993), *no.* 1, 83–85. 34A12 (34A34)
González Rovira, Josep Equations of hyperelliptic modular curves. (French summary) *Ann. Inst. Fourier (Grenoble)* **41** (1991), *no.* 4, 779–795. (Introduction) **93g:11064** 11G18 (11F06)
González-Ruiz, A. (*with* Ibort, Luis A.) Induction of quantum group representations. (English summary) *Phys. Lett. B* **296** (1992), *no.* 1-2, 104–108. (Andrey V. Tsiganov) **93j:17029** 17B37 (81R50)
Gonzalez-Sprinberg, Gerard (*with* Lejeune-Jalabert, Monique) Modèles canoniques plongés. I. (French summary) [Embedded canonical models. I] *Kodai Math. J.* **14** (1991), *no.* 2, 194–209. (From the introduction) **93a:14030** 14J17 (14M25)
— (*with* Bouvier, Catherine) *G*-désingularisations de variétés toriques. (English and French summaries) [*G*-desingularizations of toric varieties] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 7, 817–820. (Summary) **93h:14038** 14M25
— (*with* Campillo López, Antonio; Lejeune-Jalabert, Monique) Amas, idéaux à support fini et chaînes toriques. (English and French summaries) [Clusters, finitely supported ideals and toroidal chains] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 9, 987–990. (Summary) **93h:14001** 14B10 (14C20)
González-Vega, Laureano (*with* Cucker, Felipe; Rosselló-Llompart, Francesc) On algorithms for real algebraic plane curves. *Effective methods in algebraic geometry (Castiglioncello, 1990)*, 63–87, *Progr. Math.*, 94, *Birkhäuser Boston, Boston, MA*, 1991. (From the introduction) **93e:14067** 14Q05 (14P05)
— Une théorie des sous-résultants pour les polynômes en plusieurs variables. (English summary) [A subresultant theory for multivariate polynomials] *C. R. Acad. Sci. Paris Sér. I Math.* **313** (1991), *no.* 13, 905–908. (Maurice Mignotte) **93a:12001** 12D10 (26C10, 30C15)
— (*with* Delzell, C. N.; Lombardi, Henri) A new rational and continuous solution for the Hilbert's 17th problem. *Extracta Math.* **7** (1992), *no.* 1, 59–64. (Thomas C. Craven) **93j:12002** 12D15 (14P10)
González-Velasco, Enrique A. Connections in mathematical analysis: the case of Fourier series. *Amer. Math. Monthly* **99** (1992), *no.* 5, 427–441. (Burnett Meyer) **93c:01020** 01A55 (01A60, 01A70, 26–03, 42–03)
— (*with* Jones, Lee K.) On the range of an unbounded partly atomic vector-valued measure. *Pacific J. Math.* **154** (1992), *no.* 2, 245–251. (R. Anantharaman) **93f:28009** 28B05 (46G10)
Gonzalez-Velasco, Miguel (*with* Molina Fernández, Manuel) Modelization in *r*th order Markov chains with dependency on covariates. (English and Portuguese summaries) *Rev. Mat. Estatíst.* **9** (1991), 109–117. (Summary) **93e:62216** 62M05 (62J99)
González-Vera, Pablo (*with* Camacho Machín, M.; Pérez-Acosta, Francisco) Quadratures on the unit circle: algebraic aspects. (Spanish. English summary) *Rev. Acad. Canaria Cienc.* **1** (1990), 55–66. (Guillermo López Lagomasino) **93e:41039** 41A55 (65D32)
— (*with* Jiménez Paiz, Mateo M.) Multipoint Padé approximants and quadrature formulas. (Spanish. English summary) *Rev. Acad. Canaria Cienc.* **1** (1990), 85–97. (Guillermo López Lagomasino) **93g:41010** 41A21
— (*with* Pérez-Acosta, Francisco; Orive Rodríguez, Ramón A.) Quadrature for complex weight functions. (Spanish. English summary) *Rev. Acad. Canaria Cienc.* **1** (1990), 133–139. (Guillermo López Lagomasino) **93e:41040** 41A55 (41A21)
— (*with* Casasús Latorre, L.; González-Concepción, C.; Pérez-Acosta, Francisco) Quadrature formulas and convergence of two-point Padé approximants. *Pure Appl. Math. Sci.* **34** (1991), *no.* 1-2, 1–13. (A. J. Rodrigues) **93b:65047** 65D32 (41A21)
— (*with* Santos León, Juan C.) Stieltjes-type functions and elementary quadrature formulas. I. (English summary) *Rev. Acad. Canaria Cienc.* **3** (1991), *no.* 1, 65–74. (Summary) **93e:41041** 41A55 (65D32)
— (*with* Orive Rodríguez, Ramón A.) On a family of multivariate two-point rational approximants. *Appl. Numer. Math.* **9** (1992), *no.* 6, 493–510. (D. C. Gilles) **93b:41022** 41A21 (65D15)
— (*with* Orive Rodríguez, Ramón A.) On the convergence of bivariate two-point Padé-type approximants. (English summary) *Appl. Numer. Math.* **10** (1992), *no.* 6, 497–508. (Khr. Semerdzhiev) **93m:65020** 65D15 (32E30, 65B99)
— (*with* Bultheel, Adhemar; Hendriksen, Erik; Njåstad, Olav) The computation of orthogonal rational functions and their interpolating properties. *Numer. Algorithms* **2** (1992), *no.* 1, 85–114. (Tiberiu Constantinescu) **93d:42024** 42C05
— *see also* **Extrapolation and rational approximation, 93g:00026**
Good, I. J. The Bayes/non-Bayes compromise: a brief review. (English summary) *J. Amer. Statist. Assoc.* **87** (1992), *no.* 419, 597–606. (Summary) **93f:62005** 62A15
— Complex Fibonacci and Lucas numbers, continued fractions, and the square root of the golden ratio. *Fibonacci Quart.* **31** (1993), *no.* 1, 7–20. (Padmavathamma) **93k:11010** 11B39 (11A55)
— *see also* **Turing, A. M., 93k:01094**
Goodaire, Edgar G. (*with* Kallaher, M. J.) Systems with two binary operations, and their planes. *Quasigroups and loops: theory and applications*, 161–195, *Sigma Ser. Pure Math.*, 8, *Heldermann, Berlin*, 1990. (*see* **93g:20133**) 20N05 (51A25)
— Six Moufang loops of units. (English summary) *Canad. J. Math.* **44** (1992), *no.* 5, 951–973. (Elena Brožíková) **93k:20101** 20N05 (17D05)
Goodall, Colin (*with* Mardia, Kanti V.) The noncentral Bartlett decompositions and shape densities. *J. Multivariate Anal.* **40** (1992), *no.* 1, 94–108. (Minoru Siotani) **93e:62143** 62H10
Goodall, D. P. Stabilization of nonlinearly coupled uncertain systems. *Control '91, Vol.* 1, 2 (*Edinburgh*, 1991), 977–981, *IEE Conf. Publ. Ser.*, 332, *IEE, London*, 1991. (*see* **93h:93007**) 93D15
Goode, S. W. (*with* Coley, Alan A.; Wainwright, John) The isotropic singularity in cosmology. *Classical Quantum Gravity* **9** (1992), *no.* 2, 445–455. (Peter R. Law) **93b:83047** 83C75 (83F05)
Goodearl, K. R. ★ von Neumann regular rings. Second edition. *Robert E. Krieger Publishing Co., Inc., Malabar, FL*, 1991. xviii+412 *pp. ISBN* 0-89464-632-X (Carolyn Anne Dean) **93m:16006** 16E50
— Prime links in differential operator rings. *Quart. J. Math. Oxford Ser.* (2) **42** (1991), *no.* 168, 457–487. (Kenneth A. Brown) **93a:16020** 16P50 (16P40)
— (*with* Stafford, J. T.) Warfield in ring theory. *Abelian groups and noncommutative rings*, 11–15, *Contemp. Math.*, 130, *Amer. Math. Soc., Providence, RI*, 1992. (Editors) **93h:01058c** 01A70 (16–03)
— An unbounded localizable clique. (English summary) *Abelian groups and noncommutative rings*, 145–152, *Contemp. Math.*, 130, *Amer. Math. Soc., Providence, RI*, 1992. (Ian M. Musson) **93g:16033** 16P50 (16D30, 16U20)
— Prime ideals in skew polynomial rings and quantized Weyl algebras. (English summary) *J. Algebra* **150** (1992), *no.* 2, 324–377. (Miguel Ferrero) **93h:16051** 16S36 (16D30)
— *see also* **Abelian groups and noncommutative rings, 93d:20001**
Goodey, Paul (*with* Weil, Wolfgang) Integral geometric formulae for projection functions. *Geom. Dedicata* **41** (1992), *no.* 1, 117–126. (L. A. Santaló) **93e:52011** 52A22 (52A39)
— (*with* Weil, Wolfgang) Centrally symmetric convex bodies and the spherical Radon transform. *J. Differential Geom.* **35** (1992), *no.* 3, 675–688. (Árpád Kurusa) **93g:44005** 44A12 (52A20)
— (*with* Weil, Wolfgang) The determination of convex bodies from the mean of random sections. *Math. Proc. Cambridge Philos. Soc.* **112** (1992), *no.* 2, 419–430. (Richard A. Vitale) **93i:52008** 52A22 (52A39, 60D05)
Goodhart, S. G. (*with* Burnham, K. J.; James, D. J. G.) Self-tuning control for industrial heating plant: a bilinear approach. (English and Polish summaries) *Systems Sci.* **18** (1992), *no.* 1-2, 129–139 (1993). 93C95
Gooding, David Mathematics and method in Faraday's experiments. (English summary) *Physis Riv. Internaz. Storia Sci. (N.S.)* **29** (1992), *no.* 1, 121–147. 01A55
Goodman, A. W. Some open problems in geometric function theory. (English summary) *Univalent functions, fractional calculus, and their applications (Kōriyama, 1988)*, 49–64, *Ellis Horwood Ser. Math. Appl., Horwood, Chichester*, 1989. (Summary) **93h:30024** 30C55 (30C45, 30C50)
— Modulus monotonic functions. (Polish summary) *Ann. Univ. Mariae Curie-Skłodowska Sect. A* **44** (1990), 13–18 (1991). (Wolfram Koepf) **93c:30017** 30C45
— On uniformly convex functions. *Ann. Polon. Math.* **56** (1991), *no.* 1, 87–92. (Carl P. McCarty) **93a:30009** 30C45
— On the zeros of polynomials and some related functions. *Rocky Mountain J. Math.* **22** (1992), *no.* 1, 203–208. (Todor G. Genchev) **93d:30007** 30C15
Goodman, Frederick M. (*with* O'Hara, Kathleen M.; Stanton, Dennis) A unimodality identity for a Schur function. *J. Combin. Theory Ser. A* **60** (1992), *no.* 1, 143–146. (V. Krishnamurthy) **93f:05099** 05E05 (05E10)
Goodman, Irwin R. (*with* Nguyen, Hung T.; Walker, Elbert A.) ★ Conditional inference and logic for intelligent systems. A theory of measure-free conditioning. *North-Holland Publishing Co., Amsterdam*, 1991. viii+288 *pp. ISBN* 0-444-88685-0 (Walter Alexandre Carnielli) **93j:03015** 03B48 (03B52, 03B70, 60A99, 62A99, 68T27)
— Algebraic and probabilistic bases for fuzzy sets and the development of fuzzy conditioning. *Conditional logic in expert systems*, 1–69, *North-Holland, Amsterdam*, 1991. (Sankar Kumar Pal) **93e:68119** 68T27 (03B52, 03E72, 04A72)
— (*with* Nguyen, Hung T.; Rogers, Gerald S.) On the scoring approach to admissibility of uncertainty measures in expert systems. *J. Math. Anal. Appl.* **159** (1991), *no.* 2, 550–594. (Maria-Teresa Lamata) **93b:68084** 68T30 (03B60, 28A99)
Goodman, Jonathan (*with* Xin, Zhou Ping) Viscous limits for piecewise smooth solutions to systems of conservation laws. (English summary) *Arch. Rational Mech. Anal.* **121** (1992), *no.* 3, 235–265. (Michael Oberguggenberger) **93k:35167** 35L65 (35B25, 35K55, 35L67, 76L05)
Goodman, Leo A. Measures, models, and graphical displays in the analysis of cross-classified data. With comments and a rejoinder by the author. *J. Amer. Statist. Assoc.* **86** (1991), *no.* 416, 1085–1138. (Graham J. G. Upton) **93b:62086** 62H17 (62H20)
Goodman, M. S. (*with* Arthurs, E.) A quantum experiment uncertainty principle: a general 2nd moment uncertainty relation. (English summary) *Quantum aspects of optical communications (Paris, 1990)*, 18–26, *Lecture Notes in Phys.*, 378, *Springer, Berlin*, 1991. (Summary) **93i:81015** 81P15 (83B05)
Goodman, T. N. T. Joining rational curves smoothly. *Comput. Aided Geom. Design* **8** (1991), *no.* 6, 443–464. (Summary) **93a:65018** 65D17 (65D10, 65Y25, 68U05)
— (*with* Sharma, Ambikeshwar) A Bernstein type operator on the simplex. *Math. Balkanica (N.S.)* **5** (1991), *no.* 2, 129–145. (D. D. Stancu) **93a:41040** 41A36 (41A15, 41A25, 41A63, 65D07, 65D10)
— (*with* Micchelli, Charles A.) On refinement equations determined by Pólya frequency sequences. *SIAM J. Math. Anal.* **23** (1992), *no.* 3, 766–784. (Peter A. McCoy) **93e:41018** 41A15 (15A48, 42C15, 68U07)
— Two ways to construct a smooth piecewise rational curve. (English summary) *J. Approx. Theory* **72** (1993), *no.* 1, 69–86. (Summary) **93b:65017** 65D07 (41A15, 65D17)
— (*with* Sharma, Ambikeshwar) Factorization of totally positive, symmetric, periodic, banded matrices with applications. (English summary) *Linear Algebra Appl.* **178** (1993), 85–107. (Thomas L. Markham) **93k:15017** 15A23 (15A48)
— (*with* Lee, Seng Luan; Tang, W.-S.) Wavelets in wandering subspaces. *Trans. Amer. Math. Soc.* **338** (1993), *no.* 2, 639–654. (Dinh Dung) **93j:42017** 42C15 (41A15, 47B38)
Goodman, Ted W. Absolute continuity of vector valued functions. (Chinese summary) *J. Math. Res. Exposition* **13** (1993), *no.* 1, 1–6. 28B05 (46G10)
Goodrich, Michael T. (*with* Ó'Dúnlaing, Colm; Yap, Chee-Keng) Constructing the Voronoi diagram of a set of line segments in parallel. (English summary) *Algorithmica* **9** (1993), *no.* 2, 128–141. (Summary) **93m:68167** 68U05 (68Q22, 68Q25)
— Constructing the convex hull of a partially sorted set of points. (English summary) *Comput. Geom.* **2** (1993), *no.* 5, 267–278. (Summary) **93m:68168** 68U05 (52B55)
Goodrich, R. K. (*with* Cole, R. E.) L_p-spectral estimation with an L_∞-upper bound. (English summary) *J. Optim. Theory Appl.* **76** (1993), *no.* 2, 321–355. (N. C. Mohanty) **93m:90101** 90C45 (94A11, 94A12)
Goodson, G. R. (*with* Kwiatkowski, Jan; Lemańczyk, Mariusz; Liardet, Pierre) On the multiplicity function of ergodic group extensions of rotations. *Studia Math.* **102** (1992), *no.* 2, 157–174. (Vadim A. Kaimanovich) **93f:28015** 28D20

Goodwillie, Thomas G. The differential calculus of homotopy functors. *Proceedings of the International Congress of Mathematicians, Vol. I, II (Kyoto, 1990)*, 621–630, *Math. Soc. Japan, Tokyo*, 1991. (Roland Schwänzl) **93g:55015** 55P65 (19D10, 19D55, 55P47)

— Calculus. II. Analytic functors. *K-Theory* **5** (1991/92), *no.* 4, 295–332. (Roland Schwänzl) **93i:55015** 55P65 (18G55, 19D10, 55Q30)

Goodwin, Graham C. (*with* Mayne, David Q.; Salgado, M. E.) Uncertainty, information and estimation. (English summary) *Adaptive systems in control and signal processing, 1989 (Glasgow)*, 7–15, *IFAC Sympos. Ser.*, 1990, *No.* 1, *Pergamon, Oxford*, 1990. (*see* **93j:93007**) 93C40 (93B36, 93E10)

— (*with* Ninness, Brett; Poor, Harold Vincent) Choice of basis functions for continuous and discrete system modelling. *Identification and system parameter estimation* 1991, *Vol.* 1,2 (*Budapest*, 1991), 287–292, *IFAC Sympos. Ser.*, 3, *Pergamon, Oxford*, 1992. (*see* **93h:93009**) 93A30

— (*with* De Moor, Bart L. R.; Gevers, Michel) Overbiased, underbiased and unbiased estimation of transfer functions. (English summary) *Identification and system parameter estimation* 1991, *Vol.* 1,2 (*Budapest*, 1991), 805–810, *IFAC Sympos. Ser.*, 3, *Pergamon, Oxford*, 1992. (*see* **93h:93009**) 93B30 (93C80)

— (*with* Gevers, Michel; Mayne, David Q.) Bias and variance distribution in transfer function estimation. (English summary) *Identification and system parameter estimation* 1991, *Vol.* 1,2 (*Budapest*, 1991), 811–816, *IFAC Sympos. Ser.*, 3, *Pergamon, Oxford*, 1992. (*see* **93h:93009**) 93C20

— (*with* Gevers, Michel; Ninness, Brett) Quantifying the error in estimated transfer functions with application to model order selection. *IEEE Trans. Automat. Control* **37** (1992), *no.* 7, 913–928. (Summary) **93c:93037** 93C80 (93B36)

— (*with* Morse, A. Stephen; Mayne, David Q.) Applications of hysteresis switching in parameter adaptive control. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 9, 1343–1354. (J. M. Dion) **93h:93043** 93C40 (93C10)

— (*with* Feuer, Arie) Linear periodic control: a frequency domain viewpoint. (English summary) *Systems Control Lett.* **19** (1992), *no.* 5, 379–390. (Summary) **93f:93085** 93C62

Gooi, Kee Mein (*with* Tan, Choon Peng) Minimization of the scaled tau-infinity coefficient over a convex cone in the positive orthant. (English summary) *Optimization, Vol.* 1, 2 (*Singapore*, 1992), 114–123, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93e:90059** 90C30 (65K10)

van Gool, Frans On axiomatic nonlinear potential theory. *Potential theory (Nagoya*, 1990), 331–343, *de Gruyter, Berlin*, 1992. (Ilpo Laine) **93h:31017** 31D05

van Gool, Luc *see* **Van Gool, Luc**

Goos, Gerhard *see* **Dietrich, Roland, 93g:03009**

Goossens, Pierre Shelling pseudopolyhedra. *Discrete Comput. Geom.* **7** (1992), *no.* 2, 207–215. (Egon Schulte) **93c:52010** 52B11 (52C22)

Goovaerts, Danny (*with* Chan, Tony F. C.) On the relationship between overlapping and nonoverlapping domain decomposition methods. *SIAM J. Matrix Anal. Appl.* **13** (1992), *no.* 2, 663–670. (Summary) **93a:65170** 65N55 (65F10)

Goovaerts, M. J. (*with* De Vylder, F.) Estimation of the heterogeneity parameter in the Bühlmann-Straub credibility theory model. *Insurance Math. Econom.* **10** (1992), *no.* 4, 233–238. (Summary) **93c:62163** 62P05

— (*with* De Vylder, F.) Optimal parameter estimation under zero-excess assumptions in a classical model. (English summary) *Insurance Math. Econom.* **11** (1992), *no.* 1, 1–6. (Summary) **93h:62186** 62P05

— (*with* De Vylder, F.; Kaas, R.) Stochastic processes defined from a Lagrangian. (English summary) *Insurance Math. Econom.* **11** (1992), *no.* 1, 55–69. (Summary) **93g:60207** 60K99 (62P05)

— (*with* De Vylder, F.) A summary of new results on optimal parameter estimation under zero-excess assumptions. (English summary) *Insurance Math. Econom.* **11** (1992), *no.* 2, 153–161. (Summary) **93g:62129** 62P05

— (*with* De Vylder, F.) Optimal parameter estimation under zero excess assumptions in the Bühlmann-Straub model. (English summary) *Insurance Math. Econom.* **11** (1992), *no.* 3, 167–171. (Summary) **93j:62241** 62P05

— (*with* De Schepper, A.; De Vylder, F.; Kaas, R.) Interest randomness in annuities certain. (English summary) *Insurance Math. Econom.* **11** (1992), *no.* 4, 271–281. (Summary) **93k:62208** 62P05

— (*with* De Schepper, A.) Some further results on annuities certain with random interest. (English summary) *Insurance Math. Econom.* **11** (1992), *no.* 4, 283–290. (Summary) **93k:62209** 62P05

— (*with* De Schepper, A.; Delbaen, F.) The Laplace transform of annuities certain with exponential time distribution. (English summary) *Insurance Math. Econom.* **11** (1992), *no.* 4, 291–294. 62P05

Gopal, E. S. R. (*with* Baranidharan, S.; Sasisekharan, V.) Quasiperiodic tilings with fourfold symmetry. (English summary) *Acta Cryst. Sect. A* **48** (1992), *no.* 5, 782–784. (Hanna Nencka) **93h:52026** 52C20 (82D25)

Gopal, M. (*with* Swarup, A.) Eigenstructure assignment in robot tracking applications. (English summary) *Internat. J. Systems Sci.* **24** (1993), *no.* 6, 1017–1026. 93B55 (93C85)

Gopala Krishna, J. (*with* Subrahmanyam, K. H. S.) Some general Dirichlet series with variable coefficients and related aspects. *J. Ramanujan Math. Soc.* **6** (1991), *no.* 1-2, 89–118. (R. S. L. Srivastava) **93c:30003** 30B50

— (*with* Satyanarayana Murty, A.) Random power series in one or several complex variables, a theorem of Steinhaus and applications. *Contributions to stochastics*, 109–119, *Wiley, New York*, 1992. (*see* **93m:60007**) 30B20 (32A99, 60G99)

Gopalan, T. K. *see* **Benzécri, J.-P., 93e:62007**

Gopalsamy, K. (*with* He, Xue Zhong; Wen, Li Zhi) Global attractivity and oscillations in a periodic logistic integrodifferential equation. *Houston J. Math.* **17** (1991), *no.* 2, 157–177. (Summary) **93c:34143** 34K15 (45J05, 92D40)

— Oscillations in Lotka-Volterra systems with several delays. *J. Math. Anal. Appl.* **159** (1991), *no.* 2, 440–448. (H. A. DeKleine) **93a:34084** 34K15 (92D25)

— ★ Stability and oscillations in delay differential equations of population dynamics. Mathematics and its Applications, 74. *Kluwer Academic Publishers Group, Dordrecht*, 1992. xii+501 *pp. ISBN* 0-7923-1594-4 (Hal Leslie Smith) **93c:34150** 34K20 (34K15, 92D25)

— (*with* He, Xue Zhong; Sun, Da Qing) Oscillations in a delay logistic equation with diffusion. (English summary) *Recent trends in differential equations*, 239–252, *World Sci. Ser. Appl. Anal.*, 1, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93f:35102** 35K55

— (*with* Lalli, B. S.; Zhang, Bing Gen) Oscillation of odd order neutral differential equations. (English summary) *Czechoslovak Math. J.* **42(117)** (1992), *no.* 2, 313–323. (Yiannis Sficas) **93f:34120** 34K15 (34K40)

— (*with* Lalli, B. S.) Global attractivity and "level crossings" in a logistic integrodifferential equation. *Dynamic Systems Appl.* **1** (1992), *no.* 1, 23–50. (H. A. DeKleine) **93b:34086** 34K15 (34K20, 45J05, 45M99)

— (*with* Lalli, B. S.) Oscillatory and asymptotic behaviour of a multiplicative delay logistic equation. *Dynamics Stability Systems* **7** (1992), *no.* 1, 35–42. (Curtis C. Travis) **93c:34076** 34C10 (34K20)

Gopalsamy, S. (*with* Khandekar, Dilip; Mudur, S. P.) A new method of evaluating compact geometric bounds for use in subdivision algorithms. *Comput. Aided Geom. Design* **8** (1991), *no.* 5, 337–356. (S. Dubuc) **93b:65090** 65K10 (26D05, 65D17, 68U05)

Gopengauz, I. E. A pointwise error estimate for interpolation with multiple nodes at endpoints of an interval. (Russian) *Mat. Zametki* **51** (1992), *no.* 1, 55–61; *translation in Math. Notes* **51** (1992), *no.* 1-2, 36–40. (Ewald Quak) **93f:41006** 41A05 (41A10, 65D05)

Göpfert, A. (*with* Riedrich, T.) ★ Funktionalanalysis. (German) [Functional analysis] Third edition. Mathematik für Ingenieure, Naturwissenschaftler, Ökonomen und Landwirte [Mathematics for Engineers, Natural Scientists, Economists and Agriculturalists], 22. *B. G. Teubner Verlagsgesellschaft mbH, Stuttgart*, 1991. 136 *pp. ISBN* 3-8154-2022-9 (From the preface) **93b:46001** 46–01 (47–01)

Gopinath, R. A. (*with* Burrus, C. S.) Wavelet transforms and filter banks. *Wavelets*, 603–654, *Wavelet Anal. Appl.*, 2, *Academic Press, Boston, MA*, 1992. (A. Bultheel) **93a:94002** 94A11 (42C15, 94A05)

Gora, Jolanta Two models of a q-deformed hydrogen atom. (English summary) *J. Phys. A* **25** (1992), *no.* 23, L1281–L1285. (Summary) **93j:81113** 81V45 (81R50)

Góra, P. (*with* Boyarsky, A.) Modelling and simulating higher-dimensional chaotic data. (English summary) *Comput. Math. Appl.* **24** (1992), *no.* 11, 101–105. (Hans-Peter Herzel) **93h:58097** 58F13

— (*with* Boyarsky, A.) A dynamical system model for interference effects and the two-slit experiment of quantum physics. (English summary) *Phys. Lett. A* **168** (1992), *no.* 2, 103–112. (Summary) **93d:81015** 81P15 (58F99)

— (*with* Boyarsky, A.) A matrix solution to the inverse Perron-Frobenius problem. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 2, 409–414. (Remo Badii) **93g:58079** 58F11 (28D05)

Goralčík, P. (*with* Crochemore, M.) Mutually avoiding ternary words of small exponent. *Internat. J. Algebra Comput.* **1** (1991), *no.* 4, 407–410. (Jorge Almeida) **93c:05017** 05A99 (20M05, 68R15)

Goranko, Valentin (*with* Passy, Solomon) Using the universal modality: gains and questions. *J. Logic Comput.* **2** (1992), *no.* 1, 5–30. (S. K. Thomason) **93h:03016** 03B45 (03B25)

Gorbachĕv, N. V. (*with* Bolotnik, N. N.; Shukhov, A. G.) Combined suboptimal control of an electromechanical system. *J. Comput. Systems Sci. Internat.* **31** (1993), *no.* 1, 143–153; *translated from Izv. Akad. Nauk SSSR Tekhn. Kibernet.* **1991,** *no.* 6, 192–202 (*Russian. Russian summary*). 93C95

Gorbachev, O. G. (*with* Grebenshchikov, A. Yu.) Fast decision-making algorithms which use multidimensional data and limited-size training samples. *J. Comput. Systems Sci. Internat.* **30** (1992), *no.* 5, 87–96; *translated from Izv. Akad. Nauk SSSR Tekhn. Kibernet.* **1991,** *no.* 4, 91–102 (*Russian. Russian summary*). (Summary) **93g:90008** 90A05

Gorbachuk, M. L. (*with* Denche, M.) Boundary values of biharmonic functions. (Russian. Russian summary) *Boundary value problems for operator-differential equations (Russian)*, 15–20, *Akad. Nauk Ukrainy, Inst. Mat., Kiev*, 1991. (Summary) **93h:35051** 35J15 (31B30)

— *see also* **Boundary value problems for operator-differential equations, 93e:00017** *and* **Boundary value problems for differential equations, 93m:00018**

Gorbachuk, O. L. On the behavior of solutions of an evolution equation with a selfadjoint operator. (Ukrainian. Russian summary) *Visnik L'vîv. Derzh. Univ. Ser. Mekh.-Mat. No.* 30 (1988), 67–69, 79. 34G10

— Behavior at infinity of the solution of an evolution equation with a normal operator. (Ukrainian) *Visnik L'vîv. Derzh. Univ. Ser. Mekh.-Mat. No.* 32 (1989), 63–65. 34G10

— (*with* Onishchuk, V. A.) Stable torsions of simple type. (Ukrainian) *Visnik L'vîv. Univ. Ser. Mekh. Mat. No.* 34 (1990), 75–76. 16S90

— (*with* Priima, S. S.) Finite rings and torsions over them. (Ukrainian) *Visnik L'vîv. Univ. Ser. Mekh. Mat. No.* 34 (1990), 77–80. 13M05

— (*with* Yakons'ka, N. O.) Existence of the Cesàro limit of a bounded solution of an evolution equation in a Banach space. (Ukrainian. Russian and Ukrainian summaries) *Ukraïn. Mat. Zh.* **44** (1992), *no.* 9, 1279–1280. (Summary) **93k:34136** 34G10 (34C99, 47D06, 47N20)

Gorban', A. N. (*with* Bykov, V. I.; Verbitskiĭ, V. I.) On an estimate for the solution of the Cauchy problem with inexactly specified initial data and right-hand side. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* **1991,** *no.* 12, 5–8; *translation in Soviet Math. (Iz. VUZ)* **35** (1991), *no.* 12, 4–7. (From the text) **93j:34004** 34A12 (34A45, 34D10)

— (*with* Karlin, I. V.) Thermodynamic parameterization. (English summary) *Phys. A* **190** (1992), *no.* 3-4, 393–404. (A. D. Khon'kin) **93m:82040** 82C40

— (*with* Verbitskiĭ, V. I.) Jointly dissipative operators and their applications. (Russian) *Sibirsk. Mat. Zh.* **33** (1992), *no.* 1, 26–31, 218; *translation in Siberian Math. J.* **33** (1992), *no.* 1, 19–23. (Jaroslav Zemánek) **93g:47044** 47B44 (15A60, 47A13, 47D03)

Gorbar, E. V. (*with* Gusynin, V. P.; Roman'kov, V. V.) Heat kernel expansion for nonminimal differential operators and manifolds with torsion. *Nuclear Phys. B* **362** (1991), *no.* 1-2, 449–471. (Akira Asada) **93a:58161** 58G11 (58G18)

— (*with* Gusynin, V. P.) Local heat kernel asymptotics for nonminimal differential operators. *Phys. Lett. B* **270** (1991), *no.* 1, 29–36. (Akira Asada) **93a:58166** 58G18 (58G11, 81T20)

Gorbatsevich, V. V. On the cohomology of compact homogeneous spaces with a discrete stationary subgroup. (Russian) *Problems in group theory and homological algebra (Russian)*, 107–123, *Matematika, Yaroslav. Gos. Univ., Yaroslavl'*, 1990. (O. V. Shvartsman) **93g:22012** 22E41

— The structure of homogeneous spaces with a finite invariant metric. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* **1991,** *no.* 7, 66–68; *translation in Soviet Math. (Iz. VUZ)* **35** (1991), *no.* 7, 61–64. (O. Kowalski) **93d:53059** 53C30

— Contractions and degenerations of finite-dimensional algebras. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* **1991**, *no.* 10, 19–27; *translation in Soviet Math. (Iz. VUZ)* **35** (1991), *no.* 10, 17–24. (M. Stefănescu) **93h:17007** 17A30 (17A15)
— A criterion for the completeness of subgroups of finite covolume in a Lie group. (Russian) *Mat. Zametki* **50** (1991), *no.* 6, 52–56, 157; *translation in Math. Notes* **50** (1991), *no.* 5-6, 1250–1253 (1992). (O. V. Shvartsman) **93f:22006** 22E15 (22E40)
— On some cohomology invariants of compact homogeneous manifolds. *Lie groups, their discrete subgroups, and invariant theory*, 69–85, *Adv. Soviet Math.*, 8, *Amer. Math. Soc., Providence, RI*, 1992. (Samuel Evens) **93b:57041** 57T15 (57T20)
Gorbenko, N. I. Convergence of the Stone method for equations of charge transfer in semiconductor devices. (Russian. Russian summary) *Model. Mekh.* **5** (1991), *no.* 1, 17–30. (From the text) **93m:78001** 78–08 (82D99)
Gorbunov, A. K. (*with* Pinsker, M. S.) Asymptotics of epsilon entropy without anticipation of Gaussian processes. (Russian) *Problemy Peredachi Informatsii* **27** (1991), *no.* 4, 100–104; *translation in Problems Inform. Transmission* **27** (1991), *no.* 4, 361–365 (1992). (Summary) **93a:94014** 94A17 (94A12)
Gorbunov, K. Yu. A recursively enumerable family of context-free grammars that generates the class of unambiguous languages does not exist. (Russian) *Mat. Zametki* **50** (1991), *no.* 1, 34–40, 158; *translation in Math. Notes* **50** (1991), *no.* 1-2, 683–687 (1992). (Jürgen Dassow) **93f:03026** 03D05 (68Q50)
Gorbunov, V. G. Estimation of the order of nilpotence of the torsion elements of the symplectic cobordism ring. (Russian. Russian summary) *Mat. Zametki* **52** (1992), *no.* 5, 26–32, 141; *translation in Math. Notes* **52** (1992), *no.* 5-6, 1097–1101 (1993). (P. S. Landweber) **93k:55007** 55N22 (57R90)
— (*with* Ray, Nigel) Orientations of Spin bundles and symplectic cobordism. *Publ. Res. Inst. Math. Sci.* **28** (1992), *no.* 1, 39–55. (Andrew J. Baker) **93e:55008** 55N22 (57R15)
Gorbuntsov, V. V. Classification of solutions of problems of optimization of discrete stationary processes based on diodes. (Russian) *Permanents: theory and applications (Russian)*, 17–30, *Krasnoyarsk. Politekhn. Inst., Krasnoyarsk*, 1990. (*see* **93b:00018**) 90C35
Gorbuzov, V. N. (*with* Tyshchenko, V. Yu.) Particular integrals of total differential systems. (Russian) *Differentsial'nye Uravneniya* **27** (1991), *no.* 10, 1819–1822, 1839. (Summary) **93b:34010** 34A09
— (*with* Tyshchenko, V. Yu.) Particular integrals of systems of ordinary differential equations. (Russian. Russian summary) *Mat. Sb.* **183** (1992), *no.* 3, 76–94; *translation in Russian Acad. Sci. Sb. Math.* **75** (1993), *no.* 2, 353–369. (Alexander A. Samodurov) **93h:34004** 34A05 (34C05)
Gorchakov, Yu. M. On the number of monotone functions. (Russian) *Constructions in algebra and logic (Russian)*, 22–24, *Tver. Gos. Univ., Tver'*, 1990. (*see* **93m:00021**) 03B50
— *see also* **Constructions in algebra and logic**, **93m:00021**
Gordeev, L. Quasi-ordinals and proof theory. *Graph structure theory (Seattle, WA*, 1991), 485–494, *Contemp. Math.*, 147, *Amer. Math. Soc., Providence, RI*, 1993. (*see* **93m:05004**) 03F15 (06A06)
Gordeev, Yu. N. A nonstationary problem on a plane hydraulic extension fissure of a fluid-saturated stratum. (Russian) *Prikl. Mat. Mekh.* **55** (1991), *no.* 1, 100–108; *translation in J. Appl. Math. Mech.* **55** (1991), *no.* 1, 78–85 (1992). (M. Mişicu) **93a:73068** 73N20 (73M25, 76S05)
— A disk-shaped crack from hydraulic fracture in a poroelastic medium. (Russian. Russian summary) *Prikl. Mat. Mekh.* **56** (1992), *no.* 2, 268–274; *translation in J. Appl. Math. Mech.* **56** (1992), *no.* 2, 229–235. (From the text) **93g:73098** 73M25 (73K70, 73V35, 76S05)
etayo Gordejuela, Fernando *see* **Etayo Gordejuela, Fernando**
Gordienko, E. I. An estimate of the stability of optimal control of certain stochastic and deterministic systems. Stability problems for stochastic models. *J. Soviet Math.* **59** (1992), *no.* 4, 891–899. (Introduction) **93e:49038** 49K40 (49K45, 93E20)
Gordinskii, L. D. (*with* Belov, Yu. A.; Kutniv, M. V.) Numerical modeling of proton · transfer in systems with a hydrogen bond. (Russian. English and Russian summaries) *Dokl. Akad. Nauk Ukrainy* **1992**, *no.* 10, 19–23, 169. (Summary) **93h:81151** 81V55 (81–08)
Gordoa, P. R. (*with* Estévez, P. G.) Painlevé test and solutions for the general anharmonic oscillator with variable damping. (English summary) *Nonlinear evolution equations and dynamical systems (Baia Verde*, 1991), 297–302, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93i:35145** 35Q72 (34A20, 34C15)
Gordon, A. Ya. (*with* Molchanov, S. A.; Tsagani, B.) Spectral theory of one-dimensional Schrödinger operators with strongly fluctuating potentials. (Russian) *Funktsional. Anal. i Prilozhen.* **25** (1991), *no.* 3, 89–92; *translation in Functional Anal. Appl.* **25** (1991), *no.* 3, 236–238 (1992). (From the text) **93a:34097** 34L40 (34F05, 34L05, 47E05, 47N50, 81Q10)
— Exceptional values of the boundary phase for the Schrödinger equation on the semi-axis. (Russian) *Uspekhi Mat. Nauk* **47** (1992), *no.* 1(283), 211–212; *translation in Russian Math. Surveys* **47** (1992), *no.* 1, 260–261. (P. A. Mishnayevskiy) **93h:34146** 34L40 (34B20, 34B24, 34F05)
Gordon, B. Brent Canonical models of Picard modular surfaces. *The zeta functions of Picard modular surfaces*, 1–29, *Univ. Montréal, Montreal, PQ*, 1992. (Min Ho Lee) **93a:14023** 14G35 (11G18)
— Algebraic cycles and the Hodge structure of a Kuga fiber variety. *Trans. Amer. Math. Soc.* **336** (1993), *no.* 2, 933–947. (V. Kumar Murty) **93f:14003** 14C30 (14C25, 14F20, 14K30)
Gordon, C. *see* **Gordon, Carolyn S.**
Gordon, Cameron McA. Dehn surgery on knots. *Proceedings of the International Congress of Mathematicians, Vol. I, II (Kyoto*, 1990), 631–642, *Math. Soc. Japan, Tokyo*, 1991. (Charles Livingston) **93e:57006** 57M25 (57M99, 57N10)
Gordon, Carl E. (*with* Killgrove, Ray; Tamez, Rodolfo) Local motions using 5-arcs. Proceedings of the Twenty-first Southeastern Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, FL, 1990). *Congr. Numer.* **79** (1990), 101–118. (From the introduction) **93g:51011** 51E21
— (*with* Killgrove, Ray; Sternfeld, Robert; Tamez, Rodolfo; Koster, David; Wilkens, John) Local motions in sets of MOLS. Proceedings of the Twenty-second Southeastern Conference on Combinatorics, Graph Theory, and Computing (Baton Rouge, LA, 1991). *Congr. Numer.* **83** (1991), 97–113. (J. Dénes) **93c:05029** 05B15
— Orbits of arcs in PG(N, K) under projectivities. *Geom. Dedicata* **42** (1992), *no.* 2, 187–203. (Massimo de Finis) **93f:51014** 51E21
Gordon, Carolyn S. (*with* DeTurck, Dennis; Gluck, Herman; Webb, David L.) How can a drum change shape, while sounding the same? *Differential geometry*, 111–122, *Pitman Monographs Surveys Pure Appl. Math.*, 52, *Longman Sci. Tech., Harlow*, 1991. (Robert Brooks) **93f:58236** 58G25 (53C20)
— (*with* DeTurck, Dennis; Gluck, Herman; Webb, David L.) How can a drum change shape, while sounding the same? II. *Mechanics, analysis and geometry: 200 years after Lagrange*, 335–358, *North-Holland Delta Ser., North-Holland, Amsterdam*, 1991. (Robert Brooks) **93f:58237** 58G25 (53C20)
— You can't hear the shape of a manifold. *New developments in Lie theory and their applications (Córdoba*, 1989), 129–146, *Progr. Math.*, 105, *Birkhäuser Boston, Boston, MA*, 1992. (Dennis M. DeTurck) **93m:58113** 58G25 (53C30)
— (*with* DeTurck, Dennis; Gluck, Herman; Webb, David L.) Conformal isospectral deformations. *Indiana Univ. Math. J.* **41** (1992), *no.* 1, 99–107. (Robert Brooks) **93c:58218** 58G25 (58G30)
— (*with* Webb, David L.; Wolpert, Scott A.) Isospectral plane domains and surfaces via Riemannian orbifolds. *Invent. Math.* **110** (1992), *no.* 1, 1–22. (Robert Brooks) **93h:58172** 58G99
— (*with* DeTurck, Dennis; Gluck, Herman; Webb, David L.) The inaudible geometry of nilmanifolds. (English summary) *Invent. Math.* **111** (1993), *no.* 2, 271–284. (Robert Brooks) **93k:58222** 58G25
Gordon, Daniel M. Percolation in high dimensions. *J. London Math. Soc.* (2) **44** (1991), *no.* 2, 373–384. (G. R. Grimmett) **93d:60166** 60K35 (05C80)
— (*with* Pomerance, Carl) Corrigendum: "The distribution of Lucas and elliptic pseudoprimes" [Math. Comp. **57** (1991), no. 196, 825–838; MR 92h:11081]. *Math. Comp.* **60** (1993), *no.* 202, 877. (Editors) **93h:11108** 11N80 (11B39, 11G05, 11Y11)
— (*with* Grant, David) Computing the Mordell-Weil rank of Jacobians of curves of genus two. *Trans. Amer. Math. Soc.* **337** (1993), *no.* 2, 807–824. (Philippe Satgé) **93h:11057** 11G10 (11G30, 14H25, 14K15)
Gordon, E. I. The concept of relative standardness and Benninghofen-Richter π-monads. (Russian) *Optimizatsiya No.* 48(65) (1990), 58–62. (Žarko Mijajlović) **93g:03054** 03H05 (54J05)
Gordon, Jean (*with* Shortliffe, Edward H.) A method for managing evidential reasoning in a hierarchical hypothesis space: a retrospective. *Artificial Intelligence* **59** (1993), *no.* 1-2, 43–47. 68–03 (68T35)
Gordon, Jesse M. Analysis of minimal path routing schemes in the presence of faults. (English summary) *Discrete Appl. Math.* **37/38** (1992), 245–263. (A. A. Chernyak) **93f:94031** 94C12 (68M15)
Gordon, Jonathan (*with* Edgar, Hugh; Zhang, Liang Cheng) On unit solutions of the equation $xyz = x + y + z$ in totally imaginary quartic fields. *J. Number Theory* **40** (1992), *no.* 3, 255–263. (R. A. Mollin) **93b:11040** 11D72 (11R11, 11R16)
Gordon, Kenneth S. Finding mathematical patterns in chaos. (English summary) *Internat. J. Math. Ed. Sci. Tech.* **24** (1993), *no.* 2, 197–208. 58F13
Gordon, Robert G-categories. *Mem. Amer. Math. Soc.* **101** (1993), *no.* 482, xvi+129 *pp.* (R. H. Street) **93f:18003** 18A35 (18A40, 18B25, 18C15, 18D05, 18E05)
Gordon, Russell A. Riemann tails and the Lebesgue and Henstock integrals. *Real Anal. Exchange* **17** (1991/92), *no.* 2, 789–795. (J. Jarník) **93f:26004** 26A39
Gordon, V. S. Minimization of the cost connected with variable discrete deadlines in a problem of scheduling theory with one device. (Russian. Russian summary) *Avtomat. i Telemekh.* **1992**, *no.* 2, 105–112; *translation in Automat. Remote Control* **53** (1992), *no.* 2, *part* 2, 239–244. (Summary) **93f:90072** 90B22
— Parallel algorithms for solving problems in scheduling theory. (Russian. Russian summary) *Avtomat. i Telemekh.* **1992**, *no.* 5, 97–106; *translation in Automat. Remote Control* **53** (1992), *no.* 5, *part* 2, 710–717. (Summary) **93f:90089** 90B35 (65K10, 65Y05)
Gordon, Yehoram Majorization of Gaussian processes and geometric applications. *Probab. Theory Related Fields* **91** (1992), *no.* 2, 251–267. (Qi Man Shao) **93a:60059** 60G15 (60E15)
Górecki, J. (*with* Kawczyński, A. L.; Frankowicz, M.) Molecular dynamics simulations of oscillations in thermochemical systems. *Stochastic methods in experimental sciences (Szklarska Poręba*, 1989), 167–187, *World Sci. Publishing, River Edge, NJ*, 1990. (*see* **93a:60004**) 82C99 (82–04)
Gorelic, Isaac The Baire category and forcing large Lindelöf spaces with points G_δ. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 2, 603–607. (Krzysztof Ciesielski) **93g:03046** 03E35 (03E50, 54A25, 54A35)
Gorelik, G. E. The first steps of quantum gravity and the Planck values. (French summary) *Studies in the history of general relativity (Luminy*, 1988), 367–382, 461, *Einstein Stud.*, 3, *Birkhäuser Boston, Boston, MA*, 1992. (Markku Lehto) **93k:01050** 01A60 (83–03)
Gorelik, V. A. (*with* Gorelov, M. A.; Kononenko, A. F.) ★ Анализ конфликтных ситуаций в системах управления. (Russian) [Analysis of conflict situations in control systems] *"Radio i Svyaz'", Moscow*, 1991. 288 *pp. ISBN* 5-256-00367-4 (Jacek B. Krawczyk) **93c:93002** 93–02 (49J52, 90D25, 90D50, 93A13)
— (*with* Alutina, E. F.) The discrete maximum principle in dynamic multicriterial problems. (Russian. Russian summary) *Decomposition and optimization in complex systems (Russian)*, 3–13, 77, *Akad. Nauk SSSR, Vychisl. Tsentr, Moscow*, 1991. (*see* **93c:49002**) 49K15 (90C29)
— (*with* Fomina, T. P.) Turnpike properties for a two-sector model with a nonsmooth functional. (Russian. Russian summary) *Decomposition and optimization in complex systems (Russian)*, 14–26, 77, *Akad. Nauk SSSR, Vychisl. Tsentr, Moscow*, 1991. (*see* **93c:49002**) 90A16
— (*with* Rulev, G. V.) A conversion model. (Russian. Russian summary) *Decomposition and optimization in complex systems (Russian)*, 27–35, 77, *Akad. Nauk SSSR, Vychisl. Tsentr, Moscow*, 1991. (*see* **93c:49002**) 90A14
Gorelishvili, Albert On Alexandrov lattices. (English summary) *Internat. J. Math. Math. Sci.* **16** (1993), *no.* 1, 49–59. (Summary) **93m:28006** 28A33 (28C15, 46E27, 46G12)
Gorelov, A. S. (*with* Filatov, A. N.) Inertial manifolds of barotropic atmosphere equations. (Russian) *Dokl. Akad. Nauk SSSR* **318** (1991), *no.* 6, 1355–1358; *translation in Soviet Phys. Dokl.* **36** (1991), *no.* 6, 439–440. (From the text) **93d:35168** 35Q99 (76C05, 86A10)
— (*with* Filatov, A. N.) Inertial manifolds for equations of barotropic atmosphere. *Russian J. Numer. Anal. Math. Modelling* **7** (1992), *no.* 1, 25–43. (Piotr Biler) **93f:35182** 35Q35 (58F39, 76D99, 76U05)

Gorelov, M. A. (*with* Gorelik, V. A.; Kononenko, A. F.) ★ Анализ конфликтных ситуаций в системах управления. (Russian) [Analysis of conflict situations in control systems] "*Radio i Svyaz*", *Moscow*, 1991. 288 *pp. ISBN* 5-256-00367-4 (Jacek B. Krawczyk) **93c:93002** 93–02 (49J52, 90D25, 90D50, 93A13)

Gorenflo, Rudolf (*with* Đặng Đình Áng) A nonlinear Abel integral equation. (English summary) *Optimal control of partial differential equations* (*Irsee*, 1990), 26–37, *Lecture Notes in Control and Inform. Sci.*, 149, *Springer, Berlin*, 1991. (H. Brunner) **93g:45005** 45E10 (45D05)

— (*with* Pfeiffer, Andreas) On analysis and discretization of nonlinear Abel integral equations of first kind. *Acta Math. Vietnam.* **16** (1991), *no.* 2, 211–262. (Summary) **93f:45019** 45L05 (65R20)

Gorenstein, Daniel *see* **Aschbacher, Michael, 93m:01053**

Goresky, R. Mark (*with* Brasselet, Jean-Paul; MacPherson, Robert D.) Simplicial differential forms with poles. *Amer. J. Math.* **113** (1991), *no.* 6, 1019–1052. (Michael M. Kapranov) **93f:58002** 58A10 (55N33, 57Q99)

— L^2-cohomology is intersection cohomology. *The zeta functions of Picard modular surfaces*, 47–63, *Univ. Montréal, Montreal, PQ*, 1992. (From the text) **93m:32046** 32M15 (14F32, 22E30, 32–02)

— (*with* MacPherson, Robert D.) Lefschetz numbers of Hecke correspondences. *The zeta functions of Picard modular surfaces*, 465–478, *Univ. Montréal, Montreal, PQ*, 1992. (Joe Repka) **93g:22010** 22E30 (11F72, 11F75, 57T15)

Gorgula, V. I. (*with* Nagnibida, N. I.; Nastasiev, P. P.) Some methods for studying systems of functions for completeness and the basis property. (Ukrainian. Russian and Ukrainian summaries) *Visnik Kiïv. Univ. Mat. Mekh. No.* 32 (1990), 86–92. (Summary) **93f:46035** 46E22

Gori, L. *see* **Gori Nicolò-Amati, Laura**

Goriely, Alain Investigation of Painlevé property under time singularities transformations. *J. Math. Phys.* **33** (1992), *no.* 8, 2728–2742. (Franco Magri) **93h:58141** 58F37 (34A34)

Gorin, E. A. (*with* Krasnosel'skii, M. A.; Kuznetsov, N. A.) Theorems on equiconvergence for nonparametric identification algorithms. (Russian) *Dokl. Akad. Nauk* **326** (1992), *no.* 2, 237–240; *translation in Soviet Phys. Dokl.* 37 (1992), *no.* 9, 448–449 (1993). (Rudolf Kulhavý) **93k:93031** 93B30

Gorin, V. V. (*with* Dargeiko, M. M.) Investigation of the feasibility of calculating the motion of a dynamic system without loss of accuracy. *Soviet J. Automat. Inform. Sci.* **24** (1991), *no.* 3, 61–66 (1992); *translated from Avtomatika* **1991**, *no.* 3, 62–68, 97 (*Russian. English summary*). (Inge Troch) **93g:00020** 00A71 (34A45, 60J99, 65L99, 93C41)

— (*with* Burdo, O. S.; Dargeiko, M. M.) On the error estimation problem in determining location in inertial navigation problems. (Russian. Russian summary) *Kibernet. i Vychisl. Tekhn. No.* 95 (1992), 68–73. (Summary) **93k:70038** 70Q05 (70–08, 70D05)

Gori N. Amati, Laura *see* **Gori Nicolò-Amati, Laura**

Gorinevskii, D. M. Approximate solution of the inverse problem of control of a linear object and a quadratically optimal program. *J. Comput. Systems Sci. Internat.* **30** (1992), *no.* 6, 6–23; *translated from Izv. Ross. Akad. Nauk Tekhn. Kibernet.* **1992,** *no.* 1, 57–75 (*Russian. Russian summary*). (Hans Benker) **93j:49036** 49N10 (49M25, 49N50)

Gori Nicolò-Amati, Laura (*with* Santi, Elisabetta) On a method of approximation by means of spline functions. *Approximation, optimization and computing*, 41–46, *North-Holland, Amsterdam*, 1990. (R. Barrar) **93e:41019** 41A15

— On a quadrature process of Birkhoff type. (Italian summary) *Rend. Mat. Appl.* (7) **11** (1991), *no.* 4, 893–903. (Helmut Brass) **93b:41035** 41A55 (65D30)

Goritskii, A. Yu. (*with* Chepyzhov, V. V.) Unbounded attractors of evolution equations. *Properties of global attractors of partial differential equations*, 85–128, *Adv. Soviet Math.*, 10, *Amer. Math. Soc., Providence, RI*, 1992. (*see* **93i:58102**) 58F12 (34G20, 35K22, 58F39)

Gorjainov, V. V. *see* **Goryainov, V. V.**

Gorkin, Pamela Algebras of bounded functions on the disc. *Function spaces* (*Edwardsville, IL*, 1990), 155–167, *Lecture Notes in Pure and Appl. Math.*, 136, *Dekker, New York*, 1992. (Daniel H. Luecking) **93b:46104** 46J15 (46J10)

Gorlenko, S. V. (*with* Alikulov, È. O.) Analyticity of functions with rectilinear monogeneity sets. (Russian. Russian summary) *Akad. Nauk Ukrainy Inst. Mat. Preprint* **1992,** *no.* 29, 11 *pp.* 30A05 (30G30)

Gorman, Arthur D. (*with* Rask, Badih J.) On caustics associated with horizontal rays and vertical modes. *Wave Motion* **14** (1991), *no.* 4, 321–332. (Vadim D. Kryakvin) **93a:76089** 76Q05 (35C20, 35L05)

Gorman, N. (*with* McGettrick, M.; McGlinn, W. D.; O'Raifeartaigh, Lochlainn) Virasoro operators for arbitrarily twisted Kac-Moody algebras. *Internat. J. Modern Phys. A* **7** (1992), *no.* 11, 2547–2558. (Yu Ting Jia) **93c:17043** 17B67 (17B40, 81R10)

Gorni, Gianluca (*with* Zampieri, Gaetano) On the Jacobian conjecture for global asymptotic stability. *J. Dynamics Differential Equations* **4** (1992), *no.* 1, 43–55. (George Karakostas) **93a:34063** 34D20

Górnicki, Jarosław Fixed points of asymptotically regular mappings in spaces with uniformly normal structure. *Comment. Math. Univ. Carolin.* **32** (1991), *no.* 4, 639–643. (Summary) **93b:47118** 47H10

— (*with* Krüppel, Manfred) Fixed point theorems for mappings with Lipschitzian iterates. *Nonlinear Anal.* **19** (1992), *no.* 4, 353–363. (Paolo M. Soardi) **93i:47086** 47H10 (47H09)

Górniewicz, Lech (*with* Granas, Andrzej; Kryszewski, Wojciech) On the homotopy method in the fixed point index theory of multi-valued mappings of compact absolute neighborhood retracts. *J. Math. Anal. Appl.* **161** (1991), *no.* 2, 457–473. (M. van de Vel) **93e:55005** 55M20 (47H10, 54C60, 54H25)

— (*with* Bielawski, R.; Plaskacz, Sławomir) Topological approach to differential inclusions on closed subset of $\mathbf{R}^n$. *Dynamics reported: expositions in dynamical systems*, 225–250, *Dynam. Report.* (*N.S.*), 1, *Springer, Berlin*, 1992. (A. Averna) **93c:34040** 34A60 (34C25, 49J24)

— (*with* Kryszewski, Wojciech) Topological degree theory for acyclic mappings related to the bifurcation problem. (Italian summary) *Boll. Un. Mat. Ital. B* (7) **6** (1992), *no.* 3, 579–595. (Christian Fenske) **93k:58030** 58C30 (47H11, 58E07)

— (*with* Slosarski, Miroslaw) Topological essentiality and differential inclusions. *Bull. Austral. Math. Soc.* **45** (1992), *no.* 2, 177–193. (V. V. Obukhovskii) **93d:47095** 47H04 (34A60, 34B15, 34K10, 47H15, 47N20, 49J24, 54C60)

Görnitz, Thomas (*with* von Weizsäcker, Carl-Friedrich) Steps in the philosophy of quantum theory. (English summary) *Differential geometry, group representations, and quantization*, 265–280, *Lecture Notes in Phys.*, 379, *Springer, Berlin*, 1991. (*see* **93c:81004**) 81P05 (00A30)

— The role of para-Bose-statistics in making abstract quantum theory concrete. *Symmetries in science, V* (*Lochau*, 1990), 279–292, *Plenum, New York*, 1991. (S. Gudder) **93a:81012** 81P05 (81P10, 81S05)

— (*with* Graudenz, Dirk; von Weizsäcker, Carl-Friedrich) Quantum field theory of binary alternatives. (English summary) *Internat. J. Theoret. Phys.* **31** (1992), *no.* 11, 1929–1959. (S. Gudder) **93k:81016** 81P10 (81R05, 81T05)

Gornowicz, Michelle C. (*with* Godbole, Anant P.) Exact and approximate runs distributions. (English summary) *Comm. Statist. Theory Methods* **21** (1992), *no.* 8, 2151–2167. (M. P. Quine) **93m:60026** 60C05 (60F05)

Gorodetskii, M. B. Inversion of quasitriangular block Toeplitz matrices. Sixth Haifa Conference on Matrix Theory (Haifa, 1990). *Linear Algebra Appl.* **167** (1992), 119–130. (A. Böttcher) **93a:15010** 15A15 (15A09)

Gorodetskii, V. V. (*with* Nagnibida, N. I.; Nastasiev, P. P.) ★ Методы решения задач по функциональному анализу. (Russian) [Methods for solving problems in functional analysis] "*Vyshcha Shkola*", *Kiev*, 1990. 480 *pp. ISBN* 5-11-002126-0 (G. M. Ustinov) **93c:46001** 46–01 (00A07, 47–01)

— Polynomial representation of solutions of operator-differential equations of hyperbolic type in a Hilbert space. (Russian) *Differentsial'nye Uravneniya* **27** (1991), *no.* 6, 941–947, 1098; *translation in Differential Equations* **27** (1991), *no.* 6, 656–660. (A. Szép) **93c:34128** 34G10 (34A45, 35L15, 47N20)

— Representation of solutions of operator-differential equations of hyperbolic type in polynomial form. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* **1991,** *no.* 11, 87–89 (1992); *translation in Soviet Math.* (*Iz. VUZ*) **35** (1991), *no.* 11, 86–88. (Alexei I. Filinkov) **93j:34084** 34G10 (34A12)

— (*with* Zhitaryuk, I. V.) On the solvability of the Cauchy problem for evolution equations of parabolic type with degeneration in some spaces. (Russian. Russian summary) *Differentsial'nye Uravneniya* **28** (1992), *no.* 8, 1373–1381, 1469; *translation in Differential Equations* **28** (1992), *no.* 8, 1118–1125 (1993). (Georgii A. Sviridyuk) **93m:34085** 34G10 (35K65)

— (*with* Litovchenko, V. A.) The Cauchy problem for parabolic pseudodifferential equations in spaces of generalized functions of type S'. (Russian. English and Russian summaries) *Dokl. Akad. Nauk Ukrainy* **1992,** *no.* 10, 6–9, 169. (Summary) **93i:35162** 35S10 (35K45, 46F10, 47N20)

Gorodetsky, Michael *see* **Gorodetskii, M. B.**

Gorodnii, M. F. Approximation of the bounded solution of a difference equation by solutions of the corresponding boundary value problems in a Banach space. (Russian) *Mat. Zametki* **51** (1992), *no.* 4, 17–22, 139; *translation in Math. Notes* **51** (1992), *no.* 3-4, 338–341. (V. G. Kurbatov) **93d:39003** 39A10 (47B39, 47N99)

Gorodski, Claudio Closed minimal hypersurfaces in compact symmetric spaces. (English summary) *Internat. J. Math.* **3** (1992), *no.* 5, 629–651. (O. Kowalski) **93k:53051** 53C35 (53C40, 53C42)

Gorodtsov, V. A. Collapse of asymmetric perturbations in a stratified fluid. *Fluid Dynamics* **26** (1991), *no.* 6, 834–840 (1992); *translated from Izv. Akad. Nauk SSSR Mekh. Zhidk. Gaza* **1991,** *no.* 6, 51–58 (*Russian*). (Summary) **93b:76087** 76V05

— A ball in an ideal uniformly stratified medium. (Russian. Russian summary) *Gidromekh.* (*Kiev*) *No.* 65 (1992), 23–29. (Summary) **93i:76095** 76V05 (76C10)

— High-velocity asymptotics of the drag of bodies in a waveguide layer of inhomogeneous fluids. (Russian. Russian summary) *Prikl. Mat. Mekh.* **56** (1992), *no.* 2, 260–267; *translation in J. Appl. Math. Mech.* **56** (1992), *no.* 2, 222–228. (From the text) **93g:76110** 76V05 (76C10)

Goroff, Daniel L. *see* **Poincaré, Henri, 93j:01016a; 93j:01016b** *and* **93j:01016c**

Gorokhovik, V. V. (*with* Zor'ko, O. I.) Polyhedral quasidifferentiability of real-valued functions. (Russian. English and Russian summaries) *Dokl. Akad. Nauk Belarusi* **36** (1992), *no.* 5, 393–397, 476. (Summary) **93i:49022** 49J52 (26B05, 46G05, 58C20, 90C31)

Gorostiza, Luis G. (*with* Fernández, Begoña) Hydrodynamic and fluctuation limits of branching particle systems with changes of mass. *Bol. Soc. Mat. Mexicana* (2) **35** (1990), *no.* 1, 25–37. (Gail Ivanoff) **93f:60066** 60G57 (60F17)

— (*with* León, Jorge A.) A stochastic Fubini theorem and equivalence of extended solutions of stochastic evolution equations in Hilbert space. *Random partial differential equations* (*Oberwolfach*, 1989), 85–94, *Internat. Ser. Numer. Math.*, 102, *Birkhäuser, Basel*, 1991. (Constantin Tudor) **93h:60095** 60H20 (34F05, 34G10, 47N20)

— (*with* Fernández, Begoña) A criterion of convergence of generalized processes and an application to a supercritical branching particle system. *Canad. J. Math.* **43** (1991), *no.* 5, 985–997. (Thomas G. Kurtz) **93d:60054** 60F17 (60G20, 60J80)

— (*with* Wakolbinger, Anton) Convergence to equilibrium of critical branching particle systems and superprocesses, and related nonlinear partial differential equations. (English summary) *Acta Appl. Math.* **27** (1992), *no.* 3, 269–291. (Klaus Fleischmann) **93h:60131** 60J80 (35J60, 60G55, 60G57)

— (*with* López-Mimbela, J. Alfredo) The demographic variation process of multitype branching random fields. *J. Multivariate Anal.* **41** (1992), *no.* 1, 102–116. (Thomas G. Kurtz) **93j:60065** 60G60 (60F17, 60G15, 60J80)

— (*with* Fernández, Begoña) Stability of a class of transformations of distribution-valued processes and stochastic evolution equations. (English summary) *J. Theoret. Probab.* **5** (1992), *no.* 4, 661–678. (P. Kotelenez) **93m:60064** 60F17 (60G20, 60H15)

— (*with* Roelly-Coppoletta, Sylvie; Wakolbinger, Anton) Persistence of critical multitype particle and measure branching processes. *Probab. Theory Related Fields* **92** (1992), *no.* 3, 313–335. (Klaus Fleischmann) **93e:60171** 60J80 (60G57)

Gorpinevich, A. N. An algorithm of complexity $O(n + k \log k)$ for partitioning a polygonal domain into horizontal-convex bands. (Russian. Russian summary) *Mat. Issled. No.* 125, *Issled. Operatsii Mat. Progr.* (1992), 72–77, 111. (Summary) **93m:65191** 65Y20

— (*with* Soltan, V. P.) Minimum dissection of a rectilinear polygon with arbitrary holes into rectangles. (English summary) *Discrete Comput. Geom.* **9** (1993), *no.* 1, 57–79. (Nikolaj M. Korneenko) **93i:68184** 68U05 (52B55)

Gorr, G. V. (*with* Maznev, A. V.; Verkhovod, E. V.) New solutions of a generalized problem of the dynamics of a rigid body with a fixed point. (Russian. English and Russian summaries) *Dokl. Akad. Nauk Ukrainy* **1992,** *no.* 5, 50–54, 160. (Summary) **93d:70009** 70E15

— (*with* Varkhalev, Yu. P.) The first Lyapunov method in the study of asymptotic motions in the dynamics of a rigid body. (Russian. Russian summary) *Mekh. Tverd. Tela No.* 24 (1992), 25–41. (Summary) **93m:70010** 70E15 (34C99, 70K20)

— A new solution of a generalized problem on the motion of a body with a fixed point. (Russian. Russian summary) *Prikl. Mat. Mekh.* **56** (1992), *no.* 3, 532–535; *translation in J. Appl. Math. Mech.* **56** (1992), *no.* 3, 443–446. (Summary) **93g:70007** 70E15

Gorringe, V. M. (*with* Moremedi, G. M.; Mason, D. P.) On the limit cycle of a generalized van der Pol equation. (English summary) *Internat. J. Non-Linear Mech.* **28** (1993), *no.* 2, 237–250. (Summary) **93k:34080** 34C15 (70–04, 70–08, 70K10)

— (*with* Leach, P. G. L.) The first integrals and their Lie algebra of the most general autonomous Hamiltonian of the form $H = T + V$ possessing a Laplace-Runge-Lenz vector. (English summary) *J. Austral. Math. Soc. Ser. B* **34** (1993), *no.* 4, 511–522. (Summary) **93m:70018** 70H05 (58F05, 70F05, 70H33)

Gorshkov, A. S. (*with* Kravchenko, V. F.; Rvachëv, V. A.; Rvachëv, V. L.) On a number-theoretic method for the fast Fourier transform in the Fermat ring. (Russian) *Dokl. Akad. Nauk SSSR* **320** (1991), *no.* 2, 303–306; *translation in Soviet Phys. Dokl.* **36** (1991), *no.* 9, 616–618 (1992). (Vítězslav Veselý) **93g:65171** 65T20 (94A12)

Gorshkov, K. A. (*with* Lomov, A. S.; Rabinovich, M. I.) Chaotic scattering of two-dimensional solitons. (English summary) *Nonlinearity* **5** (1992), *no.* 6, 1343–1353. (Remo Badii) **93j:35147** 35Q51 (35B30, 35P30, 58F13, 65P05)

Gorshkova, O. Ya. (*with* Avdonin, S. A.) Controllability and quasicontrollability of parabolic systems with delay. (Russian. Russian summary) *Differentsial'nye Uravneniya* **28** (1992), *no.* 3, 442–451, 548; *translation in Differential Equations* **28** (1992), *no.* 3, 374–383. (Adam Kowalewski) **93k:93011** 93B05 (49J20, 93C20)

Gorskaya, A. D. Expert systems: the relationship between relevant and essential. (Russian) *Investigations in current inductive logic (Russian)*, 112–123, *Akad. Nauk SSSR, Inst. Filos., Moscow*, 1989. (*see* **93m:03039**) 68T01

Gorskii, A. S. (*with* Selivanov, K. G.) On affine Virasoro constructions for SL(2, **R**) current algebra. (English summary) *Modern Phys. Lett. A* **7** (1992), *no.* 28, 2601–2609. (D. V. Yur'ev) **93i:81065** 81R10 (17B67, 17B68)

Gorskii, V. B. Two-dimensional vortex motions of a viscous incompressible fluid. (Russian) *Prikl. Mat. Mekh.* **56** (1992), *no.* 3, 540–542; *translation in J. Appl. Math. Mech.* **56** (1992), *no.* 3, 451–452. (From the text) **93g:76037** 76D05

Gorskii, V. G. (*with* Kuntsevich, A. D.; Kudashev, V. R.; Spivak, S. I.) Group analysis of the identifiability of parameters of mathematical models of nonstationary chemical kinetics. (Russian) *Dokl. Akad. Nauk* **326** (1992), *no.* 4, 658–661. (From the text) **93h:93083** 93E12 (34A55, 34H05, 92E20, 93C95)

Gorsky, A. S. *see* **Gorskii, A. S.**

Gorunovich, V. V. Bose-Einstein condensation in a model of a lattice gas. (Russian. Russian summary) *Methods of mathematical physics in infinite systems (Russian)*, 30–44, *Akad. Nauk Ukrainy, Inst. Mat., Kiev*, 1991. (Summary) **93g:82017** 82B20 (82B26)

— (*with* Gerasimenko, V. I.) A discrete model of Bogolyubov equations. (Russian. Russian summary) *Methods of mathematical physics in infinite systems (Russian)*, 44–52, *Akad. Nauk Ukrainy, Inst. Mat., Kiev*, 1991. (Summary) **93h:82039** 82C21

— (*with* Gerasimenko, V. I.) Bogolyubov equations for a discrete model of a one-dimensional system of particles. (Russian. English summary) *Dokl. Akad. Nauk Ukrain. SSR* **1991**, *no.* 8, 34–38, 183. (Boris A. Khoruzhenko) **93a:82048** 82C40 (82C21)

— The Debye-Hückel limit for quantum-statistical charge-symmetric Coulomb systems. (Russian. English summary) *Teoret. Mat. Fiz.* **88** (1991), *no.* 2, 260–271; *translation in Theoret. and Math. Phys.* **88** (1991), *no.* 2, 858–866 (1992). (Summary) **93h:82004** 82B10

Goryainov, V. V. One-parameter semigroups of analytic functions. *Geometric function theory and applications of complex analysis to mechanics: studies in complex analysis and its applications to partial differential equations*, 2 (*Halle*, 1988), 160–164, *Pitman Res. Notes Math. Ser.*, 257, *Longman Sci. Tech., Harlow*, 1991. (L. S. O. Liverpool) **93f:30026** 30D05

Goryunov, V. V. The intersection form of a plane isolated line singularity. *Singularity theory and its applications, Part I (Coventry*, 1988/1989), 172–184, *Lecture Notes in Math.*, 1462, *Springer, Berlin*, 1991. (Maria Carmen Romero-Fuster) **93d:58017** 58C27 (32S50)

Górzeńska, Maria (*with* Leśniewicz, Maria; Rempulska, Lucyna) On approximation of 2π-periodic functions belonging to the Hölder classes. *Fasc. Math. No.* 21 (1990), 87–97 (1991). (V. V. Zhuk) **93b:42006** 42A10

— (*with* Leśniewicz, Maria; Rempulska, Lucyna) Approximation theorems for functions of Hölder classes. *Comment. Math. Prace Mat.* **30** (1991), *no.* 2, 301–308. (Shri Nivas Bhatt) **93e:42005** 42A10 (41A65)

— (*with* Leśniewicz, Maria; Rempulska, Lucyna) On summability of double Fourier series by some methods of the Abel type. (English summary) *Fasc. Math. No.* 22 (1991), 61–69 (1992). (S. Baron) **93k:42010** 42B08 (40C05)

Goshen-Meskin, Drora (*with* Bar-Itzhack, I. Y.) Observability analysis of piecewise constant systems. I. Theory. (English summary) *IEEE Trans. Aerospace Electron. Systems* **28** (1992), *no.* 4, 1056–1067. (Mikołaj Busłowicz) **93j:93023** 93B07 (93B27, 93C35, 93C50)

— (*with* Bar-Itzhack, I. Y.) Observability analysis of piecewise constant systems. II. Application to inertial navigation in-flight alignment. (English summary) *IEEE Trans. Aerospace Electron. Systems* **28** (1992), *no.* 4, 1068–1075. (Mikołaj Busłowicz) **93j:93024** 93B07 (93B27, 93C35, 93C50)

— (*with* Bar-Itzhack, I. Y.) On the connection between estimability and observability. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 8, *part I*, 1225–1226. (Summary) **93f:93120** 93E10 (93B07)

Goshko, L. V. Convergence of the transition probability densities of a sequence of diffusion processes. (Russian. Russian summary) *Stochastic equations and boundary theorems (Russian)*, 39–45, *Akad. Nauk Ukrainy, Inst. Mat., Kiev*, 1991. (Summary) **93k:60200** 60J60

Goshtasbpour, Mehrdad On some calculations of effective action and Fujikawa regularized anomaly in the chiral Schwinger model. *Progr. Theoret. Phys.* **85** (1991), *no.* 6, 1171–1174. (Summary) **93a:81118a** 81T10 (81T50)

— Errata: "On some calculations of effective action and Fujikawa regularized anomaly in the chiral Schwinger model". *Progr. Theoret. Phys.* **86** (1991), *no.* 6, 1301. (Editors) **93a:81118b** 81T10 (81T50)

Goshtasby, Ardeshir (*with* O'Neill, William D.) Surface fitting to scattered data by a sum of Gaussians. (English summary) *Comput. Aided Geom. Design* **10** (1993), *no.* 2, 143–156. 65D10

Goss, David A short introduction to rigid analytic spaces. *The arithmetic of function fields (Columbus, OH*, 1991), 131–141, *Ohio State Univ. Math. Res. Inst. Publ.*, 2, *de Gruyter, Berlin*, 1992. (Qing Liu) **93m:14020** 14G20 (32P05)

— Harmonic analysis and the flow of a Drinfel'd module. *J. Algebra* **146** (1992), *no.* 1, 219–241. (Ernst-Ulrich Gekeler) **93a:11052** 11G09 (11S80)

— *see also* **Arithmetic of function fields, 93f:11002**

Gössel, Michael ★ Automatentheorie für Ingenieure. (German) [Automata theory for engineers] Informatik [Information Science], 1. *Akademie-Verlag, Berlin*, 1991. 191 *pp. ISBN* 3-05-501268-2 (H. Jürgensen) **93d:68047** 68Q68 (68–01)

Gossez, Jean-Pierre (*with* Omari, Pierpaolo) A note on periodic solutions for a second order ordinary differential equation. (Italian summary) *Boll. Un. Mat. Ital. A* (7) **5** (1991), *no.* 2, 223–231. (Summary) **93d:34075** 34C25 (34B15, 58F22)

— (*with* Fonda, Alessandro; Zanolin, Fabio) On a nonresonance condition for a semilinear elliptic problem. *Differential Integral Equations* **4** (1991), *no.* 5, 945–951. (Nguyên-Phuong-Các) **93e:35033** 35J65 (35B05, 47H15, 47N20)

— (*with* de Figueiredo, Djairo G.) Strict monotonicity of eigenvalues and unique continuation. *Comm. Partial Differential Equations* **17** (1992), *no.* 1-2, 339–346. (V. S. Rabinovich) **93b:35098** 35P05 (35J25, 47F05)

— (*with* Cuesta, Mabel) A variational approach to nonresonance with respect to the Fučik spectrum. *Nonlinear Anal.* **19** (1992), *no.* 5, 487–500. (Norman Dancer) **93i:34032** 34B15 (47H15, 47N20, 58E30)

Gostev, V. B. (*with* Frenkin, A. R.) An inverse problem for a one-dimensional singular oscillator. (Russian) *Vestnik Moskov. Univ. Ser. III Fiz. Astronom.* **33** (1992), *no.* 1, 7–11. (V. S. Ol'khovskii) **93h:81147** 81U40 (34A55, 34L25)

Gostev, V. I. (*with* Semyanik, V. V.) Construction of discrete regulators of variable structure. *Soviet J. Automat. Inform. Sci.* **24** (1991), *no.* 3, 80–83 (1992); *translated from Avtomatika* **1991**, *no.* 3, 82–86, 97 (*Russian. English summary*). 93B12

— (*with* Baranov, A. A.) Multimode control in multistage automatic control systems. *Soviet J. Automat. Inform. Sci.* **24** (1991), *no.* 4, 56–61 (1992); *translated from Avtomatika* **1991**, *no.* 4, 56–61, 95 (*Russian. English, Russian and Ukrainian summaries*). 93C85

— A formula for optimal control of an object (system) in the case of a linearly varying action. *J. Automat. Inform. Sci.* **25** (1992), *no.* 1, 82–85 (1993); *translated from Avtomatika* **1992**, *no.* 1, 89–92, 96 (*Russian. Russian summary*). 93C57 (49K15)

Gostiaux, Bernard (*with* Berger, Marcel) ★ Géométrie différentielle: variétés, courbes et surfaces. (French. French summary) [Differential geometry: manifolds, curves and surfaces] Second edition. Mathématiques. [Mathematics] *Presses Universitaires de France, Paris*, 1992. vi+513 *pp. ISBN* 2-13-044708-2 (Editors) **93j:53001** 53-01 (58–01)

Goswami, Alok (*with* Rao, B. V.) On filtrations of Brownian polynomials. *Séminaire de Probabilités, XXV*, 349–353, *Lecture Notes in Math.*, 1485, *Springer, Berlin*, 1991. (Marek Rutkowski) **93k:60206** 60J65 (60G44)

Goswami, D. (*with* Krori, K. D.) A multipolar stationary object embedded in a gravitational field. *J. Math. Phys.* **33** (1992), *no.* 5, 1780–1781. (G. P. Pokhariyal) **93d:83042** 83C55

— (*with* Krori, K. D.) A multipolar stationary object attached to a cosmic string in a background gravitational field. (English summary) *Gen. Relativity Gravitation* **25** (1993), *no.* 2, 117–122. 83F05

Goswami, Gautam (*with* Bandyopadhyay, Pratul) Fractional statistics, Z_p spin system, and XY model. *J. Math. Phys.* **33** (1992), *no.* 3, 1090–1096. (Boris A. Khoruzhenko) **93c:81124** 81T13 (82B20)

— (*with* Bandyopadhyay, Pratul) Spin system, gauge theory, and renormalization group equation. (English summary) *J. Math. Phys.* **34** (1993), *no.* 2, 749–756. (M. Lawrence Glasser) **93k:82026** 82B28 (81T13, 81T17)

Goswami, Kalyan Kumar (*with* Pal, Satyabrata; Majumdar, Anurup) On the construction of some new series of PBIB designs and some new series of OAVS of strength two. *Calcutta Statist. Assoc. Bull.* **40** (1990/91), *no.* 157-160, 245–255. (Sanpei Kageyama) **93d:05021** 05B05 (05B15, 62K10)

— (*with* Pal, Satyabrata) A new class of Latin square type PBIB designs. (English summary) *Calcutta Statist. Assoc. Bull.* **42** (1992), *no.* 165-166, 135–141. (Summary) **93m:62175** 62K10 (05B15)

— (*with* Pal, Satyabrata) On the construction of orthogonal factorial designs of resolution IV. (English summary) *Comm. Statist. Theory Methods* **21** (1992), *no.* 12, 3561–3570. (Summary) **93i:62067** 62K15

Got, Théophile *see* **Hilbert, David[1], 93g:01101**

Gotay, Mark J. An exterior differential systems approach to the Cartan form. *Symplectic geometry and mathematical physics (Aix-en-Provence*, 1990), 160–188, *Progr. Math.*, 99, *Birkhäuser Boston, Boston, MA*, 1991. (J. Chrastina) **93e:58045** 58E30 (58A15)

— *see also* **Mathematical aspects of classical field theory, 93d:58006**

Gotchev, Ivan Superneighbourhood spaces and extensions of topological spaces. (English and Russian summaries) *Annuaire Univ. Sofia Fac. Math. Méc.* **80** (1986), *no.* 1, 31–43 (1991). (Summary) **93m:54044** 54E05 (54B20, 54D35)

GOThA Le problèmes d'ordonnancement. (English and French summaries) [Scheduling problems] *RAIRO Rech. Opér.* **27** (1993), *no.* 1, 77–150. 90B35 (90–01)

Goto, Akira (*with* Mitsui, Taketomo) Implicit RK formula for parallel computers. (English summary) *Parallel processing for scientific computing (Yokohama*, 1992), 22–28, *Adv. Numer. Methods Large Sparse Sets Linear Equations*, 8, *Keio Univ., Yokohama*, 1992. (*see* **93f:65027**) 65L06 (65Y05)

Goto, Ryushi On toric hyper-Kähler manifolds given by the hyper-Kähler quotient method. *Infinite analysis, Part A, B (Kyoto*, 1991), 317–338, *Adv. Ser. Math. Phys.*, 16, *World Sci. Publishing, River Edge, NJ*, 1992. (Henrik Pedersen) **93m:53040** 53C25 (53C55)

Goto, S. (*with* Uosaki, K.) An on-line identification procedure for linear stochastic systems. (English summary) *Identification and system parameter estimation* 1991, *Vol.* 1,2 (*Budapest*, 1991), 941–946, *IFAC Sympos. Ser.*, 3, *Pergamon, Oxford*, 1992. (*see* **93h:93009**) 93E12

Goto, Shigeki Formalizing computer program traces. (English summary) *Advances in software science and technology, Vol.* 3, 71–92, *Adv. Software Sci. Tech.*, 3, *Academic Press, Boston, MA*, 1992. (Summary) **93j:68026** 68N15

Goto, Shiro (*with* Nishida, Koji; Shimoda, Yasuhiro) Topics on symbolic Rees algebras for space monomial curves. *Nagoya Math. J.* **124** (1991), 99–132. (J. K. Verma) **93e:13002** 13A30 (13C40, 13H10, 14H50)

Goto, Shun'ichi (*with* Chen, Yun Gang; Giga, Yoshikazu) Analysis toward snow crystal growth. *Functional analysis & related topics (Sapporo,* 1990), 43–57, *World Sci. Publishing, River Edge, NJ,* 1991. (Claudia Simionescu-Badea) **93c:35164** 35R35 (35D05, 80A23)

— (*with* Chen, Yun Gang; Giga, Yoshikazu) Uniqueness and existence of viscosity solutions of generalized mean curvature flow equations. *J. Differential Geom.* **33** (1991), *no.* 3, 749–786. (Ioan I. Vrabie) **93a:35093** 35K65 (35D05, 53C21, 58E12)

— (*with* Chen, Yun Gang; Giga, Yoshikazu) Remarks on viscosity solutions for evolution equations. *Proc. Japan Acad. Ser. A Math. Sci.* **67** (1991), *no.* 10, 323–328. (Bruno Franchi) **93b:35076** 35K65 (35D05)

— (*with* Giga, Yoshikazu) Motion of hypersurfaces and geometric equations. *J. Math. Soc. Japan* **44** (1992), *no.* 1, 99–111. (Irl Bivens) **93b:58025** 58D25 (35K22, 53A07)

— (*with* Giga, Yoshikazu; Ishii, Hitoshi) Global existence of weak solutions for interface equations coupled with diffusion equations. *SIAM J. Math. Anal.* **23** (1992), *no.* 4, 821–835. (Ioan I. Vrabie) **93g:35068** 35K55 (35D05)

Goto, Tatsuo A construction of a subspace in Euclidean space with designated values of dimension and metric dimension. (English summary) *Proc. Amer. Math. Soc.* **118** (1993), *no.* 4, 1319–1321. (Jerzy Dydak) **93j:54025** 54F45 (55M10)

Goto, Toru (*with* Okada, Yasuhiro) Nonlinear σ models and supersymmetry-breaking effects in supergravity. *Phys. Rev. D* (3) **45** (1992), *no.* 10, 3636–3640. (Summary) **93b:83062** 83E50 (81R40, 81V05)

Goto, Tsutomu (*with* Ichikawa, Satoshi) An analysis for steady-state response of nonlinear systems with sinusoidal inputs. (English summary) *Electron. Comm. Japan Part III Fund. Electron. Sci.* **75** (1992), *no.* 6, 35–45. 93C10

Gotoh, Tohru On some differential geometric characterizations of the center of a Lie group. *Tokyo J. Math.* **14** (1991), *no.* 2, 305–308. (Introduction) **93a:53040** 53C30

— A remark on foliations on a complex projective space with complex leaves. *Tsukuba J. Math.* **16** (1992), *no.* 1, 169–172. (Robert A. Wolak) **93h:53028** 53C12

Gotoh, Toshiyuki (*with* Kraichnan, Robert H.) Statistics of decaying Burgers turbulence. (English summary) *Phys. Fluids A* **5** (1993), *no.* 2, 445–457. (Summary) **93k:76060** 76F05 (76M35)

Gotoh, Yasuhiro On the composition of functions of bounded mean oscillation with meromorphic functions. *J. Math. Kyoto Univ.* **31** (1991), *no.* 3, 635–642. (Hiroshige Shiga) **93a:30040** 30D50 (30C99, 30D45)

Gotoh, Yasuhisa (*with* Zwart, H. J.; Yamamoto, Yutaka) On the stability uniformity of infinite-dimensional systems. (English summary) *Analysis and optimization of systems: state and frequency domain approaches for infinite-dimensional systems (Sophia-Antipolis,* 1992), 401–409, *Lecture Notes in Control and Inform. Sci.*, 185, *Springer, Berlin,* 1993. (*see* **93i:93005**) 93D05 (47N70, 93C25)

Gotsman, C. (*with* Linial, Nathan) The equivalence of two problems on the cube. (English summary) *J. Combin. Theory Ser. A* **61** (1992), *no.* 1, 142–146. (Summary) **93d:05074** 05C35

Göttlicher, Gerd Mathematisierung und Einheit physikalischer Erkenntnis. [Mathematization and unity of physical knowledge] *Mathematik und Wirklichkeit,* 55–61, *Akademie-Verlag, Berlin,* 1991. (*see* **93e:00008**) 00A30

Gottlieb, Christian On generators of ideals in one-dimensional local rings. *Comm. Algebra* **21** (1993), *no.* 2, 421–425. (Liam O'Carroll) **93m:13011** 13H10 (13H15)

Gottlieb, David (*with* Don, Wai-Sun) Spectral simulations of an unsteady compressible flow past a circular cylinder. (English summary) *Spectral and high order methods for partial differential equations (Como,* 1989), 39–58, *North-Holland, Amsterdam,* 1990. (*see* **93d:65005**) 65N35 (76M25, 76N10)

— (*with* Cai, Wei; Harten, Ami) Cell averaging Chebyshev methods for hyperbolic problems. *Comput. Math. Appl.* **24** (1992), *no.* 5-6, 37–49. (Summary) **93c:65118** 65M70

— (*with* Cai, Wei; Shu, Chi-Wang) On one-sided filters for spectral Fourier approximations of discontinuous functions. *SIAM J. Numer. Anal.* **29** (1992), *no.* 4, 905–916. (Summary) **93e:65021** 65D15 (42A10, 65T10)

Gottlieb, H. P. W. Axisymmetric isospectral annular plates and membranes. (English summary) *IMA J. Appl. Math.* **49** (1992), *no.* 2, 185–192. (Summary) **93g:73083** 73K12 (73D30, 73K10)

— Examples and counter-examples for a string density formula in the case of a discontinuity. *J. Math. Anal. Appl.* **164** (1992), *no.* 2, 363–369. (Frank Natterer) **93c:34035** 34A55 (34B24)

Gottlieb, J. J. (*with* Hawken, D. F.; Hansen, J. S.) A new finite-difference solution-adaptive method. (English summary) *Philos. Trans. Roy. Soc. London Ser. A* **341** (1992), *no.* 1662, 373–410. (Meng Zhao Qin) **93m:65119** 65M06 (35L45, 65M50, 65M60)

Gottlob, Georg (*with* Cadoli, Marco; Eiter, Thomas) An efficient method for eliminating varying predicates from a circumscription. *Artificial Intelligence* **54** (1992), *no.* 3, 397–410. (Gerard R. Renardel de Lavalette) **93g:68125** 68T27 (03B60)

— (*with* Eiter, Thomas) On the complexity of propositional knowledge base revision, updates, and counterfactuals. (English summary) *Artificial Intelligence* **57** (1992), *no.* 2-3, 227–270. (Alexey P. Stolboushkin) **93k:68093** 68T30 (03B60, 03B70, 68T27)

— (*with* Schrefl, Michael; Stumptner, Markus) Selective inheritance of attribute values in relational databases. (English summary) *Discrete Appl. Math.* **40** (1992), *no.* 2, 187–216. (Summary) **93g:68025** 68P15

— Complexity results for nonmonotonic logics. (English summary) *J. Logic Comput.* **2** (1992), *no.* 3, 397–425. (Xiang Li) **93i:03034** 03B60 (03D15, 68Q25, 68T27)

Gottwald, J. A. (*with* Virgin, L. N.; Dowell, E. H.) Experimental mimicry of Duffing's equation. (English summary) *J. Sound Vibration* **158** (1992), *no.* 3, 447–467. (Summary) **93g:70002** 70–05 (34C15, 70K40, 70K50)

Gottwald, Siegfried (*with* Bandemer, Hans) ★ Einführung in Fuzzy-Methoden. (German) [Introduction to fuzzy methods] Theorie und Anwendungen unscharfer Mengen. [Theory and applications of fuzzy sets] Third edition. *Akademie Verlag, Berlin,* 1992. 173 *pp. ISBN* 3-05-501458-8 (J. Albrycht) **93m:04007** 04A72 (00A69, 03E72, 28E10)

Götze, Friedrich (*with* Bentkus, Vidmantas; Paulauskas, Vygantas; Račkauskas, Alfredas) The accuracy of Gaussian approximation in Banach spaces. (Russian) *Probability theory,* 6 (*Russian*), 39–139, *Itogi Nauki i Tekhniki, Akad. Nauk SSSR, Vsesoyuz. Inst. Nauchn. i Tekhn. Inform., Moscow,* 1991. (Vladimir I. Chebotarev) **93e:60014** 60B12 (60F15)

Gotzes, Siegfried Gravity as an SO(3, 2) gauge theory. *Differential geometric methods in theoretical physics (Davis, CA,* 1988), 757–766, *NATO Adv. Sci. Inst. Ser. B Phys.*, 245, *Plenum, New York,* 1990. (Summary) **93c:83096** 83D05 (58E50)

Gou, Xuan Chun (*with* Tian, Qing Chun) Linkage and strongly generalized Cohen-Macaulayness. *Proceedings of the First China-Japan International Symposium on Ring Theory (Guilin,* 1991), 52–53, *Okayama Univ., Okayama,* 1992. (*see* **93k:16001**) 13C40

Goubault, Eric (*with* Le Bris, Claude) Groupes Ext^1 et déformations de représentations de certaines algèbres de Lie nilpotentes. (English and French summaries) [Ext^1-groups and deformations of representations of certain nilpotent Lie algebras] *Bull. Sci. Math.* (2) **116** (1992), *no.* 4, 465–486. (F. W. Lemire) **93h:17018** 17B30 (17B56)

Goubet, Olivier Séparation des variables dans le problème de Stokes. Application à son approximation multiéchelles éléments finis. (English and French summaries) [Separation of variables in the Stokes problem. Application to its multiscale finite-element approximation] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 12, 1315–1318. (Summary) **93j:65180** 65N30 (76D07, 76M10)

— Construction of approximate inertial manifolds using wavelets. (English summary) *SIAM J. Math. Anal.* **23** (1992), *no.* 6, 1455–1481. (J. S. Joel) **93j:34089** 34G20 (35B35, 35K60, 42C15, 58F12)

Goudas, C. L. (*with* Petsagourakis, E. G.) The three-dipole problem. (English summary) *Predictability, stability, and chaos in N-body dynamical systems (Cortina d'Ampezzo,* 1990), 355–370, *NATO Adv. Sci. Inst. Ser. B Phys.*, 272, *Plenum, New York,* 1991. (Summary) **93k:85002** 85A05 (70F15, 78A35)

— The N-dipole problem and the rings of Saturn. *Predictability, stability, and chaos in N-body dynamical systems (Cortina d'Ampezzo,* 1990), 371–385, *NATO Adv. Sci. Inst. Ser. B Phys.*, 272, *Plenum, New York,* 1991. (Summary) **93k:85001** 85A04 (70F15)

Gouesbet, G. Reconstruction of vector fields: the case of the Lorenz system. (English summary) *Phys. Rev. A* (3) **46** (1992), *no.* 4, 1784–1796. (From the text) **93f:34077** 34C99 (34D45, 58F13, 65L99)

Gough, N. E. (*with* Dimirovski, G. M.; Ting, I. H.; Deskov, V. P.) Minimal realization of a class of discrete multivariable systems based on dyadic characteristic weighting patterns. (English summary) *Mutual impact of computing power and control theory (Prague,* 1992), 127–132, *Czech. Acad. Sci., Prague,* 1992. (*see* **93f:93005**) 93B15 (93B40)

— (*with* Deskov, V. P.; Dimirovski, G. M.) On the ordering of characteristic input-output modes in MIMO discrete-time systems. (English summary) *Mutual impact of computing power and control theory (Prague,* 1992), 137–142, *Czech. Acad. Sci., Prague,* 1992. (*see* **93f:93005**) 93C55 (93B51)

Gould, Laurence I. Nonlocal generalized angular-momentum balance laws and equations of motion. (English summary) The Eringen anniversary issue. *Internat. J. Engrg. Sci.* **30** (1992), *no.* 10, 1417–1432. (E. S. Şuhubi) **93h:70008** 70G50 (70H33, 73B18)

Gould, M. D. (*with* Zhang, R. B.; Bracken, Anthony J.) Generalized Gel'fand invariants and characteristic identities for quantum groups. *J. Math. Phys.* **32** (1991), *no.* 9, 2298–2303. (Summary) **93f:17022** 17B37 (81R50)

— (*with* Zhang, R. B.) Universal R-matrices and invariants of quantum supergroups. *J. Math. Phys.* **32** (1991), *no.* 12, 3261–3267. (A. U. Klimyk) **93b:17060** 17B37 (16W55, 81R50)

— (*with* Links, J. R.; Bracken, Anthony J.) Matrix elements and Wigner coefficients for $U_q[\mathrm{gl}(n)]$. *J. Math. Phys.* **33** (1992), *no.* 3, 1008–1022. (Chang Pu Sun) **93g:81049** 81R50 (16W30, 17B37, 81R05, 82B23)

— Reduced Wigner coefficients for $U_q[\mathrm{gl}(n)]$. *J. Math. Phys.* **33** (1992), *no.* 3, 1023–1031. (Chang Pu Sun) **93g:81050** 81R50 (16W30, 17B37, 82B23)

— Quantum groups and diagonalization of the braid generator. *Lett. Math. Phys.* **24** (1992), *no.* 3, 183–196. (Dmitrii I. Gurevich) **93h:17028** 17B37 (16W30, 81R50)

— (*with* Links, J. R.) Two variable link polynomials from quantum supergroups. (English summary) *Lett. Math. Phys.* **26** (1992), *no.* 3, 187–198. (Petr Hellinger) **93k:57018** 57M25 (17B37, 81R50)

Gould, N. I. M. (*with* Conn, Andrew R.; Toint, Ph. L.) ★ LANCELOT. (English. English summary) A Fortran package for large-scale nonlinear optimization (release A). Springer Series in Computational Mathematics, 17. *Springer-Verlag, Berlin,* 1992. xx+330 *pp. ISBN* 3-540-55470-X 65–04 (65K10)

— (*with* Conn, Andrew R.; Toint, Ph. L.) Large-scale nonlinear constrained optimization. *ICIAM* 91 (*Washington, DC,* 1991), 51–70, *SIAM, Philadelphia, PA,* 1992. (*see* **93b:00026**) 90C30

— (*with* Conn, Andrew R.; Toint, Ph. L.) On the number of inner iterations per outer iteration of a globally convergent algorithm for optimization with general nonlinear constraints and simple bounds. *Numerical analysis* 1991 (*Dundee,* 1991), 49–68, *Pitman Res. Notes Math. Ser.*, 260, *Longman Sci. Tech., Harlow,* 1992. (*see* **93b:65005**) 90C30 (65K10)

— (*with* Conn, Andrew R.; Sartenaer, A.; Toint, Ph. L.) Global convergence of a class of trust region algorithms for optimization using inexact projections on convex constraints. (English summary) *SIAM J. Optim.* **3** (1993), *no.* 1, 164–221. (Morgan A. Hanson) **93k:90069** 90C25 (65K05, 90C30)

Gould, Ronald J. (*with* Faudree, Ralph J.; Lindquester, Terri E.) Hamiltonian properties and adjacency conditions in $K(1, 3)$-free graphs. *Graph theory, combinatorics, and applications, Vol.* 1 (*Kalamazoo, MI,* 1988), 467–479, *Wiley-Intersci. Publ., Wiley, New York,* 1991. (Summary) **93c:05079** 05C45

— (*with* Rödl, Vojtěch) Bounds on the number of isolated vertices in sum graphs. *Graph theory, combinatorics, and applications, Vol.* 1 (*Kalamazoo, MI,* 1988), 553–562, *Wiley-Intersci. Publ., Wiley, New York,* 1991. (Summary) **93b:05078** 05C35

— (*with* Faudree, Ralph J.; Jacobson, Michael S.; Lesniak, Linda M.) Generalized degrees, connectivity and Hamiltonian properties in graphs. (English summary) *J. Combin. Inform. System Sci.* **16** (1991), *no.* 1, 93–105. (Summary) **93c:05078** 05C40 (05C45)

— (*with* Faudree, Ralph J.; Lesniak, Linda M.) Generalized degrees and Menger path systems. (English summary) *Discrete Appl. Math.* **37/38** (1992), 179–191. (László Pyber) **93d:05092** 05C40 (05C10)

— (*with* Faudree, Ralph J.; Jacobson, Michael S.; Lesniak, Linda M.; Lindquester, Terri E.) On independent generalized degrees and independence numbers in $K(1, m)$-free graphs. *Discrete Math.* **103** (1992), *no.* 1, 17–24. (Douglas F. Rall) **93d:05115** 05C70

— (*with* Faudree, Ralph J.; Jacobson, Michael S.; Lesniak, Linda M.) Neighborhood unions and a generalization of Dirac's theorem. (English summary) *Discrete Math.* **105** (1992), *no.* 1-3, 61–71. (Stanislav Jendrol') **93g:05094** 05C45 (05C38)

— (*with* Chen, Guantao; Jacobson, Michael S.; Schelp, Richard H.; West, Douglas B.) A characterization of influence graphs of a prescribed graph. (English summary) *Vishwa Internat. J. Graph Theory* **1** (1992), *no.* 1, 77–81. (W. G. Brown) **93k:05056** 05C12

Gould, Victoria (*with* Fountain, John B.) Orders in regular rings with minimal condition for principal right ideals. *Comm. Algebra* **19** (1991), *no.* 5, 1501–1527. (Donald S. Passman) **93b:16044** 16P60

— Coherent monoids. (English summary) *J. Austral. Math. Soc. Ser. A* **53** (1992), *no.* 2, 166–182. (P. R. Jones) **93g:20114** 20M10

— Semigroups of left quotients—the uniqueness problem. *Proc. Edinburgh Math. Soc.* (2) **35** (1992), *no.* 2, 213–226. (Saraswathi Subbiah) **93f:20086** 20M99

— (*with* Fountain, John B.) Orders in semiprime rings with minimal condition for principal right ideals. (English summary) *Proc. Roy. Soc. Edinburgh Sect. A* **121** (1992), *no.* 3-4, 375–380. (Donald S. Passman) **93h:16033** 16N60 (16P60)

— (*with* Fountain, John B.) Straight left orders in rings. *Quart. J. Math. Oxford Ser.* (2) **43** (1992), *no.* 171, 303–311. (K. C. O'Meara) **93h:16024** 16H05 (16U20, 20M25)

Goulden, I. P. A linear operator for symmetric functions and tableaux in a strip with given trace. *Discrete Math.* **99** (1992), *no.* 1-3, 69–77. (John R. Stembridge) **93f:05100** 05E05 (05E10)

— (*with* Jackson, D. M.) The combinatorial relationship between trees, cacti and certain connection coefficients for the symmetric group. (English summary) *European J. Combin.* **13** (1992), *no.* 5, 357–365. (Andrea Brini) **93g:05148** 05E15 (05C25, 20B30)

— (*with* Jackson, D. M.) Immanants of combinatorial matrices. *J. Algebra* **148** (1992), *no.* 2, 305–324. (Ira Gessel) **93i:05132** 05E05 (05E10)

— (*with* Pepper, S.) Labelled trees and factorizations of a cycle into transpositions. (English summary) *Discrete Math.* **113** (1993), *no.* 1-3, 263–268. (Summary) **93k:05044** 05C05 (05C30)

— *see also* **Kreweras, Germain**

Goulian, Mark (*with* Bagger, Jonathan) Coulomb-gas construction on higher-genus Riemann surfaces. *Differential geometric methods in theoretical physics (Davis, CA, 1988)*, 189–201, *NATO Adv. Sci. Inst. Ser. B Phys.*, 245, *Plenum, New York*, 1990. (David Sénéchal) **93i:81206** 81T40 (81T30)

Goupil, Alain (*with* Bédard, François) The poset of conjugacy classes and decomposition of products in the symmetric group. *Canad. Math. Bull.* **35** (1992), *no.* 2, 152–160. (Summary) **93c:20005** 20B30 (05E10, 20C30)

Gourdeau, Frédéric Amenability of Lipschitz algebras. *Math. Proc. Cambridge Philos. Soc.* **112** (1992), *no.* 3, 581–588. (R. J. Loy) **93k:46040** 46H20 (46J10, 46M20)

Gourevitch, Dimitri *see* **Gurevich, D. I.**

Gouriéroux, Christian Courbes de performance, de sélection et de discrimination. (English and French summaries) [Performance, selection and discrimination curves] *Ann. Économ. Statist.* **1992,** *no.* 28, 107–123. 62P05 (62P20)

— (*with* Monfort, Alain) Qualitative threshold ARCH models. *J. Econometrics* **52** (1992), *no.* 1-2, 159–199. (Bert M. Steece) **93g:62137** 62P20 (62M10)

Gourion, Catherine À propos du groupe des automorphismes de $(\mathbf{Q}; \leq)$. (English and French summaries) [On the group of automorphisms of $(\mathbf{Q}; \leq)$] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 13, 1329–1331. (Summary) **93j:20010** 20B27 (04A20, 06F15)

Goutis, Constantinos (*with* Casella, George) Increasing the confidence in Student's t interval. (English summary) *Ann. Statist.* **20** (1992), *no.* 3, 1501–1513. (G. K. Robinson) **93j:62083** 62F25 (62A99, 62C99)

Goutsias, John K. A theoretical analysis of Monte Carlo algorithms for the simulation of Gibbs random field images. *IEEE Trans. Inform. Theory* **37** (1991), *no.* 6, 1618–1628. (Summary) **93e:65006** 65C05

Gouvêa, Fernando Quadros ★ Formas modulares. (Portuguese) [Modular forms] Uma introdução. [An introduction] With a preface by Abramo Hefez. Monografías de Matemática [Mathematical Monographs], 47. *Instituto de Matemática Pura e Aplicada, Rio de Janeiro*, 199?. iv+96 *pp. ISBN* 85-244-0050-1 (From the introduction) **93f:11034** 11Fxx

— On the ordinary Hecke algebra. *J. Number Theory* **41** (1992), *no.* 2, 178–198. (Akira Kurihara) **93j:11025** 11F33 (11F25, 11F30, 11F85, 11R23)

— (*with* Mazur, Barry C.) Families of modular eigenforms. *Math. Comp.* **58** (1992), *no.* 198, 793–805. (Bas Edixhoven) **93d:11049** 11F33 (11Y35, 14G20)

— The square-free sieve over number fields. (English summary) *J. Number Theory* **43** (1993), *no.* 1, 109–122. (John W. Jones) **93m:11045** 11G05 (11N36)

Gouyou-Beauchamps, D. (*with* Gardy, Danièle) Enumerating Davenport-Schinzel sequences. (English and French summaries) *RAIRO Inform. Théor. Appl.* **26** (1992), *no.* 5, 387–402. (A. Pethő) **93k:05011** 05A15 (11B75, 68R15)

Gouzé, Jean-Luc Transformation of polynomial differential systems in the positive orthant. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, II (Kobe*, 1991), 87–93, *Mita, Tokyo*, 1992. (*see* **93g:93006**) 93A10 (93C15)

— Global behavior of n-dimensional Lotka-Volterra systems. (English summary) *Math. Biosci.* **113** (1993), *no.* 2, 231–243. (Summary) **93m:92017** 92D25 (34C99, 34D05)

Govaert, Gérard (*with* Celeux, Gilles) A classification EM algorithm for clustering and two stochastic versions. (English summary) *Comput. Statist. Data Anal.* **14** (1992), *no.* 3, 315–332. (H. Chernoff) **93k:62126** 62H30

Govaerts, Jan Does duality survive background fields? (English summary) *Internat. J. Modern Phys. A* **7** (1992), *no.* 25, 6245–6256. 81T30

— (*with* Fairlie, David B.) Euler hierarchies and universal equations. (English summary) *J. Math. Phys.* **33** (1992), *no.* 10, 3543–3566. (Jaime Muñoz Masqué) **93k:58070** 58E30 (58F07)

— (*with* Fairlie, David B.; Morozov, A. Yu.) Universal field equations with covariant solutions. *Nuclear Phys. B* **373** (1992), *no.* 1, 214–232. (Sergey Merkulov) **93d:81115** 81T13 (58E99)

— (*with* Fairlie, David B.) Universal field equations with reparametrisation invariance. *Phys. Lett. B* **281** (1992), *no.* 1-2, 49–53. (Summary) **93b:81212** 81T30

— A quantum anomaly for rigid particles. (English summary) *Phys. Lett. B* **293** (1992), *no.* 3-4, 327–334. (Alexander A. Zheltukhin) **93k:81228** 81T50

Govaerts, W. (*with* Pryce, J. D.) Mixed block elimination for linear systems with wider borders. (English summary) *IMA J. Numer. Anal.* **13** (1993), *no.* 2, 161–180. (Summary) **93m:65059** 65F30

Govil, L. K. (*with* Kumar, Arun) Interpolation by natural cubic spline. *Internat. J. Math. Math. Sci.* **15** (1992), *no.* 2, 229–234. (Summary) **93a:41017** 41A15

— (*with* Kumar, Arun) On deficient cubic spline interpolants. *J. Approx. Theory* **68** (1992), *no.* 2, 175–182. (Crăciun Iancu) **93a:41018** 41A15

Govind, Rakesh (*with* Zhao, Renhong; Fan, Guangwei) The complete decision set of the generalized symmetrical fuzzy linear programming problem. (English summary) *Fuzzy Sets and Systems* **51** (1992), *no.* 1, 53–65. (Róbert Fullér) **93j:90129** 90C70 (04A72)

Govindachar, Suresh Explicit weight two motivic cohomology complexes and algebraic K-theory. (English summary) *K-Theory* **6** (1992), *no.* 5, 387–430. (J. Browkin) **93m:19008** 19E20 (14F20, 19D55, 19F27, 20F05, 52B30)

Govindan, Ramesh (*with* Pandu Rangan, C.) An $O(n \log n)$ algorithm for a maxmin location problem. *Discrete Appl. Math.* **36** (1992), *no.* 2, 203–205. (Summary) **93d:90030** 90B80 (68Q25)

Govindan, T. E. (*with* Joshi, Mohan C.) Stability and optimal control of stochastic functional-differential equations with memory. (English summary) *Numer. Funct. Anal. Optim.* **13** (1992), *no.* 3-4, 249–265. (Summary) **93g:49007** 49J25 (34K35, 49K45, 93E15, 93E20)

Govindarajan, Suresh (*with* Ovrut, Burt A.) A geometric interpretation for the torsion constraints of (2, 0) heterotic worldsheet supergravity. *Modern Phys. Lett. A* **6** (1991), *no.* 36, 3341–3347. (Wataru Takahasi) **93g:81150** 81T40 (58A50, 81T60, 83E50)

— (*with* Nelson, Philip; Wong, Eugene) Semirigid geometry. *Comm. Math. Phys.* **147** (1992), *no.* 2, 253–275. (Christian Lyubenov Yankov) **93j:32015** 32C11 (32G81, 58A50, 81T40, 81T60)

— (*with* Jayaraman, T.; John, Varghese; Majumdar, Parthasarathi) States of nonzero ghost number in $c < 1$ matter coupled to 2D gravity. *Modern Phys. Lett. A* **7** (1992), *no.* 12, 1063–1077. (Stanislav Z. Pakuliak) **93c:81204** 81T40 (81R10, 81T70)

— (*with* Ovrut, Burt A.) The anomaly structure of (2, 0) heterotic world-sheet supergravity with gauged R-invariance. (English summary) *Nuclear Phys. B* **385** (1992), *no.* 1-2, 251–275. (Piret Kuusk) **93i:81263** 81T50 (81T30, 83E50)

Govindarajan, T. R. $D = 1$ supersymmetric matrix model. *Matrix models, random surfaces and 2-D gravity (Madras*, 1990), 42–48, *IMS Rep.*, 113, *Inst. Math. Sci., Madras*, 199?. (*see* **93h:81001**) 81T40 (81T60)

— (*with* Kaul, Romesh K.) Three-dimensional Chern-Simons theory as a theory of knots and links. (English summary) *Nuclear Phys. B* **380** (1992), *no.* 1-2, 293–333. (Emil Vinţeler) **93i:81233** 81T40 (57M25, 81T13)

— (*with* Sudarshan, E. C. G.; Anandan, J.) A group-theoretic treatment of the geometric phase. *Phys. Lett. A* **164** (1992), *no.* 2, 133–137. (Brian DeFacio) **93j:81024** 81R05 (22E45, 81P15, 81R30)

— (*with* Shankar, Ramachandran; Shaji, N.; Sivakumar, M.) Is the O(3) σ model with the Hopf term exactly equivalent to a higher-spin theory? *Phys. Rev. Lett.* **69** (1992), *no.* 5, 721–724. (Summary) **93d:81117** 81T13

Govindarajulu, P. (*with* Dersanambika, K. S.; Subba Rao, V.) Continuity of set valued metric projection in normed almost linear spaces. *Proceedings of Asian Mathematical Conference*, 1990 (*Hong Kong*, 1990), 103–108, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93b:00022**) 41A65 (46A99, 46B99)

— (*with* Dersanambika, K. S.; Subba Rao, V.) Best approximations in normed almost linear spaces. *Proceedings of Asian Mathematical Conference*, 1990 (*Hong Kong*, 1990), 109–114, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93b:00022**) 41A46 (41A50, 46A99, 46B99)

Govindarajulu, Z. Robustness of Mann-Whitney-Wilcoxon test for scale to dependence in the variables. (English summary) *Topics in statistical dependence (Somerset, PA*, 1987), 237–250, *IMS Lecture Notes Monograph Ser.*, 16, *Inst. Math. Statist., Hayward, CA*, 1990. (Summary) **93i:62046** 62G20 (62G10)

— 75 years of Herbert Robbins: the professional and personal sides. Modern sequential analysis (SSA), Vol. I (Syracuse, NY, 1989). *Amer. J. Math. Management Sci.* **11** (1991), *no.* 1-2, 5–24. (From the preface) **93a:01047** 01A70

— (*with* Geertsema, J. C.) Sequential confidence intervals for the common mean of a set of heteroscedastic normal populations. Modern sequential analysis (SSA), Vol. I (Syracuse, NY, 1989). *Amer. J. Math. Management Sci.* **11** (1991), *no.* 1-2, 55–77. (I. D. Dhariyal) **93b:62116** 62L12

— (*with* Katehakis, Michael N.) Dynamic allocation in survey sampling. (English summary) Modern sequential analysis (SSA), Vol. II (Syracuse, NY, 1989). *Amer. J. Math. Management Sci.* **11** (1991), *no.* 3-4, 199–221. (Robert Kertz) **93j:62021** 62D05 (62L12, 90C39)

— (*with* Nanthakumar, A.) Rate of convergence for the distribution of the Spearman-Karber estimator. *Comm. Statist. Theory Methods* **20** (1991), *no.* 8, 2577–2588. (Richard A. Johnson) **93e:62049** 62E20 (62G05)

— (*with* Sarkar, Subodh C.) Sequential estimation of scale parameter in exponential distributions with unknown location. *Utilitas Math.* **40** (1991), 161–178. (Hisao Nagao) **93d:62147** 62L12

— The secretary problem: optimal selection from two streams of candidates. *Strategies for sequential search and selection in real time (Amherst, MA*, 1990), 65–75, *Contemp. Math.*, 125, *Amer. Math. Soc., Providence, RI*, 1992. (Masami Yasuda) **93g:60088** 60G40 (62L15)

— The secretary problem: optimal selection with batch-interviewing and cost. (English and French summaries) *RAIRO Rech. Opér.* **26** (1992), *no.* 4, 391–407. (Krzysztof Szajowski) **93m:60083** 60G40 (62L15, 90B70)

— (*with* de la Peña, Victor H.) A note on second moment of a randomly stopped sum of independent variables. (English summary) *Statist. Probab. Lett.* **14** (1992), *no.* 4, 275–281. (Norbert Schmitz) **93i:60085** 60G40 (60G30, 62L10)

— A brief review of the role of lattices in rank order statistics. (English summary) *J. Statist. Plann. Inference* **34** (1993), *no.* 1, 135–149. (Summary) **93m:62108** 62G10 (06A07, 06B99)

— *see also* **Modern sequential analysis, 93c:62004**

Govindjee, Sanjay (*with* Simo, Juan C.) Coupled stress-diffusion: case II. (English summary) *J. Mech. Phys. Solids* **41** (1993), *no.* 5, 863–887. 73B99

Govorkov, A. B. Does the existence of antiparticles forbid violations of statistics? (English summary) *Modern Phys. Lett. A* **7** (1992), *no.* 26, 2383–2388. (Summary) **93g:81053** 81S05

Gow, R. (*with* Tamburini Bellani, Maria Chiara) Generation of $SL(n, p)$ by two Jordan block matrices. (Italian summary) *Boll. Un. Mat. Ital. A* (7) **6** (1992), *no.* 3, 349–357. (Summary) **93h:20054** 20G40

— (*with* Tamburini Bellani, Maria Chiara) Generation of $SL(n, \mathbf{Z})$ by a Jordan unipotent matrix and its transpose. (English summary) *Linear Algebra Appl.* **181** (1993), 63–71. (Summary) **93m:20061** 20G30

veerappa Gowda, G. D. *see* **Veerappa Gowda, G. D.**

Gowda, M. Seetharama (*with* Pang, Jong-Shi) Some existence results for multivalued complementarity problems. (English summary) *Math. Oper. Res.* **17** (1992), *no.* 3, 657–669. (Klaus Tammer) **93f:90167** 90C33 (90C30)

— On the continuity of the solution map in linear complementarity problems. (English summary) *SIAM J. Optim.* **2** (1992), *no.* 4, 619–634. (Jan Rückmann) **93k:90095** 90C33 (90C30, 90C31)

Gower, Barry Hume on probability. *British J. Philos. Sci.* **42** (1991), *no.* 1, 1–19. (Zeno G. Swijtink) **93a:01023** 01A50 (03B48)

Gower, J. C. (*with* Groenen, P. J. F.) Applications of the modified Leverrier-Faddeev algorithm for the construction of explicit matrix spectral decompositions and inverses. *Utilitas Math.* **40** (1991), 51–64. (V. L. Makarov) **93e:65058** 65F15 (65F05)

Gower, Rebecca A. H. (*with* Oates-Williams, Sheila; Donovan, Diane; Billington, Elizabeth J.) The quasigroup variety arising from a 2-perfect 6-cycle system of order 13. *J. Combin. Math. Combin. Comput.* **10** (1991), 119–128. (Charles C. Lindner) **93b:05027** 05B30 (20N05)

Gowers, W. T. Lipschitz functions on classical spaces. *European J. Combin.* **13** (1992), *no.* 3, 141–151. (N. Hindman) **93g:05142** 05D10 (46B45, 46G99, 54D80)

Gowrisankaran, Kohur (*with* Jesuraj, Ramasamy) Compact multipolar sets. (French summary) *Canad. Math. Bull.* **35** (1992), *no.* 1, 81–83. (Klaus Janssen) **93a:31019** 31D05

Goyal, A. K. A characterization of prime radical in near-rings under chain conditions on annihilators. (English summary) *Period. Math. Hungar.* **24** (1992), *no.* 3, 193–196. (Summary) **93h:16074** 16Y30 (16N80)

Goyal, I. C. (*with* Gallawa, R. L.; Ghatak, A. K.) Accuracy of eigenvalues: a comparison of two methods. (English summary) *J. Math. Phys.* **34** (1993), *no.* 3, 1169–1175. (Summary) **93m:65113** 65L15 (34L15, 34L40, 81Q20)

Goyal, Pankaj (*with* Alagar, V. S.; Nair, P. S.; Sadri, Fereidoon) Permutation dependency in Datalog programs. (English summary) *Inform. Sci.* **68** (1993), *no.* 3, 207–223. (Summary) **93k:68025** 68P20 (68T30)

Goyal, S. P. (*with* Jain, R. M.; Gaur, Neelima) Fractional integral operators involving a product of generalized hypergeometric functions and a general class of polynomials. II. *Indian J. Pure Appl. Math.* **23** (1992), *no.* 2, 121–128. (Summary) **93a:33011** 33C20

Goyan, I. M. (*with* Bunu, I. D.; Tèbyrtsè, E. I.) On a lattice of torsions with a unique co-atom. (Russian) *Algebraic structures and geometry (Russian)*, 29–30, 157, "*Shtiintsa*", *Kishinev*, 1991. (L. Bican) **93f:16034** 16S90

Göz, M. F. On the origin of wave patterns in fluidized beds. (English summary) *J. Fluid Mech.* **240** (1992), 379–404. (Summary) **93g:76107** 76T05 (76E99)

Góźdź, Andrzej (*with* Rogatko, Marek) The algebraic generator coordinate method for locally compact Lie groups. (English summary) *J. Phys. A* **25** (1992), *no.* 17, 4625–4632. (Mariano A. del Olmo) **93k:81071** 81R05 (22E70, 81R30)

Góźdź, Cz. (*with* Polak, M.) Random measures with values in topological abelian groups. (English summary) *Studia Sci. Math. Hungar.* **26** (1991), *no.* 4, 475–487. (Summary) **93m:60095** 60G57 (28C10)

Góźdź, Stanisław (*with* Smarzewski, Ryszard) Blaschke-Süss type theorems for closed plane curves. *J. Geom.* **44** (1992), *no.* 1-2, 45–52. (Aristide Sanini) **93f:53004** 53A04

Goze, Michel (*with* Piu, M. Paola) Distributions totalement géodésiques pour des métriques nilpotentes. [Totally geodesic distributions for nilpotent metrics] Conference on Differential Geometry and Topology (Sardinia, 1988). *Rend. Sem. Fac. Sci. Univ. Cagliari* **58** (1988), *suppl.*, 395–408. (Wolfgang Ziller) **93e:53056** 53C30 (53C22)

— Systèmes de Pfaff. (English summary) [Pfaffian systems] *Rend. Sem. Fac. Sci. Univ. Cagliari* **60** (1990), *no.* 2, 167–187. (Ceferino Ruiz) **93f:58004** 58A17 (58A10)

— (*with* Ancochéa-Bermúdez, José María; Khakimdzhanov, Yu. B.) Sur les composantes de la variété des algèbres de Lie nilpotentes. (English summary) [On the components of the variety of nilpotent Lie algebras] *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 9, 657–660. (Roger Carles) **93g:17015** 17B30

— (*with* Ancochéa-Bermúdez, José María) Le rang du systeme linéaire des racines d'une algèbre de Lie rigide résoluble complexe. [The rank of a linear system of roots of a complex solvable rigid Lie algebra] *Comm. Algebra* **20** (1992), *no.* 3, 875–887. (Roger Carles) **93a:17006** 17B30

— (*with* Ancochéa-Bermúdez, José María) On the varieties of nilpotent Lie algebras of dimension 7 and 8. *J. Pure Appl. Algebra* **77** (1992), *no.* 2, 131–140. (Roger Carles) **93b:17034** 17B30

— (*with* Piu, M. Paola) On the Riemannian geometry of the nilpotent groups $H(p, r)$. (English summary) *Proc. Amer. Math. Soc.* **119** (1993), *no.* 2, 611–619. (O. Kowalski) **93k:53047** 53C30 (22E25)

Gozzi, E. (*with* Reuter, M.; Thacker, W. D.) Symmetries of the classical path integral on a generalized phase-space manifold. *Phys. Rev. D* (3) **46** (1992), *no.* 2, 757–765. (Summary) **93e:81063** 81S40 (58D30, 70G99, 70H33)

— (*with* Reuter, M.; Thacker, W. D.) Erratum: "Symmetries of the classical path integral on a generalized phase-space manifold" [Phys. Rev. D (3) **46** (1992), no. 2, 757–765; MR 93e:81063]. *Phys. Rev. D* (3) **46** (1992), *no.* 10, 4782. 81S40 (58D30, 70G99, 70H33)

Gozzi, Fausto Some results for an optimal control problem with a semilinear state equation. (Italian summary) *Atti Accad. Naz. Lincei Rend. Cl. Sci. Fis. Mat. Natur.* (8) **82** (1988), *no.* 3, 423–429 (1990). (H. O. Fattorini) **93c:49005** 49J27 (49K27, 93C25)

de Graaf, Jan Skew-Hermitean representations of Lie algebras of vectorfields on the unit-sphere. Mathematische Wissenschaften gestern und heute. 300 Jahre Mathematische Gesellschaft in Hamburg, Teil 3 (Hamburg, 1990). *Mitt. Math. Ges. Hamburg* **12** (1991), *no.* 3, 705–711. (Alexandr V. Kosyak) **93c:22037** 22E65 (17B66)

de Graaf, Jeannette M. (*with* Kosters, Walter A.) Expected heights in heaps. (English summary) *BIT* **32** (1992), *no.* 4, 570–579. (Summary) **93g:68020** 68P10

de Graaf, M. (*with* Schrijver, Alexander; Seymour, P. D.) Directed triangles in directed graphs. (English summary) *Discrete Math.* **110** (1992), *no.* 1-3, 279–282. (Summary) **93j:05069** 05C20

Grabarnik, G. Ya. (*with* Gol'dshteĭn, M. Sh.) Almost sure convergence theorems in von Neumann algebras. (English summary) *Israel J. Math.* **76** (1991), *no.* 1-2, 161–182. (Fumio Hiai) **93j:46070** 46L50

Grabarnik, Pavel (*with* Stoyan, Dietrich) Second-order characteristics for stochastic structures connected with Gibbs point processes. *Math. Nachr.* **151** (1991), 95–100. (Summary) **93f:60065** 60G55

Gräbe, Hans-Gert Homology modules and standard bases. *Beiträge Algebra Geom. No.* 32 (1991), 11–20. (Rüdiger Achilles) **93c:13016** 13F50 (13D03, 13H10)

— Resolving algebras with straightening law. *Beiträge Algebra Geom. No.* 33 (1992), 5–16. (Franz Pauer) **93b:13035** 13F50 (13P10)

— (*with* Pauer, Franz) A remark on Hodge algebras and Gröbner bases. *Czechoslovak Math. J.* **42(117)** (1992), *no.* 2, 331–338. (Rafael H. Villarreal) **93k:13031** 13F50 (13P10)

Grabiner, Judith V. Descartes and problem solving. (English. English summary) A lecture presented at the Fiftieth Anniversary Celebration of the Metropolitan New York Section of the Mathematical Association of America held at Columbia University, New York, May 1991. Selected Lectures in Mathematics. *American Mathematical Society, Providence, RI*, 1992. 1 *videocassette* (*NTSC*; 1/2 *inch*; *VHS*) (60 *min.*); *sd., col. ISBN* 0-8218-8069-1 (From the publisher's description) **93h:01018** 01A45

Grabiner, S. (*with* Ghahramani, Fereidoun) Standard homomorphisms and convergent sequences in weighted convolution algebras. *Illinois J. Math.* **36** (1992), *no.* 3, 505–527. (Michael M. Neumann) **93d:46089** 46J40 (43A10, 43A22)

Grabisch, Michel (*with* Murofushi, Toshiaki; Sugeno, Michio) Fuzzy measure of fuzzy events defined by fuzzy integrals. (English summary) *Japanese J. Fuzzy Theory Systems* **3** (1991), *no.* 3, 251–264 (1992). (Summary) **93e:28024** 28E10 (04A72)

— (*with* Murofushi, Toshiaki; Sugeno, Michio) Fuzzy measure of fuzzy events defined by fuzzy integrals. (English summary) *Fuzzy Sets and Systems* **50** (1992), *no.* 3, 293–313. 28E10 (04A72)

— (*with* Yoneda, Minoru; Fukami, Satoru) Interactive determination of a utility function represented as a fuzzy integral. (English summary) *Inform. Sci.* **71** (1993), *no.* 1-2, 43–64. (Summary) **93m:90013** 90A10 (04A72)

Grable, David A. Sharpened Bonferroni inequalities. (English summary) *J. Combin. Theory Ser. B* **57** (1993), *no.* 1, 131–137. (Summary) **93m:60036** 60E15 (05C65, 60C05)

Grabmeier, Johannes (*with* Dress, Andreas W. M.) The interpolation problem for k-sparse polynomials and character sums. *Adv. in Appl. Math.* **12** (1991), *no.* 1, 57–75. (Summary) **93b:12018** 12Y05 (20M14)

— (*with* Clausen, Michael; Dress, Andreas W. M.; Karpiński, Marek) On zero-testing and interpolation of k-sparse multivariate polynomials over finite fields. *Theoret. Comput. Sci.* **84** (1991), *no.* 2, *Algorithms Automat. Complexity Games*, 151–164. (B. David Saunders) **93e:68045** 68Q40 (12Y05, 41A05)

Grabmüller, Hans (*with* Pirner, Robert) Existence theorems for some boundary value problems in the nonlinear theory of annular elastic membranes. (English summary) *European J. Appl. Math.* **3** (1992), *no.* 3, 299–317. (Zheng You Zhu) **93j:73046** 73K10 (34B15, 73C99, 73K15)

— (*with* Beck, Armin) Wrinkle-free solutions of circular membrane problems. *Z. Angew. Math. Phys.* **43** (1992), *no.* 3, 481–504. (Summary) **93d:73045** 73K10 (34B15, 73G05)

Grabner, Peter J. Metric results on a new notion of discrepancy. (English summary) *Math. Slovaca* **42** (1992), *no.* 5, 615–619. (Peter Schatte) **93m:11071** 11K38

— (*with* Tichy, Robert F.) Spherical designs, discrepancy and numerical integration. *Math. Comp.* **60** (1993), *no.* 201, 327–336. (Peter Schatte) **93d:11080** 11K45 (65C05)

— Searching for losers. (English summary) *Random Structures Algorithms* **4** (1993), *no.* 1, 99–110. (Summary) **93i:05048** 05C05 (05C85)

Grabosch, Annette A functional equation from cell kinetics. *Differential Integral Equations* **5** (1992), *no.* 2, 405–420. (G. F. Webb) **93f:92014** 92C40 (47D03, 47N60, 92B99)

hebda-Grabowska, Halina *see* **Hebda-Grabowska, Halina**

Grabowski, Janusz Abstract Jacobi and Poisson structures. Quantization and star-products. *J. Geom. Phys.* **9** (1992), *no.* 1, 45–73. (C. J. Atkin) **93e:58073** 58F06 (17B65, 58F05)

— (*with* Dobrowolski, Tadeusz) Subgroups of Hilbert spaces. *Math. Z.* **211** (1992), *no.* 4, 657–669. (Alexander Isaakovich Shtern) **93k:58009** 58B25 (22A15, 46A99, 46C05, 47D03)

Grabowski, Jerzy On some approximate method for Fredholm's integral equation of the second kind with bounded kernel. *Demonstratio Math.* **25** (1992), *no.* 1-2, 353–359. (G. F. Miller) **93i:65127** 65R20 (45B05, 45L05)

Grabowski, Marian On the phase operator. (English summary) *Rep. Math. Phys.* **29** (1991), *no.* 3, 377–382. (S. Gudder) **93g:81012** 81P15 (81Q10)

Grabowski, Piotr On a problem of the best L^2-approximation with exponential sums. *Estimation and control of distributed parameter systems (Vorau, 1990)*, 129–138, *Internat. Ser. Numer. Math.*, 100, *Birkhäuser, Basel*, 1991. (Günther Nürnberger) **93c:41043** 41A50 (65D15)

Grace, A. C. W. (*with* Crummey, T. P.; Farshadnia, R.; Fleming, Philip Joseph; Hancock, S. D.) An optimization toolbox for MATLAB. *Control '91, Vol.* 1, 2 (*Edinburgh*, 1991), 744–749, *IEE Conf. Publ. Ser.*, 332, *IEE, London*, 1991. (*see* **93h:93007**) 90C30

Grace, E. E. (*with* Vought, Eldon J.) Proximately refinable maps and θ_n'-continua. *Topology Proc.* **15** (1990), 39–51. (James T. Rogers, Jr.) **93f:54046** 54F15 (54C99, 54F50)

Grace, S. R. (*with* Lalli, B. S.) Oscillations of second order general nonlinear differential equations. (English summary) *Recent trends in differential equations*, 413–429, *World Sci. Ser. Appl. Anal.*, 1, *World Sci. Publishing, River Edge, NJ*, 1992. (Wadi Mahfoud) **93j:34041** 34C10

— (*with* Lalli, B. S.) Oscillation theorems for second order neutral functional-differential equations. (English summary) *Appl. Math. Comput.* **51** (1992), *no.* 2-3, 119–133. (Summary) **93d:34120** 34K15 (34K40)

— Oscillation theorems for damped functional-differential equations. *Funkcial. Ekvac.* **35** (1992), *no.* 2, 261–278. (Ch. G. Philos) **93h:34123** 34K15 (34C10)

— (*with* Lalli, B. S.) Oscillation theorems for second order superlinear differential equations with damping. (English summary) *J. Austral. Math. Soc. Ser. A* **53** (1992), *no.* 2, 156–165. (Cheh-Chih Yeh) **93g:34046** 34C10

— Oscillatory and asymptotic behavior of delay differential equations with a nonlinear damping term. (English summary) *J. Math. Anal. Appl.* **168** (1992), *no.* 2, 306–318. (I. Kiguradze) **93h:34124** 34K15

— Oscillation theorems for nonlinear differential equations of second order. (English summary) *J. Math. Anal. Appl.* **171** (1992), *no.* 1, 220–241. (Ju Rang Yan) **93m:34043** 34C10 (34A34)

— Oscillation of nonlinear differential equations of second order. *Publ. Math. Debrecen* **40** (1992), *no.* 1-2, 143–153. (Ondřej Došlý) **93g:34047** 34C10 (34K15)
— Oscillation criteria for nonlinear differential equations with several deviating arguments. (English summary) *Publ. Math. Debrecen* **41** (1992), *no.* 1-2, 99–116. (Ch. G. Philos) **93i:34130** 34K15 (34C10)
Gracey, J. A. On the evaluation of massless Feynman diagrams by the method of uniqueness. *Phys. Lett. B* **277** (1992), *no.* 4, 469–473. (Summary) **93c:81145** 81T18
Grachev, N. V. Representations and estimates for inverse operators of the potential theory integral equations in a polyhedron. *Potential theory (Nagoya, 1990)*, 201–206, *de Gruyter, Berlin*, 1992. (Summary) **93c:31009** 31B20 (31B35, 35J05, 47G10)
clavero Gracia, Carmelo *see* **Clavero Gracia, Carmelo**
Gracia, Juan-M. (*with* Beitia, Ma. Asunción; de Hoyos, Inmaculada) A linear matrix equation: a criterion for block similarity. (English summary) *Linear and Multilinear Algebra* **31** (1992), *no.* 1-4, 93–118. (Juan Manuel de Olazábal) **93m:15014** 15A21 (15A24)
Gràcia, X. (*with* Pons, J. M.; Román-Roy, N.) Higher-order Lagrangian systems: geometric structures, dynamics, and constraints. *J. Math. Phys.* **32** (1991), *no.* 10, 2744–2763. (Claude Itzykson) **93a:58061** 58F05 (70G99, 70H35)
— (*with* Pons, J. M.; Román-Roy, N.) Higher-order conditions for singular Lagrangian dynamics. *J. Phys. A* **25** (1992), *no.* 7, 1989–2004. (Jaime Muñoz Masqué) **93d:58052** 58F05 (70G99, 70H35)
— (*with* Pons, J. M.) A Hamiltonian approach to Lagrangian Noether transformations. (English summary) *J. Phys. A* **25** (1992), *no.* 23, 6357–6369. (Paulo R. Rodrigues) **93k:58092** 58F05 (53C80, 70H33, 70H35, 81T30)
Gracia-Bondía, José M. (*with* Cariñena, José F.; Ibort, Luis A.; López Lacasta, Carlos; Várilly, Joseph C.) Distinguished Hamiltonian theorem for homogeneous symplectic manifolds. *Lett. Math. Phys.* **23** (1991), *no.* 1, 35–44. (Summary) **93i:58051** 58F05 (58B20, 70H05, 70H15, 81S10)
— Generalized Moyal quantization on homogeneous symplectic spaces. *Deformation theory and quantum groups with applications to mathematical physics (Amherst, MA, 1990)*, 93–114, *Contemp. Math.*, 134, *Amer. Math. Soc., Providence, RI*, 1992. (José F. Cariñena) **93j:81060** 81S30 (58F06, 81S10)
Graczyk, Piotr Malliavin calculus for stable processes on homogeneous groups. *Studia Math.* **100** (1991), *no.* 3, 183–205. (Summary) **93i:60106** 60H07 (22E30, 60G30, 60J30)
— A central limit theorem on the space of positive definite symmetric matrices. (English and French summaries) *Ann. Inst. Fourier (Grenoble)* **42** (1992), *no.* 4, 857–874. (Donald Richards) **93m:60023** 60B15 (43A05)
Graczyńska, Ewa EIS for nilpotent shifts of varieties. (English summary) *Bull. Sect. Logic Univ. Łódź* **21** (1992), *no.* 2, 72–78. 08B99
— A word problem for normal and regular equations. (English summary) *Bull. Sect. Logic Univ. Łódź* **21** (1992), *no.* 4, 152–155. 08A50 (03D40)
el Gradechi, Amine M. *see* **El Gradechi, Amine M.**
Grädel, Erich Simple sentences that are hard to decide. *Inform. and Comput.* **94** (1991), *no.* 1, 62–82. (Summary) **93d:03019** 03B25 (03D15)
— Capturing complexity classes by fragments of second-order logic. (English summary) Logic and applications to computer science (Paris, 1990/1991). *Theoret. Comput. Sci.* **101** (1992), *no.* 1, 35–57. (Christine Charretton) **93i:03056** 03D15 (03C13, 03C85, 68Q15)
Grădinaru, Mihai On the derivative with respect to a function with applications to Riemann-Stieltjes integral. *Seminar on Mathematical Analysis (Cluj-Napoca, 1989–1990)*, 21–28, *Preprint*, 90-7, "*Babeş-Bolyai*" *Univ., Cluj-Napoca*, 1990. (James Foran) **93g:26008** 26A24 (26A42)
Gradl, H. (*with* Walcher, Sebastian) On a class of inversions. *Comm. Algebra* **20** (1992), *no.* 8, 2371–2392. (José Antonio Cuenca Mira) **93j:17059** 17C50 (17C05)
Gradus, Raymond H. J. M. The derivation of feedback Stackelberg equilibria in dynamic economic games. *Dynamic games in economic analysis (Espoo, 1990)*, 193–203, *Lecture Notes in Control and Inform. Sci.*, 157, *Springer, Berlin*, 1991. (*see* **93d:90003**) 90A16 (90A14)
— Optimal dynamic profit taxation: the derivation of feedback Stackelberg equilibria. (English summary) *Metroeconomica* **42** (1991), *no.* 2, 157–177. 90A70
— (*with* de Zeeuw, Aart J.) An employment game between government and firms. (English summary) *Optimal Control Appl. Methods* **13** (1992), *no.* 1, 57–71. 90D40 (90D25)
Grady, Michael (*with* Newman, Morris) Some divisibility properties of the subgroup counting function for free products. *Math. Comp.* **58** (1992), *no.* 197, 347–353. (Summary) **93e:11026** 11B50 (20E06)
Graef, John R. (*with* Grammatikopoulos, Myron K.; Spikes, Paul W.) Some results on the asymptotic behavior of the solutions of a second order nonlinear neutral delay equation. *Oscillation and dynamics in delay equations (San Francisco, CA, 1991)*, 105–114, *Contemp. Math.*, 129, *Amer. Math. Soc., Providence, RI*, 1992. (Binggen Zhang) **93i:34131** 34K15 (34K40)
— (*with* Spikes, Paul W.) On the oscillation of an nth-order nonlinear neutral delay differential equation. (English summary) Asymptotic methods in analysis and combinatorics. *J. Comput. Appl. Math.* **41** (1992), *no.* 1-2, 35–40. (Summary) **93f:34121** 34K15 (34K40)
— *see also* **Oscillation and dynamics in delay equations, 93b:34096**
Graettinger, Timothy J. (*with* Krogh, Bruce H.) On the computation of reference signal constraints for guaranteed tracking performance. (English summary) *Automatica J. IFAC* **28** (1992), *no.* 6, 1125–1141. (M. Krastanov) **93j:93051** 93B40 (93B51)
Graev, M. I. (*with* Gel'fand, I. M.; Retakh, V. S.) Reduction formulas for hypergeometric functions on the Grassmannian $G_{k,n}$ and the description of hypergeometric functions on strata of small codimensions. (Russian) *Dokl. Akad. Nauk SSSR* **318** (1991), *no.* 4, 793–797; *translation in Soviet Math. Dokl.* **43** (1991), *no.* 3, 757–761 (1992). (Michael M. Kapranov) **93b:33015** 33C80 (14M15)
— (*with* Gel'fand, I. M.; Retakh, V. S.) Hypergeometric functions on the kth exterior power of the space $\mathbf{C}^n$ and the Grassmannian $G_{k,n}$ and the connection between them. (Russian) *Dokl. Akad. Nauk SSSR* **320** (1991), *no.* 1, 20–24; *translation in Soviet Math. Dokl.* **44** (1992), *no.* 2, 375–380. (J. S. Joel) **93e:22022** 22E45 (32M10, 32S45, 32S60, 33C70, 33C80)
— (*with* Gel'fand, I. M.) The Crofton function and inversion formulas in real integral geometry. (Russian) *Funktsional. Anal. i Prilozhen.* **25** (1991), *no.* 1, 1–6; *translation in Functional Anal. Appl.* **25** (1991), *no.* 1, 1–5. (R. G. Mukhometov) **93e:53083** 53C65 (52A22)
Graev, M. M. (*with* Alekseevskiĭ, D. V.) Twistors and G-structures. (Russian) *Izv. Ross. Akad. Nauk Ser. Mat.* **56** (1992), *no.* 1, 3–37; *translation in Russian Acad. Sci. Izv. Math.* **40** (1993), *no.* 1, 1–31. (Sergey Merkulov) **93e:53036** 53C10 (32L25)
Graf, Gian Michele A remark on long-range Stark scattering. *Helv. Phys. Acta* **64** (1991), *no.* 7, 1167–1174. (Giorgio Cattapan) **93b:81298** 81U05 (35P25, 47F05)
— (*with* Gesztesy, F.; Simon, Barry) The ground state energy of Schrödinger operators. (English summary) *Comm. Math. Phys.* **150** (1992), *no.* 2, 375–384. (Takashi Ichinose) **93j:47070** 47F05 (47N50, 81Q10)
Graf, Martin (*with* Henning, Peter A.; Matthäus, Frank) The geometry of the thermal quasi-particle transformation. *Phys. A* **182** (1992), *no.* 3, 489–508. (M. Lawrence Glasser) **93c:81056** 81Q99 (81T13)
Graf, Siegfried (*with* Bandt, Christoph) Self-similar sets. VII. A characterization of self-similar fractals with positive Hausdorff measure. *Proc. Amer. Math. Soc.* **114** (1992), *no.* 4, 995–1001. (Tim Bedford) **93d:28014** 28A80 (58F08)
Grafakos, Loukas (*with* Coifman, Ronald R.) Hardy space estimates for multilinear operators. I. (English summary) *Rev. Mat. Iberoamericana* **8** (1992), *no.* 1, 45–67. (Aleš Založnik) **93j:42011** 42B30 (42B20)
— Hardy space estimates for multilinear operators. II. (English summary) *Rev. Mat. Iberoamericana* **8** (1992), *no.* 1, 69–92. (Aleš Založnik) **93j:42012** 42B30
— On multilinear fractional integrals. *Studia Math.* **102** (1992), *no.* 1, 49–56. (Daniel H. Luecking) **93d:42021** 42B99 (26A33, 26B99, 46E99, 47B38)
— Strong type endpoint bounds for analytic families of fractional integrals. *Proc. Amer. Math. Soc.* **117** (1993), *no.* 3, 653–663. (Alexander Nagel) **93d:42014** 42B20
Graffi, Dario (*with* Fabrizio, Mauro) On the notion of state for viscoelastic materials of "rate" type. (Italian. English summary) *Atti Accad. Naz. Lincei Rend. Cl. Sci. Fis. Mat. Natur.* (8) **83** (1989), 201–208 (1990). (Stan Chiriţă) **93a:73036** 73F15 (73B05)
— (*with* Fabrizio, Mauro) Nonuniqueness of free energy for viscoelastic materials. (Italian. English summary) *Atti Accad. Naz. Lincei Rend. Cl. Sci. Fis. Mat. Natur.* (8) **83** (1989), 209–214 (1990). (Stan Chiriţă) **93a:73037** 73F15 (73B05)
— Some results of Vito Volterra recovered via the Laplace transform. (Italian. English summary) *Rend. Mat. Appl.* (7) **10** (1990), *no.* 4, 927–948 (1991). (A. Corduneanu) **93b:44001** 44A10
— *see also* **Nardini, Renato, 93d:01072** *and* **Cercignani, Carlo**
Graffi, Sandro Classical perturbation theory in quantum mechanics. (Italian) Memoirs of mathematical physics in honor of Giovanni Carini on his 70th birthday (Italian). *Atti Accad. Peloritana Pericolanti Cl. Sci. Fis. Mat. Natur.* **68** (1990), *suppl.* 1, 309–338 (1991). (Emili Elizalde) **93c:81043** 81Q15
— Exact quantization of the canonical perturbation theory. (English summary) *Probabilistic methods in mathematical physics (Siena, 1991)*, 233–243, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93g:81021** 81Q15 (81-02)
Gragg, Karen M. (*with* Kung, Joseph P. S.) Consistent dually semimodular lattices. *J. Combin. Theory Ser. A* **60** (1992), *no.* 2, 246–263. (Manfred Stern) **93e:06008** 06C10 (20E15)
Graham, C. Robin (*with* Eastwood, Michael G.) Invariants of CR densities. *Several complex variables and complex geometry, Part 2 (Santa Cruz, CA, 1989)*, 117–133, *Proc. Sympos. Pure Math.*, 52, *Part 2, Amer. Math. Soc., Providence, RI*, 1991. (Michael Murray) **93e:32012** 32C16 (22E47, 53A55)
— (*with* Eastwood, Michael G.) Invariants of conformal densities. *Duke Math. J.* **63** (1991), *no.* 3, 633–671. (Michael Murray) **93b:22030** 22E47 (14F05, 22E46, 53A30, 58G35)
— Nonlinear diffusion with jumps. (English and French summaries) *Ann. Inst. H. Poincaré Probab. Statist.* **28** (1992), *no.* 3, 393–402. (Ingemar Kaj) **93i:60184** 60K35 (60J75)
— McKean-Vlasov Itô-Skorohod equations, and nonlinear diffusions with discrete jump sets. *Stochastic Process. Appl.* **40** (1992), *no.* 1, 69–82. (G. Papanicolaou) **93b:60102** 60G55 (60H99, 60J75)
— (*with* Méléard, Sylvie) Propagation of chaos for a fully connected loss network with alternate routing. (English summary) *Stochastic Process. Appl.* **44** (1993), *no.* 1, 159–180. (Summary) **93h:60163** 60K35 (90B12, 90B15, 94C10)
Graham, E. B. (*with* Pierrus, J.; Raab, R. E.) Multipole moments and Maxwell's equations. (English summary) *J. Phys. B* **25** (1992), *no.* 21, 4673–4684. (Summary) **93h:78003** 78A25
Graham, I. G. (*with* Lin, Qun; Xie, Rui Feng) Extrapolation of Nyström solutions of boundary integral equations on nonsmooth domains. *J. Comput. Math.* **10** (1992), *no.* 3, 231–244. (Summary) **93a:65179** 65R20
Graham, Marc H. (*with* Wang, Ke[3]) Constant-time maintainability: a generalization of independence. *ACM Trans. Database Systems* **17** (1992), *no.* 2, 201–246. (Summary) **93b:68019** 68P15
Graham, R. *see* **Graham, Robert**
Graham, R. L. Isometric embeddings of graphs. *Selected topics in graph theory*, 3, 133–150, *Academic Press, San Diego, CA*, 1988. (*see* **93h:05003**) 05C10
— (*with* Burr, Stefan A.; Erdős, Paul; Sós, Vera T.; Frankl, Peter) Further results on maximal anti-Ramsey graphs. *Graph theory, combinatorics, and applications, Vol. 1 (Kalamazoo, MI, 1988)*, 193–206, *Wiley-Intersci. Publ., Wiley, New York*, 1991. (Summary) **93i:05093** 05C55
— (*with* Chung, Fan R. K.) Maximum cuts and quasirandom graphs. *Random graphs, Vol. 2 (Poznań, 1989)*, 23–33, *Wiley-Intersci. Publ., Wiley, New York*, 1992. (E. M. Palmer) **93b:05149** 05C80
— (*with* Erdős, Paul; Ruzsa, Imre Z.; Taylor, Herbert) Bounds for arrays of dots with distinct slopes on lengths. *Combinatorica* **12** (1992), *no.* 1, 39–44. (Summary) **93k:05182** 05D05
— (*with* Diaconis, Persi) Binomial coefficient codes over GF(2). (English summary) A collection of contributions in honour of Jack van Lint. *Discrete Math.* **106/107** (1992), 181–188. (Ram Autar) **93i:94024** 94B60
— (*with* Chung, Fan R. K.; Diaconis, Persi) Universal cycles for combinatorial structures. (English summary) *Discrete Math.* **110** (1992), *no.* 1-3, 43–59. (Giuseppe Pellegrino) **93m:05018** 05A99 (05C20)
— (*with* Diaconis, Persi) An affine walk on the hypercube. (English summary) Asymptotic methods in analysis and combinatorics. *J. Comput. Appl. Math.* **41** (1992), *no.* 1-2, 215–235. (José L. Palacios) **93i:60124** 60J10 (05A99, 60C05)
— (*with* Chung, Fan R. K.) Cohomological aspects of hypergraphs. *Trans. Amer. Math. Soc.* **334** (1992), *no.* 1, 365–388. (G. Ewald) **93a:05097** 05C65 (18G99, 55N99, 57Q99, 60C05)

Graham, Robert (*with* Tél, Tamás) Nonequilibrium potentials in spatially extended pattern forming systems. (English summary) *Instabilities and nonequilibrium structures, III (Valparaíso, 1989)*, 125–142, *Math. Appl.*, 64, *Kluwer Acad. Publ., Dordrecht*, 1991. (Summary) **93f:82054** 82C99 (92C15)

— (*with* Höhnerbach, Michael) Quantum effects on the multiphoton dissociation of a diatomic molecule. *Phys. Rev. A* (3) **43** (1991), *no.* 7, 3966–3981. (Charles A. Nelson) **93c:81276** 81V55 (81V10)

— (*with* Hamm, Andreas) Nonequilibrium potentials for dynamical systems weakly perturbed by noise. *From phase transitions to chaos*, 449–469, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93c:58187** 58F30 (58F13)

— (*with* Dittrich, Thomas) Continuously measured chaotic quantum systems. *Quantum chaos—quantum measurement (Copenhagen, 1991)*, 219–229, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 358, *Kluwer Acad. Publ., Dordrecht*, 1992. (Koichiro Matsuno) **93b:81024** 81P15 (81Q50)

— (*with* Hamm, Andreas) Quasipotentials for simple noisy maps with complicated dynamics. *J. Statist. Phys.* **66** (1992), *no.* 3-4, 689–725. (Dieter H. Mayer) **93c:58188** 58F30 (58F08, 60F10, 82C05)

— (*with* Györgyi, Géza; Prange, R. E.) Renormalization group study of quantum fluctuations near classical critical points of Hamiltonian systems. *J. Statist. Phys.* **68** (1992), *no.* 1-2, 175–188. (Dieter H. Mayer) **93h:81030** 81Q50 (81Q20)

— (*with* Descalzi, O.) Gradient expansion of the nonequilibrium potential for the supercritical Ginzburg-Landau equation. (English summary) *Phys. Lett. A* **170** (1992), *no.* 2, 84–90. (Summary) **93h:82040** 82C31 (35Q55)

— (*with* Hamm, Andreas) Scaling for small random perturbations of golden critical circle maps. (English summary) *Phys. Rev. A* (3) **46** (1992), *no.* 10, 6323–6333. (Pierre Moussa) **93k:58151** 58F13 (58F27, 70K50, 82C28)

— (*with* Bene, Julius) Supersymmetric Bianchi type IX cosmology with a scalar field. (English summary) *Phys. Lett. B* **302** (1993), *no.* 2-3, 183–188. (Viqar Husain) **93m:83004** 83C05 (83C15, 83C45)

Graham, William A. Functions on the universal cover of the principal nilpotent orbit. *Invent. Math.* **108** (1992), *no.* 1, 15–27. (D. Miličić) **93h:22026** 22E46

Grakhovskaya, O. B. (*with* Granovskiĭ, Ya. I.; Zhedanov, A. S.) Addition rule for nonlinear algebras. *Phys. Lett. B* **278** (1992), *no.* 1-2, 85–88. (Summary) **93c:81079** 81R50 (17B37)

Grama, Cornelia (*with* Grama, N.; Zamfirescu, I.) Global method for all *S*-matrix poles identification: new classes of poles and resonant states. (English summary) *Ann. Physics* **218** (1992), *no.* 2, 346–383. (A. Ventura) **93i:81283** 81U05 (81U20, 81V35)

Grama, N. (*with* Grama, Cornelia; Zamfirescu, I.) Global method for all *S*-matrix poles identification: new classes of poles and resonant states. (English summary) *Ann. Physics* **218** (1992), *no.* 2, 346–383. (A. Ventura) **93i:81283** 81U05 (81U20, 81V35)

Gramain, André Rapport sur la théorie classique des nœuds. II. [Report on classical knot theory. II] Séminaire Bourbaki, Vol. 1990/91. *Astérisque No.* 201-203 (1991), *Exp. No.* 732, 89–113 (1992). (L. Neuwirth) **93a:57008** 57M25

— Le théorème de van Kampen. (English summary) [The van Kampen theorem] *Cahiers Topologie Géom. Différentielle Catégoriques* **33** (1992), *no.* 3, 237–251. (Summary) **93f:55012** 55Q05 (55P15, 57M05)

— (*with* Barrabès, Claude; Lesigne, E.; Letelier, Patricio S.) Geometric inequalities and the hoop conjecture. (English summary) *Classical Quantum Gravity* **9** (1992), *no.* 9, L105–L110. (Richard Hansen) **93f:83068** 83C99

Gramann, P. J. (*with* Mätzig, J. C.; Osswald, T. A.) Boundary element simulation of the mixing process of polymer blends. (English summary) *Boundary element technology, VII (Albuquerque, NM, 1992)*, 117–134, *Comput. Mech., Southampton*, 1992. (*see* **93b:65002**) 76M15 (65N38, 73V10)

Gramatges, R. Processing of sequences by definite and group automata. (Russian) *Constructions in algebra and logic (Russian)*, 34–37, *Tver. Gos. Univ., Tver'*, 1990. (*see* **93m:00021**) 68Q70

Gramchev, Todor Semilinear hyperbolic systems and equations with singular initial data. *Monatsh. Math.* **112** (1991), *no.* 2, 99–113. (Summary) **93e:35069** 35L60 (35L45)

— (*with* Popivanov, Petʺr R.; Yoshino, Masafumi) Global solvability and hypoellipticity on the torus for a class of differential operators with variable coefficients. *Proc. Japan Acad. Ser. A Math. Sci.* **68** (1992), *no.* 3, 53–57. (Jorge Hounie) **93g:35025** 35H05 (35D05, 58G03)

Gramlich, Günter M. Semi-infinite optimization in engineering design. (English summary) *Computational systems analysis* 1992 (*Berlin*, 1992), 183–188, *Elsevier, Amsterdam*, 1992. (*see* **93e:00021**) 90C34

Grammaticos, B. (*with* Tamizhmani, K. M.; Ramani, A.) Lie symmetries of Hirota's bilinear equations. *J. Math. Phys.* **32** (1991), *no.* 10, 2635–2659. (Niky Kamran) **93b:58125** 58F35 (35A30, 35C05)

— (*with* Karra, G.; Papageorgiou, V. G.; Ramani, A.) Integrability of discrete-time systems. (English summary) *Chaotic dynamics (Patras, 1991)*, 75–90, *NATO Adv. Sci. Inst. Ser. B Phys.*, 298, *Plenum, New York*, 1992. (Summary) **93k:39004** 39A12 (58F07)

— (*with* Ramani, A.) Miura transforms for discrete Painlevé equations. *J. Phys. A* **25** (1992), *no.* 11, L633–L637. (A. Roy Chowdhury) **93f:39012** 39A12 (35Q99, 58F37)

— (*with* Ramani, A.; Tamizhmani, K. M.) An integrability test for differential-difference systems. *J. Phys. A* **25** (1992), *no.* 14, L883–L886. (Mehmet Can) **93f:34126** 34K15 (34G20, 35Q58, 58F07)

— (*with* Ramani, A.; Karra, G.) Linearizable mappings. *Phys. A* **180** (1992), *no.* 1-2, 115–127. (Frederick R. Marotto) **93e:39005** 39A10 (34A34, 58F07)

— (*with* Papageorgiou, V. G.; Nijhoff, F. W.; Ramani, A.) Isomonodromic deformation problems for discrete analogues of Painlevé equations. *Phys. Lett. A* **164** (1992), *no.* 1, 57–64. (B. G. Konopelʹchenko) **93c:58092** 58F07 (34A20, 58F19)

— (*with* Ramani, A.; Satsuma, Junkichi) Integrability of multidimensional discrete systems. (English summary) *Phys. Lett. A* **169** (1992), *no.* 5, 323–328. (Summary) **93f:58109** 58F07 (39A12)

— (*with* Ramani, A.; Tamizhmani, K. M.) Painlevé analysis and singularity confinement: the ultimate conjecture. (English summary) *J. Phys. A* **26** (1993), *no.* 2, L53–L58. (Summary) **93k:58200** 58F37

Grammatikopoulos, Myron K. (*with* Stavroulakis, I. P.) Oscillations of neutral differential equations. (Serbo-Croatian summary) *Rad. Mat.* 7 (1991), *no.* 1, 47–71. (Ovide Arino) **93b:34087** 34K15 (34K40)

— (*with* Bilchev, Svetoslav Ĭ.; Stavroulakis, I. P.) Oscillations of second-order neutral differential equations with deviating arguments. *Oscillation and dynamics in delay equations (San Francisco, CA, 1991)*, 1–21, *Contemp. Math.*, 129, *Amer. Math. Soc., Providence, RI*, 1992. (Binggen Zhang) **93i:34127** 34K15 (34K40)

— (*with* Graef, John R.; Spikes, Paul W.) Some results on the asymptotic behavior of the solutions of a second order nonlinear neutral delay equation. *Oscillation and dynamics in delay equations (San Francisco, CA, 1991)*, 105–114, *Contemp. Math.*, 129, *Amer. Math. Soc., Providence, RI*, 1992. (Binggen Zhang) **93i:34131** 34K15 (34K40)

Grammenos, Th. (*with* Kolassis, Ch.) An analytic model of radiating spherical gravitational collapse. (English summary) *Phys. Lett. A* **169** (1992), *no.* 1-2, 5–11. (Summary) **93g:83062** 83C55

Granados, Bertha FFT method for biorthogonal expansion with respect to the integrated Walsh functions. *Ann. Univ. Sci. Budapest. Sect. Comput.* **11** (1991), 147–154. (Introduction) **93c:42024** 42C10 (65D15, 65T20)

Granas, Andrzej (*with* Górniewicz, Lech; Kryszewski, Wojciech) On the homotopy method in the fixed point index theory of multi-valued mappings of compact absolute neighborhood retracts. *J. Math. Anal. Appl.* **161** (1991), *no.* 2, 457–473. (M. van de Vel) **93e:55005** 55M20 (47H10, 54C60, 54H25)

— (*with* Frigon, M.) Problèmes aux limites pour des inclusions différentielles de type semi-continues inférieurement. (English summary) [Boundary value problems for lower semicontinuous differential inclusions] *Riv. Mat. Univ. Parma* (4) **17** (1991), 87–97 (1992). (Salvatore A. Marano) **93e:34026** 34A60 (34B15)

— (*with* Lassonde, Marc) Sur un principe géométrique en analyse convexe. (English summary) [On a geometric principle in convex analysis] *Studia Math.* **101** (1991), *no.* 1, 1–18. (Jean-Pierre Crouzeix) **93b:49009** 49J40 (46N10, 47H10, 47N10)

— (*with* Lee, Jin-Rong; Liu, Fêng Chê) Théorème de minimax sans topologie ni convexité. [A minimax theorem involving neither topology nor convexity] *Colloq. Math.* **63** (1992), *no.* 2, 141–144. (Hubertus Th. Jongen) **93f:49010** 49J35 (49K35, 90D44)

— (*with* Jaworowski, Jan) Reminiscences of Karol Borsuk. *Topol. Methods Nonlinear Anal.* **1** (1993), *no.* 1, 3–8. 01A70

Granda, L. N. (*with* Pyzh, V. M.) Effective action in R^2 gravity and spontaneous compactification. (English summary) *Classical Quantum Gravity* **9** (1992), *no.* 10, 2323–2333. (Summary) **93f:83077** 83E15 (83D05)

Grandati, Y. (*with* Bérard, Alain; Grangé, P.) Exact partition functions of interacting lattice fermions. *J. Math. Phys.* **33** (1992), *no.* 3, 1082–1089. (Yu Kui Zhou) **93g:81112** 81T25 (82B20)

Grande, Zbigniew On the Darboux property of the sum of cliquish functions. *Real Anal. Exchange* **17** (1991/92), *no.* 2, 571–576. (Clifford E. Weil) **93f:26001** 26A21

— A theorem about Carathéodory's superposition. (English summary) *Math. Slovaca* **42** (1992), *no.* 4, 443–449. (Jaromír Šimša) **93m:26029** 26B40 (34A12, 34G20, 47N20)

de Grande-De Kimpe, N. *see* **De Grande-De Kimpe, N.**

Grandell, Jan Finite time ruin probabilities and martingales. (Russian and Lithuanian summaries) *Informatica* **2** (1991), *no.* 1, 3–32, 135, 142. (Paul Embrechts) **93e:62257** 62P05 (60G44)

Grandemange, Philippe (*with* Schwartz, Pierre) Aspects classiques du troisième problème de Hilbert. [Classical aspects of Hilbert's third problem] *Gaz. Math. No.* 52 (1992), 73–86. (J. S. Joel) **93j:52023** 52B45 (01A55)

Grandet-Hugot, M. (*with* Bertin, M.-J.; Decomps-Guilloux, A.; Pathiaux-Delefosse, M.; Schreiber, J.-P.) ★ Pisot and Salem numbers. With a preface by David W. Boyd. *Birkhäuser Verlag, Basel*, 1992. xiv+291 *pp. ISBN* 3-7643-2648-4 (D. Boyd) **93k:11095** 11R06 (11K31, 11K70)

Grandis, Marco Cohesive categories and measurable operators. *Rend. Accad. Naz. Sci. XL Mem. Mat.* (5) **14** (1990), *no.* 1, 195–234. (R. Börger) **93b:46140** 46M15 (18D99, 46J99, 47B38, 47B40)

— On the categorical foundations of homological and homotopical algebra. (French summary) *Cahiers Topologie Géom. Différentielle Catégoriques* **33** (1992), *no.* 2, 135–175. (Manuel Bullejos Lorenzo) **93g:18016** 18E99 (55N20, 55N40, 55P99)

— Fractions for exact categories. (English and Italian summaries) *Rend. Accad. Naz. Sci. XL Mem. Mat.* (5) **16** (1992), 21–38. (Summary) **93j:18007** 18E10

— A categorical approach to exactness in algebraic topology. (English summary) V International Meeting on Topology in Italy (Italian) (Lecce, 1990/Otranto, 1990). *Rend. Circ. Mat. Palermo* (2) *Suppl. No.* 29 (1992), 179–213. (Paul G. Goerss) **93m:55026** 55U35 (18A20, 55N40)

Grandjean, Alfredo R. *see* **R.-Grandjeán L.-Valcárcel, Alfredo**

Grandjean, É. *see* **Logic and applications to computer science, 93b:68003**

r.-Grandjeán L.-Valcárcel, Alfredo *see* **R.-Grandjeán L.-Valcárcel, Alfredo**

Grandy, Christopher The principle of maximum entropy and the difference between risk and uncertainty. *Maximum entropy and Bayesian methods (Laramie, WY, 1990)*, 39–47, *Fund. Theories Phys.*, 43, *Kluwer Acad. Publ., Dordrecht*, 1991. (*see* **93b:00011**) 90A60

Grandy, W. T., Jr. On randomness and thermodynamics. *Found. Phys.* **22** (1992), *no.* 6, 853–866. (Lawrence Sklar) **93c:82004** 82B03 (80A05)

— *see also* **Maximum entropy and Bayesian methods, 93b:00011**

suárez Granero, Antonio *see* **Suárez Granero, Antonio**

Granero, Antonio S. *see* **Suárez Granero, Antonio**

Grangé, P. (*with* Grandati, Y.; Bérard, Alain) Exact partition functions of interacting lattice fermions. *J. Math. Phys.* **33** (1992), *no.* 3, 1082–1089. (Yu Kui Zhou) **93g:81112** 81T25 (82B20)

Grangeat, Pierre Mathematical framework of cone beam 3D reconstruction via the first derivative of the Radon transform. (English summary) *Mathematical methods in tomography (Oberwolfach, 1990)*, 66–97, *Lecture Notes in Math.*, 1497, *Springer, Berlin*, 1991. (Summary) **93h:44002** 44A12 (92C55)

Granger, Clive W. J. (*with* Lee, Tae-Hwy; White, Halbert) Testing for neglected nonlinearity in time series models: a comparison of neural network methods and alternative tests. (English summary) *J. Econometrics* **56** (1993), *no.* 3, 269–290. (Summary) **93m:62199** 62M10

Granichin, O. N. A stochastic approximation procedure with disturbance at the input. (Russian. Russian summary) *Avtomat. i Telemekh.* **1992**, *no.* 2, 97–104; *translation in Automat. Remote Control* **53** (1992), *no.* 2, *part* 1, 232–237. (Summary) **93f:93146** 93E25 (62L20, 93E10)

— Estimation of the minimum point of an unknown function observed against the background of dependent noise. (Russian. Russian summary) *Problemy Peredachi Informatsii* **28** (1992), *no.* 2, 16–20; *translation in Problems Inform. Transmission* **28** (1992), *no.* 2, 112–116. 90C15

Granja Barón, Angel (*with* Sánchez-Giralda, Tomás) Enriques graphs of plane curves. *Comm. Algebra* **20** (1992), *no.* 2, 527–562. (Philippe Carbonne) **93c:14033** 14H99

Grannan, E. (*with* Chayes, J. T.; Chayes, L.; Swindle, G.) Phase transitions in Mandelbrot's percolation process in three dimensions. *Probab. Theory Related Fields* **90** (1991), *no.* 3, 291–300. (F. M. Dekking) **93a:60156** 60K35 (60J80, 82B26, 82B43)

Grannell, M. J. (*with* Griggs, T. S.; Phelan, J. S.) On infinite Steiner systems. *Discrete Math.* **97** (1991), *no.* 1-3, 199–202. (David E. Woolbright) **93d:05034** 05B30 (04A20)

— (*with* Griggs, T. S.; Murphy, J. P.) Equivalence classes of Steiner triple systems. Proceedings of the Twenty-first Manitoba Conference on Numerical Mathematics and Computing (Winnipeg, MB, 1991). *Congr. Numer.* **86** (1992), 19–25. (K. T. Phelps) **93e:05011** 05B07

— (*with* Griggs, T. S.; Mathon, Rudolf) On Steiner systems $S(5, 6, 48)$. (English summary) *J. Combin. Math. Combin. Comput.* **12** (1992), 77–96. (Summary) **93f:05016** 05B05

Granot, Daniel (*with* Granot, Frieda) On some network flow games. (English summary) *Math. Oper. Res.* **17** (1992), *no.* 4, 792–841. (Tadeusz Radzik) **93k:90111** 90D12 (90D35)

Granot, Frieda (*with* Granot, Daniel) On some network flow games. (English summary) *Math. Oper. Res.* **17** (1992), *no.* 4, 792–841. (Tadeusz Radzik) **93k:90111** 90D12 (90D35)

— (*with* Penn, Michal) On the integral plane two-commodity flow problem. (English summary) *Oper. Res. Lett.* **11** (1992), *no.* 3, 135–139. (Summary) **93d:05075** 05C35 (05C85, 90B10)

— (*with* Gautier, Antoine) A parametric analysis of a nonlinear asset allocation management model. (English summary) *Oper. Res. Lett.* **11** (1992), *no.* 5, 273–279. (Summary) **93f:90059** 90B10 (90C31)

— (*with* Skorin-Kapov, Jadranka) On polynomial solvability of the high multiplicity total weighted tardiness problem. (English summary) *Discrete Appl. Math.* **41** (1993), *no.* 2, 139–146. (Summary) **93j:90046** 90B35 (68Q25)

Granovskiĭ, Ya. I. (*with* Lutsenko, I. M.; Zhedanov, A. S.) Mutual integrability, quadratic algebras, and dynamical symmetry. *Ann. Physics* **217** (1992), *no.* 1, 1–20. (A. O. Barut) **93k:81072** 81R05 (17B35, 58F35)

— (*with* Zhedanov, A. S.) "Twisted" Clebsch-Gordan coefficients for $SU_q(2)$. (English summary) *J. Phys. A* **25** (1992), *no.* 17, L1029–L1032. (Summary) **93e:81050** 81R50 (17B37, 33D80)

— (*with* Zhedanov, A. S.; Grakhovskaya, O. B.) Addition rule for nonlinear algebras. *Phys. Lett. B* **278** (1992), *no.* 1-2, 85–88. (Summary) **93c:81079** 81R50 (17B37)

Granovsky, Boris L. (*with* Fishman, George S.; Rubin, David S.) Evaluating best-case and worst-case variances when bounds are available. (English summary) *SIAM J. Sci. Statist. Comput.* **13** (1992), *no.* 6, 1347–1360. (Summary) **93f:62024** 62E25 (62N05)

Grant, C. K. Pragmatic implication. *Reflexivity*, 191–212, *North-Holland, Amsterdam*, 1992. (*see* **93g:03005**) 03A05

Grant, David Small solutions to a given quadratic form with a variable modulus. (English summary) *J. Number Theory* **42** (1992), *no.* 1, 57–60. (Satish K. Aggarwal) **93h:11038** 11D79 (11E20)

— (*with* Gordon, Daniel M.) Computing the Mordell-Weil rank of Jacobians of curves of genus two. *Trans. Amer. Math. Soc.* **337** (1993), *no.* 2, 807–824. (Philippe Satgé) **93h:11057** 11G10 (11G30, 14H25, 14K15)

Grant, Douglass L. (*with* Reilly, Ivan L.) On spaces in which a bound on certain cardinal invariants implies closedness. (Serbo-Croatian summary) *Mat. Vesnik* **42** (1990), *no.* 3-4, 177–186. (Paul R. Meyer) **93e:54014** 54D20 (54A25)

Grant, Hardy Leibniz—beyond the calculus. *Math. Semesterber.* **39** (1992), *no.* 1, 3–11. (Eberhard Knobloch) **93a:01016** 01A45

— *see also* **Mathematics of the 19th century, 93c:01023**

Grant, J. A. (*with* Rahman, Ali bin Abdul) Determination of the zeros of a linear combination of generalised polynomials. (English summary) *J. Comput. Appl. Math.* **42** (1992), *no.* 2, 269–278. 65H05

Grant, Simon (*with* Kajii, Atsushi; Polak, Ben) Many good choice axioms: when can many-good lotteries be treated as money lotteries? (English summary) *J. Econom. Theory* **56** (1992), *no.* 2, 313–337. (Summary) **93e:90007** 90A08 (90A60)

— (*with* Kajii, Atsushi; Polak, Ben) Many good risks: an interpretation of multivariate risk and risk aversion without the independence axiom. (English summary) *J. Econom. Theory* **56** (1992), *no.* 2, 338–351. (Syed N. U. A. Kirmani) **93e:90021** 90A46 (90A16)

Grantcharov, G. (*with* Mushkarov, Oleg K.) On a class of Riemannian k-symmetric spaces. *Rend. Sem. Mat. Univ. Politec. Torino* **48** (1990), *no.* 1, 61–80 (1992). (Philippos J. Xenos) **93f:53042** 53C35

Grantham, Walter J. (*with* Lee, Byoungsoo) A chaotic limit cycle paradox. (English summary) *Dynamics Control* **3** (1993), *no.* 2, 159–173. (Alec Norton) **93k:58184** 58F21 (34C99, 34D08, 58F13)

Granville, Andrew (*with* van de Lune, J.; te Riele, H. J. J.) Checking the Goldbach conjecture on a vector computer. *Number theory and applications* (*Banff, AB*, 1988), 423–433, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 265, *Kluwer Acad. Publ., Dordrecht*, 1989. (Summary) **93c:11085** 11P32 (11Y99)

— (*with* Friedlander, John) Limitations to the equi-distribution of primes. IV. *Proc. Roy. Soc. London Ser. A* **435** (1991), *no.* 1893, 197–204. (S. W. Graham) **93g:11098** 11N32

— Finding integers k for which a given Diophantine equation has no solution in kth powers of integers. *Acta Arith.* **60** (1992), *no.* 3, 203–212. (D. R. Heath-Brown) **93a:11024** 11D41

— Zaphod Beeblebrox's brain and the fifty-ninth row of Pascal's triangle. *Amer. Math. Monthly* **99** (1992), *no.* 4, 318–331. (J. Cofman) **93a:05008** 05A10

— (*with* Friedlander, John) Limitations to the equi-distribution of primes. III. *Compositio Math.* **81** (1992), *no.* 1, 19–32. (S. W. Graham) **93g:11097** 11N13

— (*with* Bombieri, Enrico; Pintz, János) Squares in arithmetic progressions. *Duke Math. J.* **66** (1992), *no.* 3, 369–385. (D. R. Heath-Brown) **93d:11106** 11N64 (11B25, 11G30)

— (*with* Fung, Gilbert; Williams, Hugh Cowie) Computation of the first factor of the class number of cyclotomic fields. (English summary) *J. Number Theory* **42** (1992), *no.* 3, 297–312. (Joe P. Buhler) **93k:11097** 11R18 (11R29, 11Y40)

Granville, V. (*with* Rasson, J.-P.) Density estimation on a finite regular lattice. (English summary) *Comput. Statist.* **7** (1992), *no.* 2, 129–136. (Summary) **93e:62104** 62G05 (62M40)

— (*with* Rasson, J.-P.) A new modelisation of noise in image remote sensing. *Statist. Probab. Lett.* **14** (1992), *no.* 1, 61–65. 62M40 (68U10)

— (*with* Rasson, J.-P.) A Bayesian filter for a mixture model of noise in image remote sensing. (English summary) *Comput. Statist. Data Anal.* **15** (1993), *no.* 3, 297–308. 62M40 (94A12)

Gras, Georges Sur la norme du groupe des unités d'extensions quadratiques relatives. [On the norm of the unit group of relative quadratic extensions] *Acta Arith.* **61** (1992), *no.* 4, 307–317. (Jurgen Hurrelbrink) **93c:11097** 11R27 (11R11, 11R29)

Gras, Régis (*with* Larher, Annie) L'implication statistique, une nouvelle méthode d'analyse de données. (English and French summaries) [Statistical inference, a new method of data analysis] *Math. Inform. Sci. Humaines No.* 120 (1992), 5–31. 62H99 (62P15)

Grassberger, Peter (*with* Schreiber, Thomas; Schaffrath, Carsten) Nonlinear time sequence analysis. *Internat. J. Bifur. Chaos Appl. Sci. Engrg.* **1** (1991), *no.* 3, 521–547. (Hans-Peter Herzel) **93a:58154** 58F40 (58–04)

Grasselli, Luigi (*with* Costa, Antonio F.) Universal coverings of PL-manifolds via coloured graphs. *Aequationes Math.* **44** (1992), *no.* 1, 60–71. (Mario Pezzana) **93e:57005** 57M15 (05C10, 57Q05)

Grasselli, Maurizio (*with* Lorenzi, Alfredo) Abstract nonlinear Volterra integrodifferential equations with nonsmooth kernels. (Italian summary) *Atti Accad. Naz. Lincei Cl. Sci. Fis. Mat. Natur. Rend. Lincei* (9) *Mat. Appl.* **2** (1991), *no.* 1, 43–53. (J. A. Nohel) **93b:45004** 45D05 (45J05, 47H15, 47N20)

— An identification problem for an abstract linear hyperbolic integrodifferential equation with applications. (English summary) *J. Math. Anal. Appl.* **171** (1992), *no.* 1, 27–60. (Kenneth B. Hannsgen) **93j:45008** 45K05 (34G10, 35Q72, 47N20, 73F15, 78A40)

— An identification problem for a linear integrodifferential equation occurring in heat flow. *Math. Methods Appl. Sci.* **15** (1992), *no.* 3, 167–186. (B. G. Pachpatte) **93b:45010** 45K05 (80A20)

— (*with* Kabanikhin, S. I.; Lorenzi, Alfredo) An inverse problem for an integro-differential equation. (Russian. Russian summary) *Sibirsk. Mat. Zh.* **33** (1992), *no.* 3, 58–68, 218; *translation in Siberian Math. J.* **33** (1992), *no.* 3, 415–426 (1993). (P. P. Zabreĭko) **93i:45010** 45K05 (35R30)

Grasselli, Osvaldo Maria (*with* Longhi, Sauro) Invariant zeros of linear systems connected in series. *Appl. Math. Lett.* **4** (1991), *no.* 6, 5–9. (From the introduction) **93f:93038** 93B25 (93B60, 93C10, 93C80)

— (*with* Longhi, Sauro) Block decoupling of linear periodic discrete-time systems. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, I* (*Kobe*, 1991), 529–534, *Mita, Tokyo*, 1992. (*see* **93g:93005**) 93C55 (93B17)

— (*with* Tornambè, Antonio) On obtaining a realization of a polynomial matrix description of a system. *IEEE Trans. Automat. Control* **37** (1992), *no.* 6, 852–856. (Summary) **93b:93024** 93B15

Grassmann, Winfried K. Computational methods in probability theory. *Stochastic models*, 199–254, *Handbooks Oper. Res. Management Sci.*, 2, *North-Holland, Amsterdam*, 1990. (*see* **93a:60001**) 60–04 (60J10, 60K25)

— (*with* Taksar, Michael I.) Probabilistic approach to computational algorithms for finding stationary distributions of Markov chains. *J. Comput. Appl. Math.* **36** (1991), *no.* 2, 131–136. (P. Neumann) **93a:60098** 60J10 (65U05)

Grätzer, Joachim (*with* Brungs, H.-H.) Value groups and distributivity. *Canad. J. Math.* **43** (1991), *no.* 6, 1150–1160. (Günter Törner) **93a:16016** 16L30 (16W60)

— (*with* Brungs, H.-H.) Noncommutative Prüfer and valuation rings. *Proceedings of the International Conference on Algebra, Part* 2 (*Novosibirsk*, 1989), 253–269, *Contemp. Math.*, 131, *Part* 2, *Amer. Math. Soc., Providence, RI*, 1992. (Patrick J. Morandi) **93f:16022** 16K20 (16H05, 16L30, 16W60)

— Prime PI-rings in which finitely generated right ideals are principal. (English summary) *Forum Math.* **4** (1992), *no.* 5, 447–463. (H. H. Brungs) **93i:16026** 16H05 (16L30, 16P50)

— A note on valued division algebras. (English summary) *J. Algebra* **150** (1992), *no.* 2, 271–280. (Patrick J. Morandi) **93f:16023** 16K20 (16L30)

Grath, James H. *see* **McGrath, James H.**

Gratias, D. (*with* Cenedese, P.) Multicomponent formalism in the mean-field approximation: a geometric interpretation of Chebychev polynomials. *Phys. A* **179** (1991), *no.* 2, 277–287. (Guang Shan Tian) **93e:82048** 82D20 (82B99)

Grats, Yu. V. (*with* Gal'tsov, D. V.; Zhukovskiĭ, V. Ch.) ★ Классические поля. (Russian) [Classical fields] *Moskov. Gos. Univ., Moscow*, 1991. 152 *pp. ISBN* 5-211-01587-8 (Henryk Arodź) **93g:70015** 70G50 (70–01, 78–01, 81T13, 83–01)

Grattan-Guinness, Ivor What was and what should be the calculus? (Spanish) Translated from the English. *Mathesis* **7** (1991), *no.* 3, 363–387. (D. J. Struik) **93e:01007** 01A45 (01A50, 01A55, 01A60)

— Scientific revolutions as convolutions? A sceptical enquiry. *Amphora*, 279–287, *Birkhäuser, Basel*, 1992. (*see* **93g:01001**) 01A05 (00A30)

— *see also* **Archibald, Thomas**

Gratton, Julio (*with* Diez, Javier Alberto; Minotti, Fernando) Self-similar solutions of the second kind of nonlinear diffusion-type equations. (English summary) *Quart. Appl. Math.* **50** (1992), *no.* 3, 401–414. (Summary) **93f:76090** 76R50 (35K55)

Grätzer, George (*with* Wenzel, G. H.) Tolerances, covering systems, and the axiom of choice. (English summary) *Arch. Math.* (*Brno*) **25** (1989), *no.* 1-2, 27–34. (Ivan Chajda) **93g:08003** 08A30 (04A25, 06B10)

— (*with* Kisielewicz, Andrzej) A survey of some open problems on p_n-sequences and free spectra of algebras and varieties. (English summary) *Universal algebra and quasigroup theory* (*Jadwisin*, 1989), 57–88, *Res. Exp. Math.*, 19, *Heldermann, Berlin*, 1992. (Tadeusz Wesołowski) **93j:08003** 08A40 (08B20)

— (*with* Lakser, H.) Congruence lattices of planar lattices. *Acta Math. Hungar.* **60** (1992), *no.* 3-4, 251–268. (E. T. Schmidt) **93j:06006** 06B10

— (*with* Fried, Ervin) Corrections to: "The unique amalgamation property for lattices" [Ann. Univ. Sci. Budapest. Eötvös Sect. Math. **33** (1990), 167–176 (1991); MR 92m:06015]. *Ann. Univ. Sci. Budapest. Eötvös Sect. Math.* **35** (1992), 271. (Editors) **93k:06013** 06B05 (08B25)

— (*with* Kisielewicz, Andrzej; Wolk, B.) An equational basis in four variables for the three-element tournament. *Colloq. Math.* **63** (1992), *no.* 1, 41–44. (From the text) **93c:08004** 08B05 (05C20)

— (*with* Schmidt, E. T.) "Complete-simple" distributive lattices. *Proc. Amer. Math. Soc.* **119** (1993), *no.* 1, 63–69. (Ralph Freese) **93k:06015** 06B15 (06B10, 06D05)

Graudenz, Dirk Multi-state spin glasses, neural networks and generalized subgraph polynomials. (English summary) Mathematische Wissenschaften gestern und heute. 300 Jahre Mathematische Gesellschaft in Hamburg, Teil 4 (Hamburg, 1990). *Mitt. Math. Ges. Hamburg* **12** (1991), *no.* 4, 1107–1127 (1992). (Summary) **93d:05147** 05C90 (82C23, 82D30, 92B20)

— (*with* Görnitz, Thomas; von Weizsäcker, Carl-Friedrich) Quantum field theory of binary alternatives. (English summary) *Internat. J. Theoret. Phys.* **31** (1992), *no.* 11, 1929–1959. (S. Gudder) **93k:81016** 81P10 (81R05, 81T05)

— (*with* Beck, Christian) Symbolic dynamics of successive quantum-mechanical measurements. (English summary) *Phys. Rev. A* (3) **46** (1992), *no.* 10, 6265–6276. (Summary) **93j:81005** 81P15 (54H20, 58F03)

Grauer, Rainer (*with* Birnir, Björn) The center manifold and bifurcations of damped and driven sine-Gordon breathers. *Phys. D* **56** (1992), *no.* 2-3, 165–184. (Summary) **93c:35139** 35Q53 (58F39)

Grauert, Hans (*with* Dethloff, Gerd) On the infinitesimal deformation of simply connected domains in one complex variable. *International Symposium in Memory of Hua Loo Keng, Vol. II (Beijing,* 1988), 57–88, *Springer, Berlin,* 1991. (S. Dimiev) **93e:32022** 32G10 (30C35, 30F45)

radelet-de Grave, Patricia *see* **Radelet-de Grave, Patricia**

Gravel, Pierre How many gravitational 't Hooft instantons are there past the first one? *Gen. Relativity Gravitation* **24** (1992), *no.* 8, 821–825. (Summary) **93g:83023** 83C20 (81V17, 83C60)

Gravereaux, J.-B. (*with* Coquio, A.) Calcul de Malliavin et régularité de la densité d'une probabilité invariante d'une chaîne de Markov. (English and French summaries) [The Malliavin calculus and the regularity of the density of an invariant probability of a Markov chain] *Ann. Inst. H. Poincaré Probab. Statist.* **28** (1992), *no.* 4, 431–478. (Dominique Lépingle) **93m:60112** 60H07

Graves-Morris, P. R. (*with* Saff, E. B.) An extension of a row convergence theorem for vector Padé approximants. *J. Comput. Appl. Math.* **34** (1991), *no.* 3, 315–324. (H.-J. Runckel) **93a:41023** 41A21 (30E10)

Gravvanis, George A. (*with* Lipitakis, Elias A.) The numerical solution of large finite element systems by explicit preconditioning semi-direct methods. *Bull. Greek Math. Soc.* **32** (1991), 63–82. (Summary) **93b:65073** 65F50 (65N30)

Graw, Bernd Coxeter groups and nonuniform complexity. *Adv. in Appl. Math.* **12** (1991), *no.* 2, 115–146. (G. Ewald) **93d:20079** 20F55 (90C60)

Gray, Alfred The minimal focal distance of a complex hypersurface in complex projective space. Conference on Differential Geometry and Topology (Italian) (Lecce, 1989). *Note Mat.* **9** (1989), *suppl.*, 119–122. (Summary) **93a:53048** 53C40

— (*with* de Andrés, Luis C.; Fernández, Marisa Luisa; Mencía, José J.) Moduli spaces of complex structures on compact four-dimensional nilmanifolds. (Italian summary) *Boll. Un. Mat. Ital. A* (7) **5** (1991), *no.* 3, 381–389. (Elsa Abbena) **93e:58022** 58D27 (53C15, 53C50)

Gray, B. F. (*with* Sisson, R. A.; Swift, Adrian; Wake, Graeme) The self-heating of damp cellulosic materials. I. High thermal conductivity and diffusivity. (English summary) *IMA J. Appl. Math.* **49** (1992), *no.* 3, 273–291. (Summary) **93k:80010** 80A20

— (*with* Myerscough, M. R.; Hogarth, W. L.; Norbury, John) An analysis of an ordinary differential equation model for a two-species predator-prey system with harvesting and stocking. *J. Math. Biol.* **30** (1992), *no.* 4, 389–411. (Yin Shui Fan) **93e:92013** 92D25 (34C99)

Gray, C. G. *see* **Gray, Christopher George**

Gray, C. W. (*with* Bar-on, Jonathan R.) A generalized polar decomposition. *Linear Algebra Appl.* **170** (1992), 75–80. (George P. Barker) **93b:15017** 15A30 (15A23, 15A57)

— (*with* Bar-on, Jonathan R.) Erratum: "A generalized polar decomposition" [Linear Algebra Appl. **170** (1992), 75–80; MR 93b:15017]. *Linear Algebra Appl.* **180** (1993), 6. (From the text) **93m:15022** 15A30 (15A23, 15A57)

Gray, Christopher George (*with* Basile, A. G.) A relaxation algorithm for classical paths as a function of end points: application to the semiclassical propagator for far-from-caustic and near-caustic conditions. *J. Comput. Phys.* **101** (1992), *no.* 1, 80–93. (Summary) **93c:65030** 65D30 (65P05, 81Q20)

Gray, H. L. (*with* Wang, Suojin) Approximating tail probabilities of noncentral distributions. (English summary) *Comput. Statist. Data Anal.* **15** (1993), *no.* 3, 343–352. 62E20

Gray, Jeremy ★ Ideas of space. Euclidean, non-Euclidean, and relativistic. Second edition. *The Clarendon Press, Oxford University Press, New York,* 1989. xii+242 *pp. ISBN* 0-19-853935-5 (From the preface) **93m:01033** 01A55 (01A60, 51–03, 83–03)

— Cauchy—elliptic and abelian integrals. (English and French summaries) Études sur Cauchy (1789–1857). *Rev. Histoire Sci.* **45** (1992), *no.* 1, 69–81. (Summary) **93h:01023** 01A55

Gray, John E. Electromagnetic waves with E parallel to B. (English summary) *J. Phys. A* **25** (1992), *no.* 20, 5373–5376. (Summary) **93j:78013** 78A40

Gray, John W. Products in PER: an elementary treatment of the semantics of the polymorphic lambda calculus. *Category theory at work (Bremen,* 1990), 325–340, *Res. Exp. Math.,* 18, *Heldermann, Berlin,* 1991. (Andreas Blass) **93b:03017** 03B40 (03D45, 03G30, 18B99, 68Q55)

— Order-enriched sketches for typed lambda calculi. *Category theory (Como,* 1990), 105–130, *Lecture Notes in Math.,* 1488, *Springer, Berlin,* 1991. (Bart Jacobs) **93h:68091** 68Q65 (03B40, 03G30, 18C10)

Gray, Lawrence (*with* Bramson, Maury D.) A useful renormalization argument. *Random walks, Brownian motion, and interacting particle systems,* 113–152, *Progr. Probab.,* 28, *Birkhäuser Boston, Boston, MA,* 1991. (T. M. Liggett) **93d:60162** 60K35 (82C28, 92D25)

Gray, Peter *see* **Chaos and dynamical complexity in the physical sciences**

Gray, Robert W. (*with* Chiu, Shao-Hsuan; Nelson, Charles A.) The q-analogue quantized radiation field and its uncertainty relations. *Phys. Lett. A* **164** (1992), *no.* 3-4, 237–242. (Summary) **93b:81316** 81V80 (81S05)

Gray, W. G. *see* **Computational methods in water resources, 93g:76002** *and* **93g:76003**

Graybill, Franklin A. (*with* Sen, Bhabesh; Ting, Naitee) Confidence intervals on ratios of variance components for the unbalanced two factor nested model. *Biometrical J.* **34** (1992), *no.* 3, 259–274. 62J10

Grayson, D. R. (*with* Glazebrook, J. F.; Hewitt, P. R.) Addendum: "Galois representations on holomorphic differentials" [Comm. Algebra **19** (1991), no. 5, 1375–1386; MR 92j:14032]. *Comm. Algebra* **20** (1992), *no.* 9, 2791. 14F10

Grayson, Matthew A. (*with* Altschuler, Steven J.) Shortening space curves and flow through singularities. *J. Differential Geom.* **35** (1992), *no.* 2, 283–298. (Anders Linnér) **93b:58031** 58E10 (53A10)

Graziano, E. (*with* Celeghini, E.; Nakamura, Koichi[2]; Vitiello, G.) Finite temperature quantum field theory and gauge field. *Phys. Lett. B* **285** (1992), *no.* 1-2, 98–102. (Summary) **93d:81113** 81T13

Grebenčv, V. N. Solvability of a problem on the evolution of a turbulent spot in a homogeneous fluid on a small time interval. (Russian) *Differentsial'nye Uravneniya* **27** (1991), *no.* 10, 1725–1733, 1836; *translation in Differential Equations* **27** (1991), *no.* 10, 1218–1225 (1992). (From the introduction) **93b:76044** 76F05 (35Q35)

— Letter to the editors: "Solvability of a problem on the evolution of a turbulent spot in a homogeneous fluid on a small time interval" [Differentsial'nye Uravneniya **27** (1991), no. 10, 1725–1733, 1836; MR 93b:76044]. (Russian) *Differentsial'nye Uravneniya* **28** (1992), *no.* 10, 1836. (Editors) **93k:76061** 76F05 (35Q35)

— On a dynamical system that arises in the problem of the spreading of a turbulent layer of a homogeneous fluid. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **32** (1992), *no.* 1, 123–135; *translation in Comput. Math. Math. Phys.* **32** (1992), *no.* 1, 103–113. (Andro Mikelić) **93d:35127** 35Q35 (76D99, 76F20)

— Diffusion of a turbulent spot in a problem with singularly perturbed initial turbulence energy. (Russian. Russian summary) *Zh. Vychisl. Mat. i Mat. Fiz.* **32** (1992), *no.* 12, 1916–1928; *translation in Comput. Math. Math. Phys.* **32** (1992), *no.* 12, 1745–1756 (1993). (Summary) **93k:35214** 35Q35 (35D05, 35K22, 76F99)

Grebennik, I. V. (*with* Yakovlev, S. V.) Extremal properties of quadratic functions with Boolean variables. (Russian) *Upravlyaemye Sistemy No.* 30 (1990), 30–34, 84. 90C09 (90C27)

— (*with* Yakovlev, S. V.) Some classes of optimization problems on a set of arrangements and their properties. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* **1991,** *no.* 11, 74–86 (1992); *translation in Soviet Math. (Iz. VUZ)* **35** (1991), *no.* 11, 75–85. (Peter Butkovič) **93f:90139** 90C27 (90C26)

Grebenshchikov, A. Yu. (*with* Gorbachev, O. G.) Fast decision-making algorithms which use multidimensional data and limited-size training samples. *J. Comput. Systems Sci. Internat.* **30** (1992), *no.* 5, 87–96; *translated from Izv. Akad. Nauk SSSR Tekhn. Kibernet.* **1991,** *no.* 4, 91–102 (*Russian. Russian summary*). (Summary) **93g:90008** 90A05

Grebenshchikov, B. G. Stabilization of nonstationary systems with a small parameter multiplying the derivative. (Russian. Russian summary) *Boundary value problems (Russian),* 53–58, *Perm. Politekh. Inst., Perm',* 1990. (*see* **93g:00023**) 34D99 (34E15)

Grébert, B. Inverse scattering for the Dirac operator on the real line. (English summary) *Inverse Problems* **8** (1992), *no.* 5, 787–807. (C. Tomei) **93j:34021** 34A55 (34L25, 34L40)

Grebogi, Celso (*with* Lai, Ying-Cheng) Chaotic scattering in time-dependent Hamiltonian systems. *Internat. J. Bifur. Chaos Appl. Sci. Engrg.* **1** (1991), *no.* 3, 667–679. (Helmut Rüssmann) **93c:58139** 58F13 (58F05)

— (*with* Romeiras, Filipe J.; Ott, Edward; Dayawansa, W. P.) Feedback control of chaotic systems. (English summary) *Chaotic dynamics (Patras,* 1991), 177–193, *NATO Adv. Sci. Inst. Ser. B Phys.,* 298, *Plenum, New York,* 1992. (Summary) **93j:93057** 93B52 (58F13, 93C10)

— (*with* Sommerer, John C.) Determination of crisis parameter values by direct observation of manifold tangencies. (English summary) *Internat. J. Bifur. Chaos Appl. Sci. Engrg.* **2** (1992), *no.* 2, 383–396. (Summary) **93c:58150** 58F13 (58F12)

— (*with* Park, Bae-Sig; Lai, Ying-Cheng) Abrupt dimension changes at basin boundary metamorphoses. (English summary) *Internat. J. Bifur. Chaos Appl. Sci. Engrg.* **2** (1992), *no.* 3, 533–541. (Summary) **93h:58090** 58F12 (58F13)

— (*with* Romeiras, Filipe J.; Ott, Edward; Dayawansa, W. P.) Controlling chaotic dynamical systems. (English summary) Interpretation of time series from nonlinear systems (Warwick, 1991). *Phys. D* **58** (1992), *no.* 1-4, 165–192. (Arkady S. Pikovsky) **93i:58111** 58F13 (58F30)

— (*with* Shinbrot, Troy; Ott, Edward; Yorke, James A.) Using chaos to target stationary states of flows. (English summary) *Phys. Lett. A* **169** (1992), *no.* 5, 349–354. (Summary) **93f:58158** 58F13 (65L99)

— (*with* Shinbrot, Troy; Ditto, William; Ott, Edward; Spano, Mark; Yorke, James A.) Using the sensitive dependence of chaos (the "butterfly effect") to direct trajectories in an experimental chaotic system. *Phys. Rev. Lett.* **68** (1992), *no.* 19, 2863–2866. (Gong Fu Liao) **93f:58159** 58F13

— (*with* Lai, Ying-Cheng; Blümel, Reinhold; Ott, Edward) Quantum manifestations of chaotic scattering. *Phys. Rev. Lett.* **68** (1992), *no.* 24, 3491–3494. (Summary) **93b:81074** 81Q50 (58F13, 81U99)

— (*with* Auerbach, Ditza; Ott, Edward; Yorke, James A.) Controlling chaos in high-dimensional systems. (English summary) *Phys. Rev. Lett.* **69** (1992), *no.* 24, 3479–3482. (Summary) **93f:58143** 58F13

Grecchi, Vincenzo (*with* Bentosela, F.) Stark Wannier ladders. *Comm. Math. Phys.* **142** (1991), *no.* 1, 169–192. (From the text) **93k:81046** 81Q10 (81V70)

— (*with* Maioli, Marco; Sacchetti, Andrea) Horn of singularities for the Stark-Wannier ladders. *J. Phys. A* **24** (1991), *no.* 18, 4275–4282. (Gheorghe Nenciu) **93f:81032** 81Q15 (81V10)

— (*with* Maioli, Marco; Sacchetti, Andrea) Stark resonances in disordered systems. *Comm. Math. Phys.* **146** (1992), *no.* 2, 231–240. (Gheorghe Nenciu) **93g:81022** 81Q15

Grechanyuk, M. Ĭ. On the equivalence of logarithms of the maximum modulus and maximum term of an entire multiple Dirichlet series. (Ukrainian. Russian summary) *Vtsnik L'vtv. Derzh. Untv. Ser. Mekh.-Mat. No.* 30 (1988), 51–53, 77. 30B50

— Growth cones of entire multiple Dirichlet series. (Russian. English summary) *Dokl. Akad. Nauk Ukrain. SSR* **1991,** *no.* 9, 20–26, 175. (Mariya Mitreva) **93d:32001** 32A05 (30B50, 32A15)

Grechikhin, M. A. (*with* Baronets, V. D.) A model for representing the membership function in expert systems. (Russian. Russian summary) *Avtomat. i Telemekh.* **1992,**

no. 6, 156–160; *translation in Automat. Remote Control* **53** (1992), *no.* 6, *part* 2, 921–925. 68T30

Greco, Carlo Multiple periodic trajectories on stationary space-times. (English summary) *Ann. Mat. Pura Appl.* (4) **162** (1992), 337–348. (Fabio Giannoni) **93k:58048** 58E10 (53C50)

Greco, Gabriele H. (*with* Flåm, Sjur D.) Minimax and intersection theorems. (French summary) *Fixed point theory and applications* (*Marseille*, 1989), 123–140, *Pitman Res. Notes Math. Ser.*, 252, *Longman Sci. Tech., Harlow*, 1991. (Summary) **93c:47081** 47H99 (47N10, 49J35)

— (*with* Bassanezi, Rodney C.) On the continuity of fuzzy integrals. (English summary) *Fuzzy Sets and Systems* **53** (1993), *no.* 1, 87–91. 28E10 (04A72)

del Greco, John G. Characterizing bias matroids. *Discrete Math.* **103** (1992), *no.* 2, 153–159. (James G. Oxley) **93m:05050** 05B35

Greco, Salvatore Binary preference relations: a difference-distance and entropy-uncertainty approach. *Found. Comput. Decision Sci.* **17** (1992), *no.* 1, 27–53. (Summary) **93c:90007** 90A05 (90B50, 90C29)

Greco, Silvio Orders of rational functions on algebraic curves. *Proceedings of the* 21*st. Annual Iranian Mathematics Conference* (*Isfahan*, 1990), 159–165, *Univ. Isfahan, Isfahan*, 199?. (P. Abellanas) **93b:14043** 14H10

— (*with* Catalisano, Maria Virginia) Linear systems: developments of some results by F. Enriques and B. Segre. *Geometry and complex variables* (*Bologna*, 1988/1990), 41–57, *Lecture Notes in Pure and Appl. Math.*, 132, *Dekker, New York*, 1991. (Marino Palleschi) **93b:14015** 14C20 (14N99)

— (*with* Previato, Emma) Spectral curves and ruled surfaces: projective models. *The Curves Seminar at Queen's, Vol. VIII* (*Kingston, ON*, 1990/1991), *Exp.* F, 33 *pp., Queen's Papers in Pure and Appl. Math.*, 88, *Queen's Univ., Kingston, ON*, 1991. (Maarten Bergvelt) **93e:58084** 58F07 (14H45, 14J26)

— (*with* Gatto, Letterio) Algebraic curves and differential equations: an introduction. *The Curves Seminar at Queen's, Vol. VIII* (*Kingston, ON*, 1990/1991), *Exp.* B, 69 *pp., Queen's Papers in Pure and Appl. Math.*, 88, *Queen's Univ., Kingston, ON*, 1991. (José M. Muñoz Porras) **93d:58069** 58F07 (14H40, 34L05, 35Q53, 70H05)

— (*with* Raciti, G.) The Lüroth semigroup of plane algebraic curves. *Pacific J. Math.* **151** (1991), *no.* 1, 43–56. (Sherwood Washburn) **93a:14024** 14H05 (20M99)

Grecu, Eftimie Noncompact real forms associated with Grassmann manifolds. (Romanian. French summary) *Stud. Cerc. Mat.* **44** (1992), *no.* 3, 217–227. (V. Oproiu) **93i:53049** 53C30

Gredeskul, S. A. (*with* Kivshar, Yu. S.) Propagation and scattering of nonlinear waves in disordered systems. *Phys. Rep.* **216** (1992), *no.* 1, 1–61. (Summary) **93d:82079** 82D30 (82–04)

Gredzhuk, V. I. Justification of the approximating Hamiltonian method in Bogolyubov's theory of superfluidity. (Russian. English and Russian summaries) *Dokl. Akad. Nauk Ukrainy* **1992**, *no.* 1, 59–64, 178. (Summary) **93g:82107** 82D50

Greechie, Richard J. (*with* Foulis, D. J.; Rüttimann, G. T.) Filters and supports in orthoalgebras. *Internat. J. Theoret. Phys.* **31** (1992), *no.* 5, 789–807. (Gudrun Kalmbach) **93c:06014** 06C15 (03G12, 81P10)

— (*with* Choe, Tae Ho) Profinite orthomodular lattices. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 4, 1053–1060. (S. S. Holland, Jr.) **93j:06008** 06C15 (06B30)

Green, Albert E. (*with* Naghdi, P. M.) A demonstration of consistency of an entropy balance with balance of energy. *Z. Angew. Math. Phys.* **42** (1991), *no.* 2, 159–168. (Stan Chiriţă) **93a:73008** 73B30 (80A10)

— (*with* Naghdi, P. M.) On undamped heat waves in an elastic solid. (English summary) Sixty-fifth Birthday of Bruno A. Boley Symposium, Part 2 (Atlanta, GA, 1991). *J. Thermal Stresses* **15** (1992), *no.* 2, 253–264. (J. Ignaczak) **93i:73003** 73B30 (80A20)

— (*with* Naghdi, P. M.) Errata: "A re-examination of the basic postulates of thermomechanics" [Proc. Roy. Soc. London Ser. A **432** (1991), no. 1885, 171–194; MR 92i:73016]. *Proc. Roy. Soc. London Ser. A* **438** (1992), *no.* 1904, 605. (Editors) **93g:73018** 73B30 (73B05, 80A05, 80A20)

— *see also* **Naghdi, P. M. et al., 93m:01078**

Green, Barry Recent results in the theory of constant reductions. *Sém. Théor. Nombres Bordeaux* (2) **3** (1991), *no.* 2, 275–310. (Robert S. Rumely) **93d:12015** 12J25 (03C60, 11G25, 14G20)

Green, David John On the cohomology of the sporadic simple group J_4. *Math. Proc. Cambridge Philos. Soc.* **113** (1993), *no.* 2, 253–266. (Robert M. Guralnick) **93k:20073** 20J06 (20D08)

Green, Edward L. (*with* Auslander, Maurice) Modules over endomorphism rings. *Comm. Algebra* **20** (1992), *no.* 5, 1259–1278. (Dieter Happel) **93b:16009** 16D90 (16G99)

— (*with* Farkas, Daniel R.) Do subspaces have distinguished bases? *Rocky Mountain J. Math.* **22** (1992), *no.* 4, 1295–1302. (Henri Lombardi) **93m:13012** 13P10 (15A21, 68Q40)

Green, Edwin J. (*with* Strawderman, William E.) A James-Stein type estimator for combining unbiased and possibly biased estimators. *J. Amer. Statist. Assoc.* **86** (1991), *no.* 416, 1001–1006. (Khursheed Alam) **93b:62083** 62H12 (62C12)

Green, Leon W. When is an Anosov flow geodesic? (English summary) *Ergodic Theory Dynamical Systems* **12** (1992), *no.* 2, 227–232. (Garrett Stuck) **93g:58111** 58F15 (58F17)

Green, Michael (*with* Limebeer, David J. N.; Anderson, Brian D. O.; Khargonekar, Pramod P.) A game-theoretic approach to $\mathscr{H}^\infty$ control for time-varying systems. *SIAM J. Control Optim.* **30** (1992), *no.* 2, 262–283. (Tamer Başar) **93c:93022** 93B36 (90D25, 93C60)

— $\mathscr{H}_\infty$ controller synthesis by J-lossless coprime factorization. *SIAM J. Control Optim.* **30** (1992), *no.* 3, 522–547. (Kazuhiko Terashima) **93e:93025** 93B36 (47N70)

Green, Michael B. Point-like structure in string theory. *Sakharov Memorial Lectures in Physics, Vol.* 1, 2 (*Moscow*, 1991), 387–401, *Nova Sci. Publ., Commack, NY*, 1992. (*see* **93h:81003**) 81T30

— Temperature dependence of string theory in the presence of world-sheet boundaries. *Phys. Lett. B* **282** (1992), *no.* 3-4, 380–386. (Summary) **93c:81171** 81T30 (81T15)

Green, Paul E. (*with* Krieger, Abba M.) Generalized measures of association for ranked data with an application to prediction accuracy. (English summary) *J. Classification* **10** (1993), *no.* 1, 93–114. 62H20 (62G99)

Green, Paul S. (*with* Candelas, Philip; Hübsch, Tristan) Rolling among Calabi-Yau vacua. *Mathematical physics* (*Islamabad*, 1989), 59–114, *World Sci. Publishing, River Edge, NJ*, 1990. (Bruce Hunt) **93d:32031a** 32G81 (14J30, 32J17, 32J81, 81T30, 83E30)

— (*with* Candelas, Philip; Hübsch, Tristan) Rolling among Calabi-Yau vacua. *Superstrings* '89 (*Trieste*, 1989), 366–421, *World Sci. Publishing, River Edge, NJ*, 1990. (Bruce Hunt) **93d:32031b** 32G81 (14J30, 32J17, 32J81, 81T30, 83E30)

— (*with* Candelas, Philip; de la Ossa, Xenia C.; Parkes, Linda) A pair of Calabi-Yau manifolds as an exactly soluble superconformal theory. *Nuclear Phys. B* **359** (1991), *no.* 1, 21–74. (Bruce Hunt) **93b:32029** 32G20 (14J15, 14J30, 32G05, 32G81, 81T30, 81T40)

— (*with* Candelas, Philip; de la Ossa, Xenia C.; Parkes, Linda) An exactly soluble superconformal theory from a mirror pair of Calabi-Yau manifolds. *Phys. Lett. B* **258** (1991), *no.* 1-2, 118–126. (Bruce Hunt) **93b:32028** 32G20 (14J15, 14J30, 32G05, 32G81, 81T30, 81T40)

Green, Peter J. (*with* Han, Xiao-liang) Metropolis methods, Gaussian proposals and antithetic variables. (English summary) *Stochastic models, statistical methods, and algorithms in image analysis* (*Rome*, 1990), 142–164, *Lecture Notes in Statist.*, 74, *Springer, Berlin*, 1992. (*see* **93e:62005**) 65C05 (65U05)

— (*with* Besag, Julian) Spatial statistics and Bayesian computation. (English summary) *J. Roy. Statist. Soc. Ser. B* **55** (1993), *no.* 1, 25–37. 62M30 (62F15)

cuninghame-Green, R. A. *see* **Cuninghame-Green, R. A.**

Green, W. A. (*with* Shi, Jingyu) Degenerate deformations and uniqueness in highly elastic networks. (English summary) *Quart. Appl. Math.* **50** (1992), *no.* 3, 501–516. (Summary) **93g:73065** 73G05 (73H05, 73K15, 73K99, 73V25)

Greenbaum, Anne (*with* Greengard, Leslie; Mayo, Anita A.) On the numerical solution of the biharmonic equation in the plane. (English summary) Experimental mathematics: computational issues in nonlinear science (Los Alamos, NM, 1991). *Phys. D* **60** (1992), *no.* 1-4, 216–225. (Summary) **93i:65121** 65N99

— Diagonal scalings of the Laplacian as preconditioners for other elliptic differential operators. Iterative methods in numerical linear algebra (Copper Mountain, CO, 1990). *SIAM J. Matrix Anal. Appl.* **13** (1992), *no.* 3, 826–846. (Beny Neta) **93c:65047** 65F10 (65F35, 65N06, 65N30)

— (*with* Greengard, Leslie; McFadden, G. B.) Laplace's equation and the Dirichlet-Neumann map in multiply connected domains. (English summary) *J. Comput. Phys.* **105** (1993), *no.* 2, 267–278. (Summary) **93m:65170** 65N99 (65E05)

Greenberg, Adam (*with* Sethian, James A.; Brunet, Jean-Philippe; Mesirov, Jill P.) Two-dimensional, viscous, incompressible flow in complex geometries on a massively parallel processor. *J. Comput. Phys.* **101** (1992), *no.* 1, 185–206. (Summary) **93d:76051** 76M25 (65Y05, 76D99)

Greenberg, Betsy S. (*with* Ding, Jie) Bowl shapes are better with buffers—sometimes. (English summary) *Probab. Engrg. Inform. Sci.* **5** (1991), *no.* 2, 159–169. 60K25

— (*with* Ding, Jie) Optimal order for servers in series with no queue capacity. (English summary) *Probab. Engrg. Inform. Sci.* **5** (1991), *no.* 4, 449–461. 60K25

— (*with* Goh, Chon-Huat; Matsuo, Hirofumi) Perishable inventory systems with batch demand and arrivals. (English summary) *Oper. Res. Lett.* **13** (1993), *no.* 1, 1–8. 90B05

Greenberg, Gadi (*with* Etzion, Tuvi) Constructions for perfect mixed codes and other covering codes. (English summary) *IEEE Trans. Inform. Theory* **39** (1993), *no.* 1, 209–214. (Summary) **93m:94038** 94B60

Greenberg, J. *see* **Greenberg, Joseph**

Greenberg, J. M. Exponential decay theorems for the four velocity Broadwell equations. (English summary) *Waves and stability in continuous media* (*Sorrento*, 1989), 154–161, *Ser. Adv. Math. Appl. Sci.*, 4, *World Sci. Publishing, River Edge, NJ*, 1991. (Andrzej Palczewski) **93m:82041** 82C40 (76P05)

— The shock generation problem for a discrete gas with short-range repulsive forces. *Comm. Pure Appl. Math.* **45** (1992), *no.* 9, 1125–1139. (Benoit Perthame) **93g:76076** 76L05 (35L67, 76N15, 82C21)

— The long time behavior of elastic-perfectly plastic materials. *Free boundary problems involving solids* (*Montreal, PQ*, 1990), 28–34, *Pitman Res. Notes Math. Ser.*, 281, *Longman Sci. Tech., Harlow*, 1993. (*see* **93k:00037**) 73E50

Greenberg, Joseph On the sensitivity of von Neumann and Morgenstern abstract stable sets: the stable and the individual stable bargaining set. (English summary) *Internat. J. Game Theory* **21** (1992), *no.* 1, 41–55. (James Bergin) **93f:90192** 90D12 (90A07)

Greenberg, O. W. Small violations of particle statistics. *Sakharov Memorial Lectures in Physics, Vol.* 1, 2 (*Moscow*, 1991), 29–37, *Nova Sci. Publ., Commack, NY*, 1992. (*see* **93h:81003**) 81S05

— Interactions of particles having small violations of statistics. *Phys. A* **180** (1992), *no.* 3-4, 419–427. (W. Słowikowski) **93h:81060** 81R50 (81S05)

Greenberg, Peter Projective aspects of the Higman-Thompson group. *Group theory from a geometrical viewpoint* (*Trieste*, 1990), 633–644, *World Sci. Publishing, River Edge, NJ*, 1991. (Oleg I. Tavgen') **93j:20079** 20F32

— Torsion and periods in some groups of homeomorphisms of the circle. *Math. Proc. Cambridge Philos. Soc.* **112** (1992), *no.* 1, 29–44. (John G. Ratcliffe) **93e:20055** 20F38 (57S05)

— Piecewise $SL_2\mathbf{Z}$ geometry. *Trans. Amer. Math. Soc.* **335** (1993), *no.* 2, 705–720. (Wolfgang Kühnel) **93d:52015** 52B20

Greenberg, Ralph Iwasawa theory for motives. *L-functions and arithmetic* (*Durham*, 1989), 211–233, *London Math. Soc. Lecture Note Ser.*, 153, *Cambridge Univ. Press, Cambridge*, 1991. (Bas Edixhoven) **93a:11092** 11R23 (11G09, 11G40, 11R34)

— (*with* Stevens, Glenn) p-adic L-functions and p-adic periods of modular forms. *Invent. Math.* **111** (1993), *no.* 2, 407–447. (Nigel Boston) **93m:11054** 11G40 (11F67)

Greenberg, Ronald (*with* Ja'Ja', Joseph; Krishnamurthy, Sridhar) On the difficulty of Manhattan channel routing. (English summary) *Inform. Process. Lett.* **44** (1992), *no.* 5, 281–284. (Summary) **93k:68049** 68Q35 (68Q25)

Greenberg, W. (*with* Zweifel, P. F.; Paveri-Fontana, S.) The Riemann-Hilbert problem for nonsymmetric systems. *J. Math. Phys.* **32** (1991), *no.* 12, 3540–3545. (Charles Saltzer) **93c:45007a** 45E10 (45F15, 47A68)

— (*with* Zweifel, P. F.; Paveri-Fontana, S.) Erratum: "The Riemann-Hilbert problem for nonsymmetric systems". *J. Math. Phys.* **33** (1992), *no.* 4, 1566. (Charles Saltzer) **93c:45007b** 45E10 (45F15, 47A68)

Greenblatt, Bruce (*with* Edwards, William R., Jr.) Semigroup automaton structure by homomorphism and domain partition. Combinatorics and theoretical computer science (Washington, DC, 1989). *Discrete Appl. Math.* **34** (1991), *no.* 1-3, 129–143. (Pascal Weil) **93a:68099** 68Q70 (20M35)

Greenblatt, David Computing the combined effect of wake-passing and free-stream turbulence on gas turbine blade boundary layers. (English summary) 17th South African Symposium on Numerical Mathematics (Umhlanga, 1991). *Quaestiones Math.* **15** (1992), *no.* 3, 261–278. (Summary) **93h:80002** 80A20 (65C20, 76F99)

Greene, Brian R. Mirror manifolds in $N = 2$ string compactification. *Particles, strings and cosmology (Boston, MA, 1990)*, 402–425, *World Sci. Publishing, River Edge, NJ*, 1991. (Summary) **93e:32035** 32J17 (14J30, 32G81, 81T30, 81T40)

— (*with* Berglund, Per; Hübsch, Tristan) Classical vs. Landau-Ginzburg geometry of compactification. *Modern Phys. Lett. A* **7** (1992), *no.* 20, 1855–1869. (C. Gauthier) **93g:81120** 81T30 (32G81, 32J17, 32J81)

— (*with* Mathur, Samir D.; O'Neill, Christopher M.) Eluding the no-hair conjecture: black holes in spontaneously broken gauge theories. (English summary) *Phys. Rev. D* (3) **47** (1993), *no.* 6, 2242–2259. (Summary) **93k:83048** 83C57 (81V17)

Greene, Curtis A rational-function identity related to the Murnaghan-Nakayama formula for the characters of S_n. (English summary) *J. Algebraic Combin.* **1** (1992), *no.* 3, 235–255. (Hiroshi Naruse) **93k:20025** 20C30 (05E10)

— Proof of a conjecture on immanants of the Jacobi-Trudi matrix. *Linear Algebra Appl.* **171** (1992), 65–79. (Ira Gessel) **93i:05133** 05E05 (05E10)

Greene, John (*with* Evans, Ronald J.; Niederreiter, Harald) Linearized polynomials and permutation polynomials of finite fields. *Michigan Math. J.* **39** (1992), *no.* 3, 405–413. (Daniel Ashlock) **93j:11080** 11T06

Greene, Robert E. (*with* Petersen, Peter, V) Little topology, big volume. *Duke Math. J.* **67** (1992), *no.* 2, 273–290. (Oguz C. Durumeric) **93f:53035** 53C23 (53C20)

— *see also* **Schirmer, Helga, 93k:55001**

Greengard, Claude (*with* Börgers, Christoph; Thomann, Enrique) The diffusion limit of free molecular flow in thin plane channels. *SIAM J. Appl. Math.* **52** (1992), *no.* 4, 1057–1075. (Hans Babovsky) **93g:76101** 76P05 (76M35, 82C40)

Greengard, Leslie (*with* Greenbaum, Anne; Mayo, Anita A.) On the numerical solution of the biharmonic equation in the plane. (English summary) Experimental mathematics: computational issues in nonlinear science (Los Alamos, NM, 1991). *Phys. D* **60** (1992), *no.* 1-4, 216–225. (Summary) **93i:65121** 65N99

— (*with* Greenbaum, Anne; McFadden, G. B.) Laplace's equation and the Dirichlet-Neumann map in multiply connected domains. (English summary) *J. Comput. Phys.* **105** (1993), *no.* 2, 267–278. (Summary) **93m:65170** 65N99 (65E05)

Greenhalgh, David Some results for an SEIR epidemic model with density dependence in the death rate. (English summary) *IMA J. Math. Appl. Med. Biol.* **9** (1992), *no.* 2, 67–106. (Summary) **93f:92016** 92C60 (92D30)

— Some threshold and stability results for epidemic models with a density-dependent death rate. (English summary) *Theoret. Population Biol.* **42** (1992), *no.* 2, 130–151. 92D30

Greening, Daniel R. Asynchronous parallel simulated annealing. (English summary) 1990 *lectures in complex systems (Santa Fe, NM, 1990)*, 497–507, *Santa Fe Inst. Stud. Sci. Complexity Lectures, III, Addison-Wesley, Redwood City, CA*, 1991. (*see* **93h:68003**) 90C27

Green-Krótki, Jan (*with* Cunningham, William H.) *b*-matching degree-sequence polyhedra. *Combinatorica* **11** (1991), *no.* 3, 219–230. (Prabir Das) **93a:05101** 05C70 (15A39)

Greenlaw, Raymond The parallel complexity of approximation algorithms for the maximum acyclic subgraph problem. *Math. Systems Theory* **25** (1992), *no.* 3, 161–175. (Summary) **93a:68057** 68Q25 (05C85, 68R10)

Greenleaf, Allan (*with* Uhlmann, Gunther) Microlocal techniques in integral geometry. *Integral geometry and tomography (Arcata, CA, 1989)*, 121–135, *Contemp. Math.*, 113, *Amer. Math. Soc., Providence, RI*, 1990. (Eric Grinberg) **93d:44003** 44A12 (44–02, 58G15)

— (*with* Uhlmann, Gunther) Composition of some singular Fourier integral operators and estimates for restricted X-ray transforms. II. *Duke Math. J.* **64** (1991), *no.* 3, 415–444. (Vesselin M. Petkov) **93b:58146** 58G15 (35S30, 44A12, 47G30, 58C27)

Greenleaf, Frederick P. (*with* Corwin, Lawrence) Commutativity of invariant differential operators on nilpotent homogeneous spaces with finite multiplicity. *Comm. Pure Appl. Math.* **45** (1992), *no.* 6, 681–748. (Hidenori Fujiwara) **93i:22010** 22E27 (22E25, 43A85)

— (*with* Corwin, Lawrence) Spectral decomposition of invariant differential operators on certain nilpotent homogeneous spaces. (English summary) *J. Funct. Anal.* **108** (1992), *no.* 2, 374–426. (Ewa Damek) **93j:22009** 22E25 (22E27, 43A80, 43A85)

Greenlees, J. P. C. Equivariant functional duals and completions at ideals of the Burnside ring. *Bull. London Math. Soc.* **23** (1991), *no.* 2, 163–168. (N. J. Kuhn) **93a:55007** 55P91 (55P42)

— (*with* May, J. Peter) Derived functors of I-adic completion and local homology. *J. Algebra* **149** (1992), *no.* 2, 438–453. (Michinori Sakaguchi) **93h:13009** 13B35 (13D45, 18G10, 19A22)

— Some remarks on projective Mackey functors. *J. Pure Appl. Algebra* **81** (1992), *no.* 1, 17–38. (Steven R. Costenoble) **93f:18017** 18G05 (18G20, 19A49, 19J05, 55N91, 57Q12, 57Q91)

— Generalized Eilenberg-Moore spectral sequences for elementary abelian groups and tori. *Math. Proc. Cambridge Philos. Soc.* **112** (1992), *no.* 1, 77–89. (J. M. Boardman) **93j:55021** 55T20 (55N91, 55P42, 55P91)

— Homotopy equivariance, strict equivariance and induction theory. (English summary) *Proc. Edinburgh Math. Soc.* (2) **35** (1992), *no.* 3, 473–492. (John F. Oprea) **93i:55027** 55T15 (55P91)

Greenough, P. P. (*with* Hill, Raymond) Optimal ternary quasi-cyclic codes. *Des. Codes Cryptogr.* **2** (1992), *no.* 1, 81–91. (John Karlof) **93d:94016** 94B05 (94B15)

Greenough, R. D. (*with* Parvinmehr, A.; Wilkinson, A. J.; Jenner, A.) Discrete variable structure control for an active anti-vibration system. (English summary) *Adaptive systems in control and signal processing*, 1989 (*Glasgow*), 147–152, *IFAC Sympos. Ser.*, 1990, *No.* 1, *Pergamon, Oxford*, 1990. (*see* **93j:93007**) 93B12

Greenshtein, Eitan Sequential batch sampling. *Sequential Anal.* **10** (1991), *no.* 3-4, 149–159. (René Flavigny) **93f:62111** 62L10

— (*with* Brown, Lawrence D.) Two-sided sequential tests. *Ann. Statist.* **20** (1992), *no.* 1, 555–561. (A. A. Novikov) **93c:62133** 62L10 (62C99)

— Monotonicity of sequential Bayes procedures in some multi-action problems. (English summary) *Sequential Anal.* **11** (1992), *no.* 3, 229–236. (Andrzej Sierociński) **93k:62165** 62L10 (62F15)

Greensite, Fred A new method for regularization of the inverse problem of electrocardiography. (English summary) *Math. Biosci.* **111** (1992), *no.* 1, 131–154. (Summary) **93f:92015** 92C50

Greensite, J. Probability, time, and gravity. *Probabilistic methods in quantum field theory and quantum gravity (Cargèse, 1989)*, 233–242, *NATO Adv. Sci. Inst. Ser. B Phys.*, 224, *Plenum, New York*, 1990. (Claus Kiefer) **93a:83018** 83C45

— Stabilized quantum gravity. Stochastic interpretation and numerical simulation. (English summary) *Nuclear Phys. B* **390** (1993), *no.* 2, 439–460. (Summary) **93m:83031** 83C45 (83–08)

— Dynamical origin of the Lorentzian signature of spacetime. (English summary) *Phys. Lett. B* **300** (1993), *no.* 1-2, 34–37. (Summary) **93k:83030** 83C45

Greenwell, Don (*with* Johnson, Peter D., Jr.) Functions which preserve unit distance. *Geombinatorics* **2** (1993), *no.* 3, 61–64. 51K05

Greenwood, P. E. (*with* Wefelmeyer, W.) On optimal estimating functions for partially specified counting process models. *Estimating functions*, 147–160, *Oxford Statist. Sci. Ser.*, 7, *Oxford Univ. Press, New York*, 1991. (Summary) **93a:62118** 62M09 (60G55)

— (*with* Wefelmeyer, W.) Efficient estimating equations for nonparametric filtered models. *Statistical inference in stochastic processes*, 107–141, *Probab. Pure Appl.*, 6, *Dekker, New York*, 1991. (Hans M. Dietz) **93e:62222** 62M09 (62G05)

— (*with* Doney, R. A.) On the joint distribution of ladder variables of random walk. (English summary) *Probab. Theory Related Fields* **94** (1993), *no.* 4, 457–472. (Rudolf Grübel) **93k:60170** 60J15

Grega, Wojciech Decomposition approach to the public transport scheduling problem. (English summary) *Automatica J. IFAC* **29** (1993), *no.* 3, 745–750. 90B06 (90B35)

Grégoire, Philippe (*with* Henneaux, Marc) Hamiltonian formulation of the anti-BRST transformation. *Phys. Lett. B* **277** (1992), *no.* 4, 459–463. (Summary) **93a:81197** 81T70 (17B56)

Gregorac, R. J. A law of cosines in $\mathbf{R}^n$. *Nieuw Arch. Wisk.* (4) **9** (1991), *no.* 3, 267–269. (H. W. Guggenheimer) **93c:51021** 51M04

— Iterated means of convex bodies. *Monatsh. Math.* **113** (1992), *no.* 3, 189–198. (G. D. Chakerian) **93d:52005** 52A20

— Errata: "A law of cosines in $\mathbf{R}^n$" [Nieuw Arch. Wisk. (4) **9** (1991), no. 3, 267–269; MR 93c:51021]. *Nieuw Arch. Wisk.* (4) **10** (1992), *no.* 1-2, iii–iv. (Editors) **93i:51035** 51M04

Gregori, E. (*with* Conti, M.; Lenzini, L.) On the approximation of the slot occupancy pattern in a DQDB network. (English summary) *Performance Evaluation* **16** (1992), *no.* 1-3, 159–176. 60K25

Gregorio, Enrico (*with* Dikranjan, Dikran N.; Orsatti, A.) Kasch bimodules. *Rend. Sem. Mat. Univ. Padova* **85** (1991), 147–160. (K. R. Fuller) **93e:16017** 16D90 (16D20, 16D50)

— Topologically semiperfect rings. *Rend. Sem. Mat. Univ. Padova* **85** (1991), 265–290. (Dikran Dikranjan) **93e:16060** 16W80 (16L30)

Gregorowicz, Jan La théorie des définitions dans la littérature logique polonaise. (English summary) [The theory of definitions in the Polish logical literature] *Math. Inform. Sci. Humaines No.* 116 (1991), 23–27 (1992). (Roman Murawski) **93d:03009** 03A05 (01A60, 03–03)

Gregory, David A. (*with* de Caen, D.; Henson, Teresa D.; Lundgren, J. Richard; Maybee, John S.) Real rank as a bound for nonnegative integer rank. *J. Combin. Math. Combin. Comput.* **11** (1992), 47–53. (J. Sedláček) **93f:05061** 05C50

— (*with* Kirkland, Stephen; Pullman, Norman J.) Row-stochastic matrices with a common left fixed vector. *Linear Algebra Appl.* **169** (1992), 131–149. (D. J. Hartfiel) **93d:15034** 15A51 (52B11, 90C06)

— (*with* de Caen, D.; Kirkland, Stephen; Pullman, Norman J.; Maybee, John S.) Algebraic multiplicity of the eigenvalues of a tournament matrix. *Linear Algebra Appl.* **169** (1992), 179–193. (Qiao Li) **93b:05115** 05C50 (15A18)

— (*with* Kirkland, Stephen; Pullman, Norman J.) Power convergent Boolean matrices. (English summary) *Linear Algebra Appl.* **179** (1993), 105–117. (D. Rosenblatt) **93j:15013** 15A33 (03G05, 03G15, 06E99)

Gregory, James *see* **Simpson, A. D. C.**

Gregory, John[1] (*with* Dapatadu, Rohan; Gibson, Charles) Numerical methods for nonlinear optimal control problems: application to abnormal problems. *J. Math. Anal. Appl.* **159** (1991), *no.* 1, 27–43. (Editors) **93e:49048** 49M25 (65K10)

— (*with* Gregory, Robert; Lin, Cantian; Zeman, Marvin) A global $O(h^4)$ pointwise error numerical algorithm for the extremal solution in the calculus of variations. Proceedings of the Twenty-first Manitoba Conference on Numerical Mathematics and Computing (Winnipeg, MB, 1991). *Congr. Numer.* **86** (1992), 129–147. (Summary) **93b:49036** 49M25 (65K10)

Gregory, John A. (*with* Yuen, P. K.) An arbitrary mesh network scheme using rational splines. *Mathematical methods in computer aided geometric design, II (Biri, 1991)*, 321–329, *Academic Press, Boston, MA*, 1992. (*see* **93d:65022**) 65D17

— An introduction to bivariate uniform subdivision. *Numerical analysis* 1991 (*Dundee, 1991*), 103–117, *Pitman Res. Notes Math. Ser.*, 260, *Longman Sci. Tech., Harlow*, 1992. (*see* **93b:65005**) 65D17

Gregory, John W. (*with* Bixby, Robert E.; Lustig, Irvin J.; Marsten, Roy E.; Shanno, David F.) Very large-scale linear programming: a case study in combining interior point and simplex methods. (English summary) *Oper. Res.* **40** (1992), *no.* 5, 885–897. 90C06

Gregory, R. D. The general form of the three-dimensional elastic field inside an isotropic plate with free faces. *J. Elasticity* **28** (1992), *no.* 1, 1–28. (L. P. Lebedev) **93g:73030** 73C02 (73K10)

Gregory, Robert (*with* Gregory, John[1]; Lin, Cantian; Zeman, Marvin) A global $O(h^4)$ pointwise error numerical algorithm for the extremal solution in the calculus of variations. Proceedings of the Twenty-first Manitoba Conference on Numerical Mathematics and Computing (Winnipeg, MB, 1991). *Congr. Numer.* **86** (1992), 129–147. (Summary) **93b:49036** 49M25 (65K10)

Gregory, Ruth (*with* Harvey, Jeffrey A.) Quantum fermion hair. (English summary) *Phys. Rev. D* (3) **46** (1992), *no.* 8, 3302–3308. (Summary) **93f:83056** 83C57 (81T20, 81V17, 83F05)

— (*with* Harvey, Jeffrey A.) Black holes with a massive dilaton. (English summary) *Phys. Rev. D* (3) **47** (1993), *no.* 6, 2411–2422. (Summary) **93m:83051** 83C57

Greguš, M., Jr. On the asymptotic properties of solutions of nonlinear third order differential equation. (English summary) *Arch. Math. (Brno)* **26** (1990), *no.* 2-3, 101–105. (Vincent Šoltés) **93i:34062** 34C11 (34D05)

— Remark concerning oscillatory properties of solutions of a certain nonlinear equation of the third order. (English summary) *Arch. Math. (Brno)* **28** (1992), *no.* 1-2, 51–55. (V. B. Headley) **93k:34072** 34C10 (34C15)

Greibach, Sheila (*with* Shi, Weiping; Simonson, Shai) Single tree grammars. *Theoretical studies in computer science*, 73–99, *Academic Press, Boston, MA*, 1992. (Erkki Mäkinen) **93g:68067** 68Q50 (03D05, 03D35, 68P15, 68Q45)

Greiner, Günther (*with* Kuhn, Klaus G.) Linear and semilinear boundary conditions: the analytic case. *Semigroup theory and evolution equations (Delft*, 1989), 193–211, *Lecture Notes in Pure and Appl. Math.*, 135, *Dekker, New York*, 1991. (V. Lakshmikantham) **93d:34108** 34G20 (34A12, 34B15, 47H15, 47N20)

— (*with* Eberhardt, B.) Baillon's theorem on maximal regularity. (English summary) Positive operators and semigroups on Banach lattices (Curaçao, 1990). *Acta Appl. Math.* **27** (1992), *no.* 1-2, 47–54. (Ioana Ciorănescu) **93i:47053** 47D03

Greiner, H. An algorithm for linearly constrained programs with a partly linear objective function. *Math. Comput. Modelling* **16** (1992), *no.* 4, 41–50. (Sven-Åke Gustafson) **93b:90082** 90C30 (65K05, 90C25)

Greiner, Russell (*with* Jurišica, Igor) A statistical approach to solving the EBL utility problem. (English summary) *AAAI-92. Proceedings, Tenth National Conference on Artificial Intelligence (San Jose, CA*, 1992), 241–248, *Amer. Assoc. Artif. Intell., Menlo Park, CA*, 1992. (*see* **93j:68007**) 68T05 (68T20)

Greiter, Martin (*with* Wilczek, Frank) Exact solutions and the adiabatic heuristic for quantum Hall states. *Nuclear Phys. B* **370** (1992), *no.* 3, 577–600. (Shinichi Tajima) **93g:81213** 81V70 (82B23)

— (*with* Wen, Xiao-Gang; Wilczek, Frank) Paired Hall states. *Nuclear Phys. B* **374** (1992), *no.* 3, 567–614. (Shinichi Tajima) **93i:82075** 82D20 (81V70)

Greither, Cornelius Class groups of abelian fields, and the main conjecture. (English and French summaries) *Ann. Inst. Fourier (Grenoble)* **42** (1992), *no.* 3, 449–499. (Manfred Kolster) **93j:11071** 11R23 (11R18, 11R27, 11R29, 11R42)

— Extensions of finite group schemes, and Hopf Galois theory over a complete discrete valuation ring. *Math. Z.* **210** (1992), *no.* 1, 37–67. (Lindsay N. Childs) **93f:14024** 14L15 (11S15, 11S20, 16W30)

Grekas, S. Isomorphic measures on compact groups. *Math. Proc. Cambridge Philos. Soc.* **112** (1992), *no.* 2, 349–360. (A. Precupanu) **93i:28010** 28C10 (28A60)

— (*with* Gryllakis, C.) Measures on product spaces and the existence of strong Baire liftings. (English summary) *Monatsh. Math.* **114** (1992), *no.* 1, 63–76. (D. H. Fremlin) **93h:28020** 28C15 (28A35, 28A51)

gaponov-Grekhov, A. V. *see* **Gaponov-Grekhov, A. V.**

Grekov, L. D. (*with* Gavrilyuk, I. P.) A difference scheme for the biharmonic equation with a nonlinear boundary condition. (Russian) *Vychisl. Prikl. Mat. (Kiev) No.* 71 (1990), 3–14. (Summary) **93b:65155** 65N06

Grekova, T. V. Characteristic properties of equations in the theory of long waves in a stratified fluid. (Russian. Russian summary) *Dinamika Sploshn. Sredy No.* 95 (1990), 56–69, 162. (Summary) **93d:76072** 76V05

Grelak, Aleksander (*with* Grytczuk, Aleksander) Some remarks on matrices and Diophantine equation $Ax^2 - By^2 = C$. *Discuss. Math.* **10** (1990), 13–27 (1991). (Summary) **93e:11035** 11D09 (15A06)

Grell, Georg A. (*with* Smolarkiewicz, Piotr K.) A class of monotone interpolation schemes. *J. Comput. Phys.* **101** (1992), *no.* 2, 431–440. (Summary) **93e:76061** 76M25 (65D05, 76M20)

Grell, J. C. (*with* Farrell, Edward J.) On cocircuit graphs. (English summary) *J. Combin. Math. Combin. Comput.* **12** (1992), 7–15. (Summary) **93f:05070** 05C75 (05C38)

Greller, Larry D. (*with* Samardzija, Nikola) Nested tori in a 3-variable mass action model. (English summary) *Proc. Roy. Soc. London Ser. A* **439** (1992), *no.* 1907, 637–647. (Summary) **93i:92018** 92D40 (34C23, 58F40, 92D25)

Grellier, Sandrine Behavior of holomorphic functions in complex tangential directions in a domain of finite type in $\mathbf{C}^n$. (English summary) *Publ. Mat.* **36** (1992), *no.* 1, 251–292. (Ian Graham) **93h:32009** 32A40

Gremal'skiĭ, A. A. (*with* Roshkovan, A. G.; Tsarigradskiĭ, S. V.) Design of pseudorandom test sequences for finite automata. (Russian. English, Russian and Moldavian summaries) *Izv. Akad. Nauk Respub. Moldova Fiz. Tekhn.* **1993,** *no.* 1, 71–76, 105. 68Q70 (68M15)

— (*with* Roshkovan, A. G.; Tsarigradskiĭ, S. V.) Estimation of the quality of pseudorandom test sequences with respect to an automaton model of a discrete device. (Russian. English, Russian and Moldavian summaries) *Izv. Akad. Nauk Respub. Moldova Fiz. Tekhn.* **1993,** *no.* 1, 76–83, 105. 68Q70 (68M15)

Gremaud, P.-A. (*with* Amiez, G.) Error estimates for Euler forward scheme related to two-phase Stefan problems. (French summary) *RAIRO Modél. Math. Anal. Numér.* **26** (1992), *no.* 2, 365–383. (Zheng Hui Xie) **93a:65144** 65N30 (35R35, 65N06, 80A22)

Grenfell, B. T. (*with* Roberts, M. G.) The population dynamics of nematode infections of ruminants: the effect of seasonality in the free-living stages. (English summary) *IMA J. Math. Appl. Med. Biol.* **9** (1992), *no.* 1, 29–41. 92D30

Grensing, D. (*with* Münier, M.; Jüttner, H.-U.) Exact phase transition points for vertex models on even-coordinated lattices. *J. Phys. A* **25** (1992), *no.* 11, 3133–3142. (Azer Kerimov) **93h:82037** 82C20

Grenz, Sybille Kornsche Ungleichungen und schwache Lösungen Navier'scher Randwertprobleme im Banachraumfall für beschränkte Gebiete und Außengebiete. [Korn's inequalities and weak solutions of Navier boundary value problems in the case of Banach spaces for bounded and exterior domains] Dissertation, Universität Bayreuth, Bayreuth, 1991. *Bayreuth. Math. Schr. No.* 37 (1991), 1–114. (Manfred W. Kracht) **93c:35128** 35Q30 (35B05, 35D05, 35J25)

Gres', P. G. Some algebras connected with finite groups. (Russian. Ukrainian summary) *Ukrain. Mat. Zh.* **43** (1991), *no.* 7-8, 901–911; *translation in Ukrainian Math. J.* **43** (1991), *no.* 7-8, 841–849 (1992). (V. A. Artamonov) **93d:20016** 20C15 (20C05)

— Fong's reduction, the correspondences of Brauer and Glauberman and Alperin's weight conjecture. *Proceedings of the International Conference on Algebra, Part* 1 (*Novosibirsk*, 1989), 137–158, *Contemp. Math.*, 131, *Part* 1, *Amer. Math. Soc., Providence, RI*, 1992. (David Gluck) **93f:20016** 20C20

— On conjectures of Olsson, Brauer and Alperin. (Russian. Russian summary) *Mat. Zametki* **52** (1992), *no.* 1, 32–35, 155; *translation in Math. Notes* **52** (1992), *no.* 1-2, 654–657 (1993). (A. S. Kondrat'ev) **93j:20026** 20C20 (20C15, 20F19)

— On Brauer's second fundamental theorem. (Russian. Russian and Ukrainian summaries) *Ukraïn. Mat. Zh.* **44** (1992), *no.* 6, 736–741; *translation in Ukrainian Math. J.* **44** (1992), *no.* 6, 663–668 (1993). (Yun Fan) **93m:20015** 20C20

Gresho, P. M. Some interesting issues in incompressible fluid dynamics, both in the continuum and in numerical simulation. *Advances in applied mechanics, Vol.* 28, 45–140, *Adv. Appl. Mech.*, 28, *Academic Press, Boston, MA*, 1992. (Max D. Gunzburger) **93e:76056** 76M25 (65P05, 76–02, 76D05)

Gressl, F. (*with* Ganster, Maximilian; Reilly, Ivan L.) On a decomposition of continuity. *General topology and applications (Staten Island, NY*, 1989), 67–72, *Lecture Notes in Pure and Appl. Math.*, 134, *Dekker, New York*, 1991. (S. A. Naimpally) **93b:54012** 54C08 (46A30)

— (*with* Ganster, Maximilian) On some questions concerning co-N-closed topologies. *Questions Answers Gen. Topology* **10** (1992), *no.* 1, 63–66. (Introduction) **93a:54001** 54A10 (54D10)

Grether, Marcela (*with* López Moreno, Enrique) Hamiltonian characteristic functions in the design of an aspherical lens. (Spanish. English and Spanish summaries) *Rev. Mexicana Fís.* **38** (1992), *no.* 6, 968–983. 78A10

Gretsky, Neil E. (*with* Ostroy, Joseph M.; Zame, William R.) The nonatomic assignment model. *Econom. Theory* **2** (1992), *no.* 1, 103–127. (Rainer Burkard) **93d:90021** 90A80 (90B85, 90C05)

Greuel, Gert-Martin (*with* Drozd, Yu. A.) Tame-wild dichotomy for Cohen-Macaulay modules. *Math. Ann.* **294** (1992), *no.* 3, 387–394. (Wolfgang Rump) **93h:16023** 16G60 (16G50)

— (*with* Pfister, Gerhard) Moduli spaces for torsion free modules on curve singularities. I. *J. Algebraic Geom.* **2** (1993), *no.* 1, 81–135. (Olav Arnfinn Laudal) **93m:14006** 14D15 (13D10, 14B12, 14D20)

Greven, Andreas (*with* Cox, J. T.) On the long term behavior of finite particle systems: a critical dimension example. *Random walks, Brownian motion, and interacting particle systems*, 203–213, *Progr. Probab.*, 28, *Birkhäuser Boston, Boston, MA*, 1991. (G. R. Grimmett) **93d:60163** 60K35 (82C22)

— (*with* den Hollander, Frank) Population growth in random media. I. Variational formula and phase diagram. Proceedings of the Conference on Models of Nonclassical Reaction Rates (Bethesda, MD, 1991). *J. Statist. Phys.* **65** (1991), *no.* 5-6, 1123–1146. (Dimitri Petritis) **93g:82067** 82C22 (60K35)

— (*with* den Hollander, Frank) Population growth in random media. II. Wavefront propagation. Proceedings of the Conference on Models of Nonclassical Reaction Rates (Bethesda, MD, 1991). *J. Statist. Phys.* **65** (1991), *no.* 5-6, 1147–1154. (Dimitri Petritis) **93g:82068** 82C22 (60K35)

— (*with* Fleischmann, Klaus) Localization and selection in a mean field branching random walk in a random environment. (English summary) *Ann. Probab.* **20** (1992), *no.* 4, 2141–2163. (T. M. Liggett) **93k:60236** 60K35 (82C32)

— (*with* den Hollander, Frank) Branching random walk in random environment: phase transitions for local and global growth rates. *Probab. Theory Related Fields* **91** (1992), *no.* 2, 195–249. (Klaus Fleischmann) **93c:60160** 60K35 (60J80, 82C44)

Greville, T. N. E. Matrices with Toeplitz inverse and zero leading element. Proceedings of the Twenty-first Manitoba Conference on Numerical Mathematics and Computing (Winnipeg, MB, 1991). *Congr. Numer.* **87** (1992), 153–160. (Summary) **93b:15006** 15A09 (15A57)

Grey, D. R. (*with* Lu, Zhunwei) Extinction probabilities of branching processes in random environments. (English summary) *Selected Proceedings of the Sheffield Symposium on Applied Probability (Sheffield*, 1989), 205–211, *IMS Lecture Notes Monograph Ser.*, 18, *Inst. Math. Statist., Hayward, CA*, 1991. (Kiyoshi Kawazu) **93j:60119** 60J80

Grib, A. A. (*with* Dorofeev, V. Yu.) Quantum theory of particles with Planckean masses. *Quantum gravity (Moscow*, 1990), 202–212, *World Sci. Publishing, River Edge, NJ*, 1991. (*see* **93b:83004**) 81T20 (83C47)

— (*with* Zapatrin, R. R.) Topology lattice as quantum logic. *Internat. J. Theoret. Phys.* **31** (1992), *no.* 7, 1093–1101. (Vladimir Rogalewicz) **93c:81014** 81P10 (03G12, 06C15, 54H99, 81P05)

— (*with* Zapatrin, R. R.) Macroscopic realizations of quantum logics. Quantum logics, Part I (Gdańsk, 1990). *Internat. J. Theoret. Phys.* **31** (1992), *no.* 9, 1669–1687. (Vladimir Rogalewicz) **93h:81008** 81P05 (03G12, 05C90, 06C15, 81P10)

Gribachev, Kostadin I. (*with* Staĭkova, Mariya; Mekerov, Dimitʺr G.) Riemannian P-manifolds of constant sectional curvatures. (English summary) *Serdica* **17** (1991), *no.* 4, 212–219. (Ion Mihai) **93k:53032** 53C15 (53C40)

Griepentrog, E. *see* **Seminar: Differential-Algebraic Equations, 93i:34007**

Gries, David Binary to decimal, one more time. *Beauty is our business*, 141–148, *Texts Monographs Comput. Sci., Springer, New York*, 1990. (F. J. van der Linden) **93c:68036** 68Q20 (11A67, 68Q60)

Griesinger, Regina The boundary value problem rot $u = f$, u vanishing at the boundary and the related decompositions of L^q and $H_0^{1,q}$: existence. *Ann. Univ. Ferrara Sez. VII (N.S.)* **36** (1990), 15–43 (1991). (Themistocles M. Rassias) **93a:35026** 35F15 (47F05)

Grieszbach, G. (*with* Schack, B.; Wagner, H.; Witte, H.) Statistical comparison of band spectral powers: an aid in stochastical analysis of brain electrical activity. II. Construction of confidence intervals of spectral band power and their application in EEG-analysis. (English and German summaries) *Biometrical J.* **34** (1992), *no.* 7, 827–841. (From the introduction) **93k:62210** 62P10 (62M15)

Griewank, A. (*with* Rabier, P. J.) Generic aspects of convexification with applications to thermodynamic equilibrium. *Arch. Rational Mech. Anal.* **118** (1992), *no.* 4, 349–397. (Stanisław Janeczko) **93h:58019** 58C28 (76A99, 80A15, 82B26)

Griffeath, David (*with* Bramson, Maury D.) Capture problems for coupled random walks. *Random walks, Brownian motion, and interacting particle systems*, 153–188, *Progr. Probab.*, 28, *Birkhäuser Boston, Boston, MA*, 1991. (Terry R. McConnell) **93e:60192** 60K35 (60J15)

Griffies, Stephen (*with* Cvetič, Mirjam; Rey, Soo-Jong) Static domain walls in $N = 1$ supergravity. (English summary) *Nuclear Phys. B* **381** (1992), *no.* 1-2, 301–328. (W. Cox) **93i:81269** 81T60 (83E30)

— (*with* Cvetič, Mirjam) Gravitational effects in supersymmetric domain wall backgrounds. *Phys. Lett. B* **285** (1992), *no.* 1-2, 27–34. 83E50 (83F05)

— (*with* Cvetič, Mirjam; Davis, Richard Lynn; Soleng, Harald H.) Cauchy horizons, thermodynamics, and closed timelike curves in planar supersymmetric spaces. (English

summary) *Phys. Rev. Lett.* **70** (1993), *no.* 9, 1191–1194. (Summary) **93j:83061** 83C75 (83C15)

Griffin, Nicholas Was Russell shot or did he fall? *Dialogue* **30** (1991), *no.* 4, 549–553 (1992). 03A05 (01A60, 03–03)

Griffin, Paul A. (*with* Hernández, Oscar F.) Structure of irreducible SU(2) parafermion modules derived via the Feigin-Fuchs construction. *Internat. J. Modern Phys. A* **7** (1992), *no.* 6, 1233–1265. (Stanislav Z. Pakuliak) **93d:81070** 81R10 (81T40, 81T70)

— Transverse lattice construction of 2 + 1 Chern-Simons theory. *Modern Phys. Lett. A* **7** (1992), *no.* 7, 601–610. (Asao Arai) **93b:81143** 81T10 (81T13, 81T27)

Griffin, Peter Acceleration of the sum of Fibonacci reciprocals. *Fibonacci Quart.* **30** (1992), *no.* 2, 179–181. (John Christopher Turner) **93d:11024** 11B68 (65B05)

Griffin, Philip S. (*with* McConnell, Terry R.) On the position of a random walk at the time of first exit from a sphere. *Ann. Probab.* **20** (1992), *no.* 2, 825–854. (W. E. Pruitt) **93j:60097** 60J15

Griffith, William S. (*with* Sheu, Shey Huei) Multivariate imperfect repair. (English summary) *J. Appl. Probab.* **29** (1992), *no.* 4, 947–956. (Bent Natvig) **93j:60135** 60K10 (62N05, 90B25)

Griffiths, D. F. (*with* Yee, H. C.; Sweby, P. K.) A study of spurious asymptotic numerical solutions of nonlinear differential equations by the nonlinear dynamics approach. (English summary) *Twelfth International Conference on Numerical Methods in Fluid Dynamics (Oxford, 1990)*, 259–267, *Lecture Notes in Phys.*, 371, *Springer, Berlin*, 1990. (*see* **93e:76002**) 65M06 (34A50, 65M12)

— (*with* Mitchell, Andrew Ronald) Spurious behaviour and nonlinear instability in discretised partial differential equations. *The dynamics of numerics and the numerics of dynamics (Bristol, 1990)*, 215–242, *Inst. Math. Appl. Conf. Ser. New Ser.*, 34, *Oxford Univ. Press, New York*, 1992. (M. K. Kadalbajoo) **93f:65068** 65M12 (65N12, 65N22)

— (*with* Sweby, P. K.; Yee, H. C.) On spurious asymptotic numerical solutions of explicit Runge-Kutta methods. (English summary) IMA Conference on Dynamics of Numerics and Numerics of Dynamics (Bristol, 1990). *IMA J. Numer. Anal.* **12** (1992), *no.* 3, 319–338. (Summary) **93g:65093** 65L06 (34A45)

— (*with* Stuart, A. M.; Yee, H. C.) Numerical wave propagation in an advection equation with a nonlinear source term. (English summary) *SIAM J. Numer. Anal.* **29** (1992), *no.* 5, 1244–1260. (Meng Zhao Qin) **93h:65111** 65M06 (35L60)

— *see also* **Numerical analysis, 93b:65005**

Griffiths, H. B. Euclidean representations of topological ordered spaces. *Mathematika* **39** (1992), *no.* 1, 104–135. (L. E. Ward, Jr.) **93g:54045** 54F05 (05C10, 54C25)

Griffiths, J. D. *see* **Mathematics in transport planning and control, 93g:90003**

Griffiths, Phillip A. Some aspects of exterior differential systems. *Complex geometry and Lie theory (Sundance, UT, 1989)*, 151–173, *Proc. Sympos. Pure Math.*, 53, *Amer. Math. Soc., Providence, RI*, 1991. (Irl Bivens) **93b:58005** 58A15 (35A30, 35N10, 58A17)

Griffiths, R. C. (*with* Ethier, S. N.) Harmonic measure for random genetic drift. *Diffusion processes and related problems in analysis, Vol. I (Evanston, IL, 1989)*, 73–81, *Progr. Probab.*, 22, *Birkhäuser Boston, Boston, MA*, 1990. (Akinobu Shimizu) **93d:60125** 60J60 (60J70, 92D10)

— The two-locus ancestral graph. (English summary) *Selected Proceedings of the Sheffield Symposium on Applied Probability (Sheffield, 1989)*, 100–117, *IMS Lecture Notes Monograph Ser.*, 18, *Inst. Math. Statist., Hayward, CA*, 1991. (Summary) **93h:92021** 92D10 (60J70)

Griffiths, Robert B. Commensurate-incommensurate transitions and area-preserving maps: the Frenkel-Kontorova model. *Nonlinear phenomena in fluids, solids and other complex systems (Santiago, 1990)*, 243–265, *North-Holland Delta Ser., North-Holland, Amsterdam*, 1991. (From the preface) **93g:82030** 82B21 (58F40, 82–01)

— (*with* Bassler, Kevin E.; Sasaki, Kazuo) Interface interactions in modulated phases, and upsilon points. *J. Statist. Phys.* **62** (1991), *no.* 1-2, 45–88. (Klaus Ziegler) **93c:82023** 82B24 (82B26)

Griffiths, W. E. *see* **Readings in econometric theory and practice, 93m:62006**

Griful, E. (*with* Egozcue, J. J.; Bofill, F.) Orthogonal decomposition of stationary processes into nondeterministic components. (Spanish) *Proceedings of the XII Congress on Differential Equations and Applications/II Congress on Applied Mathematics (Spanish) (Oviedo, 1991)*, 601–606, *Univ. Oviedo, Oviedo*, 1991. (*see* **93j:00009**) 60G10

Grigelionis, Arūnas A problem with a spectral parameter in boundary conditions. (Russian. English, Russian and Lithuanian summaries) *Differentsial'nye Uravneniya i Primenen. No.* 47 (1991), 22–27. (Nikolai Bozhinov) **93f:34142** 34L10 (34B05)

Grigelionis, B. Hellinger integrals and Hellinger processes for solutions of martingale problems. *Probability theory and mathematical statistics, Vol. I (Vilnius, 1989)*, 446–454, "*Mokslas*", *Vilnius*, 1990. (I. Vajda) **93c:60093** 60H99 (62B20)

— Hellinger integrals and Hellinger processes for solutions of martingale problems. *Random partial differential equations (Oberwolfach, 1989)*, 95–106, *Internat. Ser. Numer. Math.*, 102, *Birkhäuser, Basel*, 1991. (Friedrich Liese) **93i:60087** 60G44

Griggs, Jerrold R. (*with* Hutchinson, Joan P.) On the r-domination number of a graph. Special volume to mark the centennial of Julius Petersen's "Die Theorie der regulären Graphs", Part II. *Discrete Math.* **101** (1992), *no.* 1-3, 65–72. (Gary MacGillivray) **93h:05100** 05C35

— (*with* Wu, Mingshen) Spanning trees in graphs of minimum degree 4 or 5. *Discrete Math.* **104** (1992), *no.* 2, 167–183. (Gui Zhen Liu) **93d:05043** 05C05 (05C35)

— (*with* Wachs, Michelle L.) Towers of powers and Bruhat order. *European J. Combin.* **13** (1992), *no.* 5, 367–370. (From the text) **93g:20008** 20B30 (05E10)

— (*with* Yeh, Roger K.) Labelling graphs with a condition at distance 2. (English summary) *SIAM J. Discrete Math.* **5** (1992), *no.* 4, 586–595. (Summary) **93h:05141** 05C78 (05C85, 68R10)

— On the distribution of sums of residues. (English summary) *Bull. Amer. Math. Soc. (N.S.)* **28** (1993), *no.* 2, 329–333. (Jörg Brüdern) **93j:11067** 11P83 (11B50)

Griggs, T. S. (*with* Grannell, M. J.; Phelan, J. S.) On infinite Steiner systems. *Discrete Math.* **97** (1991), *no.* 1-3, 199–202. (David E. Woolbright) **93d:05034** 05B30 (04A20)

— (*with* De Resmini, Marialuisa J.; Rosa, Alexander) Decomposing Steiner triple systems into four-line configurations. *Combinatorics '90 (Gaeta, 1990)*, 215–226, *Ann. Discrete Math.*, 52, *North-Holland, Amsterdam*, 1992. (Lucien Haddad) **93m:05031** 05B07

— (*with* Grannell, M. J.; Murphy, J. P.) Equivalence classes of Steiner triple systems. Proceedings of the Twenty-first Manitoba Conference on Numerical Mathematics and Computing (Winnipeg, MB, 1991). *Congr. Numer.* **86** (1992), 19–25. (K. T. Phelps) **93e:05011** 05B07

— (*with* Grannell, M. J.; Mathon, Rudolf) On Steiner systems $S(5, 6, 48)$. (English summary) *J. Combin. Math. Combin. Comput.* **12** (1992), 77–96. (Summary) **93f:05016** 05B05

Grigis, Alain Analyse semi-classique de l'opérateur de Schrödinger sur la sphère. [Semiclassical analysis of a Schrödinger operator on the sphere] *Séminaire sur les Équations aux Dérivées Partielles*, 1990–1991, *Exp. No.* XXIV, 9 *pp.*, *École Polytech., Palaiseau*, 1991. (Denise Huet) **93g:35030** 35J10 (81Q20)

— (*with* Mohamed, Abdérémane) Finitude des lacunes dans le spectre de l'opérateur de Schrödinger et de celui de Dirac avec des potentiels électrique et magnétique périodiques. (English and French summaries) [Finiteness of gaps in the spectrum of the Schrödinger operator and the Dirac operator with periodic magnetic and electrical potential] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 12, 1249–1252. (Summary) **93i:35095** 35P05 (35Q53, 47F05, 47N50, 81Q10)

Grignani, G. (*with* Nardelli, G.) Gravity in 2 + 1 dimensions coupled to point-like sources: a flat Chern-Simons gauge theory equivalent to Einstein's. *Nuclear Phys. B* **370** (1992), *no.* 2, 491–508. (Edward Malec) **93b:81155** 81T13 (83C05)

— (*with* Nardelli, G.) Gravity and the Poincaré group. *Phys. Rev. D* (3) **45** (1992), *no.* 8, 2719–2731. (R. J. McKellar) **93b:83053** 83D05 (81T13)

— (*with* Nardelli, G.) Chern-Simons gravity from (3 + 1)-dimensional gravity. (English summary) *Phys. Lett. B* **300** (1993), *no.* 1-2, 38–43. (Summary) **93m:81102** 81T13 (81V17, 83C99)

Grigolini, Paolo (*with* Roncaglia, Roberto; Bonci, Luca; West, Bruce J.) Chaos and quantum irreversibility. *J. Statist. Phys.* **68** (1992), *no.* 1-2, 321–343. (Summary) **93c:81281** 81V80 (81Q50, 81S30)

— (*with* Bianucci, Marco; Bonci, Luca; Trefan, Gyorgy; West, Bruce J.) Brownian motion generated by a two-dimensional mapping. (English summary) *Phys. Lett. A* **174** (1993), *no.* 5-6, 377–383. (Summary) **93m:82030** 82C31

Grigor, O. È. (*with* Tverskoĭ, M. B.) Investigation of capillary-gravity waves of finite amplitude on the surface of a floating fluid. (Russian. Russian summary) *Zh. Vychisl. Mat. i Mat. Fiz.* **32** (1992), *no.* 7, 1057–1070; *translation in Comput. Math. Math. Phys.* **32** (1992), *no.* 7, 941–954. (Peter N. Zhevandrov) **93i:76009** 76B15 (76B45)

Grigorchuk, R. I. On growth in group theory. *Proceedings of the International Congress of Mathematicians, Vol. I, II (Kyoto, 1990)*, 325–338, *Math. Soc. Japan, Tokyo*, 1991. (Alexander Lubotzky) **93e:20001** 20–02 (20F32)

— (*with* Kurchanov, P. F.) On the width of elements in free groups. (Russian. Ukrainian summary) *Ukrain. Mat. Zh.* **43** (1991), *no.* 7-8, 911–918; *translation in Ukrainian Math. J.* **43** (1991), *no.* 7-8, 850–856 (1992). (J. Wiegold) **93a:20049** 20F10 (20E05)

— (*with* Kurchanov, P. F.; Zieschang, H.) Equivalence of homomorphisms of surface groups to free groups and some properties of 3-dimensional handlebodies. *Proceedings of the International Conference on Algebra, Part 1 (Novosibirsk, 1989)*, 521–530, *Contemp. Math.*, 131, *Part 1*, *Amer. Math. Soc., Providence, RI*, 1992. (Athanase Papadopoulos) **93h:20040** 20F34 (20E05, 57M05)

Grigore, D. R. Irreducible representations of the Poincaré group including inversions. *Fortschr. Phys.* **39** (1991), *no.* 2, 101–130. (U. Cattaneo) **93d:22012** 22E43 (22D30, 22E70, 81R05)

— The derivation of Einstein equations from invariance principles. *Classical Quantum Gravity* **9** (1992), *no.* 6, 1555–1571. (A. V. Aminova) **93e:83010** 83C05 (58E30)

— On manifest covariance condition in the Lagrangian formalism. (English summary) *Internat. J. Modern Phys. A* **7** (1992), *no.* 17, 4073–4089. (Frans Cantrijn) **93d:58053** 58F05 (70G99, 70H35)

— Manifest covariance condition in the Hamiltonian theory of relativistic strings. (English summary) *Internat. J. Modern Phys. A* **7** (1992), *no.* 17, 4091–4105. (Piret Kuusk) **93g:81125** 81T30 (81R05)

— Generalized Lagrangian dynamics and Noetherian symmetries. (English summary) *Internat. J. Modern Phys. A* **7** (1992), *no.* 28, 7153–7168. (Frans Cantrijn) **93j:58048** 58F05 (70G99, 70H33, 70H35)

— A derivation of the Nambu-Goto action from invariance principles. *J. Phys. A* **25** (1992), *no.* 13, 3797–3811. (Summary) **93e:81095** 81T30

Grigorenko, A. N. Geometry of projective Hilbert space. (English summary) *Phys. Rev. A* (3) **46** (1992), *no.* 11, 7292–7294. (Mark V. Losik) **93m:58008** 58B20 (81Q99, 81S99)

— Quantum mechanics with a non-Hermitian Hamiltonian. (English summary) *Phys. Lett. A* **172** (1993), *no.* 5, 350–354. (Matej Pavšič) **93m:81021** 81P99

Grigorenko, M. Yu. (*with* Tolmachev, S. A.) An approach to the solution of the fuzzy covering problem. (Russian. English and Ukrainian summaries) *Kibernet. Sistem. Anal.* **1992**, *no.* 6, 164–165, 187. 04A72

Grigorenko, N. L. The problem of pursuit by several objects. (English summary) *Differential games—developments in modelling and computation (Espoo, 1990)*, 71–80, *Lecture Notes in Control and Inform. Sci.*, 156, *Springer, Berlin*, 1991. (*see* **93c:90003**) 90D25

— Game-theoretic problems of control with variable structure. (Russian) *Vestnik Moskov. Univ. Ser. XV Vychisl. Mat. Kibernet.* **1991**, *no.* 4, 5–16; *translation in Moscow Univ. Comput. Math. Cybernet.* **1991**, *no.* 4, 4–14. 90D25 (93B12)

Grigorenko, N. V. Letter to the editors: "Logarithmic singularities of the Fuchs equations and a criterion for finiteness of the monodromy group" [Mat. Zametki **33** (1983), no. 6, 881–884; MR 85c:34007]. (Russian) *Mat. Zametki* **51** (1992), *no.* 6, 155; *translation in Math. Notes* **51** (1992), *no.* 5-6, 627. (From the text) **93g:34008** 34A20

Grigorenko, Nikolai L. *see* **Grigorenko, N. L.**

Grigorenko, Ya. M. (*with* Vasilenko, A. T.) ★ Задачи статики анизотропных неоднородных оболочек. (Russian. English and Russian summaries) [Problems of the statics of anisotropic nonhomogeneous shells] "*Nauka*", *Moscow*, 1992. 336 *pp. ISBN* 5-02-014298-0 (From the preface) **93k:73062** 73K15 (73K20)

Grigor'ev, A. A. (*with* Vityazev, A. V.; Nechkina, M. V.; Markus, V. A.; Treshnikov, A. F.) On the centennial of the birth of Academician O. Yu. Shmidt. (Russian) *Vestnik Akad. Nauk SSSR* **1991**, *no.* 9, 104–125. (R. L. Cooke) **93a:01048** 01A70

Grigor'ev, A. I. (*with* Lazaryants, A. È.) A method for solving the Navier-Stokes equation in curvilinear coordinate systems. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **32** (1992), *no.* 6, 929–938; *translation in Comput. Math. Math. Phys.* **32** (1992), *no.* 6, 803–810. (Summary) **93d:35115** 35Q30 (76D05, 76D45, 76E25)

Grigor'ev, B. S. Application of the method of conjugate equations to nonstationary problems of gas lubrication. (Russian) *Conjugate equations in problems of mathematical physics (Russian)*, 47–63, *Akad. Nauk SSSR, Otdel Vychisl. Mat., Moscow*, 1990. (From the text) **93a:76028** 76D08 (76N15)

Grigor'ev, D. Yu. (*with* Karpiński, Marek) An approximation algorithm for the number of zeros of arbitrary polynomials over GF[q]. (English summary) *32nd Annual Symposium on Foundations of Computer Science (San Juan, PR, 1991)*, 662–669, *IEEE Comput. Soc. Press, Los Alamitos, CA*, 1991. (H. J. Godwin) **93h:11141** 11Y16 (11T06, 68Q25)

Grigor'ev, M. P. (*with* Okhlopkova, E. D.) Solution of the problem for the center of some systems of second-order differential equations. (Russian) *Dynamical systems (Russian)*, 34–37, *Yakutsk. Gos. Univ., Yakutsk*, 1989. (*see* **93b:34004**) 34C05

Grigor'ev, Yu. D. (*with* Ivanov, Aleksandr Vladimirovich) Asymptotic expansion of the distribution of a functional of the least squares estimate. (Russian. English and Russian summaries) *Dokl. Akad. Nauk Ukrainy* **1992**, *no.* 7, 26–30, 178. (Summary) **93h:62028** 62E20 (62J02)

— (*with* Ivanov, Aleksandr Vladimirovich) Asymptotic expansions connected with estimators of the observation error variance in Gaussian nonlinear regression. (Russian. English and Ukrainian summaries) *Kibernet. Sistem. Anal.* **1992**, *no.* 1, 75–85, 189; *translation in Cybernet. Systems Anal.* **28** (1992), *no.* 1, 62–71. (Andrej Pázman) **93m:62142** 62J02 (62E20)

Grigor'ev, Yu. N. (*with* Meleshko, S. V.) Group theoretical analysis of kinetic Boltzmann equation and its models. (English, Russian and Polish summaries) *Arch. Mech. (Arch. Mech. Stos.)* **42** (1990), *no.* 6, 693–701 (1991). (Marshall Slemrod) **93f:35017** 35A30 (35Q99, 76P05, 82C40)

— (*with* Virchenko, Yu. P.) Equilibrium distribution of charged particles in the phase space of a cyclic accelerator. *Ann. Physics* **209** (1991), *no.* 1, 1–12. (Summary) **93a:78013** 78A35

— (*with* Meleshko, S. V.) Group-theoretic analysis of some kinetic equations. (Russian) *Model. Mekh.* **5** (1991), *no.* 3, 27–39. (Andrzej Palczewski) **93h:82054** 82C40 (22E65, 35A30, 35Q99)

Grigor'eva, N. S. ★ Асимптотические методы в задачах о распространении звука в неоднородной движущейся среде. (Russian) [Asymptotic methods in problems on the propagation of sound in an inhomogeneous moving medium] *Leningrad. Univ., Leningrad*, 1991. 240 *pp. ISBN* 5-288-00479-X (Vadim D. Kryakvin) **93a:76087** 76Q05 (35Q99, 86A05)

Grigoriadis, Karolos (*with* Liu, Ketao; Skelton, Robert E.) Optimizing linear controllers for finite precision synthesis using additive quantization models. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, I (Kobe*, 1991), 543–548, *Mita, Tokyo*, 1992. (*see* **93g:93005**) 93B40

— (*with* Liu, Ketao; Skelton, Robert E.) Optimal controllers for finite wordlength implementation. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 9, 1294–1304. (Summary) **93f:93087** 93C83

— (*with* Smith, M. J.; Skelton, Robert E.) Optimal mix of passive and active control in structures. *J. Guidance Control Dynamics* **15** (1992), *no.* 4, 912–919. (Summary) **93d:93056** 93C85 (73K50)

Grigorieff, Serge Décidabilité et complexité des théories logiques. [Decidability and complexity of logical theories] *Logique et informatique: une introduction*, 7–97, *Collect. Didact.*, 8, *INRIA, Rocquencourt*, 1991. (*see* **93d:68003**) 03B25 (03D15, 03D35)

Grigoriev, Dima *see* **Grigor'ev, D. Yu.**

Grigoriev, Yu. N. *see* **Grigor'ev, Yu. N.**

Grigorishin, K. I. (*with* Chernyak, V. Ya.; Ogievetskiĭ, E. I.) Triangle equation and quantum algebra representations. *Phys. Lett. A* **158** (1991), *no.* 6-7, 291–294. (Summary) **93g:81047** 81R50 (17B37, 22E70, 81U99, 82B23)

— (*with* Chernyak, V. Ya.; Ogievetskiĭ, E. I.) Universal R-matrix and representation theory for quantum groups. *Phys. Lett. A* **164** (1992), *no.* 5-6, 389–397. (L. L. Vaksman) **93e:17013** 17B37 (81R50)

— (*with* Chernyak, V. Ya.; Ogievetskiĭ, E. I.) Quantum group bootstrap approach and infinite-dimensional factorized scattering matrices. *Phys. Lett. A* **164** (1992), *no.* 5-6, 398–407. (L. L. Vaksman) **93e:17014** 17B37 (81R50)

— (*with* Chernyak, V. Ya.; Ogievetskiĭ, E. I.) Quantum group bootstrap approach. Application to the extended Heisenberg group. *Phys. Lett. A* **164** (1992), *no.* 5-6, 408–415. (L. L. Vaksman) **93e:17015** 17B37 (81R50)

Grigorov, A. (*with* Martinov, Nikolai Konstantinov; Ouroushev, D.; Georgiev, Vladimir) A method for generating exact solutions of the nonlinear Klein-Gordon equation. (English and French summaries) *Canad. J. Phys.* **70** (1992), *no.* 6, 467–469. (Summary) **93j:35146** 35Q40 (35L70, 81Q05)

Grigorov, Kh. (*with* Georgiev, G. Kh.) Third- and higher-order Cremona fiber transformations in $\mathbf{P}_4$. (Bulgarian. English and Russian summaries) *Godishnik Vissh. Uchebn. Zaved. Prilozhna Mat.* **23** (1987), *no.* 4, 141–148 (1989). (Summary) **93e:51037** 51N35

Grigorovich, V. G. (*with* Kravtsov, V. V.) The problem of the radiation of acoustic waves from a surface through a nonhomogeneous layer. (Russian. Russian summary) *Zh. Vychisl. Mat. i Mat. Fiz.* **32** (1992), *no.* 10, 1667–1670; *translation in Comput. Math. Math. Phys.* **32** (1992), *no.* 10, 1497–1500 (1993). (Summary) **93i:76080** 76Q05 (76M25)

Grigoryan, G. V. (*with* Grigoryan, R. P.; Tyutin, I. V.) Equivalence of Lagrangian and Hamiltonian BRST quantizations: the general case. *Nuclear Phys. B* **379** (1992), *no.* 1-2, 304–318. (Henrik Aratyn) **93d:81181** 81T70 (81S30)

Grigoryan, R. P. (*with* Grigoryan, G. V.; Tyutin, I. V.) Equivalence of Lagrangian and Hamiltonian BRST quantizations: the general case. *Nuclear Phys. B* **379** (1992), *no.* 1-2, 304–318. (Henrik Aratyn) **93d:81181** 81T70 (81S30)

Grigoryan, Souren Arshakovich (*with* Zaslavskaya, M. I.) Real parts of function algebras. (Russian) *Mat. Zametki* **50** (1991), *no.* 3, 20–26, 156; *translation in Math. Notes* **50** (1991), *no.* 3-4, 898–902 (1992). (Toma V. Tonev) **93d:46087** 46J15 (46J10)

Grigoryev, G. V. (*with* Avdeev, L. V.; Kazakov, D. I.) Renormalizations in abelian Chern-Simons field theories with matter. (English summary) *Nuclear Phys. B* **382** (1992), *no.* 3, 561–580. (Summary) **93g:81084** 81T13 (81T15)

Grigyalenis, Arunas *see* **Grigelionis, Arūnas**

Grill, Karl On the increments of the Wiener process. (English summary) *Studia Sci. Math. Hungar.* **26** (1991), *no.* 2-3, 329–354. (J. Steinebach) **93i:60058** 60F15 (60G17, 60J65)

— Exact rate of convergence in Strassen's law o· the iterated logarithm. *J. Theoret. Probab.* **5** (1992), *no.* 1, 197–204. (Thomas Mikosch) **93a:60046** 60F15 (60F17, 60J65)

— A note on randomness. *Statist. Probab. Lett.* **14** (1992), *no.* 3, 229–233. (Anant P. Godbole) **93i:60059** 60F15 (60F10, 60G50)

Grillakis, Manoussos G. Some remarks on the regularity of wave equations with a critical nonlinearity. *Nonlinear hyperbolic equations and field theory (Lake Como*, 1990), 110–120, *Pitman Res. Notes Math. Ser.*, 253, *Longman Sci. Tech., Harlow*, 1992. (*see* **93d:35003**) 35L70 (35B65)

— Regularity for the wave equation with a critical nonlinearity. *Comm. Pure Appl. Math.* **45** (1992), *no.* 6, 749–774. (Piotr T. Chruściel) **93e:35073** 35L70 (35B65, 35Q75)

Grillet, Pierre-Antoine A construction of finite commutative nilsemigroups. *Comm. Algebra* **19** (1991), *no.* 11, 3145–3172. (M. Yamada) **93e:20080a** 20M10 (20M14)

— Errata to: "A construction of finite commutative nilsemigroups". *Comm. Algebra* **20** (1992), *no.* 9, 2789. (M. Yamada) **93e:20080b** 20M10 (20M14)

— The commutative cohomology of nilsemigroups. (English summary) *J. Pure Appl. Algebra* **82** (1992), *no.* 3, 233–251. (Jonathan Leech) **93m:20095** 20M14 (20M50)

— A short proof of Rédei's theorem. *Semigroup Forum* **46** (1993), *no.* 1, 126–127. 20M14

Grillo, Gabriele (*with* Frigerio, Alberto) Time-dependent Schrödinger operators and simulated annealing. *Semigroup theory and evolution equations (Delft*, 1989), 165–179, *Lecture Notes in Pure and Appl. Math.*, 135, *Dekker, New York*, 1991. (Nariyuki Minami) **93i:82053** 82C31 (35R60, 81Q05, 82C80, 90C27)

Grim, Patrick (*with* Mar, Gary) Pattern and chaos: new images in the semantics of paradox. *Noûs* **25** (1991), *no.* 5, 659–693. (Keith Simmons) **93h:03006** 03A05 (00A30, 03B50, 58F13)

Grimaldi, Ralph P. Properties of Fibonacci trees. Proceedings of the Twenty-second Southeastern Conference on Combinatorics, Graph Theory, and Computing (Baton Rouge, LA, 1991). *Congr. Numer.* **84** (1991), 21–32. (Shreedhara Prasada Mohanty) **93f:05034** 05C05

Grimaldi, Renata Sur l'existence d'une infinité continue de structures asymptotiques sur $\mathbf{R}^n$. (English and Italian summaries) [Existence of a continuous infinity of asymptotic structures on $\mathbf{R}^n$] *Atti Accad. Naz. Lincei Rend. Cl. Sci. Fis. Mat. Natur.* (8) **82** (1988), *no.* 3, 445–449 (1990). (Gh. Pitiş) **93d:53039** 53C20 (57R15)

— Sur l'existence d'une infinité continue de structures asymptotiques sur H^2. (English and Italian summaries) [On the existence of a continuous infinity set of asymptotic structures on H^2] *Atti Accad. Naz. Lincei Rend. Cl. Sci. Fis. Mat. Natur.* (8) **83** (1989), 147–151 (1990). (Summary) **93i:53035** 53C20 (53A30)

— Nœuds et links fibrés et géométrie asymptotique de feuilles. (English summary) [Fibered knots and links and the asymptotic geometry of leaves] *Riv. Mat. Univ. Parma* (4) **17** (1991), 149–158 (1992). (Lawrence Conlon) **93f:57030** 57R30 (57M25)

— (*with* Pansu, Pierre) Sur la croissance du volume dans une classe conforme. [Growth of the volume in a conformal class] *J. Math. Pures Appl.* (9) **71** (1992), *no.* 1, 1–19. (Raymond Couty) **93a:53025** 53C20

Grimaldi Piro, Anna (*with* Ragnedda, Francesco) Classical boundary value problems for integrable temperatures in a C^1 domain. *Ann. Polon. Math.* **54** (1991), *no.* 1, 29–44. (P. Szeptycki) **93g:35056** 35K05 (46E15)

Grimble, M. J. (*with* Fairbairn, N. A.) The F-iteration approach to H_∞ control. (English summary) *Adaptive systems in control and signal processing*, 1989 (*Glasgow*), 199–204, *IFAC Sympos. Ser.*, 1990, *No.* 1, *Pergamon, Oxford*, 1990. (*see* **93j:93007**) 93B36

— (*with* Ho, Daniel W. C.; Elsayed, Ahmed) H_∞ robust linear estimator. (English summary) *Adaptive systems in control and signal processing*, 1989 (*Glasgow*), 477–482, *IFAC Sympos. Ser.*, 1990, *No.* 1, *Pergamon, Oxford*, 1990. (*see* **93j:93007**) 93E11 (93B36)

— H_∞ robust generalized minimum variance self-tuning controller. (English summary) *Advanced methods in adaptive control for industrial applications (Praha*, 1990), 43–60, *Lecture Notes in Control and Inform. Sci.*, 158, *Springer, Berlin*, 1991. (*see* **93c:93003**) 93B36

— Generalized predictive optimal control: an introduction to the advantages and limitations. *Internat. J. Systems Sci.* **23** (1992), *no.* 1, 85–98. (Summary) **93f:93139** 93E20 (49K45, 93-02)

— *see also* **Adaptive systems in control and signal processing, 93j:93007** *and* **Zhang, Han Quan**

Grimeisen, G. (*with* Erben, W.) Integration by means of Riemann sums in Banach spaces. I. (German and Russian summaries) *Z. Anal. Anwendungen* **9** (1990), *no.* 6, 481–501. (Ralph Henstock) **93a:28009** 28B05 (26A42)

— (*with* Erben, W.) Integration by means of Riemann sums in Banach spaces. II. (German and Russian summaries) *Z. Anal. Anwendungen* **10** (1991), *no.* 1, 11–26. (Ralph Henstock) **93c:28010** 28B05 (26A42)

Grimm, G. (*with* Hailer, B.; Stumpf, Harald) State representations for renormalized energy equations in quantum field theory. (German summary) *Ann. Physik* (7) **48** (1991), *no.* 5, 327–336. (G. Vitiello) **93g:81073** 81T08

Grimmer, Ronald (*with* Liu, He Tao) Integrodifferential equations with non-densely defined operators. *Differential equations with applications in biology, physics, and engineering (Leibnitz*, 1989), 185–199, *Lecture Notes in Pure and Appl. Math.*, 133, *Dekker, New York*, 1991. (Qing Rong Liu) **93g:47088** 47N20 (34G10, 34K30, 45J05, 47D03)

— (*with* Liu, He Tao) Liapunov-Razumikhin methods for integrodifferential equations in Hilbert space. *Delay and differential equations (Ames, IA*, 1991), 9–24, *World Sci. Publishing, River Edge, NJ*, 1992. (H. Brunner) **93f:45013** 45J05 (34K20, 34K30, 47N20)

— (*with* Sinestrari, Eugenio) Maximum norm in one-dimensional hyperbolic problems. *Differential Integral Equations* **5** (1992), *no.* 2, 421–432. (Anton S. Mureşan) **93b:35083** 35L50 (34G10, 47D03, 47N20)

Grimmett, Geoffrey R. (*with* Barsky, David J.; Newman, Charles M.) Dynamic renormalization and continuity of the percolation transition in orthants. *Spatial stochastic processes*, 37–55, *Progr. Probab.*, 19, *Birkhäuser Boston, Boston, MA*, 1991. (Hans-Otto Georgii) **93a:60155** 60K35 (82C28, 82C43)

— (*with* Hall, R. R.) The asymptotics of random sieves. *Mathematika* **38** (1991), *no.* 2, 285–302 (1992). (S. W. Graham) **93b:11116** 11N36 (11N35)

— (*with* Stirzaker, D. R.) ★ Probability and random processes. Second edition. *The Clarendon Press, Oxford University Press, New York*, 1992. xii+541 *pp. ISBN* 0-19-853666-6; 0-19-853665-8 (From the preface to the second edition) **93m:60002** 60-01

Grimshaw, R. H. J. ★ Nonlinear ordinary differential equations. Applied Mathematics and Engineering Science Texts, 2. *Blackwell Scientific Publications Ltd., Oxford*, 1990. viii+328 *pp. ISBN* 0-632-02708-8 (James A. Murdock) **93c:34002** 34-01 (34C15, 58F05, 70H05, 70Kxx)

— Resonant forcing of nonlinear dispersive waves. (English summary) *Nonlinear dispersive wave systems* (*Orlando, FL*, 1991), 1–11, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93h:76008** 76B15 (35Q53)
— Wave interactions in stratified fluids. *Nonlinear dynamics and chaos* (*Canberra*, 1991), 153–173, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93a:76106** 76V05 (58F40, 76E99)
— Nonlinear waves in fluids—the KdV paradigm. *Nonlinear dynamics and chaos* (*Canberra*, 1991), 175–198, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93b:76011** 76B15 (35Q53)
— (*with* Akylas, T. R.) Solitary internal waves with oscillatory tails. (English summary) *J. Fluid Mech.* **242** (1992), 279–298. (Yu. Z. Aleshkov) **93k:76025** 76C10 (76V05)
— The use of Borel-summation in the establishment of nonexistence of certain travelling-wave solutions of the Kuramoto-Sivashinsky equation. *Wave Motion* **15** (1992), *no.* 4, 393–395. (Summary) **93f:35223** 35Q58
— (*with* Yi, Zeng Xin) Resonant generation of finite-amplitude waves by flow past topography on a β-plane. (English summary) *Stud. Appl. Math.* **88** (1993), *no.* 2, 89–112. (Yu. Z. Aleshkov) **93m:76071** 76U05 (76B15)
Grimshaw, Scott D. Estimation of the linear-plateau segmented regression model in the presence of measurement error. (English summary) *Comm. Statist. Theory Methods* **21** (1992), *no.* 8, 2399–2413. 62J05
Grinberg, A. S. *see* **Grinbergs, A.**
Grinberg, Eric L. *see* **Geometric analysis, 93g:53002**
Grinbergs, A. (*with* Lototskiĭ, V. A.; Shklyar, B. Sh.) Identification of systems with distributed parameters. (Russian. Russian summary) *Avtomat. i Telemekh.* **1992,** *no.* 2, 36–49; *translation in Automat. Remote Control* **53** (1992), *no.* 2, *part* 1, 178–189. (S. T. Tikhonchuk) **93i:93033** 93B30 (93C20)
Grinblat, L. Š. On sets not belonging to algebras of subsets. *Mem. Amer. Math. Soc.* **100** (1992), *no.* 480, vi+111 *pp.* (Jakub Jasiński) **93d:04001** 04A20 (03E05, 28A05, 54D35)
Grincevičius, Arūnas Continuity of the distribution of a generalized random power series. (Russian. English and Lithuanian summaries) *Litovsk. Mat. Sb.* **31** (1991), *no.* 3, 406–410; *translation in Lithuanian Math. J.* **31** (1991), *no.* 3, 282–285 (1992). (Summary) **93h:60082** 60G99
Grinchuk, M. I. Complexity of realization of symmetric Boolean functions by switching circuits. (Russian) *Mathematical problems in cybernetics, No.* 3 (*Russian*), 77–114, "*Nauka*", *Moscow*, 1991. (Juraj Hromkovič) **93a:94043** 94C10 (68Q25)
Grindrod, P. (*with* Sleeman, B. D.) Weak travelling fronts for population models with density dependent dispersion. *Math. Methods Appl. Sci.* **9** (1987), *no.* 4, 576–586. (Yuzo Hosono) **93k:92007** 92D25 (35K55)
— (*with* Gomatam, J.) Three-dimensional waves in excitable reaction-diffusion systems: the eikonal approximation. *Nonlinear wave processes in excitable media* (*Leeds*, 1989), 201–211, *NATO Adv. Sci. Inst. Ser. B Phys.*, 244, *Plenum, New York*, 1991. (*see* **93e:00026**) 35K57
Grinfeld, M. *see* **Grinfeld, Michael**
Grinfel′d, M. A. ★ Методы механики сплошных сред в теории фазовых превращений. (Russian) [Methods of continuum mechanics in the theory of phase transitions] With an English summary. "*Nauka*", *Moscow*, 1990. 312 *pp. ISBN* 5-02-014299-9 (Victor A. L′vov) **93c:73012** 73B30 (73B27, 73C50)
Grinfeld, Michael (*with* Furter, J. E.; Eilbeck, J. C.) A monotonicity theorem and its application to stationary solutions of the phase field model. (English summary) *IMA J. Appl. Math.* **49** (1992), *no.* 1, 61–72. (J. R. Ockendon) **93j:80003** 80A22 (34B15)
Griniv, O. O. A central limit theorem for the Burgers equation. (Russian. English summary) *Teoret. Mat. Fiz.* **88** (1991), *no.* 1, 7–13; *translation in Theoret. and Math. Phys.* **88** (1991), *no.* 1, 678–682 (1992). (V. G. Kolomiets) **93f:35202** 35Q53 (35R60, 60F99, 76D05, 76M35)
Grinshpan, A. Z. (*with* Milin, I. M.) Simply connected domains with finite logarithmic area and Riemann mapping functions. *Constantin Carathéodory: an international tribute, Vol. I, II*, 381–403, *World Sci. Publishing, Teaneck, NJ*, 1991. (P. L. Duren) **93c:30025** 30C55
— Univalent functions with logarithmic restrictions. Proceedings of the Tenth Conference on Analytic Functions (Szczyrk, 1990). *Ann. Polon. Math.* **55** (1991), 117–138. (Thomas McCoy) **93c:30023** 30C50 (30C55)
Grinshpon, S. Ya. F.i.-correctness of torsion-free abelian groups. (Russian. Russian summary) *Abelian groups and modules, No.* 8 (*Russian*), 65–79, 173, *Tomsk. Gos. Univ., Tomsk*, 1989. (Gheorghe Ivan) **93m:20079** 20K20 (20K15)
— (*with* Misyakov, V. M.) Some classes of completely transitive torsion-free abelian groups. (Russian. Russian summary) *Abelian groups and modules, No.* 9 (*Russian*), 31–36, 155–156, *Tomsk. Gos. Univ., Tomsk*, 1990. (From the text) **93j:20110** 20K15
— (*with* Misyakov, V. M.) Complete transitivity of direct products of abelian groups. (Russian. English and Russian summaries) *Abelian groups and modules, No.* 10 (*Russian*), 23–30, 183, 189, *Tomsk. Gos. Univ., Tomsk*, 1991. (Summary) **93j:20118** 20K25
Grinshpun, V. Z. The point spectrum of an infinite-order random operator that acts in $l^2(\mathbf{Z}^d)$. (Russian. English and Russian summaries) *Dokl. Akad. Nauk Ukrainy* **1992,** *no.* 8, 18–21, 169. (Summary) **93i:47121** 47N55 (47A10, 47B35, 47B37, 60H25, 82D35)
Grinshpun, Z. S. Differential equations of general classes of orthogonal Bernstein-Szegő polynomials. (Russian) *Application of functional analysis in approximation theory* (*Russian*), 39–52, *Tver. Gos. Univ., Tver′*, 1990. (*see* **93k:00021**) 33C45 (34A05, 41A10)
— On an interpretation of a theorem of Lukács. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* **1991,** *no.* 3, 14–17; *translation in Soviet Math. (Iz. VUZ)* **35** (1991), *no.* 3, 13–15. (Marek Aleksander Kowalski) **93d:33005** 33C45 (42C05)
Grinshtein, V. A. The basis property of a part of a system of eigenvectors of a holomorphic operator function. (Russian) *Mat. Zametki* **50** (1991), *no.* 1, 142–144; *translation in Math. Notes* **50** (1991), *no.* 1-2, 755–757 (1992). (Branko Najman) **93b:47025** 47A56 (47A10, 47A70)
Grinstead, D. L. (*with* Slater, Peter J.) On the minimum intersection of minimum dominating sets in series-parallel graphs. *Graph theory, combinatorics, and applications, Vol.* 1 (*Kalamazoo, MI*, 1988), 563–584, *Wiley-Intersci. Publ., Wiley, New York*, 1991. (*see* **93b:05002**) 05C35
Grinstein, Geoffrey (*with* Bhagavatula, Ravi; He, Yu; Jayaprakash, C.) Algebraic correlations in conserving chaotic systems. (English summary) *Phys. Rev. Lett.* **69** (1992), *no.* 24, 3483–3486. (Summary) **93h:58094** 58F13
Grintsyavichyus, A. *see* **Grincevičius, Arūnas**
Grioli, Giuseppe On internal constraints of inextendability. (Italian) Memoirs of mathematical physics in honor of Giovanni Carini on his 70th birthday (Italian). *Atti Accad. Peloritana Pericolanti Cl. Sci. Fis. Mat. Natur.* **68** (1990), *suppl.* 1, 131–140 (1991). (P. Villaggio) **93f:73022** 73C02 (73B40, 73B99)
Gripenberg, Gustaf Confidence intervals for partial rank correlations. *J. Amer. Statist. Assoc.* **87** (1992), *no.* 418, 546–551. (Summary) **93e:62090** 62F25 (62G05)
— Unimodality and viscoelastic pulse propagation. (English summary) *Quart. Appl. Math.* **51** (1993), *no.* 1, 183–189. (Kenneth Kuttler) **93m:73012** 73F15 (45K05)
Grippo, Luigi (*with* Di Pillo, Gianni; Facchinei, Francisco) An RQP algorithm using a differentiable exact penalty function for inequality constrained problems. *Math. Programming* **55** (1992), *no.* 1, *Ser. A*, 49–68. (Vladimir I. Venets) **93c:90078** 90C30 (49M30, 90C20)
Grisaru, M. T. (*with* van Nieuwenhuizen, Peter) Loop calculations in two-dimensional nonlocal field theories. (English summary) *Internat. J. Modern Phys. A* **7** (1992), *no.* 23, 5891–5915. 81T40
— (*with* Delius, G. W.; Zanon, D.) Exact S-matrices for non-simply-laced affine Toda theories. (English summary) *Nuclear Phys. B* **382** (1992), *no.* 2, 365–406. (Niall J. MacKay) **93i:81221** 81T40 (81R10)
— (*with* Delius, G. W.; Zanon, D.) Quantum conserved currents in affine Toda theories. (English summary) *Nuclear Phys. B* **385** (1992), *no.* 1-2, 307–328. (Filippo Colomo) **93k:81198** 81T40 (81R10)
— (*with* de Wit, B.; Rabinovici, E.; Nicolai, H.) Two-loop finiteness of $D = 2$ supergravity. (English summary) *Phys. Lett. B* **286** (1992), *no.* 1-2, 78–84. (Gheorghe Zet) **93f:83083** 83E50 (81T40, 81V17)
Grishagin, V. A. (*with* Gergel′, V. P.; Kukhtin, V. V.; Rogatneva, E. A.; Strongin, R. G.; Vysotskaya, I. N.) ★ A software system for multiextremal optimization. (English. English and Russian summaries) Сообщения Объединенного Института Ядерных Исследований. Дубна [Communications of the Joint Institute for Nuclear Research. Dubna], E11-92-252. *Joint Inst. Nuclear Res., Dubna*, 1992. 19 *pp.* (Rumena Kaltinska) **93i:90005** 90–04 (65K10, 90C29, 90C30)
— (*with* Gergel′, V. P.; Kukhtin, V. V.; Rogatneva, E. A.; Strongin, R. G.; Vysotskaya, I. N.) ★ Complicated problem solution techniques in optimal parameter searching. (English. English and Russian summaries) Сообщения Объединенного Института Ядерных Исследований. Дубна [Communications of the Joint Institute for Nuclear Research. Dubna], E11-92-218. *Joint Inst. Nuclear Res., Dubna*, 1992. 21 *pp.* 90C29 (90A05)
Grishanin, B. A. *see* **Neĭmark, Yu. I., 93d:58103**
Grishchenko, A. Z. (*with* Khilenko, V. V.) Determination of the number of fast and slow motions in the decomposition of linear dynamical models of arbitrarily large dimension. (Russian. English and Ukrainian summaries) *Kibernet. Sistem. Anal.* **1991,** *no.* 6, 3–9, 187; *translation in Cybernet. Systems Anal.* **27** (1991), *no.* 6, 795–801 (1992). (Summary) **93g:65090** 65L05 (34A65, 65F15)
Grishchuk, L. P. Quantum cosmology and baby universes. *General relativity and gravitation*, 1989 (*Boulder, CO*, 1989), 463–465, *Cambridge Univ. Press, Cambridge*, 1990. (*see* **93b:83002**) 83C45 (83F05)
— (*with* Sidorov, Yurii Vladimirovich) Squeezed quantum states in theory of cosmological perturbations. *Quantum gravity* (*Moscow*, 1990), 678–688, *World Sci. Publishing, River Edge, NJ*, 1991. (Summary) **93d:83031** 83C45 (83F05)
Grishechkin, S. A. Application of branching processes to finding stationary distributions in queueing theory. (Russian) *Teor. Veroyatnost. i Primenen.* **36** (1991), *no.* 3, 446–463; *translation in Theory Probab. Appl.* **36** (1991), *no.* 3, 477–493 (1992). (From the text) **93m:60184** 60K25 (60J80)
— On a relationship between processor-sharing queues and Crump-Mode-Jagers branching processes. *Adv. in Appl. Probab.* **24** (1992), *no.* 3, 653–698. (J. D. Biggins) **93h:60150** 60K25 (60J80)
— Nearly irregular branching processes and their application to prioritized queues. Stability problems for stochastic models. *J. Soviet Math.* **59** (1992), *no.* 4, 900–907. (P. R. Parthasarathy) **93f:60140** 60K25 (60J80)
— Multiclass batch arrival retrial queues analyzed as branching processes with immigration. (English summary) *Queueing Systems Theory Appl.* **11** (1992), *no.* 4, 395–418. (Summary) **93h:60151** 60K25 (60J80)
Grishin, S. A. Solution of the problem on the universality of the coordination number and critical percolation indices on a binary tree. (Russian. Russian summary) *Vestnik Moskov. Univ. Ser. I Mat. Mekh.* **1992,** *no.* 1, 3–8, 111; *translation in Moscow Univ. Math. Bull.* **47** (1992), *no.* 1, 4–9. (Summary) **93m:60198** 60K35
Grishkov, A. N. Algebraic binary-Lie algebras. (Russian) *Sibirsk. Mat. Zh.* **32** (1991), *no.* 6, 42–48, 203; *translation in Siberian Math. J.* **32** (1991), *no.* 6, 933–938 (1992). (Aleksandr A. Mikhalev) **93g:17002** 17A30 (17A60, 17D99)
Grishukhin, V. P. Computing extreme rays of the metric cone for seven points. *European J. Combin.* **13** (1992), *no.* 3, 153–165. (Yao Zhang) **93e:51027** 51K05
Grisvard, Pierre ★ Singularities in boundary value problems. Recherches en Mathématiques Appliquées [Research in Applied Mathematics], 22. *Masson, Paris; Springer-Verlag, Berlin*, 1992. xiv+199 *pp. ISBN* 2-225-82770-2 (V. S. Rabinovich) **93h:35004** 35–02 (35A20, 35J25, 35J65)
— Singularities in boundary value problems and exact controllability of hyperbolic systems. *Optimization, optimal control and partial differential equations* (*Iaşi*, 1992), 77–84, *Internat. Ser. Numer. Math.*, 107, *Birkhäuser, Basel*, 1992. (*see* **93m:00044**) 93B05 (35B37, 35L99, 93C20)
Gritsaichuk, V. M. Structures of the solution of problems in elasticity theory with rotational symmetry. (Russian. English and Russian summaries) *Dokl. Akad. Nauk Ukrainy* **1992,** *no.* 10, 57–60, 171. (From the text) **93g:73031** 73C02 (73B10, 73V99)
Gritsenko, S. A. On a density theorem. (Russian. Russian summary) *Mat. Zametki* **51** (1992), *no.* 6, 32–40, 157; *translation in Math. Notes* **51** (1992), *no.* 5-6, 553–558. (Don Redmond) **93m:11088** 11M26
Gritsevskiĭ, A. Ė. (*with* Klimenko, E. V.; Chikriĭ, A. A.) Stochastic models for conflict-control systems with discrete time. (Russian. Russian summary) *Kibernet. i Vychisl. Tekhn. No.* 89 (1991), 47–52. (Summary) **93c:90116** 90D25 (49K45)
Grits′ko, Ė. G. (*with* Gudz′, R. V.; Bukavīna, R. Z.) Numerical-analytical determination of a stationary solution for the transport equation in a locally nonhomogeneous domain. (Ukrainian. Russian summary) *Vīsnik L′vīv. Derzh. Univ. Ser. Mekh.-Mat. No.* 30 (1988), 43–46, 76. 65P05

Gritzmann, Peter (*with* Klee, Victor) Inner and outer j-radii of convex bodies in finite-dimensional normed spaces. *Discrete Comput. Geom.* **7** (1992), *no.* 3, 255–280. (Wolfgang Lusky) **93a:52008** 52B11 (46B20, 52A21, 52A41)
— (*with* Klee, Victor) Deciding uniqueness in norm maximization. (English summary) *Math. Programming* **57** (1992), *no.* 2, *Ser. B*, 203–214. (N. I. Yanev) **93i:90068** 90C10 (68Q15, 90C20, 90C27)
— *see also* **Operations research '91, 93j:90006**
Grizāns, G. On a boundary value problem for a system of two differential equations with singularity. (English, Russian and Latvian summaries) *Mathematics. Differential equations* (*Russian*), 3–11, i, *Latv. Univ. Zināt. Raksti*, 570, *Latv. Univ., Riga*, 1992. (Donal O'Regan) **93i:34036** 34B15
Grizzle, J. W. (*with* Di Benedetto, Maria Domenica) Approximation by regular input-output maps. *IEEE Trans. Automat. Control* **37** (1992), *no.* 7, 1052–1055. (Summary) **93g:93021** 93B18
— (*with* Chung, S.-T.) Internally exponentially stable nonlinear discrete-time noninteracting control via static feedback. *Internat. J. Control* **55** (1992), *no.* 5, 1071–1092. (Summary) **93b:93096** 93D15 (93C10, 93C55)
Grmela, Miroslav Mesoscopic dynamics and thermodynamics: applications to polymeric fluids. *Rheological modelling: thermodynamical and statistical approaches* (*San Feliu de Guíxols*, 1990), 99–125, *Lecture Notes in Phys.*, 381, *Springer, Berlin*, 1991. (J. Štastna) **93g:76010** 76A10 (80A05, 82D15, 82D60)
— (*with* Baumann, Gerd; Nonnenmacher, Theo F.) Discrete Boltzmann-like equations: a dynamical formulation. (English summary) *Phys. A* **187** (1992), *no.* 3-4, 503–518. (Carlo Cercignani) **93g:82079** 82C40
Grobgeld, Dov (*with* Pollak, Eli; Zakrzewski, Jakub) A numerical method for locating stable periodic orbits in chaotic systems. *Phys. D* **56** (1992), *no.* 4, 368–380. (Summary) **93c:58135** 58F13 (58F20, 65P05, 81Q50)
Gröchenig, Karlheinz Sharp results on irregular sampling of bandlimited functions. (English summary) *Probabilistic and stochastic methods in analysis, with applications* (*Il Ciocco*, 1991), 323–335, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 372, *Kluwer Acad. Publ., Dordrecht*, 1992. (Summary) **93h:94003** 94A11 (42A38)
— (*with* Feichtinger, Hans G.) Gabor wavelets and the Heisenberg group: Gabor expansions and short time Fourier transform from the group theoretical point of view. *Wavelets*, 359–397, *Wavelet Anal. Appl.*, 2, *Academic Press, Boston, MA*, 1992. (G. C. Bohnké) **93i:42020** 42C15 (22D10, 22E25, 46E35, 65D15)
— (*with* Feichtinger, Hans G.) Nonorthogonal wavelet and Gabor expansions, and group representations. *Wavelets and their applications*, 353–375, *Jones and Bartlett, Boston, MA*, 1992. (Michael Dellomo) **93k:42017** 42C15 (46E99, 81R30)
— (*with* Madych, Wally R.) Multiresolution analysis, Haar bases, and self-similar tilings of $\mathbf{R}^n$. *IEEE Trans. Inform. Theory* **38** (1992), *no.* 2, *part* 2, 556–568. (Jayakumar Ramanathan) **93i:42001** 42-02 (42C15)
— (*with* Feichtinger, Hans G.) Irregular sampling theorems and series expansions of band-limited functions. *J. Math. Anal. Appl.* **167** (1992), *no.* 2, 530–556. (Gilbert Walter) **93g:41003** 41A05 (41A58, 41A63)
— Reconstruction algorithms in irregular sampling. *Math. Comp.* **59** (1992), *no.* 199, 181–194. (W. Splettstösser) **93a:41025** 41A25 (41A80, 42A15, 65D99, 94A12)
— (*with* Kaniuth, Eberhard; Taylor, Keith F.) Compact open sets in duals and projections in L^1-algebras of certain semi-direct product groups. *Math. Proc. Cambridge Philos. Soc.* **111** (1992), *no.* 3, 545–556. (Robert S. Doran) **93c:43003** 43A20 (22D30, 43A65)
— (*with* Feichtinger, Hans G.) Iterative reconstruction of multivariate band-limited functions from irregular sampling values. *SIAM J. Math. Anal.* **23** (1992), *no.* 1, 244–261. (Dale H. Mugler) **93a:94006** 94A12 (00A69, 42A65, 65D15)
Grochocinski, James M. (*with* Argyres, Philip C.; Tye, S.-H. Henry) Structure constants of the fractional supersymmetry chiral algebras. *Nuclear Phys. B* **367** (1991), *no.* 1, 217–254. (Alex Jay Feingold) **93d:81064** 81R10 (17B68, 81T40)
Grochowska-Prażmowska, Małgorzata (*with* Prażmowski, Krzysztof) Remarks concerning foundations of ordered affine geometry. (English summary) *Bull. Polish Acad. Sci. Math.* **38** (1990), *no.* 1-12, 113–116. (Victor V. Pambuccian) **93i:51028** 51G05 (51A15, 51A30)
Grod, I. N. Dependence on a parameter of almost periodic solutions of the Riccati matrix equation. (Russian. Russian summary) *Asymptotic solutions of nonlinear equations with a small parameter* (*Russian*), 23–26, *Akad. Nauk Ukrainy, Inst. Mat., Kiev*, 1991. (Summary) **93g:34065** 34C27 (34A12)
Grodziński, Eugeniusz Philosophical foundations of many-valued logic. *Organon No.* 24 (1988), 21–39 (1991). (Frans Voorbraak) **93g:03002** 03A05 (03B50)
Groenen, P. J. F. (*with* Gower, J. C.) Applications of the modified Leverrier-Faddeev algorithm for the construction of explicit matrix spectral decompositions and inverses. *Utilitas Math.* **40** (1991), 51–64. (V. L. Makarov) **93e:65058** 65F15 (65F05)
Groenewald, L. On the means of the argument of the Riemann zeta-function on the critical line. *Acta Math. Hungar.* **58** (1991), *no.* 1-2, 25–29. (Tom Meurman) **93a:11071** 11M26
— A note on the different exponential spectra of an element in a Banach algebra. *Quaestiones Math.* **15** (1992), *no.* 1, 39–45. (W. Żelazko) **93a:46091** 46H05
Groenewald, N. J. (*with* Booth, G. L.) Equiprime Γ-near-rings. *Quaestiones Math.* **14** (1991), *no.* 4, 411–417. (Günter Pilz) **93a:16036** 16Y30
— (*with* Olivier, W. A.) Generalized ideals of gamma rings. (English summary) *Chinese J. Math.* **20** (1992), *no.* 4, 321–341. (Stefan Veldsman) **93k:16084** 16Y99
— (*with* Booth, G. L.) On prime one-sided ideals, bi-ideals and quasi-ideals of a gamma ring. *J. Austral. Math. Soc. Ser. A* **53** (1992), *no.* 1, 55–63. (Shoji Kyuno) **93g:16061** 16Y99 (16D30)
— (*with* Booth, G. L.) Special radicals of near-rings. (English summary) *Math. Japon.* **37** (1992), *no.* 4, 701–706. (Günter Pilz) **93h:16073** 16Y30 (16N80)
— (*with* Booth, G. L.) Prime modules of a gamma ring. *Period. Math. Hungar.* **24** (1992), *no.* 1, 55–62. (Shoji Kyuno) **93g:16060** 16Y99 (16D30)
— (*with* Booth, G. L.) Special radicals of near-ring modules. (English summary) *Quaestiones Math.* **15** (1992), *no.* 2, 127–137. (Günter Pilz) **93i:16060** 16Y30 (16N80)
Groenewald, P. C. N. (*with* van der Merwe, Abraham Johannes; van der Merwe, C. A.) Bayesian inferences on nonlinear functions of the parameters in linear regression. (English summary) *Ann. Inst. Statist. Math.* **44** (1992), *no.* 2, 201–211. (Summary) **93d:62131** 62J10
van Groesen, E. On variational formulation of periodic and quasi-periodic Hamiltonian motions as relative equilibria. *Geometry and analysis in nonlinear dynamics* (*Groningen*, 1989), 22–33, *Pitman Res. Notes Math. Ser.*, 222, *Longman Sci. Tech., Harlow*, 1992. (Jean Mawhin) **93j:58049** 58F05 (34C25, 58E05, 58F22, 58F27, 70H05)
— (*with* van de Fliert, B. W.) Monopolar vortices as relative equilibria and their dissipative decay. *Nonlinearity* **5** (1992), *no.* 2, 473–495. (Summary) **93a:76024** 76D05 (35R35)
— (*with* Derks, G.) Energy propagation in dissipative systems. II. Centrovelocity for nonlinear wave equations. *Wave Motion* **15** (1992), *no.* 2, 159–172. (K. S. Harinath) **93a:35133** 35Q53 (35K55, 73D99, 76B25)
Groetsch, C. W. Spectral methods for linear inverse problems with unbounded operators. *J. Approx. Theory* **70** (1992), *no.* 1, 16–28. (M. Z. Nashed) **93g:47011** 47A50 (47A05, 65J10)
— Optimal order of accuracy in Vasin's method for differentiation of noisy functions. *J. Optim. Theory Appl.* **74** (1992), *no.* 2, 373–378. (Summary) **93f:49019** 49J52 (65D25)
Gröflin, H. (*with* Cochand, M.; Gaillard, A.) Lattice matrices, intersection of ring families and dicuts. (English summary) *Discrete Math.* **110** (1992), *no.* 1-3, 61–80. (Joseph Zaks) **93j:90060** 90C08 (90C10, 90C27, 90C35)
Gröger, Detlef Homomorphe Kopplungen auf dem Körper der reellen Quaternionen. [Homomorphic couplings on the field of real quaternions] *Arch. Math.* (*Basel*) **58** (1992), *no.* 4, 354–359. (Jan van Geel) **93c:12018** 12K05 (16Y30)
— Über die Fortsetzungen der Anordnung eines Körpers auf eine einfach transzendente Erweiterung. (English summary) [On the continuations of the ordering of a field to a simply transcendental extension] *J. Geom.* **44** (1992), *no.* 1-2, 53–64. (Summary) **93d:12013** 12J15
Gröger, Konrad $W^{1,p}$-estimates of solutions to evolution equations corresponding to nonsmooth second order elliptic differential operators. *Nonlinear Anal.* **18** (1992), *no.* 6, 569–577. (Song Mu Zheng) **93a:35066** 35K22 (34G10, 35B45, 35B65)
— *see also* **Fichtenholz, G. M., 93h:26001**
Groh, Hansjoachim Varieties of topological geometries. *Trans. Amer. Math. Soc.* **337** (1993), *no.* 2, 691–702. (Rainer Löwen) **93h:51017** 51H10
Grolmusz, Vince On a Ramsey-theoretic property of orders. (English summary) *J. Combin. Theory Ser. A* **61** (1992), *no.* 2, 243–251. (Sheila Oates-Williams) **93i:05130** 05D10 (06A05)
Gromak, V. I. (*with* Tsegel'nik, V. V.) On solutions of the fourth Painlevé equation and its applications. (Russian) *Differentsial'nye Uravneniya* **27** (1991), *no.* 8, 1303–1312, 1468; *translation in Differential Equations* **27** (1991), *no.* 8, 910–918 (1992). (Maria Clara Nucci) **93b:34013** 34A20 (35Q53, 35Q55)
Gromov, A. L. Spectral classification of some types of unitary weighted shift operators. (Russian. Russian summary) *Algebra i Analiz* **3** (1991), *no.* 5, 62–87; *translation in St. Petersburg Math. J.* **3** (1992), *no.* 5, 997–1021. (A. Böttcher) **93i:47029** 47B38 (28D05, 47A35, 47B15)
Gromov, Mikhael L. (*with* Cheeger, Jeff) Chopping Riemannian manifolds. *Differential geometry*, 85–94, *Pitman Monographs Surveys Pure Appl. Math.*, 52, *Longman Sci. Tech., Harlow*, 1991. (Y. Mutô) **93k:53034** 53C20 (53C23)
— (*with* Pansu, Pierre) Rigidity of lattices: an introduction. *Geometric topology: recent developments* (*Montecatini Terme*, 1990), 39–137, *Lecture Notes in Math.*, 1504, *Springer, Berlin*, 1991. (Viktor Schroeder) **93f:53036** 53C23 (22E40)
— (*with* Eliashberg, Yakov) Convex symplectic manifolds. *Several complex variables and complex geometry, Part* 2 (*Santa Cruz, CA*, 1989), 135–162, *Proc. Sympos. Pure Math.*, 52, *Part* 2, *Amer. Math. Soc., Providence, RI*, 1991. (Introduction) **93f:58073** 58F05 (32E10, 53C15, 53C23)
— (*with* D'Ambra, G.) Lectures on transformation groups: geometry and dynamics. *Surveys in differential geometry* (*Cambridge, MA*, 1990), 19–111, *Lehigh Univ., Bethlehem, PA*, 1991. (Viktor Schroeder) **93d:58117** 58F15 (22E46, 53C10, 57S20)
— Foliated Plateau problem. II. Harmonic maps of foliations. *Geom. Funct. Anal.* **1** (1991), *no.* 3, 253–320. (Viktor Schroeder) **93a:58048** 58E20 (49Q99, 53C12)
— Spectral geometry of semi-algebraic sets. (French summary) *Ann. Inst. Fourier* (*Grenoble*) **42** (1992), *no.* 1-2, 249–274. (Y. Yomdin) **93i:58157** 58G25 (14P10)
— (*with* Eliashberg, Yakov) Embeddings of Stein manifolds of dimension n into the affine space of dimension $3n/2 + 1$. *Ann. of Math.* (2) **136** (1992), *no.* 1, 123–135. (Zong Yuan Yao) **93g:32037** 32H35 (32E10)
— (*with* Shubin, M. A.) The Riemann-Roch theorem for general elliptic operators. *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 5, 363–367. (John Roe) **93b:58138** 58G10 (14C40)
— (*with* Cheeger, Jeff; Fukaya, Kenji) Nilpotent structures and invariant metrics on collapsed manifolds. *J. Amer. Math. Soc.* **5** (1992), *no.* 2, 327–372. (Viktor Schroeder) **93a:53036** 53C23 (53C20)
— (*with* Burago, Yu. D.; Perel'man, G. Ya.) A. D. Aleksandrov spaces with curvatures bounded below. (Russian. Russian summary) *Uspekhi Mat. Nauk* **47** (1992), *no.* 2(284), 3–51, 222; *translation in Russian Math. Surveys* **47** (1992), *no.* 2, 1–58. (Tadeusz Januszkiewicz) **93m:53035** 53C21 (53C23)
— (*with* Connes, Alain; Moscovici, Henri) Group cohomology with Lipschitz control and higher signatures. *Geom. Funct. Anal.* **3** (1993), *no.* 1, 1–78. (Chi Wai Leung) **93m:19011** 19K56 (19E99, 46L87, 57R99, 58G12)
Gromov, N. A. Matrix elements of finite group transformations in the Jordan-Schwinger representation and a contraction. (Russian) *Current group analysis* (*Russian*) (*Baku*, 1988), 64–75, "Élm", *Baku*, 1989. (*see* **93d:58002**) 81R05
— (*with* Man'ko, V. I.) Group quantum systems in the representation of coherent and correlated states. (Russian) *Trudy Fiz. Inst. Lebedev.* **200** (1991), 3–55, 223. (Piotr Kosiński) **93d:81081** 81R30
— The Gel'fand-Tsetlin representations of the orthogonal Cayley-Klein algebras. *J. Math. Phys.* **33** (1992), *no.* 4, 1363–1373. (A. U. Klimyk) **93b:17022** 17B10 (22E60)
— (*with* Man'ko, V. I.) Contractions of the irreducible representations of the quantum algebras $su_q(2)$ and $so_q(3)$. *J. Math. Phys.* **33** (1992), *no.* 4, 1374–1378. (A. U. Klimyk) **93b:17043** 17B37 (16W30)
Gromov, V. A. Some solutions of a scalar equation with a vector parameter. (Russian) *Sibirsk. Mat. Zh.* **32** (1991), *no.* 5, 179–181, 210; *translation in Siberian Math. J.* **32** (1991), *no.* 5, 882–883 (1992). (Wiesław Pawłucki) **93c:32009** 32B10 (14B07, 32S05)
Gromov, V. P. Nontrivial expansion of zero and representative systems of the eigenvectors of a linear operator. (Russian) *Dokl. Akad. Nauk SSSR* **319** (1991), *no.* 4, 801–805; *translation in Soviet Math. Dokl.* **44** (1992), *no.* 1, 209–214. (P. Wojtaszczyk) **93f:47020a** 47A75 (30B50, 46E10, 47A70, 47B38)

— Correction to: "Nontrivial expansion of zero and representative systems of eigenvectors of a linear operator". (Russian) *Dokl. Akad. Nauk SSSR* **320** (1991), *no.* 4, 776. (P. Wojtaszczyk) **93f:47020b** 47A75 (30B50, 46E10, 47A70, 47B38)

Gromova, P. S. On the inversion of theorems of Lyapunov's second method for systems of functional-differential equations. (Russian) *Differentsial'nye Uravneniya* **27** (1991), *no.* 10, 1823–1825, 1839. (Georgi K. Kulev) **93c:34151** 34K20 (34K15)

Gromyak, M. I. (*with* Mitropol'skiĭ, Yu. A.; Khoma, G. P.) ★ Асимптотические методы исследования квазиволновых уравнений гиперболического типа. (Russian) [Asymptotic methods for investigating quasiwave equations of hyperbolic type] "*Naukova Dumka*", *Kiev*, 1991. 232 *pp. ISBN* 5-12-002214-6 (Genowefa Majcher) **93f:35131** 35L10 (34Gxx, 35B40, 35L70)

Grøn, Øyvind (*with* Soleng, Harald H.) Gravitational effect of the quantum vacuum outside a cosmic string. *Classical Quantum Gravity* **9** (1992), *no.* 5, 1231–1238. (Summary) **93b:83032** 83C47 (83F05)

— (*with* Eriksen, E.) Equivalence in two-, three-, and four-dimensional space-times. (English summary) *Internat. J. Theoret. Phys.* **31** (1992), *no.* 8, 1421–1432. (Carl Brans) **93e:83054** 83C99

— (*with* Soleng, Harald H.) Static plane-symmetric space-time with a conformally coupled massless scalar field. *Phys. Lett. A* **165** (1992), *no.* 3, 191–193. (Summary) **93c:82036** 82C20

Gronau, Detlef On the structure of the solutions of the Jabotinsky equations in Banach spaces. *Z. Anal. Anwendungen* **10** (1991), *no.* 3, 335–343. (Z. Moszner) **93b:35017** 35C05 (34K30)

— *see also* **Selected topics in functional equations and iteration theory, 93m:39001**

Grønbæk, Niels Weak and cyclic amenability for noncommutative Banach algebras. *Proc. Edinburgh Math. Soc.* (2) **35** (1992), *no.* 2, 315–328. (B. E. Johnson) **93d:46082** 46H25

Grønbech-Jensen, Niels (*with* Blackburn, James A.; Smith, H. J. T.) Stability and Hopf bifurcations in an inverted pendulum. (English summary) *Amer. J. Phys.* **60** (1992), *no.* 10, 903–908. (Summary) **93h:70014** 70K20 (34C15, 34C23)

— (*with* Malomed, B. A.; Samuelsen, Mogens R.) Stability of breathers in the ac-driven sine-Gordon system. *Phys. Lett. A* **166** (1992), *no.* 5-6, 347–351. 35Q53 (78A55)

Grönfors, T. (*with* Juhola, M.) Experiments and comparison of inference methods of regular grammars. (English summary) *IEEE Trans. Systems Man Cybernet.* **22** (1992), *no.* 4, 821–826. 68Q50

de Groot, C. (*with* Peikert, R.; Würtz, D.; Monagan, M.) Packing circles in a square: a review and new results. *System modelling and optimization* (*Zurich*, 1991), 45–54, *Lecture Notes in Control and Inform. Sci.*, 180, *Springer, Berlin*, 1992. (*see* **93e:90003**) 90C27 (90C35)

Groot, Fons The feedback Stackelberg equilibrium in the cartel-versus-fringe model. (English summary) *Dynamic games in economic analysis* (*Espoo*, 1990), 11–20, *Lecture Notes in Control and Inform. Sci.*, 157, *Springer, Berlin*, 1991. (*see* **93d:90003**) 90A14

de Groot, Joost (*with* Baars, Jan) On the l-equivalence of metric spaces. *Fund. Math.* **137** (1991), *no.* 1, 25–43. (Philip L. Bowers) **93c:54012** 54C35 (57N17)

de Groot, Mark F. (*with* Hollowood, Timothy J.; Miramontes, J. Luis) Generalized Drinfel'd-Sokolov hierarchies. *Comm. Math. Phys.* **145** (1992), *no.* 1, 57–84. (Maarten Bergvelt) **93d:58072** 58F07 (17B67)

— (*with* Burroughs, Nigel; Hollowood, Timothy J.; Miramontes, J. Luis) Generalized W-algebras and integrable hierarchies. *Phys. Lett. B* **277** (1992), *no.* 1-2, 89–94. (Summary) **93g:17044** 17B68 (58F07)

Groote, Jan Friso A short proof of the decidability of bisimulation for normed BPA-processes. *Inform. Process. Lett.* **42** (1992), *no.* 3, 167–171. (Summary) **93g:68036** 68Q10 (03B70)

de Groote, M. *see* **De Groote, M.**

Gropengiesser, F. (*with* Neunzert, H.; Struckmeier, J.) Computational methods for the Boltzmann equation. *Applied and industrial mathematics* (*Venice*, 1989), 111–140, *Math. Appl.*, 56, *Kluwer Acad. Publ., Dordrecht*, 1991. (Carlo Cercignani) **93b:82066** 82C40 (65P05, 76M25, 76P05)

Gropp, Harald The history of Steiner systems $S(2, 3, 13)$. Mathematische Wissenschaften gestern und heute. 300 Jahre Mathematische Gesellschaft in Hamburg, Teil 3 (Hamburg, 1990). *Mitt. Math. Ges. Hamburg* **12** (1991), *no.* 3, 849–861. (Ferenc Wettl) **93c:05002** 05-03 (01A55, 01A60, 05B07)

— Nonsymmetric configurations with deficiencies 1 and 2. (English summary) *Combinatorics '90* (*Gaeta*, 1990), 227–239, *Ann. Discrete Math.*, 52, *North-Holland, Amsterdam*, 1992. (Giuseppe Pellegrino) **93k:05037** 05B30 (05C70)

— The construction of all configurations $(12_4, 16_3)$. (English summary) *Fourth Czechoslovakian Symposium on Combinatorics, Graphs and Complexity* (*Prachatice*, 1990), 85–91, *Ann. Discrete Math.*, 51, *North-Holland, Amsterdam*, 1992. (Summary) **93j:05010** 05B05

— Enumeration of regular graphs 100 years ago. Special volume to mark the centennial of Julius Petersen's "Die Theorie der regulären Graphs", Part II. *Discrete Math.* **101** (1992), *no.* 1-3, 73–85. (E. Keith Lloyd) **93h:05002** 05-03 (01A55, 01A60, 05C30)

— On Golomb birulers and their applications. (English summary) *Math. Slovaca* **42** (1992), *no.* 5, 517–529. (S. W. Golomb) **93k:05163** 05C78 (05B30, 05C35)

— Configurations and graphs. (English summary) Graph theory and combinatorics (Marseille-Luminy, 1990). *Discrete Math.* **111** (1993), *no.* 1-3, 269–276. (Summary) **93j:05155** 05C99 (05B25)

Gropp, Ursula There is no sharp transitivity on q^6 when q is a type of Morley rank 2. *J. Symbolic Logic* **57** (1992), *no.* 4, 1198–1212. (O. V. Belegradek) **93k:03033** 03C45 (03C60, 20B22)

Gropp, William D. (*with* Cai, Xiao-Chuan; Keyes, David E.) A comparison of some domain decomposition algorithms for nonsymmetric elliptic problems. (English summary) *Fifth International Symposium on Domain Decomposition Methods for Partial Differential Equations* (*Norfolk, VA*, 1991), 224–235, *SIAM, Philadelphia, PA*, 1992. (Summary) **93b:65149** 65N55 (65-04)

— Parallel computing and domain decomposition. (English summary) *Fifth International Symposium on Domain Decomposition Methods for Partial Differential Equations* (*Norfolk, VA*, 1991), 349–361, *SIAM, Philadelphia, PA*, 1992. (Summary) **93h:65180** 65Y05 (65N55)

— (*with* Foster, Ian; Stevens, Rick L.) Parallel scalability of the spectral transform method. (English summary) *Parallel processing for scientific computing* (*Houston, TX*, 1991), 307–312, *SIAM, Philadelphia, PA*, 1992. (*see* **93g:65178**) 65M70 (65Y05, 76M25, 86A10)

— (*with* Keyes, David E.) Domain decomposition with local mesh refinement. *SIAM J. Sci. Statist. Comput.* **13** (1992), *no.* 4, 967–993. (Summary) **93b:65189** 65N55 (65Y05)

— (*with* Keyes, David E.) Domain decomposition as a mechanism for using asymptotic methods. (English summary) *Asymptotic and numerical methods for partial differential equations with critical parameters* (*Beaune*, 1992), 93–105, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 384, *Kluwer Acad. Publ., Dordrecht*, 1993. (*see* **93m:65006**) 65N55

Grorud, A. (*with* Pardoux, Étienne) Intégrales hilbertiennes anticipantes par rapport à un processus de Wiener cylindrique et calcul stochastique associé. (English summary) [Anticipating Hilbert integrals with respect to a cylindrical Wiener process and associated stochastic calculus] *Appl. Math. Optim.* **25** (1992), *no.* 1, 31–49. (David Nualart) **93b:60114** 60H05 (60H07)

Grosberg, A. Yu. (*with* Gutin, A. M.; Shakhnovich, E. I.) Globular state of branched random heteropolymers. (English summary) *J. Phys. A* **26** (1993), *no.* 5, 1037–1049. (Summary) **93k:82072** 82D60 (92D20)

Grosch, C. E. (*with* Jackson, T. L.; Kapila, A. K.) Nonseparable eigenmodes of the incompressible boundary layer. (English summary) *Instability, transition, and turbulence* (*Hampton, VA*, 1991), 127–136, *ICASE/NASA LaRC Ser., Springer, New York*, 1992. (*see* **93j:76004**) 76E05 (76D10)

— (*with* Gupta, Saxya Narayan; Zubair, M.) A multigrid algorithm for parallel computers: CPMG. (English summary) *J. Sci. Comput.* **7** (1992), *no.* 3, 263–279. 65Y05

Grosche, Christian The SU(u, v)-group path integration. *J. Math. Phys.* **32** (1991), *no.* 8, 1984–1997. (Summary) **93a:81101** 81S40

— Path integral solution of a nonisotropic Coulomb-like potential. *Phys. Lett. A* **165** (1992), *no.* 3, 185–190. (Suresh V. Lawande) **93g:81068** 81S40

— Selberg super-trace formula for super Riemann surfaces. II. Elliptic and parabolic conjugacy classes, and Selberg super-zeta functions. (English summary) *Comm. Math. Phys.* **151** (1993), *no.* 1, 1–37. (Shin-ya Koyama) **93m:58117** 58G26 (11F72, 32C11, 81T30)

Grošelj, Bojan (*with* Anderson, James H.) Beyond atomic registers: bounded wait-free implementations of nontrivial objects. (English summary) *Sci. Comput. Programming* **19** (1992), *no.* 3, 197–237. (Summary) **93k:68016** 68N05 (68P05)

Grosjean, C. C. Deducing infinitely many mutually related sequences of orthogonal polynomials from solutions of first-order initial-value problems: an illustrative example. Proceedings of the Fourth International Congress on Computational and Applied Mathematics (Leuven, 1990). *J. Comput. Appl. Math.* **35** (1991), *no.* 1-3, 227–250. (N. Hayek Calil) **93b:33011** 33C45

— On a formula proposed by S. Ramanujan. *J. Comput. Appl. Math.* **37** (1991), *no.* 1-3, 43–56. (Andreas Guthmann) **93a:41056** 41A60 (01A60)

— (*with* Srivastava, Hari M.) Some transformation and reduction formulas for hypergeometric series in several variables. *J. Comput. Appl. Math.* **37** (1991), *no.* 1-3, 287–299. (Harold Exton) **93a:33012** 33C20 (33C50)

Gross, Aaron (*with* Robertson, James B.) Ergodic properties of stationary Poisson sequences. *J. Comput. Appl. Math.* **40** (1992), *no.* 2, 163–175. (A. Weron) **93g:60073** 60G10 (28D99)

Gross, Beate Verification of asymptotic stability for interval matrices and applications in control theory. (English summary) *Scientific computing with automatic result verification*, 357–395, *Math. Sci. Engrg.*, 189, *Academic Press, Boston, MA*, 1993. (B. Ross Barmish) **93k:93083** 93D09 (65K99, 65L99)

Gross, Benedict H. Kolyvagin's work on modular elliptic curves. *L-functions and arithmetic* (*Durham*, 1989), 235–256, *London Math. Soc. Lecture Note Ser.*, 153, *Cambridge Univ. Press, Cambridge*, 1991. (Editors) **93c:11039** 11G10 (11G40)

— Elliptic curves and modular forms. *American Mathematical Society centennial publications, Vol. II* (*Providence, RI*, 1988), 85–88, *Amer. Math. Soc., Providence, RI*, 1992. (Philippe Satgé) **93g:11067** 11G40 (11F11, 11G05)

— (*with* Prasad, Dipendra) On the decomposition of a representation of SO_n when restricted to SO_{n-1}. *Canad. J. Math.* **44** (1992), *no.* 5, 974–1002. (David Joyner) **93j:22031** 22E50 (11R39, 22E55)

— (*with* Kudla, Stephen S.) Heights and the central critical values of triple product L-functions. *Compositio Math.* **81** (1992), *no.* 2, 143–209. (Alexey A. Panchishkin) **93g:11047** 11F66 (11F67, 11G40, 19F27)

Gross, D. *see* **Gross, Dietmar**

Gross, David J. Nonperturbative string theory. *Particles, strings and cosmology* (*Boston, MA*, 1990), 657–671, *World Sci. Publishing, River Edge, NJ*, 1991. (Summary) **93c:81172** 81T30 (81-02)

— (*with* Danielsson, Ulf H.) On the correlation functions of the special operators in $c = 1$ quantum gravity. *Nuclear Phys. B* **366** (1991), *no.* 1, 3–26. (Andrew R. Kavalov) **93b:81243** 81T40 (81T30)

— (*with* Newman, Michael J.) Unitary and Hermitian matrices in an external field. II. The Kontsevich model and continuum Virasoro constraints. (English summary) *Nuclear Phys. B* **380** (1992), *no.* 1-2, 168–180. (Introduction) **93k:81203** 81T40

Gross, Dietmar Path independent integrals and crack growth parameters in nonlinear fracture mechanics. *Nonlinear fracture mechanics*, 123–141, *CISM Courses and Lectures*, 314, *Springer, Vienna*, 1990. (Introduction) **93b:73031** 73M25

Gross, Fletcher On the uniqueness of wreath products. *J. Algebra* **147** (1992), *no.* 1, 147–175. (B. H. Neumann) **93c:20052** 20E22

Gross, Fred (*with* Osgood, Charles F.) Finding all solutions related to Steinmetz's theorem. *J. Math. Anal. Appl.* **164** (1992), *no.* 2, 417–421. (A. Edrei) **93k:30045** 30D35 (30D30)

Gross, Jonathan L. (*with* Chen, Jianer) Limit points for average genus. I. 3-connected and 2-connected simplicial graphs. *J. Combin. Theory Ser. B* **55** (1992), *no.* 1, 83–103. (Saul Stahl) **93a:05055** 05C10

— (*with* Chen, Jianer) Limit points for average genus. II. 2-connected nonsimplicial graphs. (English summary) *J. Combin. Theory Ser. B* **56** (1992), *no.* 1, 108–129. (Saul Stahl) **93k:05050** 05C10

Gross, Kenneth I. (*with* Ding, Hongming) Operator-valued Bessel functions on Jordan algebras. *J. Reine Angew. Math.* **435** (1993), 157–196. (Harald Upmeier) **93m:33010** 33C80 (32M15, 46E99)

Gross, Leonard Logarithmic Sobolev inequalities for the heat kernel on a Lie group. *White noise analysis* (*Bielefeld*, 1989), 108–130, *World Sci. Publishing, River Edge, NJ*, 1990. (Jacques Vauthier) **93f:58249** 58G32 (22E30, 60H07)

— Loop spaces and logarithmic Sobolev inequalities. *Gaussian random fields* (*Nagoya*, 1990), 2–13, *Ser. Probab. Statist.*, 1, *World Sci. Publishing, River Edge, NJ*, 1991. (Hélène Airault) **93m:60113** 60H07 (58G32, 60J45)

— Logarithmic Sobolev inequalities over some infinite-dimensional manifolds. *Probability models in mathematical physics* (*Colorado Springs, CO*, 1990), 98–107, *World Sci. Publishing, Teaneck, NJ*, 1991. (Hélène Airault) **93f:58248** 58G32 (22E67, 46E35, 46E50)

— Logarithmic Sobolev inequalities on loop groups. *J. Funct. Anal.* **102** (1991), *no.* 2, 268–313. (Edward P. Osipov) **93b:22037** 22E67 (46E35, 58B25)

— (*with* Davies, E. Brian; Simon, Barry) Hypercontractivity: a bibliographic review. *Ideas and methods in quantum and statistical physics* (*Oslo*, 1988), 370–389, *Cambridge Univ. Press, Cambridge*, 1992. (From the text) **93g:47052** 47D03 (47F05, 47N50, 81Q10)

— Logarithmic Sobolev inequalities on Lie groups. *Illinois J. Math.* **36** (1992), *no.* 3, 447–490. (Hélène Airault) **93i:22012** 22E30 (46E35, 46E50, 58D20, 58G32, 60J65)

Gross, Mark (*with* Hamber, Herbert W.) Critical properties of two-dimensional simplicial quantum gravity. *Nuclear Phys. B* **364** (1991), *no.* 3, 703–733. (Ruth M. Williams) **93a:83011** 83C27 (81T25, 81T40, 83C45)

— Higher-dimensional simplicial quantum gravity. Lattice 90 (Tallahassee, FL, 1990). *Nuclear Phys. B Proc. Suppl.* **20** (1991), 724–727. (Summary) **93c:83031** 83C27

Gross, Shulamith T. (*with* Huber-Carol, Catherine) Regression models for truncated survival data. (English summary) *Scand. J. Statist.* **19** (1992), *no.* 3, 193–213. (Ramesh C. Gupta) **93m:62074** 62G05 (62N05)

Grosse, Harald Supersymmetric quantum mechanics. (English summary) *Recent developments in quantum mechanics* (*Poiana Braşov*, 1989), 299–327, *Math. Phys. Stud.*, 12, *Kluwer Acad. Publ., Dordrecht*, 1991. (Summary) **93g:81028** 81Q60 (81–02)

— (*with* Langmann, Edwin) The geometric phase and the Schwinger term in some models. (English summary) *Internat. J. Modern Phys. A* **7** (1992), *no.* 21, 5045–5083. (Nicolaas P. Landsman) **93k:81229** 81T50 (81Q05, 81R10)

— (*with* Langmann, Edwin) A superversion of quasifree second quantization. I. Charged particles. *J. Math. Phys.* **33** (1992), *no.* 3, 1032–1046. (Alan L. Carey) **93h:81075** 81T05 (81R10, 81T60)

— (*with* Kummer, Wolfgang; Prešnajder, Peter; Schwarz, Dominik J.) Novel symmetry of non-Einsteinian gravity in two dimensions. (English summary) *J. Math. Phys.* **33** (1992), *no.* 11, 3892–3900. (Yu. N. Obukhov) **93k:81204** 81T40 (81R05)

— (*with* Madore, J.) A noncommutative version of the Schwinger model. *Phys. Lett. B* **283** (1992), *no.* 3-4, 218–222. (Boris Moiseevich Zupnik) **93g:81078** 81T10 (58B30)

Grosse-Erdmann, Karl-Goswin Topologies on matrix spaces and universal matrices. *Analysis* **12** (1992), *no.* 1-2, 47–56. (Lee W. Baric) **93d:46016** 46A45 (40C05, 46A11)

— On the f-dual of sequence spaces. *Arch. Math.* (*Basel*) **58** (1992), *no.* 6, 575–581. (Robert DeVos) **93g:46008** 46A45 (40D15, 40H05)

— The structure of the sequence spaces of Maddox. *Canad. J. Math.* **44** (1992), *no.* 2, 298–302. (W. H. Ruckle) **93d:46017** 46A45 (40H05)

— Matrix transformations involving analytic sequence spaces. *Math. Z.* **209** (1992), *no.* 4, 499–510. (W. H. Ruckle) **93d:46018** 46A45 (40C05, 47B37)

— Errata: "Matrix transformations involving analytic sequence spaces" [Math. Z. **209** (1992), no. 4, 499–510; MR 93d:46018]. *Math. Z.* **212** (1993), *no.* 1, 143. (Editors) **93k:46006** 46A45 (40C05, 47B37)

Grosse-Rhode, M. (*with* Dimitrovici, C.) Algebraic specification of action trees and recursive processes. (English summary) *Tree automata and languages* (*Le Touquet*, 1990), 235–290, *Stud. Comput. Sci. Artif. Intell.*, 10, *North-Holland, Amsterdam*, 1992. (Peter Bachmann) **93j:68130** 68Q60 (18B30, 54E35, 68Q10, 68Q55)

Grosseteste, Robert *see* **Lértora Mendoza, Celina A., 93h:01015**

Grosshans, Frank D. Constructive geometric invariant theory for certain nonreductive groups. *Topics in algebra, Part 2* (*Warsaw*, 1988), 269–287, *Banach Center Publ.*, 26, *Part 2, PWN, Warsaw*, 1990. (Nicolás Andruskiewitsch) **93j:14011** 14D25 (14L30)

— Contractions of the actions of reductive algebraic groups in arbitrary characteristic. *Invent. Math.* **107** (1992), *no.* 1, 127–133. (Toshiaki Shoji) **93b:14072** 14L30 (13A50, 20G99)

Grossi, Massimo Existence and multiplicity results in the presence of symmetry for elliptic equations with critical Sobolev exponent. *Nonlinear Anal.* **17** (1991), *no.* 10, 973–989. (Joachim von Below) **93e:35034** 35J65 (35J85)

Grossi, Roberto A note on the subtree isomorphism for ordered trees and related problems. *Inform. Process. Lett.* **39** (1991), *no.* 2, 81–84. (Charles J. Colbourn) **93e:68101** 68R10 (68Q25)

— Further comments on the subtree isomorphism for ordered trees: "On the subtree isomorphism problem for ordered trees" [Inform. Process. Lett. **32** (1989), no. 5, 271–273; MR 90k:68139] by E. Mäkinen. *Inform. Process. Lett.* **40** (1991), *no.* 5, 255–256. (Fabrizio Luccio) **93c:68077** 68R10 (05C05, 68P05, 68Q25)

— On finding common subtrees. (English summary) *Theoret. Comput. Sci.* **108** (1993), *no.* 2, 345–356. (Summary) **93m:68132** 68R10 (68Q25)

Grossman, Bernard Topological quantum field theories: relations between knot theory and four manifold theory. *Differential geometric methods in theoretical physics* (*Davis, CA*, 1988), 513–531, *NATO Adv. Sci. Inst. Ser. B Phys.*, 245, *Plenum, New York*, 1990. (Matthias Blau) **93f:57041** 57R57 (57M25, 57N13, 58D29, 81–02, 81T40)

— (*with* Cinnella, P.) Flux-split algorithms for hypersonic flows. (English summary) *Computational methods in hypersonic aerodynamics*, 153–202, *Fluid Mech. Appl.*, 9, *Kluwer Acad. Publ., Dordrecht*, 1991. (Summary) **93i:76065** 76M25 (76K05, 80–08, 80A32)

Grossman, Robert Evaluation of expressions involving higher order derivations. *J. Math. Systems Estim. Control* **1** (1991), *no.* 1, 91–106. (Wei Kang) **93a:93031** 93B27 (93C10)

— (*with* Radford, David E.) A simple construction of bialgebra deformations. (English summary) *Deformation theory and quantum groups with applications to mathematical physics* (*Amherst, MA*, 1990), 115–117, *Contemp. Math.*, 134, *Amer. Math. Soc., Providence, RI*, 1992. (*see* **93e:17001**) 16S30 (16W30)

— (*with* Larson, Richard G.) Symbolic computation of derivations using labelled trees. *J. Symbolic Comput.* **13** (1992), *no.* 5, 511–523. (A. K. Lenstra) **93f:68050** 68Q40

Grossmann, Christian (*with* Al-Zanaidi, Mansour) Monotone discretization in boundary value problems using PASCAL-SC. *Proceedings of the Second International Symposium on Numerical Analysis* (*Prague*, 1987), 91–98, *Teubner-Texte Math.*, 107, *Teubner, Leipzig*, 1988. (*see* **93b:65007**) 65L10

— Semianalytic discretization of weakly nonlinear boundary value problems with variable coefficients. *Z. Anal. Anwendungen* **10** (1991), *no.* 4, 513–523. (Martin Hermann) **93b:65102** 65L10 (34A50, 34B15)

— (*with* Gartland, E. C., Jr.) Semianalytic solution of boundary value problems by using approximated operators. (English, German and Russian summaries) *Z. Angew. Math. Mech.* **72** (1992), *no.* 12, 615–619. (I. Norman Katz) **93m:34016** 34A45 (41A65, 65L10)

del Grosso, G. *see* **Del Grosso, G.**

Grosswald, Emil *see* **Tribute to Emil Grosswald: number theory and related analysis, 93j:11002**; **Ph.D. students of Emil Grosswald, (93j:11002)** *and* **Bibliography: Grosswald, Emil, (93j:11002)**

Grotberg, J. B. (*with* Jensen, O. E.) Insoluble surfactant spreading on a thin viscous film: shock evolution and film rupture. (English summary) *J. Fluid Mech.* **240** (1992), 259–288. (Summary) **93f:76026** 76D08 (76D45, 76E99, 76L05, 76Z99)

Groten, E. (*with* Yan, H. J.) Equations of motion and orbit perturbations of a neutral particle in a quasi-isotropic Kerr metric. *Gen. Relativity Gravitation* **24** (1992), *no.* 7, 719–727. (W. B. Bonnor) **93e:83013** 83C10 (83C15)

Grotendorst, J. Algorithms of mixed symbolic-numeric type for rational approximation. (English summary) *Computational and applied mathematics, I* (*Dublin*, 1991), 203–212, *North-Holland, Amsterdam*, 1992. (*see* **93j:00007**) 65–04 (65D15)

Grothe, H. (*with* De Matteis, A.; Eichenauer-Herrmann, Jürgen) Computation of critical distances within multiplicative congruential pseudorandom number sequences. *J. Comput. Appl. Math.* **39** (1992), *no.* 1, 49–55. (Summary) **93b:65011** 65C10

Grothmann, R. (*with* Mhaskar, H. N.) Detection of singularities using segment approximation. *Math. Comp.* **59** (1992), *no.* 200, 533–540. (R. Franke) **93a:41015** 41A15 (41A10, 65D15)

Grotowski, Joseph F. Heat flow for harmonic maps. (English summary) *Nematics* (*Orsay*, 1990), 129–140, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 332, *Kluwer Acad. Publ., Dordrecht*, 1991. (Wei Yue Ding) **93f:58042** 58E20 (58G11)

Grötschel, Martin (*with* Win, Zaw) A cutting plane algorithm for the windy postman problem. *Math. Programming* **55** (1992), *no.* 3, *Ser. A*, 339–358. (Rainer Burkard) **93g:90083** 90C35 (90C10)

— (*with* Monma, Clyde L.; Stoer, Mechthild) Facets for polyhedra arising in the design of communication networks with low-connectivity constraints. *SIAM J. Optim.* **2** (1992), *no.* 3, 474–504. (Michael A. Trick) **93f:90134** 90C27 (90B12)

— (*with* Ascheuer, N.; Escudero, L. F.; Stoer, Mechthild) A cutting plane approach to the sequential ordering problem (with applications to job scheduling in manufacturing). (English summary) *SIAM J. Optim.* **3** (1993), *no.* 1, 25–42. (Summary) **93k:90033** 90B10 (90B30)

buenos aires cyclic homology Group *see* **Buenos Aires Cyclic Homology Group**

Grove, E. A. (*with* Farahani, A. M.) A simple model for price fluctuations in a single commodity market. *Oscillation and dynamics in delay equations* (*San Francisco, CA*, 1991), 97–103, *Contemp. Math.*, 129, *Amer. Math. Soc., Providence, RI*, 1992. (J. C. Hwang) **93g:90019** 90A16 (34K15, 90A14)

Grove, E. F. The harmonic online K-server algorithm is competitive. *On-line algorithms* (*New Brunswick, NJ*, 1991), 65–75, *DIMACS Ser. Discrete Math. Theoret. Comput. Sci.*, 7, *Amer. Math. Soc., Providence, RI*, 1992. (Summary) **93d:68033** 68Q25

Grove, Karsten Metric and topological measurements of manifolds. *Proceedings of the International Congress of Mathematicians, Vol. I, II* (*Kyoto*, 1990), 511–519, *Math. Soc. Japan, Tokyo*, 1991. (Vicente Miquel) **93c:53030** 53C23 (53C21)

— (*with* Petersen, Peter, V) Volume comparison à la Aleksandrov. *Acta Math.* **169** (1992), *no.* 1-2, 131–151. (Viktor Schroeder) **93j:53057** 53C23 (53C20)

— (*with* Markvorsen, Steen) Curvature, triameter, and beyond. *Bull. Amer. Math. Soc.* (*N.S.*) **27** (1992), *no.* 2, 261–265. (Oguz C. Durumeric) **93b:53036** 53C23 (53C20)

Grover, Lov K. Local search and the local structure of NP-complete problems. (English summary) *Oper. Res. Lett.* **12** (1992), *no.* 4, 235–243. (Summary) **93g:90087** 90C60 (90C27, 90C35)

Groves, J. R. J. Some finitely presented nilpotent-by-abelian groups. *J. Algebra* **144** (1991), *no.* 1, 127–166. (Herbert Abels) **93b:20059** 20F05 (20F16)

— (*with* Swarup, G. A.) Remarks on a technique of Dunwoody. *J. Pure Appl. Algebra* **75** (1991), *no.* 3, 259–269. (Summary) **93f:57003** 57M07 (20F38)

— (*with* Bryant, Roger M.) Automorphisms of free metabelian groups of infinite rank. *Comm. Algebra* **20** (1992), *no.* 3, 783–814. (S. Andreadakis) **93f:20039** 20E36 (20E10, 20F28)

Groves, Mark D. Hamiltonian long-wave approximations for water waves in a uniform channel. (English summary) *Nonlinear dispersive wave systems* (*Orlando, FL*, 1991), 99–125, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93h:76009** 76B15

Grow, R. W. (*with* Bunch, K. J.) A compact cubic spline algorithm for converging to function minimums. (English summary) *Appl. Math. Comput.* **56** (1993), *no.* 1, 29–34. 65K99 (65D99)

Groza, A. A. *see* **Vilenkin, N. Ya., 93h:33009**

Groza, Ghiocel Some problems concerning relatively prime elements in certain Euclidean domains. (Romanian. English and Romanian summaries) *Stud. Cerc. Mat.* **44** (1992), *no.* 3, 229–236. 13F07

Groza, V. A. *see* **Vilenkin, N. Ya., 93h:33009**

Groze, Sever On the convergence of a class of iterative methods in Fréchet spaces. *Anal. Numér. Théor. Approx.* **19** (1990), *no.* 1, 45–48. (H. R. Shen) **93b:65084** 65J15 (47H17)

Gruais, Isabelle Modélisation de la jonction entre une plaque et une poutre en élasticité linéarisée. (English and French summaries) [Modelling of the junction between a plate and a rod in linear elasticity] *RAIRO Modél. Math. Anal. Numér.* **27** (1993), *no.* 1, 77–105. (Luis Trabucho) **93k:73050** 73K10 (73K05)

Grubb, Anthea (*with* Sharma, Chandra Shekhar) P-invertibility of matrices and operators. *Lett. Math. Phys.* **22** (1991), *no.* 1, 21–25. (Summary) **93d:47038** 47A75 (47A05, 47B25, 49R10)

— Some results on diagonals, determinants and eigenvalues of positive selfadjoint matrices. *J. Natur. Geom.* **1** (1992), *no.* 2, 107–128. (Mihail Voicu) **93f:15013** 15A42 (15A51, 15A63, 15A90, 47A75, 81P20, 82B10)

— Eigenvalue preserving automorphisms of selfadjoint operators in a unitary space of dimension two. (English summary) *J. Natur. Geom.* **2** (1992), *no.* 2, 101–106. (C. S. Sharma) **93j:15019** 15A69 (47B49, 81P10, 83A05)

— An application of P-invertibility of matrices. (English summary) *J. Natur. Geom.* **2** (1992), *no.* 2, 107–112. (C. S. Sharma) **93j:15006** 15A09 (47A05, 49R05)

Grubb, D. J. Growth conditions for thin sets in Vilenkin groups of bounded order. *Proc. Amer. Math. Soc.* **119** (1993), *no.* 2, 567–571. (Richard C. Vrem) **93k:43007** 43A46 (42C25)

Grubb, Gerd Le problème d'Atiyah-Patodi-Singer pour les variétés à bord générales (non cylindriques). [The Atiyah-Patodi-Singer problem for general (noncylindrical) manifolds with boundary] *Journées "Équations aux Dérivées Partielles" (Saint Jean de Monts, 1991), Exp. No.* VIII, 11 *pp., École Polytech., Palaiseau*, 1991. (Jürgen Eichhorn) **93a:58158** 58G10 (58G20)

— (*with* Solonnikov, V. A.) Boundary value problems for the nonstationary Navier-Stokes equations treated by pseudo-differential methods. *Math. Scand.* **69** (1991), *no.* 2, 217–290 (1992). (I. Aganović) **93e:35082** 35Q30 (35S05, 76D05)

Grübel, Rudolf (*with* Pitts, Susan M.) A functional approach to the stationary waiting time and idle period distributions of the $GI/G/1$ queue. (English summary) *Ann. Probab.* **20** (1992), *no.* 4, 1754–1778. (W. Szczotka) **93k:60226** 60K25 (60J15)

— (*with* Embrechts, Paul; Pitts, Susan M.) Some applications of the fast Fourier transform algorithm in insurance mathematics. (English summary) *Statist. Neerlandica* **47** (1993), *no.* 1, 59–75. (Summary) **93j:62243** 62P05

Gruber, Boris Topological approach to the Niggli lattice characters. *Acta Cryst. Sect. A* **48** (1992), *no.* 4, 461–470. (Summary) **93c:82066** 82D25 (51F15)

Gruber, Bruno (*with* Ramek, Michael) Symmetry-adapted wavefunctions and matrix elements: the general case. *J. Phys. A* **24** (1991), *no.* 23, 5445–5449. (A. O. Barut) **93b:81082** 81R05 (17B81)

— (*with* Ramek, Michael) Programs for symmetry adaptation coefficients for semisimple symmetry chains: the general case. *Comput. Phys. Comm.* **70** (1992), *no.* 2, 371–388. (From the text) **93e:22001** 22–04 (22E46, 65–04)

Gruber, Ch. Ground state properties of the spinless Falicov-Kimball model. *Probabilistic methods in mathematical physics (Siena, 1991), 244–255, World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93g:81002**) 82B20

— (*with* Jędrzejewski, Janusz; Lemberger, P.) Ground states of the spinless Falicov-Kimball model. II. *J. Statist. Phys.* **66** (1992), *no.* 3-4, 913–938. (Summary) **93b:82014** 82B20

Gruber, Peter Manfred Geodesics on typical convex surfaces. (Italian summary) *Atti Accad. Naz. Lincei Rend. Cl. Sci. Fis. Mat. Natur.* (8) **82** (1988), *no.* 4, 651–659 (1990). (Thomas E. Cecil) **93a:53054** 53C45 (53C22)

— The endomorphisms of the lattice of norms in finite dimensions. (English summary) *Abh. Math. Sem. Univ. Hamburg* **62** (1992), 179–189. (René Fourneau) **93i:52005** 52A20 (06B99)

Grubin, S. E. (*with* Trigub, V. N.) The asymptotic theory of hypersonic boundary-layer stability. (English summary) *J. Fluid Mech.* **246** (1993), 361–380. (Summary) **93m:76054** 76K05 (76E05, 76N20)

— (*with* Trigub, V. N.) The long-wave limit in the asymptotic theory of hypersonic boundary-layer stability. (English summary) *J. Fluid Mech.* **246** (1993), 381–395. (Summary) **93m:76055** 76K05 (76E05, 76N20)

Grübl, Gebhard (*with* Vogl, Raimund) Boost action on external field problems. *J. Phys. A* **25** (1992), *no.* 9, 2737–2744. (Summary) **93b:81252** 81T40 (81V25)

Grudo, È. I. The pseudonormal form of matrices. (Russian) *Differentsial'nye Uravneniya* **27** (1991), *no.* 10, 1669–1673, 1834; *translation in Differential Equations* **27** (1991), *no.* 10, 1172–1176 (1992). (W. S. Loud) **93b:15011** 15A21 (34C25)

— Formulas for solving the equation $AX - XB = C$ in the noncritical case. (Russian. English and Russian summaries) *Vestst Akad. Navuk Belarust Ser. Fiz. Mat. Navuk* **1992**, *no.* 1, 102–103, 127. (Leo Livshits) **93i:15018** 15A24

Grue, Klaus E. The importance of cardinality, separability, and compactness in computer science with an example from numerical signal analysis. *Topology and category theory in computer science (Oxford, 1989), 257–272, Oxford Sci. Publ., Oxford Univ. Press, New York*, 1991. (*see* **93h:68004**) 94A12 (03D80, 54A25, 54D30)

— Map theory. *Theoret. Comput. Sci.* **102** (1992), *no.* 1, 1–133. (Chantal Berline) **93j:03011** 03B40 (03B30, 03B70, 03E70, 68Q55)

Gruendler, Joseph Homoclinic solutions for autonomous dynamical systems in arbitrary dimension. *SIAM J. Math. Anal.* **23** (1992), *no.* 3, 702–721. (S. Yu. Pilyugin) **93e:34068** 34C37 (34C23, 58F14)

Gruenhage, Gary F. (*with* Dow, Alan) A point-picking game and semi-selective filters. *Topology Proc.* **14** (1989), *no.* 2, 221–238. (Richard A. Alò) **93b:54004** 54A25

— (*with* Nogura, Tsugunori; Purisch, Steve) Normality of $X \times \omega_1$. *Topology Appl.* **39** (1991), *no.* 3, 263–275. (Peter J. Nyikos) **93d:54020** 54B10 (54D15, 54F05, 54G20)

— (*with* Daniel, Tim) Some nonnormal Σ-products. *Topology Appl.* **43** (1992), *no.* 1, 19–25. (Judith Roitman) **93a:54008** 54B10 (54D15)

— A note on the point-countable base question. Proceedings of the Symposium on General Topology and Applications (Oxford, 1989). *Topology Appl.* **44** (1992), *no.* 1-3, 157–162. (Summary) **93e:54024** 54F05 (54E35)

— (*with* Fitzpatrick, Ben, Jr.; Ott, James W.) Topological completions of metrizable spaces. *Proc. Amer. Math. Soc.* **117** (1993), *no.* 1, 259–267. (Dimitrina Stavrova) **93c:54023** 54E20 (54A25, 54D40, 54D45)

Gruenwald, M. (*with* Schlüchtermann, G.) Equicontinuous and relatively weakly compact subsets of the space of Bochner integrable functions $L_1(\mu, X)$. *Arch. Math. (Basel)* **57** (1991), *no.* 5, 485–493. (Pilar Cembranos) **93c:46058** 46E40 (46G10)

Gruet, Marie-Anne Calibration non paramétrique: une procédure d'estimation directe. (English and French summaries) [Nonparametric calibration: a direct estimation procedure] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 3, 321–324. (Summary) **93e:62105** 62G05 (62J02)

Grujić, Ljubomir T. (*with* Mounfield, William Pratt, Jr.) Natural tracking control of linear systems. (English summary) *Mathematics of the analysis and design of process control (Dublin, 1991/Lille, 1991), 53–64, North-Holland, Amsterdam*, 1992. (*see* **93g:93004**) 93C05 (93B51)

— (*with* Mounfield, William Pratt, Jr.) High-gain natural tracking control of linear systems. (English summary) *Mathematics of the analysis and design of process control (Dublin, 1991/Lille, 1991), 65–74, North-Holland, Amsterdam*, 1992. (*see* **93g:93004**) 93C05 (93B51)

— (*with* Guddanti, Suresh; Mounfield, William Pratt, Jr.) Stability of an asynchronous TMS neutral network. (English summary) *Mathematics of the analysis and design of process control (Dublin, 1991/Lille, 1991), 541–548, North-Holland, Amsterdam*, 1992. (*see* **93g:93004**) 93D05 (68T05)

— (*with* Michel, Anthony N.) Modeling and qualitative analysis of continuous-time neural networks under pure structural variations. (English summary) *Mathematics of the analysis and design of process control (Dublin, 1991/Lille, 1991), 549–558, North-Holland, Amsterdam*, 1992. (*see* **93g:93004**) 93A30 (68T05)

— (*with* Michel, Anthony N.) Modelling and qualitative analysis of discrete-time neural networks under pure structural variations. (English summary) *Mathematics of the analysis and design of process control (Dublin, 1991/Lille, 1991), 559–566, North-Holland, Amsterdam*, 1992. (*see* **93g:93004**) 93A30

— Exact determination of a Lyapunov function and the asymptotic stability domain. (English summary) *Internat. J. Systems Sci.* **23** (1992), *no.* 11, 1871–1888. (Peng Nian Chen) **93j:93097** 93D05 (34D20)

— (*with* Mounfield, William Pratt, Jr.) High-gain PI natural control for exponential tracking of linear single-output systems with state-space description. (French summary) *RAIRO Automat.-Prod. Inform. Ind.* **26** (1992), *no.* 2, 125–146. (Summary) **93a:93060** 93C10 (93D05)

Grünbaum, Branko On Simmons' "campaign graphs". *Ars Combin.* **32** (1991), 181–192. (Summary) **93b:05160** 05C99

— Odd polyhedra. *Geombinatorics* **1** (1991), *no.* 1, 4–5. 52B10

— Nets of polyhedra. *Geombinatorics* **1** (1991), *no.* 2, 5–9. 52B10

— Nets of polyhedra. II. *Geombinatorics* **1** (1991), *no.* 3, 5–10. 52B10

— (*with* Ammann, Robert; Shephard, G. C.) Aperiodic tiles. *Discrete Comput. Geom.* **8** (1992), *no.* 1, 1–25. (Marjorie Senechal) **93g:52015** 52C20

— Venn diagrams. I. *Geombinatorics* **1** (1992), *no.* 4, 5–12. 52A37

— Venn diagrams. II. *Geombinatorics* **2** (1992), *no.* 2, 25–32. 52A37

— (*with* Dorwart, Harold L.) Are these figures oxymora? *Math. Mag.* **65** (1992), *no.* 3, 158–169. (E. J. F. Primrose) **93d:51039** 51M15

— Infinite uniform polyhedra. *Geombinatorics* **2** (1993), *no.* 3, 53–60. 52B10

— Holey isogonal columns. *Geombinatorics* **2** (1993), *no.* 4, 75–78. 52B10

Grünbaum, F. Alberto Diffuse tomography: a refined model. *Mathematical methods in tomography (Oberwolfach, 1990), 106–111, Lecture Notes in Math.*, 1497, *Springer, Berlin*, 1991. (*see* **93d:44001**) 92C55

— An inverse problem in transport theory: diffuse tomography. *Invariant imbedding and inverse problems (Albuquerque, NM, 1990), 209–215, SIAM, Philadelphia, PA*, 1992. (*see* **93e:00023**) 92C55 (82C70)

— (*with* Latham, Geoff A.; Zubelli, Jorge P.) An inverse problem for a model of scattered and diffused radiation. *Mini-Conference on Inverse Problems in Partial Differential Equations (Canberra, 1990), 69–81, Proc. Centre Math. Appl. Austral. Nat. Univ.*, 31, *Austral. Nat. Univ., Canberra*, 1992. (*see* **93i:00020**) 78A45

— Some new explorations into the mystery of time and band limiting. *Adv. in Appl. Math.* **13** (1992), *no.* 3, 328–349. (From the introduction) **93m:05203** 05E10

— Diffuse tomography: the isotropic case. *Inverse Problems* **8** (1992), *no.* 3, 409–419. (Summary) **93c:65021** 65D15 (35R30, 65T99)

— (*with* Zubelli, Jorge P.) Diffuse tomography: computational aspects of the isotropic case. *Inverse Problems* **8** (1992), *no.* 3, 421–433. (Summary) **93c:65022** 65D15 (65T99)

— Three-dimensional scattering and the Heisenberg inequality. (English summary) *J. Comput. Appl. Math.* **42** (1992), *no.* 1, 37–47. (Tuncay Aktosun) **93g:81197** 81U05

— *see also* **Radar and sonar, 93m:00045**

Grund, R. (*with* Kerber, Adalbert; Laue, R.) MOLGEN, ein Computeralgebra-System für die Konstruktion molekularer Graphen. [MOLGEN, a computer algebra system for the construction of molecular graphs] *Match No.* 27 (1992), 87–131. 92E10 (05C90)

Grundhöfer, Theo (*with* Salzmann, Helmut R.) Locally compact double loops and ternary fields. *Quasigroups and loops: theory and applications*, 313–355, *Sigma Ser. Pure Math.*, 8, *Heldermann, Berlin*, 1990. (*see* **93g:20133**) 51H20 (20N05)

— (*with* Stroppel, Markus) On restrictions of automorphism groups of compact projective planes to subplanes. *Results Math.* **21** (1992), *no.* 3-4, 319–327. (Rainer Löwen) **93c:51015** 51H10 (51A10)

Gründl, Gisela *see* **Peitgen, Heinz-Otto et al., 93i:00002a**

Grundland, Alfred M. (*with* Vassiliou, Peter J.) On the solvability of the Cauchy problem for Riemann double-waves by the Monge-Darboux method. *Analysis* **11** (1991), *no.* 2-3, 221–278. (Alan Jeffrey) **93f:35138** 35L60 (35A30)

— (*with* Burnat, M.) Conical solutions of the autonomous partial differential systems. *Rep. Math. Phys.* **30** (1991), *no.* 1, 71–80 (1992). (Alan Jeffrey) **93f:35015** 35A30 (35B05, 35Q99)

— Riemann double waves for nonlinear evolution equations. (English summary) *Nonlinear evolution equations and dynamical systems (Baia Verde, 1991), 418–426, World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93i:35111** 35Q35 (35L60)

— (*with* Infeld, E.) A family of nonlinear Klein-Gordon equations and their solutions. *J. Math. Phys.* **33** (1992), *no.* 7, 2498–2503. (Woodford W. Zachary) **93f:81027** 81Q05 (35L70, 35Q53, 58F07)

Grundman, H. G. Defects of cusp singularities and the classification of Hilbert modular threefolds. *Math. Ann.* **292** (1992), *no.* 1, 1–12. (Friedrich W. Knöller) **93c:11029** 11F41 (14J30, 32S05)

Grundmann, R. Introduction to three-dimensional boundary layers. (English summary) *Computational methods in viscous aerodynamics*, 1–41, *Elsevier, Amsterdam*, 1990. (Summary) **93f:76031** 76D10 (76M20, 76M25, 76N20)

— (*with* Anderson, J. D.; Degrez, G.; Dick, Erik) ★ Computational fluid dynamics. An introduction. Edited and with a preface by John F. Wendt. A von Karman Institute Book. *Springer-Verlag, Berlin*, 1992. xii+291 *pp. ISBN* 3-540-53460-1 (Corneliu Berbente) **93a:76081** 76N10 (76–01)

Grünenfelder, L. (*with* Omladič, Matjaž) Linearly recursive sequences and operator polynomials. (English summary) *Linear Algebra Appl.* **182** (1993), 127–145. (Summary) **93m:16027** 16W30 (16S50)

Grunewald, Fritz (*with* Faltings, Gerd; Wüstholz, Gisbert; Schappacher, Norbert; Stuhler, Ulrich) ★ Rational points. Third edition. Papers from the seminar held at the Max-Planck-Institut für Mathematik, Bonn/Wuppertal, 1983/1984. With an appendix by Wüstholz. Aspects of Mathematics, E6. *Friedr. Vieweg & Sohn, Braunschweig*, 1992. x+311 *pp. ISBN* 3-528-28593-1 (Kenneth A. Ribet) **93k:11060** 11G35 (11D41, 14C17, 14G05, 14G40)

— (*with* Schwermer, Joachim) Subgroups of Bianchi groups and arithmetic quotients of hyperbolic 3-space. *Trans. Amer. Math. Soc.* **335** (1993), *no.* 1, 47–78. (Avner Ash) **93c:11024** 11F06 (20H25, 22E40, 57N10)

Grushevskiĭ, A. V. (*with* Beletskiĭ, V. V.) Evolution of rotational motions of a satellite under the action of a dissipative aerodynamical moment. (Russian. English summary) *Akad. Nauk SSSR Inst. Prikl. Mat. Preprint* **1991,** *no.* 75, 30 *pp.* (Summary) **93a:70026** 70M20 (70E15)

Grushko, P. Ya. Two-point homogeneous spaces and *G*-structures. *Proceedings of Asian Mathematical Conference,* 1990 (*Hong Kong,* 1990), 165–169, *World Sci. Publishing, River Edge, NJ,* 1992. (*see* **93b:00022**) 53C30 (58H05)

Gruska, Jozef (*with* Jürgensen, Helmut) Maturing of informatics. (English summary) *Images of programming,* I55–I69, *North-Holland, Amsterdam,* 1991. (*see* **93i:68008**) 01A60 (68–03, 94–03)

Gruszka, Jacek The number of bipartite tournaments with a unique Hamiltonian cycle. (English summary) *Fasc. Math. No.* 22 (1991), 151–157 (1992). (J. W. Moon) **93d:05058** 05C20 (05C45)

Grüter, Michael A remark on minimal surfaces with corners. *Variational methods* (*Paris,* 1988), 273–282, *Progr. Nonlinear Differential Equations Appl.,* 4, *Birkhäuser Boston, Boston, MA,* 1990. (Gregory D. Crow) **93k:49037** 49Q15 (58E12)

— *see also* **Progress in partial differential equations: elliptic and parabolic problems, 93f:35007** *and* **Progress in partial differential equations: calculus of variations, applications, 93f:35008**

le Gruyer, Erwan *see* **Le Gruyer, Erwan**

Gruzdev, A. A. On a condition for the action of the Volterra integral operator. (Russian. Russian summary) *Boundary value problems* (*Russian*), 56–61, *Perm. Politekh. Inst., Permʹ,* 1989. (*see* **93k:00022**) 47B38 (45P05, 47G10)

Gryanik, V. M. (*with* Tevs, M. V.) Dynamics of singular geostrophic vortices near critical current points in an *N*-level model of the atmosphere (ocean). *Izv. Acad. Sci. USSR Atmospher. Ocean. Phys.* **27** (1991), *no.* 7, 517–526 (1992); *translated from Izv. Akad. Nauk SSSR Ser. Fiz. Atmosfer. i Okeana* **27** (1991), *no.* 7 (*Russian*). (Summary) **93c:76010** 76C05 (86A05, 86A10)

— Rossby wave emission and adaptation of potential vortex fields in the atmosphere (ocean). (Russian) *Dokl. Akad. Nauk* **326** (1992), *no.* 6, 976–979. (Yu. Z. Aleshkov) **93m:76017** 76C20 (86A05, 86A10)

— Localized vortices and coherent vortex structures in an unstable boundary layer. (Russian) *Dokl. Akad. Nauk* **327** (1992), *no.* 1, 60–64. (Radyadour Kh. Zeytounian) **93k:76021** 76C05

Gryllakis, C. (*with* Grekas, S.) Measures on product spaces and the existence of strong Baire liftings. (English summary) *Monatsh. Math.* **114** (1992), *no.* 1, 63–76. (D. H. Fremlin) **93h:28020** 28C15 (28A35, 28A51)

Gryn′, V. I. (*with* Nitishinskaya, L. V.) Inverse three-dimensional problems for the joint determination of the absorption coefficient and the source function for the transport equation. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **32** (1992), *no.* 1, 97–114; *translation in Comput. Math. Math. Phys.* **32** (1992), *no.* 1, 81–95. (Summary) **93b:35133** 35R30 (65P05, 82C70)

— Inverse problems in the theory of stationary radiation transfer in two-dimensional plane geometry. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **32** (1992), *no.* 5, 758–771; *translation in Comput. Math. Math. Phys.* **32** (1992), *no.* 5, 659–671. (Summary) **93b:35134** 35R30 (85A25)

— Variational problems in radiation transfer theory and the method of spherical harmonics. (Russian. Russian summary) *Zh. Vychisl. Mat. i Mat. Fiz.* **32** (1992), *no.* 10, 1608–1627; *translation in Comput. Math. Math. Phys.* **32** (1992), *no.* 10, 1445–1460 (1993). (Summary) **93k:49041a** 49S05 (85A25)

— Two-step iterative regularization methods. (Russian. Russian summary) *Zh. Vychisl. Mat. i Mat. Fiz.* **32** (1992), *no.* 11, 1821–1824; *translation in Comput. Math. Math. Phys.* **32** (1992), *no.* 11, 1649–1653 (1993). (C. Ilioi) **93m:65074** 65J10

— Errata: "Variational problems in radiation transfer theory and the method of spherical harmonics". (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **32** (1992), *no.* 12, 1842. (Editors) **93k:49041b** 49S05 (85A25)

Grynberg, Marcelo D. (*with* Privman, Vladimir) Fast-diffusion mean-field theory for *k*-body reactions in one dimension. (English summary) *J. Phys. A* **25** (1992), *no.* 24, 6567–6575. 82C22

— Continuously infinite commensurate-incommensurate phase transition of a two-dimensional competing Ising model. (English summary) *J. Statist. Phys.* **69** (1992), *no.* 3-4, 869–878. 82B26 (82B20)

Grysa, K. (*with* Cialkowski, M. J.; Jankowski, J.) Inverse problems of the linear nonstationary heat transfer equation. Bericht über die Wissenschaftliche Jahrestagung der GAMM (Kraków, 1991). *Z. Angew. Math. Mech.* **72** (1992), *no.* 6, T611–T614. (Ulrich Tautenhahn) **93f:80014** 80A23 (35R30, 65M60, 80–08)

Grytczuk, Aleksander (*with* Grelak, Aleksander) Some remarks on matrices and Diophantine equation $Ax^2 - By^2 = C$. *Discuss. Math.* **10** (1990), 13–27 (1991). (Summary) **93e:11035** 11D09 (15A06)

— (*with* Tropak, Bogdan) A numerical method for the determination of the cyclotomic polynomial coefficients. *Computational number theory* (*Debrecen,* 1989), 15–19, *de Gruyter, Berlin,* 1991. (Lawrence Washington) **93c:11116** 11Y40 (11R18)

Grytczuk, Jarosław On the equation of Fermat with even exponent. (French summary) *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 5, 325–327. (Takeo Miyoshi) **93c:11015** 11D41

Grytczuk, Krystyna (*with* Rotkiewicz, Emilia) Random differential inclusions with convex right hand sides. *Ann. Polon. Math.* **54** (1991), *no.* 1, 13–19. (Evgenios P. Avgerinos) **93a:60089** 60H15 (34A60, 34F05, 49J24)

Gryzlov, A. On matrix points in Čech-Stone compactifications of discrete spaces. *Comment. Math. Univ. Carolin.* **32** (1991), *no.* 4, 775–780. (Donald Plank) **93j:54017** 54D35 (54D40)

Gryzunov, A. B. (*with* Kokhov, V. A.) Algorithms for the isomorphic embedding of graphs and their application in designing electron devices. (Russian) *Modeling in information science and computer technology* (*Russian*), 25–39, *Sistem. Model.,* 13, *Akad. Nauk SSSR Sibirsk. Otdel., Vychisl. Tsentr, Novosibirsk,* 1988. (Introduction) **93a:05121** 05C90 (05C10, 05C85)

Grząślewicz, Ryszard Positive contractions in $L(l^p, l^r)$. *Linear and Multilinear Algebra* **30** (1991), *no.* 1-2, 135–144. (Nina M. Roy) **93a:47047** 47D20 (15A04, 47B37, 47B65)

— Exposed operators in $\mathfrak{L}(C(X), C(Y))$. *Z. Anal. Anwendungen* **10** (1991), *no.* 4, 433–438. (Nina M. Roy) **93c:47048** 47D20 (46B28)

— (*with* Hudzik, Henryk; Kurc, W.) Extreme and exposed points in Orlicz spaces. (English summary) *Canad. J. Math.* **44** (1992), *no.* 3, 505–515. (Ting Fu Wang) **93h:46033** 46E30 (46B25)

— Extreme positive operators on l^p. *Illinois J. Math.* **36** (1992), *no.* 2, 208–232. (Nina M. Roy) **93d:47070** 47B65 (47B37, 47D20)

— (*with* Schaefer, Helmut H.) Surjective isometries of $L^1 \cap L^\infty[0,\infty)$ and $L^1 + L^\infty[0,\infty)$. *Indag. Math. (N.S.)* **3** (1992), *no.* 2, 173–178. (Peter Dodds) **93h:47039** 47B38 (46E30)

Grzech, A. (*with* Kasprzak, A.; Chouigui, N.) The new expression for blocking probability for route in integrated services digital networks. (English summary) *Computational systems analysis* 1992 (*Berlin,* 1992), 313–318, *Elsevier, Amsterdam,* 1992. (*see* **93e:00021**) 90B22

Grzegorek, E. Hereditary measurable sets. Measure theory (Oberwolfach, 1990). *Rend. Circ. Mat. Palermo* (2) *Suppl. No.* 28 (1992), 35–40. (K. P. S. Bhaskara Rao) **93j:28001** 28A05 (03E50)

Grzegórski, S. M. Rescaled multilevel least-change almost secant methods. *Mat. Stos.* **33** (1991), 37–56. (Xiaojun Chen) **93c:65071** 65H10 (90C30)

Grzegorzewicz, Pawel A concept of decompositional approach to concurrent systems design. (English summary) *Comput. Artificial Intelligence* **11** (1992), *no.* 1, 65–82. 68Q10

Grzegorzewski, P. The infinitesimal robustness of tests against dependence. (English summary) *Zastos. Mat.* **21** (1992), *no.* 3, 455–460. (Summary) **93k:62110** 62G10 (62F03, 62F35)

Grzesiak, Maciej Localizing families for real function algebras. *Math. Pannon.* **3** (1992), *no.* 1, 49–56. (Christopher C. White) **93f:46081** 46J10 (46J40)

Grzeszczuk, Piotr The Goldie dimension of some extensions of modular lattices. *Proceedings of the International Conference on Algebra, Part* 3 (*Novosibirsk,* 1989), 111–119, *Contemp. Math.,* 131, *Part* 3, *Amer. Math. Soc., Providence, RI,* 1992. (From the text) **93i:16055** 16W50 (06C05)

— On nilpotent derivations of semiprime rings. *J. Algebra* **149** (1992), *no.* 2, 313–321. (Miguel Ferrero) **93h:16068** 16W25 (16N60)

Grzywaczewski, M. (*with* Yastrebov, A. I.) Construction of mathematical models of continuous systems on the basis of discrete measurement data. (English summary) *Computational systems analysis* 1992 (*Berlin,* 1992), 233–238, *Elsevier, Amsterdam,* 1992. (*see* **93e:00021**) 93A30

Gu, An Hai The traction problem in elastodynamics. *Appl. Math. Mech.* (*English Ed.*) **13** (1992), *no.* 11, 1067–1076; *translated from Appl. Math. Mech.* **13** (1992), *no.* 11, 1021–1029 (*Chinese. English and Chinese summaries*). (Chandra B. Sharma) **93k:73016** 73C02 (73D99)

Gu, Cai Xing Eliminating the genericity conditions in the skew Toeplitz operator algorithm for H^∞-optimization. (English summary) *SIAM J. Math. Anal.* **23** (1992), *no.* 6, 1623–1636. (Guang Xiong Wang) **93j:93042** 93B36 (47B35, 47N70, 93C05)

Gu, Chang Kang (*with* Zhang, Liang) On factorization of finite maximal codes. *Words, languages and combinatorics* (*Kyoto,* 1990), 534–542, *World Sci. Publishing, River Edge, NJ,* 1992. (Dong Yang Long) **93f:94012** 94A45 (20M05, 68Q45)

Gu, Chao Hao Extremal surfaces of mixed type in Minkowski space $\mathbf{R}^{n+1}$. (English summary) *Variational methods* (*Paris,* 1988), 283–296, *Progr. Nonlinear Differential Equations Appl.,* 4, *Birkhäuser Boston, Boston, MA,* 1990. (Alan D. Rendall) **93j:53007** 53A10 (35M10)

— On the interaction of solitons for a class of integrable systems in the spacetime $\mathbf{R}^{n+1}$. (English summary) *Lett. Math. Phys.* **26** (1992), *no.* 3, 199–209. (Wen Xiu Ma) **93m:58051** 58F07 (35Q51, 35Q53, 58F19)

— *see also* **Advances in science of China. Mathematics, 93b:00015**

Gu, Cheng Lin (*with* Li, Lang Ru; Zhou, Ke Ding) A network analysis and the graph theory of three-dimensional difference schemes. (Chinese. English summary) *J. Huazhong Univ. Sci. Tech.* **19** (1991), *no.* 6, 29–33. (Summary) **93c:65124** 65N06 (65N50)

Gu, Chong (*with* Heckman, Nancy E.; Wahba, Grace) A note on generalized cross-validation with replicates. (English summary) *Statist. Probab. Lett.* **14** (1992), *no.* 4, 283–287. 62G05

— Penalized likelihood regression: a Bayesian analysis. *Statist. Sinica* **2** (1992), *no.* 1, 255–264. (Wolfgang Wertz) **93e:62106** 62G05 (62F15, 62J02)

Gu, Chuan Qing (*with* Zhu, Gong Qin) A successive acceleration process for a general extrapolation algorithm. (Chinese. English summary) *J. Numer. Methods Comput. Appl.* **13** (1992), *no.* 1, 13–19. (Summary) **93c:65007** 65B05

Gu, Da-Wei (*with* Postlethwaite, Ian; Tsai, Mi Ching) H^∞ super-optimal solutions. *Robust control system techniques and applications, Part* 2, 183–246, *Control Dyn. Syst. Adv. Theory Appl.,* 51, *Academic Press, San Diego, CA,* 1992. (Arno Linnemann) **93i:93041** 93B36 (47N70, 93B28, 93D21)

— (*with* Lin, J.-L.; Postlethwaite, Ian) μ-K iteration: a new algorithm for μ-synthesis. (English summary) *Automatica J. IFAC* **29** (1993), *no.* 1, 219–224. 93B36

Gu, Feng² (*with* Chu, Yan Dong; Chang, Ying Xiang) Binary grey relations and their characteristics. (Chinese. English and Chinese summaries) *J. Lanzhou Railway Inst.* **11** (1992), *no.* 3, 35–42. 04A72

Gu, Fu Kui A general method for constructing higher-dimensional *N*-soliton solutions. (Chinese. Chinese summary) *Chinese Ann. Math. Ser. A* **13** (1992), *no.* 5, 526–531. (Yun Bo Zeng) **93m:35158** 35Q51 (35Q58, 58F07)

Gu, Guoxiang (*with* Khargonekar, Pramod P.) Linear and nonlinear algorithms for identification in $\mathscr{H}_\infty$ with error bounds. *IEEE Trans. Automat. Control* **37** (1992), *no.* 7, 953–963. (Summary) **93f:93046** 93B36 (93B40, 93C55)

— (*with* Zhou, Kemin) Robust stability of multivariable systems with both real parametric and norm bounded uncertainties. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 10, 1533–1537. 93D09

— (*with* Khargonekar, Pramod P.; Lee, E. Bruce; Misra, Pradeep) Finite-dimensional approximations of unstable infinite-dimensional systems. *SIAM J. Control Optim.* **30** (1992), *no.* 3, 704–716. (Vladimir B. Larin) **93c:93026** 93B40

— (*with* Khargonekar, Pramod P.; Li, Yanlin) Robust convergence of two-stage nonlinear algorithms for identification in $\mathscr{H}_\infty$. *Systems Control Lett.* **18** (1992), *no.* 4, 253–263. (R. Haber) **93b:93110** 93E12 (93B36, 93B40)

— (*with* Akçay, Hüseyin; Khargonekar, Pramod P.) A class of algorithms for identification in $\mathscr{H}_\infty$: continuous-time case. (English summary) *IEEE Trans. Automat. Control* **38**

(1993), *no.* 2, 289–294. (Summary) **93j:93035** 93B30 (93B36, 93B40)

Gu, Ji Fa (*with* Liu, Bao Ding) Probability criterion in inventory systems. (English summary) *Systems Sci. Math. Sci.* **6** (1993), *no.* 1, 70–75. (Summary) **93m:90026** 90B05

Gu, Jian De Estimates of delay for a class of differential equations with time delay. (Chinese. English summary) *Xiamen Daxue Xuebao Ziran Kexue Ban* **30** (1991), *no.* 2, 119–124. (Summary) **93i:34142** 34K20 (34K05)

Gu, Keqin (*with* Loh, Nan K.) Direct computation of stability bound for systems with polytopic uncertainties. (English summary) *IEEE Trans. Automat. Control* **38** (1993), *no.* 2, 363–366. (Summary) **93j:93105** 93D09 (93C50)

Gu, Ming Gao² On the Edgeworth expansion and bootstrap approximation for the Cox regression model under random censorship. (English and French summaries) *Canad. J. Statist.* **20** (1992), *no.* 4, 399–414. (Gutti J. Babu) **93m:62041** 62E20 (62G05)

Gu, Qi Jun (*with* Yang, Hai Lang; Hua, Mao Fen) A speedable algorithm for approximation of fractal sets. (Chinese. English summary) *Nanjing Daxue Xuebao Shuxue Bannian Kan* **9** (1992), *no.* 2, 199–203. 58–04 (58F13)

Gu, Qi Tai (*with* Zhou, Li Qiang) Decoupled state and bias estimation and its application to inertial surveys. (Chinese. English and Chinese summaries) *Control Theory Appl.* **9** (1992), *no.* 4, 436–440. 93B30

Gu, Qian Ping (*with* Maruoka, Akira) Learning monotone Boolean functions by uniformly distributed examples. *SIAM J. Comput.* **21** (1992), *no.* 3, 587–599. (Jerzy W. Grzymala-Busse) **93g:68112** 68T05

Gu, Shou Huai (*with* Zhang, Zhong Fu; Liu, Lin Zhong; Zhang, Si Hai; Zhang, Lan) An algorithm of the shortest path for the network with negative arcs. (English summary) *Optimization, Vol.* 1, 2 (*Singapore*, 1992), 294–296, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93d:90005**) 90C35

— An algorithm for the Chinese postman problem. (Chinese. English summary) *J. Lanzhou Railway Inst.* **11** (1992), *no.* 1, 11–15. 68R10 (05C70, 05C85, 90C27)

Gu, Tong Xin (*with* Cao, Hui Zhong) On the enumeration function of multiplicative partitions. *Math. Balkanica (N.S.)* **4** (1990), *no.* 4, 325–328 (1991). (M. S. Cheema) **93d:05013** 05A17 (11B75)

Gu, Weizhen (*with* Reid, K. B.) Peripheral and eccentric vertices in graphs. (English summary) *Graphs Combin.* **8** (1992), *no.* 4, 361–375. (Koduvayur R. Parthasarathy) **93k:05057** 05C12 (05C75)

— (*with* Chen, Sheng) Exact order of subsets of asymptotic bases. *J. Number Theory* **41** (1992), *no.* 1, 15–21. (Georges Grekos) **93f:11012b** 11B13 (20D60)

Gu, Wen Xiang (*with* Lu, Tu) Fuzzy linear spaces. (English summary) *Fuzzy Sets and Systems* **49** (1992), *no.* 3, 377–380. (Summary) **93f:15029** 15A99 (04A72)

— (*with* Lu, Tu) Some properties of divisible and pure fuzzy subgroups. *Mohu Xitong yu Shuxue* **6** (1992), *no.* 1, 48–53. (Phullendu Das) **93e:20105** 20N25 (04A72)

— (*with* Lu, Tu) Fuzzy algebras over fuzzy fields redefined. (English summary) *Fuzzy Sets and Systems* **53** (1993), *no.* 1, 105–107. 16D99 (04A72)

— (*with* Lu, Tu) The properties of fuzzy divisible groups. (English summary) *Fuzzy Sets and Sysiems* **56** (1993), *no.* 2, 195–198. 20N25 (04A72)

Gu, Xiao Ying Approximation in the mean by 2-periodic lacunary interpolatory polynomials. (Chinese) *Acta Math. Sinica* **34** (1991), *no.* 5, 653–664. (Jia Rong Yu) **93g:30054** 30E10 (41A05)

Gu, Xing Sheng (*with* Hu, Yang Zeng; Ge, Zu Guang; Lu, Jun²) A piecewise multiple general orthogonal polynomial method for identifying parameters of a class of systems. (Chinese. English summary) *Inform. and Control* (*Shenyang*) **20** (1991), *no.* 3, 25–32. (De Xing Feng) **93c:93020** 93B30

Gu, Xing Yuan (*with* Chen, Wen Hua; Yuan, Xin) Robust state estimation for linear systems with uncertain dynamics. (Chinese. English and Chinese summaries) *Control Theory Appl.* **9** (1992), *no.* 5, 523–528. 93E12

— (*with* Mao, Zhi Zhong) A predictive controller for stable open-loop systems. (Chinese. English and Chinese summaries) *J. Northeast Univ. Tech.* **13** (1992), *no.* 4, 373–377. 93C05

Gu, Yan (*with* Zhao, Hong; Zheng, Wei Mou) Determination of partition lines from dynamical foliations for the Hénon map. (English summary) *Comm. Theoret. Phys.* **17** (1992), *no.* 3, 263–268. (Arkady S. Pikovsky) **93j:58046** 58F03 (39B12, 58F13)

Gu, Yong Geng The eigenvalue problems of elliptic equations of higher order. *Acta Math. Sci.* (*English Ed.*) **11** (1991), *no.* 4, 361–367. (Günter Berger) **93f:35055** 35J40 (35P15)

— (*with* Wu, Zai De; Liang, Xue Xin; Jiao, Yang) Existence and decay estimates of global solutions to a class of quasilinear degenerate parabolic equations. (Chinese. English summary) *Math. Appl.* **4** (1991), *no.* 4, 98–106. (Yun Gang Chen) **93j:35102** 35K65 (35A05, 35B45, 35K55)

— Some notes on eigenvalue problems of elliptic equations of high order. *Proceedings of Asian Mathematical Conference*, 1990 (*Hong Kong*, 1990), 170–175, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93b:00022**) 35P05 (35J35)

Gu, Yong Xing On the singular direction of entire functions. *Adv. in Math.* (*China*) **20** (1991), *no.* 2, 180–183. (Summary) **93e:30061** 30D20 (30D45)

Gu, Yu Tao Multipliers from a Segal algebra $S(G)$ to $L^1(G)$. (Chinese. Chinese summary) *Chinese Ann. Math. Ser. A* **13** (1992), *suppl.*, 53–56. (Han Ch'ing Lai) **93m:43003** 43A22

Gu, Z.-C. (*with* Balachandran, A. P.; Daughton, A.; Marmo, Giuseppe; Sorkin, R. D.; Srivastava, A. M.) A topological spin-statistics theorem or a use of the antiparticle. The birth and early evolution of our Universe (Gräftåvallen, 1990). *Phys. Scripta* **1991**, *Vol.* T36, 253–257. (Yu Liang Liu) **93c:81099** 81S99 (81R99)

Gu, Zhong Bi (*with* Wang, Wei) Generalized predictive control for a class of nonlinear systems. (Chinese. English summary) *Sichuan Daxue Xuebao* **29** (1992), *no.* 1, 99–103. (Summary) **93b:93065** 93C40 (93C10)

— (*with* Wang, Wei) A self-adaptive generalized predictive control algorithm for nonlinear systems. (Chinese. English and Chinese summaries) *Sichuan Daxue Xuebao* **29** (1992), *no.* 3, 365–372. (Summary) **93g:93050** 93C40 (93B40)

Gu, Zhong Wen (*with* Yu, Jing Jiang; Zhou, Chun Hui) Construction of fuzzy reference sets and identification of fuzzy models. (Chinese. English summary) *Inform. and Control* (*Shenyang*) **20** (1991), *no.* 3, 20–24. 93C42 (04A72)

Gu, Zhu Quan Two finite-dimensional completely integrable Hamiltonian systems associated with the solutions of the MKDV hierarchy. *J. Math. Phys.* **32** (1991), *no.* 6, 1531–1536. (Ziemowit Popowicz) **93a:58081** 58F07 (35Q35)

— (*with* Zhang, Bao Cai) The involutive representation of solutions of the coupled KdV equation. (English summary) *Nuovo Cimento B* (11) **107** (1992), *no.* 8, 855–862. (Summary) **93j:35159** 35Q53 (58F07)

Guadagnini, E. (*with* Martellini, Maurizio; Mintchev, M.) Chern-Simons field theory and quantum groups. (English summary) *Quantum groups* (*Clausthal*, 1989), 307–317, *Lecture Notes in Phys.*, 370, *Springer, Berlin*, 1990. (Summary) **93i:81137** 81T13 (81R50)

— Braid group representations and link invariants. (English summary) *Nonperturbative methods in low-dimensional quantum field theories* (*Debrecen*, 1990), 1–38, *World Sci. Publishing, River Edge, NJ*, 1991. (Emil Vinţeler) **93m:57006** 57M25 (20F36, 81T40)

— (*with* Martellini, Maurizio; Mintchev, M.) Chern-Simons theory, link invariants and quasi-Hopf algebras. *Knots* 90 (*Osaka*, 1990), 195–212, *de Gruyter, Berlin*, 1992. (Michael Kapovich) **93g:57007** 57M25 (17B37, 20F36, 81R10, 81T13)

— The universal link polynomial. *Internat. J. Modern Phys. A* **7** (1992), *no.* 5, 877–945. (Summary) **93g:57008** 57M25 (81T13)

— (*with* Volpi, F.) Two-particle scattering amplitude in gauge ISO(2, 1) quantum gravity. *Phys. Lett. B* **275** (1992), *no.* 1-2, 33–38. (Yu. N. Obukhov) **93f:83040** 83C45

Guaiana, Giovanna (*with* Restivo, Antonio; Salemi, Sergio) Star-free trace languages. *Theoret. Comput. Sci.* **97** (1992), *no.* 2, 301–311. (Manfred Armbrust) **93c:68048** 68Q45 (20M35)

Gualtieri, M. I. (*with* Costabile, C.; Costabile, Francesco) Generalization of the methods of Nyström. (Italian. English summary) *Rend. Mat. Appl.* (7) **11** (1991), *no.* 3, 447–469. (Summary) **93b:65092** 65L05

Guan, Ai Wen (*with* Shi, He) q-analog of Li Shan-lan identity. (English summary) *Systems Sci. Math. Sci.* **3** (1990), *no.* 4, 308–326. (Gloria Olive) **93f:05012** 05A30 (01A25, 01A60, 05A10, 05A19)

Guan, D. J. (*with* Frederickson, Greg N.) Preemptive ensemble motion planning on a tree. (English summary) *SIAM J. Comput.* **21** (1992), *no.* 6, 1130–1152. (Summary) **93k:68043** 68Q25 (68R10, 90B06, 90B10)

Guan, Daniel *see* **Guan, Zhuang Dan**

Guan, Deng Jun (*with* Yue, Chan Jan) Generalization operation and properties of the interval grey number. (English summary) *J. Grey System* **3** (1991), *no.* 1, 59–66. 04A72

Guan, Jian (*with* Wang, L.; Owens, David H.) Internal model adaptive control systems. (English summary) *Adaptive systems in control and signal processing*, 1989 (*Glasgow*), 135–139, *IFAC Sympos. Ser.*, 1990, *No.* 1, *Pergamon, Oxford*, 1990. (*see* **93j:93007**) 93C40

Guan, Ke Ying The structure of energy spectrum of solid and the bifurcation of an autonomous system on torus T^2. *Chinese Sci. Bull.* **34** (1989), *no.* 22, 1851–1853. 58F14 (34C23, 34L40)

Guan, P. *see* **Guan, Puhua**

Guan, Ping (*with* Wang, Yuan Ming) On existence of weak solution to a kind of semiconductor equation affected by a magnetic field. (English summary) *J. Southeast Univ.* (*English Ed.*) **7** (1991), *no.* 2, 49–58. (Summary) **93m:35041** 35D05 (35M20, 35Q60)

Guan, Puhua (*with* Emamy-K., M. R.; Rivera-Vega, Pedro I.) On the characterization of the maximum squareless subgraphs of 5-cube. (English summary) Proceedings of the Twenty-third Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, FL, 1992). *Congr. Numer.* **88** (1992), 97–109. (Summary) **93j:05126** 05C75

Guan, Xi Wen (*with* Yin, Chun Hao; Xiong, Zhuang) Algebraic Bethe-ansatz equations for one-dimensional small-polaron models. (Chinese. English summary) *Sichuan Shifan Daxue Xuebao Ziran Kexue Ban* **14** (1991), *no.* 4, 68–71. (Summary) **93b:82015** 82B20 (81V70)

— (*with* Yin, Chun Hao; Xiong, Zhuang) Connections between the coupled sinh-Gordon equations and the infinity of conservation laws for the Hirota-Satsuma equations. (Chinese. English summary) *Sichuan Shifan Daxue Xuebao Ziran Kexue Ban* **14** (1991), *no.* 4, 72–76. (Summary) **93c:35144** 35Q53 (58F07)

— (*with* Yin, Chun Hao; Xiong, Zhuang) The classical Yang-Baxter equation and an osp(2, 1) Gaudin model. (Chinese. English summary) *Sichuan Shifan Daxue Xuebao Ziran Kexue Ban* **14** (1991), *no.* 5, 64–65. (Summary) **93c:82020** 82B23

— (*with* Xiong, Zhuang; Zhou, Huan Qiang) A quantum integrable supersymmetric multiple three-wave interaction model. *J. Phys. A* **25** (1992), *no.* 11, L643–L645. (Gheorghe Zet) **93c:81241** 81T60

— (*with* Xiong, Zhuang; Zhou, Huan Qiang) Classical Yang-Baxter equations and quantum $\mathrm{gl}(p, q)$-Gaudin model. *Modern Phys. Lett. A* **7** (1992), *no.* 18, 1647–1649. (Dmitrii I. Gurevich) **93h:17029** 17B37 (82B23)

Guan, Xiaohong (*with* Luh, Peter B.) A new parallel algorithm for optimal control problems of interconnected systems. (English summary) *Internat. J. Control* **56** (1992), *no.* 6, 1275–1297. (E. S. Lee) **93k:49028** 49M30 (93A14, 93B40, 93C55)

Guan, Xiaojun (*with* Mural, Richard; Mann, Reinhold; Uberbacher, Edward) On parallel search of DNA sequence databases. (English summary) *Parallel processing for scientific computing* (*Houston, TX*, 1991), 332–337, *SIAM, Philadelphia, PA*, 1992. (*see* **93g:65178**) 65K05 (65Y05, 92D20)

Guan, Ying Nan (*with* Liu, Shuang Zhe) Applications of the theory of linear structure for Hankel matrices and matrix equations. (Chinese. English and Chinese summaries) *J. Northeast Univ. Tech.* **13** (1992), *no.* 2, 200–210. (Gong Ning Chen) **93m:15039** 15A57 (15A24)

Guan, Yu Lin (*with* Sun, Mao Xiang; Wang, Shu Guang; Wu, Xue Man; Feng, Xi Sheng) An algorithm for generalized predictive pole-placement feedforward control. (Chinese. English and Chinese summaries) *Inform. and Control* (*Shenyang*) **21** (1992), *no.* 6, 338–342. 93B55 (93B40)

Guan, Zhao Zhi *see* **Tang, Ting You**

Guan, Zhi (*with* Han, Hou De; He, Bin) Boundary element approximation of Steklov eigenvalue problem. *Theory and applications of boundary element methods* (*Beijing*, 1991), 9–15, *Internat. Acad. Publ., Beijing*, 1991. (*see* **93b:65008**) 65N38 (65N25)

— (*with* Han, Hou De) An analysis of the boundary element approximation of Steklov eigenvalue problem. *Numerical methods for partial differential equations* (*Tianjin*, 1991), 35–51, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93b:65006**) 65N38

Guan, Zhi Cheng Existence of solutions to the problem of nonequilibrium phase change. (Italian summary) *Rend. Istit. Mat. Univ. Trieste* **21** (1989), *no.* 1, 39–50 (1991). (Cristina Turner) **93a:80006** 80A22 (35K05, 35R35)

— On a free boundary problem modelling thermal oxidation of silicon. (German and Russian summaries) *Z. Anal. Anwendungen* **10** (1991), *no.* 1, 43–48. (Riccardo Ricci) **93c:80008** 80A22 (35R35)

Guan, Zhi Hong (*with* Liu, Dai Fang) Oscillation of solutions to linear retarded differential systems with matrix coefficients. (Chinese. English summary) *J. Central China Normal Univ. Natur. Sci.* **26** (1992), *no.* 4, 533–534. 34K15

Guan, Zhong An extended Glivenko-Cantelli theorem. *J. Harbin Inst. Tech.* **24** (1992), *no.* 3, 109–112. 60F15

Guan, Zhuang Dan (*with* Dorfmeister, Josef) Classification of compact homogeneous pseudo-Kähler manifolds. *Comment. Math. Helv.* **67** (1992), *no.* 4, 499–513. (B. Gilligan) **93i:32042** 32M10 (53C55)

— (*with* Dorfmeister, Josef) Supplement to: "Fine structure of reductive pseudo-Kählerian spaces" [Geom. Dedicata **39** (1991), no. 3, 321–338; MR 92h:53081]. *Geom. Dedicata* **42** (1992), *no.* 2, 241–242. (Editors) **93b:53055** 53C55 (53C30)

— Stability of Hermitian vector bundles—a quantitative point of view. *Internat. J. Math.* **3** (1992), *no.* 4, 477–481. (Steven B. Bradlow) **93k:32067** 32L07 (53C07)

Guangxue, Han *see* **Han, Guang Xue**

Guangzhong, Liu *see* **Liu, Guang Zhong**

Guardabassi, Guido O. Nicely nonlinear modelling and control. *Systems, models and feedback: theory and applications* (*Capri*, 1992), 265–274, *Progr. Systems Control Theory*, 12, *Birkhäuser Boston, Boston, MA*, 1992. (*see* **93a:93006**) 93A30 (93C10)

durán Guardeño, Antonio J. *see* **Durán Guardeño, Antonio J.**

Guardiola, R. (*with* Ros, J.) The anharmonic oscillator $-d^2/dx^2 + x^2 + b/x^4 + c/x^6$ for extreme values of the anharmonicity constants. *J. Phys. A* **25** (1992), *no.* 5, 1351–1372. (M. Demuth) **93b:81059** 81Q15

— (*with* Aguilera-Navarro, V. C.; Fernández, Francisco M.; Ros, J.) Large-order perturbation expansions for the charged harmonic oscillator. (English summary) *J. Phys. A* **25** (1992), *no.* 23, 6379–6392. (Summary) **93k:81049** 81Q15

— (*with* Solís, M. A.; Ros, J.) Strong-coupling expansion for the anharmonic oscillators $-d^2/dx^2 + x^2 + \lambda x^{2N}$. *Nuovo Cimento B* (11) **107** (1992), *no.* 6, 713–724. (Peter N. Zhevandrov) **93f:81033** 81Q15

Guariglia, Emma K-triangular functions on an orthomodular lattice and the Brooks-Jewett theorem. (Serbo-Croatian summary) *Rad. Mat.* **7** (1991), *no.* 2, 241–251. (Vladimir Rogalewicz) **93b:06021** 06C15 (03G12, 28B10, 81P10)

Guarnaccia, J. F. (*with* Pinder, G. F.) A collocation based parallel algorithm to solve two phase flow and transport problems in porous media. (English summary) *Parallel processing for scientific computing* (*Houston, TX*, 1991), 263–268, *SIAM, Philadelphia, PA*, 1992. (*see* **93g:65178**) 65N22 (65Y05, 76M25, 76S05, 76T05)

Guarneri, Italo (*with* Borgonovi, Fausto) Irregular scattering and quantum transport fluctuations. *J. Phys. A* **25** (1992), *no.* 11, 3239–3259. (Summary) **93f:82050** 82C70

Guazzelli, E. The motion of defects in convective structures of the elliptical shear instability of a nematic. (English summary) *Nematics* (*Orsay*, 1990), 141–171, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 332, *Kluwer Acad. Publ., Dordrecht*, 1991. (*see* **93d:58007**) 76A15

Gubaidullin, S. M. (*with* Shikin, E. V.) Tracking domains on a cylinder and a torus. (Russian. Russian summary) *Vestnik Moskov. Univ. Ser. XV Vychisl. Mat. Kibernet.* **1992**, *no.* 2, 46–50, 74; *translation in Moscow Univ. Comput. Math. Cybernet.* **47** (1992), *no.* 2, 45–48. (Summary) **93f:90207** 90D26 (70Q05)

Gubal', L. O. (*with* Kostenko, V. G.) Approximate solution of a mixed problem for a two-dimensional parabolic system of equations. (Ukrainian. Russian summary) *Visnik L'viv. Derzh. Univ. Ser. Mekh.-Mat. No.* 30 (1988), 8–13, 72. 65M99

— (*with* Kostenko, V. G.; Gera, B. V.) Determination of the heat emission coefficient in an inverse problem for the heat equation. (Ukrainian) *Mat. Metody i Fiz.-Mekh. Polya No.* 33 (1991), 9–13; *translation in J. Soviet Math.* **65** (1993), *no.* 5, 1814–1817. (S. T. Tikhonchuk) **93d:35176** 35R30 (35K05, 80A23)

Gubar', A. Yu. (*with* Arsen'ev, S. A.; Rykunov, L. N.; Shelkovnikov, N. K.) On the effect of frequency division in spectra of surface gravitational waves. (Russian) *Dokl. Akad. Nauk* **322** (1992), *no.* 6, 1062–1064. 76B15 (86A15)

— (*with* Arsen'ev, S. A.; Rykunov, L. N.; Shelkovnikov, N. K.) A new type of instability of long waves in shallow water: nonlinear sign-variable viscosity in tides. (Russian) *Dokl. Akad. Nauk* **323** (1992), *no.* 1, 58–61. (Radyadour Kh. Zeytounian) **93g:76041** 76D33 (76B15, 76E20, 86A05)

Gubeladze, Joseph The elementary action on unimodular rows over a monoid ring. *J. Algebra* **148** (1992), *no.* 1, 135–161. (L. N. Vaserstein and E. R. Wheland) **93e:19001** 19A13

Gubreev, G. M. (*with* Dzhrbashyan, A. M.) Functions of generalized bounded type in spectral theory of nonweak contractions. Analyse complexe (Bucharest, 1989). *Rev. Roumaine Math. Pures Appl.* **36** (1991), *no.* 3-4, 147–154. (E. Durszt) **93e:47014** 47A45 (30D99, 47A10, 47A56, 47B10)

— Spectral analysis of biorthogonal expansions generated by Muckenhoupt weights. (Russian. English summary) *Zap. Nauchn. Sem. Leningrad. Otdel. Mat. Inst. Steklov.* (*LOMI*) **190** (1991), *Issled. po Linein. Oper. i Teor. Funktsii.* 19, 34–80, 185–186. (Yurii Lyubarskii) **93a:42014** 42C15 (42B30, 47A70, 47B99)

Guccione, Jorge Alberto (*with* Guccione, Juan José; Redondo, María Julia; Villamayor, Orlando Eugenio) Hochschild and cyclic homology of hypersurfaces. *Adv. Math.* **95** (1992), *no.* 1, 18–60. (Sue Geller) **93i:19002** 19D55 (18G60)

— (*with* Guccione, Juan José) Un critère homologique de lissité. (English and French summaries) [A homological smoothness criterion] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 5, 523–525. (Summary) **93g:13010** 13D03

— *see also* **Buenos Aires Cyclic Homology Group, 93b:19002**

Guccione, Juan José (*with* Guccione, Jorge Alberto; Redondo, María Julia; Villamayor, Orlando Eugenio) Hochschild and cyclic homology of hypersurfaces. *Adv. Math.* **95** (1992), *no.* 1, 18–60. (Sue Geller) **93i:19002** 19D55 (18G60)

— (*with* Guccione, Jorge Alberto) Un critère homologique de lissité. (English and French summaries) [A homological smoothness criterion] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 5, 523–525. (Summary) **93g:13010** 13D03

— *see also* **Buenos Aires Cyclic Homology Group, 93b:19002**

van Gucht, Dirk *see* **Van Gucht, Dirk**

Guckenheimer, John (*with* Holmes, Philip J.) ★ Nonlinear oscillations, dynamical systems, and bifurcations of vector fields. Revised and corrected reprint of the 1983 original. Applied Mathematical Sciences, 42. *Springer-Verlag, New York*, 1990. xvi+459 *pp. ISBN* 0-387-90819-6 (D. R. J. Chillingworth) **93e:58046** 58Fxx (34C15, 34C23, 58–02, 58F14, 70Kxx)

— (*with* Baesens, Claude; Kim, Seung-hwan; MacKay, Robert S.) Three coupled oscillators: mode-locking, global bifurcations and toroidal chaos. *Phys. D* **49** (1991), *no.* 3, 387–475. (Henk Broer) **93c:58155** 58F14 (34C15, 34C23, 58F13, 58F27, 70K50)

— (*with* Worfolk, Patrick) Instant chaos. (English summary) *Nonlinearity* **5** (1992), *no.* 6, 1211–1222. (Andrew C. Fowler) **93i:58105** 58F13 (34C23, 58F36)

— (*with* Mahalov, Alex) Resonant triad interactions in symmetric systems. *Phys. D* **54** (1992), *no.* 4, 267–310. (Mikhail Zaks) **93b:76028** 76D33 (34C37, 58F35, 76E99, 76U05)

— Symmetry properties of confined convective states. *Z. Angew. Math. Phys.* **43** (1992), *no.* 3, 422–429. (Summary) **93a:76043** 76E15 (34C35)

Gucker, Ernst F. *see* **Peitgen, Heinz-Otto et al., 93i:00001** *and* **93i:00002a**

Gudadhe, A. S. LM-spaces, distributional Laplace-Mellin transform and shift-form invariant system. *J. Maulana Azad College Tech.* **24** (1991), 97–106. (P. M. Gupta) **93e:44003** 44A10 (44A15)

Guddanti, Suresh (*with* Mounfield, William Pratt, Jr.; Grujić, Ljubomir T.) Stability of an asynchronous TMS neutral network. (English summary) *Mathematics of the analysis and design of process control* (*Dublin*, 1991/*Lille*, 1991), 541–548, *North-Holland, Amsterdam*, 1992. (*see* **93g:93004**) 93D05 (68T05)

Guddat, J. (*with* Römisch, Werner; Schultz, Rüdiger) Some applications of mathematical programming techniques in optimal power dispatch. (English and German summaries) *Computing* **49** (1992), *no.* 3, 193–200. 90C90

Gudder, Stanley (*with* Schindler, C.) Quasi-discrete quantum Markov processes. (French summary) *Ann. Inst. H. Poincaré Phys. Théor.* **56** (1992), *no.* 2, 123–142. (Andrzej Łuczak) **93f:81062** 81S25 (81P20)

— Higher-dimensional analysis. (English summary) *Demonstratio Math.* **25** (1992), *no.* 3, 533–571. (Joe Thrash) **93m:58015** 58C99 (26E15, 46G99, 46N50, 46S99, 58C40)

— Realistic spin. *Found. Phys.* **22** (1992), *no.* 1, 107–120. (Koichiro Matsuno) **93c:81017** 81P15

— Quantum stochastic models. *Found. Phys.* **22** (1992), *no.* 6, 839–852. (D. J. Foulis) **93d:81007** 81P05

— Quantum probability model for spin. *Found. Phys. Lett.* **5** (1992), *no.* 1, 1–13. (D. J. Foulis) **93g:81005** 81P05

— Amplitudes on entities. *Internat. J. Theoret. Phys.* **31** (1992), *no.* 3, 463–513. (V. Ya. Kreĭnovich) **93b:81010** 81P05

— Systems of covariance in quantum probability. *Internat. J. Theoret. Phys.* **31** (1992), *no.* 5, 825–834. (D. J. Foulis) **93f:81010** 81P05

— Schrödinger and Dirac quantum random walks. (English summary) *Internat. J. Theoret. Phys.* **31** (1992), *no.* 11, 1973–1991. (Cheng Xun Wu) **93m:82016** 82B41 (81Q99, 81S25)

wolff von Gudenberg, Jürgen *see* **Wolff von Gudenberg, Jürgen**

Gudinas, P. *see* **Gudynas, Pranas P.**

Gudivok, P. M. (*with* Barannik, A. F.) A ring of projective integral p-adic representations of a finite group. (Ukrainian. Russian summary) *Mathematical investigations* (*Ukrainian*), 44–54, 117, *Zb. Nauk. Prats' L'viv. Mat. Tov.*, 1, *L'viv. Mat. Tov., L'viv*, 1991. (Summary) **93h:20012** 20C25

— Sylow subgroups of the general linear group over complete discretely valued rings. (Russian. Ukrainian summary) *Ukrain. Mat. Zh.* **43** (1991), *no.* 7-8, 918–924; *translation in Ukrainian Math. J.* **43** (1991), *no.* 7-8, 857–863 (1992). (V. A. Vishins'kiĭ) **93d:20086** 20G25

— On representations of finite groups over some factorial rings. *Proceedings of the International Conference on Algebra, Part* 1 (*Novosibirsk*, 1989), 173–181, *Contemp. Math.*, 131, *Part* 1, *Amer. Math. Soc., Providence, RI*, 1992. (Jeremy Haefner) **93g:20022** 20C20 (16S34, 20F24)

— (*with* Rud'ko, V. P.) An isomorphism of Sylow p-subgroups of the general linear group over a ring of integers. (Russian. English and Russian summaries) *Dokl. Akad. Nauk Ukrainy* **1992**, *no.* 9, 3–5, 168. (From the text) **93h:20051** 20G30

— (*with* Vashchuk, F. G.; Drobotenko, V. S.) Chernikov's p-groups and integral p-adic representations of finite groups. (Russian. Russian and Ukrainian summaries) *Ukraïn. Mat. Zh.* **44** (1992), *no.* 6, 742–753; *translation in Ukrainian Math. J.* **44** (1992), *no.* 6, 668–678 (1993). (S. M. Vovsi) **93j:20063** 20E22 (20C11)

— (*with* Oros, V. M.; Roĭter, A. V.) Representations of finite p-groups over a ring of formal power series with integer p-adic coefficients. (Russian. Russian and Ukrainian summaries) *Ukraïn. Mat. Zh.* **44** (1992), *no.* 6, 753–765; *translation in Ukrainian Math. J.* **44** (1992), *no.* 6, 678–689 (1993). (A. S. Kondrat'ev) **93m:20010** 20C11 (20D15)

Gudkov, D. A. *see* **Arnol'd, V. I., 93m:01052**

Gudkov, V. V. Solvability of a boundary value problem for a one-dimensional model of a semiconductor device. (Russian. English, Russian and Latvian summaries) *Mathematics. Differential equations* (*Russian*), 42–53, iv, *Latv. Univ. Zinat. Raksti*, 570, *Latv. Univ., Riga*, 1992. (From the text) **93f:34040** 34B15 (34E05, 34E15, 78A55)

— Existence and uniqueness of a solution of a boundary value problem for a drift-diffusion one-dimensional model of a semiconductor device. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **32** (1992), *no.* 6, 917–928; *translation in Comput. Math. Math. Phys.* **32** (1992), *no.* 6, 793–802. (Summary) **93c:34053** 34B15 (78A55)

Gudmundsson, Sigmundur (*with* Baird, Paul) p-harmonic maps and minimal submanifolds. *Math. Ann.* **294** (1992), *no.* 4, 611–624. (Caio J. C. Negreiros) **93j:58030** 58E20 (53C42)

— Harmonic morphisms between spaces of constant curvature. (English summary) *Proc. Edinburgh Math. Soc.* (2) **36** (1993), *no.* 1, 133–143. (Martin A. Guest) **93j:58034** 58E20

Gudmundsson, Thorkell (*with* Kenney, Charles; Laub, Alan J.) Scaling of the discrete-time algebraic Riccati equation to enhance stability of the Schur solution method. *IEEE Trans. Automat. Control* **37** (1992), *no.* 4, 513–518. (Ian Petersen) **93b:93042** 93B40 (49N10, 93C55, 93D05)

Gudynas, Pranas P. An estimate of the rate of convergence in the CLT for dependent Hilbert space valued random variables. (English summary) *New trends in probability and statistics, Vol.* 1 (*Bakuriani*, 1990), 111–122, *VSP, Utrecht*, 1991. (Summary) **93h:60011** 60B12

— Refinements of the central limit theorem for homogeneous Markov chains. (Russian) *Probability theory*, 6 (*Russian*), 200–218, *Itogi Nauki i Tekhniki, Akad. Nauk SSSR, Vsesoyuz. Inst. Nauchn. i Tekhn. Inform., Moscow*, 1991. (Gh. Oprişan) **93f:60027** 60F05 (60J25)

— An estimate for the rate of convergence in the central limit theorem for dependent random elements in a Hilbert space. (Russian. English and Lithuanian summaries)

Litovsk. Mat. Sb. **31** (1991), *no.* 1, 50–61; *translation in Lithuanian Math. J.* **31** (1991), *no.* 1, 34–42 (1992). (Summary) **93d:60010** 60B12

— (*with* Sakalauskas, L. L.) Distribution of extrema of multidimensional Gaussian sequences. (Russian. Russian and Lithuanian summaries) *Liet. Mat. Rink.* **32** (1992), *no.* 1, 39–52. (Summary) **93k:60131** 60G70 (60F05)

Gudz', R. V. (*with* Grits'ko, È. G.; Bukavīna, R. Z.) Numerical-analytical determination of a stationary solution for the transport equation in a locally nonhomogeneous domain. (Ukrainian. Russian summary) *Visnik L'viv. Derzh. Univ. Ser. Mekh.-Mat. No.* 30 (1988), 43–46, 76. 65P05

Guechi, L. (*with* Chetouani, L.; Hammann, T. F.) Algebraic treatment of a general noncentral potential. (English summary) *J. Math. Phys.* **33** (1992), *no.* 10, 3410–3418. (Martin Kummer) **93k:81035** 81Q05

Guedes de Oliveira, António (*with* Cordovil, Raul) A note on the fundamental group of the Salvetti complex determined by an oriented matroid. (English summary) *European J. Combin.* **13** (1992), *no.* 6, 429–437. (Hiroaki Terao) **93j:52021** 52B40 (05B35, 52B30)

Guelman, M. Control strategies in a planar pursuit evasion game with energy contraints. (English summary) *Differential games—developments in modelling and computation* (*Espoo*, 1990), 28–37, *Lecture Notes in Control and Inform. Sci.*, 156, *Springer, Berlin*, 1991. (*see* **93c:90003**) 90D25

Guendelman, E. I. (*with* Rabinowitz, A. I.) Hedgehog compactification. (English summary) *Phys. Rev. D* (3) **47** (1993), *no.* 8, 3474–3475. (Summary) **93m:83075** 83E15

Guendouz, F. (*with* Vasil'ev, R. K.) On the order of approximation of continuous functions by positive linear operators of finite rank. *J. Approx. Theory* **69** (1992), *no.* 2, 133–140. (Heinz H. Gonska) **93c:41039** 41A36 (41A25)

Guennoun, Zine El Abdine Méthode de sur et sous-solutions appliquée à des problèmes périodiques. (English summary) [The method of upper and lower solutions applied to periodic problems] *Ann. Sci. Math. Québec* **15** (1991), *no.* 2, 153–163. (Bogdan Przeradzki) **93c:34094** 34C25 (34B15, 47H15)

— Sur un problème périodique. [On a periodic problem] *Canad. Math. Bull.* **35** (1992), *no.* 2, 186–193. (L. E. Bobisud) **93c:34093** 34C25 (34B15)

Guénoche, Alain (*with* Barthélémy, Jean-Pierre) ★ Trees and proximity representations. With a preface by Michel Minoux. Translated from the French by Gregor Lawden. Wiley-Interscience Series in Discrete Mathematics and Optimization. *John Wiley & Sons, Ltd., Chichester*, 1991. xvi+238 *pp. ISBN* 0-471-92263-3 (Ding Zhu Du) **93b:05042** 05C05 (68T30)

— Énumération des partitions de diamètre minimum. (English and French summaries) [Enumeration of partitions with minimum diameter] Graph theory and combinatorics (Marseille-Luminy, 1990). *Discrete Math.* **111** (1993), *no.* 1-3, 277–287. (Summary) **93j:05081** 05C30

— Hiérarchies conceptuelles de données binaires. (English and French summaries) [Conceptual clustering of binary attributes] *Math. Inform. Sci. Humaines No.* 121 (1993), 23–34. 68T10 (62H30)

Guenot, Jacques *see* **Seminar: Complex Analysis and Geometry, 93m:32003**

Guenther, Grant R. (*with* Davison, L.) Maximal run lengths in binary strings. Proceedings of the Twenty-second Southeastern Conference on Combinatorics, Graph Theory, and Computing (Baton Rouge, LA, 1991). *Congr. Numer.* **82** (1991), 129–138. (Wayne M. Dymacek) **93c:05005** 05A10 (05A17)

— (*with* Davison, L.) Sums involving multinomial coefficients. *J. Combin. Math. Combin. Comput.* **11** (1992), 13–22. (Summary) **93b:05008** 05A10

Guenther, Ronald B. Obituary: Lothar Collatz, 1910–1990. *Aequationes Math.* **43** (1992), *no.* 2-3, 117–119. (Editors) **93c:01041a** 01A70

Guermond, Jean-Luc Numerical quadratures for layer potentials over curved domains in $\mathbf{R}^3$. (English summary) *SIAM J. Numer. Anal.* **29** (1992), *no.* 5, 1347–1369. (G. A. Evans) **93g:65033** 65D32 (65N38, 65R20)

bleuzen-Guernalec, N. *see* **Bleuzen-Guernalec, N.**

le Guernic, Paul *see* **Le Guernic, Paul**

Guerra, Francesco (*with* Aldrovandi, Ettore; Dohrn, Daniela) The Lagrangian approach to stochastic variational principles on curved manifolds. Application of statistical methods in theoretical physics and fluid mechanics (Calcutta, 1991). *Acta Appl. Math.* **26** (1992), *no.* 3, 219–236. (Jacques Vauthier) **93m:58123** 58G32 (81P20)

— *see also* **Probabilistic methods in mathematical physics, 93g:81002**

jiménez Guerra, P. *see* **Jiménez Guerra, P.**

Guerraggio, A. (*with* Giorgi, Giorgio) On a characterization of Clarke's tangent cone. *J. Optim. Theory Appl.* **74** (1992), *no.* 2, 369–372. 49J52

Guerreiro, R. A. de T. (*with* Casanova, M. A.; Hemerly, A. S.) Explaining SLDNF resolution with nonnormal defaults. (English summary) *IBM J. Res. Develop.* **36** (1992), *no.* 3, 347–359. (Summary) **93i:68037** 68N17 (68Q55)

— (*with* Hemerly, A. S.; Casanova, M. A.) STORK and PENGUIN: logic programming systems using general clauses and defaults. (English summary) *IBM J. Res. Develop.* **36** (1992), *no.* 3, 361–374. 68N17

guil Guerrero, F. *see* **Guil Guerrero, F.**

bobillo Guerrero, Pablo *see* **Bobillo Guerrero, Pablo**

Guerriero, Gabriele On the existence and stability of a steady solution to a nonlinear integral equation of the particle transport theory. (Italian summary) *Rend. Accad. Sci. Fis. Mat. Napoli* (4) **56** (1989), 163–173 (1990). (D. A. Shulaia) **93c:82060** 82C70 (45G10)

— Perturbative method for a nonlinear integral equation of the particle transport theory. (English summary) *Waves and stability in continuous media* (*Sorrento*, 1989), 162–167, *Ser. Adv. Math. Appl. Sci.*, 4, *World Sci. Publishing, River Edge, NJ*, 1991. (*see* **93g:00030**) 45K05 (82C70)

Guesnerie, Roger (*with* Chiappori, Pierre-André; Geoffard, Pierre-Yves) Sunspot fluctuations around a steady state: the case of multidimensional, one-step forward looking economic models. (English summary) *Econometrica* **60** (1992), *no.* 5, 1097–1126. (Summary) **93e:90016** 90A16 (90A14)

Guest, M. A. Harmonic two-spheres in complex projective space and some open problems. *Exposition. Math.* **10** (1992), *no.* 1, 61–87. (Giorgio Valli) **93c:58053** 58E20

Guez, Allon (*with* Rusnak, Ilan; Bar-Kana, Izhak) Multiple objective optimization approach to adaptive and learning control. (English summary) *Internat. J. Control* **56** (1992), *no.* 2, 469–482. 93E35 (90C29)

Gugenheim, V. K. A. M. (*with* Lambe, L. A.; Stasheff, J. D.) Perturbation theory in differential homological algebra. II. *Illinois J. Math.* **35** (1991), *no.* 3, 357–373. (Ronald Brown) **93e:55018** 55R20 (18G10, 55U15)

Guha, A. Jump conditions across normal shock waves in pure vapour-droplet flows. (English summary) *J. Fluid Mech.* **241** (1992), 349–369. (Summary) **93f:76063** 76L05 (76N15, 76T05)

Guha, N. (*with* De, U. C.) On generalised con-harmonically 2-recurrent Riemannian manifolds. (English summary) *Bull. Calcutta Math. Soc.* **83** (1991), *no.* 5, 457–460. (Andrzej Bucki) **93j:53047** 53C20

— (*with* De, U. C.) On a type of Sasakian manifold. (English summary) *Math. Balkanica* (*N.S.*) **6** (1992), *no.* 2, 187–191. (Andrzej Bucki) **93g:53062** 53C25

Guha, P. (*with* Roy Chowdhury, A.) Multidimensional analogue of Virasoro algebra and quantum higher-order water wave equation. (English summary) *Internat. J. Theoret. Phys.* **32** (1993), *no.* 2, 347–351. (I. S. Krasil'shchik) **93k:58114** 58F07 (17B68, 81R10)

Guha, Sumanta (*with* Sen, Arunabha; Deng, Haiyong) On a graph partition problem with application to VLSI layout. *Inform. Process. Lett.* **43** (1992), *no.* 2, 87–94. 68R10 (05C90)

— Parallel computation of internal and external farthest neighbors in simple polygons. *Internat. J. Comput. Geom. Appl.* **2** (1992), *no.* 2, 175–190. (Michael S. Martin) **93f:68094** 68U05 (52B55, 68Q10, 68Q25)

Guhr, Thomas (*with* Frisk, Hans) Spin-orbit coupling in semiclassical approximation. (English summary) *Ann. Physics* **221** (1993), *no.* 2, 229–257. 81Q20

Gui, Changfeng (*with* Ni, Wei-Ming; Wang, Xue Feng[1]) On the stability and instability of positive steady states of a semilinear heat equation in $\mathbf{R}^n$. *Comm. Pure Appl. Math.* **45** (1992), *no.* 9, 1153–1181. (Yoshio Yamada) **93h:35095** 35K55 (35B35)

— Positive entire solutions of the equation $\Delta u + f(x,u) = 0$. *J. Differential Equations* **99** (1992), *no.* 2, 245–280. (C. A. Swanson) **93h:35065** 35J60 (34C11, 35B05)

Gui, Wei Hua (*with* Wu, Min; Guo, Hai Jiao; Wang, Hong Gui) H_∞ state feedback control on the basis of a state observer. (Chinese. English and Chinese summaries) *Control Theory Appl.* **9** (1992), *no.* 6, 660–665. 93B36

Gui, Yuan Xing Thermal properties of fermion fields in η-ξ space time. (Chinese. English summary) *J. Dalian Univ. Tech.* **32** (1992), *no.* 1, 5–10. (Summary) **93b:81185** 81T20

— Fermion fields in η-ξ spacetime. *Phys. Rev. D* (3) **45** (1992), *no.* 2, 697–700. (Piret Kuusk) **93c:81148** 81T20 (83C47)

— η-ξ spacetime and thermofields. (English summary) *Phys. Rev. D* (3) **46** (1992), *no.* 4, 1869–1872. (Summary) **93g:81111** 81T20 (81V17, 83C47)

Guía, Carlos (*with* Ordáz, Oscar) Sufficient condition for oriented graphs to have a Hamiltonian path. (Spanish summary) *Acta Cient. Venezolana* **43** (1992), *no.* 1, 11–13. (Summary) **93b:05106** 05C45 (05C20)

Guiaşu, Silviu Deducing the Schrödinger equation from minimum χ^2. *Internat. J. Theoret. Phys.* **31** (1992), *no.* 7, 1153–1176. (M. J. Mączyński) **93f:81011** 81P05 (62E99, 81Q05)

Guibas, Leonidas J. (*with* Edelsbrunner, Herbert; Sharir, Micha) The complexity of many faces in arrangements of lines and of segments. (English summary) *Proceedings of the Fourth Annual Symposium on Computational Geometry* (*Urbana, IL*, 1988), 44–55, *ACM, New York*, 1988. (*see* **93k:68003**) 68R10 (68Q30)

— (*with* Edelsbrunner, Herbert; Hershberger, John; et al.) Implicitly representing arrangements of lines or segments. (English summary) *Proceedings of the Fourth Annual Symposium on Computationo[1] Geometry* (*Urbana, IL*, 1988), 56–69, *ACM, New York*, 1988. (*see* **93k:68003**) 68U05 (68R10)

— (*with* Edelsbrunner, Herbert; Hershberger, John; et al.) On arrangements of Jordan arcs with three intersections per pair. (English summary) *Proceedings of the Fourth Annual Symposium on Computational Geometry* (*Urbana, IL*, 1988), 258–265, *ACM, New York*, 1988. (*see* **93k:68003**) 57N05 (52B55, 68U05)

— (*with* Sharir, Micha; Sifrony, Shmuel) On the general motion planning problem with two degrees of freedom. (English summary) *Proceedings of the Fourth Annual Symposium on Computational Geometry* (*Urbana, IL*, 1988), 289–298, *ACM, New York*, 1988. (*see* **93k:68003**) 68U05

— (*with* Knuth, Donald E.; Sharir, Micha) Randomized incremental construction of Delaunay and Voronoĭ diagrams. *Algorithmica* **7** (1992), *no.* 4, 381–413. (David Fernández-Baca) **93e:68130** 68U05 (52B55, 68Q25, 68R10)

— (*with* Chazelle, Bernard; Edelsbrunner, Herbert; et al.) Counting and cutting cycles of lines and rods in space. *Comput. Geom.* **1** (1992), *no.* 6, 305–323. (Henk Meijer) **93m:68164** 68U05 (65Y25, 68Q25, 68R05)

— (*with* Edelsbrunner, Herbert; Pach, János; Pollack, Richard; Seidel, Raimund; Sharir, Micha) Arrangements of curves in the plane—topology, combinatorics, and algorithms. *Theoret. Comput. Sci.* **92** (1992), *no.* 2, 319–336. (Summary) **93g:68136** 68U05

Guibourg, Denis Inégalités maximales pour l'opérateur de Schrödinger. (English and French summaries) [Maximal inequalities for Schrödinger operators] *C. R. Acad. Sci. Paris Sér. I Math.* **316** (1993), *no.* 3, 249–252. (Summary) **93k:35053** 35B50 (35J10, 47F05, 81Q10)

Guichard, David R. (*with* Krussel, John W.) Pair labelings of graphs. *SIAM J. Discrete Math.* **5** (1992), *no.* 1, 144–149. (J. R. Griggs) **93d:05052** 05C15 (05C35, 05C78)

Guichard, Frédéric (*with* Álvarez León, Luis; Lions, Pierre-Louis; Morel, Jean-Michel) Équations fondamentales de l'analyse multiéchelle des films. (English and French summaries) [Fundamental equations of the multiscale analysis of movies] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 11, 1145–1148. (Summary) **93j:68217** 68U10

Guida, M. (*with* Calabria, R.; Pulcini, G.) Power bounds for a test of equality of trends in k independent power law processes. (English summary) *Comm. Statist. Theory Methods* **21** (1992), *no.* 11, 3275–3290. 62F03

Guida, Marco (*with* Marchesi, Paola; Basaglia, Giorgio) Knowledge-based decision support systems for manufacturing decision-making. The Pirelli experience. (English summary) *Inform. Decision Tech.* **18** (1992), *no.* 5, 347–361. 90B50

Guidetti, Davide A maximal regularity result with applications to parabolic problems with nonhomogeneous boundary conditions. *Rend. Sem. Mat. Univ. Padova* **84** (1990), 1–37 (1991). (Editors) **93a:35064** 35K20 (35B65, 46E35)

— Abstract linear parabolic problems with nonhomogeneous boundary conditions. *Semigroup theory and evolution equations* (*Delft*, 1989), 227–242, *Lecture Notes in Pure and Appl. Math.*, 135, *Dekker, New York*, 1991. (Juan J. Nieto) **93d:34104** 34G10 (35K35, 47N20)

Guidi, M. (*with* Adams, B. L.; Boehler, J.-P.; Onat, E. T.) Group theory and representation of microstructure and mechanical behavior of polycrystals. *J. Mech. Phys. Solids* **40** (1992), *no.* 4, 723–737. (Summary) **93b:73002** 73B05 (70G05, 73B10, 73S10, 82D25)

Guido, C. (*with* De Mitri, C.) G-fuzzy topological spaces and subspaces. V International Meeting on Topology in Italy (Italian) (Lecce, 1990/Otranto, 1990). *Rend. Circ. Mat.*

Palermo (2) *Suppl. No.* 29 (1992), 363–383. (Abd El-Sattar Dabbour) **93m:54015** 54A40 (03E72, 04A72, 94D05)

Guido, Daniele (*with* Longo, Roberto) Relativistic invariance and charge conjugation in quantum field theory. (English summary) *Comm. Math. Phys.* **148** (1992), *no.* 3, 521–551. (Stephen J. Summers) **93i:81121** 81T05 (46L60, 81T40)

Guidorizzi, Hamilton Luiz On the existence of periodic solutions for the equation $\ddot{x} + f(x)\dot{x} + g(x) = 0$. *Bol. Soc. Brasil. Mat. (N.S.)* **22** (1991), *no.* 1, 81–92. (J. O. C. Ezeilo) **93d:34076** 34C25

Guidorzi, R. P. (*with* Stoian, A.) Identification of data-compatible models for control applications. (English summary) *Mutual impact of computing power and control theory (Prague,* 1992), 115–120, *Czech. Acad. Sci., Prague,* 1992. (*see* **93f:93005**) 93B30 (93E10)

— Errors-in-variables identification in presence of nonindependent noise. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, I (Kobe,* 1991), 563–568, *Mita, Tokyo,* 1992. (*see* **93g:93005**) 93B30 (93E12)

Guidotti, Pablo E. (*with* Calvo, Guillermo A.) Optimal maturity of nominal government debt: an infinite-horizon model. (English summary) *Internat. Econom. Rev.* **33** (1992), *no.* 4, 895–919. 90A53 (90A60)

Guidry, Mike ★ Gauge field theories. An introduction with applications. A Wiley-Interscience Publication. *John Wiley & Sons, Inc., New York,* 1991. xviii+605 *pp. ISBN* 0-471-63117-5 (R. Delbourgo) **93g:81090** 81T13 (81–02)

podio-Guidugli, Paolo *see* **Podio-Guidugli, Paolo**

Guiggiani, M. (*with* Gigante, A.) A general algorithm for multidimensional Cauchy principal value integrals in the boundary element method. *Trans. ASME J. Appl. Mech.* **57** (1990), *no.* 4, 906–915. (Summary) **93b:73037** 73V10 (65N38)

— Direct evaluation of hypersingular integrals in 2D BEM. *Numerical techniques for boundary element methods (Kiel,* 1991), 23–34, *Notes Numer. Fluid Mech.,* 33, *Vieweg, Braunschweig,* 1992. (Mark Ainsworth) **93a:65165** 65N38 (65D30)

— (*with* Krishnasamy, G.; Rudolphi, T. J.; Rizzo, F. J.) A general algorithm for the numerical solution of hypersingular boundary integral equations. (English summary) *Trans. ASME J. Appl. Mech.* **59** (1992), *no.* 3, 604–614. (Summary) **93f:73109** 73V10

Guignard, Monique Solving makespan minimization problems with Lagrangean decomposition. (English summary) *Discrete Appl. Math.* **42** (1993), *no.* 1, 17–29. (Summary) **93k:90054** 90C10 (90C27, 90C35)

Guil, F. *see* **Guil Guerrero, F.**

mateos Guilarte, Juan *see* **Mateos Guilarte, Juan**

Guil Asensio, F. (*with* Guil Asensio, P. A.) On torsion theories induced by tilting modules. *Comm. Algebra* **20** (1992), *no.* 7, 2015–2027. (Ibrahim Assem) **93h:16013** 16G10 (16D90, 16S90)

Guil Asensio, P. A. (*with* Guil Asensio, F.) On torsion theories induced by tilting modules. *Comm. Algebra* **20** (1992), *no.* 7, 2015–2027. (Ibrahim Assem) **93h:16013** 16G10 (16D90, 16S90)

— (*with* Gómez Pardo, J. L.) Linear compactness and Morita duality for Grothendieck categories. *J. Algebra* **148** (1992), *no.* 1, 53–67. (T. Albu) **93h:18017** 18E15 (16D90)

Guil Guerrero, F. (*with* Mañas, M.) Homogeneous manifolds and modified KdV equations. *J. Math. Phys.* **32** (1991), *no.* 7, 1744–1749. (From the text) **93a:58082** 58F07 (22E67, 35Q53, 58F37)

Guillard, H. (*with* Désidéri, J.-A.) Iterative methods with spectral preconditioning for elliptic equations. (English summary) *Spectral and high order methods for partial differential equations (Como,* 1989), 305–312, *North-Holland, Amsterdam,* 1990. (*see* **93d:65005**) 65N35 (65F10)

— (*with* Malé, J. M.; Peyret, Roger) Adaptive spectral methods with application to mixing layer computations. (English summary) *J. Comput. Phys.* **102** (1992), *no.* 1, 114–127. (Summary) **93e:76057** 76M25 (65M70, 76N10)

séro-Guillaume, O. E. *see* **Séro-Guillaume, O. E.**

Guillaume, Philippe (*with* Masmoudi, Mohamed) Dérivées d'ordre supérieur en optimisation de domaines. (English and French summaries) [Higher-order derivatives in shape optimization] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 7, 859–862. (Summary) **93f:49038** 49Q10 (49J52)

Guillemin, Fabrice (*with* Mazumdar, Ravi R.; Badrinath, Vivek; Kannurpatti, Raghavan) On pathwise behavior of queues. (English summary) *Oper. Res. Lett.* **12** (1992), *no.* 4, 263–270. (Summary) **93g:90038** 90B22 (60K25)

— (*with* Boyer, Jacqueline; Dupuis, Alain) Burstiness in broadband integrated networks. (English summary) *Performance Evaluation* **15** (1992), *no.* 3, 163–176. 90B22

Guillemin, Victor (*with* Sternberg, Shlomo) ★ Variations on a theme by Kepler. American Mathematical Society Colloquium Publications, 42. *American Mathematical Society, Providence, RI,* 1990. viii+88 *pp. ISBN* 0-8218-1042-1 (Ivailo M. Mladenov) **93a:58071** 58F06 (58F05, 70F05, 70H33, 81S10)

— (*with* Stenzel, Matthew) Grauert tubes and the homogeneous Monge-Ampère equation. *J. Differential Geom.* **34** (1991), *no.* 2, 561–570. (Giorgio Patrizio) **93e:32018** 32F07 (32E10)

Guillemot, M. De l'arithmetique égyptienne à l'arithmetique arabo-islamique. (Arabic summary) [From Egyptian arithmetic to Arabo-Islamic arithmetic] *Deuxième Colloque Maghrebin sur l'Histoire des Mathématiques Arabes (Tunis,* 1988), 95–105, A177, *Maghreb, Tunis,* 19??. (Jan P. Hogendijk) **93c:01010** 01A30 (01A16)

Guillén, F. (*with* Fernández Cara, Enrique) The existence of nonhomogeneous, viscous and incompressible flow in unbounded domains. (English summary) *Comm. Partial Differential Equations* **17** (1992), *no.* 7-8, 1253–1265. (Long An Ying) **93h:35157** 35Q30 (76D05)

sánchez Guillén, Joaquín *see* **Sánchez Guillén, Joaquín**

Guillén, Joaquín Sánchez *see* **Sánchez Guillén, Joaquín**

Guillerme, J. (*with* Dolecki, S.; Lignola, M. B.; Malivert, C.) Γ-inequalities and stability of generalized extremal convolutions. *Math. Nachr.* **152** (1991), 299–323. (Jean-Paul Penot) **93e:49020** 49J45 (47H19, 54A20)

decomps-Guilloux, A. *see* **Decomps-Guilloux, A.**

Guimarães, Florêncio F. The integral of the scalar curvature of complete manifolds without conjugate points. (English summary) *J. Differential Geom.* **36** (1992), *no.* 3, 651–662. (Paul E. Ehrlich) **93j:53055** 53C22 (53C20)

Guimaraes, J. E. F. (*with* Heppler, G. R.; Czapor, S. R.) On the derivation and reduction of C^1 trigonometic basis functions using Maple. (English summary) *J. Symbolic Comput.* **13** (1992), *no.* 6, 643–675. (Summary) **93d:65117** 65T10

Guinea, F. (*with* Bonilla, L. L.) Collapse of the wave packet and chaos in a model with classical and quantum degrees of freedom. *Phys. Rev. A* (3) **45** (1992), *no.* 11, 7718–7728. (Summary) **93a:81030** 81Q05 (81P99, 81Q50)

Guñez, V. (*with* Sáez, E.; Szántó, I.) Small amplitude limit cycles for cubic systems. (English summary) *Canad. Math. Bull.* **36** (1993), *no.* 1, 54–63. (Summary) **93k:34060** 34C05 (34C23, 58F21)

Guinn, J. W. *see* **Leaver, Edward W., 93g:83066**

grattan-Guinness, Ivor *see* **Grattan-Guinness, Ivor**

Guitart, René Fonctions d'Euler-Jordan et de Gauss et exponentielle dans les semi-anneaux de Burnside. (English summary) [Euler-Jordan and Gauss functions and exponential in Burnside semirings] *Cahiers Topologie Géom. Différentielle Catégoriques* **33** (1992), *no.* 3, 253–260. (Summary) **93f:18008** 18B25 (19A22)

— (*with* Riguet, J.) Enveloppe karoubienne de catégories de Kleisli. (English summary) [The Karoubi envelope of Kleisli categories] *Cahiers Topologie Géom. Différentielle Catégoriques* **33** (1992), *no.* 3, 261–266. (Summary) **93f:18013** 18C20

Guivarc'h, Y. (*with* Taylor, John Christopher) The Martin compactification of the polydisc at the bottom of the positive spectrum. *Colloq. Math.* **60/61** (1990), *no.* 2, 537–546. (A. Hejfic (Zbl 727:31007)) **93a:31015** 31C35 (60J50)

Gukasyan, A. A. On the optimal stabilization of the motions of a manipulator with electromechanical drives. *J. Comput. Systems Sci. Internat.* **30** (1992), *no.* 5, 153–158; *translated from Izv. Akad. Nauk SSSR Tekhn. Kibernet.* **1991**, *no.* 4, 189–195 (*Russian. Russian summary*). 93C85 (93D15)

Gukelberger, Thilo *see* **Engeln-Müllges, Gisela, 93g:65001**

Gul, Faruk (*with* Postlewaite, Andrew) Asymptotic efficiency in large exchange economies with asymmetric information. (English summary) *Econometrica* **60** (1992), *no.* 6, 1273–1292. (Summary) **93f:90047** 90A35

— Savage's theorem with a finite number of states. *J. Econom. Theory* **57** (1992), *no.* 1, 99–110. (Yew-Kwang Ng) **93c:90017** 90A10 (90A08, 90A43)

Gulati, S. (*with* Padgett, W. J.) Kernel density estimation from record-breaking data. (English summary) With a discussion by Saul Blumenthal. *Survival analysis: state of the art (Columbus, OH,* 1991), 197–210, *NATO Adv. Sci. Inst. Ser. E Appl. Sci.,* 211, *Kluwer Acad. Publ., Dordrecht,* 1992. (*see* **93b:62005**) 62G05 (62N10)

Guldan, Filip Note on linear arboricity of graphs with large girth. *Czechoslovak Math. J.* **41(116)** (1991), *no.* 3, 467–470. (From the text) **93c:05064** 05C35

Güler, Osman Augmented Lagrangian algorithms for linear programming. (English summary) *J. Optim. Theory Appl.* **75** (1992), *no.* 3, 445–470. (Yin Zhang) **93i:90061** 90C05

— New proximal point algorithms for convex minimization. (English summary) *SIAM J. Optim.* **2** (1992), *no.* 4, 649–664. (Massimo Pappalardo) **93j:90076** 90C25 (65K05, 90C30)

Güler, Y. Integration of singular systems. (English summary) *Nuovo Cimento B* (11) **107** (1992), *no.* 10, 1143–1149. (Summary) **93k:70025** 70H05 (70F99, 70H20)

Gulidov, A. I. Organization of the computation process and the data structure in the numerical solution of dynamic problems of the mechanics of deformable media. (Russian) *Model. Mekh.* **5** (1991), *no.* 3, 127–141. (Jiří Nedoma) **93f:73111** 73V99 (73E50, 73V15)

Guliev, V. S. (*with* Lizorkin, P. I.) $\mathscr{B}$- and $\mathscr{L}$-classes of harmonic and holomorphic functions in the disc, and classes of boundary values. (Russian) *Dokl. Akad. Nauk SSSR* **319** (1991), *no.* 4, 806–810; *translation in Soviet Math. Dokl.* **44** (1992), *no.* 1, 215–219. (Jacques Mayer) **93e:30091** 30H05 (46E35, 46J99)

Guljanitsky, L. F. *see* **Gulyanitskii, L. F.**

Guljaš, B. (*with* Crnjac, M.; Miller, H. I.) On some questions of Ger, Grubb and Kraljević. *Acta Math. Hungar.* **57** (1991), *no.* 3-4, 253–257. (Karol Baron) **93e:28013** 28A99

Gull, Stephen F. (*with* Skilling, John) Bayesian maximum entropy image reconstruction. (English summary) *Spatial statistics and imaging (Brunswick, ME,* 1988), 341–367, *IMS Lecture Notes Monograph Ser.,* 20, *Inst. Math. Statist., Hayward, CA,* 1991. (*see* **93g:62004**) 62F15 (62M30, 68U10)

Gulledge, Thomas R. (*with* Ringuest, Jeffrey L.) An interactive multi-objective gradient search. (English summary) *Oper. Res. Lett.* **12** (1992), *no.* 1, 53–58. 90C29

Gulliksson, Mårten (*with* Wedin, Per-Åke) Modifying the QR-decomposition to constrained and weighted linear least squares. (English summary) *SIAM J. Matrix Anal. Appl.* **13** (1992), *no.* 4, 1298–1313. (Summary) **93e:65066** 65F25 (65F35, 65G05)

Gulliver, Robert Convergence of minimal submanifolds to a singular variety. (English summary) *Variational methods (Paris,* 1988), 297–307, *Progr. Nonlinear Differential Equations Appl.,* 4, *Birkhäuser Boston, Boston, MA,* 1990. (Summary) **93j:49041** 49Q05 (49J45, 58E15)

— A minimal surface with an atypical boundary branch point. *Differential geometry,* 211–228, *Pitman Monographs Surveys Pure Appl. Math.,* 52, *Longman Sci. Tech., Harlow,* 1991. (Kichoon Yang) **93d:53011** 53A10 (49Q05)

— Fiber evolution in the heat flow of harmonic maps. (English summary) *Nematics (Orsay,* 1990), 173–178, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.,* 332, *Kluwer Acad. Publ., Dordrecht,* 1991. (Summary) **93e:58036** 58E20 (58G11)

— (*with* Choe, Jaigyoung) The sharp isoperimetric inequality for minimal surfaces with radially connected boundary in hyperbolic space. *Invent. Math.* **109** (1992), *no.* 3, 495–503. (Cun-Jin Sun) **93m:53005** 53A10

— (*with* Choe, Jaigyoung) Isoperimetric inequalities on minimal submanifolds of space forms. (English summary) *Manuscripta Math.* **77** (1992), *no.* 2-3, 169–189. (Takehiro Itoh) **93k:53059** 53C42 (53C40)

Gulliver, T. Aaron Self-reciprocal polynomials and generalized Fermat numbers. *IEEE Trans. Inform. Theory* **38** (1992), *no.* 3, 1149–1154. (Stefan Dodunekov) **93h:11135** 11T06

— (*with* Bhargava, Vijay K.) Nine good rate $(m-1)/pm$ quasi-cyclic codes. *IEEE Trans. Inform. Theory* **38** (1992), *no.* 4, 1366–1369. 94B15

— (*with* Bhargava, Vijay K.) Some best rate $1/p$ and rate $(p-1)/p$ systematic quasi-cyclic codes over GF(3) and GF(4). *IEEE Trans. Inform. Theory* **38** (1992), *no.* 4, 1369–1374. 94B15

— (*with* Bhargava, Vijay K.) A systematic (16, 8) code for correcting double errors and detecting triple-adjacent errors. (English summary) *IEEE Trans. Comput.* **42** (1993), *no.* 1, 109–112. (Summary) **93j:94030** 94B15

Gulrajani, Ramesh M. (*with* Iakovidis, Ilias) Improving Tikhonov regularization with linearly constrained optimization: application to the inverse epicardial potential solution. (English summary) *Math. Biosci.* **112** (1992), *no.* 1, 55–80. 92Cxx (90Cxx)

Gulyaev, V. I. (*with* Druzhinina, A. L.; Koshkin, V. L.) A universal sequence of period-doubling bifurcations for a conservative oscillator with power nonlinearities. (Russian) *Mat. Fiz. Nelinein. Mekh. No.* 15(49) (1991), 49–54. (Ji Bin Li) **93a:58121** 58F13 (34C23, 58F14, 70K50)

Gulyan, A. M. (*with* Zharkov, G. F.; Sergoyan, G. M.) Time-dependent Ginzburg-Landau equations for superconductors with finite gap. (Russian) *Trudy Fiz. Inst. Lebedev.* **204** (1990), 3–56. (Darko Kapor) **93d:82083** 82D55 (35Q40, 82-04, 82C99)

— (*with* Nersesyan, O. N.; Sergoyan, G. M.) Electromagnetic and kinetic phenomena in superconductors and superfluid helium-3. (Russian) *Trudy Fiz. Inst. Lebedev.* **204** (1990), 57–85. (Tatiana Bilgildeyeva) **93g:82101** 82D30 (82D55)

Gulyanitskii, L. F. (*with* Sergienko, I. V.) Construction of mathematical models of optimization problems using expert estimates. (English summary) *Computational systems analysis* 1992 (*Berlin*, 1992), 281–285, *Elsevier, Amsterdam*, 1992. (*see* **93e:00021**) 93C42 (93A30)

Gumerov, N. A. Quasimonochromatic weakly nonlinear waves in a bubble medium with small dissipation. (Russian) *Prikl. Mat. Mekh.* **56** (1992), *no.* 1, 58–67; *translation in J. Appl. Math. Mech.* **56** (1992), *no.* 1, 50–59. (From the text) **93d:76070** 76T05 (76E30, 76N15)

Gumerov, R. N. On a geometric criterion for nontriviality of the simplicial and cyclic cohomology of Banach algebras. (Russian) *Vestnik Moskov. Univ. Ser. I Mat. Mekh.* **1991**, *no.* 3, 67–69; *translation in Moscow Univ. Math. Bull.* **46** (1991), *no.* 3, 52–53. (Mihai Putinar) **93m:46092** 46M20 (46H20)

Guminskii, V. V. (*with* Makarov, Vladimir Leonidovich; Burkhanov, Sh. A.) A scheme of the method of lines for the quasi-inversion problem. (Russian) *Vychisl. Prikl. Mat. (Kiev) No.* 71 (1990), 49–60. (Summary) **93b:65186** 65N40 (35R30)

Gumm, H. P. (*with* Day, Alan) Some characterizations of the commutator. *Algebra Universalis* **29** (1992), *no.* 1, 61–78. (David Hobby) **93g:08005** 08B10 (08B99)

Gumpertz, Marcia L. (*with* Pantula, Sastry G.) Nonlinear regression with variance components. *J. Amer. Statist. Assoc.* **87** (1992), *no.* 417, 201–209. (Wilfried Grossmann) **93c:62112** 62J02 (62F12)

Gümral, H. Bi-Hamiltonian structure of N-component Kodama equations. (English summary) *J. Phys. A* **25** (1992), *no.* 19, 5141–5149. (Summary) **93h:35164** 35Q35 (58F07)

Gunawan, Hendra A generalization of maximal functions on compact semisimple Lie groups. (English summary) *Pacific J. Math.* **156** (1992), *no.* 1, 119–134. (Tomasz Przebinda) **93i:22013** 22E30 (42B25, 43A15)

Gunawardena, Jeremy Geometric logic, causality and event structures. *CONCUR '91* (*Amsterdam*, 1991), 266–280, *Lecture Notes in Comput. Sci.*, 527, *Springer, Berlin*, 1991. (Gabriel Ciobanu) **93b:03043** 03B70 (03G10, 68Q05, 68Q70)

— Causal automata. (English summary) Selected papers of the International BCS-FACS Workshop on Semantics for Concurrency (Leicester, 1990). *Theoret. Comput. Sci.* **101** (1992), *no.* 2, 265–288. (Eugenio Moggi) **93j:68143** 68Q70

Günaydin, Murat Singleton and doubleton supermultiplets of space-time supergroups and infinite spin superalgebras. *Supermembranes and physics in* 2+1 *dimensions* (*Trieste*, 1989), 442–456, *World Sci. Publishing, River Edge, NJ*, 1990. (*see* **93g:81003**) 81R05 (17B70)

— (*with* Hyun, Seungjoon) Ternary algebraic approach to extended superconformal algebras. *Nuclear Phys. B* **373** (1992), *no.* 3, 688–712. (Andrèj K. Kwaśniewski) **93b:81095** 81R10 (17A40, 81T40)

Gundersen, Gary G. (*with* Steinbart, Enid M.) Finite order solutions of nonhomogeneous linear differential equations. (English summary) *Ann. Acad. Sci. Fenn. Ser. A I Math.* **17** (1992), *no.* 2, 327–341. (Shlomo Strelitz) **93m:34003** 34A20 (30D20, 30D35)

— (*with* Steinbart, Enid M.) A generalization of the Airy integral for $f'' - z^n f = 0$. *Trans. Amer. Math. Soc.* **337** (1993), *no.* 2, 737–755. (Günter Frank) **93h:34007** 34A20 (30D35, 33E30)

Gundersen, Roy M. Modified dispersive equations. (English summary) *Internat. J. Non-Linear Mech.* **27** (1992), *no.* 4, 651–660. (Summary) **93e:35095** 35Q53 (35B20)

— Modified dispersion equations. II. (English summary) *Internat. J. Non-Linear Mech.* **27** (1992), *no.* 5, 749–758. (Summary) **93i:35125** 35Q53 (35Q55)

— The evolution of packets of surface waves. (English summary) *Internat. J. Non-Linear Mech.* **28** (1993), *no.* 2, 187–194. (Summary) **93m:76008** 76B15 (76E99)

Gündeş, A. Nazli Parameterization of decoupling controllers in the unity-feedback system. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 10, 1572–1576. (Yu. A. Nikolaev) **93i:93059** 93B52

— Stability of feedback systems with sensor or actuator failures: analysis. (English summary) *Internat. J. Control* **56** (1992), *no.* 4, 735–753. (Summary) **93f:93094** 93D05 (93B52)

Gundlach, Andreas Klassifikation von Distributionenalgebren mit Hilfe der Peirceschen Zerlegung. [Classification of algebras of distributions by means of the Peirce decomposition] *Rostock. Math. Kolloq. No.* 45 (1991), 25–33. (Arpad Takači) **93h:46047** 46F10

Gundlach, Carsten (*with* Deruelle, Nathalie; Polarski, David) The growth of density fluctuations in a simplified model of extended inflation. *Classical Quantum Gravity* **9** (1992), *no.* 6, 1511–1524. (Summary) **93a:83040** 83F05

Gundlach, Volker Matthias (*with* Bogenschütz, Thomas) Symbolic dynamics for expanding random dynamical systems. (English summary) *Random Comput. Dynamics* **1** (1992/93), *no.* 2, 219–227. (Lan Wen) **93j:58042** 58F03 (58F15)

Güneş, R. (*with* Keleş, S.; Hacısalihoğlu, H. Hilmi) Two corollaries of Holditch's theorem for one-parameter closed spatial motions. (English summary) *Comm. Fac. Sci. Univ. Ankara Ser. A_1 Math. Statist.* **38** (1989), *no.* 1-2, 53–58 (1990). (Andrzej Bucki) **93k:53017a** 53A17

— (*with* Keleş, S.; Hacısalihoğlu, H. Hilmi) Two corollaries of Holditch's theorem for the parts of surface in E^3. (English summary) *Comm. Fac. Sci. Univ. Ankara Ser. A_1 Math. Statist.* **38** (1989), *no.* 1-2, 59–66 (1990). (Andrzej Bucki) **93k:53017b** 53A17

Gunhouse, Steven V. Highly transitive representations of free products on the natural numbers. *Arch. Math. (Basel)* **58** (1992), *no.* 5, 435–443. (J. D. Dixon) **93c:20003** 20B22

Gunji, Yukio (*with* Konno, Norio) Mathematical construction of an autonomous artificial life. *Appl. Math. Comput.* **46** (1991), *no.* 1, *part I*, 33–58. (Summary) **93f:92002** 92B05

Günlük, N. O. (*with* Özekici, S.) Maintenance of a device with age-dependent exponential failures. *Naval Res. Logist.* **39** (1992), *no.* 5, 699–714. (Masafumi Sasaki) **93d:90024** 90B25 (60K10, 60K20, 62N05)

Gunnarsson, S. Robustness in adaptive control from a frequency domain system identification perspective. (English summary) *Adaptive systems in control and signal processing*, 1989 (*Glasgow*), 217–221, *IFAC Sympos. Ser.*, 1990, *No.* 1, *Pergamon, Oxford*, 1990. (*see* **93j:93007**) 93D09 (93C40)

Gunnarsson, T. (*with* Schwänzl, R.; Vogt, Rainer M.; Waldhausen, Friedhelm) An un-delooped version of algebraic K-theory. *J. Pure Appl. Algebra* **79** (1992), *no.* 3, 255–270. (V. P. Snaith) **93f:19001** 19D06 (19D10, 55S25)

Gunst, Richard F. (*with* Carrillo-Gamboa, Olivia) Measurement-error-model collinearities. (English summary) *Technometrics* **34** (1992), *no.* 4, 454–464. 62J20

Günter, N. M. *see* **Pilyugin, S. Yu., 93m:01082**

Günther, Bernd Properties of normal embeddings concerning strong shape theory. I. *Tsukuba J. Math.* **15** (1991), *no.* 2, 261–274. (Jerzy Dydak) **93b:54016** 54C56 (54C20, 55N05, 55N40)

— The Vietoris system in strong shape and strong homology. (English summary) *Fund. Math.* **141** (1992), *no.* 2, 147–168. (S. Mardešić) **93i:55013** 55P55 (54C56, 54E35, 55N07, 55U15)

— (*with* Segal, Jack) Every attractor of a flow on a manifold has the shape of a finite polyhedron. *Proc. Amer. Math. Soc.* **119** (1993), *no.* 1, 321–329. (Richard M. Schori) **93k:54044** 54C56 (54H20, 57N25, 58F12)

— A tom Dieck theorem for strong shape theory. *Trans. Amer. Math. Soc.* **338** (1993), *no.* 2, 857–870. (Zvonko Čerin) **93j:54009** 54C56 (54D20, 55P55)

Günther, Georg (*with* Hartnell, Bert L.) On m-connected and k-neighbour-connected graphs. *Graph theory, combinatorics, and applications. Vol.* 2 (*Kalamazoo, MI*, 1988), 585–596, *Wiley-Intersci. Publ., Wiley, New York*, 1991. (Summary) **93b:05098** 05C40

— (*with* Hartnell, Bert L.; Rall, Douglas F.) Critical β-stable graphs. Proceedings of the Twenty-first Manitoba Conference on Numerical Mathematics and Computing (Winnipeg, MB, 1991). *Congr. Numer.* **86** (1992), 55–64. (Summary) **93a:05105** 05C75

— (*with* Wilker, J. B.) The bisectrix of a tetrahedron. (English summary) *Mathematika* **39** (1992), *no.* 1, 93–103. (E. J. F. Primrose) **93c:51029** 51M04 (51M25)

Günther, Matthias Isometric embeddings of Riemannian manifolds. *Proceedings of the International Congress of Mathematicians, Vol. I, II* (*Kyoto*, 1990), 1137–1143, *Math. Soc. Japan, Tokyo*, 1991. (Chong Kyu Han) **93b:53049** 53C42 (58G30)

Günttner, Rüdiger On the uniform approximation of continuous functions by the Euler means of Fourier series. *Demonstratio Math.* **23** (1990), *no.* 1, 133–138. (V. A. Baskakov) **93b:42008** 42A10 (42A24)

— On the uniform approximation by generalized Bernstein-means. *Acta Math. Hungar.* **58** (1991), *no.* 3-4, 241–246. (J. Szabados) **93b:42007** 42A10

— An error estimate for interpolation by Markov systems. *Studia Sci. Math. Hungar.* **26** (1991), *no.* 1, 129–133. (Ryozi Sakai) **93d:41003** 41A05 (41A17, 41A30)

Gunzburger, Max D. (*with* Mundt, M.; Peterson, Janet S.) Experiences with finite element methods for the velocity-vorticity formulation of three-dimensional, viscous, incompressible flows. (English summary) *Computational methods in viscous aerodynamics*, 231–271, *Elsevier, Amsterdam*, 1990. (Summary) **93f:76067** 76M10 (76D05)

— (*with* Hou, LiSheng; Svobodny, Thomas P.) A numerical method for drag minimization via the suction and injection of mass through the boundary. (English summary) *Stabilization of flexible structures* (*Montpellier*, 1989), 312–321, *Lecture Notes in Control and Inform. Sci.*, 147, *Springer, Berlin*, 1990. (*see* **93c:93006**) 65K10 (76D99, 76M99)

— (*with* Hou, Steven L.) Treating inhomogeneous essential boundary conditions in finite element methods and the calculation of boundary stresses. *SIAM J. Numer. Anal.* **29** (1992), *no.* 2, 390–424. (Rolf Rannacher) **93d:76039** 76M10 (65N30, 76D05, 76D07)

— (*with* Du, Qiang; Peterson, Janet S.) Analysis and approximation of the Ginzburg-Landau model of superconductivity. *SIAM Rev.* **34** (1992), *no.* 1, 54–81. (Tatiana Bilgildeyeva) **93g:82109** 82D55 (35Q55, 65P05)

— (*with* Hou, LiSheng; Svobodny, Thomas P.) Heating and cooling control of temperature distributions along boundaries of flow domains. (English summary) *J. Math. Systems Estim. Control* **3** (1993), *no.* 2, 147–172. (Summary) **93m:35178** 35Q99 (76D05, 80A20, 93C20)

— (*with* Du, Qiang; Peterson, Janet S.) Finite element approximation of a periodic Ginzburg-Landau model for type-II superconductors. (English summary) *Numer. Math.* **64** (1993), *no.* 1, 85–114. (B. Kellogg) **93j:65178** 65N30 (82D55)

Gunzig, Edgard (*with* Castagnino, Mario A.; Nardone, Pascal) On quantum gravity for homogeneous pure radiation universes. *Quantum mechanics in curved space-time* (*Erice*, 1989), 403–430, *NATO Adv. Sci. Inst. Ser. B Phys.*, 230, *Plenum, New York*, 1990. (*see* **93d:83003**) 83C45

— (*with* Castagnino, Mario A.; Nardone, Pascal) The problem of the wave function of the Universe in the radiation dominated case. *Quantum gravity* (*Moscow*, 1990), 600–612, *World Sci. Publishing, River Edge, NJ*, 1991. (Vladimir Soloviev) **93i:83045** 83C45 (83F05)

— (*with* Bombelli, Luca; Nesteruk, A. V.) Renormalization, the trace anomaly and spacetime anisotropy. (English summary) *Classical Quantum Gravity* **9** (1992), *no.* 10, 2193–2202. (Summary) **93g:81102** 81T15 (81T20, 81T50, 83C47)

Günzler, H. Convergence theorems for a Daniell-Loomis integral. *Math. Pannon.* **2** (1991), *no.* 2, 77–94. (Constantin Dumitrescu) **93d:28019** 28C05 (26A42, 28A20)

Guo, B. Q. *see* **Guo, Ben Qi**

Guo, B.-Y. *see* **Guo, Ben Yu**

Guo, Bao Zhu (*with* Chan, Wai Leung) Controlled age-dependent population dynamics based on parity progression. *J. Math. Anal. Appl.* **166** (1992), *no.* 2, 442–455. (G. F. Webb) **93f:92021** 92D25 (47D03)

— (*with* Chan, Wai Leung) Age-dependent population dynamics based on parity interval progression. *Math. Comput. Modelling* **16** (1992), *no.* 4, 57–68. (R. C. MacCamy) **93b:92010** 92D25 (47N60)

Guo, Ben Hong (*with* Liang, Jiu Qing; Morandi, G.) Extended Feynman formula for harmonic oscillator and its application. *Sci. China Ser. A* **34** (1991), *no.* 11, 1346–1353. (Summary) **93a:81104** 81S40 (81T13)

Guo, Ben Qi (*with* Babuška, Ivo M.; Stephan, E. P.) The h-p version of the boundary element method with geometric mesh on polygonal domains. (English summary)

Spectral and high order methods for partial differential equations (*Como*, 1989), 319–325, *North-Holland, Amsterdam*, 1990. (*see* **93d:65005**) 65N30 (65N50)

Guo, Ben Yu (*with* Ma, He Ping) Combined finite element and pseudospectral method for three-dimensional vorticity equations. *J. Hydrodyn. Ser. B* (*English Ed.*) **2** (1990), *no.* 3, 75–87. (M. M. Sussman) **93f:76077** 76M25 (65M60, 65M70, 76C05)

— (*with* Cao, Wei Ming) Spectral-finite element method for solving three-dimensional vorticity equations. *Bull. Greek Math. Soc.* **32** (1991), 83–108. (Summary) **93b:65148** 65M70 (76C05, 76M10)

— (*with* Cao, Wei Ming) A pseudospectral method for solving Navier-Stokes equations. *J. Comput. Math.* **9** (1991), *no.* 3, 278–289. (Anders Szepessy) **93c:65119** 65M70 (76D05, 76M25)

— (*with* Xiong, Yue Shan) A spectral-difference method for solving the three-dimensional vorticity equation. I. (Chinese summary) *Numer. Math. J. Chinese Univ.* **13** (1991), *no.* 3, 251–262. (D. M. Sloan) **93b:65149** 65M70 (76D99, 76M20, 76M25)

— (*with* Xiong, Yue Shan) A spectral-difference method for solving the three-dimensional vorticity equation. II. (Chinese summary) *Numer. Math. J. Chinese Univ.* **13** (1991), *no.* 4, 331–345. (D. M. Sloan) **93b:65150** 65M70 (76D99, 76M20, 76M25)

— (*with* Miller, John J. H.) Iterative and Petrov-Galerkin methods for a nonlinear two-point boundary value problem with application to semiconductor devices. *Numerical methods for partial differential equations* (*Tianjin*, 1991), 23–34, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93b:65006**) 65L60 (78A55)

— (*with* Cao, Wei Ming) Spectral-finite element method for compressible fluid flow. *Appl. Math. Mech.* (*English Ed.*) **13** (1992), *no.* 8, 701–717; *translated from Appl. Math. Mech.* **13** (1992), *no.* 8, 677–692 (*Chinese. English and Chinese summaries*). (Summary) **93j:65159** 65M70 (76M10, 76M25, 76N10)

— (*with* Ma, He Ping) Combined finite element and pseudospectral method for the three-dimensional Navier-Stokes equations. (English summary) A Chinese summary appears in Chinese Ann. Math. Ser. A **13** (1992), no. 4, 517. *Chinese Ann. Math. Ser. B* **13** (1992), *no.* 3, 350–367. (A. J. Meir) **93m:65144** 65M60 (76D05, 76M10, 76M25)

— (*with* Cao, Wei Ming) A Fourier-Chebyshev spectral method for three-dimensional vorticity equations with unilateral periodic boundary conditions. (English summary) *Gaoxiao Yingyong Shuxue Xuebao* **7** (1992), *no.* 3, 350–366. (Summary) **93j:65157** 65M70 (76D05, 76M25)

— (*with* Ma, He Ping; Cao, Wei Ming; Huang, Hui) The Fourier-Chebyshev spectral method for solving two-dimensional unsteady vorticity equations. *J. Comput. Phys.* **101** (1992), *no.* 1, 207–217. (Summary) **93d:76048** 76M25 (65M06, 65M70, 76D99, 76M20)

— (*with* Cao, Wei Ming) A combined spectral-finite element method for solving two-dimensional unsteady Navier-Stokes equations. *J. Comput. Phys.* **101** (1992), *no.* 2, 375–385. (Timothy Nigel Phillips) **93g:76079** 76M10 (65M99, 76D05, 76M25)

— (*with* Huang, Wei[2]) The spectral-difference method for Navier-Stokes equations. (English summary) *Northeast. Math. J.* **8** (1992), *no.* 2, 157–176. (Tian Xiao Zhou) **93h:65143** 65N35 (76D05, 76M20, 76M25)

— (*with* Cao, Wei Ming) Spectral-finite element method for compressible fluid flows. (French summary) *RAIRO Modél. Math. Anal. Numér.* **26** (1992), *no.* 4, 469–491. (G. W. Hedstrom) **93b:76072** 76N15 (65M60, 65M70, 76M10)

— Generalized stability of discretization and its applications to numerical solutions of nonlinear partial differential equations. (Russian summary) *Zh. Vychisl. Mat. i Mat. Fiz.* **32** (1992), *no.* 4, 530–541; *reprinted in Comput. Math. Math. Phys.* **32** (1992), *no.* 4, 447–457. (Snezhana Gocheva-Ilieva) **93e:65114** 65M12 (65J15, 65L20)

— *see also* **Numerical methods for partial differential equations, 93b:65006**

Guo, Bo Ling Existence of global solutions to a class of strongly nonlinear Schrödinger systems of equations of fourth order and the "blowup" problem. (Chinese. English summary) *Gaoxiao Yingyong Shuxue Xuebao* **6** (1991), *no.* 2, 173–182. (Editors) **93a:35140** 35Q55

— (*with* Tan, Shao Bin) Global smooth solution for coupled nonlinear wave equations. *Math. Methods Appl. Sci.* **14** (1991), *no.* 6, 419–425. (John C. Baez) **93c:35148** 35Q58 (35B65)

— The existence of global solution and "blow up" phenomenon for a system of multi-dimensional symmetric regularized wave equations. *Acta Math. Appl. Sinica* (*English Ser.*) **8** (1992), *no.* 1, 59–72. (Song Mu Zheng) **93d:35128** 35Q35 (35B05)

— (*with* Zhou, Yu Lin; Sun, He Sheng) Geometrical extensions for systems of ferro-magnetic chain. *Adv. in Math.* (*China*) **21** (1992), *no.* 4, 497–501. 35Q60

— (*with* Hong, Min Chun) Landau-Lifshitz equations of the ferromagnetic spin chain and harmonic maps. *Adv. in Math.* (*China*) **21** (1992), *no.* 4, 501–503. 82C10 (58E20)

— (*with* Zhou, Yu Lin; Tan, Shao Bin) On the Cauchy problem for the equation of finite-depth fluids. *J. Partial Differential Equations* **5** (1992), *no.* 1, 1–16. (Song Mu Zheng) **93a:35127** 35Q35 (35B45, 76C99)

— (*with* Tan, Shao Bin) Mixed initial-boundary value problem for some multidimensional nonlinear Schrödinger equations including damping. (English summary) *J. Partial Differential Equations* **5** (1992), *no.* 2, 69–80. (Hideo Yamagata) **93h:35189** 35Q55 (35B40, 35B45)

— (*with* Tan, Shao Bin) Cauchy problem for a generalized nonlinear dispersive equation. (English summary) *J. Partial Differential Equations* **5** (1992), *no.* 4, 37–50. (Hong Ming Yin) **93m:35101** 35K55 (35Q53)

— (*with* Jiang, Li Shang; Sun, He Sheng; Ye, Qi Xiao) Happy birthday, Professor Zhou Yulin. *J. Partial Differential Equations* **6** (1993), *no.* 1, 1–9 *pp.* (Editors) **93m:01071** 01A70

Guo, Chun Biao (*with* Xie, Wei Xin; Liu, Xiao Fan) A fuzzy region feature method in fuzzy pyramid data structures. (Chinese. English and Chinese summaries) *Xi'an Jiaotong Daxue Xuebao* **26** (1992), *no.* 4, 115–125. 68T10 (04A72)

Guo, Da Chang (*with* Li, Feng Lai) Nilpotency and solvability of Lie algebras. (Chinese. English and Chinese summaries) *Natur. Sci. J. Harbin Normal Univ.* **7** (1991), *no.* 2, 21–25. (Summary) **93k:17015** 17B30

Guo, Da Jun Extremal solutions of nonlinear Fredholm integral equations in ordered Banach spaces. *Northeast. Math. J.* **7** (1991), *no.* 4, 416–423. (Summary) **93c:45001** 45B05 (34K30, 47H15)

— (*with* Erbe, Lynn H.) Periodic boundary value problems for second order integrodifferential equations of mixed type. *Appl. Anal.* **46** (1992), *no.* 3-4, 249–258. (Introduction) **93f:34119** 34K15 (45J05)

— (*with* Erbe, Lynn H.; Liu, Xinzhi) Positive solutions of a class of nonlinear integral equations and applications. *J. Integral Equations Appl.* **4** (1992), *no.* 2, 179–195. (N. K. Karapetyants) **93h:45002** 45G15 (34K15)

— (*with* Erbe, Lynn H.; Krawcewicz, W.) Some fixed point theorems for multivalued maps and applications. *Results Math.* **21** (1992), *no.* 1-2, 42–64. (Juan A. Gatica) **93h:47067** 47H10 (34A60, 34B15, 47H04, 47N20)

Guo, Dian Long (*with* DiCesare, Frank; Zhou, Meng Chu) A moment generating function based approach for evaluating extended stochastic Petri nets. (English summary) *IEEE Trans. Automat. Control* **38** (1993), *no.* 2, 321–327. (Summary) **93m:68127** 68Q90

Guo, Dong Hui (*with* Liu, Rui Tang; Chen, Zhen Xiang; Wu, Bo Xi) A modified Hopfield model of neural networks. (Chinese. English and Chinese summaries) *Xiamen Daxue Xuebao Ziran Kexue Ban* **32** (1993), *no.* 1, 33–38. (Summary) **93m:92004** 92B20

Guo, Dong Sheng (*with* Drake, G. W. F.) Stationary solutions for an electron in an intense laser field. I. Single-mode case. *J. Phys. A* **25** (1992), *no.* 11, 3383–3397. (K. Wódkiewicz) **93c:81265** 81V10

Guo, Feng Wei (*with* Feng, Zhao Shu; Liu, Yong Qing) Criteria for practical stability in the *p*th mean of nonlinear stochastic systems. *Appl. Math. Comput.* **49** (1992), *no.* 2-3, 251–260. (Arcady Ponosov) **93f:34130** 34K20 (34F05, 34K50, 60H10)

Guo, Fu Kui The Bäcklund transformation for the higher-order KdV equation. (Chinese. English and Chinese summaries) *Shandong Kuangye Xueyuan Xuebao* **11** (1992), *no.* 2, 190–195. 35Q53

Guo, Guang Yuan (*with* Cai, Sui Lin) Saddle values and limit cycles generated by separatrix of quadratic systems. *Proceedings of Asian Mathematical Conference*, 1990 (*Hong Kong*, 1990), 25–31, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93b:00022**) 34C05 (58F21)

Guo, Hai Jiao (*with* Wu, Min; Gui, Wei Hua; Wang, Hong Gui) H_∞ state feedback control on the basis of a state observer. (Chinese. English and Chinese summaries) *Control Theory Appl.* **9** (1992), *no.* 6, 660–665. 93B36

— (*with* Wu, Min; Rao, Li Chang; Ishihara, Tadashi) A parametrization of discrete-time low-order integral controllers with computation delay. (English and Chinese summaries) *Control Theory Appl.* **10** (1993), *no.* 1, 80–86. 93B52 (93C55)

Guo, Han Ying (*with* Fei, Shao Ming; Yu, Yue) Supermanifold, symplectic structure and geometric quantization of BRST systems. *Differential geometric methods in theoretical physics* (*Davis, CA*, 1988), 603–619, *NATO Adv. Sci. Inst. Ser. B Phys.*, 245, *Plenum, New York*, 1990. (Summary) **93c:58078** 58F06 (58A50, 81T70)

— (*with* Wang, Zhong Hua; Wu, Ke) Field equations, conservation laws in 2D quantum gravity and the Beltrami-KdV-Liouville system. *Phys. Lett. B* **264** (1991), *no.* 3-4, 277–282. (Summary) **93d:81157** 81T40 (32G81, 58F07)

— (*with* Wang, Zhong Hua; Wu, Ke) On the composition laws of Beltrami-Liouville theories and 2D quantum gravity. *Phys. Lett. B* **264** (1991), *no.* 3-4, 283–291. (Summary) **93d:81158** 81T40 (32G81, 81T70)

— (*with* Chang, Zhe; Yan, Hong) The q-Hermite polynomial and the representations of Heisenberg and quantum Heisenberg algebras. *J. Phys. A* **25** (1992), *no.* 6, 1517–1525. (Aleksandr Panov) **93a:33032** 33D80 (17B10, 33D45, 81R50)

— (*with* Fei, Shao Ming; Shi, He) Multiparameter solutions of the Yang-Baxter equation. *J. Phys. A* **25** (1992), *no.* 9, 2711–2720. (Summary) **93d:82028** 82B23 (16W30, 17B37)

Guo, Hua Guang A commutativity condition for associative rings. *Proceedings of the First China-Japan International Symposium on Ring Theory* (*Guilin*, 1991), 54–56, *Okayama Univ., Okayama*, 1992. (*see* **93k:16001**) 16U80

Guo, Ji Chuan 2π-periodic solutions to higher-order nonconservative systems. (Chinese. Chinese summary) *Chinese Ann. Math. Ser. A* **13** (1992), *no.* 4, 424–436. (Da Jun Guo) **93j:34056** 34C25 (34B15, 47H15, 47N20)

Guo, Jian[1] (*with* Tang, Huan Wen; Jiang, Ye; Hu, Yun Jiao) Fixed point algorithms and its applications to nondifferentiable programming. *Approximation, optimization and computing*, 291–294, *North-Holland, Amsterdam*, 1990. (*see* **93a:41001**) 90C30

Guo, Jian Han (*with* Gan, Dan Yan) Embeddings and immersions of a 2-sphere in 4-manifolds. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 4, 1323–1330. (Elmer G. Rees) **93j:57018** 57R40 (57R42)

Guo, Jin Li (*with* Zhang, Shi Sheng; Chen, Yu Qing) Ekeland's variational principle and Caristi's fixed point theorem in probabilistic metric space. *Acta Math. Appl. Sinica* (*English Ser.*) **7** (1991), *no.* 3, 217–228. (Pando Georgiev) **93b:49021** 49J45 (47H10, 47S50, 54E70)

Guo, Jin Yun The Hall algebra of a cyclic serial algebra. *Proceedings of the First China-Japan International Symposium on Ring Theory* (*Guilin*, 1991), 57–59, *Okayama Univ., Okayama*, 1992. (*see* **93k:16001**) 16G99

— The centre of the Hall algebra of a cyclic quiver. (English summary) *Proceedings of the Sixth International Conference on Representations of Algebras* (*Ottawa, ON*, 1992), 11 *pp.*, *Carleton-Ottawa Math. Lecture Note Ser.*, 14, *Carleton Univ., Ottawa, ON*, 1992. (Zygmunt Pogorzały) **93m:16007** 16G30 (16S30)

Guo, Jing Mei Embedding of k-orientable manifolds. *Chinese Sci. Bull.* **35** (1990), *no.* 24, 2028–2031. (P. J. Kahn) **93k:57059** 57R40 (57R42)

— Embedding of k-orientable PL manifolds. *Northeast. Math. J.* **7** (1991), *no.* 3, 309–316. (Oziride Manzolli Neto) **93d:57043** 57Q35 (55R60, 57N55, 57Q50)

Guo, Jing Zhen (*with* Li, Xing Hui) A characterization of infinite fields from a matrix point of view. (Chinese. English and Chinese summaries) *Natur. Sci. J. Harbin Normal Univ.* **8** (1992), *no.* 1, 20–22. 15A99

Guo, Jong-Shenq *see* **Kuo, Chung Shêng**

Guo, Jun Yi (*with* Yang, Xiang Qun) Three-point transition functions for two-parameter Markov chains and their four systems of partial differential equations. (English summary) *Sci. China Ser. A* **35** (1992), *no.* 7, 806–818. (Summary) **93j:60108** 60J35

Guo, Kang Hui On the spectral synthesis property and its application to partial differential equations. *Ark. Mat.* **30** (1992), *no.* 1, 93–103. (Carlos A. Berenstein) **93h:46045** 46F05 (35P05, 42B10, 43A45)

Guo, Lei (*with* Chen, Han Fu; Zhang, Ji Feng) Identification and adaptive control for ARMAX systems. *Topics in stochastic systems: modelling, estimation and adaptive control*, 216–241, *Lecture Notes in Control and Inform. Sci.*, 161, *Springer, Berlin*, 1991. (Leopoldo Jetto) **93a:93002** 93–02 (62M10, 93C40, 93E12)

— (*with* Moore, John Barratt) Stochastic system identification via adaptive spectral factorization. *Systems Sci. Math. Sci.* **4** (1991), *no.* 3, 275–288. (Summary) **93d:93079** 93E10 (93E12)

— (*with* Chen, Han Fu) The Astrom-Wittenmark self-tuning tracker. (English summary) *Identification and system parameter estimation* 1991, *Vol.* 1,2 (*Budapest*, 1991), 97–102, *IFAC Sympos. Ser.*, 3, *Pergamon, Oxford*, 1992. (*see* **93h:93009**) 93E10

— (*with* Chen, Han Fu; Zhang, Ji Feng) Estimating time-varying parameters in regression models. (English summary) *Identification and system parameter estimation* 1991, *Vol.* 1,2 (*Budapest*, 1991), 121–126, *IFAC Sympos. Ser.*, 3, *Pergamon, Oxford*, 1992. (*see* **93h:93009**) 93E10

— (*with* Chen, Han Fu) Parameter identification in stochastic adaptive tracking systems. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, I* (*Kobe*, 1991), 671–676, *Mita, Tokyo*, 1992. (*see* **93g:93005**) 93E12 (93E35)

Guo, Li² (*with* Jin, Da Sheng; Cheng, Yi Min) Design and implementation of discrete-time neural networks. (Chinese. English and Chinese summaries) *J. China Univ. Sci. Tech.* **22** (1992), *no.* 2, 165–173. 68T05 (92B20)

Guo, Mao Zheng (*with* Qian, Zhao Hui; Qian, Min) A new type of Hopf algebra which is neither commutative nor cocommutative. *J. Phys. A* **25** (1992), *no.* 5, 1237–1245. (Helmut Boseck) **93b:16073** 16W30 (17B37)

— (*with* Wang, Zheng Dong; Qian, Min) Diffusion processes on principal bundles and differential operators on the associated bundles. (English summary) *Sci. China Ser. A* **35** (1992), *no.* 4, 385–398. (Jacques Vauthier) **93j:58144** 58G32 (35Q40, 60J60)

Guo, Qiao A new kind of decentralized adaptive robust control scheme with task comparability for a redundant manipulator. (Chinese. English and Chinese summaries) *Control Theory Appl.* **9** (1992), *no.* 3, 279–282. 93B36 (70B15, 70Q05)

Guo, Shan Liang A note on weakly primitive rings. (Chinese summary) A Chinese summary appears in Chinese Ann. Math. Ser. A **12** (1991), no. 2, 259. *Chinese Ann. Math. Ser. B* **12** (1991), *no.* 2, 207–212. (Birge Zimmermann-Huisgen) **93a:16005** 16D60 (16D80)

Guo, Shi Rong The correspondence between the mathematicians Xun Jiao and Rui Li in the middle of the Qing dynasty. (Chinese) Correspondence: Jiao, Xun–Li, Rui. *Collected research papers on the history of mathematics, Vol.* 1 (*Chinese*), 123–130, *Inner Mongolia Univ. Press, Hohhot*, 1990. (*see* **93i:01004**) 01A25

— On national education in astronomy in ancient China. (Chinese) *Collected research papers on the history of mathematics, Vol.* 2 (*Chinese*), 27–30, *Inner Mongolia Univ. Press, Hohhot*, 1991. (*see* **93i:01005**) 01A25

— On the problem of Hui Liu's use of "qi". (Chinese) *Collected research papers on the history of mathematics, Vol.* 2 (*Chinese*), 40–42, *Inner Mongolia Univ. Press, Hohhot*, 1991. (*see* **93i:01005**) 01A25

— Guang Di Li's support and promotion of Wen Ding Mei's academic research. (Chinese) *Collected research papers on the history of mathematics, Vol.* 2 (*Chinese*), 91–95, *Inner Mongolia Univ. Press, Hohhot*, 1991. (*see* **93i:01005**) 01A25

— Waring's problem in China. (Chinese) *Collected research papers on the history of mathematics, Vol.* 3 (*Chinese*), 123–147, *Inner Mongolia Univ. Press, Hohhot*, 1992. (*see* **93i:01006**) 01A25 (01A50)

Guo, Shu Yun *see* **Guo, Su Yun**

Guo, Shun Sheng On approximation of classes of functions for modified Meyer-König-Ziller [Zeller] operators. *Approximation, optimization and computing*, 85–87, *North-Holland, Amsterdam*, 1990. (Summary) **93c:41036** 41A35

— (*with* Wang, Yuan Kui) Approximation of functions of bounded variation of order p by the Feller operator. (Chinese) *Acta Math. Sinica* **34** (1991), *no.* 4, 462–469. (Jia-Ding Cao) **93b:41030** 41A35 (41A25, 41A36)

— (*with* Cavaretta, A. S., Jr.) On modified Bojanic-Shisha operators. *Approximation theory, spline functions and applications* (*Maratea*, 1991), 303–310, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 356, *Kluwer Acad. Publ., Dordrecht*, 1992. (Tian Ping Chen) **93i:41013** 41A35 (41A25)

Guo, Su Yun (*with* Li, Dong Lin; Tian, Zi Yun) A new pseudodiagonalization algorithm with automatic weighting. (Chinese. English and Chinese summaries) *J. Harbin Inst. Tech.* **24** (1992), *no.* 6, 31–37. 65F99

Guo, Tie Xin (*with* Lin, Xi) Random metric spaces and their applications. (Chinese summary) *J. Math. Res. Exposition* **12** (1992), *no.* 4, 499–504. (Jin Xuan Fang) **93k:46061** 46S50 (54E70)

— (*with* Lin, Xi) Complete W-spaces. (Chinese. English and Chinese summaries) *Xi'an Jiaotong Daxue Xuebao* **26** (1992), *no.* 4, 13–18, 52. (Jin Xuan Fang) **93m:54052** 54E70 (54F99)

Guo, Tong Yi (*with* Huang, Ch'i; Shieh, Leang San) A lattice realization for 2-D separable-denominator digital filters. (English summary) *Circuits Systems Signal Process.* **12** (1993), *no.* 3, 465–488. (Summary) **93m:94008** 94A12

Guo, Wen Bin (*with* Shemetkov, L. A.) Finite groups with the hypercentral condition. (Russian. English and Russian summaries) *Dokl. Akad. Nauk Belarusi* **36** (1992), *no.* 6, 485–486, 571. (From the text) **93h:20022** 20D15 (20D10)

Guo, Xian Ping Nonstationary Markovian decision processes average models—the denumerable state space case. (Chinese. English summary) *Acta Sci. Natur. Univ. Norm. Hunan.* **14** (1991), *no.* 4, 302–308, 324. (Summary) **93d:90069** 90C40

— Sufficient conditions for the existence of $\varepsilon(\geq 0)$-optimal policies of nonstationary MDP average models. (Chinese. English and Chinese summaries) *Acta Sci. Natur. Univ. Norm. Hunan.* **15** (1992), *no.* 4, 300–304. 90D40

Guo, Xiao Feng (*with* Zhang, Fu Ji; Chen, Rong Si; Gutman, Ivan) Benzenoid systems whose (x, y, z)-invariants have $x = 1$ and $x = 2$. *Match No.* 26 (1991), 229–241. (Zhibo Chen) **93b:92024** 92E10 (05C70, 05C90)

— (*with* Zhang, Fu Ji) Reducible chains in several types of 2-connected graphs. (English summary) *Discrete Math.* **105** (1992), *no.* 1-3, 285–291. (Cun-Quan Zhang) **93g:05077** 05C35

— (*with* Zhang, Fu Ji) Mathematical properties and structures of sets of sextet patterns of generalized polyhexes. *J. Math. Chem.* **9** (1992), *no.* 3, 279–290. (Summary) **93d:92015** 92E10 (05C90)

— (*with* Zhang, Fu Ji) The existence of Kekulé structures in helicenes and enumeration of concealed non-Kekuléan helicenes with $h \leq 13$. (English summary) *J. Math. Chem.* **11** (1992), *no.* 4, 293–309. (Summary) **93h:92043** 92E10

Guo, Xiao Ming (*with* She, Ying He) Variational inequality in elastoplastic problems. (English summary) *J. Southeast Univ.* (*English Ed.*) **8** (1992), *no.* 1, 99–106. (Summary) **93k:73032** 73E05 (73V05, 73V25)

Guo, Xiao Ying (*with* Shen, Yi Bing) On submanifolds with parallel mean curvature vector. (Chinese. English summary) *J. Hangzhou Univ. Natur. Sci. Ed.* **19** (1992), *no.* 1, 10–17. (Xue Shan Zhang) **93e:53060** 53C40 (53C20, 53C42)

— (*with* Shen, Yi Bing) Three-dimensional totally real minimal submanifolds in a complex projective space. (Chinese. English summary) *J. Math. Res. Exposition* **12** (1992), *no.* 1, 127–130. (Bang-yen Chen) **93b:53046** 53C40 (53C42)

Guo, Xiu Yun On M_2-groups. *Northeast. Math. J.* **7** (1991), *no.* 2, 229–232. (Summary) **93b:20034** 20D10

Guo, Y. H. (*with* Padovan, Joe; Krishna, Lala) Partitioned multiply scaled pseudo conjugate gradient schemes. (English summary) *Comput. Mech.* **8** (1991), *no.* 3, 205–220. (Summary) **93e:65055** 65F10 (65F35)

Guo, Yi Ke (*with* Darlington, John; Pull, Helen) A new perspective on integrating functional and logic languages. (English summary) *Fifth generation computer systems, Vol.* 1, 2 (*Tokyo*, 1992), 682–693, *Ohm, Tokyo*, 1992. (*see* **93i:68007**) 68N15 (68N17)

Guo, Ying Yueh (*with* Pal, Nabendu) A sequence of improvements over the James-Stein estimator. (English summary) *J. Multivariate Anal.* **42** (1992), *no.* 2, 302–317. (Dipak K. Dey) **93h:62009** 62C15 (62H12)

— (*with* Pal, Nabendu) A note on the trace of a normal dispersion matrix. (English summary) *Statist. Probab. Lett.* **14** (1992), *no.* 5, 349–353. (Khursheed Alam) **93j:62153** 62H12 (62C15)

Guo, Yu Qi (*with* Shum, Kar Ping) Completely semiprime and completely prime congruences on semigroups. *Words, languages and combinatorics* (*Kyoto*, 1990), 179–186, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93a:20099** 20M12

— (*with* Zhu, Pin Yu; Shum, Kar Ping) Structure and characteristics of left Clifford semigroups. (English summary) *Sci. China Ser. A* **35** (1992), *no.* 7, 791–805. (Grigori I. Žitomirskii) **93m:20100** 20M19

Guo, Yuan Chun Central elements of semiprime rings. (Chinese. English summary) *Acta Sci. Natur. Univ. Jilin.* **1991**, *no.* 4, 33–36. 16N60 (16U70)

— (*with* Xie, Bang Jie) Rings with chain conditions. *Proceedings of the First China-Japan International Symposium on Ring Theory* (*Guilin*, 1991), 163–166, *Okayama Univ., Okayama*, 1992. (*see* **93k:16001**) 16P70

Guo, Yuan Ming Simultaneous approximation properties of generalized convex sets. (Chinese. Chinese summary) *Chinese Ann. Math. Ser. A* **13** (1992), *suppl.*, 70–75. (Kung-fu Ng) **93m:46010** 46B20 (46N10, 52A27)

Guo, Yugi *see* **Guo, Yu Qi**

Guo, Yun Xia Partial stability for nonlinear time varying dynamic systems. (English summary) *Ann. Differential Equations* **8** (1992), *no.* 3, 276–283. (S. Leela) **93m:34074** 34D99 (93D05)

Guo, Zhen Conformally symmetric K-contact manifolds. (Chinese. English summary) *Chinese Quart. J. Math.* **7** (1992), *no.* 1, 5–10. (Yang Lian Pan) **93e:53038** 53C15

Guo, Zhi Tang (*with* Wu, Yun Fei) On the equation $1 + q + q^2 + \cdots + q^{n-1} = p^m$. (Chinese. English and Chinese summaries) *J. Harbin Inst. Tech.* **24** (1992), *no.* 3, 6–9. (Mao Hua Le) **93k:11024** 11D61

Guo, Zhong A block order-descending criterion for matrices and solutions to the inverse problem for $Ax = b$. (Chinese. English and Chinese summaries) *Hunan Daxue Xuebao* **19** (1992), *no.* 4, 114–118, 124. (Summary) **93i:65042** 65F05

Guo, Zhong Heng A geometric definition of generalized Kronecker deltas and an intrinsic proof of Cayley-Hamilton theorem. *Advances in applied mathematics and mechanics in China, Vol.* 2, 77–84, *Internat. Acad. Publ., Beijing*, 1990. (B. Reichstein) **93c:15021** 15A69 (15A15, 15A72, 15A75)

— (*with* Wang, Shu Xun) Dynamics of unilateral systems on a finite-dimensional Riemannian manifold. *Unilateral problems in structural analysis, IV* (*Capri*, 1989), 215–228, *Internat. Ser. Numer. Math.*, 101, *Birkhäuser, Basel*, 1991. (Summary) **93e:58061** 58F05 (53C80, 70F99, 70H99, 73T05)

— (*with* Gao, Pu Yun) Lagrange equation of another class of nonholonomic systems. *Appl. Math. Mech.* (*English Ed.*) **12** (1991), *no.* 8, 727–732; *translated from Appl. Math. Mech.* **12** (1991), *no.* 8, 679–684 (*Chinese. English summary*). (Larisa E. Veselova) **93d:70022** 70F25 (70H35)

— (*with* Lehmann, Th.; Liang, Hao Yun) The conjugacy between Cauchy stress and logarithm of the left stretch tensor. *European J. Mech. A Solids* **10** (1991), *no.* 4, 395–404. (Summary) **93c:73019** 73B99

— (*with* Man, Chi-Sing) Conjugate stress and tensor equation $\sum_{r=1}^{m} \mathbf{U}^{m-r}\mathbf{X}\mathbf{U}^{r-1} = \mathbf{C}$. *Internat. J. Solids Structures* **29** (1992), *no.* 16, 2063–2076. (Summary) **93k:73012** 73B99 (73C99)

Guo, Zhu Rui (*with* Wen, Shih Liang) An extremal problem on unit sphere. (Chinese summary) *Math. Appl.* **4** (1991), *no.* 4, 52–63. (Zong Min Wu) **93a:41033** 41A29 (41A44)

Guo, Zongming Some existence and multiplicity results for a class of quasilinear elliptic eigenvalue problems. *Nonlinear Anal.* **18** (1992), *no.* 10, 957–971. (Srinivasan Kesavan) **93c:35045** 35J65 (35B50, 35P30, 47H11, 47N20)

— Existence of positive radial solutions for a class of nonlinear singular elliptic problems in annular domains. (English summary) *Proc. Edinburgh Math. Soc.* (2) **35** (1992), *no.* 3, 405–418. (Alexandra Kurepa) **93k:35103** 35J65 (34B15, 35B99)

Guo-Li, Ao (*with* Cui, Yu Jun; Izumi, Masao; Fukunaga, Kunio) Structural representation of the outline and its application. (English summary) *Bull. Univ. Osaka Prefect. Ser. A* **40** (1991), *no.* 1, 43–59. 94A12

Gupalo, G.-V. S. (*with* Kashits'ka, L. Yu.) On the generalized Riquier problem for the biharmonic equation. (Ukrainian. Russian summary) *Visnik L'viv. Derzh. Univ. Ser. Mekh.-Mat. No.* 30 (1988), 18–20, 73. 35J40

— On an inverse problem for determining the coefficients of a heat and moisture transfer system. (Ukrainian) *Visnik L'viv. Univ. Ser. Mekh. Mat. No.* 34 (1990), 23–26. 35R30 (35K05)

Gupta, A. C. (*with* Mahato, Anil Kumar) Complex inversion and uniqueness theorems for a generalized Laplace transform. *Indag. Math.* (*N.S.*) **2** (1991), *no.* 3, 301–310. (C. M. Joshi) **93f:44001** 44A10 (33C15)

Gupta, A. K. *see* **Gupta, Arjun K.**

Gupta, A. S. (*with* Bhattacharyya, S. N.; Ganguly, Keshab) On the onset of thermal instability in fluid-filled porous spheres and spherical shells. *Stability Appl. Anal. Contin. Media* **1** (1991), *no.* 3, 213–241. (D. A. Nield) **93d:76025** 76E15 (76E20, 86A60)

Gupta, Ajay K. (*with* Boals, Alfred J.; Sherwani, Naveed A.; Hambrusch, Susanne E.) A lower bound on embedding large hypercubes into small hypercubes. Proceedings

of the Twenty-first Southeastern Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, FL, 1990). *Congr. Numer.* **78** (1990), 141–151. (Giorgio Balconi) **93b:05048** 05C10

— (*with* Hambrusch, Susanne E.) Load balanced tree embeddings. *Parallel Comput.* **18** (1992), *no.* 6, 595–614. (Summary) **93c:68005** 68M07 (05C05, 05C85)

Gupta, Anju (*with* Khanna, Saroj; Puri, M. C.) Paradoxical situations in transportation problems. (English summary) *Cahiers Centre Études Rech. Opér.* **34** (1992), *no.* 1, 37–49. (Štefan Peško) **93m:90053** 90C08 (90B06)

— On certain Ramanujan's mock theta functions. (English summary) *Nat. Acad. Sci. Lett.* **15** (1992), *no.* 2, 49–50. 33D10

Gupta, Arjun K. (*with* Nagar, Daya K.; Jain, S. K.) Distribution of LRC for testing sphericity structure of a covariance matrix in multivariate normal distribution. (English and Italian summaries) *Metron* **49** (1991), *no.* 1-4, 435–457 (1992). 62H10

— (*with* Amey, Alphonse K. A.) Testing sphericity under a mixture model. (English summary) *Austral. J. Statist.* **34** (1992), *no.* 3, 451–460. (Summary) **93m:62126** 62H15 (62H10)

— (*with* Nagar, Daya K.; Jain, Kalpana) Asymptotic distribution of likelihood ratio statistic for testing multisample sphericity. (English summary) *J. Korean Statist. Soc.* **21** (1992), *no.* 1, 14–26. (Summary) **93e:62149** 62H15 (62E20)

— (*with* Varga, T.) Characterization of matrix variate normal distributions. *J. Multivariate Anal.* **41** (1992), *no.* 1, 80–88. (Ludwig Baringhaus) **93b:62079** 62H05

— (*with* Nagar, Daya K.; Jain, Kalpana) On the asymptotic distribution of likelihood ratio statistic for testing multisample sphericity in the complex case. (English and Italian summaries) *Statistica (Bologna)* **52** (1992), *no.* 1, 37–48. 62E20 (62H10)

Gupta, Arvind (*with* Impagliazzo, Russell) Computing planar intertwines. (English summary) 32*nd Annual Symposium on Foundations of Computer Science (San Juan, PR,* 1991), 802–811, *IEEE Comput. Soc. Press, Los Alamitos, CA,* 1991. (Summary) **93e:05091** 05C85 (68Q25, 68R10)

sen Gupta, Ashis *see* **Sen Gupta, Ashis**

Gupta, Ashish (*with* Swami, Arun; Young, Honesty C.) Algorithms for handling skew in parallel task scheduling. (English summary) *J. Parallel Distrib. Comput.* **16** (1992), *no.* 4, 363–377. (Summary) **93i:68029** 68M20 (90B35)

Gupta, Bhisham Chand Some results on main effect plus one plans for 2^m factorials. *Comm. Statist. Theory Methods* **20** (1991), *no.* 9, 2955–2963. (M. L. Chandak) **93d:62141** 62K15

— On the existence of main effect plus k plans for 2^m factorials and tables for main effect plus 1 and 2 plans for 2^7 factorials. *Comm. Statist. Theory Methods* **21** (1992), *no.* 4, 1137–1143. (Summary) **93e:62196** 62K15 (05B30)

Gupta, C. K. *see* **Gupta, Chander Kanta**

Gupta, Chaitan P. (*with* Mawhin, Jean) Weighted eigenvalue, eigenfunctions and boundary value problems for fourth order ordinary differential equations. (English summary) *Recent trends in differential equations,* 253–267, *World Sci. Ser. Appl. Anal.,* 1, *World Sci. Publishing, River Edge, NJ,* 1992. (Ping J. Xun) **93g:34129** 34L10 (34B15, 47E05)

— Solvability of a three-point nonlinear boundary value problem for a second order ordinary differential equation. *J. Math. Anal. Appl.* **168** (1992), *no.* 2, 540–551. (P. W. Eloe) **93h:34033** 34B15 (34B10, 47H15, 47N20)

— (*with* Nkashama, M. N.) Periodic solutions of some forced nonlinear nonautonomous second order ordinary differential equations at resonance. (English and Italian summaries) *Rend. Mat. Appl.* (7) **12** (1992), *no.* 2, 505–520. (Maria Patrizia Pera) **93h:34032** 34B15 (34C25, 47N20, 70K40)

Gupta, Chander Kanta (*with* Andreadakis, S.) Automorphism groups of free metabelian nilpotent groups. *Algebra and Logic* **29** (1990), *no.* 6, 480–483 (1991). (Introduction) **93c:20065** 20F28 (20F18)

— Some recent results on automorphism groups. *Proceedings of the International Conference on Algebra, Part* 1 (*Novosibirsk,* 1989), 183–188, *Contemp. Math.,* 131, *Part* 1, *Amer. Math. Soc., Providence, RI,* 1992. (Martin R. Pettet) **93g:20068** 20F28 (20E36)

— (*with* Gupta, Narain; Roman'kov, V. A.) Primitivity in free groups and free metabelian groups. (English summary) *Canad. J. Math.* **44** (1992), *no.* 3, 516–523. (Summary) **93e:20037** 20E05

Gupta, D. K. (*with* Kaul, C. N.) Two sided iteration with generalised bisection technique for real roots of $f(x) = 0$. *J. Math. Phys. Sci.* **25** (1991), *no.* 4, 431–436. 65H05

— (*with* Kaul, C. N.) A note on the computation of fixed points in interval analysis. *Z. Angew. Math. Mech.* **72** (1992), *no.* 11, 607. 65G10

Gupta, D. P. (*with* Aggarwal, Satish K.) Least positive values of nonhomogeneous indefinite quadratic forms of signature 4. *J. Indian Math. Soc. (N.S.)* **56** (1991), *no.* 1-4, 109–131. (Madhu Raka) **93e:11083** 11H50 (11E20)

Gupta, Dharma P. (*with* Ismail, Mourad E. H.; Masson, David R.) Contiguous relations, basic hypergeometric functions, and orthogonal polynomials. II. Associated big q-Jacobi polynomials. (English summary) *J. Math. Anal. Appl.* **171** (1992), *no.* 2, 477–497. (W. A. Al-Salam) **93k:33011** 33D45

Gupta, Dilip (*with* Namdeo, R. K.) A fixed point theorem on pseudo-compact Tichonov space. (English summary) *Math. Ed. (Siwan)* **26** (1992), *no.* 2, 114–116. 54H25

Gupta, G. K. *see* **Conference: Computer Science, 93i:68005** *and* **93i:68006**

Gupta, Hansraj *see* **Chopra, S. D., 93d:01059**; **Dumir, V. C., 93d:01060**; **Cheema, M. S., 93d:01061** *and* **Bibliography: Gupta, Hansraj, 93d:01062**

Gupta, J. M. (*with* Sen, Kanwar; Jain, J. L.) Lattice path approach to transient solution of $M/M/1$ with $(0, k)$ control policy. (English summary) *J. Statist. Plann. Inference* **34** (1993), *no.* 2, 259–267. (Summary) **93j:60147** 60K25 (60C05)

Gupta, J. R. (*with* Banerjee, Mihir B.; Prakash, Jyoti) Upper limits to the complex growth rates in thermohaline instability. *J. Math. Anal. Appl.* **167** (1992), *no.* 1, 66–73. (Summary) **93d:76023** 76E15 (76R05)

Gupta, K. C. (*with* Ray, Suryansu) Fuzzy plane projective geometry. (English summary) *Fuzzy Sets and Systems* **54** (1993), *no.* 2, 191–206. (Summary) **93k:51005** 51A99 (04A72)

Gupta, K. S. (*with* Balachandran, A. P.; Bimonte, G.; Stern, Allen Bruce) Conformal edge currents in Chern-Simons theories. (English summary) *Internat. J. Modern Phys. A* **7** (1992), *no.* 19, 4655–4670. (Pablo M. Llatas) **93i:81130** 81T13 (81R10)

— (*with* Balachandran, A. P.; Bimonte, G.; Stern, Allen Bruce) The Chern-Simons source as a conformal family and its vertex operators. (English summary) *Internat. J. Modern Phys. A* **7** (1992), *no.* 23, 5855–5876. 81T40

Gupta, Kailash Chandra (*with* Jain, Rashmi) A study of multidimensional fractional integral operators involving general class of polynomials and a generalized hypergeometric function. *Ganita Sandesh* **5** (1991), *no.* 2, 55–64. (J. V. Baxley) **93k:33008** 33C70 (44A15, 45P05)

Gupta, Kavita (*with* Arya, S. P.) s-regularly ordered and almost s-regularly ordered spaces. (English summary) *Indian J. Pure Appl. Math.* **23** (1992), *no.* 11, 797–806. (Joe D. Mashburn) **93m:54054** 54F05 (54D10, 54D15)

Gupta, L. R. (*with* Puri, P. D.) Supplemented designs for parallel line bio-assays. (English summary) *Sankhyā Ser. B* **51** (1989), *no.* 3, 339–347. 62K10 (62P10)

Gupta, M. *see* **Gupta, Manjul**

Gupta, Madan M. (*with* Knopf, G. K.) Fuzzy neural network approach to control systems. (English summary) *Analysis and management of uncertainty: theory and applications (College Park, MD,* 1990), 183–197, *Mach. Intell. Pattern Recogn.,* 13, *North-Holland, Amsterdam,* 1992. (*see* **93f:68004**) 03B52

— *see also* **Analysis and management of uncertainty: theory and applications, 93f:68004**

Gupta, Manju (*with* Chaturvedi, Ajit; Pandey, S. K.) On a class of asymptotically risk-efficient sequential procedures. (English summary) *Scand. Actuar. J.* **1991,** *no.* 1, 87–96. (Albrecht Irle) **93i:62070** 62L12

Gupta, Manjul (*with* Kamthan, P. K.) Characterizations of almost shrinking bases. *Note Mat.* **10** (1990), *no.* 1, 67–73. (W. H. Ruckle) **93e:46007** 46A35 (46A45)

Gupta, Mukul Some remarks on a paper of A. Verma and C. M. Joshi: "Some remarks on summation of basic hypergeometric series" [Houston J. Math. **5** (1979), no. 2, 277–294; MR 80i:33012]. *Math. Balkanica (N.S.)* **4** (1990), *no.* 4, 321–324 (1991). (P. D. F. Ion) **93g:33014** 33D15

sen Gupta, N. D. *see* **Sen Gupta, N. D.**

Gupta, Narain (*with* Srivastava, J. B.) Some remarks on Lie dimension subgroups. *J. Algebra* **143** (1991), *no.* 1, 57–62. (Introduction) **93c:20011** 20C10 (20F14)

— (*with* Fabrykowski, Jacek) On groups with sub-exponential growth functions. II. *J. Indian Math. Soc. (N.S.)* **56** (1991), *no.* 1-4, 217–228. (Martha K. Smith) **93g:20053** 20E99 (20F05, 20F19)

— Some problems in free group rings. *Proceedings of the International Conference on Algebra, Part* 1 (*Novosibirsk,* 1989), 189–196, *Contemp. Math.,* 131, *Part* 1, *Amer. Math. Soc., Providence, RI,* 1992. (Gerald H. Cliff) **93m:20008** 20C07 (20E05, 20F05)

— (*with* Gupta, Chander Kanta; Roman'kov, V. A.) Primitivity in free groups and free metabelian groups. (English summary) *Canad. J. Math.* **44** (1992), *no.* 3, 516–523. (Summary) **93e:20037** 20E05

— (*with* Kuz'min, Yu. V.) On varietal quotients defined by ideals generated by Fox derivatives. *J. Pure Appl. Algebra* **78** (1992), *no.* 2, 165–172. (Summary) **93b:20051** 20E10 (20F10)

Gupta, Naresh (*with* Nau, Dana S.) Complexity results for blocks-world planning. (English summary) *AAAI-*91. *Proceedings, Ninth National Conference on Artificial Intelligence, Vol.* 1, 2, 629–633, *AAAI Press, Menlo Park, CA,* 1991. (Summary) **93j:68175** 68T15 (68Q25, 68T30)

— (*with* Nau, Dana S.) On the complexity of blocks-world planning. (English summary) *Artificial Intelligence* **56** (1992), *no.* 2-3, 223–254. (Summary) **93h:68058** 68Q25

Gupta, Neelam (*with* Sachdev, P. L.; Ahluwalia, D. S.) Global solutions describing the collapse of a spherical or cylindrical cavity. (English summary) *Z. Angew. Math. Phys.* **43** (1992), *no.* 5, 856–874. (Summary) **93i:76075** 76N15

— Integrals of motion for the Lorenz system. (English summary) *J. Math. Phys.* **34** (1993), *no.* 2, 801–804. (Summary) **93j:34071** 34C99 (34A05, 58F07)

Gupta, Omprakash K. On evaluation of powers. (English summary) *J. Inform. Optim. Sci.* **13** (1992), *no.* 2, 331–336. (Summary) **93h:65182** 65Y20 (65D20)

Gupta, Phalguni (*with* Rajan, Vijayan; Ghosh, Ratan K.) Parallel generation of combinations and permutations. (English summary) *National Seminar on Theoretical Computer Science (Madras,* 1991), 129–135, *IMS Rep.,* 115, *Inst. Math. Sci., Madras,* 199?. (*see* **93h:68006**) 68Q22 (68Q20, 68R05)

Gupta, Pushpa L. (*with* Gupta, Rameshwar D.) Relative errors in reliability measures. (English summary) *Topics in statistical dependence (Somerset, PA,* 1987), 251–256, *IMS Lecture Notes Monograph Ser.,* 16, *Inst. Math. Statist., Hayward, CA,* 1990. (Summary) **93g:62122** 62N05

Gupta, R. C. *see* **Gupta, Radha Charan**

Gupta, R. D. *see* **Gupta, Rameshwar D.**

Gupta, R. P. *see* **Gupta, Rajenda P.**

Gupta, Radha Charan *see* **Jain, L. C.**

Gupta, Rajenda P. (*with* Gadag, V. G.) On the properties of processes associated with a Markov branching process. *J. Appl. Probab.* **28** (1991), *no.* 3, 520–528. (Summary) **93f:60126** 60J80 (62M05)

— (*with* Gadag, V. G.) A study of the behaviour of certain known estimators on the nonextinction path of a branching process. *Statist. Probab. Lett.* **12** (1991), *no.* 2, 135–139. (Summary) **93e:62214** 62M05

— (*with* Rahman, M. S.) Family of transformed chi-square distributions. (English summary) *Comm. Statist. Theory Methods* **22** (1993), *no.* 1, 135–146. 62F10 (62E15)

Gupta, Ramesh C. (*with* Tiwari, Ram C.; Tripathi, Ram C.) Some weighted distributions of order k. *Comm. Statist. Theory Methods* **21** (1992), *no.* 2, 411–422. (Summary) **93b:62019** 62E15

Gupta, Rameshwar D. (*with* Gupta, Pushpa L.) Relative errors in reliability measures. (English summary) *Topics in statistical dependence (Somerset, PA,* 1987), 251–256, *IMS Lecture Notes Monograph Ser.,* 16, *Inst. Math. Statist., Hayward, CA,* 1990. (Summary) **93g:62122** 62N05

— (*with* Khatri, C. G.; Khattree, Ravindra) On a class of orthogonal invariant and residual independent matrix distributions. (English summary) *Sankhyā Ser. B* **53** (1991), *no.* 1, 1–10. (Tõnu Kollo) **93k:62120** 62H10

— (*with* Singh, Harshinder) Pitman nearness comparisons of estimates of two ordered normal means. (English summary) *Austral. J. Statist.* **34** (1992), *no.* 3, 407–414. (Summary) **93k:62051** 62F10

— (*with* Khattree, Ravindra) Some probability distributions connected with beta and gamma matrices. *Comm. Statist. Theory Methods* **21** (1992), *no.* 2, 369–390. (Summary) **93b:62081** 62H10

— (*with* Singh, Harshinder; Misra, Neeraj) Estimation of parameters of an exponential distribution when the parameter space is restricted with an application to two-sample

problem. (English summary) *Comm. Statist. Theory Methods* **22** (1993), *no.* 2, 461–477. (Summary) **93k:62055** 62F10

Gupta, Renu (*with* Malhotra, Rita) Multi-criteria integer linear programming problem. (English summary) *Cahiers Centre Études Rech. Opér.* **34** (1992), *no.* 1, 51–68. (Joachim Piehler) **93j:90086** 90C29 (90C10)

— (*with* Puri, M. C.) Extreme point quadratic minimization problem. (English summary) *J. Inform. Optim. Sci.* **14** (1993), *no.* 1, 73–81. (Summary) **93m:90057** 90C20 (90C26)

Gupta, S. (*with* Zagier, Don) On the coefficients of the minimal polynomials of Gaussian periods. *Math. Comp.* **60** (1993), *no.* 201, 385–398. (Andrew Granville) **93d:11086** 11L05 (11T22, 11Y40)

Gupta, S. B. (*with* Purbey, B.) Topological transformation group effective in topological dynamics. (English summary) *Math. Ed. (Siwan)* **26** (1992), *no.* 3, 168–171. 54H15 (54H20)

Gupta, S. C. (*with* Agrawal, B. M.) Finite summation. I. *J. Indian Acad. Math.* **14** (1992), *no.* 1, 80–85. (David R. Masson) **93h:33010** 33C99 (39A70)

Gupta, S. N. *see* **Gupta, Saxya Narayan**

Gupta, Sat N. (*with* Kumar, Ashok) Time domain estimation in fractionally differenced noise processes. (English summary) *J. Combin. Inform. System Sci.* **16** (1991), *no.* 4, 281–285. (Summary) **93f:62123** 62M10

— Estimation in long memory time series models. *Comm. Statist. Theory Methods* **21** (1992), *no.* 5, 1327–1338. (Summary) **93e:62232** 62M10

Gupta, Saxya Narayan (*with* Zubair, M.; Grosch, C. E.) A multigrid algorithm for parallel computers: CPMG. (English summary) *J. Sci. Comput.* **7** (1992), *no.* 3, 263–279. 65Y05

Gupta, Shanti S. (*with* Miescke, Klaus J.) On finding the largest normal mean and estimating the selected mean. (English summary) *Sankhyā Ser. B* **52** (1990), *no.* 2, 144–157. (Summary) **93e:62062** 62F07 (62F15)

— (*with* Panchapakesan, S.) Sequential ranking and selection procedures. *Handbook of sequential analysis*, 363–380, *Statist. Textbooks Monographs*, 118, *Dekker, New York*, 1991. (*see* **93g:62102**) 62L99 (62F07)

— (*with* Leu, Lii Yuh; Liang, TaChen) Selection of the best with a preliminary test for location-scale parametric models. (English summary) *J. Combin. Inform. System Sci.* **16** (1991), *no.* 2-3, 221–233. (Summary) **93k:62042** 62F07

— (*with* Sohn, Joong Kweon) Selection and ranking procedures for Tukey's generalized lambda distributions: symmetric case. (English summary) With discussion. *The frontiers of modern statistical inference procedures, II (Sydney*, 1987), 153–175, *Amer. Sci. Press Ser. Math. Management Sci.*, 28, *Amer. Sci. Press, Columbus, OH*, 1992. (Summary) **93h:62037** 62F07

das Gupta, Somesh *see* **Das Gupta, Somesh**

Gupta, Sudhir (*with* Singh, Murari) Behaviour of some transforms of correlation coefficient from a bivariate normal sample contaminated with bivariate normal outliers. (English summary) *Sankhyā Ser. B* **54** (1992), *no.* 2, 184–199. 62H10

Gupta, Sumnesh Computing aspects of molecular dynamics simulation. *Comput. Phys. Comm.* **70** (1992), *no.* 2, 243–270. 82C80 (65P05, 76M99)

Gupta, Sunita[2] (*with* Pandey, G. S.) On approximation to a function by harmonic means of its Fourier-Laguerre series. *Vikram Math. J.* **8** (1988), 49–56. (Walter Schempp) **93a:41035** 41A30 (33C45)

Gupta, U. C. (*with* Chaudhry, Mohan L.; Madill, B. R.) Computational aspects of bulk-service queueing system with variable capacity and finite waiting space: $M/G^Y/1/N+B$. *J. Oper. Res. Soc. Japan* **34** (1991), *no.* 4, 404–421. (Summary) **93a:60142** 60K25 (90B22)

Gupta, V. K. (*with* Singh, C.) Solution of an integral equation with Neumann function as kernel. *J. Maulana Azad College Tech.* **25** (1992), 31–33. 45E10

Gupta, Vandana (*with* Beohar, Archana; Gupta, Virendra K.) Approximation by Fourier expansion. (Hindi. English summary) *Vijnana Parishad Anusandhan Patrika* **34** (1991), *no.* 3, 127–132. 42A10

Gupta, Vijay (*with* Kasana, H. S.; Agrawal, Purshottam Narain) Inverse and saturation theorems for linear combination of modified Baskakov operators. *Approx. Theory Appl.* **7** (1991), *no.* 2, 65–82. (Geetha S. Rao) **93a:41029** 41A27 (41A35, 41A40, 47B38)

— (*with* Agrawal, Purshottam Narain) A saturation theorem for combinations of Bernstein-Durrmeyer polynomials. (English summary) *Ann. Polon. Math.* **57** (1992), *no.* 2, 157–164. (Heinz H. Gonska) **93i:41012** 41A35 (41A25, 41A40)

Gupta, Vijay K. (*with* Waymire, Edward C.) Spatial statistics of random networks and a problem in river basin hydrology. (English summary) *Spatial statistics and imaging (Brunswick, ME*, 1988), 103–111, *IMS Lecture Notes Monograph Ser.*, 20, *Inst. Math. Statist., Hayward, CA*, 1991. (Summary) **93j:62149** 62H11

Gupta, Vinod Kumar (*with* Singh, Rajeshwar) Characterizations and construction of E-optimal block designs. (English summary) *Sankhyā Ser. B* **52** (1990), *no.* 2, 204–211. (Summary) **93e:62183** 62K05

— (*with* Gandhi Prasad, N. S.) On construction of general efficiency balanced block designs. (English summary) *Sankhyā Ser. B* **53** (1991), *no.* 1, 89–96. 62K10

— (*with* Singh, Rajeshwar) E-optimal designs for two-way elimination of heterogeneity. (English summary) *Sankhyā Ser. B* **53** (1991), *no.* 1, 97–104. (Summary) **93e:62187** 62K05 (62K10)

— (*with* Das, Ashish; Das, Praggya) E-optimal block designs under heteroscedastic model. *Comm. Statist. Theory Methods* **21** (1992), *no.* 6, 1651–1666. (Summary) **93a:62103** 62K05

— (*with* Srivastava, Rakesh) Investigations on robustness of block designs against missing observations. (English summary) *Sankhyā Ser. B* **54** (1992), *no.* 1, 100–105. (Summary) **93h:62134** 62K10 (05B05)

Gupta, Virendra (*with* Rajagopal, A. K.) Uncertainty principle, squeezing, and quantum groups. (English summary) *Modern Phys. Lett. A* **7** (1992), *no.* 40, 3759–3764. (Hong Yan) **93m:81070** 81S05 (33D80, 81R50)

Gupta, Virendra K. (*with* Gupta, Vandana; Beohar, Archana) Approximation by Fourier expansion. (Hindi. English summary) *Vijnana Parishad Anusandhan Patrika* **34** (1991), *no.* 3, 127–132. 42A10

— (*with* Pathak, Ashutosh) On the degree of approximation of a function by its Nörlund means. (Hindi. English and Hindi summaries) *Vijnana Parishad Anusandhan Patrika* **35** (1992), *no.* 2, 89–97. 42A24 (41A25)

Gupta, Yash P. (*with* Chand, Shubhag) Inventory system analysis by Markov renewal processes. (English summary) *Internat. J. Inform. Management Sci.* **2** (1991), *no.* 1, 129–137. (Summary) **93g:90031** 90B05 (60K20)

— (*with* Chand, Shubhag) Markov renewal processes with random number of delays: an application to a conception and birth model. (English and Italian summaries) *Metron* **49** (1991), *no.* 1-4, 387–400 (1992). 60K15

— (*with* Alfa, Attahiru Sule) Quality control in manufacturing systems using $M/G/1$ queues with $(N+1)$ different inspection rates. (English summary) *J. Inform. Optim. Sci.* **13** (1992), *no.* 2, 279–291. 90B22

Gurak, S. Explicit construction of certain split extensions of number fields and constructing cyclic classfields. (English summary) *Pacific J. Math.* **157** (1993), *no.* 2, 269–294. (Franz Halter-Koch) **93i:11126** 11R32 (11R37)

Guralnick, Robert M. (*with* Saxl, Jan) Primitive permutation characters. *Groups, combinatorics & geometry (Durham*, 1990), 364–367, *London Math. Soc. Lecture Note Ser.*, 165, *Cambridge Univ. Press, Cambridge*, 1992. (From the text) **93j:20018** 20C15

— (*with* Talelli, Olympia) A remark on infinite torsion groups with periodic cohomology. *Comm. Algebra* **20** (1992), *no.* 4, 1217–1221. (U. Stammbach) **93b:20086** 20J05

— (*with* Wiegand, Roger) Galois groups and the multiplicative structure of field extensions. *Trans. Amer. Math. Soc.* **331** (1992), *no.* 2, 563–584. (F. DeMeyer) **93c:12004** 12F05 (12F10)

— (*with* Kleidman, Peter B.; Lyons, Richard) Sylow p-subgroups and subnormal subgroups of finite groups. *Proc. London Math. Soc.* (3) **66** (1993), *no.* 1, 129–151. (È. M. Pal'chik) **93k:20036** 20D20 (20D35)

Guralnick, S. A. (*with* Erber, T.; Michels, S. C.) Hysteresis and fatigue. (English summary) *Ann. Physics* **224** (1993), *no.* 2, 157–192. 73M25

Guran, A. Chaotic motion of a Kelvin type gyrostat in a circular orbit. (English summary) *Acta Mech.* **98** (1993), *no.* 1-4, 51–61. 70E15 (70K20, 70K50, 70M20)

Guran, I. I. On a problem of Arkhangel'skiĭ. (Ukrainian. Russian summary) *Visnik L'vīv. Derzh. Univ. Ser. Mekh.-Mat. No.* 30 (1988), 66–67, 79. 22A25

— (*with* Zarichnyi, M. M.) The space of continuous functions, and box products. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* **1991**, *no.* 11, 22–24 (1992); *translation in Soviet Math. (Iz. VUZ)* **35** (1991), *no.* 11, 22–24. (Vesko Valov) **93i:54009** 54C35 (46E10, 54B10)

— Condensation of topologically inverse semi-groups. Application of topology in algebra and differential geometry (Tartu, 1991). *Tartu Ül. Toimetised No.* 940 (1992), 47–50. (Jimmie D. Lawson) **93h:22004** 22A25 (54A25)

Gurarie, David The inverse spectral problem. *Forty more years of ramifications: spectral asymptotics and its applications*, 77–99, *Discourses Math. Appl.*, 1, *Texas A & M Univ., College Station, TX*, 1991. (Robert Brooks) **93j:58137** 58G25 (35P05, 35R30, 81Q20)

— ★ Symmetries and Laplacians. Introduction to harmonic analysis, group representations and applications. North-Holland Mathematics Studies, 174. *North-Holland Publishing Co., Amsterdam*, 1992. viii+453 *pp. ISBN* 0-444-88612-5 (P. L. Robinson) **93h:22012** 22Exx (43-01, 58G03, 81R05)

Gurchenkov, S. A. On the completion of invariant locally nilpotent subgroups of linearly ordered groups. (Russian) *Mat. Zametki* **51** (1992), *no.* 2, 35–39, 156; *translation in Math. Notes* **51** (1992), *no.* 1-2, 129–132. (From the summary) **93c:20070** 20F60 (06F15)

Gurevič, R. H. Detecting algebraic (in)dependence of explicitly presented functions (some applications of Nevanlinna theory to mathematical logic). *Trans. Amer. Math. Soc.* **336** (1993), *no.* 1, 1–67. (A. M. Dawes) **93e:03053** 03C62 (03B30, 30D35, 32A22)

Gurevich, B. M. On joint distributions of random elements with given mutual conditional distributions. *Probability theory and mathematical statistics, Vol. I (Vilnius*, 1989), 470–479, "*Mokslas*", *Vilnius*, 1990. (M. P. Eršov) **93e:60029** 60E05 (60G55, 60G60, 60K35)

— On the joint distribution of random variables with given mutual conditional distributions (the discrete case). (Russian) *Teor. Veroyatnost. i Primenen.* **36** (1991), *no.* 2, 352–355; *translation in Theory Probab. Appl.* **36** (1991), *no.* 2, 371–375 (1992). (Detlef Plachky) **93e:60030** 60E05 (60A10)

— Gibbs random fields that are invariant with respect to infinite-particle Hamiltonian dynamics. (Russian. English and Russian summaries) *Teoret. Mat. Fiz.* **90** (1992), *no.* 3, 424–459; *translation in Theoret. and Math. Phys.* **90** (1992), *no.* 3, 289–312. (Krystyna Parczyk) **93g:82005** 82B05 (82B21, 82C21)

Gurevich, Boris (*with* Jeffrey, Alan; Pelinovskiĭ, E. N.) A method for obtaining evolution equations for nonlinear waves in a random medium. (English summary) *Wave Motion* **17** (1993), *no.* 3, 287–295. (Summary) **93m:35152** 35Q35 (35L05)

Gurevich, D. I. Algebraic aspects of the quantum Yang-Baxter equation. (Russian) *Algebra i Analiz* **2** (1990), *no.* 4, 119–148; *translation in Leningrad Math. J.* **2** (1991), *no.* 4, 801–828. (J. Stasheff) **93e:17018** 17B37 (16W30, 58F07, 82B23)

— (*with* Rubtsov, V. V.) Équation de Yang-Baxter et S-traces. (English summary) [The Yang-Baxter equation and S-traces] *C. R. Acad. Sci. Paris Sér. I Math.* **313** (1991), *no.* 11, 809–812. (Roland Berger) **93m:17011** 17B37 (16S80, 81R50, 82B23)

— (*with* Lychagin, V. V.; Rubtsov, V. V.) Cohomologie de "grand crochet" et filtration "non-holonome". (English summary) ["Big bracket" cohomology and "nonholonomic" filtration] *C. R. Acad. Sci. Paris Sér. I Math.* **313** (1991), *no.* 12, 855–858. (J. S. Joel) **93b:58171** 58H10 (17B55, 17B65)

— (*with* Rubtsov, V. V.) Yang-Baxter equation and deformation of associative and Lie algebras. (English summary) *Quantum groups (Leningrad*, 1990), 47–55, *Lecture Notes in Math.*, 1510, *Springer, Berlin*, 1992. (Roland Berger) **93j:17030** 17B37 (16W30, 81R50)

— (*with* Rubtsov, V. V.; Zobin, N. M.) Quantization of Poisson pairs: the R-matrix approach. *J. Geom. Phys.* **9** (1992), *no.* 1, 25–44. (Wojciech Lisiecki) **93f:58088** 58F06 (17B37, 81S99)

— (*with* Lychagin, V. V.; Rubtsov, V. N.) Nonholonomic filtration of the cohomology of Lie algebras and "large brackets". (Russian. Russian summary) *Mat. Zametki* **52** (1992), *no.* 1, 36–41, 155; *translation in Math. Notes* **52** (1992), *no.* 1-2, 657–661 (1993). (Jan Kubarski) **93k:17044** 17B56

— (*with* Radul, A.; Rubtsov, V. V.) Noncommutative differential geometry related to the Yang-Baxter equation. (Russian. English summary) *Zap. Nauchn. Sem. S.-Peterburg. Otdel. Mat. Inst. Steklov. (POMI)* **199** (1992), *Voprosy Kvant. Teor. Polya Statist. Fiz.* 11, 51–70, 185. (J. S. Joel) **93d:16045** 16W25 (15A75, 17B37, 58A10, 58B30)

Gurevich, I. L. Capillary waves on the surface of an axisymmetric jet. (Russian) *Trudy Sem. Kraev. Zadacham No.* 26 (1991), 103–109. (From the text) **93h:76010** 76B15 (76B10, 76B45)

— (*with* Zhitnikov, V. P.) Plane flow around a ponderable flexible shell. (Russian) *Trudy Sem. Kraev. Zadacham No.* 26 (1991), 109–114. 76B99

Gurevich, I. M. Dynamical properties of network systems. (Russian) *Voprosy Kibernet. (Moscow)* *No.* 161 (1990), 22–44. (A. I. Nikitin) **93f:68008** 68M10

Gurevich, Yuri Matrix decomposition problem is complete for the average case. 31*st Annual Symposium on Foundations of Computer Science, Vol. I, II (St. Louis, MO,* 1990), 802–811, *IEEE Comput. Soc. Press, Los Alamitos, CA,* 1990. (K. G. Peeva) **93b:68038** 68Q40 (68Q25)

Guričan, Jaroslav Homology theory in the AST. II. Basic concepts, Eilenberg-Steenrod's axioms. (English summary) *Comment. Math. Univ. Carolin.* **33** (1992), *no.* 2, 353–372. (Rade Živaljević) **93i:03077** 03E70 (03H05, 55N35)

Gurin, V. S. (*with* Trofimenko, A. P.) Many-dimensional (complex) representation of extended manifolds and monopoles in extended relativity. (English summary) *Hadronic J.* **14** (1991), *no.* 5, 395–406. (Summary) **93m:83052** 83C57 (83A05, 83C75)

Gurjar, R. V. On a conjecture of C. T. C. Wall. *J. Math. Kyoto Univ.* **31** (1991), *no.* 4, 1121–1124. (Michel Brion) **93b:14073** 14L30 (14B05, 14J17, 32S05)

— (*with* Simha, R. R.) Some results on the topology of varieties dominated by $\mathbf{C}^n$. *Math. Z.* **211** (1992), *no.* 2, 333–340. (Lucy Moser-Jauslin) **93i:14043** 14L30 (14F35)

Gurka, Petr (*with* Opic, Bohumír) Continuous and compact imbeddings of weighted Sobolev spaces. III. *Czechoslovak Math. J.* **41(116)** (1991), *no.* 2, 317–341. (Summary) **93a:46056** 46E35

— (*with* Pick, Luboš) A_∞ type conditions for general measures in $\mathbf{R}^1$. *Real Anal. Exchange* **17** (1991/92), *no.* 2, 706–727. (Wo-Sang Young) **93h:26024** 26D10 (42B25)

Gürlebeck, K. Lower and upper bounds for the first eigenvalue of the Lamé system. *Boundary value and initial value problems in complex analysis: studies in complex analysis and its applications to partial differential equations,* 1 (*Halle,* 1988), 184–192, *Pitman Res. Notes Math. Ser.,* 256, *Longman Sci. Tech., Harlow,* 1991. (Howard A. Levine) **93d:35106** 35P15 (35Q30, 73C02)

— (*with* Sprössig, W.) On eigenvalue estimates of nonlinear Stokes eigenvalue problems. *Clifford algebras and their applications in mathematical physics (Montpellier,* 1989), 327–333, *Fund. Theories Phys.,* 47, *Kluwer Acad. Publ., Dordrecht,* 1992. (Summary) **93j:35122** 35P15 (73C99)

— (*with* Sprössig, W.) Application of quaternionic analysis on generalized nonlinear Stokes eigenvalue problems. (English summary) *Partial differential equations with complex analysis,* 52–60, *Pitman Res. Notes Math. Ser.,* 262, *Longman Sci. Tech., Harlow,* 1992. (Summary) **93k:35207** 35Q30 (30G35, 35C99, 35P15, 76D05)

Gurman, V. Extensions and global estimates for evolutionary discrete control systems. (English summary) *Modelling and inverse problems of control for distributed parameter systems (Laxenburg,* 1989), 16–21, *Lecture Notes in Control and Inform. Sci.,* 154, *Springer, Berlin,* 1991. (*see* **93d:93006**) 93A30 (93B03, 93C55)

Gurov, I. R. (*with* Ohta, Yuzo; Haneda, H.) Robust stabilization of a class of uncertain nonlinear systems. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, I (Kobe,* 1991), 385–390, *Mita, Tokyo,* 1992. (*see* **93g:93005**) 93D21 (93C10)

— (*with* Ohta, Yuzo; Haneda, H.) Quadratic stabilization of uncertain Lur'e-Postnikov systems via linear state feedback. (English summary) *Control Theory Adv. Tech.* **8** (1992), *no.* 2, 353–360. (Eyad H. Abed) **93h:93064** 93D15 (93C41)

Gurov, L. G. On Perron's integral. (English summary) Siberian Advances in Mathematics. *Siberian Adv. Math.* **2** (1992), *no.* 2, 58–67. (J. Jarník) **93h:26015** 26A39 (34A30)

Gürses, Metin (*with* Karasu, Atalay; Satir, Ahmet) Linearization as a new test for integrability. (English summary) *Nonlinear evolution equations and dynamical systems (Baia Verde,* 1991), 303–309, *World Sci. Publishing, River Edge, NJ,* 1992. (Summary) **93i:35141** 35Q58 (35A25, 58F07)

— Uniqueness of the solutions of sigma models in non-Riemannian background. (English summary) *Lett. Math. Phys.* **26** (1992), *no.* 4, 265–269. (R. S. Ward) **93m:81109** 81T20 (58E20, 81T13)

— Signatures of black holes in string theory. (English summary) *Phys. Rev. D* (3) **46** (1992), *no.* 6, 2522–2526. (Piret Kuusk) **93k:83049** 83C57 (83E30)

Gürsey, Feza (*with* Jiang, Wenxin) Extensions of some infinite algebras in space-time. *J. Math. Phys.* **32** (1991), *no.* 9, 2365–2369. (Summary) **93d:17027** 17B65 (57R50, 58Z05, 81R10, 81T13)

— (*with* Balakrishna, B. S.; Wali, Kameshwar C.) Towards a unified treatment of Yang-Mills and Higgs fields. *Phys. Rev. D* (3) **44** (1991), *no.* 10, 3313–3321. (Summary) **93h:81080** 81T13 (58B30)

— (*with* Jiang, Wenxin) Euclidean space-time diffeomorphisms and their Fueter subgroups. *J. Math. Phys.* **33** (1992), *no.* 2, 682–700. (John Ryan) **93a:22016** 22E65 (30G35, 81R10)

— (*with* Balakrishna, B. S.; Nguyen Ai Viet; Wali, Kameshwar C.) Towards a unified treatment of Yang-Mills and Higgs fields: a supersymmetric extension. (English summary) *Phys. Rev. D* (3) **46** (1992), *no.* 10, 4698–4703. (Boris Moiseevich Zupnik) **93j:81098** 81T60 (58Z05, 81V25)

Gürsey, Yusuf (*with* Catto, Sultan) Instanton-like solutions in conformal chiral superfield theories. (English summary) *J. Math. Phys.* **33** (1992), *no.* 10, 3567–3573. (W. Cox) **93i:81268** 81T60 (58C50)

Gurtin, Morton E. (*with* Podio-Guidugli, Paolo) A hyperbolic theory for the evolution of plane curves. *SIAM J. Math. Anal.* **22** (1991), *no.* 3, 575–586. (L. A. Turski) **93b:73008** 73B30 (35L70, 53A04, 80A22)

— (*with* Soner, H. Mete) Some remarks on the Stefan problem with surface structure. *Quart. Appl. Math.* **50** (1992), *no.* 2, 291–303. (Antonio Fasano) **93d:35181** 35R35 (35K05, 76A99, 76D45, 80A22)

— (*with* Di Carlo, Antonio; Podio-Guidugli, Paolo) A regularized equation for anisotropic motion-by-curvature. *SIAM J. Appl. Math.* **52** (1992), *no.* 4, 1111–1119. (Jacob Rubinstein) **93g:73005** 73B05 (35Q72, 73B30)

Guruswamy, S. (*with* Rajeev, S. G.) Two-dimensional quantum chromodynamics on a cylinder. (English summary) *Modern Phys. Lett. A* **7** (1992), *no.* 40, 3783–3788. (Summary) **93k:81205** 81T40 (81V05)

Gurvich, V. A. Criteria for nonrepetitiveness of truth functions. (Russian) *Dokl. Akad. Nauk SSSR* **318** (1991), *no.* 3, 532–537; *translation in Soviet Math. Dokl.* **43** (1991), *no.* 3, 721–726 (1992). (S. Rudeanu) **93a:06014** 06E30 (03G05, 94C10)

— Positional structures and chromatic graphs. (Russian) *Dokl. Akad. Nauk* **322** (1992), *no.* 5, 828–831; *translation in Soviet Math. Dokl.* **45** (1992), *no.* 1, 168–172. (O. V. Borodin) **93g:05039** 05C05 (05C15)

— Algebraic properties of influence functions. (Russian) *Dokl. Akad. Nauk* **323** (1992), *no.* 1, 19–24; *translation in Russian Acad. Sci. Dokl. Math.* **45** (1992), *no.* 2, 245–251 (1993). 90D40

— (*with* Temkin, M. A.) Cellular perfect graphs. (Russian) *Dokl. Akad. Nauk* **326** (1992), *no.* 2, 227–232. (Mirko Horňák) **93m:05069** 05C15

— Informational extensions of game forms. (Russian) *Dokl. Akad. Nauk SSSR* **322** (1992), *no.* 3, 451–455; *translation in Soviet Math. Dokl.* **45** (1992), *no.* 1, 110–114. (Roy Gardner) **93a:90088** 90D12 (90D35)

— Influence functions and information extensions of game forms and game relations. (Russian) *Uspekhi Mat. Nauk* **47** (1992), *no.* 6(288), 209–210. (Summary) **93j:90146** 90D40 (90D12)

Gurvits, L. N. (*with* Rodman, Leiba; Spitkovsky, Ilya M.) Spectral assignment for Hilbert space operators. *Houston J. Math.* **17** (1991), *no.* 4, 501–523. (Avraham Feintuch) **93c:47004** 47A10 (47A53, 47N70, 93B05)

— (*with* Rodman, Leiba; Shalom, Tamir) Controllability and completion of partial upper triangular matrices over rings. Second NIU Conference on Linear Algebra, Numerical Linear Algebra and Applications (DeKalb, IL, 1991). *Linear Algebra Appl.* **172** (1992), 135–149. (John Maroulas) **93i:15024** 15A33

Gur'yanov, A. V. ★ Пакет программ для решения двухточечных краевых задач (метод ортогонального переноса граничных условий). (Russian. Russian summary) [A program package for solving two-point boundary value problems (the method of orthogonal transfer of boundary conditions)] Сообщения по Программному Обеспечению ЭВМ. [Reports in Software] *Akad. Nauk SSSR, Vychisl. Tsentr, Moscow,* 1991. 66 *pp.* 65–04 (34–04, 65L10)

Gur'yanov, V. M. (*with* Gur'yanov, V. V.) A generalization of the Kirchhoff formula. (Russian) *Izv. Akad. Nauk SSSR Ser. Fiz. Zemli* **1992,** *no.* 3, 93–96. 35L05

Gur'yanov, V. V. Monotype plane nonlinear seismic waves. (Russian) *Dokl. Akad. Nauk SSSR* **319** (1991), *no.* 1, 120–123. (Sergej M. Zverev) **93f:73042** 73D35 (73D15, 86A15)

— Monotype plane nonlinear seismic waves. (Russian. Russian summary) *Fiz. Zemli* **1992,** *no.* 7, 81–88. (Summary) **93g:86005** 86A15 (73D35)

Gur'yanov, V. V. (*with* Gur'yanov, V. M.) A generalization of the Kirchhoff formula. (Russian) *Izv. Akad. Nauk SSSR Ser. Fiz. Zemli* **1992,** *no.* 3, 93–96. 35L05

Gurzhii, A. A. (*with* Meleshko, V. V.; Konstantinov, M. Yu.; Konovalyuk, T. P.) Advection of a vortex pair atmosphere in a velocity field of point vortices. (English summary) *Phys. Fluids A* **4** (1992), *no.* 12, 2779–2797. (Mikhail Zaks) **93k:76022** 76C05

Gusak, D. V. (*with* Korkuna, O. P.) Distribution of the maximum of oscillating semicontinuous processes with independent increments. (Russian. Russian summary) *Asymptotic methods in problems in the theory of random evolutions (Russian),* 19–25, *Akad. Nauk Ukrain. SSR, Inst. Mat., Kiev,* 1991. (Summary) **93j:60106** 60J30

— An oscillating inventory control model. (Russian. Russian summary) *Random evolutions: theoretical and applied problems (Russian),* 27–33, *Akad. Nauk Ukrainy, Inst. Mat., Kiev,* 1992. (*see* **93m:60009**) 90B22 (60J30, 60K30)

Gusarenko, S. A. Stability of a system of two linear differential equations with retarded argument. (Russian. Russian summary) *Boundary value problems (Russian),* 3–9, *Perm. Politekh. Inst., Perm',* 1989. (*see* **93k:00022**) 34K20

— Equations with Volterra operators. (Russian. Russian summary) *Boundary value problems (Russian),* 24–30, *Perm. Politekh. Inst., Perm',* 1991. (*see* **93m:00017**) 47G10 (45D05, 47A50)

Gusarov, M. N. A new form of the Conway-Jones polynomial of oriented links. (Russian. English summary) *Zap. Nauchn. Sem. Leningrad. Otdel. Mat. Inst. Steklov. (LOMI)* **193** (1991), *Geom. i Topol.* 1, 4–9, 161. (Józef H. Przytycki) **93b:57007** 57M25

Guseinov, E. G. Unimprovable estimates for the modulus of continuity of a harmonic function. (Russian. English and Azerbaijani summaries) *Izv. Akad. Nauk Azerbaidzhan. SSR Ser. Fiz.-Tekhn. Mat. Nauk* **10** (1989), *no.* 2-3, 9–12 (1992). (Summary) **93g:31005** 31B05 (35J05)

— The Plemelj-Privalov theorem for generalized Hölder classes. (Russian) *Mat. Sb.* **183** (1992), *no.* 2, 21–37; *translation in Russian Acad. Sci. Sb. Math.* **75** (1993), *no.* 1, 165–182. (A. Böttcher) **93g:30056** 30E20 (42A50, 45E05, 46E10, 47G10)

Guseinov, G. Sh. Completeness theorem for the dissipative Sturm-Liouville operator. (English and Turkish summaries) *Doğa Mat.* **17** (1993), *no.* 1, 48–54. (Anton Zettl) **93k:34174** 34L10 (34B24, 34L05, 47E05)

Guseinov, Kh. G. On the determination of the cost function of a differential game by means of inequalities. (Russian. Russian summary) *Control in dynamical systems (Russian),* 47–51, 125, *Akad. Nauk SSSR Ural. Otdel., Sverdlovsk,* 1990. (Arkadii Kryazhimskiĭ) **93k:90117** 90D25 (49L20, 49L25)

Guseinov, R. V. Smoothness of solutions of a class of quasi-elliptic equations. (Russian. Russian summary) *Vestnik Moskov. Univ. Ser. I Mat. Mekh.* **1992,** *no.* 6, 10–14, 95. (Summary) **93k:35104** 35J65 (35B65)

Gusel'nikov, N. S. Triangular set functions and Nikodým's theorem on the uniform boundedness of a family of measures. II. (Russian. Russian summary) *Ordered spaces and operator equations (Russian),* 52–57, 160, *Syktyvkar. Gos. Univ., Syktyvkar,* 1989. (*see* **93m:00034**) 28A10

Gusev, A. I. (*with* Il'vovskaya, M. S.) On the structure of the set of cyclic points of a class of one-dimensional mappings. (Russian) *Application of functional analysis in approximation theory (Russian),* 53–61, *Tver. Gos. Univ., Tver',* 1990. (*see* **93k:00021**) 58F08 (54H20)

Gusev, G. I. Exact value of a complete trigonometric sum with an exponential function. (Russian. Russian summary) *Mat. Zametki* **51** (1992), *no.* 6, 41–45, 157; *translation in Math. Notes* **51** (1992), *no.* 5-6, 558–561. (E. Stankus) **93i:11098** 11L03

Gušev, Marjan (*with* Tasič, Jurij) A method for broadcast elimination. (English summary) *Parallel computing '91 (London,* 1991), 303–310, *Adv. Parallel Comput.,* 4, *North-Holland, Amsterdam,* 1992. (*see* **93f:00016**) 68Q22

Gusev, V. I. (*with* Kessel', A. R.) The kinetics of a percolation lattice as a model of the filtration of an oil stratum. (Russian) *Dokl. Akad. Nauk SSSR* **321** (1991), *no.* 3, 509–512; *translation in Soviet Phys. Dokl.* **36** (1991), *no.* 11, 763–764 (1992). (Jerzy Stopa) **93f:76094** 76S05 (76M25)

Gusev, V. V. (*with* Abramov, D. I.) The Coulomb two-centre problem near the boundary of the continuous spectrum. *J. Phys. B* **25** (1992), *no.* 11, 2445–2457. (Summary) **93a:81216** 81V45 (81Q05)

Gusfield, Dan (*with* Naor, Dalit; Martel, Charles) A fast algorithm for optimally increasing the edge-connectivity. 31*st Annual Symposium on Foundations of Computer Science, Vol.*

I, II (*St. Louis, MO*, 1990), 698–707, *IEEE Comput. Soc. Press, Los Alamitos, CA*, 1990. (Mirko Křivánek) **93b:05153** 05C85 (05C40, 68Q25)

— (*with* Balasubramanian, Krishnan; Naor, Dalit) Parametric optimization of sequence alignment. *Proceedings of the Third Annual ACM-SIAM Symposium on Discrete Algorithms* (*Orlando, FL*, 1992), 432–439, *ACM, New York*, 1992. (James L. Cornette) **93f:92018** 92D20 (92–04, 92C40)

— (*with* Pitt, Leonard) A bounded approximation for the minimum cost 2-sat problem. *Algorithmica* **8** (1992), *no.* 2, 103–117. (M. S. Burgin) **93g:03006** 03B05 (03B35, 03D15, 68Q25)

Gushchin, A. A. (*with* Mishura, Yu. S.) Two-parameter strong martingales: inequalities for quadratic variation and some decompositions. *Probability theory and mathematical statistics, Vol. II* (*Vilnius*, 1989), 181–192, "*Mokslas*", *Vilnius*, 1990. (Summary) **93e:60089** 60G44 (60G42, 60G60)

— (*with* Mishura, Yu. S.) Davis inequalities and the Gundy decomposition for two-parameter strong martingales. III. (Russian) *Teor. Veroyatnost. i Mat. Statist. No.* 44 (1991), 49–56; *translation in Theory Probab. Math. Statist. No.* **44** (1992), 45–51. (Jia Gang Wang) **93e:60096** 60G60 (60G48, 60H05)

— On quasi-score processes. *Ann. Acad. Sci. Fenn. Ser. A I Math.* **17** (1992), *no.* 1, 29–38. (Paul I. Nelson) **93d:62036** 62F10 (62A10)

Gushchin, A. K. (*with* Mikhailov, V. P.) On the existence of boundary values of solutions of an elliptic equation. (Russian) *Mat. Sb.* **182** (1991), *no.* 6, 787–810; *translation in Math. USSR-Sb.* **73** (1992), *no.* 1, 171–194. (Nicolai N. Tarkhanov) **93g:35051** 35J67

Gushchin, I. S. On a method for computing high-frequency discharge. (Russian. Russian summary) *Direct and inverse problems in mathematical physics* (*Russian*), 203–212, 264, *Moskov. Gos. Univ., Moscow*, 1991. (Summary) **93m:78018** 78A55

Gushel', N. P. On the ampleness criterion for a stable two-dimensional vector bundle on $\mathbf{P}^2$. (Russian) *Problems in group theory and homological algebra* (*Russian*), 123–128, *Matematika, Yaroslav. Gos. Univ., Yaroslavl'*, 1990. (From the introduction) **93e:14052** 14J60

— Fano 3-folds of genus 8. (Russian) *Algebra i Analiz* **4** (1992), *no.* 1, 120–134. (Jarosław A. Wiśniewski) **93e:14050** 14J45 (14J30, 14J60)

Gusin, Pawel Five-dimensional abelian Chern-Simons theory in terms of linking number. (English summary) *Modern Phys. Lett. A* **7** (1992), *no.* 34, 3203–3210. (Emil Vinţeler) **93k:81141** 81T13 (58Z05)

Gustafson, C. L. (*with* McGraw, G. A.; Gillis, J. T.) Conditions for the equivalence of ARMAX and ARX systems. (English summary) *IEEE Trans. Automat. Control* **38** (1993), *no.* 4, 632–636. 93E03 (93E12)

Gustafson, John (*with* Aluru, Srinivas; Prabhu, G. M.) A random number generator for parallel computers. (English summary) *Parallel Comput.* **18** (1992), *no.* 8, 839–847. (Summary) **93e:65008** 65C10 (65Y05)

Gustafson, Karl E. (*with* Halasi, K.) The flow semigroup approximation problem. *Approximation theory* (*Kecskemét*, 1990), 343–354, *Colloq. Math. Soc. János Bolyai*, 58, *North-Holland, Amsterdam*, 1991. (M. Biroli) **93m:47073** 47N20 (35Q30, 47H20, 65M99, 76D05, 76M99)

— Four principles of vortex motion. *Vortex methods and vortex motion*, 95–141, *SIAM, Philadelphia, PA*, 1991. (*see* **93f:76078**) 76M25 (76C05, 76D05)

— (*with* Freymuth, Peter; Leben, Robert) Visualization and computation of hovering mode vortex dynamics. *Vortex methods and vortex motion*, 143–169, *SIAM, Philadelphia, PA*, 1991. (*see* **93f:76078**) 76M25 (76C05, 76D05)

— *see also* **Vortex methods and vortex motion, 93f:76078**

Gustafson, William H. On products of involutions. *Paul Halmos*, 237–255, *Springer, New York*, 1991. (Robert M. Guralnick) **93a:15018** 15A23 (20B30, 47A99)

Gustafsson, Björn (*with* Mossino, J.; Picard, Colette) Limit behaviour of some stratified structures with high conductivity. *Progress in partial differential equations: calculus of variations, applications* (*Pont-à-Mousson*, 1991), 187–199, *Pitman Res. Notes Math. Ser.*, 267, *Longman Sci. Tech., Harlow*, 1992. (Dietrich Göhde) **93k:35023** 35B27 (34E99, 35J20)

— (*with* Sakai, Makoto) An approximation theorem for integrable harmonic vector fields. *Math. Scand.* **70** (1992), *no.* 1, 78–90. (P. Lindqvist) **93h:31006** 31B05

— (*with* Sakai, Makoto) Some geometric properties of solutions of a Hele-Shaw flow moving boundary problem. *Free boundary problems in fluid flow with applications* (*Montreal, PQ*, 1990), 53–57, *Pitman Res. Notes Math. Ser.*, 282, *Longman Sci. Tech., Harlow*, 1993. (*see* **93k:00036**) 35R35 (76S05)

— (*with* Mossino, J.) Isoperimetric inequalities for the Stefan problem. *Free boundary problems involving solids* (*Montreal, PQ*, 1990), 130–134, *Pitman Res. Notes Math. Ser.*, 281, *Longman Sci. Tech., Harlow*, 1993. (*see* **93k:00037**) 35R35 (35B45, 80A22)

Gustafsson, Ivar (*with* Axelsson, Owe) An efficient finite element method for nonlinear diffusion problems. *Bull. Greek Math. Soc.* **32** (1991), 45–61. (Summary) **93a:65145** 65N30

Gustedt, Jens Well-quasi-ordering finite posets (extended abstract). (English summary) *Graph structure theory* (*Seattle, WA*, 1991), 511–515, *Contemp. Math.*, **147**, *Amer. Math. Soc., Providence, RI*, 1993. (*see* **93m:05004**) 06A07 (68Q22, 68R99)

Gustfield, Dan (*with* Martel, Charles) A fast algorithm for the generalized parametric minimum cut problem and applications. *Algorithmica* **7** (1992), *no.* 5-6, 499–519. (Peter Butkovič) **93b:90072** 90C27 (05C85, 90B10)

Gusynin, V. P. (*with* Gorbar, E. V.; Roman'kov, V. V.) Heat kernel expansion for nonminimal differential operators and manifolds with torsion. *Nuclear Phys. B* **362** (1991), *no.* 1-2, 449–471. (Akira Asada) **93a:58161** 58G11 (58G18)

— (*with* Gorbar, E. V.) Local heat kernel asymptotics for nonminimal differential operators. *Phys. Lett. B* **270** (1991), *no.* 1, 29–36. (Akira Asada) **93a:58166** 58G18 (58G11, 81T20)

— Asymptotics of the heat kernel for nonminimal differential operators. (Russian. Ukrainian summary) *Ukrain. Mat. Zh.* **43** (1991), *no.* 11, 1541–1551; *translation in Ukrainian Math. J.* **43** (1991), *no.* 11, 1432–1441 (1992). (Friedbert Prüfer) **93g:58141** 58G11

Gut, Allan Limit theorems for record times. *Probability theory and mathematical statistics, Vol. I* (*Vilnius*, 1989), 490–503, "*Mokslas*", *Vilnius*, 1990. (Dietmar Pfeifer) **93c:60075** 60G70 (60F05, 60F15, 60G50)

— Anscombe laws of the iterated logarithm. *Probab. Math. Statist.* **12** (1991), *no.* 1, 127–137 (1992). (Zdzisław Rychlik) **93c:60040** 60F15

— Complete convergence for arrays. (English summary) *Period. Math. Hungar.* **25** (1992), *no.* 1, 51–75. (Zdzisław Rychlik) **93m:60059** 60F15 (60G50)

— The weak law of large numbers for arrays. *Statist. Probab. Lett.* **14** (1992), *no.* 1, 49–52. (Summary) **93a:60028** 60F05

Gutenbaum, J. Dynamic programming approach in solving multistage optimal control problems. (English summary) *Computational systems analysis* 1992 (*Berlin*, 1992), 55–60, *Elsevier, Amsterdam*, 1992. (*see* **93e:00021**) 49L20 (49M27)

Gutenbrunner, C. Efficient L-estimators in semiparametric linear heteroscedastic models. (English summary) *L_1-statistical analysis and related methods* (*Neuchâtel*, 1992), 187–200, *North-Holland, Amsterdam*, 1992. (Summary) **93m:62075** 62G05 (62F35, 62J05)

— (*with* Jurečková, Jana) Regression rank scores and regression quantiles. *Ann. Statist.* **20** (1992), *no.* 1, 305–330. (Gutti J. Babu) **93c:62069** 62G05 (62J05)

Gutev, V. (*with* Nedev, S.; Pelant, Jan; Valov, V.) Cantor set selectors. Proceedings of the Symposium on General Topology and Applications (Oxford, 1989). *Topology Appl.* **44** (1992), *no.* 1-3, 163–166. (Summary) **93e:54011** 54C65 (54E52)

Guth, Alan H. Creation of a universe in the laboratory. *Particles, strings and cosmology* (*Boston, MA*, 1990), 603–622, *World Sci. Publishing, River Edge, NJ*, 1991. (Summary) **93b:83066** 83F05 (81V17)

— Can a man-made universe be created by quantum tunneling without an initial singularity? The birth and early evolution of our Universe (Gräftåvallen, 1990). *Phys. Scripta* **1991**, *Vol.* T36, 237–246. (Summary) **93b:83024** 83C45 (83F05)

— (*with* Carroll, Sean M.; Farhi, Edward) An obstacle to building a time machine. *Phys. Rev. Lett.* **68** (1992), *no.* 3, 263–266. (Laszlo B. Szabados) **93e:83048a** 83C75

— (*with* Carroll, Sean M.; Farhi, Edward) Errata: "An obstacle to building a time machine". *Phys. Rev. Lett.* **68** (1992), *no.* 22, 3368. (Laszlo B. Szabados) **93e:83048b** 83C75

Guthmann, Andreas Effective primality tests for integers of the forms $N = k \cdot 3^n + 1$ and $N = k \cdot 2^m 3^n + 1$. (English summary) *BIT* **32** (1992), *no.* 3, 529–534. (Samuel S. Wagstaff, Jr.) **93h:11008** 11A51 (11Y11)

Guthrie, Graeme A. (*with* Hickman, Mark S.) Nonlocal symmetries of the KdV equation. (English summary) *J. Math. Phys.* **34** (1993), *no.* 1, 193–205. (Walter Oevel) **93m:58052** 58F07 (35Q53, 58F37)

Gutiérrez, Carlos Dissipative vector fields on the plane with infinitely many attracting hyperbolic singularities. (English summary) *Bol. Soc. Brasil. Mat.* (*N.S.*) **22** (1992), *no.* 2, 179–190. (Robert Roussarie) **93i:58089** 58F10 (34C05, 58F21)

Gutiérrez, Cristian E. (*with* Wheeden, Richard L.) Bounds for the fundamental solution of degenerate parabolic equations. *Comm. Partial Differential Equations* **17** (1992), *no.* 7-8, 1287–1307. (Francesco Zirilli) **93h:35111** 35K65 (35A08)

Gutiérrez, J. *see* **Gutiérrez, Jaime G.**

Gutiérrez, J. M. *see* **Gutiérrez Díez, José Manuel**

Gutiérrez, Jaime G. Rings in the near-rings of formal power series. *Period. Math. Hungar.* **23** (1991), *no.* 1, 1–4. (Günter Pilz) **93a:16037** 16Y30

Gutiérrez, Joaquín M. *see* **Gutiérrez del Alamo, Joaquín M.**

Gutiérrez, Mauricio A. (*with* Bogley, William A.) Mayer-Vietoris sequences in homotopy of 2-complexes and in homology of groups. *J. Pure Appl. Algebra* **77** (1992), *no.* 1, 39–65. (Johannes Huebschmann) **93e:20069** 20J05 (57M20)

Gutierrez, R. *see* **Gutiérrez Jáimez, Ramón**

Gutiérrez, Ramón *see* **Gutiérrez Jáimez, Ramón**

Gutiérrez del Alamo, Joaquín M. (*with* González, Manuel) The compact weak topology on a Banach space. *Proc. Roy. Soc. Edinburgh Sect. A* **120** (1992), *no.* 3-4, 367–379. (Giovanni Emmanuele) **93c:46022** 46B20 (46A03, 46B10)

— Weakly continuous functions on Banach spaces not containing l_1. *Proc. Amer. Math. Soc.* **119** (1993), *no.* 1, 147–152. (Richard M. Aron) **93k:46011** 46B20 (46G99)

— (*with* Llavona, José G.) Composition operators between algebras of differentiable functions. *Trans. Amer. Math. Soc.* **338** (1993), *no.* 2, 769–782. (Richard M. Aron) **93j:46048** 46G20 (26E15, 46E25, 47B38)

Gutiérrez Díez, José Manuel On the gearing adjustment. An axiomatic approach. (English summary) *Theory and Decision* **33** (1992), *no.* 3, 207–221. (Summary) **93h:90053** 90B50 (90A09)

Gutiérrez Jáimez, Ramón (*with* Rosales, M. J.) Diffusion approximation for a stochastic model of population growth. (English summary) *Applied stochastic models and data analysis* (*Granada*, 1991), 315–320, *World Sci. Publishing, River Edge, NJ*, 1991. (*see* **93g:62001**) 60J70 (92D25)

— (*with* Angulo Ibañez, J. M.; Juan Gonzalez, A.; Pérez, Rigoberto) Inference in lognormal multidimensional diffusion processes with exogenous factors: application to modelling in economics. *Appl. Stochastic Models Data Anal.* **7** (1991), *no.* 4, 295–316. (Summary) **93k:62172** 62M05

— (*with* Juan Gonzalez, A.; Román Román, P.) Construction of first-passage-time densities for a diffusion process which is not necessarily time-homogeneous. *J. Appl. Probab.* **28** (1991), *no.* 4, 903–909. (Summary) **93a:60123** 60J60

— (*with* Ruiz Medina, M. D.; Valderrama Bonnet, Mariano J.) Stochastic analysis of the Kiefer field. (Spanish. English summary) *Papers in honor of Pablo Bobillo Guerrero* (*Spanish*), 213–227, *Univ. Granada, Granada*, 1992. (Summary) **93m:60098** 60G60 (60F99)

— (*with* Valderrama Bonnet, Mariano J.) A note about the Gaussian property of the Brownian bridge. (English summary) *Appl. Stochastic Models Data Anal.* **8** (1992), *no.* 1, 1–5. (Summary) **93e:60163** 60J65 (60G15)

— *see also* **Applied stochastic models and data analysis, 93g:62001**

Gutin, A. M. (*with* Grosberg, A. Yu.; Shakhnovich, E. I.) Globular state of branched random heteropolymers. (English summary) *J. Phys. A* **26** (1993), *no.* 5, 1037–1049. (Summary) **93k:82072** 82D60 (92D20)

Gutjahr, Walter J. (*with* Pflug, G. Ch.) The asymptotic distribution of leaf heights in binary trees. (English summary) *Graphs Combin.* **8** (1992), *no.* 3, 243–251. (Edward A. Bender) **93i:05049** 05C05 (05A16)

— (*with* Pflug, G. Ch.) The limiting common distribution of two leaf heights in a random binary tree. (French summary) *RAIRO Inform. Théor. Appl.* **26** (1992), *no.* 1, 1–18. (Summary) **93b:68032** 68Q25

— The variance of level numbers in certain families of trees. (English summary) *Random Structures Algorithms* **3** (1992), *no.* 4, 361–374. (Zbigniew Palka) **93i:05116** 05C80

— (*with* Pflug, G. Ch.) The asymptotic contour process of a binary tree is a Brownian excursion. *Stochastic Process. Appl.* **41** (1992), *no.* 1, 69–89. (G. Louchard) **93i:60017** 60C05 (05C05, 60J65, 68R10)

Gutknecht, Martin H. (*with* Boley, Daniel L.; Elhay, Sylvan; Golub, Gene H.) Nonsymmetric Lanczos and finding orthogonal polynomials associated with indefinite weights. *Numer. Algorithms* **1** (1991), *no.* 1, 21–43. (Alexander S. Babanin) **93f:65033** 65F15 (65F30, 65F50, 65G05)

— A completed theory of the unsymmetric Lanczos process and related algorithms. I. *SIAM J. Matrix Anal. Appl.* **13** (1992), *no.* 2, 594–639. (E. L. Yip) **93e:65053** 65F10 (30E05, 41A21, 65F15)

— (*with* Freund, Roland W.; Nachtigal, Noël M.) An implementation of the look-ahead Lanczos algorithm for non-Hermitian matrices. (English summary) *SIAM J. Sci. Comput.* **14** (1993), *no.* 1, 137–158. (Summary) **93h:65048** 65F15

Gutlyanskiĭ, V. Ya. (*with* Ryazanov, V. I.) On the representation of solutions with singularities for the generalized Cauchy-Riemann system. (Russian) *Dokl. Akad. Nauk SSSR* **321** (1991), *no.* 6, 1147–1150; *translation in Soviet Math. Dokl.* **44** (1992), *no.* 3, 858–861. (J. Lawrynowicz) **93h:30033** 30C70 (30C62)

— (*with* Ryazanov, V. I.) Solutions with singularities of an equation in mathematical physics. (Russian. Russian and Ukrainian summaries) *Ukraïn. Mat. Zh.* **44** (1992), *no.* 2, 174–178; *translation in Ukrainian Math. J.* **44** (1992), *no.* 2, 155–159. (Jiří Rákosník) **93k:35073** 35J20 (35A20)

Gutman, A. E. On the representation of lattice-normed spaces. (Russian) *Sibirsk. Mat. Zh.* **32** (1991), *no.* 2, 41–54, 211; *translation in Siberian Math. J.* **32** (1991), *no.* 2, 210–221. (Yu. A. Abramovich) **93c:46034** 46B40 (46A40, 47B65)

Gutman, Aron (*with* Garlauskas, Algis; Shimoliunas, Algirdas) Some logic functions realized on a stationary nonlinear dendrite. I. Exciting synapses. (English, Russian and Lithuanian summaries) *Informatica* **2** (1991), *no.* 3, 403–413, 459, 466. 94C10 (92B20)

Gutman, Ivan (*with* Zhang, Fu Ji; Chen, Rong Si; Guo, Xiao Feng) Benzenoid systems whose (x, y, z)-invariants have $x = 1$ and $x = 2$. *Match No.* 26 (1991), 229–241. (Zhibo Chen) **93b:92024** 92E10 (05C70, 05C90)

— Some analytical properties of the independence and matching polynomials. (English summary) *Match No.* 28 (1992), 139–150. (N. Trinajstić) **93k:05128** 05C70

Gutman, Michael (*with* Feder, Meir; Merhav, Neri) Universal prediction of individual sequences. *IEEE Trans. Inform. Theory* **38** (1992), *no.* 4, 1258–1270. (Summary) **93b:94019** 94A55 (94A29)

Gutman, P.-O. On-line identification of transfer function value sets. (English summary) *Identification and system parameter estimation* 1991, *Vol.* 1,2 (*Budapest*, 1991), 209–213, *IFAC Sympos. Ser.*, 3, *Pergamon, Oxford*, 1992. (*see* **93h:93009**) 93B30

Gutman, Shaul Data and uncertain parameters in robust analysis. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 8, *part I*, 1238–1239. 93D09

— Root clustering for convex combination of complex polynomials. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 10, 1520–1522. 93D09

Gutmann, Sam (*with* Farhi, Edward) The functional integral constructed directly from the Hamiltonian. *Ann. Physics* **213** (1992), *no.* 1, 182–203. (Takashi Ichinose) **93c:81096** 81S40 (58D30)

— (*with* Maymin, Zakhar) Testing retrospective hypotheses. (English and French summaries) *Canad. J. Statist.* **20** (1992), *no.* 3, 335–345. (Ryszard Zieliński) **93k:62035** 62F03 (62F07)

Gutov, B. I. (*with* Fedorov, Alexandre V.) Vasiliĭ Mikhaĭlovich Fomin (on the occasion of his fiftieth birthday). (Russian) *Model. Mekh.* **4** (1990), *no.* 4, 1–2. 01A70

Gutowski, Roman Investigation of the stability of tranversal vibrations of a nonlinear string by the method of differential inequalities. (English summary) *Waves and stability in continuous media* (*Sorrento*, 1989), 168–179, *Ser. Adv. Math. Appl. Sci.*, 4, *World Sci. Publishing, River Edge, NJ*, 1991. (*see* **93g:00030**) 35B35 (35L70, 73D35, 73H10, 73K05, 73K12)

Guts, A. K. Semigroups and their automorphisms of the fundamental affine Lie group. (Russian. Russian summary) *Sibirsk. Mat. Zh.* **33** (1992), *no.* 4, 59–64, 221; *translation in Siberian Math. J.* **33** (1992), *no.* 4, 597–602 (1993). (Joachim Hilgert) **93i:22008** 22E25

Gutshabash, E. Sh. (*with* Lipovskiĭ, V. D.) A boundary value problem for a two-dimensional stationary Heisenberg magnet with nontrivial background. I. (Russian. English and Russian summaries) *Teoret. Mat. Fiz.* **90** (1992), *no.* 2, 259–272; *translation in Theoret. and Math. Phys.* **90** (1992), *no.* 2, 175–184. (Miroslav Kolesík) **93j:82007** 82B20 (35Q60)

— (*with* Lipovskiĭ, V. D.) Exact solutions of the nonlinear sigma model in curved space and the theory of magneto-ordered media with variable saturation time. (Russian. English summary) *Zap. Nauchn. Sem. S.-Peterburg. Otdel. Mat. Inst. Steklov.* (*POMI*) **199** (1992), *Voprosy Kvant. Teor. Polya Statist. Fiz.* 11, 71–80, 185. (Summary) **93c:82071** 82D40

Gutsul, I. S. (*with* Apanasov, B. N.) Greatly symmetric totally geodesic surfaces and closed hyperbolic 3-manifolds which share a fundamental polyhedron. (English summary) *Topology* '90 (*Columbus, OH*, 1990), 37–53, *Ohio State Univ. Math. Res. Inst. Publ.*, 1, *de Gruyter, Berlin*, 1992. (Athanase Papadopoulos) **93i:57017** 57M50 (20H15, 51M10)

Gutsunaev, Ts. I. (*with* Beisekeev, S. B.) A class of solutions of the steady-state vacuum Einstein equations. *JETP Lett.* **54** (1991), *no.* 11, 599–602 (1992); *translated from Pis'ma Zh. Èksper. Teoret. Fiz.* **54** (1991), *no.* 11, 597–599 (*Russian*). (From the text) **93b:83012** 83C20

Gutsviler, M. Ts. *see* **Gutzwiller, Martin C.**

Gutt, Simone (*with* Arnal, Didier; Cahen, Michel; Zahir, H.) A Moyal type * product on Hermitian symmetric spaces. (English summary) *Acad. Roy. Belg. Bull. Cl. Sci.* (6) **2** (1991), *no.* 1-3, 91–103. (Akira Yoshioka) **93i:81052** 81R05 (22E99, 81S99)

— (*with* Arnal, Didier; Cahen, Benjamin; Cahen, Michel) Une classe d'orbites coadjointes qui sont symplectomorphes à un fibré cotangent. (English summary) [A class of coadjoint orbits that are symplectomorphic to a cotangent bundle] *C. R. Acad. Sci. Paris Sér. I Math.* **312** (1991), *no.* 1, 127–130. (Alberto Medina) **93e:22021** 22E45 (58F05)

— (*with* Cahen, Michel; Rawnsley, John) Nonlinearizability of the Iwasawa Poisson Lie structure. *Lett. Math. Phys.* **24** (1992), *no.* 1, 79–83. (Alberto Medina) **93i:58050** 58F05

— (*with* Cahen, Michel; Rawnsley, John) Quantization of Kähler manifolds. II. (English summary) *Trans. Amer. Math. Soc.* **337** (1993), *no.* 1, 73–98. (Ivailo M. Mladenov) **93i:58063** 58F06 (32C17, 53C55, 81S10)

Guttman, Irwin (*with* Fraser, D. A. S.; Srivastava, M. S.) Conditional inference for treatment and error in multivariate analysis. *Biometrika* **78** (1991), *no.* 3, 565–572. (Jack C. Lee) **93c:62102** 62H15 (62J10)

— (*with* Draper, Norman R.) Treating bias as variance for experimental design purposes. (English summary) *Ann. Inst. Statist. Math.* **44** (1992), *no.* 4, 659–671. 62K99

— (*with* Reiser, B.; Faraggi, D.) Choice of sample size for testing the $P(X > Y)$. *Comm. Statist. Theory Methods* **21** (1992), *no.* 3, 559–569. (Summary) **93f:62136** 62N10 (62F03)

Guttmann, A. J. (*with* Brak, R.; Whittington, S. G.) On the behaviour of collapsing linear and branched polymers. Mathematical chemistry and computation (Dubrovnik, 1990). *J. Math. Chem.* **8** (1991), *no.* 1-3, 255–267. (Muthiah Daniel) **93a:82070** 82D60 (82–04, 82B26)

— (*with* Brak, R.; Whittington, S. G.) A collapse transition in a directed walk model. *J. Phys. A* **25** (1992), *no.* 9, 2437–2446. (Summary) **93a:82025** 82B41 (82D60)

— (*with* Enting, I. G.) Self-avoiding rings on the triangular lattice. *J. Phys. A* **25** (1992), *no.* 10, 2791–2807. (H. N. V. Temperley) **93b:82030** 82B41

— (*with* Enting, I. G.; Richmond, L. Bruce; Wormald, Nicholas C.) Enumeration of almost-convex polygons on the square lattice. (English summary) *Random Structures Algorithms* **3** (1992), *no.* 4, 445–461. (Jozef Širáň) **93h:05051** 05B99 (05A15)

Gutwin, Carl A. (*with* Keil, J. Mark) Classes of graphs which approximate the complete Euclidean graph. *Discrete Comput. Geom.* **7** (1992), *no.* 1, 13–28. (Gui Zhen Liu) **93a:05059** 05C12

Gutzwiller, Martin C. Chaos and symmetry in the history of mechanics. (Bulgarian) Translated from the English and with commentaries by Ivan Chobanov. *Fiz.-Mat. Spis. Bʺlgar. Akad. Nauk.* **33(66)** (1991), *no.* 3-4, 196–223 (1992). (Editors) **93f:01004** 01A05 (58–03, 70–03)

Gun, Sy-Ming (*with* Cottle, Richard W.) Two characterizations of sufficient matrices. *Linear Algebra Appl.* **170** (1992), 65–74. (J. Parida) **93g:90074** 90C33 (15A57)

Guven, Jemal (*with* Ryan, Michael P., Jr.) Functional integrals and canonical quantum gravity. *Phys. Rev. D* (3) **45** (1992), *no.* 10, 3559–3576. (Claus Kiefer) **93g:83047** 83C45 (81V17)

Güven, R. Supermembranes on black holes. *Supermembranes and physics in* 2+1 *dimensions* (*Trieste*, 1989), 150–157, *World Sci. Publishing, River Edge, NJ*, 1990. (*see* **93g:81003**) 81T30 (83C57)

Guy, Richard K. Graphs and the strong law of small numbers. *Graph theory, combinatorics, and applications. Vol.* 2 (*Kalamazoo, MI*, 1988), 597–614, *Wiley-Intersci. Publ., Wiley, New York*, 1991. (*see* **93b:05003**) 05C30

— (*with* Sallows, Lee C. F.; Gardner, Martin; Knuth, Donald E.) Serial isogons of 90 degrees. *Math. Mag.* **64** (1991), *no.* 5, 315–324. (From the text) **93h:05050** 05B50

— (*with* Krattenthaler, C.; Sagan, Bruce E.) Lattice paths, reflections, & dimension-changing bijections. (English summary) *Ars Combin.* **34** (1992), 3–15. (Summary) **93i:05008** 05A15

— (*with* Bremner, Andrew) Nu-configurations in tiling the square. *Math. Comp.* **59** (1992), *no.* 199, 195–202, *S*1–*S*20. (Joe P. Buhler) **93a:11019** 11D25 (11G05, 11Y50, 52C20)

— (*with* Bremner, Andrew; Nowakowski, Richard J.) Which integers are representable as the product of the sum of three integers with the sum of their reciprocals? (English summary) *Math. Comp.* **61** (1993), *no.* 203, 117–130. (Philippe Satgé) **93k:11021** 11D25 (11G05, 11G40)

Guyon, Etienne *see* **Fractal forms, 93a:00011**

Guyon, F. (*with* Yvon, J. P.; Henry, Jacques) On a weighting method improving identifiability of distributed parameter systems. *Optimal control of partial differential equations* (*Irsee*, 1990), 104–119, *Lecture Notes in Control and Inform. Sci.*, 149, *Springer, Berlin*, 1991. (Wen Huan Yu) **93g:93028** 93B30 (35R30, 93C20)

Guyon, Xavier (*with* Dinten, J. M.; Yao, Jian Feng) On the choice of the regularization parameter: the case of binary images in the Bayesian restoration framework. (English summary) *Spatial statistics and imaging* (*Brunswick, ME*, 1988), 55–77, *IMS Lecture Notes Monograph Ser.*, 20, *Inst. Math. Statist., Hayward, CA*, 1991. (Summary) **93j:60055** 60G35 (62M40, 68U10)

— Variations et identification de champs gaussiens sur $\mathbf{R}^2$. [Variations and identification of Gaussian fields in $\mathbf{R}^2$] *Probabilités numériques*, 134–139, *Collect. Didact.*, 10, *INRIA, Rocquencourt*, 1992. (*see* **93k:65002**) 60G15 (60G60, 62M10)

— (*with* Hardouin, C.) The chi-square coding test for nested Markov random field hypotheses. (English and French summaries) *Stochastic models, statistical methods, and algorithms in image analysis* (*Rome*, 1990), 165–176, *Lecture Notes in Statist.*, 74, *Springer, Berlin*, 1992. (Summary) **93j:62207** 62M02 (62M05, 62M40)

— (*with* Künsch, Hans R.) Asymptotic comparison of estimators in the Ising model. *Stochastic models, statistical methods, and algorithms in image analysis* (*Rome*, 1990), 177–198, *Lecture Notes in Statist.*, 74, *Springer, Berlin*, 1992. (*see* **93e:62005**) 62M40 (60K35, 82B05, 82B20)

Guyonnet, Régis (*with* Aubry, Nadine; Lima, Ricardo) Spatio-temporal symmetries and bifurcations via bi-orthogonal decompositions. *J. Nonlinear Sci.* **2** (1992), *no.* 2, 183–215. (Yi Yuan Chen) **93e:58136** 58F14 (34C23)

— (*with* Aubry, Nadine; Lima, Ricardo) Turbulence spectra. *J. Statist. Phys.* **67** (1992), *no.* 1-2, 203–228. (Olec Troshkin) **93f:76052** 76F05 (76F99)

Guz', A. N. (*with* Kabelka, I.; Markush, Sh.; et al.) ★ Динамика и устойчивость слоистых композитных материалов. (Russian. Russian summary) [Dynamics and stability of layered composite materials] "*Naukova Dumka*", *Kiev*, 1992. 368 *pp. ISBN* 5-12-002204-9 (From the preface) **93g:73084** 73K12 (73D15, 73H10, 73K20, 73S10)

Guzar, V. I. (*with* Sheremeta, M. N.) On some classes of positive functions. (Ukrainian. Russian summary) *Visnik L'viv. Derzh. Univ. Ser. Mekh.-Mat. No.* 30 (1988), 24, 74. 26A48

Güzel, Erhan Primitive idempotents of the group algebra CSL(3, q). *Math. Scand.* **70** (1992), *no.* 2, 177–185. (Donald L. White) **93k:20027** 20C33 (20C15)

Guzev, M. A. (*with* Klyatskin, V. I.; Popov, G. V.) Phase fluctuations and localization length in layered randomly inhomogeneous media. *Waves Random Media* **2** (1992), *no.* 2, 117–123. (Summary) **93b:34108** 34L25 (34F05)

de Guzman, Adolfo M. An information-theoretic proof of Hadamard's inequality. *Matimyás Mat.* **13** (1990), *no.* 1, 1–10. (B. Crstici) **93b:26030** 26D99 (94A15)

Guzmán, Enrique Isotropization in Brans-Dicke-Bianchi type-V. *Astrophys. Space Sci.* **191** (1992), *no.* 1, 157–159. (Summary) **93a:83032** 83D05

Guzmán, Fernando The variety of Boolean semirings. *J. Pure Appl. Algebra* **78** (1992), *no.* 3, 253–270. (Joel Berman) **93d:08007** 08B20 (06D05, 06E20, 16Y60)

Guzmán Sánchez, A. R. (*with* Plebański, Jerzy; Przanowski, M.) Deformations of algebraic types of the energy-momentum tensor. *J. Math. Phys.* **32** (1991), *no.* 10, 2839–2847.

(Mario C. Diaz) **93c:83042** 83C40 (58C27)

Guzzella, L. LQR in the presence of input saturation. (English summary) *Mathematics of the analysis and design of process control (Dublin, 1991/Lille, 1991)*, 303–312, *North-Holland, Amsterdam*, 1992. (*see* **93g:93004**) 49N10 (93D05)

Gvaramiya, A. A. (*with* Plotkin, B. I.) The homotopies of quasigroups and universal algebras. *Universal algebra and quasigroup theory (Jadwisin, 1989)*, 89–99, *Res. Exp. Math.*, 19, *Heldermann, Berlin*, 1992. (Sheila Oates-Williams) **93j:20141** 20N05 (08C10)

Gvozdik, A. A. On ordering of multicriterial objects based on rank criteria. *J. Comput. Systems Sci. Internat.* **30** (1992), *no.* 5, 60–69; *translated from Izv. Akad. Nauk SSSR Tekhn. Kibernet.* **1991**, *no.* 3, 69–79 (*Russian. Russian summary*). 90C29 (90A05)

Gvozdjak, Pavol (*with* Širáň, Jozef) Kuratowski-type theorems do not extend to pseudo-surfaces. *J. Combin. Theory Ser. B* **54** (1992), *no.* 2, 209–212. (Michael O. Albertson) **93a:05056** 05C10

al-Gwaiz, M. A. *see* **Al-Gwaiz, M. A.**

Gwet, Jean-Philippe (*with* Rivest, Louis-Paul) Outlier resistant alternatives to the ratio estimator. (English summary) *J. Amer. Statist. Assoc.* **87** (1992), *no.* 420, 1174–1182. 62D05

Gwo, Shang-Jr (*with* DeWitt-Morette, Cécile) One Spin group; two Pin groups. With the collaboration of L. Dąbrowski. *Proceedings of the International Symposium on Mathematics and Theoretical Physics (Guarujá, 1989)*, 341–382, *Sympos. Gaussiana Ser. A Math. Theoret. Phys.*, 1, *Inst. Gaussianum, Toronto, ON*, 1990. (Pierre Anglès) **93a:22017** 22E70 (15A66, 81R25)

Gwoździewicz, Janusz (*with* Ploski, Arkadiusz) On the Merle formula for polar invariants. (English and Polish summaries) *Bull. Soc. Sci. Lett. Łódź* **41** (1991), *no.* 1-10, 61–67. (Summary) **93h:14024** 14H99

Gyárfás, András (*with* Erdős, Paul; Faudree, Ralph J.; Schelp, Richard H.) Odd cycles in graphs of given minimum degree. *Graph theory, combinatorics, and applications, Vol. 1 (Kalamazoo, MI, 1988)*, 407–418, *Wiley-Intersci. Publ., Wiley, New York*, 1991. (Summary) **93d:05085** 05C38

— (*with* Faudree, Ralph J.; Lehel, Jenő) Minimal path pairable graphs. (English summary) Proceedings of the Twenty-third Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, FL, 1992). *Congr. Numer.* **88** (1992), 111–128. (Summary) **93j:05085** 05C35

— Graphs with k odd cycle lengths. *Discrete Math.* **103** (1992), *no.* 1, 41–48. (David Burns) **93d:05086** 05C38

— (*with* Dinitz, Jeffrey H.; Garnick, David K.) On the irregularity strength of the $m \times n$ grid. *J. Graph Theory* **16** (1992), *no.* 4, 355–374. (Michael Jacobson) **93i:05074** 05C35

— (*with* Csaba, László; Faudree, Ralph J.; Lehel, Jenő; Schelp, Richard H.) Networks communicating for each pairing of terminals. (English summary) *Networks* **22** (1992), *no.* 7, 615–626. (Summary) **93h:05097** 05C35 (68M10, 90B10)

Gyarmati, Edit Ideale Zahlen und die Fermatsche Vermutung. [Ideal numbers and the Fermat conjecture] *Große Augenblicke aus der Geschichte der Mathematik*, 139–166, *Bibliographisches Inst., Mannheim*, 1990. (*see* **93g:01004**) 01A05

Gyllenberg, Mats (*with* Diekmann, O.; Thieme, Horst R.) Perturbation theory for dual semigroups. V. Variation of constants formulas. *Semigroup theory and evolution equations (Delft, 1989)*, 107–123, *Lecture Notes in Pure and Appl. Math.*, 135, *Dekker, New York*, 1991. (S. Kantorovitz) **93e:47047** 47D03 (47A55)

— (*with* Webb, G. F.) Asynchronous exponential growth of semigroups of nonlinear operators. *J. Math. Anal. Appl.* **167** (1992), *no.* 2, 443–467. (V. N. Razzhevaikin) **93i:47108** 47H20 (34G20, 47N20)

— (*with* Hanski, Ilkka) Single-species metapopulation dynamics: a structured model. (English summary) *Theoret. Population Biol.* **42** (1992), *no.* 1, 35–61. (Summary) **93g:92020** 92D25

Gyoja, Akihiko Theory of prehomogeneous vector spaces without regularity condition. *Publ. Res. Inst. Math. Sci.* **27** (1991), *no.* 6, 861–922. (Hubert Rubenthaler) **93f:22018** 22E47 (32A45)

— Representations of reductive group schemes. *Tsukuba J. Math.* **15** (1991), *no.* 2, 335–346. (R. T. Hoobler) **93b:14070** 14L15 (20G05)

— On the regularity of prehomogeneous vector spaces. *Proc. Japan Acad. Ser. A Math. Sci.* **68** (1992), *no.* 10, 341–344. (Lucy Moser-Jauslin) **93m:14042** 14L30 (32M12)

Gyöngy, István On stochastic partial differential equations. Results on approximations. *Topics in stochastic systems: modelling, estimation and adaptive control*, 116–136, *Lecture Notes in Control and Inform. Sci.*, 161, *Springer, Berlin*, 1991. (Mireille Chaleyat-Maurel) **93c:60091** 60H15 (35R60, 93E10)

Györfi, László (*with* van der Meulen, Edward C.) On the nonparametric estimation of the entropy functional. *Nonparametric functional estimation and related topics (Spetses, 1990)*, 81–95, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 335, *Kluwer Acad. Publ., Dordrecht*, 1991. (David W. Scott) **93a:62057** 62G05

— (*with* Carbonez, A.; van der Meulen, Edward C.) Nonparametric entropy estimation based on randomly censored data. (Russian summary) *Problems Control Inform. Theory/Problemy Upravlen. Teor. Inform.* **20** (1991), *no.* 6, 441–451. (Summary) **93d:62054** 62G05

— (*with* Carbonez, A.; van der Meulen, Edward C.) Universal consistency of partitioning-estimates of a regression function for randomly missing data. (English summary) *Computational statistics, Vol. 1 (Neuchâtel, 1992)*, 429–440, *Physica, Heidelberg*, 1992. (*see* **93k:62002**) 62G05 (62J02)

— (*with* Lugosi, Gábor) Kernel density estimation from ergodic sample is not universally consistent. (English summary) *Comput. Statist. Data Anal.* **14** (1992), *no.* 4, 437–442. (M. Bertrand-Retali) **93m:62076** 62G05 (62G20)

— (*with* Barron, Andrew R.; van der Meulen, Edward C.) Distribution estimation consistent in total variation and in two types of information divergence. (English summary) *IEEE Trans. Inform. Theory* **38** (1992), *no.* 5, 1437–1454. (Summary) **93h:62067** 62G05 (94A17)

Györgyi, Géza (*with* Graham, Robert; Prange, R. E.) Renormalization group study of quantum fluctuations near classical critical points of Hamiltonian systems. *J. Statist. Phys.* **68** (1992), *no.* 1-2, 175–188. (Dieter H. Mayer) **93h:81030** 81Q50 (81Q20)

— *see also* **From phase transitions to chaos, 93b:58001**

Győri, Ervin On the number of edge disjoint cliques in graphs of given size. *Combinatorica* **11** (1991), *no.* 3, 231–243. (Carsten Thomassen) **93a:05075** 05C35

— (*with* Plummer, Michael D.) The Cartesian product of a k-extendable and an l-extendable graph is $(k + l + 1)$-extendable. Special volume to mark the centennial of Julius Petersen's "Die Theorie der regulären Graphs", Part II. *Discrete Math.* **101** (1992), *no.* 1-3, 87–96. (Gui Zhen Liu) **93d:05116** 05C70

Győri, István (*with* Ladas, G.) ★ Oscillation theory of delay differential equations. With applications. Oxford Mathematical Monographs. Oxford Science Publications. *The Clarendon Press, Oxford University Press, New York*, 1991. xii+368 *pp. ISBN* 0-19-853582-1 (Hiroshi Onose) **93m:34109** 34K15 (34–02, 34C10, 34K25, 45G10, 92B99)

— Stability in a class of integrodifferential systems. (English summary) *Recent trends in differential equations*, 269–284, *World Sci. Ser. Appl. Anal.*, 1, *World Sci. Publishing, River Edge, NJ*, 1992. (C. Corduneanu) **93j:34113** 34K20 (45J05, 45M10)

— Oscillations of nonlinear delay differential equations—general linearized oscillations results. (English summary) A Chinese summary appears in Chinese Ann. Math. Ser. A. **13** (1992), no. 5, 654. *Chinese Ann. Math. Ser. B* **13** (1992), *no.* 4, 485–506. (Anatoliĭ Fedorovich Ivanov) **93m:34110** 34K15 (34K40)

— (*with* Ladas, G.) Positive solutions of integro-differential equations with unbounded delay. (English summary) *J. Integral Equations Appl.* **4** (1992), *no.* 3, 377–390. (George Seifert) **93i:34132** 34K15 (45J05)

— Necessary and sufficient stability conditions in an asymptotically ordinary delay differential equation. (English summary) *Differential Integral Equations* **6** (1993), *no.* 1, 225–239. (T. A. Burton) **93j:34114** 34K20 (34K15, 34K25)

Győrvári, J. (*with* Mihálykó, Cs.) The numerical solution of nonlinear differential equations by spline functions. *Acta Math. Hungar.* **59** (1992), *no.* 1-2, 39–48. (Introduction) **93b:65095** 65L05 (65D07)

Győry, K. (*with* Evertse, Jan-Hendrik) Some results on Thue equations and Thue-Mahler equations. *Computational number theory (Debrecen, 1989)*, 295–302, *de Gruyter, Berlin*, 1991. (T. N. Shorey) **93c:11014** 11D41 (11D75)

— (*with* Evertse, Jan-Hendrik) Thue inequalities with a small number of solutions. *The mathematical heritage of C. F. Gauss*, 204–224, *World Sci. Publishing, River Edge, NJ*, 1991. (T. N. Shorey) **93e:11045** 11D75 (11J25)

— (*with* Pethő, Attila) On second order linear divisibility sequences over algebraic number fields. *Publ. Math. Debrecen* **39** (1991), *no.* 1-2, 171–179. (A. J. van der Poorten) **93i:11011** 11B37

— (*with* Evertse, Jan-Hendrik) Effective finiteness theorems for decomposable forms of given discriminant. *Acta Arith.* **60** (1992), *no.* 3, 233–277. (C. L. Stewart) **93b:11035** 11D57 (11D75)

Gysin, Liliana M. The isoperimetric inequality for nonsimple closed curves. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 1, 197–203. (T. Banchoff) **93f:53063** 53C65 (53A35)

Gyssens, Marc (*with* Van Gucht, Dirk) The powerset algebra as a natural tool to handle nested database relations. *J. Comput. System Sci.* **45** (1992), *no.* 1, 76–103. (Summary) **93a:68032** 68P15

Gyunter, Nikolaĭ Maksimovich *see* **Günter, N. M.**

Gzyl, Henryk Nonunitary representation of canonical transformations and applications to filtering theory. *Acta Cient. Venezolana* **38** (1987), *no.* 5-6, 620–624. (Tamer Başar) **93e:93062** 93E11 (58F40, 70H15, 93E25)

— (*with* Jiménez, Raúl) From heat equations to wave equations: more on transmutation operators. *Math. Comput. Modelling* **16** (1992), *no.* 3, 59–61. (Eugene Schlereth) **93a:35007** 35A22 (35K05, 35L05, 47N20)

— (*with* Betz, C.; Jiménez, Raúl) Probabilistic approach to wave propagations problems. V. A collection of examples. (English summary) *Math. Comput. Modelling* **16** (1992), *no.* 10, 165–176. (Genowefa Majcher) **93k:35154** 35L05 (35A22)

–H–

tran thu Ha *see* **Tran Thu Ha**

Ha, Ming Hu (*with* Wang, Xi Zhao) Fuzzy linear regression analysis. (English summary) *Fuzzy Sets and Systems* **51** (1992), *no.* 2, 179–188. 62J99 (04A72)

Ha, Z. N. C. (*with* Haldane, F. D. M.; Talstra, J. C.; Bernard, Denis; Pasquier, V.) Yangian symmetry of integrable quantum chains with long-range interactions and a new description of states in conformal field theory. (English summary) *Phys. Rev. Lett.* **69** (1992), *no.* 14, 2021–2025. (Summary) **93h:82020** 82B23 (81T40)

Haab, François Immersions tendues de surfaces dans $\mathbf{E}^3$. [Tight immersions of surfaces in $\mathbf{E}^3$] *Comment. Math. Helv.* **67** (1992), *no.* 2, 182–202. (Steven G. Buyske) **93e:53068** 53C42 (53A05, 57R42)

Haaf, Hermann (*with* Roberts, Mark; Stewart, Ian N.) A Hopf bifurcation with spherical symmetry. (English summary) *Z. Angew. Math. Phys.* **43** (1992), *no.* 5, 793–826. (Ian Melbourne) **93g:58105** 58F14 (34C23)

Haag, Rudolf Quantum physics and gravitation. *Constructive quantum field theory, II (Erice, 1988)*, 265–282, *NATO Adv. Sci. Inst. Ser. B Phys.*, 234, *Plenum, New York*, 1990. (*see* **93g:81074**) 83C45

— *see also* **Special issue dedicated to R. Haag on the occasion of his 70th birthday, 93h:81004**

Haag, S. (*with* Charnes, Abraham; Jaska, P.; Semple, John Hartley) Sensitivity of efficiency classifications in the additive model of data envelopment analysis. *Internat. J. Systems Sci.* **23** (1992), *no.* 5, 789–798. (Summary) **93a:90066** 90C31 (90C08)

Haag, Ulrich Diskriminantenalgebren quadratischer Formen. [Discriminant algebras of quadratic forms] *Arch. Math. (Basel)* **57** (1991), *no.* 6, 546–554. (Jorge F. Morales) **93a:11031** 11E88 (15A63, 15A66)

Haagensen, Peter E. Differential renormalization of the Wess-Zumino model. *Modern Phys. Lett. A* **7** (1992), *no.* 10, 893–901. (Piotr Kosiński) **93c:81138** 81T15 (81T60)

Haake, Fritz (*with* Wiedemann, Harald; Życzkowski, Karol) Lyapunov exponents from quantum dynamics. (English summary) *Ann. Physik* (8) **1** (1992), *no.* 7, 531–539. 81Q50 (58F15)

de Haan, L. A Brownian bridge connected with extreme values. (English summary) *Sankhyā Ser. A* **52** (1990), *no.* 2, 157–165. (Summary) **93d:60093** 60G70 (60F17, 62E20)

Haara, Pentti (*with* Arjas, Elja) Observation scheme and likelihood. *Scand. J. Statist.* **19**

(1992), *no.* 2, 111–132. (František Rublík) **93m:60091** 60G55 (62A10, 92C50)

— (*with* Arjas, Elja; Norros, Ilkka) Filtering the histories of a partially observed marked point process. *Stochastic Process. Appl.* **40** (1992), *no.* 2, 225–250. (Federico Marchetti) **93j:60054** 60G35 (60G55, 62M20, 93E11)

Haario, Heikki (*with* Saksman, Eero) Simulated annealing process in general state space. *Adv. in Appl. Probab.* **23** (1991), *no.* 4, 866–893. (Tsu Shu Chiang) **93e:60146** 60J27 (60F05, 60F10)

— (*with* Saksman, Eero) Weak convergence of the simulated annealing process in general state space. *Ann. Acad. Sci. Fenn. Ser. A I Math.* **17** (1992), *no.* 1, 39–50. (Dominique Lépingle) **93d:60109** 60J05 (65U05, 93E20)

Haas, Peter J. (*with* Shedler, Gerald S.) Stochastic Petri nets: modeling power and limit theorems. (English summary) *Probab. Engrg. Inform. Sci.* **5** (1991), *no.* 4, 477–498. (Summary) **93e:68086** 68Q90 (68U20)

— The maximum and mean of a random length sequence. *J. Appl. Probab.* **29** (1992), *no.* 2, 460–466. (Summary) **93i:60099** 60G70 (60K05)

Haase, Gundolf (*with* Langer, Ulrich[1]; Meyer, Arnd) The approximate Dirichlet domain decomposition method. I. An algebraic approach. (German summary) *Computing* **47** (1991), *no.* 2, 137–151. (Jan Mandel) **93e:65146a** 65N55 (65F10, 65N22)

— (*with* Langer, Ulrich[1]; Meyer, Arnd) The approximate Dirichlet domain decomposition method. II. Applications to 2nd-order elliptic BVPs. (German summary) *Computing* **47** (1991), *no.* 2, 153–167. (Jan Mandel) **93e:65146b** 65N55 (65F10, 65N22)

— (*with* Langer, Ulrich[1]; Meyer, Arnd) Domain decomposition preconditioners with inexact subdomain solvers. *J. Numer. Linear Algebra Appl.* **1** (1992), *no.* 1, 27–41. (Summary) **93c:65153** 65N55 (65N30)

Haase, Maria (*with* Argyris, John; Faust, Gunter) Χάoς—an adventure in chaos. Second World Congress on Computational Mechanics, Part III (Stuttgart, 1990). *Comput. Methods Appl. Mech. Engrg.* **91** (1991), *no.* 1-3, 997–1091. (Helena E. Nusse) **93f:58142** 58F13 (34C99, 70K50)

Haba, Zbigniew Solutions of quantum mechanics and field theory in terms of stochastic (partial) differential equations. *White noise analysis* (*Bielefeld*, 1989), 131–139, *World Sci. Publishing, River Edge, NJ*, 1990. (David Applebaum) **93b:81124** 81S20 (60H15, 81T08, 81T20)

— Ergodicity and invariant measures of some randomly perturbed classical fields. *J. Math. Phys.* **32** (1991), *no.* 12, 3463–3472. (Ana Bela Cruzeiro) **93c:58112** 58F11 (34F05, 58F30, 58F39, 76M35)

Habashi, W. G. (*with* Strigberger, J.; Baruzzi, G.; Fortin, Michel) Some special purpose preconditioners for conjugate gradient-like methods applied to CFD. (English summary) *Internat. J. Numer. Methods Fluids* **16** (1993), *no.* 7, 581–596. (Summary) **93k:76093** 76M25 (76M10, 76M20)

— (*with* Bhat, M. V.; Liu, Joseph W. H.; Nguyen, V. N.; Peeters, M. F.) A note on nested dissection for rectangular grids. (English summary) *SIAM J. Matrix Anal. Appl.* **14** (1993), *no.* 1, 253–258. 65F50

Habashy, Tarek M. A generalized Gel'fand-Levitan-Marchenko integral equation. *Inverse Problems* **7** (1991), *no.* 5, 703–711. (Pierre C. Sabatier) **93c:78011** 78A45 (34A55, 34L25)

Habbal, Abderrahmane Theoretical and numerical study of nonsmooth shape optimization applied to the arch problem. *Mech. Structures Mach.* **20** (1992), *no.* 1, 93–117. (Summary) **93d:73053** 73K40 (49Q10, 73K15)

— (*with* Chenais, D.) Deterioration of a finite element method for arch structures when the thickness goes to zero. *Numer. Math.* **62** (1992), *no.* 3, 321–341. (Claude Surry) **93f:73099** 73V05 (65N30, 73K99)

Habbal, S. R. (*with* Hu, You Qiu) Interaction between perpendicular magnetohydrodynamic shocks. (English summary) *Phys. Fluids B* **5** (1993), *no.* 3, 732–741. (Summary) **93k:76123** 76W05 (76L05)

Habbas, Z. (*with* Belmesk, M.) A process calculus with shared variables. (English summary) *Comput. Artificial Intelligence* **11** (1992), *no.* 4, 335–350. (Summary) **93j:68118** 68Q55

Habegger, Nathan Applications of Morse theory to link theory. *Knots* 90 (*Osaka*, 1990), 389–394, *de Gruyter, Berlin*, 1992. (Bruno Zimmermann) **93g:57030** 57Q60 (57M25, 57Q45, 57R70)

Habel, Annegret (*with* Ehrig, Hartmut; Kreowski, Hans-Jörg; Parisi-Presicce, Francesco) Parallelism and concurrency in high-level replacement systems. *Math. Structures Comput. Sci.* **1** (1991), *no.* 3, 361–404. (K. G. Subramanian) **93e:68047** 68Q42

— (*with* Kreowski, Hans-Jörg; Vogler, Walter) Decidable boundedness problems for sets of graphs generated by hyperedge-replacement. 1989 International Joint Conference on Theory and Practice of Software Development (TAPSOFT '89) (Barcelona, 1989). *Theoret. Comput. Sci.* **89** (1991), *no.* 1, 33–62. (K. G. Subramanian) **93a:68116** 68R10 (03B35, 05C99)

Haber, Robert (*with* Zierfuss, R.) Identification of nonlinear models between the reflux flow and the top temperature of a distillation column. (English summary) *Identification and system parameter estimation* 1991, *Vol.* 1,2 (*Budapest*, 1991), 859–864, *IFAC Sympos. Ser.*, 3, *Pergamon, Oxford*, 1992. (*see* **93h:93009**) 93B30 (93C95)

— (*with* Bars, R.) One-step-ahead adaptive predictive control of nonlinear processes. (English summary) *Mathematics of the analysis and design of process control* (*Dublin*, 1991/*Lille*, 1991), 435–444, *North-Holland, Amsterdam*, 1992. (*see* **93g:93004**) 93C40 (93C10)

— Transformation of the absolute descriptions of linear and nonlinear processes to their incremental forms. *Internat. J. Systems Sci.* **23** (1992), *no.* 6, 935–955. (Abdellah Benzaouia) **93e:93017** 93B30 (34A25, 34A30, 34A34, 93A30)

Haber, Seymour Two formulas for numerical indefinite integration. *Math. Comp.* **60** (1993), *no.* 201, 279–296. (Georgi Grozev) **93d:65026** 65D32 (41A55)

Haberman, Richard Standard form and a method of averaging for strongly nonlinear oscillatory dispersive traveling waves. *SIAM J. Appl. Math.* **51** (1991), *no.* 6, 1638–1652. (V. G. Kolomiets) **93a:73027** 73D35 (35B20, 35Q53, 76B15)

— Phase shift modulations for perturbed strongly nonlinear oscillatory dispersive waves. (English summary) *Nonlinear dispersive wave systems* (*Orlando, FL*, 1991), 73–82, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93i:35112** 35Q35

Haberman, Steven Pension funding with time delays: a stochastic approach. (English summary) *Insurance Math. Econom.* **11** (1992), *no.* 3, 179–189. (Summary) **93m:62212** 62P05

Habermann, Lutz A family of metrics on the moduli space of $\mathbb{CP}^2$ instantons. (English summary) *Comm. Math. Phys.* **149** (1992), *no.* 1, 209–216. (Antony Maciocia) **93f:58025** 58D27 (53C07, 58E11, 81T13)

Habets, L. C. G. J. M. ★ Stabilization of time-delay systems: an overview of the algebraic approach. EUT Report-WSK, 92-02. *Eindhoven University of Technology, Department of Mathematics and Computing Science, Eindhoven*, 1992. vi+112 *pp.* (V. Kolmanovskiĭ) **93j:93006** 93-02 (93B05, 93B25, 93C30, 93D15)

Habets, P. (*with* De Coster, C.; Fabry, C.) An abstract approach to a class of nonlinear boundary value problems. *Differential Integral Equations* **4** (1991), *no.* 5, 1073–1087. (Maria Patrizia Pera) **93d:47111** 47H15 (34B15, 34C25, 35G30, 47N20)

— (*with* Fabry, C.) Periodic solutions of second order differential equations with superlinear asymmetric nonlinearities. *Arch. Math.* (*Basel*) **60** (1993), *no.* 3, 266–276. (Pavel Drábek) **93j:34055** 34C25 (34B15)

Habib, M. *see* **Habib, Michel**

Habib, M. K. *see* **Habib, Muhammad K.**

Habib, Michel (*with* Kelly, David; Möhring, Rolf H.) Interval dimension is a comparability invariant. Combinatorics of ordered sets (Oberwolfach, 1988). *Discrete Math.* **88** (1991), *no.* 2-3, 211–229. (K. P. Bogart) **93a:06004** 06A07

— (*with* Morvan, M.; Rampon, Jean-Xavier) On the calculation of transitive reduction-closure of orders. (English summary) Graph theory and combinatorics (Marseille-Luminy, 1990). *Discrete Math.* **111** (1993), *no.* 1-3, 289–303. (Summary) **93k:68045** 68Q25 (05C20, 68R10)

Habib, Mohamed E. (*with* Amira, Tarik A.; Al-Harby, Abdullah H.) Estimation of the intensity function of nonhomogeneous Poisson process using nonparametric density estimation methods. (English summary) *Egyptian Statist. J.* **35** (1991), *no.* 2, 324–338. (Lydger Rüschendorf) **93j:62088** 62G05 (62M09)

Habib, Muhammad K. (*with* Thavaneswaran, A.) Optimal estimation for semimartingale neuronal models. (English summary) *J. Statist. Plann. Inference* **33** (1992), *no.* 1, 143–156. 60G55 (62F99)

Habib, Salman Stochastic inflation: quantum phase-space approach. (English summary) *Phys. Rev. D* (3) **46** (1992), *no.* 6, 2408–2427. (Summary) **93g:83048** 83C45 (83F05)

— (*with* Kandrup, Henry E.) Nonlinear noise in cosmology. (English summary) *Phys. Rev. D* (3) **46** (1992), *no.* 12, 5303–5314. (Summary) **93h:83037** 83F05 (82C35)

Habibullah, Mohamed (*with* Ebrahimi, Nader; Soofi, Ehsan) Testing exponentiality based on Kullback-Leibler information. (English summary) *J. Roy. Statist. Soc. Ser. B* **54** (1992), *no.* 3, 739–748. 62F03

Habibullin, I. T. *see* **Khabibullin, I. T.**

Haboush, William (*with* Fossum, Robert) The cohomology algebra of a commutative group scheme. *Trans. Amer. Math. Soc.* **339** (1993), *no.* 2, 553–565. (R. T. Hoobler) **93m:14041** 14L17 (14L15, 16E40)

Haccoun, David (*with* Montpetit, Marie-José; Deslauriers, Gilles) A branching process analysis of the stack algorithm for variable channel conditions. (English summary) *IEEE Trans. Inform. Theory* **38** (1992), *no.* 6, 1845–1848. 94A40

Hach, Edwin E., III (*with* Gerry, Christopher C.) Four-photon coherent states. Properties and generation. (English summary) *J. Modern Opt.* **39** (1992), *no.* 12, 2501–2517. 81R30 (81V80)

Hachem, G. Spectral theory for Dirac operators with a Stark potential. *J. Math. Pures Appl.* (9) **71** (1992), *no.* 4, 293–329. (Hitoshi Kitada) **93g:47062** 47F05 (35P05, 35Q40, 47A40, 47N50, 81Q10)

Hachenberger, Dirk (*with* Jungnickel, Dieter) Translation nets: a survey. (English summary) A collection of contributions in honour of Jack van Lint. *Discrete Math.* **106/107** (1992), 231–242. (P. B. Kirkpatrick) **93i:51011** 51E14

— On the existence of translation nets. (English summary) *J. Algebra* **152** (1992), *no.* 1, 207–229. (N. D. Podufalov) **93m:51016** 51E30 (05B25, 20D15, 51A15)

Hacınlıyan, Avadis (*with* Fırat, F. Gülay; Özel, R. Mert) Chaotic behavior in a class of one-dimensional maps. (English and Turkish summaries) *Doğa Mat.* **16** (1992), *no.* 3, 210–217. (Frederick R. Marotto) **93m:58073** 58F13 (58F14)

Hacısalihoğlu, H. Hilmi (*with* Güneş, R.; Keleş, S.) Two corollaries of Holditch's theorem for one-parameter closed spatial motions. (English summary) *Comm. Fac. Sci. Univ. Ankara Ser. A_1 Math. Statist.* **38** (1989), *no.* 1-2, 53–58 (1990). (Andrzej Bucki) **93k:53017a** 53A17

— (*with* Güneş, R.; Keleş, S.) Two corollaries of Holditch's theorem for the parts of surface in E^3. (English summary) *Comm. Fac. Sci. Univ. Ankara Ser. A_1 Math. Statist.* **38** (1989), *no.* 1-2, 59–66 (1990). (Andrzej Bucki) **93k:53017b** 53A17

— (*with* Çalışkan, Mustafa) On the pair of generalized ruled surfaces under the homothetic motions of E^n. (English summary) *Comm. Fac. Sci. Univ. Ankara Ser. A_1 Math. Statist.* **38** (1989), *no.* 1-2, 95–102 (1990). (Josef Vala) **93m:53015** 53A25

Hack, James J. (*with* Williamson, David L.; Drake, John B.; Jakob, Rüdiger; Swarztrauber, Paul N.) A standard test set for numerical approximations to the shallow water equations in spherical geometry. (English summary) *J. Comput. Phys.* **102** (1992), *no.* 1, 211–224. (Summary) **93d:86006** 86A10 (65P05, 76C20, 86–08)

Hackbusch, Wolfgang A new multi-grid method. *Proceedings of the Second International Symposium on Numerical Analysis* (*Prague*, 1987), 59–69, *Teubner-Texte Math.*, 107, *Teubner, Leipzig*, 1988. (*see* **93b:65007**) 65N55

— The solution of large systems of BEM equations by the multi-grid and panel clustering technique. Numerical methods in applied science and industry (Torino, 1990). *Rend. Sem. Mat. Univ. Politec. Torino* **1991**, *Special Issue*, 163–187 (1992). (G. T. Symm) **93d:65104** 65N38 (65F10, 65R20)

— A parallel conjugate gradient method. (English summary) *J. Numer. Linear Algebra Appl.* **1** (1992), *no.* 2, 133–147. (Bruno Codenotti) **93k:65027** 65F10 (65Y05)

— The frequency decomposition multi-grid method. II. Convergence analysis based on the additive Schwarz method. (English summary) *Numer. Math.* **63** (1992), *no.* 4, 433–453. (Summary) **93j:65203** 65N55

Hackl, Klaus A normal mode expansion for a unified ocean-bottom system. (English summary) *Computational acoustics, Vol.* 2 (*Cambridge, MA*, 1991), 259–268, *North-Holland, Amsterdam*, 1993. (*see* **93j:76002**) 76Q05 (76V05)

Hackl, Peter (*with* Ledolter, Johannes) A new nonparametric quality control technique. *Comm. Statist. Simulation Comput.* **21** (1992), *no.* 2, 423–443. 62N10

Hackman, S. T. (*with* First, Z.; Passy, U.) Local-global properties of bifunctions. *J. Optim. Theory Appl.* **73** (1992), *no.* 2, 279–297. (Ivan Ginchev) **93c:90060** 90C26 (49N15)

Hacque, Michel Armatures des extensions galoisiennes. [Armatures of Galois extensions] *Comm. Algebra* **20** (1992), *no.* 6, 1615–1673. (Stefaan Caenepeel) **93i:16047** 16W20

Hacyan, Shahen The Dirac sea in accelerated frames or magnetic fields. *Quantum gravity* (*Moscow*, 1990), 385–390, *World Sci. Publishing, River Edge, NJ*, 1991. (*see* **93b:83004**) 81V10

Hadaegh, F. Y. (*with* Gawronski, Wlodzimierz) Balanced input-output assignment. (English summary) *Internat. J. Systems Sci.* **24** (1993), *no.* 6, 1027–1036. 93B55

Hadamard, Jacques ★ Leçons de géométrie. I. (French) [Lessons of geometry. I] Géométrie plane. [Plane geometry] Reprint of the thirteenth (1947) edition. *Éditions Jacques Gabay, Sceaux*, 1988. xvi+317 *pp. ISBN* 2-87647-038-1 (Editors) **93g:01099a** 01A75 (51–03)

— ★ Leçons de géométrie. II. (French) [Lessons of geometry. II] Géométrie dans l'espace. [Space geometry] Reprint of the eighth (1949) edition. *Éditions Jacques Gabay, Sceaux*, 1988. xvi+727 *pp. ISBN* 2-87647-038-1 (Editors) **93g:01099b** 01A75 (51–03)

Haddad, Abraham H. (*with* Tsai, Ching-Chih) Approximation and decomposition of singularly perturbed stochastic hybrid systems. *Internat. J. Control* **55** (1992), *no.* 5, 1219–1238. (G. A. Kurina) **93g:93081** 93E03 (34E15, 34F05, 34H05, 93C73)

Haddad, Lucien (*with* Rosenberg, Ivo G.) Completeness theory for finite partial algebras. *Algebra Universalis* **29** (1992), *no.* 3, 378–401. (Ágnes Szendrei) **93j:08005** 08A55 (03B50, 08A40)

— (*with* Rödl, Vojtěch) On the complexity of coloring areflexive relations. (English summary) *Ars Combin.* **33** (1992), 217–225. (Václav Koubek) **93h:68113** 68R10 (04A20, 05C15, 08A02, 68Q15)

Haddad, Richard A. (*with* Akansu, Ali N.) ★ Multiresolution signal decomposition. Transforms, subbands, and wavelets. Telecommunications. *Academic Press, Inc., Boston, MA*, 1992. xii+376 *pp. ISBN* 0-12-047140-X (A. Bultheel) **93m:94004** 94A12 (94–02, 94A11)

Haddad, S. (*with* Couvreur, J. M.; Peyre, J. F.) Résolution paramétrée de familles de systèmes linéaires. (English summary) [Parametrized solution of a family of linear systems] *RAIRO Rech. Opér.* **26** (1992), *no.* 2, 183–206. (A. G. Azpeitia) **93d:65063** 65K05 (90C08)

Haddad, Wassim M. (*with* Halevi, Yoram; Bernstein, Dennis S.) On stable full-order and reduced-order LQG controllers. (English summary) *Optimal Control Appl. Methods* **12** (1991), *no.* 3, 163–172. 93B50 (93D15)

— (*with* Bernstein, Dennis S.) Robust stabilization with positive real uncertainty: beyond the small gain theorem. *Systems Control Lett.* **17** (1991), *no.* 3, 191–208. (Summary) **93b:93103** 93D21 (93D09, 93D15)

— (*with* Halevi, Yoram; Bernstein, Dennis S.) A Riccati equation approach to the singular LQG problem. (English summary) *Automatica J. IFAC* **29** (1993), *no.* 3, 773–778. 93B40 (93E20)

— (*with* Tadmor, Gilead) Reduced order LQG controllers for linear time varying plants. (English summary) *Systems Control Lett.* **20** (1993), *no.* 2, 87–97. (Krzysztof Szajowski) **93m:93097** 93E20 (49N10)

Haddi, Aziz Homologie des algèbres de Lie étendues à une algèbre commutative. [Homology of Lie algebras extended to a commutative algebra] *Comm. Algebra* **20** (1992), *no.* 4, 1145–1166. (Jean-Louis Cathelineau) **93b:17063** 17B55 (13D03, 17B67)

Haddock, J. R. (*with* Kuang, Yang) Asymptotic theory for a class of nonautonomous delay differential equations. *J. Math. Anal. Appl.* **168** (1992), *no.* 1, 147–162. (L. A. V. Carvalho) **93f:34131** 34K20 (34K25)

Hadeler, K. P. Periodic solutions of homogeneous equations. *J. Differential Equations* **95** (1992), *no.* 1, 183–202. (Introduction) **93a:34051** 34C25 (34D05, 34D20, 92D30)

Hadi, Ali S. (*with* Wells, Martin T.) Minimum distance method of estimation and testing when statistics have limiting singular multivariate normal distribution. (English summary) *Sankhyā Ser. B* **53** (1991), *no.* 2, 257–267. (Summary) **93e:62150** 62H15 (62H12)

— Identifying multiple outliers in multivariate data. (English summary) *J. Roy. Statist. Soc. Ser. B* **54** (1992), *no.* 3, 761–771. 62H99

el Hadi, Kamal *see* **El Hadi, Kamal**

Hadiji, Rejeb Solutions positives de l'équation $-\Delta u = u^p + \mu u^q$ dans un domaine à trou. (English and French summaries) [Positive solutions of the equation $-\Delta u = u^p + \mu u^q$ in a domain with a hole] *Ann. Fac. Sci. Toulouse Math.* (5) **11** (1990), *no.* 3, 55–71. (Summary) **93g:35009** 35B05 (35J65)

— (*with* Crouau, R.; Lewandowski, Roger) Critical Sobolev exponent and the dimension three. *Houston J. Math.* **18** (1992), *no.* 2, 189–204. (Josef Voldřich) **93c:35044** 35J65

— (*with* Demengel, F.) Relaxed energies for functionals on $W^{1,1}(B^2, S^1)$. *Nonlinear Anal.* **19** (1992), *no.* 7, 625–641. (Martin Fuchs) **93h:58038** 58E12 (49Q20, 76A15, 76M30)

Hadim, A. (*with* Amir, R.) Some structured dynamic programs arising in economics. (English summary) *Comput. Math. Appl.* **24** (1992), *no.* 8-9, 209–218. (Peter Bod) **93i:90105** 90C39 (90A14)

Hadjar, M. E. Amine Sur un problème d'existence relatif de formes de contact invariantes en dimension trois. (English and French summaries) [On the existence of relative invariant contact forms in dimension three] *Ann. Inst. Fourier* (*Grenoble*) **42** (1992), *no.* 4, 891–904. (Nikolai K. Smolentsev) **93k:57056** 57R15 (53C15, 55R10)

Hadjidemetriou, John D. Mapping models for Hamiltonian systems with application to resonant asteroid motion. (English summary) *Predictability, stability, and chaos in N-body dynamical systems* (*Cortina d'Ampezzo*, 1990), 157–175, *NATO Adv. Sci. Inst. Ser. B Phys.*, 272, *Plenum, New York*, 1991. (Summary) **93k:70026** 70H05 (58F05, 58F13, 70F15, 70K50)

— The elliptic restricted problem at the 3:1 resonance. *Celestial Mech. Dynam. Astronom.* **53** (1992), *no.* 2, 151–183. (Summary) **93b:70009** 70F07 (34C25)

Hadjidimos, Apostolos (*with* Psimarni, A.; Yeyios, A. K.) On the convergence of the modified accelerated overrelaxation (MAOR) method. *Appl. Numer. Math.* **10** (1992), *no.* 2, 115–127. (Summary) **93a:65036** 65F10

— (*with* Saridakis, Yiannis G.) Modified successive overrelaxation (MSOR) and equivalent 2-step iterative methods for collocation matrices. (English summary) *J. Comput. Appl. Math.* **42** (1992), *no.* 3, 375–393. (Summary) **93h:65057** 65F30 (65M70, 65N35)

— (*with* Galanis, Sofoklis) Best cyclic repartitioning for optimal successive overrelaxation convergence. *SIAM J. Matrix Anal. Appl.* **13** (1992), *no.* 1, 102–120. (Summary) **93g:65047** 65F10

Hadjiivanov, L. K. *see* **Khadzhiivanov, L. K.**

Hadjiivanov, Ludmil K. *see* **Khadzhiivanov, L. K.**

Hadjitodorov, S. T. (*with* Kissiov, V. T.) A fuzzy version of the *K*-NN method. (English summary) *Fuzzy Sets and Systems* **49** (1992), *no.* 3, 323–329. 68T10 (04A72, 68T30)

Hadjou, Brahim (*with* Dubois, Jacques) On the Lebesgue decomposition of the normal states of a JBW-algebra. *Math. Bohem.* **117** (1992), *no.* 2, 185–193. (Sh. A. Ayupov) **93d:46114** 46L70 (06C15, 17C50, 46H70)

Hadley, S. W. (*with* Rendl, Franz; Wolkowicz, Henry) Symmetrization of nonsymmetric quadratic assignment problems and the Hoffman-Wielandt inequality. Sixth Haifa Conference on Matrix Theory (Haifa, 1990). *Linear Algebra Appl.* **167** (1992), 53–64. (Rainer Burkard) **93d:90050** 90C27 (15A42, 90B80)

— (*with* Rendl, Franz; Wolkowicz, Henry) A new lower bound via projection for the quadratic assignment problem. (English summary) *Math. Oper. Res.* **17** (1992), *no.* 3, 727–739. (M. C. Puri) **93i:90080** 90C27 (90C20)

Hadlock, Frank Set sequence matching. Proceedings of the Twenty-second Southeastern Conference on Combinatorics, Graph Theory, and Computing (Baton Rouge, LA, 1991). *Congr. Numer.* **81** (1991), 5–16. (O. D'Antona) **93e:05005** 05A99 (05C35, 68U15)

Hadouaj, H. (*with* Maugin, Gérard A.) Surface solitons on elastic surfaces: numerics. (English summary) Nonlinear waves in solids (Washington, DC, 1991). *Wave Motion* **16** (1992), *no.* 2, 115–123. (Summary) **93g:73040** 73D20 (73V15)

Ha-Duong, Tuong (*with* Bamberger, A.) Diffraction d'une onde acoustique par une paroi absorbante: nouvelles équations intégrales. (English summary) [Diffraction of an acoustic wave by an absorbing wall: new integral equations] *Math. Methods Appl. Sci.* **9** (1987), *no.* 4, 431–454. (Summary) **93h:35142** 35P05 (35J05, 76Q05)

— (*with* Joly, Patrick) Estimations d'énergie pour l'équation des ondes avec conditions aux limites d'ordre élevé. (English and French summaries) [Energy estimates for the wave equation with higher-order boundary conditions] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 7, 781–786. (Pavel Krejčí) **93k:35160** 35L20

Hadwin, Don (*with* Nordgren, E.; Radjabalipour, M.; Radjavi, H.; Rosenthal, Peter M.) On simultaneous triangularization of collections of operators. *Houston J. Math.* **17** (1991), *no.* 4, 581–602. (Kenneth R. Davidson) **93a:47004** 47A15 (47B99, 47D25)

— (*with* Hoover, Thomas B.) Representations of weighted translation algebras. *Houston J. Math.* **18** (1992), *no.* 2, 295–318. (È. V. Kissin) **93g:47034** 47B37 (46L99, 47D25)

Hadžić, Olga A fixed point theorem for nonexpansive mappings in random normed spaces. (Serbo-Croatian summary) *Zb. Rad. Prirod.-Mat. Fak. Ser. Mat.* **20** (1990), *no.* 1, 97–105. (Introduction) **93e:47074** 47H10 (47S50)

— Continuous dependence of the fixed points on parameters in random normed spaces. (Serbo-Croatian summary) *Zb. Rad. Prirod.-Mat. Fak. Ser. Mat.* **21** (1991), *no.* 1, 203–215. (From the introduction) **93d:47102** 47H10 (47H09, 47S50)

elezović-Hadžić, Sunčica *see* **Elezović-Hadžić, Sunčica**

Haefliger, André Complexes of groups and orbihedra. *Group theory from a geometrical viewpoint* (*Trieste*, 1990), 504–540, *World Sci. Publishing, River Edge, NJ*, 1991. (D. E. Cohen) **93m:20048** 20F32 (57M07)

— Extension of complexes of groups. (French summary) *Ann. Inst. Fourier* (*Grenoble*) **42** (1992), *no.* 1-2, 275–311. (Martin A. Roller) **93j:20080** 20F32 (20E08, 20F05, 20J05)

— *see also* **Group theory from a geometrical viewpoint, 93a:20001**

Haefner, Jeremy (*with* Klingler, Lee) Integral representations of finite groups with finite representation type. *Azumaya algebras, actions, and modules* (*Bloomington, IN*, 1990), 73–82, *Contemp. Math.*, 124, *Amer. Math. Soc., Providence, RI*, 1992. (Lawrence S. Levy) **93c:20009** 20C10 (16G30)

— The Auslander-Reiten quivers of nonlocal Bass rings. (English summary) *Comm. Algebra* **21** (1993), *no.* 2, 483–509. (Zygmunt Pogorzały) **93m:16009** 16G70 (13C13)

— *see also* **Methods in module theory, 93h:16001**

Haegemans, Ann (*with* Beckers, Marc) Transformation of integrands for lattice rules. (English summary) *Numerical integration* (*Bergen*, 1991), 329–340, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 357, *Kluwer Acad. Publ., Dordrecht*, 1992. (*see* **93f:65006**) 65D30

— (*with* Verlinden, Pierre) An asymptotic expansion in wavelet analysis and its application to accurate numerical wavelet decomposition. (English summary) *Numer. Algorithms* **2** (1992), *no.* 3-4, 287–298. (Summary) **93g:65032** 65D30 (65B05, 65B15)

Haemers, Willem H. (*with* Brouwer, Andries) Structure and uniqueness of the (81, 20, 1, 6) strongly regular graph. (English summary) A collection of contributions in honour of Jack van Lint. *Discrete Math.* **106/107** (1992), 77–82. (Siu Lun Ma) **93g:05149** 05E30

— (*with* Brouwer, Andries; Wilbrink, H. A.) Some 2-ranks. (English summary) A collection of contributions in honour of Jack van Lint. *Discrete Math.* **106/107** (1992), 83–92. (Vikram Jha) **93k:51006** 51E12 (51A50, 51E22, 94B25)

— (*with* Parker, Christopher; Pless, Vera S.; Tonchev, Vladimir D.) A design and a code invariant under the simple group Co_3. (English summary) *J. Combin. Theory Ser. A* **62** (1993), *no.* 2, 225–233. (Summary) **93m:94039** 94B60 (05B05)

von Haeseler, A. *see* **Trees and hierarchical structures, 93f:92004**

von Haeseler, Fritz Fraktale Geometrie und Juliamengen. [Fractal geometry and Julia sets] *Rostock. Math. Kolloq. No.* 44 (1991), 21–28. (M. Zähle) **93h:30038** 30D05 (28A80, 58F23)

— (*with* Peitgen, Heinz-Otto; Skordev, Gencho) Pascal's triangle, dynamical systems and attractors. (English summary) *Ergodic Theory Dynamical Systems* **12** (1992), *no.* 3, 479–486. (Christoph Bandt) **93k:28009** 28A80 (58F11, 58F12)

— (*with* Skordev, Gencho) Borsuk-Ulam theorem, fixed point index and chain approximations for maps with multiplicity. *Pacific J. Math.* **153** (1992), *no.* 2, 369–396. (L. Górniewicz) **93e:55006** 55M20

Hafez, S. T. (*with* Common, A. K.) Linearization of the relativistic and discrete-time Toda lattices for particular boundary conditions. *Inverse Problems* **8** (1992), *no.* 1, 59–69. (Hong You Wu) **93c:58083** 58F07 (34K99, 35Q53)

Häfner, Frank Einige orthogonale und symplektische Gruppen als Galoisgruppen über Q. [Some orthogonal and symplectic groups as Galois groups over Q] *Math. Ann.* **292** (1992), *no.* 4, 587–618. (Helmut Völklein) **93d:12005** 12F12 (20G40)

Hafner, James Lee (*with* McCurley, Kevin S.) Asymptotically fast triangularization of matrices over rings. *SIAM J. Comput.* **20** (1991), *no.* 6, 1068–1083. (Timothy Stokes) **93d:15021** 15A23 (15A21, 68Q40)

— (*with* Sarnak, Peter C.; McCurley, Kevin S.) Relatively prime values of polynomials. (English summary) *A tribute to Emil Grosswald: number theory and related analysis*, 437–443, *Contemp. Math.*, 143, *Amer. Math. Soc., Providence, RI*, 1993. (Gérald Tenenbaum) **93m:11094** 11N32 (11N64)

Haftmann, Rolf Zum 100. Geburtstag von Stefan Banach. [On the 100th anniversary of the birthday of Stefan Banach] *Wiss. Z. Tech. Univ. Chemnitz* **34** (1992), *no.* 1, 9–18. (Renate Tobies) **93c:01042** 01A70

— Variational inequalities for discrete exterior boundary value problems. *Wiss. Z. Tech. Univ. Chemnitz* **34** (1992), *no.* 1, 67–73. (Zheng Hui Xie) **93b:65156** 65N06 (35J85, 49J40, 65N12)

Hagander, Per (*with* Nielsen, Lars; Canudas de Wit, Carlos) Controllability issues of robots near singular configurations. (English summary) *Advanced robot control* (*Grenoble*, 1990), 307–314, *Lecture Notes in Control and Inform. Sci.*, 162, *Springer, Berlin*, 1991. (Summary) **93f:70035** 70Q05 (70B15, 93C85)

Hagauer, Johann (*with* Aurenhammer, Franz) Computing equivalence classes among the edges of a graph with applications. (English summary) Algebraic graph theory (Leibnitz, 1989). *Discrete Math.* **109** (1992), *no.* 1-3, 3–12. (Peter B. Gibbons) **93k:05167** 05C85 (68R10)

Hagedorn, George A. Time-reversal invariance and the time-dependent Born-Oppenheimer approximation. (English summary) *Forty more years of ramifications: spectral asymptotics and its applications*, 161–197, *Discourses Math. Appl.*, 1, *Texas A & M Univ., College Station, TX*, 1991. (Summary) **93g:81210** 81V55 (81–02)

Hagel, J. A new analytic approach to the Sitnikov problem. *Celestial Mech. Dynam. Astronom.* **53** (1992), *no.* 3, 267–292. (Summary) **93b:70010** 70F07

Hagelstein, Peter L. (*with* Kaushik, Sumanth) The application of the preconditioned biconjugate gradient algorithm to NLTE rate matrix equations. *J. Comput. Phys.* **101** (1992), *no.* 2, 360–367. (Summary) **93c:65042** 65F05 (65F50, 65L12)

Hagen, C. R. Comment on: "Soliton solutions to the gauged nonlinear Schrödinger equation on the plane" [Phys. Rev. Lett. **64** (1990), no. 25, 2969–2972; MR 91k:81085] by R. Jackiw and S.-Y. Pi. With a reply by Jackiw and Pi. *Phys. Rev. Lett.* **66** (1991), *no.* 20, 2681–2682. (Editors) **93d:81107** 81T10

— Parity conservation in Chern-Simons theories and the anyon interpretation. *Phys. Rev. Lett.* **68** (1992), *no.* 26, 3821–3825. (Summary) **93a:81128** 81T13

Hagen, Hans (*with* Lasser, Dieter) Interval weighted tau-splines. *Curve and surface design* (*Tempe, AZ*, 1989), 41–53, *Geom. Des. Publ., SIAM, Philadelphia, PA*, 1992. (*see* **93g:65027**) 65D07 (65D17)

— (*with* Farin, Gerald) A local twist estimator. *Topics in surface modeling*, 79–84, *Geom. Des. Publ., SIAM, Philadelphia, PA*, 1992. (*see* **93c:65026**) 65D17 (65K10)

— (*with* Santarelli, Paolo) Variational design of smooth *B*-spline surfaces. *Topics in surface modeling*, 85–92, *Geom. Des. Publ., SIAM, Philadelphia, PA*, 1992. (*see* **93c:65026**) 65D17 (65D07, 65K10)

— *see also* **Topics in surface modeling, 93c:65026** *and* **Curve and surface design, 93g:65027**

von Hagen, Jürgen Policy-delegation and fixed exchange rates. (English summary) *Internat. Econom. Rev.* **33** (1992), *no.* 4, 849–870. 90A60 (90A12)

Hager, A. W. (*with* Martinez, Jorge[2]) Fraction-dense algebras and spaces. (English summary) Positive operators and semigroups on Banach lattices (Curaçao, 1990). *Acta Appl. Math.* **27** (1992), *no.* 1-2, 55–65. (Summary) **93i:13006** 13B30 (06F15, 54C30, 54D99)

Hager, William W. (*with* Dontchev, Asen L.) Discretization error in optimal control. (English summary) *Optimal control of partial differential equations* (*Irsee*, 1990), 120–128, *Lecture Notes in Control and Inform. Sci.*, 149, *Springer, Berlin*, 1991. (*see* **93b:49002**) 49M25

Hagerup, Torben (*with* Albers, Susanne) Improved parallel integer sorting without concurrent writing. *Proceedings of the Third Annual ACM-SIAM Symposium on Discrete Algorithms* (*Orlando, FL*, 1992), 463–472, *ACM, New York*, 1992. (*see* **93b:68005**) 68P10

— On a compaction theorem of Ragde. (English summary) *Inform. Process. Lett.* **43** (1992), *no.* 6, 335–340. (Summary) **93g:68014** 68P05 (68Q22)

Haggith, Mandy (*with* Robertson, David; Bundy, Alan; Muetzelfeldt, Robert; Uschold, Michael) ★ Eco-logic. Logic-based approaches to ecological modelling. MIT Press Series in Logic Programming. *MIT Press, Cambridge, MA*, 1991. xviii+246 *pp. ISBN* 0-262-18143-6 (Petr Jirků) **93m:68157** 68T30 (68T27, 68U20, 92D40)

Häggkvist, Roland On the structure of non-Hamiltonian graphs. I. *Combin. Probab. Comput.* **1** (1992), *no.* 1, 27–34. (S. F. Kapoor) **93d:05101** 05C45

— (*with* Chetwynd, Amanda) Some upper bounds on the total and list chromatic numbers of multigraphs. (English summary) *J. Graph Theory* **16** (1992), *no.* 5, 503–516. (Hugh Hind) **93i:05060** 05C15

Hägglund, T. (*with* Åström, Karl Johan) Identification of systems using periodic excitation. (English summary) *Identification and system parameter estimation* 1991, *Vol.* 1,2 (*Budapest*, 1991), 727–732, *IFAC Sympos. Ser.*, 3, *Pergamon, Oxford*, 1992. (*see* **93h:93009**) 93B30

montazer-Haghighi, A. *see* **Montazer-Haghighi, A.**

Haghighi, K. (*with* Kang, E.) A knowledge-based a priori approach to mesh generation in thermal problems. (English summary) *Internat. J. Numer. Methods Engrg.* **35** (1992), *no.* 4, 915–937. (Summary) **93d:80001** 80–08

Hagihara, Ken'ichi (*with* Park, Jungho; Tokura, Nobuki; Masuzawa, Toshimitsu) Efficient distributed algorithm to solve updating minimum spanning tree problem. *Systems Comput. Japan* **23** (1992), *no.* 3, 1–12. (Summary) **93c:68010** 68M15 (68Q25, 68R10)

Hagino, Kojiro (*with* Ohbayashi, Tokuji) A design method of LQ regulator by fuzzy set theory. *Electron. Comm. Japan Part III Fund. Electron. Sci.* **75** (1992), *no.* 3, 26–36. 93C42

Hagiwara, Tomomichi (*with* Araki, Mituhiko; Soma, H.) Simultaneous pole assignment and stabilization by multirate digital controllers. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, I* (*Kobe*, 1991), 505–510, *Mita, Tokyo*, 1992. (*see* **93g:93005**) 93B55 (93C57)

— (*with* Araki, Mituhiko) Robust stability of sampled data systems. (English summary) *Robust control* (*Tokyo*, 1991), 48–55, *Lecture Notes in Control and Inform. Sci.*, 183, *Springer, Berlin*, 1992. (*see* **93f:93006**) 93D09 (93C57)

— (*with* Fujigaki, M.; Araki, Mituhiko) Optimal robust servo controllers with two degrees of freedom and application to the control of electric power generators. (English summary) *Control Theory Adv. Tech.* **8** (1992), *no.* 2, 289–314. 93B36 (93C95)

Hagler, J. (*with* Schindler, C.) Normal functionals and spaces of weights. *Internat. J. Theoret. Phys.* **30** (1991), *no.* 10, 1337–1342. (Gottfried T. Rüttimann) **93a:46139** 46N50 (46B40, 46L60, 81P10)

Hagmeijer, R. (*with* Spekreijse, S. P.) Derivation of a Roe scheme for an *N*-species chemically reacting gas in thermal equilibrium. *Proceedings of the Eighth GAMM-Conference on Numerical Methods in Fluid Mechanics* (*Delft*, 1989), 522–532, *Notes Numer. Fluid Mech.*, 29, *Vieweg, Braunschweig*, 1990. (*see* **93b:76002**) 80–08 (65M06, 76M20, 80A32)

Hagwood, Robert Charles (*with* Galambos, Janos) The characterization of a distribution function by the second moment of the residual life. *Comm. Statist. Theory Methods* **21** (1992), *no.* 5, 1463–1468. (Summary) **93e:62040** 62E10

— The calibration problem as an ill-posed inverse problem. *J. Statist. Plann. Inference* **31** (1992), *no.* 2, 179–185. (N. Gaffke) **93j:62063** 62F10 (62J05)

Hahn, G. D. (*with* Carney, J. F., III; Ray, Malcolm H.) On the numerical evaluation of the unforced response of a Duffing oscillator. (English summary) *Trans. ASME J. Appl. Mech.* **59** (1992), *no.* 1, 228–230. (Summary) **93d:70003** 70–08 (34C15, 70K50)

Hahn, Marjorie G. (*with* Weiner, Daniel Charles) On joint estimation of an exponent of regular variation and an asymmetry parameter for tail distributions. *Sums, trimmed sums and extremes*, 111–134, *Progr. Probab.*, 23, *Birkhäuser Boston, Boston, MA*, 1991. (From the introduction) **93f:62053** 62G05 (60F05)

— (*with* Weiner, Daniel Charles) Asymptotic behavior of self-normalized trimmed sums: nonnormal limits. *Ann. Probab.* **20** (1992), *no.* 1, 455–482. (R. A. Maller) **93e:60041** 60F05 (62G30)

— (*with* Weiner, Daniel Charles) Asymptotic behavior of self-normalized trimmed sums: nonnormal limits. II. *J. Theoret. Probab.* **5** (1992), *no.* 1, 169–196. (R. A. Maller) **93e:60042** 60F05 (62G30)

Hahn, S. *see* **Hahn, Siegfried**

Hahn, Sang-Geun Certain hyperelliptic curves of genus two. *Proceedings of Asian Mathematical Conference*, 1990 (*Hong Kong*, 1990), 176–179, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93b:00022**) 14H45

— (*with* Bae, Sung Han) On the ring of integers of cyclotomic function fields. *Bull. Korean Math. Soc.* **29** (1992), *no.* 1, 153–163. (David Goss) **93a:11050** 11G09 (11R58)

— (*with* Oh, Yoon Yong) Small discriminants. *Bull. Korean Math. Soc.* **29** (1992), *no.* 2, 201–204. 11R29

— On Mirimanoff type congruences. *J. Number Theory* **41** (1992), *no.* 2, 167–171. (Vincent Fleckinger) **93e:11140** 11R44 (11R42, 11R45)

— *see also* **Algebra and topology, 93k:00030**

Hahn, Siegfried (*with* Juckelandt, S.) Zur Approximation von Fixpunkten bei mengenwertigen oberhalbstetigen kompakten Abbildungen. (Serbo-Croatian summary) [On the approximation of fixed points in set-valued upper semicontinuous compact mappings] *Zb. Rad. Prirod.-Mat. Fak. Ser. Mat.* **21** (1991), *no.* 1, 127–133. (L. Janos) **93b:54042** 54H25 (58C06)

Hahne, F. J. W. (*with* Klein, Abraham; Walet, Niels R.; Geyer, H. B.) Vector coherent state, quantized Bogoliubov transformation, and boson expansions. (English summary) *Group theory and special symmetries in nuclear physics* (*Ann Arbor, MI*, 1991), 233–247, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93e:81150**) 81R05 (81V35)

Hähnel, Ramona (*with* Handrock-Meyer, Sybille) Inverse Probleme für eine spezielle gewöhnliche Differentialgleichung. [Inverse problems for a special ordinary differential equation] *Wiss. Z. Tech. Univ. Chemnitz* **34** (1992), *no.* 1, 75–79. (Frank Natterer) **93c:34036** 34A55

Hà Huy Khoái Sur les séries *L* associées aux formes modularies. (English summary) [On *L*-series associated with modular forms] *Bull. Soc. Math. France* **120** (1992), *no.* 1, 1–13. (Alexey A. Panchishkin) **93g:11048** 11F66 (11F11)

nguyễn thanh Hài *see* **Nguyễn Thanh Hài**

Hai, L. M. (*with* Nguyễn Văn Khuê; Nguyen Thu Nga) Weak meromorphic extension. *Colloq. Math.* **64** (1993), *no.* 1, 65–70. (J. Siciak) **93m:32016** 32D15 (32A20, 46G20)

Hai, Wen Hua General soliton solutions and Bäcklund transformations of higher-dimensional sine-Gordon equations. (Chinese. English summary) *Hunan Jiaoyu Xueyuan Xuebao* (*Ziran Kexue*) **10** (1992), *no.* 2, 44–48. (Summary) **93e:35096** 35Q53 (58G37)

— Quadric solitons and breathers of *n*-dimensional nonlinear wave equations. (English summary) *Phys. Rev. A* (3) **46** (1992), *no.* 10, 6757–6760. (Summary) **93j:35148** 35Q51

— Canonical transformations and general soliton solutions of some multidimensional field equations. (English summary) *J. Phys. A* **26** (1993), *no.* 4, 969–980. (Summary) **93k:35226** 35Q51 (58F07)

Haidar, Nassar H. S. Eigenfunctions for a class of parametric Sturm-Liouville problems with an eigenvalue continuum. *J. Math. Anal. Appl.* **161** (1991), *no.* 1, 20–27. (J. B. Butler, Jr.) **93a:34098** 34L40 (34B24)

Haidegger, Wolfgang Basic facts about homoclinic and heteroclinic orbits and their importance in the theory of analytical chaos. *Rep. Math. Phys.* **30** (1991), *no.* 1, 53–62 (1992). (Helena E. Nusse) **93h:58112** 58F14 (34C37, 58F03, 58F13)

— Mel'nikov's vector—a "measure of chaos". (English summary) *Rep. Math. Phys.* **30** (1991), *no.* 2, 223–231 (1992). (W.-H. Steeb) **93i:58106** 58F13 (34C37, 58F15)

Haider, Q. (*with* Liu, L. C.) Fourier or Bessel transformations of highly oscillatory functions. (English summary) *J. Phys. A* **25** (1992), *no.* 24, 6755–6760. 65T99 (65R10)

Haiges, K. (*with* Chiang, R. Y.; Safonov, Michael G.; Madden, K.; Tekawy, Jonathan A.) A fixed H^∞ controller for a supermaneuverable fighter performing the Herbst maneuver. (English summary) *Automatica J. IFAC* **29** (1993), *no.* 1, 111–127. 93B36 (93C90)

Haigh, John (*with* Cannings, C.) Montreal solitaire. *J. Combin. Theory Ser. A* **60** (1992), *no.* 1, 50–66. (A. Pultr) **93d:90082** 90D46 (05A99)

Hailat, Mohammad Q. Root systems of type $S(n, p, 2, 2)$. (English summary) *Linear and Multilinear Algebra* **31** (1992), *no.* 1-4, 1–17. (V. V. Astrakhantsev) **93j:17040** 17B50

Haile, Darrell E. When is the Clifford algebra of a binary cubic form split? *J. Algebra* **146** (1992), *no.* 2, 514–520. (Andrzej Sladek) **93a:11029** 11E76 (15A66)

— (*with* Morandi, Patrick J.) On Dubrovin valuation rings in crossed product algebras. *Trans. Amer. Math. Soc.* **338** (1993), *no.* 2, 723–751. (Timothy J. Ford) **93j:16010** 16H05 (12G05, 13F30, 16G30, 16W60)

Hailer, B. (*with* Grimm, G.; Stumpf, Harald) State representations for renormalized energy equations in quantum field theory. (German summary) *Ann. Physik* (7) **48** (1991), *no.* 5, 327–336. (G. Vitiello) **93g:81073** 81T08

ben-Haim, Shlomo *see* **Ben-Haim, Shlomo**

Haiman, George A strong invariance principle for the extremes of multivariate stationary *m*-dependent sequences. (English summary) *J. Statist. Plann. Inference* **32** (1992), *no.* 2, 147–163. (R. J. Tomkins) **93h:60048** 60F15 (60G10, 62G30)

Haiman, Mark D. Dual equivalence with applications, including a conjecture of Proctor. *Discrete Math.* **99** (1992), *no.* 1-3, 79–113. (Andrea Brini) **93h:05173** 05E10 (05E05, 20F55)
— (*with* Kim, Dongsu) A characterization of generalized staircases. *Discrete Math.* **99** (1992), *no.* 1-3, 115–122. (Andrea Brini) **93h:05174** 05E10 (05E05, 20F55)
— Hecke algebra characters and immanant conjectures. *J. Amer. Math. Soc.* **6** (1993), *no.* 3, 569–595. (James E. Humphreys) **93j:05163** 05E05 (14M15, 20C30, 20F55)
Haimo, Deborah Tepper (*with* Zayed, Ahmed I.) Inversion of integral transforms associated with a class of perturbed heat equations. *J. Math. Anal. Appl.* **163** (1992), *no.* 1, 113–135. (J. M. H. Peters) **93a:44002** 44A10 (34B27, 34L10, 35K05, 47A70)
— (*with* Markett, Clemens) A representation theory for solutions of a higher-order heat equation. I. *J. Math. Anal. Appl.* **168** (1992), *no.* 1, 89–107. (Manfred W. Kracht) **93f:35091** 35K25 (35C10)
— (*with* Markett, Clemens) A representation theory for solutions of a higher order heat equation. II. *J. Math. Anal. Appl.* **168** (1992), *no.* 2, 289–305. (Manfred W. Kracht) **93h:35086** 35K25 (35C10)
Hain, Richard M. (*with* MacPherson, Robert D.) Introduction to higher logarithms. *Structural properties of polylogarithms*, 337–353, *Math. Surveys Monographs*, 37, *Amer. Math. Soc., Providence, RI*, 1991. (*see* **93b:11158**) 14C30 (11R70, 14D05, 19F27)
— Nil-manifolds as links of isolated singularities. *Compositio Math.* **84** (1992), *no.* 1, 91–99. (Syoji Tsuboi) **93k:14012** 14C30 (14D07, 32S35, 55P62)
Haine, Luc (*with* Flaschka, Hermann) Variétés de drapeaux et réseaux de Toda. [Flag manifolds and Toda lattices] *Math. Z.* **208** (1991), *no.* 4, 545–556. (Introduction) **93e:58080** 58F07 (17B20, 22E60)
Haines, Linda M. Optimal design for inverse quadratic polynomials. (English summary) *South African Statist. J.* **26** (1992), *no.* 1, 25–41. (William I. Notz) **93j:62189** 62K05 (62J02)
Hainzl, J. Multiparameter bifurcation of a predator-prey system. *SIAM J. Math. Anal.* **23** (1992), *no.* 1, 150–180. (Edoardo Beretta) **93h:34056** 34C23 (34C25, 58F14, 92D25)
Haitovsky, Yoel (*with* Rapp, Joel) Conditional resampling for misclassified multinomial data with applications to sampling inspection. (English summary) *Technometrics* **34** (1992), *no.* 4, 473–482. 62N10
Hajarnavis, C. R. Annihilators in semiprime right Goldie rings. *Proc. Edinburgh Math. Soc.* (2) **35** (1992), *no.* 1, 133–137. (Jeanne Wald Kerr) **93g:16034** 16P60
— (*with* Chatters, A. W.; Lenagan, T. H.) Ideal arithmetic in affine PI rings. *Quart. J. Math. Oxford Ser.* (2) **43** (1992), *no.* 171, 297–302. (Amiram Braun) **93g:16037** 16R20 (16P99)
Hajduk, Bogusław On the obstruction group to existence of Riemannian metrics of positive scalar curvature. *Global differential geometry and global analysis* (*Berlin*, 1990), 62–72, *Lecture Notes in Math.*, 1481, *Springer, Berlin*, 1991. (Viktor Schroeder) **93g:53056** 53C21 (53C20, 57N70)
— (*with* Januszkiewicz, Tadeusz) Cobordism of polarized *t*-structures. *Topology* **31** (1992), *no.* 3, 559–570. (R. E. Stong) **93e:57021** 57M60 (57N10, 57N70)
Hájek, Alan (*with* Bub, Jeffrey) EPR. *Found. Phys.* **22** (1992), *no.* 3, 313–332. (Emilio Santos) **93f:81012** 81P05 (01A60, 81-03)
Hajek, Bruce (*with* Radosavljevic, Branko; Arikan, Erdal) Sequential decoding of low-density parity-check codes by adaptive reordering of parity checks. (English summary) *IEEE Trans. Inform. Theory* **38** (1992), *no.* 6, 1833–1839. 94B35
Hájek, O. (*with* Fashoro, M.; Loparo, Kenneth A.) Controllability properties of constrained linear systems. *J. Optim. Theory Appl.* **73** (1992), *no.* 2, 329–346. (F. S. Van Vleck) **93i:93017** 93B05 (93C05, 93C15)
Hájek, Petr (*with* Švejdar, Vítězslav) A note on the normal form of closed formulas of interpretability logic. *Studia Logica* **50** (1991), *no.* 1, 25–28. (Lilija A. Chagrova) **93i:03023** 03B45 (03F30, 03F40)
— (*with* Montagna, Franco) The logic of Π_1-conservativity continued. (English summary) *Arch. Math. Logic* **32** (1992), *no.* 1, 57–63. (Summary) **93i:03024** 03B45
Hajela, D. J. On faster than Nyquist signaling: further estimations on the minimum distance. *SIAM J. Appl. Math.* **52** (1992), *no.* 3, 900–907. (H. J. Landau) **93h:42001** 42A05 (94A05)
— On polynomials with low peak signal to power (L_∞ to L_2 norm) ratios and theorems of Kashin and Spencer. *Stud. Appl. Math.* **87** (1992), *no.* 1, 81–94. (Kenjiro Yanagi) **93h:94004** 94A11
Hajian, Arshag (*with* Eigen, Stanley; Kalikow, Steven) Ergodic transformations and sequences of integers. *Israel J. Math.* **75** (1991), *no.* 1, 119–128. (Peter J. Hellekalek) **93c:28014** 28D05 (11B13)
— (*with* Eigen, Stanley; Kakutani, Shizuo) Complementing sets of integers—a result from ergodic theory. *Japan. J. Math. (N.S.)* **18** (1992), *no.* 1, 205–211. (F. Schweiger) **93g:11087** 11K55 (28D05)
Hájíček, Petr Large diffeomorphisms and Dirac quantization of constrained systems. (English summary) *Classical Quantum Gravity* **9** (1992), *no.* 10, 2249–2266. (Michael O. Katanaev) **93j:83038** 83C45 (58Z05, 83E15)
— (*with* Kay, Bernard S.; Kuchař, Karel V.) Quantum collapse of a self-gravitating shell: equivalence to Coulomb scattering. (English summary) *Phys. Rev. D* (3) **46** (1992), *no.* 12, 5439–5448. (Summary) **93j:83039** 83C45 (81V17)
Haji-Sheikh, A. (*with* Beck, J. V.; Cole, K. D.; Litkouhi, B.) ★ Heat conduction using Green's functions. Series in Computational and Physical Processes in Mechanics and Thermal Sciences. *Hemisphere Publishing Corp., London*, 1992. xxviii+523 *pp. ISBN* 1-56032-096-6 (P. M. Gupta) **93g:80005** 80A20 (35-01, 35C15, 35K05, 80-01)
— *see also* **Integral methods in science and engineering—90, 93f:00014**
Hajja, Mowaffaq A description of an algebraic automorphism in terms of the radical of its minimal polynomial. *Comm. Algebra* **20** (1992), *no.* 3, 761–776. (Yu Wang) **93b:12009** 12F20
— (*with* Kang, Ming Chang) Finite group actions on rational function fields. *J. Algebra* **149** (1992), *no.* 1, 139–154. (James K. Deveney) **93d:12009** 12F20
Hajnal, András (*with* Milner, E. C.) On *k*-independent subsets of a closure. *Studia Sci. Math. Hungar.* **26** (1991), *no.* 4, 467–470. (Josef Niederle) **93m:06011** 06A15 (04A20, 06A07)
— (*with* Gerlits, János; Szentmiklóssy, Z.) On the cardinality of certain Hausdorff spaces. (English summary) Topological, algebraical and combinatorial structures. Frolík's memorial volume. *Discrete Math.* **108** (1992), *no.* 1-3, 31–35. (Summary) **93k:54009** 54A25
— *see also* **Sets, graphs and numbers, 93k:05004** *and* **Combinatorics, 93m:05002**
Hajnal, Péter An $\Omega(n^{4/3})$ lower bound on the randomized complexity of graph properties. *Combinatorica* **11** (1991), *no.* 2, 131–143. (Selim G. Akl) **93a:05118** 05C85 (68Q25, 68R10)
— (*with* Füredi, Zoltán) Davenport-Schinzel theory of matrices. *Discrete Math.* **103** (1992), *no.* 3, 233–251. (K. Vijayan) **93g:05026** 05B20 (15A45)
Hajra, K. Stochastic quantization of a dissipative dynamical system and its hydrodynamical interpretation. *J. Math. Phys.* **32** (1991), *no.* 6, 1505–1509. (From the introduction) **93i:81107** 81S20
— (*with* Bandyopadhyay, Pratul) Equivalence of stochastic, Klauder and geometric quantization. *Internat. J. Modern Phys. A* **7** (1992), *no.* 6, 1267–1285. (Summary) **93g:81059** 81S20 (81S10)
Hajto, Zbigniew Equisingularity of analytically constructible sets. *Complex analysis* (*Wuppertal*, 1991), 143–147, *Aspects of Math., E17*, *Vieweg, Braunschweig*, 1991. (Arkadiusz Ploski) **93a:32009** 32B20 (32S15, 32S60)
abd el-Hakeim, K. M. *see* **Abd El-Hakeim, K. M.**
Haken, H. (*with* Fantz, M.; Friedrich, R.; Bestehorn, M.) Evolution of patterns in rotating Bénard convection. *From phase transitions to chaos*, 118–127, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93b:58001**) 76E15
— (*with* Ning, Cun Zheng) The geometric phase in nonlinear dissipative systems. (English summary) *Modern Phys. Lett. B* **6** (1992), *no.* 25, 1541–1568. (Summary) **93k:81279** 81V80 (58F40, 81Q99)
abd-el-Hakim, Nagi S. *see* **Abd-El-Hakim, Nagi S.**
Hakim, V. (*with* Derrida, B.; Vannimenus, J.) Effect of disorder on two-dimensional wetting. *J. Statist. Phys.* **66** (1992), *no.* 5-6, 1189–1213. (Klaus Ziegler) **93e:82022** 82B24
Hakimi, S. Louis (*with* Bagchi, Anindo) Data transfers in broadcast networks. (English summary) *IEEE Trans. Comput.* **41** (1992), *no.* 7, 842–847. (Summary) **93i:68024** 68M20 (05C90)
— (*with* Bagchi, Amitava; Schmeichel, Edward) Sequential information dissemination by packets. *Networks* **22** (1992), *no.* 4, 317–333. (Summary) **93c:68006** 68M10 (68Q25, 90B12)
— (*with* Labbé, Martine; Schmeichel, Edward) The Voronoi partition of a network and its implications in location theory. (English summary) *ORSA J. Comput.* **4** (1992), *no.* 4, 412–417. 90C35
Hakimjanov, You. B. *see* **Khakimdzhanov, Yu. B.**
Hakimjanov, Yu. B. *see* **Khakimdzhanov, Yu. B.**
Hakobyan, Ashot Use of single layer potential in mixed problems of elasticity. *Potential theory* (*Nagoya*, 1990), 207–211, *de Gruyter, Berlin*, 1992. (Summary) **93d:73023** 73C35 (35Q99, 45K05)
Hakomori, K. (*with* Yoshii, K.) Feedback stabilization of linear diffusion systems with periodically scanning sensors. *IEEE Trans. Automat. Control* **37** (1992), *no.* 7, 1019–1022. 93D15
dziechcińska-Halamoda, Z. *see* **Dziechcińska-Halamoda, Z.**
Halanay, Aristide (*with* Morozan, Toader) Tracking almost periodic signals under white noise perturbations. *Stochastic systems and optimization* (*Warsaw*, 1988), 75–85, *Lecture Notes in Control and Inform. Sci.*, 136, *Springer, Berlin*, 1989. (*see* **93d:93009**) 93E10 (34F05)
— Advances in linear control theory and Riccati equations. (English summary) *Rend. Sem. Mat. Univ. Politec. Torino* **48** (1990), *no.* 3, 251–350 (1992). (Jan Bialasiewicz) **93k:93003** 93–02 (34H05, 93C05, 93C50)
— (*with* Drăgan, Vasile) Global solutions for matrix Riccati differential equations via input-output operators. *Recent trends in differential equations*, 135–148, *World Sci. Ser. Appl. Anal.*, 1, *World Sci. Publishing, River Edge, NJ*, 1992. (S. P. Bhattacharyya) **93f:34032** 34A99 (34A34, 34H05, 93B40)
— (*with* Morozan, Toader) Optimal stabilizing compensator for linear discrete-time systems under independent random perturbations. *Rev. Roumaine Math. Pures Appl.* **37** (1992), *no.* 3, 213–224. (Vivek S. Borkar) **93f:93140** 93E20 (49K45, 93D15)
— (*with* Drăgan, Vasile) Asymptotic expansions for singular values associated to singularly perturbed control systems. (English summary) *Rev. Roumaine Math. Pures Appl.* **37** (1992), *no.* 5, 371–385. (T. R. Gichev) **93k:93065** 93C73 (34E15, 34H05)
— (*with* Drăgan, Vasile) Uniform controllability for systems with two time-scales. (English summary) *Rev. Roumaine Math. Pures Appl.* **37** (1992), *no.* 8, 673–681. (T. R. Gichev) **93k:93066** 93C73 (34E15, 34H05, 93B05)
— (*with* Drăgan, Vasile; Morozan, Toader) Optimal stabilizing compensator for linear systems with state-dependent noise. (English summary) *Stochastic Anal. Appl.* **10** (1992), *no.* 5, 557–572. (Marcelo Fragoso) **93j:93127** 93D15 (49N10, 93C41, 93E03, 93E11)
— (*with* Morozan, Toader) Discrete-time stabilizing compensators for continuous-time systems with state dependent noise. *Stud. Cerc. Mat.* **44** (1992), *no.* 6, 471–488. (Abdellah Benzaouia) **93j:93129** 93D15 (60H05, 93E03, 93E15)
— (*with* Ionescu, Vlad) Generalized discrete-time Popov-Yakubovich theory. (English summary) *Systems Control Lett.* **20** (1993), *no.* 1, 1–6. (Denis Khusainov) **93m:93081** 93D10 (93C55)
Halasi, K. (*with* Gustafson, Karl E.) The flow semigroup approximation problem. *Approximation theory* (*Kecskemét*, 1990), 343–354, *Colloq. Math. Soc. János Bolyai*, 58, *North-Holland, Amsterdam*, 1991. (M. Biroli) **93m:47073** 47N20 (35Q30, 47H20, 65M99, 76D05, 76M99)
Halász, Gábor The "coarse and fine theory of interpolation" of Erdős and Turán in a broader view. *Constr. Approx.* **8** (1992), *no.* 2, 169–185. (Ambikeswar Sharma) **93f:42009** 42A15 (41A05)
— *see also* **Sets, graphs and numbers, 93k:05004**
Halberstam, H. (*with* Diamond, Harold G.) Differential difference equations in analytic number theory. *Oscillation and dynamics in delay equations* (*San Francisco, CA*, 1991), 73–95, *Contemp. Math.*, 129, *Amer. Math. Soc., Providence, RI*, 1992. (Antal Balog) **93g:11096** 11N25 (11N35, 34K25)
— (*with* Freiman, Gregory A.; Ruzsa, Imre Z.) Integer sum sets containing long arithmetic progressions. *J. London Math. Soc.* (2) **46** (1992), *no.* 2, 193–201. (Les Davison) **93j:11008** 11B13 (11B25)
Halbwachs, N. (*with* Bouajjani, A.; Fernandez, J.-C.; Raymond, P.; Ratel, C.) Minimal state graph generation. *Sci. Comput. Programming* **18** (1992), *no.* 3, 247–269. (Summary) **93a:68091** 68Q60 (68R10)

Hald, Ole H. Convergence of vortex methods. *Vortex methods and vortex motion*, 33–58, *SIAM, Philadelphia, PA*, 1991. (*see* **93f:76078**) 76M25 (65P05, 76C05)

Haldane, F. D. M. (*with* Ha, Z. N. C.; Talstra, J. C.; Bernard, Denis; Pasquier, V.) Yangian symmetry of integrable quantum chains with long-range interactions and a new description of states in conformal field theory. (English summary) *Phys. Rev. Lett.* **69** (1992), *no.* 14, 2021–2025. (Summary) **93h:82020** 82B23 (81T40)

Haldar, Chandan (*with* Patnaik, L. M.) On movable separability and isotheticity. *Inform. Sci.* **62** (1992), *no.* 1-2, 87–102. (Menachem Dishon) **93i:68172** 68U05 (93C85)

Hale, Jack K. (*with* Koçak, Hüseyin) ★ Dynamics and bifurcations. Texts in Applied Mathematics, 3. *Springer-Verlag, New York*, 1991. xiv+568 *pp. ISBN* 0-387-97141-6 (D. R. J. Chillingworth) **93e:58047** 58Fxx (34–01, 34C23, 58–01, 58F14)

— ★ Oscillations in nonlinear systems. (English. English summary) Corrected reprint of the 1963 original. *Dover Publications, Inc., New York*, 1992. x+180 *pp. ISBN* 0-486-67362-6 (Editors) **93j:34047** 34C15 (34C25, 34Dxx, 70Kxx)

— Periodic solutions of singularly perturbed delay equations. *Delay and differential equations (Ames, IA*, 1991), 25–35, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93a:34003**) 34K15 (34E15)

— Dynamics and numerics. *The dynamics of numerics and the numerics of dynamics (Bristol*, 1990), 243–253, *Inst. Math. Appl. Conf. Ser. New Ser.*, 34, *Oxford Univ. Press, New York*, 1992. (Summary) **93d:58091** 58F12 (34D45, 34G20, 58F39, 65J15, 65L99)

— (*with* Arrieta, José; De Carvalho, Alexandre Nolasco) A damped hyperbolic equation with critical exponent. *Comm. Partial Differential Equations* **17** (1992), *no.* 5-6, 841–866. (Piotr Biler) **93f:35145** 35L70 (34D45, 34G20, 47H20, 47N20, 58F39)

— (*with* Huang, Wen Zhang) Square and pulse waves in matrix delay differential equations. *Dynamic Systems Appl.* **1** (1992), *no.* 1, 51–70. (Ovide Arino) **93f:34112** 34K10 (34E15, 34K15, 58F14, 58F36)

— (*with* Raugel, Geneviève) Reaction-diffusion equation on thin domains. *J. Math. Pures Appl.* (9) **71** (1992), *no.* 1, 33–95. (Jian Hong Wu) **93a:35083** 35K57 (34D45, 58F39)

— (*with* Chow, Shui-Nee; Huang, Wen Zhang) From sine waves to square waves in delay equations. *Proc. Roy. Soc. Edinburgh Sect. A* **120** (1992), *no.* 3-4, 223–229. (John G. Milton) **93b:34085** 34K15 (34C23)

— (*with* Raugel, Geneviève) Convergence in gradient-like systems with applications to PDE. *Z. Angew. Math. Phys.* **43** (1992), *no.* 1, 63–124. (From the introduction) **93h:58143** 58F39 (34G20, 35B40, 35K60, 47H20, 47N20, 58F12)

— (*with* Ivanov, Anatolii Fiodorovich) On a high order differential delay equation. *J. Math. Anal. Appl.* **173** (1993), *no.* 2, 505–514. (George Seifert) **93m:34111** 34K15

— *see also* **Oscillation and dynamics in delay equations, 93b:34096**; **New directions in differential equations and dynamical systems, 93i:00024** *and* **Olech, Czeslaw, (93i:00024)**

Halejeva, I. V. *see* **Khaleeva, I. V.**

Hales, A. W. (*with* Arora, Satya R.; Passi, I. B. S.) Jordan decomposition and hypercentral units in integral group rings. *Comm. Algebra* **21** (1993), *no.* 1, 25–35. (Héctor A. Merklen) **93m:20005** 20C05 (16S34, 20F14)

Hales, Thomas C. Orbital integrals on U(3). *The zeta functions of Picard modular surfaces*, 303–333, *Univ. Montréal, Montreal, PQ*, 1992. (Marko Tadić) **93d:22020** 22E50 (11F85)

— The sphere packing problem. (English summary) *J. Comput. Appl. Math.* **44** (1992), *no.* 1, 41–76. (W. J. Firey) **93k:52020** 52C17

— The subregular germ of orbital integrals. *Mem. Amer. Math. Soc.* **99** (1992), *no.* 476, xii+142 *pp.* (David Joyner) **93f:22011** 22E35 (20G25, 22E50)

Halevi, Yoram (*with* Bernstein, Dennis S.; Haddad, Wassim M.) On stable full-order and reduced-order LQG controllers. (English summary) *Optimal Control Appl. Methods* **12** (1991), *no.* 3, 163–172. 93B50 (93D15)

— Frequency weighted model reduction via optimal projection. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 10, 1537–1542. 93B11

— (*with* Palmor, Z. J.; Efrati, T.) Limit cycles in decentralized relay systems. (English summary) *Internat. J. Control* **56** (1992), *no.* 4, 755–765. (Summary) **93f:93010** 93A14 (34C05, 34H05)

— (*with* Haddad, Wassim M.; Bernstein, Dennis S.) A Riccati equation approach to the singular LQG problem. (English summary) *Automatica J. IFAC* **29** (1993), *no.* 3, 773–778. 93B40 (93E20)

— (*with* Jalfon, Agnès Cohen) On partially augmented observers for systems with coloured noises. (English summary) *Internat. J. Control* **57** (1993), *no.* 2, 335–349. (Summary) **93i:93022** 93B07 (93E03)

Halfin, Shlomo (*with* Avi-Itzhak, Benjamin) Servers in tandem with communication and manufacturing blocking. (English summary) *J. Appl. Probab.* **30** (1993), *no.* 2, 429–437. (Summary) **93m:60195** 60K35 (90B30)

Halford, W. D. (*with* Vlieg-Hulstman, M.) Korteweg-de Vries-Burgers equation and the Painlevé property. *J. Phys. A* **25** (1992), *no.* 8, 2375–2379. (Summary) **93a:35135** 35Q53

Halilović, A. Multilinear Stieltjes integrals in Banach spaces. (Serbo-Croatian summary) *Rad. Mat.* **7** (1991), *no.* 2, 305–316. (Pilar Cembranos) **93a:46079** 46G10 (28B05, 28C20)

Halilsoy, M. (*with* El-Said, M.) The physical interpretation of a Painlevé transcendent spacetime. (English summary) *Gen. Relativity Gravitation* **25** (1993), *no.* 1, 81–86. (Nora Bretón Báez) **93m:83010** 83C15

abd el-Halim, Fayza *see* **Abd El-Halim, Fayza**

Halim, G. A. (*with* Thomas, D. K.) Sharp estimates for some integral operators of convex functions of order alpha. *Publ. Inst. Math. (Beograd) (N.S.)* **49(63)** (1991), 67–70. (Introduction) **93e:30025** 30C45

abdel Halim, I. H. *see* **Abdel Halim, I. H.**

abdul Halim, S. *see* **Abdul Halim, S.**

Halin, R. Lattices of cuts in graphs. *Abh. Math. Sem. Univ. Hamburg* **61** (1991), 217–230. (Jarmila Hedlíková) **93f:05055** 05C40 (05C38, 06A23)

— Bounded graphs. Directions in infinite graph theory and combinatorics (Cambridge, 1989). *Discrete Math.* **95** (1991), *no.* 1-3, 91–99. (Bojan Mohar) **93a:05122** 05C99

— Tree-partitions of infinite graphs. *Discrete Math.* **97** (1991), *no.* 1-3, 203–217. (W. T. Tutte) **93b:05044** 05C05

— Some finiteness results concerning separation in graphs. Special volume to mark the centennial of Julius Petersen's "Die Theorie der regulären Graphs", Part II. *Discrete Math.* **101** (1992), *no.* 1-3, 97–106. (M. E. Watkins) **93f:05056** 05C40

Halkowska, Katarzyna Equational theories of varieties defined by P-compatible identities of Boolean algebras. *Beiträge Algebra Geom. No.* 33 (1992), 103–108. (From the introduction) **93d:08005** 08B05 (03G05, 06E99)

Hall, A. Rupert In memoriam: Pierre Costabel (1912–1989). *Arch. Internat. Hist. Sci.* **41** (1991), *no.* 126, 105–108. 01A70

Hall, Charles A. (*with* Porsching, T. A.) Approximation methods in the computer numerically controlled fabrication of optical surfaces. II. Mollifications. *IMA J. Numer. Anal.* **12** (1992), *no.* 2, 259–269. (Summary) **93b:65027** 65D17

— (*with* Ye, Xiu) Construction of null bases for the divergence operator associated with incompressible Navier-Stokes equations. *Linear Algebra Appl.* **171** (1992), 9–52. (Long An Ying) **93c:65142** 65N30 (65N06, 76D05, 76M20)

Hall, Eric B. (*with* Wise, Gary L.) A result on multidimensional quantization. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 2, 609–613. (Summary) **93m:60014** 60A10

Hall, Frank J. (*with* Bevis, Jean H.) Nested range conditions for LU factorizations of integer matrices. Second NIU Conference on Linear Algebra, Numerical Linear Algebra and Applications (DeKalb, IL, 1991). *Linear Algebra Appl.* **172** (1992), 97–108. (Jeffrey Stuart) **93i:15014** 15A23 (15A36)

Hall, G. S. (*with* da Costa, José Manuel N.) Curvature collineations in general relativity. I, II. *J. Math. Phys.* **32** (1991), *no.* 10, 2848–2853, 2854–2862. (Toshihiko Ikawa) **93a:53058** 53C50 (53C80, 83C99)

— (*with* Hossack, A. D.; Pulham, J. R.) Sectional curvature, symmetries, and conformally flat plane waves. *J. Math. Phys.* **33** (1992), *no.* 4, 1408–1414. (A. V. Aminova) **93i:83040** 83C40 (53B50)

— Weyl manifolds and connections. *J. Math. Phys.* **33** (1992), *no.* 7, 2633–2638. (Paul E. Ehrlich) **93f:53056** 53C50 (53C05, 53C80)

Hall, Glen R. (*with* Meyer, Kenneth R.) ★ Introduction to Hamiltonian dynamical systems and the N-body problem. Applied Mathematical Sciences, 90. *Springer-Verlag, New York*, 1992. xii+292 *pp. ISBN* 0-387-97637-X (Richard C. Churchill) **93b:70002** 70–01 (58F05, 70Fxx, 70H05)

Hall, Jonathan I. Local indecomposability of certain geometric graphs. (English summary) A collection of contributions in honour of Jack van Lint. *Discrete Math.* **106/107** (1992), 243–254. (Gerard J. Chang) **93e:05056** 05C40 (05C75)

— (*with* Roseiro, Albert M.; Adney, Joseph E.; Siegel, Marvin) The trace operator and redundancy of Goppa codes. *IEEE Trans. Inform. Theory* **38** (1992), *no.* 3, 1130–1133. (Summary) **93b:94027** 94B27 (11T71)

— 3-transposition groups with noncentral normal 2-subgroups. *J. Algebra* **146** (1992), *no.* 1, 49–76. (Ulrich Dempwolff) **93b:20027** 20D05 (20F05)

— (*with* Liebeck, Martin W.; Seitz, Gary M.) Generators for finite simple groups, with applications to linear groups. *Quart. J. Math. Oxford Ser.* (2) **43** (1992), *no.* 172, 441–458. (Richard Lyons) **93k:20030** 20D06 (20F05, 20F50, 20G15)

Hall, Lawrence O. (*with* Kandel, Abraham) The evolution from expert systems to fuzzy expert systems. *Fuzzy expert systems*, 3–21, *CRC, Boca Raton, FL*, 1992. (*see* **93g:68133**) 68T35 (03B52, 68T30)

— (*with* Kandel, Abraham) Fess: a reusable fuzzy expert system. *Fuzzy expert systems*, 181–193, *CRC, Boca Raton, FL*, 1992. (*see* **93g:68133**) 68T35 (03B52)

Hall, Leslie A. (*with* Shmoys, David B.) Jackson's rule for single-machine scheduling: making a good heuristic better. *Math. Oper. Res.* **17** (1992), *no.* 1, 22–35. (Summary) **93a:90031** 90B35

— (*with* Magnanti, Thomas L.) A polyhedral intersection theorem for capacitated spanning trees. *Math. Oper. Res.* **17** (1992), *no.* 2, 398–410. (Valentin E. Brimkov) **93e:90064** 90C35 (05C05, 05C99, 65K05, 90C27)

Hall, Michael J. W. Logic of likelihood. *Internat. J. Theoret. Phys.* **31** (1992), *no.* 7, 1131–1151. (Sylvia Pulmannova) **93e:81013** 81P10 (03B48, 03G12)

Hall, Michael L. (*with* Morel, Jim Emanuel; Dendy, J. E., Jr.; White, Stephen W.) A cell-centered Lagrangian-mesh diffusion differencing scheme. (English summary) *J. Comput. Phys.* **103** (1992), *no.* 2, 286–299. (Summary) **93i:76061** 76M20

Hall, P. *see* **Hall, Philip[2]**

Hall, Peter Gavin (*with* Marron, J. Stephen) Lower bounds for bandwidth selection in density estimation. *Probab. Theory Related Fields* **90** (1991), *no.* 2, 149–173. (Thomas W. Sager) **93f:62054** 62G05

— ★ The bootstrap and Edgeworth expansion. Springer Series in Statistics. *Springer-Verlag, New York*, 1992. xiv+352 *pp. ISBN* 0-387-97720-1 (Gutti J. Babu) **93h:62029** 62E20 (62E25, 62G05, 62G09)

— (*with* Fisher, Nicholas I.) Bootstrap methods for directional data. (English summary) *The art of statistical science*, 47–63, *Wiley Ser. Probab. Math. Statist. Probab. Math. Statist., Wiley, Chichester*, 1992. (*see* **93b:62003**) 62G09 (62H11)

— Effect of bias estimation on coverage accuracy of bootstrap confidence intervals for a probability density. *Ann. Statist.* **20** (1992), *no.* 2, 675–694. (Keh-Wei Chen) **93e:62131** 62G15 (62E20, 62G09)

— On bootstrap confidence intervals in nonparametric regression. *Ann. Statist.* **20** (1992), *no.* 2, 695–711. (K. M. Lal Saxena) **93j:62118** 62G09 (62G05)

— On global properties of variable bandwidth density estimators. *Ann. Statist.* **20** (1992), *no.* 2, 762–778. (A. J. van Es) **93j:62096** 62G05

— (*with* Booth, James G.; Wood, Andrew T. A.) Bootstrap estimation of conditional distributions. (English summary) *Ann. Statist.* **20** (1992), *no.* 3, 1594–1610. (Hung Trung Nguyen) **93j:62116** 62G09

— (*with* Beran, Rudolf) Estimating coefficient distributions in random coefficient regressions. (English summary) *Ann. Statist.* **20** (1992), *no.* 4, 1970–1984. (Yu. I. Petunin) **93m:62039** 62E20 (62J05)

— (*with* Davison, A. C.) On the bias and variability of bootstrap and cross-validation estimates of error rate in discrimination problems. (English summary) *Biometrika* **79** (1992), *no.* 2, 279–284. (Summary) **93f:62085** 62H30 (62G05, 62G09)

— (*with* Chambers, Raymond L.; Dorfman, Alan H.) Properties of estimators of the finite population distribution function. (English summary) *Biometrika* **79** (1992), *no.* 3, 577–582. (Summary) **93j:62090** 62G05 (62D05)

— (*with* Anderson, Niall H.; Titterington, D. M.) Interpolation rules suggested by asymptotic expansions. (English summary) *Biometrika* **79** (1992), *no.* 3, 651–653. 62E20

— (*with* Härdle, Wolfgang; Marron, J. Stephen) Regression smoothing parameters that are not far from their optimum. *J. Amer. Statist. Assoc.* **87** (1992), *no.* 417, 227–233. (Ewaryst Rafajłowicz) **93d:62065** 62G05

— (*with* Teugels, Jozef L.; Vanmarcke, Ann) The abscissa of convergence of the Laplace transform. *J. Appl. Probab.* **29** (1992), *no.* 2, 353–362. (Sándor Csörgő) **93e:62107** 62G05 (44A10, 60F99, 60G70, 62H30)

— (*with* Padmanabhan, A. R.) On the bootstrap and the trimmed mean. *J. Multivariate Anal.* **41** (1992), *no.* 1, 132–153. (Michael R. Chernick) **93d:62030** 62E20 (62G09)
— (*with* Welsh, A. H.) Corrigendum: "Normal approximation in regression" [J. Multivariate Anal. **39** (1991), no. 1, 87–105; MR 92h:60049]. *J. Multivariate Anal.* **43** (1992), *no.* 1, 171. (Editors) **93h:60054** 60F17 (62G05)
— (*with* Johnstone, Iain M.) Empirical functional and efficient smoothing parameter selection. With discussion and a reply by the authors. *J. Roy. Statist. Soc. Ser. B* **54** (1992), *no.* 2, 475–530. (Wolfgang Wertz) **93i:62029** 62G05
— (*with* Do, Kim-Anh) Distribution estimation using concomitants of order statistics, with application to Monte Carlo simulation for the bootstrap. *J. Roy. Statist. Soc. Ser. B* **54** (1992), *no.* 2, 595–607. (Michael Falk) **93e:62136** 62G30 (62G05, 62G09)
— (*with* Marron, J. Stephen) Corrigendum: "Local minima in cross-validation functions" [J. Roy. Statist. Soc. Ser. B **53** (1991), no. 1, 245–252; MR 92d:62044]. *J. Roy. Statist. Soc. Ser. B* **54** (1992), *no.* 3, 907. (Editors) **93h:62077** 62G05 (62E25)
— (*with* Marron, J. Stephen; Park, Byeong U.) Smoothed cross-validation. *Probab. Theory Related Fields* **92** (1992), *no.* 1, 1–20. (Jan Mielniczuk) **93e:62108** 62G05
— Convergence rates in the central limit theorem for means of autoregressive and moving average sequences. (English summary) *Stochastic Process. Appl.* **43** (1992), *no.* 1, 115–131. (Daniel W. Chambers) **93m:60045** 60F05 (60G10)
— (*with* Titterington, D. M.) Edge-preserving and peak-preserving smoothing. (English summary) *Technometrics* **34** (1992), *no.* 4, 429–440. (Summary) **93g:62088** 62J02 (62G05)
— (*with* Härdle, Wolfgang) On the backfitting algorithm for additive regression models. (English summary) *Statist. Neerlandica* **47** (1993), *no.* 1, 43–57. (Summary) **93j:62097** 62G05
Hall, Philip[2] (*with* Denier, James P.; Seddougui, Sharon O.) On the receptivity problem for Görtler vortices: vortex motions induced by wall roughness. *Philos. Trans. Roy. Soc. London Ser. A* **335** (1991), *no.* 1636, 51–85. (Summary) **93c:76030** 76E05
— (*with* Bassom, Andrew P.) On the interaction of Görtler vortices and Tollmien-Schlichting waves in boundary layer flows. (English summary) *Instability, transition, and turbulence* (*Hampton, VA*, 1991), 51–60, *ICASE/NASA LaRC Ser., Springer, New York*, 1992. (Summary) **93m:76039** 76E30 (76D10, 76D33)
— (*with* Choudhari, Meelan) On the nonlinear evolution of large wavelength Görtler vortices. (English summary) *Instability, transition, and turbulence* (*Hampton, VA*, 1991), 61–78, *ICASE/NASA LaRC Ser., Springer, New York*, 1992. (Summary) **93k:76047** 76E30 (76D10, 76N20)
— (*with* Fu, Yibin) Nonlinear development and secondary instability of large-amplitude Görtler vortices in hypersonic boundary layers. (English summary) *European J. Mech. B Fluids* **11** (1992), *no.* 4, 465–510. (Summary) **93i:76050** 76K05 (76E30, 76N20)
— (*with* Balakumar, P.; Papageorgiu, D.) On a class of unsteady three-dimensional Navier-Stokes solutions relevant to rotating disc flows: threshold amplitudes and finite-time singularities. *J. Fluid Mech.* **238** (1992), 297–323. (Summary) **93c:76016** 76D05 (76E30)
— (*with* Morris, Helen) On the instability of boundary layers on heated flat plates. (English summary) *J. Fluid Mech.* **245** (1992), 367–400. (Summary) **93i:76036** 76E15 (76D10)
— (*with* Denier, James P.) On the nonlinear development of the most unstable Görtler vortex mode. (English summary) *J. Fluid Mech.* **247** (1993), 1–16. (Summary) **93m:76040** 76E30 (76D10)
— (*with* Blackaby, Nicholas D.; Cowley, Stephen J.) On the instability of hypersonic flow past a flat plate. (English summary) *J. Fluid Mech.* **247** (1993), 369–416. (Summary) **93m:76042** 76E99 (76K05, 76N20)
— (*with* Fu, Yibin) Effects of Görtler vortices, wall cooling and gas dissociation on the Rayleigh instability in a hypersonic boundary layer. (English summary) *J. Fluid Mech.* **247** (1993), 503–525. (Summary) **93m:76043** 76E99 (76K05, 76N20)
Hall, R. R. (*with* Tenenbaum, Gérald) Effective mean value estimates for complex multiplicative functions. *Math. Proc. Cambridge Philos. Soc.* **110** (1991), *no.* 2, 337–351. (From the introduction) **93e:11109** 11N37
— (*with* Grimmett, Geoffrey R.) The asymptotics of random sieves. *Mathematika* **38** (1991), *no.* 2, 285–302 (1992). (S. W. Graham) **93b:11116** 11N36 (11N35)
— On some conjectures of P. Erdős in Astérisque. I: "Some unconventional problems in number theory" [in *Journées Arithmétiques de Luminy (Luminy, 1978)*, 73–82, Astérisque, 61, Soc. Math. France, Paris, 1979; MR 81h:10001]. (English summary) *J. Number Theory* **42** (1992), *no.* 3, 313–319. (Gérald Tenenbaum) **93k:11084** 11N25 (11K65)
— A quantitative isoperimetric inequality in n-dimensional space. *J. Reine Angew. Math.* **428** (1992), 161–176. (W. J. Firey) **93d:51041** 51M16 (51M25, 52A40)
— (*with* Tenenbaum, Gérald) On Behrend sequences. *Math. Proc. Cambridge Philos. Soc.* **112** (1992), *no.* 3, 467–482. (Wen Peng Zhang) **93h:11026** 11B83
Hall, Richard L. Mixtures of potentials in quantum mechanics. *J. Math. Phys.* **33** (1992), *no.* 5, 1710–1716. (Summary) **93a:81038** 81Q10
— Square-well representations for potentials in quantum mechanics. (English summary) *J. Math. Phys.* **33** (1992), *no.* 10, 3472–3476. (Summary) **93g:81018** 81Q05
— Refining the comparison theorem of quantum mechanics. (English summary) *J. Phys. A* **25** (1992), *no.* 16, 4459–4469. (Summary) **93f:35161** 35P05 (35J10, 81Q05)
— *see also* **Anand, Kailash K.**, (**93f:34004**)
Hall, Richard W. Tests for connectivity preservation for parallel reduction operators. (English summary) Special issue on digital topology. *Topology Appl.* **46** (1992), *no.* 3, 199–217. (Christian Ronse) **93m:68183** 68U10 (54D05, 68T10)
Hall, Robert J. Comparing parameter schemes for propositional reasoning: an empirical study. *J. Automat. Reason.* **8** (1992), *no.* 3, 367–394. (Sergey G. Vorobyov) **93f:68081** 68T15 (03B35)
Hallahan, Charles (*with* Chang, I Lok; Swamy, P. A. V. B.) Efficient computation of stochastic coefficients models. (English summary) *Computational economics and econometrics* (*Minneapolis, MN*, 1990), 43–53, *Adv. Stud. Theoret. Appl. Econometrics*, 22, *Kluwer Acad. Publ., Dordrecht*, 1992. (*see* **93b:90009**) 62P20
Hallam, Thomas G. (*with* Lassiter, Ray R.; Jaworska, Joanna; McKinney, William) Physiologically based models in predator-prey ecology: an introduction. (English summary) *Recent trends in differential equations*, 285–299, *World Sci. Ser. Appl. Anal.*, 1, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93e:34005**) 92D40
— (*with* Silva, Jacques A. L.) Compensation and stability in nonlinear matrix models. *Math. Biosci.* **110** (1992), *no.* 1, 67–101. (Poul Einer Hansen) **93e:92014** 92D25
Hallatschek, Klaus Fouriertransformation auf dünnen Gittern mit hierarchischen Basen. (English and German summaries) [Fourier transform on sparse grids with hierarchical bases] *Numer. Math.* **63** (1992), *no.* 1, 83–97. (Summary) **93f:65014** 65D05 (65T20)
Halldórsson, Magnús M. (*with* Szegedy, Mário) Lower bounds for on-line graph coloring. *Proceedings of the Third Annual ACM-SIAM Symposium on Discrete Algorithms* (*Orlando, FL*, 1992), 211–216, *ACM, New York*, 1992. (*see* **93b:68005**) 68R10 (05C15, 05C85, 68Q20)
— (*with* Boppana, Ravi) Approximating maximum independent sets by excluding subgraphs. *BIT* **32** (1992), *no.* 2, 180–196. (Lajos Rónyai) **93g:68105** 68R10 (05C85)
— A still better performance guarantee for approximate graph coloring. (English summary) *Inform. Process. Lett.* **45** (1993), *no.* 1, 19–23. (Summary) **93j:05146** 05C85 (05C15, 68Q25, 68R10)
Hallenbeck, D. J. Radial growth of subharmonic functions. *Partial differential equations with complex analysis*, 113–121, *Pitman Res. Notes Math. Ser.*, 262, *Longman Sci. Tech., Harlow*, 1992. (Krzysztof Samotij) **93m:31002** 31A20 (31A05)
— Subordination families. (English summary) *Rocky Mountain J. Math.* **22** (1992), *no.* 3, 867–876. (T. H. MacGregor) **93j:30017** 30C80 (30C55)
Haller, Hans Limitations of the revelation principle. (English summary) *Econom. Lett.* **39** (1992), *no.* 4, 409–413. 90A08
hughes-Hallett, A. J. *see* **Hughes-Hallett, A. J.**
Halley, Edmond *see* **Kollerstrom, Nick**
Halliday, Ian (*with* Chu, Meifang; Goddard, Peter; Olive, David; Schwimmer, Adam) Quantization of the Wess-Zumino-Witten model on a circle. *Phys. Lett. B* **266** (1991), *no.* 1-2, 71–81. (Summary) **93c:81199** 81T40 (81R10, 81T70)
Hallin, Marc (*with* Dufour, Jean-Marie) Nonuniform bounds for nonparametric t-tests. *Econometric Theory* **7** (1991), *no.* 2, 253–263. (Summary) **93e:62123** 62G10
— (*with* Mélard, Guy; Milhaud, Xavier) Permutational extreme values of autocorrelation coefficients and a Pitman test against serial dependence. *Ann. Statist.* **20** (1992), *no.* 1, 523–534. (Arup Bose) **93d:62089** 62G10 (62M10)
— (*with* Dufour, Jean-Marie) Simple exact bounds for distributions of linear signed rank statistics. *J. Statist. Plann. Inference* **31** (1992), *no.* 3, 311–333. (Sotiris Loukas) **93j:62128** 62G10 (62E15)
— (*with* Benghabrit, Youssef) Optimal rank-based tests against first-order superdiagonal bilinear dependence. (English summary) *J. Statist. Plann. Inference* **32** (1992), *no.* 1, 45–61. (Endre Csáki) **93i:62040** 62G10 (62M10)
— (*with* Puri, Madan L.) Some asymptotic results for a broad class of nonparametric statistics. (English summary) *J. Statist. Plann. Inference* **32** (1992), *no.* 2, 165–196. (M. Hušková) **93k:62030** 62E20 (60F05, 60F10, 62G10)
Halliwell, Jonathan J. Introductory lectures on quantum cosmology. *Quantum cosmology and baby universes* (*Jerusalem*, 1989/1990), 159–243, *Jerusalem Winter School Theoret. Phys.*, 7, *World Sci. Publishing, River Edge, NJ*, 1991. (*see* **93h:83024**) 83C45 (83F05)
— (*with* Hartle, James B.) Wave functions constructed from an invariant sum-over-histories satisfy constraints: three derivations of the Wheeler-DeWitt equation. *Quantum gravity* (*Moscow*, 1990), 92–123, *World Sci. Publishing, River Edge, NJ*, 1991. (Vladimir Soloviev) **93g:83049** 83C45 (81S40)
Hallnäs, Lars (*with* Schroeder-Heister, Peter) A proof-theoretic approach to logic programming. I. Clauses as rules. *J. Logic Comput.* **1** (1990), *no.* 2, 261–283. (Summary) **93d:68011** 68N17 (03B70)
— (*with* Schroeder-Heister, Peter) A proof-theoretic approach to logic programming. II. Programs as definitions. *J. Logic Comput.* **1** (1991), *no.* 5, 635–660. (Summary) **93d:68012** 68N17 (03B70, 03F50)
Halmos, Paul Richard Has progress in mathematics slowed down? A lecture presented at the Seventy-fifth Anniversary Celebration of the Founding of the MAA in Columbus, Ohio, August 1990. AMS-MAA Joint Lecture Series. *Mathematical Association of America, Washington, DC*, 1991. 1 *videocassette* (*NTSC*; 1/2 *inch*; *VHS*) (45 *min.*); *sd., col.* (Editors) **93c:01025** 01A60 (00A05)
— Has progress in mathematics slowed down? (Bulgarian) Translated from the English by B. Penkov and G. Boshnakov. *Fiz.-Mat. Spis. B"lgar. Akad. Nauk.* **33(66)** (1991), *no.* 3-4, 247–273 (1992). (Editors) **93d:01040** 01A60
— Has progress in mathematics slowed down? I. (Czech) Translated from the English by Oldřich Kowalski and Ivan Netuka. *Pokroky Mat. Fyz. Astronom.* **36** (1991), *no.* 5, 262–276. (Editors) **93c:01026a** 01A60 (00A05)
— Has progress in mathematics slowed down? II. (Czech) Translated from the English by Oldřich Kowalski and Ivan Netuka. *Pokroky Mat. Fyz. Astronom.* **36** (1991), *no.* 6, 305–319. (Editors) **93c:01026b** 01A60 (00A05)
— Cosets, clusters, spinsters, and the Schröder-Bernstein theorem. (English. English summary) A lecture presented at the Fiftieth Anniversary Celebration of the Metropolitan New York Section of the Mathematical Association of America held at Columbia University, New York, May 1991. Selected Lectures in Mathematics. *American Mathematical Society, Providence, RI*, 1992. 1 *videocassette* (*NTSC*; 1/2 *inch*; *VHS*) (60 *min.*); *sd., col. ISBN* 0-8218-8070-5 (Publisher's description) **93i:01019** 01A60 (20–03, 47–03)
— Large intersections of large sets. *Amer. Math. Monthly* **99** (1992), *no.* 4, 307–312. (K. P. S. Bhaskara Rao) **93c:28003** 28A05 (04A03, 04A20)
— The problem of positive contraction approximation. (English summary) *Chinese J. Math.* **20** (1992), *no.* 3, 241–248. (Richard Bouldin) **93i:47017** 47A58 (15A60, 47B15)
Halousková, Alena (*with* Kárný, Miroslav; Böhm, Josef) MIMO—a set of SISO? Multivariate system adaptively controlled as a set of single-input single-output models. (English summary) *Mutual impact of computing power and control theory* (*Prague*, 1992), 121–126, *Czech. Acad. Sci., Prague*, 1992. (Mikolaj Busłowicz) **93m:93055** 93C40 (93C35)
— (*with* Kárný, Miroslav; Nagy, Ivan) Adaptive cross-direction control of paper basis weight. (English summary) *Automatica J. IFAC* **29** (1993), *no.* 2, 425–429. 93C95
— *see also* **Advanced methods in adaptive control for industrial applications**, **93c:93003**
Halpenny, Liam (*with* Smyth, Christopher J.) A classification of minimal standard-path 2 × 2 switching networks. *Theoret. Comput. Sci.* **102** (1992), *no.* 2, 329–354. (B. Hazeltine) **93e:94019** 94C10 (94C15)
Halperin, Dan (*with* Sharir, Micha) Improved combinatorial bounds and efficient techniques for certain motion planning problems with three degrees of freedom. *Comput. Geom.* **1** (1992), *no.* 5, 269–303. (Helmut Alt) **93d:68068** 68U05 (68Q25)

— (*with* Overmars, Mark H.; Sharir, Micha) Efficient motion planning for an L-shaped object. *SIAM J. Comput.* **21** (1992), *no.* 1, 1–23. (Summary) **93a:68150** 68U05 (68Q25)

Halperin, Stephen Universal enveloping algebras and loop space homology. (English summary) *J. Pure Appl. Algebra* **83** (1992), *no.* 3, 237–282. (Yves Félix) **93k:55014** 55P62 (55P35, 57T05)

— (*with* Félix, Yves; Thomas, Jean-Claude) Torsion in loop space homology. *J. Reine Angew. Math.* **432** (1992), 77–92. (John F. Oprea) **93i:55012** 55P35 (57T05)

Halpern, D. (*with* Secomb, T. W.) The squeezing of red blood cells through parallel-sided channels with near-minimal widths. (English summary) *J. Fluid Mech.* **244** (1992), 307–322. 76Z05 (92C35)

Halpern, Joseph Y. The relationship between knowledge, belief, and certainty. *Ann. Math. Artificial Intelligence* **4** (1991), *no.* 3-4, 301–322. (Mohamed Amer) **93c:03018** 03B45 (03B48, 68T27)

— (*with* Shoham, Yoav) A propositional modal logic of time intervals. *J. Assoc. Comput. Mach.* **38** (1991), *no.* 4, 935–962. (Katalin Bimbó) **93a:68133** 68T27 (03B45)

— (*with* Fagin, Ronald) Two views of belief: belief as generalized probability and belief as evidence. *Artificial Intelligence* **54** (1992), *no.* 3, 275–317. (J.-J. Ch. Meyer) **93h:68132** 68T30 (03B45, 60A99)

— (*with* Moses, Yoram) A guide to completeness and complexity for modal logics of knowledge and belief. *Artificial Intelligence* **54** (1992), *no.* 3, 319–379. (Frans Voorbraak) **93c:03019** 03B45 (68T27, 68T30)

— (*with* Fagin, Ronald; Vardi, Moshe Y.) What can machines know? On the properties of knowledge in distributed systems. *J. Assoc. Comput. Mach.* **39** (1992), *no.* 2, 328–376. (J.-J. Ch. Meyer) **93h:68131** 68T30 (03B45, 03B70, 68Q10)

Halpern, M. B. (*with* Obers, N. A.) Magic bases, metric ansätze and generalized graph theories in the Virasoro master equation. *Ann. Physics* **212** (1991), *no.* 1, 28–52. (Vladimir A. Stukopin) **93d:81071** 81R10 (17B81, 81T40)

— (*with* Giveon, Amit; Kiritsis, Elias B.; Obers, N. A.) Exact C-function and C-theorem on affine-Virasoro space. *Nuclear Phys. B* **357** (1991), *no.* 2-3, 655–690. (P. D. Jarvis) **93d:81069** 81R10 (17B65, 17B68, 81T30, 81T40)

— (*with* Obers, N. A.) Superconformal constructions on two-dimensional simplicial complexes. *Internat. J. Modern Phys. A* **7** (1992), *no.* 13, 3065–3082. (Robert E. C. Perret) **93j:81091** 81T40 (17B68, 81R10)

— (*with* Obers, N. A.) New superconformal constructions on triangle-free graphs. (English summary) *Internat. J. Modern Phys. A* **7** (1992), *no.* 29, 7263–7286. (Nicolás Andruskiewitsch) **93k:81079** 81R10 (17B81, 81T40)

— (*with* Obers, N. A.) Generalized graph theory on Lie g and applications in conformal field theory. *J. Math. Phys.* **33** (1992), *no.* 10, 3274–3295. (A. Hamid Bougourzi) **93m:81131** 81T40 (17B67, 81R10)

Halpern, Mark E. (*with* Hill, Robin D.) Minimum overshoot design for SISO discrete-time systems. (English summary) *IEEE Trans. Automat. Control* **38** (1993), *no.* 1, 155–158. (O. A. Sebakhy) **93k:93045** 93B51 (93B40, 93C55)

Halpern, P. H. (*with* Mohapatra, Ram Narayan; O'Hara, P. J.; Rodriguez, R. S.) An extremal problem concerning finite dimensional subspaces of $C[a, b]$ pertinent in signal theory. *J. Austral. Math. Soc. Ser. B* **34** (1992), *no.* 1, 35–42. 94A12

Halpern, Paul (*with* Kerrick, David) Five-dimensional solutions for the modified Einstein-Hilbert Lagrangian. (English summary) *Gen. Relativity Gravitation* **25** (1993), *no.* 1, 41–53. (Summary) **93i:83084** 83E15

Halsey, Mark (*with* Dolan, Peter) Random edge domination. (English summary) *Discrete Math.* **112** (1993), *no.* 1-3, 259–260. (Summary) **93k:05166** 05C80

Halstenberg, Bernd (*with* Reischuk, Rüdiger) Über den Nutzen von Orakelfragen bei nichtdeterministischen Kommunikationsprotokollen. (German summary) [On the use of oracle questions in nondeterministic communication protocols] *Informatik*, 169–183, *Teubner-Texte Inform.*, 1, *Teubner, Stuttgart*, 1992. (*see* **93d:68002**) 94A05

Halter-Koch, Franz Prime-producing quadratic polynomials and class numbers of quadratic orders. *Computational number theory (Debrecen, 1989)*, 73–82, *de Gruyter, Berlin*, 1991. (Michael D. Hendy) **93c:11101** 11R29 (11A41)

— (*with* Kaplan, Pierre; Williams, Kenneth S.; Yamamoto, Yoshihiko) Infrastructure des classes ambiges d'idéaux des ordres des corps quadratiques réels. [Infrastructure of ambiguous classes of ideals of the orders of real quadratic fields] *Enseign. Math.* (2) **37** (1991), *no.* 3-4, 263–292. (Stéphane Louboutin) **93b:11147** 11R29 (11E41, 11R11)

— Chebotarev formations and quantitative aspects of nonunique factorizations. *Acta Arith.* **62** (1992), *no.* 2, 173–206. (Jerzy Kaczorowski) **93m:11119** 11R47 (11R27)

— A generalization of Davenport's constant and its arithmetical applications. *Colloq. Math.* **63** (1992), *no.* 2, 203–210. (W. Narkiewicz) **93h:11119** 11R27 (11N45)

— (*with* Geroldinger, Alfred) On the asymptotic behaviour of lengths of factorizations. *J. Pure Appl. Algebra* **77** (1992), *no.* 3, 239–252. (David F. Anderson) **93c:13001** 13A05 (13G05, 20M99)

— (*with* Geroldinger, Alfred) Nonunique factorizations in block semigroups and arithmetical applications. (English summary) *Math. Slovaca* **42** (1992), *no.* 5, 641–661. (W. Narkiewicz) **93k:11106** 11R44 (11R27, 20M14)

— (*with* Narkiewicz, W.) Commutative rings and binomial coefficients. (English summary) *Monatsh. Math.* **114** (1992), *no.* 2, 107–110. (Summary) **93j:13011** 13A99 (05A10)

— Typenhalbgruppen und Faktorisierungsprobleme. (German summary) [Type semigroups and factorization problems] *Results Math.* **22** (1992), *no.* 1-2, 545–559. (Mark Verus Lawson) **93g:11110** 11R27 (20M14)

— (*with* Geroldinger, Alfred) Realization theorems for semigroups with divisor theory. *Semigroup Forum* **44** (1992), *no.* 2, 229–237. (Št. Schwarz) **93c:20096** 20M05

Halton, John H. Random sequences in generalized Cantor sets. *J. Sci. Comput.* **6** (1991), *no.* 4, 415–423. (Henri Faure) **93c:65013** 65C10 (65C05)

— Reject the rejection technique. (English summary) *J. Sci. Comput.* **7** (1992), *no.* 3, 281–287. (Summary) **93j:65008** 65C05

Ham, Woonchul Adaptive control based on explicit model of robot manipulator. (English summary) *IEEE Trans. Automat. Control* **38** (1993), *no.* 4, 654–658. 93C85 (70B15, 70Q05, 93C40)

Hamabata, Hiromitsu Nonlinear hydromagnetic waves in a thermally stratified cylindrical fluid. I. Exact translationally and axially symmetric solutions. (English summary) *J. Fluid Mech.* **243** (1992), 637–651. (Summary) **93g:76112** 76W05 (85A30, 86A25)

Hamachi, Toshihiro A measure theoretical proof of the Connes-Woods theorem on AT-flows. *Pacific J. Math.* **154** (1992), *no.* 1, 67–85. (A. I. Danilenko) **93c:46120** 46L55 (22D25, 28D99)

Hamad, A. J. (*with* Makky, S. M.) Water coning in oil wells via a new variational technique for free boundary problems. *Approximation, optimization and computing*, 399–402, *North-Holland, Amsterdam*, 1990. (*see* **93a:41001**) 65K10

bonan-Hamada, Catherine M. *see* **Bonan-Hamada, Catherine M.**

Hamada, Ken-Ji Quantum theory of dilaton gravity in $1 + 1$ dimensions. (English summary) *Phys. Lett. B* **300** (1993), *no.* 4, 322–329. (Summary) **93m:81132** 81T40 (83C45, 83C57)

Hamada, N. *see* **Hamada, Nozomu**

Hamada, Noboru (*with* Deza, Michel) A characterization of $\{2v_{\alpha+1} + 2v_{\beta+1}, 2v_\alpha + 2v_\beta; t, q\}$-minihypers in PG$(t, q)$ ($t \geq 2$, $q \geq 5$ and $0 \leq \alpha < \beta < t$) and its applications to error-correcting codes. *Discrete Math.* **93** (1991), *no.* 1, 19–33. (Arrigo Bonisoli) **93i:51019** 51E22 (51E20, 94B05)

— (*with* Helleseth, Tor) On a characterization of some minihypers in PG(t, q) ($q = 3$ or 4) and its applications to error-correcting codes. (English summary) *Coding theory and algebraic geometry (Luminy, 1991)*, 43–62, *Lecture Notes in Math.*, 1518, *Springer, Berlin*, 1992. (Vikram Jha) **93j:51006** 51E22 (94B65)

— (*with* Helleseth, Tor; Ytrehus, Øyvind) On the construction of $[q^4 + q^2 - q, 5, q^4 - q^3 + q^2 - 2q; q]$-codes meeting the Griesmer bound. (English summary) *Des. Codes Cryptogr.* **2** (1992), *no.* 3, 225–229. (H. Mizuno) **93h:94026** 94B25 (94B27)

— (*with* Helleseth, Tor) A characterization of some $\{2v_{\alpha+1} + v_{\gamma+1}, 2v_\alpha + v_\gamma; k - 1, 3\}$-minihypers and some $(n, k, 3^{k-1} - 2 \cdot 3^\alpha - 3^\gamma; 3)$-codes ($k \geq 3$, $0 \leq \alpha < \gamma < k - 1$) meeting the Griesmer bound. *Discrete Math.* **104** (1992), *no.* 1, 67–81. (Derek Smith) **93f:94029** 94B75 (05B25, 51E22)

— (*with* Helleseth, Tor) A characterization of some linear codes over GF(4) meeting the Griesmer bound. *Math. Japon.* **37** (1992), *no.* 2, 231–242. (Raymond Hill) **93c:94005** 94B05 (05B25)

— (*with* Helleseth, Tor) A characterization of some minihypers and codes meeting the Griesmer bound over GF(q), $q > 9$. (English summary) *Finite fields, coding theory, and advances in communications and computing (Las Vegas, NV, 1991)*, 105–122, *Lecture Notes in Pure and Appl. Math.*, 141, *Dekker, New York*, 1993. (Vikram Jha) **93k:51018** 51E22 (94B05)

Hamada, Nozomu (*with* Kato, T.) Stability conditions of 2-D system in terms of its line spectrum pair. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, II (Kobe, 1991)*, 171–176, *Mita, Tokyo*, 1992. (*see* **93g:93006**) 93D05 (93C35)

Hamada, Toshio A discounted uniform one-armed bandit problem. *Sequential Anal.* **11** (1992), *no.* 1, 1–15. (Douglas P. Kennedy) **93h:62151** 62L15 (90C39)

Hamaguchi, Kiyoharu (*with* Hiraishi, Hiromi; Fujii, Hiroshi; Yajima, Shuzo) Regular temporal logic expressively equivalent to finite automata and its application to logic design verification. (English summary) *J. Inform. Process.* **15** (1992), *no.* 1, 129–138. (Summary) **93e:68072** 68Q60 (03B45, 03B70)

— (*with* Hiraishi, Hiromi; Yajima, Shuzo) ∞-regular temporal logic and its model checking problem. (English summary) *Theoret. Comput. Sci.* **103** (1992), *no.* 2, 191–204. (Summary) **93i:68130** 68Q60 (03B45, 03B70)

Hämäläinen, Jari ★ Mathematical modelling and simulation of fluid flows in the headbox of paper machines. Dissertation, University of Jyväskylä, Jyväskylä, 1993. Report, 57. *University of Jyväskylä, Department of Mathematics, Jyväskylä*, 1993. 101 *pp. ISBN* 951-680-993-6 76D99 (76D05, 76F99, 76M10)

Hämäläinen, Raimo P. (*with* Ehtamo, Harri; Ruusunen, Jukka) On intertemporal cooperation—a dynamic stochastic problem with nonadditive group utility function. *Dynamic games in economic analysis (Espoo, 1990)*, 88–94, *Lecture Notes in Control and Inform. Sci.*, 157, *Springer, Berlin*, 1991. (*see* **93d:90003**) 90A10 (90D25)

— (*with* Ehtamo, Harri) A cooperative incentive equilibrium for a resource management problem. (English summary) *J. Econom. Dynamics Control* **17** (1993), *no.* 4, 659–678. (Summary) **93m:90123** 90D25 (90A16)

— *see also* **Differential games—developments in modelling and computation**, **93c:90003** *and* **Dynamic games in economic analysis**, **93d:90003**

Hamam, Y. (*with* Khoukhi, A.) Optimal control for robot manipulators. (English summary) *Optimization, optimal control and partial differential equations (Iaşi, 1992)*, 207–218, *Internat. Ser. Numer. Math.*, 107, *Birkhäuser, Basel*, 1992. (*see* **93m:00044**) 49N55 (93C85)

Hamana, Masamichi Modules over monotone complete C^*-algebras. *Internat. J. Math.* **3** (1992), *no.* 2, 185–204. (J. D. Maitland Wright) **93c:46108** 46L05 (46H25, 46M20)

Hamana, Yuji On the central limit theorem for the multiple point range of random walk. (English summary) *J. Fac. Sci. Univ. Tokyo Sect. IA Math.* **39** (1992), *no.* 2, 339–363. (S. J. Taylor) **93h:60112** 60J15 (60F05, 60G50)

— The variance of the single point range of two-dimensional recurrent random walk. *Proc. Japan Acad. Ser. A Math. Sci.* **68** (1992), *no.* 7, 195–197. (Introduction) **93k:60173** 60J15 (60F05)

Hamann, Eloise Semiflat algebras and transcendence degree. *J. Algebra* **147** (1992), *no.* 1, 1–18. (R. K. Markanda) **93f:13004** 13B02

Hamann, U. Approximation durch Lösungen elliptischer Randwertprobleme auf offenen Mengen. II. (English and Russian summaries) [Approximation on open sets by solutions of elliptic boundary value problems. II] *Z. Anal. Anwendungen* **10** (1991), *no.* 1, 49–61. (Nicolai N. Tarkhanov) **93g:35034** 35J40 (35A35)

Hämarik, Uno Quasioptimal error estimate for the regularized Ritz-Galerkin method with a posteriori choice of the parameter. (Russian summary) *Tartu Ül. Toimetised No.* 937 (1992), 63–76. (Anton Suhadolc) **93e:65087** 65J20 (47A50, 65R20)

Hambaba, Mohamed L. Order selection statistical test for nonstationary AR models. (English summary) *Circuits Systems Signal Process.* **12** (1993), *no.* 3, 431–440. (Summary) **93k:62183** 62M10

Hamber, Herbert W. (*with* Gross, Mark) Critical properties of two-dimensional simplicial quantum gravity. *Nuclear Phys. B* **364** (1991), *no.* 3, 703–733. (Ruth M. Williams) **93a:83011** 83C27 (81T25, 81T40, 83C45)

— Critical behavior in simplicial quantum gravity. Lattice 90 (Tallahassee, FL, 1990). *Nuclear Phys. B Proc. Suppl.* **20** (1991), 728–732. (Summary) **93c:83032** 83C27 (83C45)

— Phases of simplicial quantum gravity. (English summary) Random surfaces and 2D quantum gravity (Barcelona, 1991). *Nuclear Phys. B Proc. Suppl.* **25A** (1992), 150–175. (Summary) **93g:81151** 81T40 (81-02, 81T80)

— (*with* Williams, Ruth M.) Simplicial quantum gravity in three dimensions: analytical and numerical results. (English summary) *Phys. Rev. D* (3) **47** (1993), *no.* 2, 510–532. (Summary) **93j:83028** 83C27 (83C45)

Hambleton, Ian (*with* Kharshiladze, A. F.) A spectral sequence in surgery theory. (Russian. Russian summary) *Mat. Sb.* **183** (1992), *no.* 9, 3–14. (A. A. Ranicki) **93m:57036** 57R67 (18G40, 19G24)

— (*with* Lee, Ronnie) Perturbation of equivariant moduli spaces. *Math. Ann.* **293** (1992), *no.* 1, 17–37. (Terry Lawson) **93f:57023** 57N13 (57R99, 57S17, 58D19, 58D29)

Hambly, B. M. On the limiting distribution of a supercritical branching process in a random environment. *J. Appl. Probab.* **29** (1992), *no.* 3, 499–518. (Kiyoshi Kawazu) **93h:60132** 60J80 (60F05)

— Brownian motion on a homogeneous random fractal. (English summary) *Probab. Theory Related Fields* **94** (1992), *no.* 1, 1–38. (S. J. Taylor) **93m:60163** 60J60 (60J65)

Hambrusch, Susanne E. (*with* Gupta, Ajay K.; Boals, Alfred J.; Sherwani, Naveed A.) A lower bound on embedding large hypercubes into small hypercubes. Proceedings of the Twenty-first Southeastern Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, FL, 1990). *Congr. Numer.* **78** (1990), 141–151. (Giorgio Balconi) **93b:05048** 05C10

— (*with* Tu, Hung Yi) A framework for 1-D compaction with forbidden region avoidance. *Comput. Geom.* **1** (1992), *no.* 4, 203–226. (Mirko Křivánek) **93e:68033** 68Q25 (68U05)

— (*with* Apostolico, Alberto; Atallah, Mikhail J.) New clique and independent set algorithms for circle graphs. *Discrete Appl. Math.* **36** (1992), *no.* 1, 1–24. (Linda Pagli) **93b:05151** 05C85 (68Q25, 68R10, 90C35)

— (*with* Gupta, Ajay K.) Load balanced tree embeddings. *Parallel Comput.* **18** (1992), *no.* 6, 595–614. (Summary) **93c:68005** 68M07 (05C05, 05C85)

Hamburg, Ileana (*with* Hamburg, Peter) Fuzzy logic, a user friendly technology for the management of uncertain knowledge in engineering design process. *Modelling uncertain data* (*Freiberg*, 1992), 153–157, *Math. Res.*, 68, *Akademie-Verlag, Berlin*, 1992. (*see* **93i:00021**) 03B52 (00A71)

Hamburg, Peter (*with* Hamburg, Ileana) Fuzzy logic, a user friendly technology for the management of uncertain knowledge in engineering design process. *Modelling uncertain data* (*Freiberg*, 1992), 153–157, *Math. Res.*, 68, *Akademie-Verlag, Berlin*, 1992. (*see* **93i:00021**) 03B52 (00A71)

Hamburger, C. Regularity of differential forms minimizing degenerate elliptic functionals. *J. Reine Angew. Math.* **431** (1992), 7–64. (Jean-Pierre Raymond) **93i:49049** 49N60 (58E15)

Hamburger, Peter (*with* Chilakamarri, Kiran B.) A note on packing paths into complete bipartite graphs. *Bull. Inst. Combin. Appl.* **4** (1992), 32–34. (H. Joseph Straight) **93h:05123** 05C70 (05C38)

— (*with* Pippert, Raymond E.; Weakley, W. Douglas) On a leverage problem in the hypercube. *Networks* **22** (1992), *no.* 5, 435–439. (K. Jay Bagga) **93d:05117** 05C70 (05C12, 68M10, 68R10)

Hamdache, K. (*with* Amirat, Youcef; Ziani, A.) Some results on homogenization of convection-diffusion equations. *Arch. Rational Mech. Anal.* **114** (1991), *no.* 2, 155–178. (Andro Mikelić) **93d:76064** 76Rxx (35B27, 73B27)

— (*with* Amirat, Youcef; Ziani, A.) Kinetic formulation for a transport equation with memory. *Comm. Partial Differential Equations* **16** (1991), *no.* 8-9, 1287–1311. (Luisa Arlotti) **93a:82054** 82C70 (35Q99, 45K05, 47N55)

— Initial-boundary value problems for the Boltzmann equation: global existence of weak solutions. (English summary) *Arch. Rational Mech. Anal.* **119** (1992), *no.* 4, 309–353. (Marshall Slemrod) **93g:35132** 35Q99 (76P05, 82C40)

— (*with* Amirat, Youcef; Ziani, A.) Homogenisation of parametrised families of hyperbolic problems. *Proc. Roy. Soc. Edinburgh Sect. A* **120** (1992), *no.* 3-4, 199–221. (Fu Ru Jiang) **93f:35021** 35B27 (35L40, 73B27, 78A25)

Hamdan, M. H. Computational aspects of flow through curved domains: the effect of no-slip. (English summary) *Appl. Math. Comput.* **52** (1992), *no.* 2-3, 189–206. (Summary) **93k:76109** 76S05 (76D99, 76M25)

— (*with* Barron, R. M.) Applications of von Mises coordinates in porous media flow. *J. Comput. Appl. Math.* **39** (1992), *no.* 3, 353–361. (Summary) **93b:76083** 76S05 (76M20)

— (*with* Barron, R. M.) On the Darcy-Lapwood-Brinkman-Saffman dusty fluid flow models through porous media. I. Models development. (English summary) *Appl. Math. Comput.* **54** (1993), *no.* 1, 65–79. (Summary) **93k:76110a** 76S05 (76T05)

— (*with* Barron, R. M.) On the Darcy-Lapwood-Brinkman-Saffman dusty fluid flow models through porous media. II. Applications to flow into a two-dimensional sink. (English summary) *Appl. Math. Comput.* **54** (1993), *no.* 1, 81–97. (Summary) **93k:76110b** 76S05 (76T05)

Hamdy, Hosny I. (*with* Son, Mun-S.) On accelerating sequential procedures for point estimation: the normal case. (English and Italian summaries) *Statistica* (*Bologna*) **51** (1991), *no.* 3, 437–446 (1992). 62L12

Hamedani, G. G. Periodic solutions of a system of nonlinear second order equations. *Ann. Univ. Sci. Budapest. Eötvös Sect. Math.* **34** (1991), 227–230 (1992). (From the text) **93d:34077** 34C25

— (*with* Ahsanullah, Mohammad; Bansal, Naveen K.) On characterizations of normal distributions. (English summary) *Calcutta Statist. Assoc. Bull.* **41** (1991), *no.* 161-164, 157–162. (Summary) **93h:62017** 62E10

— Bivariate and multivariate normal characterizations: a brief survey. *Comm. Statist. Theory Methods* **21** (1992), *no.* 9, 2665–2688. (Mir Maswood Ali) **93h:62103** 62H05 (62E10)

Hamenstädt, Ursula Compact manifolds with 1/4-pinched negative curvature. *Global differential geometry and global analysis* (*Berlin*, 1990), 73–78, *Lecture Notes in Math.*, 1481, *Springer, Berlin*, 1991. (Atsushi Katsuda) **93i:53036** 53C20 (58F15, 58F17)

— Time-preserving conjugacies of geodesic flows. *Ergodic Theory Dynamical Systems* **12** (1992), *no.* 1, 67–74. (Donal Hurley) **93g:58115** 58F17 (58F11)

Hamer, C. J. (*with* Zheng, Weihong) Spin-wave expansion for the O(2) Heisenberg spin model in $(d+1)$ dimensions. (English summary) *J. Phys. A* **25** (1992), *no.* 23, 6211–6230. (Summary) **93j:82008** 82B20

Hamhalter, Jan (*with* Pták, Pavel) Hilbert-space-valued measures on Boolean algebras (extensions). *Acta Math. Univ. Comenian.* (*N.S.*) **60** (1991), *no.* 2, 219–224. (V. I. Chilin) **93b:28024** 28B05 (06E99, 28A60, 46L99)

— (*with* Navara, Mirko) Orthosymmetry and modularity in ortholattices. *Demonstratio Math.* **24** (1991), *no.* 1-2, 323–329. (S. Gudder) **93a:06010; EA 93m** 06C15 (81P10)

— (*with* Pták, Pavel) Hilbert-space-valued states on quantum logics. *Appl. Math.* **37** (1992), *no.* 1, 51–61. (M. J. Mączyński) **93c:81015** 81P10 (03G12, 06C15, 28B05, 46N50)

— Completeness and modular cross-symmetry in normed linear spaces. *Czechoslovak Math. J.* **42(117)** (1992), *no.* 1, 1–5. (G. J. O. Jameson) **93c:46023** 46B20 (06B99)

— Centrally determined states on von Neumann algebras. *Math. Bohem.* **117** (1992), *no.* 2, 195–196. (Cho Ho Chu) **93f:46096** 46L10

Hamidoune, Yahya Ould Combinatorial additive number theory and Cayley graphs. *Graph theory, combinatorics, and applications. Vol. 2* (*Kalamazoo, MI*, 1988), 615–620, *Wiley-Intersci. Publ., Wiley, New York*, 1991. (*see* **93b:05003**) 05C25 (11P99, 20K99)

— (*with* Lladó, Anna S.; Serra, O.) The connectivity of hierarchical Cayley digraphs. (English summary) *Discrete Appl. Math.* **37/38** (1992), 275–280. (Stephan Rosebrock) **93e:05041** 05C25 (05C40)

— On a subgroup contained in some words with a bounded length. *Discrete Math.* **103** (1992), *no.* 2, 171–176. (Summary) **93f:20029** 20D60 (05A05)

— A generalization of an addition theorem of Shatrowsky. (English summary) *European J. Combin.* **13** (1992), *no.* 4, 249–255. (Summary) **93h:20026** 20D60 (05C25)

Hamill-Keays, William J. P. A fault-tolerant system for safety-critical control laws. (English and Polish summaries) *Systems Sci.* **18** (1992), *no.* 4, 35–43 (1993). 93B35 (93C95)

Hamilton, D. H. Distortion of sets by inner functions. *Proc. Amer. Math. Soc.* **117** (1993), *no.* 3, 771–774. (G. Piranian) **93d:30002** 30A10 (30D50)

Hamilton, G. M. (*with* Rogers, D. G.) Further results on irregular, critical perfect systems of difference sets. I. Split systems. *Discrete Math.* **102** (1992), *no.* 1, 25–45. (R. Balakrishnan) **93h:05022** 05B10 (05B30)

Hamilton, Ian (*with* Permann, Delmar) Wavelet analysis of time series for the Duffing oscillator: the detection of order within chaos. (English summary) *Phys. Rev. Lett.* **69** (1992), *no.* 18, 2607–2610. (Summary) **93h:70019** 70K50 (34C15, 58F13, 70–08)

Hamilton, Jonathan H. (*with* Slutsky, Steven M.) Endogenizing the order of moves in matrix games. (English summary) *Theory and Decision* **34** (1993), *no.* 1, 47–62. (Peter Borm) **93m:90106** 90D05 (90D55)

Hamilton, R. L. (*with* Kennel, C. F.; Mjølhus, E.) Stability and bifurcation of quasiparallel Alfvén solitons. (English summary) *Phys. Scripta* **46** (1992), *no.* 3, 230–236. (Summary) **93j:35149** 35Q51 (35Q55, 76E25, 76W05, 85A30)

— (*with* Kennel, C. F.; Mjølhus, E.) Formation of quasiparallel Alfvén solitons. (English summary) *Phys. Scripta* **46** (1992), *no.* 3, 237–247. (Summary) **93j:35150** 35Q51 (35Q55, 76W05, 85A30)

Hamilton, Richard S. The Harnack estimate for the Ricci flow. *J. Differential Geom.* **37** (1993), *no.* 1, 225–243. (Wei Yue Ding) **93k:58052** 58E11 (53C21, 58G11)

Hamilton, William O. Resonant bar and microwave gravitational wave experiments. *General relativity and gravitation*, 1989 (*Boulder, CO*, 1989), 349–355, *Cambridge Univ. Press, Cambridge*, 1990. (*see* **93b:83002**) 83B05

Hamina, M. (*with* Ruotsalainen, Keijo; Saranen, Jukka) The numerical approximation of the solution of a nonlinear boundary integral equation with the collocation method. *J. Integral Equations Appl.* **4** (1992), *no.* 1, 95–116. (Summary) **93a:65180** 65R20 (45L10, 65N38)

Hamlett, T. R. (*with* Janković, Dragan) Compactness with respect to an ideal. (Italian summary) *Boll. Un. Mat. Ital. B* (7) **4** (1990), *no.* 4, 849–861. (Douglass L. Grant) **93e:54016** 54D30

— (*with* Janković, Dragan) Ideals in topological spaces and the set operator ψ. (Italian summary) *Boll. Un. Mat. Ital. B* (7) **4** (1990), *no.* 4, 863–874. (Douglass L. Grant) **93e:54017** 54D30

— (*with* Rose, David Alon) Idealized Piccard-Pettis theorems. *General topology and applications* (*Staten Island, NY*, 1989), 289–295, *Lecture Notes in Pure and Appl. Math.*, 134, *Dekker, New York*, 1991. (Gabriel Debs) **93e:54028** 54H11 (28A05)

— (*with* Janković, Dragan; Rose, David Alon) Countable compactness with respect to an ideal. *Math. Chronicle* **20** (1991), 109–126. (Douglas Mooney) **93f:54029** 54D20 (54D25, 54D30)

— (*with* Rose, David Alon) Local compactness with respect to an ideal. *Kyungpook Math. J.* **32** (1992), *no.* 1, 31–43. (Summary) **93f:54032** 54D30 (54D45)

— (*with* Rose, David Alon) On one-point $\mathcal{J}$-compactification and local $\mathcal{J}$-compactness. (English summary) *Math. Slovaca* **42** (1992), *no.* 3, 359–369. (Vinodkumar) **93k:54057** 54D35 (54D25, 54D30, 54D45)

Hamm, Andreas (*with* Graham, Robert) Nonequilibrium potentials for dynamical systems weakly perturbed by noise. *From phase transitions to chaos*, 449–469, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93c:58187** 58F30 (58F13)

— (*with* Graham, Robert) Quasipotentials for simple noisy maps with complicated dynamics. *J. Statist. Phys.* **66** (1992), *no.* 3-4, 689–725. (Dieter H. Mayer) **93c:58188** 58F30 (58F08, 60F10, 82C05)

— (*with* Graham, Robert) Scaling for small random perturbations of golden critical circle maps. (English summary) *Phys. Rev. A* (3) **46** (1992), *no.* 10, 6323–6333. (Pierre Moussa) **93k:58151** 58F13 (58F27, 70K50, 82C28)

Hamm, Susan (*with* Heinrich, Katherine) Resolvable and near-resolvable decompositions of DK_v into oriented 4-cycles. (English summary) *Aequationes Math.* **44** (1992), *no.* 2-3, 304–316. (Frank E. Bennett) **93m:05080** 05C20 (05C70)

Hammack, J. L. (*with* Henderson, D. M.) Resonant interactions among surface water waves. *Annual review of fluid mechanics, Vol.* 25, 55–97, *Annual Reviews, Palo Alto, CA*, 1993. (*see* **93h:76003**) 76B15 (76–05)

Hammad, Sh. (*with* M'Saad, M.; Dugard, Luc) A suitable generalized predictive adaptive controller case study: control of a flexible arm. (English summary) *Automatica J. IFAC* **29** (1993), *no.* 3, 589–608. 93C85 (70B15, 70Q05)

Hammann, T. F. (*with* Chetouani, L.; Guechi, L.) Algebraic treatment of a general noncentral potential. (English summary) *J. Math. Phys.* **33** (1992), *no.* 10, 3410–3418. (Martin Kummer) **93k:81035** 81Q05

Hammarling, Sven (*with* Dongarra, Jack J.; Wilkinson, James H.) Numerical considerations in computing invariant subspaces. *SIAM J. Matrix Anal. Appl.* **13** (1992), *no.* 1, 145–161. (Colette Lebaud) **93a:65049** 65F15

Hamme, B. (*with* Glöckle, Walter) Relativistic two-body bound state in motion. (English summary) *Few-Body Systems* **13** (1992), *no.* 1, 1–10. 81V45

van Hamme, Lucien *see* **Van Hamme, Lucien**

Hammer, Joseph (*with* Sarvate, Dinesh G.) Another application of graph representation of designs. *Bull. Inst. Combin. Appl.* **6** (1992), 61–62. 05B05
— (*with* Sarvate, Dinesh G.) Generalizations of results of Stanton on BIBDs. *Discrete Math.* **102** (1992), *no.* 2, 149–154. (R. N. Mohan) **93d:05020** 05B05
Hammer, Peter L. (*with* Boros, Endre; Shamir, Ron) A polynomial algorithm for balancing acyclic data flow graphs. (English summary) *IEEE Trans. Comput.* **41** (1992), *no.* 11, 1380–1385. (Summary) **93g:68003** 68M07
— (*with* Boros, Endre; Crama, Y.) Chvátal cuts and odd cycle inequalities in quadratic 0-1 optimization. *SIAM J. Discrete Math.* **5** (1992), *no.* 2, 163–177. (Michael A. Trick) **93a:90043** 90C09 (90C27, 90C35)
Hämmerlin, Günther Developments in solving integral equations numerically. (English summary) *Numerical integration* (*Bergen*, 1991), 187–201, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 357, *Kluwer Acad. Publ., Dordrecht*, 1992. (*see* **93f:65006**) 65R20
Hammersley, J. M. Corrigendum: "Self-avoiding walks" [Phys. A **177** (1991), no. 1-3, 51–57; MR 92i:82054]. *Phys. A* **183** (1992), *no.* 4, 574–578. (Summary) **93c:82029** 82B41 (82D60)
Hammon, Kevin S. Biframe bundle geometry and an extension of RMW theory: application to a charged perfect fluid. *Gen. Relativity Gravitation* **24** (1992), *no.* 3, 259–279. (Birgitta Alertz) **93c:83028** 83C22
Hammond, Richard T. Naked singularities with vector torsion gravity. (English summary) *Classical Quantum Gravity* **9** (1992), *no.* 12, L171–L172. (Robert J. Low) **93i:83068** 83C75 (83D05)
Hammoum, F. (*with* Loret, Benjamin; Dafalias, Y. F.) A note on the accuracy of stress-point algorithms for anisotropic elastic-plastic solids. (English summary) *Comput. Methods Appl. Mech. Engrg.* **98** (1992), *no.* 3, 399–409. (Summary) **93c:73094** 73V05 (73E05)
— (*with* Loret, Benjamin; Dafalias, Y. F.) Computational aspects of large elastoplastic deformations in the presence of anisotropy and plastic spin. (English summary) *Comput. Methods Appl. Mech. Engrg.* **105** (1993), *no.* 2, 151–180. 73G20 (73V20)
Hammouri, H. (*with* Gauthier, Jean-Paul) Global time-varying linearization up to output injection. (English summary) *SIAM J. Control Optim.* **30** (1992), *no.* 6, 1295–1310. (David L. Elliott) **93i:93064** 93C10 (93B07)
el-Hamouly, Hassan M. *see* **El-Hamouly, Hassan M.**
Han, Anthony Fu Wha (*with* Hwang, Ming Chorng) Location-search-based heuristic methods for set covering problems. (English summary) *Optimization, Vol.* 1, 2 (*Singapore*, 1992), 187–196, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93d:90005**) 90C27
Han, Bo (*with* Kuang, Zheng; Liu, Jia Qi) A modified algorithm for the PST method. (English summary) *Mathematical and intelligent models in system simulation, I, II* (*Brussels*, 1990), 17–19, *IMACS Ann. Comput. Appl. Math.*, 10, 11, *Baltzer, Basel*, 1991. (*see* **93c:93005**) 65N99 (35R30)
— (*with* Shao, Ji Qun) An existence result for the nonlinear equations in several variables. *J. Harbin Inst. Tech.* **1991**, *no.* 2, 101–103. (R. N. Mukherjee) **93b:58017** 58C15 (65H05)
— (*with* Liu, Jia Qi) A widely convergent method (CHM) for the inverse problem of operator identification. (English summary) *Computational and applied mathematics, II* (*Dublin*, 1991), 253–258, *North-Holland, Amsterdam*, 1992. (*see* **93j:00008**) 65P05
— (*with* Chu, Zhong Wu) Existence of zeros of decomposable mappings and its applications. (Chinese. English summary) *J. Harbin Inst. Tech.* **24** (1992), *no.* 1, 8–11. (T. Y. Li) **93d:65053** 65H20
Han, Chi-Geun (*with* Pardalos, Panos M.; Ye, Yinyu) Interior point algorithms in quadratic programming. (Russian) *Optimization: models, methods, solutions* (*Russian*) (*Irkutsk*, 1989), 194–213, "*Nauka*" *Sibirsk. Otdel., Novosibirsk*, 1992. (*see* **93k:90002**) 90C25 (90C05)
— (*with* Li, Wu; Pardalos, Panos M.) Gauss-Seidel method for least-distance problems. (English summary) *J. Optim. Theory Appl.* **75** (1992), *no.* 3, 487–500. (Klaus Tammer) **93j:90074** 90C20 (65K05)
Han, Chien-Pai (*with* Saleh, A. K. Md. Ehsanes) Shrinkage estimation in regression analysis. *Estadística* **42** (1990), *no.* 139, 40–63 (1991). (Summary) **93c:62125** 62J07
Han, Ching-Chih (*with* Lin, Kwei-Jay) Scheduling real-time computations with separation constraints. *Inform. Process. Lett.* **42** (1992), *no.* 2, 61–66. (Summary) **93c:90037** 90B35 (05C85, 68M20, 68Q25, 90B12)
Han, Chong-Kyu Rigid immersions of G-structures and analyticity of CR mappings into spheres. *Several complex variables and complex geometry, Part* 2 (*Santa Cruz, CA*, 1989), 239–249, *Proc. Sympos. Pure Math.*, 52, *Part* 2, *Amer. Math. Soc., Providence, RI*, 1991. (Mark A. Chinak) **93a:32027** 32F40 (32H35, 53C10)
— (*with* Cho, Chung Ki) The Gauss equations and ellipticity of isometric embeddings. *J. Korean Math. Soc.* **29** (1992), *no.* 1, 165–174. (Dennis M. DeTurck) **93a:53053** 53C42 (35J45, 58G30)
Han, Cuangshong *see* **Han, Guang Xue**
Han, De Guang A note on the commutants of CSL algebras modulo bimodules. *Proc. Amer. Math. Soc.* **116** (1992), *no.* 3, 707–709. (Kenneth R. Davidson) **93a:47048** 47D25
— The first cohomology groups of nest algebras on normed spaces. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 4, 1147–1149. (Florin Rădulescu) **93j:47063** 47D30 (46M20)
Han, Dong Uniqueness of martingale solutions to infinite-dimensional reaction-diffusion systems with multispecies. (Chinese. Chinese summary) *Chinese Ann. Math. Ser. A* **13** (1992), *no.* 2, 271–277. (Shuenn Jyi Sheu) **93k:60237** 60K35 (35K57, 60J80)
— A limit theorem for sums of independent random variables under the condition of asymptotic infinite smallness. (Chinese. English and Chinese summaries) *J. Xinjiang Univ. Natur. Sci.* **9** (1992), *no.* 3, 26–32. 60F05
Han, Dong Hwan (*with* Choi, Bong Dae; Falin, G. I.) On the virtual waiting time for an $M/G/1$ retrial queue with two types of calls. (English summary) *J. Appl. Math. Stochastic Anal.* **6** (1993), *no.* 1, 11–23. (Summary) **93m:60180** 60K25 (60J20, 90B22)
Han, Guang Xue (*with* Liu, Guang Zhong) Optimality conditions in multiobjective quasidifferentiable programming. (English summary) *Pure Math. Appl. Ser. B* **2** (1991), *no.* 4, 227–238 (1992). (Juan García Laguna) **93m:90070** 90C29 (49J52)
— (*with* Liu, Guang Zhong) Optimality conditions for multi-objective subdifferentiable programming. (Chinese. English summary) *J. Chengdu Univ. Sci. Tech.* **1992**, *no.* 1, 39–46. 90C29 (49J52)
Han, Guo-Niu ★ Calcul denertien. (French) [Denertian calculus] Dissertation, Université Louis Pasteur, Strasbourg, 1992. Publication de l'Institut de Recherche Mathématique Avancée [Publication of the Institute of Advanced Mathematical Research], 476. *Université Louis Pasteur, Département de Mathématique, Institut de Recherche Mathématique Avancée, Strasbourg*, 1991. 119 *pp.* (A. O. Morris) **93h:05169** 05E05
— Une courte démonstration d'un résultat sur la Z-statistique. (English summary) [A short proof of a result on the Z-statistic] *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 13, 969–971. (David M. Bressoud) **93e:05003** 05A19
Han, Hou De (*with* Guan, Zhi; He, Bin) Boundary element approximation of Steklov eigenvalue problem. *Theory and applications of boundary element methods* (*Beijing*, 1991), 9–15, *Internat. Acad. Publ., Beijing*, 1991. (*see* **93b:65008**) 65N38 (65N25)
— A boundary element method for Signorini problems in three dimensions. *Numer. Math.* **60** (1991), *no.* 1, 63–75. (G. W. Hedstrom) **93a:65166** 65N38 (49J40, 65R20, 73C02, 73V10)
— (*with* Guan, Zhi) An analysis of the boundary element approximation of Steklov eigenvalue problem. *Numerical methods for partial differential equations* (*Tianjin*, 1991), 35–51, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93b:65006**) 65N38
— (*with* Wu, Xiao Nan) A finite element method for linear elastic equations on unbounded domains. (English summary) *Proceedings of International Conference on Scientific Computation* (*Hangzhou*, 1991), 36–40, *Ser. Appl. Math.*, 1, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93d:65004**) 65N30 (73V05)
— (*with* Il'in, V. P.; Kellogg, R. B.; Yuan, Wei) Analysis of flow directed iterations. *J. Comput. Math.* **10** (1992), *no.* 1, 57–76. (Jian-Ping Zhu) **93c:65048** 65F10 (65L12, 65M06, 76M20)
Han, J. (*with* Cao, Zhi Qiang; Kandel, Abraham; Li, Lihong) The mechanism of fuzzy logic controllers. (English summary) *Analysis and management of uncertainty: theory and applications* (*College Park, MD*, 1990), 199–208, *Mach. Intell. Pattern Recogn.*, 13, *North-Holland, Amsterdam*, 1992. (*see* **93f:68004**) 03B52
Han, Jiawei Binding propagation beyond the reach of rule/goal graphs. (English summary) *Inform. Process. Lett.* **42** (1992), *no.* 5, 263–268. 68P05 (68Q42)
Han, Jing Luan (*with* Li, Yong Jin) Strongly even Banach spaces. (Chinese. English and Chinese summaries) *Acta Sci. Natur. Univ. Sunyatseni* **31** (1992), *no.* 3, 117–119. 46B20
Han, Juncheol Commuting involutions in a left Artinian ring. *Bull. Korean Math. Soc.* **29** (1992), *no.* 2, 221–226. (Weimin Xue) **93g:16050** 16W10
Han, Li Xing (*with* Xi, Shao Lin; Lin, You Lian) A trust region algorithm for equality constrained optimization. (Chinese. English and Chinese summaries) *J. Tianjin Univ.* **1992**, *no.* 3, 87–94. (H. T. Lau) **93h:90084** 90C30 (65K10)
Han, M. C. Perturbation analysis of a quasi-diffusion type integral equation and its application on a fault tolerant manufacturing system. (English summary) *Analysis and geometry* 1991 (*Taejŏn*, 1991), 217–224, *Korea Adv. Inst. Sci. Tech., Taejŏn*, 1991. (*see* **93k:00029**) 60H10
— (*with* Chen, Ye-Hwa) Decentralized robust control of nonlinear systems with bounded time-varying uncertainties. *Control Theory Adv. Tech.* **7** (1991), *no.* 4, 609–628. (Mietek Brdyś) **93c:93011** 93A14 (93B35)
— (*with* Chen, Ye-Hwa) Polynomial robust control design for uncertain systems. *Automatica J. IFAC* **28** (1992), *no.* 4, 809–814. (Summary) **93a:93048** 93B51 (93B12, 93B35, 93C10)
Han, Mao An (*with* Luo, Ding Jun; Zhu, De Ming) Uniqueness of limit cycles bifurcating from a singular closed orbit. I. (Chinese. Chinese summary) *Acta Math. Sinica* **35** (1992), *no.* 3, 407–417. (Chengzhi Li) **93k:34084** 34C23 (34C05, 34C37, 58F21)
— (*with* Luo, Ding Jun; Zhu, De Ming) Uniqueness of limit cycles bifurcating from a singular closed orbit. II. (Chinese. Chinese summary) *Acta Math. Sinica* **35** (1992), *no.* 4, 541–548. (Chengzhi Li) **93k:34085** 34C23 (34C05, 58F21)
Han, Qing Long (*with* Wu, Qi Bin) Erratum: "Stability robustness analysis of discrete linear systems" [Internat. J. System Sci. **22** (1991), no. 1, 165–172; MR 91j:93076]. *Internat. J. Systems Sci.* **23** (1992), *no.* 11, 2121. (Editors) **93k:93084** 93D09 (39A11, 93C55)
Han, Qing Shu Boundary element method of 3-D low-Reynolds-number viscous fluid flow. *Theory and applications of boundary element methods* (*Beijing*, 1991), 169–175, *Internat. Acad. Publ., Beijing*, 1991. (*see* **93b:65008**) 76M15 (65N38)
— (*with* Yang, De Quan; Zhang, Gou You; Wu, Bao Lin; Xing, Peng Ling) Boundary element analysis of hydrodynamical characteristics of lubricant in special shaped bearings. *Theory and applications of boundary element methods* (*Beijing*, 1991), 177–182, *Internat. Acad. Publ., Beijing*, 1991. (*see* **93b:65008**) 76M15 (65N38)
— (*with* Lin, Chang Sheng) Numerical simulations of separating low-Reynolds-number viscous fluid flow. *Theory and applications of boundary element methods* (*Beijing*, 1991), 183–190, *Internat. Acad. Publ., Beijing*, 1991. (*see* **93b:65008**) 76M15 (65N38)
Han, S. R. (*with* Sekiguchi, Takashi[1]) A method for solution of a fuzzy inequality relation. (English summary) *Japanese J. Fuzzy Theory Systems* **4** (1992), *no.* 4, 383–398. 04A72
Han, Sang-Eon On the atomic property. *Collection of papers dedicated to Prof. Jong Geun Park on his sixtieth birthday* (*Korean*), 193–199, *Jeonbug, Seoul*, 1989. (Introduction) **93m:55009** 55P10 (55Q05)
Han, Sang G. On p-adic L-functions and the Riemann-Hurwitz genus formula. *Acta Arith.* **60** (1991), *no.* 2, 97–104. (Robert Gold) **93e:11128** 11R23 (11R42)
Han, Shao Cen (*with* Chao, Chong-Yun) A note on the toughness of generalized Petersen graphs. *J. Math. Res. Exposition* **12** (1992), *no.* 2, 183–186. (Barry Piazza) **93h:05096** 05C35
Han, Shi Fang A variational method for research on an unsteady tube flow of upper-convected Maxwell fluid. *Acta Math. Sci.* (*English Ed.*) **12** (1992), *no.* 2, 121–129. 76A05 (76M30)
Han, Shih-Ping (*with* Pang, Jong-Shi; Rangaraj, Narayan) Globally convergent Newton methods for nonsmooth equations. (English summary) *Math. Oper. Res.* **17** (1992), *no.* 3, 586–607. (T. L. Freeman) **93m:65070** 65H10 (49J52, 65K10, 90C30, 90C33)
Han, Sung S. (*with* Kwon, Kil H.; Kim, Sung S.) Orthogonalizing weights of Tchebychev sets of polynomials. *Bull. London Math. Soc.* **24** (1992), *no.* 4, 361–367. (Hans-Jürgen Glaeske) **93g:33007** 33C45 (42C05)
Han, Wei Min (*with* Jou, Emery) Minimal-energy splines with various end constraints. *Curve and surface design* (*Tempe, AZ*, 1989), 23–40, *Geom. Des. Publ., SIAM, Philadelphia, PA*, 1992. (*see* **93g:65027**) 65D07 (65D17)
Han, X. M. (*with* Liang, Xue Zhang) On Chebyshev approximation in several variables. III. *Approximation, optimization and computing*, 125–128, *North-Holland, Amsterdam*, 1990. (*see* **93a:41001**) 41A50

Han, Xiang Zhu (*with* Shou, Ji Lin) Optimality conditions for multi-objective nondifferentiable programming. (Chinese. English summary) *Xi'an Jiaotong Daxue Xuebao* **25** (1991), *no.* 3, 91–98. (Jia Liu Mei) **93b:90078** 90C29 (49J52)

Han, Xiao-liang (*with* Green, Peter J.) Metropolis methods, Gaussian proposals and antithetic variables. (English summary) *Stochastic models, statistical methods, and algorithms in image analysis* (*Rome*, 1990), 142–164, *Lecture Notes in Statist.*, 74, *Springer, Berlin*, 1992. (*see* **93e:62005**) 65C05 (65U05)

Han, Xiaofeng (*with* Kelsen, Pierre; Ramachandran, Vijaya; Tarjan, Robert Endre) Computing minimal spanning subgraphs in linear time. *Proceedings of the Third Annual ACM-SIAM Symposium on Discrete Algorithms* (*Orlando, FL*, 1992), 146–156, *ACM, New York*, 1992. (Summary) **93e:05092** 05C85 (68Q25, 68R10)

Han, Y. *see* **Han, Yijie**

Han, Y.-S. *see* **Han, Yong Sheng**

Han, Yeong Deok (*with* Koh, In Gyu) Topological nature of the Aharonov-Casher effect. *Phys. Lett. A* **167** (1992), *no.* 4, 341–344. (Summary) **93c:81266** 81V10

Han, Yijie (*with* Igarashi, Yoshihide; Truszczyński, Mirosław) Indexing functions and time lower bounds for sorting on a mesh-connected computer. *Discrete Appl. Math.* **36** (1992), *no.* 2, 141–152. (Summary) **93b:68014** 68P10 (68Q25)

— (*with* Narahari, Bhagirath; Choi, Hyeong-Ah) Mapping a chain task to chained processors. (English summary) *Inform. Process. Lett.* **44** (1992), *no.* 3, 141–148. (Summary) **93j:68022** 68M20 (68M10, 68Q25)

Han, Yong Sheng (*with* Hofmann, Steve) T1 theorems for Besov and Triebel-Lizorkin spaces. *Trans. Amer. Math. Soc.* **337** (1993), *no.* 2, 839–853. (H. Triebel) **93h:46038** 46E35 (42B20, 47G10)

Han, Young Min (*with* Lee, Woo Young; Lee, Hong Youl) The essential point spectrum of a regular operator. *Bull. Korean Math. Soc.* **29** (1992), *no.* 2, 295–300. (R. W. Cross) **93h:47003** 47A05 (47A10, 47A53)

Han, Z. Z. *see* **Han, Zheng Zhi**

Han, Zhen Xiang (*with* Wen, Fu Shuan) An artificial neural network model for a class of nonlinear programming problems. (Chinese. English and Chinese summaries) *Zhejiang Daxue Xuebao Ziran Kexue Ban* **26** (1992), *no.* 5, 506–512. 90C30 (90C35, 92B20)

Han, Zhen Yao Minimal 3-edge-connected collapsible graphs. (Chinese. English and Chinese summaries) *J. Math. Res. Exposition* **12** (1992), *no.* 4, 629–633. (Xue Liang Li) **93k:05146** 05C75 (05C05)

Han, Zheng Zhi (*with* Feng, Tian Qiu; Zhang, Zhong Jun) An investigation of the structure of (A, B) invariant subspaces and its application. (Chinese. English summary) *J. Shanghai Jiaotong Univ.* **25** (1991), *no.* 3, 57–66. (Zhenyue Zhang) **93c:93015** 93B10 (15A24, 47A15)

— (*with* Pan, Dan Jie; Zhang, Zhong Jun; Zheng, Yu Fan) A new observer form for nonlinear systems and its transformation. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, II* (*Kobe*, 1991), 307–312, *Mita, Tokyo*, 1992. (*see* **93g:93006**) 93C10 (93B07)

— (*with* Zheng, Yu Fan; Zhang, Zhong Jun) A new canonical form for nonlinear systems. I. The observer type. (Chinese. Chinese summary) *Acta Math. Sci.* (*Chinese*) **12** (1992), *no.* 3, 318–324. 93B07 (93B10)

— (*with* Zhang, Zhong Jun) New developments in some advanced topics in control theory. (Chinese. English and Chinese summaries) *J. Shanghai Jiaotong Univ.* **26** (1992), *no.* 2, 1–5. 93–02

— (*with* Pan, Dan Jie) The Yokoyama form and the largest linearizable subsystems of nonlinear control systems. (Chinese. English and Chinese summaries) *J. Shanghai Jiaotong Univ.* **26** (1992), *no.* 2, 19–27. (Wei Bing Gao) **93e:93040** 93C10 (93B10, 93B18, 93D15)

— (*with* Gao, Feng[1]) Almost disturbance decoupling for nonlinear control systems. (Chinese. English and Chinese summaries) *J. Shanghai Jiaotong Univ.* **26** (1992), *no.* 2, 35–40. 93B52

— (*with* Pan, Dan Jie) Dynamic compensating stabilization of nonlinear systems. (Chinese. English and Chinese summaries) *J. Shanghai Jiaotong Univ.* **26** (1992), *no.* 3, 22–28. 93D15

Han, Zhi Gang A dual adaptive control algorithm for parameter estimation. (Chinese. English and Chinese summaries) *Control Theory Appl.* **9** (1992), *no.* 4, 374–379. (George Yin) **93i:93074** 93C40 (93E35)

Han, Zhi Jun (*with* Lu, Yuan Zhang; Huang, Ming Shen) A minimum variance self-tuning controller with fixed closed-loop holes. (Chinese. English and Chinese summaries) *J. Shanghai Jiaotong Univ.* **25** (1991), *no.* 6, 45–53. 93B55 (93E35)

Han, Zhi Qing An extension of Guo's theorem and its applications. *Northeast. Math. J.* **7** (1991), *no.* 4, 480–485. (Maria Patrizia Pera) **93c:47074** 47H15 (34B15, 47H11)

— Geometric characterization of a plastering cone and its application. (Chinese. English summary) *J. Math. Res. Exposition* **12** (1992), *no.* 1, 37–40. (Summary) **93b:46036** 46B40 (47H12)

— A class of resonance problems and their perturbation. (Chinese. English and Chinese summaries) *Shandong Daxue Xuebao Ziran Kexue Ban* **27** (1992), *no.* 3, 266–273. (Gong Qing Zhang) **93m:34028** 34B15 (34C25)

Hanafy, I. M. (*with* Abd El-Monsef, M. E.; El-Deeb, S. N.) Fuzzy weakly α-continuous functions. *Bull. Inst. Math. Acad. Sinica* **19** (1991), *no.* 1, 75–85. (Osmo Kaleva) **93c:54002** 54A40 (04A72)

Hanagal, David D. Some inference results in bivariate exponential distributions based on censored samples. *Comm. Statist. Theory Methods* **21** (1992), *no.* 5, 1273–1295. 62F10

— (*with* Kale, B. K.) Large sample tests for testing symmetry and independence in some bivariate exponential models. (English summary) *Comm. Statist. Theory Methods* **21** (1992), *no.* 9, 2625–2643. 62F03

— Some inference results in an absolutely continuous multivariate exponential model of Block. (English summary) *Statist. Probab. Lett.* **16** (1993), *no.* 3, 177–180. (Summary) **93k:62052** 62F10

Hanaki, Akihide (*with* Hida, Akihiko) A remark on M_p-groups. *Osaka J. Math.* **29** (1992), *no.* 1, 71–74. (I. M. Isaacs) **93c:20020** 20C20 (20C15)

Hanchate, Amresh D. Strategic bargaining equilibrium in a market with no re-entry: a generalization. (English summary) *Econom. Lett.* **39** (1992), *no.* 2, 147–154. 90A53 (90A56)

Hančl, Jaroslav Expression of real numbers with the help of infinite series. *Acta Arith.* **59** (1991), *no.* 2, 97–104. (A. J. van der Poorten) **93d:11073** 11J72 (11B34)

Hancock, S. D. (*with* Crummey, T. P.; Farshadnia, R.; Fleming, Philip Joseph; Grace, A. C. W.) An optimization toolbox for MATLAB. *Control '91, Vol.* 1, 2 (*Edinburgh*, 1991), 744–749, *IEE Conf. Publ. Ser.*, 332, *IEE, London*, 1991. (*see* **93h:93007**) 90C30

Hand, David J. *see* **Artificial intelligence and statistics, 93j:68005**

Hand, Michael Meaning, truth-conditions, and substitutional quantification. *Philos. Stud.* **68** (1992), *no.* 2, 195–216. (Charles F. Kielkopf) **93k:03007** 03B10 (03A05)

Handa, B. R. (*with* Kambo, N. S.; Al-Hemyari, Z. A.) On Huntsberger type shrinkage estimator. *Comm. Statist. Theory Methods* **21** (1992), *no.* 3, 823–841. (Khursheed Alam) **93h:62046** 62F10

— *see also* **Saran, Jagdish, 93d:62095**

Handa, Keiichi (*with* Fukuda, Komei) Antipodal graphs and oriented matroids. (English summary) Graph theory and combinatorics (Marseille-Luminy, 1990). *Discrete Math.* **111** (1993), *no.* 1-3, 245–256. (Summary) **93j:05127** 05C75 (05B35)

Handel, David On products in the cohomology of the dihedral groups. (English summary) *Tôhoku Math. J.* (2) **45** (1993), *no.* 1, 13–42. (C. B. Thomas) **93m:20072** 20J06

Handel, Michael There are no minimal homeomorphisms of the multipunctured plane. *Ergodic Theory Dynamical Systems* **12** (1992), *no.* 1, 75–83. (Edward Slaminka) **93f:58193** 58F20 (58F11)

— Commuting homeomorphisms of S^2. *Topology* **31** (1992), *no.* 2, 293–303. (Darryl McCullough) **93e:57022** 57M60 (55M20, 57M50, 57S25)

Handelman, David Finiteness of conjugacy classes of restricted block upper triangular matrices. (English summary) *Symbolic dynamics and its applications* (*New Haven, CT*, 1991), 223–228, *Contemp. Math.*, 135, *Amer. Math. Soc., Providence, RI*, 1992. (E. W. Ellers) **93i:15012** 15A21 (20H25, 54H20)

— Polynomials with a positive power. (English summary) *Symbolic dynamics and its applications* (*New Haven, CT*, 1991), 229–230, *Contemp. Math.*, 135, *Amer. Math. Soc., Providence, RI*, 1992. (Summary) **93g:26023** 26C05 (54H20)

— Spectral radii of primitive integral companion matrices and log concave polynomials. *Symbolic dynamics and its applications* (*New Haven, CT*, 1991), 231–237, *Contemp. Math.*, 135, *Amer. Math. Soc., Providence, RI*, 1992. (Summary) **93k:58080** 58F03 (11R06, 15A36, 15A48, 54H20)

— (*with* Baker, B. Mitchell) Positive polynomials and time dependent integer-valued random variables. *Canad. J. Math.* **44** (1992), *no.* 1, 3–41. (Gabriele Grillo) **93f:60037** 60F15 (46A55, 46L50, 60J15)

— (*with* Boyle, Mike) Algebraic shift equivalence and primitive matrices. *Trans. Amer. Math. Soc.* **336** (1993), *no.* 1, 121–149. (Fred W. Roush) **93e:58050** 58F03 (28D20, 46L99, 54H20)

Handrock-Meyer, Sybille Determination of a real parameter in the coefficient of a quasilinear elliptic differential equation. *Z. Anal. Anwendungen* **10** (1991), *no.* 4, 439–446. (Hideo Soga) **93d:35175** 35R30 (35J25, 35J65)

— (*with* Hähnel, Ramona) Inverse Probleme für eine spezielle gewöhnliche Differentialgleichung. [Inverse problems for a special ordinary differential equation] *Wiss. Z. Tech. Univ. Chemnitz* **34** (1992), *no.* 1, 75–79. (Frank Natterer) **93c:34036** 34A55

Handy, Carlos R. (*with* Lee, Patricia) Positivity and the energy quantization of physical systems: the C-shift moment method. *J. Phys. A* **24** (1991), *no.* 7, 1565–1578. (Summary) **93a:81107** 81S99 (81Q05)

Haneda, H. (*with* Gurov, I. R.; Ohta, Yuzo) Robust stabilization of a class of uncertain nonlinear systems. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, I* (*Kobe*, 1991), 385–390, *Mita, Tokyo*, 1992. (*see* **93g:93005**) 93D21 (93C10)

— (*with* Ohta, Yuzo; Gurov, I. R.) Quadratic stabilization of uncertain Lur'e-Postnikov systems via linear state feedback. (English summary) *Control Theory Adv. Tech.* **8** (1992), *no.* 2, 353–360. (Eyad H. Abed) **93h:93064** 93D15 (93C41)

Hänel, D. Computational methods for viscous hypersonic flows. (English summary) *Computational methods in hypersonic aerodynamics*, 29–79, *Fluid Mech. Appl.*, 9, *Kluwer Acad. Publ., Dordrecht*, 1991. (Summary) **93i:76067** 76M25 (76K05, 76N15)

Haney, Frank Alternativen in der Physikentwicklung. [Alternatives in the development of physics] *Mathematik und Wirklichkeit*, 62–70, *Akademie-Verlag, Berlin*, 1991. (*see* **93e:00008**) 00A30

Hanf, William P. *see* **Myers, Dale, 93b:01041a** *and* **Anellis, Irving H., 93b:01041b**

Hang, Chang Chieh (*with* Tay, T. T.; Vasnani, V. U.) Auto-tuning of multivariable decoupling controllers. (English summary) *Intelligent tuning and adaptive control* (*Singapore*, 1991), 115–120, *IFAC Sympos. Ser.*, 1991, *No.* 7, *Pergamon, Oxford*, 1991. (*see* **93i:93007**) 93C83

— (*with* Cai, Y. S.) An experimental study of a dual-rate autotuned pole-placement controller. (English summary) *Intelligent tuning and adaptive control* (*Singapore*, 1991), 265–269, *IFAC Sympos. Ser.*, 1991, *No.* 7, *Pergamon, Oxford*, 1991. (*see* **93i:93007**) 93B55

— (*with* He, Shi Zhong; Tan, Shao Hua; Wang, Pei Zhuang) Control of dynamical processes using an on-line rule-adaptive fuzzy control system. (English summary) *Fuzzy Sets and Systems* **54** (1993), *no.* 1, 11–22. 93C42 (04A72)

Hang, Chang Woo (*with* Miyanishi, Masayoshi; Nishida, Kenji; Zhang, De-Qi) On algebras which resemble the local Weyl algebra. *Osaka J. Math.* **29** (1992), *no.* 2, 393–404. (Ian M. Musson) **93h:16045** 16S32 (13N10)

Hanggi, Peter (*with* Jung, Peter; Zerbe, Christine; Moss, Frank) Can colored noise improve stochastic resonance? (English summary) *J. Statist. Phys.* **70** (1993), *no.* 1-2, 25–47. 82C35

Hangos, K. M. Complexity of dynamic models for intelligent control. (English summary) *Mutual impact of computing power and control theory* (*Prague*, 1992), 45–56, *Czech. Acad. Sci., Prague*, 1992. (*see* **93f:93005**) 93C83

Hanif, Khalid (*with* Zaman, F. D.; Asghar, Saleem) Dispersion of Love waves in an inhomogeneous layer due to a source. *Punjab Univ. J. Math.* (*Lahore*) **24** (1991), 1–10. (Summary) **93a:73025** 73D20 (73N20, 86A15)

Hanin, L. G. *see* **Khanin, L. G.**

Hanisch, M. R. Multigrid algorithms for the first biharmonic problem: robustness. (English summary) *Transactions of the Tenth Army Conference on Applied Mathematics and Computing* (*West Point, NY*, 1992), 257–272, *ARO Rep.*, 93-1, *U.S. Army Res. Office, Research Triangle Park, NC*, 1993. (*see* **93m:00047**) 65N55

Hanke, M. *see* **Hanke, Michael**

Hanke, Marko (*with* Epperlein, Joachim; Tröltzsch, Fredi) On a system of partial differential equations occurring in double-layer-systems in photochemistry. *Wiss. Z. Tech.*

Univ. Chemnitz **34** (1992), *no.* 1, 53–65. (Summary) **93a:35081** 35K57 (65P05, 92E20)

Hanke, Martin Regularization with differential operators: an iterative approach. (English summary) *Numer. Funct. Anal. Optim.* **13** (1992), *no.* 5-6, 523–540. (Charles W. Groetsch) **93j:65089** 65J20 (47A50)

Hanke, Michael *see* **Seminar: Differential-Algebraic Equations, 93i:34007**

Hanks, Robert (*with* Dobbs, David E.) ★ A modern course on the theory of equations. Second edition. With an appendix by Michael Weinstein. *Polygonal Publ. House, Washington, NJ*, 1992. x+253 *pp. ISBN* 0-936428-14-7 (From the introduction) **93b:12001** 12–01

Hänler, M. Gebietsstabilität und Approximation durch Lösungen elliptischer Gleichungen. [Stability of domains, and approximation by solutions of elliptic equations] *Math. Nachr.* **148** (1990), 47–57. (Frank Benkert) **93c:35031** 35J25 (31B35, 35J40, 41A30)

Hanlon, B. E. (*with* Joshi, G. C.) A three generation unified model from coset space-dimensional reduction. (English summary) *Phys. Lett. B* **298** (1993), *no.* 3-4, 312–317. 81V22 (22E70, 81R05)

Hanlon, Philip J. (*with* Stanley, Richard P.; Stembridge, John R.) Some combinatorial aspects of the spectra of normally distributed random matrices. *Hypergeometric functions on domains of positivity, Jack polynomials, and applications (Tampa, FL*, 1991), 151–174, *Contemp. Math.*, 138, *Amer. Math. Soc., Providence, RI*, 1992. (Torbjörn Tambour) **93j:05164** 05E05 (15A18, 60E99, 62H10)

— A Markov chain on the symmetric group and Jack symmetric functions. *Discrete Math.* **99** (1992), *no.* 1-3, 123–140. (James Allen Fill) **93j:60093** 60J10 (05E05, 60B10)

— Some remarkable combinatorial matrices. *J. Combin. Theory Ser. A* **59** (1992), *no.* 2, 218–239. (Tadeusz Józefiak) **93f:05104** 05E15 (17B65)

— (*with* Sundaram, Sheila) On a bijection between Littlewood-Richardson fillings of conjugate shape. *J. Combin. Theory Ser. A* **60** (1992), *no.* 1, 1–18. (Dennis White) **93c:05117** 05E10 (20C30)

— Order and disorder in algebraic combinatorics. *Math. Intelligencer* **14** (1992), *no.* 2, 20–25. (Uno Kaljulaid) **93g:05144** 05Exx (05E25)

Hanmandlu, M. (*with* Pandian, S. R.) Decentralized model-based control of a class of large-scale interconnected systems. (English summary) *Internat. J. Systems Sci.* **24** (1993), *no.* 3, 499–514. 93A14 (93D05)

Hanna, F. K. (*with* Ritchie, G. D.) AM: a case study in AI methodology. *The foundations of artificial intelligence*, 247–265, *Cambridge Univ. Press, Cambridge*, 1990. (*see* **93b:68073**) 68T15 (68T20)

Hanna, M. H. (*with* Ahmad, Mubarak; Tikoo, S. K.; Raina, T. K.) Coherent state in the roton region of superfluid helium-4. *Nuovo Cimento D* (1) **14** (1992), *no.* 3, 221–238. (Summary) **93a:82063** 82D50 (81R30)

Hannabuss, K. C. (*with* Carey, A. L.) Temperature states on gauge groups. (English and French summaries) *Ann. Inst. H. Poincaré Phys. Théor.* **57** (1992), *no.* 3, 219–257. (H. Araki) **93j:22034** 22E65 (17B67, 46L60, 81T13)

Hannan, E. J. Missed opportunities. (English summary) *The art of statistical science*, 33–44, *Wiley Ser. Probab. Math. Statist. Probab. Math. Statist., Wiley, Chichester*, 1992. (*see* **93b:62003**) 62M10 (01A60, 62M15)

Hannan, John (*with* Miller, Dale A.) From operational semantics to abstract machines. (English summary) 1990 ACM Conference on Lisp and Functional Programming (Nice, 1990). *Math. Structures Comput. Sci.* **2** (1992), *no.* 4, 415–459. (Peter Bachmann) **93m:68113** 68Q55 (03B70, 68Q42, 68Q60)

Hanneken, John W. (*with* Franceschetti, Donald R.; Jones, D. Wayne; Campbell, Bruce W.) Hamming sets, Ising sets, cellular automata, neural nets, and the random walk. (English summary) *Amer. J. Phys.* **61** (1993), *no.* 1, 50–53. 82C32 (68Q90, 82B20, 92B20)

Hannigan, P. (*with* Buffet, E.) Directed random walks in random environments. *J. Statist. Phys.* **65** (1991), *no.* 3-4, 645–672. (Thomas Polaski) **93b:60151** 60J15 (60J25, 82C41)

Hannsgen, Kenneth B. (*with* Wheeler, Robert L.) A representation formula for one-dimensional viscoelasticity with stabilizing boundary feedback. *Estimation and control of distributed parameter systems (Vorau*, 1990), 139–147, *Internat. Ser. Numer. Math.*, 100, *Birkhäuser, Basel*, 1991. (Takao Nambu) **93f:93113** 93D15 (73F15, 73K12, 73K50, 93C20)

— (*with* Staffans, Olof J.; Wheeler, Robert L.) Rational approximation of the transfer function of a viscoelastic rod. (English summary) *Analysis and optimization of systems: state and frequency domain approaches for infinite-dimensional systems (Sophia-Antipolis*, 1992), 551–562, *Lecture Notes in Control and Inform. Sci.*, 185, *Springer, Berlin*, 1993. (*see* **93i:93005**) 93B15 (73F15, 73K05, 73K50, 93C20)

Hansbo, Peter The characteristic streamline diffusion method for convection-diffusion problems. *Comput. Methods Appl. Mech. Engrg.* **96** (1992), *no.* 2, 239–253. (Summary) **93a:76066** 76M10 (76Rxx)

— (*with* Johnson, Claes) Adaptive finite element methods in computational mechanics. (English summary) Reliability in computational mechanics (Kraków, 1991). *Comput. Methods Appl. Mech. Engrg.* **101** (1992), *no.* 1-3, 143–181. (J. T. Oden) **93m:65157** 65N30 (73V05, 76M10)

Hanschke, Thomas Markov chains and generalized continued fractions. (English summary) *J. Appl. Probab.* **29** (1992), *no.* 4, 838–849. (M. Iosifescu) **93i:60125** 60J10 (30B70, 60J27)

— Characterization of antidominant solutions of linear differential equations. *J. Comput. Appl. Math.* **40** (1992), *no.* 3, 351–361. (Summary) **93f:34007** 34A05

Hansel, G. (*with* Troallic, Jean-Pierre) Extension properties of WS-groups. *Semigroup Forum* **45** (1992), *no.* 1, 63–70. (K. H. Hofmann) **93d:43008** 43A60 (22D99)

Hansell, R. I. C. (*with* Byers, R. E.; Madras, Neal) Stability-like properties of population models. (English summary) *Theoret. Population Biol.* **42** (1992), *no.* 1, 10–34. (Summary) **93e:92009** 92D25 (58F40)

Hansell, Roger W. First class functions with values in nonseparable spaces. *Constantin Carathéodory: an international tribute, Vol. I, II*, 461–475, *World Sci. Publishing, Teaneck, NJ*, 1991. (J. M. Aarts) **93c:54014** 54C50 (54H05)

— Compact perfect sets in weak analytic spaces. *Topology Appl.* **41** (1991), *no.* 1-2, 65–72. (R. M. Stephenson, Jr.) **93a:54028** 54E52 (54H05)

Hansen, A. J. (*with* Beatovic, D.; Levin, P. L.; Gan, H.; Kokernak, J. M.) Numerical analysis of open boundary problems using finite element substructuring and Galerkin boundary elements. *COMPEL* **11** (1992), *no.* 2, 295–309. (Summary) **93c:65139** 65N30 (65N38)

Hansen, B. G. (*with* Frenk, J. B. G.) Some monotonicity properties of the delayed renewal function. *J. Appl. Probab.* **28** (1991), *no.* 4, 811–821. (Laurence A. Baxter) **93a:60138** 60K05

Hansen, Bruce E. Strong laws for dependent heterogeneous processes. *Econometric Theory* **7** (1991), *no.* 2, 213–221. (B. M. Pötscher) **93b:60064** 60F15 (62M99)

— Erratum: "Strong laws for dependent heterogeneous processes" [Econometric Theory **7** (1991), no. 2, 213–221; MR 93b:60064]. *Econometric Theory* **8** (1992), *no.* 3, 421–422. (From the text) **93j:60036** 60F15 (62M99)

— Consistent covariance matrix estimation for dependent heterogeneous processes. *Econometrica* **60** (1992), *no.* 4, 967–972. (From the introduction) **93c:62147** 62M10 (62G05, 62P20)

— Efficient estimation and testing of cointegrating vectors in the presence of deterministic trends. (English summary) *J. Econometrics* **53** (1992), *no.* 1-3, 87–121. (Jati K. Sengupta) **93j:62244** 62P20

Hansen, David (*with* Bayliss, Alvin; Belytschko, Ted; Turkel, Eli) Adaptive multi-domain spectral methods. (English summary) *Fifth International Symposium on Domain Decomposition Methods for Partial Differential Equations (Norfolk, VA*, 1991), 195–203, *SIAM, Philadelphia, PA*, 1992. (*see* **93g:65009**) 65M70

Hansen, Eldon ★ Global optimization using interval analysis. Monographs and Textbooks in Pure and Applied Mathematics, 165. *Marcel Dekker, Inc., New York*, 1992. xvi+230 *pp. ISBN* 0-8247-8696-3 (M. Krastanov) **93i:90002** 90–02 (65K10, 90C30)

— (*with* Moore, R. E.; Leclerc, Anthony) Rigorous methods for global optimization. *Recent advances in global optimization (Princeton, NJ*, 1991), 321–342, *Princeton Ser. Comput. Sci., Princeton Univ. Press, Princeton, NJ*, 1992. (C. Bergthaller) **93c:90080** 90C30 (65K10)

— Bounding the solution of interval linear equations. (English summary) *SIAM J. Numer. Anal.* **29** (1992), *no.* 5, 1493–1503. (From the introduction) **93e:65075** 65G10 (15A06, 65F05)

Hansen, Erik B. On drying of laundry. (English summary) *SIAM J. Appl. Math.* **52** (1992), *no.* 5, 1360–1369. (Summary) **93f:80007** 80A20 (35Q99)

Hansen, H. C. Small universal covers for sets of unit diameter. *Geom. Dedicata* **42** (1992), *no.* 2, 205–213. (R. Blind) **93c:52018** 52C15 (52A10)

— The isoperimetric problem family. (Danish. English summary) With a comment by Hans Georg Killingbergtrø. *Normat* **40** (1992), *no.* 1, 14–25, 56. (Summary) **93j:52012** 52A40 (49J05, 52A10)

— The worm problem. (Danish. English summary) *Normat* **40** (1992), *no.* 3, 119–123, 143. (Summary) **93h:52025** 52C15

Hansen, J. S. (*with* Hawken, D. F.; Gottlieb, J. J.) A new finite-difference solution-adaptive method. (English summary) *Philos. Trans. Roy. Soc. London Ser. A* **341** (1992), *no.* 1662, 373–410. (Meng Zhao Qin) **93m:65119** 65M06 (35L45, 65M50, 65M60)

Hansen, K. D. (*with* Althoen, S. C.; Kugler, L. D.) Rotational scaled quaternion division algebras. *J. Algebra* **146** (1992), *no.* 1, 124–143. (P. M. Cohn) **93e:16025** 16K20

Hansen, Kai T. Pruning of orbits in four-disk and hyperbola billiards. *Chaos* **2** (1992), *no.* 1, 71–75. (Valery Covachev) **93a:58053** 58F03 (58F13)

— Remarks on the symbolic dynamics for the Hénon map. *Phys. Lett. A* **165** (1992), *no.* 2, 100–104. (Summary) **93d:58045** 58F03

Hansen, Lars Peter (*with* Singleton, Kenneth J.) Computing semiparametric efficiency bounds for linear time series models. *Nonparametric and semiparametric methods in econometrics and statistics (Durham, NC*, 1988), 387–412, *Internat. Sympos. Econom. Theory Econometrics, Cambridge Univ. Press, Cambridge*, 1991. (*see* **93c:62005**) 62P20 (62M10)

— (*with* Sargent, Thomas J.) Seasonality and approximation errors in rational expectations models. (English summary) *J. Econometrics* **55** (1993), *no.* 1-2, 21–55. (Summary) **93k:62213** 62P20

Hansen, P. *see* **Hansen, Pierre**

Hansen, Per Christian Numerical tools for analysis and solution of Fredholm integral equations of the first kind. (English summary) *Inverse Problems* **8** (1992), *no.* 6, 849–872. (Summary) **93h:65167** 65R20

— (*with* Bischof, Christian H.) A block algorithm for computing rank-revealing *QR* factorizations. (English summary) *Numer. Algorithms* **2** (1992), *no.* 3-4, 371–391. (Summary) **93h:65054** 65F25 (65F20)

— (*with* Chan, Tony F. C.) A look-ahead Levinson algorithm for indefinite Toeplitz systems. *SIAM J. Matrix Anal. Appl.* **13** (1992), *no.* 2, 490–506. (Mark Ainsworth) **93a:65032** 65F05 (65F30, 65F35)

— (*with* Chan, Tony F. C.) Some applications of the rank revealing *QR* factorization. *SIAM J. Sci. Statist. Comput.* **13** (1992), *no.* 3, 727–741. (Summary) **93a:65057** 65F25 (65F20)

— (*with* Sekii, Takashi; Shibahashi, Hiromoto) The modified truncated SVD method for regularization in general form. *SIAM J. Sci. Statist. Comput.* **13** (1992), *no.* 5, 1142–1150. (Summary) **93e:65072** 65F35

— Analysis of discrete ill-posed problems by means of the L-curve. (English summary) *SIAM Rev.* **34** (1992), *no.* 4, 561–580. (Jin Xi Zhao) **93k:65035** 65F20 (65F30)

Hansen, Pierre (*with* Kuplinsky, Julio) The smallest hard-to-color graph. *Discrete Math.* **96** (1991), *no.* 3, 199–212. (D. de Werra) **93a:05061** 05C15 (05C85)

— (*with* Jaumard, Brigitte; Lu, Shi Hui) Global optimization of univariate Lipschitz functions. (Russian) *Optimization: models, methods, solutions (Russian) (Irkutsk*, 1989), 287–316, "*Nauka*" *Sibirsk. Otdel., Novosibirsk*, 1992. (*see* **93k:90002**) 90C30

— (*with* Jaumard, Brigitte; Lu, Shi Hui) Global optimization of univariate Lipschitz functions. II. New algorithms and computational comparison. (Russian) *Optimization: models, methods, solutions (Russian) (Irkutsk*, 1989), 317–338, "*Nauka*" *Sibirsk. Otdel., Novosibirsk*, 1992. (*see* **93k:90002**) 90C30

— (*with* Jaumard, Brigitte; Lu, Shi Hui) On using estimates of Lipschitz constants in global optimization. (English summary) *J. Optim. Theory Appl.* **75** (1992), *no.* 1, 195–200. (Ebu Tamm) **93j:90098** 90C30 (65K10)

— (*with* Jaumard, Brigitte; Lu, Shi Hui) Global optimization of univariate Lipschitz functions. I. Survey and properties. *Math. Programming* **55** (1992), *no.* 3, *Ser. A*, 251–272. (G. R. Wood) **93f:90149** 90C30 (49M37)

— (*with* Jaumard, Brigitte; Lu, Shi Hui) Global optimization of univariate Lipschitz functions. II. New algorithms and computational comparison. *Math. Programming* **55** (1992), *no.* 3, *Ser. A*, 273–292. (G. R. Wood) **93f:90150** 90C30 (49M37)

— (*with* Jaumard, Brigitte; Savard, Gilles) New branch-and-bound rules for linear bilevel programming. (English summary) *SIAM J. Sci. Statist. Comput.* **13** (1992), *no.* 5, 1194–1217. (Stephan Dempe) **93f:90151** 90C30 (90C27, 90D05)

— (*with* Mladenović, Nenad) A comparison of algorithms for the maximum clique problem. (English summary) *Yugosl. J. Oper. Res.* **2** (1992), *no.* 1, 3–11. 90C35 (05C85)

— (*with* Hertz, Alain; Kuplinsky, Julio) Bounded vertex colorings of graphs. (English summary) Graph theory and combinatorics (Marseille-Luminy, 1990). *Discrete Math.* **111** (1993), *no.* 1-3, 305–312. (Summary) **93j:05057** 05C15 (68Q25, 68R10)

— (*with* Zheng, Mao Lin) Sharp bounds on the order, size, and stability number of graphs. (English summary) *Networks* **23** (1993), *no.* 2, 99–102. (Summary) **93i:05076** 05C35

Hansen, R. (*with* Espedal, M. S.; Nygaard, O.) An operator splitting technique for two-phase immiscible flow dominated by gravity and capillary forces. (English summary) *Computational methods in water resources, IX, Vol.* 1 (*Denver, CO*, 1992), 59–67, *Comput. Mech., Southampton*, 1992. (*see* **93g:76002**) 76M25 (76T05)

Hansen, Scott W. Exponential energy decay in a linear thermoelastic rod. *J. Math. Anal. Appl.* **167** (1992), *no.* 2, 429–442. (Gustavo Perla Menzala) **93f:35229** 35Q72 (35M99, 73B30, 73K12)

Hansen, Tom (*with* Mullen, Gary L.) Primitive polynomials over finite fields. *Math. Comp.* **59** (1992), *no.* 200, 639–643, S47–S50. (S. D. Cohen) **93a:11101** 11T06

Hansen, Vagn Lundsgaard (*with* Petersen, Peter, V) Groups, coverings and Galois theory. *Canad. J. Math.* **43** (1991), *no.* 6, 1281–1293. (Jaroslav Zemánek) **93d:57006** 57M12 (13B05, 46J05)

— About Jakob Nielsen (1890–1959). (Danish. English summary) *Normat* **40** (1992), *no.* 2, 63–74, 96. (Thomas Archibald) **93f:01020** 01A70

Hansen, Wolfhard Uniform limits of balayage spaces. *Exposition. Math.* **10** (1992), *no.* 1, 89–96. (Tadashi Murazawa) **93g:31025** 31D05

— (*with* Albeverio, Sergio; Fukushima, Masatoshi; Ma, Zhi Ming; Röckner, Michael) An invariance result for capacities on Wiener space. *J. Funct. Anal.* **106** (1992), *no.* 1, 35–49. (Denis Feyel) **93f:28013** 28C20 (31C25, 46G12, 60H07)

— (*with* Andrievskiĭ, V. V.; Nadirashvili, N. S.) Isoperimetric inequalities for capacities in the plane. *Math. Ann.* **292** (1992), *no.* 2, 191–195. 31A15 (30C85)

— A note on solutions of the Schrödinger equation. *Proc. Amer. Math. Soc.* **117** (1993), *no.* 2, 381–384. (E. Müller-Pfeiffer) **93d:35032** 35J10 (35A20, 35B05)

Hans-Gill, R. J. (*with* Dumir, V. C.) Mathematical contributions of Professor Hansraj Gupta. *J. Indian Math. Soc. (N.S.)* **57** (1991), *no.* 1-4, 11–16. (Gloria Olive) **93d:01060** 01A70 (05–03)

— (*with* Dumir, V. C.) The view obstruction problems for boxes. *J. Indian Math. Soc. (N.S.)* **57** (1991), *no.* 1-4, 117–122. (J. M. Wills) **93e:52035** 52C07 (11H31)

— (*with* Dumir, V. C.) Markoff type chain for the view obstruction problem for three-dimensional cubes. *J. Indian Math. Soc. (N.S.)* **57** (1991), *no.* 1-4, 123–141. (Marilyn Breen) **93g:52004** 52A37

Hanski, Ilkka (*with* Gyllenberg, Mats) Single-species metapopulation dynamics: a structured model. (English summary) *Theoret. Population Biol.* **42** (1992), *no.* 1, 35–61. (Summary) **93g:92020** 92D25

Hanson, Bruce (*with* Koskela, Pekka) Higher integrability and the boundary dimension. *Ann. Acad. Sci. Fenn. Ser. A I Math.* **16** (1991), *no.* 2, 323–331. (David A. Herron) **93c:30030** 30C65

Hanson, Denis A quick proof that $K_{10} \neq P + P + P$. Special volume to mark the centennial of Julius Petersen's "Die Theorie der regulären Graphs", Part II. *Discrete Math.* **101** (1992), *no.* 1-3, 107–108. (Editors) **93e:05075** 05C70

— (*with* Wang, Ping[1]; Jørgensen, Leif K.) On cages with given degree sets. Special volume to mark the centennial of Julius Petersen's "Die Theorie der regulären Graphs", Part II. *Discrete Math.* **101** (1992), *no.* 1-3, 109–114. (Farrokh Saba) **93h:05106** 05C38 (05C75)

Hanson, F. B. (*with* Chung, S. L.; Xu, H. H.) Parallel stochastic dynamic programming: finite element methods. Second NIU Conference on Linear Algebra, Numerical Linear Algebra and Applications (DeKalb, IL, 1991). *Linear Algebra Appl.* **172** (1992), 197–218. (Summary) **93c:90049** 90C15 (65K05, 65Y05, 90C39)

Hanson, James E. (*with* Crutchfield, James P.) The attractor-basin portrait of a cellular automaton. *J. Statist. Phys.* **66** (1992), *no.* 5-6, 1415–1462. (Summary) **93i:68140** 68Q80 (58F08)

Hanson, James N. The computer generated symbolic approximations to systems of nonlinear ODEs by matrix annihilation and the Newton-Kantorovich method. *Comput. Math. Appl.* **24** (1992), *no.* 3, 29–35. (Summary) **93b:65096** 65L05 (34A45, 65J15, 65Y10)

Hansoul, Georges Modal-axiomatic classes of Kripke models. *Algebraic logic (Budapest*, 1988), 231–240, *Colloq. Math. Soc. János Bolyai*, 54, *North-Holland, Amsterdam*, 1991. (Introduction) **93e:03026** 03B45 (03G25)

— À propos des treillis faiblement complémentés. (English summary) [On weakly complemented lattices] *Bull. Soc. Roy. Sci. Liège* **61** (1992), *no.* 3-4, 289–291. 06C99

— (*with* Sart, F.) A modified Kripke semantic for Lewis' S5 modal system and related systems. (English summary) *Bull. Soc. Roy. Sci. Liège* **61** (1992), *no.* 3-4, 293–297. (Summary) **93e:03025** 03B45

Hanssens, G. (*with* Van Maldeghem, H.) A characterization of $\tilde{C}_2$-buildings by floors. *Simon Stevin* **65** (1991), *no.* 3-4, 217–265. (Norbert Knarr) **93f:51018** 51E24 (51E12)

Hansson, Anders Control of level crossings in stationary Gaussian random processes. (English summary) *IEEE Trans. Automat. Control* **38** (1993), *no.* 2, 318–321. (Summary) **93j:93151** 93E20

cruzeiro-Hansson, Leonor *see* **Cruzeiro-Hansson, Leonor**

Hansson, Sven Ove Deontic logic without misleading alethic analogies. I, II. (English summary) *Logique et Anal. (N.S.)* **31** (1988), *no.* 123-124, 337–353, 355–370. (David Makinson) **93m:03027** 03B45

— Belief contraction without recovery. *Studia Logica* **50** (1991), *no.* 2, 251–260. (From the text) **93a:03017** 03B45 (68T27)

— A dyadic representation of belief. *Belief revision*, 89–121, *Cambridge Tracts Theoret. Comput. Sci.*, 29, *Cambridge Univ. Press, Cambridge*, 1992. (*see* **93g:68131**) 68T30 (03B60, 03B70)

— A procedural model of voting. *Theory and Decision* **32** (1992), *no.* 3, 269–301. (Maurice Salles) **93f:90044** 90A28

Hansson, T. H. (*with* Leinaas, J. M.; Myrheim, J.) Dimensional reduction in anyon systems. (English summary) *Nuclear Phys. B* **384** (1992), *no.* 3, 559–580. (Summary) **93g:81054** 81S05 (81Q99, 81T99)

— (*with* Brink, L.; Vasil'ev, M. A.) Explicit solution to the N-body Calogero problem. (English summary) *Phys. Lett. B* **286** (1992), *no.* 1-2, 109–111. (Summary) **93d:81029** 81Q05 (81S05, 81U10)

Hantler, S. L. (*with* Gail, H. R.; Taylor, B. A.) On a preemptive Markovian queue with multiple servers and two priority classes. *Math. Oper. Res.* **17** (1992), *no.* 2, 365–391. (Summary) **93b:90028** 90B22 (60K25)

Hantzschmann, Karl N. Joachim Lehmann—ein Leben mit dem und für den Computer. [N. Joachim Lehmann—a life with and for the computer] *Wiss. Z. Tech. Univ. Dresden* **41** (1992), *no.* 4, 52–55. (Editors) **93h:01040** 01A70

Hanus, Raymond (*with* Peng, You Bin; Henrotte, Jean-Luc) Parameter estimation using orthonormalization. (English summary) *Mathematical and intelligent models in system simulation, I, II* (*Brussels*, 1990), 53–57, *IMACS Ann. Comput. Appl. Math.*, 10, 11, *Baltzer, Basel*, 1991. (*see* **93c:93005**) 93E10

— (*with* Peng, You Bin) Modified conditioning technique for controllers with nonminimum phase zeros and/or time-delays. (English summary) *Mathematics of the analysis and design of process control* (*Dublin*, 1991/*Lille*, 1991), 175–181, *North-Holland, Amsterdam*, 1992. (*see* **93g:93004**) 93B52

— *see also* **Mathematical and intelligent models in system simulation, 93c:93005**

Hanyga, Andrzej (*with* Seredyńska, Malgorzata) Diffraction of pulses in the vicinity of simple caustics and caustic cusps. *Wave Motion* **14** (1991), *no.* 2, 101–121. (Bair V. Budaev) **93f:86002** 86A15 (76Q05)

Hanzawa, Eiichi A generalization of the idea of distributions. (English summary) *Japan J. Indust. Appl. Math.* **9** (1992), *no.* 3, 471–485. (Todor Dimitrov Todorov) **93i:46067** 46F10 (46F05)

Hanzon, Bernard (*with* Peeters, Ralf L. M.) On the Riemannian interpretation of the Gauss-Newton algorithm. (English summary) *Mutual impact of computing power and control theory* (*Prague*, 1992), 65–70, *Czech. Acad. Sci., Prague*, 1992. (*see* **93f:93005**) 65U05

— The area enclosed by the (oriented) Nyquist diagram and the Hilbert-Schmidt-Hankel norm of a linear system. *IEEE Trans. Automat. Control* **37** (1992), *no.* 6, 835–839. (Summary) **93a:93078** 93D05 (47N70)

dinh nho Hào *see* **Dinh Nho Hào**

Hào, Dinh Nho *see* **Dinh Nho Hào**

Hao, Dun Yuan Instability of a class of nondifferentiable time-delay differential equations. (Chinese. English summary) *Nei Mongol Daxue Xuebao Ziran Kexue* **23** (1992), *no.* 2, 163–165. (Summary) **93c:34152** 34K20 (92D30)

Hao, Jianxiu (*with* Orlin, James B.) A faster algorithm for finding the minimum cut in a graph. *Proceedings of the Third Annual ACM-SIAM Symposium on Discrete Algorithms* (*Orlando, FL*, 1992), 165–174, *ACM, New York*, 1992. (*see* **93b:68005**) 05C85

— (*with* Goldfarb, Donald) Polynomial-time primal simplex algorithms for the minimum cost network flow problem. *Algorithmica* **8** (1992), *no.* 2, 145–160. (Santosh Kumar) **93f:90060** 90B10 (68Q25, 68R99, 90C08)

Hao, Rong Xia (**K**, **L**)-injectivity and (**K**, **L**)-pseudoinjectivity. *Proceedings of the First China-Japan International Symposium on Ring Theory* (*Guilin*, 1991), 60–62, *Okayama Univ., Okayama*, 1992. (*see* **93k:16001**) 16D50

Haouala, E. Topologie fine dans les espaces harmoniques. [Fine topology in harmonic spaces] *Math. Bohem.* **117** (1992), *no.* 1, 33–41. (J. Lukeš) **93c:31017** 31D05

el Haouari, Mohammed *see* **El Haouari, Mohammed**

Happel, Dieter Hochschild cohomology of Auslander algebras. *Topics in algebra, Part* 1 (*Warsaw*, 1988), 303–310, *Banach Center Publ.*, 26, *Part* 1, *PWN, Warsaw*, 1990. (Claude Cibils) **93j:16006** 16E40 (16E70)

— (*with* Unger, Luise) Rigid transjective modules. *Topics in algebra, Part* 1 (*Warsaw*, 1988), 311–316, *Banach Center Publ.*, 26, *Part* 1, *PWN, Warsaw*, 1990. (Héctor A. Merklen) **93f:16007** 16D80

— (*with* Unger, Luise) A family of infinite-dimensional non-self-extending bricks for wild hereditary algebras. *Representations of finite-dimensional algebras* (*Tsukuba*, 1990), 181–189, *CMS Conf. Proc.*, 11, *Amer. Math. Soc., Providence, RI*, 1991. (Otto Kerner) **93c:16014** 16G20 (16G60)

— Partial tilting modules and recollement. (English summary) *Proceedings of the International Conference on Algebra, Part* 2 (*Novosibirsk*, 1989), 345–361, *Contemp. Math.*, 131, *Part* 2, *Amer. Math. Soc., Providence, RI*, 1992. (Jeremy Rickard) **93k:16011** 16D90 (18E30)

— (*with* Unger, Luise) Erratum to the article: "A family of infinite-dimensional non-self-extending bricks for wild hereditary algebras" [in *Representations of finite-dimensional algebras (Tsukuba, 1990)*, 181–189, Amer. Math. Soc., Providence, RI, 1991; MR 93c:16014]. *Proceedings of the Sixth International Conference on Representations of Algebras* (*Ottawa, ON*, 1992), 2 *pp.*, *Carleton-Ottawa Math. Lecture Note Ser.*, 14, *Carleton Univ., Ottawa, ON*, 1992. (*see* **93j:16001**) 16G20 (16G60)

— (*with* Crawley-Boevey, William; Ringel, Claus Michael) A bypass of an arrow is sectional. *Arch. Math. (Basel)* **58** (1992), *no.* 6, 525–528. (Flávio Ulhoa Coelho) **93c:16018** 16G70 (16G20)

— (*with* Dräxler, Peter) A proof of the generalized Nakayama conjecture for algebras with $J^{2l+1} = 0$ and A/J^l representation finite. *J. Pure Appl. Algebra* **78** (1992), *no.* 2, 161–164. (Hagen Meltzer) **93g:16012** 16G10

— (*with* Carlson, Jon F.) Contravariantly finite subcategories and irreducible maps. *Proc. Amer. Math. Soc.* **117** (1993), *no.* 1, 61–65. (Zygmunt Pogorzały) **93c:16001** 16D10 (16D90, 16G60, 20C20)

Happel, Robert (*with* Stadler, Peter F.) Correlation structure of the landscape of the graph-bipartitioning problem. *J. Phys. A* **25** (1992), *no.* 11, 3103–3110. (Cheng Xun Wu) **93h:82026** 82B41 (82C41, 82D30)

Haque, K. A. (*with* Strouboulis, T.) Recent experiences with error estimation and adaptivity. I. Review of error estimators for scalar elliptic problems. *Comput. Methods Appl. Mech. Engrg.* **97** (1992), *no.* 3, 399–436. (Summary) **93a:65138** 65N15

— (*with* Strouboulis, T.) Recent experiences with error estimation and adaptivity. II. Error estimation for h-adaptive approximations on grids of triangles and quadrilaterals. (English summary) *Comput. Methods Appl. Mech. Engrg.* **100** (1992), *no.* 3, 359–430. (Summary) **93j:65172** 65N15 (65N30)

Hara, Hiroaki (*with* Obata, Tsunehiro; Endo, Kunio) Differential geometry of nonequilibrium processes. *Phys. Rev. A* (3) **45** (1992), *no.* 10, 6997–7001. (Summary) **93b:82039** 82C05 (53C80, 60J15)

Hara, Masaru Ideals of bounded holomorphic functions on simple n-sheeted discs. *Nagoya Math. J.* **123** (1991), 171–201. (Pamela Gorkin) **93g:30068** 30H05 (30F99, 46J15, 46J20)
fuji-Hara, Ryoh *see* **Fuji-Hara, Ryoh**
Hara, S. *see* **Hara, Shinji**
Hara, Shigeomi A necessary condition for H^∞-well-posed Cauchy problem of Schrödinger type equations with variable coefficients. *J. Math. Kyoto Univ.* **32** (1992), *no.* 2, 287–305. (Ross Pinsky) **93j:35086** 35K15 (35J10)
Hara, Shin-ichiro (*with* Kono, Akira[1]) KO-theory of Hermitian symmetric spaces. *Hokkaido Math. J.* **21** (1992), *no.* 1, 103–116. (Hideaki Ōshima) **93b:55006** 55N15 (19M05)
Hara, Shinji (*with* Kondō, Ryōji) A unified approach to continuous/discrete time H_∞ problems via J-spectral factorizations. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, I* (*Kobe*, 1991), 247–252, *Mita, Tokyo*, 1992. (*see* **93g:93005**) 93B36
— (*with* Kimura, T.; Kondō, Ryōji) H_∞ control system design by a parameter space approach. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, I* (*Kobe*, 1991), 287–292, *Mita, Tokyo*, 1992. (Han Sheng Wu) **93k:93039** 93B36 (93B25, 93B52, 93D09)
— (*with* Nakajima, Masayuki; Kabamba, Pierre T.) Robust stabilization in digital control systems. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, I* (*Kobe*, 1991), 481–486, *Mita, Tokyo*, 1992. (*see* **93g:93005**) 93C62 (93D21)
— (*with* Kabamba, Pierre T.) Robust control system design for sampled-data feedback systems. *Robust control* (*Tokyo*, 1991), 56–63, *Lecture Notes in Control and Inform. Sci.*, 183, *Springer, Berlin*, 1992. (*see* **93f:93006**) 93D09 (93C57)
— (*with* Sugie, Toshiharu; Fujita, Masayuki) H_∞-suboptimal controller design of robust tracking systems. *Robust control* (*Tokyo*, 1991), 162–169, *Lecture Notes in Control and Inform. Sci.*, 183, *Springer, Berlin*, 1992. (*see* **93f:93006**) 93B36
— (*with* Sugie, Toshiharu; Kondō, Ryōji) H_∞ control problem with $j\omega$-axis zeros. *Automatica J. IFAC* **28** (1992), *no.* 1, 55–70. (Cheng Wu Yang) **93b:93033** 93B36 (93B52, 93D15)
— (*with* Yamamoto, Yutaka) Internal and external stability and robust stability condition for a class of infinite-dimensional systems. *Automatica J. IFAC* **28** (1992), *no.* 1, 81–93. (Hartmut Logemann) **93a:93090** 93D09 (93C25, 93C35, 93D25)
Hara, Takashi (*with* Slade, Gordon) Self-avoiding walk in five or more dimensions. I. The critical behaviour. *Comm. Math. Phys.* **147** (1992), *no.* 1, 101–136. (Neal Madras) **93j:82032** 82B41 (60J15, 82B27)
— (*with* Slade, Gordon) The number and size of branched polymers in high dimensions. *J. Statist. Phys.* **67** (1992), *no.* 5-6, 1009–1038. (Summary) **93c:82075** 82D60 (82B41)
— (*with* Slade, Gordon) The lace expansion for self-avoiding walk in five or more dimensions. *Rev. Math. Phys.* **4** (1992), *no.* 2, 235–327. (Neal Madras) **93j:82033** 82B41 (60J15)
Hara, Takuya Operator inequalities and construction of Krein spaces. *Integral Equations Operator Theory* **15** (1992), *no.* 4, 551–567. (J. Rovnyak) **93f:46027** 46C20 (47A63, 47B50)
— (*with* Ando, Tsuyoshi) Another approach to the strong Parrott theorem. *J. Math. Anal. Appl.* **171** (1992), *no.* 1, 125–130. (Joseph A. Ball) **93k:47011** 47A20
Hara, Veikko (*with* Liniger, Werner; Odeh, Farouk) A second-order sparse factorization method for Poisson's equation with mixed boundary conditions. (English summary) *J. Comput. Appl. Math.* **44** (1992), *no.* 2, 201–218. (Summary) **93k:65085** 65N06 (65F10)
Harabetian, Eduard A subcell resolution method for viscous systems of conservation laws. (English summary) *J. Comput. Phys.* **103** (1992), *no.* 2, 350–358. (Summary) **93i:76068** 76M25 (35L65, 65M99, 76M20, 76N15)
— (*with* Pego, Robert L.) Nonconservative hybrid shock capturing schemes. (English summary) *J. Comput. Phys.* **105** (1993), *no.* 1, 1–13. (Summary) **93m:65118** 65M06 (76L05, 76M20)
— Propagation of singularities, Hamilton-Jacobi equations and numerical applications. (English summary) *Trans. Amer. Math. Soc.* **337** (1993), *no.* 1, 59–71. (Ramajayam Sahadevan) **93i:35005** 35A20 (35F20)
Harada, Koichiro *see* **Connell, Ian, 93d:11057**
Harada, Koji (*with* Abdalla, Elcio; Abdalla, M. C. B.; Dalmazi, D.) Correlation functions in noncritical (super) string theory. (English summary) *Internat. J. Modern Phys. A* **7** (1992), *no.* 29, 7339–7363. 81T30
Harada, Manabu Direct sums of almost relative injective modules. *Osaka J. Math.* **28** (1991), *no.* 3, 751–758. (J. Jirásko) **93c:16005** 16D50
— Almost hereditary rings. *Osaka J. Math.* **28** (1991), *no.* 4, 793–809. (John Clark) **93b:16003** 16D40 (16E60, 16P20)
— Hereditary rings and relative projectives. *Osaka J. Math.* **28** (1991), *no.* 4, 811–827. (John Clark) **93b:16004** 16D40
— Relative almost projective modules and hereditary rings. *Proceedings of the First China-Japan International Symposium on Ring Theory* (*Guilin*, 1991), 63–67, *Okayama Univ., Okayama*, 1992. (*see* **93k:16001**) 16E60
— Note on almost relative projectives and almost relative injectives. *Osaka J. Math.* **29** (1992), *no.* 3, 435–446. (K. R. Fuller) **93h:16004** 16D80
Harada, Minoru Solving $J_k(x) = \varepsilon$ and $J_k'(x) = 0$ for a given $\varepsilon > 0$ and $k > 1$. (Japanese. English summary) *Parallel processing for matrix computation* (*Yokohama*, 1991), 13–18, *Adv. Numer. Methods Large Sparse Sets Linear Equations*, 7, *Keio Univ., Yokohama*, 1991. (*see* **93e:65040**) 65H05 (65F15)
Harada, Tetsuya (*with* Fukao, Takeshi; Wu, Jijun) Continuous modelling of discrete optimization problems. (English summary) *System modelling and optimization* (*Zurich*, 1991), 165–174, *Lecture Notes in Control and Inform. Sci.*, 180, *Springer, Berlin*, 1992. (*see* **93e:90003**) 90C27 (90C10)
Haraguchi, M. Analogy as hypothetical reasoning. *Japanese J. Fuzzy Theory Systems* **4** (1992), *no.* 4, 497–514. 03B60 (03B70)
Haran, D. (*with* Jarden, Moshe) Compositum of Galois extensions of Hilbertian fields. *Ann. Sci. École Norm. Sup.* (4) **24** (1991), *no.* 6, 739–748. (Jean Cougnard) **93h:12003** 12E25 (12F20)
Harant, Jochen Toughness and non-Hamiltonicity of polyedral graphs. (English summary) *Discrete Math.* **113** (1993), *no.* 1-3, 249–253. (Summary) **93k:05086** 05C35 (05C45)
Harari, Diego D. (*with* Skarzhinskiĭ, V. D.) Quantum processes in the gravitational field of a cosmic string. *Quantum gravity* (*Moscow*, 1990), 524–533, *World Sci. Publishing, River Edge, NJ*, 1991. (*see* **93b:83004**) 83C47 (81T20, 83F05)
Harari, Isaac (*with* Chalot, Frédéric L.; Franca, Leopoldo P.; et al.) Calculation of two-dimensional compressible Euler flows with a new Petrov-Galerkin finite element method. *Numerical simulation of compressible Euler flows* (*Rocquencourt*, 1986), 88–104, *Notes Numer. Fluid Mech.*, 26, *Vieweg, Braunschweig*, 1989. (*see* **93b:76056**) 76M10 (76N10)
— (*with* Hughes, Thomas J. R.) A cost comparison of boundary element and finite element methods for problems of time-harmonic acoustics. (English summary) *Comput. Methods Appl. Mech. Engrg.* **97** (1992), *no.* 1, 77–102. (Summary) **93h:76067** 76Q05 (76M10, 76M15)
— (*with* Hughes, Thomas J. R.) Analysis of continuous formulations underlying the computation of time-harmonic acoustics in exterior domains. (English summary) *Comput. Methods Appl. Mech. Engrg.* **97** (1992), *no.* 1, 103–124. (Summary) **93h:76068** 76Q05 (76M99)
— (*with* Hughes, Thomas J. R.) What are C and h?: inequalities for the analysis and design of finite element methods. *Comput. Methods Appl. Mech. Engrg.* **97** (1992), *no.* 2, 157–192. (Michael Fröhner) **93g:65122** 65M60 (65N30, 73V05, 76M10)
— (*with* Hughes, Thomas J. R.) Galerkin/least-squares finite element methods for the reduced wave equation with nonreflecting boundary conditions in unbounded domains. (English summary) *Comput. Methods Appl. Mech. Engrg.* **98** (1992), *no.* 3, 411–454. (Summary) **93c:76060** 76M10 (65N30, 73D25, 73K70, 76Q05)
Harari, Sami Sacs à dos orthogonaux et sacs à dos divisibles. (English and French summaries) [Orthogonal and divisible knapsacks] *Traitement Signal* **9** (1992), *no.* 3, 273–279. (J. Dénes) **93j:94022** 94A60
Harary, Frank Recent results and unsolved problems on hypercube theory. *Graph theory, combinatorics, and applications. Vol.* 2 (*Kalamazoo, MI*, 1988), 621–632, *Wiley-Intersci. Publ., Wiley, New York*, 1991. (*see* **93b:05003**) 05C99
— (*with* Lewinter, Martin) Spanning subgraphs of a hypercube. VI. Survey and unsolved problems. *Graph theory, combinatorics, and applications. Vol.* 2 (*Kalamazoo, MI*, 1988), 633–637, *Wiley-Intersci. Publ., Wiley, New York*, 1991. (*see* **93b:05003**) 05C99
— (*with* Kabell, Jerald A.; McMorris, F. R.) Subtree acyclic digraphs. (English summary) *Ars Combin.* **34** (1992), 93–95. (Summary) **93i:05068** 05C20
— (*with* Bergstrand, Deborah; Hodges, Ken; Jennings, George; Kuklinski, Lisa; Wiener, Janet) Product graphs are sum graphs. (English summary) *Math. Mag.* **65** (1992), *no.* 4, 262–264. (Summary) **93g:05117** 05C75
— (*with* Banerjee, Subhankar) The minimum detour number of a connected graph. (English and Malayan summaries) *Menemui Mat.* **14** (1992), *no.* 1, 38–43. (Sudhangshu B. Karmakar) **93h:05105** 05C38 (05C40, 05C85, 68Q25, 68R10)
— (*with* Chartrand, Gary; Hevia, Héctor; McKeon, Kathleen A.) On signed graphs with prescribed positive and negative graphs. (English summary) *Vishwa Internat. J. Graph Theory* **1** (1992), *no.* 1, 9–18. (H. Joseph Straight) **93m:05095** 05C35
— (*with* Lewinter, Martin) Which graphs are pluperfect? (English summary) *Australas. J. Combin.* **7** (1993), 81–86. (Summary) **93k:05147** 05C75
— (*with* Kainen, Paul C.) The cube of a path is maximal planar. (English summary) *Bull. Inst. Combin. Appl.* **7** (1993), 55–56. 05C10
— Is Snaky a winner? *Geombinatorics* **2** (1993), *no.* 4, 79–82. 05B50
— (*with* Hayes, John P.) Edge fault tolerance in graphs. (English summary) *Networks* **23** (1993), *no.* 2, 135–142. (Summary) **93i:05106** 05C75 (05C35, 68M10, 90B12)
— *see also* **Chartrand, Gary, 93g:01065**; **Proceedings: Conference on Graphs and Applications, 93m:05006**; **Applied graph theory and discrete mathematics in chemistry, 93m:92001** *and* **Holdsworth, Christopher**
Harayama, Takahisa (*with* Shudo, Akira) Zeta function derived from the boundary element method. *Phys. Lett. A* **165** (1992), *no.* 5-6, 417–426. (Dieter H. Mayer) **93i:81033** 81Q20 (58F20, 58G25, 81Q50)
Harbater, David Arithmetic discriminants and horizontal intersections. *Math. Ann.* **291** (1991), *no.* 4, 705–724. (Robert S. Rumely) **93e:14029** 14G40 (14C17)
Harbord, R. (*with* Gellert, M.) A simple least-squares method for FE analysis of the Navier-Stokes problem. (English summary) *Comput. Mech.* **8** (1991), *no.* 1, 19–24. (Summary) **93g:76080** 76M10 (76D05)
Harborth, Heiko (*with* Mengersen, Ingrid) The Ramsey number of $K_{3,3}$. *Graph theory, combinatorics, and applications. Vol.* 2 (*Kalamazoo, MI*, 1988), 639–644, *Wiley-Intersci. Publ., Wiley, New York*, 1991. (Summary) **93b:05121** 05C55
— Maximum number of crossings for the cube graph. Proceedings of the Twenty-second Southeastern Conference on Combinatorics, Graph Theory, and Computing (Baton Rouge, LA, 1991). *Congr. Numer.* **82** (1991), 117–122. (Roman Nedela) **93d:05047** 05C10
— (*with* Kemnitz, Arnfried; Möller, Meinhard) An upper bound for the minimum diameter of integral point sets. (English summary) *Discrete Comput. Geom.* **9** (1993), *no.* 4, 427–432. (Martin Henk) **93m:52018** 52C10 (11H99)
Harbottle, S. R. Cluster sets of set-valued functions. *Math. Proc. Cambridge Philos. Soc.* **111** (1992), *no.* 3, 557–566. (P. Lappan) **93c:30047** 30D40
— Cluster sets of analytic multivalued functions. *Studia Math.* **101** (1992), *no.* 3, 253–267. (George L. Csordas) **93f:30036** 30D40 (30G30)
Harboure, E. (*with* García-Cuerva, José; Segovia, Carlos; Torrea Hernández, José Luis) Weighted norm inequalities for commutators of strongly singular integrals. *Indiana Univ. Math. J.* **40** (1991), *no.* 4, 1397–1420. (Kenneth F. Andersen) **93f:42031** 42B20 (47G10)
al-Harby, Abdullah H. *see* **Al-Harby, Abdullah H.**
Harche, Farid (*with* Baxter, Laurence A.) Note: on the greedy algorithm for optimal assembly. (English summary) *Naval Res. Logist.* **39** (1992), *no.* 6, 833–837. (Summary) **93f:90132** 90C27 (65K10)
— (*with* Baxter, Laurence A.) On the optimal assembly of series-parallel systems. (English summary) *Oper. Res. Lett.* **11** (1992), *no.* 3, 153–157. 90B35
Hardaha, D. R. Two variables analogue of Jacobi polynomial over an elliptic disc. *J. Maulana Azad College Tech.* **24** (1991), 19–27. (Khélifa Trimèche) **93i:33004** 33C45
Harder, Alberta (*with* Hicks, Troy L.; Saliga, Linda Marie) Fixed point theorems for non-self-maps. III. (English summary) *Indian J. Pure Appl. Math.* **24** (1993), *no.* 3, 151–154. 54H25

Harder, Günter Eisenstein cohomology of arithmetic groups and its applications to number theory. *Proceedings of the International Congress of Mathematicians, Vol. I, II (Kyoto, 1990)*, 779–790, *Math. Soc. Japan, Tokyo*, 1991. (Dipendra Prasad) **93b:11057** 11F67 (11F75)

Harder, Melinda H. Minimum distance estimators of scale with censored data. (English summary) *J. Amer. Statist. Assoc.* **87** (1992), *no.* 419, 832–843. (Truc Nguyen) **93k:62203** 62N05 (62G05)

Hardie, K. A. (*with* Kamps, K. H.) Variations on a theme of Dold. (English summary) *Category theory* 1991 (*Montreal, PQ*, 1991), 201–209, *CMS Conf. Proc.*, **13**, *Amer. Math. Soc., Providence, RI*, 1992. (John F. Oprea) **93i:55007** 55P10 (55P05)

Hardin, Jay C. (*with* Miamee, A. G.) On a class of nonstationary stochastic processes. (English summary) *Sankhyā Ser. A* **52** (1990), *no.* 2, 145–156. (Summary) **93e:60070** 60G10 (60G25)

— (*with* Makagon, A.; Miamee, A. G.) Correlation autoregressive sequences: a summary. (English summary) *Nonstationary stochastic processes and their applications (Hampton, VA*, 1991), 165–175, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93h:60059** 60G12 (62M10)

Hardin, R. H. (*with* Sloane, N. J. A.) New spherical 4-designs. (English summary) A collection of contributions in honour of Jack van Lint. *Discrete Math.* **106/107** (1992), 255–264. (J. J. Seidel) **93i:05039** 05B30

Hardjono, Thomas (*with* Zheng, Yuliang; Seberry, Jennifer) How to recycle shares in secret sharing schemes. (English summary) Fifteenth Australian Computer Science Conference (ACSC-15) (Hobart, 1992). *Austral. Comput. Sci. Comm.* **14** (1992), *no.* 1, *part B*, 1053–1064. (Summary) **93k:94008** 94A60

Härdle, Wolfgang ★ Applied nonparametric regression. Econometric Society Monographs, 19. *Cambridge University Press, Cambridge*, 1990. xvi+333 *pp. ISBN* 0-521-38248-3 (Sidney J. Yakowitz) **93i:62030** 62G05

— ★ Smoothing techniques. With implementation in S. Springer Series in Statistics. *Springer-Verlag, New York*, 1991. xii+261 *pp. ISBN* 0-387-97367-2 (From the preface) **93b:62006** 62–07 (62G05)

— (*with* Mammen, Enno) Bootstrap methods in nonparametric regression. *Nonparametric functional estimation and related topics (Spetses*, 1990), 111–123, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 335, *Kluwer Acad. Publ., Dordrecht*, 1991. (Summary) **93a:62072** 62G09 (62G05)

— (*with* Franke, Jürgen) On bootstrapping kernel spectral estimates. *Ann. Statist.* **20** (1992), *no.* 1, 121–145. (Friedrich Liese) **93b:62129** 62M15 (62G09)

— (*with* Scott, David W.) Smoothing by weighted averaging of rounded points. (English summary) *Comput. Statist.* **7** (1992), *no.* 2, 97–128. 62G05

— (*with* Hart, Jeffrey D.) A bootstrap test for positive definiteness of income effect matrices. (English summary) *Econometric Theory* **8** (1992), *no.* 2, 276–290. (A. L. Rukhin) **93h:62193** 62P20 (62G09, 62H15)

— (*with* Marron, J. Stephen; Tsybakov, A. B.) Bandwidth choice for average derivative estimation. *J. Amer. Statist. Assoc.* **87** (1992), *no.* 417, 218–226. (Ulrich Stadtmüller) **93d:62064** 62G05

— (*with* Hall, Peter Gavin; Marron, J. Stephen) Regression smoothing parameters that are not far from their optimum. *J. Amer. Statist. Assoc.* **87** (1992), *no.* 417, 227–233. (Ewaryst Rafajlowicz) **93d:62065** 62G05

— (*with* Vieu, Philippe) Kernel regression smoothing of time series. *J. Time Ser. Anal.* **13** (1992), *no.* 3, 209–232. (Raúl Pedro Mentz) **93g:62119** 62M20 (62G05, 62M10)

— (*with* Hall, Peter Gavin) On the backfitting algorithm for additive regression models. (English summary) *Statist. Neerlandica* **47** (1993), *no.* 1, 43–57. (Summary) **93j:62097** 62G05

— *see also* **Computer intensive methods in statistics**, **93m:62004**

Hardouin, C. (*with* Guyon, Xavier) The chi-square coding test for nested Markov random field hypotheses. (English and French summaries) *Stochastic models, statistical methods, and algorithms in image analysis (Rome*, 1990), 165–176, *Lecture Notes in Statist.*, 74, *Springer, Berlin*, 1992. (Summary) **93j:62207** 62M02 (62M05, 62M40)

Hardt, Robert M. Axially symmetric harmonic maps. (English summary) *Nematics (Orsay*, 1990), 179–187, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 332, *Kluwer Acad. Publ., Dordrecht*, 1991. (Summary) **93f:58043** 58E20

— (*with* Lin, Fang-Hua; Poon, Chi-Cheung) Axially symmetric harmonic maps minimizing a relaxed energy. *Comm. Pure Appl. Math.* **45** (1992), *no.* 4, 417–459. (Martin Fuchs) **93c:58054** 58E20

— (*with* Mu, Li Bin) Harmonic maps with fixed singular sets. (English summary) *J. Geom. Anal.* **2** (1992), *no.* 5, 445–488. (Martin Fuchs) **93h:58041** 58E20

Hardwick, J. P. (*with* Ferguson, Thomas S.; Tamaki, M.) Maximizing the duration of owning a relatively best object. *Strategies for sequential search and selection in real time (Amherst, MA*, 1990), 37–57, *Contemp. Math.*, 125, *Amer. Math. Soc., Providence, RI*, 1992. (Minoru Sakaguchi) **93h:60066** 60G40 (62L15)

Hardy, Godfrey Harold ★ Divergent series. With a preface by J. E. Littlewood and a note by L. S. Bosanquet. Reprint of the revised (1963) edition. *Éditions Jacques Gabay, Sceaux*, 1992. xvi+396 *pp. ISBN* 2-87647-131-0 (Editors) **93g:01100** 01A75 (40–01, 40–03)

Hardy, Kenneth (*with* Williams, Kenneth S.) Determination of $\sum_{k=1}^{p-1} g^{ak^2}$ modulo p. *Acta Arith.* **61** (1992), *no.* 2, 161–172. (Ronald J. Evans) **93h:11093** 11L05

— (*with* Williams, Kenneth S.) A refinement of H. C. Williams' qth root algorithm. (English summary) *Math. Comp.* **61** (1993), *no.* 203, 475–483. (Robert O. Robson) **93k:11003** 11A15 (11A07, 11Y16)

— (*with* Williams, Kenneth S.) The squareroot of an ambiguous form in the principal genus. (English summary) *Proc. Edinburgh Math. Soc.* (2) **36** (1993), *no.* 1, 145–150. (Duncan A. Buell) **93i:11044** 11E16 (11R11)

Hardy, Lucien A new way to obtain Bell inequalities. *Phys. Lett. A* **161** (1991), *no.* 1, 21–25. (Guido A. Raggio) **93c:81018** 81P15 (81P10)

— (*with* Home, D.; Squires, Euan J.; Whitaker, M. A. B.) Realism and the quantum-mechanical two-state oscillator. *Phys. Rev. A* (3) **45** (1992), *no.* 7, *part A*, 4267–4270. (Jeffrey Bub) **93f:81019** 81P15 (81P05)

— Quantum mechanics, local realistic theories, and Lorentz-invariant realistic theories. *Phys. Rev. Lett.* **68** (1992), *no.* 20, 2981–2984. (Matej Pavšič) **93d:81008** 81P05 (81P10)

Hare, Donovan R. (*with* Alspach, Brian) Edge-pancyclic block-intersection graphs. *Discrete Math.* **97** (1991), *no.* 1-3, 17–24. (Bojan Mohar) **93a:05081** 05C45 (05C38)

— (*with* McCuaig, William D.) The connectivity of the block-intersection graphs of designs. (English summary) *Des. Codes Cryptogr.* **3** (1993), *no.* 1, 5–8. (L. W. Beineke) **93m:05116** 05C40 (05B05)

Hare, Kathryn E. Norm one multipliers on subspaces of L^p. *Canad. Math. Bull.* **35** (1992), *no.* 2, 194–203. (Nakhlé Asmar) **93f:42018** 42A45 (43A22)

— The size of (L^2, L^p) multipliers. *Colloq. Math.* **63** (1992), *no.* 2, 249–262. (U. B. Tewari) **93k:43005** 43A22 (43A46)

— (*with* Wilson, David Charles) A structural criterion for the existence of infinite central $\Lambda(p)$ sets. *Trans. Amer. Math. Soc.* **337** (1993), *no.* 2, 907–925. (A. H. Dooley) **93h:43006** 43A46 (43A80)

Harel, David Hamiltonian paths in infinite graphs. (English summary) *Israel J. Math.* **76** (1991), *no.* 3, 317–336. (William Gasarch) **93d:68023** 68Q20 (03D30, 05C45, 68R10)

— ★ Algorithmics. The spirit of computing. Second edition. With the technical assistance of Roni Rosner on the exercises and solutions. *Addison-Wesley Publishing Company, Advanced Book Program, Reading, MA*, 1992. xvi+476 *pp. ISBN* 0-201-50401-4 (From the preface) **93b:68001** 68–01

Harel, Michel (*with* O'Cinneide, Colm A.; Schneider, Helmut) Comportement asymptotique de la fonction de renouvellement. (English and French summaries) [Asymptotic behavior of the sample renewal function] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 4, 465–468. (Summary) **93g:60186** 60K05 (60F05)

— Weak invariance of the multidimensional rank statistic with unbounded scores for nonstationary absolutely regular processes. (English summary) *J. Statist. Plann. Inference* **32** (1992), *no.* 2, 197–227. (Ken-ichi Yoshihara) **93j:60039** 60F17

Harenbrock, Marion (*with* Schmitz, Norbert J.) Optional sampling of submartingales with scanned index sets. *J. Theoret. Probab.* **5** (1992), *no.* 2, 309–326. (Ely Merzbach) **93e:60085** 60G40 (60G48)

Hargittai, István *see* **Spiral symmetry**, **93h:00014** *and* **Fivefold symmetry**, **93i:52002**

Hargittai, Magdolna Hawaiian flowers with fivefold symmetry. *Fivefold symmetry*, 529–541, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93i:52002**) 00A69

Hargreaves, Kathryn A. *see* **Probabilistic and stochastic methods in analysis, with applications**, **93e:00029**

Hari, Vjeran On sharp quadratic convergence bounds for the serial Jacobi methods. *Numer. Math.* **60** (1991), *no.* 3, 375–406. (Heike Faßbender) **93a:65050** 65F15 (65–02)

— (*with* Rhee, Noah H.) On a pair of almost diagonal skew-symmetric and symmetric positive definite matrices. *Parallel processing for scientific computing, Vol. I, II (Norfolk, VA*, 1993), 582–585, *SIAM, Philadelphia, PA*, 1993. (*see* **93k:65003**) 65F99

Hari Dass, N. D. Random surfaces. *Matrix models, random surfaces and 2-D gravity (Madras*, 1990), 1–30, *IMS Rep.*, 113, *Inst. Math. Sci., Madras*, 199?. (*see* **93h:81001**) 81T40 (81T27)

Hariharan, S. I. (*with* Ping, Yu; Scott, J. R.) Time domain numerical calculations of unsteady vortical flows about a flat plate airfoil. *J. Comput. Phys.* **101** (1992), *no.* 2, 419–430. (Summary) **93d:76043** 76M20 (76C99, 76N99)

— (*with* Young, G. W.; Carnahan, R.) Flow effects in a vertical CVD reactor. (English summary) *SIAM J. Appl. Math.* **52** (1992), *no.* 6, 1509–1532. (Summary) **93h:76064** 76N99 (76Rxx, 80A32)

Harikae, Toshio (*with* Kinoshita, Shin'ichi) On spatial embeddings of $\mathbf{R}_3$-graphs. *Kwansei Gakuin Univ. Annual Stud.* **40** (1991), 145–148. (I. Broere) **93h:05062** 05C10 (57M15)

— Universal abelian coverings of spatial theta-curves. (English summary) *Knots* 90 (*Osaka*, 1990), 133–142, *de Gruyter, Berlin*, 1992. (C. Kearton) **93k:57011** 57M25

Harikar, Ranjan S. (*with* Nayak, Tapan K.) On estimating the number of errors in computer software. (English summary) *Sankhyā Ser. B* **53** (1991), *no.* 3, 275–287. 62F10

Harin, Alexander O. (*with* Kozlov, Valerii V.) Kepler's problem in constant curvature spaces. (English summary) *Celestial Mech. Dynam. Astronom.* **54** (1992), *no.* 4, 393–399. (Bruno Cordani) **93i:70010** 70F05

Harinck, Pascale Fonctions généralisées sphériques induites sur $G_{\mathbf{C}}/G_{\mathbf{R}}$ et applications. (English summary) [Spherical generalized functions induced on $G_{\mathbf{C}}/G_{\mathbf{R}}$, and applications] *J. Funct. Anal.* **103** (1992), *no.* 1, 104–127. (Summary) **93b:22022** 22E45 (22E30, 46F99)

— (*with* Bopp, Nicole) Formule de Plancherel pour $\mathrm{GL}(n,\mathbf{C})/\mathrm{U}(p,q)$. [The Plancherel formula for $\mathrm{GL}(n,\mathbf{C})/\mathrm{U}(p,q)$] *J. Reine Angew. Math.* **428** (1992), 45–95. (Alexander Isaakovich Shtern) **93g:22015** 22E46 (22E30, 43A85)

sree Hari Rao, V. *see* **Sree Hari Rao, V.**

Harish-Chandra *see* **Varadarajan, V. S.**, **93a:01060**; **Herb, Rebecca A.**, **93b:01038** *and* **93f:01021**

Harizanov, Valentina S. Some effects of Ash-Nerode and other decidability conditions on degree spectra. *Ann. Pure Appl. Logic* **55** (1991), *no.* 1, 51–65. (M. Yasuhara) **93b:03055** 03C57 (03D25)

Harju, T. (*with* Kleijn, H. C. M.; Latteux, Michel) Deterministic sequential functions. (English summary) *Acta Inform.* **29** (1992), *no.* 6-7, 545–554. (Summary) **93h:68093** 68Q70 (68Q45)

— (*with* Kleijn, H. C. M.; Latteux, Michel) Compositional representation of rational functions. (French summary) *RAIRO Inform. Théor. Appl.* **26** (1992), *no.* 3, 243–255. (Pascal Weil) **93j:68144** 68Q70 (68Q45, 68Q68)

Harkleroad, Leon Polynomial-time analogues of isolatedness. *Ann. Pure Appl. Logic* **56** (1992), *no.* 1-3, 173–182. (Charles Applebaum) **93h:03065** 03D50 (03D15)

Harlamov, B. P. *see* **Kharlamov, B. P.**

Harleston L., Hugh (*with* Vishniac, Ethan T.) Numerical treatment of the spherically symmetric general-relativistic Boltzmann equation for massless and massive particles. *Phys. Rev. D* (3) **45** (1992), *no.* 12, 4458–4472. (Summary) **93c:83070** 83C55 (83–08)

Harley, P. J. (*with* Pickering, W. M.) FFT solution of the Robbins problem. (English summary) *IMA J. Numer. Anal.* **13** (1993), *no.* 2, 215–233. (Summary) **93m:65153** 65N06 (65J10)

Harman, Glyn (*with* Baker, R. C.; Brüdern, J.) Simultaneous Diophantine approximation with square-free numbers. *Acta Arith.* **63** (1993), *no.* 1, 51–60. (R. J. Cook) **93m:11055** 11J13 (11L07)

Harman, P. M. Maxwell and Saturn's rings: problems of stability and calculability. *The investigation of difficult things*, 477–502, *Cambridge Univ. Press, Cambridge*, 1992. (I. Grattan-Guinness) **93m:01034** 01A55

— *see also* **Investigation of difficult things**, **93g:01002**

Harmanci, Abdullah (*with* Smith, Patrick F.) Relative injectivity and module classes. *Comm. Algebra* **20** (1992), *no.* 9, 2471–2501. (Robert Wisbauer) **93g:16002** 16D50

(16D80, 16S90)

Harmelin, Reuven (*with* Minda, David) Quasi-invariant domain constants. (English summary) *Israel J. Math.* **77** (1992), *no.* 1-2, 115–127. (Joachim A. Hempel) **93m:30034** 30C80 (30C35, 30C75)

Harms, B. (*with* Leblanc, Y.) Statistical mechanics of black holes. (English summary) *Phys. Rev. D* (3) **46** (1992), *no.* 6, 2334–2340. (Summary) **93e:83044** 83C57 (83C47)

— (*with* Leblanc, Y.) Statistical mechanics of extended black objects. (English summary) *Phys. Rev. D* (3) **47** (1993), *no.* 6, 2438–2445. (Summary) **93k:83050** 83C57 (82C99, 83C47)

Harms, Daryl D. (*with* Colbourn, Charles J.; Myrvold, Wendy J.) Reliability polynomials can cross twice. (English summary) *J. Franklin Inst.* **330** (1993), *no.* 3, 629–633. (Summary) **93m:94053** 94C12 (68M15, 90B25)

van Harn, K. (*with* Steutel, F. W.) On a characterization of the exponential distribution. *J. Appl. Probab.* **28** (1991), *no.* 4, 947–949. (Mir Maswood Ali) **93a:62014** 62E10 (60E05, 60K25)

Harn, Ywh-Pyng (*with* Chang, Chin Fu) A discrete-time priority queue with two-class customers and bulk services. *Queueing Systems Theory Appl.* **10** (1992), *no.* 3, 185–211. (Summary) **93c:60141** 60K25 (90B22)

Harnad, John (*with* Shapiro, Joel A.; Shnider, Steven; Taylor, Cyrus C.) Symplectic reduction of the minimally coupled massless superparticle in $D = 10$. *Differential geometric methods in theoretical physics (Davis, CA, 1988)*, 693–701, *NATO Adv. Sci. Inst. Ser. B Phys.*, 245, *Plenum, New York*, 1990. (Summary) **93b:81156** 81T13

— (*with* Shnider, Steven) Isotropic geometry and twistors in higher dimensions. I. The generalized Klein correspondence and spinor flags in even dimensions. (English summary) *J. Math. Phys.* **33** (1992), *no.* 9, 3197–3208. (Sergey Merkulov) **93j:32037** 32L25 (81R25)

— (*with* Wisse, M.-A.) Matrix nonlinear Schrödinger equations and moment maps into loop algebras. (English summary) *J. Math. Phys.* **33** (1992), *no.* 12, 4164–4176. (Summary) **93k:58093** 58F05 (22E67, 35Q55, 58F19)

Harnett, G. The bivector Clifford algebra and the geometry of Hodge dual operators. (English summary) *J. Phys. A* **25** (1992), *no.* 21, 5649–5662. (Jörg Frauendiener) **93j:83060** 83C60 (15A66, 53A50)

Harnik, Victor (*with* Makkai, Michael) Lambek's categorical proof theory and Läuchli's abstract realizability. *J. Symbolic Logic* **57** (1992), *no.* 1, 200–230. (Andreas Blass) **93k:18014** 18D15 (03F07, 03F50, 03F55, 03G25, 03G30)

— Provably total functions of intuitionistic bounded arithmetic. *J. Symbolic Logic* **57** (1992), *no.* 2, 466–477. (Mariko Yasugi) **93g:03050** 03F10 (03D15, 03F30, 03F55)

López de Haro, M. *see* **López de Haro, M.**

Haroon, Ahmed H. (*with* Konsowa, Mokhtar H.; Bendjilali, Boualem) Conductivity of random trees and the existence of infinite conducting components-percolation model. (English summary) *Egyptian Statist. J.* **35** (1991), *no.* 2, 251–266. (Summary) **93j:60157** 60K35

Haroutjunian, Samvel Geometry of $(n + s)$-multiply integrals, depending on n parameters. *Proceedings of the 3rd Congress of Geometry (Thessaloniki, 1991)*, 176–186, *Aristotle Univ. Thessaloniki, Thessaloniki*, 1992. (Summary) **93i:53066** 53C65 (53C05)

Harpaz, Amos ★ Relativity theory. Concepts and basic principles. *Jones and Bartlett Publishers, Boston, MA*, 1992. viii+224 *pp. ISBN* 0-86720-220-3 (Mary L. Boas) **93d:83001** 83–01

de la Harpe, Pierre (*with* Ghys, Étienne) Infinite groups as geometric objects (after Gromov). *Ergodic theory, symbolic dynamics, and hyperbolic spaces (Trieste, 1989)*, 299–314, *Oxford Sci. Publ., Oxford Univ. Press, New York*, 1991. (*see* **93e:58002**) 20F32 (53C23, 57M07, 57S30)

— An invitation to Coxeter groups. *Group theory from a geometrical viewpoint (Trieste, 1990)*, 193–253, *World Sci. Publishing, River Edge, NJ*, 1991. (Hiroshi Naruse) **93g:20080** 20F55

Harper, John F. (*with* Lerner, L.) Stokes flow past a pair of stagnant-cap bubbles. *J. Fluid Mech.* **232** (1991), 167–190. (A. M. J. Davis) **93a:76026** 76D07

Harper, John R. (*with* Roitberg, Joseph) Phantom maps and spaces of the same n-type for all n. *J. Pure Appl. Algebra* **80** (1992), *no.* 2, 123–137. (Charles A. McGibbon) **93g:55010** 55P15 (55P99, 55S37)

Harper, L. H. On a problem of Kleitman and West. *Discrete Math.* **93** (1991), *no.* 2-3, 169–182. (Douglas B. West) **93b:05079** 05C35 (06A07, 90C35)

Harper, Robert Constructing type systems over an operational semantics. (English summary) *J. Symbolic Comput.* **14** (1992), *no.* 1, 71–84. (Summary) **93i:68121** 68Q55 (03B70)

Harrell, E. M., II *see* **Differential equations with applications to mathematical physics, 93i:00013**

Harrington, Joseph E., Jr. Uncertainty over product differentiation in a price-setting duopoly: a nonrobustness result. (English summary) *Econom. Lett.* **39** (1992), *no.* 3, 283–288. (Summary) **93i:90118** 90D12 (90A60)

— Modelling the role of information in elections. (English summary) Formal theories of politics, II. *Math. Comput. Modelling* **16** (1992), *no.* 8-9, 133–145. (Summary) **93m:92034** 92K10 (90A28, 90D40)

— The impact of reelection pressures on the fulfillment of campaign promises. (English summary) *Games Econom. Behav.* **5** (1993), *no.* 1, 71–97. 90A28

Harrington, Leo (*with* Cooper, S. Barry; Lachlan, Alistair H.; Lempp, Steffen; Soare, Robert I.) The d.r.e. degrees are not dense. *Ann. Pure Appl. Logic* **55** (1991), *no.* 2, 125–151. (Xi Zhong Zheng) **93a:03045** 03D30

Harrington, R. F. Formulation of boundary integral equations by the equivalent source method. (English summary) *Boundary element technology, VII (Albuquerque, NM, 1992)*, 293–303, *Comput. Mech., Southampton*, 1992. (*see* **93b:65002**) 65N38 (78A25)

Harriott, Tina A. (*with* Dunn, K. A.; Williams, Jeffrey George) Kinks in $1 + 1$, $2 + 1$ and $3 + 1$ dimensions. *Proceedings of the 4th Canadian Conference on General Relativity and Relativistic Astrophysics (Winnipeg, MB, 1991)*, 360–363, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93d:83017** 83C20 (81T99, 83C15)

— (*with* Dunn, K. A.; Williams, Jeffrey George) FLRW kinks. *Phys. Lett. A* **163** (1992), *no.* 3, 152–154. (Shin-ichi Kitamura) **93f:83010** 83C15 (81T13, 83C20)

Harris, B. J. A series representation for the Titchmarsh-Weyl m-function. *J. Math. Anal. Appl.* **171** (1992), *no.* 1, 294–299. (J. K. Shaw) **93j:34032** 34B20 (34L25, 34L40, 47E05)

Harris, Bennette R. Extremal solutions for nth order linear difference equations. *J. Math. Anal. Appl.* **167** (1992), *no.* 1, 123–132. (Anton Hut'a) **93g:39003** 39A10

Harris, C. *see* **Harris, Christopher J.**

Harris, Carl M. (*with* Marchal, William G.; Tibbs, Richard W.) An algorithm for finding characteristic roots of quasi-triangular Markov chains. (English summary) *Queueing and related models*, 224–239, *Oxford Statist. Sci. Ser.*, 9, *Oxford Univ. Press, New York*, 1992. (*see* **93i:60006**) 60J10 (65U05)

— (*with* Marchal, William G.; Botta, Robert F.) A note on generalized hyperexponential distributions. *Comm. Statist. Stochastic Models* **8** (1992), *no.* 1, 179–191. (Summary) **93b:60214** 60K25 (60–04, 60E10)

— (*with* Brill, P. H.) Waiting times for $M/G/1$ queues with service-time or delay-dependent server vacations. (English summary) *Naval Res. Logist.* **39** (1992), *no.* 6, 775–787. (Summary) **93g:60189** 60K25

Harris, Christopher J. (*with* Moore, C. G.) Indirect adaptive fuzzy control. (English summary) *Internat. J. Control* **56** (1992), *no.* 2, 441–468. 93C42 (93C40)

— (*with* Fudenberg, Drew) Evolutionary dynamics with aggregate shocks. (English summary) *J. Econom. Theory* **57** (1992), *no.* 2, 420–441. (Andor Dobó) **93g:92016** 92D15 (90A16)

Harris, Greg A. On multiple solutions of a nonlinear Neumann problem. *J. Differential Equations* **95** (1992), *no.* 1, 75–104. (Norman Dancer) **93d:34035** 34B15

Harris, J. *see* **Harris, Joseph Daniel**

Harris, Joe *see* **Harris, Joseph Daniel**

Harris, John C. On certain stable wedge summands of $B(\mathbf{Z}/p)^n_+$. *Canad. J. Math.* **44** (1992), *no.* 1, 104–118. (John F. Oprea) **93b:55020** 55R40 (55P42)

Harris, Joseph Daniel (*with* Tu, Loring W.) The connectedness of symmetric degeneracy loci: odd ranks. Appendix to: "The connectedness of degeneracy loci" [*Topics in algebra, Part 2* (Warsaw, 1988), 235–248, PWN, Warsaw, 1990; MR 93g:14050a] by Tu. *Topics in algebra, Part* 2 (*Warsaw*, 1988), 249–256, *Banach Center Publ.*, 26, *Part* 2, *PWN, Warsaw*, 1990. (Vasile Brînzănescu) **93g:14050b** 14J60 (14M12, 14M15)

— (*with* Fulton, William) ★ Representation theory. A first course. Graduate Texts in Mathematics, 129. Readings in Mathematics. *Springer-Verlag, New York*, 1991. xvi+551 *pp. ISBN* 0-387-97527-6; 0-387-97495-4 (James E. Humphreys) **93a:20069** 20G05 (17B10, 20G20, 22E46)

— ★ Algebraic geometry. A first course. Graduate Texts in Mathematics, 133. *Springer-Verlag, New York*, 1992. xx+328 *pp. ISBN* 0-387-97716-3 (Liam O'Carroll) **93j:14001** 14–01

— (*with* Eisenbud, David) ★ Schemes. The language of modern algebraic geometry. The Wadsworth & Brooks/Cole Mathematics Series. *Wadsworth & Brooks/Cole Advanced Books & Software, Pacific Grove, CA*, 1992. xii+157 *pp. ISBN* 0-534-17606-2; 0-534-17604-6 (Alexey N. Rudakov) **93k:14001** 14–01 (14A15)

— Developments in algebraic geometry. *American Mathematical Society centennial publications, Vol. II (Providence, RI, 1988)*, 89–100, *Amer. Math. Soc., Providence, RI*, 1992. (Alexey N. Rudakov) **93k:14002** 14–01

— (*with* Ciliberto, Ciro; Teixidor i Bigas, Montserrat) On the endomorphisms of $\mathrm{Jac}(W^1_d(C))$ when $\rho = 1$ and C has general moduli. *Classification of irregular varieties (Trento, 1990)*, 41–67, *Lecture Notes in Math.*, 1515, *Springer, Berlin*, 1992. (John B. Little) **93i:14023** 14H40 (14C22, 14H10)

— (*with* Eisenbud, David) The dimension of the Chow variety of curves. *Compositio Math.* **83** (1992), *no.* 3, 291–310. (R. F. Lax) **93h:14002** 14C05 (14H10)

— *see also* **Salvati Manni, Riccardo, 93m:14022**

Harris, Lawrence A. Linear fractional transformations of circular domains in operator spaces. *Indiana Univ. Math. J.* **41** (1992), *no.* 1, 125–147. (Daniel Alpay) **93c:47040** 47B49 (47A99, 47B50, 47B99, 47D15)

Harris, Michael (*with* Kudla, Stephen S.) The central critical value of a triple product L-function. *Ann. of Math.* (2) **133** (1991), *no.* 3, 605–672. (Dipendra Prasad) **93a:11043** 11F67 (11F27, 11F41, 11F70, 22E55)

— (*with* Kudla, Stephen S.) Arithmetic automorphic forms for the nonholomorphic discrete series of GSp(2). *Duke Math. J.* **66** (1992), *no.* 1, 59–121. (Stephen Gelbart) **93e:22023** 22E45 (11F70, 22E47)

— L-functions of 2×2 unitary groups and factorization of periods of Hilbert modular forms. *J. Amer. Math. Soc.* **6** (1993), *no.* 3, 637–719. (Hiroshi Saito) **93m:11043** 11F67 (11F27, 11F41, 11F70)

Harris, Morton E. (*with* Cliff, Gerald; Weiss, Alfred) Relative projectivity of representations of group-graded rings. *Arch. Math. (Basel)* **56** (1991), *no.* 6, 533–538. (Piotr Grzeszczuk) **93d:16058** 16W50 (16G99)

Harris, S. L. (*with* Ibrahim, E. Y.; Lovass-Nagy, Victor; Schilling, Robert J.) Minimum energy control of linear time-invariant systems with input derivatives. (English summary) *Internat. J. Systems Sci.* **23** (1992), *no.* 7, 1191–1200. 49N10 (93C10)

— (*with* Schilling, Robert J.; Lovass-Nagy, Victor) Tracking control of linear time-invariant descriptor systems. (English summary) *Internat. J. Systems Sci.* **23** (1992), *no.* 11, 1953–1963. (Summary) **93h:93036** 93C05 (93B51)

Harris, Steven Conformally stationary spacetimes. *Classical Quantum Gravity* **9** (1992), *no.* 7, 1823–1827. (Summary) **93c:83020** 83C20

Harris, William A., Jr. (*with* Sibuya, Yasutaka) Asymptotic behaviors of solutions of a system of linear ordinary differential equations as $t \to \infty$. *Delay differential equations and dynamical systems (Claremont, CA, 1990)*, 210–217, *Lecture Notes in Math.*, 1475, *Springer, Berlin*, 1991. (Leonid Yu. Motylev) **93k:34119** 34E05 (34A30)

Harrison, D. K. (*with* Deck, K.) Properties of fields. *J. Algebra* **143** (1991), *no.* 2, 470–486. (Franz B. Kalhoff) **93b:12008** 12F20 (12J10, 18B99)

Harrison, J. Michael (*with* Williams, Ruth J.) Brownian models of feedforward queueing networks: quasireversibility and product form solutions. *Ann. Appl. Probab.* **2** (1992), *no.* 2, 263–293. (Věra Lánská) **93d:60126** 60J60 (60J70, 60K25, 90B22)

— (*with* Nguyen, Viên) Brownian models of multiclass queueing networks: current status and open problems. (English summary) *Queueing Systems Theory Appl.* **13** (1993), *no.* 1-3, 5–40. (Summary) **93m:60185** 60K25 (90B22)

Harrison, Jeff (*with* West, Mike) Dynamic linear model diagnostics. *Biometrika* **78** (1991), *no.* 4, 797–808. (B. M. Pötscher) **93c:62148** 62M10 (62J20)

Harrison, Jenny (*with* Pugh, Charles C.) A remark on the loxodromic mapping conjecture. *Bull. Austral. Math. Soc.* **45** (1992), *no.* 3, 521–524. (Lian-Fa He) **93f:58208** 58F25

— (*with* Norton, Alec) The Gauss-Green theorem for fractal boundaries. *Duke Math. J.* **67** (1992), *no.* 3, 575–588. (J. Jarník) **93k:58031** 58C35 (26B20, 28A75, 49Q15)

Harrison, John (*with* Figala, Karin; Petzold, Ulrich) *De scriptoribus chemicis*: sources for the establishment of Isaac Newton's (al)chemical library. *The investigation of difficult things*, 135–179, *Cambridge Univ. Press, Cambridge*, 1992. (*see* **93g:01002**) 01A45

Harrison, M. C. *see* **Fiorot, J.-C., 93f:65023**

Harrison, Michael A. Proving nonmembership in certain families of context free languages. *Theoretical studies in computer science*, 15–71, *Academic Press, Boston, MA*, 1992. (*see* **93a:68009**) 68Q45

dimkpa-Harry, Sunday H. *see* **Dimkpa-Harry, Sunday H.**

Hart, Bradd (*with* Valeriote, Matthew A.) A structure theorem for strongly abelian varieties with few models. *J. Symbolic Logic* **56** (1991), *no.* 3, 832–852. (John T. Baldwin) **93a:03031** 03C05 (03C15, 03C45, 08B99)

Hart, Jeffrey D. (*with* Eubank, R. L.) Testing goodness-of-fit in regression via order selection criteria. (English summary) *Ann. Statist.* **20** (1992), *no.* 3, 1412–1425. (M. Hušková) **93k:62107** 62G10 (62E20, 62J02)

— (*with* Härdle, Wolfgang) A bootstrap test for positive definiteness of income effect matrices. (English summary) *Econometric Theory* **8** (1992), *no.* 2, 276–290. (A. L. Rukhin) **93h:62193** 62P20 (62G09, 62H15)

— (*with* Wehrly, Thomas E.) Kernel regression when the boundary region is large, with an application to testing the adequacy of polynomial models. (English summary) *J. Amer. Statist. Assoc.* **87** (1992), *no.* 420, 1018–1024. 62G05

Hart, M. R. (*with* Yu, Xingxing) On a problem of Hendry. *Discrete Math.* **102** (1992), *no.* 1, 107–108. (S. F. Kapoor) **93c:05080** 05C45

Hart, V. G. (*with* Shi, Jingyu) Joined dissimilar thin elastic tubes containing steady perfect flow. (English summary) *Z. Angew. Math. Phys.* **43** (1992), *no.* 6, 1038–1054. (Summary) **93i:73038** 73K70 (73G05, 73K10, 76B99)

— (*with* Shi, Jingyu) Joined dissimilar orthotropic elastic cylindrical membranes under internal pressure and longitudinal tension. (English summary) *J. Austral. Math. Soc. Ser. B* **34** (1993), *no.* 3, 296–317. (Summary) **93m:73018** 73K10 (73G05, 73P20)

Hart, W. D. On self-reference. *Reflexivity*, 213–218, *North-Holland, Amsterdam*, 1992. (*see* **93g:03005**) 03A05

Hart, W. E. (*with* Soesianto, F.) On the solution of highly structured nonlinear equations. *J. Comput. Appl. Math.* **40** (1992), *no.* 3, 285–296. (Summary) **93c:65067** 65H05

Harte, Robin E. On the punctured neighbourhood theorem. *Math. Z.* **207** (1991), *no.* 3, 391–394. (Jaroslav Zemánek) **93f:46072** 46H05

— Fredholm, Weyl and Browder theory. II. *Proc. Roy. Irish Acad. Sect. A* **91** (1991), *no.* 1, 79–88. (Mihai Putinar) **93e:47005** 47A10 (46H05, 46M99, 47A53)

— (*with* Eschmeier, Jörg; Fialkow, Lawrence A.; Magajna, Bojan; Mathieu, Martin; Smith, Roger R.) Open problems. *Elementary operators and applications* (*Blaubeuren*, 1991), 249–251, *World Sci. Publishing, River Edge, NJ*, 1992. (F.-H. Vasilescu) **93i:47043** 47B47 (01A67, 47–02)

— Exactness in elementary differential equations. *Panamer. Math. J.* **2** (1992), *no.* 2, 11–16. (D. Przeworska-Rolewicz) **93d:34026** 34A99 (47A05)

— Polar decomposition and the Moore-Penrose inverse. (English summary) *Panamer. Math. J.* **2** (1992), *no.* 4, 71–76. (Vladimir Rakočević) **93i:47003** 47A05 (46K05, 46L05, 47C15)

— (*with* Mbekhta, Mostafa) On generalized inverses in C^*-algebras. (English summary) *Studia Math.* **103** (1992), *no.* 1, 71–77. (Vladimir Rakočević) **93i:46097** 46L05 (16U99, 47A05, 47D25)

— (*with* Shannon, Gerry) On closed subspaces of operator ranges. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 1, 171–173. (Seymour Goldberg) **93f:47001** 47A05

— Taylor exactness and Kato's jump. *Proc. Amer. Math. Soc.* **119** (1993), *no.* 3, 793–801. (Mostafa Mbekhta) **93m:47020** 47A99 (47A13, 47B07)

van Harten, Aart On the validity of the Ginzburg-Landau equation. *J. Nonlinear Sci.* **1** (1991), *no.* 4, 397–422. (Mariarosaria Padula) **93b:76038** 76E30 (35Q35, 76F99)

Harten, Ami Recent developments in shock-capturing schemes. *Proceedings of the International Congress of Mathematicians, Vol. I, II* (*Kyoto*, 1990), 1549–1559, *Math. Soc. Japan, Tokyo*, 1991. (Long An Ying) **93c:65122** 65M99 (35L67, 76L05, 76M20)

— (*with* Cai, Wei; Gottlieb, David) Cell averaging Chebyshev methods for hyperbolic problems. *Comput. Math. Appl.* **24** (1992), *no.* 5-6, 37–49. (Summary) **93c:65118** 65M70

Harter, H. Leon ★ The chronological annotated bibliography of order statistics. Vol. IV. 1962–1963. With a foreword by Satya D. Dubey. American Sciences Press Series in Mathematical and Management Sciences, 20. *American Sciences Press, Columbus, OH*, 1991. viii+173 *pp. ISBN* 0-935950-22-2 (From the preface) **93c:62001a** 62–00 (00A15, 62G30)

— ★ The chronological annotated bibliography of order statistics. Vol. V. 1964–1965. With a foreword by Charles E. Antle. American Sciences Press Series in Mathematical and Management Sciences, 21. *American Sciences Press, Columbus, OH*, 1991. vi+180 *pp. ISBN* 0-935950-23-0 (From the preface) **93c:62001b** 62–00 (00A15, 62G30)

— ★ The chronological annotated bibliography of order statistics. Vol. VI. 1966–1967. With a foreword by N. Balakrishnan. American Sciences Press Series in Mathematical and Management Sciences, 22. *American Sciences Press, Columbus, OH*, 1991. vi+232 *pp. ISBN* 0-935950-24-9 (From the preface) **93c:62001c** 62–00 (00A15, 62G30)

— ★ The chronological annotated bibliography of order statistics. Vol. VII. 1968–1969. With a foreword by Lee J. Bain. American Sciences Press Series in Mathematical and Management Sciences, 23. *American Sciences Press, Columbus, OH*, 1992. vi+292 *pp. ISBN* 0-935950-25-7 (From the preface) **93c:62001d** 62–00 (00A15, 62G30)

Hartfiel, D. J. Sequential limits in Markov set-chains. *J. Appl. Probab.* **28** (1991), *no.* 4, 910–913. (Adolf Rhodius) **93a:60092** 60J10 (15A51)

Harthong, Jacques (*with* Reeb, Georges) Intuitionnisme 84. **[Intuitionism '84]** With comments by Harthong. *La mathématique non standard*, 213–273, *Fondem. Sci., CNRS, Paris*, 1989. (*see* **93c:01002**) 03A05 (01A60, 03–03)

— Une théorie du continu. [A theory of the continuum] *La mathématique non standard*, 307–329, *Fondem. Sci., CNRS, Paris*, 1989. (*see* **93c:01002**) 03H05 (01A05, 26–03, 26E35)

— *see also* **Nonstandard mathematics, 93c:01002**

Hartigan, J. A. (*with* Barry, Daniel) Product partition models for change point problems. *Ann. Statist.* **20** (1992), *no.* 1, 260–279. (Friedrich Liese) **93b:62122** 62M10

— (*with* Barry, Daniel) A Bayesian analysis for change point problems. (English summary) *J. Amer. Statist. Assoc.* **88** (1993), *no.* 421, 309–319. (Summary) **93k:62062** 62F15

Hartl, Johann Zur integration der Frénet-Gleichungen. (English summary) [On the integration of the Frénet equations] *Proceedings of the 3rd Congress of Geometry* (*Thessaloniki*, 1991), 187–193, *Aristotle Univ. Thessaloniki, Thessaloniki*, 1992. (W. J. Firey) **93e:53002** 53A04

Hartl, R. F. (*with* Mehlmann, A.; Novak, A.) Cycles of fear: periodic bloodsucking rates for vampires. (English summary) *J. Optim. Theory Appl.* **75** (1992), *no.* 3, 559–568. 92K99

— *see also* **Nonlinear methods in economic dynamics and optimal control, 93d:90004**

Hartle, James B. Progress in quantum cosmology. *General relativity and gravitation*, 1989 (*Boulder, CO*, 1989), 391–417, *Cambridge Univ. Press, Cambridge*, 1990. (*see* **93b:83002**) 83C45

— The quantum mechanics of cosmology. *Quantum cosmology and baby universes* (*Jerusalem*, 1989/1990), 65–157, *Jerusalem Winter School Theoret. Phys.*, 7, *World Sci. Publishing, River Edge, NJ*, 1991. (*see* **93h:83024**) 81P05 (83F05)

— (*with* Halliwell, Jonathan J.) Wave functions constructed from an invariant sum-over-histories satisfy constraints: three derivations of the Wheeler-DeWitt equation. *Quantum gravity* (*Moscow*, 1990), 92–123, *World Sci. Publishing, River Edge, NJ*, 1991. (Vladimir Soloviev) **93g:83049** 83C45 (81S40)

— Classical physics and Hamiltonian quantum mechanics as relics of the big bang. The birth and early evolution of our Universe (Gräftåvallen, 1990). *Phys. Scripta* **1991**, *Vol.* T36, 228–236. (Summary) **93b:83067** 83F05 (81P99)

— Quantum mechanics from the perspective of quantum cosmology. *Proceedings of the 4th Canadian Conference on General Relativity and Relativistic Astrophysics* (*Winnipeg, MB*, 1991), 108–109, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93b:83003**) 83C45

— *see also* **Quantum cosmology and baby universes, 93h:83024**

Hartley, Brian Finite and locally finite groups containing a small subgroup with small centralizer. *Groups, combinatorics & geometry* (*Durham*, 1990), 397–402, *London Math. Soc. Lecture Note Ser.*, 165, *Cambridge Univ. Press, Cambridge*, 1992. (*see* **93g:20001**) 20F50

— A general Brauer-Fowler theorem and centralizers in locally finite groups. *Pacific J. Math.* **152** (1992), *no.* 1, 101–117. (Gernot Stroth) **93b:20068** 20F28

Hartley, D. H. (*with* Tucker, R. W.) Extremal immersions and the extended frame bundle. *Geometry of low-dimensional manifolds*, 1 (*Durham*, 1989), 207–230, *London Math. Soc. Lecture Note Ser.*, 150, *Cambridge Univ. Press, Cambridge*, 1990. (Krzysztof Galicki) **93h:58004** 58A15 (53C42, 58A17, 58D10)

Hartman, Alan (*with* Colbourn, Charles J.) Intersections and supports of quadruple systems. *Discrete Math.* **97** (1991), *no.* 1-3, 119–137. (M. J. Grannell) **93a:05016** 05B05

— (*with* Assaf, Ahmed M.; Shalaby, Nabil) Packing designs with block size 6 and index 5. *Discrete Math.* **103** (1992), *no.* 2, 121–128. (R. N. Mohan) **93d:05018** 05B05 (05B40)

— (*with* Yehudai, Zvi) Intersections of Steiner quadruple systems. *Discrete Math.* **104** (1992), *no.* 3, 227–244. (Charles C. Lindner) **93g:05022** 05B07

Hartman, Stanisław *see* **Obituary: Hartman, Stanisław**

Hartmann, Christian (*with* Clerc, R.-L.) Normal forms and asymptotic methods for dynamical systems. (English summary) *European Conference on Iteration Theory* (*Batschuns*, 1989), 55–70, *World Sci. Publishing, River Edge, NJ*, 1991. (Richard C. Churchill) **93g:58129** 58F36 (34C20, 34C35, 34C37, 34E10, 58F25)

Hartmann, Erich (*with* Hoschek, Josef) Functional splines for interpolation, approximation, and blending of curves, surfaces, and solids. *Topics in surface modeling*, 53–76, *Geom. Des. Publ., SIAM, Philadelphia, PA*, 1992. (*see* **93c:65026**) 65D17 (65D07)

müller-Hartmann, Erwin *see* **Müller-Hartmann, Erwin**

Hartmann, Mark E. An improvement on Paulson's procedure for selecting the population with the largest mean from k normal populations with a common unknown variance. *Sequential Anal.* **10** (1991), *no.* 1-2, 1–16. (I. D. Dhariyal) **93c:62034** 62F07

— (*with* Cook, William J.; Kannan, Ravindran; McDiarmid, Colin J. H.) On integer points in polyhedra. *Combinatorica* **12** (1992), *no.* 1, 27–37. (Paul R. Scott) **93e:52025** 52B12 (11P21)

Hartnell, Bert L. (*with* Günther, Georg) On m-connected and k-neighbour-connected graphs. *Graph theory, combinatorics, and applications. Vol.* 2 (*Kalamazoo, MI*, 1988), 585–596, *Wiley-Intersci. Publ., Wiley, New York*, 1991. (Summary) **93b:05098** 05C40

— (*with* Kocay, William) On minimal neighbourhood-connected graphs. *Discrete Math.* **92** (1991), *no.* 1-3, 95–105. (Georg Günther) **93b:05080** 05C35 (05C40)

— (*with* Rall, Douglas F.) A characterization of trees in which no edge is essential to the domination number. (English summary) *Ars Combin.* **33** (1992), 65–76. (Summary) **93d:05129** 05C75 (05C05)

— (*with* Günther, Georg; Rall, Douglas F.) Critical β-stable graphs. Proceedings of the Twenty-first Manitoba Conference on Numerical Mathematics and Computing (Winnipeg, MB, 1991). *Congr. Numer.* **86** (1992), 55–64. (Summary) **93a:05105** 05C75

— (*with* Finbow, A.; Nowakowski, Richard J.) A characterization of well covered graphs of girth 5 or greater. (English summary) *J. Combin. Theory Ser. B* **57** (1993), *no.* 1, 44–68. (E. J. Janse van Rensburg) **93k:05126** 05C70

Hartsfield, Nora (*with* Archdeacon, Dan) Self-dual embeddings of complete bipartite graphs. *J. Combin. Theory Ser. B* **54** (1992), *no.* 2, 249–256. (Saul Stahl) **93b:05046** 05C10

— (*with* Smyth, W. F.) The sum number of complete bipartite graphs. (English summary) *Graphs, matrices, and designs*, 205–211, *Lecture Notes in Pure and Appl. Math.*, 139, *Dekker, New York*, 1993. (David Burns) **93m:05173** 05C78

Hartung, Gerd A topological representation of lattices. *Algebra Universalis* **29** (1992), *no.* 2, 273–299. (Marcel Erné) **93e:06005** 06B15 (06E15)

Hartvigsen, David (*with* Mardon, Russell) Cycle bases from orderings and coverings. *Discrete Math.* **94** (1991), *no.* 2, 81–94. (Brian Alspach) **93b:05091** 05C38

— (*with* Zemel, Eitan) The complexity of lifted inequalities for the knapsack problem. (English summary) *Discrete Appl. Math.* **39** (1992), *no.* 2, 113–123. (Peter Butkovič) **93j:90066** 90C10 (68Q25, 90C27)

— Recognizing Voronoĭ diagrams with linear programming. (English summary) *ORSA J. Comput.* **4** (1992), *no.* 4, 369–374. (Summary) **93h:90056** 90C05 (90C35)

— (*with* Mardon, Russell) When do short cycles generate the cycle space? (English summary) *J. Combin. Theory Ser. B* **57** (1993), *no.* 1, 88–99. (S. F. Kapoor) **93j:05093** 05C38 (05C85, 68R10)

Hartwig, Karl-Heinz (*with* Weinelt, Wilfried; Goncharov, A. L.; Fryazinov, I. V.) Numerical methods for solving the problem of injection of plastic into thin forms. (Russian. Russian summary) *Zh. Vychisl. Mat. i Mat. Fiz.* **32** (1992), *no.* 11, 1790–1802; *translation in*

Comput. Math. Math. Phys. **32** (1992), *no.* 11, 1617–1628 (1993). (From the introduction) **93k:76031** 76D05 (65P05, 73E50, 76M25, 76M30)

Hartwig, Robert E. (*with* Loewy, Raphael) Maximal elements under the three partial orders. (English summary) *Linear Algebra Appl.* **175** (1992), 39–61. (John Maroulas) **93i:15035** 15A99

— (*with* Mitra, Sujit Kumar) Partial orders based on outer inverses. (English summary) *Linear Algebra Appl.* **176** (1992), 3–20. (Vladimir Rakočević) **93m:15008** 15A09 (15A06, 15A24)

Haruki, Hiroshi A new characterization of Möbius transformations. (English summary) *Math. Notae* **34** (1990), 55–63. (K. S. Padmanabhan) **93k:30016** 30C45

— A new cosine functional equation. *The mathematical heritage of C. F. Gauss*, 334–341, *World Sci. Publishing, River Edge, NJ*, 1991. (F. W. Carroll) **93a:39018** 39B22 (30D05)

— (*with* Baran, Mirosław) On two new functional equations for generalized Joukowski transformations. *Ann. Polon. Math.* **56** (1991), *no.* 1, 79–85. (F. W. Carroll) **93c:39004** 39B32 (30D05)

Haruki, Shigeru (*with* Nakagiri, Shin-ichi) Optimization of initial functions for linear retarded systems in Banach spaces. *Funkcial. Ekvac.* **35** (1992), *no.* 1, 179–198. (N. U. Ahmed) **93e:49035** 49K25 (47N10)

Harun-ar Rashid, A. M. (*with* Fronsdal, C.; Flato, Moshé) Three-D singletons and 2-D C.F.T. *Internat. J. Modern Phys. A* **7** (1992), *no.* 10, 2193–2206. (Summary) **93e:81072** 81T13 (81T40)

Harvald, Bent (*with* Anderson, Jon E.; Louis, Thomas A.; Holm, Niels V.) Time-dependent association measures for bivariate survival distributions. (English summary) *J. Amer. Statist. Assoc.* **87** (1992), *no.* 419, 641–650. (Summary) **93f:62133** 62N05 (62P10)

Harvey, A. P. (*with* Craine, R. E.; Syngellakis, S.) Propagation of nonlinear surface acoustic waves on elastic and piezoelectric solids. (English summary) Elastic waves and related topics (Dublin, 1991). *J. Mech. Phys. Solids* **40** (1992), *no.* 7, 1529–1542. (Summary) **93h:73015** 73D20 (73B40, 73D35, 73R05)

— (*with* Tupholme, G. E.) Propagation of anisotropic elastic and piezoelectric nonlinear surface acoustic waves. (English summary) Nonlinear waves in solids (Washington, DC, 1991). *Wave Motion* **16** (1992), *no.* 2, 125–135. (Summary) **93g:73041** 73D20 (73B40, 73R05)

Harvey, Andrew (*with* Streibel, Mariane) Estimation of simultaneous equation models with stochastic trend components. (English summary) *J. Econom. Dynamics Control* **17** (1993), *no.* 1-2, 263–287. (Summary) **93j:62250** 62P20

Harvey, F. Reese *see* **Harvey, Reese**

Harvey, Jeffrey A. Conformal field theory in string theory. *Constructive quantum field theory, II* (*Erice*, 1988), 307–325, *NATO Adv. Sci. Inst. Ser. B Phys.*, 234, *Plenum, New York*, 1990. (*see* **93g:81074**) 81T40 (81T30)

— (*with* Callan, Curtis G., Jr.; Strominger, Andrew) Worldbrane actions for string solitons. *Nuclear Phys. B* **367** (1991), *no.* 1, 60–82. (Raiko Zaikov) **93b:81205** 81T30

— (*with* Gregory, Ruth) Quantum fermion hair. (English summary) *Phys. Rev. D* (3) **46** (1992), *no.* 8, 3302–3308. (Summary) **93f:83056** 83C57 (81T20, 81V17, 83F05)

— (*with* Gregory, Ruth) Black holes with a massive dilaton. (English summary) *Phys. Rev. D* (3) **47** (1993), *no.* 6, 2411–2422. (Summary) **93m:83051** 83C57

Harvey, Reese (*with* Semmes, Stephen W.) Zero divisors of atomic functions. *Ann. of Math.* (2) **135** (1992), *no.* 3, 567–600. (Y. Yomdin) **93g:58003** 58A25 (49Q15, 58C35)

— (*with* Dadok, Jiri) Calibrations and spinors. *Acta Math.* **170** (1993), *no.* 1, 83–120. (Timothy Murdoch) **93m:53053** 53C40 (53A50)

Harvey, W. J. (*with* González Díez, G.) Moduli of Riemann surfaces with symmetry. *Discrete groups and geometry* (*Birmingham*, 1991), 75–93, *London Math. Soc. Lecture Note Ser.*, 173, *Cambridge Univ. Press, Cambridge*, 1992. (I. Kra) **93k:32042** 32G15 (14J15, 30F10, 32J25)

— *see also* **Discrete groups and geometry, 93f:20002**

Harvey, William D. (*with* Ginsberg, Matthew L.) Iterative broadening. *Artificial Intelligence* **55** (1992), *no.* 2-3, 367–383. (Summary) **93c:68015** 68P10

Harville, David A. (*with* Carriquiry, Alicia L.) Classical and Bayesian prediction as applied to an unbalanced mixed linear model. (English and French summaries) *Biometrics* **48** (1992), *no.* 4, 987–1003. 62J05 (62F15, 62P10)

— (*with* Jeske, Daniel R.) Mean squared error of estimation or prediction under a general linear model. (English summary) *J. Amer. Statist. Assoc.* **87** (1992), *no.* 419, 724–731. (A. L. Nagar) **93j:62173** 62J05

Harzheim, Egbert Separation theorems for mappings preserving disjointness of covering sets. *Contemporary methods in graph theory*, 371–381, *Bibliographisches Inst., Mannheim*, 1990. (From the text) **93f:05029** 05B40

Hasan, M. Anwarul (*with* Wang, Muzhong; Bhargava, Vijay K.) Modular construction of low complexity parallel multipliers for a class of finite fields GF(2^m). (English summary) *IEEE Trans. Comput.* **41** (1992), *no.* 8, 962–971. 68M07

— (*with* Bhargava, Vijay K.) Bit-serial systolic divider and multiplier for finite fields GF(2^m). (English summary) *IEEE Trans. Comput.* **41** (1992), *no.* 8, 972–980. 68M07

Hasan, Mohamed R. (*with* Aljarrah, Radwan) Interpolation of entire functions associated with some Freud weights. I. (English summary) *J. Approx. Theory* **71** (1992), *no.* 2, 123–137. (Franz Peherstorfer) **93k:41004** 41A05 (41A55)

Hasan, N. (*with* Cottingham, W. N.) The fall of the sphaleron. (English summary) *Nuclear Phys. B* **392** (1993), *no.* 1, 39–57. (Summary) **93j:81112** 81V15 (81V22)

Hasan, S. (*with* Dodson, M. M.) Systems of linear forms and covers for star bodies. *Acta Arith.* **61** (1992), *no.* 2, 119–127. (F. Schweiger) **93g:11078** 11J83 (11K55)

Hasan Shahid, M. *see* **Shahid, M. Hasan**

Haščák, Alexander On the relationship between the initial- and the multipoint boundary value problems for nth order linear differential equations with delay. (English summary) *Arch. Math.* (*Brno*) **26** (1990), *no.* 4, 207–213. (S. K. Ntouyas) **93g:34103** 34K05 (34K10)

Hasegawa, Hiroshi H. (*with* Saphir, William C.) Decaying eigenstates for simple chaotic systems. *Phys. Lett. A* **161** (1992), *no.* 6, 471–476. (Si Ming Zhu) **93d:58095** 58F13 (34C35)

— (*with* Driebe, Dean J.) Transport as a dynamical property of a simple map. (English summary) *Phys. Lett. A* **168** (1992), *no.* 1, 18–24. (Summary) **93d:58096** 58F13 (82C70)

— (*with* Saphir, William C.) Spectral representations of the Bernoulli map. (English summary) *Phys. Lett. A* **171** (1992), *no.* 5-6, 317–322. (Remo Badii) **93j:58078** 58F11 (82C03)

— (*with* Saphir, William C.) Unitarity and irreversibility in chaotic systems. (English summary) *Phys. Rev. A* (3) **46** (1992), *no.* 12, 7401–7423. (Viviane Baladi) **93k:58179** 58F19 (58F13)

Hasegawa, Hisao (*with* Lee, Ven-Gen; Mura, Toshio) Green's functions for axisymmetric problems of dissimilar elastic solids. (English summary) *Trans. ASME J. Appl. Mech.* **59** (1992), *no.* 2, *part* 1, 312–320. (Summary) **93e:73009** 73C02 (73B27)

Hasegawa, Kenji Subelliptic estimates for the $\overline{\partial}$-Neumann problem on certain weakly pseudo-convex domains. *J. Fac. Sci. Univ. Tokyo Sect. IA Math.* **39** (1992), *no.* 3, 385–418. (Der-Chen E. Chang) **93i:32021** 32F20 (35N15)

Hasegawa, T. *see* **Hasegawa, Toshiharu**

Hasegawa, Takemitsu (*with* Sugiura, Hiroshi; Torii, Tatsuo) Positivity of the weights of extended Clenshaw-Curtis quadrature rules. (English summary) *Math. Comp.* **60** (1993), *no.* 202, 719–734. (Ezio Venturino) **93h:65032** 65D30 (65D32)

Hasegawa, Toshiharu (*with* Takine, Tetsuya) Average waiting time of a symmetric polling system under Bernoulli scheduling. *Oper. Res. Lett.* **10** (1991), *no.* 9, 535–539. (Summary) **93b:90034** 90B35 (60K25)

— (*with* Takine, Tetsuya) On the $M/G/1$ queue with multiple vacations and gated service discipline. (English summary) *J. Oper. Res. Soc. Japan* **35** (1992), *no.* 3, 217–235. (Summary) **93j:60151** 60K25 (90B22)

— (*with* Takine, Tetsuya) A generalization of the decomposition property in the $M/G/1$ queue with server vacations. (English summary) *Oper. Res. Lett.* **12** (1992), *no.* 2, 97–99. (Summary) **93j:60152** 60K25 (90B22)

— (*with* Takine, Tetsuya) A cyclic-service finite source model with round-robin scheduling. (English summary) *Queueing Systems Theory Appl.* **11** (1992), *no.* 1-2, 91–108. (Summary) **93g:60201** 60K25 (68M20, 90B35)

— (*with* Ko, Hong Seung; Takine, Tetsuya; Takahashi, Yutaka[3]) Performance analysis of a flexible manufacturing cell with waiting storage. (English and Polish summaries) *Systems Sci.* **18** (1992), *no.* 1-2, 27–36 (1993). 90B22

— (*with* Takine, Tetsuya; Takagi, Hideaki) Analysis of an $M/G/1/K/N$ queue. (English summary) *J. Appl. Probab.* **30** (1993), *no.* 2, 446–454. (Summary) **93m:60190** 60K25 (90B22)

Hasegawa, Yukiko A remark on the C^∞-Goursat problem. II. *Publ. Res. Inst. Math. Sci.* **28** (1992), *no.* 2, 207–222. (Xavier Saint Raymond) **93g:35021** 35E15 (35A05)

Hasenfratz, P. (*with* Niedermayer, F.) Exact mass gap and the thermodynamic Bethe ansatz for the O(N) σ-model. *Nonperturbative methods in low-dimensional quantum field theories* (*Debrecen*, 1990), 407–411, *World Sci. Publishing, River Edge, NJ*, 1991. (*see* **93f:81005**) 81T18 (81T27)

Hashem, Huda (*with* Deshmukh, Sharief; Ghazal, Tahsin) Submersions of CR-submanifolds on an almost Hermitian manifold. (English summary) *Yokohama Math. J.* **40** (1992), *no.* 1, 45–57. (Bang-yen Chen) **93h:53058** 53C40 (53C55)

Hashem, S. (*with* Seif, N. P.; Deif, A. S.) Bounding the eigenvectors for symmetric interval matrices. *Z. Angew. Math. Mech.* **72** (1992), *no.* 3, 233–236. (Summary) **93a:65055** 65F15 (15A18, 65G10, 90C05)

Hashemi, H. R. *see* **Veeravalli, Venugopal V., 93c:62018**

Hashiguchi, Kosaburo The double reconstruction conjecture about finite colored hypergraphs. *J. Combin. Theory Ser. B* **54** (1992), *no.* 1, 64–76. (William L. Kocay) **93i:05094** 05C60 (05C65)

— (*with* Yoo, Heekeun) Extended regular expressions of arbitrary star degrees. *Theoret. Comput. Sci.* **97** (1992), *no.* 2, 217–231. (J. Calvert) **93h:68074** 68Q45

Hashiguchi, Masao (*with* Nishimura, Shin-ichi) On the Gaussian curvature of the indicatrix of a Lagrange space. *Rep. Fac. Sci. Kagoshima Univ. Math. Phys. Chem. No.* 24 (1991), 33–41. (Aurel Bejancu) **93h:53022** 53B40

— (*with* Atanasiu, Gheorghe) Structures presque tangentes sur fibrés vectoriels. [Almost tangent structures on vector bundles] *Mathematica* (*Cluj*) **34(57)** (1992), *no.* 1, 17–21. (Andrzej Bucki) **93j:53041** 53C15

Hashiguchi, Norikazu PL-representations of Anosov foliations. (English and French summaries) *Ann. Inst. Fourier* (*Grenoble*) **42** (1992), *no.* 4, 937–965. (Athanase Papadopoulos) **93k:57058** 57R30 (57R32, 58F15, 58F18)

— (*with* Minakawa, H.) Continuous variation of the discrete Godbillon-Vey invariant. (English summary) *J. Fac. Sci. Univ. Tokyo Sect. IA Math.* **39** (1992), *no.* 2, 271–278. (V. V. Solodov) **93h:57045** 57R32 (57R30)

Hashim, G. (*with* Rachid, A.; Humbert, C.) Aggregation method for model reduction via Schur decomposition. (English summary) *Mathematical and intelligent models in system simulation, I, II* (*Brussels*, 1990), 11–16, *IMACS Ann. Comput. Appl. Math.*, 10, 11, *Baltzer, Basel*, 1991. (*see* **93c:93005**) 93B11 (93C05)

al-Hashimi, Basil Atta *see* **Al-Hashimi, Basil Atta**

Hashimoto, Hideki (*with* Xu, Jian Xin) Parameter identification methodologies based on variable structure control. (English summary) *Internat. J. Control* **57** (1993), *no.* 5, 1207–1220. 93B30 (93B12)

Hashimoto, Hiroshi (*with* Akizuki, Kageo) Global convergence of implicit STC. (English summary) *Systems and control*, 85–96, *Mita, Tokyo*, 1991. (Summary) **93h:93072** 93E03 (93B52, 93E25)

Hashimoto, K. (*with* Kurata, Yoshiki) On dual-bimodules. *Tsukuba J. Math.* **16** (1992), *no.* 1, 85–105. (J. L. García Hernández) **93i:16004** 16D20 (16D90)

Hashimoto, K. (*with* Kimoto, T.; Ebine, T.; Kimura, Hidenori) Image-based dynamic visual servo for a hand-eye manipulator. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, II* (*Kobe*, 1991), 609–614, *Mita, Tokyo*, 1992. (*see* **93g:93006**) 93C85

Hashimoto, Mitsuyasu Resolutions of determinantal ideals: t-minors of $(t+2)\times n$ matrices. *J. Algebra* **142** (1991), *no.* 2, 456–491. (Piotr Pragacz) **93a:13006** 13C40 (14M12, 20G05)

— Algebra structures of Koszul complexes defined by Yang-Baxter operators. *J. Pure Appl. Algebra* **71** (1991), *no.* 2-3, 157–173. (J. Stasheff) **93b:18018** 18G10 (16W30)

— (*with* Kurano, Kazuhiko) Resolutions of determinantal ideals: n-minors of $(n+2)$-square matrices. *Adv. Math.* **94** (1992), *no.* 1, 1–66. (José F. Andrade) **93f:13008** 13C40 (13D25, 14M12, 20G05)

— (*with* Hibi, Takayuki; Noma, Atsushi) Divisor class groups of affine semigroup rings associated with distributive lattices. *J. Algebra* **149** (1992), *no.* 2, 352–357. (Jonathan Leech) **93d:13034** 13F50 (13C20, 20M25)

Hashimoto, Takashi (*with* Ogura, Kazunori; Okamoto, Kiyosato; Sawae, Ryuichi) Kirillov-Kostant theory and Feynman path integrals on coadjoint orbits of SU(2) and SU(1, 1). (English summary) *Infinite analysis, Part A, B (Kyoto, 1991)*, 377–390, *Adv. Ser. Math. Phys.*, 16, *World Sci. Publishing, River Edge, NJ*, 1992. (Henrik Aratyn) **93j:58022** 58D30 (22E70, 58F05, 81R05, 81S40)

Hashimoto, Y. *see* **Hashimoto, Yukio**

Hashimoto, Yoshihiro (*with* Yoneya, Akihiko; Togari, Yoshitaka) Model following controller with specified sensitivity function. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 10, 1582–1584. 93B35

Hashimoto, Yukio (*with* Iwasawa, K.; Marumori, T.; Sakata, F.) A microscopic theory of dissipative nuclear collective motions. *Thermal field theories (Ibaraki, 1990)*, 223–231, *North-Holland Delta Ser., North-Holland, Amsterdam*, 1991. (Summary) **93a:81215** 81V35

Hashin, Zvi Extremum principles for elastic heterogenous media with imperfect interfaces and their application to bounding of effective moduli. *J. Mech. Phys. Solids* **40** (1992), *no.* 4, 767–781. (Introduction) **93b:73006** 73B27 (73K20)

Hasiewicz, Zbigniew (*with* Defever, Filip; Troost, W.) Superconformal algebras with $N = 5, 6, 7, 8$. I, II. *Classical Quantum Gravity* **8** (1991), *no.* 2, 253–256, 257–261. (From the text) **93c:81065** 81R10 (17A70, 81R25)

— (*with* Siemion, Przemyslaw; Defever, Filip) A bosonic model for particles with arbitrary spin. (English summary) *Internat. J. Modern Phys. A* **7** (1992), *no.* 17, 3979–3996. (W. Cox) **93h:81051** 81R20

Haskell, Deirdre A transfer theorem in constructive p-adic algebra. *Ann. Pure Appl. Logic* **58** (1992), *no.* 1, 29–55. (B. H. Mayoh) **93e:03081** 03F65 (11U99)

Haskell, P. (*with* Fox, Jeffrey S.) K-theory and the spectrum of discrete subgroups of spin(4, 1). *Operator algebras and topology (Craiova, 1989)*, 30–44, *Pitman Res. Notes Math. Ser.*, 270, *Longman Sci. Tech., Harlow*, 1992. (Alain Valette) **93m:46087** 46L80 (19K35, 22D25)

Hasler, Martin Topological methods for the qualitative analysis of nonlinear circuits. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, II (Kobe, 1991)*, 483–488, *Mita, Tokyo*, 1992. (*see* **93g:93006**) 94C05

Häsler-Richter, Karin *see* **Ergodic theory and related topics, 93c:28002**

Haslett, John (*with* Horgan, Graham) Linear discriminant analysis in image restoration and the prediction of error rate. (English summary) *Spatial statistics and imaging (Brunswick, ME, 1988)*, 112–129, *IMS Lecture Notes Monograph Ser.*, 20, *Inst. Math. Statist., Hayward, CA*, 1991. (*see* **93g:62004**) 62H30 (62M30, 68U10)

Haslinger, Jaroslav (*with* Panagiotopoulos, P. D.) Optimal control of hemivariational inequalities. Continuous case. *Estimation and control of distributed parameter systems (Vorau, 1990)*, 149–160, *Internat. Ser. Numer. Math.*, 100, *Birkhäuser, Basel*, 1991. (W. Schirotzek) **93g:49011** 49J40 (49J52)

— Shape optimization in unilateral boundary value problems. *Unilateral problems in structural analysis, IV (Capri, 1989)*, 51–55, *Internat. Ser. Numer. Math.*, 101, *Birkhäuser, Basel*, 1991. (*see* **93a:73001**) 49Q10 (73K40)

— (*with* Panagiotopoulos, P. D.) Optimal control and identification of structures involving multivalued nonmonotonicities. Existence and approximation results. *European J. Mech. A Solids* **11** (1992), *no.* 4, 425–445. (Pekka Neittaanmäki) **93e:73029** 73K50 (49J40, 73K99, 73T05, 73V25)

— (*with* Neittaanmäki, Pekka; Salmenjoki, K.) Sensitivity analysis for discretized unilateral plane elasticity problem. (English summary) *Finite Elem. Anal. Des.* **12** (1992), *no.* 1, 13–25. (Bernard Rousselet) **93j:73058** 73K40 (49Q12, 73C02, 73T05, 73V05, 73V25)

— Signorini problem with Coulomb's law of friction. Shape optimization in contact problems. The Second World Congress of Computational Mechanics, Part I (Stuttgart, 1990). *Internat. J. Numer. Methods Engrg.* **34** (1992), *no.* 1, 223–231. (Meir Shillor) **93f:73093** 73T05 (73K40, 73V05)

— (*with* Miettinen, M.) Approximation of optimal control problems of hemivariational inequalities. *Numer. Funct. Anal. Optim.* **13** (1992), *no.* 1-2, 43–68. (P. D. Panagiotopoulos) **93i:49014** 49J40 (49M25, 65K10)

— (*with* Panagiotopoulos, P. D.) On the dual reciprocal variational approach to the Signorini-Fichera problem. Convex and nonconvex generalization. (English, German and Russian summaries) *Z. Angew. Math. Mech.* **72** (1992), *no.* 10, 497–506. (Inna Sharf) **93m:49007** 49J40 (35J85, 73C99, 73K20, 73T05, 73V25)

Hassad, H. (*with* Mehdi, D.; Humbert, C.) On the stability of the generalized predictive control. (English summary) *Mathematics of the analysis and design of process control (Dublin, 1991/Lille, 1991)*, 465–471, *North-Holland, Amsterdam*, 1992. (*see* **93g:93004**) 93C15

Hassairi, Abdelhamid La classification des familles exponentielles naturelles sur $\mathbf{R}^n$ par l'action du groupe linéaire de $\mathbf{R}^{n+1}$. (English and French summaries) [Classification of natural exponential families in $\mathbf{R}^n$ by the action of the linear group in $\mathbf{R}^{n+1}$] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 2, 207–210. (Summary) **93i:60023** 60E05 (62E10)

Hassan, A. A. M. (*with* Zayed, E. M. E.; Kishta, M. A.) The wave equation approach to an inverse problem for a general convex domain: an extension to higher dimensions. (English summary) *Bull. Calcutta Math. Soc.* **82** (1990), *no.* 6, 457–474. (P. Günther) **93m:35136** 35P20 (35R30, 58G18)

— (*with* Abdel Halim, I. H.) Some asymptotic formulae for doubly connected regions. *J. Math. Phys. Sci.* **25** (1991), *no.* 4, 375–402. (Summary) **93c:35119** 35P20 (35J05, 58G18, 58G25)

Hassan, Hytham R. (*with* Naoum, Adil G.; Al-Hashimi, Basil Atta) Maximal, prime and primary submodules of finitely generated multiplication modules. (English and Arabic summaries) *Dirāsat Ser. B Pure Appl. Sci.* **18** (1991), *no.* 1, 7–17. (Jian-Pan Wang) **93j:13015** 13C13

Hassan, I. M. Strongly nonlinear elliptic variational inequalities with nonlocal boundary conditions. *Ann. Univ. Sci. Budapest. Eötvös Sect. Math.* **34** (1991), 155–166 (1992). (Igor Bock) **93e:35043** 35J85 (49J40)

Hassan, O. (*with* Morgan, Kenneth; Peraire, J.) Finite-element solution scheme for compressible viscous flow. *Finite elements in fluids, Vol. 8 (Huntsville, AL, 1989)*, 47–73, *Ser. Comput. Phys. Process. Mech. Thermal Sci., Hemisphere, Washington, DC*, 1992. (*see* **93e:76050**) 76M10 (65M60, 76N10)

al-Hassan, Qassem M. *see* **Al-Hassan, Qassem M.**

Hassan, S. F. (*with* Sen, Ashoke) Twisting classical solutions in heterotic string theory. *Nuclear Phys. B* **375** (1992), *no.* 1, 103–118. (Summary) **93b:81216** 81T30

Hassan, Tawfik (*with* El-Helbawy, Abdalla T.) Some direct methods for testing hypotheses in 2^n factorial paired comparison models. (English summary) *Proc. Pakistan Acad. Sci.* **29** (1992), *no.* 2, 127–143. 62J15 (62K15)

Hassanabadi, A. Mohammadi (*with* Lennox, John C.; Wiegold, James) Some commutativity criteria. II. *Rend. Sem. Mat. Univ. Padova* **86** (1991), 207–211 (1992). (J. R. J. Groves) **93a:20066** 20F99 (20M99)

Hassanein, Khatab M. (*with* Saleh, A. K. Md. Ehsanes; Brown, Edward F.) Linear estimation and test of quantiles of Cauchy distribution based on selected order statistics. (English summary) *Soochow J. Math.* **18** (1992), *no.* 3, 301–312. 62G30 (62G20)

Hassani, Souad Ameziane Construction d'un exemple d'anneau de Jaffard local factoriel non noethérien de dimension 2 et de caractéristique 0. [Construction of a two-dimensional non-Noetherian factorization local Jaffard ring of characteristic 0] *C. R. Math. Rep. Acad. Sci. Canada* **14** (1992), *no.* 1, 49–54. (J. W. Brewer) **93b:13011** 13B99

Hassard, Brian (*with* Jiang, Katie) Unfolding a point of degenerate Hopf bifurcation in an enzyme-catalyzed reaction model. (English summary) *SIAM J. Math. Anal.* **23** (1992), *no.* 5, 1291–1304. (Summary) **93f:34065** 34C23 (58F14, 92E20)

Hassell, Andrew The Yang-Mills-Higgs heat flow on $\mathbf{R}^3$. (English summary) *J. Funct. Anal.* **111** (1993), *no.* 2, 431–448. (Wei Yue Ding) **93m:58023** 58E15 (58G11)

Hassenforder, Claudie A study of some stationary Gaussian processes indexed by the homogeneous tree. *Probability measures on groups, X (Oberwolfach, 1990)*, 177–188, *Plenum, New York*, 1991. (Steven N. Evans) **93g:60076** 60G15 (60B99, 60G60)

Hassenpflug, W. C. Matrix tensor notation. I. Rectilinear orthogonal coordinates. (English summary) *Comput. Math. Appl.* **26** (1993), *no.* 3, 55–93. 00A35 (15–01)

— Revised notation for partial derivatives. (English summary) *Comput. Math. Appl.* **26** (1993), *no.* 3, 95–105. 00A35 (26–01)

Hassin, Refael Approximation schemes for the restricted shortest path problem. *Math. Oper. Res.* **17** (1992), *no.* 1, 36–42. (Ştefan Ţigan) **93b:90102** 90C35 (90B35)

— (*with* Anily, S.) The swapping problem. *Networks* **22** (1992), *no.* 4, 419–433. (Summary) **93c:05057** 05C35 (05C85, 68R10, 90B10)

— Algorithms for the minimim cost circulation problem based on maximizing the mean improvement. (English summary) *Oper. Res. Lett.* **12** (1992), *no.* 4, 227–233. (Summary) **93g:90084** 90C35 (90C10)

— (*with* Tamir, Arie) Minimal length curves that are not embeddable in an open planar set: the problem of a lost swimmer with a compass. *SIAM J. Control Optim.* **30** (1992), *no.* 3, 695–703. (Lawrence D. Stone) **93d:90028** 90B40 (52A40)

— (*with* Haviv, Moshe) Mean passage times and nearly uncoupled Markov chains. *SIAM J. Discrete Math.* **5** (1992), *no.* 3, 386–397. (G. Louchard) **93m:60146** 60J10

Hasslacher, Brosl (*with* Meyer, David A.) Lattice gases and exactly solvable models. (English summary) Advanced Research Workshop on Lattice Gas Automata (Nice, 1991). *J. Statist. Phys.* **68** (1992), *no.* 3-4, 575–590. (Ladislav Šamaj) **93j:82046** 82C20 (82C23)

Hassler, U. Unit root tests: the autoregressive approach in comparison with the periodogram regression. (English summary) *Statist. Papers* **34** (1993), *no.* 1, 67–82. 62M10

Hassouni, A. Quasimonotone multifunctions; applications to optimality conditions in quasiconvex programming. (English summary) *Numer. Funct. Anal. Optim.* **13** (1992), *no.* 3-4, 267–275. (Longin Rybiński) **93j:49016** 49J52 (49J40, 90C26, 90C48)

Håstad, Johan (*with* Alon, Noga; Goldreich, Oded; Peralta, René) Simple constructions of almost k-wise independent random variables. *31st Annual Symposium on Foundations of Computer Science, Vol. I, II (St. Louis, MO, 1990)*, 544–553, *IEEE Comput. Soc. Press, Los Alamitos, CA*, 1990. (Summary) **93a:65008** 65C10 (65U05, 68Q25)

— (*with* Goldmann, Mikael) On the power of small-depth threshold circuits. *Comput. Complexity* **1** (1991), *no.* 2, 113–129. (Frederic Green) **93e:68025** 68Q20 (68R10)

— (*with* Aiello, William) Relativized perfect zero knowledge is not BPP. *Inform. and Comput.* **93** (1991), *no.* 2, 223–240. (M. V. D. Burmester) **93b:68076** 68T15

— (*with* Goldmann, Mikael) A simple lower bound for monotone clique using a communication game. *Inform. Process. Lett.* **41** (1992), *no.* 4, 221–226. (Summary) **93a:68115** 68R10 (68Q25, 94C10)

— (*with* Alon, Noga; Goldreich, Oded; Peralta, René) Simple constructions of almost k-wise independent random variables. *Random Structures Algorithms* **3** (1992), *no.* 3, 289–304. (Summary) **93k:94006a** 94A55 (65C10, 68Q30)

— (*with* Alon, Noga; Goldreich, Oded; Peralta, René) Addendum to: "Simple constructions of almost k-wise independent random variables". *Random Structures Algorithms* **4** (1993), *no.* 1, 119–120. (From the text) **93k:94006b** 94A55 (65C10, 68Q30)

Hastings, Alan McKendrick-Von Foerster models for patch dynamics. *Differential equations models in biology, epidemiology and ecology (Claremont, CA, 1990)*, 189–199, *Lecture Notes in Biomath.*, 92, *Springer, Berlin*, 1991. (*see* **93g:92001**) 92D40 (92D20)

Hastings, Kevin J. Impulse control of portfolios with jumps and transaction costs. *Comm. Statist. Stochastic Models* **8** (1992), *no.* 1, 59–72. (Thomas W. Epps) **93b:90017** 90A09 (93E20)

Hastings, Stuart P. (*with* Fife, Paul C.; Lu, Chun Qing) An asymptotic and rigorous study of flames with reversible chain branching. *Asymptotic Anal.* **5** (1991), *no.* 1, 1–26. (Riccardo Ricci) **93a:80009** 80A25 (34E15, 80A32)

— (*with* McLeod, J. Bryce) On the periodic solutions of a forced second-order equation. *J. Nonlinear Sci.* **1** (1991), *no.* 2, 225–245. (Mikhail Zaks) **93e:34060a** 34C25 (34C37, 35Q35, 58F22, 76B15)

— (*with* Troy, William C.) A shooting approach to the Lorenz equations. *Bull. Amer. Math. Soc. (N.S.)* **27** (1992), *no.* 2, 298–303. (Timothy Sauer) **93f:58150** 58F13 (34C99, 65L99)

— (*with* Lu, Chun Qing; MacGillivray, A. Dean) Asymptotic behaviour of solutions of a similarity equation for laminar flows in channels with porous walls. (English summary) *IMA J. Appl. Math.* **49** (1992), *no.* 2, 139–162. (William H. H. Banks) **93h:76020** 76D05 (34E99)

— *see also* **Kaper, Tasso J., 93e:34060b**

Hata, Hiroki (*with* Inoue, Masayoshi; Anai, Hirokazu; Fujisaka, Hirokazu) Synchronized states in asymmetric coupled map systems. *Progr. Theoret. Phys.* **87** (1992), *no.* 1, 103–110. (Summary) **93g:58075** 58F10 (58F14)

Hata, Hiroyuki (*with* Maeno, Masahiro) General covariance in pre-geometrical string field theory. *Nuclear Phys. B* **364** (1991), *no.* 1, 85–108. (Akira Asada) **93b:81217** 81T30 (81T70)

— Jacobi identity anomaly in closed string field theory. *Progr. Theoret. Phys.* **86** (1991), *no.* 5, 1111–1127. (Tsou Sheung Tsun) **93d:81139** 81T30

Hata, Masayoshi Irrationality measures of the values of hypergeometric functions. *Acta Arith.* **60** (1992), *no.* 4, 335–347. (F. Beukers) **93c:11048** 11J82

— Rational approximations to the dilogarithm. *Trans. Amer. Math. Soc.* **336** (1993), *no.* 1, 363–387. (J. Browkin) **93e:11088** 11J82 (11J72)

Hatano, K. (*with* Hatano, Y.; Mitsui, Taketomo) On reformed Krylov's method. (English summary) *Computational and applied mathematics, I (Dublin, 1991)*, 213–222, *North-Holland, Amsterdam*, 1992. (Summary) **93k:65014** 65D15 (65T10)

Hatano, Y. (*with* Hatano, K.; Mitsui, Taketomo) On reformed Krylov's method. (English summary) *Computational and applied mathematics, I (Dublin, 1991)*, 213–222, *North-Holland, Amsterdam*, 1992. (Summary) **93k:65014** 65D15 (65T10)

Hatcher, Allen Some examples of essential laminations in 3-manifolds. (French summary) *Ann. Inst. Fourier (Grenoble)* **42** (1992), *no.* 1-2, 313–325. (William Dunbar) **93e:57026** 57N10 (57M25, 57R30)

— (*with* Oertel, U.) Affine lamination spaces for surfaces. *Pacific J. Math.* **154** (1992), *no.* 1, 87–101. (William Dunbar) **93b:57033** 57R30 (57M50, 58F15)

Hatcher, W. S. (*with* Tonga, Marcel) Pairings on lambda algebras. *Z. Math. Logik Grundlag. Math.* **37** (1991), *no.* 4, 343–352. (Martin W. Bunder) **93c:03015** 03B40 (03G25)

Hatjispyros, Spyros (*with* Vivaldi, Franco) Galois theory of periodic orbits of rational maps. *Nonlinearity* **5** (1992), *no.* 4, 961–978. (Summary) **93i:11153** 11Z50 (11R21, 11R32, 58F08, 58F22)

Hatori, Osamu On the local behavior of a Banach space of continuous functions and its application to the problem on the range transformations. *Function spaces (Edwardsville, IL, 1990)*, 169–187, *Lecture Notes in Pure and Appl. Math.*, 136, *Dekker, New York*, 1992. (Denny Gulick) **93c:46041** 46E25 (46J10)

— (*with* Takahasi, Sin-ei) Commutative Banach algebras and BSE-inequalities. (English summary) *Math. Japon.* **37** (1992), *no.* 4, 607–614. (Keith Taylor) **93h:46069** 46J05 (43A10, 46J10)

— (*with* Wada, Junzo) Ring derivations on semi-simple commutative Banach algebras. *Tokyo J. Math.* **15** (1992), *no.* 1, 223–229. (R. J. Loy) **93c:46099** 46J40 (46H40)

Hatsuda, Machiko BRST field theories for a quantum Lorentz particle. *Internat. J. Modern Phys. A* **7** (1992), *no.* 6, 1187–1213. (Viktor A. Abramov) **93g:81192** 81T70

— (*with* Berkovits, Nathan; Siegel, Warren) The big picture. *Nuclear Phys. B* **371** (1992), *no.* 1-2, 434–466. (Tsou Sheung Tsun) **93d:81135** 81T30 (81T40, 81T70)

Hatsugai, Yasuhiro (*with* Kohmoto, Mahito) Exactly solvable model of correlated lattice electrons in any dimensions. (English summary) *J. Phys. Soc. Japan* **61** (1992), *no.* 6, 2056–2069. (Summary) **93g:82033** 82B23 (82D30)

— (*with* Kohmoto, Mahito; Wu, Yong Shi[1]) Braid groups, anyons and gauge invariance: on topologically nontrivial surfaces. (English summary) Low-dimensional field theories and condensed matter physics (Kyoto, 1991). *Progr. Theoret. Phys. Suppl. No.* 107 (1992), 101–119. (Summary) **93m:81090** 81S99 (20F36, 81–02, 81T99)

Hattingh, Johannes H. (*with* Henning, Michael A.; Walters, Jakobus L.) On the computational complexity of upper distance fractional domination. (English summary) *Australas. J. Combin.* **7** (1993), 133–144. (Summary) **93k:05170** 05C85 (68Q25)

— (*with* Henning, Michael A.) A characterization of block graphs that are well-k-dominated. (English summary) *J. Combin. Math. Combin. Comput.* **13** (1993), 33–38. (Summary) **93m:05162** 05C75

Hattori, Akio (*with* Ahara, Kazushi) 4-dimensional symplectic S^1-manifolds admitting moment map. *J. Fac. Sci. Univ. Tokyo Sect. IA Math.* **38** (1991), *no.* 2, 251–298. (Charles-Michel Marle) **93b:58048** 58F05 (53C15, 57R19, 57R91, 57R95)

— Symplectic manifolds with semi-free Hamiltonian S^1-action. *Tokyo J. Math.* **15** (1992), *no.* 2, 281–296. (Kazushi Ahara) **93m:57043** 57S15 (57R15, 57S25, 58F05)

Hattori, Harumi (*with* Mischaikow, Konstantin) A phase transition problem—a dynamical systems approach. *Viscous profiles and numerical methods for shock waves (Raleigh, NC, 1990)*, 73–78, *SIAM, Philadelphia, PA*, 1991. (Yang Kuang) **93g:35061** 35K50 (35K55, 58F39)

— (*with* Mischaikow, Konstantin) A dynamical system approach to a phase transition problem. *J. Differential Equations* **94** (1991), *no.* 2, 340–378. (From the introduction) **93m:58104** 58F39 (35K50, 58F12, 58F14, 73B30)

— (*with* Mischaikow, Konstantin) On the slow motions of phase boundaries in the Korteweg theory of capillarity. (English summary) *Dynamic Systems Appl.* **1** (1992), *no.* 4, 441–452. (Summary) **93k:35232** 35Q53 (76D45, 80A22)

— (*with* Mischaikow, Konstantin) On a global dynamics of a phase transition problem. (English summary) *Free boundary problems involving solids (Montreal, PQ, 1990)*, 226–231, *Pitman Res. Notes Math. Ser.*, 281, *Longman Sci. Tech., Harlow*, 1993. (*see* **93k:00037**) 35B32 (35K55)

Hattori, Tetsuya (*with* Kusuoka, Shigeo) The exponent for the mean square displacement of self-avoiding random walk on the Sierpiński gasket. (English summary) *Probab. Theory Related Fields* **93** (1992), *no.* 3, 273–284. (Davar Khoshnevisan) **93m:60199** 60K35 (60J15, 82B41)

Hattori, Toshiaki Geometry of quotient spaces of SO(3)\SL(3, **R**) by congruence subgroups. *Math. Ann.* **293** (1992), *no.* 3, 443–467. (Viktor Schroeder) **93i:53044** 53C23 (22E40, 53C20)

Hattori, Y. (*with* Nakamura, F.; Kambe, Tsutomu) Geodesics and curvature of a group of diffeomorphisms and motion of an ideal fluid. *J. Phys. A* **25** (1992), *no.* 2, L45–L50. (Frans Cantrijn) **93c:58036** 58D05 (35Q30, 53C80, 58B20, 76C99)

Hatvani, L. On the stability of the solutions of ordinary differential equations with mechanical applications. (Hungarian. English summary) *Alkalmaz. Mat. Lapok* **15** (1990/91), *no.* 1-2, 1–90 (1992). (Marian Mureşan) **93f:34082** 34D20 (34–02, 34D05, 70K20)

— Nonlinear oscillation with large damping. (English summary) *Dynamic Systems Appl.* **1** (1992), *no.* 3, 257–269. (Josef Kalas) **93i:34093** 34D20 (34C15, 70K20)

— (*with* Krisztin, T.) On the existence of periodic solutions for linear inhomogeneous and quasilinear functional-differential equations. *J. Differential Equations* **97** (1992), *no.* 1, 1–15. (Harlan W. Stech) **93c:34139** 34K10 (34C25, 92D25)

Hatz, Volker (*with* Beth, Thomas) Design machines: algebraically well described interconnection networks. (English summary) *Des. Codes Cryptogr.* **2** (1992), *no.* 3, 287–298. (Summary) **93f:68029** 68Q10 (05C85, 68R10)

Hatziafratis, Telemachos An integral formula on submanifolds of domains of $\mathbf{C}^n$. (English summary) *Publ. Mat.* **35** (1991), *no.* 2, 559–569. (Bo Berndtsson) **93k:32005** 32A25

Hatzikiriakou, Kostas Minimal prime ideals and arithmetic comprehension. *J. Symbolic Logic* **56** (1991), *no.* 1, 67–70. (From the introduction) **93g:03051** 03F35

Hauck, Jürgen[1] Ein Kriterium für die primitive Rekursivität der Funktional-Iteration. [A criterion for the primitive recursiveness of functional iteration] *Z. Math. Logik Grundlag. Math.* **37** (1991), *no.* 3, 193–200. (Summary) **93h:03060** 03D20

Hauck, Peter (*with* Bianchi, Maria Grazia; Gillio Berta Mauri, Anna) Maximal supersoluble subgroups of symmetric groups. *Ann. Mat. Pura Appl.* (4) **159** (1991), 371–404. (Wolfgang Lempken) **93d:20007** 20B30 (20D10, 20E28)

Haug, Edward J. (*with* Yen, Jeng; Tak, T. O.) Numerical methods for constrained equations of motion in mechanical system dynamics. *Mech. Structures Mach.* **19** (1991), *no.* 1, 41–76. (Inge Troch) **93a:65110** 65L99 (34A09, 58F99, 70–08, 70B15, 70F99)

— (*with* Wang, J. Y.; Wu, J. K.) Dextrous workspaces of manipulators. I. Analytical criteria. (English summary) *Mech. Structures Mach.* **20** (1992), *no.* 3, 321–361. (Summary) **93f:70003** 70B15

— (*with* Chung, Shu) A hybrid variational method for multibody dynamics. (English summary) *Internat. J. Numer. Methods Engrg.* **36** (1993), *no.* 1, 87–109. (Summary) **93j:70002** 70–08 (70B15, 70E99)

Haugan, M. P. (*with* Palmer, J. H.; Mann, Robert B.; Gabriel, M. D.) Polarization shifts in nonsymmetric theories of gravity. *Proceedings of the 4th Canadian Conference on General Relativity and Relativistic Astrophysics (Winnipeg, MB, 1991)*, 40–44, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93b:83003**) 83D05

— (*with* Palmer, J. H.; Mann, Robert B.; Gabriel, M. D.) Electromagnetism in nonsymmetric theories of gravity: gravitationally induced polarization shifts. *Proceedings of the 4th Canadian Conference on General Relativity and Relativistic Astrophysics (Winnipeg, MB, 1991)*, 350–354, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93c:83102** 83D05 (83B05)

Haughton, David Mark Boundary layer solutions for incompressible elastic cylinders. *Internat. J. Engrg. Sci.* **30** (1992), *no.* 8, 1027–1039. (Summary) **93a:73043** 73G05

Haughton, Dominique (*with* Byrne, Charles L.; Jiang, Jyh-Ming) High-resolution inversion of the discrete Poisson and binomial transformations. (English summary) *Inverse Problems* **9** (1993), *no.* 1, 39–56. (Michael J. Evans) **93k:62048** 62F10 (65R10, 65U05)

Haugland, Jan Kristian A new hypothesis—a sharper version of Goldbach's conjecture. (Norwegian. English summary) *Normat* **40** (1992), *no.* 2, 90–92, 96. 11P32

Haugset, T. (*with* Ravndal, F.) Anyon winding numbers from the Chern-Simons interaction. *J. Phys. A* **25** (1992), *no.* 8, L449–L451. (Summary) **93b:81157** 81T13

Hauke, Jan (*with* Baksalary, Jerzy K.) Minimum number of experimental units in connected block designs with certain additional properties. *J. Statist. Plann. Inference* **30** (1992), *no.* 2, 173–183. (Summary) **93m:62174** 62K10

Haukkanen, Pentti (*with* Sivaramakrishnan, R.) Cauchy multiplication and periodic functions (mod r). (English summary) *Collect. Math.* **42** (1991), *no.* 1, 33–44. (H. L. Abbott) **93h:11004** 11A25

— (*with* Sivaramakrishnan, R.) Arithmetic functions in an algebraic setting. *Tsukuba J. Math.* **15** (1991), *no.* 1, 227–234. (Jean-Marie De Koninck) **93a:11006** 11A25

— On a convolution of linear recurring sequences over finite fields. *J. Algebra* **149** (1992), *no.* 1, 179–182. (Rudolf Lidl) **93g:11126** 11T30

— Higher-dimensional GCD matrices. *Linear Algebra Appl.* **170** (1992), 53–63. (Mihail Voicu) **93d:15044** 15A99 (15A15, 15A36)

— Arithmetical expressions and asymptotic formulae for generalized totient functions. *Publ. Math. Debrecen* **40** (1992), *no.* 1-2, 35–42. (Chao Hua Jia) **93c:11079** 11N37 (11A25)

Haunsperger, Deanna B. Dictionaries of paradoxes for statistical tests on k samples. *J. Amer. Statist. Assoc.* **87** (1992), *no.* 417, 149–155. (J. V. Deshpande) **93f:62067** 62G10

Haupt, Peter (*with* Pao, Yih Hsing; Hutter, Kolumban) Theory of incremental motion in a body with initial elastoplastic deformation. (English and German summaries) *J. Elasticity* **28** (1992), *no.* 3, 193–221. (Summary) **93f:73046** 73E05 (73B99, 73C50, 73E70)

Haurie, Alain (*with* Boukas, El-Kebir; van Delft, Ch.) A turnpike improvement algorithm for piecewise deterministic control. (English summary) *Optimal Control Appl. Methods* **12** (1991), *no.* 1, 1–18. 49M05

— (*with* Loulou, Richard; Savard, Gilles) A two-player game model of power cogeneration in New England. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 9, 1451–1456. 90D40 (90D05)

— (*with* Leizarowitz, Arie) Overtaking optimal regulation and tracking of piecewise diffusion linear systems. *SIAM J. Control Optim.* **30** (1992), *no.* 4, 816–837. (Jacek B. Krawczyk) **93d:93087** 93E20 (93E10)

Hausch, Donald B. (*with* Li, Lode) A common value auction model with endogenous entry and information acquisition. (English summary) *Econom. Theory* **3** (1993), *no.* 2, 315–334. 90A60

Hausdorff, Felix *see* **Recent developments of general topology and its applications**, **93m:54004**

Hausen, J. (*with* Dugas, Manfred; Johnson, Johnny Albert) Rings whose additive endomorphisms are multiplicative. *Period. Math. Hungar.* **23** (1991), *no.* 1, 67–75. (Introduction) **93d:16007** 16D70 (16S99, 20K99)

Hauser, Herwig (*with* Müller, Gerd) Automorphism groups in local analytic geometry, infinite-dimensional rank theorem and Lie groups. (French summary) *C. R. Acad. Sci. Paris Sér. I Math.* **313** (1991), *no.* 11, 751–756. (Harald Upmeier) **93f:32030** 32K99 (58B12)

Hauser, John E. (*with* Sastry, S. Shankar; Meyer, George) Nonlinear control design for slightly nonminimum phase systems: application to V/STOL aircraft. *Automatica J. IFAC* **28** (1992), *no.* 4, 665–679. 93B51

Hauser, Kai Indescribable cardinals without diamonds. *Arch. Math. Logic* **31** (1992), *no.* 5, 373–383. (Daniel Velleman) **93b:03082** 03E05 (03E35, 03E55)

— (*with* Herrlich, F.; Kneser, M.; Opolka, Hans; Schappacher, Norbert; Scholz, Erhard) Oswald Teichmüller—Leben und Werk. [Oswald Teichmüller—his life and work] *Jahresber. Deutsch. Math.-Verein.* **94** (1992), *no.* 1, 1–39. (J. Dieudonné) **93b:01037** 01A70 (01A60)

Hausmann, Jean-Claude Sur la topologie des bras articulés. [On the topology of robot arms] *Algebraic topology Poznań 1989*, 146–159, *Lecture Notes in Math.*, 1474, *Springer, Berlin*, 1991. (P. E. Newstead) **93a:57035** 57R45 (58C27, 70B15)

— Actions quasi-linéaires sur les sphères. [Quasilinear actions on spheres] *Enseign. Math.* (2) **38** (1992), *no.* 1-2, 55–70. (C. B. Thomas) **93f:57047** 57S25

Hausrath, Alan R. (*with* Manásevich, Raúl F.) Periodic solutions of a periodically perturbed Lotka-Volterra equation using the Poincaré-Birkhoff theorem. *J. Math. Anal. Appl.* **157** (1991), *no.* 1, 1–9. (Tong Ren Ding) **93e:34061** 34C25

Hauss, M. (*with* Butzer, Paul L.) Riemann zeta function: rapidly converging series and integral representations. *Appl. Math. Lett.* **5** (1992), *no.* 2, 83–88. (Jacek Fabrykowski) **93b:11106** 11M06 (11B73)

— (*with* Butzer, Paul L.) Integral and rapidly converging series representations of the Dirichlet L-functions $L_1(s)$ and $L_{-4}(s)$. *Atti Sem. Mat. Fis. Univ. Modena* **40** (1992), *no.* 1, 329–359. (Matti Jutila) **93h:11095** 11M06

Hausser, Roland Complexity in left-associative grammar. (English summary) *Theoret. Comput. Sci.* **106** (1992), *no.* 2, 283–308. (Summary) **93j:68108** 68Q50

Haussler, David (*with* Kearns, Michael J.; Littlestone, Nick; Warmuth, Manfred K.) Equivalence of models for polynomial learnability. *Inform. and Comput.* **95** (1991), *no.* 2, 129–161. (Summary) **93b:68074** 68T05

— Decision-theoretic generalizations of the PAC model for neural net and other learning applications. (English summary) *Inform. and Comput.* **100** (1992), *no.* 1, 78–150. (Mark R. Jerrum) **93i:68149** 68T05 (92B20)

Haussmann, U. G. Synthesis of optimal controls. *Stochastic systems and optimization* (*Warsaw*, 1988), 309–317, *Lecture Notes in Control and Inform. Sci.*, 136, *Springer, Berlin*, 1989. (*see* **93d:93009**) 93E20 (93B50)

— (*with* Zhang, Qing[1]) Discrete-time stochastic adaptive control with small observation noise. *Appl. Math. Optim.* **25** (1992), *no.* 3, 303–330. (Summary) **93f:93149** 93E35 (93C55)

— A probabilistic approach to the generalized Hessian. *Math. Oper. Res.* **17** (1992), *no.* 2, 411–443. (Alexei Gaivoronski) **93e:49024** 49J52 (26A24, 90C25, 93E14)

Haussmann, W. (*with* Goldstein, Myron; Rogge, L.) Characterization of open strips by harmonic quadrature. *Approximation by solutions of partial differential equations* (*Hanstholm*, 1991), 87–92, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 365, *Kluwer Acad. Publ., Dordrecht*, 1992. (*see* **93a:31001**) 31B05

— (*with* Wehrend, L.; Zeller, K.) Mean value theorems and best L^1-approximation. *Approximation by solutions of partial differential equations* (*Hanstholm*, 1991), 93–102, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 365, *Kluwer Acad. Publ., Dordrecht*, 1992. (Ognyan Kounchev) **93i:41011** 41A30 (41A63)

— (*with* Goldstein, Myron; Rogge, L.) On the inverse mean value property of harmonic functions on strips. *Bull. London Math. Soc.* **24** (1992), *no.* 6, 559–564. (D. H. Armitage) **93h:31005** 31B05

— *see also* **Approximation by solutions of partial differential equations, 93a:31001**

Havârneanu, Teodor An approximation scheme of the dynamic programming equation for a stochastic control problem with infinite horizon. *Differential equations and control theory* (*Iaşi*, 1990), 103–111, *Pitman Res. Notes Math. Ser.*, 250, *Longman Sci. Tech., Harlow*, 1991. (From the introduction) **93g:49023** 49L20 (49K45, 93E03, 93E20)

Havas, George (*with* Czech, Zbigniew J.; Majewski, Bohdan S.) An optimal algorithm for generating minimal perfect hash functions. (English summary) *Inform. Process. Lett.* **43** (1992), *no.* 5, 257–264. 68P05 (05C80)

Havas, Katalin G. Do we tolerate inconsistencies? (English summary) *Dialectica* **47** (1993), *no.* 1, 27–35. 03A05 (03B53)

Havas, Peter The early history of the "problem of motion" in general relativity. *Einstein and the history of general relativity* (*North Andover, MA*, 1986), 234–276, *Einstein Stud.*, 1, *Birkhäuser Boston, Boston, MA*, 1989. (*see* **93g:83001**) 01A60 (83–03)

— Shear-free spherically symmetric perfect fluid solutions with conformal symmetry. *Gen. Relativity Gravitation* **24** (1992), *no.* 6, 599–615. (M. A. J. Vandyck) **93g:83024** 83C20 (83C15)

Havel, Ivan (*with* Laborde, J.-M.) On distance monotone graphs. *Combinatorics* (*Eger*, 1987), 557–561, *Colloq. Math. Soc. János Bolyai*, 52, *North-Holland, Amsterdam*, 1988. (*see* **93m:05002**) 05C75 (05C50)

Havel, Timothy F. (*with* Bouchet, André; Dress, Andreas W. M.) Δ-matroids and metroids. *Adv. Math.* **91** (1992), *no.* 1, 136–142. (Laura Bertani) **93e:05018** 05B35

Havenner, Arthur M. (*with* Dorfman, Jeffrey H.) A Bayesian approach to state space multivariate time series modeling. *J. Econometrics* **52** (1992), *no.* 3, 315–346. (Summary) **93c:62146** 62M10 (62P20)

Haviar, Miroslav (*with* Chajda, Ivan) Induced pseudo-orders. *Acta Univ. Palack. Olomuc. Fac. Rerum Natur. Math.* **30** (1991), 9–16. (Summary) **93b:04002** 04A05 (06A99)

— Lattices whose congruence lattices satisfy Lee's identities. Universal algebra, quasigroups and related systems (Jadwisin, 1989). *Demonstratio Math.* **24** (1991), *no.* 1-2, 247–261. (E. T. Schmidt) **93a:06013** 06D15 (06B10)

— On affine completeness of distributive p-algebras. *Glasgow Math. J.* **34** (1992), *no.* 3, 365–368. (R. Beazer) **93h:06019** 06D15

Haviland, Julie (*with* Thomason, Andrew) On testing the "pseudo-randomness" of a hypergraph. *Discrete Math.* **103** (1992), *no.* 3, 321–327. (Summary) **93e:05088** 05C80 (05C65)

Haviv, Moshe An aggregation/disaggregation algorithm for computing the stationary distribution of a large Markov chain. (English summary) *Comm. Statist. Stochastic Models* **8** (1992), *no.* 3, 565–575. (Summary) **93e:60134** 60J10

— (*with* Puterman, Martin L.) Estimating the value of a discounted reward process. (English summary) *Oper. Res. Lett.* **11** (1992), *no.* 5, 267–272. 90C40

— (*with* Hassin, Refael) Mean passage times and nearly uncoupled Markov chains. *SIAM J. Discrete Math.* **5** (1992), *no.* 3, 386–397. (G. Louchard) **93m:60146** 60J10

Havlena, Vladimír Simple predictive LQ controller design. (English summary) *Advanced methods in adaptive control for industrial applications* (*Praha*, 1990), 137–148, *Lecture Notes in Control and Inform. Sci.*, 158, *Springer, Berlin*, 1991. (*see* **93c:93003**) 93B50

Havlicek, Hans Die Projektivitäten und Antiprojektivitäten der Quaternionengeraden. [The projectivities and antiprojectivities of the quaternion line] *Publ. Math. Debrecen* **40** (1992), *no.* 3-4, 219–227. (O. Giering) **93h:51004** 51A05 (51A10)

Havlíček, M. (*with* Blank, J.) On the tensor product of supersingleton representations of Lie superalgebras osp(1, 2n). *Selected topics in QFT and mathematical physics* (*Liblice*, 1989), 190–196, *World Sci. Publishing, Teaneck, NJ*, 1990. (Bani Mitra Södermark) **93a:17002** 17A70 (17B70, 81R05)

— (*with* Burdík, Č.; Vančura, A.) Irreducible highest weight representations of quantum groups $U_q(\mathfrak{gl}(n, \mathbf{C}))$. (English summary) *Comm. Math. Phys.* **148** (1992), *no.* 2, 417–423. (Dmitrii I. Gurevich) **93i:17014** 17B37 (81R50)

Havlin, Shlomo (*with* Dayan, Ido) Number of distinct sites visited by a random walker in the presence of a trap. *J. Phys. A* **25** (1992), *no.* 9, L549–L553. (Summary) **93a:82053** 82C41

Havner, K. S. ★ Finite plastic deformation of crystalline solids. Cambridge Monographs on Mechanics and Applied Mathematics. *Cambridge University Press, Cambridge*, 1992. xiv+235 *pp. ISBN* 0-521-39245-4 (Victor A. L'vov) **93e:73017** 73G20 (73C50, 73E05)

Havránek, Tomáš *see* **Obituary: Havránek, Tomáš, 93k:01082**

al-Hawaj, A. Y. *see* **Al-Hawaj, A. Y.**

Hawaleshka, O. (*with* Bector, C. R.; Gill, A.) A 0-1 linear programming formulation for solving an equipment replacement problem. (English summary) *Internat. J. Systems Sci.* **23** (1992), *no.* 12, 2393–2399. (Summary) **93h:90043** 90B25 (90C09)

el-Hawary, H. M. *see* **El-Hawary, H. M.**

Hawdon, B. J. (*with* Heffernan, Daniel M.; Jenkins, P.; Daly, M.; O'Gorman, J.) Characterization of chaos. (English summary) *Internat. J. Theoret. Phys.* **31** (1992), *no.* 8, 1345–1362. (Summary) **93d:58097** 58F13 (34C35, 34D45)

Hawken, D. F. (*with* Hansen, J. S.; Gottlieb, J. J.) A new finite-difference solution-adaptive method. (English summary) *Philos. Trans. Roy. Soc. London Ser. A* **341** (1992), *no.* 1662, 373–410. (Meng Zhao Qin) **93m:65119** 65M06 (35L45, 65M50, 65M60)

Hawkes, Alan G. (*with* Jalali, Assad) The distribution of apparent occupancy times in a two-state Markov process in which brief events cannot be detected. *Adv. in Appl. Probab.* **24** (1992), *no.* 2, 288–301. (Summary) **93b:60142** 60J10

— (*with* Jalali, Assad) Generalised eigenproblems arising in aggregated Markov processes allowing for time interval omission. *Adv. in Appl. Probab.* **24** (1992), *no.* 2, 302–321. (Summary) **93b:60164** 60J27

Hawkes, J. (*with* Truman, Aubrey) Statistics of local time and excursions for the Ornstein-Uhlenbeck process. *Stochastic analysis* (*Durham*, 1990), 91–101, *London Math. Soc. Lecture Note Ser.*, 167, *Cambridge Univ. Press, Cambridge*, 1991. (Guang Lu Gong) **93f:60117** 60J60 (60J30, 60J55)

Hawkes, Lois Wright (*with* Derry, Sharon; Kandel, Abraham) Fuzzy expert systems for an intelligent computer-based tutor. *Fuzzy expert systems*, 237–257, *CRC, Boca Raton, FL*, 1992. (*see* **93g:68133**) 68T35 (03B52)

— Combinatorial filing schemes with fewer buckets and improved redundancy and construction characteristics. *Inform. Sci.* **65** (1992), *no.* 1-2, 99–122. 68P20

Hawkes, Trevor (*with* Doerk, Klaus) ★ Finite soluble groups. de Gruyter Expositions in Mathematics, 4. *Walter de Gruyter & Co., Berlin*, 1992. xiv+891 *pp. ISBN* 3-11-012892-6 (R. Bryce) **93k:20033** 20D10 (20F17)

— (*with* Cossey, John; Mann, Avinoam) A criterion for a group to be nilpotent. *Bull. London Math. Soc.* **24** (1992), *no.* 3, 267–270. (I. M. Isaacs) **93c:20040** 20D15

— (*with* Cossey, John) Computing the order of the nilpotent residual of a finite group from knowledge of its group algebra. *Arch. Math.* (*Basel*) **60** (1993), *no.* 2, 115–120. (H. Heineken) **93m:20006** 20C05 (20D25)

Hawking, Stephen W. Wormholes in dimensions 1–4. *Particles, strings and cosmology* (*Boston, MA*, 1990), 623–634, *World Sci. Publishing, River Edge, NJ*, 1991. (Philippe-A. Dionne) **93d:83068** 83E30 (83C47, 83E05)

— Wormholes and non-simply connected manifolds. *Quantum cosmology and baby universes* (*Jerusalem*, 1989/1990), 245–267, *Jerusalem Winter School Theoret. Phys.*, 7, *World Sci. Publishing, River Edge, NJ*, 1991. (*see* **93h:83024**) 83C45

— The alpha parameters of wormholes. The birth and early evolution of our Universe (Gräftåvallen, 1990). *Phys. Scripta* **1991**, *Vol.* T36, 222–227. (Claus Kiefer) **93g:83050** 83C45 (81V17)

— Chronology protection conjecture. *Phys. Rev. D* (3) **46** (1992), *no.* 2, 603–611. (Summary) **93c:83086** 83C75

— Evaporation of two-dimensional black holes. *Phys. Rev. Lett.* **69** (1992), *no.* 3, 406–409. (Summary) **93g:83063** 83C57 (81T40)

— (*with* Gibbons, G. W.) Kinks and topology change. (English summary) *Phys. Rev. Lett.* **69** (1992), *no.* 12, 1719–1721. (Summary) **93f:83076** 83E05 (57R15, 83C99)

— (*with* D'Eath, P. D.; Obregón, O.) Supersymmetric Bianchi models and the square root of the Wheeler-DeWitt equation. (English summary) *Phys. Lett. B* **300** (1993), *no.* 1-2, 44–48. (Vladimir Soloviev) **93k:83029** 83C45 (83E50, 83F05)

— *see also* **Zalcman, Lawrence A., 93a:01041**

Hawkins, D. L. Retrospective and sequential tests for change in an estimable parameter based on U-statistics. (English summary) *Sankhyā Ser. B* **51** (1989), *no.* 3, 271–286. (Summary) **93e:62124** 62G10

— (*with* Kochar, Subhash C.) Inference for the crossing point of two continuous CDFs. *Ann. Statist.* **19** (1991), *no.* 3, 1626–1638. (S. Rao Jammalamadaka) **93e:62125** 62G10 (62G05)

— (*with* Korzeniowski, Andrzej) On simulating Wiener integrals and their expectations. (English summary) *Probab. Engrg. Inform. Sci.* **5** (1991), *no.* 1, 101–112. (Summary) **93f:60122** 60J65 (65D30)

— (*with* Kochar, Subhash C.; Loader, Clive R.) Testing exponentiality against IDMRL distributions with unknown change point. *Ann. Statist.* **20** (1992), *no.* 1, 280–290. (J. V. Deshpande) **93b:62071** 62G10 (62N05)

— Detecting shifts in functions of multivariate location and covariance parameters. (English summary) *J. Statist. Plann. Inference* **33** (1992), *no.* 2, 233–244. (Lionel Weiss) **93m:62109** 62G10 (62H15, 62L10)

Hawkins, D. M. (*with* Cook, R. Dennis; Weisberg, S.) Comparison of model misspecification diagnostics using residuals from least mean of squares and least median of squares fits. *J. Amer. Statist. Assoc.* **87** (1992), *no.* 418, 419–424. 62J05

— (*with* Cook, R. Dennis; Weisberg, S.) Exact iterative computation of the robust multivariate minimum volume ellipsoid estimator. (English summary) *Statist. Probab. Lett.* **16** (1993), *no.* 3, 213–218. 62F35

Hawkins, John H. (*with* Knopp, Marvin I.) A Hecke correspondence theorem for automorphic integrals with rational period functions. *Illinois J. Math.* **36** (1992), *no.* 2, 178–207. (YoungJu Choie) **93d:11052** 11F66 (11F12)

Hawkins, W. G. (*with* Yang, N.-C.; Leichner, P. K.) Theorems for the number of zeros of the projection radial modulators of the 2D exponential Radon transform. (English summary) *Mathematical methods in tomography* (*Oberwolfach*, 1990), 194–214, *Lecture Notes in Math.*, 1497, *Springer, Berlin*, 1991. (Summary) **93g:44006** 44A12 (92C55)

Haws, D. (*with* Copeland, E.; Holbraad, S.; Rivers, R. J.) The statistical mechanics of interacting strings. *Phys. A* **179** (1991), *no.* 3, 507–530. (Claus Montonen) **93d:82008**

82B05 (82B26)

Hawthorn, I. J. Fitting pairs and pFitting pairs. *Arch. Math. (Basel)* **58** (1992), *no.* 4, 322–328. (Hartmut Laue) **93f:20046** 20F17 (20D10)

— Transfer normal Fitting pairs do not always suffice. (English summary) *J. Algebra* **152** (1992), *no.* 1, 30–64. (G. Zappa) **93m:20044** 20F17 (20D10)

Hay, S. J. *see* **Wood, Simon N., 93h:92031**

Hayakawa, Yoshikazu (*with* Sasaki, Motofumi; Fujii, Seizo; Koizumi, Kunio; Iwaki, Toshihiro) Finite-dimensional model reference adaptive control of a class of nonlinear distributed systems with quasi-sliding mode. (English summary) *Internat. J. Systems Sci.* **24** (1993), *no.* 2, 387–402. 93C40 (93C20)

Hayami, Ken A robust numerical integration method for 3-D boundary element analysis and its error analysis using complex function theory. (English summary) *Numerical integration (Bergen, 1991)*, 235–248, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 357, *Kluwer Acad. Publ., Dordrecht*, 1992. (*see* **93f:65006**) 65D30

Hayashi, Isao (*with* Araki, S.; Nomura, H.; Wakami, N.) Fuzzy modeling with an iterative generation mechanism for fuzzy inference rules. (English summary) *Japanese J. Fuzzy Theory Systems* **4** (1992), *no.* 4, 399–411. 03B52 (93C42)

Hayashi, M. *see* **Hayashi, Masaki**

Hayashi, Makoto (*with* Tanaka, Yasuhiko) Amalgams of solvable groups. *J. Fac. Sci. Univ. Tokyo Sect. IA Math.* **39** (1992), *no.* 2, 309–338. (N. T. Vorob'ev) **93i:20016** 20D05

Hayashi, Masahiro Network reliability analysis using dual graph. *Electron. Comm. Japan Part III Fund. Electron. Sci.* **74** (1991), *no.* 10, 1–12 (1992). (Summary) **93a:94046** 94C12 (90B12, 90B25)

Hayashi, Masahito Classification of $(2+1)$-dimensional Chern-Simons supergravity theories. (English summary) *Progr. Theoret. Phys.* **88** (1992), *no.* 2, 403–429. (Boris Moiseevich Zupnik) **93k:81232** 81T60 (81T13, 83E50)

Hayashi, Masaki (*with* Baĭkov, P. A.; Nelipa, N. F.; Ostapchenko, S.) Ghost- and tachyon-free gauge-invariant, Poincaré, affine and projective Lagrangians. *Gen. Relativity Gravitation* **24** (1992), *no.* 8, 867–880. (Summary) **93c:83091** 83D05 (81V17)

— (*with* Nelipa, N. F.; Yakovlev, A.) On a possibility of constructing a gauge-invariant Lagrangian for $N = 1$ super-Poincaré gravity. (English summary) *Nuovo Cimento B* (11) **107** (1992), *no.* 7, 805–811. (Ilya Shapiro) **93i:83076; EA 93m** 83D05 (53C80)

— (*with* Vera Mendoza, Honorio) Errata: "Quantum phase space for an ideal relativistic gas in d spatial dimensions" [Rev. Mexicana Fís. **38** (1992), no. 1, 81–91; MR 92m:82018]. *Rev. Mexicana Fís.* **38** (1992), *no.* 4, 690. (Editors) **93i:82008** 82B10

Hayashi, Mitsuo J. (*with* Fujishiro, Takehiko T.) Review of the $N = 2$ superconformal field theory. *Proc. Fac. Sci. Tokai Univ.* **25** (1990), 39–68. (Vladimir Souček) **93b:81248** 81T40 (11F22, 17B67, 17B81, 81-02, 81R10)

Hayashi, Nakao Smoothing effect of small analytic solutions to nonlinear Schrödinger equations. (English and French summaries) *Ann. Inst. H. Poincaré Phys. Théor.* **57** (1992), *no.* 4, 385–394. (Summary) **93m:35169** 35Q55 (35B05)

— (*with* Ozawa, Tohru) On the derivative nonlinear Schrödinger equation. *Phys. D* **55** (1992), *no.* 1-2, 14–36. (John Albert) **93h:35190** 35Q55 (35B65)

Hayashi, Takahiro An algebra related to the fusion rules of Wess-Zumino-Witten models. *Lett. Math. Phys.* **22** (1991), *no.* 4, 291–296. (Siddhartha Sen) **93b:81114** 81R50 (16W30, 17B37, 81T40)

— Quantum groups and quantum determinants. (English summary) *J. Algebra* **152** (1992), *no.* 1, 146–165. (Marco Tarlini) **93j:17031** 17B37 (16W30)

Hayashi, Takao A note on Bhāskara I's rational approximation to sine. *Historia Sci. No.* 42 (1991), 45–48. (M. S. Rangachari) **93d:01012** 01A32

— Erratum: "The *Pañcavimśatikā* in its two recensions" [Indian J. Hist. Sci. **26** (1991), no. 4, 395–448; MR 92j:01014]. *Indian J. Hist. Sci.* **27** (1992), *no.* 4, 521–523. (Editors) **93h:01013** 01A32

Hayashi, Yoichi (*with* Buckley, James J.; Czogała, Ernest) On the equivalence of neural nets and fuzzy expert systems. (English summary) *Fuzzy Sets and Systems* **53** (1993), *no.* 2, 129–134. (Summary) **93m:68158** 68T35 (04A72, 92B20)

Hayat-Legrand, Claude Classes homotopiques associées à une G-opération. (English summary) [Homotopy classes associated with a G-action] *Algebraic topology (San Feliu de Guíxols, 1990)*, 134–138, *Lecture Notes in Math.*, 1509, *Springer, Berlin*, 1992. (John F. Oprea) **93i:55025** 55S99 (55P20, 55S45)

Haydn, Nicolai T. A. The product structure of finitely presented dynamical systems. *Israel J. Math.* **73** (1991), *no.* 3, 343–356. (Introduction) **93f:58060** 58F03 (58F11)

— (*with* Ruelle, David) Equivalence of Gibbs and equilibrium states for homeomorphisms satisfying expansiveness and specification. (English summary) *Comm. Math. Phys.* **148** (1992), *no.* 1, 155–167. (Viviane Baladi) **93h:58084** 58F11 (28D05, 28D20)

Haydon, Richard Trees and renormings. *Séminaire d'Initiation à l'Analyse, Exp. No.* 8, 2 *pp., Publ. Math. Univ. Pierre et Marie Curie*, 104, *Univ. Paris VI, Paris*, 199?. (*see* **93k:00039**) 46B20

— Some problems about scattered spaces. *Séminaire d'Initiation à l'Analyse, Exp. No.* 9, 10 *pp., Publ. Math. Univ. Pierre et Marie Curie*, 95, *Univ. Paris VI, Paris*, 199?. (W. A. Feldman) **93i:46043** 46E15 (46B20, 54C35, 54G12)

Hayek Calil, Nácere Mathematics and biology. (Spanish. English and Spanish summaries) *Rev. Acad. Canaria Cienc.* **2** (1990), 191–238. 92-01

— (*with* Pérez-Acosta, Francisco) Expansions of coefficients and logarithms of Bessel-Clifford functions and of the modified Bessel function of the first kind. (Spanish. English and Spanish summaries) *Rev. Acad. Canaria Cienc.* **3** (1991), *no.* 1, 113–125. 65D20 (33C10)

— (*with* González Rodríguez, Benito) On the Mehler-Fock transform on generalized functions. (English summary) *Bull. Soc. Roy. Sci. Liège* **61** (1992), *no.* 3-4, 315–327. (W. A. Al-Salam) **93g:44013** 44A15 (33C45, 46F12)

— (*with* González Rodríguez, Benito; Negrín, E. R.) Abelian theorems for the index ${}_2F_1$-transform. (English and Spanish summaries) *Rev. Técn. Fac. Ingr. Univ. Zulia* **15** (1992), *no.* 3, 167–171. (Summary) **93m:44003** 44A15 (33C05)

— (*with* González Rodríguez, José Manuel; Falcon, Sergio) An existence and uniqueness theorem for linear ordinary differential equations of the first order in aleph. (English summary) *J. Inst. Math. Comput. Sci. Math. Ser.* **6** (1993), *no.* 1, 83–85. 34A12 (34A34)

— *see also* **Extrapolation and rational approximation, 93g:00026**

Hayes, David R. A brief introduction to Drinfel'd modules. *The arithmetic of function fields (Columbus, OH, 1991)*, 1–32, *Ohio State Univ. Math. Res. Inst. Publ.*, 2, *de Gruyter, Berlin*, 1992. (Sung Han Bae) **93m:11050** 11G09 (11R37, 11R58)

— *see also* **Arithmetic of function fields, 93f:11002**

Hayes, John P. (*with* Lee, Tze Chiang) A fault-tolerant communication scheme for hypercube computers. (English summary) *IEEE Trans. Comput.* **41** (1992), *no.* 10, 1242–1256. 68M10 (68M15)

— (*with* Harary, Frank) Edge fault tolerance in graphs. (English summary) *Networks* **23** (1993), *no.* 2, 135–142. (Summary) **93i:05106** 05C75 (05C35, 68M10, 90B12)

Hayes, Michael A. (*with* Boulanger, Ph.; Rajagopal, K. R.) Some unsteady exact solutions in the Navier-Stokes and the second grade fluid theories. (English summary) *Stability Appl. Anal. Contin. Media* **1** (1991), *no.* 2, 185–204. (C. Fetecău) **93i:76022** 76D05 (76A05)

— Special circles in mechanics. *Internat. J. Solids Structures* **29** (1992), *no.* 14-15, 1781–1788. (Summary) **93c:73016** 73B99

— (*with* Boulanger, Ph.) Shear, shear stress and shearing. (English summary) Elastic waves and related topics (Dublin, 1991). *J. Mech. Phys. Solids* **40** (1992), *no.* 7, 1449–1457. (Summary) **93h:73009** 73C02 (73G05)

— (*with* Rajagopal, K. R.) Inhomogeneous finite amplitude motions in a neo-Hookean solid. (English summary) *Proc. Roy. Irish Acad. Sect. A* **92** (1992), *no.* 2, 137–147. (C. F. M. Creasy) **93k:73040** 73G05 (73D35)

— (*with* Boulanger, Ph.) Static and propagating exponential solutions of Maxwell's equations for crystals. (English summary) *Proc. Roy. Soc. London Ser. A* **438** (1992), *no.* 1904, 485–510. (Summary) **93g:78005** 78A25

— (*with* Norris, Andrew) Static implications of the existence of a plane of symmetry in an anisotropic elastic solid. (English summary) *Quart. J. Mech. Appl. Math.* **45** (1992), *no.* 2, 141–147. (Summary) **93c:73013** 73B40 (73C02)

Hayman, Walter K. (*with* Gaier, Dieter) Moduli of long quadrilaterals and thick ring domains. (Italian summary) *Rend. Mat. Appl.* (7) **10** (1990), *no.* 4, 809–834 (1991). (N. Papamichael) **93b:30007** 30C35 (30C30)

— (*with* Gaier, Dieter) On the computation of modules of long quadrilaterals. *Constr. Approx.* **7** (1991), *no.* 4, 453–467. (N. Papamichael) **93a:30006** 30C30 (30C35, 30E10)

— (*with* Fuchs, W. H. J.) Rational approximation to the Fresnel integral. *Approximation by solutions of partial differential equations (Hanstholm, 1991)*, 69–77, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 365, *Kluwer Acad. Publ., Dordrecht*, 1992. (Tord H. Ganelius) **93d:30047** 30E10 (41A20)

— Strict isoperimetric inequalities and asymmetry. *Potential theory (Nagoya, 1990)*, 33–42, *de Gruyter, Berlin*, 1992. (D. H. Armitage) **93d:31006** 31B15 (31A15)

— *see also* **Approximation by solutions of partial differential equations, 93a:31001** *and* **Herglotz, G. et al., 93d:01095**

Haynes, Teresa W. (*with* Lawson, Linda M.; Boland, James W.) Observations regarding distance-n graphs. (English summary) Proceedings of the Twenty-third Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, FL, 1992). *Congr. Numer.* **89** (1992), 55–64. (Summary) **93j:05052** 05C12

— (*with* Lawson, Linda M.) The effects of graph modifications on edge independence and edge covering numbers. (English summary) *J. Combin. Math. Combin. Comput.* **12** (1992), 129–140. (Summary) **93f:05073** 05C75

— (*with* Lawson, Linda M.) E-graphs, a generalization of several network designs. (English summary) *Bull. Inst. Combin. Appl.* **7** (1993), 39–46. (Summary) **93j:05153** 05C90 (68M10, 94C15)

Hayter, Anthony J. (*with* Hirotsu, Chihiro; Kuriki, Satoshi) Multiple comparison procedures based on the maximal component of the cumulative chi-squared statistic. (English summary) *Biometrika* **79** (1992), *no.* 2, 381–392. (Thomas J. Santner) **93i:62063** 62J15

ibn al-Haytham, Ḥasan *see* **Al-ʿĀyib, ʿAlī, 93c:01008**; **Crombie, A. C., 93g:01019** *and* **Albertini, Tamara, 93h:01008**

Hayton, G. E. (*with* Pugh, A. C.; Jones, E. R. Ll.) General pole structure assignment in singular systems. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, II (Kobe, 1991)*, 127–132, *Mita, Tokyo*, 1992. (*see* **93g:93006**) 93B55

— (*with* Pugh, A. C.; Johnson, D. S.) On conditions guaranteeing two polynomial matrices possess identical zero structures. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 9, 1383–1386. (Summary) **93h:93033** 93B55 (15A99)

Hayward, Geoff General laws of thermodynamics. *Proceedings of the 4th Canadian Conference on General Relativity and Relativistic Astrophysics (Winnipeg, MB, 1991)*, 200–205, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93c:83066** 83C47

Hayward, Ryan B. (*with* McDiarmid, Colin J. H.) Strong concentration for quicksort. *Proceedings of the Third Annual ACM-SIAM Symposium on Discrete Algorithms (Orlando, FL, 1992)*, 414–421, *ACM, New York*, 1992. (*see* **93b:68005**) 68P10

— Smallest transversals of small 3-graphs. (English summary) *Ars Combin.* **34** (1992), 289–312. (Summary) **93i:05077** 05C35 (05B40, 05D15)

Hayward, Sean A. Trapping and completeness of a light-cone. (English summary) *Classical Quantum Gravity* **9** (1992), *no.* 9, L115–L118. (Summary) **93g:83064** 83C57

— On cosmological isotropy, quantum cosmology and the Weyl curvature hypothesis. (English summary) *Classical Quantum Gravity* **10** (1993), *no.* 1, L7–L11. (Summary) **93h:83023** 83C45 (83F05)

— Trapping and completeness of a spherical light-cone. (English summary) *Gen. Relativity Gravitation* **25** (1993), *no.* 1, 95–100. (Summary) **93j:83063** 83C75

Hazama, Fumio The Mordell-Weil group of certain abelian varieties defined over the rational function field. (English summary) *Tôhoku Math. J.* (2) **44** (1992), *no.* 3, 335–344. (V. Kumar Murty) **93m:14037** 14K10 (11G10, 14H40, 14H52)

Hazard, C. (*with* Lenoir, Marc André; Vulliermе-Ledard, M.) Variational formulations for the determination of resonant states in scattering problems. *SIAM J. Math. Anal.* **23** (1992), *no.* 3, 579–608. (Volker Vogelsang) **93c:35120** 35P25 (35J05, 65L60, 76Q05)

Hazen, A. P. Interpretability of Robinson arithmetic in the ramified second-order theory of dense linear order. *Notre Dame J. Formal Logic* **33** (1992), *no.* 1, 101–111. (Mariko Yasugi) **93b:03011** 03B15 (03F25, 03F30)

Hazewinkel, Michiel Ricatti and soliton equations. *Gaussian random fields (Nagoya, 1990)*, 187–196, *Ser. Probab. Statist.*, 1, *World Sci. Publishing, River Edge, NJ*, 1991. (Summary) **93a:35136** 35Q53 (35Q58, 58F07)

Hazins, V. M. (*with* Svetsov, V. V.) A conservative stable smoothness-enhancing free-Lagrangian method. (English summary) *J. Comput. Phys.* **105** (1993), *no.* 2, 187–198. (Summary) **93k:76086** 76M25 (76M20)

Hazod, W. Semistability and domains of attraction on compact extensions of nilpotent groups. *Probability measures on groups, X (Oberwolfach, 1990)*, 189–204, *Plenum, New York*, 1991. (Gyula Pap) **93k:60021** 60B15 (22E25, 60F05)

Hazra, M. (*with* Basu, D. K.) Derivation of a general class of bilateral and trilateral generating functions for hypergeometric polynomial by group-theoretic method. *Pure Math. Manuscript* **8** (1989), 45–53. (B. P. Parashar) **93e:33003** 33C45

Hazra, R. N. (*with* Chattopadhyay, K. C.; Samanta, S. K.) Gradation of openness: fuzzy topology. (English summary) *Fuzzy Sets and Systems* **49** (1992), *no.* 2, 237–242. (Summary) **93f:54004** 54A40 (04A72)

He, Bin (*with* Han, Hou De; Guan, Zhi) Boundary element approximation of Steklov eigenvalue problem. *Theory and applications of boundary element methods (Beijing, 1991)*, 9–15, *Internat. Acad. Publ., Beijing*, 1991. (*see* **93b:65008**) 65N38 (65N25)

He, Bing Sheng A projection and contraction method for a class of linear complementarity problems and its application in convex quadratic programming. *Appl. Math. Optim.* **25** (1992), *no.* 3, 247–262. (J. Parida) **93c:90090** 90C33 (90C25)

— Some numerical experiments with a saddle point algorithm for linear programming. (Chinese. English summary) *J. Numer. Methods Comput. Appl.* **13** (1992), *no.* 3, 174–181. (Summary) **93j:90051** 90C05 (65K05)

— (*with* Stoer, Josef) Solution of projection problems over polytopes. *Numer. Math.* **61** (1992), *no.* 1, 73–90. (A. G. Azpeitia) **93b:90059** 90C20 (49M37, 65K05, 90C25)

He, Bo Yong Topological balanced supporting molecular lattices. (Chinese. Chinese summary) *Acta Math. Sinica* **35** (1992), *no.* 5, 642–651. 54A40 (04A72)

— Some theorems on hereditary properties and product properties in L-fuzzy topological spaces. (Chinese. Chinese summary) *Chinese Ann. Math. Ser. A* **13** (1992), *no.* 2, 243–247. 54A40 (04A72)

He, Can Zhi Existence conditions for solutions A to the inverse problem $Ax = b$ with A in certain classes of matrices, in particular the stochastic matrices. (Chinese. English and Chinese summaries) *Hunan Daxue Xuebao* **19** (1992), *no.* 2, 93–99. (Guo Rong Wang) **93i:15019** 15A24 (15A51)

He, Chang Bai (*with* Zhang, Zhen Jiu; Huang, Huan Ran; Bao, Gong) Quantum mechanics of black holes in curved space-time. *Quantum mechanics in curved space-time (Erice, 1989)*, 111–133, *NATO Adv. Sci. Inst. Ser. B Phys.*, 230, *Plenum, New York*, 1990. (*see* **93d:83003**) 83C47 (81T20, 83C57)

He, Chao (*with* He, Jian Xun) A simple and fast method of constructing concentric magic squares of even order. (Chinese. English summary) *J. Huazhong Univ. Sci. Tech.* **20** (1992), *no.* 4, 185–188. 05B15

He, Gang Fixed point theorems for weakly inward compact mappings on a cone. (Chinese. English summary) *Sichuan Shifan Daxue Xuebao Ziran Kexue Ban* **14** (1991), *no.* 5, 117–118. 47H10

He, Guan Yu A recursive filter for linear discrete systems with delayed observations. (Chinese. English summary) *Gaoxiao Yingyong Shuxue Xuebao* **7** (1992), *no.* 2, 206–215. (Min Sun) **93e:93063** 93E11 (93C55)

— A recursive filter for nonlinear discrete-time systems with linear observations. (Chinese. English and Chinese summaries) *J. Shanghai Jiaotong Univ.* **26** (1992), *no.* 1, 101–109. (Summary) **93e:93064** 93E11 (93C55)

— A recursive filter for first-order discrete systems with nonnormal noises. (Chinese. English summary) *J. Systems Sci. Math. Sci.* **12** (1992), *no.* 2, 174–177. 93E11

He, Guang (*with* Lan, Ren Xia; Wang, Zhen; et al.) ★ Xin E-Han zonghe keji cihui. (Chinese) [New Russian-Chinese polytechnic dictionary] *Kexue Chubanshe (Science Press), Beijing*, 1986. vi+1321 *pp.* (Summary) **93d:00009** 00A20

He, Guo Ping (*with* Gao, Zi You) A parallel algorithm for a class of quadratic programming problems. (Chinese. English and Chinese summaries) *Shandong Kuangye Xueyuan Xuebao* **11** (1992), *no.* 2, 209–212. 65K05 (90C20)

He, Guo Qiang On asymptotic convergence rates for the Tikhonov regularization method. (Chinese summary) *Shanghai Keji Daxue Xuebao* **14** (1991), *no.* 3, 19–32. (Alan L. Andrew) **93a:65076** 65J10 (47A50)

— A-smooth regularization operators. (Chinese. English and Chinese summaries) *Gaoxiao Yingyong Shuxue Xuebao* **7** (1992), *no.* 4, 568–578. (Summary) **93j:65087** 65J10 (47A50)

He, Hua Can (*with* Cao, Da Wei; Zhang, Guo Qi) Similarity analysis of Lie group method applied to solving the partial differential equation of orthogonal anisotropic plates. (English summary) *Sci. China Ser. A* **35** (1992), *no.* 2, 211–222. (Summary) **93g:35004** 35–04 (35A30, 35E20, 73B40, 73C02, 73K10)

He, Jia Ru (*with* Yu, Xin Zhen) Fuzzy integrals of λ-additive fuzzy measures. I. (Chinese. English summary) *Sichuan Shifan Daxue Xuebao Ziran Kexue Ban* **14** (1991), *no.* 4, 13–19. (Summary) **93b:28054** 28E10 (04A72)

— Fuzzy mappings and extension theorems. (Chinese. English summary) *Sichuan Shifan Daxue Xuebao Ziran Kexue Ban* **14** (1991), *no.* 4, 49–56. 54A40 (04A72)

— Fuzzy-valued measurable functions and their construction. (Chinese. English summary) *Mohu Xitong yu Shuxue* **6** (1992), *no.* 1, 59–66. (Ming Ma) **93d:28032** 28E10 (04A72)

He, Jia Xing (*with* Xu, Chun Ning) On derivation approximation of Bernstein operator. *J. Math. Res. Exposition* **12** (1992), *no.* 2, 258–260. (Geetha S. Rao) **93j:41013** 41A25 (41A17)

He, Jian Min (*with* Da, Qing Li) A conventional separation approach for system structural models. (Chinese. English and Chinese summaries) *J. Southeast Univ.* **22** (1992), *no.* 2, 22–27. 93A30

He, Jian Xun Strong practical stability of discontinuous dynamical systems. (Chinese. Chinese summary) *Acta Math. Sci. (Chinese)* **11** (1991), *no.* 4, 373–380. (Xin-Zhi Liu) **93h:34084** 34D20

— (*with* Wang, Mu Song) Remarks on exponential stability by comparison functions of the same order of magnitude. *Ann. Differential Equations* **7** (1991), *no.* 4, 409–414. (A. A. Martynyuk) **93d:34094** 34D99 (34D20)

— Using the comparison principle to study strong practical stability of discontinuous systems. (Chinese. English and Chinese summaries) *Xiamen Daxue Xuebao Ziran Kexue Ban* **31** (1992), *no.* 6, 575–580. (Summary) **93j:34077** 34D20

He, Jian Xun (*with* He, Chao) A simple and fast method of constructing concentric magic squares of even order. (Chinese. English summary) *J. Huazhong Univ. Sci. Tech.* **20** (1992), *no.* 4, 185–188. 05B15

He, Jiaz Ru *see* **He, Jia Ru**

He, Jifeng (*with* Martin, C. E.; Hoare, C. A. R.) Pre-adjunctions in order enriched categories. *Math. Structures Comput. Sci.* **1** (1991), *no.* 2, 141–158. (V. Yu. Meitus) **93e:68064** 68Q55 (18D05, 68Q60)

He, Jing Min An improved knapsack-based public key cryptosystem. (Chinese. English and Chinese summaries) *J. Tsinghua Univ.* **32** (1992), *no.* 4, 86–91. (Summary) **93i:94011** 94A60

He, Jiwen (*with* Atamian, C.; Dinh, G. V.; Glowinski, Roland; Périaux, Jacques) On some imbedding methods applied to fluid dynamics and electromagnetics. Second World Congress on Computational Mechanics, Part III (Stuttgart, 1990). *Comput. Methods Appl. Mech. Engrg.* **91** (1991), *no.* 1-3, 1271–1299. (Rolf Rannacher) **93c:76066** 76M25 (65K10, 65N30, 65N55, 78–08)

— (*with* Dinh, Q. V.; Glowinski, Roland; Kwock, V.; Pan, T. W.; Périaux, Jacques) Lagrange multiplier approach to fictitious domain methods: application to fluid dynamics and electromagnetics. (English summary) *Fifth International Symposium on Domain Decomposition Methods for Partial Differential Equations (Norfolk, VA, 1991)*, 151–194, *SIAM, Philadelphia, PA*, 1992. (Summary) **93h:65136** 65N30 (65N50, 76M25, 78–08)

— (*with* Dean, E. J.; Dinh, Q. V.; Glowinski, Roland; Pan, T. W.; Périaux, Jacques) Least squares/domain imbedding methods for Neumann problems: applications to fluid dynamics. (English summary) *Fifth International Symposium on Domain Decomposition Methods for Partial Differential Equations (Norfolk, VA, 1991)*, 451–475, *SIAM, Philadelphia, PA*, 1992. (Summary) **93h:65152** 65N55 (76M25, 76N10)

He, Kun Parametric empirical Bayes confidence intervals based on James-Stein estimator. *Statist. Decisions* **10** (1992), *no.* 1-2, 121–132. (A. L. Rukhin) **93d:62014** 62C12 (62C15, 62F25, 62H10)

He, Li Min (*with* Polak, Elijah) Rate-preserving discretization strategies for semi-infinite programming and optimal control. *SIAM J. Control Optim.* **30** (1992), *no.* 3, 548–572. (Alexander Shapiro) **93d:49036** 49M25 (90C34)

He, Lun Zhi (*with* Zhang, Hua Xiao; Jin, Yue Feng) The optimality conditions of D-pseudoconvex programming with operator constraints. (English summary) *Systems Sci. Math. Sci.* **5** (1992), *no.* 2, 111–120. (Corneliu Ursescu) **93i:90112** 90C48 (49K27)

He, Meng Xing An approximation criterion for type II stability of abstract functional-differential equations. (Chinese. Chinese summary) *Acta Math. Sci. (Chinese)* **11** (1991), *no.* 4, 381–386. (Guo Zhu Gao) **93g:34118** 34K20 (34K30)

— Boundedness and asymptotic properties of solutions to equations with time delay. (Chinese) *Acta Math. Sinica* **34** (1991), *no.* 6, 785–792. (Li Shang Jiang) **93f:35119** 35K60 (35R10)

— (*with* Liu, An Ping) Existence and stability of global solutions to abstract functional-differential equations. (Chinese. English summary) *Math. Appl.* **4** (1991), *no.* 4, 29–35. (Yang Kuang) **93f:35235** 35R10 (34K30)

— Periodic boundary problems for atmospheric dynamical equations. (Chinese. Chinese summary) *Acta Math. Sci. (Chinese)* **12** (1992), *no.* 1, 26–34. (Song Mu Zheng) **93m:35123** 35L50 (35Q99, 76C99, 86A10)

He, Nai Wen (*with* He, Yu Quan; Chi, Rui Dong) Lyapunov exponents of the circle map in human hearts. (English summary) *Phys. Lett. A* **170** (1992), *no.* 1, 29–32. 92C30 (58F13, 92–04)

He, Pei Yu (*with* Zhong, Guo Fa) Error-trapping decoding using duadic codes. (Chinese. English and Chinese summaries) *Sichuan Daxue Xuebao* **30** (1993), *no.* 1, 76–81. 94B35

He, Qi Min Conditions for the existence of exactly n limit cycles for the equations $\dot{x} = \varphi(y) - F(x)$, $\dot{y} = -g(x)$. (Chinese) *Acta Math. Sinica* **35** (1992), *no.* 1, 45–52. (Jian Hua Sun) **93e:34038** 34C05

He, Qi Ming (*with* Xu, Guang Hui) The distribution of the first passage time for the Markov processes of $GI/M/1$ type. *Comm. Statist. Stochastic Models* **7** (1991), *no.* 3, 397–417. (Brian Conolly) **93d:60160** 60K25

— An analysis of slow server systems and an algorithm. (Chinese. English and Chinese summaries) *Chinese J. Appl. Probab. Statist.* **8** (1992), *no.* 1, 1–9. 60K25

— A note on queueing system $M/M/1$. *J. Math. Res. Exposition* **12** (1992), *no.* 2, 313–315. (Summary) **93b:60215** 60K25

He, Qing Hong (*with* Zhang, Shi Ying) A method for estimating time-varying parameters of disequilibrium models using a maximum likelihood function with optimal moving windows. (Chinese. English and Chinese summaries) *Inform. and Control (Shenyang)* **21** (1992), *no.* 3, 135–140. 93E10 (93E12)

He, Rong (*with* Vaidya, P. G.) Analysis and synthesis of synchronous periodic and chaotic systems. (English summary) *Phys. Rev. A* (3) **46** (1992), *no.* 12, 7387–7392. (Summary) **93j:58091** 58F13 (34C15)

He, S. (*with* Auriault, J.-L.) Liquid phase sintering: rearrangement and densification. (English summary) *European J. Mech. A Solids* **12** (1993), *no.* 1, 125–143. (Summary) **93k:73010** 73B99 (73B27, 73S10, 76A99, 76D99, 76T05)

He, Sailing (*with* Ström, Staffan) The electromagnetic scattering problem in the time domain for a dissipative slab and a point source using invariant imbedding. *J. Math. Phys.* **32** (1991), *no.* 12, 3529–3539. (V. H. Weston) **93a:78016** 78A45

— (*with* Weston, Vaughan H.) Inverse problem for the dissipative wave equation in a stratified half-space and linearization of the imbedding equations. *Inverse Problems* **8** (1992), *no.* 3, 435–455. (Summary) **93c:35161** 35R30 (65P05, 78A45)

— (*with* Ström, Staffan) The electromagnetic inverse problem in the time domain for a dissipative slab and a point source using invariant imbedding: reconstruction of the permittivity and conductivity. (English summary) *J. Comput. Appl. Math.* **42** (1992), *no.* 1, 137–155. 78A45

— A time-harmonic Green's function technique and wave propagation in a stratified nonreciprocal chiral slab with multiple discontinuities. (English summary) *J. Math. Phys.* **33** (1992), *no.* 12, 4103–4110. (Summary) **93g:78014** 78A40

He, Sheng Wu (*with* Wang, Jia Gang; Xia, Ai Hua) Weak convergence of Markov jump processes. (Chinese. English and Chinese summaries) *Chinese J. Appl. Probab. Statist.* **7** (1991), *no.* 1, 73–81. (Summary) **93m:60065** 60F17 (60J75)

He, Shi Zhong (*with* Tan, Shao Hua; Hang, Chang Chieh; Wang, Pei Zhuang) Control of dynamical processes using an on-line rule-adaptive fuzzy control system. (English summary) *Fuzzy Sets and Systems* **54** (1993), *no.* 1, 11–22. 93C42 (04A72)

— (*with* Tan, Shao Hua; Xu, Feng Lan; Wang, Pei Zhuang) Fuzzy self-tuning of PID controllers. (English summary) *Fuzzy Sets and Systems* **56** (1993), *no.* 1, 37–46. 93C42 (04A72)

He, Tai Ping A note on two sufficient conditions for a ring to be a division ring. (Chinese. English summary) *Sichuan Shifan Daxue Xuebao Ziran Kexue Ban* **14** (1991), *no.* 4, 108–110. 16K20

He, Whenhua (*with* Dhaliwal, Ranjit S.) A problem of Reissner-Sagoci type for a semi-infinite composite elastic cylinder. *Acta Mech.* **93** (1992), *no.* 1-4, 125–132. (Summary) **93c:73073** 73K20

— (*with* Dhaliwal, Ranjit S.) Torsion of two nonhomogeneous elastic layers with penny-shaped flaw at the interface. (English summary) *J. Math. Phys. Sci.* **26** (1992), *no.* 1, 37–59. 73M25

He, X. (*with* Li, Xin[5]) Uniform convergence of polynomials associated with varying Jacobi weights. Proceedings of the U.S.-Western Europe Regional Conference on Padé Approximants and Related Topics (Boulder, CO, 1988). *Rocky Mountain J. Math.* **21** (1991), *no.* 1, 281–300. (J. A. Siddiqi) **93f:41012** 41A10 (41A25)

He, Xiang Min The Markov properties of two-parameter Feller processes and solutions to stochastic differential equations. (Chinese. English summary) *Natur. Sci. J. Xiangtan Univ.* **13** (1991), *no.* 2, 33–40, 51. (Summary) **93g:60157** 60J25 (60H10, 60J60)

— Properties of solutions to two-parameter stochastic integral equations of Volterra-Itô type. (Chinese. English and Chinese summaries) *Natur. Sci. J. Xiangtan Univ.* **14** (1992), *no.* 2, 92–99. 60H20

He, Xing Gang Integrable quasiconformal homeomorphisms. (Chinese. English and Chinese summaries) *J. Central China Normal Univ. Natur. Sci.* **26** (1992), *no.* 2, 138–143. (Summary) **93h:30030** 30C65

He, Xue Zhong Oscillatory property of solutions of a second order nonlinear difference equation. *Ann. Differential Equations* **7** (1991), *no.* 4, 415–422. (Shao Zhu Chen) **93a:39003** 39A10 (34C10, 39A12)

— (*with* Gopalsamy, K.; Wen, Li Zhi) Global attractivity and oscillations in a periodic logistic integrodifferential equation. *Houston J. Math.* **17** (1991), *no.* 2, 157–177. (Summary) **93c:34143** 34K15 (45J05, 92D40)

— (*with* Gopalsamy, K.; Sun, Da Qing) Oscillations in a delay logistic equation with diffusion. (English summary) *Recent trends in differential equations*, 239–252, *World Sci. Ser. Appl. Anal.*, 1, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93f:35102** 35K55

He, Xuming A local breakdown property of robust tests in linear regression. *J. Multivariate Anal.* **38** (1991), *no.* 2, 294–305. (Jan Ámos Víšek) **93a:62097** 62J05 (62F35)

— (*with* Simpson, Douglas G.) Robust direction estimation. *Ann. Statist.* **20** (1992), *no.* 1, 351–369. (Yasuko Chikuse) **93d:62105** 62H11 (62F35, 62H12)

— (*with* Portnoy, Stephen) Reweighted LS estimators converge at the same rate as the initial estimator. (English summary) *Ann. Statist.* **20** (1992), *no.* 4, 2161-2167. (Gutti J. Babu) **93k:62138** 62J05 (62G05)

He, Yi Liang (*with* Li, Lin Zhong) A_0-stability and $A(\alpha)$-stability of implicit linear 3-step methods of order 3. (Chinese. English summary) *Numer. Math. J. Chinese Univ.* **14** (1992), *no.* 2, 158–168. (Xu Hai Xu) **93m:65093** 65L05

He, Yin Nian (*with* Li, Kai Tai; Huang, Ai Xiang) Full discrete nonlinear Galerkin method. *Numerical methods for partial differential equations* (*Tianjin*, 1991), 61–82, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93b:65006**) 65M60 (34G20, 35Q30)

He, Yin Yun (*with* Wang, En Fu; Fang, Hao) Further research on parallel memories without access conflict and cell redundancy. (Chinese. English and Chinese summaries) *J. Wuhan Univ. Natur. Sci. Ed.* **1992**, *no.* 2, 25–30. 68P20 (68Q10)

He, Yong (*with* Yao, En Yu; Li, Rong Heng) New progress on optimal partitioning problems. (English summary) *Optimization, Vol.* 1, 2 (*Singapore*, 1992), 229–234, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93d:90005**) 90C27

He, Yong Cong Limit cycles of vector fields $X(v) = Av + f(v)v$. (Chinese. English summary) *Sichuan Shifan Daxue Xuebao Ziran Kexue Ban* **14** (1991), *no.* 4, 7–12. (Summary) **93d:34051** 34C05 (34D05, 58F21)

He, Yu (*with* Bhagavatula, Ravi; Grinstein, Geoffrey; Jayaprakash, C.) Algebraic correlations in conserving chaotic systems. (English summary) *Phys. Rev. Lett.* **69** (1992), *no.* 24, 3483–3486. (Summary) **93h:58094** 58F13

He, Yu Quan (*with* Chi, Rui Dong; He, Nai Wen) Lyapunov exponents of the circle map in human hearts. (English summary) *Phys. Lett. A* **170** (1992), *no.* 1, 29–32. 92C30 (58F13, 92-04)

He, Yu Zan (*with* Lin, Yong) On factorization of meromorphic functions satisfying nonlinear ordinary differential equations. *International Symposium in Memory of Hua Loo Keng, Vol. II* (*Beijing*, 1988), 123–133, *Springer, Berlin*, 1991. (Fred Gross) **93a:30034** 30D30

He, Yuanping (*with* Moodie, T. Bryant; Barclay, D. W.) Wavefront expansions and nonlinear hyperbolic waves. *Wave Motion* **14** (1991), *no.* 4, 347–367. (Alan Jeffrey) **93e:35074** 35L70 (65P05, 76B15)

He, Ze Lin (*with* Mustard, David) The type of the maximal operators of a class of Walsh convolution operators. *Proc. Amer. Math. Soc.* **116** (1992), *no.* 3, 711–719. (P. Simon) **93a:42012** 42C10 (47B35)

He, Zhen Some mapping theorems involving the perturbations of m-accretive operators. *Nonlinear Anal.* **19** (1992), *no.* 4, 345–351. (A. S. Potapov) **93j:47078** 47H06 (47H09)

He, Zheng-Xu (*with* Freedman, Michael H.) Divergence-free fields: energy and asymptotic crossing number. *Ann. of Math.* (2) **134** (1991), *no.* 1, 189–229. (Anders Linnér) **93a:58040** 58E15 (57M25)

— (*with* Bryson, Steve; Freedman, Michael H.; Wang, Zhenghan) Möbius invariance of knot energy. *Bull. Amer. Math. Soc.* (*N.S.*) **28** (1993), *no.* 1, 99–103. (Anders Linnér) **93d:57010** 57M25 (57N45, 58E10)

He, Zhi Bin (*with* Zhang, Hong Cai; Zhang, You Min) A robust self-adaptive extended Kalman filter and its application to flight state estimation. (Chinese. English and Chinese summaries) *Inform. and Control* (*Shenyang*) **21** (1992), *no.* 6, 343–348. 93E11 (93E35)

He, Zhong Luo Empirical Bayes estimation for parameters of one-dimensional continuous exponential families. (Chinese. English and Chinese summaries) *Chinese J. Appl. Probab. Statist.* **7** (1991), *no.* 4, 352–360. (Summary) **93m:62020** 62C12 (62F10, 62F15)

He, Zong Fu (*with* Cheng, Kan) A study on life distribution classes. (Chinese. English and Chinese summaries) *Chinese J. Appl. Probab. Statist.* **8** (1992), *no.* 3, 312–323. 62N05

Headley, Patrick (*with* Beals, Robert; Gallian, Joseph A.; Jungreis, Douglas S.) Harmonious groups. *J. Combin. Theory Ser. A* **56** (1991), *no.* 2, 223–238. (F. Pérez Monasor) **93a:20033** 20D60 (05C25, 20F05)

Heagy, J. F. A physical interpretation of the Hénon map. (English summary) *Phys. D* **57** (1992), *no.* 3-4, 436–446. (Summary) **93e:58130** 58F13 (34D45, 70H05, 70K50)

Healey, Richard A. Discussion: causation, robustness, and EPR. *Philos. Sci.* **59** (1992), *no.* 2, 282–292. (Lawrence Sklar) **93b:81025** 81P15

— Why error-prone quantum measurements have outcomes. (English summary) *Found. Phys. Lett.* **6** (1993), *no.* 1, 37–54. 81P15

Healey, Timothy J. (*with* Kielhöfer, Hansjörg) Hidden symmetry of fully nonlinear boundary conditions in elliptic equations: global bifurcation and nodal structure. *Results Math.* **21** (1992), *no.* 1-2, 83–92. (J. López Gómez) **93d:35053** 35J65 (35B32, 47H15, 47N20, 58G28)

— Large rotatory oscillations of transversely isotropic rods: spatio-temporal symmetry-breaking bifurcation. *SIAM J. Appl. Math.* **52** (1992), *no.* 4, 1120–1135. (Reiner Lauterbach) **93k:34032** 34A47 (58E09, 73B10, 73K05, 73K12)

Healy, D. M. (*with* Wallace, D. I.) Periodic solutions of differential equations on unipotent groups using Lie group deformations. *J. Math. Systems Estim. Control* **1** (1991), *no.* 4, 465–485. (A. Hulanicki) **93h:43009** 43A80 (22E27, 43A22)

Healy, Kevin J. Scheduling arrivals to a stochastic service mechanism. (English summary) *Queueing Systems Theory Appl.* **12** (1992), *no.* 3-4, 257–272. 60K25 (90B25)

Healy, Liam M. (*with* Dragt, Alex J.; Gjaja, Ivan M.) Computation of error effects in nonlinear Hamiltonian systems using Lie algebraic methods. *J. Math. Phys.* **33** (1992), *no.* 6, 1948–1963. (Summary) **93b:70018** 70H05 (70–08, 70H33, 78A35)

Healy, M. J. R. Biometrika index: Volumes 57–78 (1970–1991), author. *Biometrika* **1992**, *Author Index*, 62 *pp.* 00A15

Hearn, Donald W. (*with* Ventura, Jose A.) Restricted simplicial decomposition for symmetric convex flow problems. (English summary) *Amer. J. Math. Management Sci.* **12** (1992), *no.* 4, 363–381. (Summary) **93k:90100** 90C35 (90B10, 90C90)

Hearnshaw, J. B. Doppler and Vogel—two notable anniversaries in stellar astronomy. (English summary) *Vistas Astronom.* **35** (1992), *no.* 2, 157–177. (Summary) **93g:01068** 01A70 (01A55)

Heath, Jo W. Weakly confluent, 2-to-1 maps on hereditarily indecomposable continua. *Proc. Amer. Math. Soc.* **117** (1993), *no.* 2, 569–573. (James T. Rogers, Jr.) **93d:54047** 54F15

Heath, Lenwood S. (*with* Istrail, Sorin) The pagenumber of genus g graphs is $O(g)$. (English summary) *J. Assoc. Comput. Mach.* **39** (1992), *no.* 3, 479–501. (Summary) **93k:05171** 05C85 (05C10, 68Q25, 68R10)

— (*with* Rosenberg, Arnold L.) Laying out graphs using queues. (English summary) *SIAM J. Comput.* **21** (1992), *no.* 5, 927–958. (Václav Koubek) **93j:68157** 68R10 (05C85, 68Q25)

— (*with* Leighton, Frank Thomson; Rosenberg, Arnold L.) Comparing queues and stacks as mechanisms for laying out graphs. *SIAM J. Discrete Math.* **5** (1992), *no.* 3, 398–412. (Peter B. Gibbons) **93d:05150** 05C99 (68P05, 68R10, 94C15)

— (*with* Pemmaraju, Sriram V.; Trenk, Ann) Stack and queue layouts of directed acyclic graphs. (English summary) *Planar graphs* (*New Brunswick, NJ*, 1991), 5–11, *DIMACS Ser. Discrete Math. Theoret. Comput. Sci.*, 9, *Amer. Math. Soc., Providence, RI*, 1993. (*see* **93m:05005**) 68R10 (05C10)

Heath, Philip R. Nielsen type numbers for fibre preserving maps, coincidences of fibre preserving maps, and for periodic points of fibre preserving maps. *C. R. Math. Rep. Acad. Sci. Canada* **14** (1992), *no.* 1, 25–30. (Helga Schirmer) **93b:55001** 55M20 (54H25, 55R05)

— (*with* You, Cheng Ye) Nielsen-type numbers for periodic points. II. *Topology Appl.* **43** (1992), *no.* 3, 219–236. (Helga Schirmer) **93c:55002** 55M20 (54H25)

Heath, R. W. Some nonmetric, first countable, cancellative topological semigroups that are generalized metric spaces. Proceedings of the Symposium on General Topology and Applications (Oxford, 1989). *Topology Appl.* **44** (1992), *no.* 1-3, 167–173. (William Lindgren) **93h:22003** 22A15 (54E99)

Heath-Brown, D. R. Small solutions of quadratic congruences. II. *Mathematika* **38** (1991), *no.* 2, 264–284 (1992). (Ming-Chit Liu) **93d:11039** 11D79

— The distribution and moments of the error term in the Dirichlet divisor problem. *Acta Arith.* **60** (1992), *no.* 4, 389–415. (Claudia A. Spiro-Silverman) **93e:11114** 11N60 (11N25, 11N37, 11N56)

— (*with* Wilson, P. M. H.) Calabi-Yau threefolds with $\rho > 13$. *Math. Ann.* **294** (1992), *no.* 1, 49–57. (Bruce Hunt) **93j:14046** 14J30 (14J15)

— The density of zeros of forms for which weak approximation fails. *Math. Comp.* **59** (1992), *no.* 200, 613–623. (R. C. Baker) **93a:11055** 11G35 (11D25, 11P55)

— Zero-free regions for Dirichlet L-functions, and the least prime in an arithmetic progression. *Proc. London Math. Soc.* (3) **64** (1992), *no.* 2, 265–338. (Andrew Granville) **93a:11075** 11N13 (11M26)

— The size of Selmer groups for the congruent number problem. *Invent. Math.* **111** (1993), *no.* 1, 171–195. (Fernando Q. Gouvêa) **93j:11038** 11G40 (11G05)

— Zeros of the Riemann zeta-function on the critical line. *Math. Z.* **212** (1993), *no.* 2, 193–199. (Matti Jutila) **93k:11077** 11M26

Heatherly, Henry (*with* Birkenmeier, Gary F.; Kepka, Tomáš) Rings with left self-distributive multiplication. *Acta Math. Hungar.* **60** (1992), *no.* 1-2, 107–114. (N. Divinsky) **93i:16044** 16U99

— (*with* Meldrum, J. D. P.) Finiteness conditions for near-rings. (English summary) *Canad. Math. Bull.* **35** (1992), *no.* 4, 492–496. (Summary) **93j:16034** 16Y30

— (*with* Birkenmeier, Gary F.) Minimal ideals in near-rings and localized distributivity conditions. (English summary) *J. Austral. Math. Soc. Ser. A* **54** (1993), *no.* 2, 156–168. (Steve Ligh) **93k:16080** 16Y30

Heavens, Alan F. *see* **Physics of the early universe, 93b:83071**

Hebda, Piotr W. (*with* Rideau, Guy; Anderson, Robert Leonard) Canonical quantization of the Bateman-Morse-Feshbach damped oscillator. *Lett. Math. Phys.* **23** (1991), *no.* 1, 79–89. (W. Slowikowski) **93d:81101** 81S99 (81Q05, 81S05)

Hebda-Grabowska, Halina On the rate of convergence to Brownian motion of the partial sums of infima of independent random variables. *Probab. Math. Statist.* **12** (1991), *no.* 1, 113–125 (1992). (Shûya Kanagawa) **93f:60028** 60F05 (60G70)

Hebeker, F.-K. An integral equation of the first kind for a free boundary value problem of the stationary Stokes' equations. (English summary) *Math. Methods Appl. Sci.* **9** (1987), *no.* 4, 550–575. (Summary) **93g:35147** 35R35 (35Q30, 76D07, 76M99)

— (*with* Wilde, P.) On missing boundary conditions with unsteady incompressible Navier-Stokes flows. (English summary) *Math. Methods Appl. Sci.* **15** (1992), *no.* 6, 421–432. (Anders Szepessy) **93h:35158** 35Q30 (76D05, 76M10)

Hébert, Michel Syntactic characterization of closure under connected limits. *Arch. Math. Logic* **31** (1991), *no.* 2, 133–143. (Summary) **93e:03050** 03C52 (18A35, 68P15, 68Q65)

Hebey, Emmanuel La méthode d'isométries-concentration dans le cas d'un problème non linéaire sur les variétés compactes à bord avec exposant critique de Sobolev. (English summary) [The isometry-concentration method in the case of a nonlinear problem with

Sobolev critical exponent on compact manifolds with boundary] *Bull. Sci. Math.* (2) **116** (1992), *no.* 1, 35–51. (Peter R. Popivanov) **93d:35054** 35J65 (35A25)

— (*with* Vaugon, Michel) Quelques résultats sur l'existence de solutions nodales d'équations elliptiques non linéaires avec exposant critique de Sobolev. (English summary) [Some results about the existence of nodal solutions of nonlinear elliptic equations with critical Sobolev exponents] *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 12, 901–904. (Summary) **93c:35046** 35J65 (35B05)

— À propos d'un théorème non linéaire de Th. Aubin pour la transformation conforme de la courbure scalaire sur S^n. (English and French summaries) [Concerning a nonlinear theorem of Th. Aubin for the conformal transformation of the scalar curvature on S^n] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 2, 183–185. (Summary) **93k:53039** 53C21 (35J60, 58G30)

— (*with* Vaugon, Michel) Meilleures constantes dans le théorème d'inclusion de Sobolev et multiplicité pour les problèmes de Nirenberg et Yamabe. (English summary) [Best constants in the Sobolev embedding theorem and multiplicity for the Nirenberg and Yamabe problems] *Indiana Univ. Math. J.* **41** (1992), *no.* 2, 377–407. (Dennis M. DeTurck) **93m:58121** 58G30 (35J60, 46E35, 53C21)

Hebisch, Udo Eine algebraische Theorie unendlicher Summen mit Anwendungen auf Halbgruppen und Halbringe. [An algebraic theory of infinite sums with applications to semigroups and semirings] *Bayreuth. Math. Schr. No.* 40 (1992), 21–152. (B. Pondělíček) **93e:16062** 16Y60 (20M99)

— (*with* Weinert, Hanns J.) Generalized semigroup semirings which are zero-divisor-free or multiplicatively left-cancellative. *Theoret. Comput. Sci.* **92** (1992), *no.* 2, 269–289. (C. J. Maxson) **93a:16041** 16Y60 (20M25)

Hebisch, Waldemar A multiplier theorem for Schrödinger operators. *Colloq. Math.* **60/61** (1990), *no.* 2, 659–664. (Hitoshi Kitada) **93f:47055** 47F05 (35J10, 46E35)

— (*with* Biler, Piotr; Dziubański, Jacek) Scattering of small solutions to generalized Benjamin-Bona-Mahony equation in several space dimensions. (English summary) *Comm. Partial Differential Equations* **17** (1992), *no.* 9-10, 1737–1758. (Alan Jeffrey) **93k:35209** 35Q35 (35L70)

— Estimates on the semigroups generated by left invariant operators on Lie groups. *J. Reine Angew. Math.* **423** (1992), 1–45. (Chu Li Fu) **93d:22008** 22E30 (35A99, 58G99)

— On heat kernels on Lie groups. *Math. Z.* **210** (1992), *no.* 4, 593–605. (Michael Cowling) **93j:22016** 22E30 (43A80)

— The subalgebra of $L^1(AN)$ generated by the Laplacian. *Proc. Amer. Math. Soc.* **117** (1993), *no.* 2, 547–549. (Norman J. Weiss) **93d:22009** 22E30 (43A20)

Hecht, Hartmut Gottfried Wilhelm Leibniz über Geometrie und Erfahrung. [Gottfried Wilhelm Leibniz on geometry and experience] *Mathematik und Wirklichkeit*, 71–79, *Akademie-Verlag, Berlin*, 1991. (*see* **93e:00008**) 00A30 (01A45)

— *see also* **Gottfried Wilhelm Leibniz in philosophical discourse on geometry and experience, 93g:01031**

Hecht, K. T. *see* **Group theory and special symmetries in nuclear physics, 93e:81150**

Hecht, R. D. On Toma's Kerr metric solution in new general relativity. *Phys. Lett. A* **165** (1992), *no.* 3, 194–198. (Summary) **93g:83087** 83D05 (83C15)

— (*with* Hehl, Friedrich W.; McCrea, J. Dermott; Mielke, Eckehard W.; Ne'eman, Yuval) Improved energy-momentum currents in metric-affine spacetime. (English summary) *Phys. Lett. A* **172** (1992), *no.* 1-2, 13–20. (Gheorghe Zet) **93k:83023** 83C40 (81V17, 83D05)

Heck, A. *see* **Applying fractals in astronomy, 93g:85001**

Hecker, Hans-Dietrich (*with* Böttcher, Ralf) Weitere NP-schwere Probleme für minimale Polygonüberdeckungen. [More NP-hard problems for minimal polygon coverings] *Beiträge Algebra Geom. No.* 33 (1992), 71–76. (Peter Gritzmann) **93i:68169** 68U05 (52B55, 68Q25)

— (*with* Böttcher, Ralf) Streckensternförmigkeit—eine weitere Verallgemeinerung der Sternförmigkeit. [Segment star shapedness—another generalization of star shapedness] *Beiträge Algebra Geom. No.* 33 (1992), 109–114. (J. Böhm) **93f:52011** 52A30 (51M20, 52-04)

— *see also* **Aleksandrov, P. S., 93i:20001**

Heckert, F. (*with* Bretthauer, G.) A priori identifiability of closed loop subsystems for correlated outer signals. (English summary) *Identification and system parameter estimation* 1991, *Vol.* 1,2 (*Budapest*, 1991), 1127–1132, *IFAC Sympos. Ser.*, 3, *Pergamon, Oxford*, 1992. (*see* **93h:93009**) 93B52

Heckman, G. J. (*with* Brussee, R.; Opdam, E. M.) Variation on a theme of MacDonald. *Math. Z.* **208** (1991), *no.* 1, 1–10. (René J. Beerends) **93a:33028** 33C80 (17B20, 22E30)

Heckman, Nancy E. Minimax Bayes estimation, penalized likelihood methods, and restricted minimax estimation. *Nonparametric functional estimation and related topics* (*Spetses*, 1990), 339–346, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 335, *Kluwer Acad. Publ., Dordrecht*, 1991. (Summary) **93a:62058** 62G05 (62C20)

— (*with* Woodroofe, Michael) Minimax Bayes estimation in nonparametric regression. *Ann. Statist.* **19** (1991), *no.* 4, 2003–2014. (Friedrich Liese) **93a:62059** 62G05

— Bump hunting in regression analysis. *Statist. Probab. Lett.* **14** (1992), *no.* 2, 141–152. (Summary) **93c:62070** 62G05

— (*with* Gu, Chong; Wahba, Grace) A note on generalized cross-validation with replicates. (English summary) *Statist. Probab. Lett.* **14** (1992), *no.* 4, 283–287. 62G05

Heckmann, Reinhold Lower and upper power domain constructions commute on all cpos. *Inform. Process. Lett.* **40** (1991), *no.* 1, 7–11. (Ana Pasztor) **93a:06007** 06B35 (18C10, 68Q55)

— Power domain constructions. ESOP '90 (Copenhagen, 1990). *Sci. Comput. Programming* **17** (1991), *no.* 1-3, 77–117. (Wesley Phoa) **93a:68079** 68Q55 (06B35, 06F25)

Heckner, Michael On meromorphic functions and linear differential polynomials, which have few zeros. (English summary) *Mitt. Math. Sem. Giessen No.* 211 (1992), 1–14. (Hong Xun Yi) **93k:30046** 30D35

Hector, Gilbert (*with* Brasselet, Jean-Paul; Saralegi Aranguren, Martin) Théorème de de Rham pour les variétés stratifiées. [The de Rham theorem for stratified manifolds] *Ann. Global Anal. Geom.* **9** (1991), *no.* 3, 211–243. (A. A. Ranicki) **93g:55009** 55N33 (58A12, 58A35)

— (*with* Cenkl, Bohumil; Saralegi Aranguren, Martin) Tame intersection cohomology. (Italian summary) *Rend. Mat. Appl.* (7) **11** (1991), *no.* 4, 931–944. (Summary) **93i:55006** 55N33

— (*with* Brasselet, Jean-Paul; Saralegi Aranguren, Martin) $\mathscr{L}^2$-cohomologie des espaces stratifiés. (English summary) [$\mathscr{L}^2$-cohomology of stratified spaces] *Manuscripta Math.* **76** (1992), *no.* 1, 21–32. (Summary) **93i:58009** 58A35 (55N33)

— (*with* Saralegi Aranguren, Martin) Intersection cohomology of S^1-actions. *Trans. Amer. Math. Soc.* **338** (1993), *no.* 1, 263–288. (Marek Golasiński) **93j:57021** 57S15 (55N33, 57N80)

Hedayat, A. S. (*with* Pesotan, H.) Coexistence of a family of systematic sampling designs with positive second order inclusion probabilities and block designs. (English summary) *J. Combin. Inform. System Sci.* **17** (1992), *no.* 1-2, 113–122. (Summary) **93m:62032** 62D05 (05B05, 62K10)

Hedayatian, K. (*with* Seddighi, K.) In certain spaces of analytic functions invertibility implies weak invertibility. *Proceedings of the 21st. Annual Iranian Mathematics Conference* (*Isfahan*, 1990), 275–281, *Univ. Isfahan, Isfahan*, 199?. (Benjamin A. Lotto) **93c:47037** 47B38 (30H05, 46E20)

Hedberg, Lars Inge Nonlinear potential theory. *Potential theory* (*Nagoya*, 1990), 43–54, *de Gruyter, Berlin*, 1992. (Juha Heinonen) **93g:31020** 31C45 (31C15, 46E35)

Heden, Olof On the modular n-queen problem. *Discrete Math.* **102** (1992), *no.* 2, 155–161. (Jonathan I. Hall) **93d:05041** 05B99

Hedenmalm, Håkan A factorization theorem for square area-integrable analytic functions. *J. Reine Angew. Math.* **422** (1991), 45–68. (P. L. Duren) **93c:30053** 30D99 (30D55, 31A25, 46E20, 46J15)

Hedetniemi, Stephen T. (*with* Domke, Gayla S.; Laskar, Renu C.; Fricke, Gerd) Relationships between integer and fractional parameters of graphs. *Graph theory, combinatorics, and applications, Vol.* 1 (*Kalamazoo, MI*, 1988), 371–387, *Wiley-Intersci. Publ., Wiley, New York*, 1991. (Summary) **93c:05060** 05C35

Hedlíková, Jarmila (*with* Katriňák, Tibor) On a characterization of lattices by the betweenness relation—on a problem of M. Kolibiar. *Algebra Universalis* **28** (1991), *no.* 3, 389–400. (Editors) **93f:06007** 06B05

Hedrick, J. Karl (*with* Slotine, Jean-Jacques) Robust input-output feedback linearization. (English summary) *Internat. J. Control* **57** (1993), *no.* 5, 1133–1139. 93B17

Hedström, Peter Organizational vacancy chains and the attainment process. (English summary) *J. Math. Sociol.* **17** (1992), *no.* 1, 63–76. 92H35

Hedtstück, U. (*with* Beierle, Christoph; Pletat, U.; Schmitt, Peter H.; Siekmann, Jörg H.) An order-sorted logic for knowledge representation systems. *Artificial Intelligence* **55** (1992), *no.* 2-3, 149–191. (Sławomir Zadrożny) **93e:68124** 68T30 (03B70, 68T27)

Heegaard, J.-H. (*with* Curnier, A.) An augmented Lagrangian method for discrete large-slip contact problems. (English summary) *Internat. J. Numer. Methods Engrg.* **36** (1993), *no.* 4, 569–593. (Summary) **93i:73049** 73T05 (73V05, 73V25)

Heermann, D. W. (*with* Burkitt, A. N.) ★ Parallel algorithms in computational science. Springer Series in Information Sciences, 24. *Springer-Verlag, Berlin*, 1991. xiv+183 *pp. ISBN* 3-540-53418-0 (From the preface) **93b:68030** 68Q22 (68–02, 68U20)

— (*with* Mehlig, B.; Forrest, B. M.) Exact Langevin algorithms. (English summary) *Molecular Phys.* **76** (1992), *no.* 6, 1347–1357. (Summary) **93d:65009** 65C05

Heersink, Rudolf On associated operators in the theory of Cauchy-Kovalevskaya problems. *Partial differential equations with complex analysis*, 23–28, *Pitman Res. Notes Math. Ser.*, 262, *Longman Sci. Tech., Harlow*, 1992. (*see* **93h:35005**) 35A10 (35C99)

— (*with* Tutschke, Wolfgang) Ordinary differential equations in the complex domain whose solutions satisfy a partial differential equation of second order. *Complex Variables Theory Appl.* **18** (1992), *no.* 1-2, 49–53. (Heinrich Begehr) **93f:30049** 30G20 (34A20, 35N10)

van Heerwaarden, A. E. (*with* Kaas, R.) Stop-loss order, unequal means, and more dangerous distributions. (English summary) *Insurance Math. Econom.* **11** (1992), *no.* 1, 71–77. (Summary) **93f:62141** 62P05

Heesterman, C. C. (*with* Gill, Richard D.) A central limit theorem for M-estimators by the von Mises method. (English summary) *Statist. Neerlandica* **46** (1992), *no.* 2-3, 165–177. (Xuming He) **93h:62055** 62F12 (60F05, 62E20, 62F35)

Hefez, Abramo ★ Introdução à geometria projetiva. (Portuguese) [Introduction to projective geometry] Monografias de Matemática [Mathematical Monographs], 46. *Instituto de Matemática Pura e Aplicada, Rio de Janeiro*, 199?. ii+90 *pp. ISBN* 85-244-0051-X (From the introduction) **93h:51001** 51–01

— (*with* Kakuta, Neuza) New bounds for Fermat curves over finite fields. *Enumerative algebraic geometry* (*Copenhagen*, 1989), 89–97, *Contemp. Math.*, 123, *Amer. Math. Soc., Providence, RI*, 1991. (Paulo Viana) **93e:11077** 11G20 (14G15, 14H25)

— (*with* Kakuta, Neuza) On the geometry of nonclassical curves. (English summary) *Bol. Soc. Brasil. Mat.* (*N.S.*) **23** (1992), *no.* 1-2, 79–91. (Jonathan M. Wahl) **93m:14030** 14H50

— (*with* Levcovitz, Daniel) About inseparable morphisms. *Comm. Algebra* **21** (1993), *no.* 3, 1023–1028. (From the introduction) **93m:14014** 14E22

— *see also* **Gouvêa, Fernando Quadros, 93f:11034**

Heffernan, Daniel M. (*with* Jenkins, P.; Daly, M.; Hawdon, B. J.; O'Gorman, J.) Characterization of chaos. (English summary) *Internat. J. Theoret. Phys.* **31** (1992), *no.* 8, 1345–1362. (Summary) **93d:58097** 58F13 (34C35, 34D45)

Heffernan, Maika Behaxeteguy (*with* Santner, Thomas J.) A two-stage procedure for selecting the largest normal mean whose first stage selects a bounded random number of populations. *J. Statist. Plann. Inference* **31** (1992), *no.* 2, 147–168. (Summary) **93k:62046** 62F07

Hefner, Kim A. S. (*with* Lundgren, J. Richard; Maybee, John S.) Biclique covers and partitions of unipathic digraphs. (English summary) *Graphs, matrices, and designs*, 213–224, *Lecture Notes in Pure and Appl. Math.*, 139, *Dekker, New York*, 1993. (Brian Alspach) **93m:05081** 05C20 (05C38)

Hegazi, A. S. (*with* Ahmed, Elsayed Mohamed) Finite temperature infinitesimally deformed classical and quantum gravity. (English summary) *Gen. Relativity Gravitation* **24** (1992), *no.* 9, 929–934. (Summary) **93i:81088** 81R50 (81T30)

Hegde, S. M. Additively graceful graphs. *Nat. Acad. Sci. Lett.* **12** (1989), *no.* 11, 387–390. (Prabir Das) **93f:05080** 05C78

— (*with* Acharya, B. Devadas) Strongly indexable graphs. *Discrete Math.* **93** (1991), *no.* 2-3, 123–129. (Qing De Kang) **93f:05078** 05C78

— Construction of sequential and sequentially additive graphs. (English summary) *J. Ramanujan Math. Soc.* **7** (1992), *no.* 2, 165–173. (Peter J. Slater) **93m:05174** 05C78

Hegel, Georg Wilhelm *see* **Kleinert, Ernst, 93e:01011**

Hegenbarth, Friedrich A note on the Brauer lift map. *Algebraic topology (San Feliu de Guíxols, 1990)*, 139–145, *Lecture Notes in Math.*, 1509, *Springer, Berlin*, 1992. (Donald M. Davis) **93h:55001** 55N15 (20C33)

— (*with* Cavicchioli, Alberto) On the intersection forms of closed 4-manifolds. (English summary) *Publ. Mat.* **36** (1992), *no.* 1, 73–83. (Terry Lawson) **93f:57021** 57N13

Heger, A. S. (*with* Alang-Rashid, N. K.) A method for transforming operators' skill to fuzzy logic controllers. (English summary) *Control Theory Adv. Tech.* **8** (1992), *no.* 3, 513–523. 93C42

Hegerfeldt, Gerhard C. An alternative approach to the quantization of linear relativistic field equations. (English summary) *Differential geometry, group representations, and quantization*, 75–83, *Lecture Notes in Phys.*, 379, *Springer, Berlin*, 1991. (Summary) **93g:81070** 81S99 (81T99)

— A quantum characterization of Gaussianness. (English summary) *Quantum probability & related topics*, 165–173, *QP-PQ, VII, World Sci. Publishing, River Edge, NJ*, 1992. (David Applebaum) **93k:81121** 81S25 (46L50, 47N50, 60G15)

— (*with* Plenio, Martin B.) Macroscopic dark periods without a metastable state. *Phys. Rev. A* (3) **46** (1992), *no.* 1, 373–379. 81V80

Heggie, Douglas C. Chaos in the N-body problem of stellar dynamics. *Predictability, stability, and chaos in N-body dynamical systems (Cortina d'Ampezzo, 1990)*, 47–62, *NATO Adv. Sci. Inst. Ser. B Phys.*, 272, *Plenum, New York*, 1991. (*see* **93i:70002**) 85A05 (58F13, 70F10, 70F15)

Heggie, Murray The left derived tensor product of CAT-valued diagrams. (French summary) *Cahiers Topologie Géom. Différentielle Catégoriques* **33** (1992), *no.* 1, 33–53. (Timothy Porter) **93d:18014** 18G55 (18G10)

Heggie, Patricia M. (*with* Campbell, Colin M.; Robertson, Edmund F.; Thomas, Richard M.) One-relator products of cyclic groups and Fibonacci-like sequences. *Applications of Fibonacci numbers, Vol. 4 (Winston-Salem, NC, 1990)*, 63–68, *Kluwer Acad. Publ., Dordrecht*, 1991. (G. L. Alexanderson) **93k:11009** 11B39 (20K05)

— (*with* Campbell, Colin M.; Robertson, Edmund F.; Thomas, Richard M.) Finite one-relator products of two cyclic groups with the relator of arbitrary length. (English summary) *J. Austral. Math. Soc. Ser. A* **53** (1992), *no.* 3, 352–368. (Stephan Rosebrock) **93i:20035** 20F05 (20F32)

— (*with* Campbell, Colin M.; Robertson, Edmund F.; Thomas, Richard M.) Cyclically presented groups embedded in one-relator products of cyclic groups. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 2, 401–408. (Stephen J. Pride) **93g:20054** 20F05

Hegland, Markus An optimal order regularization method which does not use additional smoothness assumptions. (English summary) *SIAM J. Numer. Anal.* **29** (1992), *no.* 5, 1446–1461. (Charles W. Groetsch) **93j:65090** 65J20 (45B05, 47A50, 65J10, 65R20)

Hegyvári, N. On complete sequences. *Ann. Univ. Sci. Budapest. Eötvös Sect. Math.* **34** (1991), 7–10 (1992). (Péter Kiss) **93b:11024** 11B83

Heh, Jia Sheng (*with* Wu, Chin Fu; Fêng, I Kang; Kuo, Tê Shêng) Optimal pi-coefficients of second-order systems. *J. Chinese Inst. Engrs.* **15** (1992), *no.* 2, 179–187. (Summary) **93e:93055** 93D21 (93C55, 93D09)

Hehl, Friedrich W. (*with* Baekler, P.; Mielke, Eckehard W.) Dynamical symmetries in topological 3D gravity with torsion. *Nuovo Cimento B* (11) **107** (1992), *no.* 1, 91–110. (Carl Brans) **93d:83053** 83D05 (81V17)

— (*with* Hecht, R. D.; McCrea, J. Dermott; Mielke, Eckehard W.; Ne'eman, Yuval) Improved energy-momentum currents in metric-affine spacetime. (English summary) *Phys. Lett. A* **172** (1992), *no.* 1-2, 13–20. (Gheorghe Zet) **93k:83023** 83C40 (81V17, 83D05)

Heibig, Arnaud (*with* Serre, Denis) Étude variationnelle du problème de Riemann. (English summary) [Variational study of a Riemann problem] *J. Differential Equations* **96** (1992), *no.* 1, 56–88. (Eduard Feireisl) **93a:35103** 35L65 (35A15)

— (*with* Colombeau, Jean-François) Nonconservative products in bounded variation functions. *SIAM J. Math. Anal.* **23** (1992), *no.* 4, 941–949. (P. Cràciunas) **93f:46058** 46F10 (35L99)

meyer auf der Heide, Friedhelm *see* **Meyer auf der Heide, Friedhelm**

Heidelberger, Philip (*with* Glynn, Peter W.) Jackknifing under a budget constraint. (English summary) *ORSA J. Comput.* **4** (1992), *no.* 3, 226–234. (Summary) **93e:62071** 62F10

— (*with* Glynn, Peter W.) Analysis of initial transient deletion for parallel steady-state simulations. *SIAM J. Sci. Statist. Comput.* **13** (1992), *no.* 4, 904–922. (Summary) **93c:68110** 68U20 (60F05, 60K99, 65C05, 65Y05)

Heidenreich, W. F. (*with* Fronsdal, C.) Infrared regularization of quantum gravity. *Ann. Physics* **215** (1992), *no.* 1, 51–62. (Yu. N. Obukhov) **93f:83039** 83C45 (81T70)

Heiderich, Karen R. (*with* Abrahams, Andrew M.; Shapiro, Stuart L.; Teukolsky, Saul A.) Vacuum initial data, singularities, and cosmic censorship. (English summary) *Phys. Rev. D* (3) **46** (1992), *no.* 6, 2452–2463. (Francis Cagnac) **93g:83077** 83C75 (83C05)

Heidler, Harald (*with* Böttcher, Albrecht) Algebraic composition operators. *Integral Equations Operator Theory* **15** (1992), *no.* 3, 389–411. (Barbara D. MacCluer) **93b:47057** 47B38

Heij, Christiaan (*with* Kloek, Teun; Lucas, André) Positivity conditions for stochastic state space modelling of time series. (English summary) *Econometric Rev.* **11** (1992), *no.* 3, 379–396. (Luis Firinguetti) **93m:62197** 62M10 (62P20)

van der Heijden, M. C. (*with* de Kok, A. G.) Customer waiting times in an (R, S) inventory system with compound Poisson demand. (English summary) *Z. Oper. Res.* **36** (1992), *no.* 4, 315–332. (Upendra Dave) **93j:90036** 90B05

van Heijenoort, Jean *see* **Special Issue: van Heijenoort, Jean, 93d:03003** *and* **Feferman, Anita Burdman, 93j:01010**

Heijmans, Henk J. A. M. Discrete wavelets and multiresolution analysis. (English summary) *CWI Quarterly* **5** (1992), *no.* 1, 5–32. (Karlheinz Gröchenig) **93g:42023** 42C15 (94A11)

— (*with* Vincent, Luc) Graph morphology in image analysis. *Mathematical morphology in image processing*, 171–203, *Opt. Engrg.*, 34, *Dekker, New York*, 1993. (*see* **93f:68100**) 68U10 (68R10)

van Heijst, Eugène Josephus Leonardus Johannes ★ Special signature schemes. Dissertation, Technische Universiteit Eindhoven, Eindhoven, 1992. With a Dutch summary. *Technische Universiteit Eindhoven, Eindhoven*, 1992. iv+134 *pp.* (James W. Snively, Jr.) **93j:94023** 94A60 (68P25)

van Heijst, G. J. F. (*with* Hopfinger, E. J.) Vortices in rotating fluids. *Annual review of fluid mechanics, Vol. 25*, 241–289, *Annual Reviews, Palo Alto, CA*, 1993. (Radyadour Kh. Zeytounian) **93k:76119** 76U05 (76C05, 76V05, 86A10)

Heikkilä, Seppo (*with* Carl, Siegfried) On extremal solutions of an elliptic boundary value problem involving discontinuous nonlinearities. *Differential Integral Equations* **5** (1992), *no.* 3, 581–589. (Maurizio Chicco) **93b:35046** 35J65 (35R05)

— (*with* Leela, S.) On the solvability of the second order initial value problems in Banach spaces. *Dynamic Systems Appl.* **1** (1992), *no.* 2, 141–170. (Tomás Domínguez Benavides) **93g:34097** 34G20 (34A12, 47N20)

— (*with* Carl, Siegfried; Kumpulainen, Martti) On a generalized iteration method with applications to fixed point theorems and elliptic systems involving discontinuities. *Nonlinear Anal.* **20** (1993), *no.* 2, 157–167. (Pavel Drábek) **93k:35083** 35J55 (47H10, 47N20)

Heikkinen, J. A. (*with* Salomaa, R. R. E.) Diffusion by amplitude modulation in Hamiltonian systems. (English summary) *Phys. D* **64** (1993), *no.* 4, 365–378. (Summary) **93k:58206** 58F40

Heil, Alions Anton (*with* Kersch, A.; Papadopoulos, N. A.; Reifenhäuser, B.; Scheck, F.) Structure of the space of reducible connections for Yang-Mills theories. *J. Geom. Phys.* **7** (1990), *no.* 4, 489–505 (1991). (Dana S. Fine) **93a:58029** 58D19 (53C07, 81T13)

— (*with* Kersch, A.; Papadopoulos, N. A.; Reifenhäuser, B.) Abelian charges in a nonabelian Yang-Mills theory from the stratification of the space of gauge potentials. (English summary) *Ann. Physics* **217** (1992), *no.* 2, 173–193. (Jan Segert) **93h:58032** 58D29 (58D30, 81R40)

Heil, Christopher Methods of solving dilation equations. (English summary) *Probabilistic and stochastic methods in analysis, with applications (Il Ciocco, 1991)*, 15–45, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 372, *Kluwer Acad. Publ., Dordrecht*, 1992. (Summary) **93h:42023** 42C15

Heil, Erhard A sufficient support condition for minima of variational problems for simple integrals. *Proceedings of the 3rd Congress of Geometry (Thessaloniki, 1991)*, 195–202, *Aristotle Univ. Thessaloniki, Thessaloniki*, 1992. (*see* **93d:53003**) 49K05

Heil, Wolfgang (*with* Gómez-Larrañaga, José Carlos) 3-manifolds that are unions of three handlebodies of genus at most 1. *Knots* 90 (*Osaka*, 1990), 477–487, *de Gruyter, Berlin*, 1992. (Katura Miyazaki) **93i:57024** 57N10 (57M50)

— (*with* Raspopović, Pedja) Dehn fillings of Klein bottle bundles. *Math. Proc. Cambridge Philos. Soc.* **112** (1992), *no.* 2, 255–270. (William Dunbar) **93i:57025** 57N10 (57M25, 57M35)

Heiland, Randy (*with* Armbruster, Dieter; Kostelich, Eric J.; Nicolaenko, Basil) Phase-space analysis of bursting behavior in Kolmogorov flow. (English summary) Interpretation of time series from nonlinear systems (Warwick, 1991). *Phys. D* **58** (1992), *no.* 1-4, 392–401. (Summary) **93i:76046** 76F99 (76D05, 76M99)

Heiler, Siegfried Bounded influence and high breakdown point regression with linear combinations of order statistics and rank statistics. (English summary) L_1*-statistical analysis and related methods (Neuchâtel, 1992)*, 201–215, *North-Holland, Amsterdam*, 1992. (Summary) **93m:62151** 62J05 (62F35, 62G05)

Heiligers, Berthold Admissibility of experimental designs in linear regression with constant term. *J. Statist. Plann. Inference* **28** (1991), *no.* 1, 107–123. (Summary) **93d:62133** 62K05

— A note on connectedness of block designs. *Metrika* **38** (1991), *no.* 6, 377–381. (K. G. Russell) **93b:62106** 62K10

— (*with* Schneider, Klaus) Invariant admissible and optimal designs in cubic regression on the ν-ball. *J. Statist. Plann. Inference* **31** (1992), *no.* 1, 113–125. (Ashish Das) **93m:62171** 62K05

— Admissible experimental designs in multiple polynomial regression. *J. Statist. Plann. Inference* **31** (1992), *no.* 2, 219–233. (William I. Notz) **93h:62128** 62K05

— (*with* Mandal, Nripes Kumar) Minimax designs for estimating the optimum point in a quadratic response surface. *J. Statist. Plann. Inference* **31** (1992), *no.* 2, 235–244. (Ivar Petersen) **93g:62100** 62K05

Heilmann, Margareta (*with* Müller, Manfred W.) Equivalence of a weighted modulus of smoothness and a modified weighted K-functional. *Progress in approximation theory*, 467–473, *Academic Press, Boston, MA*, 1991. (V. Totik) **93a:41031** 41A28 (46M35)

Heilmann, Ole J. Analytical solutions of Smoluchowski's coagulation equation. *J. Phys. A* **25** (1992), *no.* 13, 3763–3771. (Summary) **93c:82068** 82D30 (34A34)

Heilmann, Wolf-Rödiger (*with* Schröter, Klaus J.) Orderings of risks and their actuarial applications. (English summary) *Stochastic orders and decision under risk (Hamburg, 1989)*, 157–173, *IMS Lecture Notes Monograph Ser.*, 19, *Inst. Math. Statist., Hayward, CA*, 1991. (Summary) **93h:62187** 62P05 (60E15)

Heilpern, Stanisław The expected value of a fuzzy number. *Fuzzy Sets and Systems* **47** (1992), *no.* 1, 81–86. 04A72

— Fuzzy subsets of the space of probability measures and expected value of fuzzy variable. (English summary) *Fuzzy Sets and Systems* **54** (1993), *no.* 3, 301–309. 60A99 (04A72, 28E10)

Heiman, Rafi (*with* Wigderson, Avi) Randomized vs. deterministic decision tree complexity for read-once Boolean functions. *Comput. Complexity* **1** (1991), *no.* 4, 311–329. (Peter Clote) **93j:68059** 68Q15 (03D15, 03G05, 06E25, 68Q25)

— (*with* Newman, Ilan; Wigderson, Avi) On read-once threshold formulae and their randomized decision tree complexity. (English summary) Structure in complexity theory (Barcelona, 1990). *Theoret. Comput. Sci.* **107** (1993), *no.* 1, 63–76. (Summary) **93k:68033** 68Q15 (03D15, 68Q05)

Heimbeck, Günter Translationsebenen der Ordnung 49 mit einer Quaternionengruppe von Dehnungen. (English summary) [Translation planes of order 49 with a quaternion group of elongations] *J. Geom.* **44** (1992), *no.* 1-2, 65–76. (T. G. Ostrom) **93d:51018** 51E15 (05B25, 20B25, 51A35, 51A40)

— Translation planes of order 25 admitting a quaternion group of homologies with affine axis. *Results Math.* **21** (1992), *no.* 3-4, 328–331. (M. J. Kallaher) **93e:51009** 51E15 (20B25, 51A40)

Heimsoeth, B. (*with* Lange, Horst R.) Nonlocal nonlinear Schrödinger equations. *Semigroup theory and evolution equations (Delft, 1989)*, 243–257, *Lecture Notes in Pure and Appl. Math.*, 135, *Dekker, New York*, 1991. (Piotr Biler) **93f:35216** 35Q55 (34G20, 47N20, 81Q05)

Hein, James Completions of perpetual logic programs. *Theoret. Comput. Sci.* **99** (1992), *no.* 1, 65–78. (Neculai Curteanu) **93c:68013** 68N17 (03B70, 68T15, 68T25)

Heindl, G. Inclusions of the range of functions and their derivatives. (English summary) *Computer arithmetic, scientific computation and mathematical modelling* (*Albena*, 1990), 229–238, *IMACS Ann. Comput. Appl. Math.*, 12, *Baltzer, Basel*, 1991. (Summary) **93h:65019** 65D15 (65D25, 65G10)

— Computable hypernorm bounds for the error of an approximate solution to a system of nonlinear equations. (English summary) *Computer arithmetic and enclosure methods* (*Oldenburg*, 1991), 451–461, *North-Holland, Amsterdam*, 1992. (Summary) **93j:65085** 65J05 (65H99)

Heindorf, Lutz Chains in Boolean semigroup algebras. *Z. Math. Logik Grundlag. Math.* **37** (1991), *no.* 1, 93–96. (F. M. Yaqub) **93b:06028** 06E10

— Alternative characterizations of finitary and well-founded Boolean algebras. *Algebra Universalis* **29** (1992), *no.* 1, 109–135. (S. Comer) **93b:06027** 06E05 (03G05)

— Moderate families in Boolean algebras. *Ann. Pure Appl. Logic* **57** (1992), *no.* 3, 217–250. (Martin Weese) **93d:06013** 06E05 (06E15)

— Zero-dimensional Dugundji spaces admit profinite lattice structures. (English summary) *Comment. Math. Univ. Carolin.* **33** (1992), *no.* 2, 329–334. (Summary) **93h:54025** 54H12 (06B35, 54F50)

Heinekamp, Albert *see* **Leibniz, Gottfried Wilhelm, 93h:01063**

Heineken, Hermann (*with* Ritthaler, R.) On some locally finite groups which are sharply triply transitive. (Russian and Ukrainian summaries) *Ukrain. Mat. Zh.* **43** (1991), *no.* 7-8, 1060–1065; *reprinted in Ukrainian Math. J.* **43** (1991), *no.* 7-8, 994–999 (1992). (John S. Wilson) **93b:20006** 20B22 (20B10, 20E25)

— The product of two finite nilpotent groups and its Fitting series. *Arch. Math.* (*Basel*) **59** (1992), *no.* 3, 209–214. (Gary L. Walls) **93i:20017** 20D10 (20D40)

— Normal embeddings of p-groups into p-groups. *Proc. Edinburgh Math. Soc.* (2) **35** (1992), *no.* 2, 309–314. (John D. P. Meldrum) **93g:20040** 20D15 (20D30, 20D45)

Heinig, Georg Inverse problems for Hankel and Toeplitz matrices. *Linear Algebra Appl.* **165** (1992), 1–23. (A. Böttcher) **93b:15016** 15A24 (15A09, 47B35, 65F99)

— (*with* Jankowski, Peter) Kernel structure of block Hankel and Toeplitz matrices and partial realization. (English summary) *Linear Algebra Appl.* **175** (1992), 1–30. (John Maroulas) **93h:47029** 47B35 (15A57, 47A99, 47N70)

— (*with* Finck, Tilo; Rost, Karla) An inversion formula and fast algorithms for Cauchy-Vandermonde matrices. (English summary) *Linear Algebra Appl.* **183** (1993), 179–191. (Zeng Rong Chen) **93m:65034** 65F05 (15A09)

Heinig, H. P. Weighted inequalities in Fourier analysis. *Nonlinear analysis, function spaces and applications, Vol.* 4 (*Roudnice nad Labem*, 1990), 42–85, *Teubner-Texte Math.*, 119, *Teubner, Leipzig*, 1990. (Kenneth F. Andersen) **93b:42015** 42A38 (26D15, 42B10, 47B38)

— (*with* Benedetto, John J.) Fourier transform inequalities with measure weights. (English summary) *Adv. Math.* **96** (1992), *no.* 2, 194–225. (Luboš Pick) **93m:42004** 42B10

— (*with* Carton-Lebrun, C.) Weighted Fourier transform inequalities for radially decreasing functions. *SIAM J. Math. Anal.* **23** (1992), *no.* 3, 785–798. (Vladimir D. Stepanov) **93e:42012** 42A38 (42B10)

— (*with* Stepanov, V. D.) Weighted Hardy inequalities for increasing functions. (English summary) *Canad. J. Math.* **45** (1993), *no.* 1, 104–116. (Kenneth F. Andersen) **93j:26011** 26D15 (26D10, 42B25)

Heinkenschloss, Matthias Mesh independence for nonlinear least squares problems with norm constraints. (English summary) *SIAM J. Optim.* **3** (1993), *no.* 1, 81–117. (Marlies Borchardt) **93m:65082** 65K10 (49M40, 90C20)

Heinonen, J. (*with* Gauthier, Paul M.; Zwick, D.) Axiomatic approximation. *Approximation by solutions of partial differential equations* (*Hanstholm*, 1991), 79–85, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 365, *Kluwer Acad. Publ., Dordrecht*, 1992. (*see* **93a:31001**) 41A30 (31B35, 35J99)

— (*with* Kilpeläinen, Tero; Martio, Olli) Harmonic morphisms in nonlinear potential theory. *Nagoya Math. J.* **125** (1992), 115–140. (S. K. Vodop'yanov) **93e:30052** 30C65 (35J60)

— (*with* Zwick, D.) Best uniform approximation by $\mathscr{H}$-superharmonic functions. *Numer. Funct. Anal. Optim.* **13** (1992), *no.* 1-2, 1–10. (Ilpo Laine) **93g:31021** 31C45 (41A30, 41A50)

Heinreichsberger, O. (*with* Selberherr, S.; Stiftinger, M.) Three-dimensional MOS device simulation on a connection machine. (English summary) *Parallel processing for scientific computing* (*Houston, TX*, 1991), 388–393, *SIAM, Philadelphia, PA*, 1992. (*see* **93g:65178**) 65F50 (65F10, 65Y05)

Heinrich, Juan C. (*with* Pepper, Darrell W.) ★ The finite element method. Basic concepts and applications. With 1 IBM-PC floppy disk (5.25 inch; HD). Series in Computational and Physical Processes in Mechanics and Thermal Sciences. *Hemisphere Publishing Corp., Washington, DC*, 1992. xii+240 *pp. ISBN* 1-56032-104-0 (William W. Hager) **93f:65001** 65-01 (65M60, 65N30, 73V05, 76M10)

Heinrich, Katherine Simple direct constructions for hybrid triple designs. *Discrete Math.* **97** (1991), *no.* 1-3, 223–227. (Laura Bertani) **93a:05027** 05B07

— (*with* Liu, Gui Zhen; Alspach, Brian) Some results on orthogonal factorizations. (Chinese. English and Chinese summaries) *Adv. in Math.* (*China*) **21** (1992), *no.* 2, 211–215. (Zhong Fu Zhang) **93g:05114** 05C70

— (*with* Hamm, Susan) Resolvable and near-resolvable decompositions of DK_v into oriented 4-cycles. (English summary) *Aequationes Math.* **44** (1992), *no.* 2-3, 304–316. (Frank E. Bennett) **93m:05080** 05C20 (05C70)

— (*with* Kim, Kichul; Prasanna Kumar, V. K.) Perfect Latin squares. (English summary) *Discrete Appl. Math.* **37/38** (1992), 281–286. (V. Havel) **93h:05025** 05B15

— (*with* Colbourn, Charles J.) Conflict-free access to parallel memories. *J. Parallel Distrib. Comput.* **14** (1992), *no.* 2, 193–200. (Shinsei Tazawa) **93a:05032** 05B15 (68P05, 68P20)

Heinrich, Lothar Bounds for the absolute regularity coefficient of a stationary renewal process. (English summary) *Yokohama Math. J.* **40** (1992), *no.* 1, 25–33. (Esa Nummelin) **93j:60125** 60K05 (60G50)

Heinrich, O. Equilibrium configurations of superconducting cosmic strings in background fields. *Quantum gravity* (*Moscow*, 1990), 534–552, *World Sci. Publishing, River Edge, NJ*, 1991. (*see* **93b:83004**) 83C47 (81T20, 83E05)

Heinrich, Stefan (*with* Kern, Jörg-Detlef) Parallel information-based complexity. *J. Complexity* **7** (1991), *no.* 4, 339–370. (Arthur G. Werschulz) **93a:68063** 68Q30

— Probabilistic analysis of numerical methods for integral equations. *J. Integral Equations Appl.* **3** (1991), *no.* 2, 289–319. (M. Z. Nashed) **93a:65181a** 65R20 (45L05, 60H99)

— Errata: "Probabilistic analysis of numerical methods for integral equations". *J. Integral Equations Appl.* **3** (1991), *no.* 3, 469–472. (M. Z. Nashed) **93a:65181b** 65R20 (45L05, 60H99)

— Lower bounds for the complexity of Monte Carlo function approximation. (English summary) *J. Complexity* **8** (1992), *no.* 3, 277–300. (Erich Novak) **93h:65007** 65C05 (41A46, 47A58, 47B38, 65D15, 65Y20)

— (*with* Mathé, Peter) The Monte Carlo complexity of Fredholm integral equations. *Math. Comp.* **60** (1993), *no.* 201, 257–278. (B. L. Granovskiy) **93d:65007** 65C05 (45L10, 60J10, 65R20)

Heinricher, Arthur C. (*with* Stockbridge, Richard H.) Optimal control and replacement with state-dependent failure rate. (English summary) *Stochastic theory and adaptive control* (*Lawrence, KS*, 1991), 240–247, *Lecture Notes in Control and Inform. Sci.*, 184, *Springer, Berlin*, 1992. (Summary) **93j:93152** 93E20 (49L20, 90B25)

Heinrichs, Wilhelm Algebraic spectral multigrid methods. (English summary) *Spectral and high order methods for partial differential equations* (*Como*, 1989), 281–286, *North-Holland, Amsterdam*, 1990. (*see* **93d:65005**) 65N35 (65N55)

— Strong convergence estimates for pseudospectral methods. (English summary) *Appl. Math.* **37** (1992), *no.* 6, 401–417. (Relja Vulanović) **93h:65101** 65L10 (65N35)

— (*with* Eisen, Henner) A new method of stabilization for singular perturbation problems with spectral methods. *SIAM J. Numer. Anal.* **29** (1992), *no.* 1, 107–122. (I. Norman Katz) **93a:65160** 65N35 (34E15)

— Splitting techniques for the pseudospectral approximation of the unsteady Stokes equations. (English summary) *SIAM J. Numer. Anal.* **30** (1993), *no.* 1, 19–39. (Summary) **93i:65097** 65M70 (65N35, 76D07, 76M25)

Heins, Maurice Composition and Fatou limits. *Geometry and complex variables* (*Bologna*, 1988/1990), 215–219, *Lecture Notes in Pure and Appl. Math.*, 132, *Dekker, New York*, 1991. (I. N. Baker) **93e:30057** 30D05

Heinson, G. S. (*with* Lilley, F. E. M.) Examples in the inversion of seafloor magnetotelluric data. *Mini-Conference on Inverse Problems in Partial Differential Equations* (*Canberra*, 1990), 121–142, *Proc. Centre Math. Appl. Austral. Nat. Univ.*, 31, *Austral. Nat. Univ., Canberra*, 1992. (*see* **93i:00020**) 86A25

Heintz, Joos (*with* Recio Muñiz, Tomás J.; Roy, Marie-Françoise) Algorithms in real algebraic geometry and applications to computational geometry. *Discrete and computational geometry* (*New Brunswick, NJ*, 1989/1990), 137–163, *DIMACS Ser. Discrete Math. Theoret. Comput. Sci.*, 6, *Amer. Math. Soc., Providence, RI*, 1991. (Charles N. Delzell) **93f:14029** 14P10 (03B35, 03C10, 12D10, 14Q15, 68Q25, 68Q40)

— (*with* Krick, Teresa; Slisenko, A. O.; Solernó, P.) A search for the shortest path around semi-algebraic obstacles in the plane. (Russian. English summary) *Zap. Nauchn. Sem. Leningrad. Otdel. Mat. Inst. Steklov.* (*LOMI*) **192** (1991), *Teor. Slozhn. Vychisl.* 5, 163–173, 176. (M. M. Syslo) **93b:68088** 68U05 (05C38, 05C85, 90C35)

Heintze, Ernst (*with* Olmos, Carlos) Normal holonomy groups and s-representations. (English summary) *Indiana Univ. Math. J.* **41** (1992), *no.* 3, 869–874. (Gudlaugur Thorbergsson) **93h:53060** 53C40 (53C35)

Heinz, A. (*with* Neumann, P.) Representation of orientation and disorientation data for cubic, hexagonal, tetragonal and orthorhombic crystals. *Acta Cryst. Sect. A* **47** (1991), *no.* 6, 780–789. (T. Janssen) **93c:82067** 82D25

Heinz, H.-P. (*with* Küpper, Tassilo; Stuart, Charles A.) Existence and bifurcation of solutions for nonlinear perturbations of the periodic Schrödinger equation. (English summary) *J. Differential Equations* **100** (1992), *no.* 2, 341–354. (Hideo Yamagata) **93k:35029** 35B32 (35J10, 35Q55, 47H12)

— (*with* Stuart, Charles A.) Solvability of nonlinear equations in spectral gaps of the linearization. *Nonlinear Anal.* **19** (1992), *no.* 2, 145–165. (Pavel Drábek) **93g:47078** 47H15 (34B15, 34L40, 47H12, 47N20, 58E07)

Heinzer, William J. (*with* Abhyankar, Shreeram S.) Singular locus of an infinite integral extension. *J. Algebra* **143** (1991), *no.* 2, 436–469. (Sherwood Washburn) **93a:13010** 13F40 (14E20, 14J99)

— (*with* Lantz, David; Shah, Kishor) The Ratliff-Rush ideals in a Noetherian ring. *Comm. Algebra* **20** (1992), *no.* 2, 591–622. (L. J. Ratliff, Jr.) **93c:13002** 13A15 (13C13)

— (*with* Gilmer, Robert) The family of residue fields of a zero-dimensional commutative ring. (English summary) *J. Pure Appl. Algebra* **82** (1992), *no.* 2, 131–153. (Evan G. Houston) **93k:13019** 13C15 (13C05)

— (*with* Gilmer, Robert) An application of Jónsson modules to some questions concerning proper subrings. *Math. Scand.* **70** (1992), *no.* 1, 34–42. (Johnny A. Johnson) **93k:13025** 13E99 (13E05, 13E10)

— (*with* Johnston, Bernard L.; Lantz, David; Shah, Kishor) The Ratliff-Rush ideals in a Noetherian ring: a survey. *Methods in module theory* (*Colorado Springs, CO*, 1991), 149–159, *Lecture Notes in Pure and Appl. Math.*, 140, *Dekker, New York*, 1993. (L. J. Ratliff, Jr.) **93k:13004** 13A15 (13C99, 13D40)

— (*with* Gilmer, Robert) Primary ideals with finitely generated radical in a commutative ring. (English summary) *Manuscripta Math.* **78** (1993), *no.* 2, 201–221. (L. J. Ratliff, Jr.) **93k:13003** 13A15 (13B25, 13F05)

— (*with* Gilmer, Robert) Artinian subrings of a commutative ring. *Trans. Amer. Math. Soc.* **336** (1993), *no.* 1, 295–310. (Liam O'Carroll) **93e:13028** 13E10 (12D15, 12F99, 13A99)

— (*with* Gilmer, Robert; Lantz, David) The Noetherian property in rings of integer-valued polynomials. *Trans. Amer. Math. Soc.* **338** (1993), *no.* 1, 187–199. (Jean-Luc Chabert) **93j:13027** 13G05 (13B22, 13B25, 13E05)

Heinzmann, Gerhard (*with* Proust, Joëlle) Carnap et Gödel: échange de lettres autour de la définition de l'analyticité. Introduction, traduction et notes. [Carnap and Gödel: exchange of letters concerning the definition of analyticity. Introduction, translation and notes] *Logique et Anal.* (*N.S.*) **31** (1988), *no.* 123-124, 257–291. (Roman Murawski) **93m:03010** 03A05 (01A60, 03–03)

Heinzner, Peter (*with* Kutzschebauch, Frank) Le principe d'Oka équivariant. (English and French summaries) [The equivariant Oka principle] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 12, 1265–1267. (B. Gilligan) **93k:32071** 32M05 (32E10)

— On the automorphisms of special domains in $\mathbf{C}^n$. (English summary) *Indiana Univ. Math. J.* **41** (1992), *no.* 3, 707–712. (Jean-Jacques Loeb) **93k:32072** 32M05

— (*with* Abate, Marco) Holomorphic actions on contractible domains without fixed points. *Math. Z.* **211** (1992), *no.* 4, 547–555. (Dennis Snow) **93i:32037** 32M05 (32H50, 32M10)

Heise, Ulrich Fundamental solutions of Navier's differential operator for elastic Riemann spaces with a finite and with an infinite number of sheets. (English summary) *Comput. Mech.* **7** (1991), *no.* 5-6, 311–328. (Jian Ke Lu) **93f:73023** 73C02 (73V35)

— Fundamental solutions of the plane and three-dimensional bipotential operators defined on various types of Riemann surfaces and spaces. (English summary) *Internat. J. Solids Structures* **30** (1993), *no.* 1, 115–128. (Summary) **93k:73088** 73V35 (73C35, 73M25)

Heisel, Maritta Formalizing and implementing Gries' program development method in dynamic logic. *Sci. Comput. Programming* **18** (1992), *no.* 1, 107–137. (Summary) **93a:68021** 68N05

Heislbetz, Hans Peter ★ Invariante Typen und hyperrationale Gruppen. (German) [Invariant types and hyperrational groups] Dissertation, Bayerische-Julius-Maximilians-Universität Würzburg, Würzburg, 1991. *Bayerische-Julius-Maximilians-Universität Würzburg, Fakultät für Mathematik, Würzburg*, 1991. iv+100 *pp.* (Otto Mutzbauer) **93c:20060** 20F12 (20F14, 20F18, 20F19)

Heiss, W. D. (*with* Steeb, Willi-Hans) Avoided level crossings and Riemann sheet structure. *J. Math. Phys.* **32** (1991), *no.* 11, 3003–3007. (Kotik K. Lee) **93b:81060** 81Q15 (47A55, 47N50)

schroeder-Heister, Peter *see* **Schroeder-Heister, Peter**

Heitjan, Daniel F. (*with* Rubin, Donald B.) Ignorability and coarse data. *Ann. Statist.* **19** (1991), *no.* 4, 2244–2253. (Summary) **93f:62042** 62F99 (62A10, 62A15)

Heitkamp, Dieter ★ Hecke-Theorie zur SL(2; o). (German) [Hecke theory for SL(2; o)] Schriftenreihe des Mathematischen Instituts der Universität Münster, 3. Serie [Series of the Mathematical Institute of the University of Münster, Series 3], 5. *Universität Münster, Mathematisches Institut, Münster*, 1992. iv+143 *pp.* (K.-B. Gundlach) **93c:11030** 11F41 (11F60)

Heitmann, Raymond C. A counterexample to the rigidity conjecture for rings. (English summary) *Bull. Amer. Math. Soc.* (*N.S.*) **29** (1993), *no.* 1, 94–97. (José A. Hermida-Alonso) **93m:13007** 13D05 (18G15)

— Characterization of completions of unique factorization domains. *Trans. Amer. Math. Soc.* **337** (1993), *no.* 1, 379–387. (José A. Hermida-Alonso) **93g:13006** 13B35 (13C15, 13F15)

Hejduk, Jacek Convergence with respect to some σ-ideals. (Serbo-Croatian summary) *Zb. Rad. Prirod.-Mat. Fak. Ser. Mat.* **21** (1991), *no.* 1, 157–164. (Richard Becker) **93f:46031** 46E10 (28A99, 54A20)

Hejhal, Dennis A. On the distribution of zeros of a certain class of Dirichlet series. *Internat. Math. Res. Notices* **1992,** *no.* 4, 83–91. (Kai Man Tsang) **93e:11102** 11M41 (11M26, 11R47)

— Eigenvalues of the Laplacian for Hecke triangle groups. *Mem. Amer. Math. Soc.* **97** (1992), *no.* 469, vi+165 *pp.* (Shigeki Akiyama) **93f:11043** 11F72 (11F06)

Hejmo, Władysław (*with* Kloch, Jacenty) Dynamic behaviour of a planar feedback-system. (English summary) *Bull. Polish Acad. Sci. Math.* **39** (1991), *no.* 3-4, 249–258. (P. Brunovský) **93m:34097** 34H05 (34A60, 93B52)

Hejný, M. Typical intersections of continuous functions with monotone functions. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 4, 1131–1137. (Paul D. Humke) **93j:26007** 26A48 (26A21)

Hekimova, M. A. *see* **Arolska-Hekimova, Mariya At.**

arolska-Hekimova, Mariya At. *see* **Arolska-Hekimova, Mariya At.**

Hekstra, A. (*with* Berger, Toby; Orlitsky, Alon) Asymptotic component densities in programmable gate arrays realizing all circuits of a given size. (English summary) *Algorithmica* **9** (1993), *no.* 2, 101–127. (Summary) **93j:68082** 68Q35 (05C85, 68Q25, 68R10)

el-Helaly, Sherif *see* **El-Helaly, Sherif**

Helander, P. (*with* Lisak, M.; Semenov, V. E.) Generalized adiabatic invariants in one-dimensional Hamiltonian systems. *Phys. Rev. Lett.* **68** (1992), *no.* 25, 3659–3662. (Summary) **93a:70016** 70H05 (58F05)

Helayël-Neto, J. A. (*with* Almeida, C. A. S.; Smith, A. William) The superspace gauging of (2, 0) nonlinear sigma models in the presence of torsion. *Phys. Lett. B* **279** (1992), *no.* 1-2, 75–77. (Gheorghe Zet) **93d:81173** 81T60

el-Helbawy, Abdalla T. *see* **El-Helbawy, Abdalla T.**

Helberg, Albertus S. J. (*with* Ferreira, Hendrik C.) On the complete decoding of constrained codes. (English summary) *IEEE Trans. Inform. Theory* **39** (1993), *no.* 1, 228–232. (Summary) **93m:94035** 94B35

Helbing, Dirk A fluid-dynamic model for the movement of pedestrians. (English summary) *Complex Systems* **6** (1992), *no.* 5, 391–415. (Summary) **93m:90027** 90B06 (82C40)

Held, Martin ★ On the computational geometry of pocket machining. Lecture Notes in Computer Science, 500. *Springer-Verlag, Berlin*, 1991. xii+178 *pp. ISBN* 3-540-54103-9 (Wolfgang Boehm) **93a:68151** 68U05 (90B99)

Hélein, Frédéric Harmonic diffeomorphisms between Riemannian manifolds. *Variational methods (Paris*, 1988), 309–318, *Progr. Nonlinear Differential Equations Appl.*, 4, *Birkhäuser Boston, Boston, MA*, 1990. (Caio J. C. Negreiros) **93k:58064** 58E20

— (*with* Bethuel, Fabrice; Coron, Jean-Michel; Demengel, F.) A cohomological criterion for density of smooth maps in Sobolev spaces between two manifolds. (English summary) *Nematics* (*Orsay*, 1990), 15–23, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 332, *Kluwer Acad. Publ., Dordrecht*, 1991. (Liliana Maxim-Râileanu) **93g:58020** 58D15

— (*with* Bethuel, Fabrice; Brézis, Haïm; Coleman, Bernard D.) Bifurcation analysis of minimizing harmonic maps describing the equilibrium of nematic phases between cylinders. *Arch. Rational Mech. Anal.* **118** (1992), *no.* 2, 149–168. (E. Acerbi) **93h:49059** 49Q10 (58E20, 76A15, 76M30)

— (*with* Bethuel, Fabrice; Brézis, Haïm) Limite singulière pour la minimisation de fonctionnelles du type Ginzburg-Landau. (English summary) [Singular limit for the minimization of Ginzburg-Landau functionals] *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 12, 891–895. (Summary) **93d:58033** 58E12 (35Q55, 58E20)

— *see also* **Nematics, 93d:58007**

Helfer, Adam D. (*with* Zhao, Zhong Xin) Gaussian integrals on Wiener spaces. *J. Appl. Probab.* **29** (1992), *no.* 1, 46–55. (Yuh-Jia Lee) **93e:60075** 60G15 (60G35, 60J65)

Helffer, Bernard (*with* Balslev, Erik) Limiting absorption principle and resonances for the Dirac operator. *Adv. in Appl. Math.* **13** (1992), *no.* 2, 186–215. (Volker Vogelsang) **93g:35106** 35P25 (35B30, 35Q40, 47F05, 47N50)

— (*with* Knauf, Andreas; Siedentop, Heinz; Weikard, Rudi) On the absence of a first order correction for the number of bound states of a Schrödinger operator with Coulomb singularity. *Comm. Partial Differential Equations* **17** (1992), *no.* 3-4, 615–639. (Vesselin M. Petkov) **93h:35149** 35P20 (35J10, 47F05, 58G18)

Helgason, Sigurdur Invariant differential operators and Weyl group invariants. *Harmonic analysis on reductive groups* (*Brunswick, ME*, 1989), 193–200, *Progr. Math.*, 101, *Birkhäuser Boston, Boston, MA*, 1991. (Aleksander Strasburger) **93h:22018** 22E30 (43A85, 44A12)

— Geometric and analytic features of the Radon transform. Mathematische Wissenschaften gestern und heute. 300 Jahre Mathematische Gesellschaft in Hamburg, Teil 4 (Hamburg, 1990). *Mitt. Math. Ges. Hamburg* **12** (1991), *no.* 4, 977–988 (1992). (Árpád Kurusa) **93g:44007** 44A12 (53C65)

— The flat horocycle transform for a symmetric space. *Adv. Math.* **91** (1992), *no.* 2, 232–251. (Aleksander Strasburger) **93i:43008** 43A85 (22E30, 22E46)

— Huygens' principle for wave equations on symmetric spaces. *J. Funct. Anal.* **107** (1992), *no.* 2, 279–288. (P. Günther) **93i:58151** 58G16 (53C35)

Hell, Pavol (*with* Nešetřil, Jaroslav) Universality of directed graphs of a given height. (English summary) *Arch. Math.* (*Brno*) **25** (1989), *no.* 1-2, 47–54. (Erol Barbut) **93i:05069** 05C20

— (*with* Bermond, Jean-Claude; Liestman, Arthur L.; Peters, Joseph G.) Sparse broadcast graphs. *Discrete Appl. Math.* **36** (1992), *no.* 2, 97–130. (Summary) **93a:68011** 68M10 (05C90, 90B12, 90C35)

— (*with* Miller, Donald J.) Achromatic numbers and graph operations. (English summary) Topological, algebraical and combinatorial structures. Frolík's memorial volume. *Discrete Math.* **108** (1992), *no.* 1-3, 297–305. (Robin J. Wilson) **93k:05062** 05C15

— (*with* Bang-Jensen, Jørgen; MacGillivray, Gary) On the complexity of colouring by superdigraphs of bipartite graphs. (English summary) Algebraic graph theory (Leibnitz, 1989). *Discrete Math.* **109** (1992), *no.* 1-3, 27–44. (Italo José Dejter) **93m:68051** 68Q15 (05C15, 05C20, 68R10)

— (*with* Nešetřil, Jaroslav) The core of a graph. (English summary) Algebraic graph theory (Leibnitz, 1989). *Discrete Math.* **109** (1992), *no.* 1-3, 117–126. (Gary MacGillivray) **93m:05163** 05C75 (05C85, 68Q25)

— (*with* Bang-Jensen, Jørgen) Fast algorithms for finding Hamiltonian paths and cycles in in-tournament digraphs. (English summary) *Discrete Appl. Math.* **41** (1993), *no.* 1, 75–79. (Summary) **93h:05113** 05C45 (05C20, 05C85)

— (*with* Seyffarth, Karen) Largest planar graphs of diameter two and fixed maximum degree. (English summary) Graph theory and combinatorics (Marseille-Luminy, 1990). *Discrete Math.* **111** (1993), *no.* 1-3, 313–322. (Summary) **93j:05086** 05C35

— (*with* Kirkpatrick, David G.) Algorithms for degree constrained graph factors of minimum deficiency. (English summary) *J. Algorithms* **14** (1993), *no.* 1, 115–138. (Norbert Blum) **93m:68133** 68R10 (05–04, 68Q25)

— (*with* de Werra, D.; Kameda, Tsunehiko; Katoh, Naoki; Solot, Ph.; Yamashita, Masafumi) Graph endpoint coloring and distributed processing. (English summary) *Networks* **23** (1993), *no.* 2, 93–98. (Summary) **93i:68031** 68M20 (05C15, 90B12, 94C05)

— *see also* **Algebraic graph theory, 93e:05001**

Hella, Lauri (*with* Luosto, Kerkko) The Beth-closure of $\mathscr{L}(Q_\alpha)$ is not finitely generated. *J. Symbolic Logic* **57** (1992), *no.* 2, 442–448. (Henry Africk) **93i:03054** 03C80 (03C40, 03C75, 03C85)

Hellaby, C. (*with* Ellis, George F. R.; Sumeruk, A.; Coule, David H.) Change of signature in classical relativity. *Classical Quantum Gravity* **9** (1992), *no.* 6, 1535–1554. (André Burnel) **93c:83018** 83C20 (83C15)

Helland, Inge S. Maximum likelihood regression on relevant components. *J. Roy. Statist. Soc. Ser. B* **54** (1992), *no.* 2, 637–647. (Jon Stene) **93h:62110** 62H12 (62H15, 62J05)

— *see also* **Tjur, Tue, 93b:62098**

Helland, K. (*with* Lii, Keh-Shin; Rosenblatt, Murray) Monte Carlo and turbulence. *Nonparametric functional estimation and related topics* (*Spetses*, 1990), 405–418, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 335, *Kluwer Acad. Publ., Dordrecht*, 1991. (Summary) **93a:65006** 65C05 (76F99, 76M35)

Hellegouarch, Yves Modules de Drinfel'd généralisés. (English summary) [Generalized Drinfel'd modules] *Approximations diophantiennes et nombres transcendants* (*Luminy*, 1990), 123–164, *de Gruyter, Berlin*, 1992. (David Goss) **93f:11045** 11G09 (11J81, 11J91)

— Galois calculus and Carlitz exponentials. *The arithmetic of function fields* (*Columbus, OH*, 1991), 33–50, *Ohio State Univ. Math. Res. Inst. Publ.*, 2, *de Gruyter, Berlin*, 1992. (Yuichiro Taguchi) **93j:11076** 11R58 (11J91)

Helleman, Robert H. G. Chaos toys. *Nonlinear dynamics and chaos* (*Canberra*, 1991), 1–13, *World Sci. Publishing, River Edge, NJ*, 1992. (M. L. Blank) **93d:58098** 58F13 (00A69, 81Q50, 82C35)

Heller, Alex Relative homotopy. *J. London Math. Soc.* (2) **44** (1991), *no.* 3, 537–552. (John F. Oprea) **93a:55010** 55U35

Heller, Eric J. (*with* O'Connor, Patrick W.; Tomsovic, Steven) Accuracy of semiclassical dynamics in the presence of chaos. *J. Statist. Phys.* **68** (1992), *no.* 1-2, 131–152. (Alfredo M. Ozorio de Almeida) **93e:81024** 81Q50 (58F13)

— (*with* O'Connor, Patrick W.; Tomsovic, Steven) Semiclassical dynamics in the strongly chaotic regime: breaking the log time barrier. *Phys. D* **55** (1992), *no.* 3-4, 340–357. (Alfredo M. Ozorio de Almeida) **93e:81025** 81Q50 (58F13)

Heller, Michael Algebraic foundations of the theory of differential spaces. Differential spaces and their applications (Pasierbiec, 1990). *Demonstratio Math.* **24** (1991), *no.* 3-4, 349–364. (Wieslaw Sasin) **93c:58008** 58A40

— Einstein algebras and general relativity. *Internat. J. Theoret. Phys.* **31** (1992), *no.* 2, 277–288. (H. Rund) **93c:83010** 83C05 (13B99, 83D05)

Heller, U. M. *see* **Lattice 90, 93b:81195**

Heller, William Complex analysis and frames in sampling theory. (English summary) *Probabilistic and stochastic methods in analysis, with applications* (*Il Ciocco*, 1991), 101–116, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 372, *Kluwer Acad. Publ., Dordrecht*, 1992. (Summary) **93g:94005** 94A11 (42A99)

Hellerstein, Simon (*with* Miles, Joseph; Rossi, John) On the growth of solutions of certain linear differential equations. (English summary) *Ann. Acad. Sci. Fenn. Ser. A I Math.* **17** (1992), *no.* 2, 343–365. (Shlomo Strelitz) **93m:34004** 34A20 (30D20, 30D35)

Helleseth, Tor (*with* Kløve, Torleiv) The number of cross-join pairs in maximum length linear sequences. *IEEE Trans. Inform. Theory* **37** (1991), *no.* 6, 1731–1733. (Shojiro Sakata) **93a:94021** 94A55

— (*with* Hamada, Noboru) On a characterization of some minihypers in PG(t, q) ($q = 3$ or 4) and its applications to error-correcting codes. (English summary) *Coding theory and algebraic geometry* (*Luminy*, 1991), 43–62, *Lecture Notes in Math.*, **1518**, *Springer, Berlin*, 1992. (Vikram Jha) **93j:51006** 51E22 (94B65)

— (*with* Hamada, Noboru; Ytrehus, Øyvind) On the construction of $[q^4 + q^2 - q, 5, q^4 - q^3 + q^2 - 2q; q]$-codes meeting the Griesmer bound. (English summary) *Des. Codes Cryptogr.* **2** (1992), *no.* 3, 225–229. (H. Mizuno) **93h:94026** 94B25 (94B27)

— Legendre sums and codes related to QR codes. *Discrete Appl. Math.* **35** (1992), *no.* 2, 107–113. (H. F. Mattson, Jr.) **93c:94006** 94B15 (11T71)

— (*with* Hamada, Noboru) A characterization of some $\{2v_{\alpha+1} + v_{\gamma+1}, 2v_\alpha + v_\gamma; k - 1, 3\}$-minihypers and some $(n, k, 3^{k-1} - 2 \cdot 3^\alpha - 3^\gamma; 3)$-codes ($k \geq 3$, $0 \leq \alpha < \gamma < k - 1$) meeting the Griesmer bound. *Discrete Math.* **104** (1992), *no.* 1, 67–81. (Derek Smith) **93f:94029** 94B75 (05B25, 51E22)

— Projective codes meeting the Griesmer bound. (English summary) A collection of contributions in honour of Jack van Lint. *Discrete Math.* **106/107** (1992), 265–271. (Gur Dial) **93m:94045** 94B65

— (*with* Kløve, Torleiv; Ytrehus, Øyvind) Generalized Hamming weights of linear codes. *IEEE Trans. Inform. Theory* **38** (1992), *no.* 3, 1133–1140. (Summary) **93a:94028** 94B05 (94B65)

— (*with* Hamada, Noboru) A characterization of some linear codes over GF(4) meeting the Griesmer bound. *Math. Japon.* **37** (1992), *no.* 2, 231–242. (Raymond Hill) **93c:94005** 94B05 (05B25)

— (*with* Hamada, Noboru) A characterization of some minihypers and codes meeting the Griesmer bound over GF(q), $q > 9$. (English summary) *Finite fields, coding theory, and advances in communications and computing* (*Las Vegas, NV*, 1991), 105–122, *Lecture Notes in Pure and Appl. Math.*, 141, *Dekker, New York*, 1993. (Vikram Jha) **93k:51018** 51E22 (94B05)

Hellinger, Ernst D. *see* **Topics in operator theory: Ernst D. Hellinger memorial volume, 93k:47002**

Hellinger, Petr (*with* Burdík, Č.) The universal R-matrix and the Yang-Baxter equation with parameters. (English summary) *J. Phys. A* **25** (1992), *no.* 17, L1023–L1027. (Peter J. Forrester) **93j:82019** 82B23 (17B37, 81R50)

Hellings, Ronald Solar system and pulsar tests of general relativity. *General relativity and gravitation*, 1989 (*Boulder, CO*, 1989), 341–344, *Cambridge Univ. Press, Cambridge*, 1990. (*see* **93b:83002**) 83B05

Helliwell, T. M. (*with* Konkowski, D. A.) Singularities in colliding plane-wave spacetimes. *Proceedings of the 4th Canadian Conference on General Relativity and Relativistic Astrophysics* (*Winnipeg, MB*, 1991), 115–119, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93c:83089** 83C75

— (*with* Konkowski, D. A.) Stability analysis of a nonscalar curvature singularity. (English summary) *Phys. Rev. D* (3) **46** (1992), *no.* 4, 1424–1428. (Summary) **93g:83079** 83C75 (83C20)

Hellman, Geoffrey Bell-type inequalities in the nonideal case: proof of a conjecture of Bell. *Found. Phys.* **22** (1992), *no.* 6, 807–817. (Jeffrey Bub) **93f:81013** 81P05 (81P10)

Hellman, Olavi A Hilbert space fuzzy set theory. (Russian summary) *Comput. Artificial Intelligence* **10** (1991), *no.* 5, 457–463. (Jin Xuan Fang) **93b:03093** 03E72 (46N99, 47N99, 81P10)

Hellstrand, Johan (*with* Larsson, Torbjörn; Migdalas, Athanasios) A characterization of the uncapacitated network design polytope. (English summary) *Oper. Res. Lett.* **12** (1992), *no.* 3, 159–163. (Summary) **93f:90061** 90B10 (90C27, 90C35)

Hellwig, Martin Fully revealing outcomes in signalling models: an example of nonexistence when the type space is unbounded. (English summary) *J. Econom. Theory* **58** (1992), *no.* 1, 93–104. (Summary) **93f:90048** 90A35 (90A08)

— (*with* Allen, Beth) Bertrand-Edgeworth duopoly with proportional residual demand. (English summary) *Internat. Econom. Rev.* **34** (1993), *no.* 1, 39–60. (Summary) **93h:90014** 90A12

Helmbold, David (*with* Sloan, Robert; Warmuth, Manfred K.) Learning integer lattices. *SIAM J. Comput.* **21** (1992), *no.* 2, 240–266. (Jerzy W. Grzymala-Busse) **93d:68060** 68T05 (11H06)

Helmer, D. (*with* Pym, John) Approximation by functions with finitely many discontinuities. *Quart. J. Math. Oxford Ser.* (2) **43** (1992), *no.* 170, 223–226. (Beverly Diamond) **93g:54022** 54C30

Helmers, R. (*with* Janssen, Paul; Veraverbeke, Noël) Bootstrapping U-quantiles. (English summary) *Exploring the limits of bootstrap* (*East Lansing, MI*, 1990), 145–155, *Wiley Ser. Probab. Math. Statist. Probab. Math. Statist., Wiley, New York*, 1992. (Thomas Mikosch) **93j:62119** 62G09

Helmes, K. L. (*with* Rishel, Raymond Warren) An optimal control depending on the conditional density of the unobserved state. *Applied stochastic analysis* (*New Brunswick, NJ*, 1991), 144–150, *Lecture Notes in Control and Inform. Sci.*, 177, *Springer, Berlin*, 1992. (*see* **93a:93100**) 93E20

— (*with* Rishel, Raymond Warren) The solution of a partially observed stochastic optimal control problem in terms of predicted miss. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 9, 1462–1464. (Shin'ichi Aihara) **93g:93085** 93E20

Helmi, A. M. (*with* Singh, Tarkeshwar[2]; Singh, G. P.) Solutions of Einstein's field equations for charged static fluid spheres. (English summary) *Astrophys. Space Sci.* **199** (1993), *no.* 1, 113–123. (Nora Bretón Báez) **93m:83019** 83C22 (83C15)

Helmicki, A. J. (*with* Jacobson, C. A.; Nett, C. N.) On zero-order hold equivalents of distributed parameter systems. *IEEE Trans. Automat. Control* **37** (1992), *no.* 4, 488–491. (Summary) **93a:93062a** 93C20 (93B50)

— (*with* Jacobson, C. A.; Nett, C. N.) Worst-case/deterministic identification in H_∞: the continuous-time case. *IEEE Trans. Automat. Control* **37** (1992), *no.* 5, 604–610. (Jan Bialasiewicz) **93c:93019** 93B30 (93B36)

— (*with* Jacobson, C. A.; Nett, C. N.) Correction to: "On zero-order hold equivalents of distributed parameter systems". *IEEE Trans. Automat. Control* **37** (1992), *no.* 6, 895–896. (Editors) **93a:93062b** 93C20 (93B50)

Helminck, G. F. Integrable deformations of meromorphic equations on $\mathbf{P}^1(\mathbf{C})$. (English summary) *Deformation theory and quantum groups with applications to mathematical physics* (*Amherst, MA*, 1990), 119–128, *Contemp. Math.*, 134, *Amer. Math. Soc., Providence, RI*, 1992. (V. A. Golubeva) **93m:32031** 32G34 (32S40)

Helmke, Uwe (*with* Prätzel-Wolters, D.; Schmid, S.) Adaptive tracking for scalar minimum phase systems. (English summary) *Control of uncertain systems* (*Bremen*, 1989), 101–117, *Progr. Systems Control Theory*, 6, *Birkhäuser Boston, Boston, MA*, 1990. (*see* **93i:93006**) 93C40

— (*with* Anderson, Brian D. O.) Hermitian pencils and output feedback stabilization of scalar systems. (English summary) *Internat. J. Control* **56** (1992), *no.* 4, 857–876. (Wiland Schmale) **93g:93071** 93D15 (93B27, 93B55)

— A several complex variables approach to sensitivity analysis and structured singular values. *J. Math. Systems Estim. Control* **2** (1992), *no.* 3, 339–351. (From the summary) **93a:93039** 93B35

— Waring's problem for binary forms. *J. Pure Appl. Algebra* **80** (1992), *no.* 1, 29–45. (Joseph Kung) **93e:11057** 11E76 (11P05, 15A72, 93B25)

— (*with* Moore, John Barratt) Singular-value decomposition via gradient and self-equivalent flows. *Linear Algebra Appl.* **169** (1992), 223–248. (Summary) **93m:65036** 65F05 (93B25)

— (*with* Manthey, W.; Hinrichsen, Diederich) Topological aspects of the partial realization problem. *Math. Control Signals Systems* **5** (1992), *no.* 2, 117–149. (Gh. Pitiş) **93e:93013** 93B15 (93B27)

tittelbach-Helmrich, K. *see* **Tittelbach-Helmrich, K.**

Helmstetter, J. *see* **Clifford algebras and their applications in mathematical physics, 93f:00011**

Helou, Charles Quintic reciprocity. *Proc. Amer. Math. Soc.* **117** (1993), *no.* 4, 877–884. (Lawrence Washington) **93e:11007** 11A15 (11L99)

Helson, Henry ★ Harmonic analysis. Reprint of the 1983 original. The Wadsworth & Brooks/Cole Mathematics Series. *Wadsworth & Brooks/Cole Advanced Books & Software, Pacific Grove, CA*, 1991. xiv+190 *pp. ISBN* 0-534-15570-7 (Editors) **93d:43001** 43–02 (42–02, 47B38)

— (*with* McCarthy, John E.) Continuity of seminorms. *Functional analysis and operator theory* (*New Delhi*, 1990), 88–90, *Lecture Notes in Math.*, 1511, *Springer, Berlin*, 1992. (Introduction) **93g:46004** 46A04

Helstrom, Carl W. Calculating photocount distributions by saddlepoint methods. (English summary) *Quantum aspects of optical communications* (*Paris*, 1990), 193–202, *Lecture Notes in Phys.*, 378, *Springer, Berlin*, 1991. (*see* **93e:81158**) 81V80

Helton, J. William Two topics in systems engineering: frequency domain design and nonlinear systems. H_∞*-control theory* (*Como*, 1990), 106–140, *Lecture Notes in Math.*, 1496, *Springer, Berlin*, 1991. (Andrzej Banaszuk) **93g:93001** 93–02 (47N70, 93B36)

— (*with* Merino, Orlando) Optimal analytic disks. *Several complex variables and complex geometry, Part 2* (*Santa Cruz, CA*, 1989), 251–262, *Proc. Sympos. Pure Math.*, 52, *Part 2, Amer. Math. Soc., Providence, RI*, 1991. (Herbert Alexander) **93e:32031** 32H02 (47N70, 49N55)

— (*with* Ball, Joseph A.; Verma, Madanpal) A J-inner-outer factorization principle for the H^∞ control problem. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, I* (*Kobe*, 1991), 31–36, *Mita, Tokyo*, 1992. (*see* **93g:93005**) 93B36 (47N70)

— (*with* Walker, Michael L.) High frequency inverse scattering and the Luneberg-Kline asymptotic expansion. *IEEE Trans. Antennas and Propagation* **40** (1992), *no.* 4, 450–453. (Summary) **93b:78007** 78A45

— (*with* Ball, Joseph A.) Inner-outer factorization of nonlinear operators. *J. Funct. Anal.* **104** (1992), *no.* 2, 363–413. (Avraham Feintuch) **93e:47099** 47N70 (47H99, 93B25, 93C10)

— (*with* Ball, Joseph A.) Nonlinear H^∞ control theory for stable plants. *Math. Control Signals Systems* **5** (1992), *no.* 3, 233–261. (Tamer Başar) **93c:93021** 93B36 (47N70, 90D25)

Helversen-Pasotto, Anna On the structure constants of certain Hecke algebras. Proceedings of the Winter School on Geometry and Physics (Srní, 1990). *Rend. Circ. Mat. Palermo* (2) *Suppl. No.* 26 (1991), 179–188. (François Digne) **93c:20074** 20G40 (11T24, 20C33)

Hemachandra, Lane A. (*with* Jain, Sanjay[1]) On the limitations of locally robust positive reductions. *Internat. J. Found. Comput. Sci.* **2** (1991), *no.* 3, 237–255. (Marius Zimand) **93b:68026** 68Q15 (03D15)

— (*with* Allender, Eric) Lower bounds for the low hierarchy. *J. Assoc. Comput. Mach.* **39** (1992), *no.* 1, 234–251. (Klaus W. Wagner) **93c:68026** 68Q15 (03D15)

— (*with* Allender, Eric; Ogiwara, Mitsunori; Watanabe, Osamu[2]) Relating equivalence and reducibility to sparse sets. *SIAM J. Comput.* **21** (1992), *no.* 3, 521–539. (Evangelos Kranakis) **93d:68019** 68Q15 (03D15)

— (*with* Rubinstein, Roy S.) Separating complexity classes with tally oracles. *Theoret. Comput. Sci.* **92** (1992), *no.* 2, 309–318. (William Gasarch) **93a:68043** 68Q15 (03D15)

— (*with* Buntrock, Gerhard; Siefkes, Dirk) Using inductive counting to simulate nondeterministic computation. (English summary) *Inform. and Comput.* **102** (1993), *no.* 1, 102–117. (Summary) **93m:68052** 68Q15 (03D15)

Hemalatha, K. (*with* Usha, R.) A note on plane Stokes flow past a shear free impermeable cylinder. (English summary) *Z. Angew. Math. Phys.* **44** (1993), *no.* 1, 73–84. (A. M. J. Davis) **93m:76026** 76D07

Hemasinha, Rohan (*with* Pal, Nikhil R.; Bezdek, James C.) Uncertainty measures for evidential reasoning. I. A review. (English summary) *Internat. J. Approx. Reason.* **7** (1992), *no.* 3-4, 165–183. (Summary) **93j:68203a** 68T30

— (*with* Weaver, James R.; Li, Chi-Kwong) Norms induced by symmetric gauge functions. (English summary) *Linear and Multilinear Algebra* **31** (1992), *no.* 1-4, 217–224. (Dragomir Ž. Djoković) **93k:15042** 15A60

— (*with* Pal, Nikhil R.; Bezdek, James C.) Uncertainty measures for evidential reasoning. II. A new measure of total uncertainty. (English summary) *Internat. J. Approx. Reason.* **8** (1993), *no.* 1, 1–16. (Summary) **93j:68203b** 68T30

Hemerly, A. S. (*with* Casanova, M. A.; Guerreiro, R. A. de T.) Explaining SLDNF resolution with nonnormal defaults. (English summary) *IBM J. Res. Develop.* **36** (1992), *no.* 3, 347–359. (Summary) **93i:68037** 68N17 (68Q55)

— (*with* Guerreiro, R. A. de T.; Casanova, M. A.) STORK and PENGUIN: logic programming systems using general clauses and defaults. (English summary) *IBM J. Res. Develop.* **36** (1992), *no.* 3, 361–374. 68N17

Hemerly, E. M. (*with* Fragoso, Marcelo D.) Strongly consistent estimation of the order of stochastic control systems (CARMA model). *J. Math. Anal. Appl.* **166** (1992), *no.* 2, 404–427. (H. Vincent Poor) **93f:93145** 93E24

Hemker, P. W. (*with* Koren, B.) Efficient multigrid computation of steady hypersonic flows. (English summary) *Computational methods in hypersonic aerodynamics*, 203–231, *Fluid Mech. Appl.*, 9, *Kluwer Acad. Publ., Dordrecht*, 1991. (*see* **93d:76001**) 76M20 (76K05)
— (*with* Désidéri, J.-A.) Convergence behaviour of defect correction for hyperbolic equations. (English summary) *J. Comput. Appl. Math.* **45** (1993), *no.* 3, 357–365. 65M12
Hemleben, Christoph (*with* Ott, Rolf; Bijma, Jelle; Signes, Miguel) A computer method for estimating volumes and surface areas of complex structures consisting of overlapping spheres. (English summary) *Math. Comput. Modelling* **16** (1992), *no.* 12, 83–98. (Johann Linhart) **93j:52024** 52B55 (51–04, 51M25, 68U05)
Hemmeter, Joe (*with* Ebert, G. L.; Lazebnik, Felix; Woldar, Andrew J.) On the number of irregular assignments on a graph. *Discrete Math.* **93** (1991), *no.* 2-3, 131–142. (Michael Jacobson) **93b:05147** 05C78
— On a graph related to a dual polar graph. (English summary) Proceedings of the Twenty-third Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, FL, 1992). *Congr. Numer.* **88** (1992), 139–143. (Summary) **93j:05128** 05C75
— (*with* Brouwer, Andries) A new family of distance-regular graphs and the $\{0, 1, 2\}$-cliques in dual polar graphs. *European J. Combin.* **13** (1992), *no.* 2, 71–79. (Arjeh M. Cohen) **93c:05119** 05E30 (05C25)
Hemmi, Yutaka On certain 6-connected H-spaces. *Mem. Fac. Sci. Kôchi Univ. Ser. A Math.* **14** (1993), 65–70. (Donald M. Davis) **93k:55010** 55P45
Hemminger, Robert L. (*with* Yu, Xingxing) On 3-connected graphs with contractible edge covers of size k. Special volume to mark the centennial of Julius Petersen's "Die Theorie der regulären Graphs", Part II. *Discrete Math.* **101** (1992), *no.* 1-3, 115–133. (Richard D. Ringeisen) **93m:05151** 05C70
Hempel, John Homology of branched coverings of 3-manifolds. *Canad. J. Math.* **44** (1992), *no.* 1, 119–134. (Wilbur Whitten) **93a:57002** 57M12 (57M05, 57M25)
Hempel, Rainer (*with* Seco, Luis A.; Simon, Barry) The essential spectrum of Neumann Laplacians on some bounded singular domains. *J. Funct. Anal.* **102** (1991), *no.* 2, 448–483. (H. Hogreve) **93h:35144** 35P05 (47F05, 58G25)
— Eigenvalues in gaps and decoupling by Neumann boundary conditions. (English summary) *J. Math. Anal. Appl.* **169** (1992), *no.* 1, 229–259. (George D. Raikov) **93i:47071** 47F05 (35J10, 35P05, 47N50, 81Q10)
al-Hemyari, Z. A. *see* **Al-Hemyari, Z. A.**
Henckell, Karsten The type-II conjecture: a survey. *Monoids and semigroups with applications* (*Berkeley, CA*, 1989), 441–452, *World Sci. Publishing, River Edge, NJ*, 1991. (Alessandra Cherubini) **93d:20106** 20M10
— (*with* Rhodes, John) The theorem of Knast, the $PG = BG$ and type-II conjectures. *Monoids and semigroups with applications* (*Berkeley, CA*, 1989), 453–463, *World Sci. Publishing, River Edge, NJ*, 1991. (Mária B. Szendrei) **93a:20091** 20M07 (20M10, 20M35)
— (*with* Margolis, Stuart W.; Pin, Jean-Eric; Rhodes, John) Ash's type II theorem, profinite topology and Mal'cev products. I. *Internat. J. Algebra Comput.* **1** (1991), *no.* 4, 411–436. (From the summary) **93h:20064** 20M10 (20E18, 68Q45)
— (*with* Rhodes, John) Type-II conjecture is true for finite $\mathcal{J}$-trivial monoids. (English summary) *J. Algebra* **151** (1992), *no.* 1, 221–235. (Wit Foryś) **93h:20065** 20M10
Hencsey, Gusztáv (*with* Demetrovics, János; Libkin, L. O.; Muchnik, I. B.) On the interaction between closure operations and choice functions with applications to relational databases. (English summary) *Acta Cybernet.* **10** (1992), *no.* 3, 129–139. (Summary) **93k:68024** 68P15
— (*with* Demetrovics, János; Libkin, L. O.; Muchnik, I. B.) Normal form relation schemes: a new characterization. (English summary) *Acta Cybernet.* **10** (1992), *no.* 3, 141–163. (Summary) **93m:68042** 68P15
Hendel, B. (*with* Limebeer, David J. N.; Anderson, Brian D. O.) Mixed H_2/H_∞ filtering by the theory of Nash games. (English summary) *Robust control* (*Tokyo*, 1991), 9–15, *Lecture Notes in Control and Inform. Sci.*, 183, *Springer, Berlin*, 1992. (*see* **93f:93006**) 93E11 (93B36)
— (*with* Limebeer, David J. N.; Anderson, Brian D. O.) Nash games and mixed H_2/H_∞ control. (English summary) *Robust control* (*Tokyo*, 1991), 210–217, *Lecture Notes in Control and Inform. Sci.*, 183, *Springer, Berlin*, 1992. (*see* **93f:93006**) 93B36
Henderson, D. M. (*with* Hammack, J. L.) Resonant interactions among surface water waves. *Annual review of fluid mechanics, Vol.* 25, 55–97, *Annual Reviews, Palo Alto, CA*, 1993. (*see* **93b:76003**) 76B15 (76–05)
Henderson, Johnny (*with* Eloe, Paul W.) Singular nonlinear boundary value problems for higher order ordinary differential equations. *Nonlinear Anal.* **17** (1991), *no.* 1, 1–10. (J. V. Baxley) **93b:34034** 34B15 (47H15)
— (*with* DeBortoli, Ann) Boundary value problems for Lipschitz equations with coefficients bounded in L^r. (English summary) *Recent trends in differential equations*, 119–125, *World Sci. Ser. Appl. Anal.*, 1, *World Sci. Publishing, River Edge, NJ*, 1992. (S. A. Brykalov) **93i:34033** 34B15 (34B10, 34H05)
— (*with* Eloe, Paul W.) Comparison of eigenvalues for a class of multipoint boundary value problems. (English summary) *Recent trends in differential equations*, 179–188, *World Sci. Ser. Appl. Anal.*, 1, *World Sci. Publishing, River Edge, NJ*, 1992. (Curtis C. Travis) **93f:34036** 34B10 (47N20)
— (*with* Ehme, Jeffrey A.) Differentiation of solutions of boundary value problems with respect to boundary conditions. *Appl. Anal.* **46** (1992), *no.* 3-4, 175–194. (Mauro Marini) **93g:34028** 34B10 (34B15)
— (*with* Datta, Anjali) Differentiation of solutions of difference equations with respect to right focal boundary values. *Panamer. Math. J.* **2** (1992), *no.* 1, 1–16. (Shao Zhu Chen) **93a:39002** 39A10 (39A12)
— (*with* DeBortoli, Ann; Pruet, Susan) Uniqueness of n-point boundary value problems. (English summary) *Panamer. Math. J.* **3** (1993), *no.* 1, 25–38. (P. W. Eloe) **93k:34046** 34B15 (34B10)
Henderson, K. L. (*with* Dold, J. W.) Transition from thermal runaway to propagating flames. *SIAM J. Appl. Math.* **51** (1991), *no.* 5, 1304–1314. (Summary) **93c:80013** 80A25
Henderson, Robin (*with* Matthews, J. N. S.) An investigation of changepoints in the annual number of cases of haemolytic uraemic syndrome. (English summary) *J. Roy. Statist. Soc. Ser. C* **42** (1993), *no.* 3, 461–471. 62F03
Henderson, Ron (*with* Karniadakis, George Em.) Hybrid spectral element methods for flows over rough walls. (English summary) *Fifth International Symposium on Domain Decomposition Methods for Partial Differential Equations* (*Norfolk, VA*, 1991), 485–497, *SIAM, Philadelphia, PA*, 1992. (*see* **93g:65009**) 65M55 (76D05, 76M25)
Henderson, Thomas C. ★ Discrete relaxation techniques. International Series of Monographs on Computer Science, 5. *The Clarendon Press, Oxford University Press, New York*, 1990. 146 *pp. ISBN* 0-19-504894-6 (Editors) **93i:65135** 65Y10 (68Q22, 68U05)
Henderson, W. (*with* Taylor, P. G.) Discrete-time queueing networks with geometric release probabilities. *Adv. in Appl. Probab.* **24** (1992), *no.* 1, 229–233. (Summary) **93i:60173** 60K25 (90B22)
— (*with* Pearce, C. E. M.; Pollett, P. K.; Taylor, P. G.) Connecting internally balanced quasi-reversible Markov processes. (English summary) *Adv. in Appl. Probab.* **24** (1992), *no.* 4, 934–959. (Masakiyo Miyazawa) **93m:60186** 60K25 (60J27, 60J35)
— (*with* Taylor, P. G.) Insensitivity in discrete time queues with a moving server. (English summary) *Queueing Systems Theory Appl.* **11** (1992), *no.* 3, 273–297. (Hans Daduna) **93m:60187** 60K25 (68M20, 90B22)
— (*with* Lucic, D.) Aggregation and disaggregation through insensitivity in stochastic Petri nets. (English summary) *Performance Evaluation* **17** (1993), *no.* 2, 91–114. (Summary) **93k:68077** 68Q90
Hendriks, Harrie A Cramér-Rao type lower bound for estimators with values in a manifold. *J. Multivariate Anal.* **38** (1991), *no.* 2, 245–261. (P. E. Jupp) **93b:62084** 62H12 (62F11, 62H11)
Hendriks, Lex (*with* de Jongh, Dick; Renardel de Lavalette, Gerard R.) Computations in fragments of intuitionistic propositional logic. Automated reasoning and nonclassical logics. *J. Automat. Reason.* **7** (1991), *no.* 4, 537–561. (A. Tauts) **93c:03012** 03B20 (03B35, 03F55)
Hendriksen, Erik (*with* Bultheel, Adhemar; González-Vera, Pablo; Njåstad, Olav) The computation of orthogonal rational functions and their interpolating properties. *Numer. Algorithms* **2** (1992), *no.* 1, 85–114. (Tiberiu Constantinescu) **93d:42024** 42C05
Hendry, George R. T. An Ore-type sufficient condition for a bipancyclic ordering. *Discrete Math.* **102** (1992), *no.* 1, 47–49. (Theodore C. Enns) **93g:05080** 05C38 (05C45)
Hendy, Michael D. The path sets of weighted partially labelled trees. *Australas. J. Combin.* **5** (1992), 277–284. (Seymour Schuster) **93j:05152** 05C90 (05C05)
— (*with* Steel, Michael A.; Penny, David) Significance of the length of the shortest tree. *J. Classification* **9** (1992), *no.* 1, 71–90. (Koduvayur R. Parthasarathy) **93g:05042** 05C05 (05C90, 62P10, 92D20)
Hengartner, Walter (*with* Abdulhadi, Zayid) Univalent harmonic mappings on the left half-plane with periodic dilatations. (English summary) *Univalent functions, fractional calculus, and their applications* (*Kōriyama*, 1988), 13–28, *Ellis Horwood Ser. Math. Appl., Horwood, Chichester*, 1989. (Summary) **93h:30023** 30C55 (31A05)
— (*with* Bshouty, Daoud) Boundary correspondence of univalent harmonic mappings from the unit disc onto a Jordan domain. *Approximation by solutions of partial differential equations* (*Hanstholm*, 1991), 51–60, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 365, *Kluwer Acad. Publ., Dordrecht*, 1992. (P. Lappan) **93f:31004** 31A20 (30C20, 31A25)
— (*with* Szynal, Jan) Univalent harmonic ring mappings vanishing on the interior boundary. *Canad. J. Math.* **44** (1992), *no.* 2, 308–323. (Albert E. Livingston) **93h:30025** 30C55
— (*with* Abdulhadi, Zayid; Szynal, Jan) Univalent logharmonic ring mappings. (English summary) *Proc. Amer. Math. Soc.* **119** (1993), *no.* 3, 735–745. (Y. Komatu) **93m:30026** 30C55
Henk, M. (*with* Betke, Ulrich) Linear programming by minimizing distances. *Z. Oper. Res.* **35** (1991), *no.* 4, 299–307. (C. Bergthaller) **93d:90031** 90C05 (49M30)
— A generalization of Jung's theorem. *Geom. Dedicata* **42** (1992), *no.* 2, 235–240. (Peter Gritzmann) **93i:52013** 52A40 (52A20)
— (*with* Betke, Ulrich; Wills, J. M.) Successive-minima-type inequalities. (English summary) *Discrete Comput. Geom.* **9** (1993), *no.* 2, 165–175. (Peter M. Gruber) **93j:52026** 52C07 (52C05, 52C17)
Henkel, C. S. (*with* Sarsour, H. N.; Turinsky, P. J.) Parallel solution of the few-group neutron diffusion equations. (English summary) *Parallel processing for scientific computing* (*Houston, TX*, 1991), 269–274, *SIAM, Philadelphia, PA*, 1992. (*see* **93g:65178**) 65N06 (65Y05, 82D75)
Henkel, Malte Two-dimensional spin systems in an external magnetic field. (English summary) *Nonperturbative methods in low-dimensional quantum field theories* (*Debrecen*, 1990), 383–406, *World Sci. Publishing, River Edge, NJ*, 1991. (Summary) **93i:82012** 82B20 (82–02, 82–04)
Henkin, G. M. *see* **Khenkin, G. M.**
Henkin, Gennadi *see* **Khenkin, G. M.**
Henle, James M. (*with* Apter, Arthur W.) Relative consistency results via strong compactness. *Fund. Math.* **139** (1991), *no.* 2, 133–149. (James Baumgartner) **93h:03071** 03E35 (03E55, 03E60)
— Reply to the letters of M. L. Yevick and A. Paris. *Math. Intelligencer* **14** (1992), *no.* 1, 8. (Paul Ernest) **93b:00008** 00A30
— *see also* **Yevick, Miriam L., 93b:00006**; **Paris, Alan, 93b:00007** *and* **Nyikos, Peter J., 93d:00015**
Henley, Gregory J. (*with* Janus, J. Mark) Parallelization and convergence of a 3D implicit unsteady turbomachinery flow code. (English summary) *Parallel processing for scientific computing* (*Houston, TX*, 1991), 238–245, *SIAM, Philadelphia, PA*, 1992. (*see* **93g:65178**) 65M06 (65M12, 65Y05, 76M20)
Henna, Jōgi An estimator of the number of components of finite mixtures of discrete distributions. *Ryukyu Math. J.* **4** (1991), 1–13. (Prafulchandra N. Jani) **93c:62039** 62F10 (62F12)
Henneaux, Marc (*with* Teitelboim, Claudio) Consistent quantum mechanics of chiral p-forms. *Quantum mechanics of fundamental systems*, 2 (*Santiago*, 1987), 79–112, *Ser. Cent. Estud. Cient. Santiago, Plenum, New York*, 1989. (*see* **93e:81005**) 81T30
— (*with* Teitelboim, Claudio) First and second quantized point particles of any spin. *Quantum mechanics of fundamental systems*, 2 (*Santiago*, 1987), 113–152, *Ser. Cent. Estud. Cient. Santiago, Plenum, New York*, 1989. (*see* **93e:81005**) 81T70 (81T30)
— On the use of auxiliary fields in classical mechanics and in field theory. (English summary) *Mathematical aspects of classical field theory* (*Seattle, WA*, 1991), 393–401, *Contemp. Math.*, 132, *Amer. Math. Soc., Providence, RI*, 1992. (Introduction) **93i:58039** 58E30 (70G50, 70H05, 70H35, 70H40)

— The antifield-BRST formalism for gauge theories. *Quantum mechanics of fundamental systems*, 3 (*Santiago*, 1990), 73–134, *Ser. Cent. Estud. Cient. Santiago, Plenum, New York*, 1992. (*see* **93j:81003**) 81T70 (81–02, 81T13)

— (*with* Vergara, José David) BRST formalism and gauge invariant operators: the example of the free relativistic particle. *Sakharov Memorial Lectures in Physics, Vol. 1*, 2 (*Moscow*, 1991), 111–124, *Nova Sci. Publ., Commack, NY*, 1992. (*see* **93h:81003**) 81T70

— (*with* Barnich, Glenn) Comments on unitarity in the antifield formalism. (English summary) *Modern Phys. Lett. A* **7** (1992), *no.* 29, 2703–2713. (Summary) **93f:81078** 81T13

— (*with* Teitelboim, Claudio; Vergara, José David) Gauge invariance for generally covariant systems. (English summary) *Nuclear Phys. B* **387** (1992), *no.* 2, 391–418. (Rudolf Schmid) **93k:81142** 81T13 (58D30)

— (*with* Grégoire, Philippe) Hamiltonian formulation of the anti-BRST transformation. *Phys. Lett. B* **277** (1992), *no.* 4, 459–463. (Summary) **93a:81197** 81T70 (17B56)

— Geometric interpretation of the quantum master equation in the BRST–anti-BRST formalism. *Phys. Lett. B* **282** (1992), *no.* 3-4, 372–376. (C. Gauthier) **93c:81247** 81T70

— (*with* Dubois-Violette, Michel; Talon, Michel; Viallet, Claude-Michel) General solution of the consistency equation. (English summary) *Phys. Lett. B* **289** (1992), *no.* 3-4, 361–367. (Wolfgang Kalau) **93i:81276** 81T70 (17B55, 81T13, 81T20)

Hennet, Jean-Claude (*with* Castelan, Eugênio B.) A unified framework for linear constrained regulation problems. (English summary) *Mathematics of the analysis and design of process control* (*Dublin*, 1991/*Lille*, 1991), 337–346, *North-Holland, Amsterdam*, 1992. (*see* **93g:93004**) 93B51

— (*with* Castelan, Eugênio B.) Eigenstructure assignment for state constrained linear continuous time systems. *Automatica J. IFAC* **28** (1992), *no.* 3, 605–611. (T. Kaczorek) **93a:93055** 93B55 (93C05)

d'Hennezel, Frédéric Domain decomposition method with nonsymmetric interface operator. (English summary) *Fifth International Symposium on Domain Decomposition Methods for Partial Differential Equations* (*Norfolk, VA*, 1991), 37–47, *SIAM, Philadelphia, PA*, 1992. (Summary) **93h:65153** 65N55

— (*with* Bourquin, Frédéric) Application of domain decomposition techniques to modal synthesis for eigenvalue problems. (English summary) *Fifth International Symposium on Domain Decomposition Methods for Partial Differential Equations* (*Norfolk, VA*, 1991), 214–223, *SIAM, Philadelphia, PA*, 1992. (*see* **93g:65009**) 65N25 (65N55)

— (*with* Bourquin, Frédéric) Numerical study of an intrinsic component mode synthesis method. (English summary) *Comput. Methods Appl. Mech. Engrg.* **97** (1992), *no.* 1, 49–76. (Summary) **93g:73082** 73K12 (73D30, 73V20)

— (*with* Bourquin, Frédéric) Intrinsic component mode synthesis and plate vibrations. (English summary) Second World Congress of Computational Mechanics (Stuttgart, 1990). *Comput. & Structures* **44** (1992), *no.* 1-2, 315–324. (Summary) **93f:73065** 73K12 (73K10, 73V20)

Henniart, Guy Quelques remarques sur les théorèmes réciproques. (English summary) [Some remarks on inverse theorems] *Festschrift in honor of I. I. Piatetski-Shapiro on the occasion of his sixtieth birthday, Part I* (*Ramat Aviv*, 1989), 77–92, *Israel Math. Conf. Proc.*, 2, *Weizmann, Jerusalem*, 1990. (Joe Repka) **93h:22030** 22E50

— Erratum: "Maass forms and Galois representations (after Blasius, Clozel, Harris, Ramakrishnan and Taylor)" [Astérisque No. 177-178 (1989), Exp. No. 711, 277–302; MR 91e:11055]. (French) *Astérisque No.* 201-203 (1991), 485–486 (1992). (Ernst-Wilhelm Zink) **93b:11060** 11F70 (11F80, 11G18, 11R39, 22E50, 22E55)

— Représentations des groupes réductifs *p*-adiques. [Representations of *p*-adic reductive groups] Séminaire Bourbaki, Vol. 1990/91. *Astérisque No.* 201-203 (1991), *Exp. No.* 736, 193–219 (1992). (David Joyner) **93b:22031** 22E50

Hennicker, Rolf A semi-algorithm for algebraic implementation proofs. (English summary) Theoretical issues of design and implementation of symbolic computation systems (Capri, 1990). *Theoret. Comput. Sci.* **104** (1992), *no.* 1, 53–87. (Ranjan Chaudhuri) **93j:68131** 68Q60

Hennig, D. (*with* Bordag, M.; Robaschik, D.) Vacuum energy in quantum field theory with external potentials concentrated on planes. (English summary) *J. Phys. A* **25** (1992), *no.* 16, 4483–4498. (Summary) **93f:81157** 81V10

— (*with* Esser, B.) Transfer dynamics of a quasiparticle in a nonlinear dimer coupled to an intersite vibration: chaos on the Bloch sphere. (English summary) *Phys. Rev. A* (3) **46** (1992), *no.* 8, 4569–4576. (Summary) **93i:82068** 82C70 (58F13, 58F40)

— Analytic structure of a harmonically perturbed nonlinear dimer model. (English summary) *Phys. Scripta* **46** (1992), *no.* 1, 14–19. (Summary) **93g:82064** 82C20

Hennig, J. D. *see* **Differential geometry, group representations, and quantization, 93c:81004** *and* **Quantum groups, 93h:00020**

Henning, Michael A. (*with* Swart, Henda C.; Winter, P. A.) On graphs with (I, n)-regular induced subgraphs. *Graph theory, combinatorics, and applications. Vol. 2* (*Kalamazoo, MI*, 1988), 645–650, *Wiley-Intersci. Publ., Wiley, New York*, 1991. (Summary) **93b:05139** 05C75

— (*with* Oellermann, Ortrud R.; Swart, Henda C.) Bounds on distance domination parameters. (English summary) *J. Combin. Inform. System Sci.* **16** (1991), *no.* 1, 11–18. (Summary) **93d:05076** 05C35

— On the diameter of *n*th order degree regular trees. (English summary) *J. Combin. Math. Combin. Comput.* **12** (1992), 97–108. (Summary) **93h:05057** 05C05

— (*with* Goddard, Wayne D.; Swart, Henda C.) Some Nordhaus-Gaddum-type results. *J. Graph Theory* **16** (1992), *no.* 3, 221–231. (G. Chartrand) **93e:05046** 05C35 (05C70)

— (*with* Hattingh, Johannes H.; Walters, Jakobus L.) On the computational complexity of upper distance fractional domination. (English summary) *Australas. J. Combin.* **7** (1993), 133–144. (Summary) **93k:05170** 05C85 (68Q25)

— (*with* Hattingh, Johannes H.) A characterization of block graphs that are well-*k*-dominated. (English summary) *J. Combin. Math. Combin. Comput.* **13** (1993), 33–38. (Summary) **93m:05162** 05C75

Henning, Peter A. (*with* Graf, Martin; Matthäus, Frank) The geometry of the thermal quasi-particle transformation. *Phys. A* **182** (1992), *no.* 3, 489–508. (M. Lawrence Glasser) **93c:81056** 81Q99 (81T13)

— Correlation diagrams and perturbation theory in thermal coherent states. *Phys. Lett. A* **165** (1992), *no.* 5-6, 396–400. (Summary) **93c:81255** 81T99

Henningson, Dan S. (*with* Schmid, Peter J.) A new mechanism for rapid transition involving a pair of oblique waves. (English summary) *Phys. Fluids A* **4** (1992), *no.* 9, 1986–1989. (Summary) **93f:76059** 76F99 (76E30)

— (*with* Schmid, Peter J.) Vector eigenfunction expansions for plane channel flows. *Stud. Appl. Math.* **87** (1992), *no.* 1, 15–43. (Adelina Georgescu) **93e:76021** 76E05 (35Q35)

Hennion, Hubert Sur un théorème spectral et son application aux noyaux lipchitziens. (English summary) [On a spectral theorem and its application to Lipschitz kernels] *Proc. Amer. Math. Soc.* **118** (1993), *no.* 2, 627–634. (Yves Derriennic) **93g:60141** 60J10 (28D99, 47A35, 47N30)

Henrard, Jacques (*with* Delhaise, Fabienne) The problem of critical inclination combined with a resonance in mean motion in artificial satellite theory. (English summary) *Celestial Mech. Dynam. Astronom.* **55** (1993), *no.* 3, 261–280. 70M20 (70–08, 70F05, 70H05)

Henrici, Peter ★ Applied and computational complex analysis. Vol. 2. Special functions—integral transforms—asymptotics—continued fractions. Reprint of the 1977 original. Wiley Classics Library. A Wiley-Interscience Publication. *John Wiley & Sons, Inc., New York*, 1991. x+662 *pp. ISBN* 0-471-54289-X (Editors) **93b:30001** 30–02 (65E05)

Henriksen, Melvin Topologies and cotopologies generated by sets of functions: a preview. *General topology and applications* (*Staten Island, NY*, 1989), 115–128, *Lecture Notes in Pure and Appl. Math.*, 134, *Dekker, New York*, 1991. (R. Grant Woods) **93e:54010** 54C30 (46J10, 54G05)

— (*with* Larson, Suzanne; Smith, F. A.) When is every order ideal a ring ideal? *Comment. Math. Univ. Carolin.* **32** (1991), *no.* 3, 411–416. (James J. Madden) **93c:06024** 06F25 (13C05, 16D15, 16W80)

— (*with* Wilson, Richard Gordon) When is $C(X)/P$ a valuation ring for every prime ideal P? Proceedings of the Symposium on General Topology and Applications (Oxford, 1989). *Topology Appl.* **44** (1992), *no.* 1-3, 175–180. (I. Blum) **93j:54006** 54C40 (06F25, 13A18)

— (*with* Wilson, Richard Gordon) Almost discrete SV-spaces. (English summary) *Topology Appl.* **46** (1992), *no.* 2, 89–97. (Mohan L. Tikoo) **93k:54040** 54C40 (54G05)

Henriksen, Rolf Accuracy of some robust estimators based upon prefiltering of the input/output data. (English summary) *Identification and system parameter estimation* 1991, *Vol.* 1,2 (*Budapest*, 1991), 877–882, *IFAC Sympos. Ser.*, 3, *Pergamon, Oxford*, 1992. (*see* **93h:93009**) 93E10

— Accuracy of some robust estimators based upon prefiltering of the input/output data. (English summary) *MIC—Modeling Identification Control* **13** (1992), *no.* 3, 141–154. (Summary) **93i:93118** 93E10 (93E03, 93E35)

Henrion, R. On constraint qualifications. *J. Optim. Theory Appl.* **72** (1992), *no.* 1, 187–197. (Aharon Ben-Tal) **93b:90083** 90C30 (49K40, 90C34)

Henriques, José Marques The first three million primes: computational problems and analytical and statistical considerations. (Portuguese. English summary) *Proceedings of the XVth Portuguese-Spanish Conference on Mathematics, Vol. V* (*Portuguese*) (*Évora*, 1990), 19–24, *Univ. Évora, Évora*, 1991. (Summary) **93a:11104** 11Y11

— *see also* **Fractals in the fundamental and applied sciences, 93g:58102**

Henriques, V. B. (*with* Carneiro, C. E. I.; Tamashiro, M. N.; Salinas, S. R.) Spin-1 Ising ferromagnet in a random crystal field. *Nonlinear phenomena in fluids, solids and other complex systems* (*Santiago*, 1990), 351–359, *North-Holland Delta Ser., North-Holland, Amsterdam*, 1991. (Summary) **93a:82030** 82B44 (82D30)

mesa Henríquez, Antonio *see* **Mesa Henríquez, Antonio**

Henríquez, Hernán R. (*with* Delgado A., Víctor; San Martín A., María E.) Invariance properties of trajectories in linear control systems. (Spanish) *Proyecciones* **10** (1991), *no.* 17, 13–26. (O. A. Malafeyev) **93f:93039** 93B25 (93C05)

— (*with* Hernández, Eduardo A.) An extension of Horn's theorem for a space of locally integrable functions. (English summary) *Internat. J. Math. Math. Sci.* **15** (1992), *no.* 4, 635–640. (Bogdan Przeradzki) **93m:47063** 47H10 (47B38)

— Finite-dimensional compensators for linear distributed control systems with delays in outputs. (English summary) *J. Math. Anal. Appl.* **169** (1992), *no.* 1, 92–110. (Hong Xing Zhou) **93i:93070** 93C25 (93D15)

Henrot, Antoine (*with* Pierre, Michel) About critical points of the energy in an electromagnetic shaping problem. *Boundary control and boundary variation* (*Sophia-Antipolis*, 1990), 238–252, *Lecture Notes in Control and Inform. Sci.*, 178, *Springer, Berlin*, 1992. (Klaus Steffen) **93k:49035** 49Q10 (35R35, 78A55)

Henrotte, Jean-Luc (*with* Hanus, Raymond; Peng, You Bin) Parameter estimation using orthonormalization. (English summary) *Mathematical and intelligent models in system simulation, I, II* (*Brussels*, 1990), 53–57, *IMACS Ann. Comput. Appl. Math.*, 10, 11, *Baltzer, Basel*, 1991. (*see* **93c:93005**) 93E10

Henry, Daniel B. The temperature of an asteroid. (French summary) Multiscale phenomena (São Paulo, 1990). *Ann. Inst. H. Poincaré Phys. Théor.* **55** (1991), *no.* 2, 719–750. (N. L. Vulchanov) **93a:35087** 35K60 (80A20, 85A99)

Henry, Desmond Paul ★ Medieval mereology. Bochumer Studien zur Philosophie [Bochum Studies on Philosophy], 16. *B. R. Grüner, Amsterdam*, 1991. xxvi+609 *pp. ISBN* 90-6032-318-1 (Mary J. Sirridge) **93g:01024** 01A35 (03–03)

Henry, Jacques (*with* Guyon, F.; Yvon, J. P.) On a weighting method improving identifiability of distributed parameter systems. *Optimal control of partial differential equations* (*Irsee*, 1990), 104–119, *Lecture Notes in Control and Inform. Sci.*, 149, *Springer, Berlin*, 1991. (Wen Huan Yu) **93g:93028** 93B30 (35R30, 93C20)

Henry, M. S. (*with* Angelos, James R.; Kaufman, E., Jr.; Lenker, T.) Bounds for extended Lipschitz constants. *Acta Math. Hungar.* **58** (1991), *no.* 1-2, 81–93. (Martin Bartelt) **93c:41010** 41A10 (41A50)

Henry, Shawn R. (*with* Weeks, Jeffrey R.) Symmetry groups of hyperbolic knots and links. *J. Knot Theory Ramifications* **1** (1992), *no.* 2, 185–201. (Colin C. Adams) **93e:57007** 57M25 (57–04, 57M50, 57M60)

Hensel, A. D. (*with* Gardiner, A. D.; Godsil, C. D.; Royle, Gordon F.) Second neighbourhoods of strongly regular graphs. *Discrete Math.* **103** (1992), *no.* 2, 161–170. (M. D. Hestenes) **93k:05183** 05E30

— (*with* Godsil, C. D.) Distance regular covers of the complete graph. (English summary) *J. Combin. Theory Ser. B* **56** (1992), *no.* 2, 205–238. (Arjeh M. Cohen) **93k:05184** 05E30 (05E20)

Hensel, M. (*with* Korsch, H. J.) Dissipative quantum dynamics: solution of the generalized von Neumann equation for the damped harmonic oscillator. *J. Phys. A* **25** (1992), *no.* 7, 2043–2064. (Brian DeFacio) **93g:81032** 81Q99 (81Q50, 81S99, 82C10)

Hensley, Doug Continued fraction Cantor sets, Hausdorff dimension, and functional analysis. *J. Number Theory* **40** (1992), *no.* 3, 336–358. (F. Schweiger) **93c:11058** 11K50 (28A78, 46E99, 47B38)

Hensley, J. L. (*with* Douglas, Jim, Jr.; Wei, Y.; et al.) A derivation for Darcy's law for miscible fluids and a revised model for miscible displacement in porous media. (English summary) *Computational methods in water resources, IX, Vol. 2 (Denver, CO,* 1992), 165–178, *Comput. Mech., Southampton,* 1992. (*see* **93g:76003**) 76S05

Henson, C. Ward Strong counterexamples to Borel hyperdeterminacy. *Arch. Math. Logic* **31** (1992), *no.* 3, 215–220. (Renling Jin) **93d:03072** 03H05 (03E15, 03E60)

— (*with* Ross, David Andrew) Analytic mappings on hyperfinite sets. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 2, 587–596. (Nigel J. Cutland) **93g:03055** 03H05 (03E15, 04A15, 28A12, 28E05)

Henson, Teresa D. (*with* de Caen, D.; Gregory, David A.; Lundgren, J. Richard; Maybee, John S.) Real rank as a bound for nonnegative integer rank. *J. Combin. Math. Combin. Comput.* **11** (1992), 47–53. (J. Sedláček) **93f:05061** 05C50

Henstock, R. The integral over product spaces and Wiener's formula. *Real Anal. Exchange* **17** (1991/92), *no.* 2, 737–744. (Jae Moon Ahn) **93j:28006** 28A35 (28C20)

van Hentenryck, Pascal *see* **Van Hentenryck, Pascal**

Hentschel, Klaus Einstein's attitude towards experiments: testing relativity theory 1907–1927. *Stud. Hist. Philos. Sci.* **23** (1992), *no.* 4, 593–624. 01A60

Hentzel, Irvin Roy (*with* Jacobs, D. P.) A condition guaranteeing commutativity. (English summary) *Internat. J. Algebra Comput.* **2** (1992), *no.* 3, 291–295. (Ernest Stitzinger) **93h:17006** 17A20

— (*with* Kleinfeld, Erwin; Smith, Harry F.) On rings in the join of associative and commutative. *J. Algebra* **149** (1992), *no.* 2, 528–537. (Santos González) **93h:17008** 17A30

Henze, N. (*with* Baringhaus, L.) Limit distributions for measures of multivariate skewness and kurtosis based on projections. *J. Multivariate Anal.* **38** (1991), *no.* 1, 51–69. (Minoru Siotani) **93a:62086** 62H15 (62H10)

— (*with* Voigt, B.) Almost sure convergence of certain slowly changing symmetric one- and multi-sample statistics. *Ann. Probab.* **20** (1992), *no.* 2, 1086–1098. (Lajos Horváth) **93e:60059** 60F15 (62G20)

— (*with* Baringhaus, L.) An adaptive omnibus test for exponentiality. *Comm. Statist. Theory Methods* **21** (1992), *no.* 4, 969–978. (František Rublík) **93m:62103** 62G10 (62F03)

— (*with* Baringhaus, L.) A characterization of and new consistent tests for symmetry. *Comm. Statist. Theory Methods* **21** (1992), *no.* 6, 1555–1566. (Truc Nguyen) **93k:62105** 62G10 (62E10)

— (*with* Baringhaus, L.) A goodness of fit test for the Poisson distribution based on the empirical generating function. *Statist. Probab. Lett.* **13** (1992), *no.* 4, 269–274. (S. Rao Jammalamadaka) **93e:62054** 62F03 (62E25)

Henzinger, Thomas A. Sooner is safer than later. (English summary) *Inform. Process. Lett.* **43** (1992), *no.* 3, 135–141. (Summary) **93e:68071** 68Q60 (68Q55)

Heo, E. G. (*with* Isichenko, M. B.; Horton, Claude Wendell, Jr.; Kim, D. E.; Choi, D.-I.) Stochastic diffusion and Kolmogorov entropy in regular and random Hamiltonians. (English summary) *Phys. Fluids B* **4** (1992), *no.* 12, 3973–3980. (Summary) **93h:76082** 76X05 (58F40, 76F20)

Heppes, A. Solid circle-packings in the Euclidean plane. *Discrete Comput. Geom.* **7** (1992), *no.* 1, 29–43. (A. Florian) **93d:52020** 52C15

Heppler, G. R. (*with* Guimaraes, J. E. F.; Czapor, S. R.) On the derivation and reduction of C^1 trigonometic basis functions using Maple. (English summary) *J. Symbolic Comput.* **13** (1992), *no.* 6, 643–675. (Summary) **93d:65117** 65T10

— (*with* Vermeulen, A. H.; Bartels, Richard H.) Integrating products of *B*-splines. *SIAM J. Sci. Statist. Comput.* **13** (1992), *no.* 4, 1025–1038. (Summary) **93b:65018** 65D07 (65D30, 65N30)

Her, Shenq-Shyong (*with* Murthy, Ishwar) Solving min-max shortest-path problems on a network. *Naval Res. Logist.* **39** (1992), *no.* 5, 669–683. 90C35 (90B10)

Hérault, Laurent (*with* Niez, Jean-Jacques) Neural networks & combinatorial optimization: a study of NP-complete graph problems. (English summary) *Neural networks,* 165–213, *North-Holland, Amsterdam,* 1991. (*see* **93i:68010**) 90C27 (68R10, 68T05, 92B20)

Herb, Rebecca A. Harish-Chandra and his work. A joint AMS-MAA lecture presented in San Francisco, California, January 1991. AMS-MAA Joint Lecture Series. *American Mathematical Society, Providence, RI,* 1991. 1 *videocassette (NTSC; 1/2 inch; VHS)* (60 *min.*); *sd., col. ISBN* 0-8218-8061-6 (Editors) **93f:01021** 01A70 (01A60, 22–03)

— The Schwartz space of a general semisimple Lie group. *Harmonic analysis on reductive groups (Brunswick, ME,* 1989), 201–208, *Progr. Math.,* 101, *Birkhäuser Boston, Boston, MA,* 1991. (Aleksander Strasburger) **93j:22017** 22E30 (22E46, 43A30)

— Harish-Chandra and his work. *Bull. Amer. Math. Soc. (N.S.)* **25** (1991), *no.* 1, 1–17. (J. Dieudonné) **93b:01038** 01A70 (01A60, 22–03)

— *see also* **Representation theory of groups and algebras, 93k:00028**

Herb, Thomas The O(N) nonlinear σ-model with prescribed boundary values in a belt. *J. Phys. A* **24** (1991), *no.* 15, L821–L824. (Mark Temple-Raston) **93f:58044** 58E20 (49S05, 81T13)

engel-Herbert, H. *see* **Engel-Herbert, H.**

Herbert, Th. (*with* Bertolotti, F. P.; Spalart, P. R.) Linear and nonlinear stability of the Blasius boundary layer. (English summary) *J. Fluid Mech.* **242** (1992), 441–474. (Summary) **93g:76061** 76E99 (76D10, 76E30, 76N20)

Herberthson, Magnus (*with* Ludvigsen, Malcolm) A relationship between future and past null infinity. (English summary) *Gen. Relativity Gravitation* **24** (1992), *no.* 11, 1185–1193. (Richard Hansen) **93i:83036** 83C30

Herbort, Gregor Invariant metrics and peak functions on pseudoconvex domains of homogeneous finite diagonal type. *Math. Z.* **209** (1992), *no.* 2, 223–243. (Alan V. Noell) **93a:32041** 32H15 (32E25)

— The growth of the Bergman kernel on pseudoconvex domains of homogeneous finite diagonal type. *Nagoya Math. J.* **126** (1992), 1–24. (Jeffery D. McNeal) **93j:32030** 32H10

— (*with* Diederich, Klas) Extension of holomorphic L^2-functions with weighted growth conditions. *Nagoya Math. J.* **126** (1992), 141–157. (Kensho Takegoshi) **93h:32016** 32D15 (32F15)

Herbst, Ben M. Numerical evidence of exponentially small splitting distances in symplectic discretizations of planar Hamiltonian systems. (English summary) *Nonlinear evolution equations and dynamical systems (Baia Verde,* 1991), 207–215, *World Sci. Publishing, River Edge, NJ,* 1992. (Summary) **93h:58098** 58F13 (58F05, 70–08, 70H05)

— (*with* Robinson, Mark P.; Fairweather, Graeme) On the numerical solution of the cubic Schrödinger equation in one space variable. *J. Comput. Phys.* **104** (1993), *no.* 1, 277–284. 81–04

— (*with* Ablowitz, Mark J.) Numerical chaos, symplectic integrators, and exponentially small splitting distances. (English summary) *J. Comput. Phys.* **105** (1993), *no.* 1, 122–132. (Summary) **93m:65120** 65M06 (58F13, 65L99)

— *see also* **Symposium: Numerical Mathematics**

Herbst, Tomáš Estimation of moments under Koziol-Green model for random censorship. *Comm. Statist. Theory Methods* **21** (1992), *no.* 3, 613–624. (Hung Trung Nguyen) **93f:62055** 62G05

— Test of fit with the Koziol-Green model for random censorship. *Statist. Decisions* **10** (1992), *no.* 1-2, 163–171. (Eswar G. Phadia) **93e:62250** 62N05 (62G10, 62P10)

Herburt, Irmina (*with* Moszyńska, Maria) On metric products. *Colloq. Math.* **62** (1991), *no.* 1, 121–133. (Grattan P. Murphy) **93b:54029** 54E35 (51K05)

Herceg, Dragoslav A note on iterative process for solving linear systems of equations. (Serbo-Croatian summary) *Zb. Rad. Prirod.-Mat. Fak. Ser. Mat.* **20** (1990), *no.* 1, 1–9. (S. Galanis) **93d:65035** 65F10

— (*with* Cvetković, Ljiljana) On an iterative method for a system of equations. (Serbo-Croatian summary) *Zb. Rad. Prirod.-Mat. Fak. Ser. Mat.* **20** (1990), *no.* 1, 11–15. (S. Galanis) **93d:65036** 65F10

Herdegen, Andrzej Classical electrodynamics of a point particle from action integral. (English summary) *Proc. Roy. Soc. London Ser. A* **439** (1992), *no.* 1907, 559–581. (Summary) **93j:78010** 78A35

Herden, G. Topological spaces for which every continuous total preorder can be represented by a continuous utility function. *Math. Social Sci.* **22** (1991), *no.* 2, 123–136. (Summary) **93d:54044** 54F05 (06F30)

Heredia, F. Javier (*with* Nabona, Narcís) Numerical implementation and computational results of nonlinear network optimization with linear side constraints. *System modelling and optimization (Zurich,* 1991), 301–310, *Lecture Notes in Control and Inform. Sci.,* 180, *Springer, Berlin,* 1992. (*see* **93e:90003**) 90C35

Hereman, W. (*with* Zhuang, W.) Symbolic computation of solitons with Macsyma. (English summary) *Computational and applied mathematics, II (Dublin,* 1991), 287–296, *North-Holland, Amsterdam,* 1992. (Summary) **93m:65003** 65–04 (35Q51, 68Q40)

— (*with* Steeb, Willi-Hans; Euler, Norbert) A note on the Zakharov equation and Lie-symmetry vector fields. (English summary) *Nuovo Cimento B* (11) **107** (1992), *no.* 10, 1211–1213. (Mehmet Can) **93k:58241** 58G37 (17B66, 35Q51)

Herer, Wojciech Mathematical expectation and martingales of random subsets of a metric space. *Probab. Math. Statist.* **11** (1990), *no.* 2, 291–304 (1991). (Ilya S. Molchanov) **93d:60016** 60D05 (60B05, 60G48)

Herfort, W. (*with* Seke, J.; Adam, Gerhard; Hittmair, O.) Nicht-Markoffsche Bewegungsgleichung für die Besetzungszahlinversion und ihre Lösung bei der spontanen Emission eines Zwei-Niveau-Atoms. I. Anwendung der Rotating-Wave-Approximation. [Non-Markovian equation of motion for the inversion of occupancy number and its solution in the spontaneous emission of a two-level atom. I. Application of the rotating wave approximation] *Österreich. Akad. Wiss. Math.-Natur. Kl. Sitzungsber. II* **199** (1990), *no.* 4-7, 103–121. (I. A. Sakmar) **93d:81198** 81V80 (81V45)

— (*with* Seke, J.; Adam, Gerhard; Hittmair, O.) Nicht-Markoffsche Bewegungsgleichung für die Besetzungszahlinversion und ihre Lösung bei der spontanen Emission eines Zwei-Niveau-Atoms. II. Berücksichtigung der Counter-Rotating-Terme. [Non-Markovian equation of motion for the inversion of occupancy number and its solution in the spontaneous emission of a two-level atom. II. Consideration of counter-rotating terms] *Österreich. Akad. Wiss. Math.-Natur. Kl. Sitzungsber. II* **199** (1990), *no.* 4-7, 123–130. (I. A. Sakmar) **93d:81199** 81V80 (81V45)

Herglotz, G. (*with* Schur, I.; Pick, G.; Nevanlinna, R.; Weyl, Hermann) ★ Ausgewählte Arbeiten zu den Ursprüngen der Schur-Analysis. (German) [Selected works on the origins of Schur analysis] Gewidmet dem großen Mathematiker Issai Schur (1875–1941). [Dedicated to the great mathematician Issai Schur (1875–1941)] Edited and with a foreword and afterword by Bernd Fritzsche and Bernd Kirstein. With contributions by W. Ledermann and W. K. Hayman. With English, French and Russian summaries. Teubner-Archiv zur Mathematik [Teubner Archive on Mathematics], 16. *B. G. Teubner Verlagsgesellschaft mbH, Stuttgart,* 1991. 290 *pp. ISBN* 3-8154-2012-1 (Michael von Renteln) **93d:01095** 01A75 (00B60, 01A60, 30–03)

Hering, Franz Beweis einer Vermutung von Heiko Harborth über Polyominos aus Quadraten. [Proof of a conjecture of Heiko Harborth on polyominoes of squares] *Math. Semesterber.* **38** (1991), *no.* 2, 223–237. (Béla Uhrin) **93f:05032** 05B50

Herlihy, Maurice (*with* Lynch, Nancy; Merritt, Michael; Weihl, William) On the correctness of orphan management algorithms. (English summary) *J. Assoc. Comput. Mach.* **39** (1992), *no.* 4, 881–930. (Summary) **93j:68013** 68M10 (68M20, 68Q10)

Herlt, E. (*with* Stephani, H.) Invariance transformations of the class $y'' = F(x)y^n$ of differential equations. (English summary) *J. Math. Phys.* **33** (1992), *no.* 12, 3983–3988. (Summary) **93h:34013** 34A26 (34A34)

Herman, G. T. *see* **Mathematical methods in tomography, 93d:44001**

Herman, Gérard C. Estimation of the inverse acoustic transmission operator of a heterogeneous region directly from its reflection operator. (English summary) *Inverse Problems* **8** (1992), *no.* 4, 559–574. (Summary) **93g:73051** 73D50 (73D25, 73N20, 86A15)

Herman, Michael-Robert Inégalités "a priori" pour des tores lagrangiens invariants par des difféomorphismes symplectiques. [A priori inequalities for Lagrangian tori invariant under symplectic diffeomorphisms] *Inst. Hautes Études Sci. Publ. Math. No.* 70 (1989), 47–101 (1990). (From the introduction) **93b:58052** 58F05 (58F22, 58F27, 58F30)

— On the dynamics of Lagrangian tori invariant by symplectic diffeomorphisms. *Progress in variational methods in Hamiltonian systems and elliptic equations (L'Aquila,* 1990), 92–112, *Pitman Res. Notes Math. Ser.,* 243, *Longman Sci. Tech., Harlow,* 1992. (Le Hong Van) **93h:58054** 58F05

— *see also* **Members elected to the Academy in 1991: Michael-Robert Herman, 93c:01049**

Herman, R. L. (*with* Knickerbocker, C. J.) Numerically induced phase shift in the KdV soliton. (English summary) *J. Comput. Phys.* **104** (1993), *no.* 1, 50–55. 65M06 (35Q53)

Herman, R. M. Classical origins of the Aharonov-Bohm effect. *Found. Phys.* **22** (1992), *no.* 5, 713–725. (Summary) **93a:81013** 81P05 (81V10)

Herman, Ted Self-stabilization: randomness to reduce space. (English summary) *Distrib. Comput.* **6** (1992), *no.* 2, 95–98. (Summary) **93g:68037** 68Q10

Hermann, Carl Friedrich Die Nullstellen der Thetareihen zu positiven, binär-quadratischen Formen. [The zeros of theta series for positive, binary-quadratic forms] *Manuscripta Math.* **74** (1992), *no.* 1, 107–115. (Rainer Schulze-Pillot) **93i:11055** 11F27 (11E45, 11F46)

— Symmetrische Modulflächen der Diskriminante p^2. (German summary) [Symmetric modular surfaces of discriminant p^2] *Manuscripta Math.* **76** (1992), *no.* 2, 169–179. (Bruce Hunt) **93j:14044** 14J20 (11F41, 14G35)

Hermann, Jakob *see* **Aiton, Eric John**, **(93e:01009)**

Hermann, Robert ★ Geometric computing science: first steps. Interdisciplinary Mathematics, 25. *Math Sci Press, Brookline, MA*, 1991. xiv+400 *pp. ISBN* 0-915692-41-4 (Stephen J. Hegner) **93a:93032** 93B27 (18B20, 58E25, 68–02, 93B40)

Hermann, Thomas On a tolerance problem of parametric curves and surfaces. *Comput. Aided Geom. Design* **9** (1992), *no.* 2, 109–117. (Summary) **93b:65028** 65D17

— (*with* Renner, Gábor) Note on the RBG-patch concept. (English summary) *Comput. Aided Geom. Design* **9** (1992), *no.* 4, 271–277. (R. Franke) **93j:65026** 65D17

Hermansson, Björn (*with* Glasner, Moses; Yevick, David) Generalized propagation techniques for longitudinally varying refractive index distributions. (English summary) *Math. Comput. Modelling* **16** (1992), *no.* 10, 177–182. (Summary) **93e:65124** 65M99 (35A35, 35Kxx, 81–08)

Hermeline, F. (*with* George, P. L.) Delaunay's mesh of a convex polyhedron in dimension *d*. Application to arbitrary polyhedra. *Internat. J. Numer. Methods Engrg.* **33** (1992), *no.* 5, 975–995. (H. P. Dikshit) **93e:65117** 65M50 (68U30)

Hermes *see* **Hughes, M.**, **93c:01015**

Hermes, Henry Stabilization via optimization. *New trends in systems theory* (*Genoa*, 1990), 379–385, *Progr. Systems Control Theory*, 7, *Birkhäuser Boston, Boston, MA*, 1991. (Stuart Townley) **93a:93092** 93D15 (93C10, 93D20, 93D22)

Hermida Alonso, J. Á. Linear equations over commutative rings and grade theory. *J. Algebra* **148** (1992), *no.* 2, 497–503. (Liam O'Carroll) **93e:13014** 13C10 (13C15, 13D25)

Hermite, Charles *see* **Brezinski, Claude**, **93h:01037**

Hermoso Carazo, A. (*with* Molina Fernández, Manuel) On the estimation in a class of diffusion-type processes. Application for diffusion branching processes. *Extracta Math.* **5** (1990), *no.* 3, 109–111. (Introduction) **93f:62119** 62M05 (60J60)

— (*with* Linares Pérez, Josefa) Some properties of the isometric stochastic integral with respect to a Hilbert-valued martingale. *Rebrape* **5** (1991), *no.* 1, 65–80. (Summary) **93i:60102** 60H05

Hernández, Diego Bricio (*with* Spigler, Renato) *A*-stability of Runge-Kutta methods for systems with additive noise. (English summary) *BIT* **32** (1992), *no.* 4, 620–633. (Masaharu Nakashima) **93j:65114** 65L06 (65L20)

Hernández, Eduardo A. (*with* Henríquez, Hernán R.) An extension of Horn's theorem for a space of locally integrable functions. (English summary) *Internat. J. Math. Math. Sci.* **15** (1992), *no.* 4, 635–640. (Bogdan Przeradzki) **93m:47063** 47H10 (47B38)

Hernández, Eugenio (*with* Soria, Javier) Spaces of Lorentz type and complex interpolation. *Ark. Mat.* **29** (1991), *no.* 2, 203–220. (Irina U. Asekritova) **93a:46048** 46E30 (46M35)

Hernández, Francisco L. *see* **Hernández Rodríguez, Francisco L.**

Hernández, Gregorio (*with* Abellanas, M.; Neumann Lara, Víctor; Urrutia, Jorge) A combinatorial property of convex sets. (Spanish. English summary) *II Meeting on Computational Geometry* (*Spanish*) (*Madrid*, 1991), 71–78, *Univ. Politéc. Madrid, Madrid*, 1992. (Summary) **93c:52003** 52A37 (05B99)

Hernández, Héctor J. (*with* Chan, Edward P. F.) Independence-reducible database schemes. *J. Assoc. Comput. Mach.* **38** (1991), *no.* 4, 854–886. (Marc Gyssens) **93a:68030** 68P15

— (*with* Wang, Ke[3]) On the boundedness of constant-time-maintainable database schemes. (English summary) *SIAM J. Comput.* **22** (1993), *no.* 1, 29–45. (Summary) **93j:68047** 68P15 (68P20)

Hernández, J. E. (*with* Nashed, M. Zuhair) Global invertibility in nonlinear functional analysis. (English summary) *Fixed point theory and applications* (*Halifax, NS*, 1991), 229–247, *World Sci. Publishing, River Edge, NJ*, 1992. (V. V. Obukhovskiĭ) **93i:47101** 47H15 (58C15)

Hernández, Jesús (*with* Fleckinger, Jacqueline Pellé; de Thélin, François) Principe du maximum pour un système elliptique non linéaire. (English summary) [The maximum principle for some cooperative elliptic systems] *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 9, 665–668. (Summary) **93a:35052** 35J65 (35B50)

torrea Hernández, José Luis *see* **Torrea Hernández, José Luis**

Hernández, Luis (*with* Carlson, James A.) Harmonic maps from compact Kähler manifolds to exceptional hyperbolic spaces. *J. Geom. Anal.* **1** (1991), *no.* 4, 339–357. (John C. Wood) **93a:58046** 58E20 (32J27)

ruiz Hernández, Luis Enrique *see* **Ruiz Hernández, Luis Enrique**

Hernández, Luis Javier (*with* Porter, Timothy) Categorical models of *n*-types for pro-crossed complexes and $\mathcal{J}_n$-prospaces. (English summary) *Algebraic topology* (*San Feliu de Guíxols*, 1990), 146–185, *Lecture Notes in Math.*, 1509, *Springer, Berlin*, 1992. (Marek Golasiński) **93m:55015** 55P55 (18G30, 54C56, 55P15, 55U10)

— (*with* Porter, Timothy) An embedding theorem for proper *n*-types. (English summary) *Topology Appl.* **48** (1992), *no.* 3, 215–233. (Marek Golasiński) **93m:55011** 55P15 (55U99)

Hernández, Oscar F. (*with* Griffin, Paul A.) Structure of irreducible SU(2) parafermion modules derived via the Feigin-Fuchs construction. *Internat. J. Modern Phys. A* **7** (1992), *no.* 6, 1233–1265. (Stanislav Z. Pakuliak) **93d:81070** 81R10 (81T40, 81T70)

Hernández, Vicente G. (*with* Coll, C.; Brú, Rafael) Realizations of rational matrices in discrete periodic linear systems. (Spanish) *Proceedings of the XII Congress on Differential Equations and Applications/II Congress on Applied Mathematics* (*Spanish*) (*Oviedo*, 1991), 319–324, *Univ. Oviedo, Oviedo*, 1991. (*see* **93j:00009**) 93B15

— (*with* Pedroso de Lima, Teresa; Estruch, Vicente D.) Discrete periodic linear systems in implicit form. (Spanish) *Proceedings of the XII Congress on Differential Equations and Applications/II Congress on Applied Mathematics* (*Spanish*) (*Oviedo*, 1991), 325–330, *Univ. Oviedo, Oviedo*, 1991. (*see* **93j:00009**) 93C55

— (*with* Sánchez, Elena; Brú, Rafael) Minimal realizations for discrete-time linear periodic systems. Directions in matrix theory (Auburn, AL, 1990). *Linear Algebra Appl.* **162/164** (1992), 685–708. (Joseph D. Cole) **93a:93027** 93B15 (93B20, 93C55)

Hernández Barrera, Antonio (*with* Mesa Henríquez, Antonio; Puerta Balda, Antonio) Placement of orthogonal polygons. (Spanish. English and Spanish summaries) *Investigación Oper.* **12** (1991), *no.* 2-3, 89–102. 68U05 (68Q35)

Hernández-García, E. (*with* San Miguel, M.; Colet, P.; Cáceres, Manuel O.; De Pasquale, F.) Passage time description of dynamical processes. (English summary) *Instabilities and nonequilibrium structures, III* (*Valparaíso*, 1989), 143–155, *Math. Appl.*, 64, *Kluwer Acad. Publ., Dordrecht*, 1991. (Summary) **93c:58190** 58F30 (58F14)

Hernández Herrera, René (*with* López Lagomasino, Guillermo) Relative asymptotic behavior of sequences of orthogonal polynomials on the real line. (Spanish. English and Spanish summaries) *Cienc. Mat.* (*Havana*) **12** (1991), *no.* 2-3, 155–169. (José Javier Guadalupe Hernández) **93m:42012** 42C05

Hernández-Lerma, Onésimo (*with* Cavazos-Cadena, Rolando) Adaptive policies for priority assignment in discrete time queues—discounted cost criterion. (Russian and Polish summaries) *Control Cybernet.* **19** (1990), *no.* 1-2, 149–177. (Summary) **93c:90034** 90B22 (60K25)

— On integrated square errors of recursive nonparametric estimates of nonstationary Markov processes. *Probab. Math. Statist.* **12** (1991), *no.* 1, 25–33 (1992). (Alan F. Karr) **93i:62075** 62M05 (60J05)

— (*with* Cavazos-Cadena, Rolando) Equivalence of Lyapunov stability criteria in a class of Markov decision processes. *Appl. Math. Optim.* **26** (1992), *no.* 2, 113–137. (Raimi Ajibola Kasumu) **93i:90108** 90C40 (93D05, 93E15)

— (*with* Muñoz de Özak, Myriam) Discrete-time Markov control processes with discounted unbounded costs: optimality criteria. *Kybernetika* (*Prague*) **28** (1992), *no.* 3, 191–212. (Krzysztof Szajowski) **93h:93085** 93E20 (49J45, 93B55)

Hernández Rodríguez, Francisco L. (*with* Rodríguez-Salinas, Baltasar) Orlicz spaces containing singular l^p-complemented copies. *Function spaces* (*Poznań*, 1989), 15–22, *Teubner-Texte Math.*, 120, *Teubner, Stuttgart*, 1991. (Summary) **93a:46049** 46E30 (47B38)

— (*with* Ruiz, César) On Musielak-Orlicz spaces isomorphic to Orlicz spaces. (English summary) *Comment. Math. Prace Mat.* **32** (1992), 55–60. (Summary) **93m:46024** 46E30 (46A45)

— (*with* Ruiz, César) Universal classes of Orlicz function spaces. *Pacific J. Math.* **155** (1992), *no.* 1, 87–98. (Cong Xin Wu) **93i:46051** 46E30

Hernández Ruipérez, Daniel (*with* Bartocci, Claudio; Bruzzo, Ugo) Some results on line bundles over SUSY-curves. *Differential geometric methods in theoretical physics* (*Davis, CA*, 1988), 675–680, *NATO Adv. Sci. Inst. Ser. B Phys.*, 245, *Plenum, New York*, 1990. (Wataru Takahasi) **93k:14071** 14M30 (32C11, 32L05)

— (*with* Bartocci, Claudio; Bruzzo, Ugo) ★ The geometry of supermanifolds. Mathematics and its Applications, 71. *Kluwer Academic Publishers Group, Dordrecht*, 1991. xx+242 *pp. ISBN* 0-7923-1440-9 (Jaime Muñoz Masqué) **93h:58006** 58A50 (32C11, 58C50)

— Supermanifolds: new directions in geometry. (Spanish) *Proceedings of the XVth Portuguese-Spanish Conference on Mathematics, Vol. III* (*Portuguese*) (*Évora*, 1990), 3–26, *Univ. Évora, Évora*, 1991. (Jaime Muñoz Masqué) **93f:58011** 58A50

Hernando Pérez, Jesús (*with* Charrier, Christian) The sheaves of sets on a topological space form a topos. (Spanish) *Bol. Mat.* **20** (1986), *no.* 3, 173–196. 18F20 (54B30)

Hero, Michael W. Special α-limit points for maps of the interval. *Proc. Amer. Math. Soc.* **116** (1992), *no.* 4, 1015–1022. (Arkady S. Pikovsky) **93b:58086** 58F08 (54A20)

— The set of ω-limit points of a map of the circle is closed. (English summary) *Bull. London Math. Soc.* **25** (1993), *no.* 2, 157–161. (Shigeru Haruki) **93m:26005** 26A18

— An example of a homeomorphism of the plane where the set of ω-limit points is not a closed set. *Proc. Amer. Math. Soc.* **117** (1993), *no.* 3, 843–844. (Jerzy Ombach) **93d:54061** 54H20 (58F08)

Herod, J. V. *see* **Differential equations with applications to mathematical physics**, **93i:00013**

Heron *see* **Keyser, Paul**, **93k:01005**

Herranz Calzada, J. (*with* Gavete, Luis; Alonso Martínez, J.) A conformal mapping for the generation of singular elements. (Spanish) *Proceedings of the XII Congress on Differential Equations and Applications/II Congress on Applied Mathematics* (*Spanish*) (*Oviedo*, 1991), 477–483, *Univ. Oviedo, Oviedo*, 1991. (*see* **93j:00009**) 65N50

Herre, Heinrich (*with* Krynicki, Michał; Pinus, A. G.; Väänänen, Jouko) The Härtig quantifier: a survey. *J. Symbolic Logic* **56** (1991), *no.* 4, 1153–1183. (Bernd Dahn) **93c:03051** 03C80 (03–02, 03B25)

bouza Herrera, Carlos *see* **Bouza Herrera, Carlos**

Herrera, F. (*with* Delgado, Miguel; Verdegay, J. L.; Vila, Maria Amparo) Post-optimality analysis on the membership functions of a fuzzy linear programming problem. (English summary) *Fuzzy Sets and Systems* **53** (1993), *no.* 3, 289–297. (Summary) **93k:90101** 90C70 (04A72, 90C08)

— (*with* Kovács, Margit; Verdegay, J. L.) Optimality for fuzzified mathematical programming problems: a parametric approach. (English summary) *Fuzzy Sets and Systems* **54** (1993), *no.* 3, 279–285. 90C70 (04A72)

Herrera, Ismael Localized adjoint methods: a new discretization methodology. (English summary) *Computational methods in geosciences*, 66–77, *SIAM, Philadelphia, PA*, 1992. (Summary) **93e:76058** 76M25 (76M30)

— Localized adjoint method: topics for further research and some contributions. (English summary) *Computational methods in water resources, IX, Vol.* 1 (*Denver, CO*, 1992), 3–15, *Comput. Mech., Southampton*, 1992. (*see* **93g:76002**) 65J10 (76M25)

Herrera, J. Julio E. (*with* Minzoni, Antonmaría; Ondarza, Ricardo) Reaction-diffusion equations in one dimension: particular solutions and relaxation. (English summary) *Phys. D* **57** (1992), *no.* 3-4, 249–266. (Summary) **93f:35110** 35K57

Herrera, L. (*with* Chan, Roberto; Santos, N. O.) Dynamical instability in the collapse of anisotropic matter. (English summary) *Classical Quantum Gravity* **9** (1992), *no.* 10, L133–L135. (Summary) **93f:83054** 83C55

— (*with* Man'ko, V. S.) Stationary solution of the Einstein equations possessing zero total angular momentum. *Phys. Lett. A* **167** (1992), *no.* 3, 238–242. (Summary) **93d:83011** 83C15 (83C25)

hernández Herrera, René *see* **Hernández Herrera, René**

Herrera H., Angel N. Static realization of dynamic precompensators. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 9, 1391–1394. (Summary) **93f:93029** 93B15

— (*with* Lafay, J. F.; Zagalak, Petr) Reduced form of the interactor matrix. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 11, 1778–1782. (Summary)

93i:93031 93B28 (93C05)

Herrero, Domingo A. (*with* Wang, Zong Yao) Quasidiagonal operators in tridiagonal algebras. *Math. Balkanica (N.S.)* **4** (1990), *no.* 4, 337–346 (1991). (John Froelich) **93g:47022** 47A66 (47A55, 47D25)

— (*with* Kitai, Carol) On invertible hypercyclic operators. *Proc. Amer. Math. Soc.* **116** (1992), *no.* 3, 873–875. (Summary) **93a:47023** 47A65 (47A15, 47B99)

— *see also* **Davidson, Kenneth R., 93e:01020** *and* **Elementary operators & applications, 93e:47001**

Herrero, Maria José (*with* Srivastava, Sanjay) Implementation via backward induction. *J. Econom. Theory* **56** (1992), *no.* 1, 70–88. (Edward W. Packel) **93c:90011** 90A08 (90D40)

Herrero, Miguel A. (*with* Bénilan, Philippe; Boccardo, Lucio) On the limit of solutions of $u_t = \Delta u^m$ as $m \to \infty$. Some topics in nonlinear PDEs (Turin, 1989). *Rend. Sem. Mat. Univ. Politec. Torino* **1989,** *Special Issue*, 1–13 (1991). (Zhen Chao Cao) **93c:35069** 35K57 (35B05)

— (*with* Velázquez, Juan J. L.) Blow-up profiles in one-dimensional, semilinear parabolic problems. *Comm. Partial Differential Equations* **17** (1992), *no.* 1-2, 205–219. (H. J. Kuiper) **93b:35066** 35K55 (35B05)

— (*with* Velázquez, Juan J. L.) Flat blow-up in one-dimensional semilinear heat equations. *Differential Integral Equations* **5** (1992), *no.* 5, 973–997. (Summary) **93d:35065** 35K55 (35B40)

— (*with* Friedman, Avner) Extinction and positivity for a system of semilinear parabolic variational inequalities. *J. Math. Anal. Appl.* **167** (1992), *no.* 1, 167–175. (Shuzi Zhou) **93a:35096** 35K85 (49J40)

— (*with* Velázquez, Juan J. L.) Approaching an extinction point in one-dimensional semilinear heat equations with strong absorption. (English summary) *J. Math. Anal. Appl.* **170** (1992), *no.* 2, 353–381. (Song Mu Zheng) **93k:35043** 35B40 (35K15)

— (*with* Velázquez, Juan J. L.) Asymptotics near an extinction point for some semilinear heat equations. *Emerging applications in free boundary problems (Montreal, PQ,* 1990), 188–194, *Pitman Res. Notes Math. Ser.*, 280, *Longman Sci. Tech., Harlow*, 1993. (*see* **93k:00035**) 35B40 (35K55)

Herrlich, F. (*with* Hauser, Kai; Kneser, M.; Opolka, Hans; Schappacher, Norbert; Scholz, Erhard) Oswald Teichmüller—Leben und Werk. [Oswald Teichmüller—his life and work] *Jahresber. Deutsch. Math.-Verein.* **94** (1992), *no.* 1, 1–39. (J. Dieudonné) **93b:01037** 01A70 (01A60)

Herrlich, Horst Realizations of topologies and closure operators by set systems and by neighbourhoods. (English summary) *Arch. Math. (Brno)* **25** (1989), *no.* 1-2, 83–87. (Summary) **93f:18009** 18B30 (18B15, 54A05, 54B30)

— (*with* Bentley, H. L.; Lowen, Robert) Improving constructions in topology. *Category theory at work (Bremen,* 1990), 3–20, *Res. Exp. Math.*, 18, *Heldermann, Berlin*, 1991. (Y. T. Rhineghost) **93b:54009** 54B30 (54A05, 54D20, 54E17)

— (*with* Lowen-Colebunders, Eva; Schwarz, Friedhelm) Improving Top: PrTop and PsTop. *Category theory at work (Bremen,* 1990), 21–34, *Res. Exp. Math.*, 18, *Heldermann, Berlin*, 1991. (Jiří Adámek) **93d:18007** 18B30 (18D15, 54B30)

— Convenient topological constructs. *Applications of category theory to fuzzy subsets (Linz,* 1989), 137–151, *Theory Decis. Lib. Ser. B Math. Statist. Methods*, 14, *Kluwer Acad. Publ., Dordrecht*, 1992. (Peter Johnstone) **93b:18011** 18B30 (04A72, 18D15, 54A40)

— (*with* Brümmer, G. C. L.; Giuli, Eraldo) Epireflections which are completions. (French summary) *Cahiers Topologie Géom. Différentielle Catégoriques* **33** (1992), *no.* 1, 71–73. (H. L. Bentley) **93h:18004** 18A40 (18B30, 54B30, 54E15)

— Hyperconvex hulls of metric spaces. Proceedings of the Symposium on General Topology and Applications (Oxford, 1989). *Topology Appl.* **44** (1992), *no.* 1-3, 181–187. (J. R. Isbell) **93f:54043** 54E40 (54B30)

— *see also* **Recent developments of general topology and its applications, 93m:54004**

Herrmann, Christian On the contraction of vectorial lattice representations. *Order* **8** (1991), *no.* 3, 275–281. (George Hutchinson) **93c:06015** 06C20

Herrmann, Eberhard 1-reducibility inside an m-degree with a maximal set. (English summary) *J. Symbolic Logic* **57** (1992), *no.* 3, 1046–1056. (Decheng Ding) **93i:03059** 03D30 (03D35)

Herrmann, Eva (*with* Gasser, Theo) Data-adaptive kernel estimation. *Nonparametric functional estimation and related topics (Spetses,* 1990), 67–79, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 335, *Kluwer Acad. Publ., Dordrecht*, 1991. (Summary) **93a:62054** 62G05

Herrmann, G. (*with* Honein, E.; Honein, T.) On two circular inclusions in harmonic problems. (English summary) *Quart. Appl. Math.* **50** (1992), *no.* 3, 479–499. (Summary) **93f:73031** 73C99 (73B27, 73K20, 73V35)

Herrmann, H. *see* **Herrmann, Horst**

Herrmann, H. J. (*with* Moukarzel, C.) A vectorizable random lattice. (English summary) *J. Statist. Phys.* **68** (1992), *no.* 5-6, 911–923. (Summary) **93f:82030** 82B41

Herrmann, Horst Continuation of convergence for distribution functions of sums of weakly dependent random variables. *Math. Nachr.* **151** (1991), 311–314. (Lothar Heinrich) **93a:60029** 60F05

Herrmann, J. M. An asymptotic analysis of finite deformations near the tip of an interface-crack. II. (English summary) *J. Elasticity* **29** (1992), *no.* 3, 203–241. (Summary) **93j:73064** 73M25 (73G05)

— (*with* Walton, J. R.) A new method for solving dynamically accelerating crack problems. I. The case of a semi-infinite mode III crack in elastic material revisited. *Quart. Appl. Math.* **50** (1992), *no.* 2, 373–387. (Summary) **93c:73086** 73M25 (73D99)

eichenauer-Herrmann, Jürgen *see* **Eichenauer-Herrmann, Jürgen**

Herrmann, Leopold Optimal oscillatory time for a class of second order nonlinear dissipative ODE. (English summary) *Appl. Math.* **37** (1992), *no.* 5, 369–382. (Hiroshi Onose) **93f:34054** 34C10

— (*with* Feireisl, Eduard) Oscillations of a non-linearly damped extensible beam. (English summary) *Appl. Math.* **37** (1992), *no.* 6, 469–478. (Takashi Narazaki) **93k:35013** 35B05 (35Q99, 73D35, 73K05, 73K12)

Herrmann, Manfred (*with* Ribbe, J.; Ngô Viêt Trung) Rees algebras of nonsingular equimultiple prime ideals. *Nagoya Math. J.* **124** (1991), 1–12. (Aron Simis) **93e:13003** 13A30 (13H10, 13H15)

— (*with* Ribbe, J.; Zarzuela Armengou, Santiago) On Rees and form rings of almost complete intersections. *Comm. Algebra* **21** (1993), *no.* 2, 647–664. (Ian M. Aberbach) **93k:13007** 13A30 (13H10)

— (*with* Ngô Viêt Trung) Examples of Buchsbaum quasi-Gorenstein rings. *Proc. Amer. Math. Soc.* **117** (1993), *no.* 3, 619–625. (J. K. Verma) **93d:13035** 13H10 (13H15)

Hersh, M. A. A robust adaptive algorithm in delta-operator formulation. *Control theory, stochastic analysis and applications (Hangzhou,* 1991), 214–226, *World Sci. Publishing, River Edge, NJ*, 1991. (*see* **93a:93005**) 93B40 (93C40)

— Adaptive algorithms for the simultaneous stabilization and decoupling of time-varying multivariable systems. (English summary) *Internat. J. Control* **56** (1992), *no.* 3, 563–579. (Summary) **93d:93070** 93D15 (93B40, 93B55)

Hershberger, John (*with* Edelsbrunner, Herbert; Guibas, Leonidas J.; et al.) Implicitly representing arrangements of lines or segments. (English summary) *Proceedings of the Fourth Annual Symposium on Computational Geometry (Urbana, IL,* 1988), 56–69, *ACM, New York*, 1988. (*see* **93k:68003**) 68U05 (68R10)

— (*with* Edelsbrunner, Herbert; Guibas, Leonidas J.; et al.) On arrangements of Jordan arcs with three intersections per pair. (English summary) *Proceedings of the Fourth Annual Symposium on Computational Geometry (Urbana, IL,* 1988), 258–265, *ACM, New York*, 1988. (*see* **93k:68003**) 57N05 (52B55, 68U05)

— (*with* Snoeyink, Jack) Sweeping arrangements of curves. *Discrete and computational geometry (New Brunswick, NJ,* 1989/1990), 309–349, *DIMACS Ser. Discrete Math. Theoret. Comput. Sci.*, 6, *Amer. Math. Soc., Providence, RI*, 1991. (Ivan Stojmenović) **93e:52031** 52B55 (68U05)

— (*with* Suri, Subhash) Applications of a semi-dynamic convex hull algorithm. *BIT* **32** (1992), *no.* 2, 249–267. (H. W. Guggenheimer) **93f:68095** 68U05 (52B55)

— Upper envelope onion peeling. (English summary) *Comput. Geom.* **2** (1992), *no.* 2, 93–110. (Summary) **93i:68174** 68U05 (68Q25)

— Minimizing the sum of diameters efficiently. (English summary) *Comput. Geom.* **2** (1992), *no.* 2, 111–118. (Summary) **93i:68173** 68U05 (68Q25)

Hershkowitz, Daniel The height characteristic of block triangular matrices. Sixth Haifa Conference on Matrix Theory (Haifa, 1990). *Linear Algebra Appl.* **167** (1992), 3–15. (R. A. Brualdi) **93d:15036** 15A57

— Recent directions in matrix stability. *Linear Algebra Appl.* **171** (1992), 161–186. (Mihail Voicu) **93c:15001** 15-02 (15A48, 93D20)

— (*with* Carlson, David H.; Shasha, Dafna) Block diagonal semistability factors and Lyapunov semistability of block triangular matrices. Second NIU Conference on Linear Algebra, Numerical Linear Algebra and Applications (DeKalb, IL, 1991). *Linear Algebra Appl.* **172** (1992), 1–25. (George P. Barker) **93c:15010** 15A18 (15A57, 34D20)

— (*with* Agha, Nader; Kogan, Nataly) A solution to an inverse height and level characteristics problem. (English summary) *Linear and Multilinear Algebra* **31** (1992), *no.* 1-4, 139–146. (Jia-yu Shao) **93k:15047** 15A99

Herstein, I. N. (*with* Small, L.; Winter, D. J.) A Lie algebra variation on a theorem of Wedderburn. *J. Algebra* **144** (1991), *no.* 2, 496–509. (B. N. Allison) **93d:17025** 17B60 (16S30)

Herter, Rainer Ein Gittergenerator für spezielle Mehrgitterverfahren. [A grid generator for special multigrid methods] *Wiss. Z. Pädagog. Hochsch. Halle/Köthen* **28** (1990), *no.* 4, 9–12. (Lutz Tobiska) **93c:65149** 65N50 (65N55)

Hertle, Jochen (*with* Honegger, Reinhard) Limiting Gibbs states and dynamics for thermal photons. *J. Math. Phys.* **33** (1992), *no.* 1, 143–151. (Boguslaw Zegarlinski) **93c:82005** 82B10 (46N55, 47N55, 81T05)

— (*with* Honegger, Reinhard) Rigorous derivation of Planck's law in the thermodynamic limit. *J. Math. Phys.* **33** (1992), *no.* 1, 343–348. (Klaus Ziegler) **93c:82006** 82B10 (35Q99)

den Hertog, D. (*with* Roos, C.) A survey of search directions in interior point methods for linear programming. Interior point methods for linear programming: theory and practice (Scheveningen, 1990). *Math. Programming* **52** (1991), *no.* 3, *Ser. B*, 481–509 (1992). (Summary) **93f:90002** 90–02 (90C05)

— (*with* Roos, C.; Terlaky, Tamás) On the classical logarithmic barrier function method for a class of smooth convex programming problems. *J. Optim. Theory Appl.* **73** (1992), *no.* 1, 1–25. (Vladimir I. Venets) **93b:90063** 90C25 (49M30, 65K05)

— (*with* Roos, C.; Terlaky, Tamás) A build-up variant of the logarithmic barrier method for LP. (English summary) *Oper. Res. Lett.* **12** (1992), *no.* 3, 181–186. (Summary) **93f:90107** 90C05

— (*with* Roos, C.; Vial, Jean-Philippe) A complexity reduction for the long-step path-following algorithm for linear programming. *SIAM J. Optim.* **2** (1992), *no.* 1, 71–87. (Charles E. Blair) **93d:90032** 90C05 (65K05)

Hertrampf, Ulrich (*with* Buntrock, Gerhard; Damm, Carsten; Meinel, Christoph) Structure and importance of logspace-MOD class. *Math. Systems Theory* **25** (1992), *no.* 3, 223–237. (Summary) **93d:68029** 68Q25 (03D15)

Hertz, Alain (*with* Gendreau, Michel; Laporte, Gilbert) New insertion and postoptimization procedures for the traveling salesman problem. (English summary) *Oper. Res.* **40** (1992), *no.* 6, 1086–1094. 90C10 (90C27)

— (*with* Hansen, Pierre; Kuplinsky, Julio) Bounded vertex colorings of graphs. (English summary) Graph theory and combinatorics (Marseille-Luminy, 1990). *Discrete Math.* **111** (1993), *no.* 1-3, 305–312. (Summary) **93j:05057** 05C15 (68Q25, 68R10)

Hertz, David On the extreme eigenvalues of Toeplitz and real Hankel interval matrices. (English summary) *Multidimens. Systems Signal Process.* **4** (1993), *no.* 1, 83–90. (A. Böttcher) **93m:65063** 65G10 (15A18, 15A57, 93E03)

Hertz, J. A. (*with* Fischer, K. H.) ★ Spin glasses. Cambridge Studies in Magnetism, 1. *Cambridge University Press, Cambridge*, 1991. x+408 *pp. ISBN* 0-521-34296-1 (Muthiah Daniel) **93m:82019** 82B44 (82–02, 82B28, 82D30)

Herve, Loïc Régularité et conditions de bases de Riesz pour les fonctions d'échelle. (English and French summaries) [Regularity and the Riesz basis property of scaling functions] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 10, 1029–1032. (Jayakumar Ramanathan) **93m:42015** 42C15 (42B20)

Hervella, Luis M. (*with* Bonome, Agustín; Castro, Regina; García-Río, Eduardo) On the holomorphic sectional curvature on an indefinite Kähler manifold. (English and French summaries) *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 11, 1183–1187. (Demir N. Kupeli) **93j:53079** 53C50 (53B30, 53B35, 53C55)

Hervés, Carlos (*with* Candeal, Juan Carlos; Induráin Eraso, Esteban) Applications économiques des suites dans les espaces vectoriels topologiques. (English summary) [Applications in economics of sequences in topological vector spaces] *Rev. Acad. Cienc. Zaragoza* (2) **47** (1992), 89–102. (Summary) **93j:90024** 90A14 (46N10)

Herwig, Bernhard (*with* Loveys, James G.; Pillay, Anand; Tanović, Predag; Wagner, Frank O.) Stable theories without dense forking chains. *Arch. Math. Logic* **31** (1992), *no.* 5, 297–303. (John Rosenthal) **93i:03046** 03C45

Herwig, Helge Möglichkeit und Konstruktion—die mathematisierte physikalische Theorie als eine Form der Abbildung der Wirklichkeit. [Possibility and construction—the mathematized physical theory as a form of picturing reality] *Mathematik und Wirklichkeit*, 80–86, *Akademie-Verlag, Berlin*, 1991. (*see* **93e:00008**) 00A30

Herzberger, Jürgen (*with* Petković, M. S.) Inclusion of multiple polynomial roots in complex rectangular arithmetic. (English summary) *Computer arithmetic, scientific computation and mathematical modelling* (*Albena*, 1990), 367–375, *IMACS Ann. Comput. Appl. Math.*, 12, *Baltzer, Basel*, 1991. (Summary) **93h:65072** 65H05 (65G10)

— (*with* Bethke, D.) On two algorithms for bounding the inverses of an interval matrix. (English and Russian summaries) *Interval Comput./Interval. Vychisl.* **1991**, *no.* 1, 44–53. (Summary) **93c:65040** 65F05 (65G10)

— (*with* Petković, Ljiljana D.) On the construction of efficient interval Schulz's methods for bounding the inverse matrix. *Z. Angew. Math. Mech.* **71** (1991), *no.* 10, 411–412. (Mei-Qin Chen) **93c:65065** 65G10 (15A09, 65F10)

— (*with* Atanassova, Lidiya) A general approach to simultaneous inclusion methods for polynomial zeros. (English summary) *Computer arithmetic and enclosure methods* (*Oldenburg*, 1991), 189–197, *North-Holland, Amsterdam*, 1992. (Summary) **93j:65076** 65H05 (65G10)

— (*with* Bethke, D.) Interval Schulz's methods: on the case of an interval matrix. (English summary) *Computer arithmetic and enclosure methods* (*Oldenburg*, 1991), 199–203, *North-Holland, Amsterdam*, 1992. (Summary) **93k:65040** 65G10 (65F10)

— Iterative inclusion of the inverse matrix. *Mathematical modelling and scientific computations* (*Albena*, 1990), 14–26, *Bulgar. Acad. Sci., Sofia*, 1992. (Ljiljana Petković) **93d:65037** 65F10 (65G10)

— *see also* **Computer arithmetic and enclosure methods, 93i:65006**

Herzel, Hans-Peter (*with* Ebeling, Werner; Engel-Herbert, H.) ★ Selbstorganisation in der Zeit. (German) [Self-organization in time] Wissenschaftliche Taschenbücher, Reihe Mathematik/Physik [Scientific Paperbacks, Mathematics/Physics Series], 309. *Akademie-Verlag, Berlin*, 1990. 205 *pp. ISBN* 3-05-500709-3 (J. S. Joel) **93d:00019** 00A69 (34C23, 58–02, 70–02, 70K40, 76E99, 80–02, 92–02)

Herzer, A. On sets of subspaces closed under reguli. *Geom. Dedicata* **41** (1992), *no.* 1, 89–99. (P. Burda (Zbl 749:51007)) **93h:51007** 51C05

— Characterization of strong chain geometries by their automorphism group. *Geom. Dedicata* **41** (1992), *no.* 1, 101–102. (P. Burda (Zbl 749:51008)) **93h:51008** 51C05

Herzog, Gerd On universal functions and interpolation. *Analysis* **11** (1991), *no.* 1, 21–26. (Summary) **93c:41002** 41A05 (65D05)

— On linear operators having supercyclic vectors. (English summary) *Studia Math.* **103** (1992), *no.* 3, 295–298. (Warren R. Wogen) **93k:47033** 47A99 (47B99)

Herzog, H. (*with* Natterer, F.) Attenuation correction in positron emission tomography. *Math. Methods Appl. Sci.* **15** (1992), *no.* 5, 321–330. (Summary) **93a:92005** 92C55 (65R10)

Herzog, Ivo The Auslander-Reiten translate. (English summary) *Abelian groups and noncommutative rings*, 153–165, *Contemp. Math.*, 130, *Amer. Math. Soc., Providence, RI*, 1992. (Mike Prest) **93k:16025** 16G70 (03C60)

— Modules with few types. *J. Algebra* **149** (1992), *no.* 2, 358–370. (Mike Prest) **93i:03050** 03C60 (03C45, 16D70)

— (*with* Rothmaler, Philipp) Modules with regular generic types. IV. *J. Symbolic Logic* **57** (1992), *no.* 1, 193–199. (John T. Baldwin) **93h:03042** 03C45 (03C60)

Herzog, Jürgen Tensor products of Clifford modules and linear maximal Cohen-Macaulay modules on quadrics. *Topics in algebra, Part 2* (*Warsaw*, 1988), 125–140, *Banach Center Publ.*, 26, *Part* 2, *PWN, Warsaw*, 1990. (P. Schenzel) **93f:13007** 13C14

— (*with* Simis, Aron; Vasconcelos, Wolmer V.) Arithmetic of normal Rees algebras. *J. Algebra* **143** (1991), *no.* 2, 269–294. (Matthew Miller) **93b:13002** 13A30 (13B22, 13H10)

— (*with* Marcos, Eduardo do Nascimento; Waldi, Rolf) On the Grothendieck group of a quotient singularity defined by a finite abelian group. *J. Algebra* **149** (1992), *no.* 1, 122–138. (Gennady Lyubeznik) **93j:19002** 19A49 (14L30)

— (*with* Ngô Viêt Trung; Ulrich, Bernd) On the multiplicity of blow-up rings of ideals generated by d-sequences. *J. Pure Appl. Algebra* **80** (1992), *no.* 3, 273–297. (C. P. L. Rhodes) **93h:13004** 13A30 (13H15)

— (*with* Bruns, Winfried) On the computation of a-invariants. (English summary) *Manuscripta Math.* **77** (1992), *no.* 2-3, 201–213. (Gert Naudé) **93k:13032** 13H10 (13F50)

Herzog, Marcel (*with* Bianchi, Maria Grazia; Chillag, David; Gillio Berta Mauri, Anna; Scoppola, Carlo M.) Applications of a graph related to conjugacy classes in finite groups. *Arch. Math.* (*Basel*) **58** (1992), *no.* 2, 126–132. (Wolfgang Willems) **93d:20061** 20E34 (20C15, 20D60)

Herzog, Walter (*with* Binding, P. A.) Predictions of antagonistic muscular activity using nonlinear optimization. (English summary) *Math. Biosci.* **111** (1992), *no.* 2, 217–229. 92C30 (90C90)

Hesaaraki, Mahmud The structure of MFD shock waves in a model of two fluids. (English summary) *Nonlinearity* **6** (1993), *no.* 1, 1–24. (R. M. Gundersen) **93m:76073** 76W05 (34C37, 35Q35, 76L05)

Hess, A. (*with* Carl, Bernd) Estimates of covering numbers. *J. Approx. Theory* **65** (1991), *no.* 2, 121–139. (Yehoram Gordon) **93d:47042** 47B06 (46B20)

Hess, Christian On multivalued martingales whose values may be unbounded: martingale selectors and Mosco convergence. *J. Multivariate Anal.* **39** (1991), *no.* 1, 175–201. (Gabriella Salinetti) **93e:60090** 60G48 (60B12)

— An inf-compactness result for the mean functional. *Sém. Anal. Convexe* **21** (1991), *Exp. No.* 18, 7 *pp.* (Jean-Pierre Raymond) **93f:49004** 49J10 (46N10, 49Q20)

Hess, Heinz-Jürgen Der Briefwechsel zwischen Jakob Bernoulli und Leibniz. Eine Kurzcharakteristik. [The correspondence between Jacob Bernoulli and Leibniz. A brief characterization] *Der Ausbau des Calculus durch Leibniz und die Brüder Bernoulli* (*Basel*, 1987), 151–166, *Studia Leibnitiana Sonderheft*, 17, *Steiner, Wiesbaden*, 1989. (*see* **93e:01009**) 01A45 (01A50)

— *see also* **Development of calculus through Leibniz and the Bernoulli brothers, 93e:01009**

Hess, Kathryn P. Mild and tame homotopy theory. (English summary) *J. Pure Appl. Algebra* **84** (1993), *no.* 3, 277–310. (John F. Oprea) **93m:55012** 55P15 (55P60)

Hess, Peter On the asymptotically periodic Fisher equation. *Progress in partial differential equations: elliptic and parabolic problems* (*Pont-à-Mousson*, 1991), 24–33, *Pitman Res. Notes Math. Ser.*, 266, *Longman Sci. Tech., Harlow*, 1992. (Mehmet Can) **93k:35045** 35B40 (35B10, 35B35, 35K55)

Hess, Siegfried *see* **Statistical physics, 93i:82002**

Hesse, C. H. On asymptotics of the sample distribution for a class of linear process models in economics. (English summary) *Econometric Theory* **8** (1992), *no.* 3, 330–342. (Peter M. Robinson) **93k:62184** 62M10 (62P20)

Hesselager, Ole Prediction of outstanding claims: a hierarchical credibility approach. (English summary) *Scand. Actuar. J.* **1991**, *no.* 1, 25–47. 62P05

— Rates of risk convergence of empirical linear Bayes estimators. (English summary) *Scand. Actuar. J.* **1992**, *no.* 1, 88–94. (Summary) **93g:62012** 62C10 (62F15)

Hesselink, Wim H. ★ Programs, recursion and unbounded choice. Predicate-transformation semantics and transformation rules. Cambridge Tracts in Theoretical Computer Science, 27. *Cambridge University Press, Cambridge*, 1992. xiv+223 *pp. ISBN* 0-521-40436-3 (Cristian Calude) **93f:68002** 68–02 (68Q55, 68Q60)

— LR-parsing derived. (English summary) *Sci. Comput. Programming* **19** (1992), *no.* 2, 171–196. (Michael Bauer) **93j:68117** 68Q52

Hestenes, Magnus R. *see* **Berkovitz, Leonard D., 93e:01017**

Hestir, Kevin (*with* Nguyen, Hung T.; Rogers, Gerald S.) A random set formalism for evidential reasoning. *Conditional logic in expert systems*, 309–344, *North-Holland, Amsterdam*, 1991. (Summary) **93a:68139** 68T30 (03B48)

Hethcote, Herbert W. (*with* Mena-Lorca, Jaime) Dynamic models of infectious diseases as regulators of population sizes. (English summary) *J. Math. Biol.* **30** (1992), *no.* 7, 693–716. (Brian D. Sleeman) **93m:92014** 92D20

Hettich, Rainer *see* **Operations research '91, 93j:90006**

Hettmansperger, Thomas P. (*with* Nyblom, Jukka; Oja, Hannu) On multivariate notions of sign and rank. (English summary) *L_1-statistical analysis and related methods* (*Neuchâtel*, 1992), 267–278, *North-Holland, Amsterdam*, 1992. (Summary) **93m:62110** 62G10 (62H15)

— (*with* Sheather, Simon J.) A cautionary note on the method of least median squares. *Amer. Statist.* **46** (1992), *no.* 2, 79–83. (Summary) **93b:62092** 62J05

— (*with* Brown, Bruce Maxwell; Nyblom, Jukka; Oja, Hannu) On certain bivariate sign tests and medians. *J. Amer. Statist. Assoc.* **87** (1992), *no.* 417, 127–135. (J. V. Deshpande) **93f:62065** 62G10 (62G20, 62G30)

Hetzer, Georg (*with* Schmidt, Paul Günter) Global existence and asymptotic behavior for a quasilinear reaction-diffusion system from climate modeling. *J. Math. Anal. Appl.* **160** (1991), *no.* 1, 250–262. (János Tóth) **93b:35072** 35K57 (58F39, 86A10)

— (*with* Engler, Hans) Convergence to equilibria for a class of reaction-diffusion systems. *Osaka J. Math.* **29** (1992), *no.* 3, 471–481. (Elias Tuma) **93h:35099** 35K57

Heuer, Gerald A. (*with* Evans, Ronald J.) Silverman's game on discrete sets. *Linear Algebra Appl.* **166** (1992), 217–235. (F. Szidarovszky) **93a:90082** 90D05 (90D46)

Heuer, M. Asymptotically optimal strategies in repeated games with incomplete information. *Internat. J. Game Theory* **20** (1992), *no.* 4, 377–392. (Tadeusz Radzik) **93e:90076** 90D20 (90D05)

Heumos, Michael J. Models and periods for automorphic forms on GL_n. *Representation theory of groups and algebras*, 135–144, *Contemp. Math.*, 145, *Amer. Math. Soc., Providence, RI*, 1993. (*see* **93k:00028**) 22E50 (22E35)

Heurteaux, Yanick Solutions positives et mesure harmonique pour des opérateurs paraboliques dans des ouverts "lipschitziens". (English summary) [Positive solutions and harmonic measure for parabolic operators in open Lipschitz subsets] *Ann. Inst. Fourier* (*Grenoble*) **41** (1991), *no.* 3, 601–649. (W. P. Ziemer) **93c:35058** 35K10 (31B25, 35B05)

Heusler, Markus (*with* Straumann, Norbert) Scaling arguments for the existence of static, spherically symmetric solutions of self-gravitating systems. (English summary) *Classical Quantum Gravity* **9** (1992), *no.* 9, 2177–2189. (Nora Bretón Báez) **93g:83017** 83C15 (81T13, 81V17, 83C20, 83C57)

— (*with* Droz, Serge; Straumann, Norbert) Linear stability of Einstein-Skyrme black holes. *Phys. Lett. B* **285** (1992), *no.* 1-2, 21–26. 83C57

— Staticity and uniqueness of multiple black hole solutions of σ-models. (English summary) *Classical Quantum Gravity* **10** (1993), *no.* 4, 791–799. (Alan D. Rendall) **93m:83053** 83C57 (53C50, 58E50)

Hevia, Héctor (*with* Novotny, Karen S.; VanderJagt, Donald W.) Cores of graphs. (English summary) Proceedings of the Twenty-third Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, FL, 1992). *Congr. Numer.* **88** (1992), 169–191. (Summary) **93j:05087** 05C35

— (*with* Chartrand, Gary; Wilson, Robin J.) The ubiquitous Petersen graph. Special volume to mark the centennial of Julius Petersen's "Die Theorie der regulären Graphs", Part I. *Discrete Math.* **100** (1992), *no.* 1-3, 303–311. (David M. Berman) **93h:05162** 05C99 (05–03)

— (*with* Chartrand, Gary; Harary, Frank; McKeon, Kathleen A.) On signed graphs with prescribed positive and negative graphs. (English summary) *Vishwa Internat. J. Graph Theory* **1** (1992), *no.* 1, 9–18. (H. Joseph Straight) **93m:05095** 05C35

Hewett, D. W. (*with* Larson, D. J.; Doss, S.) Solution of simultaneous partial differential equations using dynamic ADI: solution of the streamlined Darwin field equations. *J. Comput. Phys.* **101** (1992), *no.* 1, 11–24. 65P05 (76X05, 78A25)

Hewitt, C. G. Algebraic invariant curves in cosmological dynamical systems and exact solutions. *Gen. Relativity Gravitation* **23** (1991), *no.* 12, 1363–1383. (Summary) **93g:83018** 83C15 (83C05)

— (*with* Wainwright, John) Dynamical systems approach to tilted Bianchi cosmologies: irrotational models of type V. (English summary) *Phys. Rev. D* (3) **46** (1992), *no.* 10, 4242–4252. (A. H. Taub) **93i:83028** 83C20

Hewitt, Carl The challenge of open systems. *The foundations of artificial intelligence*, 383–395, *Cambridge Univ. Press, Cambridge*, 1990. (*see* **93b:68073**) 68T01

Hewitt, Edwin (*with* Ritter, Gunter) Elliott-Morse measures and Kakutani's dichotomy theorem. *Math. Z.* **211** (1992), *no.* 2, 247–263. (Akihito Hora) **93i:28003** 28A35 (46G12, 60G30)

Hewitt, P. R. (*with* Glazebrook, J. F.; Grayson, D. R.) Addendum: "Galois representations on holomorphic differentials" [Comm. Algebra **19** (1991), no. 5, 1375–1386; MR 92j:14032]. *Comm. Algebra* **20** (1992), *no.* 9, 2791. 14F10

Hey, J. D. Erwin Schrödinger (1887–1961). *Trans. Roy. Soc. South Africa* **47** (1989), *no.* 1, 43–79. (H. Treder) **93a:01049** 01A70 (01A60, 81–03)

de Heybech, Nicholaus *see* **Chabás, José, 93k:01013**

Heydari, S. H. (*with* Quine, J. R.; Song, Richard R.) Zeta regularized products. *Trans. Amer. Math. Soc.* **338** (1993), *no.* 1, 213–231. (Steven Rosenberg) **93j:58139** 58G26 (11F72, 11M41, 30D10, 33B15, 81T30)

Heyde, C. C. (*with* Lin, Y.-X.) Approximate confidence zones in an estimating function context. *Estimating functions*, 161–168, *Oxford Statist. Sci. Ser.*, 7, *Oxford Univ. Press, New York*, 1991. (Summary) **93a:62119** 62M09 (62F10)

— The promotion and development of [the journal] Applied Probability: a note on the contributions of J. Gani. *Selected Proceedings of the Sheffield Symposium on Applied Probability (Sheffield*, 1989), 9–11, *IMS Lecture Notes Monograph Ser.*, 18, *Inst. Math. Statist., Hayward, CA*, 1991. (*see* **93f:60003**) 01A70

— Some results on inference for stationary processes and queueing systems. (English summary) *Queueing and related models*, 337–345, *Oxford Statist. Sci. Ser.*, 9, *Oxford Univ. Press, New York*, 1992. (Summary) **93k:62175** 62M09

— On best asymptotic confidence intervals for parameters of stochastic processes. *Ann. Statist.* **20** (1992), *no.* 1, 603–607. (Friedrich Liese) **93c:62045** 62F11 (62F25, 62M09)

— (*with* Lin, Y.-X.) On quasi-likelihood methods and estimation for branching processes and heteroscedastic regression models. (English summary) *Austral. J. Statist.* **34** (1992), *no.* 2, 199–206. (Summary) **93j:62210** 62M05

Heydemann, M.-C. (*with* Favaron, O.; Meyer, J.-C.; Sotteau, D.) A parameter linked with *G*-factors and the binding number. *Discrete Math.* **91** (1991), *no.* 3, 311–316. (From the introduction) **93c:05053** 05C20

— (*with* Meyer, J.-C.; Opatrný, J.; Sotteau, D.) Forwarding indices of *k*-connected graphs. (English summary) *Discrete Appl. Math.* **37/38** (1992), 287–296. (C. Peyrat) **93k:05093** 05C38 (68M20)

— (*with* Opatrný, J.; Sotteau, D.) Broadcasting and spanning trees in de Bruijn and Kautz networks. (English summary) *Discrete Appl. Math.* **37/38** (1992), 297–317. (Pavol Hell) **93g:05137** 05C99 (68M20, 94C15)

Heyer, Herbert (*with* Wang, Yan) Measures of finite energy on a commutative hypergroup. (Italian summary) *Rend. Sem. Mat. Fis. Milano* **59** (1989), 245–267 (1992). (Michael Voit) **93c:43008** 43A62 (43A05, 60B15)

— Locally compact hypergroups: origin, analysis, and some applications. *Functional analysis & related topics (Sapporo*, 1990), 1–18, *World Sci. Publishing, River Edge, NJ*, 1991. (Walter R. Bloom) **93a:43007** 43A62 (20N20, 43A65)

— Stationary random fields over hypergroups. *Gaussian random fields (Nagoya*, 1990), 197–213, *Ser. Probab. Statist.*, 1, *World Sci. Publishing, River Edge, NJ*, 1991. (Michael Voit) **93g:60104** 60G60 (43A62)

— *see also* **Probability measures on groups, 93f:60001**

Heyker, Linda (*with* Engelfriet, Joost) Context-free hypergraph grammars have the same term-generating power as attribute grammars. *Acta Inform.* **29** (1992), *no.* 2, 161–210. (Katsushi Inoue) **93c:68056** 68Q50 (68Q45, 68Q55)

Heyl, Peter *see* **Lambert, Johann Heinrich, 93a:01024**

Heyman, D. P. *see* **Stochastic models, 93a:60001**

Heyman, G. A. P. (*with* Olson, D. M.; le Roux, H. J.) Weakly special classes of hemirings. (English summary) *Quaestiones Math.* **15** (1992), *no.* 2, 119–126. (Summary) **93h:16079** 16Y60 (16N80)

Heymann, Michael (*with* Willner, Yosef; Bodson, Marc) Parameter convergence and uniqueness in nonminimal parameterizations for multivariable adaptive control. *SIAM J. Control Optim.* **30** (1992), *no.* 4, 800–815. (Edward Jezierski) **93g:93051** 93C40 (93B10, 93C35, 93D20)

— (*with* Brave, Yitzhak) On optimal attraction in discrete-event processes. (English summary) *Inform. Sci.* **67** (1993), *no.* 3, 245–276. (Jing Yue Lin) **93j:93124** 93D15 (93B50, 93C30)

van Heyst, Eugène (*with* Evertse, Jan-Hendrik) Which new RSA-signatures can be computed from certain given RSA-signatures? *J. Cryptology* **5** (1992), *no.* 1, 41–52. (Hirosuke Yamamoto) **93g:94010** 94A60

Heyvaerts, J. (*with* Bonazzola, S.; Pérault, M.; Puget, J. L.; Falgarone, E.; Panis, J. F.) Jeans collapse of turbulent gas clouds: tentative theory. (English summary) *J. Fluid Mech.* **245** (1992), 1–28. (Summary) **93i:85005** 85A30 (76E20, 76N15)

Heywood, J. G. *see* **Navier-Stokes equations II—theory and numerical methods, 93m:00042**

Heywood, P. *see* **Nishimoto, Katsuyuki**

Hiai, Fumio Minimum index for subfactors and entropy. *J. Operator Theory* **24** (1990), *no.* 2, 301–336. (Sze-Kai Tsui) **93g:46062** 46L37 (46L50)

— Minimum index for subfactors and entropy for canonical shifts. (English summary) *Current topics in operator algebras (Nara*, 1990), 59–70, *World Sci. Publishing, River Edge, NJ*, 1991. (Summary) **93g:46064** 46L37

— (*with* Petz, Dénes) The proper formula for relative entropy and its asymptotics in quantum probability. *Comm. Math. Phys.* **143** (1991), *no.* 1, 99–114. (Kalyanapuram R. Parthasarathy) **93b:46122** 46L50 (46L30, 81S99, 82C10)

— Minimum index for subfactors and entropy. II. *J. Math. Soc. Japan* **43** (1991), *no.* 2, 347–379. (Sze-Kai Tsui) **93g:46063** 46L37 (46L50)

— (*with* Choda, Marie) Entropy for canonical shifts. II. *Publ. Res. Inst. Math. Sci.* **27** (1991), *no.* 3, 461–489. (D. Petz) **93a:46127** 46L55 (28D20)

Hibi, Takayuki Linear and nonlinear inequalities concerning a certain combinatorial sequence which arises from counting the number of chains of a finite distributive lattice. Combinatorics and theoretical computer science (Washington, DC, 1989). *Discrete Appl. Math.* **34** (1991), *no.* 1-3, 145–150. (Josef Niederle) **93b:06015** 06D05 (06A07)

— Stanley's problem on (P, ω)-partitions. *Words, languages and combinatorics (Kyoto*, 1990), 187–201, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93b:06006** 06A07 (05A18)

— Dual polytopes of rational convex polytopes. (English summary) *Combinatorica* **12** (1992), *no.* 2, 237–240. (P. McMullen) **93f:52018** 52B20

— (*with* Hashimoto, Mitsuyasu; Noma, Atsushi) Divisor class groups of affine semigroup rings associated with distributive lattices. *J. Algebra* **149** (1992), *no.* 2, 352–357. (Jonathan Leech) **93d:13034** 13F50 (13C20, 20M25)

— Face number inequalities for matroid complexes and Cohen-Macaulay types of Stanley-Reisner rings of distributive lattices. *Pacific J. Math.* **154** (1992), *no.* 2, 253–264. (Michel Brion) **93e:52027** 52B40 (05B35, 06A07, 13D40)

Hibino, R. (*with* Ando, Yoshinori; Suzuki, Masayuki) High gain observer and reduced order observer. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, I (Kobe*, 1991), 455–460, *Mita, Tokyo*, 1992. (*see* **93g:93005**) 93B06

Hibschweiler, R. A. (*with* MacGregor, T. H.) Multipliers of families of Cauchy-Stieltjes transforms. *Trans. Amer. Math. Soc.* **331** (1992), *no.* 1, 377–394. (V. P. Khavin) **93g:30057** 30E20

Híc, Pavol (*with* Palumbíny, Daniel) Isomorphic factorisations of complete graphs into factors with a given diameter. (Russian summary) *Math. Slovaca* **37** (1987), *no.* 3, 247–254. (Dalibor Fronček) **93f:05067** 05C70

— A note on randomly complete *n*-partite graphs. (English summary) *Math. Slovaca* **42** (1992), *no.* 4, 407–410. 05C99

Hickel, M. Fonction de Artin d'un germe d'espace analytique. [Artin function of an analytic space germ] *Complex analysis (Wuppertal*, 1991), 148–154, *Aspects of Math., E17, Vieweg, Braunschweig*, 1991. (Arkadiusz Płoski) **93a:32053** 32S10

Hickin, K. K. Highly transitive Jordan representations of free products. *J. London Math. Soc.* (2) **46** (1992), *no.* 1, 81–91. (Jacinta Covington) **93g:20007** 20B22

Hickman, Mark S. (*with* Guthrie, Graeme A.) Nonlocal symmetries of the KdV equation. (English summary) *J. Math. Phys.* **34** (1993), *no.* 1, 193–205. (Walter Oevel) **93m:58052** 58F07 (35Q53, 58F37)

Hicks, A. C. (*with* Bassom, Andrew P.; Clarkson, Peter A.; McLeod, J. Bryce) Integral equations and exact solutions for the fourth Painlevé equation. (English summary) *Proc. Roy. Soc. London Ser. A* **437** (1992), *no.* 1899, 1–24. (Mehmet Can) **93h:34020** 34A34 (34A20, 35Q55, 45P05, 58F37)

Hicks, Troy L. (*with* Rhoades, B. E.) Comments on a paper by R. N. Mukherjee and T. Som: "On some fixed point theorems for generalized multivalued mappings" [Indian J. Pure Appl. Math. **14** (1983), no. 12, 1506–1509; MR 85a:54049]. *Indian J. Pure Appl. Math.* **23** (1992), *no.* 4, 255–256. (I. A. Rus) **93g:54056** 54H25 (54C60)

— (*with* Rhoades, B. E.) Fixed points and continuity for multivalued mappings. *Internat. J. Math. Math. Sci.* **15** (1992), *no.* 1, 15–30. (E. Fadell) **93b:54043** 54H25 (47H10, 54C60)

— Fixed point theorems for *d*-complete topological spaces. I. *Internat. J. Math. Math. Sci.* **15** (1992), *no.* 3, 435–439. 54H25

— (*with* Rhoades, B. E.) Fixed point theorems for *d*-complete topological spaces. II. (English summary) *Math. Japon.* **37** (1992), *no.* 5, 847–853. 54H25 (47H10)

— (*with* Harder, Alberta; Saliga, Linda Marie) Fixed point theorems for non-self-maps. III. (English summary) *Indian J. Pure Appl. Math.* **24** (1993), *no.* 3, 151–154. 54H25

— (*with* Rhoades, B. E.) Fixed points for pairs of mappings in *d*-complete topological spaces. (English summary) *Internat. J. Math. Math. Sci.* **16** (1993), *no.* 2, 259–266. (Summary) **93k:54076** 54H25

Hida, Akihiko (*with* Hanaki, Akihide) A remark on M_p-groups. *Osaka J. Math.* **29** (1992), *no.* 1, 71–74. (I. M. Isaacs) **93c:20020** 20C20 (20C15)

Hida, Haruzo (*with* Tilouine, J.) Katz *p*-adic *L*-functions, congruence modules and deformation of Galois representations. *L-functions and arithmetic (Durham*, 1989), 271–293, *London Math. Soc. Lecture Note Ser.*, 153, *Cambridge Univ. Press, Cambridge*, 1991. (Nigel Boston) **93c:11027** 11F33 (11F80, 11R23)

— On *p*-adic *L*-functions of GL(2) × GL(2) over totally real fields. (French summary) *Ann. Inst. Fourier (Grenoble)* **41** (1991), *no.* 2, 311–391. (Jacques Tilouine) **93b:11052** 11F33 (11F41, 11F80, 11F85, 11S40)

— (*with* Tilouine, J.) Anti-cyclotomic Katz *p*-adic *L*-functions and congruence modules. *Ann. Sci. École Norm. Sup.* (4) **26** (1993), *no.* 2, 189–259. (Nigel Boston) **93m:11044** 11F80 (11F33, 11F85)

— *see also* **Fujiwara, Daisuke, 93m:01070a** *and* **Doi, Koji, 93m:01070b**

Hida, Takeyuki (*with* Si Si) Variational calculus for Gaussian random fields. *Stochastic systems and optimization (Warsaw*, 1988), 86–97, *Lecture Notes in Control and Inform. Sci.*, 136, *Springer, Berlin*, 1989. (Yoshitaka Yokoi) **93j:49029** 49K45 (60G15, 60G20, 60G60)

— (*with* Potthoff, Jürgen) White noise analysis—an overview. *White noise analysis (Bielefeld*, 1989), 140–165, *World Sci. Publishing, River Edge, NJ*, 1990. (Jan Uboe) **93g:60081** 60G20 (46F25, 60H99, 60J30)

— Stochastic variational calculus. *Stochastic partial differential equations and their applications (Charlotte, NC*, 1991), 123–134, *Lecture Notes in Control and Inform. Sci.*, 176, *Springer, Berlin*, 1992. (*see* **93b:60006**) 60G20 (60H05, 60J65)

— (*with* Kuo, Hui-Hsiung) Semigroups associated with generalized Brownian functionals. *Semigroup Forum* **45** (1992), *no.* 2, 261–263. (From the text) **93i:60080** 60G20 (46N30, 60H99, 60J65)

— (*with* Kuo, Hui-Hsiung; Obata, Nobuaki) Transformations for white noise functionals. (English summary) *J. Funct. Anal.* **111** (1993), *no.* 2, 259–277. (Mylan Redfern) **93m:46042** 46F25 (46G12, 60H99)

Hidaka, F. (*with* Arima, S.; Asaeda, You) On the spaces of general tensors. *Proceedings of the International Symposium on Mathematics and Theoretical Physics (Guarujá*, 1989), 192–198, *Sympos. Gaussiana Ser. A Math. Theoret. Phys.*, 1, *Inst. Gaussianum, Toronto, ON*, 1990. (B. Reichstein) **93b:15032** 15A69 (15A72)

Hidalgo, F. Javier Adaptive estimation in time series regression models with heteroskedasticity of unknown form. (English summary) *Econometric Theory* **8** (1992), *no.* 2, 161–187. (Luis Firinguetti) **93j:62227** 62M10 (62P20)

— Adaptive semiparametric estimation in the presence of autocorrelation of unknown form. *J. Time Ser. Anal.* **13** (1992), *no.* 1, 47–78. (Arup Bose) **93c:62071** 62G05 (62G20, 62M10)

Hidalgo, M. C. Periods of periodic points for transitive degree one maps of the circle with a fixed point. (English summary) *Acta Math. Univ. Comenian. (N.S.)* **61** (1992), *no.* 1, 11–19. (Arkady S. Pikovsky) **93k:58181** 58F20 (58F08)

lobo-Hidalgo, Miguel *see* **Lobo-Hidalgo, Miguel**

fernández garcía-Hierro, Manuel *see* **Fernández García-Hierro, Manuel**

Hietarinta, Jarmo (*with* Satsuma, Junkichi) The trilinear equation as a $(2+2)$-dimensional extension of the $(1+1)$-dimensional relativistic Toda lattice. *Phys. Lett. A* **161** (1991), *no.* 3, 267–273. (Allan P. Fordy) **93g:58061** 58F07 (35Q53)

— All solutions to the constant quantum Yang-Baxter equation in two dimensions. *Phys. Lett. A* **165** (1992), *no.* 3, 245–251. (Ladislav Hlavatý) **93d:16050** 16W30 (16G10, 16S30, 82B23)

kohatsu-Higa, Arturo *see* **Kohatsu-Higa, Arturo**

Higaki, Nobuo (*with* Fukuhara, Nobuhiko; Kuriyagawa, Akira) Mode-matching analysis of electromagnetic waves scattered by a rotating dielectric cylinder. (Japanese. English summary) *Rep. Fac. Engrg. Oita Univ. No.* 24 (1991), 27–35. (Summary) **93f:78012** 78A45 (78–08)

Higashijima, Kiyoshi Theory of dynamical symmetry breaking. (English summary) *Progr. Theoret. Phys. Suppl. No.* 104 (1991), 69 *pp.* (Summary) **93g:81041** 81R20 (81T40, 81V05)

Higashitani, Naomi (*with* Suzuki, Hiroshi) Bounding the number of columns $(1, k-2, 1)$ in the intersection arrays of a distance-regular graph. *Math. Japon.* **37** (1992), *no.* 3, 487–494. (A. E. Brouwer) **93a:05131** 05E30

Higdon, Robert L. Absorbing boundary conditions for acoustic and elastic waves in stratified media. *J. Comput. Phys.* **101** (1992), *no.* 2, 386–418. (Summary) **93c:73035** 73D99 (73D15, 73D20, 73N20, 73V99, 76M99, 76Q05)

Higgins, J. E. (*with* Polak, Elijah; Mayne, David Q.) A barrier function method for minimax problems. *Math. Programming* **54** (1992), *no.* 2, *Ser. A*, 155–176. (Summary) **93g:90080** 90C34 (49M39, 90C30)

Higgins, J. R. Sampling and aliasing for functions band-limited to a thin shell. *Numer. Funct. Anal. Optim.* **12** (1991), *no.* 3-4, 327–337. (Dale H. Mugler) **93a:94007** 94A12 (42C15)

Higgins, M. L. (*with* Bera, Anil K.) A test for conditional heteroskedasticity in time series models. (English summary) *J. Time Ser. Anal.* **13** (1992), *no.* 6, 501–519. 62M10

longuet-Higgins, Michael S. *see* **Longuet-Higgins, Michael S.**

Higgins, Peter M. ★ Techniques of semigroup theory. With a foreword by G. B. Preston. Oxford Science Publications. *The Clarendon Press, Oxford University Press, New York*, 1992. x+258 *pp. ISBN* 0-19-853577-5 (John M. Howie) **93d:20101** 20Mxx (20–02)

— On eventually regular semigroups. (English summary) *Semigroups with applications (Oberwolfach*, 1991), 170–189, *World Sci. Publishing, River Edge, NJ*, 1992. (Francis Pastijn) **93j:20134** 20M17

Higgins, Walter T. (*with* Eren, Murat) A new algorithm for computing modified z-transforms. (English summary) *IMA J. Math. Control Inform.* **9** (1992), *no.* 2, 113–129. 93B40 (93C80)

Higham, Desmond J. (*with* Higham, Nicholas J.) Componentwise perturbation theory for linear systems with multiple right-hand sides. (English summary) *Linear Algebra Appl.* **174** (1992), 111–129. (W. C. Rheinboldt) **93e:65041** 65F05 (65F35, 65H10)

— (*with* Bartels, Sven G.) The structured sensitivity of Vandermonde-like systems. *Numer. Math.* **62** (1992), *no.* 1, 17–33. (George D. Poole) **93e:65071** 65F35 (65F05)

— The tolerance proportionality of adaptive ODE solvers. (English summary) *J. Comput. Appl. Math.* **45** (1993), *no.* 1-2, 227–236. (Summary) **93m:65090** 65L05

Higham, Nicholas J. Solving linear equations. *New applications of mathematics*, 33–56, *Penguin, New York*, 1991. (*see* **93g:00019**) 65–01

— (*with* Higham, Desmond J.) Componentwise perturbation theory for linear systems with multiple right-hand sides. (English summary) *Linear Algebra Appl.* **174** (1992), 111–129. (W. C. Rheinboldt) **93e:65041** 65F05 (65F35, 65H10)

— Estimating the matrix p-norm. *Numer. Math.* **62** (1992), *no.* 4, 539–555. (Summary) **93d:65046** 65F35

— Stability of a method for multiplying complex matrices with three real matrix multiplications. *SIAM J. Matrix Anal. Appl.* **13** (1992), *no.* 3, 681–687. (Summary) **93a:65033** 65F05 (65G05)

— Optimization by direct search in matrix computations. (English summary) *SIAM J. Matrix Anal. Appl.* **14** (1993), *no.* 2, 317–333. (Summary) **93m:65083** 65K10 (65F99, 65G05)

Highnam, Peter (*with* Joubert, Wayne; Carey, Graham) PCG/CM: a package for the iterative solution of large sparse linear systems on the connection machine. (English summary) *Parallel processing for scientific computing (Houston, TX*, 1991), 631–636, *SIAM, Philadelphia, PA*, 1992. (*see* **93g:65178**) 65F50 (65F10, 65Y05)

Higle, Julia L. (*with* Sen, Suvrajeet) On the convergence of algorithms with implications for stochastic and nondifferentiable optimization. *Math. Oper. Res.* **17** (1992), *no.* 1, 112–131. (Alexei Gaivoronski) **93b:90054** 90C15 (49J52, 65K10)

Higson, Nigel (*with* Rørdam, Mikael) The Weyl-von Neumann theorem for multipliers of some AF-algebras. *Canad. J. Math.* **43** (1991), *no.* 2, 322–330. (John Phillips) **93b:46112** 46L05 (46L80, 47C15)

Higuchi, Atsushi (*with* Camporesi, Roberto) Stress-energy tensors in anti-de Sitter spacetime. *Phys. Rev. D* (3) **45** (1992), *no.* 10, 3591–3603. (Enric Verdaguer) **93f:83047** 83C47 (58G26, 81T20)

— (*with* Matsas, G. E. A.; Sudarsky, Daniel) Bremsstrahlung and Fulling-Davies-Unruh thermal bath. (English summary) *Phys. Rev. D* (3) **46** (1992), *no.* 8, 3450–3457. (Summary) **93f:83049** 83C47 (81T20)

Higuchi, Saburo (*with* Fujiwara, Yoshihisa; Hosoya, Akio; Mishima, Takashi; Siino, Masaru) Nucleation of a universe in $(2+1)$-dimensional gravity with a negative cosmological constant. *Phys. Rev. D* (3) **44** (1991), *no.* 6, 1756–1762. (Ruth M. Williams) **93a:83017a** 83C45

— (*with* Fujiwara, Yoshihisa; Hosoya, Akio; Mishima, Takashi; Siino, Masaru) Topology changes in $(2+1)$-dimensional quantum gravity. *Phys. Rev. D* (3) **44** (1991), *no.* 6, 1763–1768. (Ruth M. Williams) **93a:83017b** 83C45

— (*with* Fujiwara, Yoshihisa; Hosoya, Akio; Mishima, Takashi; Siino, Masaru) Point particles as defects in $(2+1)$-dimensional quantum gravity. *Classical Quantum Gravity* **9** (1992), *no.* 4, 867–872. (Michael O. Katanaev) **93b:83022** 83C45

— (*with* Amano, Kaoru) Topology change in ISO(2, 1) Chern-Simons gravity. *Nuclear Phys. B* **377** (1992), *no.* 1-2, 218–235. (Michael Kapovich) **93h:58031** 58D29 (57M50, 58D30, 81T13)

Higuchi, Tatsuo (*with* Deng, T.; Kawamata, M.) Design of two-dimensional recursive digital filters based on the optimal decomposition of magnitude specifications. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, II (Kobe*, 1991), 153–158, *Mita, Tokyo*, 1992. (*see* **93g:93006**) 94A12 (93E11)

— (*with* Aoki, Takafumi; Kameyama, Michitaka) Design of an ultrahigher-valued biocomputing system based on set-valued logic networks. (English summary) *Systems Comput. Japan* **23** (1992), *no.* 7, 35–43. 68Q05 (94C10)

Higurashi, Hitoshi (*with* Sumino, Masayoshi; Fukuda, Reijiro) The generating functional of the nonequilibrium process. The case of macrovariable. *Progr. Theoret. Phys.* **86** (1991), *no.* 3, 617–651. (Claus Montonen) **93g:82063** 82C10

Hijab, Omar Partially observed control of Markov processes. *Applied stochastic analysis (New Brunswick, NJ*, 1991), 151–158, *Lecture Notes in Control and Inform. Sci.*, 177, *Springer, Berlin*, 1992. (Kimio Kanai) **93e:93066** 93E20

— Partially observed control of Markov processes. *Stochastic theory and adaptive control (Lawrence, KS*, 1991), 248–255, *Lecture Notes in Control and Inform. Sci.*, 184, *Springer, Berlin*, 1992. (*see* **93g:93007**) 93E20

— Partially observed control of Markov processes. IV. (English summary) *J. Funct. Anal.* **109** (1992), *no.* 2, 215–256. (Jose Luis Menaldi) **93j:93153** 93E20 (49K45, 49L25)

Hijazi, Oussama Première valeur propre de l'opérateur de Dirac et nombre de Yamabe. (English summary) [First eigenvalue of the Dirac operator and the Yamabe number] *C. R. Acad. Sci. Paris Sér. I Math.* **313** (1991), *no.* 12, 865–868. (Dennis M. DeTurck) **93b:58151** 58G25 (53C21, 53C25)

Hijikata, H. (*with* Nishida, Kenji) Classification of Bass orders. *J. Reine Angew. Math.* **431** (1992), 191–220. (Juliusz Brzeziński) **93g:16023** 16H05

villamayor Hijo, Orlando Eugenio *see* **Villamayor Hijo, Orlando Eugenio**

Hikami, Kazuhiro (*with* Kulish, P. P.; Wadati, Miki) Construction of integrable spin systems with long-range interactions. (English summary) *J. Phys. Soc. Japan* **61** (1992), *no.* 9, 3071–3076. (Ladislav Šamaj) **93k:82017** 82B23

— (*with* Ujino, Hideaki; Wadati, Miki) Integrability of the quantum Calogero-Moser model. (English summary) *J. Phys. Soc. Japan* **61** (1992), *no.* 10, 3425–3427. (Summary) **93i:81289** 81U40 (58F07)

Hikami, Shinobu (*with* Brézin, Édouard) A naive matrix-model approach to 2D quantum gravity coupled to matter of arbitrary central charge. *Phys. Lett. B* **283** (1992), *no.* 3-4, 203–208. (Summary) **93c:81194** 81T40 (81–04, 81T27)

— Localization, nonlinear σ model and string theory. (English summary) Low-dimensional field theories and condensed matter physics (Kyoto, 1991). *Progr. Theoret. Phys. Suppl. No.* 107 (1992), 213–227. (Summary) **93i:81308** 81V70 (81T30, 82D35)

Hikida, Masato On higher order derivatives in differential calculus by the method of ranked spaces. (English summary) *SUT J. Math.* **27** (1991), *no.* 1, 1–15. (Summary) **93m:46045** 46G05 (46A19, 58C20)

— Some applications of the mean value theorem in differential calculus by the method of ranked spaces. *SUT J. Math.* **27** (1991), *no.* 2, 151–167. (Andreas Kriegl) **93c:46076** 46G05 (26E15, 46A19, 58C20)

— A criterion for local extrema by the method of ranked spaces. *SUT J. Math.* **28** (1992), *no.* 1, 1–21. (Andreas Kriegl) **93i:46013** 46A19 (46N10, 49K10, 58C05)

mbala Hikolo, A. *see* **Mbala Hikolo, A.**

Hilberdink, Hendrik (*with* Goguen, Joseph A.; Stevens, Andrew; Hobley, Keith) 2OBJ: a metalogical framework theorem prover based on equational logic. (English summary) *Philos. Trans. Roy. Soc. London Ser. A* **339** (1992), *no.* 1652, 69–86. 68T15 (03B35)

Hilbers, Peter A. J. ★ Processor networks and aspects of the mapping problem. Cambridge International Series on Parallel Computation, 2. *Cambridge University Press, Cambridge*, 1991. x+133 *pp. ISBN* 0-521-40250-6 (Mario Mango Furnari) **93c:68025** 68Q10 (68M10, 68R10)

Hilbert, David[1] ★ Sur les problèmes futurs des mathématiques. (French) [On the future problems of mathematics] Les 23 problèmes. [The 23 problems] Translated from the 1900 German original by M. L. Laugel and revised by the author. Reprint of the 1902 French translation. Les Grands Classiques Gauthier-Villars. [Gauthier-Villars Great Classics] *Éditions Jacques Gabay, Sceaux*, 1990. ii+60 *pp. ISBN* 2-87647-037-3 (Editors) **93f:01027** 01A75 (01A60)

— ★ Théorie des corps de nombres algébriques. (French) [Theory of algebraic number fields] Translated from the 1897 German edition by Albert Lévy and Théophile Got. With a preface and notes by Georges Humbert. With a foreword by Lévy and additional notes by Got. Reprint of the French translation (1909–1911). *Éditions Jacques Gabay, Sceaux*, 1991. viii+379 *pp. ISBN* 2-87647-043-8 (Editors) **93g:01101** 01A75 (11Rxx)

Hildebrand, Adolf A note on the convergence of sums of independent random variables. (English summary) *Ann. Probab.* **20** (1992), *no.* 3, 1204–1212. (Peter Schatte) **93g:60047** 60F05 (11K65)

Hildebrand, Francis B. ★ Methods of applied mathematics. Corrected reprint of the second edition. *Dover Publications, Inc., New York*, 1992. xii+362 *pp. ISBN* 0-486-67002-3 (Editors) **93d:00003** 00A05 (15–01, 45–01, 49–01)

Hildebrandt, Stefan *see* **Courant, Richard, 93k:00002**

Hildebrant, John A. Divisible and exponent actions of semigroups. *Semigroup Forum* **46** (1993), *no.* 2, 138–145. (Summary) **93j:20136** 20M20 (22A15)

Hilden, Hugh M. (*with* Lozano, María Teresa; Montesinos, José María) On the Borromean orbifolds: geometry and arithmetic. *Topology '90 (Columbus, OH*, 1990), 133–167, *Ohio State Univ. Math. Res. Inst. Publ.*, 1, *de Gruyter, Berlin*, 1992. (B. N. Apanasov) **93h:57021** 57M50 (20F32)

— (*with* Lozano, María Teresa; Montesinos, José María) The arithmeticity of the figure eight knot orbifolds. *Topology '90 (Columbus, OH*, 1990), 169–183, *Ohio State Univ. Math. Res. Inst. Publ.*, 1, *de Gruyter, Berlin*, 1992. (B. N. Apanasov) **93k:57012** 57M25 (57M50)

Hile, G. N. (*with* Mawata, C. P.) Liouville theorems for nonlinear elliptic equations of second order. *Partial differential equations with real analysis*, 57–92, *Pitman Res. Notes Math. Ser.*, 263, *Longman Sci. Tech., Harlow*, 1992. (C. A. Swanson) **93m:35016** 35B05 (35J60)

Hilfer, R. Scaling theory and the classification of phase transitions. *Modern Phys. Lett. B* **6** (1992), *no.* 13, 773–784. (Summary) **93g:82044** 82B26

Hilger, Stefan Smoothness of invariant manifolds. *J. Funct. Anal.* **106** (1992), *no.* 1, 95–129. (A. Vanderbauwhede) **93h:58137** 58F35 (34C30, 34C45)

Hilgers, John W. An analytic approach to a combinatorics problem. Proceedings of the Twenty-first Southeastern Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, FL, 1990). *Congr. Numer.* **78** (1990), 135–140. (Helmut Prodinger) **93d:05011** 05A15

Hilgers, M. G. (*with* Pipkin, A. C.) The Graves condition for variational problems of arbitrary order. *IMA J. Appl. Math.* **48** (1992), *no.* 3, 265–269. (Gianfranco Bottaro) **93i:49025** 49K10 (73C50, 73V25)

— (*with* Pipkin, A. C.) Bending energy of highly elastic membranes. *Quart. Appl. Math.* **50** (1992), *no.* 2, 389–400. (Summary) **93a:73056** 73K10 (73G05)

— (*with* Pipkin, A. C.) Elastic sheets with bending stiffness. *Quart. J. Mech. Appl. Math.* **45** (1992), *no.* 1, 57–75. (Raymond W. Ogden) **93a:73044** 73G05 (73K10)

Hilgert, Joachim The hyperboloid as ordered symmetric space. Seminar Sophus Lie (Darmstadt, 1991). *Sem. Sophus Lie* **1** (1991), *no.* 2, 135–141. (Summary) **93b:53044** 53C35

— Controllability on real reductive Lie groups. *Math. Z.* **209** (1992), *no.* 3, 463–466. (K. H. Hofmann) **93d:22017** 22E46 (22A15, 93B05)

Hilhorst, Danielle (*with* Abergel, F.; Issard-Roch, F.) On a Stefan problem with surface tension in the neighborhood of a stationary solution. *Progress in partial differential equations: elliptic and parabolic problems* (*Pont-à-Mousson*, 1991), 149–155, *Pitman Res. Notes Math. Ser.*, 266, *Longman Sci. Tech., Harlow*, 1992. (Cristina Turner) **93k:35274** 35R35 (35K99, 76R50, 80A22)

— (*with* Bronsard, Lia) On the slow dynamics for the Cahn-Hilliard equation in one space dimension. (English summary) *Proc. Roy. Soc. London Ser. A* **439** (1992), *no.* 1907, 669–682. (Summary) **93k:35210** 35Q35 (35B40)

— (*with* Bertsch, Michiel; Hulshof, Josephus) On a free boundary problem arising in detonation theory: convergence to travelling waves. *Emerging applications in free boundary problems* (*Montreal, PQ*, 1990), 146–151, *Pitman Res. Notes Math. Ser.*, 280, *Longman Sci. Tech., Harlow*, 1993. (*see* **93k:00035**) 80A25 (35R35)

— (*with* Issard-Roch, F.; Seidman, Thomas I.) On a reaction-diffusion equation with a free boundary: the case of an unbounded domain. *Free boundary problems involving solids* (*Montreal, PQ*, 1990), 232–236, *Pitman Res. Notes Math. Ser.*, 281, *Longman Sci. Tech., Harlow*, 1993. (*see* **93k:00037**) 35K57 (35R35)

— (*with* Abergel, F.; Issard-Roch, F.) On a dissolution-growth problem with surface tension in the neighborhood of a stationary solution. (English summary) *SIAM J. Math. Anal.* **24** (1993), *no.* 2, 299–316. (Summary) **93m:35187** 35R35 (35K50)

Hilhorst, H. J. (*with* Nifle, M.) New critical-point exponent and new scaling laws for short-range Ising spin glasses. *Phys. Rev. Lett.* **68** (1992), *no.* 20, 2992–2995. (Summary) **93c:82027** 82B28 (82-04, 82B44)

Hill, Ouagnina Sur les modèles autorégressifs à seuils. (English summary) [On autoregressive threshold models] *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 7, 573–576. (Summary) **93d:62160** 62M10

— Estimateurs du minimum de distance d'Hellinger des modèles EXPARMA. (English and French summaries) [Minimum Hellinger distance estimates for the EXPARMA models] *C. R. Acad. Sci. Paris Sér. I Math.* **316** (1993), *no.* 1, 77–80. (Summary) **93h:62044** 62F10 (62M10)

Hilken, Barney P. (*with* Rydeheard, David E.) Indexed categories for program development. (French summary) *Cahiers Topologie Géom. Différentielle Catégoriques* **32** (1991), *no.* 2, 165–185. (R. H. Street) **93d:18012** 18D05 (03D10, 68Q60)

— (*with* Rydeheard, David E.) Towards a categorical semantics of type classes. Mathematical foundations of computer science '91 (Kazimierz Dolny, 1991). *Fund. Inform.* **16** (1992), *no.* 2, 127–147. (Andreas Blass) **93k:68063** 68Q55 (68N15, 68Q65)

Hill, Andrew (*with* Stewart, Ian N.) 3-mode interactions with O(2) symmetry and a model for Taylor-Couette flow. *Dynamics Stability Systems* **6** (1991), *no.* 4, 267–339. (Ian Melbourne) **93d:58111** 58F14 (34C23, 58F40, 76E99, 76F20)

Hill, Bruce M. Bayesian nonparametric prediction and statistical inference. (English summary) *Bayesian analysis in statistics and econometrics* (*Bangalore*, 1988), 43–94, *Lecture Notes in Statist.*, 75, *Springer, New York*, 1992. (Summary) **93i:62003** 62A15 (62C10, 62G99)

— Bayesian nonparametric survival analysis: a comparison of the Kaplan-Meier and Berliner-Hill estimators. (English summary) With a discussion by Steven MacEachern and a rejoinder by the author. *Survival analysis: state of the art* (*Columbus, OH*, 1991), 25–46, *NATO Adv. Sci. Inst. Ser. E Appl. Sci.*, 211, *Kluwer Acad. Publ., Dordrecht*, 1992. (Summary) **93d:62066** 62G05 (62F15)

Hill, C. Denson (*with* Simanca, Santiago R.) The super complex Frobenius theorem. Proceedings of the Tenth Conference on Analytic Functions (Szczyrk, 1990). *Ann. Polon. Math.* **55** (1991), 139–155. (Christian Lyubenov Yankov) **93e:32009** 32C11 (58A50, 58C50)

Hill, David Arneson Left serial rings and their factor skew fields. *J. Algebra* **146** (1992), *no.* 1, 30–48. (Weimin Xue) **93b:16041** 16P20

Hill, David J. A generalization of the small-gain theorem for nonlinear feedback systems. *Automatica J. IFAC* **27** (1991), *no.* 6, 1043–1045. (Summary) **93f:93114** 93D15 (93B52)

— (*with* Wen, Changyun) Global boundedness of discrete-time adaptive control just using estimator projection. (English summary) *Automatica J. IFAC* **28** (1992), *no.* 6, 1143–1157. (Edward Jezierski) **93j:93082** 93C40 (93A14, 93B35, 93B50, 93D15)

Hill, Gregory (*with* Ellers, Harald) Block multiplicities and the Brauer correspondence. *J. Algebra* **147** (1992), *no.* 2, 491–508. (David Benson) **93e:20013** 20C20

— (*with* Ellers, Harald) A local characterization of the Alperin-Burry correspondence. *J. Algebra* **150** (1992), *no.* 2, 427–434. (V. A. Belonogov) **93h:20008** 20C20

Hill, James M. (*with* Avagliano, Aaron J.; Edwards, Maureen P.) Some exact results for nonlinear diffusion with absorption. *IMA J. Appl. Math.* **48** (1992), *no.* 3, 283–304. (From the summary) **93c:35067** 35K55 (35C05)

— (*with* Wu, Yong-Hong) Some axially symmetric flows of Mohr-Coulomb compressible granular materials. *Proc. Roy. Soc. London Ser. A* **438** (1992), *no.* 1902, 67–93. (David Harris) **93i:73023** 73E05 (73B99, 73Q05)

— (*with* Myers, Timothy G.) The combined compression and shear of a rectangular rubber block. (English summary) *Z. Angew. Math. Phys.* **43** (1992), *no.* 5, 911–923. (C. F. M. Creasy) **93g:73066** 73G05

— *see also* **Miniconference: Free and Moving Boundary and Diffusion Problems, 93j:35005**

Hill, Joe R. (*with* Bedrick, Edward J.) A generalized bootstrap. (English summary) *Exploring the limits of bootstrap* (*East Lansing, MI*, 1990), 319–326, *Wiley Ser. Probab. Math. Statist. Probab. Math. Statist., Wiley, New York*, 1992. (Summary) **93j:62115** 62G09

Hill, Paul (*with* Megibben, Charles) Mixed groups. *Trans. Amer. Math. Soc.* **334** (1992), *no.* 1, 121–142. (A. I. Moskalenko) **93a:20085** 20K21 (20K27)

Hill, R. *see* **Hill, Raymond**

Hill, R. O., Jr. Certain rank $2k$ updates act like rank k. (English summary) *Linear Algebra Appl.* **177** (1992), 173–174. 15A18

Hill, Raymond (*with* Greenough, P. P.) Optimal ternary quasi-cyclic codes. *Des. Codes Cryptogr.* **2** (1992), *no.* 1, 81–91. (John Karlof) **93d:94016** 94B05 (94B15)

— (*with* Newton, D. E.) Optimal ternary linear codes. *Des. Codes Cryptogr.* **2** (1992), *no.* 2, 137–157. (Vera Pless) **93h:94027** 94B25

— (*with* Karim, Jehangir P.) Searching with lies: the Ulam problem. (English summary) A collection of contributions in honour of Jack van Lint. *Discrete Math.* **106/107** (1992), 273–283. (A. Pultr) **93h:05004** 05A05 (90D05)

Hill, Richard D. (*with* Waters, Steven R.) On κ-real and κ-Hermitian matrices. *Linear Algebra Appl.* **169** (1992), 17–29. (Carl Riehm) **93f:15022** 15A57

— (*with* Kunicki, Catherine M.) Normal-preserving linear transformations. *Linear Algebra Appl.* **170** (1992), 107–115. (Seymour Kass) **93j:15004** 15A04

Hill, Robin D. (*with* Halpern, Mark E.) Minimum overshoot design for SISO discrete-time systems. (English summary) *IEEE Trans. Automat. Control* **38** (1993), *no.* 1, 155–158. (O. A. Sebakhy) **93k:93045** 93B51 (93B40, 93C55)

Hill, Rodney Similarity analysis of creep indentation tests. (English summary) *Proc. Roy. Soc. London Ser. A* **436** (1992), *no.* 1898, 617–630. (Summary) **93e:73036** 73T05 (73B99, 73C50, 73E99)

Hill, Theodore P. (*with* Krengel, Ulrich) On the construction of generalized measure preserving transformations with given marginals. (English summary) *Ergodic theory and related topics, III* (*Güstrow*, 1990), 114–123, *Lecture Notes in Math.*, 1514, *Springer, Berlin*, 1992. (R. E. Bradley) **93j:28024** 28D05 (47A35, 60G10)

— (*with* Kertz, Robert P.) A survey of prophet inequalities in optimal stopping theory. *Strategies for sequential search and selection in real time* (*Amherst, MA*, 1990), 191–207, *Contemp. Math.*, 125, *Amer. Math. Soc., Providence, RI*, 1992. (Douglas P. Kennedy) **93g:60089** 60G40

— (*with* Krengel, Ulrich) A prophet inequality related to the secretary problem. *Strategies for sequential search and selection in real time* (*Amherst, MA*, 1990), 209–215, *Contemp. Math.*, 125, *Amer. Math. Soc., Providence, RI*, 1992. (Douglas P. Kennedy) **93b:60089** 60G40

— (*with* Kennedy, Douglas P.) Sharp inequalities for optimal stopping with rewards based on ranks. *Ann. Appl. Probab.* **2** (1992), *no.* 2, 503–517. (Minoru Sakaguchi) **93f:60058** 60G40 (62L15)

— (*with* Elton, J. H.) Fusions of a probability distribution. *Ann. Probab.* **20** (1992), *no.* 1, 421–454. (Thomas E. Armstrong) **93a:60007** 60B11 (28C20, 46G12, 60G42)

— (*with* Gilat, David) One-sided refinements of the strong law of large numbers and the Glivenko-Cantelli theorem. (English summary) *Ann. Probab.* **20** (1992), *no.* 3, 1213–1221. (Endre Csáki) **93g:60064** 60F15 (62G30)

— (*with* Boshuizen, Frans A.) Moment-based minimax stopping functions for sequences of random variables. (English summary) *Stochastic Process. Appl.* **43** (1992), *no.* 2, 303–316. (S. M. Samuels) **93j:60056** 60G40 (62L15)

Hillebrandt, Gert The p-rank of (0, 1)-matrices. *J. Combin. Theory Ser. A* **60** (1992), *no.* 1, 131–139. (From the text) **93h:15003** 15A03 (05B20)

Hillion, Pierre T. M. Nondispersive waves: interpretation and causality. (English summary) *IEEE Trans. Antennas and Propagation* **40** (1992), *no.* 9, 1031–1035. (Summary) **93h:78007** 78A40 (35Q60)

— Nondispersive solutions of the Klein-Gordon equation. *J. Math. Phys.* **33** (1992), *no.* 5, 1817–1821. (Luis Vázquez) **93d:81031** 81Q05 (35C05, 35Q40)

— Nondispersive solutions of the Dirac equation. *J. Math. Phys.* **33** (1992), *no.* 5, 1822–1830. (Luis Vázquez) **93d:81032** 81Q05 (35C05, 35Q40)

— The Courant-Hilbert solutions of the wave equation. *J. Math. Phys.* **33** (1992), *no.* 8, 2749–2753. (Summary) **93e:35065** 35L05 (35A30)

— Relativistic theory of scalar and vector diffraction by planar apertures. (English summary) *J. Opt. Soc. Amer. A* **9** (1992), *no.* 10, 1794–1800. (Summary) **93g:78019** 78A45

— Nondispersive wave representation of photons. (English summary) *Phys. Lett. A* **172** (1992), *no.* 1-2, 1–2. (Summary) **93j:78006** 78A25 (35Q60, 81V10)

— A note on the derivation of paraxial equation in nonhomogeneous media. *SIAM J. Appl. Math.* **52** (1992), *no.* 2, 337–346. (Summary) **93c:35087** 35L05

— Nonhomogeneous nondispersive waves: classification. *Wave Motion* **16** (1992), *no.* 1, 81–87. (Summary) **93c:35088** 35L05

— Generalized phases and nondispersive waves. (English summary) *Acta Appl. Math.* **30** (1993), *no.* 1, 35–45. (Summary) **93k:35157** 35L05 (73D25, 76B15)

Hillman, Jonathan A. On 4-manifolds homotopy equivalent to circle bundles over 3-manifolds. *Israel J. Math.* **75** (1991), *no.* 2-3, 277–287. (Christopher W. Stark) **93m:57022** 57N13 (57P10, 57Q10)

— (*with* Linnell, Peter A.) Elementary amenable groups of finite Hirsch length are locally-finite by virtually-solvable. *J. Austral. Math. Soc. Ser. A* **52** (1992), *no.* 2, 237–241. (Javier Otal) **93b:20067** 20F19 (20F38)

Hillmer, Steven C. (*with* Stam, Antonie) Order reductions of the marginals and identification of multiple ARMA models. *SIAM J. Matrix Anal. Appl.* **12** (1991), *no.* 4, 679–689. (B. M. Pötscher) **93a:62128** 62M10 (15A18, 15A21, 15A54)

Hills, Norman L. (*with* Irwin, John M.; Mulla, Fuad) Numerical solution of the heat equation by infinite-order ordinary differential equations. (English summary) *Numer. Methods Partial Differential Equations* **8** (1992), *no.* 6, 505–514. (Zdzisław W. Trzaska) **93m:65150** 65M99 (34A35)

Hills, R. N. (*with* Roberts, Paul H.) On the motion of a fluid that is incompressible in a generalized sense and its relationship to the Boussinesq approximation. *Stability Appl. Anal. Contin. Media* **1** (1991), *no.* 3, 205–212. (Summary) **93a:76001** 76A02 (76V05)

Hilsum, Michel On the curvature of the determinant bundle. (English summary) *Current topics in operator algebras* (*Nara*, 1990), 255–263, *World Sci. Publishing, River Edge, NJ*, 1991. (John Roe) **93k:58233** 58G26 (46L87)

— (*with* Skandalis, Georges) Invariance par homotopie de la signature à coefficients dans un fibré presque plat. [Homotopy invariance of the signature with coefficients in an almost flat fiber bundle] *J. Reine Angew. Math.* **423** (1992), 73–99. (Mi-Soo Smith) **93b:46137** 46L87 (19K56, 57R30, 58G12)

Hilton, A. J. W. (*with* Johnson, Peter D., Jr.) A variation of Ryser's theorem and a necessary condition for the list-colouring problem. *Graph colourings* (*Milton Keynes*, 1988), 135–143, *Pitman Res. Notes Math. Ser.*, 218, *Longman Sci. Tech., Harlow*, 1990. (*see* **93k:05072**) 05C15

— (*with* Chetwynd, Amanda) Outline symmetric Latin squares. *Discrete Math.* **97** (1991), *no.* 1-3, 101–117. (Katherine Heinrich) **93a:05031** 05B15

— The initial and the threshold values for exactly k-to-1 continuous maps between graphs. (English summary) Proceedings of the Twenty-third Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, FL, 1992). *Congr. Numer.* **91** (1992), 254–270. (Summary) **93j:05045** 05C10
— (*with* Zhao, Cheng) The chromatic index of a graph whose core has maximum degree two. Special volume to mark the centennial of Julius Petersen's "Die Theorie der regulären Graphs", Part II. *Discrete Math.* **101** (1992), *no.* 1-3, 135–147. (Michael O. Albertson) **93e:05076** 05C70 (05C15)
— (*with* Chetwynd, Amanda) Alternating Hamiltonian cycles in two-colored complete bipartite graphs. *J. Graph Theory* **16** (1992), *no.* 2, 153–158. (Prabir Das) **93g:05092** 05C45 (05C15, 05C38)
Hilton, Peter (*with* Pedersen, Jean) Catalan numbers, their generalization, and their uses. *Math. Intelligencer* **13** (1991), *no.* 2, 64–75. (L. Bruce Richmond) **93d:05006** 05A10 (00A69, 01A55, 05A15, 11B65)
— (*with* Pedersen, Jean) Generalizations of Eulerian numbers and their q-analogues. *Nieuw Arch. Wisk.* (4) **9** (1991), *no.* 3, 271–298. (Christian Krattenthaler) **93j:11016** 11B68 (05A10, 05A30, 11B65)
— (*with* Casacuberta, Carles) A note on extensions of nilpotent groups. *Adams Memorial Symposium on Algebraic Topology*, 1 (*Manchester*, 1990), 225–234, *London Math. Soc. Lecture Note Ser.*, 175, *Cambridge Univ. Press, Cambridge*, 1992. (Zhi Rang Zhang) **93g:20065** 20F18 (20E22)
— (*with* Fenn, Roger) On links with one codimension two component. *Forum Math.* **4** (1992), *no.* 2, 175–185. (Washington Mio) **93c:57017** 57Q45
— *see also* **McCarthy, John, 93d:05007**
Hilton, R. R. On the coexistence of collective and single particle aspects of the giant angle dipole. *Ann. Physics* **214** (1992), *no.* 2, 258–292. (David J. Rowe) **93g:81207** 81V35
Himonas, A. Alexandrou On hypoellipticity for sums of squares of vector fields. *The Madison Symposium on Complex Analysis* (*Madison, WI*, 1991), 267–275, *Contemp. Math.*, 137, *Amer. Math. Soc., Providence, RI*, 1992. (Jorge Hounie) **93m:35047** 35H05 (35B65, 35N15, 58G99)
Hinamoto, Takao (*with* Toshiaki, Takao; Muneyasu, Mitsuji) Synthesis of 2-D separable-denominator digital filters with low sensitivity. (English summary) *J. Franklin Inst.* **329** (1992), *no.* 6, 1063–1080. (A. Bultheel) **93i:93122** 93E11 (93B15, 93B35)
Hinch, E. J. ★ Perturbation methods. Cambridge Texts in Applied Mathematics. *Cambridge University Press, Cambridge*, 1991. xii+160 *pp. ISBN* 0-521-37310-7; 0-521-37897-4 (James A. Murdock) **93a:34002** 34–02 (34Exx, 35B20, 35B25, 41A60)
Hind, H. R. An upper bound for the total chromatic number of dense graphs. *J. Graph Theory* **16** (1992), *no.* 3, 197–203. (Bradley W. Jackson) **93h:05076** 05C15
Hindley, J. Roger (*with* Dezani-Ciancaglini, Mariangiola) Intersection types for combinatory logic. *Theoret. Comput. Sci.* **100** (1992), *no.* 2, 303–324. (Summary) **93i:03018** 03B40 (68Q55)
Hindman, Neil (*with* Bergelson, Vitaly) Some topological semicommutative van der Waerden type theorems and their combinatorial consequences. (English summary) *J. London Math. Soc.* (2) **45** (1992), *no.* 3, 385–403. (Wen Li Chen) **93j:05162** 05D10 (03E15, 54H20)
— (*with* Bergelson, Vitaly) Ramsey theory in noncommutative semigroups. *Trans. Amer. Math. Soc.* **330** (1992), *no.* 1, 433–446. (Andreas Blass) **93j:03025** 03E05 (05D10, 22A15, 54H15, 54H20)
— (*with* Baker, John Walter; Pym, John) Elements of finite order in Stone-Čech compactifications. (English summary) *Proc. Edinburgh Math. Soc.* (2) **36** (1993), *no.* 1, 49–54. (Michael Tkačenko) **93m:22003** 22A15 (20M99, 22C05)
Hindy, Ayman (*with* Huang, Chi-fu) Intertemporal preferences for uncertain consumption: a continuous time approach. *Econometrica* **60** (1992), *no.* 4, 781–801. (Summary) **93c:90027** 90A40 (90A06, 90A07)
— (*with* Huang, Chi-fu; Kreps, David) On intertemporal preferences in continuous time: the case of certainty. (English summary) *J. Math. Econom.* **21** (1992), *no.* 5, 401–440. (Hiroaki Osana) **93i:90012** 90A06 (90A10)
— (*with* Huang, Chi-fu) Optimal consumption and portfolio rules with durability and local substitution. (English summary) *Econometrica* **61** (1993), *no.* 1, 85–121. (Summary) **93h:90028** 90A40
Hines, Larry M. Completeness of a prover for dense linear orders. *J. Automat. Reason.* **8** (1992), *no.* 1, 45–75. (M. I. Dekhtyar) **93e:68112** 68T15 (03B35)
Hinestroza G., Doris (*with* Murio, Diego A.) The space marching solution of the inverse heat conduction problem and the identification of the initial temperature distribution. (English summary) *Comput. Math. Appl.* **25** (1993), *no.* 4, 55–63. (Summary) **93i:65103** 65M99
— (*with* Murio, Diego A.) Recovery of the transient heat transfer coefficient in the nonlinear boundary value problem for the heat equation. (English summary) *Comput. Math. Appl.* **25** (1993), *no.* 5, 101–111. (Summary) **93i:65090** 65M30
— (*with* Murio, Diego A.) Identification of transmissivity coefficients by mollification techniques. I. One-dimensional elliptic and parabolic problems. (English summary) *Comput. Math. Appl.* **25** (1993), *no.* 8, 59–79. (Ulrich Tautenhahn) **93m:65174** 65P05 (35R25, 35R30, 65M30, 93B30)
Hineva, Stefana (*with* Belchev, Evgeni) On the minimal hypersurfaces of a locally symmetric manifold. *Global differential geometry and global analysis* (*Berlin*, 1990), 1–4, *Lecture Notes in Math.*, 1481, *Springer, Berlin*, 1991. (Bang-yen Chen) **93f:53051** 53C42 (53C40)
Hingston, Nancy An equivariant model for the free loop space of S^N. *Amer. J. Math.* **114** (1992), *no.* 1, 139–155. (N. J. Kuhn) **93b:55011** 55P35 (18G60, 19D10, 55P91, 58E05)
— (*with* Kalish, Diane) The Morse index theorem in the degenerate endmanifold case. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 2, 663–668. (Dorin Andrica) **93g:58030** 58E10
Hinich, Melvin J. (*with* Patterson, Douglas M.) A new diagnostic test of model inadequacy which uses the martingale difference criterion. *J. Time Ser. Anal.* **13** (1992), *no.* 3, 233–252. (Ed McKenzie) **93h:62157** 62M10
Hinich, V. *see* **Khinich, V. A.**
Hinkelmann, Klaus (*with* Singh, Murari) Distribution of genotypic correlation coefficient and its transforms for nonnormal populations. (English summary) *Sankhyā Ser. B* **54** (1992), *no.* 1, 42–66. (Summary) **93k:62145** 62J99 (62H20, 62P10)
Hinkkanen, A. Functions conjugating entire functions to entire functions and semigroups of analytic endomorphisms. *Complex Variables Theory Appl.* **18** (1992), *no.* 3-4, 149–154. (Genadi Mironovich Levin) **93m:30037** 30D05 (30D20)
— A sharp form of Nevanlinna's second fundamental theorem. *Invent. Math.* **108** (1992), *no.* 3, 549–574. (D. Drasin) **93c:30045** 30D35 (30D30, 32A22, 32H30)
Hinkley, D. V. (*with* Davison, A. C.; Worton, B. J.) Bootstrap likelihoods. *Biometrika* **79** (1992), *no.* 1, 113–130. (Gutti J. Babu) **93c:62078** 62G09
Hinman, Peter G. (*with* Slaman, Theodore A.) Jump embeddings in the Turing degrees. *J. Symbolic Logic* **56** (1991), *no.* 2, 563–591. (J. C. Owings, Jr.) **93b:03072** 03D30
Hinnion, R. *see* **Antifoundation in logic and set theory, 93b:03091**
Hinokuma, Takanori (*with* Ozawa, Masanao) Conversion from nonstandard matrix algebras to standard factors of type II_1. *Illinois J. Math.* **37** (1993), *no.* 1, 1–13. (From the introduction) **93j:46066** 46L10 (03H05, 46L35, 46S20)
Hinrichs, Klaus (*with* Nievergelt, Jürg; Schorn, Peter) An all-round sweep algorithm for 2-dimensional nearest-neighbor problems. (English summary) *Acta Inform.* **29** (1992), *no.* 4, 383–394. (Summary) **93d:68069** 68U05
Hinrichsen, Diederich (*with* Pritchard, A. J.) On the robustness of stable discrete-time linear systems. *New trends in systems theory* (*Genoa*, 1990), 393–400, *Progr. Systems Control Theory*, 7, *Birkhäuser Boston, Boston, MA*, 1991. (Summary) **93b:93083** 93D09 (93C55)
— (*with* O'Halloran, J.) New results on the orbit closure problem for singular systems under pencil equivalence. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, II* (*Kobe*, 1991), 133–138, *Mita, Tokyo*, 1992. (*see* **93g:93006**) 93B29
— (*with* Pritchard, A. J.) Robustness measures for linear systems with application to stability radii of Hurwitz and Schur polynomials. *Internat. J. Control* **55** (1992), *no.* 4, 809–844. (Summary) **93f:93103** 93D09 (93C05)
— (*with* O'Halloran, J.) Orbit closures of singular matrix pencils. (English summary) *J. Pure Appl. Algebra* **81** (1992), *no.* 2, 117–137. (Piotr Pragacz) **93j:15011** 15A22 (14L30)
— (*with* Manthey, W.; Helmke, Uwe) Topological aspects of the partial realization problem. *Math. Control Signals Systems* **5** (1992), *no.* 2, 117–149. (Gh. Pitiş) **93e:93013** 93B15 (93B27)
— (*with* Pritchard, A. J.) On spectral variations under bounded real matrix perturbations. *Numer. Math.* **60** (1992), *no.* 4, 509–524. (Heike Faßbender) **93a:65051** 65F15 (34D10, 34L05)
— *see also* **Control of uncertain systems, 93i:93006**
Hinsberger, Uwe (*with* Kolla, Reiner) Performance optimization of combinational circuits. (English summary) *Informatik*, 185–208, *Teubner-Texte Inform.*, 1, *Teubner, Stuttgart*, 1992. (*see* **93d:68002**) 90C35
Hinsen, G. Explicit irregular sampling formulas. *J. Comput. Appl. Math.* **40** (1992), *no.* 2, 177–198. (Dinh Dung) **93f:41045** 41A58 (41A05, 41A25, 41A45)
Hinsen, K. (*with* Felderhof, B. U.) Reduced description of electric multipole potential in Cartesian coordinates. (English summary) *J. Math. Phys.* **33** (1992), *no.* 11, 3731–3735. (Summary) **93g:78011** 78A30
Hinson, Edward K. On the distribution of Pythagorean triples. *Fibonacci Quart.* **30** (1992), *no.* 4, 335–338. (Mao Hua Le) **93i:11033** 11D09
Hintikka, Jaakko Overcoming "Overcoming metaphysics through logical analysis of language" through logical analysis of language. (French and German summaries) *Dialectica* **45** (1991), *no.* 2-3, 203–218. (Summary) **93e:03006** 03A05 (03B65)
— (*with* Sandu, Gabriel) The skeleton in Frege's cupboard: the standard versus nonstandard distinction. *J. Philos.* **89** (1992), *no.* 6, 290–315. (N. B. Cocchiarella) **93i:03005** 03A05 (01A55, 03–03, 03B15)
Hinton, Don B. (*with* Jordan, A. K.; Klaus, Martin; Shaw, J. K.) Inverse scattering on the line for a Dirac system. *J. Math. Phys.* **32** (1991), *no.* 11, 3015–3030. (C. Tomei) **93a:34094** 34L25 (34A55, 34L40)
— (*with* Klaus, Martin; Shaw, J. K.) Embedded half-bound states for potentials of Wigner-von Neumann type. *Proc. London Math. Soc.* (3) **62** (1991), *no.* 3, 607–646. (Horst Behncke) **93b:34110** 34L40 (34B24, 34L25, 47E05, 81Q10, 81U05)
— (*with* Kauffman, Robert M.) Discreteness of some continuous spectrum eigenfunction expansions. *Proc. Amer. Math. Soc.* **119** (1993), *no.* 1, 235–243. (Zoran Kadelburg) **93k:34175** 34L10 (47A70, 47E05)
Hinton, J. C. (*with* Jiang, Jing Ping; Ho, P. L.) Parallel processing in optimal control of robot drives. *Control '91*, *Vol.* 1, 2 (*Edinburgh*, 1991), 376–381, *IEE Conf. Publ. Ser.*, 332, *IEE, London*, 1991. (*see* **93h:93007**) 93B40
Hinz, Andreas M. Pascal's triangle and the Tower of Hanoi. *Amer. Math. Monthly* **99** (1992), *no.* 6, 538–544. (Morton Abramson) **93f:05004** 05A10
— Shortest paths between regular states of the Tower of Hanoi. *Inform. Sci.* **63** (1992), *no.* 1-2, 173–181. (Summary) **93b:05001** 05–04
— (*with* Stolz, Günter) Polynomial boundedness of eigensolutions and the spectrum of Schrödinger operators. *Math. Ann.* **294** (1992), *no.* 2, 195–211. (M. S. Agranovich) **93m:35049** 35J10 (35P99, 47F05)
— Regularity of solutions for singular Schrödinger equations. *Rev. Math. Phys.* **4** (1992), *no.* 1, 95–161. (B. Hellwig) **93j:35062** 35J10 (35B65, 47F05, 47N50)
— Regularity of solutions for singular Schrödinger equations. (English summary) *Differential equations with applications to mathematical physics*, 167–176, *Math. Sci. Engrg.*, 192, *Academic Press, Boston, MA*, 1993. (Eugen Belokolos) **93m:35050** 35J10
Hinz, Jürgen G. Chen's theorem in totally real algebraic number fields. *Acta Arith.* **58** (1991), *no.* 4, 335–361. (Shigeru Kanemitsu) **93b:11155** 11R47 (11N36, 11P32)
Hipparchus *see* **Jones, Alexander, 93g:01011**
Hippe, Peter Design of MIMO compensators for systems with unmeasurable disturbances: the polynomial approach. (English summary) *Automatica J. IFAC* **28** (1992), *no.* 5, 1003–1009. (Summary) **93f:93066** 93B52 (93C80)
Hippisley-Cox, S. D. Finite point compactifications of $(\mathbf{N}, +)$. *Semigroup Forum* **44** (1992), *no.* 3, 388–392. (Bernard L. Madison) **93i:20076** 20M14 (22A30, 54D35)
Hiraba, Seiji Existence and smoothness of transition density for jump-type Markov processes: applications of Malliavin calculus. *Kodai Math. J.* **15** (1992), *no.* 1, 29–49. (Patrick Cattiaux) **93f:60125** 60J75 (60H07)
Hirabayashi, Ryuichi (*with* Saruwatari, Yasufumi; Nishida, Naonori) Tour construction algorithm for the capacitated arc routing problems. (English summary) *Asia-Pacific J. Oper. Res.* **9** (1992), *no.* 2, 155–175. (Summary) **93j:90120** 90C35 (90C10, 90C27)
— (*with* Saruwatari, Yasufumi; Nishida, Naonori) Node duplication lower bounds for the capacitated arc routing problem. (English summary) *J. Oper. Res. Soc. Japan* **35** (1992),

no. 2, 119–133. (Summary) **93g:90034** 90B10

Hirachi, Kengo Scalar pseudo-Hermitian invariants and the Szegő kernel on three-dimensional CR manifolds. *Complex geometry (Osaka, 1990)*, 67–76, *Lecture Notes in Pure and Appl. Math.*, 143, *Dekker, New York*, 1993. (So-Chin Chen) **93k:32036** 32F40

Hirai, Kazumasa (*with* Shindou, Hisanori) The cooperative behavior of a compound system. (English summary) *Electron. Comm. Japan Part III Fund. Electron. Sci.* **75** (1992), *no.* 6, 85–92. (Wei-Min Liu) **93h:34078** 34C99 (34C15, 34H05, 70E15, 70K99)

Hirai, Takeshi Some aspects in the theory of representations of discrete groups. *Japan. J. Math. (N.S.)* **16** (1990), *no.* 2, 197–268. (E. Kaniuth (Zbl 729:22007)) **93e:22008** 22D30 (20C99, 22D10)

— Some aspects in the theory of representations of discrete groups. II. *Proc. Japan Acad. Ser. A Math. Sci.* **66** (1990), *no.* 1, 16–18. (From the text) **93g:22005** 22D10

— Some aspects in the theory of representations of discrete groups. I. *Proc. Japan Acad. Ser. A Math. Sci.* **66** (1990), *no.* 10, 315–318. (Introduction) **93g:22004** 22D10 (22D30)

Hiraishi, Hiromi (*with* Hamaguchi, Kiyoharu; Fujii, Hiroshi; Yajima, Shuzo) Regular temporal logic expressively equivalent to finite automata and its application to logic design verification. (English summary) *J. Inform. Process.* **15** (1992), *no.* 1, 129–138. (Summary) **93e:68072** 68Q60 (03B45, 03B70)

— (*with* Hamaguchi, Kiyoharu; Yajima, Shuzo) ω-regular temporal logic and its model checking problem. (English summary) *Theoret. Comput. Sci.* **103** (1992), *no.* 2, 191–204. (Summary) **93i:68130** 68Q60 (03B45, 03B70)

Hirakawa, Masataka A generalization of φ-conditional expectation and operator valued weight. *Publ. Res. Inst. Math. Sci.* **28** (1992), *no.* 2, 289–297. (Victor Kaftal) **93a:46121** 46L50

Hiramine, Yutaka (*with* Johnson, Norman Lloyd[1]) Near nearfield planes. *Geom. Dedicata* **43** (1992), *no.* 1, 17–33. (M. J. Kallaher) **93f:51020** 51J20 (51A40, 51E15)

— Planar functions and related group algebras. *J. Algebra* **152** (1992), *no.* 1, 135–145. (G. Karpilovsky) **93k:20008** 20C05

Hirano, Masaki On the uniqueness of the periodic orbit of Liénard equation. *Math. Japon.* **36** (1991), *no.* 6, 1193–1199. (Noel G. Lloyd) **93a:34037** 34C05 (34C25, 70K10)

Hirano, Norimichi Existence of multiple solutions for quasilinear and semilinear elliptic equations. *Nonlinear Anal.* **19** (1992), *no.* 2, 123–143. (Frank Benkert) **93m:35081** 35J65 (47H11, 47H15, 47N20)

Hirano, Yasuyuki On periodic P.I. rings and locally finite rings. *Math. J. Okayama Univ.* **33** (1991), 115–120. (From the introduction) **93b:16060** 16U50

— (*with* Park, Jae Keol) Rings for which the converse of Schur's lemma holds. *Math. J. Okayama Univ.* **33** (1991), 121–131. (Ming-chang Kang) **93b:16026** 16K40 (16D60)

— On rings whose additive endomorphism are multiplicative. *Period. Math. Hungar.* **23** (1991), *no.* 1, 89–91. (J. Hausen) **93f:16005** 16D70 (20K30)

— On self-injective strongly π-regular rings. *Proceedings of the 15th Symposium on Semigroups (Matsue, 1991)*, 67–70, *Shimane Univ., Matsue*, 1992. (*see* **93e:20073**) 16D50

— (*with* Sumiyama, Takao) On orders of directly indecomposable finite rings. (English summary) *Bull. Austral. Math. Soc.* **46** (1992), *no.* 3, 353–359. (Summary) **93h:16025** 16H05 (16P10)

— (*with* Park, Jae Keol) On self-injective strongly π-regular rings. *Comm. Algebra* **21** (1993), *no.* 1, 85–91. (Stefan Veldsman) **93i:16008** 16D50 (16N20)

Hirasawa, Yoshikazu On a global block-diagonalization of square matrices with variable components. (English summary) *Bull. Univ. Electro-Comm.* **5** (1992), *no.* 1, 39–48. (Chong Guang Cao) **93m:15036** 15A54 (15A18)

Hirata, H. (*with* Matsumoto, T.; Tanaka, Masataka) Boundary stress calculation using regularized boundary integral equation for displacement gradients. *Theory and applications of boundary element methods (Beijing, 1991)*, 53–60, *Internat. Acad. Publ., Beijing*, 1991. (*see* **93b:65008**) 73V10 (65N38)

Hirata, Hironori Modelling of flow networks using information coding: an application to ecological systems. (English summary) *System modelling and optimization (Zurich, 1991)*, 698–705, *Lecture Notes in Control and Inform. Sci.*, 180, *Springer, Berlin*, 1992. (*see* **93e:90003**) 90B10 (94A15)

Hirata, Kouichi On Russellian propositions. *Bull. Inform. Cybernet.* **25** (1992), *no.* 1-2, 41–51. (Summary) **93i:03038** 03B70 (03A05, 68Q55)

Hirata, Masaki (*with* Ogi, Hidekazu; Saito, Kichi-Suke; Watanabe, Keiichi) On the angle operator between two projections in a von Neumann algebra. *Arch. Math. (Basel)* **59** (1992), *no.* 4, 361–362. (Cho Ho Chu) **93h:46085** 46L10 (47B99, 47C15)

Hirata-Kohno, Noriko Nouvelles mesures de transcendance liées aux groupes algébriques commutatifs. (English summary) [New transcendence measures associated with commutative algebraic groups] *Approximations diophantiennes et nombres transcendants (Luminy, 1990)*, 165–172, *de Gruyter, Berlin*, 1992. (Michel Waldschmidt) **93f:11053** 11J82 (11J89, 11J91)

Hirayama, Minoru Gauge field theory of the quantum group $SU_q(2)$. (English summary) *Progr. Theoret. Phys.* **88** (1992), *no.* 1, 111–127. (Arne Schirrmacher) **93j:81044** 81R50 (17B37, 58B30)

Hirenzaki, Satoru (*with* Shiraishi, Kiyoshi) Quantum aspects of self-interacting fields around cosmic strings. (English summary) *Classical Quantum Gravity* **9** (1992), *no.* 10, 2277–2286. (Summary) **93f:83052** 83C47 (83F05)

Hiriart-Urruty, J.-B. (*with* Plazanet, Ph.) Moreau's decomposition theorem revisited. (English summary) *Analyse non linéaire (Perpignan, 1987)*, 325–338, *Univ. Montréal, Montreal, PQ*, 1989. (*see* **93h:49003**) 49J52 (26B25)

Hirji, Karim F. (*with* Salvan, Alessandra) Asymptotic equivalence of conditional median unbiased and maximum likelihood estimators in exponential families. (English and Italian summaries) *Metron* **49** (1991), *no.* 1-4, 219–232 (1992). 62F12

— Computing exact distributions for polytomous response data. *J. Amer. Statist. Assoc.* **87** (1992), *no.* 418, 487–492. (Summary) **93e:62169** 62J05

Hirokawa, Sachio Principal type assignment to lambda terms. *Internat. J. Found. Comput. Sci.* **2** (1991), *no.* 2, 149–162. (John C. Mitchell) **93a:03013** 03B40 (68Q55)

— The converse principal type-scheme theorem in lambda calculus. *Studia Logica* **51** (1992), *no.* 1, 83–95. (J. P. Seldin) **93k:03012** 03B40

Hironaka, Heisuke On the work of Shigefumi Mori. *Proceedings of the International Congress of Mathematicians, Vol. I, II (Kyoto, 1990)*, 19–25, *Math. Soc. Japan, Tokyo*, 1991. (Bruce Hunt) **93d:14003** 14-02 (01A65)

Hirose, Ken *see* **Conference: Logic, 93j:03003**

Hirose, Susumu On diffeomorphisms over T^2-knots. *Proc. Amer. Math. Soc.* **119** (1993), *no.* 3, 1009–1018. (Dončo Dimovski) **93m:57025** 57Q45

Hirota, Kaoru Probabilistic sets—a survey. *Combining fuzzy imprecision with probabilistic uncertainty in decision making*, 184–196, *Lecture Notes in Econom. and Math. Systems*, 310, *Springer, Berlin*, 1988. (*see* **93c:90002**) 04A72

— (*with* Pedrycz, Witold) Probabilistic sets in classification and pattern recognition. *Combining fuzzy imprecision with probabilistic uncertainty in decision making*, 342–352, *Lecture Notes in Econom. and Math. Systems*, 310, *Springer, Berlin*, 1988. (*see* **93c:90002**) 68T10 (04A72)

— (*with* Yoshinari, Y.; Pedrycz, Witold) Construction of fuzzy models through clustering techniques. (English summary) *Fuzzy Sets and Systems* **54** (1993), *no.* 2, 157–165. 93C42 (04A72)

Hirota, Osamu (*with* Uyematsu, Tomohiko; Sakaniwa, Kohichi) Quantum nondemolition measurement in optical communication theory. *Quantum aspects of optical communications (Paris, 1990)*, 111–123, *Lecture Notes in Phys.*, 378, *Springer, Berlin*, 1991. (*see* **93e:81158**) 81V80 (81P15)

— *see also* **Quantum aspects of optical communications, 93e:81158**

Hirotsu, Chihiro (*with* Kuriki, Satoshi; Hayter, Anthony J.) Multiple comparison procedures based on the maximal component of the cumulative chi-squared statistic. (English summary) *Biometrika* **79** (1992), *no.* 2, 381–392. (Thomas J. Santner) **93i:62063** 62J15

Hirsch, Francis (*with* Bouleau, Nicolas) ★ Dirichlet forms and analysis on Wiener space. de Gruyter Studies in Mathematics, 14. *Walter de Gruyter & Co., Berlin*, 1991. x+325 *pp. ISBN* 3-11-012919-1 (David Nualart) **93e:60107** 60H07 (31C25, 60G30, 60J45)

Hirsch, Michael D. Lower bounds for the nonlinear complexity of algebraic computation trees with integer inputs. *Comput. Complexity* **1** (1991), *no.* 3, 257–268. (Summary) **93e:68026** 68Q20 (68T25)

— (*with* Wang, Xiaolu) Links and polar flows on 4-manifolds. (English summary) *Topology Appl.* **46** (1992), *no.* 2, 167–172. (Marko Kranjc) **93h:57050** 57R65 (58F09)

Hirsch, Morris W. Dynamics and neural networks. *Theory & control of dynamical systems (Huddinge, 1991)*, 31–51, *World Sci. Publishing, River Edge, NJ*, 1992. (Clark Jeffries) **93j:92004** 92B20 (34C35, 34D45, 82C32)

Hirschel, Ernst Heinrich (*with* Eberle, Albrecht; Rizzi, Arthur) ★ Numerical solutions of the Euler equations for steady flow problems. Notes on Numerical Fluid Mechanics, 34. *Friedr. Vieweg & Sohn, Braunschweig*, 1992. xvi+448 *pp. ISBN* 3-528-07634-8 (Dennis C. Jespersen) **93f:76081** 76N10 (65–02, 76M20)

Hirschelmann, Arnulf Ein Evolutionsspiel im Partitionengraph. [A game of evolution in a partition graph] *Séminaire Lotharingien de Combinatoire (Thurnau, 1991)*, 43–48, *Publ. Inst. Rech. Math. Av.*, 476, *Univ. Louis Pasteur, Strasbourg*, 1992. (Konrad Engel) **93k:05014** 05A17 (05C99, 90D43)

Hirschfeld, J. W. P. (*with* Szőnyi, Tamás) A problem on squares in a finite field and its application to geometry. *Advances in finite geometries and designs (Chelwood Gate, 1990)*, 169–176, *Oxford Sci. Publ., Oxford Univ. Press, New York*, 1991. (Harald Niederreiter) **93a:51007** 51E21 (11T23)

— (*with* Szőnyi, Tamás) Sets in a finite plane with few intersection numbers and a distinguished point. *Discrete Math.* **97** (1991), *no.* 1-3, 229–242. (Massimo de Finis) **93d:51021** 51E20 (51E21)

— Projective spaces of square size. *Simon Stevin* **65** (1991), *no.* 3-4, 319–329. (Vikram Jha) **93f:51012** 51E20 (51A45)

— (*with* Ceccherini, Pier Vittorio) The dimension of projective geometry codes. (English summary) A collection of contributions in honour of Jack van Lint. *Discrete Math.* **106/107** (1992), 117–126. (Vikram Jha) **93i:51018** 51E22 (94B05)

Hirschhorn, M. D. A Diophantine equation. *Austral. Math. Soc. Gaz.* **20** (1993), *no.* 1, 1–3. 11D09

— On the parity of $p(n)$. II. *J. Combin. Theory Ser. A* **62** (1993), *no.* 1, 128–138. (David M. Bressoud) **93j:11068** 11P83

Hirschmann, Tankred ★ Pseudo-differential operators and asymptotics on manifolds with corners. Va. Supplement. Pseudo-differential operator calculus with exit conditions. With a German summary. Report MATH, 91-04. *Karl-Weierstrass-Institut für Mathematik, Berlin*, 1991. vi+61 *pp.* (Elmar Schrohe) **93c:58213** 58G15 (35J70, 35S05, 47G30)

Hirschowitz, André (*with* Ellia, Philippe; Mezzetti, Emilia) On the number of irreducible components of the Hilbert scheme of smooth space curves. *Internat. J. Math.* **3** (1992), *no.* 6, 799–807. (Şerban Bărcănescu) **93j:14006** 14C05 (14H10)

— (*with* Alexander, James Ernest) La méthode d'Horace éclatée: application à l'interpolation en degré quatre. [The blown-up Horace method: application to fourth-order interpolation] *Invent. Math.* **107** (1992), *no.* 3, 585–602. (Giorgio Bolondi) **93d:13017** 13B25 (14J17)

— (*with* Alexander, James Ernest) Un lemme d'Horace différentiel: application aux singularités hyperquartiques de $\mathbf{P}^5$. [A differential Horace lemma: application of hyperquartic singularities in $\mathbf{P}^5$] *J. Algebraic Geom.* **1** (1992), *no.* 3, 411–426. (Kurt Behnke) **93e:14004** 14B05 (14B10, 14F17)

— (*with* Ellia, Philippe) Voie ouest. I. Génération de certains fibrés sur les espaces projectifs et application. [Western track. I. Generation of certain bundles over projective spaces, and application] *J. Algebraic Geom.* **1** (1992), *no.* 4, 531–547. (Laurent Manivel) **93h:14033** 14J60 (14H50)

Hirsh, Haym Polynomial-time learning with version spaces. (English summary) *AAAI-92. Proceedings, Tenth National Conference on Artificial Intelligence (San Jose, CA, 1992)*, 117–122, *Amer. Assoc. Artif. Intell., Menlo Park, CA*, 1992. (*see* **93j:68007**) 68T05

— (*with* Cohen, William W.; Borgida, Alex) Computing least common subsumers in description logics. (English summary) *AAAI-92. Proceedings, Tenth National Conference on Artificial Intelligence (San Jose, CA, 1992)*, 754–760, *Amer. Assoc. Artif. Intell., Menlo Park, CA*, 1992. (Summary) **93j:68190** 68T27 (03B70, 68T30)

Hirsh, Richard S. (*with* Ku, Hwar-Ching; Taylor, Thomas D.) Pseudospectral matrix element methods for flow in complex geometry. (English summary) *Spectral and high order methods for partial differential equations (Como, 1989)*, 381–388, *North-Holland, Amsterdam*, 1990. (*see* **93d:65005**) 65N35 (65N55, 76D05, 76M25)

Hirshfeld, Allen C. Anomalies, BRS symmetry and superconnections. *Differential geometric methods in theoretical physics (Davis, CA, 1988)*, 485–491, *NATO Adv. Sci. Inst. Ser. B Phys.*, 245, *Plenum, New York*, 1990. (Summary) **93b:81274** 81T50 (58Z05, 81T70)

Hirshon, Ron (*with* Meier, David) Groups with a quotient that contains the original group as a direct factor. *Bull. Austral. Math. Soc.* **45** (1992), *no.* 3, 513–520. (Marston Conder) **93d:20066** 20F05 (20E34)

Hirzebruch, Friedrich Codierungstheorie und ihre Beziehung zu Geometrie und Zahlentheorie. [Coding theory and its relation to geometry and number theory] *Rheinisch-Westfälische Akad. Wiss. Natur-, Ingr.- Wirtschaftswiss. No.* 370 (1989), 7–33. (Henk van Tilborg) **93e:94013** 94B05 (11F11, 11T71, 51E22, 52C07)

— (*with* Scharlau, Winfried) ★ Einführung in die Funktionalanalysis. (German) [Introduction to functional analysis] Reprint of the 1971 original. B.I.-Hochschultaschenbücher [B.I. University Paperbacks], 296. *Bibliographisches Institut, Mannheim*, 1991. 178 *pp. ISBN* 3-411-00296-4 (Editors) **93g:46001** 46–01 (47–01)

— *see also* **Zalcman, Lawrence A., 93a:01041** *and* **Bourguignon, Jean-Pierre, 93h:01036**

Hisakado, Masato (*with* Wadati, Miki; Iizuka, Takeshi) A coupled nonlinear Schrödinger equation and optical solitons. (English summary) *J. Phys. Soc. Japan* **61** (1992), *no.* 7, 2241–2245. (From the introduction) **93e:35106** 35Q55 (35Q51)

Hisamura, Tomiji (*with* Ohta, Atsushi) On the monotonicity of liveness with respect to the increase of the token count in Petri nets. (Japanese. English summary) *Bull. Sci. Engrg. Res. Lab. Waseda Univ. No.* 136 (1992), 91–98. (Summary) **93j:68150** 68Q90

— (*with* Ohta, Atsushi) POC net, a subclass of Petri nets, and its application to timed Petri nets. (English summary) *Internat. J. Systems Sci.* **24** (1993), *no.* 3, 539–552. (Summary) **93m:68129** 68Q90

Hishida, Toshiaki Existence and regularizing properties of solutions for the nonstationary convection problem. *Funkcial. Ekvac.* **34** (1991), *no.* 3, 449–474. (H. J. Kuiper) **93d:35079** 35K60 (34G20, 35Q35, 47N20, 76R99)

— (*with* Yamada, Yoshio) Global solutions for the heat convection equations in an exterior domain. *Tokyo J. Math.* **15** (1992), *no.* 1, 135–151. (I. Aganović) **93f:35177** 35Q30 (35Q35, 76D05, 76R05)

Hislop, Peter D. (*with* Nakamura, Shu[1]) Stark Hamiltonian with unbounded random potentials. *Rev. Math. Phys.* **2** (1990), *no.* 4, 479–494. (Georgi E. Karadzhov) **93c:81041** 81Q10 (34L40, 47E05, 47N50)

— (*with* Combes, J.-M.) Stark ladder resonances for small electric fields. *Comm. Math. Phys.* **140** (1991), *no.* 2, 291–320. (Georgi E. Karadzhov) **93c:81040** 81Q10 (81Q20, 81V10)

— (*with* Froese, Richard; Perry, Peter A.) The Laplace operator on hyperbolic three manifolds with cusps of nonmaximal rank. *Invent. Math.* **106** (1991), *no.* 2, 295–333. (Shin-ya Koyama) **93b:11065** 11F72 (47F05, 58G25)

— (*with* Combes, J.-M.) Some transport and spectral properties of disordered media. *Schrödinger operators (Aarhus*, 1991), 16–47, *Lecture Notes in Phys.*, 403, *Springer, Berlin*, 1992. (Lawrence E. Thomas) **93k:81047** 81Q10 (35J10, 35P05, 47F05, 47N50, 82C44, 82C70)

— (*with* Brown, Russell M.; Martinez, André) Lower bounds on eigenfunctions and the first eigenvalue gap. (English summary) *Differential equations with applications to mathematical physics*, 33–49, *Math. Sci. Engrg.*, 192, *Academic Press, Boston, MA*, 1993. (Summary) **93k:35196** 35P15 (35J25)

Hiss, Gerhard Decomposition numbers of finite groups of Lie type in nondefining characteristic. *Representation theory of finite groups and finite-dimensional algebras (Bielefeld*, 1991), 405–418, *Progr. Math.*, 95, *Birkhäuser, Basel*, 1991. (Richard Dipper) **93a:20019** 20C20 (20C33, 20G40)

— (*with* Shamash, Josephine) 2-blocks and 2-modular characters of the Chevalley groups $G_2(q)$. *Math. Comp.* **59** (1992), *no.* 200, 645–672. (Karin Erdmann) **93a:20020** 20C20 (20C33, 20C40)

Hitchin, Nigel J. Geometric quantization of spaces of connections. *Geometry of low-dimensional manifolds*, 2 (*Durham*, 1989), 97–100, *London Math. Soc. Lecture Note Ser.*, 151, *Cambridge Univ. Press, Cambridge*, 1990. (Editors) **93k:58038** 58D27 (32G13, 53C07, 58F06)

— The symplectic geometry of moduli spaces of connections and geometric quantization. Common trends in mathematics and quantum field theories (Kyoto, 1990). *Progr. Theoret. Phys. Suppl. No.* 102 (1990), 159–174 (1991). (Steven B. Bradlow) **93f:58089** 58F06 (14D20, 32G13, 58D27)

— Lie groups and Teichmüller space. *Topology* **31** (1992), *no.* 3, 449–473. (William Goldman) **93e:32023** 32G13 (32G15, 57M99, 58D27, 58E15)

Hitha, N. (*with* Unnikrishnan Nair, N.) Characterizations of bivariate Lomax and finite range distributions. (English summary) *Calcutta Statist. Assoc. Bull.* **41** (1991), *no.* 161-164, 163–167. (Summary) **93h:62019** 62E10

Hitotumatu, Sin Multiple numerical integration formula using regular lattices. *Approximation, optimization and computing*, 3–8, *North-Holland, Amsterdam*, 1990. (Summary) **93c:65031** 65D30 (41A55)

Hitsuda, Masuyuki Canonical representations of Gaussian processes and integral operators. *Gaussian random fields (Nagoya*, 1990), 214–226, *Ser. Probab. Statist.*, 1, *World Sci. Publishing, River Edge, NJ*, 1991. (Summary) **93j:60046** 60G15

Hittmair, O. (*with* Seke, J.; Herfort, W.; Adam, Gerhard) Nicht-Markoffsche Bewegungsgleichung für die Besetzungszahlinversion und ihre Lösung bei der spontanen Emission eines Zwei-Niveau-Atoms. I. Anwendung der Rotating-Wave-Approximation. [Non-Markovian equation of motion for the inversion of occupancy number and its solution in the spontaneous emission of a two-level atom. I. Application of the rotating wave approximation] *Österreich. Akad. Wiss. Math.-Natur. Kl. Sitzungsber. II* **199** (1990), *no.* 4-7, 103–121. (I. A. Sakmar) **93d:81198** 81V80 (81V45)

— (*with* Seke, J.; Herfort, W.; Adam, Gerhard) Nicht-Markoffsche Bewegungsgleichung für die Besetzungszahlinversion und ihre Lösung bei der spontanen Emission eines Zwei-Niveau-Atoms. II. Berücksichtigung der Counter-Rotating-Terme. [Non-Markovian equation of motion for the inversion of occupancy number and its solution in the spontaneous emission of a two-level atom. II. Consideration of counter-rotating terms] *Österreich. Akad. Wiss. Math.-Natur. Kl. Sitzungsber. II* **199** (1990), *no.* 4-7, 123–130. (I. A. Sakmar) **93d:81199** 81V80 (81V45)

Hivert, Marc (*with* Laboure, Marie-José; Jourlin, Michel) Détection des zones de forte courbure sur la frontière d'un convexe du plan euclidien. [Detection of regions of strong curvature on the boundary of a convex domain in the Euclidean plane] *Publications du Département de Mathématiques. Nouvelle Série. A, Vol.* 1, 67–94, *Publ. Dép. Math. Nouvelle Sér. A*, 89-1, *Univ. Claude-Bernard, Lyon*, 1989. (Introduction) **93d:52002** 52A10

Hjalmarsson, Håkan Estimation of the variability of time-varying systems. (English summary) *Identification and system parameter estimation* 1991, *Vol.* 1,2 (*Budapest*, 1991), 1097–1102, *IFAC Sympos. Ser.*, 3, *Pergamon, Oxford*, 1992. (*see* **93h:93009**) 93C50

— (*with* Ljung, Lennart) Estimating model variance in the case of undermodeling. *IEEE Trans. Automat. Control* **37** (1992), *no.* 7, 1004–1008. 93E10

Hjort, Nils Lid Semiparametric estimation of parametric hazard rates. (English summary) With a discussion by Mike West and Sue Leurgans. *Survival analysis: state of the art (Columbus, OH*, 1991), 211–236, *NATO Adv. Sci. Inst. Ser. E Appl. Sci.*, 211, *Kluwer Acad. Publ., Dordrecht*, 1992. (*see* **93b:62005**) 62G05 (62N05, 62P10)

— (*with* Fenstad, Grete) On the last time and the number of times an estimator is more than ε from its target value. *Ann. Statist.* **20** (1992); *no.* 1, 469–489. (Tapas K. Chandra) **93f:60029** 60F05 (62F12)

Hlaváček, Ivan Shape optimization of elastoplastic bodies by the finite element method. *Proceedings of the Second International Symposium on Numerical Analysis (Prague*, 1987), 150–156, *Teubner-Texte Math.*, 107, *Teubner, Leipzig*, 1988. (*see* **93b:65007**) 73K40 (49Q10, 65K10, 65N30, 73E99, 73V05)

— (*with* Křížek, Michal) Weight minimization of elastic bodies weakly supporting tension. I. Domains with one curved side. (Czech summary) *Appl. Math.* **37** (1992), *no.* 3, 201–240. (Pekka Neittaanmäki) **93c:73029** 73C99 (49Q10, 65K10, 65N30, 73K40, 73V20)

Hlavatý, Ladislav The Painlevé classification of partial differential equations. III. Rational equations with several poles. *J. Math. Phys.* **33** (1992), *no.* 3, 888–894. (Summary) **93a:35030** 35G20 (35Q58)

— New constant and trigonometric 4 × 4 solutions to the Yang-Baxter equations. *J. Phys. A* **25** (1992), *no.* 2, L63–L68. (Summary) **93g:82034** 82B23 (17B37)

— Yang-Baxter matrices and differential calculi on quantum hyperplanes. *J. Phys. A* **25** (1992), *no.* 2, 485–494. (Benjamin David Enriquez) **93b:58015** 58B30 (17B37)

— On solutions of the Yang-Baxter equations without additivity. *J. Phys. A* **25** (1992), *no.* 5, 1395–1397. (Ladislav Šamaj) **93b:82024** 82B23 (17B37, 81R50)

— (*with* Bednář, M.; Burdík, Č.; Couture, Michel Josaphat) On the quantum symmetries associated with the two parameter free fermion model. *J. Phys. A* **25** (1992), *no.* 7, L341–L346. (Dmitrii I. Gurevich) **93c:17023** 17B37 (81R50, 82B23)

Hlawka, Edmund Zur Radontransformation. [On the Radon transform] *Österreich. Akad. Wiss. Math.-Natur. Kl. Sitzungsber. II* **198** (1989), *no.* 8-10, 331–379. (Frank Natterer) **93c:44008** 44A12 (53C65)

— Buffons Nadelproblem und verwandte Probleme behandelt mit der Theorie der Gleichverteilung. (English summary) [Buffon's needle problem and related problems treated with the theory of uniform distribution] *Geom. Dedicata* **41** (1992), *no.* 1, 109–116. (L. A. Santaló) **93e:60025** 60D05 (52A22)

— Buffons Nadelproblem und verwandte Probleme behandelt mit der Theorie der Gleichverteilung. II. (English summary) [Buffon's needle problem and related problems treated with the theory of uniform distribution. II] *Geom. Dedicata* **44** (1992), *no.* 1, 105–110. (L. A. Santaló) **93m:60029** 60D05 (52A22, 53C65)

— Gleichverteilung—Entropie (Das Entropiespiel von T. and P. Ehrenfest) [oder: Über Hausfrauen und Dämone]. (English summary) [Uniform distribution—entropy (The entropy game of T. and P. Ehrenfest) [or: On housewives and demons]] *Exposition. Math.* **11** (1993), *no.* 1, 3–46. (C. A. Hurst) **93m:82001** 82B03 (01A60)

Hlebarska, J. (*with* Atanassov, Krassimir T.; Mihov, S.) Recurrent formulas of the generalized Fibonacci and Tribonacci sequences. *Fibonacci Quart.* **30** (1992), *no.* 1, 77–79. (Shreedhara Prasada Mohanty) **93e:11023** 11B39

Hlibiciuc, A. V. (*with* Lyakhu, A. K.) On finite projection of nonstationary $M/GI/1$ queueing systems. (English, Russian and Moldavian summaries) *Izv. Akad. Nauk Respub. Moldova Mat.* **1992**, *no.* 1, 81–83, 93. (Summary) **93j:60144** 60K25

Hloušek, Zvonimir (*with* Spector, Donald) Understanding solitons algebraically. (English summary) *Modern Phys. Lett. A* **7** (1992), *no.* 36, 3403–3410. (Vladimir Soloviev) **93k:81233** 81T60 (58Z05)

— (*with* Spector, Donald) Topological charges and central charges in (3 + 1)-dimensional supersymmetry. *Phys. Lett. B* **283** (1992), *no.* 1-2, 75–79. (Boris Moiseevich Zupnik) **93d:81175** 81T60

Hlynka, M. (*with* Caron, R. J.; McDonald, James Frederick) On the best case performance of hit and run methods for detecting necessary constraints. *Math. Programming* **54** (1992), *no.* 2, *Ser. A*, 233–249. (E. A. Nurminski) **93d:65062** 65K05 (90C15, 93E35)

Hmamed, A. (*with* Tissir, E.) Further results on the stabilization of time delay systems containing saturating actuators. *Internat. J. Systems Sci.* **23** (1992), *no.* 4, 615–622. (Mikołaj Busłowicz) **93e:93053** 93D15 (34K20, 34K35, 93B50, 93C60)

— (*with* Belhouari, A.; Tissir, E.) Stability of interval matrix polynomial in continuous and discrete cases. *Systems Control Lett.* **18** (1992), *no.* 3, 183–189. (Summary) **93g:93062** 93D09 (93B40, 93C55)

Hmissi, Mohamed Sur l'équation fonctionnelle des cocycles d'un système semi-dynamique. (English summary) [On the functional equation for the cocycles of a semidynamical system] *European Conference on Iteration Theory (Batschuns*, 1989), 149–156, *World Sci. Publishing, River Edge, NJ*, 1991. (W. R. Utz) **93m:54069** 54H20 (39B52)

— Lois de sortie et semi-groupes basiques. (English summary) [Exit laws and basic semigroups] *Manuscripta Math.* **75** (1992), *no.* 3, 293–302. (L. Stoica) **93f:60111** 60J45 (47D03, 47N30)

diem Ho *see* **Diem Ho**

Ho, Chat Yin On bounds for groups of multipliers of planar difference sets. *J. Algebra* **148** (1992), *no.* 2, 325–336. (R. C. Mullin) **93e:05013** 05B10

— Singer groups, an approach from a group of multipliers of even order. *Proc. Amer. Math. Soc.* **119** (1993), *no.* 3, 925–930. (Sharad S. Sane) **93m:51006** 51E15 (05B25, 20B25)

Ho, Chia Shêng *see* **Heh, Jia Sheng**

Ho, Ching-Tien An observation on the bisectional interconnection networks. (English summary) *IEEE Trans. Comput.* **41** (1992), *no.* 7, 873–877. (Summary) **93f:68009** 68M10 (05C90)

Ho, Choon Lin (*with* Hosotani, Yutaka) Anyon equation on a torus. (English summary) *Internat. J. Modern Phys. A* **7** (1992), *no.* 23, 5797–5831. (James E. Hetrick) **93i:81166** 81T20 (20F36, 81V25)

— (*with* Hosotani, Yutaka) Operator algebra in Chern-Simons theory on a torus. (English summary) *Phys. Rev. Lett.* **70** (1993), *no.* 10, 1360–1363. (Summary) **93m:81103** 81T13 (81T10)

Ho, Chung-Wu (*with* Parish, James L.; Shiue, Peter Jau-Shyong) On the sizes of elements in the complement of a submonoid of integers. *Applications of Fibonacci numbers, Vol.* 4 (*Winston-Salem, NC*, 1990), 139–144, *Kluwer Acad. Publ., Dordrecht*, 1991. (B. Garrison) **93i:11032** 11B99 (11P21)

— (*with* Nagasaka, Kenji; Shiue, Peter Jau-Shyong) A fast algorithm of the Chinese remainder theorem and its application to Fibonacci numbers. *Applications of Fibonacci numbers, Vol.* 4 (*Winston-Salem, NC*, 1990), 241–246, *Kluwer Acad. Publ., Dordrecht*, 1991. (Pentti Haukkanen) **93i:11004** 11A07 (11B39)

Ho, Daniel W. C. (*with* Grimble, M. J.; Elsayed, Ahmed) H_∞ robust linear estimator. (English summary) *Adaptive systems in control and signal processing*, 1989 (*Glasgow*), 477–482, *IFAC Sympos. Ser.*, 1990, *No.* 1, *Pergamon, Oxford*, 1990. (*see* **93j:93007**) 93E11 (93B36)

— (*with* Fletcher, L. R.) Extending partial pole placement. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, I* (*Kobe*, 1991), 209–214, *Mita, Tokyo*, 1992. (*see* **93g:93005**) 93B55

Ho, James K. (*with* Lee, Tak C.) Dynamics of information in distributed decision systems. (English summary) *Internat. J. Inform. Management Sci.* **2** (1991), *no.* 1, 95–117. 90C90 (90A05)

— (*with* Birge, John R.) Optimal flows in stochastic dynamic networks with congestion. (English summary) *Oper. Res.* **41** (1993), *no.* 1, 203–216. (Summary) **93i:90044** 90B15

— (*with* Sundarraj, R. P.) A timing model for the revised simplex method. (English summary) *Oper. Res. Lett.* **13** (1993), *no.* 2, 67–73. 90C05

Ho, Lee-Wing (*with* Maday, Yvon; Patera, Anthony T.; Rønquist, Einar M.) A high-order Lagrangian-decoupling method for the incompressible Navier-Stokes equations. (English summary) *Spectral and high order methods for partial differential equations* (*Como*, 1989), 65–90, *North-Holland, Amsterdam*, 1990. (*see* **93d:65005**) 65N06 (65N30, 65N35, 76D05, 76M15, 76M20)

— (*with* Patera, Anthony T.) A Legendre spectral element method for simulation of unsteady incompressible viscous free-surface flows. (English summary) *Spectral and high order methods for partial differential equations* (*Como*, 1989), 355–366, *North-Holland, Amsterdam*, 1990. (*see* **93d:65005**) 65N35 (76D05, 76M25)

Ho, Lop-Hing Exact subelliptic estimates for $n-1$ forms. *Math. Z.* **211** (1992), *no.* 4, 635–641. (Makhlouf Derridj) **93m:32023** 32F20 (35H05, 35N15)

Ho, P. L. (*with* Jiang, Jing Ping; Hinton, J. C.) Parallel processing in optimal control of robot drives. *Control'91, Vol.* 1, 2 (*Edinburgh*, 1991), 376–381, *IEE Conf. Publ. Ser.*, 332, *IEE, London*, 1991. (*see* **93h:93007**) 93B40

Ho, Shinn Jang (*with* Chou, Jyh Horng; Horng, Ing Rong) Robustness of disk-stability for perturbed large-scale systems. (English summary) *Automatica J. IFAC* **28** (1992), *no.* 5, 1063–1066. 93D09 (93A15, 93B55)

Ho, Tien Kung A revised simplex algorithm for LP problem with bounded variables. *Tamsui Oxford J. Management Sci.* **7** (1991), 1–27. (F. Szidarovszky) **93c:90040** 90C05

Ho, W. C. D. *see* **Ho, Daniel W. C.**

Ho, Yu-Chi (*with* Zhang, Bin) Improvements in the likelihood ratio method for steady-state sensitivity analysis and simulation. (English summary) *Performance Evaluation* **15** (1992), *no.* 3, 177–194. (Summary) **93f:93122** 93E10 (93E30)

nguyen quang Hoa *see* **Nguyen Quang Hoa**

Hoa, Lê Tuân *see* **Lê Tuân Hoa**

Hoa, Nguyen Quang *see* **Nguyen Quang Hoa**

le van Hoang *see* **Le Van Hoang**

Hoàng, Chính T. (*with* Maffray, Frédéric; Olariu, Stephan; Preissmann, Myriam) A charming class of perfectly orderable graphs. *Discrete Math.* **102** (1992), *no.* 1, 67–74. (Summary) **93b:05140** 05C75

— (*with* Maffray, Frédéric) On slim graphs, even pairs, and star-cutsets. (English summary) *Discrete Math.* **105** (1992), *no.* 1-3, 93–102. (E. Olaru) **93h:05132** 05C75

— A parallel algorithm for minimum weighted colouring of triangulated graphs. *Theoret. Comput. Sci.* **99** (1992), *no.* 2, 335–344. (Henk Meijer) **93m:05183** 05C85 (68Q22, 68Q25, 68R10)

Hoang, Thanh (*with* Seeger, Alberto) On conjugate functions, subgradients, and directional derivatives of a class of optimality criteria in experimental design. *Statistics* **22** (1991), *no.* 3, 349–368. (Summary) **93b:62102** 62K05

Hoang, Tien H. *see* **Hoang Tien**

Hoang, Tuy *see* **Hoàng Tuy**

Hoàng Hồng So'n (*with* Thoa, P. H.; Nguyen Thuc Loan) Self-tuning adaptive control based on a new parameter estimation method. (English summary) *Intelligent tuning and adaptive control* (*Singapore*, 1991), 345–350, *IFAC Sympos. Ser.*, 1991, *No.* 7, *Pergamon, Oxford*, 1991. (*see* **93i:93007**) 93C40

— (*with* Nguyen Thuc Loan) Time-stable nonlinear filters: stochastic Lyapunov function approach. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, I* (*Kobe*, 1991), 653–658, *Mita, Tokyo*, 1992. (*see* **93g:93005**) 93E11

Hoang Ngoc Long Path integral on non-simply connected space and problem with zero boundary condition. (English and French summaries) *Canad. J. Phys.* **70** (1992), *no.* 5, 375–378. (Summary) **93f:81069** 81S40

Hoang Tien Fuzzy system and fuzzy logic theory in the decision support systems and artificial intelligence. (English summary) *Computational systems analysis*, 343–354, *Elsevier, Amsterdam*, 1992. (*see* **93b:93006**) 93C42 (90A05)

Hoàng Tuy Computing fixed points by global optimization methods. (French summary) *Fixed point theory and applications* (*Marseille*, 1989), 231–243, *Pitman Res. Notes Math. Ser.*, 252, *Longman Sci. Tech., Harlow*, 1991. (Summary) **93a:90063** 90C30 (54H25)

— (*with* Al-Khayyal, Faiz A.) A class of global optimization problems solvable by sequential unconstrained convex minimization. *Recent advances in global optimization* (*Princeton, NJ*, 1991), 141–151, *Princeton Ser. Comput. Sci., Princeton Univ. Press, Princeton, NJ*, 1992. (Zulfiqar Ali Khan) **93b:90084** 90C30 (49M37, 65K10)

Hoàng Văn Lai Splines and numerical solutions with an accuracy $O(h^3)$ for a hyperbolic differential-integral equation. *Math. Balkanica* (*N.S.*) **5** (1991), *no.* 4, 279–296 (1992). (From the summary) **93b:65134** 65M12 (65D07)

Hoang Van Quang (*with* Gaishun, I. V.) Conditions for complete controllability and observability of discrete two-parameter systems. (Russian) *Differentsial'nye Uravneniya* **27** (1991), *no.* 2, 187–193, 363; *translation in Differential Equations* **27** (1991), *no.* 2, 125–130. (From the introduction) **93a:93016** 93B05 (93C55, 93C95)

— (*with* Gaishun, I. V.) Controllability of Roesser systems in a global state space. (Russian. Russian summary) *Differentsial'nye Uravneniya* **28** (1992), *no.* 11, 1871–1881, 2021. (From the introduction) **93m:93011** 93B05 (93C55)

— (*with* Gaishun, I. V.) Solvability of a class of operator equations and controllability of the Roesser system. (Russian) *Dokl. Akad. Nauk SSSR* **322** (1992), *no.* 1, 16–19; *translation in Soviet Math. Dokl.* **45** (1992), *no.* 1, 7–11. (Mietek Brdyś) **93e:47095** 47N20 (47N70, 93B05)

Hoang Xuan Huan A class of calibrated forms on f-manifolds. *Acta Math. Vietnam.* **16** (1991), *no.* 2, 155–170. (J. E. Brothers) **93d:53076** 53C42 (49Q20, 53C15)

Hoare, C. A. R. (*with* Martin, C. E.; He, Jifeng) Pre-adjunctions in order enriched categories. *Math. Structures Comput. Sci.* **1** (1991), *no.* 2, 141–158. (V. Yu. Meltus) **93e:68064** 68Q55 (18D05, 68Q60)

Hobart, S. A. On designs related to coherent configurations of type $\binom{2}{4}^2$. *Discrete Math.* **94** (1991), *no.* 2, 103–127. (J. J. Seidel) **93a:05041** 05B30 (05E30)

— (*with* Kreher, Donald L.; de Caen, D.; Kramer, Earl S.; Radziszowski, Stanisław P.) The parameters 4-(12, 6, 6) and related t-designs. (English summary) *Australas. J. Combin.* **7** (1993), 3–20. (Summary) **93k:05020** 05B05

Hobbs, Arthur M. (*with* Lai, Hong-Jian; Weng, Guoqing; Lai, Hongyuan) Uniformly dense generalized prisms over graphs. (English summary) Proceedings of the Twenty-third Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, FL, 1992). *Congr. Numer.* **91** (1992), 99–105. (Summary) **93m:05164** 05C75

Hobby, David Finding type sets is NP-hard. *Internat. J. Algebra Comput.* **1** (1991), *no.* 4, 437–444. (Joel Berman) **93d:08008** 08B99 (68Q25)

Hobby, John D. Polygonal approximations that minimize the number of inflections. (English summary) *Proceedings of the Fourth Annual ACM-SIAM Symposium on Discrete Algorithms* (*Austin, TX*, 1993), 93–102, *ACM, New York*, 1993. (Summary) **93m:68185** 68U15 (68U10)

Hobley, Keith (*with* Goguen, Joseph A.; Stevens, Andrew; Hilberdink, Hendrik) 2OBJ: a metalogical framework theorem prover based on equational logic. (English summary) *Philos. Trans. Roy. Soc. London Ser. A* **339** (1992), *no.* 1652, 69–86. 68T15 (03B35)

Hobson, D. G. (*with* Rogers, L. C. G.) Recurrence and transience of reflecting Brownian motion in the quadrant. *Math. Proc. Cambridge Philos. Soc.* **113** (1993), *no.* 2, 387–399. (S. Ramasubramanian) **93k:60207** 60J65 (60J30, 60J55)

Hobson, Dana An efficient method for computing invariant manifolds of planar maps. (English summary) *J. Comput. Phys.* **104** (1993), *no.* 1, 14–22. (Summary) **93h:58089** 58F12 (58F08)

Hoch, Jeffrey C. (*with* Donoho, David L.; Johnstone, Iain M.; Stern, Alan S.) Maximum entropy and the nearly black object. With discussion and a reply by the authors. *J. Roy. Statist. Soc. Ser. B* **54** (1992), *no.* 1, 41–81. (P. N. Rathie) **93d:62010** 62B10 (94A17)

Hochbaum, Dorit S. (*with* Shamir, Ron; Shanthikumar, J. George) A polynomial algorithm for an integer quadratic nonseparable transportation problem. *Math. Programming* **55** (1992), *no.* 3, *Ser. A*, 359–371. (N. I. Yanev) **93e:90041** 90C09 (90B35, 90C20, 90C27)

— An exact sublinear algorithm for the max-flow, vertex disjoint paths and communication problems on random graphs. (English summary) *Oper. Res.* **40** (1992), *no.* 5, 923–935. 90B10

— Why should biconnected components be identified first? (English summary) Combinatorial structures and algorithms. *Discrete Appl. Math.* **42** (1993), *no.* 2-3, 203–210. (Summary) **93m:90090** 90C35 (05C40, 05C85, 90C27)

Hochberg, David (*with* Kephart, Thomas W.) Wormhole cosmology and the horizon problem. (English summary) *Phys. Rev. Lett.* **70** (1993), *no.* 18, 2665–2668. (Summary) **93m:83072** 83E05 (83F05)

Hochberg, K. J. (*with* Dawson, Donald A.; Wu, Yadong) Multilevel branching systems. *White noise analysis* (*Bielefeld*, 1989), 93–107, *World Sci. Publishing, River Edge, NJ*, 1990. (Summary) **93b:60191** 60J80 (60G57)

— (*with* Dawson, Donald A.) A multilevel branching model. *Adv. in Appl. Probab.* **23** (1991), *no.* 4, 701–715. (Thomas G. Kurtz) **93d:60139** 60J80 (60G57)

Hochberg, Robert (*with* O'Donnell, Paul) A large independent set in the unit distance graph. *Geombinatorics* **2** (1993), *no.* 4, 83–84. 05C15

Hochbruck, M. (*with* Freund, Roland W.) A biconjugate gradient-type algorithm for the iterative solution of non-Hermitian linear systems on massively parallel architectures. (English summary) *Computational and applied mathematics, I* (*Dublin*, 1991), 169–178, *North-Holland, Amsterdam*, 1992. (*see* **93j:00007**) 65Y05 (65F10)

Hochmuth, R. (*with* Doppel, K.) On the regularity of solutions of a homogeneous Dirichlet problem for a nonhypoelliptic linear partial differential operator. *Ann. Acad. Sci. Fenn. Ser. A I Math.* **16** (1991), *no.* 1, 183–198. (Min You Qi) **93m:35034** 35B65 (35G15, 35H05, 46E35)

Hochster, Melvin (*with* Huneke, Craig L.) Phantom homology. *Mem. Amer. Math. Soc.* **103** (1993), *no.* 490, vi+91 *pp.* (Matthew Miller) **93j:13020** 13D25 (13A35, 13C14, 14C17)

Hochstrasser, Bernhard A note on Winkler's algorithm for factoring a connected graph. (English summary) Algebraic graph theory (Leibnitz, 1989). *Discrete Math.* **109** (1992), *no.* 1-3, 127–132. (Peter B. Gibbons) **93m:05152** 05C70 (68R10)

Hochwald, Scott (*with* Tong, Jing Cheng) Some developments of Fagnano's problem. *Nieuw Arch. Wisk.* (4) **10** (1992), *no.* 1-2, 11–18. (E. J. F. Primrose) **93h:51020** 51M04

Hock, J. L. (*with* McQuistan, R. B.) Composite nearest-neighbor degeneracies for several kinds of simple particles distributed on two-dimensional, square-cell lattices. *J. Math. Phys.* **33** (1992), *no.* 8, 2877–2883. (Kornél Szlachányi) **93k:82012** 82B20

Hockett, Kevin Numerical dynamics of ordinary differential equations with singularity. *Proc. Amer. Math. Soc.* **117** (1993), *no.* 2, 369–379. (Timothy Sauer) **93d:58099** 58F13 (34A50, 34C99, 65L99)

Hocking, Graeme C. Flow from a vertical slot into a layer of finite depth. *Appl. Math. Modelling* **16** (1992), *no.* 6, 300–306. (Summary) **93b:76008** 76B10

— (*with* Forbes, Lawrence K.) Subcritical free-surface flow caused by a line source in a fluid of finite depth. (English summary) *J. Engrg. Math.* **26** (1992), *no.* 4, 455–466. (Summary) **93g:76021** 76B15

— (*with* Forbes, Lawrence K.) Flow induced by a line sink in a quiescent fluid with surface-tension effects. (English summary) *J. Austral. Math. Soc. Ser. B* **34** (1993), *no.* 3, 377–391. (Summary) **93k:76009** 76B10 (76B45)

Hocking, Leslie M. Rival contact-angle models and the spreading of drops. *J. Fluid Mech.* **239** (1992), 671–681. (Summary) **93a:76035** 76D45

— (*with* Miksis, Michael J.) Stability of a ridge of fluid. (English summary) *J. Fluid Mech.* **247** (1993), 157–177. (Summary) **93m:76044** 76E99 (76D45, 76D99)

Hodel, A. Scottedward (*with* Poolla, Kameshwar) Parallel solution of large Lyapunov equations. (English summary) *SIAM J. Matrix Anal. Appl.* **13** (1992), *no.* 4, 1189–1203. (Summary) **93e:65042** 65F05 (15A06, 65F10, 65Y05)

Hodes, Harold T. Where do sets come from? *J. Symbolic Logic* **56** (1991), *no.* 1, 150–175. (Yehuda Rav) **93c:03006a** 03A05

— Corrections to: "Where do sets come from?". *J. Symbolic Logic* **56** (1991), *no.* 4, 1486. (Yehuda Rav) **93c:03006b** 03A05

Hodges, James S. (*with* Draper, David; Mallows, Colin L.; Pregibon, Daryl) Exchangeability and data analysis. (English summary) With discussion. *J. Roy. Statist. Soc. Ser. A* **156** (1993), *no.* 1, 9–37. (Summary) **93j:62010** 62A99 (62E10)

Hodges, Ken (*with* Bergstrand, Deborah; Jennings, George; Kuklinski, Lisa; Wiener, Janet; Harary, Frank) Product graphs are sum graphs. (English summary) *Math. Mag.* **65** (1992), *no.* 4, 262–264. (Summary) **93g:05117** 05C75

Hodges, Wilfrid (*with* Shelah, Saharon) There are reasonably nice logics. *J. Symbolic Logic* **56** (1991), *no.* 1, 300–322. (Martin Weese) **93h:03055** 03C80 (03C40, 03C95)

Hodgson, Bernard R. On some number sequences related to the parity of binomial coefficients. *Fibonacci Quart.* **30** (1992), *no.* 1, 35–47. (G. L. Alexanderson) **93b:11013** 11B39 (05A10)

Hodgson, Craig D. (*with* Bleiler, Steven A.) Spherical space forms and Dehn surgery. *Knots* 90 (*Osaka*, 1990), 425–433, *de Gruyter, Berlin*, 1992. (G. Burde) **93k:57008** 57M25 (57M50)

— Deduction of Andreev's theorem from Rivin's characterization of convex hyperbolic polyhedra. (English summary) *Topology* '90 (*Columbus, OH*, 1990), 185–193, *Ohio State Univ. Math. Res. Inst. Publ.*, 1, *de Gruyter, Berlin*, 1992. (B. N. Apanasov) **93h:57022** 57M50 (52A55)

— (*with* Meyerhoff, Robert; Weeks, Jeffrey R.) Surgeries on the Whitehead link yield geometrically similar manifolds. (English summary) *Topology* '90 (*Columbus, OH*, 1990), 195–206, *Ohio State Univ. Math. Res. Inst. Publ.*, 1, *de Gruyter, Berlin*, 1992. (Dave Auckly) **93i:57019** 57M50 (57N10)

— (*with* Rivin, Igor; Smith, Warren D.) A characterization of convex hyperbolic polyhedra and of convex polyhedra inscribed in the sphere. *Bull. Amer. Math. Soc.* (*N.S.*) **27** (1992), *no.* 2, 246–251. (Wolfgang Kühnel) **93a:52009** 52B12 (51M10, 52A55, 68U05)

— (*with* Rivin, Igor; Smith, Warren D.) Erratum: "A characterization of convex hyperbolic polyhedra and of convex polyhedra inscribed in the sphere" [Bull. Amer. Math. Soc. (N.S.) **27** (1992), no. 2, 246–251; MR 93a:52009]. *Bull. Amer. Math. Soc.* (*N.S.*) **28** (1993), *no.* 1, 213. (From the text) **93i:52018** 52B12 (51M10, 52A55, 68U05)

— (*with* Tysk, Johan) Eigenvalue estimates and isoperimetric inequalities for cone-manifolds. (English summary) *Bull. Austral. Math. Soc.* **47** (1993), *no.* 1, 127–143. (Srinivasan Kesavan) **93m:58114** 58G25 (35P15)

— (*with* Rivin, Igor) A characterization of compact convex polyhedra in hyperbolic 3-space. (English summary) *Invent. Math.* **111** (1993), *no.* 1, 77–111. (Feng Luo) **93j:52015** 52A55 (52A15, 53C23, 53C45)

Hodgson, S. P. (*with* Stoten, D. P.) The application of the minimal control synthesis algorithm to the hybrid control of a class 1 manipulator. (English summary) *Internat. J. Control* **56** (1992), *no.* 3, 499–513. 93C85 (70B15, 70Q05)

Ho Dinh Duan On associated primes of modules over a noncommutative Gorenstein ring. *Acta Math. Vietnam.* **17** (1992), *no.* 1, 113–126. (Robert Wisbauer) **93i:16058** 16W60 (16S32, 16W50)

Hodkinson, I. M. (*with* Gabbay, D. M.) An axiomatization of the temporal logic with Until and Since over the real numbers. *J. Logic Comput.* **1** (1990), *no.* 2, 229–259. (N. B. Cocchiarella) **93h:03015** 03B45

Hoechsmann, Klaus Exotic units in group rings of rank p^2. *Arch. Math.* (*Basel*) **58** (1992), *no.* 3, 239–247. (Ashwani Kumar Bhandari) **93a:20011** 20C05 (16S34)

— Local units and circular index in abelian p-group rings. (English summary) *J. Pure Appl. Algebra* **82** (1992), *no.* 3, 253–272. (Jürgen Ritter) **93i:20006** 20C05 (16U60)

— Constructing units in commutative group rings. *Manuscripta Math.* **75** (1992), *no.* 1, 5–23. (From the introduction) **93j:20011** 20C05

Hoede, Cornelis A characterization of consistent marked graphs. *J. Graph Theory* **16** (1992), *no.* 1, 17–23. (Anthony E. Barkauskas) **93b:05141** 05C75 (05C38)

ver Hoef, Jay M. *see* **Ver Hoef, Jay M.**

Hoefer, Edwin T. Harmonic functions of three real variables. *Complex Variables Theory Appl.* **18** (1992), *no.* 1-2, 27–31. (Tom Carroll) **93f:31007** 31B10

Hoegh-Krohn, Raphael (*with* Albeverio, Sergio; Surgailis, Donatas) Some Euclidean integer-valued random fields with Markov properties. (English summary) *Ideas and methods in mathematical analysis, stochastics, and applications* (*Oslo*, 1988), 93–114, *Cambridge Univ. Press, Cambridge*, 1992. (Summary) **93i:60180** 60K35 (60G60, 82B05)

— (*with* Albeverio, Sergio; Fenstad, Jens Erik; Karwowski, Witold; Lindstrøm, Tom) Schrödinger operators with potentials supported by null sets. (English summary) *Ideas and methods in quantum and statistical physics* (*Oslo*, 1988), 63–95, *Cambridge Univ. Press, Cambridge*, 1992. (Sylvie Paycha) **93m:81025** 81Q10 (31B99, 35J10, 47F05, 47N50, 81Q15)

— (*with* Albeverio, Sergio; Blanchard, Philippe; Gandolfo, Daniel; Mebkhout, Mohammed) Morphology and classification of galaxies. A stochastic model. (English summary) *Ideas and methods in quantum and statistical physics* (*Oslo*, 1988), 447–460, *Cambridge Univ. Press, Cambridge*, 1992. (Summary) **93g:85005** 85A35

— *see also* **Ideas and methods in mathematical analysis, stochastics, and applications, 93e:00033** *and* **Ideas and methods in quantum and statistical physics, 93e:00034**

Hoehnke, Hans-Jürgen On the internal structure of fractegories. *Semigroups with applications* (*Oberwolfach*, 1991), 6–10, *World Sci. Publishing, River Edge, NJ*, 1992. (Walter Tholen) **93m:18014** 18D99

— (*with* Johnson, Kenneth Walter) The 1-, 2-, and 3-characters determine a group. *Bull. Amer. Math. Soc.* (*N.S.*) **27** (1992), *no.* 2, 243–245. (Roderick Gow) **93d:20017** 20C15

van der Hoek, John (*with* Cannon, John R.; Lin, Yan Ping) Semi-linear heat equation subject to the specification of energy. (English summary) *Modeling and analysis of diffusive and advective processes in geosciences*, 40–51, *SIAM, Philadelphia, PA*, 1992. (Summary) **93f:35098** 35K55 (35B30)

van der Hoek, W. (*with* Meyer, J.-J. Ch.) Possible logics for belief. (English summary) *Logique et Anal.* (*N.S.*) **32** (1989), *no.* 127-128, 177–194. 03B45

Hoekstra, Robert M. (*with* Ghosh, Malay) Asymptotically pointwise optimal stopping rules. *Handbook of sequential analysis*, 429–439, *Statist. Textbooks Monographs*, 118, *Dekker, New York*, 1991. (*see* **93g:62102**) 62L15

Hoekzema, Dick J. Contextual quantum process theory. *Found. Phys.* **22** (1992), *no.* 4, 467–486. (Jeffrey Bub) **93f:81014** 81P05 (81P15)

— Quantum event theory: a Tetrode-Fokker version of quantum field theory. *Found. Phys.* **22** (1992), *no.* 4, 487–506. (Jeffrey Bub) **93f:81152** 81T99 (81P05)

Hoenders, B. J. (*with* Slump, C. H.) On the determination of the number and multiplicity of zeros of a function. (German summary) *Computing* **47** (1992), *no.* 3-4, 323–336. (Miodrag Petković) **93e:65076** 65H05

Hoenselaers, Cornelius (*with* Schief, Wolfgang K.) Prolongation structures for Harry Dym type equations and Bäcklund transformations of CC ideals. *J. Phys. A* **25** (1992), *no.* 3, 601–622. (Marek Antonowicz) **93f:58099** 58F07 (17B67, 35B60, 35Q40, 58F37)

Hof, A. (*with* van Enter, Aernout C. D.; Miękisz, Jacek) Overlap distributions for deterministic systems with many pure states. (English summary) *J. Phys. A* **25** (1992), *no.* 18, L1133–L1137. (Dimitri Petritis) **93i:82045** 82B44 (82B26)

im Hof, H.-C. *see* **Im Hof, H.-C.**

van den Hof, Paul M. J. (*with* de Vries, Douwe K.; Schoen, Peter) On relaxed delay structure conditions in closed loop identifiability problems. (English summary) *Identification and system parameter estimation* 1991, *Vol.* 1,2 (*Budapest*, 1991), 1091–1096, *IFAC Sympos. Ser.*, 3, *Pergamon, Oxford*, 1992. (*see* **93h:93009**) 93B30

— Discriminability of linear models under closed loop observations. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, I* (*Kobe*, 1991), 233–238, *Mita, Tokyo*, 1992. (*see* **93g:93005**) 93B06 (93C05)

— (*with* de Vries, Douwe K.; Schoen, Peter) Delay structure conditions for identifiability of closed loop systems. (English summary) *Automatica J. IFAC* **28** (1992), *no.* 5, 1047–1050. (Summary) **93f:93041** 93B30 (93B52)

— System order and structure indices of linear systems in polynomial form. *Internat. J. Control* **55** (1992), *no.* 6, 1471–1490. (Summary) **93b:93071** 93C70 (93C05, 93C55)

Hofbauer, Dieter Termination proofs by multiset path ordering simply primitive recursive derivation lengths. (English summary) Second International Conference on Algebraic and Logic Programming (Nancy, 1990). *Theoret. Comput. Sci.* **105** (1992), *no.* 1, 129–140. (Summary) **93h:68068** 68Q42 (68Q25)

Hofbauer, Franz An inequality for the Ljapunov exponent of an ergodic invariant measure for a piecewise monotonic map of the interval. *Lyapunov exponents* (*Oberwolfach*, 1990), 227–231, *Lecture Notes in Math.*, 1486, *Springer, Berlin*, 1991. (Ladislav Andrey) **93j:58073** 58F11

— (*with* Raith, Peter) The Hausdorff dimension of an ergodic invariant measure for a piecewise monotonic map of the interval. *Canad. Math. Bull.* **35** (1992), *no.* 1, 84–98. (Jincheng Xiong) **93c:58113** 58F11 (26A18, 28D20, 58F03)

Hofer, Helmut Symplectic capacities. *Geometry of low-dimensional manifolds*, 2 (*Durham*, 1989), 15–34, *London Math. Soc. Lecture Note Ser.*, 151, *Cambridge Univ. Press, Cambridge*, 1990. (Nikolai K. Smolentsev) **93f:53037** 53C23 (53C15, 57S25, 58F05)

— Symplectic invariants. *Proceedings of the International Congress of Mathematicians, Vol. I, II* (*Kyoto*, 1990), 521–528, *Math. Soc. Japan, Tokyo*, 1991. (Nikolai K. Smolentsev) **93b:58053** 58F05 (53C15, 53C23, 57S05)

— Properties of symplectic maps. *Progress in variational methods in Hamiltonian systems and elliptic equations* (*L'Aquila*, 1990), 113–118, *Pitman Res. Notes Math. Ser.*, 243, *Longman Sci. Tech., Harlow*, 1992. (Yong-Geun Oh) **93g:58049** 58F05

— (*with* Zehnder, Eduard) Andreas Floer, 1956–1991. *Topological and geometrical methods in field theory* (*Turku*, 1991), xi, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93m:81008**) 01A70

— (*with* Viterbo, Claude) The Weinstein conjecture in the presence of holomorphic spheres. *Comm. Pure Appl. Math.* **45** (1992), *no.* 5, 583–622. (Nikolai K. Smolentsev) **93h:58055** 58F05 (53C15, 53C23, 57R15)

— (*with* Eliashberg, Yakov) Towards the definition of symplectic boundary. *Geom. Funct. Anal.* **2** (1992), *no.* 2, 211–220. (Nikolai K. Smolentsev) **93c:58069** 58F05 (53C23, 57R32, 58F18)

Hofer, R. D. (*with* Magill, K. D., Jr.) On the simplicity of sandwich near-rings. *Acta Math. Hungar.* **60** (1992), *no.* 1-2, 51–60. (John D. P. Meldrum) **93i:16064** 16Y30 (16W80, 22A99)

Höfer, Thomas Remarks on torus principal bundles. *J. Math. Kyoto Univ.* **33** (1993), *no.* 1, 227–259. (Claire Voisin) **93m:32042** 32L05 (14L30, 55T99, 57R22)

Hofestädt, Ralf (*with* Hörkens, Ulrich) Cellular automata simulation shell. (English summary) *Computational systems analysis* 1992 (*Berlin*, 1992), 325–330, *Elsevier, Amsterdam*, 1992. (*see* **93e:00021**) 68Q80 (68Q75)

Hoff, David Global well-posedness of the Cauchy problem for the Navier-Stokes equations of nonisentropic flow with discontinuous initial data. *J. Differential Equations* **95** (1992), *no.* 1, 33–74. (A. Elcrat) **93f:35178** 35Q30 (35R05, 76N10)

Hoffend, T. R., Jr. (*with* Kaul, Raj K.) Relativistic theory of superpotentials for a nonhomogeneous spatially isotropic medium. (English summary) *Gen. Relativity Gravitation* **24** (1992), *no.* 11, 1143–1168. (Summary) **93g:83059** 83C50

Hoffman, A. J. On simple combinatorial optimization problems. (English summary) A collection of contributions in honour of Jack van Lint. *Discrete Math.* **106/107** (1992), 285–289. (Summary) **93d:90051** 90C27

— (*with* Barnes, E. R.; Rothblum, Uriel G.) Optimal partitions having disjoint convex and conic hulls. *Math. Programming* **54** (1992), *no.* 1, *Ser. A*, 69–86. (Frank K. Hwang) **93d:05014** 05A18 (52A20, 65K10, 90C05)

Hoffman, Cornelius On von Neumann's concept of metric comparability. *Stud. Cerc. Mat.* **44** (1992), *no.* 4, 301–304. (Janusz Pawlikowski) **93m:04004** 04A20 (28A25)

Hoffman, David A. (*with* Karcher, Hermann; Rosenberg, Harold) Embedded minimal annuli in $\mathbf{R}^3$ bounded by a pair of straight lines. *Comment. Math. Helv.* **66** (1991), *no.* 4, 599–617. (Cun-Jin Sun) **93d:53012** 53A10

— (*with* Rosenberg, Harold; Spruck, Joel) Boundary value problems for surfaces of constant Gauss curvature. *Comm. Pure Appl. Math.* **45** (1992), *no.* 8, 1051–1062. (Friedrich Sauvigny) **93h:53009** 53A10 (35J60)

Hoffman, David K. (*with* Sharafeddin, Omar A.; Bowen, H. Ferrel; Kouri, Donald J.) Numerical evaluation of spherical Bessel transforms via fast Fourier transforms. *J. Comput. Phys.* **100** (1992), *no.* 2, 294–296. (From the introduction) **93c:65028** 65D20 (33C55, 44A15, 65T20)

Hoffman, Dean G. (*with* Leonard, D. A.; Lindner, Charles C.; Phelps, Kevin T.; Rodger, Chris A.; Wall, J. R.) ★ Coding theory. The essentials. Monographs and Textbooks in Pure and Applied Mathematics, 150. *Marcel Dekker, Inc., New York*, 1991. xiv+277 *pp. ISBN* 0-8247-8611-4 (Jonathan I. Hall) **93d:94001** 94–01 (94Bxx)
— (*with* Colbourn, Charles J.; Phelps, Kevin T.; Rödl, Vojtěch; Winkler, Peter M.) The number of t-wise balanced designs. *Combinatorica* **11** (1991), *no.* 3, 207–218. (Summary) **93b:05014** 05B05
— (*with* Lindner, Charles C.; Phelps, Kevin T.) Blocking sets in designs with block size four. II. *Discrete Math.* **89** (1991), *no.* 3, 221–229. (M. J. Grannell) **93a:05018** 05B05
— (*with* Colbourn, Charles J.; Rodger, Chris A.) Directed star decompositions of directed multigraphs. *Discrete Math.* **97** (1991), *no.* 1-3, 139–148. (Ian Anderson) **93b:05138** 05C75 (05C20)
— (*with* Colbourn, Charles J.; Lindner, Charles C.) Intersections of $S(2,4,v)$ designs. (English summary) *Ars Combin.* **33** (1992), 97–111. (Jozef Širáň) **93h:05016** 05B05
— (*with* Butler, R. A. R.) Intersections of group divisible triple systems. (English summary) *Ars Combin.* **34** (1992), 268–288. (Summary) **93i:05022** 05B07
— (*with* Billington, Elizabeth J.) Pairs of simple balanced ternary designs with prescribed numbers of triples in common. *Australas. J. Combin.* **5** (1992), 59–71. (Summary) **93a:05015** 05B05
— (*with* Colbourn, Charles J.; Rees, Rolf Stephen) A new class of group divisible designs with block size three. *J. Combin. Theory Ser. A* **59** (1992), *no.* 1, 73–89. (David E. Woolbright) **93f:05015** 05B05
— (*with* Rodger, Chris A.) The chromatic index of complete multipartite graphs. *J. Graph Theory* **16** (1992), *no.* 2, 159–163. (Bradley W. Jackson) **93g:05051** 05C15
Hoffman, Donald D. (*with* Bennett, Bruce M.; Kakarala, Ramakrishna) Modeling performance in observer theory. (English summary) *J. Math. Psych.* **37** (1993), *no.* 2, 220–240. 92J30
Hoffman, Lorrie L. Characterizing linear birth and death processes. (English summary) *J. Amer. Statist. Assoc.* **87** (1992), *no.* 420, 1183–1187. (Summary) **93k:60213** 60J80
Hoffman, Peter N. Projective representations of S_n: ring structure and inductive formulae. *Topics in algebra, Part 2* (*Warsaw*, 1988), 289–297, *Banach Center Publ.*, 26, *Part 2*, *PWN, Warsaw*, 1990. (Davison Theo) **93g:20025** 20C25
— Functors which produce Specht modules. *J. Pure Appl. Algebra* **80** (1992), *no.* 2, 139–158. (Thomas Scharf) **93g:20027** 20C30 (05E10, 20J05)
Hoffman, Todd (*with* Mitchem, John; Schmeichel, Edward) On edge-coloring graphs. *Ars Combin.* **33** (1992), 119–128. (Arthur T. White) **93e:05030** 05C15
Hoffmann, Achim G. Connectionist functionality and the emergent network behavior. *Neurocomputing* **2** (1991), *no.* 4, 161–172. (John Pedersen) **93d:68036** 68Q30 (68T05, 92B20)
Hoffmann, Christoph M. (*with* Vaněček, George, Jr.) Fundamental techniques for geometric and solid modeling. *Control and dynamic systems, Vol.* 48, 101–165, *Academic Press, San Diego, CA*, 1991. (Michael Kallay) **93c:68109** 68U07 (51–04, 65D17)
Hoffmann, Dieter (*with* Laitko, Hubert) Positionen zu Ernst Mach. [Viewpoints regarding Ernst Mach] *Ernst Mach* (*German*), 13–103, *Deutscher Verlag Wissensch., Berlin*, 1991. (*see* **93g:01095**) 01A70 (00A30)
— (*with* Schäfke, Friedrich Wilhelm) ★ Integrale. (German) [Integrals] *Bibliographisches Institut, Mannheim*, 1992. xiv+333 *pp. ISBN* 3-411-15431-4 (From the introduction) **93g:26001** 26–02 (28–02)
— *see also* **Ernst Mach, 93g:01095**
Hoffmann, Frank (*with* Kaufmann, Michael; Kriegel, Klaus) The art gallery theorem for polygons with holes. (English summary) 32*nd Annual Symposium on Foundations of Computer Science* (*San Juan, PR*, 1991), 39–48, *IEEE Comput. Soc. Press, Los Alamitos, CA*, 1991. (Summary) **93i:68175** 68U05
Hoffmann, Karl-Heinz[1] (*with* Chen, Zhi Ming) Numerical solutions of the optimal control problem governed by a phase field model. *Estimation and control of distributed parameter systems* (*Vorau*, 1990), 79–97, *Internat. Ser. Numer. Math.*, 100, *Birkhäuser, Basel*, 1991. (Fredi Tröltzsch) **93e:49047** 49M25 (49J20, 49M30, 65K10)
— (*with* Knabner, Peter; Seifert, W.) Adaptive methods for parameter identification in ground water hydrology. *Adv. in Water Res.* **14** (1991), *no.* 5, 220–239. (From the summary) **93a:76076** 76M25 (35J25, 35R30, 76S05, 86A05)
— (*with* Khludnev, A. M.) A variational inequality in a contact elastoplastic problem for a bar. *Adv. Math. Sci. Appl.* **1** (1992), *no.* 1, 127–136. (Summary) **93a:73072** 73T05 (49J40, 73E99, 73V25)
— (*with* Żochowski, A.) Existence of solutions of some nonlinear thermoelastic systems with viscosity. *Math. Methods Appl. Sci.* **15** (1992), *no.* 3, 187–204. (Song Jiang) **93d:73013** 73B30 (35Q99, 80A22)
— (*with* Żochowski, A.) Analysis of the thermoelastic model of a plate with nonlinear shape memory alloy reinforcements. (English summary) *Math. Methods Appl. Sci.* **15** (1992), *no.* 9, 631–645. (Summary) **93i:35146** 35Q72 (73B30, 73K10)
— (*with* Jiang, Li Shang) Optimal control of a phase field model for solidification. *Numer. Funct. Anal. Optim.* **13** (1992), *no.* 1-2, 11–27. (Summary) **93h:35218** 35R35 (35B37, 49K20, 80A22)
— (*with* Zou, Jun) Parallel algorithms of Schwarz variant for variational inequalities. (English summary) *Numer. Funct. Anal. Optim.* **13** (1992), *no.* 5-6, 449–462. (Ya. I. Al'ber) **93k:65050** 65J15 (47H19, 49J40, 65K05, 65Y05)
— *see also* **Optimal control of partial differential equations, 93b:49002**
Hoffmann, Kurt ★ Improved estimation of distribution parameters: Stein-type estimators. With German, French and Russian summaries. Teubner-Texte zur Mathematik [Teubner Texts in Mathematics], 128. *B. G. Teubner Verlagsgesellschaft mbH, Stuttgart*, 1992. 174 *pp. ISBN* 3-8154-2028-8 (Khursheed Alam) **93i:62001** 62–02
Hoffmann, Michael H. W. On the numerical computation of phase-space-trajectories. (English summary) *Computational systems analysis* 1992 (*Berlin*, 1992), 307–312, *Elsevier, Amsterdam*, 1992. (Summary) **93g:65106** 65L99
Hoffmann, T. Extended phenomenological electrodynamics. (Russian and Polish summaries) *J. Tech. Phys.* **32** (1991), *no.* 1, 3–15. (Gérard A. Maugin) **93a:78008** 78A25 (78A02)
— Surface effects in generalized phenomenological electrodynamics. (Russian and Polish summaries) *J. Tech. Phys.* **32** (1991), *no.* 3-4, 339–345 (1992). (Introduction) **93c:78006** 78A25 (78A55)
Hoffmann-Jørgensen, J. *see* **Functional analysis, 93m:60008**
Hoffmann-Ostenhof, M. (*with* Hoffmann-Ostenhof, T.) On nodes of local solutions to Schrödinger equations. *Differential equations with applications in biology, physics, and engineering* (*Leibnitz*, 1989), 201–208, *Lecture Notes in Pure and Appl. Math.*, 133, *Dekker, New York*, 1991. (*see* **93a:00021**) 35J10 (34L40)
— (*with* Hoffmann-Ostenhof, T.) Local properties of solutions of Schrödinger equations. *Comm. Partial Differential Equations* **17** (1992), *no.* 3-4, 491–522. (Maria J. Esteban) **93d:35033** 35J10 (35C10)
Hoffmann-Ostenhof, T. (*with* Hoffmann-Ostenhof, M.) On nodes of local solutions to Schrödinger equations. *Differential equations with applications in biology, physics, and engineering* (*Leibnitz*, 1989), 201–208, *Lecture Notes in Pure and Appl. Math.*, 133, *Dekker, New York*, 1991. (*see* **93a:00021**) 35J10 (34L40)
— (*with* Hoffmann-Ostenhof, M.) Local properties of solutions of Schrödinger equations. *Comm. Partial Differential Equations* **17** (1992), *no.* 3-4, 491–522. (Maria J. Esteban) **93d:35033** 35J10 (35C10)
Hoffstein, Jeffrey (*with* Bump, Daniel; Duke, W.; Iwaniec, Henryk) An estimate for the Hecke eigenvalues of Maass forms. *Internat. Math. Res. Notices* **1992,** *no.* 4, 75–81. (M. Ram Murty) **93d:11047** 11F11 (11F37, 11F66, 11F70)
— (*with* Rosen, Michael I.) Average values of L-series in function fields. *J. Reine Angew. Math.* **426** (1992), 117–150. (Kazuyuki Hatada) **93c:11022** 11E41 (11R29, 11R58)
Hofmann, Gerald On topological tensor-algebras. (German summary) *Wiss. Z. Karl-Marx-Univ. Leipzig Math.-Natur. Reihe* **39** (1990), *no.* 6, 598–622. (Summary) **93e:46085** 46M05 (46H05, 81T05)
— On the closed hull of subsets of inductive limits. *Publ. Res. Inst. Math. Sci.* **27** (1991), *no.* 5, 813–826. (M. Valdivia) **93e:46002** 46A13
— On algebraic $\sharp$-cones in topological tensor-algebras. I. Basic properties and normality. (English summary) *Publ. Res. Inst. Math. Sci.* **28** (1992), *no.* 3, 455–494. (Julio Alcántara-Bode) **93i:46133** 46M05 (46K99, 81T05)
Hofmann, Karl H. (*with* Strambach, Karl) Topological and analytic loops. *Quasigroups and loops: theory and applications*, 205–262, *Sigma Ser. Pure Math.*, 8, *Heldermann, Berlin*, 1990. (*see* **93g:20133**) 22A30 (20N05)
— (*with* Morris, Sidney A.) Free compact groups. V. Remarks on projectivity. *Category theory at work* (*Bremen*, 1990), 177–198, *Res. Exp. Math.*, 18, *Heldermann, Berlin*, 1991. (Summary) **93h:22007** 22C05 (18B30)
— (*with* Morris, Sidney A.) Free compact groups. IV. Splitting the component and the structure of the commutator group. Proceedings of the Conference on Locales and Topological Groups (Curaçao, 1989). *J. Pure Appl. Algebra* **70** (1991), *no.* 1-2, 89–96. (Introduction) **93b:22004** 22C05 (18A22, 18B99)
— (*with* Strambach, Karl) Idempotent multiplications on surfaces and aspherical spaces. *Rocky Mountain J. Math.* **21** (1991), *no.* 4, 1279–1315. (M. Arkowitz) **93c:55011** 55P45 (55P20)
— (*with* Ruppert, W. A. F.) The divisibility problem for subsemigroups of Lie groups. Seminar Sophus Lie (Darmstadt, 1991). *Sem. Sophus Lie* **1** (1991), *no.* 2, 205–213. (Joachim Hilgert) **93e:22014** 22E15 (22A15)
— A memo on the exponential function and regular points. *Arch. Math.* (*Basel*) **59** (1992), *no.* 1, 24–37. (Gestur Olafsson) **93i:22005** 22E15 (22E20)
— Compact elements in solvable real Lie algebras. *Sem. Sophus Lie* **2** (1992), *no.* 1, 41–55. (Rolf Farnsteiner) **93k:17016** 17B30
— *see also* **Poguntke, Detlev, 93i:22006**
Hofmann, Steve A weak molecule condition for certain Triebel-Lizorkin spaces. *Studia Math.* **101** (1992), *no.* 2, 113–122. (H. Triebel) **93a:46057** 46E35
— A note on weighted Sobolev spaces, and regularity of commutators and layer potentials associated to the heat equation. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 4, 1087–1096. (Margaret A. M. Murray) **93j:42003** 42A50 (35K05, 42B25, 47N20)
— (*with* Han, Yong Sheng) T1 theorems for Besov and Triebel-Lizorkin spaces. *Trans. Amer. Math. Soc.* **337** (1993), *no.* 2, 839–853. (H. Triebel) **93h:46038** 46E35 (42B20, 47G10)
Hofmann, Wolf (*with* Zheng, Qinghua) Autonomous oscillations in connection with noncontinuous regulations. *Proceedings of the Second International Symposium on Numerical Analysis* (*Prague*, 1987), 157–161, *Teubner-Texte Math.*, 107, *Teubner, Leipzig*, 1988. (*see* **93b:65007**) 65J15 (47H17)
Hofmeister, M. Isomorphisms and automorphisms of graph coverings. *Discrete Math.* **98** (1991), *no.* 3, 175–183. (Martin Škoviera) **93f:05037** 05C10 (05C30, 57M10)
— (*with* Ewen, R.) On coverings of the complete graph with 4 vertices. (English summary) *Ars Combin.* **35** (1993), 87–96. (Summary) **93m:05149** 05C70
Hofri, Micha (*with* Shachnai, Hadas) On the limited utility of auxiliary information in the list update problem. (English summary) *Comm. Statist. Stochastic Models* **8** (1992), *no.* 4, 637–649. (Summary) **93h:68025** 68P10
— (*with* Aldous, David J.; Szpankowski, Wojciech) Maximum size of a dynamic data structure: hashing with lazy deletion revisited. *SIAM J. Comput.* **21** (1992), *no.* 4, 713–732. (Helmut Alt) **93i:68042** 68P05 (60K25, 60K30, 68P20)
Höfting, Franz (*with* Wanke, Egon) Polynomial algorithms for minimum cost paths in periodic graphs. (English summary) *Proceedings of the Fourth Annual ACM-SIAM Symposium on Discrete Algorithms* (*Austin, TX*, 1993), 493–499, *ACM, New York*, 1993. (Summary) **93m:05184** 05C85 (68R10)
Hogan, P. A. A spherical gravitational wave in the de Sitter universe. (English summary) *Phys. Lett. A* **171** (1992), *no.* 1-2, 21–22. (A. H. Taub) **93i:83038** 83C35 (83C15)
— A spherical impulse gravity wave. (English summary) *Phys. Rev. Lett.* **70** (1993), *no.* 2, 117–118. (Summary) **93k:83021** 83C35 (83C15)
Hogan, S. J. The effect of damping on rigid block motion under harmonic forcing. (English summary) *Proc. Roy. Soc. London Ser. A* **437** (1992), *no.* 1899, 97–108. (Summary) **93e:70002** 70E99 (70K99, 73D05, 73D99, 73N20, 86–04, 86A15)
— Heteroclinic bifurcations in damped rigid block motion. (English summary) *Proc. Roy. Soc. London Ser. A* **439** (1992), *no.* 1905, 155–162. (Summary) **93h:70021** 70K99 (34C23, 34C37, 58F40, 70E99)
Hog-Angeloni, Cynthia (*with* Latiolais, M. Paul; Metzler, Wolfgang[1]) Bias ideals and obstructions to simple-homotopy equivalence. *Topology and combinatorial group theory* (*Hanover, NH*, 1986/1987; *Enfield, NH*, 1988), 109–121, *Lecture Notes in Math.*, 1440, *Springer, Berlin*, 1990. (From the introduction) **93b:57024** 57Q10 (55P99, 57M20)
— (*with* Metzler, Wolfgang[1]) Andrews-Curtis-Operationen und höhere Kommutatoren der Relatorengruppe. (English summary) [Andrews-Curtis operations and higher

commutators of the relator subgroup] *J. Pure Appl. Algebra* **75** (1991), *no.* 1, 37–45. (Roger Fenn) **93d:57009** 57M20 (20F05)

Hogarth, Mark L. Does general relativity allow an observer to view an eternity in a finite time? *Found. Phys. Lett.* **5** (1992), *no.* 2, 173–181. (J. K. Beem) **93c:83087** 83C75 (53C50, 53C80)

Hogarth, W. L. (*with* Myerscough, M. R.; Gray, B. F.; Norbury, John) An analysis of an ordinary differential equation model for a two-species predator-prey system with harvesting and stocking. *J. Math. Biol.* **30** (1992), *no.* 4, 389–411. (Yin Shui Fan) **93e:92013** 92D25 (34C99)

Hogea, Valentin Fixed points theorems in Banach spaces. (Romanian summary) *Bul. Inst. Politehn. Iaşi Secţ. I* **35(39)** (1989), *no.* 1-2, 5–8. (Charles Ejike Chidume) **93e:47075** 47H10

Hogendijk, Jan P. The geometrical parts of the *Istikmāl* of Yūsuf al-Mu'taman ibn Hūd (11th century). An analytical table of contents. *Arch. Internat. Hist. Sci.* **41** (1991), *no.* 127, 207–281. (J. L. Berggren) **93m:01015** 01A30 (01A20)

— In memoriam: Hans Freudenthal (1905–1990). *Arch. Internat. Hist. Sci.* **41** (1991), *no.* 127, 353–354. 01A70

— Bibliography of publications of Aḥmad Salīm Sa'īdān (1914–1991) on the history of mathematics and astronomy in Islamic civilization, and list of medieval Arabic texts published by him. *Historia Math.* **19** (1992), *no.* 4, 439–443. (Editors) **93m:01084b** 01A70

Högfors, Christian (*with* Andersson, Stig I.) History dependence. *Theory & control of dynamical systems* (*Huddinge*, 1991), 52–60, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93d:92001**) 92B05

Hoggar, S. G. t-designs with general angle set. (English summary) *European J. Combin.* **13** (1992), *no.* 4, 257–271. (J. J. Seidel) **93k:05038** 05B30

Höglund, Thomas Bounds for the sample size to justify normal approximation of the confidence level. *Ann. Inst. Statist. Math.* **43** (1991), *no.* 3, 565–578. (K. K. Ferentinos) **93a:62044** 62F25 (62E17)

Högmander, H. A random field approach to transect counts of wildlife populations. (English summary) *Biometrical J.* **33** (1991), *no.* 8, 1013–1023. (Summary) **93h:62177** 62M40 (62P10)

Högnäs, Göran Sensational mathematics—mathematics goes over the news threshold. (Swedish) *Arkhimedes* **44** (1992), *no.* 1, 3–7. 01A99

Hoh, Walter (*with* Jacob, Niels) Some Dirichlet forms generated by pseudo differential operators. (English and French summaries) *Bull. Sci. Math.* (2) **116** (1992), *no.* 3, 383–398. (J. A. Van Casteren) **93m:47060** 47G30 (31C25, 35S05, 47B25, 60J25)

Hohberg, Walter The decomposition of graphs into k-connected components. (English summary) Algebraic graph theory (Leibnitz, 1989). *Discrete Math.* **109** (1992), *no.* 1-3, 133–145. (Koduvayur R. Parthasarathy) **93m:05117** 05C40 (05C65, 05C85, 68R10)

Hohenberg, P. C. (*with* van Saarloos, Wim) Fronts, pulses, sources and sinks in generalized complex Ginzburg-Landau equations. *Phys. D* **56** (1992), *no.* 4, 303–367. (J. J. C. Nimmo) **93h:35195** 35Q55 (58F39)

— (*with* Shraiman, B. I.; Pumir, Alain; van Saarloos, Wim; Chaté, Hugues; Holen, M.) Spatiotemporal chaos in the one-dimensional complex Ginzburg-Landau equation. (English summary) *Phys. D* **57** (1992), *no.* 3-4, 241–248. (Summary) **93e:58134** 58F13 (35Q55, 58F39)

Höhle, Ulrich The Poincaré paradox and the cluster problem. *Trees and hierarchical structures* (*Bielefeld*, 1987), 117–124, *Lecture Notes in Biomath.*, **84**, *Springer, Berlin*, 1990. (*see* **93f:92004**) 92B10 (00A30, 00A69)

— (*with* Coulon, Josette; Coulon, J.-L.) Classification of extremal subobjects of algebras over SM-SET. *Applications of category theory to fuzzy subsets* (*Linz*, 1989), 9–31, *Theory Decis. Lib. Ser. B Math. Statist. Methods*, 14, *Kluwer Acad. Publ., Dordrecht*, 1992. (Anna Labella) **93b:18007** 18B05 (18A32, 18B25)

— M-valued sets and sheaves over integral commutative cl-monoids. *Applications of category theory to fuzzy subsets* (*Linz*, 1989), 33–72, *Theory Decis. Lib. Ser. B Math. Statist. Methods*, 14, *Kluwer Acad. Publ., Dordrecht*, 1992. (R. Gylys) **93c:03086** 03G30 (03B50, 03E72, 18B99)

Hohler, Erling G. B. (*with* Albeverio, Sergio; Zegarliński, Bogusław) Ferromagneticity of simplicial fields on two-dimensional compact manifolds. *J. Math. Phys.* **33** (1992), *no.* 8, 2808–2818. (Kornél Szlachányi) **93k:81161** 81T25 (53C80)

Hohmann, Andreas (*with* Gatermann, Karin) Symbolic exploitation of symmetry in numerical pathfollowing. *Impact Comput. Sci. Engrg.* **3** (1991), *no.* 4, 330–365. (Timothy Sauer) **93d:65052** 65H17 (47H15, 47H17, 58F36, 65H20)

Hohmeyer, Michael E. (*with* Teller, Seth J.) Stabbing isothetic boxes and rectangles in $O(n \log n)$ time. (English summary) *Comput. Geom.* **2** (1992), *no.* 4, 201–207. 68U05

Höhnerbach, Michael (*with* Graham, Robert) Quantum effects on the multiphoton dissociation of a diatomic molecule. *Phys. Rev. A* (3) **43** (1991), *no.* 7, 3966–3981. (Charles A. Nelson) **93c:81276** 81V55 (81V10)

Hoischen, Lothar A generalization of theorems of Eidelheit and Carleman concerning approximation and interpolation. (English summary) *J. Approx. Theory* **71** (1992), *no.* 2, 154–174. (Summary) **93g:41004** 41A05 (41A28)

müller-Hoissen, Folkert *see* **Müller-Hoissen, Folkert**

Hojek, Stanislav (*with* Lešanovský, Antonín; Rataj, Jan) 0-1 sequences having the same numbers of (1-1)-couples of given distances. (English summary) *Math. Bohem.* **117** (1992), *no.* 3, 271–282. (Gerhard Larcher) **93j:11048** 11K31 (11B05)

Hojman, Sergio A. (*with* Pardo, Francisco; Aulestia, Luis; de Lisa, Francisco) Lagrangians for differential equations of any order. *J. Math. Phys.* **33** (1992), *no.* 2, 584–590. (José F. Cariñena) **93e:49052** 49N45 (34A99, 70G99, 70H35)

— A new conservation law constructed without using either Lagrangians or Hamiltonians. *J. Phys. A* **25** (1992), *no.* 7, L291–L295. (Takayuki Nōno) **93d:70031** 70H33 (58F35, 70G99)

— (*with* Núñez, Darío; Ryan, Michael P., Jr.) Minisuperspace example of non-Lagrangian quantization. *Phys. Rev. D* (3) **45** (1992), *no.* 10, 3523–3527. (Ingemar Bengtsson) **93c:83121** 83E99

Ho-Kim, Q. (*with* Bougourzi, A. H.; Kikuchi, Yukio; Lam, C. S.) Screening currents in free-field representations of Kac-Moody algebras. *Internat. J. Modern Phys. A* **6** (1991), *no.* 23, 4181–4208. (Alex Jay Feingold) **93a:17025** 17B67 (81R10, 81T40)

Hokkanen, Veli-Matti On nonlinear Volterra equations in Hilbert spaces. *Differential Integral Equations* **5** (1992), *no.* 3, 647–669. (Sergiu Aizicovici) **93b:47128** 47H15 (45D05, 47N20)

Hoksbergen, R. A. M. *see* **Baïnov, Drumi Dimitrov, 93g:26027**

Holá, Ľubica Hausdorff metric on the space of upper semicontinuous multifunctions. (English summary) *Rocky Mountain J. Math.* **22** (1992), *no.* 2, 601–610. (Janina Ewert) **93j:54010** 54C60 (54C35, 54E35)

Holbraad, S. (*with* Copeland, E.; Haws, D.; Rivers, R. J.) The statistical mechanics of interacting strings. *Phys. A* **179** (1991), *no.* 3, 507–530. (Claus Montonen) **93d:82008** 82B05 (82B26)

Holbrook, John A. Inequalities of von Neumann type for small matrices. *Function spaces* (*Edwardsville, IL*, 1990), 189–193, *Lecture Notes in Pure and Appl. Math.*, 136, *Dekker, New York*, 1992. (T. Ando) **93d:47015** 47A30 (15A60, 47A20)

— Spectral variation of normal matrices. (English summary) *Linear Algebra Appl.* **174** (1992), 131–141. (Matjaž Omladič) **93k:15035** 15A42 (47A10, 47A30)

Holden, Arun V. (*with* Rubio, J. E.) The optimal control of an excitable neural fibre. *Nonlinear wave processes in excitable media* (*Leeds*, 1989), 115–121, *NATO Adv. Sci. Inst. Ser. B Phys.*, 244, *Plenum, New York*, 1991. (*see* **93e:00026**) 92C05 (92C20)

— (*with* Tucker, J. V.; Thompson, B. C.) Excitable media as computational systems. *Nonlinear wave processes in excitable media* (*Leeds*, 1989), 513–520, *NATO Adv. Sci. Inst. Ser. B Phys.*, 244, *Plenum, New York*, 1991. (*see* **93e:00026**) 68M05 (68Q10, 92C20)

— (*with* Zhang, Henggui) Nonlinear wave phenomena in cardiac tissue. (English summary) *Nonlinear dispersive wave systems* (*Orlando, FL*, 1991), 551–574, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93f:00015**) 92C50

— (*with* Tucker, J. V.; Zhang, Henggui; Poole, M. J.) Coupled map lattices as computational systems. (English summary) *Chaos* **2** (1992), *no.* 3, 367–376. (Summary) **93i:68065** 68Q05

— (*with* Lábos, E.; Zhang, Henggui) The behaviour of the Lyapunov exponent of a map simulating neural activity. (English summary) *Phys. Lett. A* **173** (1993), *no.* 4-5, 399–406. (Summary) **93i:92010** 92C20 (58F40)

— *see also* **Nonlinear wave processes in excitable media, 93e:00026**; **Neural networks—theory and architecture, 93h:92002**; **Neurocomputers and attention, 93j:92001a** *and* **93j:92001b**

Holden, Helge (*with* Gesztesy, F.) A new representation of soliton solutions of the Kadomtsev-Petviashvili equation. (English summary) *Ideas and methods in mathematical analysis, stochastics, and applications* (*Oslo*, 1988), 472–479, *Cambridge Univ. Press, Cambridge*, 1992. (Summary) **93i:35124** 35Q53 (58F07)

— (*with* Holden, Lars) On scalar conservation laws in one dimension. (English summary) *Ideas and methods in mathematical analysis, stochastics, and applications* (*Oslo*, 1988), 480–509, *Cambridge Univ. Press, Cambridge*, 1992. (Summary) **93i:65101** 65M99 (35L65)

— (*with* Risebro, Nils Henrik) A method of fractional steps for scalar conservation laws without the CFL condition. *Math. Comp.* **60** (1993), *no.* 201, 221–232. (Anders Szepessy) **93d:65081** 65M12 (35L65)

— (*with* Gesztesy, F.; Simon, Barry; Zhao, Zhong Xin) On the Toda and Kac-van Moerbeke systems. *Trans. Amer. Math. Soc.* **339** (1993), *no.* 2, 849–868. (C. Tomei) **93m:58050** 58F07 (35Q58)

— *see also* **Ideas and methods in mathematical analysis, stochastics, and applications, 93e:00033** *and* **Ideas and methods in quantum and statistical physics, 93e:00034**

Holden, L. J. (*with* Erneux, T.; Reiss, E. L.; Georgiou, M.) Slow passage through bifurcation and limit points. Asymptotic theory and applications. *Dynamic bifurcations* (*Luminy*, 1990), 14–28, *Lecture Notes in Math.*, 1493, *Springer, Berlin*, 1991. (Miklós Farkas) **93f:34063** 34C23 (58F14)

Holden, Lars (*with* Holden, Helge) On scalar conservation laws in one dimension. (English summary) *Ideas and methods in mathematical analysis, stochastics, and applications* (*Oslo*, 1988), 480–509, *Cambridge Univ. Press, Cambridge*, 1992. (Summary) **93i:65101** 65M99 (35L65)

— On the strict hyperbolicity of the Buckley-Leverett equations for three-phase flow. *The mathematics of oil recovery* (*Cambridge*, 1989), 151–159, *Inst. Math. Appl. Conf. Ser. New Ser.*, 31, *Oxford Univ. Press, New York*, 1992. (Summary) **93e:76067** 76T05 (35Q35, 76S05)

Holden, Peter J. Extension domains for A_p weights. *Michigan Math. J.* **39** (1992), *no.* 2, 353–368. (Pekka Koskela) **93g:42012** 42B25 (30C65)

Holdsworth, Christopher [Frank] Harary honoured by Exeter. *Bull. Inst. Combin. Appl.* **7** (1993), 10–12. 01A70

Holen, M. (*with* Shraiman, B. I.; Pumir, Alain; van Saarloos, Wim; Hohenberg, P. C.; Chaté, Hugues) Spatiotemporal chaos in the one-dimensional complex Ginzburg-Landau equation. (English summary) *Phys. D* **57** (1992), *no.* 3-4, 241–248. (Summary) **93e:58134** 58F13 (35Q55, 58F39)

Holevo, A. S. *see* **Kholevo, A. S.**

Holgate, P. The multilocus Hardy-Weinberg law. (English summary) *J. Math. Biol.* **31** (1992), *no.* 1, 101–106. (Summary) **93j:92019** 92D10

Holický, P. Zdeněk Frolík and the descriptive theory of sets and spaces. *Acta Univ. Carolin. Math. Phys.* **32** (1991), *no.* 2, 5–21. (Gabriel Debs) **93e:54027** 54H05 (01A60, 04A15, 28A05, 54–03)

— *see also* **Malyshev, V. A., 93i:82003**

Holiday, D. B. Considerations for optimal nonparametric regression under a generalized error structure. *Comm. Statist. Theory Methods* **20** (1991), *no.* 8, 2387–2406. (Ewaryst Rafajłowicz) **93d:62067** 62G05 (62J02, 62M10)

Holland, David Additive Galois module structure and Chinburg's invariant. *J. Reine Angew. Math.* **425** (1992), 193–218. (M. E. Keating) **93e:11136** 11R33 (11R29)

Holland, Kitty L. On finding fields from their algebraic closure geometries. *Proc. Amer. Math. Soc.* **116** (1992), *no.* 4, 1135–1142. (Moshe Jarden) **93b:03059** 03C60 (12L12)

Holland, M. P. (*with* Stafford, J. T.) Differential operators on rational projective curves. *J. Algebra* **147** (1992), *no.* 1, 176–244. (K. R. Goodearl) **93d:16029** 16S32 (16E10, 16E20, 16H05, 16P40, 16P60)

— (*with* Coutinho, S. C.) Locally free $\mathscr{D}(\mathbf{P}^n)$-modules. *Math. Proc. Cambridge Philos. Soc.* **112** (1992), *no.* 2, 233–245. (Ian M. Musson) **93h:16044** 16S32

Holland, P. R. The Dirac equation in the de Broglie-Bohm theory of motion. (English summary) *Found. Phys.* **22** (1992), *no.* 10, 1287–1301. (Dennis Dieks) **93k:81007** 81P05

— (*with* Vigier, Jean-Pierre) David Joseph Bohm: 1917–1992. *Found. Phys.* **23** (1993), *no.* 1, 5–6. 01A70

Holland, Robert A. Apriority and applied mathematics. (English summary) *Synthese* **92** (1992), *no.* 3, 349–370. (E. Mendelson) **93h:00008** 00A30 (03A05)

Holland, W. Charles Partial orders of the group of automorphisms of the real line. *Proceedings of the International Conference on Algebra, Part* 1 (*Novosibirsk*, 1989), 197–207, *Contemp. Math.*, 131, *Part* 1, *Amer. Math. Soc., Providence, RI*, 1992. (N. Ya. Medvedev) **93f:06016** 06F15

— (*with* Székely, Gábor J.) Lattice-ordered groups with a prescribed minimum for given elements. *Algebra Universalis* **29** (1992), *no.* 1, 79–87. (Introduction) **93e:06012** 06F20

den Hollander, Frank (*with* Greven, Andreas) Population growth in random media. I. Variational formula and phase diagram. Proceedings of the Conference on Models of Nonclassical Reaction Rates (Bethesda, MD, 1991). *J. Statist. Phys.* **65** (1991), *no.* 5-6, 1123–1146. (Dimitri Petritis) **93g:82067** 82C22 (60K35)

— (*with* Greven, Andreas) Population growth in random media. II. Wavefront propagation. Proceedings of the Conference on Models of Nonclassical Reaction Rates (Bethesda, MD, 1991). *J. Statist. Phys.* **65** (1991), *no.* 5-6, 1147–1154. (Dimitri Petritis) **93g:82068** 82C22 (60K35)

— (*with* Hooghiemstra, G.; Keane, Michael S.; Resing, J.) Strong law and central limit theorem for a process between maxima and sums. *Probab. Theory Related Fields* **90** (1991), *no.* 1, 37–55. (Sándor Csörgő) **93a:60030** 60F05 (60F15, 60G99)

— (*with* Naudts, J.; Scheunders, P.) A long-time tail for random walk in random scenery. *J. Statist. Phys.* **66** (1992), *no.* 5-6, 1527–1555. (Dimitri Petritis) **93f:82028** 82B41 (60J15, 82B44)

— (*with* Naudts, J.; Redig, Frank) Invariance principle for the stochastic Lorentz lattice gas. *J. Statist. Phys.* **66** (1992), *no.* 5-6, 1583–1598. (Dimitri Petritis) **93e:82034** 82C22

— (*with* Shuler, Kurt E.) Random walks in a random field of decaying traps. *J. Statist. Phys.* **67** (1992), *no.* 1-2, 13–31. (Neal Madras) **93f:82048** 82C41 (60F10, 60J15)

— (*with* Naudts, J.; Redig, Frank) Long-time tails in a random diffusion model. (English summary) *J. Statist. Phys.* **69** (1992), *no.* 3-4, 731–762. (Cheng Xun Wu) **93k:82056** 82C41 (60J15, 60K35, 82C22)

— (*with* Greven, Andreas) Branching random walk in random environment: phase transitions for local and global growth rates. *Probab. Theory Related Fields* **91** (1992), *no.* 2, 195–249. (Klaus Fleischmann) **93c:60160** 60K35 (60J80, 82C44)

— *see also* **Seminar: Probability and Physics, 93f:00019**

Holländer, I. (*with* Bača, Martin) Labelings of a certain class of convex polytopes. *J. Franklin Inst.* **329** (1992), *no.* 3, 539–547. (Peter J. Slater) **93e:05085** 05C78

Hollander, Myles (*with* Proschan, Frank; Sconing, James) Information, censoring, and dependence. (English summary) *Topics in statistical dependence* (*Somerset, PA*, 1987), 257–268, *IMS Lecture Notes Monograph Ser.*, 16, *Inst. Math. Statist., Hayward, CA*, 1990. (Summary) **93h:62180** 62N05 (62B10)

— (*with* Presnell, Brett; Sethuraman, Jayaram) Nonparametric methods for imperfect repair models. *Ann. Statist.* **20** (1992), *no.* 2, 879–896. (J. V. Deshpande) **93h:62078** 62G05 (62N05)

— (*with* Peña, Edsel A.) A chi-squared goodness-of-fit test for randomly censored data. *J. Amer. Statist. Assoc.* **87** (1992), *no.* 418, 458–463. (Summary) **93c:62082** 62G10

Hölldobler, Steffen Combining logic programming and equation solving. *J. Logic Comput.* **1** (1991), *no.* 3, 397–415. (Summary) **93a:68023** 68N17 (03B70)

Hollender, J. (*with* Vogt, Rainer M.) Modules of topological spaces, applications to homotopy limits and E_∞ structures. *Arch. Math.* (*Basel*) **59** (1992), *no.* 2, 115–129. (Richard John Steiner) **93e:55015** 55P99 (18G99, 55P47)

Holley, Richard The one-dimensional stochastic X-Y model. *Random walks, Brownian motion, and interacting particle systems*, 295–307, *Progr. Probab.*, 28, *Birkhäuser Boston, Boston, MA*, 1991. (Hans-Otto Georgii) **93b:60229** 60K35 (82C20, 82C44)

— On the asymptotics of the spin-spin autocorrelation function in stochastic Ising models near the critical temperature. *Spatial stochastic processes*, 89–104, *Progr. Probab.*, 19, *Birkhäuser Boston, Boston, MA*, 1991. (Yu. P. Virchenko) **93a:82039** 82C20 (60K35, 82C27)

— (*with* Waymire, Edward C.) Multifractal dimensions and scaling exponents for strongly bounded random cascades. (English summary) *Ann. Appl. Probab.* **2** (1992), *no.* 4, 819–845. (Ilya S. Molchanov) **93k:60122** 60G57 (76F05)

Holliday, Robert L. Some nonexistence results for strongly α-resolvable designs. Proceedings of the Twenty-third Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, FL, 1992). *Congr. Numer.* **90** (1992), 205–209. (Summary) **93j:05011** 05B05

Höllig, Klaus (*with* de Boor, Carl) Box-spline tilings. *Amer. Math. Monthly* **98** (1991), *no.* 9, 793–802. (Marjorie Senechal) **93f:52024** 52C22 (52C20)

Hollis, Selwyn L. (*with* Morgan, Jeff J.) Global existence and asymptotic decay for systems of convective reaction-diffusion equations. *Nonlinear Anal.* **17** (1991), *no.* 8, 725–739. (Victor A. Galaktionov) **93a:35084** 35K57 (35B40, 35K60, 47N20)

— (*with* Morgan, Jeff J.) Interior estimates for a class of reaction-diffusion systems from L^1 a priori estimates. *J. Differential Equations* **98** (1992), *no.* 2, 260–276. (Siegfried Carl) **93f:35111** 35K57 (35B45)

— (*with* Morgan, Jeff J.) Partly dissipative reaction-diffusion systems and a model of phosphorus diffusion in silicon. *Nonlinear Anal.* **19** (1992), *no.* 5, 427–440. (Qi Xiao Ye) **93m:35104** 35K57 (35B40, 92E20)

Hollister, Herbert A. An infinite collection of absolutely convex subgroups. *Czechoslovak Math. J.* **42(117)** (1992), *no.* 2, 311–312. (From the text) **93e:20056** 20F60

Hollmann, H. D. L. (*with* van Lint, J. H., Jr.) Nonblocking self-routing switching networks. (English summary) *Discrete Appl. Math.* **37/38** (1992), 319–340. (David H. Green) **93g:94033** 94C10 (68M10)

Hollot, Christopher V. (*with* Barmish, B. Ross; Kraus, Frantisek J.; Tempo, Roberto) Extreme point results for robust stabilization of interval plants with first order compensators. *IEEE Trans. Automat. Control* **37** (1992), *no.* 6, 707–714. (Arno Linnemann) **93d:93062** 93D09 (93D21)

— (*with* Padmanabhan, Prasad) Complete instability of a box of polynomials. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 8, *part I*, 1230–1233. (Jacob Hammer) **93g:93066** 93D09 (93C80)

— (*with* Barmish, B. Ross; Tempo, Roberto; Kang, H. I.) An extreme point result for robust stability of a diamond of polynomials. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 9, 1460–1462. (Ian Petersen) **93j:93099** 93D09 (93D20, 93D22)

— *see also* **Yen, K. K., 93k:93092**

Holloway, Lawrence E. (*with* Krogh, Bruce H.) On closed-loop liveness of discrete-event systems under maximally permissive control. *IEEE Trans. Automat. Control* **37** (1992), *no.* 5, 692–697. (Summary) **93e:68087** 68Q90 (93C85)

Hollowood, Timothy J. (*with* de Groot, Mark F.; Miramontes, J. Luis) Generalized Drinfel'd-Sokolov hierarchies. *Comm. Math. Phys.* **145** (1992), *no.* 1, 57–84. (Maarten Bergvelt) **93d:58072** 58F07 (17B67)

— (*with* Miramontes, J. Luis; Pasquinucci, Andrea; Nappi, Chiara R.) Hermitian versus anti-Hermitian one-matrix models and their hierarchies. *Nuclear Phys. B* **373** (1992), *no.* 1, 247–280. (M. I. Monastyrskiĭ) **93e:81111** 81T40 (58F07, 81T27)

— (*with* Evans, Jonathan M.) Erratum: "Supersymmetric Toda field theories" [Nuclear Phys. B **352** (1991), no. 3, 723–768; MR 92h:81150]. *Nuclear Phys. B* **382** (1992), *no.* 3, 662. (Editors) **93j:81089** 81T40 (17B65, 17B70, 58F07)

— (*with* Burroughs, Nigel; de Groot, Mark F.; Miramontes, J. Luis) Generalized W-algebras and integrable hierarchies. *Phys. Lett. B* **277** (1992), *no.* 1-2, 89–94. (Summary) **93g:17044** 17B68 (58F07)

— (*with* Evans, Jonathan M.) Integrable $N = 2$ supersymmetric field theories. (English summary) *Phys. Lett. B* **293** (1992), *no.* 1-2, 100–110. (Summary) **93i:81270** 81T60 (17B81, 81R10)

Hollunder, Bernhard (*with* Donini, Francesco M.; Lenzerini, Maurizio; Nardi, Daniele; Nutt, Werner; Marchetti-Spaccamela, Alberto) The complexity of existential quantification in concept languages. *Artificial Intelligence* **53** (1992), *no.* 2-3, 309–327. (Summary) **93a:68138** 68T30 (03D15, 68Q25)

Holly, Jan (*with* van den Dries, Lou) Quantifier elimination for modules with scalar variables. *Ann. Pure Appl. Logic* **57** (1992), *no.* 2, 161–179. (Carlo Toffalori) **93e:03045** 03C10 (03C60, 03D15, 13L05, 68Q25)

— Definable operations on sets and elimination of imaginaries. *Proc. Amer. Math. Soc.* **117** (1993), *no.* 4, 1149–1157. (O. V. Belegradek) **93e:03052** 03C60 (03C10, 03C40, 03C45, 12L05)

Holly, Konstanty (*with* Bożek, Bogusław; Olajossy, Andrzej) Stationary Navier-Stokes equations: on qualitative and numerical aspects of the Galerkin method. (Polish summary) *Opuscula Math. No.* 11 (1991), 61 *pp.* (Summary) **93a:76074** 76M25 (65M60, 76D05)

— Development of the fourth rank moment of velocity of the free fluid in $\mathbf{R}^3$. *Univ. Iagel. Acta Math. No.* 28 (1991), 125–134. (Yoshikazu Giga) **93c:35129** 35Q30 (76D05)

Holm, Darryl D. (*with* Marsden, Jerrold Eldon) The rotor and the pendulum. *Symplectic geometry and mathematical physics* (*Aix-en-Provence*, 1990), 189–203, *Progr. Math.*, 99, *Birkhäuser Boston, Boston, MA*, 1991. (José F. Cariñena) **93f:58075** 58F05 (70E15, 70H05, 70Q05)

— (*with* Kimura, Yoshifumi) Zero-helicity Lagrangian kinematics of three-dimensional advection. (English summary) Symposium on Fluid Mechanics of Stirring and Mixing (La Jolla, CA, 1990). *Phys. Fluids A* **3** (1991), *no.* 5, *part* 2, 1033–1038. (Summary) **93k:76095** 76M99 (76D99, 76E15, 76F20)

— (*with* David, D.) Multiple Lie-Poisson structures, reductions, and geometric phases for the Maxwell-Bloch travelling wave equations. *J. Nonlinear Sci.* **2** (1992), *no.* 2, 241–262. (Richard Montgomery) **93e:58060** 58F05 (78A60)

— (*with* Kovačič, Gregor) Homoclinic chaos in a laser-matter system. *Phys. D* **56** (1992), *no.* 2-3, 270–300. (Gennady Berman) **93c:78013** 78A60 (58F13, 70K50, 81V70)

— (*with* Camassa, Roberto) Dispersive barotropic equations for stratified mesoscale ocean dynamics. (English summary) Experimental mathematics: computational issues in nonlinear science (Los Alamos, NM, 1991). *Phys. D* **60** (1992), *no.* 1-4, 1–15. (Radyadour Kh. Zeytounian) **93j:76061** 76U05 (76V05, 86A05)

Holm, Niels V. (*with* Anderson, Jon E.; Louis, Thomas A.; Harvald, Bent) Time-dependent association measures for bivariate survival distributions. (English summary) *J. Amer. Statist. Assoc.* **87** (1992), *no.* 419, 641–650. (Summary) **93f:62133** 62N05 (62P10)

Holmåker, Kjell Optimal control problems with applications to the elimination of substrate diffusing and convecting through immobilized enzyme. *J. Optim. Theory Appl.* **71** (1991), *no.* 2, 205–235. (Claudia Simionescu-Badea) **93b:49042** 49N55 (49K20, 92C45)

— An optimization problem for a second order differential equation with oscillating solutions. (English summary) *J. Math. Anal. Appl.* **169** (1992), *no.* 2, 420–436. (Summary) **93f:34051** 34B24 (34C10, 34H05, 49J15)

— Global asymptotic stability for a stationary solution of a system of integro-differential equations describing the formation of liver zones. (English summary) *SIAM J. Math. Anal.* **24** (1993), *no.* 1, 116–128. (Gustaf Gripenberg) **93m:45003** 45K05 (45M05, 45M10, 92C99)

Holman, R. (*with* Boyanovsky, Daniel) Renormalized density of states in conformal field theories. *Thermal field theories* (*Ibaraki*, 1990), 95–103, *North-Holland Delta Ser.*, *North-Holland, Amsterdam*, 1991. (Summary) **93b:81177** 81T17 (81T40)

— (*with* Boyanovsky, Daniel; Willey, R.) Quantum mechanical metastability: when and why? *Nuclear Phys. B* **376** (1992), *no.* 3, 599–634. (Summary) **93b:81066** 81Q20 (82C10)

Holme, Finn Some hyperbolic geometry. (Norwegian. English summary) *Normat* **40** (1992), *no.* 1, 37–43, 56. (Summary) **93c:51022** 51M10

Holmes, J. P. The structure of the set of idempotents in a Banach algebra. *Illinois J. Math.* **36** (1992), *no.* 1, 102–115. (H. G. Dales) **93c:46088** 46H20 (22E65)

Holmes, M. Randall Modelling fragments of Quine's "New Foundations". *L'anti-fondation en logique et en théorie des ensembles*, 97–112, *Cahiers Centre Logique*, 7, *Univ. Catholique Louvain, Louvain-la-Neuve*, 1992. (C. Ward Henson) **93i:03078** 03E70

— The universal separable metric space of Urysohn and isometric embeddings thereof in Banach spaces. *Fund. Math.* **140** (1992), *no.* 3, 199–223. (S. Swaminathan) **93i:46022** 46B04 (54E35, 54F65)

— Systems of combinatory logic related to predicative and "mildly impredicative" fragments of Quine's "New Foundations". (English summary) *Ann. Pure Appl. Logic* **59** (1993), *no.* 1, 45–53. (Summary) **93m:03020** 03B40 (03E70)

Holmes, Philip J. (*with* Guckenheimer, John) ★ Nonlinear oscillations, dynamical systems, and bifurcations of vector fields. Revised and corrected reprint of the 1983 original. Applied Mathematical Sciences, 42. *Springer-Verlag, New York*, 1990. xvi+459 *pp. ISBN* 0-387-90819-6 (D. R. J. Chillingworth) **93e:58046** 58Fxx (34C15, 34C23, 58–02, 58F14, 70Kxx)

— A degenerate Hamiltonian system and a slow flow with jumps. *Ordinary and partial differential equations, Vol. III* (*Dundee*, 1990), 95–105, *Pitman Res. Notes Math. Ser.*, 254, *Longman Sci. Tech., Harlow*, 1991. (Richard C. Churchill) **93a:70017** 70H05 (34C35, 58F14, 73K03)

— (*with* Berkooz, Gal; Lumley, John L.) Turbulence, dynamical systems and the unreasonable effectiveness of empirical eigenfunctions. *Proceedings of the International Congress of Mathematicians, Vol. I, II (Kyoto,* 1990), 1607–1617, *Math. Soc. Japan, Tokyo,* 1991. (Zengrong Liu) **93c:76046** 76F20 (76M99)

— (*with* Berkooz, Gal; Lumley, John L.) Control of the turbulent boundary layer and dynamical systems theory: an update. *The global geometry of turbulence* (*Rota,* 1990), 211–220, *NATO Adv. Sci. Inst. Ser. B Phys.,* 268, *Plenum, New York,* 1991. (*see* **93b:76001**) 76F20 (76D10)

— (*with* Berkooz, Gal; Lumley, John L.) Intermittent dynamics in simple models of the turbulent wall layer. *J. Fluid Mech.* **230** (1991), 75–95. (Mikhail Zaks) **93f:76054** 76F20 (34C37, 58F40)

— (*with* Mielke, Alexander; O'Reilly, O. M.) Cascades of homoclinic orbits to, and chaos near, a Hamiltonian saddle-center. *J. Dynamics Differential Equations* **4** (1992), *no.* 1, 95–126. (Richard C. Churchill) **93c:58161** 58F14 (34C23, 58F05, 70H05, 70K50)

— (*with* Berkooz, Gal; Lumley, John L.) Low-dimensional models of the wall region in a turbulent boundary layer: new results. (English summary) Interpretation of time series from nonlinear systems (Warwick, 1991). *Phys. D* **58** (1992), *no.* 1-4, 402–406. (Summary) **93i:76043** 76Fxx (76D10)

— (*with* Campbell, Sue Ann) Heteroclinic cycles and modulated travelling waves in a system with D_4 symmetry. (English summary) *Phys. D* **59** (1992), *no.* 1-3, 52–78. (Alois Klíč) **93k:58166** 58F14 (34A20, 34C23, 34C37, 35Q99, 58F35)

— (*with* Stuart, Charles A.) Homoclinic orbits for eventually autonomous planar flows. (English summary) *Z. Angew. Math. Phys.* **43** (1992), *no.* 4, 598–625. (Ding Jun Luo) **93g:34073** 34C37 (58F30)

Holmes, Randall R. (*with* Nakano, Daniel K.) Brauer-type reciprocity for a class of graded associative algebras. *J. Algebra* **144** (1991), *no.* 1, 117–126. (Manuel Ojanguren) **93b:16015** 16E10 (17B70)

— (*with* Tam, Tin Yau) Symmetry classes of tensors associated with certain groups. (English summary) *Linear and Multilinear Algebra* **32** (1992), *no.* 1, 21–31. (Stuart Martin) **93j:20019** 20C15 (20C30)

— An algorithm for the projective characters of finite Chevalley groups. (English summary) *Rocky Mountain J. Math.* **22** (1992), *no.* 2, 611–630. (Jian Yi Shi) **93h:20009** 20C20

Holmgren, S. (*with* Otto, Kurt) Iterative solution methods and preconditioners for block-tridiagonal systems of equations. Iterative methods in numerical linear algebra (Copper Mountain, CO, 1990). *SIAM J. Matrix Anal. Appl.* **13** (1992), *no.* 3, 863–886. (Summary) **93a:65037** 65F10 (65N22)

Holopainen, Ilkka (*with* Rickman, Seppo) Quasiregular mappings of the Heisenberg group. *Math. Ann.* **294** (1992), *no.* 4, 625–643. (Tero Kilpeläinen) **93m:30031** 30C65 (31C12, 53C20)

Holroyd, F. C. (*with* Loupekine, Feodor) The four colour problem is not dead. *Graph colourings* (*Milton Keynes,* 1988), 37–44, *Pitman Res. Notes Math. Ser.,* 218, *Longman Sci. Tech., Harlow,* 1990. (*see* **93k:05072**) 05C15

— Reconstructing finite group actions and characters from subgroup information. (English summary) *Discrete Math.* **110** (1992), *no.* 1-3, 283–287. (Summary) **93j:20037** 20C99

Holschneider, M. (*with* Tchamitchian, Ph.) Pointwise analysis of Riemann's "nondifferentiable" function. *Invent. Math.* **105** (1991), *no.* 1, 157–175. (Summary) **93g:26010** 26A27 (42C15)

Holst, J. (*with* Parkum, J. E.; Poulsen, N. K.) Analysis of forgetting algorithms. (English summary) *Identification and system parameter estimation* 1991, *Vol.* 1,2 (*Budapest,* 1991), 623–628, *IFAC Sympos. Ser.,* 3, *Pergamon, Oxford,* 1992. (*see* **93h:93009**) 93E10

Holst, Lars (*with* Barbour, A. D.; Janson, Svante) ★ Poisson approximation. Oxford Studies in Probability, 2. Oxford Science Publications. *The Clarendon Press, Oxford University Press, New York,* 1992. x+277 *pp. ISBN* 0-19-852235-5 (Dietmar Pfeifer) **93g:60043** 60F05 (60C05, 60J80, 62E17)

— On the number of vertices in the complete graph with a given vertex as nearest neighbor. *Random graphs, Vol.* 2 (*Poznań,* 1989), 91–99, *Wiley-Intersci. Publ., Wiley, New York,* 1992. (Graham Brightwell) **93g:60017** 60C05 (05C80)

Holt, Derek F. The computation of normalizers in permutation groups. Computational group theory, Part 2. *J. Symbolic Comput.* **12** (1991), *no.* 4-5, 499–516. (Martin W. Liebeck) **93b:20010** 20B40 (68Q40)

— (*with* Epstein, David B. A.; Cannon, James W.; Levy, Silvio V. F.; Paterson, Michael S.; Thurston, William P.) ★ Word processing in groups. *Jones and Bartlett Publishers, Boston, MA,* 1992. xii+330 *pp. ISBN* 0-86720-244-0 (Richard M. Thomas) **93i:20036** 20F10 (03D40, 20-02, 68Q70)

— (*with* Rees, Sarah) An implementation of the Neumann-Praeger algorithm for the recognition of special linear groups. (English summary) *Experiment. Math.* **1** (1992), *no.* 3, 237–242. (Summary) **93j:20003** 20-04

— (*with* Rowley, P.) On products of Sylow subgroups in finite groups. *Arch. Math.* (*Basel*) **60** (1993), *no.* 2, 105–107. (H. Heineken) **93k:20037** 20D20

Holte, Robert (*with* Rosier, Louis; Tulchinsky, Igor; Varvel, Donald) Pinwheel scheduling with two distinct numbers. *Theoret. Comput. Sci.* **100** (1992), *no.* 1, 105–135. (Summary) **93d:68008** 68M20 (90B35)

Holte, Sarah E. Generalized horseshoe maps and inverse limits. (English summary) *Pacific J. Math.* **156** (1992), *no.* 2, 297–305. (Edward Slaminka) **93k:58142** 58F12 (54B99, 54H20)

van Holten, J. W. BRST field theory of relativistic particles. (English summary) *Internat. J. Modern Phys. A* **7** (1992), *no.* 28, 7119–7134. (Kishore Marathe) **93j:81103** 81T70

Holthaus, M. (*with* Breuer, H. P.) A semiclassical theory of quasienergies and Floquet wave functions. *Ann. Physics* **211** (1991), *no.* 2, 249–291. (H. Hogreve) **93f:81035** 81Q20 (81V45)

— (*with* Breuer, H. P.; Dietz, Klaus P.) A remark on the Kramers-Henneberger transformation. (English summary) *Phys. Lett. A* **165** (1992), *no.* 4, 341–346. (Summary) **93f:81158** 81V10

Holton, D. A. (*with* Plummer, Michael D.) Matching extension and connectivity in graphs. II. *Graph theory, combinatorics, and applications. Vol.* 2 (*Kalamazoo, MI,* 1988), 651–665, *Wiley-Intersci. Publ., Wiley, New York,* 1991. (Bert L. Hartnell) **93f:05068** 05C70 (05C40)

— (*with* Aldred, R. E. L.; Jackson, Bill) Uniform cyclic edge connectivity in cubic graphs. *Combinatorica* **11** (1991), *no.* 2, 81–96. (Nicholas Wormald) **93e:05055** 05C40

— (*with* Lou, Ding Jun; Plummer, Michael D.) On the 2-extendability of planar graphs. *Discrete Math.* **96** (1991), *no.* 2, 81–99. (J. Sedláček) **93f:05038** 05C10 (05C70)

— (*with* Eggleton, R. B.; Little, C. H. C.) Cycles and paths in multigraphs. *Australas. J. Combin.* **5** (1992), 3–11. (Summary) **93a:05077** 05C38

— (*with* Lou, Ding Jun) Matching extensions of strongly regular graphs. (English summary) *Australas. J. Combin.* **6** (1992), 187–208. (Summary) **93j:05170** 05E30 (05C40)

— (*with* Zhang, Ke Min[1]) On edge-pancyclic graphs. (English summary) *Soochow J. Math.* **19** (1993), *no.* 1, 37–41. (Summary) **93j:05097** 05C38

Holton, Gerald Spengler, Einstein and the controversy over the end of science. *Physis Riv. Internaz. Storia Sci. (N.S.)* **28** (1991), *no.* 2, 543–556. (Summary) **93b:01029** 01A60 (00A30)

Holub, James R. Generalized shifts and basis vectors. *J. Math. Anal. Appl.* **161** (1991), *no.* 1, 176–187. (Richard M. Crownover) **93a:47031** 47B37 (47A99)

Holvorcem, Paulo R. Laurent expansions for certain functions defined by Dirichlet series. (English summary) *Aequationes Math.* **45** (1993), *no.* 1, 62–69. (Summary) **93k:30005** 30B50

Holz, Arno (*with* Ochiai, Moyuru; Yamazaki, Yoshitake; Ozao, Riko) Regression law of fluctuations and self-similarity law at a critical point in diffusion-reaction processes. *Thermal field theories* (*Ibaraki,* 1990), 513–519, *North-Holland Delta Ser., North-Holland, Amsterdam,* 1991. (Summary) **93b:82040** 82C05

— Topological properties of static and dynamic defect configurations in ordered liquids. *Phys. A* **182** (1992), *no.* 1-2, 240–278. (Yurii Raikher) **93d:82080** 82D30 (57M25, 57N12, 76A15)

Holzbaur, Christian (*with* Mozetič, Igor) Integrating numerical and qualitative models within constraint logic programming. (English summary) *Logic programming* (*San Diego, CA,* 1991), 678–693, *MIT Press Ser. Logic Program., MIT Press, Cambridge, MA,* 1991. (Summary) **93m:68118** 68Q60 (68N17)

Holzer, Siegfried M. How to deal with hypersingular integrals in the symmetric BEM. (English summary) *Comm. Numer. Methods Engrg.* **9** (1993), *no.* 3, 219–232. (Summary) **93j:65195** 65N38 (73V10)

Holzer, Silvano (*with* Girotto, Bruno) Regular and purely irregular bounded charges: a decomposition theorem. *Proc. Amer. Math. Soc.* **116** (1992), *no.* 3, 683–693. (K. P. S. Bhaskara Rao) **93a:28011** 28C15 (60B05)

Holzfuss, Joachim (*with* Parlitz, Ulrich) Lyapunov exponents from time series. *Lyapunov exponents* (*Oberwolfach,* 1990), 263–270, *Lecture Notes in Math.,* 1486, *Springer, Berlin,* 1991. (Hans-Peter Herzel) **93g:58096** 58F13

Holzhey, Christoph F. E. (*with* Wilczek, Frank) Black holes as elementary particles. (English summary) *Nuclear Phys. B* **380** (1992), *no.* 3, 447–477. (Summary) **93d:83045** 83C57 (81V17)

Holzman, Ron (*with* Aharoni, Ron) Optimal fractional matchings and covers in infinite hypergraphs: existence and duality. *Graphs Combin.* **8** (1992), *no.* 1, 11–22. (Ioan Tomescu) **93b:05125** 05C65 (05C70)

— (*with* Aharoni, Ron) How to guess two letters correctly. (English summary) *J. Combin. Theory Ser. A* **61** (1992), *no.* 1, 1–12. (Svatopluk Poljak) **93g:05140** 05D05

Holzmann, W. H. A short proof of Polya's theorem. (English summary) *J. Combin. Math. Combin. Comput.* **13** (1993), 57–64. 05A15

Home, D. (*with* Agarwal, G. S.; Schleich, W.) Einstein-Podolsky-Rosen correlation—parallelism between the Wigner function and the local hidden variable approaches. (English summary) *Phys. Lett. A* **170** (1992), *no.* 5, 359–362. (S. Gudder) **93k:81011** 81P10 (81S30)

— (*with* Hardy, Lucien; Squires, Euan J.; Whitaker, M. A. B.) Realism and the quantum-mechanical two-state oscillator. *Phys. Rev. A* (3) **45** (1992), *no.* 7, *part A,* 4267–4270. (Jeffrey Bub) **93f:81019** 81P15 (81P05)

Homentcovschi, Dorel (*with* Dragoș, Lazăr; Georgescu, Adelina) In memoriam. Caius Jacob (1912–1992). *Rev. Roumaine Math. Pures Appl.* **37** (1992), *no.* 7, 537–538. 01A70

— Generalised operational method applied to the lifting surface theory. (English summary) *Rev. Roumaine Math. Pures Appl.* **37** (1992), *no.* 7, 613–618. (Stanley A. Berger) **93k:76006** 76B05

Homer, M. S. Spectral properties of the Laplace tidal wave equation. *J. London Math. Soc.* (2) **45** (1992), *no.* 1, 79–96. (Summary) **93a:34099** 34L40 (34B24, 34L10, 47E05, 76B15)

Homer, Steven (*with* Goldman, Jerry) Doubly-periodic sequences and a class of two-dimensional cyclic codes. *Adv. in Appl. Math.* **13** (1992), *no.* 1, 48–61. (N. L. Manev) **93g:94019** 94B15 (11B37, 16W30)

— (*with* Selman, Alan L.) Oracles for structural properties: the isomorphism problem and public-key cryptography. *J. Comput. System Sci.* **44** (1992), *no.* 2, 287–301. (William R. Nico) **93j:68060** 68Q15 (68P25, 68Q45, 94A60)

— (*with* Ganesan, K.) Complete problems and strong polynomial reducibilities. *SIAM J. Comput.* **21** (1992), *no.* 4, 733–742. (Summary) **93f:68034** 68Q15 (03D15, 03D25)

Homma, Masaaki Nonreflexive plane curves of a certain type. *Ryukyu Math. J.* **1** (1988), 22–37. (Mei Chu Chang) **93f:14016a** 14H45

— Nonreflexive plane curves of a certain type. II. *Ryukyu Math. J.* **2** (1989), 21–28. (Mei Chu Chang) **93f:14016b** 14H45

— Duality of space curves and their tangent surfaces in characteristic $p > 0$. *Ark. Mat.* **29** (1991), *no.* 2, 221–235. (R. F. Lax) **93b:14056** 14H50 (14H55)

— Space curves with degenerate strict duals. *Comm. Algebra* **20** (1992), *no.* 3, 867–874. (Alfio Ragusa) **93b:14057** 14H50

— (*with* Kaji, Hajime) On the inseparable degree of the Gauss map of higher order for space curves. *Proc. Japan Acad. Ser. A Math. Sci.* **68** (1992), *no.* 1, 11–14. (R. F. Lax) **93c:14031** 14H50

— On duals of smooth plane curves. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 3, 785–790. (A. Prabhakar Rao) **93i:14025** 14H45 (14N05)

Hommel, Gerhard (*with* Bernhard, Gudrun) Multiple hypotheses testing. (English summary) *Computational aspects of model choice* (*Prague,* 1991), 211–235, *Contrib. Statist., Physica, Heidelberg,* 1993. (*see* **93k:62001**) 62H15 (62F03, 62J15)

Hommes, Cars H. (*with* Nusse, Helena E.) "Period three to period two" bifurcation for piecewise linear models. *Z. Nationalökonom.* **54** (1991), *no.* 2, 157–169. (Summary) **93b:90022** 90A16 (58F14)

Homobono, N. (*with* Escudero, M.; Fàbrega, J.; Fiol, Miguel A.) On surviving route graphs of iterated line digraphs. *Graph theory, combinatorics, and applications, Vol.*

1 (*Kalamazoo, MI*, 1988), 451–466, *Wiley-Intersci. Publ., Wiley, New York*, 1991. (Summary) **93c:05052** 05C20

buenos aires cyclic Homology Group *see* **Buenos Aires Cyclic Homology Group**

Honda, Katsuya *see* **Meneveau, Charles, 93d:76031**

Honda, Masanobu Ascendant subalgebras of hyperfinite Lie algebras. *Hiroshima Math. J.* **21** (1991), *no.* 3, 529–538. (Naoki Kawamoto) **93e:17032** 17B65 (17B05, 17B30)

Honda, Naofumi On the reconstruction theorem of holonomic modules in the Gevrey classes. *Publ. Res. Inst. Math. Sci.* **27** (1991), *no.* 6, 923–943. (P. Schapira) **93a:58156** 58G07 (32C38, 35N15, 46F15)

Honda, Noriko On the length of proofs after eliminating atomic cut inferences. *Hitotsubashi J. Arts Sci.* **32** (1991), *no.* 1, 79–85. (Anthony M. Ungar) **93b:03099** 03F20 (03F05)

Honda, Toshio Estimation of the mean by three stage procedure. *Sequential Anal.* **11** (1992), *no.* 1, 73–89. (Masafumi Akahira) **93i:62072** 62L12 (62L10)

— Construction of a confidence interval by triple sampling. (English summary) *Sequential Anal.* **11** (1992), *no.* 3, 273–287. (A. A. Novikov) **93j:62200** 62L05 (62F12, 62F25)

Honecker, A. (*with* Eholzer, W.; Flohr, M.; Hübel, R.; Nahm, Werner; Varnhagen, R.) Representations of W-algebras with two generators and new rational models. (English summary) *Nuclear Phys. B* **383** (1992), *no.* 1-2, 249–288. (A. Hamid Bougourzi) **93i:81061** 81R10 (81T40)

Honegger, Reinhard (*with* Rieckers, Alfred) First order coherent boson states. (English summary) *Helv. Phys. Acta* **65** (1992), *no.* 7, 965–984. (Helmut R. Reeh) **93m:81055** 81R30 (46L30, 46L60)

— (*with* Hertle, Jochen) Limiting Gibbs states and dynamics for thermal photons. *J. Math. Phys.* **33** (1992), *no.* 1, 143–151. (Boguslaw Zegarlinski) **93c:82005** 82B10 (46N55, 47N55, 81T05)

— (*with* Hertle, Jochen) Rigorous derivation of Planck's law in the thermodynamic limit. *J. Math. Phys.* **33** (1992), *no.* 1, 343–348. (Klaus Ziegler) **93c:82006** 82B10 (35Q99)

— (*with* Rieckers, Alfred) On higher-order coherent states of the Weyl algebra. *Lett. Math. Phys.* **24** (1992), *no.* 3, 221–225. (Władysław Adam Majewski) **93d:81082** 81R30 (46L30, 46L60, 81V80)

Honein, E. (*with* Honein, T.; Herrmann, G.) On two circular inclusions in harmonic problems. (English summary) *Quart. Appl. Math.* **50** (1992), *no.* 3, 479–499. (Summary) **93f:73031** 73C99 (73B27, 73K20, 73V35)

Honein, T. (*with* Honein, E.; Herrmann, G.) On two circular inclusions in harmonic problems. (English summary) *Quart. Appl. Math.* **50** (1992), *no.* 3, 479–499. (Summary) **93f:73031** 73C99 (73B27, 73K20, 73V35)

Hong, Fang Quan A class of martingale Φ-inequalities for $q = 1$. (Chinese. Chinese summary) *Acta Math. Sinica* **35** (1992), *no.* 2, 145–150. (Summary) **93m:60085** 60G42

Hong, G. S. (*with* Zhu, H. A.; Teo, C. L.; Poo, A. N.) An enhanced scheme for the model-based control of robot manipulators. (English summary) *Internat. J. Control* **56** (1992), *no.* 6, 1243–1261. 93C85 (70B15, 70Q05)

Hong, Geck Chan Integral mean estimates for a class of subharmonic functions of finite order in space. *Complex Variables Theory Appl.* **17** (1992), *no.* 3-4, 235–258. (Summary) **93k:31003** 31B05 (30D35)

Hong, Hoon (*with* Collins, George E.) Partial cylindrical algebraic decomposition for quantifier elimination. *J. Symbolic Comput.* **12** (1991), *no.* 3, 299–328. (Henry Africk) **93b:03015** 03B35 (03C10, 68Q40, 68T20)

Hong, Hui Min (*with* Li, Rui Sheng; Ma, Ping) Robustness and convergence of least-squares identification and adaptive tracking for stochastic system. (English and Chinese summaries) *Control Theory Appl.* **9** (1992), *no.* 3, 268–278. (Yuandong Ji) **93m:93094** 93E12 (93E10, 93E24, 93E35)

Hong, Jia Lin Spectral properties of linear differential systems with mean value. (English summary) *Northeast. Math. J.* **8** (1992), *no.* 2, 246–252. (James S. Muldowney) **93k:34019** 34A30 (34C99)

Hong, Jia Xing Dirichlet problems for Monge-Ampère equation degenerate on boundary. A Chinese summary appears in Chinese Ann. Math. Ser. A **12** (1991), no. 5, 644. *Chinese Ann. Math. Ser. B* **12** (1991), *no.* 4, 407–420. (R. C. MacCamy) **93a:35054** 35J65 (35J20, 35J70)

Hong, Kwang S. (*with* Leung, Joseph Y.-T.) Some results on Liu's conjecture. (English summary) *SIAM J. Discrete Math.* **5** (1992), *no.* 4, 500–523. (Jacek Błażewicz) **93i:90053** 90B35

Hong, Min Chun (*with* Guo, Bo Ling) Landau-Lifshitz equations of the ferromagnetic spin chain and harmonic maps. *Adv. in Math. (China)* **21** (1992), *no.* 4, 501–503. 82C10 (58E20)

— Partial regularities of minimizers of certain quadratic functionals with unbounded obstacles. (English summary) *Ann. Mat. Pura Appl.* (4) **161** (1992), 113–138. (Michele Carriero) **93i:49050** 49N60 (35J85)

— Some remarks on the minimizers of variational integrals with nonstandard growth conditions. (Italian summary) *Boll. Un. Mat. Ital. A* (7) **6** (1992), *no.* 1, 91–101. (Michele Mininni) **93f:49034** 49N60 (49J10)

— On the conformal equivalence of harmonic maps and exponentially harmonic maps. *Bull. London Math. Soc.* **24** (1992), *no.* 5, 488–492. (A. R. Aithal) **93f:58045** 58E20

— The equator map and the negative exponential functional. *Manuscripta Math.* **75** (1992), *no.* 1, 49–63. (Helmut Kaul) **93e:58037** 58E20

— Liouville theorems for exponentially harmonic functions on Riemannian manifolds. (English summary) *Manuscripta Math.* **77** (1992), *no.* 1, 41–46. (Wei Yue Ding) **93h:58042** 58E20 (35J60)

Hong, Sheng Yan A law of the iterated logarithm for random window-width kernel estimator of a nonparametric regression function. (English summary) *Systems Sci. Math. Sci.* **3** (1990), *no.* 4, 356–363. (Sidney J. Yakowitz) **93i:62031** 62G05 (62G20)

— Asymptotic normality of nearest neighbour regression estimators. (Chinese. English and Chinese summaries) *Chinese J. Appl. Probab. Statist.* **7** (1991), *no.* 2, 187–191. 62G05 (62E20)

— A law of the iterated logarithm for neighbor-type regression function estimator. (English summary) A Chinese summary appears in Chinese Ann. Math. Ser. A **13** (1992), no. 2, 279. *Chinese Ann. Math. Ser. B* **13** (1992), *no.* 2, 180–195. (Wolfgang Wertz) **93j:62098** 62G05

— (*with* Gao, Ji Ti) The rate of convergence of the nearest neighbour regression function estimator. (Chinese. English and Chinese summaries) *Chinese J. Appl. Probab. Statist.* **8** (1992), *no.* 3, 247–255. (Summary) **93m:62077** 62G05 (60F15, 62E20)

— Asymptotic properties of L_1-norm kernel estimator of the conditional median. (English summary) *Systems Sci. Math. Sci.* **5** (1992), *no.* 1, 55–69. (Summary) **93h:62079** 62G05

— Local oscillation modulus of the uniform empirical process. (English summary) *Systems Sci. Math. Sci.* **5** (1992), *no.* 2, 164–179. (Summary) **93i:60060** 60F15 (62G05, 62G30)

Hong, Xiao (*with* Chen, Bin) How small are the increments of partial sums of sequences of independent random variables with different distributions? (Chinese. English summary) *J. Hangzhou Univ. Natur. Sci. Ed.* **18** (1991), *no.* 4, 383–389. (Summary) **93a:60047** 60F15 (60G50)

Hong, Y. (*with* Cheng, Dai Zhan) Stability of ideal sliding dynamics. *Control theory, stochastic analysis and applications* (*Hangzhou*, 1991), 105–118, *World Sci. Publishing, River Edge, NJ*, 1991. (Vadim Komkov) **93d:93020** 93B12

Hong, Y. W. (*with* Bai, Do Sun) Estimation of $\Pr(X < Y)$ in the exponential case with common location parameter. *Comm. Statist. Theory Methods* **21** (1992), *no.* 1, 269–282. (Summary) **93c:62036** 62F10

Hong, Yan *see* **Yan, Hong**

Hong, Yi The heat kernels of some symmetric spaces. *International Symposium in Memory of Hua Loo Keng, Vol. II* (*Beijing*, 1988), 143–155, *Springer, Berlin*, 1991. (P. Günther) **93b:58139** 58G11 (35C15, 35K10)

— (*with* Wang, Guo Qiang) The heat kernels on some classical manifolds and classical domains. A Chinese summary appears in Acta Math. Sinica **35** (1992), no. 5, 719. *Acta Math. Sinica (N.S.)* **7** (1991), *no.* 4, 324–341. (Stig I. Andersson) **93e:58179** 58G11 (22E30, 35K05)

Hong, Yoo Pyo (*with* Pan, Ching-Tsuan) A lower bound for the smallest singular value. Second NIU Conference on Linear Algebra, Numerical Linear Algebra and Applications (DeKalb, IL, 1991). *Linear Algebra Appl.* **172** (1992), 27–32. (A. R. Amir-Moéz) **93d:15027** 15A42

— (*with* Horn, Roger A.; Li, Chi-Kwong) Linear operators preserving t-congruence on matrices. (English summary) *Linear Algebra Appl.* **175** (1992), 191–211. (Mihail Voicu) **93h:15004** 15A04 (15A24, 15A57, 47A99)

— (*with* Pan, Ching-Tsuan) Rank-revealing QR factorizations and the singular value decomposition. *Math. Comp.* **58** (1992), *no.* 197, 213–232. (John Todd) **93d:65031** 65F05

Hongan, Motoshi A generalization of a theorem of Posner. *Math. J. Okayama Univ.* **33** (1991), 97–101. (W. K. Nicholson) **93d:16041** 16U80 (16W25)

Hongler, M.-O. On the diffusion induced by alternating renewal processes. (English summary) *Phys. A* **188** (1992), *no.* 4, 597–606. (Yu. P. Virchenko) **93j:82053** 82C31 (60K40)

ta Hông Quang *see* **Ta Hông Quang**

hoàng Hồng So'n *see* **Hoàng Hồng So'n**

nguyễn Hồng Thái *see* **Nguyễn Hồng Thái**

Hong Tuan, R. Abstraction hierarchy in neural networks: a rigorous treatment. (English summary) *Neural networks*, 21–32, *North-Holland, Amsterdam*, 1991. (*see* **93i:68010**) 68T05 (92B20)

— A rigorous derivation of the Gaussian representation for propagators in scalar field theories. (English summary) *Phys. Lett. B* **286** (1992), *no.* 3-4, 315–320. (Summary) **93d:81121** 81T15

lê Hông Vân *see* **Lê Hông Vân**

Hong-zhi, An *see* **An, Hong Zhi**

Honkala, Iiro On lengthening of covering codes. (English summary) A collection of contributions in honour of Jack van Lint. *Discrete Math.* **106/107** (1992), 291–295. (Wende Chen) **93h:94034** 94B75

Honkala, J. (*with* Salomaa, Arto) Characterization results about L codes. (French summary) *RAIRO Inform. Théor. Appl.* **26** (1992), *no.* 3, 287–301. (Bal Kishan Dass) **93d:94012** 94A40 (94A60, 94B10)

Honkonen, Juha Anomalous diffusion in a unidirectional random velocity field with long-range correlations. *J. Phys. A* **25** (1992), *no.* 11, 3175–3188. (Summary) **93a:82056** 82C70 (82C44)

Honma, Toshihiro (*with* Okada, Tsuyoshi; Kihara, Masahiko; Ikeda, Masakazu) System observer techniques in robust control systems design synthesis. *Robust control system techniques and applications, Part* 1, 79–118, *Control Dyn. Syst. Adv. Theory Appl.*, 50, *Academic Press, San Diego, CA*, 1992. (*see* **93d:93007**) 93B36 (93D15)

Honoré, Bo E. Trimmed LAD and least squares estimation of truncated and censored regression models with fixed effects. *Econometrica* **60** (1992), *no.* 3, 533–565. (Summary) **93a:62100** 62J07 (62M99, 62P20)

Honsberger, R. A. A gem from combinatorics. *Bull. Inst. Combin. Appl.* **1** (1991), 56–58. (C. R. Pranesachar) **93a:05004** 05A05

Honsell, Furio (*with* Forti, M.) Weak foundation and antifoundation properties of positively comprehensive hyperuniverses. *L'anti-fondation en logique et en théorie des ensembles*, 31–43, *Cahiers Centre Logique*, 7, *Univ. Catholique Louvain, Louvain-la-Neuve*, 1992. (A. Lévy) **93i:03076** 03E70

— (*with* Egidi, Lavinia; Ronchi Della Rocca, Simona) Operational, denotational and logical descriptions: a case study. Mathematical foundations of computer science '91 (Kazimierz Dolny, 1991). *Fund. Inform.* **16** (1992), *no.* 2, 149–169. (Summary) **93i:68036** 68N15 (68Q55)

— (*with* Avron, Arnon; Mason, Ian A.; Pollack, Robert) Using typed lambda calculus to implement formal systems on a machine. (English summary) *J. Automat. Reason.* **9** (1992), *no.* 3, 309–354. (Summary) **93j:68171** 68T15 (03B35, 03B40)

— (*with* Ronchi Della Rocca, Simona) An approximation theorem for topological lambda models and the topological incompleteness of lambda calculus. *J. Comput. System Sci.* **45** (1992), *no.* 1, 49–75. (Martin W. Bunder) **93h:03014** 03B40 (06A23)

Hoo, C. S. Extensions of MV- and BCK-algebras. *Proceedings of Asian Mathematical Conference*, 1990 (*Hong Kong*, 1990), 180–185, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93b:00022**) 06F35 (03G25)

— Unitary extension of MV- and BCK-algebras. II. (English summary) *Math. Japon.* **37** (1992), *no.* 4, 683–686. (Summary) **93d:06017** 06F35 (03G25)

Hood, L. (*with* Hunkapillar, T.; Solomon, J. E.) Computational problems and the human genome project. *Parallel processing for scientific computing* (*Houston, TX*, 1991), 315–331, *SIAM, Philadelphia, PA*, 1992. (*see* **93g:65178**) 92B05 (68T99)

Hood, M. J. On the computation of modified Bennett functions. *European J. Appl. Math.* **3** (1992), *no.* 1, 93–95. (T. Giec) **93d:49030** 49K30 (33B10, 49M30)

Hood, Simon (*with* Clarkson, Peter A.) Nonclassical symmetry reductions and exact solutions of the Zabolotskaya-Khokhlov equation. (English summary) *European J. Appl. Math.* **3** (1992), *no.* 4, 381–414. (Naruyoshi Asano) **93k:35056** 35C05 (35N10, 35Q30, 58F37)

— (*with* Clarkson, Peter A.) Symmetry reductions of a generalized, cylindrical nonlinear Schrödinger equation. (English summary) *J. Phys. A* **26** (1993), *no.* 1, 133–150. (Summary) **93m:35167** 35Q55 (34A99, 81Q05)

Hooda, B. K. (*with* Singh, N. P.; Singh, Umed) On estimation in Fréchet distribution of *m*th maxima. (English summary) *Comm. Statist. Theory Methods* **22** (1993), *no.* 3, 907–919. 62F10

't Hooft, Gerard Black hole quantization and a connection to string theory. *Physics, geometry, and topology* (*Banff, AB*, 1989), 105–128, *NATO Adv. Sci. Inst. Ser. B Phys.*, 238, *Plenum, New York*, 1990. (V. A. Golubeva) **93e:83045** 83C57 (83C45, 83E30)

— More on the black hole *S*-matrix. *Quantum gravity* (*Moscow*, 1990), 251–265, *World Sci. Publishing, River Edge, NJ*, 1991. (Summary) **93d:83046** 83C57 (81V17)

— The black hole horizon as a quantum surface. The birth and early evolution of our Universe (Gräftåvallen, 1990). *Phys. Scripta* **1991**, *Vol.* T36, 247–252. (Summary) **93c:83074** 83C57 (83C47)

— Causality in (2 + 1)-dimensional gravity. *Classical Quantum Gravity* **9** (1992), *no.* 5, 1335–1348. (Michael O. Katanaev) **93f:83031** 83C27 (83C99)

— (*with* Isler, Karl; Kalitzin, S.) Quantum field-theoretic behavior of a deterministic cellular automaton. (English summary) *Nuclear Phys. B* **386** (1992), *no.* 3, 495–519. (From the text) **93m:81150** 81T99 (68Q80)

— (*with* Deser, S.; Jackiw, R.) Physical cosmic strings do not generate closed timelike curves. *Phys. Rev. Lett.* **68** (1992), *no.* 3, 267–269. (Laszlo B. Szabados) **93a:83026** 83C75

— *see also* **New symmetry principles in quantum field theory, 93h:81002**

Hooghiemstra, G. (*with* den Hollander, Frank; Keane, Michael S.; Resing, J.) Strong law and central limit theorem for a process between maxima and sums. *Probab. Theory Related Fields* **90** (1991), *no.* 1, 37–55. (Sándor Csörgő) **93a:60030** 60F05 (60F15, 60G99)

Hooker, J. N. (*with* Chandru, Vijaya) Detecting embedded Horn structure in propositional logic. *Inform. Process. Lett.* **42** (1992), *no.* 2, 109–111. (Summary) **93c:68039** 68Q25 (03B05, 03D15)

— Solving the incremental satisfiability problem. (English summary) *J. Logic Programming* **15** (1993), *no.* 1-2, 177–186. (Summary) **93h:68122** 68T15

Hooker, John W. (*with* Patula, William T.) Generalized second order linear differential equations. (Serbo-Croatian summary) *Rad. Mat.* **7** (1991), *no.* 2, 253–271. (B. B. Pakholok) **93c:34077** 34C10 (34A30, 34K05, 45J05)

Hooley, C. On ternary quadratic forms that represent zero. *Glasgow Math. J.* **35** (1993), *no.* 1, 13–23. (D. R. Heath-Brown) **93i:11045** 11E20 (11L40)

Hooman, J. J. M. (*with* de Roever, W. P.) An introduction to compositional methods for concurrency and their application to real-time. *Sādhanā* **17** (1992), *no.* 1, 29–73. (Summary) **93d:68044** 68Q60 (68Q10)

— (*with* Ramesh, S.; de Roever, W. P.) A compositional axiomatization of Statecharts. (English summary) Selected papers of the International BCS-FACS Workshop on Semantics for Concurrency (Leicester, 1990). *Theoret. Comput. Sci.* **101** (1992), *no.* 2, 289–335. (Gabriel Ciobanu) **93h:68085** 68Q60 (68Q55)

de Hoop, Adrianus T. Reciprocity, causality, and Huygens' principle in electromagnetic wave theory. *Huygens' principle* 1690–1990: *theory and applications* (*The Hague and Scheveningen*, 1990), 171–192, *Stud. Math. Phys.*, 3, *North-Holland, Amsterdam*, 1992. (I. Kay) **93d:78002** 78A25 (45F15, 78A40, 78A45)

— (*with* de Hoop, Maarten V.) Scalar space-time waves in their spectral-domain first- and second-order Thiele approximations. *Wave Motion* **15** (1992), *no.* 3, 229–265. (Summary) **93a:86001** 86A15 (73D99, 73V35)

— (*with* Verweij, Martin D.) Analysis of time-domain acoustic wave fields in arbitrarily continuously layered configurations based on the modified Cagniard method. (English summary) *Computational acoustics, Vol.* 1 (*Cambridge, MA*, 1991), 399–409, *North-Holland, Amsterdam*, 1993. (*see* **93j:76001**) 76Q05

— (*with* de Hoop, Maarten V.) Interface reflection of spherical acoustic waves in the first- and second-order rational parabolic approximations and their artifacts. (English summary) *J. Acoust. Soc. Amer.* **93** (1993), *no.* 1, 22–35. (Summary) **93i:76081** 76Q05

de Hoop, Maarten V. (*with* de Hoop, Adrianus T.) Scalar space-time waves in their spectral-domain first- and second-order Thiele approximations. *Wave Motion* **15** (1992), *no.* 3, 229–265. (Summary) **93a:86001** 86A15 (73D99, 73V35)

— (*with* de Hoop, Adrianus T.) Interface reflection of spherical acoustic waves in the first- and second-order rational parabolic approximations and their artifacts. (English summary) *J. Acoust. Soc. Amer.* **93** (1993), *no.* 1, 22–35. (Summary) **93i:76081** 76Q05

Hooper, Peter M. Iterative weighted least squares estimation in heteroscedastic linear model. (English summary) *J. Amer. Statist. Assoc.* **88** (1993), *no.* 421, 179–184. 62J05

— Nearly orthogonal randomized designs. (English summary) *J. Roy. Statist. Soc. Ser. B* **55** (1993), *no.* 1, 221–236. (Summary) **93k:62162** 62K99

Hoops, Stefan (*with* Benguria, Rafael D.; Siedentop, Heinz) Bounds on the excess charge and the ionization energy for the Hellmann-Weizsäcker model. (English and French summaries) *Ann. Inst. H. Poincaré Phys. Théor.* **57** (1992), *no.* 1, 47–65. (A. Ventura) **93g:81209** 81V45

Hooshyar, M. A. (*with* Richardson, P. A.) The inverse problem of central, spin-orbit and L^2-dependent potentials. *J. Math. Phys.* **32** (1991), *no.* 5, 1310–1317. (Pierre C. Sabatier) **93f:34025** 34A55 (34L25, 35P25, 35R30, 81U99)

— (*with* Tamil, Lakshman S.) Inverse scattering theory and the design of planar optical waveguides with the same propagation constants for different frequencies. (English summary) *Inverse Problems* **9** (1993), *no.* 1, 69–80. (Summary) **93k:78001** 78A10 (34A55, 34L25, 78A55)

Hoover, Carol G. (*with* Hoover, William G.; Evans, Will J.; Moran, William; Levatin, Joanne A.; Craig, Errol A.) Irreversible processes from reversible mechanics. *Microscopic simulations of complex flows* (*Brussels*, 1989), 199–231, *NATO Adv. Sci. Inst. Ser. B Phys.*, 236, *Plenum, New York*, 1990. (Summary) **93a:82035** 82C05 (58F13, 58F40)

— (*with* Hoover, William G.; Posch, Harald A.) Fractal dimension of steady nonequilibrium flows. *Chaos* **2** (1992), *no.* 2, 245–252. (Summary) **93c:82032** 82C05 (58F40, 76A99, 76E99)

Hoover, D. N. Convergence in distribution and Skorokhod convergence for the general theory of processes. *Probab. Theory Related Fields* **89** (1991), *no.* 3, 239–259. (Saul D. Jacka) **93c:60050** 60G07 (60B10)

— Complexity of graph covering problems for graphs of low degree. *J. Combin. Math. Combin. Comput.* **11** (1992), 187–208. (Summary) **93a:05119** 05C85

Hoover, H. James Real functions, contraction mappings, and P-completeness. *Inform. and Comput.* **93** (1991), *no.* 2, 333–349. (Summary) **93d:68034** 68Q25

Hoover, Thomas B. (*with* Lambert, Alan) Essentially normal composition operators on L^2. *Acta Sci. Math.* (*Szeged*) **55** (1991), *no.* 3-4, 403–408. (Valentin Matache) **93b:47060** 47B38 (47B15)

— (*with* Hadwin, Don) Representations of weighted translation algebras. *Houston J. Math.* **18** (1992), *no.* 2, 295–318. (È. V. Kissin) **93g:47034** 47B37 (46L99, 47D25)

— Isomorphic operator algebras and conjugate inner functions. *Michigan Math. J.* **39** (1992), *no.* 2, 229–237. (D. Sarason) **93h:47056** 47D25 (47B38)

Hoover, William G. (*with* Hoover, Carol G.; Evans, Will J.; Moran, William; Levatin, Joanne A.; Craig, Errol A.) Irreversible processes from reversible mechanics. *Microscopic simulations of complex flows* (*Brussels*, 1989), 199–231, *NATO Adv. Sci. Inst. Ser. B Phys.*, 236, *Plenum, New York*, 1990. (Summary) **93a:82035** 82C05 (58F13, 58F40)

— (*with* Posch, Harald A.; Hoover, Carol G.) Fractal dimension of steady nonequilibrium flows. *Chaos* **2** (1992), *no.* 2, 245–252. (Summary) **93c:82032** 82C05 (58F40, 76A99, 76E99)

Hop, J. Peter (*with* van Dijk, Herman K.) SISAM and MIXIN: two algorithms for the computation of posterior moments and densities using Monte Carlo integration. (English summary) *Comput. Sci. Econom. Management* **5** (1992), *no.* 3, 183–220. (Summary) **93e:65157** 65U05 (65C05)

Hopcraft, K. I. (*with* Smith, P. R.) ★ An introduction to electromagnetic inverse scattering. Developments in Electromagnetic Theory and Applications, 7. *Kluwer Academic Publishers Group, Dordrecht*, 1992. xii+228 *pp. ISBN* 0-7923-0777-1 (Philip Huddleston) **93j:78002** 78–01 (78A25, 78A45)

Hopcroft, John E. (*with* Kahn, Peter J.) A paradigm for robust geometric algorithms. *Algorithmica* **7** (1992), *no.* 4, 339–380. 68U05 (68R10)

Hopenhayn, Hugo A. Entry, exit, and firm dynamics in long run equilibrium. (English summary) *Econometrica* **60** (1992), *no.* 5, 1127–1150. (Summary) **93e:90012** 90A11 (90A14)

— (*with* Prescott, Edward C.) Stochastic monotonicity and stationary distributions for dynamic economies. (English summary) *Econometrica* **60** (1992), *no.* 6, 1387–1406. (Summary) **93k:90025** 90A16

— Exit, selection, and the value of firms. *J. Econom. Dynamics Control* **16** (1992), *no.* 3-4, 621–653. 90A11

Hopfield, John J. (*with* Dong, Dawei W.) Dynamic properties of neural networks with adapting synapses. (English summary) *Network* **3** (1992), *no.* 3, 267–283. (Summary) **93g:92003** 92B20 (68T05)

Hopfinger, E. J. (*with* van Heijst, G. J. F.) Vortices in rotating fluids. *Annual review of fluid mechanics, Vol.* 25, 241–289, *Annual Reviews, Palo Alto, CA*, 1993. (Radyadour Kh. Zeytounian) **93k:76119** 76U05 (76C05, 76V05, 86A10)

Hopkins, Michael J. (*with* Kuhn, Nicholas J.; Ravenel, Douglas C.) Morava *K*-theories of classifying spaces and generalized characters for finite groups. *Algebraic topology* (*San Feliu de Guíxols*, 1990), 186–209, *Lecture Notes in Math.*, 1509, *Springer, Berlin*, 1992. (Nobuaki Yagita) **93k:55008** 55N22 (55N15, 55R35)

— (*with* Hovey, Mark A.) Spin cobordism determines real *K*-theory. *Math. Z.* **210** (1992), *no.* 2, 181–196. (P. S. Landweber) **93g:55007** 55N22 (19L41)

Hoppe, Fred M. Asymptotic rates of growth of the extinction probability of a mutant gene. *J. Math. Biol.* **30** (1992), *no.* 6, 547–566. (Dean H. Fearn) **93h:60133** 60J80

— The survival probability of a mutant in a multidimensional population. *J. Math. Biol.* **30** (1992), *no.* 6, 567–575. (Dean H. Fearn) **93h:60134** 60J80

Hoppe, Jens New symmetries in 2 + 1 dimensions. *Supermembranes and physics in* 2+1 *dimensions* (*Trieste*, 1989), 327–331, *World Sci. Publishing, River Edge, NJ*, 1990. (*see* **93g:81003**) 81R10

— Infinite-dimensional algebras and (2 + 1)-dimensional field theories: yet another view of gl(∞); some new algebras. *Geometry and theoretical physics* (*Bad Honnef*, 1990), 171–177, *Springer, Berlin*, 1991. (*see* **92f:00024**) 81R10 (17B65, 17B81, 81T40)

— (2*n* + 1)-dimensional integrable field theories. *Nonperturbative methods in low-dimensional quantum field theories* (*Debrecen*, 1990), 449–454, *World Sci. Publishing, River Edge, NJ*, 1991. (*see* **93f:81005**) 81R10 (81–02, 81T99)

— (*with* Bordemann, Martin; Schaller, Peter; Schlichenmaier, Martin) gl(∞) and geometric quantization. *Comm. Math. Phys.* **138** (1991), *no.* 2, 209–244. (Alan L. Carey) **93c:58077** 58F06 (17B65, 81S10)

— ★ Lectures on integrable systems. Lecture Notes in Physics. New Series m: Monographs, 10. *Springer-Verlag, Berlin*, 1992. vi+111 *pp. ISBN* 3-540-55700-8 (Walter Oevel) **93h:58069** 58F07 (35Q58, 81–02, 82–02, 82B23)

Hoppe, W. (*with* Berthold, Dietmar; Silbermann, Bernd) A fast algorithm for solving the generalized airfoil equation. (English summary) Orthogonal polynomials and numerical methods. *J. Comput. Appl. Math.* **43** (1992), *no.* 1-2, 185–219. (Jose Cuminato) **93k:65106** 65R20 (45E05)

— (*with* Berthold, Dietmar; Silbermann, Bernd) The numerical solution of the generalized airfoil equation. *J. Integral Equations Appl.* **4** (1992), *no.* 3, 309–336. (John W. Hilgers) **93m:65181** 65R20 (45L05, 76M25)

Hoppensteadt, F. C. Signal processing by model neural networks. (English summary) *SIAM Rev.* **34** (1992), *no.* 3, 426–444. 68T05 (82C32, 92B20)

Hora, Akihito Quasi-invariant measures on the infinite product of SU(2). *J. Theoret. Probab.* **5** (1992), *no.* 1, 71–100. (Richard Becker) **93g:22008** 22D40 (28C99, 43A05, 46G12, 60B15, 60G30)

— Remarks on the shuffling problem for finite groups. (English summary) *Publ. Res. Inst. Math. Sci.* **29** (1993), *no.* 1, 153–159. (Summary) **93m:60024** 60B15

Horadam, Alwyn F. Falling factorial polynomials of generalized Fibonacci type. *Applications of Fibonacci numbers, Vol.* 3 (*Pisa*, 1988), 139–153, *Kluwer Acad. Publ., Dordrecht*, 1990. (Padmavathamma) **93f:11013** 11B39

— (*with* Filipponi, Piero) Derivative sequences of Fibonacci and Lucas polynomials. *Applications of Fibonacci numbers, Vol.* 4 (*Winston-Salem, NC*, 1990), 99–108, *Kluwer Acad. Publ., Dordrecht*, 1991. (Pentti Haukkanen) **93i:11014** 11B39

— Genocchi polynomials. *Applications of Fibonacci numbers, Vol. 4 (Winston-Salem, NC,* 1990), 145–166, *Kluwer Acad. Publ., Dordrecht,* 1991. (F. T. Howard) **93i:11027** 11B68
— (*with* Shannon, A. G.; Loh, R. P.) Generalized Fibonacci and Lucas factorizations. *Applications of Fibonacci numbers, Vol. 4 (Winston-Salem, NC,* 1990), 271–276, *Kluwer Acad. Publ., Dordrecht,* 1991. (James N. Ridley) **93m:11014** 11B39
— Negative order Genocchi polynomials. *Fibonacci Quart.* **30** (1992), *no.* 1, 21–34. (Shiro Ando) **93a:11016** 11B68 (05A15)
— (*with* Filipponi, Piero; Brugia, Odoardo) A note on the improper use of a formula for Fibonacci numbers. (English summary) *Internat. J. Math. Ed. Sci. Tech.* **24** (1993), *no.* 1, 9–21. (Pentti Haukkanen) **93m:11013** 11B39 (11B65)
— *see also* **Applications of Fibonacci numbers, 93g:11004**

Horadam, K. J. (*with* de Launey, Warwick) A weak difference set construction for higher-dimensional designs. (English summary) *Des. Codes Cryptogr.* **3** (1993), *no.* 1, 75–87. (Dieter Jungnickel) **93m:05041** 05B20 (05B10)

Horák, Pavel Strong divisibility linear recurrences of the third order. *Fibonacci Quart.* **30** (1992), *no.* 2, 98–102. (Shiro Ando) **93e:11020** 11B37

Horák, Peter (*with* Sauer, Norbert W.) Covering complete graphs by cliques. (English summary) *Ars Combin.* **33** (1992), 279–288. (Summary) **93d:05118** 05C70
— (*with* Rosa, Alexander) Maximal partial Latin squares. *Graphs, matrices, and designs,* 225–235, *Lecture Notes in Pure and Appl. Math.,* 139, *Dekker, New York,* 1993. (Charles J. Colbourn) **93m:05037** 05B15

Hořava, Petr Some exact solutions of string theory in four and five dimensions. *Phys. Lett. B* **278** (1992), *no.* 1-2, 101–110. (Ilya Shapiro) **93f:81110** 81T30
— Two-dimensional stringy black holes with one asymptotically flat domain. (English summary) *Phys. Lett. B* **289** (1992), *no.* 3-4, 293–301. (Summary) **93f:81132** 81T40 (81T20)

Hordijk, Arie (*with* Spieksma, Flos) On ergodicity and recurrence properties of a Markov chain with an application to an open Jackson network. *Adv. in Appl. Probab.* **24** (1992), *no.* 2, 343–376. (Summary) **93i:60126** 60J10 (60K25)
— (*with* Dekker, Rommert) Recurrence conditions for average and Blackwell optimality in denumerable state Markov decision chains. *Math. Oper. Res.* **17** (1992), *no.* 2, 271–289. (D. Kalin) **93h:90100** 90C40 (90B22)

Horgan, Cornelius O. (*with* Payne, L. E.) The influence of geometric perturbations on the decay of Saint-Venant end effects in linear isotropic elasticity. (English summary) *Partial differential equations with real analysis,* 187–218, *Pitman Res. Notes Math. Ser.,* 263, *Longman Sci. Tech., Harlow,* 1992. (Summary) **93m:35177** 35Q72 (73C02)
— (*with* Polignone, Debra A.) Axisymmetric finite anti-plane shear of compressible nonlinearly elastic circular tubes. *Quart. Appl. Math.* **50** (1992), *no.* 2, 323–341. (Summary) **93a:73049** 73G05 (73C50)
— (*with* Payne, L. E.) A Saint-Venant principle for a theory of nonlinear plane elasticity. (English summary) *Quart. Appl. Math.* **50** (1992), *no.* 4, 641–675. (Joseph J. Roseman) **93j:73017** 73C10 (73C50)

Horgan, Graham (*with* Haslett, John) Linear discriminant analysis in image restoration and the prediction of error rate. (English summary) *Spatial statistics and imaging (Brunswick, ME,* 1988), 112–129, *IMS Lecture Notes Monograph Ser.,* 20, *Inst. Math. Statist., Hayward, CA,* 1991. (*see* **93g:62004**) 62H30 (62M30, 68U10)

Hori, Noriyuki (*with* Mori, Takahiko; Nikiforuk, Peter N.) A new perspective for discrete-time models of a continuous-time system. *IEEE Trans. Automat. Control* **37** (1992), *no.* 7, 1013–1017. (Summary) **93c:93034** 93C55 (93B40)

Hori, Takayuki Hidden symmetry of relativistic particles. *J. Phys. Soc. Japan* **61** (1992), *no.* 2, 744–745. (Nathalie Debergh) **93d:81059** 81R05 (22E70)

Horie, Kuniaki Two aspects of the relative λ-invariant. *Bull. London Math. Soc.* **24** (1992), *no.* 3, 243–248. (Jonathan W. Sands) **93b:11141** 11R23

Horie, Mitsuko The Hasse norm principle for elementary abelian extensions. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 1, 47–56. (M. E. Keating) **93f:11074** 11R20 (11R32, 11R37)

Horikawa, Eiji Contiguity relations for q-hypergeometric function and related quantum group. *Proc. Japan Acad. Ser. A Math. Sci.* **68** (1992), *no.* 7, 157–160. (A. U. Klimyk) **93j:33009** 33D15 (17B37, 81R50)

Horikawa, Eriko Some irreducible unitary representations of $SL(n, \mathcal{O})$ and the corresponding spherical functions of class χ. *Japan. J. Math. (N.S.)* **18** (1992), *no.* 1, 173–203. (David Joyner) **93e:22035** 22E50 (20G25, 22D10)

Horita, Takehiko (*with* Mori, Hazime) Long-time correlations and anomalous scaling laws of widespread chaos in the standard map. *From phase transitions to chaos,* 290–307, *World Sci. Publishing, River Edge, NJ,* 1992. (Summary) **93c:58136** 58F13

Horiuchi, Annick M. The development of algebraic methods of problem-solving in Japan in the late seventeenth and the early eighteenth centuries. *Proceedings of the International Congress of Mathematicians, Vol. I, II (Kyoto,* 1990), 1639–1649, *Math. Soc. Japan, Tokyo,* 1991. (George Gheverghese Joseph) **93f:01005** 01A27

Horiuchi, Kazuo (*with* Makino, Mitsunori; Oishi, Shin'ichi; Kashiwagi, Masahide) Computational complexity of the homotopy method for calculating solutions of strongly monotonic resistive circuit equations. *Electron. Comm. Japan Part III Fund. Electron. Sci.* **74** (1991), *no.* 11, 90–100 (1992). (S. Hitotumatu) **93b:65078** 65H20 (65Y20, 68Q25, 94C05)
— (*with* Yamamura, Kiyotaka; Ushida, Akio) Improving the efficiency of interval analysis by Kevorkian's decomposition technique. *Electron. Comm. Japan Part III Fund. Electron. Sci.* **75** (1992), *no.* 2, 36–46. 65G10 (65H10)

Horiuchi, Toshio On the relative p-capacity. *J. Math. Soc. Japan* **43** (1991), *no.* 3, 605–617. (From the introduction) **93b:31007** 31B15 (35J20, 46E35)

Hörkens, Ulrich (*with* Hofestädt, Ralf) Cellular automata simulation shell. (English summary) *Computational systems analysis* 1992 (*Berlin,* 1992), 325–330, *Elsevier, Amsterdam,* 1992. (*see* **93e:00021**) 68Q80 (68Q75)

Hörmander, Lars Quadratic hyperbolic operators. *Microlocal analysis and applications (Montecatini Terme,* 1989), 118–160, *Lecture Notes in Math.,* 1495, *Springer, Berlin,* 1991. (Nobuyuki Tose) **93k:35187** 35L99 (35A27)
— A uniqueness theorem of Beurling for Fourier transform pairs. *Ark. Mat.* **29** (1991), *no.* 2, 237–240. (Colin C. Graham) **93b:42016** 42A38 (01A60)
— A uniqueness theorem for second order hyperbolic differential equations. *Comm. Partial Differential Equations* **17** (1992), *no.* 5-6, 699–714. (Tapas Mazumdar) **93h:35116** 35L10 (35A05)
— *see also* **Zalcman, Lawrence A., 93a:01041**

Hormel, M. (*with* Tolle, H.; Parks, P. C.; Ersü, E.; Militzer, Jürgen) Learning control with interpolating memories—general ideas, design lay-out, theoretical approaches and practical applications. (English summary) *Internat. J. Control* **56** (1992), *no.* 2, 291–317. 93E35

Horn, Mary Ann (*with* Lasiecka, Irena) The Euler-Bernoulli plate is exactly controllable via bending moments only. *Optimal control of partial differential equations (Irsee,* 1990), 129–142, *Lecture Notes in Control and Inform. Sci.,* 149, *Springer, Berlin,* 1991. (Enrique Zuazua) **93j:35034** 35B37 (35Q72, 73K10, 73K50, 93B05)
— Uniform decay rates for the solutions to the Euler-Bernoulli plate equation with boundary feedback acting via bending moments. *Differential Integral Equations* **5** (1992), *no.* 5, 1121–1150. (Goong Chen) **93h:35054** 35J25 (73K12, 73K50, 93C20)
— Exact controllability of the Euler-Bernoulli plate via bending moments only on the space of optimal regularity. *J. Math. Anal. Appl.* **167** (1992), *no.* 2, 557–581. (L. P. Lebedev) **93c:73075** 73K50 (73K10)

Horn, Paul S. Quasi-nonparametric upper tolerance regions based on the bootstrap. (English summary) *Comm. Statist. Theory Methods* **21** (1992), *no.* 12, 3351–3367. (Summary) **93h:62089** 62G09 (62F25, 62G15)

Horn, Roger A. (*with* Mathias, Roy; Nakamura, Yoshihiro) Inequalities for unitarily invariant norms and bilinear matrix products. *Linear and Multilinear Algebra* **30** (1991), *no.* 4, 303–314. (Matjaž Omladič) **93b:15020** 15A45
— (*with* Mathias, Roy) Block-matrix generalizations of Schur's basic theorems on Hadamard products. Second NIU Conference on Linear Algebra, Numerical Linear Algebra and Applications (DeKalb, IL, 1991). *Linear Algebra Appl.* **172** (1992), 337–346. (Jeffrey Stuart) **93j:15014** 15A42 (15A18, 15A69)
— (*with* Hong, Yoo Pyo; Li, Chi-Kwong) Linear operators preserving t-congruence on matrices. (English summary) *Linear Algebra Appl.* **175** (1992), 191–211. (Mihail Voicu) **93h:15004** 15A04 (15A24, 15A57, 47A99)
— *see also* **Conference: Linear Algebra, Numerical Linear Algebra and Applications, 93a:15002**

Horn, T. C. M. (*with* Kleyn, A. W.; Dijkhuis, B.) Catastrophes and classical surface scattering. *Chem. Phys.* **149** (1990), *no.* 3, 275–298. (D. R. J. Chillingworth) **93e:58020** 58C28 (78A05)

Horne, James H. Skein relations and Wilson loops. (English summary) *Nonperturbative methods in low-dimensional quantum field theories (Debrecen,* 1990), 39–67, *World Sci. Publishing, River Edge, NJ,* 1991. (Emil Vinţeler) **93i:57006** 57M25 (81R05, 81T40)
— (*with* Martin, Stephen P.) On the form of the free energy in 2D gravity theories. *Phys. Lett. B* **258** (1991), *no.* 3-4, 322–330. (Andrew R. Kavalov) **93b:81253** 81T40
— (*with* Horowitz, Gary T.) Exact black string solutions in three dimensions. *Nuclear Phys. B* **368** (1992), *no.* 2, 444–462. (Asghar Qadir) **93d:81140** 81T30 (81T40, 83E30)
— (*with* Horowitz, Gary T.; Steif, Alan R.) An equivalence between momentum and charge in string theory. *Phys. Rev. Lett.* **68** (1992), *no.* 5, 568–571. (Aleksandar R. Miković) **93b:81218** 81T30

Hornfeck, K. The minimal supersymmetric extension of WA_{n-1}. *Phys. Lett. B* **275** (1992), *no.* 3-4, 355–360. (Bani Mitra Södermark) **93d:81072** 81R10 (17B68, 81T30)

Horng, Gwoboa (*with* Huang, Ming-Deh A.) Simplifying nested radicals and solving polynomials by radicals in minimum depth. *31st Annual Symposium on Foundations of Computer Science, Vol. I, II (St. Louis, MO,* 1990), 847–856, *IEEE Comput. Soc. Press, Los Alamitos, CA,* 1990. (Jacques Calmet) **93g:68061** 68Q40 (12Y05)

Horng, Huey Yang (*with* Chou, Jyh Horng; Horng, Ing Rong) Robustness of eigenvalue clustering in various regions of the complex plane for perturbed systems. (English summary) *Internat. J. Control* **57** (1993), *no.* 6, 1469–1484. (Summary) **93m:93070** 93D09 (93B60)
— (*with* Horng, Ing Rong; Chou, Jyh Horng) Eigenvalue clustering in subregions of the complex plane for interval dynamic systems. (English summary) *Internat. J. Systems Sci.* **24** (1993), *no.* 5, 901–914. (Summary) **93k:93053** 93B55 (93D09)

Horng, Ing Rong (*with* Chou, Jyh Horng; Ho, Shinn Jang) Robustness of disk-stability for perturbed large-scale systems. (English summary) *Automatica J. IFAC* **28** (1992), *no.* 5, 1063–1066. 93D09 (93A15, 93B55)
— (*with* Horng, Huey Yang; Chou, Jyh Horng) Robustness of eigenvalue clustering in various regions of the complex plane for perturbed systems. (English summary) *Internat. J. Control* **57** (1993), *no.* 6, 1469–1484. (Summary) **93m:93070** 93D09 (93B60)
— (*with* Horng, Huey Yang; Chou, Jyh Horng) Eigenvalue clustering in subregions of the complex plane for interval dynamic systems. (English summary) *Internat. J. Systems Sci.* **24** (1993), *no.* 5, 901–914. (Summary) **93k:93053** 93B55 (93D09)

Hornik, K. On some large deviation probabilities for finite Markov processes. (English summary) *Studia Sci. Math. Hungar.* **26** (1991), *no.* 2-3, 355–362. (Tzong-Yow Lee) **93h:60041** 60F10 (60J27)

Hornor, William E. Liapunov-Razumikhin pairs and the location of positive limit sets for precompact functional-differential equations with infinite delay. *Nonlinear Anal.* **19** (1992), *no.* 5, 441–453. (Tibor Krisztin) **93h:34138** 34K20

Hornung, U. *see* **Random partial differential equations, 93e:60007**

Horowitz, Gary T. String theory as a quantum theory of gravity. *General relativity and gravitation,* 1989 (*Boulder, CO,* 1989), 419–439, *Cambridge Univ. Press, Cambridge,* 1990. (*see* **93b:83002**) 83E30 (83C45)
— (*with* Horne, James H.) Exact black string solutions in three dimensions. *Nuclear Phys. B* **368** (1992), *no.* 2, 444–462. (Asghar Qadir) **93d:81140** 81T30 (81T40, 83E30)
— (*with* Horne, James H.; Steif, Alan R.) An equivalence between momentum and charge in string theory. *Phys. Rev. Lett.* **68** (1992), *no.* 5, 568–571. (Aleksandar R. Miković) **93b:81218** 81T30

Horowitz, Joel L. A smoothed maximum score estimator for the binary response model. *Econometrica* **60** (1992), *no.* 3, 505–531. (Summary) **93a:62143** 62P20 (62G05)

Horowitz, Roberto (*with* Paice, A. D. B.; Moore, John Barratt) Nonlinear feedback system stability via coprime factorization analysis. *J. Math. Systems Estim. Control* **2** (1992), *no.* 3, 293–321. (Valeriu Prepeliţă) **93d:93072** 93D15 (93B52, 93C10)

Horozov, Emil *see* **Khorozov, E. I.**

de la Horra Navarro, Julián Bayesian confidence estimation: an alternative approach. *Comm. Statist. Theory Methods* **20** (1991), *no.* 7, 2299–2306. (Françoise Garcia-Brouaye) **93b:62045** 62F15 (62F25)

van Horssen, W. T. Asymptotics for a class of semilinear hyperbolic equations with an application to a problem with a quadratic nonlinearity. *Nonlinear Anal.* **19** (1992), *no.* 6,

501–530. (Fumioki Asakura) **93i:35091** 35L70 (35B20, 35C20)

Horst, C. On product decompositions of complex spaces. *Note Mat.* **10** (1990), *no.* 1, 157–213. (Salvatore Coen) **93i:32009** 32C15 (32J99)

Horst, Ernst (*with* Glassey, Robert; Lenard, Andrew; Schaeffer, Jack W.) On the inverse of the discrete two-dimensional wave operator at CFL. *SIAM J. Math. Anal.* **22** (1991), *no.* 6, 1763–1775. (A. O. Oganesyan) **93k:65069** 65M06 (35L05)

Horst, Reiner (*with* Al-Khayyal, Faiz A.; Pardalos, Panos M.) Global optimization of concave functions subject to quadratic constraints: an application in nonlinear bilevel programming. Hierarchical optimization. *Ann. Oper. Res.* **34** (1992), *no.* 1-4, 125–147. (Jan Rückmann) **93c:90072** 90C30 (90C20, 90C31)

— (*with* Nguyen Van Thoai) Conical algorithm for the global minimization of linearly constrained decomposable concave minimization problems. (English summary) *J. Optim. Theory Appl.* **74** (1992), *no.* 3, 469–486. (Panos M. Pardalos) **93h:90085** 90C30 (65K10)

— *see also* **Operations research '91, 93j:90006**

Horsten, Leon Two problems concerning Frege's distinction between concepts and objects. *Logique et Anal. (N.S.)* **32** (1989), *no.* 127-128, 267–284. 03A05 (01A55, 01A60, 03–03)

Hortaçsu, M. Singularities with C^0 metrics. *Lett. Math. Phys.* **23** (1991), *no.* 4, 301–305. (Marcos D. Maia) **93b:81186** 81T20 (83C47, 83C75)

— Quantum fluctuations of a spherical gravitational shock wave. *Classical Quantum Gravity* **9** (1992), *no.* 6, 1619–1629. (Summary) **93d:83039** 83C47 (83C35, 83F05)

— Fluctuations of a spherical gravitational impulsive wave. (English summary) *J. Math. Phys.* **34** (1993), *no.* 2, 690–699. (S. Kichenassamy) **93m:83024** 83C35 (83F05)

Horton, Clark D. Stability of nonsingular group orbits. (English summary) *Pacific J. Math.* **156** (1992), *no.* 1, 135–154. (J. E. Brothers) **93m:53066** 53C42 (58E40)

Horton, Claude Wendell, Jr. (*with* Kono, M.) Point vortex description of drift wave vortices: dynamics and transport. *Phys. Fluids B* **3** (1991), *no.* 12, 3255–3262. (Summary) **93b:76089** 76X05 (76C05)

— (*with* Isichenko, M. B.; Kim, D. E.; Heo, E. G.; Choi, D.-I.) Stochastic diffusion and Kolmogorov entropy in regular and random Hamiltonians. (English summary) *Phys. Fluids B* **4** (1992), *no.* 12, 3973–3980. (Summary) **93b:76082** 76X05 (58F40, 76F20)

Horton, G. (*with* Dewdney, C.; Lam, M. M.; Malik, Z.; Schmidt, Michael G.) Wave-particle dualism and the interpretation of quantum mechanics. (English summary) *Found. Phys.* **22** (1992), *no.* 10, 1217–1265. (Lawrence Sklar) **93i:81008** 81P05

Horton, Graham The time-parallel multigrid method. (English summary) *Comm. Appl. Numer. Methods* **8** (1992), *no.* 9, 585–595. 65M55

Horton, S. B. (*with* Parker, R. Gary) On some results pertaining to Halin graphs. (English summary) Proceedings of the Twenty-third Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, FL, 1992). *Congr. Numer.* **89** (1992), 65–87. (Summary) **93j:05129** 05C75 (68Q25, 68R10)

Horton, W. *see* **Horton, Claude Wendell, Jr.**

Horuzhy, S. S. *see* **Khoruzhii, S. S.**

Horváth, Ákos G. On double-latticelike spherepacking. *Ann. Univ. Sci. Budapest. Eötvös Sect. Math.* **33** (1990), 53–60 (1991). (R. Blind) **93a:52016** 52C07 (52C17)

— On a question of K. Bezdek and T. Odor on Λ-parallelotopes. (English summary) *Period. Math. Hungar.* **24** (1992), *no.* 3, 189–192. (Robert M. Erdahl) **93j:52027** 52C07 (52C22)

Horváth, John The mathematical works of Manuel Valdivia. *Progress in functional analysis* (*Peñíscola*, 1990), 1–55, *North-Holland Math. Stud.*, 170, *North-Holland, Amsterdam*, 1992. (Klaus-Dieter Bierstedt) **93c:01043** 01A70 (46–03)

Horváth, L. On characterization of linear forms satisfying a maximum principle. *Ann. Univ. Sci. Budapest. Eötvös Sect. Math.* **34** (1991), 73–79 (1992). (Yu. V. Kostarchuk) **93e:46090** 46N10 (46G99, 47N10)

— Note on continuity of functions derived from equivalence relations. *Ann. Univ. Sci. Budapest. Eötvös Sect. Math.* **35** (1992), 147–150. (W. R. Utz) **93m:54024** 54C05 (34A12)

Horváth, Lajos (*with* Csörgő, Miklós) On confidence bands for the quantile function of a continuous distribution function. *Limit theorems in probability and statistics* (*Pécs*, 1989), 95–106, *Colloq. Math. Soc. János Bolyai*, 57, *North-Holland, Amsterdam*, 1990. (M. D. Burke) **93a:62074** 62G15 (62G05)

— (*with* Csörgő, Miklós; Deheuvels, Paul) Estimating the quantile-density function. *Nonparametric functional estimation and related topics* (*Spetses*, 1990), 213–223, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 335, *Kluwer Acad. Publ., Dordrecht*, 1991. (David W. Scott) **93a:62052** 62G05

— Weak convergence of discrete scattering processes. *Adv. in Appl. Probab.* **23** (1991), *no.* 4, 733–750. (Zheng Yan Lin) **93a:60031** 60F05 (60F17)

— (*with* Csörgő, Miklós; Gombay, Edit) Central limit theorems for L_p distances of kernel estimators of densities under random censorship. *Ann. Statist.* **19** (1991), *no.* 4, 1813–1831. (Paul Deheuvels) **93d:60032** 60F05 (60G15, 62G10)

— (*with* Johnson, Richard A.) Tests of fit for composite hypotheses with censored data. *Statist. Decisions* **9** (1991), *no.* 1-2, 21–43. (Truc Nguyen) **93f:62028** 62F05 (62E20, 62N05)

— Rate of convergence in limit theorems for Brownian excursions. *Stochastic Process. Appl.* **39** (1991), *no.* 1, 55–64. (Karl Grill) **93b:60175** 60J55 (60F17)

— Short distances on the line. *Stochastic Process. Appl.* **39** (1991), *no.* 1, 65–80. (N. C. Weber) **93b:60068** 60F17 (60H05)

— (*with* Csörgő, Miklós) Rényi-type empirical processes. *J. Multivariate Anal.* **41** (1992), *no.* 2, 338–358. (Qi Man Shao) **93g:60069** 60F17 (62G30)

— Strong approximations of open queueing networks. *Math. Oper. Res.* **17** (1992), *no.* 2, 487–508. (W. Szczotka) **93d:60055** 60F17 (60K25)

— (*with* Csörgő, Miklós) Invariance principles for logarithmic averages. *Math. Proc. Cambridge Philos. Soc.* **112** (1992), *no.* 1, 195–205. (Peter Schatte) **93e:60057** 60F15 (60F05, 60F17)

— (*with* Gombay, Edit) A goodness-of-fit test for exponential families. (English summary) *Statist. Probab. Lett.* **15** (1992), *no.* 3, 235–239. (Arnold Janssen) **93m:62107** 62G10

Horváth, Miklós (*with* Joó, István; Szalkai, István) On "Banach's principle". (Hungarian. English and Russian summaries) *Mat. Lapok* **34** (1983/87), *no.* 4, 253–300 (1991). (Summary) **93d:47040** 47A99 (03E35, 03E75, 47A05)

— Some saturation theorems for classical orthogonal expansions. II. *Acta Math. Hungar.* **58** (1991), *no.* 1-2, 157–191. (Ryszard Gajewski) **93g:42020** 42C10 (41A40)

— (*with* Erdős, Paul; Joó, István) On the uniqueness of the expansions $1 = \sum q^{-n_i}$. *Acta Math. Hungar.* **58** (1991), *no.* 3-4, 333–342. (John H. Loxton) **93e:11012** 11A63

— Some saturation theorems for classical orthogonal expansions. I. *Period. Math. Hungar.* **22** (1991), *no.* 1, 27–60. (Ryszard Gajewski) **93g:42019** 42C10 (41A40)

Horváth, Zalán *see* **Nonperturbative methods in low-dimensional quantum field theories, 93f:81005**

Horváthy, P. A. (*with* Fehér, László) Particle in a self-dual monopole field. *Differential geometric methods in theoretical physics* (*Chester*, 1988), 130–137, *World Sci. Publishing, Teaneck, NJ*, 1989. (Mark Temple-Raston) **93d:81053** 81Q99 (53C80, 81–04)

— Monopole scattering. *Nonperturbative methods in low-dimensional quantum field theories* (*Debrecen*, 1990), 473–480, *World Sci. Publishing, River Edge, NJ*, 1991. (*see* **93f:81005**) 81T13 (81–02)

basarab-Horwath, P. *see* **Basarab-Horwath, P.**

Horwich, Paul *see* **World changes, 93m:01003**

Horwitz, J. (*with* Rosenblat, S.) Nonlinear stability of a viscous axisymmetric jet. (English summary) *Acta Mech.* **95** (1992), *no.* 1-4, 131–156. (Summary) **93f:76047** 76E30 (76D25, 76F20)

Horwitz, L. P. (*with* Zerzion, Daniel; Arshansky, R. I.) Classical mechanics of special relativity in a Riemannian space-time. *J. Math. Phys.* **32** (1991), *no.* 7, 1788–1795. (Summary) **93b:70020** 70H40 (70G05, 83A05)

— On the definition and evolution of states in relativistic classical and quantum mechanics. *Found. Phys.* **22** (1992), *no.* 3, 421–450. (A. O. Barut) **93d:81009** 81P05 (83A05)

— (*with* Arensburg, A.) A first-order equation for spin in a manifestly relativistically covariant quantum theory. (English summary) *Found. Phys.* **22** (1992), *no.* 8, 1025–1039. (A. O. Barut) **93k:81083** 81R20

— (*with* Razon, A.) Uniqueness of the scalar product in the tensor product of quaternion Hilbert modules. (English summary) *J. Math. Phys.* **33** (1992), *no.* 9, 3098–3104. (Summary) **93h:46103** 46M05 (46C05, 46H25, 46N50, 81R05)

— (*with* Schieve, W. C.) Horseshoes in a relativistic Hamiltonian system in 1 + 1 dimensions. (English summary) *Phys. Rev. A* (3) **46** (1992), *no.* 2, 743–756. (Summary) **93d:70033** 70H40 (58F13, 70F05, 70H05, 70K50)

— Dynamical group of the relativistic Kepler problem. (English summary) *J. Math. Phys.* **34** (1993), *no.* 2, 645–648. (Summary) **93j:70007** 70H33 (70F05, 70H40, 81R05)

Horzela, Andrzej (*with* Kapuścik, Edward; Kempczyński, Jarosław; Uzes, Charles) On discrete models of space-time. (English summary) *Progr. Theoret. Phys.* **88** (1992), *no.* 6, 1065–1071. (Lawrence Sklar) **93j:83006** 83A05

Hosaka, Mamoru (*with* Saitoh, Tsuyoshi) Curve fitting with extended rational Bézier curves and curve drawing. *Computer-aided design & computer graphics* (*Hangzhou*, 1991), 205–210, *Internat. Acad. Publ., Beijing*, 1991. (*see* **93a:68006**) 65D10

— New solutions of connection problems of free-form curves and surfaces. *J. Inform. Process.* **14** (1991), *no.* 4, 463–472. 68U05 (65D17)

Hoschek, Josef (*with* Schneider, Franz-Josef) Approximate spline conversion for integral and rational Bézier and *B*-spline surfaces. *Geometry processing for design and manufacturing*, 45–86, *SIAM, Philadelphia, PA*, 1992. (*see* **93b:65035**) 65D07 (41A15, 65D17)

— Bézier curves and surface patches on quadrics. *Mathematical methods in computer aided geometric design, II* (*Biri*, 1991), 331–342, *Academic Press, Boston, MA*, 1992. (*see* **93d:65022**) 65D17 (65D07)

— (*with* Hartmann, Erich) Functional splines for interpolation, approximation, and blending of curves, surfaces, and solids. *Topics in surface modeling*, 53–76, *Geom. Des. Publ., SIAM, Philadelphia, PA*, 1992. (*see* **93c:65026**) 65D17 (65D07)

— (*with* Seemann, G.) Spherical splines. (French summary) Topics in computer aided geometric design (Erice, 1990). *RAIRO Modél. Math. Anal. Numér.* **26** (1992), *no.* 1, 1–22. (Georgi Grozev) **93a:65013** 65D07 (41A15, 65D10, 65D17)

Hösel, Volker (*with* Lasser, Rupert) One-step prediction for P_n-weakly stationary processes. *Monatsh. Math.* **113** (1992), *no.* 3, 199–212. (Michael Voit) **93f:60044** 60G10 (43A62, 60G25)

Hoshina, Takao Products of paracompact spaces and Lašnev spaces. *Topology Proc.* **15** (1990), 53–62. (Gary Gruenhage) **93f:54013** 54B10 (54D20, 54E35)

Hoshino, Hiroki (*with* Yamada, Yoshio) Solvability and smoothing effect for semilinear parabolic equations. *Funkcial. Ekvac.* **34** (1991), *no.* 3, 475–494. (H. J. Kuiper) **93c:34131** 34G20 (35K60, 47H20, 47N20)

— (*with* Ebihara, Yukiyoshi; Kurokiba, M.) On exact solutions of Kirchhoff quasilinear hyperbolic equation with absorbing term. *Fukuoka Univ. Sci. Rep.* **22** (1992), *no.* 1, 14–15. (From the introduction) **93b:35089** 35L70 (35C05)

Hoshino, Mitsuo (*with* Takashima, Shinsuke) On Lambek torsion theories. II. *Proceedings of the 25th Symposium on Ring Theory* (*Matsumoto*, 1992), 27–36, *Okayama Univ., Okayama*, 1992. (*see* **93i:16001**) 16S90

— On Lambek torsion theories. *Osaka J. Math.* **29** (1992), *no.* 3, 447–453. (J. L. García Hernández) **93k:16060** 16S90 (16D90)

Hoshino, Shinichi (*with* Nunokawa, Mamoru) On some starlikeness conditions for analytic functions. *Tsukuba J. Math.* **16** (1992), *no.* 1, 211–215. (Olga Bereśniewicz-Rajca) **93h:30012** 30C45

Hoshino, Y. (*with* Yamakita, M.; Morimoto, K.; Furuta, Katsuhisa) Parallel implementation of Newton-Euler algorithm with one step ahead predictions. *Control '91, Vol.* 1, 2 (*Edinburgh*, 1991), 364–369, *IEE Conf. Publ. Ser.*, 332, *IEE, London*, 1991. (*see* **93h:93007**) 93B40

Hoshiro, Toshihiko On Levi-type conditions for hypoellipticity of certain differential operators. (English summary) *Comm. Partial Differential Equations* **17** (1992), *no.* 5-6, 905–922. (Michael Langenbruch) **93j:35049** 35H05

Hosking, J. R. M. (*with* Wu, Lilian Shiao Yen; Ravishanker, Nalini) Reallocation outliers in time series. (English summary) *J. Roy. Statist. Soc. Ser. C* **42** (1993), *no.* 2, 301–313. 62M10

— (*with* Ravishanker, Nalini) Approximate simultaneous significance intervals for residual autocorrelations of autoregressive moving-average time series models. (English summary) *J. Time Ser. Anal.* **14** (1993), *no.* 1, 19–26. 62M10

Hoskins, J. A. (*with* Hoskins, W. D.; Stanton, R. G.) A note on tesselations arising from multispecies competition. (English summary) *J. Combin. Inform. System Sci.* **16** (1991), *no.* 4, 307–312. 92D25 (52B55, 68U05)

Hoskins, W. D. (*with* Hoskins, J. A.; Stanton, R. G.) A note on tesselations arising from multispecies competition. (English summary) *J. Combin. Inform. System Sci.* **16** (1991), *no.* 4, 307–312. 92D25 (52B55, 68U05)

Hosoe, Shigeyuki (*with* Muramatsu, E.) Solution of the standard H^∞ control problem without the Youla-parametrization and some remarks on the closed-loop pole-zero cancellations. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, I* (*Kobe*, 1991), 293–298, *Mita, Tokyo*, 1992. (*see* **93g:93005**) 93B36

— (*with* Zhang, Feifei; Kono, Michio) Synthesis of servo mechanism problem via H_∞ control. *Robust control* (*Tokyo*, 1991), 154–161, *Lecture Notes in Control and Inform. Sci.*, 183, *Springer, Berlin*, 1992. (*see* **93f:93006**) 93B36

— *see also* **Robust control, 93f:93006**

Hosoi, Tsutomu (*with* Masuda, Isao) A study of intermediate propositional logics on the third slice. (English summary) *Studia Logica* **52** (1993), *no.* 1, 15–21. (George F. Schumm) **93m:03049** 03B55

Hosokawa, Iwao Intrinsic probability of a multifractal set. *J. Phys. Soc. Japan* **60** (1991), *no.* 12, 3983–3985. (Summary) **93b:58099** 58F13 (28A80)

— Fundamental properties of "homogeneous" multifractals. (English summary) *J. Phys. Soc. Japan* **61** (1992), *no.* 6, 1831–1833. (Summary) **93d:28016** 28A80

Hosono, Kiyoshi (*with* Fukuma, Yoshiaki) Cover and partition of pre-maximal plane graphs. *Proc. Fac. Sci. Tokai Univ.* **26** (1991), 5–13. (Peter Mihók) **93b:05133** 05C70 (05C85)

Hosono, Shinobu Physical states in quantum Liouville theory. *Phys. Lett. B* **285** (1992), *no.* 1-2, 35–41. (Henrik Aratyn) **93k:81206a** 81T40 (17B56, 17B68, 81T70)

— Errata: "Physical states in quantum Liouville theory". *Phys. Lett. B* **300** (1993), *no.* 4, 410. (Henrik Aratyn) **93k:81206b** 81T40 (17B56, 17B68, 81T70)

Hosono, Yuzo (*with* Beretta, Edoardo; Fasano, Antonio) Equilibrium of a phytoplankton population in a laboratory controlled system. *Surveys Math. Indust.* **1** (1992), *no.* 4, 283–336. (József Terjéki) **93e:92008** 92D25 (45J05)

Hosotani, Yutaka (*with* Ho, Choon Lin) Anyon equation on a torus. (English summary) *Internat. J. Modern Phys. A* **7** (1992), *no.* 23, 5797–5831. (James E. Hetrick) **93i:81166** 81T20 (20F36, 81V25)

— (*with* Ho, Choon Lin) Operator algebra in Chern-Simons theory on a torus. (English summary) *Phys. Rev. Lett.* **70** (1993), *no.* 10, 1360–1363. (Summary) **93m:81103** 81T13 (81T10)

Hosoya, Akio Stochastic quantum gravity—(2 + 1)-dimensional case. *Thermal field theories* (*Ibaraki*, 1990), 273–281, *North-Holland Delta Ser., North-Holland, Amsterdam*, 1991. (Summary) **93b:81187** 81T20 (83C45, 83C47)

— (*with* Fujiwara, Yoshihisa; Higuchi, Saburo; Mishima, Takashi; Siino, Masaru) Nucleation of a universe in (2 + 1)-dimensional gravity with a negative cosmological constant. *Phys. Rev. D* (3) **44** (1991), *no.* 6, 1756–1762. (Ruth M. Williams) **93a:83017a** 83C45

— (*with* Fujiwara, Yoshihisa; Higuchi, Saburo; Mishima, Takashi; Siino, Masaru) Topology changes in (2 + 1)-dimensional quantum gravity. *Phys. Rev. D* (3) **44** (1991), *no.* 6, 1763–1768. (Ruth M. Williams) **93a:83017b** 83C45

— (*with* Fujiwara, Yoshihisa; Higuchi, Saburo; Mishima, Takashi; Siino, Masaru) Point particles as defects in (2 + 1)-dimensional quantum gravity. *Classical Quantum Gravity* **9** (1992), *no.* 4, 867–872. (Michael O. Katanaev) **93b:83022** 83C45

Hosoya, Junji (*with* Wada, Hideo) Tables of ideal class groups of purely cubic fields. *Proc. Japan Acad. Ser. A Math. Sci.* **68** (1992), *no.* 5, 111–114. 11R29

Hossack, A. D. (*with* Hall, G. S.; Pulham, J. R.) Sectional curvature, symmetries, and conformally flat plane waves. *J. Math. Phys.* **33** (1992), *no.* 4, 1408–1414. (A. V. Aminova) **93i:83040** 83C40 (53B50)

Hosseini, M. A. (*with* Shidfar, Afima Abdullah) Application of potential theory in biharmonic analysis. *Potential theory* (*Nagoya*, 1990), 299–302, *de Gruyter, Berlin*, 1992. (Summary) **93b:31003** 31A30 (35J40)

Hosseini Ali Abadi, M. *see* **Aliabadi, M. Hosseini**

Host, Bernard (*with* Méla, Jean-François; Parreau, François) Nonsingular transformations and spectral analysis of measures. (French summary) *Bull. Soc. Math. France* **119** (1991), *no.* 1, 33–90. (Mahendra G. Nadkarni) **93d:43002** 43A05 (22D40, 28D15, 42A55, 43A46)

— Mixing of all orders and pairwise independent joinings of systems with singular spectrum. (English summary) *Israel J. Math.* **76** (1991), *no.* 3, 289–298. (Mahendra G. Nadkarni) **93k:28022** 28D05

— (*with* Dekking, F. M.) Limit distributions for minimal displacement of branching random walks. *Probab. Theory Related Fields* **90** (1991), *no.* 3, 403–426. (J. D. Biggins) **93b:60189** 60J80

Hoste, Jim (*with* Przytycki, Józef H.) A survey of skein modules of 3-manifolds. (English summary) *Knots* 90 (*Osaka*, 1990), 363–379, *de Gruyter, Berlin*, 1992. (John G. Ratcliffe) **93m:57018** 57N10 (57M25)

Hotes, S. A. (*with* Crescimanno, M.) Monopoles, modular invariance and Chern-Simons field theory. *Nuclear Phys. B* **372** (1992), *no.* 3, 683–700. (Tsou Sheung Tsun) **93i:81215** 81T40 (58Z05, 81T13)

Hotje, Herbert Allgemeine kinematische Räume. [General kinematic spaces] Mathematische Wissenschaften gestern und heute. 300 Jahre Mathematische Gesellschaft in Hamburg, Teil 3 (Hamburg, 1990). *Mitt. Math. Ges. Hamburg* **12** (1991), *no.* 3, 785–791. (Franz B. Kalhoff) **93c:51017** 51J15

— Kinematic groups constructed by near-rings. *Proceedings of the 3rd Congress of Geometry* (*Thessaloniki*, 1991), 206–211, *Aristotle Univ. Thessaloniki, Thessaloniki*, 1992. (Norbert Knarr) **93f:51021** 51J20 (16Y30)

Hotloś, Marian Curvature properties of some Riemannian manifolds. *Proceedings of the 3rd Congress of Geometry* (*Thessaloniki*, 1991), 212–219, *Aristotle Univ. Thessaloniki, Thessaloniki*, 1992. (Andrzej Bucki) **93e:53042** 53C20

Hotta, Masahiro (*with* Ezawa, Zyun F.; Iwazaki, Aiichi) Anyon field theory and fractional quantum Hall states. (English summary) Low-dimensional field theories and condensed matter physics (Kyoto, 1991). *Progr. Theoret. Phys. Suppl. No.* 107 (1992), 185–194. (Summary) **93i:81307** 81V70 (81T40, 82D55)

Hottinger, Stephan *see* **Influence of language on philosophy and science, 93f:03003**

Hotz, Anthony F. Direct variance design—a multiobjective control theory. (English summary) *IEEE Trans. Automat. Control* **38** (1993), *no.* 1, 178–184. (Dimitri M. Gorinevskiĭ) **93k:93105** 93E03 (49N35, 90C29, 93B52, 93C05)

Hotz, Günter (*with* Becker, U.) Folding-free coverings and graph embeddings. (English summary) Mathematische Wissenschaften gestern und heute. 300 Jahre Mathematische Gesellschaft in Hamburg, Teil 4 (Hamburg, 1990). *Mitt. Math. Ges. Hamburg* **12** (1991), *no.* 4, 1157–1170 (1992). (E. J. Janse van Rensburg) **93g:54019** 54C10 (05C10, 68R10)

— *see also* **Computer science, 93d:68002**

Hotzel, Eckehart The congruences of the dual Baer-Levi semigroup. *Semigroups with applications* (*Oberwolfach*, 1991), 31–48, *World Sci. Publishing, River Edge, NJ*, 1992. (Mária B. Szendrei) **93m:20102** 20M20

Hou, Bo Yu (*with* Shi, Kang Jie; Yue, Rui Hong) Explicit expressions for fusion and braid matrices in the unitary minimal model. (Chinese. English summary) *High Energy Phys. Nuclear Phys.* **14** (1990), *no.* 9, 802–809. (Introduction) **93e:81112** 81T40 (17B81, 81R10, 81T30)

— (*with* Shi, Kang Jie; Yang, Zhong Xia; Yue, Rui Hong) Integrable quantum chain and the representation of the quantum group $SU_q(2)$. *J. Phys. A* **24** (1991), *no.* 16, 3825–3836. (Paul A. Pearce) **93d:82033** 82B23 (17B37, 81R50)

— (*with* Chao, Liu) Conformally reduced WZNW theory, new extended chiral algebras and their associated Toda type integrable systems. (English summary) *Internat. J. Modern Phys. A* **7** (1992), *no.* 28, 7015–7043. (A. Hamid Bougourzi) **93k:81080** 81R10 (17B68, 17B81, 58F07, 81T40)

— (*with* Hou, Bo Yuan; Ma, Zhong Qi) Quantum Clebsch-Gordan coefficients for nongeneric q values. *J. Phys. A* **25** (1992), *no.* 5, 1211–1221. (G. Vanden Berghe) **93b:17044** 17B37 (81R50)

— (*with* Chao, Liu) A_N W-algebras and classification. (English summary) *Modern Phys. Lett. A* **7** (1992), *no.* 36, 3419–3423. (Summary) **93i:17028** 17B68 (81R10)

— (*with* Zhou, Yu Kui) Some remarks on the eigenvalue problem for Z_n symmetric vertex and face models. (English summary) *Phys. A* **187** (1992), *no.* 1-2, 308–328. (Paul A. Pearce) **93m:82010** 82B23

— (*with* Chao, Liu) Hamiltonian reductions of self-dual Yang-Mills theory. (English summary) *Phys. Lett. B* **298** (1993), *no.* 1-2, 103–110. (Alexander D. Popov) **93k:58115** 58F07 (58Z05, 81T13)

Hou, Bo Yuan (*with* Ma, Zhong Qi) Solutions to the Yang-Baxter equation for the spinor representations of q-B_l. *J. Phys. A* **24** (1991), *no.* 7, 1363–1377. (Vadim B. Kuznetsov) **93a:17013** 17B37 (81R50, 82B23)

— (*with* Hou, Bo Yu; Ma, Zhong Qi) Quantum Clebsch-Gordan coefficients for nongeneric q values. *J. Phys. A* **25** (1992), *no.* 5, 1211–1221. (G. Vanden Berghe) **93b:17044** 17B37 (81R50)

Hou, Gene J.-W. *see* **Hou, Jean W.**

Hou, Hang-Sheng (*with* Abeyaratne, Rohan) Cavitation in elastic and elastic-plastic solids. *J. Mech. Phys. Solids* **40** (1992), *no.* 3, 571–592. (Raymond W. Ogden) **93g:73067** 73G05

Hou, Jean W. (*with* Sheen, Jeenson) Numerical methods for second-order shape sensitivity analysis. *Theoretical aspects of industrial design* (*Wright-Patterson Air Force Base, OH*, 1990), 58–75, *SIAM, Philadelphia, PA*, 1992. (Summary) **93a:65152** 65N30 (49Q10, 73V25)

Hou, Jie Chang (*with* Wang, Gao Feng; Shen, Li) A hybrid equation for an electromagnetic field, the extinction theorem and the boundary element method. (Chinese. English summary) *J. Wuhan Univ. Natur. Sci. Ed.* **1991**, *no.* 3, 62–70. 78A25 (78–08)

— (*with* Wang, Gao Feng; Feng, De Guang) The interaction of EM wave with dielectric bodies: hybrid equation finite element method. *Sci. China Ser. A* **35** (1992), *no.* 1, 110–121. (Summary) **93a:78018** 78A45 (78–08)

Hou, Jin Chuan On operator inequality and linear combination of operators. (English summary) *Lecture notes in contemporary mathematics*, 1989, 29–38, *Science Press, Beijing*, 1990. (A. R. Sourour) **93e:47022a** 47A63 (47A62)

— On operator inequalities and linear combinations of operators. *Chinese Sci. Bull.* **36** (1991), *no.* 19, 1595–1597. (A. R. Sourour) **93e:47022b** 47A63 (47A62)

— Solution of operator equations and tensor products. (English and Chinese summaries) *J. Math. Res. Exposition* **12** (1992), *no.* 4, 479–486. (Fuad Kittaneh) **93j:47025** 47A62 (47A80, 47B20)

Hou, LiSheng (*with* Gunzburger, Max D.; Svobodny, Thomas P.) A numerical method for drag minimization via the suction and injection of mass through the boundary. (English summary) *Stabilization of flexible structures* (*Montpellier*, 1989), 312–321, *Lecture Notes in Control and Inform. Sci.*, 147, *Springer, Berlin*, 1990. (*see* **93c:93006**) 65K10 (76D99, 76M99)

— (*with* Manouzi, Hassan) Resolution of the Navier-Stokes equations in vorticity-velocity formulation via control techniques. (English summary) Experimental mathematics: computational issues in nonlinear science (Los Alamos, NM, 1991). *Phys. D* **60** (1992), *no.* 1-4, 185–193. (A. J. Meir) **93m:65145** 65M60 (35Q30, 49L25, 76D05, 76M10)

— (*with* Gunzburger, Max D.; Svobodny, Thomas P.) Heating and cooling control of temperature distributions along boundaries of flow domains. (English summary) *J. Math. Systems Estim. Control* **3** (1993), *no.* 2, 147–172. (Summary) **93m:35178** 35Q99 (76D05, 80A20, 93C20)

Hou, Ming (*with* Müller, Peter C.) Design of observers for linear systems with unknown inputs. *IEEE Trans. Automat. Control* **37** (1992), *no.* 6, 871–875. (Summary) **93a:93020** 93B07

Hou, Steven L. (*with* Gunzburger, Max D.) Treating inhomogeneous essential boundary conditions in finite element methods and the calculation of boundary stresses. *SIAM J. Numer. Anal.* **29** (1992), *no.* 2, 390–424. (Rolf Rannacher) **93d:76039** 76M10 (65N30, 76D05, 76D07)

Hou, Thomas Y. (*with* Wetton, Brian T. R.) Convergence of a finite difference scheme for the Navier-Stokes equations using vorticity boundary conditions. *SIAM J. Numer. Anal.* **29** (1992), *no.* 3, 615–639. (John C. Strikwerda) **93b:65125** 65M06 (65M12, 76D05, 76M20)

— (*with* Lowengrub, J.; Shelley, M. J.) The convergence of an exact desingularization for vortex methods. (English summary) *SIAM J. Sci. Comput.* **14** (1993), *no.* 1, 1–18. (Summary) **93k:65075** 65M12 (76C05, 76M25)

Hou, Xiang Dong Some inequalities about the covering radius of Reed-Muller codes. (English summary) *Des. Codes Cryptogr.* **2** (1992), *no.* 3, 215–224. (René Struik) **93g:94021** 94B27

— On the G-matrices with entries and eigenvalues in $\mathbf{Q}(i)$. *Graphs Combin.* **8** (1992), *no.* 1, 53–64. (Andrew Woldar) **93c:05120** 05E30

Hou, Xiao Rong (*with* Zhang, Jing Zhong; Yang, Lu) A criterion for dependency of algebraic equations and its application to automated theorem proving. *Proceedings of Asian Mathematical Conference*, 1990 (*Hong Kong*, 1990), 548–553, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93b:00022**) 12D10 (03B35, 14A25, 68T15)

Hou, Xue Zhang Some spectral decomposition conditions for closed operators in spectral decompositions. (Chinese. English summary) *Dongbei Shida Xuebao* **1991**, *no.* 3, 1–4, 10. (Dian Zhou Zhang) **93i:47038** 47B40

Hou, You Liang Extensions of continuous random operators. (Chinese. Chinese summary) *Acta Math. Sci. (Chinese)* **11** (1991), *no.* 4, 420–429. (Tong Shan Lu) **93j:60088** 60H25 (47B80, 47H10, 47H40)

— An extremal principle for random functionals and general random fixed point theorems. (Chinese. English summary) *J. Wuhan Univ. Natur. Sci. Ed.* **1991**, *no.* 3, 14–24. (Summary) **93c:60092** 60H25 (47H10, 47H40)

— (*with* Liu, Pei De) Pettis integration and nuclearity in Fréchet spaces. (Chinese. English and Chinese summaries) *J. Wuhan Univ. Natur. Sci. Ed.* **1992**, *no.* 2, 1–8. (Summary) **93m:46046** 46G12 (46A11)

Hou, Yu Song (*with* Chen, Rong Jaye) Nonassociative parallel prefix computation. (English summary) *Inform. Process. Lett.* **44** (1992), *no.* 2, 91–94. (Summary) **93i:68099** 68Q40 (08A02, 68Q70)

Hou, Z. *see* **Hou, Zong Yi**

Hou, Zi Xin On harmonic maps between generalized flag manifolds. A Chinese summary appears in Acta Math. Sinica **36** (1993), no. 2, 287–288. *Acta Math. Sinica (N.S.)* **8** (1992), *no.* 1, 1–16. (Martin A. Guest) **93c:58055** 58E20

— On the Borel subgroups of large type. (English summary) A Chinese summary appears in Chinese Ann. Math. Ser. A. **13** (1992), no. 5, 654. *Chinese Ann. Math. Ser. B* **13** (1992), *no.* 4, 440–454. (Jorge A. Vargas) **93m:20060** 20G20

— Langlands classifications of reductive groups. (English summary) *Sci. China Ser. A* **35** (1992), *no.* 5, 536–546. (Stephen Gelbart) **93j:22023** 22E45 (20G05, 22E46, 22E47)

Hou, Zong Yi (*with* Li, He Nong) A coefficient inverse problem for an elliptic equation. (English summary) *Partial differential equations with real analysis*, 93–101, *Pitman Res. Notes Math. Ser.*, 263, *Longman Sci. Tech., Harlow*, 1992. (Summary) **93m:35184** 35R30 (35C99, 35J15)

— (*with* Li, He Nong) The general Arcangeli method for operator equations of the first kind. (Chinese. English and Chinese summaries) *J. Fudan Univ. Natur. Sci.* **31** (1992), *no.* 2, 142–147. (Summary) **93i:65064** 65J10 (47A50)

Houard, Jean-Claude (*with* Irac-Astaud, Michèle) Stochastic quantization for quantum mechanics and conditional probabilities. *J. Math. Phys.* **33** (1992), *no.* 4, 1348–1357. (Helmut Rumpf) **93a:81093** 81S20

— (*with* De Bièvre, Stephan; Irac-Astaud, Michèle) Wave packets localized on closed classical trajectories. (English summary) *Differential equations with applications to mathematical physics*, 25–32, *Math. Sci. Engrg.*, 192, *Academic Press, Boston, MA*, 1993. (*see* **93i:00013**) 81Q20

Houba, Harold (*with* de Zeeuw, Aart J.) Strategic bargaining and difference games. (English summary) *Dynamic games in economic analysis (Espoo*, 1990), 68–77, *Lecture Notes in Control and Inform. Sci.*, 157, *Springer, Berlin*, 1991. (*see* **93d:90003**) 90A60 (90D25)

Houck, Bradley C. (*with* Choi, Hyeong-Ah; Esfahanian, Abdol-Hossein) Optimal communication trees with application to hypercube multicomputers. *Graph theory, combinatorics, and applications, Vol.* 1 (*Kalamazoo, MI*, 1988), 245–264, *Wiley-Intersci. Publ., Wiley, New York*, 1991. (Summary) **93b:05156** 05C90 (05C05)

Houde, Louis (*with* Lepage, Yves) L'effet de l'erreur d'arrondi sur l'estimateur d'une densité par la méthode du noyau. (English summary) [The effect of rounding error on the estimator of a density by the kernel method] *Canad. J. Statist.* **19** (1991), *no.* 4, 361–369. (Wolfgang Wertz) **93h:62080** 62G05

Houdré, Christian On the linear prediction of multivariate $(2,p)$-bounded processes. *Ann. Probab.* **19** (1991), *no.* 2, 843–867. (Franz Schmidt) **93a:60056** 60G12 (60G10, 60G25, 62M10)

— A note on the dilation of second order processes. (English summary) *Nonstationary stochastic processes and their applications (Hampton, VA*, 1991), 238–242, *World Sci. Publishing, River Edge, NJ*, 1992. (M. M. Rao) **93k:60084** 60G12 (42C99)

— Some recent results on the sampling theorem. (English summary) *Probabilistic and stochastic methods in analysis, with applications (Il Ciocco*, 1991), 337–341, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 372, *Kluwer Acad. Publ., Dordrecht*, 1992. (*see* **93e:00029**) 60G35

Houël, J. *see* **Gispert-Chambaz, Hélène, 93f:01012**

Hough, J. Laser gravitational wave experiments. *General relativity and gravitation*, 1989 (*Boulder, CO*, 1989), 357–366, *Cambridge Univ. Press, Cambridge*, 1990. (*see* **93b:83002**) 83B05

Hough, Michael E. Motion on two-dimensional manifolds in rotating coordinates. *Celestial Mech. Dynam. Astronom.* **50** (1991), *no.* 2, 143–164. (George Bozis) **93a:70018** 70H05 (70F05, 70F15)

Houimdi, M. Un phénomène d'explosion du spectre. [A blow-up phenomenon for the spectrum] *Proc. Amer. Math. Soc.* **117** (1993), *no.* 2, 423–428. (Karim Seddighi) **93d:47059** 47B37 (47A10)

Houlrik, Jens M. Periodic orbits in a two-variable coupled map. (English summary) *Chaos* **2** (1992), *no.* 3, 323–327. (Summary) **93f:58194** 58F20 (58F03)

Hounie, Jorge Continuity properties and characterization of pseudo-differential operators of type (1, 1). *Comm. Partial Differential Equations* **17** (1992), *no.* 5-6, 827–839. (Josefina Alvarez) **93g:47069** 47G30 (35S05, 46E35)

— (*with* dos Santos Filho, José Ruidival) Well-posed Cauchy problems for complex nonlinear equations must be semilinear. *Math. Ann.* **294** (1992), *no.* 3, 439–447. (Peter R. Popivanov) **93k:35164** 35L60 (35F25)

— The Mizohata structure on the sphere. *Trans. Amer. Math. Soc.* **334** (1992), *no.* 2, 641–649. (Makhlouf Derridj) **93b:32025** 32F40 (58G05)

— (*with* Tavares, Joaquim) Radó's theorem for locally solvable vector fields. *Proc. Amer. Math. Soc.* **119** (1993), *no.* 3, 829–836. (Florin Iacob) **93m:35044** 35F05 (35B99, 35D99)

— (*with* Malagutti, Pedro) Local integrability of Mizohata structures. *Trans. Amer. Math. Soc.* **338** (1993), *no.* 1, 337–362. (Takao Akahori) **93j:35119** 35N15 (32F20, 32F40, 35F05)

House, John M. (*with* Arora, Jasbir S.; Smith, Theodore F.) Comparison of methods for design sensitivity analysis for optimal control of thermal systems. (English summary) *Optimal Control Appl. Methods* **14** (1993), *no.* 1, 17–37. 93B30 (93C95)

Houser, Nathan R. (*with* Anellis, Irving H.) Nineteenth-century roots of algebraic logic and universal algebra. *Algebraic logic (Budapest*, 1988), 1–36, *Colloq. Math. Soc. János Bolyai*, 54, *North-Holland, Amsterdam*, 1991. (Marcel Guillaume) **93a:01027** 01A55 (03–03, 03B10, 03Gxx, 06–03, 08–03)

— *see also* **Peirce, Charles Sanders, 93k:01092**

Houston, Evan G. (*with* Dobbs, David E.; Lucas, Thomas G.; Roitman, Moshe; Zafrullah, Muhammad) On t-linked overrings. *Comm. Algebra* **20** (1992), *no.* 5, 1463–1488. (Marco Fontana) **93e:13034** 13F05 (13B02, 13G05)

— A linear algebra approach to cyclic extensions in Galois theory. *Amer. Math. Monthly* **100** (1993), *no.* 1, 64–66. (From the text) **93m:12002** 12F10

— (*with* Roitman, Moshe) On ideals v-generated by two elements. (English summary) *Comm. Algebra* **21** (1993), *no.* 2, 563–573. (Stephen McAdam) **93j:13028** 13G05 (13A15)

Housworth, E. A. (*with* Anderson, James Milne; Pitt, Loren D.) The spectral theory of multiplication operators and recurrence properties for nondifferentiable functions in the Zygmund class Λ^*_α. (English summary) *Mathematika* **39** (1992), *no.* 1, 136–151. (Paul Bourdon) **93h:30050** 30D40 (26A27, 30D45, 47A10, 47B38)

in 't Hout, K. J. A new interpolation procedure for adapting Runge-Kutta methods to delay differential equations. (English summary) *BIT* **32** (1992), *no.* 4, 634–649. (Matti Mäkelä) **93j:65115** 65L06 (65L99)

van der Houwen, P. J. (*with* Sommeijer, B. P.) Fractional Runge-Kutta methods with application to convection-diffusion equations. (English summary) *Impact Comput. Sci. Engrg.* **4** (1992), *no.* 3, 195–216. (Summary) **93h:65118** 65M20 (65L06, 76M25, 76Rxx)

— Parallel step-by-step methods. (English summary) Parallel methods for ordinary differential equations (Grado, 1991). *Appl. Numer. Math.* **11** (1993), *no.* 1-3, 69–81. (Summary) **93j:65103** 65L05 (65Y05)

— (*with* Sommeijer, B. P.) Analysis of parallel diagonally implicit iteration of Runge-Kutta methods. (English summary) Parallel methods for ordinary differential equations (Grado, 1991). *Appl. Numer. Math.* **11** (1993), *no.* 1-3, 169–188. (Summary) **93i:65075** 65L06 (65Y05)

— *see also* **Computational and applied mathematics, 93j:00008**

Houziaux, Léo L'astronomie stellaire au XVIIIe siècle. [Stellar astronomy in the XVIIIth century] *Acad. Roy. Belg. Bull. Cl. Sci.* (6) **1** (1990), *no.* 12, 349–357. 01A50

Hovd, Morten (*with* Skogestad, Sigurd) Simple frequency-dependent tools for control system analysis, structure selection and design. (English summary) *Automatica J. IFAC* **28** (1992), *no.* 5, 989–996. 93C80 (93B52)

Hoveijn, I. (*with* Verhulst, F.) Integrability and chaos in Hamiltonian normal forms. *Geometry and analysis in nonlinear dynamics (Groningen*, 1989), 114–134, *Pitman Res. Notes Math. Ser.*, 222, *Longman Sci. Tech., Harlow*, 1992. (Richard C. Churchill) **93i:58136** 58F36 (58F05, 58F07, 58F13)

Hovenier, J. W. (*with* van der Mee, Cornelis) Structure of matrices transforming Stokes parameters. (English summary) *J. Math. Phys.* **33** (1992), *no.* 10, 3574–3584. (Summary) **93f:78002** 78A05

Hovestädt, E. State space analysis of sampled-data systems—extension of Kalman and Bertram's method. (English summary) *Mathematics of the analysis and design of process control (Dublin*, 1991/*Lille*, 1991), 235–244, *North-Holland, Amsterdam*, 1992. (*see* **93g:93004**) 93C57

Hovey, Mark A. *A*-cordial graphs. *Discrete Math.* **93** (1991), *no.* 2-3, 183–194. (Severino V. Gervacio) **93c:05102** 05C78

— (*with* Hopkins, Michael J.) Spin cobordism determines real K-theory. *Math. Z.* **210** (1992), *no.* 2, 181–196. (P. S. Landweber) **93g:55007** 55N22 (19L41)

— A proof of the existence of level 1 elliptic cohomology. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 4, 1331–1334. (P. S. Landweber) **93j:55008** 55N22 (11F75)

Howard, Don Einstein and Eindeutigkeit: a neglected theme in the philosophical background to general relativity. (French summary) *Studies in the history of general relativity (Luminy*, 1988), 154–243, 462, *Einstein Stud.*, 3, *Birkhäuser Boston, Boston, MA*, 1992. (Dennis Dieks) **93g:01044** 01A60 (00A30, 83–03)

— *see also* **Einstein and the history of general relativity, 93g:83001**

Howard, F. T. Congruences for weighted and degenerate Stirling numbers. *Applications of Fibonacci numbers, Vol.* 3 (*Pisa*, 1988), 161–170, *Kluwer Acad. Publ., Dordrecht*, 1990. (Daniel Barsky) **93b:11020** 11B73 (05A18, 11A07)

Howard, Henry (*with* Marić, Vojislav; Radašin, Zvezdana) Asymptotics of nonoscillatory solutions of a second order linear differential equation. (Serbo-Croatian summary) *Zb. Rad. Prirod.-Mat. Fak. Ser. Mat.* **20** (1990), *no.* 1, 107–116. (I. P. Stavroulakis) **93d:34058** 34C10 (34E99)

Howard, J. V. (*with* Goldstein, Michael) A likelihood paradox. With comments by G. A. Barnard and M. Stone. *J. Roy. Statist. Soc. Ser. B* **53** (1991), *no.* 3, 619–628. (Summary) **93d:62005** 62A10

Howard, L. N. (*with* Balmforth, N. J.; Spiegel, E. A.) Equilibria of rapidly rotating polytropes. (English summary) *Monthly Notices Roy. Astronom. Soc.* **260** (1993), *no.* 2, 253–272. (Summary) **93j:85005** 85A15 (85A30)

Howard, Paul E. The axiom of choice for countable collections of countable sets does not imply the countable union theorem. *Notre Dame J. Formal Logic* **33** (1992), *no.* 2, 236–243. (John K. Truss) **93e:03072** 03E25 (04A25)

Howard, Ralph (*with* Reese, Margaret) Characterization of eigenfunctions by boundedness conditions. *Canad. Math. Bull.* **35** (1992), *no.* 2, 204–213. (Hideo Tamura) **93e:35077** 35P05 (35J05, 47F05)

Howarth, J. A. The Stefan problem with slightly varying wall temperature. *Mech. Res. Comm.* **20** (1993), *no.* 1, 59–64. (Introduction) **93m:80010** 80A22

Howe, P. S. (*with* Townsend, P. K.) Supermembranes and the modulus space of $d = 4$ superstrings. *Supermembranes and physics in* 2+1 *dimensions (Trieste*, 1989), 165–172, *World Sci. Publishing, River Edge, NJ*, 1990. (*see* **93g:81003**) 81T30

— Elliptic operators and supersymmetry. *Supermembranes and physics in* 2+1 *dimensions (Trieste*, 1989), 302–315, *World Sci. Publishing, River Edge, NJ*, 1990. (*see* **93g:81003**) 81T60 (58G03)

— (*with* West, P. C.) The conformal group, point particles and twistors. (English summary) *Internat. J. Modern Phys. A* **7** (1992), *no.* 26, 6639–6664. (Alexander D. Popov) **93i:81080** 81R25 (81S10)

— (*with* Gal′perin, A. S.; Stelle, K. S.) The superparticle and the Lorentz group. *Nuclear Phys. B* **368** (1992), *no.* 2, 248–280. (Raiko Zaikov) **93c:81170** 81T30 (81R25, 81T60, 83E50)

— (*with* Delduc, François; Gal′perin, A. S.; Sokatchev, E. S.) Twistor formulation of the heterotic $D = 10$ superstring with manifest $(8, 0)$ world-sheet supersymmetry. (English summary) *Phys. Rev. D* (3) **47** (1993), *no.* 2, 578–593. (Sergey Merkulov) **93m:81050** 81R25 (81T30, 83E30)

Howe, Roger E. Another look at the local θ-correspondence for an unramified dual pair. *Festschrift in honor of I. I. Piatetski-Shapiro on the occasion of his sixtieth birthday, Part I* (*Ramat Aviv*, 1989), 93–124, *Israel Math. Conf. Proc.*, 2, *Weizmann, Jerusalem*, 1990. (Shai Haran) **93d:22024** 22E55

— (*with* Tan, Eng-Chye) ★ Nonabelian harmonic analysis. Applications of $SL(2, \mathbb{R})$. Universitext. *Springer-Verlag, New York*, 1992. xvi+257 *pp. ISBN* 0-387-97768-6 (Wulf Rossmann) **93f:22009** 22E30 (22–02, 22E46)

— (*with* Bárány, Imre; Lovász, László) On integer points in polyhedra: a lower bound. (English summary) *Combinatorica* **12** (1992), *no.* 2, 135–142. (Martin Henk) **93g:52012** 52C07 (11H56, 52B20)

— (*with* Duke, W.; Li, Jian-Shu) Estimating Hecke eigenvalues of Siegel modular forms. *Duke Math. J.* **67** (1992), *no.* 1, 219–240. (T. C. Vasudevan) **93i:11057** 11F60 (11F30, 11F46, 11F70)

— (*with* Aubert, Anne-Marie) Géométrie des cônes aigus et application à la projection euclidienne sur la chambre de Weyl positive. [Geometry of acute cones and application to Euclidean projection onto the positive Weyl chamber] *J. Algebra* **149** (1992), *no.* 2, 472–493. (Michel Brion) **93i:17008** 17B20 (22E46, 52A20)

— (*with* Tan, Eng-Chye) Homogeneous functions on light cones: the infinitesimal structure of some degenerate principal series representations. *Bull. Amer. Math. Soc.* (*N.S.*) **28** (1993), *no.* 1, 1–74. (Brian E. Blank) **93j:22027** 22E46 (17B10, 22–02)

— *see also* **Festschrift: Piatetski-Shapiro, Ilya Iosifovitch, 93b:00038** *and* **93b:00039**

Howell, Gary W. Derivative error bounds for Lagrange interpolation: an extension of Cauchy's bound for the error of Lagrange interpolation. *J. Approx. Theory* **67** (1991), *no.* 2, 164–173. (Antonio López-Carmona) **93b:41003** 41A05 (65D05)

— Conditioning of Birkhoff interpolation. *Approximation theory* (*Memphis, TN*, 1991), 315–324, *Lecture Notes in Pure and Appl. Math.*, 138, *Dekker, New York*, 1992. (From the introduction) **93d:41004** 41A05 (41A10)

— (*with* Sen, Syamal Kumar) Direct fail-proof triangularization algorithms for $AX + XB = C$ with error-free and parallel implementations. *Appl. Math. Comput.* **50** (1992), *no.* 2-3, 255–278. (Bo Kågström) **93k:65025** 65F05 (65Y05)

— (*with* Murty, K. N.; Sivasundaram, S.) Two (multi) point nonlinear-Lyapunov systems—existence and uniqueness. *J. Math. Anal. Appl.* **167** (1992), *no.* 2, 505–515. (Introduction) **93e:34032** 34B15 (34A34)

Howes, Norman R. Paracompactifications, preparacompactness and some problems of K. Morita and H. Tamano. (English summary) *Questions Answers Gen. Topology* **10** (1992), *no.* 2, 191–204. (Summary) **93e:54018** 54D35

Howie, James (*with* Brodskiĭ, S. D.) One-relator products of torsion-free groups. *Glasgow Math. J.* **35** (1993), *no.* 1, 99–104. (S. Andreadakis) **93k:20042** 20E06 (20F05)

Howie, John M. (*with* Gomes, Gracinda M. S.) On the ranks of certain semigroups of order-preserving transformations. *Semigroup Forum* **45** (1992), *no.* 3, 272–282. (Inessa Levi) **93h:20070** 20M20

— *see also* **Semigroups with applications, 93g:20003**

Howison, Sam D. (*with* Khokhlov, Yu. E.) Classification of solutions in a problem of Hele-Shaw flows with an unknown boundary. (Russian) *Dokl. Akad. Nauk* **325** (1992), *no.* 6, 1161–1166; *translation in Soviet Phys. Dokl.* **37** (1992), *no.* 8, 416–418 (1993). (Martin Senkyrik) **93k:35278** 35R35 (35Q35, 76D99)

— (*with* Fowler, A. C.; Frigaard, I.) Temperature surges in current-limiting circuit devices. *SIAM J. Appl. Math.* **52** (1992), *no.* 4, 998–1011. (Summary) **93c:80005** 80A20 (78A55)

— Codimension-two free boundary problems. (English summary) *Emerging applications in free boundary problems* (*Montreal, PQ*, 1990), 13–23, *Pitman Res. Notes Math. Ser.*, 280, *Longman Sci. Tech., Harlow*, 1993. (*see* **93k:00035**) 35R35 (76S05)

— (*with* Lawrence, R. J.) Fluorescent transfer of light in dyed materials. (English summary) *SIAM J. Appl. Math.* **53** (1993), *no.* 2, 447–458. (Summary) **93k:92013** 92J30 (34A55, 45J05, 78A10)

Howitt, George D. (*with* Luus, Rein) Control of a collection of linear systems by linear state feedback control. (English summary) *Internat. J. Control* **58** (1993), *no.* 1, 79–96. (Summary) **93m:93042** 93B52 (93D15)

Howland, James L. (*with* Vaillancourt, Rémi) Rational transformation from Schur to Jordan form. *Comput. Math. Appl.* **23** (1992), *no.* 11, 91–101. (James Weldon Demmel) **93b:15012** 15A21 (65F30)

Howland, James S. Stability of quantum oscillators. (English summary) *J. Phys. A* **25** (1992), *no.* 19, 5177–5181. (V. S. Ol′khovskiĭ) **93i:81026** 81Q05 (35P05)

Howlett, Jack *see* **le Méhauté, Alain, 93d:51049**

Howlett, R. B. (*with* Glasby, S. P.) Extraspecial towers and Weil representations. *J. Algebra* **151** (1992), *no.* 1, 236–260. (Zhi Rang Zhang) **93j:20072** 20F22 (20E15)

— (*with* Bergeron, François; Bergeron, Nantel; Taylor, D. E.) A decomposition of the descent algebra of a finite Coxeter group. *J. Algebraic Combin.* **1** (1992), *no.* 1, 23–44. (Witold Kraśkiewicz) **93g:20079** 20F55 (19A22)

Howson, Colin Mathematics in philosophy. *The space of mathematics* (*San Sebastián*, 1990), 192–201, *Found. Comm. Cogn., de Gruyter, Berlin*, 1992. (*see* **93j:00010**) 00A30

— *see also* **Maher, Patrick**

Hoy, Erich Construction of special quasi-conformal mappings by analytic functions. *Geometric function theory and applications of complex analysis to mechanics: studies in complex analysis and its applications to partial differential equations*, 2 (*Halle*, 1988), 40–48, *Pitman Res. Notes Math. Ser.*, 257, *Longman Sci. Tech., Harlow*, 1991. (Juan J. Manfredi) **93d:30024** 30C62

— Über eine Erweiterung des Liouvilleschen Satzes. (English summary) [On an extension of Liouville's theorem] *Z. Anal. Anwendungen* **10** (1991), *no.* 3, 385–390. (Tuomas Sorvali) **93c:30027** 30C62 (30D99)

— On a class of mappings being quasiconformal in the mean. II. *Complex Variables Theory Appl.* **17** (1992), *no.* 3-4, 201–212. (Summary) **93m:30027** 30C62

Høyer, Christian *see* **Meyer, Henrik, 93e:01010**

Høyer, Ulrich Zur Theorie der Lorentztransformationen. Eine Erwiderung. (English summary) [On the theory of Lorentz transformations. A reply] *J. Gen. Philos. Sci.* **22** (1991), *no.* 1, 173–175. (J. A. Lester) **93e:83005b** 83A05

de Hoyos, Inmaculada (*with* Beitia, Ma. Asunción; Gracia, Juan-M.) A linear matrix equation: a criterion for block similarity. (English summary) *Linear and Multilinear Algebra* **31** (1992), *no.* 1-4, 93–118. (Juan Manuel de Olazábal) **93m:15014** 15A21 (15A24)

Høyrup, Jens Anfänge von Wissenschaft im Kontext der frühmesopotamischen "städtischen Revolution". (English summary) [The beginnings of science in the context of early Mesopotamian "urban revolution"] *Ber. Wiss.-Gesch.* **15** (1992), *no.* 2, 75–97. (Summary) **93g:01007** 01A17

Hrbáček, Karel (*with* Ballard, David) Standard foundations for nonstandard analysis. *J. Symbolic Logic* **57** (1992), *no.* 2, 741–748. (L. D. Kugler) **93d:03071** 03H05 (03C50, 03C55, 03E70)

Hřebíček, Jiří (*with* Kotoul, Michal; Polcar, Pavel) Numerical analysis of dynamical postcritical behaviour of solids. *Proceedings of the Second International Symposium on Numerical Analysis* (*Prague*, 1987), 175–182, *Teubner-Texte Math.*, 107, *Teubner, Leipzig*, 1988. (*see* **93b:65007**) 73M25 (73V20)

— (*with* Mikulík, Miloslav) Shape preserving splines. *Proceedings of the Second International Symposium on Numerical Analysis* (*Prague*, 1987), 183–186, *Teubner-Texte Math.*, 107, *Teubner, Leipzig*, 1988. (*see* **93b:65007**) 65D07

— (*with* Šik, František; Veselý, Vítězslav) Digital convolution filters and smoothing splines. *Proceedings of the Second International Symposium on Numerical Analysis* (*Prague*, 1987), 187–193, *Teubner-Texte Math.*, 107, *Teubner, Leipzig*, 1988. (*see* **93b:65007**) 65D10 (65D07)

Hrgovčić, H. J. Discrete representations of the n-dimensional wave equation. *J. Phys. A* **25** (1992), *no.* 5, 1329–1350. (I. P. Stavroulakis) **93e:39006** 39A12 (65M06)

Hricišáková, Daniela Negative solutions of the generalized Liénard equation. *Hiroshima Math. J.* **23** (1993), *no.* 1, 155–160. (James M. D'Archangelo) **93m:34050** 34C11

Hristov, V. H. *see* **Khristov, Vladimir Kh.**

Hristova, S. G. *see* **Khristova, S. G.**

Hromadka, T. V., II Complex variable boundary element method error analysis using Taylor series. (English summary) *Boundary element technology, VII* (*Albuquerque, NM*, 1992), 703–719, *Comput. Mech., Southampton*, 1992. (*see* **93b:65002**) 65N38 (65F05)

— (*with* Whitley, R. J.) Complex variable element solution of potential flow problems using Taylor series for error analysis. *Appl. Math. Modelling* **16** (1992), *no.* 3, 114–123. (Summary) **93a:65167** 65N38

Hromkovič, Juraj (*with* Inoue, Katsushi; Itō, Akira; Takanami, Itsuo) On the power of two-dimensional synchronized alternating finite automata. *Fund. Inform.* **15** (1991), *no.* 1, 90–98. (Summary) **93a:68100** 68Q70

— (*with* Monien, Burkhard) The bisection problem for graphs of degree 4 (configuring transputer systems). (English summary) *Informatik*, 215–233, *Teubner-Texte Inform.*, 1, *Teubner, Stuttgart*, 1992. (Wolfgang Feitscher) **93k:68030** 68Q10 (05C12, 68M10, 68Q35, 68R05, 68R10)

— (*with* Dassow, Jürgen) On synchronized Lindenmayer picture languages. (English summary) *Lindenmayer systems*, 253–261, *Springer, Berlin*, 1992. (*see* **93m:68004**) 68U05 (68Q45)

— (*with* Inoue, Katsushi; Rovan, Branislav; Slobodová, Anna; Takanami, Itsuo; Wagner, Klaus Werner) On the power of one-way synchronized alternating machines with small space. *Internat. J. Found. Comput. Sci.* **3** (1992), *no.* 1, 65–79. (Summary) **93f:68026** 68Q05 (68Q70)

— (*with* Lozhkin, S. A.; Rybko, A. I.; Sapozhenko, A. A.; Shkalikova, N. A.) Lower bounds on the area complexity of Boolean circuits. *Theoret. Comput. Sci.* **97** (1992), *no.* 2, 285–300. (Norbert Blum) **93g:68042** 68Q15 (68Q25, 68Q35, 68R05)

— (*with* Inoue, Katsushi) A note on realtime one-way synchronized alternating one-counter automata. (English summary) *Theoret. Comput. Sci.* **108** (1993), *no.* 2, 393–400. (Summary) **93k:68072** 68Q70

Hrushovski, Ehud Extending partial isomorphisms of graphs. (English summary) *Combinatorica* **12** (1992), *no.* 4, 411–416. (Martin Škoviera) **93m:05089** 05C25 (05C80)

— (*with* Zil′ber, B. I.) Zariski geometries. (English summary) *Bull. Amer. Math. Soc.* (*N.S.*) **28** (1993), *no.* 2, 315–323. (Liam O'Carroll) **93j:14003** 14A99 (03C45, 03C60, 03C65, 14H99)

Hryniewicz, Olgierd Estimation of life-time with fuzzy prior information: application in reliability. *Combining fuzzy imprecision with probabilistic uncertainty in decision making*, 307–321, *Lecture Notes in Econom. and Math. Systems*, 310, *Springer, Berlin*, 1988. (*see* **93c:90002**) 90B25 (04A72)

— Approximately optimal economic process control for a general class of control procedures. *Frontiers in statistical quality control*, 4 (*Baton Rouge, LA*, 1990), 201–215, *Physica, Heidelberg*, 1992. (*see* **93i:62002**) 62N10

Hsia, J. S. (*with* Jöchner, M.; Shao, You Yu) A structure theorem for a pair of quadratic forms. *Proc. Amer. Math. Soc.* **119** (1993), *no.* 3, 731–734. (A. G. Earnest) **93m:11027** 11E12

Hsia, Kuo Hsien (*with* Hsieh, Chê Kuang) A first approach to fuzzy differential game problem: guarding a territory. (English summary) *Fuzzy Sets and Systems* **55** (1993), *no.* 2, 157–167. (Summary) **93k:90122** 90D40 (04A72)

Hsiang, H. W. Parallelogram rule of quadratic forms. *J. Statist. Res.* **23** (1989), *no.* 1-2, 71. (Sever S. Dragomir) **93j:46028** 46C99

Hsiang, Jieh (*with* Kirchner, Hélène; Lescanne, Pierre; Rusinowitch, Michael) The term rewriting approach to automated theorem proving. (English summary) *J. Logic Programming* **14** (1992), *no.* 1-2, 71–99. (Michael Bauer) **93m:68148** 68T15 (03B35, 68Q42)

— (*with* Bonacina, Maria Paola) On rewrite programs: semantics and relationship with Prolog. (English summary) *J. Logic Programming* **14** (1992), *no.* 1-2, 155–180. (Summary) **93i:68126** 68Q60 (68N17, 68Q42, 68Q55)

Hsiang, W. H. Integral representation of measurable functions on the unit interval. *J. Statist. Res.* **23** (1989), *no.* 1-2, 69–70. 28A99

Hsiang, Wu-Yi Isoperimetric regions and soap bubbles. *Differential geometry*, 229–240, *Pitman Monographs Surveys Pure Appl. Math.*, 52, *Longman Sci. Tech., Harlow*, 1991. (Anna Salvadori) **93h:49060** 49Q10 (53A10)

— A simple proof of a theorem of Thue on the maximal density of circle packings in E^2. *Enseign. Math.* (2) **38** (1992), *no.* 1-2, 125–131. (A. Florian) **93k:52018** 52C15 (52A40)

— On soap bubbles and isoperimetric regions in noncompact symmetric spaces. I. *Tôhoku Math. J.* (2) **44** (1992), *no.* 2, 151–175. (Ivan Sterling) **93a:53044** 53C35 (53C20, 58E15)

Hsiao, Chih Ru (*with* Raghavan, T. E. S.) Monotonicity and dummy free property for multi-choice cooperative games. (English summary) *Internat. J. Game Theory* **21** (1992), *no.* 3, 301–312. (G. A. Heuer) **93k:90112** 90D12 (90D40)

Hsiao, Fêng Hsiang Robust stability of discrete multivariable systems subject to nonlinear time-varying unmodelled dynamics. (English summary) *Internat. J. Systems Sci.* **23** (1992), *no.* 10, 1717–1730. 93D09

Hsiao, George C. (*with* Kleinman, Ralph E.) Feasible error estimates in boundary element methods. (English summary) *Boundary element technology, VII* (*Albuquerque, NM*, 1992), 875–886, *Comput. Mech., Southampton*, 1992. (*see* **93b:65002**) 65N38 (65N15)

— (*with* Ahner, John F.) Iterative solutions of boundary integral equations of the first kind. *J. Math. Anal. Appl.* **167** (1992), *no.* 2, 322–339. (V. V. Vasin) **93h:65164** 65R20 (45B05, 45L05)

— (*with* Gatica, Gabriel N.) The coupling of boundary integral and finite element methods for nonmonotone nonlinear problems. (English summary) *Numer. Funct. Anal. Optim.* **13** (1992), *no.* 5-6, 431–447. (Weimin Han) **93j:65194** 65N38 (47H17, 65J15)

Hsiao, Hsing T'ai (*with* Lin, Ts'ung Wu; Huang, Chin T'ien) Decomposition of singular large sparse matrix by adding dummy links and dummy degrees. (English and Chinese summaries) *J. Chinese Inst. Engrs.* **15** (1992), *no.* 6, 723–727. 65F50

Hsiao, Ju Yuan (*with* T'ang, Ch'uan I; Chang, Jui Hsiung) An efficient algorithm for finding a maximum weight 2-independent set on interval graphs. *Inform. Process. Lett.* **43** (1992), *no.* 5, 229–235. (Summary) **93g:05130** 05C85 (68Q25, 68R10)

Hsiao, Ling *see* **Xiao, Ling**

Hsiao, Shêng Yen (*with* Li, Yuan Chuan) Generalization of Baire and Mittag-Leffler theorems. *Functional analysis & related topics* (*Sapporo*, 1990), 138–140, *World Sci. Publishing, River Edge, NJ*, 1991. (Winfried Kaballo) **93c:46138** 46M99 (46A04, 46G99, 47A99)

— (*with* Li, Yuan Chuan) Representation formulas for C-semigroups. *Semigroup Forum* **46** (1993), *no.* 1, 123–125. (Frank Neubrander) **93m:47043** 47D03

Hsiaq, Fu Chao (*with* Chang, Ch'i) An example on quasi-zero-monotonic games. (English summary) *Games Econom. Behav.* **5** (1993), *no.* 2, 223–226. (Summary) **93m:90108** 90D06

Hsieh, C. K. *see* **Hsieh, Chung Kuo**

Hsieh, C. M. (*with* Chu, Yen Ping) An artificial neural network model with modified perceptron algorithm. (English summary) *Parallel Comput.* **18** (1992), *no.* 9, 983–996. (Summary) **93h:68120** 68T05 (92B20)

Hsieh, Chê Kuang (*with* Hsia, Kuo Hsien) A first approach to fuzzy differential game problem: guarding a territory. (English summary) *Fuzzy Sets and Systems* **55** (1993), *no.* 2, 157–167. (Summary) **93k:90122** 90D40 (04A72)

Hsieh, Chung (*with* Chiang, Tsu Shu; Chou, Yün Hsiung) Some limit theorems on simulated annealing. *Stochastic models, statistical methods, and algorithms in image analysis* (*Rome*, 1990), 125–131, *Lecture Notes in Statist.*, 74, *Springer, Berlin*, 1992. (*see* **93e:62005**) 60F99

— (*with* Chou, Yün Hsiung) On occupation times of annealing processes. *Bull. Inst. Math. Acad. Sinica* **20** (1992), *no.* 1, 19–26. (Summary) **93m:60154** 60J27 (60F15, 90C15)

Hsieh, Chung Kuo (*with* Choi, C.-Y.; Kassab, A. J.) Solution of Stefan problems by a boundary element method. (English summary) *Boundary element technology, VII* (*Albuquerque, NM*, 1992), 473–490, *Comput. Mech., Southampton*, 1992. (*see* **93b:65002**) 80A22 (65N38, 80–08)

Hsieh, D. Y. Gravity waves in Lagrangian coordinates. *Engineering science, fluid dynamics* (*Pasadena, CA*, 1989), 3–15, *World Sci. Publishing, River Edge, NJ*, 1990. (Touvia Miloh) **93d:76007** 76B15

Hsieh, Gary C. (*with* Safonov, Michael G.) Conservatism of the gap metric. (English summary) *IEEE Trans. Automat. Control* **38** (1993), *no.* 4, 594–598. (Summary) **93m:93045** 93C05 (93C70)

Hsieh, Hsien Fen (*with* Hsu, Su Chu; Huang, Shing Tsaan) A fully-pipelined systolic algorithm for finding bridges on an undirected connected graph. *Parallel Comput.* **18** (1992), *no.* 4, 377–391. (Summary) **93b:68070** 68R10 (68Q20)

Hsieh, J. *see* **Hsieh, Chung**

Hsieh, Jer-Guang *see* **Hsieh, Chê Kuang**

Hsieh, John J. A hazard process for survival analysis. (English summary) *Exploring the limits of bootstrap* (*East Lansing, MI*, 1990), 345–362, *Wiley Ser. Probab. Math. Statist. Probab. Math. Statist., Wiley, New York*, 1992. (Subhash C. Kochar) **93m:62111** 62G10 (62N05)

Hsieh, June *see* **Hsieh, Chung**

Hsieh, Kuen Rong (*with* Chen, Wen Tsuen) A neural sorting network with $O(1)$ time complexity. *Inform. Process. Lett.* **45** (1993), *no.* 6, 309–313. 68T05 (92B20)

Hsieh, Nan Jui (*with* Yokoi, Yoshitaka) Positivity of Donsker's delta function. *White noise analysis* (*Bielefeld*, 1989), 374–382, *World Sci. Publishing, River Edge, NJ*, 1990. (Summary) **93m:60075** 60G20

— A W.N.C. viewpoint on intersection local times. *Gaussian random fields* (*Nagoya*, 1990), 346–353, *Ser. Probab. Statist.*, 1, *World Sci. Publishing, River Edge, NJ*, 1991. (Summary) **93b:60184** 60J65 (60J55)

— Local nondeterminism and self-intersections of certain self-similar stable processes. *Probability theory and mathematical statistics* (*Kiev*, 1991), 317–323, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93k:60008**) 60G18 (60J30)

— Multiple points of sample paths of Markov processes. *Ann. Probab.* **20** (1992), *no.* 2, 553–562. (Walter J. Hendricks) **93e:60151** 60J30 (60G17, 60J65)

— (*with* Kôno, Norio) Local times and related sample path properties of certain self-similar processes. *J. Math. Kyoto Univ.* **33** (1993), *no.* 1, 51–64. (Simeon M. Berman) **93m:60073** 60G17 (60G18, 60J55)

Hsieh, Po-Fang (*with* Gingold, Harry) Globally analytic triangularization of a matrix function—an algorithm. *Proceedings of Asian Mathematical Conference*, 1990 (*Hong Kong*, 1990), 149–154, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93b:00022**) 15A21 (47A56)

— (*with* Gingold, Harry) Globally analytic triangularization of a matrix function. *Linear Algebra Appl.* **169** (1992), 75–101. (L. Rodman) **93f:15007** 15A18 (15A54, 47A56)

Hsing, Tailen (*with* Chernick, Michael R.; McCormick, William P.) Calculating the extremal index for a class of stationary sequences. *Adv. in Appl. Probab.* **23** (1991), *no.* 4, 835–850. (Georg Lindgren) **93c:60073** 60G70

— (*with* Carroll, Raymond J.) An asymptotic theory for sliced inverse regression. *Ann. Statist.* **20** (1992), *no.* 2, 1040–1061. (Keh-Wei Chen) **93h:62081** 62G05

Hsiung, Chuan-Chih In memory of teacher Jiong Zeng. (Chinese) *Collected research papers on the history of mathematics, Vol.* 2 (*Chinese*), 150, *Inner Mongolia Univ. Press, Hohhot*, 1991. (*see* **93i:01005**) 01A70

Hsu, C. A. (*with* Yang, J. Y.; Hui, W. H.) A generalized Lagrangian method for solving the steady shallow water equations. (English summary) *Math. Comput. Simulation* **35** (1993), *no.* 1, 43–61. (Summary) **93h:65127** 65M99 (76B15, 76L05, 76M20, 76M25)

Hsu, C. S. *see* **Hsu, Chieh Su**

Hsu, C. T. (*with* Sigmar, D. J.) Alpha-particle losses from toroidicity-induced Alfvén eigenmodes. I. Phase-space topology of energetic particle orbits in tokamak plasma. *Phys. Fluids B* **4** (1992), *no.* 6, 1492–1505. (Summary) **93d:76077** 76X05

— (*with* Sigmar, D. J.; White, Roscoe Beryl; Cheng, C. Z.) Alpha-particle losses from toroidicity-induced Alfvén eigenmodes. II. Monte Carlo simulations and anomalous alpha-loss processes. *Phys. Fluids B* **4** (1992), *no.* 6, 1506–1516. (Summary) **93d:76078** 76X05 (76M25)

Hsu, Chieh Su (*with* Sun, J.-Q.) The generalized cell mapping method in nonlinear random vibration based upon short-time Gaussian approximation. *Trans. ASME J. Appl. Mech.* **57** (1990), *no.* 4, 1018–1025. (Summary) **93b:70026** 70L05 (70–08)

Hsu, D. Frank Orthomorphisms and near orthomorphisms. *Graph theory, combinatorics, and applications. Vol.* 2 (*Kalamazoo, MI*, 1988), 667–679, *Wiley-Intersci. Publ., Wiley, New York*, 1991. (*see* **93b:05003**) 05C25

— (*with* Shapiro, Jacob) Bounds for the minimal number of transmission delays in double loop networks. (English summary) *J. Combin. Inform. System Sci.* **16** (1991), *no.* 1, 55–62. (Summary) **93d:05077** 05C35 (68M10, 68M20)

— (*with* Du, Ding Zhu; Hwang, F. K.; Zhang, Xian Mo) The Hamiltonian property of generalized de Bruijn digraphs. *J. Combin. Theory Ser. B* **52** (1991), *no.* 1, 1–8. (Arthur M. Hobbs) **93b:05105** 05C45

— (*with* Du, Ding Zhu; Peck, G. W.) Connectivity of consecutive-d digraphs. (English summary) *Discrete Appl. Math.* **37/38** (1992), 169–177. (L. W. Beineke) **93g:05089** 05C40 (05C38, 68R10, 94C15)

— (*with* Cheng, Ying; Hwang, F. K.; Akyildiz, I. F.) Routing algorithms for double loop networks. (English summary) *Internat. J. Found. Comput. Sci.* **3** (1992), *no.* 3, 323–331. (Summary) **93m:68013** 68M10 (68Q25)

— (*with* Erdős, Paul) Distributed loop network with minimum transmission delay. *Theoret. Comput. Sci.* **100** (1992), *no.* 1, 223–241. (Summary) **93d:68006** 68M10

Hsu, F. R. (*with* Lee, R. C. T.; Chang, Ruei Chuan) Parallel algorithms for computing the minimum visible vertex distance between two polygons. (English summary) *Parallel computing* '91 (*London*, 1991), 115–122, *Adv. Parallel Comput.*, 4, *North-Holland, Amsterdam*, 1992. (Summary) **93i:68176** 68U05 (52B55, 68Q22)

— (*with* Lee, R. C. T.; Chang, Ruei Chuan) Special subgraphs of weighted visibility graphs. *Inform. Process. Lett.* **43** (1992), *no.* 2, 69–75. (Summary) **93g:68137** 68U05 (68Q25, 68R10)

— (*with* Chang, Ruei Chuan; Lee, R. C. T.) Parallel algorithms for computing the closest visible vertex pair between two polygons. *Internat. J. Comput. Geom. Appl.* **2** (1992), *no.* 2, 135–162. (Ivan Stojmenović) **93h:52020** 52B55 (68U05)

Hsu, Guan-Hsong (*with* Cawley, Robert) Local-geometric-projection method for noise reduction in chaotic maps and flows. (English summary) *Phys. Rev. A* (3) **46** (1992), *no.* 6, 3057–3082. (Hans-Peter Herzel) **93g:58094** 58F13 (58F40)

Hsu, Guang Hui *see* **Xu, Guang Hui**

Hsü, I Jung (*with* Ch'ên, Hsing Hsia) On Redheffer's type theorems in differential inequalities on manifolds. *Bull. Inst. Math. Acad. Sinica* **19** (1991), *no.* 1, 1–10. (From the text) **93e:58194** 58G30

— A characterization of surfaces of constant curvature by eigenfunctions. (English summary) *Chinese J. Math.* **20** (1992), *no.* 4, 343–346. (Qing Ming Cheng) **93m:58115** 58G25 (53C45)

Hsu, J. R.-C. (*with* Ch'ên, Yü I) Frequency modulations between two intersecting waves in deep water. (English summary) *Nonlinear dispersive wave systems* (*Orlando, FL*, 1991), 299–328, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93i:76010** 76B15

Hsu, Jason C. (*with* Chang, Jane Y.) Optimal designs for multiple comparisons with the best. *J. Statist. Plann. Inference* **30** (1992), *no.* 1, 45–62. (Summary) **93b:62099** 62K05 (62J15)

— (*with* Ruberg, Stephen J.) Multiple comparison procedures for pooling batches in stability studies. (English summary) *Technometrics* **34** (1992), *no.* 4, 465–472. (Summary) **93g:62126** 62N10

Hsu, L. C. *see* **Xu, Li Zhi**

Hsü, Li Hsing (*with* Jan, Rong Hong; Lee, Yueh-Ying) The most vital edges with respect to the number of spanning trees in two-terminal series-parallel graphs. (English summary) *BIT* **32** (1992), *no.* 3, 403–412. (Summary) **93i:05123** 05C85 (68R10, 90C35)

— (*with* Wang, Peng Fei; Wu, Chu Tao) Parallel algorithms for finding the most vital edge with respect to minimum spanning tree. (English summary) *Parallel Comput.* **18** (1992), *no.* 10, 1143–1155. (Summary) **93j:68158** 68R10 (05C85, 68Q20, 68Q22)

Hsu, Lifang (*with* Chen, Pinyuen) Partitioning multinomial cells. (English summary) With discussion. *The frontiers of modern statistical inference procedures, II* (*Sydney*, 1987), 239–253, *Amer. Sci. Press Ser. Math. Management Sci.*, 28, *Amer. Sci. Press, Columbus, OH*, 1992. (Summary) **93h:62036** 62F07 (62L10)

Hsu, Lih-Hsing *see* **Hsü, Li Hsing**

Hsu, Pei A class of singular continuous functions. (German summary) *Elem. Math.* **47** (1992), *no.* 4, 169–172. (T. Šalát) **93k:26004** 26A30

Hsu, S. B. *see* **Hsü, Shih Pi**

Hsü, Sên Chu (*with* Shih, Hui Jan) Some properties of balanced languages. (English summary) *Soochow J. Math.* **18** (1992), *no.* 4, 431–450. (J.-M. Autebert) **93m:68099** 68Q45 (68–01)

Hsü, Shih Pi (*with* Chêng, Kuo Shun; Huang, Hsin Fêng) On the singular behavior of the solution of $v''(x) + x \sin v(x) = 0$. *J. Math. Anal. Appl.* **163** (1992), *no.* 1, 20–37. (P. K. Palamides) **93b:34011** 34A12 (34B99, 73K05)

— (*with* Waltman, Paul) Analysis of a model of two competitors in a chemostat with an external inhibitor. *SIAM J. Appl. Math.* **52** (1992), *no.* 2, 528–540. (Yang Kuang) **93g:92021** 92D25 (34C25, 34C99)

Hsu, Su Chu (*with* Huang, Shing Tsaan) A self-stabilizing algorithm for maximal matching. (English summary) *Inform. Process. Lett.* **43** (1992), *no.* 2, 77–81. (Summary) **93g:68006** 68M15

— (*with* Hsieh, Hsien Fen; Huang, Shing Tsaan) A fully-pipelined systolic algorithm for finding bridges on an undirected connected graph. *Parallel Comput.* **18** (1992), *no.* 4, 377–391. (Summary) **93b:68070** 68R10 (68Q20)

Hsu, Sze-Bi *see* **Hsü, Shih Pi**

Hsü, T'ung An Some optimal selection procedures for dependent normal populations. (English summary) *Calcutta Statist. Assoc. Bull.* **42** (1992), *no.* 165-166, 19–27. (Summary) **93k:62043** 62F07

— Some preservation theorems with applications to shock models. *Chinese J. Math.* **20** (1992), *no.* 1, 79–88. (Summary) **93h:44001** 44A05 (45P05)

Hsu, Wen-Lian (*with* Tsai, Kuo-Hui) Linear time algorithms on circular-arc graphs. *Inform. Process. Lett.* **40** (1991), *no.* 3, 123–129. (Summary) **93a:68117** 68R10 (68Q25)

— (*with* Shih, Wei Kuan; Chern, T. C.) An $O(n^2 \log n)$ algorithm for the Hamiltonian cycle problem on circular-arc graphs. (English summary) *SIAM J. Comput.* **21** (1992), *no.* 6, 1026–1046. (Summary) **93h:05158** 05C85 (05C45, 68Q25, 68R10)

Hsu, Yen Ting (*with* Tsai, Te Ping) A two-degree-of-freedom LQR design of control systems. (English summary) *Control Theory Adv. Tech.* **8** (1992), *no.* 4, 763–777. 93B52 (93E20)

Hsu, Yi Jung *see* **Hsü, I Jung**

Hsu, Yu Sheng Double kernel estimation and testing of the conditional cell probabilities. (English summary) *Chinese J. Math.* **20** (1992), *no.* 3, 249–261. (H. Enke) **93j:62099** 62G05

Hsueh, Yuang Cheh On fuzzification of matroids. (English summary) *Fuzzy Sets and Systems* **53** (1993), *no.* 3, 319–327. (Summary) **93k:05040** 05B35 (04A72)

— Extended lattice-ordered structures for L-fuzzy sets and L-fuzzy numbers. (English summary) *Fuzzy Sets and Systems* **54** (1993), *no.* 1, 81–90. (Summary) **93m:04013** 04A72

Hu, B. L. Quantum and statistical effects in superspace cosmology. *Quantum mechanics in curved space-time* (*Erice*, 1989), 361–402, *NATO Adv. Sci. Inst. Ser. B Phys.*, 230, *Plenum, New York*, 1990. (*see* **93d:83003**) 83C47 (83C45)

— (*with* Paz, Juan Pablo; Zhang, Yuhong) Quantum Brownian motion in a general environment: exact master equation with nonlocal dissipation and colored noise. *Phys. Rev. D* (3) **45** (1992), *no.* 8, 2843–2861. (Demetris P. K. Ghikas) **93g:82062** 82C10 (81P15, 81S40, 82C31)

Hu, Bambi (*with* Lin, Bin) Frenkel-Kontorova model with Toda interactions. (English summary) *J. Statist. Phys.* **69** (1992), *no.* 5-6, 1047–1068. (Summary) **93g:82019** 82B20 (82D25)

Hu, Bei (*with* Friedman, Avner) The Stefan problem with kinetic condition at the free boundary. *Ann. Scuola Norm. Sup. Pisa Cl. Sci.* (4) **19** (1992), *no.* 1, 87–111. (Li Shang Jiang) **93k:35277** 35R35 (35J05, 80A22)

— (*with* Friedman, Avner; Velázquez, Juan J. L.) A free-boundary problem modeling loop dislocations in crystals. *Arch. Rational Mech. Anal.* **119** (1992), *no.* 3, 229–291. (Ján Lovišek) **93h:35217** 35R35 (35K85, 73B99, 73S10)

— (*with* Friedman, Avner) A free boundary problem arising in superconductor modeling. (English summary) *Asymptotic Anal.* **6** (1992), *no.* 2, 109–133. (J. W. Jerome) **93k:82071** 82D55 (35Q60, 35R35)

— A nonlinear nonlocal parabolic equation for channel flow. *Nonlinear Anal.* **18** (1992), *no.* 10, 973–992. (Alberto Valli) **93f:35120** 35K60 (35K65, 35Q35, 76D99)

— (*with* Wang, Lihe) A free boundary problem arising in electrophotography: solutions with connected toner region. (English summary) *SIAM J. Math. Anal.* **23** (1992), *no.* 6, 1439–1454. (From the text) **93i:35158** 35R35 (35Q60)

Hu, Bi Zhong A PL geometric study of algebraic K theory. *Trans. Amer. Math. Soc.* **334** (1992), *no.* 2, 783–808. (Christopher W. Stark) **93b:57025** 57Q10 (19B28, 53C21, 57N60, 57R80)

Hu, Bing Sheng A further study on the positive-negative principle in the *Jiu zhang suanshu*. (Chinese) *Collected research papers on the history of mathematics, Vol.* 2 (*Chinese*), 31–34, *Inner Mongolia Univ. Press, Hohhot*, 1991. (*see* **93i:01005**) 01A25

Hu, C.-Y. (*with* Kvitsinskii, A. A.) Solution of three-dimensional Faddeev equations for three-body Coulomb bound states. *Few-Body Systems* **12** (1992), *no.* 1, 7–19. (Summary) **93c:81259** 81U10 (65P05, 81-04, 81V55)

Hu, Chen-Yi (*with* Kearfott, Ralph Baker) A pivoting scheme for the interval Gauss-Seidel method: numerical experiments. *Approximation, optimization and computing*, 97–100, *North-Holland, Amsterdam*, 1990. (*see* **93a:41001**) 65H10

— (*with* Kearfott, Ralph Baker; Novoa, Manuel, III) A review of preconditioners for the interval Gauss-Seidel method. (English and Russian summaries) *Interval Comput./Interval. Vychisl.* **1991**, *no.* 1, 59–85. (Summary) **93d:65051** 65H10 (65G10)

— (*with* Bayoumi, M.; Kearfott, Ralph Baker; Yang, Qing) A parallelized algorithm for the all-row preconditioned interval Newton/generalized bisection method. (English summary) *Parallel processing for scientific computing* (*Houston, TX*, 1991), 205–209, *SIAM, Philadelphia, PA*, 1992. (*see* **93g:65178**) 65H10 (65Y05, 90C30)

Hu, Chin Kun (*with* Maillard, J.-M.; Wu, F. Y.) Thermal transmissivity in discrete spin systems: formulation and applications. *J. Phys. A* **25** (1992), *no.* 9, 2521–2531. (Summary) **93a:82013** 82B20

— Histogram Monte Carlo renormalization group method for phase transition models without critical slowing down. (English summary) *Phys. Rev. Lett.* **69** (1992), *no.* 19, 2739–2742. (Summary) **93m:82020** 82B80 (65C05, 82B28)

Hu, D. Y. (*with* Bai, Zhao Jun; Reichel, Lothar) An implementation of the GMRES method using QR factorization. (English summary) *Parallel processing for scientific computing* (*Houston, TX*, 1991), 84–91, *SIAM, Philadelphia, PA*, 1992. (*see* **93g:65178**) 65F05 (65Y05)

— (*with* Reichel, Lothar) Krylov-subspace methods for the Sylvester equation. Second NIU Conference on Linear Algebra, Numerical Linear Algebra and Applications (DeKalb, IL, 1991). *Linear Algebra Appl.* **172** (1992), 283–313. (Anna Lee) **93c:65041** 65F05 (15A24, 65Y05)

Hu, Duan Ping The general solution to the matrix equation $AXB + CYD = E$. (Chinese. Chinese summary) *Math. Practice Theory* **1992**, *no.* 4, 85–87. 15A24

Hu, Fei Fang Admissibility of linear estimators for the common mean vector in a linear model. (Chinese. English and Chinese summaries) *Chinese J. Appl. Probab. Statist.* **7** (1991), *no.* 3, 275–282. 62J05

Hu, Gang[1] Microscopic entropy in a quantum model. (English and Chinese summaries) *Beijing Shifan Daxue Xuebao* **28** (1992), *no.* 2, 176–181. (Robert Alicki) **93j:82043** 82C10

Hu, Guan Zhang (*with* Zhang, Zhong Fu) Edge-face total colorings of planar graphs. (Chinese. English and Chinese summaries) *J. Tsinghua Univ.* **32** (1992), *no.* 3, 18–23. (Summary) **93k:05063** 05C15

Hu, H. *see* **Hu, Hui**

Hu, H.-C. (*with* Kelly, Robert Edward) The onset of Rayleigh-Bénard convection in nonplanar oscillatory flows. (English summary) *J. Fluid Mech.* **249** (1993), 373–390. (Summary) **93m:76034** 76E15

Hu, Hai Chang (*with* Ji, Hai Bo; Wu, Ji Ke) Geometric description and computational method for bifurcation. (English summary) *Sci. China Ser. A* **35** (1992), *no.* 5, 597–606. (Jacobo Pejsachowicz) **93j:65084** 65H17 (58-04, 65H10)

— Necessary and sufficient boundary integral equations for plane harmonic functions. (English summary) *Sci. China Ser. A* **35** (1992), *no.* 7, 861–869. (G. T. Symm) **93j:65196** 65N38 (73V99)

Hu, Hai Ping (*with* Ma, Ming) The (N) fuzzy integrals of abstract functions. (English summary) *Fuzzy Sets and Systems* **55** (1993), *no.* 3, 323–332. 28E10 (04A72)

Hu, Heng Zhang (*with* Zhang, Zhao; Zhao, Chang An) A study on perturbation bounds for robust stability in linear systems. (Chinese. English and Chinese summaries) *J. Harbin Inst. Tech.* **25** (1993), *no.* 1, 38–42. 93D09

Hu, Hong Liang Gauged WZNW models and topological conformal field theories. *Phys. Lett. B* **284** (1992), *no.* 3-4, 242–247. (Pablo M. Llatas) **93h:81123** 81T40 (17B81)

Hu, Hong Xing (*with* Loh, Nan K.) Active suspension design via frequency-shaping optimal parametric control theory. (English and Polish summaries) *Systems Sci.* **18** (1992), *no.* 1-2, 5–18 (1993). 93C85

Hu, Howard H. (*with* Joseph, Daniel D.) Miscible displacement in a Hele-Shaw cell. (English summary) *Z. Angew. Math. Phys.* **43** (1992), *no.* 4, 626–644. (Summary) **93c:76025** 76D99 (76A99, 76E99, 76R99)

Hu, Hui A projective method for rescaling a diagonally stable matrix to be positive definite. (English summary) *SIAM J. Matrix Anal. Appl.* **13** (1992), *no.* 4, 1255–1263. (Dao Sheng Zheng) **93m:15012** 15A18 (15A24)

Hu, Ji Shan (*with* Kruskal, Martin D.) Reflection coefficient beyond all orders for singular problems. (English summary) *Asymptotics beyond all orders* (*La Jolla, CA*, 1991), 247–253, *NATO Adv. Sci. Inst. Ser. B Phys.*, 284, *Plenum, New York*, 1991. (*see* **93i:00016**) 34L25 (34E20)

— (*with* Kruskal, Martin D.) Reflection coefficient beyond all orders for singular problems. I. Separated critical points on the nearest critical level line. *J. Math. Phys.* **32** (1991), *no.* 9, 2400–2405. (Summary) **93a:34095a** 34L25 (34E15, 34L40)

— (*with* Kruskal, Martin D.) Reflection coefficient beyond all orders for singular problems. II. Closed-spaced critical points on the nearest critical level line. *J. Math. Phys.* **32** (1991), *no.* 10, 2676–2678. (Summary) **93a:34095b** 34L25 (34E15, 34L40)

— (*with* Gingold, Harry) Transcendentally small reflection of waves for problems with/without turning points near infinity: a new uniform approach. *J. Math. Phys.* **32** (1991), *no.* 12, 3278–3284. (Anthony Leung) **93a:34069** 34E20 (34E05, 81Q20)

— Reflection coefficient beyond all orders for singular problems. III. Essential singularities on the real axis. *J. Math. Phys.* **33** (1992), *no.* 1, 37–43. (Summary) **93a:34095c** 34L25 (34E15, 34L40)

— (*with* Kruskal, Martin D.) Reflection coefficient problems for weakly nonlinear wave equations. (English summary) *SIAM J. Appl. Math.* **52** (1992), *no.* 6, 1584–1596. (Peter N. Zhevandrov) **93i:34099** 34E20 (34L25, 81Q20)

Hu, Ji Yang (*with* Hu, Rui An) Using triangular iteration to generate visualizations of fractal geometric morphology with periodicity. (Chinese. English summary) *J. Huazhong Univ. Sci. Tech.* **19** (1991), *no.* 6, 97–101. 58F23 (58F13)

Hu, Jian Kun (*with* Wang, Guang Xiong; Zhang, Guo Feng[2]; Yao, Yi Xin; Chang, Chun; Weng, Zheng Xin) A design of H_∞ controllers that fail to satisfy certain constraints. (Chinese. English and Chinese summaries) *J. Harbin Inst. Tech.* **25** (1993), *no.* 1, 43–47. 93B36

Hu, Jian Qiang (*with* Glasserman, Paul; Strickland, Stephen G.) Strongly consistent steady-state derivative estimates. (English summary) *Probab. Engrg. Inform. Sci.* **5** (1991), *no.* 4, 391–413. (Summary) **93f:60139** 60K25 (60K05, 62M99)

— Consistency of infinitesimal perturbation analysis estimators with rates. *Queueing Systems Theory Appl.* **8** (1991), *no.* 3, 265–277. (Summary) **93b:60216** 60K25 (90B22)

— (*with* Fu, Michael C.) Extensions and generalizations of smoothed perturbation analysis in a generalized semi-Markov process framework. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 10, 1483–1500. (Summary) **93i:60171** 60K25 (90B22, 93E14)

— (*with* Gong, Wei Bo) The MacLaurin series for the $GI/G/1$ queue. *J. Appl. Probab.* **29** (1992), *no.* 1, 176–184. (Summary) **93b:60213** 60K25 (90B22)

— Variance properties of sample path derivatives of parametric random variables. *Oper. Res. Lett.* **11** (1992), *no.* 1, 47–54. (Summary) **93a:60162** 60K99 (60K25, 90B22)

— (*with* Xiang, Dong) The queueing equivalence to a manufacturing system with failures. (English summary) *IEEE Trans. Automat. Control* **38** (1993), *no.* 3, 499–502. 90B22

Hu, Jian Sheng (*with* Yang, Cheng Wu) A discrete pulse orthogonal function method for the analysis of discrete systems and parameter estimation. (Chinese. Chinese summary) *Acta Math. Sci.* (*Chinese*) **12** (1992), *no.* 2, 160–165. 93E10 (93C55)

— (*with* Yang, Cheng Wu) A new method of parameter estimation for time-delay linear systems—the Fourier series method. (Chinese. English and Chinese summaries) *Inform. and Control* (*Shenyang*) **21** (1992), *no.* 3, 146–150. 93E10

Hu, Jie (*with* Dekel, Eliezer; Ouyang, Wen) An optimal algorithm for finding compact sets. (English summary) *Inform. Process. Lett.* **44** (1992), *no.* 5, 285–289. (Summary) **93h:05151** 05C85 (68Q25, 68R10)

Hu, Jun (*with* Wu, Hong Xin; Xie, Yong Chun) A simple practical multivariable self-adaptive control algorithm suitable for higher-dimensional variables and its appli-

cation. (Chinese. Chinese summary) *Inform. and Control (Shenyang)* **21** (1992), *no.* 1, 44–48. 93C40

Hu, K. K. (*with* Wang, Sam S. Y.) Improved methodology for formulating finite-element hydrodynamic models. *Finite elements in fluids, Vol. 8 (Huntsville, AL, 1989)*, 457–478, *Ser. Comput. Phys. Process. Mech. Thermal Sci., Hemisphere, Washington, DC*, 1992. (*see* **93c:76050**) 76M10

Hu, Kaiyuan *see* **Probability theory, 93e:60005**

Hu, Ke On a Milin's conjecture and its applications. *Proceedings of Asian Mathematical Conference*, 1990 (*Hong Kong*, 1990), 186–190, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93b:00022**) 30C50

Hu, Lan Fang (*with* Wang, Ge Ping) The φ-order homomorphisms and their applications to the theory of φ-continuous lattices. (Chinese. English summary) *J. Math. Res. Exposition* **12** (1992), *no.* 3, 361–365. 06B30

Hu, Long Mei Enumeration of Euler circuits and Hamiltonian cycles in generalized de Bruijn digraphs. (Chinese. English and Chinese summaries) *J. China Univ. Sci. Tech.* **22** (1992), *no.* 3, 375–384. (Shaocen Han) **93i:05088** 05C45 (05C30)

Hu, Ming Jie The mathematical foundation of Chinese four-element algebra. (Chinese. English summary) *Beijing Shifan Daxue Xuebao* **27** (1991), *no.* 4, 492–498. (Catherine Jami) **93b:01008** 01A25

Hu, Mou A multiple-valued algebra for modeling MOS VLSI circuits at switch-level. *J. Comput. Sci. Tech. (English Ed.)* **7** (1992), *no.* 2, 175–184. 94C10 (03B50)

Hu, Nan Hua A note on stochastic ordering ($\leq_d$). (English and Chinese summaries) *J. Math. Res. Exposition* **13** (1993), *no.* 1, 52–54. (Summary) **93m:60037** 60E15 (60F05)

Hu, Ning (*with* Zhang, Ru Qing) An iterative parallel algorithm of finite element method. *Appl. Math. Mech. (English Ed.)* **13** (1992), *no.* 4, 305–313; *translated from Appl. Math. Mech.* **13** (1992), *no.* 4, 287–295 (*Chinese. English summary*). 65M60 (65Y05, 73V05)

Hu, Pei Chu (*with* Yang, Lian Zhong) Admissible solutions to algebraic differential equations. (Chinese. English summary) *Shandong Daxue Xuebao Ziran Kexue Ban* **26** (1991), *no.* 1, 19–25. (Shi An Gao) **93g:34009** 34A20 (30D35)

Hu, Qi Ya Extrapolation of finite element solutions to a class of integro-differential equations. (Chinese. English and Chinese summaries) *Natur. Sci. J. Xiangtan Univ.* **14** (1992), *no.* 2, 28–34. (Summary) **93g:65103** 65L60 (49L10, 65R20)

Hu, Qi Ying Discounted and average Markov decision processes with unbounded rewards: new conditions. (English summary) *J. Math. Anal. Appl.* **171** (1992), *no.* 1, 111–124. (Gerhard Hübner) **93m:90094** 90C40 (90C42)

Hu, Qing (*with* Shen, Xiao Jun; Cong, Bin; Sudborough, Ivan Hal; Girou, Mike; Bettayeb, Said) The 4-star graph is not a subgraph of any hypercube. (English summary) *Inform. Process. Lett.* **45** (1993), *no.* 4, 199–203. (Summary) **93k:05054** 05C10 (68Q10, 68R10)

Hu, Qing Ping (*with* Wang, Hao[2]) Four types of morphism-map categories and their properties. (Chinese. English summary) *J. Northwest Univ.* **22** (1992), *no.* 1, 21–26. (Summary) **93b:18006** 18A99

— The introduction and development of BCH-algebras. (Chinese. English and Chinese summaries) *J. Northwest Univ.* **22** (1992), *no.* 3, 261–267. (Summary) **93k:06025** 06F35 (03G25)

Hu, Qing Yong (*with* Mu, Chun Di; Wu, Xu Dong) An adaptive control algorithm for optimal model matching based on the H_∞-norm. (Chinese. English and Chinese summaries) *Control Theory Appl.* **9** (1992), *no.* 6, 666–671. 93C40 (93B36)

Hu, Ri Zhang A new method of constructing natural interpolation splines. (Chinese. English and Chinese summaries) *Acta Sci. Natur. Univ. Sunyatseni* **31** (1992), *no.* 2, 19–24. (Summary) **93e:65020** 65D07

Hu, Rui An (*with* Hu, Ji Yang) Using triangular iteration to generate visualizations of fractal geometric morphology with periodicity. (Chinese. English summary) *J. Huazhong Univ. Sci. Tech.* **19** (1991), *no.* 6, 97–101. 58F23 (58F13)

Hu, Shao Hua (*with* Liu, Shao Min) A method of generating control rule model and its application. (English summary) *Fuzzy Sets and Systems* **52** (1992), *no.* 1, 33–37. 93C42 (04A72)

Hu, Shi Geng Asymptotic properties of solutions to a class of differential equations with time delay. (Chinese. English summary) *J. Huazhong Univ. Sci. Tech.* **19** (1991), *no.* 3, 101–106. (From the summary) **93g:34125** 34K25 (45J05)

— The asymptotic behavior of positive solutions to a class of integro-differential equations. (Chinese. Chinese summary) *Chinese Ann. Math. Ser. A* **13** (1992), *suppl.*, 110–115. (Zhicheng Wang) **93k:34158** 34K15 (45J05, 45M20)

— Dissipativity of Lotka-Volterra ecological systems. (Chinese. English and Chinese summaries) *Math. Appl.* **5** (1992), *no.* 2, 29–33. (Roger Lui) **93g:92029** 92D40 (34D99)

— (*with* Li, Jia[2]) On eventual boundedness of Lotka-Volterra ecological systems. *Nonlinear Anal.* **18** (1992), *no.* 10, 917–928. (Guo Ren Dai) **93f:92029** 92D40 (34C99, 34D40, 92D25)

Hu, Shi Hua *see* **Yang, Dong Ping**

Hu, Shi Ke (*with* Zhang, Lin[2]; Huang, Lin) Hamiltonian dynamics of the general double sine-Gordon kinks. (French summary) *Canad. J. Phys.* **70** (1992), *no.* 2-3, 183–186. (Summary) **93a:35139** 35Q53

Hu, Shou Chuan Nonlinear elliptic boundary value problems via cone analysis. *Nonlinear Anal.* **18** (1992), *no.* 8, 713–730. (Norman Dancer) **93d:47113** 47H15 (34B15, 35J65, 47H10, 47N20)

Hu, Shu An[1] (*with* Hurley, James F.; Tam, Tin Yau) Nonconvexity of the permanental numerical range. (English summary) *Linear Algebra Appl.* **180** (1993), 121–131. (Natalia Bebiano) **93m:15010** 15A15 (15A60)

Hu, Shu He A law of the iterated logarithm for double array sum of φ-mixing sequence. *Chinese Sci. Bull.* **36** (1991), *no.* 13, 1057–1061. (Qi Man Shao) **93b:60065** 60F15 (62J12)

— (*with* Zhou, Wei Xin; Chen, Gui Jing) Asymptotic sufficiency of rank statistics. (Chinese. English and Chinese summaries) *Chinese J. Appl. Probab. Statist.* **8** (1992), *no.* 1, 17–26. (Summary) **93j:62130** 62G10 (62B05)

— Strong uniform consistency rates for conditional function estimators with φ-mixing sample. (English summary) *Systems Sci. Math. Sci.* **5** (1992), *no.* 4, 365–382. (Noël Veraverbeke) **93j:62138** 62G20

Hu, T. C. *see* **Hu, Te Chiang**

Hu, Tai Zhong Monotonicity of the probability of a rectangular region under a multinormal distribution with nonzero means. (English and Chinese summaries) *J. China Univ. Sci. Tech.* **22** (1992), *no.* 3, 265–270. (Summary) **93m:60038** 60E15 (62H10)

Hu, Te Chiang (*with* Cheng, Chung-Kuan) Maximum concurrent flows and minimum cuts. (English summary) *Algorithmica* **8** (1992), *no.* 3, 233–249. (Wilfried Grossmann) **93h:90034** 90B10 (90C35)

— (*with* Kahng, Andrew B.; Robins, Gabriel) Solution of the discrete Plateau problem. (English summary) *Proc. Nat. Acad. Sci. U.S.A.* **89** (1992), *no.* 19, 9235–9236. (Summary) **93h:53010** 53A10

Hu, Tian You (*with* Lau, Ka-Sing) Fractal dimensions and singularities of the Weierstrass type functions. *Trans. Amer. Math. Soc.* **335** (1993), *no.* 2, 649–665. (S. J. Taylor) **93d:28011** 28A75 (28A12)

Hu, Tien Chung (*with* Weber, N. C.) On the rate of convergence in the strong law of large numbers for arrays. *Bull. Austral. Math. Soc.* **45** (1992), *no.* 3, 479–482. (F. Móricz) **93d:60044** 60F15

— (*with* Fan, Jianqing) Bias correction and higher order kernel functions. *Statist. Probab. Lett.* **13** (1992), *no.* 3, 235–243. (M. A. Mirzakhmedov) **93f:62051** 62G05

Hu, Ting Shu (*with* Shi, Song Jiao) Robust analysis of systems with uncertain parameters in their state matrices. (Chinese. English and Chinese summaries) *Control Theory Appl.* **9** (1992), *no.* 5, 533–537. 93D09

— (*with* Shi, Song Jiao) Robust stability analysis of an interval matrix. (Chinese. English and Chinese summaries) *J. Shanghai Jiaotong Univ.* **26** (1992), *no.* 2, 57–63. (Jyun-Horng Fu) **93g:93064** 93D09 (93C41, 93C73)

Hu, Wei Hsin (*with* Fu, Hêng Lin) A special partition of the set I_n. (English summary) *Bull. Inst. Combin. Appl.* **6** (1992), 57–60. (Summary) **93g:05014** 05A18

Hu, Wei Qun Some remarks on von Neumann regular rings. (Chinese. English and Chinese summaries) *J. Math. Res. Exposition* **12** (1992), *no.* 3, 391–394. 16E50

Hu, Wen Yuan (*with* Duan, Guang Ren) Decoupling control of linear systems via output feedback. (Chinese. English and Chinese summaries) *J. Harbin Inst. Tech.* **24** (1992), *no.* 5, 55–59. 93B52 (93C05)

Hu, X. *see* **Hu, Xiao Ming**

Hu, X. D. *see* **Hu, Xiao Dong**

Hu, Xi He *see* **Hu, Xie He**

Hu, Xian Cheng (*with* Chu, De Lin) A preconditioner for solving elliptic problems based on domain decomposition. (Chinese. English summary) *J. Tsinghua Univ.* **31** (1991), *no.* 6, 12–19. (Summary) **93d:65107** 65N55

Hu, Xian Hui (*with* Wu, Pin San) On decompositions of quasi-regular rings. *Proceedings of the First China-Japan International Symposium on Ring Theory (Guilin*, 1991), 160–161, *Okayama Univ., Okayama*, 1992. (*see* **93k:16001**) 16E50

Hu, Xian You (*with* Wei, Quan Ling) Using the simplex method to determine the real efficient front plane for production. (Chinese. Chinese summary) *Acta Math. Sci. (Chinese)* **12** (1992), *no.* 3, 351–360. 90C90

Hu, Xiao Dong (*with* Hwang, F. K.) An improved upper bound for the subarray partial concentrators. (English summary) *Discrete Appl. Math.* **37/38** (1992), 341–346. (Summary) **93g:94034** 94C10 (68M10)

— (*with* Chen, Jia Yuan) A direct method for higher-dimensional constrained nonlinear optimum problems and its application. (Chinese. English and Chinese summaries) *J. Chengdu Univ. Sci. Tech.* **1992**, *no.* 4, 65–72, 92. 90C30 (90C90)

— (*with* Liu, Zi Cheng; Du, Ding Zhu; Chen, Bo) A note on Rosen's algorithm. (Chinese. English summary) *J. Systems Sci. Math. Sci.* **12** (1992), *no.* 1, 94–96. 90C08

— (*with* Hwang, F. K.) Reliabilities of chordal rings. *Networks* **22** (1992), *no.* 5, 487–501. (Summary) **93k:05100** 05C40 (68M10, 68R10)

Hu, Xiao Ming Output tracking through singularities for nonlinear systems. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, II (Kobe*, 1991), 339–344, *Mita, Tokyo*, 1992. (*see* **93g:93006**) 93C10 (93B25)

— (*with* Byrnes, Christopher I.) The zero dynamics algorithm for general nonlinear systems and its application in exact output tracking. (English summary) *J. Math. Systems Estim. Control* **3** (1993), *no.* 1, 51–72. (Vladimir Veliov) **93i:93063** 93C10 (49J52, 93B03)

Hu, Xie He (*with* Chu, Jian) A design of a reduced-order robust observer for a nonlinear system. (Chinese. English summary) *Zhejiang Daxue Xuebao Ziran Kexue Ban* **26** (1992), *no.* 2, 179–185. 93B07

Hu, Xin Sheng (*with* Tang, Huan Wen) The theory of the complementarity problem for set-valued mappings and its application. (Chinese. English and Chinese summaries) *Math. Appl.* **5** (1992), *no.* 2, 34–41. (Tian Xiong Han) **93f:90168** 90C33 (49J40, 49J52)

Hu, Xing On the exact solutions and invariant rays of the phase plane in Brans-Dicke theory. *Astrophys. Space Sci.* **192** (1992), *no.* 1, 145–148. 83D05

Hu, Xing Biao (*with* Li, Yong[3]) The Bäcklund transform for the DJKM equations and its nonlinear superposition formulas. (Chinese) *Acta Math. Sci. (Chinese)* **11** (1991), *no.* 2, 164–172. (Hong You Wu) **93c:58196** 58F37 (35A30, 35Q58)

— Nonlinear evolution equations connected with the matrix Schrödinger spectral problem. *J. Phys. A* **25** (1992), *no.* 1, 231–240. (Summary) **93d:35159** 35Q58 (58F07, 58F19)

Hu, Xuan Da (*with* Sheng, Zhao Han) Optimal time-interval formulas for streamlined production. (Chinese. English and Chinese summaries) *J. Southeast Univ.* **22** (1992), *no.* 2, 16–21. 90B10

Hu, Y. D. *see* **Hu, Yu Da**

Hu, Y. Q. *see* **Hu, You Qiu**

Hu, Yang Zeng (*with* Gu, Xing Sheng; Ge, Zu Guang; Lu, Jun[2]) A piecewise multiple general orthogonal polynomial method for identifying parameters of a class of systems. (Chinese. English summary) *Inform. and Control (Shenyang)* **20** (1991), *no.* 3, 25–32. (De Xing Feng) **93c:93020** 93B30

Hu, Yao Hua (*with* Deng, Hong Jun) On amenable Banach algebras. *J. Math. Res. Exposition* **11** (1991), *no.* 4, 487–496. (Gustavo Corach) **93c:46087** 46H20 (46J40, 46L05, 46M20)

— (*with* Deng, Hong Jun) On amenable Banach algebras. *Proceedings of Asian Mathematical Conference*, 1990 (*Hong Kong*, 1990), 95–102, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93b:00022**) 46H05

Hu, Yi The geometry and topology of quotient varieties of torus actions. *Duke Math. J.* **68** (1992), *no.* 1, 151–184. (Michel Brion) **93k:14019a** 14D25 (14L30, 58F05)

— Erratum to: "The geometry and topology of quotient varieties of torus actions". *Duke Math. J.* **68** (1992), *no.* 3, 609. (Michel Brion) **93k:14019b** 14D25 (14L30, 58F05)

Hu, Yi Bao Chinese arithmeticians' understanding of the number of positive roots of an equation. (Chinese) *Collected research papers on the history of mathematics, Vol.* 2

(*Chinese*), 66–70, *Inner Mongolia Univ. Press, Hohhot*, 1991. (*see* **93i:01005**) 01A25

Hu, Yi Jun (*with* Gan, Shi Xin) The convex Φ-inequality and a characterization of Hilbert spaces. (Chinese. English summary) *J. Wuhan Univ. Natur. Sci. Ed.* **1991**, *no.* 3, 29–34. (Summary) **93d:46038** 46C15 (60B11, 60G42)

Hu, Ying (*with* Peng, Shi Ge) Adapted solution of a backward semilinear stochastic evolution equation. *Stochastic Anal. Appl.* **9** (1991), *no.* 4, 445–459. (J. M. Stoyanov) **93b:60130** 60H15 (34F05)

Hu, Ying Ping General possibilistic multi-objective linear programming and its application. (Chinese. English summary) *Mohu Xitong yu Shuxue* **6** (1992), *no.* 1, 87–93, 73. (Summary) **93e:90039** 90C08 (90C29, 90C90)

Hu, Ying Sheng A few extremal problems in approximation theory. *Advances in science of China. Mathematics, Vol.* 3, 45–69, *Science Press, Beijing*, 1990. (From the introduction) **93e:41002** 41–02 (41A10, 41A46, 41A65)

Hu, You Qiu (*with* Habbal, S. R.) Interaction between perpendicular magnetohydrodynamic shocks. (English summary) *Phys. Fluids B* **5** (1993), *no.* 3, 732–741. (Summary) **93k:76123** 76W05 (76L05)

Hu, Yu Da Major optimality and major efficiency in multicriteria optimization. (English summary) *Optimization, Vol.* 1, 2 (*Singapore*, 1992), 368–374, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93f:90142** 90C29

— (*with* Xu, Yong Ming) Uniform approximation of a multiobjective optimization sequence. (English summary) *Gaoxiao Yingyong Shuxue Xuebao* **7** (1992), *no.* 3, 339–349. (Alberto Cambini) **93j:90087** 90C29 (49J45, 90C31)

Hu, Yu Hen (*with* Park, Changweon) Existence and optimality of the hyperplane schedule for recurrence equations. (English summary) *Parallel processing for scientific computing, Vol. I, II* (*Norfolk, VA*, 1993), 907–912, *SIAM, Philadelphia, PA*, 1993. (*see* **93k:65003**) 65Y99

Hu, Yun Fa A goal-type driven method of solving Horn logic with equality. *J. Comput. Sci. Tech.* (*English Ed.*) **5** (1990), *no.* 3, 250–258. (Summary) **93e:68113** 68T15 (03B35, 68N17)

Hu, Yun Jiao (*with* Tang, Huan Wen; Jiang, Ye; Guo, Jian[1]) Fixed point algorithms and its applications to nondifferentiable programming. *Approximation, optimization and computing*, 291–294, *North-Holland, Amsterdam*, 1990. (*see* **93a:41001**) 90C30

Hu, Ze Xin (*with* Jiang, Wei Sun) Dynamic modelling on the basis of pattern recognition. (Chinese. Chinese summary) *Inform. and Control* (*Shenyang*) **21** (1992), *no.* 3, 172–176. 93B30

— (*with* Jiang, Wei Sun) A novel predictive control for nonlinear systems with time delay and its application. (Chinese. Chinese summary) *Inform. and Control* (*Shenyang*) **21** (1992), *no.* 5, 310–312. 93E35

Hu, Zhan Ning (*with* Wang, Pei) Bosonic realization of SU(3) parafermion irreducible representation. *Internat. J. Modern Phys. A* **7** (1992), *no.* 15, 3473–3491. (Robert E. C. Perret) **93j:81097** 81T40 (17B68, 17B81, 81R10, 81T70)

Hu, Zhang Jian Radial derivatives and fractional derivatives of holomorphic functions in the unit ball of $\mathbf{C}^n$. (Chinese. Chinese summary) *Chinese Ann. Math. Ser. A* **13** (1992), *no.* 4, 458–464. (Yan Da Zhao) **93j:32009** 32A37 (32A35)

— A new characterization of Bloch functions on bounded symmetric domains. (English and Chinese summaries) *J. Math. Res. Exposition* **12** (1992), *no.* 4, 519–522. (Richard M. Timoney) **93k:32007** 32A37 (32M15)

— Boundary behavior of holomorphic functions of $A^p_{0,s}$. (English summary) *Proc. Amer. Math. Soc.* **119** (1993), *no.* 2, 447–451. (Richard M. Timoney) **93k:32008** 32A40 (32A37, 32F15)

Hu, Zhi Jin On the isovectors of the principal chiral model. *J. Math. Phys.* **32** (1991), *no.* 9, 2540–2542. (Summary) **93g:81091** 81T13

Hu, Zhi Xiang (*with* Shao, Jia Yu) The exponent set of primitive minimally strong digraphs. (Chinese. English summary) *Gaoxiao Yingyong Shuxue Xuebao* **6** (1991), *no.* 1, 118–130. (Zhibo Chen) **93b:05063** 05C20

Hu, Zhibao (*with* Lin, Bor-Luh) On the asymptotic-norming property of Banach spaces. *Function spaces* (*Edwardsville, IL*, 1990), 195–210, *Lecture Notes in Pure and Appl. Math.*, 136, *Dekker, New York*, 1992. (Gilles Godefroy) **93d:46031** 46B20

— (*with* Lin, Bor-Luh) Smoothness and the asymptotic-norming properties of Banach spaces. *Bull. Austral. Math. Soc.* **45** (1992), *no.* 2, 285–296. (John R. Giles) **93d:46026** 46B10 (46B20, 46B22)

— (*with* Chen, Dong Jian; Lin, Bor-Luh) Balls intersection properties of Banach spaces. *Bull. Austral. Math. Soc.* **45** (1992), *no.* 2, 333–342. (T. S. S. R. K. Rao) **93c:46021; EA 93m** 46B20 (46B10, 46B22)

— (*with* Dowling, Patrick N.; Smith, Mark A.) Extremal structure of the unit ball of $C(K, X)$. (English summary) *Banach spaces* (*Mérida*, 1992), 81–85, *Contemp. Math.*, 144, *Amer. Math. Soc., Providence, RI*, 1993. (Summary) **93j:46042** 46E40 (46B20)

— (*with* Girardi, Maria) Errata: "Dentability, trees, and Dunford-Pettis operators on L_1" [Pacific J. Math. **148** (1991), no. 1, 59–79; MR 92e:46030] by Girardi. (English summary) *Pacific J. Math.* **157** (1993), *no.* 2, 389–394. (Summary) **93k:46010** 46B20 (46B22, 46G10, 47D15)

— Strongly extreme points and the Radon-Nikodým property. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 4, 1167–1171. (Giovanni Emmanuele) **93j:46023** 46B22

Hu, Zuo Sheng Dependence on delay of solutions to functional-differential equations with small time delay. (Chinese. English summary) *Shandong Daxue Xuebao Ziran Kexue Ban* **26** (1991), *no.* 2, 174–182. (Summary) **93d:34113** 34K05

— Stability of solutions to a class of functional-differential equations of neutral type. (Chinese. English and Chinese summaries) *Shandong Daxue Xuebao Ziran Kexue Ban* **27** (1992), *no.* 3, 256–265. (Ju Rang Yan) **93k:34165** 34K20 (34K40)

Hua, Heng Fang *see* **Ji, Zhi Gang, (93i:01004)**

Hua, Mao Fen (*with* Gu, Qi Jun; Yang, Hai Lang) A speedable algorithm for approximation of fractal sets. (Chinese. English summary) *Nanjing Daxue Xuebao Shuxue Bannian Kan* **9** (1992), *no.* 2, 199–203. 58–04 (58F13)

Hua, Nam Son (*with* Demetrovics, János; Rónyai, Lajos) Dependency types. Hungarian applied mathematics. *Comput. Math. Appl.* **21** (1991), *no.* 1, 25–33. (J. Paredaens) **93a:68031** 68P15

— (*with* Demetrovics, János) An explicit representation of functional dependencies and their relationships to Sperner systems. *Pure Math. Appl. Ser. A* **2** (1991), *no.* 1-2, 25–44. (Bernhard Thalheim) **93c:68019** 68P15 (03E05)

Hua, Wen Xiu (*with* Li, Lu Shu) The g_λ-measures and conditional g_λ-measures on measurable spaces. *Fuzzy Sets and Systems* **46** (1992), *no.* 2, 211–219. (Summary) **93b:28051** 28E10 (04A72)

Hua, Xin Hou (*with* Zhuang, Qi Tai) On a conjecture of Hayman. A Chinese summary appears in Acta Math. Sinica **35** (1992), no. 3, 431. *Acta Math. Sinica* (*N.S.*) **7** (1991), *no.* 2, 119–126. (Norbert Steinmetz) **93a:30035** 30D35

— Exceptional values of meromorphic functions. (Chinese. English summary) *Adv. in Math.* (*China*) **21** (1992), *no.* 2, 153–167. 30D35

— On a conjecture of Fuchs concerning factorization of entire functions. *Tôhoku Math. J.* (2) **44** (1992), *no.* 2, 259–270. (Fred Gross) **93f:30030** 30D20

Hua, Xue Jiao (*with* Li, Rong Hua) Generalized upwind difference methods for convection-dominated diffusion problems. *Numerical methods for partial differential equations* (*Tianjin*, 1991), 83–90, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93b:65006**) 65M06 (76M20, 76Rxx)

Huaihui, Chen *see* **Chen, Huai Hui**

Huaizhong, Kou *see* **Kou, Huai Zhong**

hoang xuan Huan *see* **Hoang Xuan Huan**

Huan, Zhong Dan Some basic facts for a class of degenerate parabolic equations. *Differential Integral Equations* **5** (1992), *no.* 5, 961–972. (Alan V. Lair) **93g:35081** 35K65 (35B30)

— (*with* Crandall, Michael G.) On nonuniqueness of viscosity solutions. *Differential Integral Equations* **5** (1992), *no.* 6, 1247–1265. (Teodor Havârneanu) **93j:34025** 34B05 (35D05, 49L25)

Huang, Ai Xiang (*with* Li, Kai Tai; He, Yin Nian) Full discrete nonlinear Galerkin method. *Numerical methods for partial differential equations* (*Tianjin*, 1991), 61–82, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93b:65006**) 65M60 (34G20, 35Q30)

— (*with* Li, Kai Tai) A method for approximating inertial manifolds and approximation of multilevel finite elements. (Chinese. English summary) *Xi'an Jiaotong Daxue Xuebao* **26** (1992), *no.* 1, 51–58, 80. (Summary) **93b:65142** 65M60 (34G20, 47H17)

Huang, Ben Wen Construction of finite abelian groups G with $|A(G)| = 2^6pq$. (Chinese. English summary) *J. Wuhan Univ. Natur. Sci. Ed.* **1991**, *no.* 4, 11–21. (Hugo S. Sun) **93g:20104** 20K30 (20F28)

— Structure of a class of abelian groups determined by the order of their automorphism groups. (Chinese. English and Chinese summaries) *J. Wuhan Univ. Natur. Sci. Ed.* **1992**, *no.* 2, 17–24. (Hugo S. Sun) **93k:20080** 20K30 (20K01)

Huang, Ben Xiong (*with* Zhou, Xiao Mai; Xiong, Zhao Fei) Application of neural networks to soft-decision decoding for block error-correcting codes. (Chinese. English summary) *J. Huazhong Univ. Sci. Tech.* **19** (1991), *no.* 6, 47–51. 92B20 (94B35)

Huang, Bin (*with* Pang, Xue Cheng) Picard values of algebroid functions and their derivatives. (Chinese. English and Chinese summaries) *J. East China Norm. Univ. Natur. Sci. Ed.* **1992**, *no.* 4, 38–45. 30D35

Huang, Bing Zhang (*with* Zhang, Ke Bang) A probabilistic objective model for probabilistic constrained programming and its solution. (Chinese. English and Chinese summaries) *J. Shanghai Jiaotong Univ.* **26** (1992), *no.* 1, 90–95. 90C15

Huang, C. X. (*with* Wei, Jia Ning; Dong, Z. D.) On asymptotic expansion of rapidly oscillatory integrals. *Approximation, optimization and computing*, 209–211, *North-Holland, Amsterdam*, 1990. (*see* **93a:41001**) 41A60

Huang, Chang Quan Relations between Markov properties of two-parameter processes. (Chinese. English and Chinese summaries) *Math. Appl.* **5** (1992), *no.* 4, 88–91. 60J25 (60G60)

Huang, Chao Guang Thermal stress-energy tensor of a scalar field in Reissner-Nordström space-time. *Phys. Lett. A* **164** (1992), *no.* 5-6, 384–388. (Summary) **93b:83033** 83C47 (83C15)

Huang, Chen-Sheng *see* **Huang, Zhen Sheng**

Huang, Cheng Chao Some results on anti-invariant manifolds in quasicomplex spaces. (Chinese. English summary) *J. Fudan Univ. Natur. Sci.* **30** (1991), *no.* 4, 429–436. (Summary) **93a:53059** 53C56

Huang, Cheng Chi Normalized finite nonhomogeneous chains and applications. *Internat. J. Math. Ed. Sci. Tech.* **23** (1992), *no.* 3, 387–397. (Summary) **93c:60098** 60J10

Huang, Cheng Da *see* **Huang, Zheng Da**

Huang, Cheng Gui ★ Weijifen he qiyi jifen de xin lilun. (Chinese) [A new theory of calculus and singular integrals] With an English summary. *Tianjin Kexue Jishu Chubanshe, Tianjin*, 1991. xvi+480 *pp. ISBN* 7-5308-1008-1 (Renling Jin) **93e:00001** 00A05 (03H05, 26–02, 26E35, 46Fxx, 46S20)

— Solutions of the matrix equation (1): $X^m + A_1X^{m-1} + \cdots + A_m = 0$. (English summary) *Acta Math. Sinica* (*N.S.*) **8** (1992), *no.* 3, 225–235. (Jyun-Horng Fu) **93k:34004** 34A05 (15A24, 34A30)

Huang, Ch'i (*with* Guo, Tong Yi; Shieh, Leang San) A lattice realization for 2-D separable-denominator digital filters. (English summary) *Circuits Systems Signal Process.* **12** (1993), *no.* 3, 465–488. (Summary) **93m:94008** 94A12

Huang, Chi-fu (*with* Pagès, Henri) Optimal consumption and portfolio policies with an infinite horizon: existence and convergence. *Ann. Appl. Probab.* **2** (1992), *no.* 1, 36–64. (Douglas P. Kennedy) **93b:90018** 90A09 (90A40)

— (*with* Hindy, Ayman) Intertemporal preferences for uncertain consumption: a continuous time approach. *Econometrica* **60** (1992), *no.* 4, 781–801. (Summary) **93c:90027** 90A40 (90A06, 90A07)

— (*with* Cox, John C.) A continuous-time portfolio turnpike theorem. *J. Econom. Dynamics Control* **16** (1992), *no.* 3-4, 491–507. (Summary) **93h:90008** 90A09

— (*with* Hindy, Ayman; Kreps, David) On intertemporal preferences in continuous time: the case of certainty. (English summary) *J. Math. Econom.* **21** (1992), *no.* 5, 401–440. (Hiroaki Osana) **93i:90012** 90A06 (90A10)

— (*with* Hindy, Ayman) Optimal consumption and portfolio rules with durability and local substitution. (English summary) *Econometrica* **61** (1993), *no.* 1, 85–121. (Summary) **93h:90028** 90A40

Huang, Ch'i Jui (*with* Sheu, Shuenn Jyi) A remark on the ergodicity of systematic sweep in stochastic relaxation. (English summary) *Stochastic models, statistical methods, and algorithms in image analysis* (*Rome*, 1990), 199–202, *Lecture Notes in Statist.*, 74, *Springer, Berlin*, 1992. (*see* **93e:62005**) 60K99

— (*with* Frigessi, Arnoldo; Younes, Laurent) Optimal spectral structure of reversible stochastic matrices, Monte Carlo methods and the simulation of Markov random fields.

(English summary) *Ann. Appl. Probab.* **2** (1992), *no.* 3, 610–628. (Summary) **93e:60133** 60J10 (15A51, 60G60, 65C05)

— (*with* Sheu, Shuenn Jyi) Singular perturbed Markov chains and exact behaviors of simulated annealing processes. *J. Theoret. Probab.* **5** (1992), *no.* 2, 223–249. (Dominique Lépingle) **93f:60101** 60J10 (60F10, 65C05, 65K10, 90C15)

Huang, Chin T'ien (*with* Lin, Ts'ung Wu; Chung, Ming Hui) Solving optimization problems by searching along a curve. (English and Chinese summaries) *J. Chinese Inst. Engrs.* **15** (1992), *no.* 4, 427–434. 65K10

— (*with* Lin, Ts'ung Wu; Hsiao, Hsing T'ai) Decomposition of singular large sparse matrix by adding dummy links and dummy degrees. (English and Chinese summaries) *J. Chinese Inst. Engrs.* **15** (1992), *no.* 6, 723–727. 65F50

Huang, Chong Fu Optimal processing of incomplete sample knowledge. (Chinese. English and Chinese summaries) *Beijing Shifan Daxue Xuebao* **28** (1992), *no.* 2, 129–135. 68T30 (04A72)

— (*with* Wang, Pei Zhuang; Li, Hong Xing; Yan, Jian Ping; Lu, Gao) Fuzzy set operations in the theory of falling shadow representation. (Chinese. English and Chinese summaries) Fuzzy information processing and machine intelligence (Chinese). *Mohu Xitong yu Shuxue* **6** (1992), *no.* 2, 86–92, 124. (Summary) **93m:04023** 04A72

Huang, Chuan Guey (*with* Su, Tê Jên) Robust stability of delay dependence for linear uncertain systems. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 10, 1656–1659. 93D09 (93B35)

Huang, Chueng Chiu (*with* Weiss, Gideon) Scheduling jobs with stochastic processing times and due dates to minimize total tardiness. (English summary) *Comm. Statist. Stochastic Models* **8** (1992), *no.* 3, 529–541. (Summary) **93f:90090** 90B35

Huang, Cun Zhi On the zeros of solutions of differential equation $f'' + Af = 0$. *Southeast Asian Bull. Math.* **16** (1992), *no.* 1, 49–55. (Summary) **93e:34012** 34A20 (30D20, 34C10)

Huang, Da Wei Central limit theorem for two-parameter martingale differences with application to stationary random fields. (English summary) *Sci. China Ser. A* **35** (1992), *no.* 4, 413–425. (Adhir K. Basu) **93j:60023** 60F05 (60G42, 60G60)

Huang, Dan Run Generalized inverses over Banach algebras. *Integral Equations Operator Theory* **15** (1992), *no.* 3, 454–469. (Robin Harte) **93a:46092** 46H05 (46J05, 47A05)

Huang, De Cai (*with* Yang, Wan Nian) Convergence of AOR methods for large sparse least-squares problems. (Chinese. English summary) *J. Numer. Methods Comput. Appl.* **13** (1992), *no.* 3, 214–220. (Summary) **93j:65067** 65F50

Huang, Deng-Yuan *see* **Huang, Têng Yüan**

Huang, Dong Quan (*with* Ye, Feng; Yang, Zu Ying) Topological conditions for fault diagnosability at subnetwork-level. (English summary) *Sci. China Ser. A* **35** (1992), *no.* 9, 1117–1125. (Summary) **93i:94025** 94C12

Huang, F. K. (*with* Fong, Yuen; K'o, Wên Fêng) Syntactic linear[near]-rings associated with groups semiautomata. *Pure Math. Appl. Ser. A* **2** (1992), *no.* 3-4, 187–204. (Günter Pilz) **93i:16061** 16Y30 (16N80, 68Q70)

Huang, Fa Lun The existence of periodic solutions of linear and nonlinear evolution equations in Banach spaces. *Ann. Differential Equations* **7** (1991), *no.* 2, 166–170. (Summary) **93c:34125** 34Gxx (34C25, 47H15, 47H20)

— (*with* Chen, Goong; Lin, Chin Yuan) "More boundary energy dissipation" does not necessarily imply larger asymptotic decay rates. (English summary) *Asymptotic Anal.* **6** (1992), *no.* 2, 191–203. (Summary) **93j:35105** 35L05 (35B30)

Huang, G. R. (*with* Liu, T. S.) Fatigue reliability of structures based on probability and possibility measures. (English summary) *Comput. & Structures* **45** (1992), *no.* 2, 361–368. 73M25 (04A72)

Huang, Guo Shi A mathematical method for housing assignment and selection. (Chinese. English and Chinese summaries) *Xiamen Daxue Xuebao Ziran Kexue Ban* **31** (1992), *no.* 5, 477–480. 90B80

Huang, Guo Tai A property of graceful numberings of wheels. (Chinese) *J. Math. Res. Exposition* **13** (1993), *no.* 1, 40. 05C78

Huang, Guohe (*with* Moore, R. Dan) Grey linear programming, its solving approach, and its application. (English summary) *Internat. J. Systems Sci.* **24** (1993), *no.* 1, 159–172. 90C08 (90C70)

Huang, Hai Jun (*with* Lam, William H. K.) Modified Evans' algorithms for solving the combined trip distribution and assignment problem. (English summary) *Transportation Res. Part B* **26** (1992), *no.* 4, 325–337. 90C35 (90B80)

Huang, Hai Yan (*with* Chen, Rong Si; Lin, Ke Rong) Realization of k-coverable coronoid systems. (Chinese summary) *J. Xinjiang Univ. Natur. Sci.* **9** (1992), *no.* 1, 16–21. (N. Trinajstić) **93e:92019** 92E10

Huang, Han Pang (*with* Lin, Marlon) Robust force control for robotic manipulators. (English summary) *Internat. J. Control* **56** (1992), *no.* 3, 631–653. 93C85 (70B15, 70Q05, 93B36)

— (*with* Lin, Wei Ming) Development of a simplified fuzzy controller and its relation to PID controller. (English and Chinese summaries) *J. Chinese Inst. Engrs.* **16** (1993), *no.* 1, 59–72. 93C42 (04A72)

Huang, Hong Ci (*with* Zou, Jun) A posterior error estimates for the h-p version of the finite element method in one dimension. *Chinese J. Numer. Math. Appl.* **12** (1990), *no.* 4, 75–90. (Teodor Potra) **93c:65102** 65L60 (41A10, 65L10, 65L70)

— (*with* Zhang, Sheng[2]) Parallel iterative domain decomposition method for elliptic equation: many subdomains case. (English summary) *Sci. China Ser. A* **35** (1992), *no.* 6, 690–700. (Summary) **93j:65206** 65N55

Huang, Hsiao Ping (*with* Wang, Gow Bin) Deadtime compensation for nonlinear processes with disturbances. (English summary) *Internat. J. Systems Sci.* **23** (1992), *no.* 10, 1761–1776. 93B50 (93D15)

Huang, Hsin Fêng Analysis of large deformation of loading [a loaded] cantilever. *Chinese J. Math.* **20** (1992), *no.* 1, 89–105. (Jesús Hernández) **93d:73044** 73K05 (34A47, 34C10, 70K05, 73G05)

— (*with* Chêng, Kuo Shun; Hsü, Shih Pi) On the singular behavior of the solution of $v''(x) + x \sin v(x) = 0$. *J. Math. Anal. Appl.* **163** (1992), *no.* 1, 20–37. (P. K. Palamides) **93b:34011** 34A12 (34B99, 73K05)

Huang, Huan Ran (*with* Zhang, Zhen Jiu; Bao, Gong; He, Chang Bai) Quantum mechanics of black holes in curved space-time. *Quantum mechanics in curved space-time (Erice, 1989)*, 111–133, *NATO Adv. Sci. Inst. Ser. B Phys.*, 230, *Plenum, New York*, 1990. (*see* **93d:83003**) 83C47 (81T20, 83C57)

Huang, Hui (*with* Kendall, Wilfrid S.) Correction note to: "Martingales on manifolds and harmonic maps" [in *Geometry of random motion (Ithaca, NY, 1987)*, 121–157, Contemp. Math., 73, Amer. Math. Soc., Providence, RI, 1988; MR 90d:58163] by Kendall. *Stochastics Stochastics Rep.* **37** (1991), *no.* 4, 253–257. (Summary) **93d:58187** 58G32 (58E20, 60G44, 60J65)

Huang, Hui (*with* Guo, Ben Yu; Ma, He Ping; Cao, Wei Ming) The Fourier-Chebyshev spectral method for solving two-dimensional unsteady vorticity equations. *J. Comput. Phys.* **101** (1992), *no.* 1, 207–217. (Summary) **93d:76048** 76M25 (65M06, 65M70, 76D99, 76M20)

Huang, Jia Ying (*with* Tang, Jian Guo) An analysis of the D robust stability of a class of polynomial families. (Chinese. English and Chinese summaries) *Control Theory Appl.* **9** (1992), *no.* 5, 474–480. 93D09

Huang, Jian Guo (*with* Zhang, Sheng[2]) Parallel iterative domain decomposition method for elliptic equation—subdomain and dual subdomain decomposition. (English summary) *Proceedings of International Conference on Scientific Computation (Hangzhou, 1991)*, 263–266, *Ser. Appl. Math.*, 1, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93d:65004**) 65N55

Huang, Jie (*with* Rugh, Wilson J.) Stabilization on zero-error manifolds and the nonlinear servomechanism problem. *IEEE Trans. Automat. Control* **37** (1992), *no.* 7, 1009–1013. (È. G. Al'brekht) **93g:93072** 93D15

— (*with* Rugh, Wilson J.) An approximation method for the nonlinear servomechanism problem. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 9, 1395–1398. (Summary) **93f:93067** 93B52

— *see also* **Rugh, Wilson J., 93h:93052**

Huang, Jie (*with* Narkounskaia, Galina; Turcotte, Donald L.) Chaotic and self-organized critical behavior of a generalized slider-block model. *J. Statist. Phys.* **67** (1992), *no.* 5-6, 1151–1183. (Summary) **93d:58102** 58F13 (58F40)

Huang, Jin Ten *see* **Huang, Chin T'ien**

Huang, Jing-Song Metaplectic correspondences and unitary representations. *Compositio Math.* **80** (1991), *no.* 3, 309–322. (Joe Repka) **93d:22021** 22E50

Huang, Jun Min On n^*-pseudo-ideals of semigroups. (Chinese. English summary) *Nanjing Daxue Xuebao Shuxue Bannian Kan* **8** (1991), *no.* 2, 177–186. (Editors) **93f:20081** 20M12

— (*with* Chen, Jian Long) Generalized pseudo-ideals of strongly regular rings. (Chinese. English summary) *Nanjing Daxue Xuebao Shuxue Bannian Kan* **9** (1992), *no.* 1, 52–57. (From the summary) **93j:16005** 16D99

Huang, Ka Ma (*with* Lin, Wei Gan) Using the method of operator expansions to solve Fredholm integral equations. (Chinese. English and Chinese summaries) *Dianzi Keji Daxue Xuebao* **20** (1991), *no.* 2, 138–144. (Summary) **93j:65222** 65R20 (65J10)

Huang, Ke (*with* Wu, Jie) Optimal fault-tolerant ring networks. (English summary) Proceedings of the Twenty-third Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, FL, 1992). *Congr. Numer.* **91** (1992), 43–54. (Summary) **93m:68024** 68M20 (05C99, 68R10)

Huang, Ke Lei (*with* Lin, Rui; Lu, Qi Shao) Subharmonic bifurcations, stability and chaos. *Advances in applied mathematics and mechanics in China, Vol. 3*, 85–93, *Internat. Acad. Publ., Beijing*, 1991. (Georgii Osipenko) **93c:58160** 58F14 (34C23, 58F13, 70K50)

— (*with* Zhao, Xiao Hua; Kwek, Keng Huat; Li, Ji Bin) Chaotic and resonant streamlines in the ABC flow. (English summary) *SIAM J. Appl. Math.* **53** (1993), *no.* 1, 71–77. (Summary) **93j:76039** 76F20 (58F13, 76C05, 76E99)

Huang, Ke Zhi (*with* Zheng, Quan Shui) On Cauchy's mean rotation. (English summary) *Trans. ASME J. Appl. Mech.* **59** (1992), *no.* 2, *part* 1, 405–410. (Summary) **93c:73021** 73B99 (73G05)

Huang, Li Feng H^∞ interpolating sequences in polydiscs. *Complex Variables Theory Appl.* **18** (1992), *no.* 3-4, 243–251. (Bo Berndtsson) **93d:32007** 32A35

Huang, Li Hong (*with* Wang, Zhi Cheng[1]; Yu, Jian She) Existence of nonoscillatory solutions to delay logistic equations. (Chinese. English and Chinese summaries) *Gaoxiao Yingyong Shuxue Xuebao* **7** (1992), *no.* 4, 517–524. (Bo Zhang) **93j:34108** 34K15

Huang, Li Ping *see* **Huang, Li Ping[3]**

Huang, Li Ping[2] (*with* Chen, Mu Fa; Xu, Xian Jin) Continuum limit for reaction diffusion processes with several species. (English summary) *Probability and statistics (Tianjin, 1988/1989)*, 23–31, *Nankai Ser. Pure Appl. Math. Theoret. Phys., World Sci. Publishing, River Edge, NJ*, 1992. (Ingemar Kaj) **93i:60183** 60K35 (60J25, 60J60)

Huang, Li Ping[3] Estimation of eigenvalues and singular values of quaternion matrices. (Chinese. English summary) *J. Math. Res. Exposition* **12** (1992), *no.* 3, 449–454. 15A18

— Inequalities for determinants of quaternion matrices. (Chinese. Chinese summary) *Math. Practice Theory* **1992**, *no.* 2, 53–58. (Yao Zhang) **93j:15007** 15A15 (15A45)

Huang, Lin (*with* Wang, Long) Value mapping and parameterization approach to robust stability analysis. *Sci. China Ser. A* **34** (1991), *no.* 10, 1222–1232. (Summary) **93g:93065** 93D09

— (*with* Wang, Long) Robust stability of polynomials and strictly positive real invariance of rational functions in the coefficient space. (Chinese. English and Chinese summaries) *Control Theory Appl.* **9** (1992), *no.* 2, 155–160. (Guang Xiong Wang) **93h:93055** 93D09

— (*with* Wang, Long) Some results on root distribution of polynomials. (Chinese. English and Chinese summaries) *Control Theory Appl.* **9** (1992), *no.* 3, 296–299. (Zhuo Jun Liu) **93k:12002** 12D10 (93D09)

— (*with* Wang, Long) Robust stability of polynomial families and robust strict positive realness of rational function families. *Internat. J. Systems Sci.* **23** (1992), *no.* 2, 235–247. (Mohamed Mansour) **93d:93068** 93D09

— (*with* Wang, Long) Robust stability of diamond families of polynomials with complex coefficients. (English summary) *Internat. J. Systems Sci.* **23** (1992), *no.* 8, 1371–1378. (Jacob Kogan) **93f:93108** 93D09 (93B35)

— (*with* Yu, Nian Cai) Boundary theorems for the robust stability of complex polynomial families. (English summary) *Sci. China Ser. A* **36** (1993), *no.* 1, 54–61. 93D09

Huang, Lin (*with* Zhang, Lin[2]; Hu, Shi Ke) Hamiltonian dynamics of the general double sine-Gordon kinks. (French summary) *Canad. J. Phys.* **70** (1992), *no.* 2-3, 183–186. (Summary) **93a:35139** 35Q53

Huang, Long Xuan (*with* Cao, Yu Shu) On the Diophantine equation $x^3 \pm 8 = Dy^2$. (Chinese. English summary) *Heilongjiang Daxue Ziran Kexue Xuebao* **9** (1992), *no.* 2, 1–5. (Mao Hua Le) **93e:11036** 11D25

Huang, Luo Sheng (*with* Xue, Wei Min[2]) An internal characterisation of strongly regular rings. (English summary) *Bull. Austral. Math. Soc.* **46** (1992), *no.* 3, 525–528. (Summary) **93h:16011** 16E50

Huang, Mao Guang (*with* Qian, Jiang; Wang, Xiu Xi) An exact approach to eigenfrequencies by BIE method. *Theory and applications of boundary element methods* (*Beijing*, 1991), 25–30, *Internat. Acad. Publ., Beijing*, 1991. (*see* **93b:65008**) 65N25 (65N38)

— (*with* Wang, Jian Guo; Lu, Pin) Boundary element methods for some moderately thick plate and shallow shell problems. *Theory and applications of boundary element methods* (*Beijing*, 1991), 333–341, *Internat. Acad. Publ., Beijing*, 1991. (*see* **93b:65008**) 73V10 (65N38)

— (*with* Wang, Jian Guo) A boundary integral equation formulation for Hoff's sandwich plates. *Theory and applications of boundary element methods* (*Beijing*, 1991), 357–364, *Internat. Acad. Publ., Beijing*, 1991. (*see* **93b:65008**) 73V10 (65N38)

— (*with* Lu, Pin) Boundary element analysis of shallow shells involving shear deformation. *Theory and applications of boundary element methods* (*Beijing*, 1991), 365–372, *Internat. Acad. Publ., Beijing*, 1991. (*see* **93b:65008**) 73V10 (65N38)

— (*with* Jiao, Zhao Ping; Wu, Chang Chun) A study on completeness of displacement trial functions of incompatible elements with internal parameters. (Chinese. English and Chinese summaries) *J. China Univ. Sci. Tech.* **22** (1992), *no.* 3, 308–317. 65P05 (73V05)

Huang, Mao Kang (*with* Ruan, Rong Yao) Self-adaptive control for tracking reference signals directly. II. (Chinese. English and Chinese summaries) *J. East China Norm. Univ. Natur. Sci. Ed.* **1992**, *no.* 1, 8–15. 93C80 (93B51)

Huang, Maokuang *see* **Huang, Mao Guang**

Huang, Mei-Ling (*with* Fung, Karen Yuen) Intervened truncated Poisson distribution. (English summary) *Sankhya Ser. B* **51** (1989), *no.* 3, 302–310. 62E15

Huang, Min Qiang (*with* Dai, Zong Duo) A criterion for primitiveness of polynomials over $\mathbf{Z}/(2^d)$. *Chinese Sci. Bull.* **36** (1991), *no.* 11, 892–895. (N. L. Manev) **93d:11126** 11T06

— (*with* Dai, Zong Duo) Linear complexity and the minimal polynomial of linear recurring sequences over $\mathbf{Z}/(m)$. (English summary) *Systems Sci. Math. Sci.* **4** (1991), *no.* 1, 51–54. (Summary) **93g:11018** 11B50 (94A60)

— (*with* Dai, Zong Duo) Projective maps of linear recurring sequences with maximal p-adic periods. *Fibonacci Quart.* **30** (1992), *no.* 2, 139–143. (Rudolf Lidl) **93b:11012** 11B37 (11B83)

— Maximal period polynomials over $\mathbf{Z}/(p^d)$. (English summary) *Sci. China Ser. A* **35** (1992), *no.* 3, 270–275. (Summary) **93e:11148** 11T06

Huang, Ming-Deh A. (*with* Horng, Gwoboa) Simplifying nested radicals and solving polynomials by radicals in minimum depth. *31st Annual Symposium on Foundations of Computer Science, Vol. I, II* (*St. Louis, MO*, 1990), 847–856, *IEEE Comput. Soc. Press, Los Alamitos, CA*, 1990. (Jacques Calmet) **93g:68061** 68Q40 (12Y05)

— (*with* Adleman, Leonard M.) ★ Primality testing and abelian varieties over finite fields. (English. English summary) Lecture Notes in Mathematics, 1512. *Springer-Verlag, Berlin*, 1992. viii+142 *pp. ISBN* 3-540-55308-8 (Kenneth A. Ribet) **93g:11128** 11Y11 (11G10, 11G25, 14G15, 14K99)

Huang, Ming Geng Several problems concerning the Fourier-Motzkin method for solving linear programming problems. (Chinese. English summary) *J. Numer. Methods Comput. Appl.* **13** (1992), *no.* 1, 7–12. 90C05

Huang, Ming Shen (*with* Han, Zhi Jun; Lu, Yuan Zhang) A minimum variance self-tuning controller with fixed closed-loop holes. (Chinese. English and Chinese summaries) *J. Shanghai Jiaotong Univ.* **25** (1991), *no.* 6, 45–53. 93B55 (93E35)

Huang, Ming You (*with* Cao, Yan Zhao) On finite element approximation for the bifurcation solution of free convection problem. *Numerical methods for partial differential equations* (*Tianjin*, 1991), 3–14, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93b:65006**) 65M60 (76M10, 76R10)

— (*with* Zheng, Quan[1]) A simplified viscosity splitting method for solving the initial boundary value problems of Navier-Stokes equation. *J. Comput. Math.* **10** (1992), *no.* 1, 39–56. (A. J. Meir) **93c:65128** 65N12 (76D05, 76M25)

Huang, Nan Jing (*with* Zhang, Shi Sheng; Kang, Shi Kun) Fixed point theorems for mappings in probabilistic metric spaces and their applications. (Chinese. English summary) *J. Chengdu Univ. Sci. Tech.* **1991**, *no.* 3, 1–4. 54H25 (54E70)

— (*with* Zhang, Shi Sheng) On the principle of randomization of fixed points for set-valued mappings with applications. *Northeast. Math. J.* **7** (1991), *no.* 4, 486–491. (Nikolaos S. Papageorgiou) **93b:47125** 47H10 (46S50, 47S50, 54C60, 54H25)

— (*with* Zhang, Shi Sheng) Generalized complementarity problems for fuzzy mappings. *Appl. Math. Mech.* (*English Ed.*) **13** (1992), *no.* 8, 691–699; *translated from Appl. Math. Mech.* **13** (1992), *no.* 8, 667–675 (*Chinese. English and Chinese summaries*). 90C70 (04A72)

— (*with* Zhang, Shi Sheng; Kang, Shi Kun) Coincidence points of mappings in convex metric spaces and nonexpansive mappings in product spaces. (Chinese. English and Chinese summaries) *J. Chengdu Univ. Sci. Tech.* **1992**, *no.* 3, 1–6, 14. 54H25

— (*with* Zhang, Shi Sheng) Generalized multivalued complementarity and quasicomplementarity problems. (Chinese. English summary) *Sichuan Daxue Xuebao* **29** (1992), *no.* 1, 1–7. (Summary) **93c:90093** 90C33

Huang, Nan Yang[2] A generalization of the Budan-Fourier theorem and its application in solving equations. (Chinese. English summary) *J. Numer. Methods Comput. Appl.* **13** (1992), *no.* 1, 44–50. (Summary) **93c:65068** 65H05

— A computation of powers of matrices. (Chinese. Chinese summary) *Math. Practice Theory* **1992**, *no.* 4, 83–85. 15A99

Huang, Nen Fu On the complexity of two circle strongly connecting problems. (English summary) *IEEE Trans. Comput.* **41** (1992), *no.* 9, 1185–1188. (Summary) **93h:05152** 05C85 (05C40, 68Q25, 68U05)

Huang, Nian Ning (*with* Chen, Zong Yun; Liu, Zhong Zhu; Xiao, Yi) An explicit expression of the dark N-soliton solution of the MKdV equation by means of the Darboux transformation. (English summary) *J. Phys. A* **26** (1993), *no.* 6, 1365–1374. (Summary) **93k:35231** 35Q53 (58F37)

Huang, Pei Jin NCD-rings and NCD-modules. *Proceedings of the First China-Japan International Symposium on Ring Theory* (*Guilin*, 1991), 68–70, *Okayama Univ., Okayama*, 1992. (*see* **93k:16001**) 16S99

Huang, Ping (*with* Dong, Zheng Zhu) Numerical residual elimination method of finite differential equations. *Appl. Math. Mech.* (*English Ed.*) **14** (1993), *no.* 2, 185–191; *translated from Appl. Math. Mech.* **14** (1993), *no.* 2, 173–179 (*Chinese. English and Chinese summaries*). 65F99 (65N30)

Huang, Qi Yu Limit cycle for cubic system of Kolmogorov type with a conic algebraic trajectory. *Proceedings of Asian Mathematical Conference*, 1990 (*Hong Kong*, 1990), 191–198, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93b:00022**) 34C05

Huang, Qing Bo Nondenseness of $C^\beta(\overline{\Omega})$ in $C^\alpha(\overline{\Omega})$ for $0 < \alpha < \beta < 1$. (Chinese. English summary) *Xiamen Daxue Xuebao Ziran Kexue Ban* **31** (1992), *no.* 4, 441–443. (Summary) **93m:46020** 46E15

Huang, Qing Guang Comparison theorems for first order retarded functional-differential equations and their applications. *Differential Integral Equations* **4** (1991), *no.* 5, 1101–1112. (Ovide Arino) **93c:34144** 34K15

— (*with* Chen, Shao Zhu) On a conjecture of Hunt and Yorke. *J. Math. Anal. Appl.* **159** (1991), *no.* 2, 469–484. (Ovide Arino) **93a:34082** 34K15

Huang, Qiong Xiang Enumeration of the Ádám isomorphism classes of circulants. II. (Chinese. English summary) *J. Xinjiang Univ. Natur. Sci.* **8** (1991), *no.* 1, 1–6. (Summary) **93a:05069** 05C30

— Some classes of circulant graphs that satisfy Ádám's conjecture. (Chinese. English summary) *J. Xinjiang Univ. Natur. Sci.* **8** (1991), *no.* 4, 5–11. (Yuan Hong) **93c:05098** 05C75

— (*with* Zhang, Fu Ji; Li, Xue Liang; Liu, Xin[2]) Digraph categories and line digraph functors. (English summary) A Chinese summary appears in Chinese Ann. Math. Ser. A **13** (1992), no. 4, 517. *Chinese Ann. Math. Ser. B* **13** (1992), *no.* 3, 368–373. (R. L. Hemminger) **93j:05073** 05C20 (05C99, 18A99)

— (*with* Meng, Ji Xiang) Cayley graphs and interchange graphs. (Chinese. English summary) *J. Xinjiang Univ. Natur. Sci.* **9** (1992), *no.* 1, 5–10. (Summary) **93b:05069** 05C25

— (*with* Meng, Ji Xiang) The diameter and covering index of circulant digraphs. (Chinese. English and Chinese summaries) *J. Xinjiang Univ. Natur. Sci.* **9** (1992), *no.* 3, 13–18. (Ke Min Zhang) **93m:05082** 05C20

— (*with* Liu, Xin[2]) The lower boundary of strong connectivity of circulant digraphs. (Chinese) *Math. Appl.* **5** (1992), *no.* 1, 120–121. (Cun-Quan Zhang) **93b:05099** 05C40 (05C20, 05C25)

— (*with* Meng, Ji Xiang) Hamiltonian decompositions of Cayley digraphs on finite cyclic groups. (Chinese. English and Chinese summaries) *J. Math. Res. Exposition* **13** (1993), *no.* 1, 126–130. (Summary) **93k:05109** 05C45 (05C20, 05C25)

Huang, Ren (*with* Jia, Min Ping) On the stationarity and invertibility of a general bilinear time series model. (English summary) *Gaoxiao Yingyong Shuxue Xuebao* **7** (1992), *no.* 3, 381–390. (Summary) **93h:62161** 62M10

Huang, Rong Tan A comparative analysis of criteria for variable selection in linear regression models. (Chinese. English and Chinese summaries) *Xiamen Daxue Xuebao Ziran Kexue Ban* **31** (1992), *no.* 6, 591–594. 62J05 (62J20)

Huang, Rosa Q. Invariants of sets of lines in projective 3-space. *J. Algebra* **143** (1991), *no.* 1, 208–218. (Andrea Brini) **93a:15027** 15A72 (05E15, 13F50)

Huang, S. *see* **Huang, Si Ming**

Huang, Sha (*with* Li, Sheng Xun) The fundamental theorem for quasiconformal mappings and a class of boundary value problems for systems of complex equations. (Chinese. English summary) *J. Math.* (*Wuhan*) **11** (1991), *no.* 1, 7–16. (Fuyao Ren) **93a:30023** 30C62 (30E25, 35J55)

Huang, Shing Tsaan (*with* Chen, Nian Shing) A self-stabilizing algorithm for constructing breadth-first trees. *Inform. Process. Lett.* **41** (1992), *no.* 2, 109–117. (Summary) **93a:68017** 68M15

— (*with* Hsu, Su Chu) A self-stabilizing algorithm for maximal matching. (English summary) *Inform. Process. Lett.* **43** (1992), *no.* 2, 77–81. (Summary) **93g:68006** 68M15

— (*with* Hsu, Su Chu; Hsieh, Hsien Fen) A fully-pipelined systolic algorithm for finding bridges on an undirected connected graph. *Parallel Comput.* **18** (1992), *no.* 4, 377–391. (Summary) **93b:68070** 68R10 (68Q20)

Huang, Shou-Hsuan Stephen (*with* Liu, Hong Fei; Viswanathan, Venkatraman) A sublinear parallel algorithm for some dynamic programming problems. (English summary) *Theoret. Comput. Sci.* **106** (1992), *no.* 2, 361–371. (Summary) **93j:90124** 90C39 (68Q22, 68Q25)

Huang, Si Ming Cartan matrices and strong perfect graph conjecture. *Graph theory, combinatorics, and applications. Vol.* 2 (*Kalamazoo, MI*, 1988), 681–686, *Wiley-Intersci. Publ., Wiley, New York*, 1991. (*see* **93b:05003**) 05C15

— (*with* Kortanek, K. O.) A note of a potential reduction algorithm for LP with simultaneous primal-dual updating. *Oper. Res. Lett.* **10** (1991), *no.* 9, 501–507. (K. Zimmermann) **93a:90036** 90C05

— (*with* Zhu, Ji Shan) On the convergence rate of the duality gap in a symmetric primal-dual potential reduction algorithm. (English summary) *Oper. Res. Lett.* **11** (1992), *no.* 5, 289–291. (Summary) **93e:90038** 90C05

Huang, Si Wen (*with* Ke, Heng Yu; Li, Wen Jun) A study of electromagnetic scattering from a dielectric-coated conducting cylinder. (English summary) *Acta Math. Sci.* (*English Ed.*) **12** (1992), *no.* 2, 179–189. (Summary) **93j:78017** 78A45

Huang, Si Xun A discussion on the existence of nonlinear solitary waves in low latitude areas. (Chinese. Chinese summary) *Acta Math. Sci.* (*Chinese*) **12** (1992), *no.* 2, 128–135. (Summary) **93k:35215** 35Q35 (76B15, 76B25, 76U05, 86A05)

Huang, Tao (*with* Zhang, Xinmin) Composite sphalerons in the O(3) nonlinear σ-model. *Modern Phys. Lett. A* **6** (1991), *no.* 26, 2371–2377. (A. K. Raina) **93c:81205** 81T40 (81V22)

Huang, Têng Yüan (*with* Tsêng, Shêng Ts'ang) A decision procedure for determining the number of components in principal component analysis. *J. Statist. Plann. Inference* **30** (1992), *no.* 1, 63–71. (Minoru Siotani) **93e:62160** 62H25 (62F07)

Huang, Tian Pei A class of cyclic fields of degree l and Fermat's equation. (Chinese. English summary) *Sichuan Daxue Xuebao* **29** (1992), *no.* 1, 29–31. (Mao Hua Le) **93e:11125** 11R18 (11R29)

Huang, Ting Zhu Generalized interval diagonally dominant matrices. (Chinese. English and Chinese summaries) *Dianzi Keji Daxue Xuebao* **21** (1992), *no.* 4, 429–433. (Gong Ning Chen) **93m:15038** 15A57

— G-functions and spectral properties. (Chinese) *Xi'an Jiaotong Daxue Xuebao* **26** (1992), *no.* 5, 115–118. 15A60

— Lower bounds of determinants of H-matrices and estimates of $\|A^{-1}B\|_\infty$. (Chinese. English and Chinese summaries) *Dianzi Keji Daxue Xuebao* **22** (1993), *no.* 1, 87–92. (Shao Kuan Li) **93m:15034** 15A45 (15A15)

Huang, Tseng *see* **Huang, Zeng**

Huang, W. *see* **Huang, Wen Zhang**

Huang, W.-L. *see* **Huang, Wen Liang**

Huang, Wei[2] (*with* Guo, Ben Yu) The spectral-difference method for Navier-Stokes equations. (English summary) *Northeast. Math. J.* **8** (1992), *no.* 2, 157–176. (Tian Xiao Zhou) **93h:65143** 65N35 (76D05, 76M20, 76M25)

Huang, Wei Hong[2] (*with* Shen, You Gen) Quantum cosmology with conformal scalar field in the Vilenkin theory. *Chinese Astronom. Astrophys.* **16** (1992), *no.* 2, 124–132. 83C45

Huang, Wei-Min (*with* Ghosh, Bhaskar K.) Optimum bandwidths and kernels for estimating certain discontinuous densities. (English summary) *Ann. Inst. Statist. Math.* **44** (1992), *no.* 3, 563–577. (Ulrich Stadtmüller) **93m:62073** 62G05

Huang, Wei Zhang[2] Singular perturbation of Robin boundary value problem for the almost linear differential equations. (English summary) *Ann. Differential Equations* **8** (1992), *no.* 3, 284–294. (L. E. Bobisud) **93h:34091** 34E15 (34B15)

— The estimation of solution of the boundary value problem of the systems for quasi-linear ordinary differential equations. *Appl. Math. Mech.* (*English Ed.*) **13** (1992), *no.* 8, 745–754; *translated from Appl. Math. Mech.* **13** (1992), *no.* 8, 719–727 (*Chinese. English and Chinese summaries*). (L. E. Bobisud) **93i:34097** 34E15 (34A50, 34B15, 65L10)

Huang, Wên Chang On the characterization of point processes with the exchangeable and Markov properties. (English summary) *Sankhya Ser. A* **52** (1990), *no.* 1, 16–27. (Summary) **93d:60086** 60G55 (60J25, 60K05)

— (*with* Puri, Prem S.) On some characterizations of the Poisson processes arising in queues with infinite servers. (English summary) *Sankhyā Ser. A* **52** (1990), *no.* 2, 232–243. (Summary) **93e:60091** 60G55 (60K05, 62G30)

— (*with* Puri, Prem S.) A queueing process with the possibility of customers becoming servers. *Adv. in Appl. Probab.* **23** (1991), *no.* 4, 957–971. (Peter Purdue) **93b:60217** 60K25 (90B22, 92C45)

Huang, Wen Chao On the sandwich semigroups of circulant Boolean matrices. (English summary) *Linear Algebra Appl.* **179** (1993), 135–160. (John M. Howie) **93m:20107** 20M99

Huang, Wen-Jang *see* **Huang, Wên Chang**

Huang, Wen-Jui (*with* Das, Ashok; Roy, Shibaji) A geometrical formulation of fermionic integrable systems. *J. Math. Phys.* **32** (1991), *no.* 10, 2733–2738. (Bakhit T. Matkarimov) **93f:58096** 58F07 (58A50)

— (*with* Das, Ashok; Roy, Shibaji) Zero curvature condition and 2D gravity theories. *Internat. J. Modern Phys. A* **7** (1992), *no.* 15, 3447–3472. (Andrew R. Kavalov) **93d:81067** 81R10 (58F07, 81T40)

— (*with* Das, Ashok) The Hamiltonian structures associated with a generalized Lax operator. *J. Math. Phys.* **33** (1992), *no.* 7, 2487–2497. (Vadim G. Bakurov) **93g:58055** 58F07

— (*with* Das, Ashok) A note on supersymmetric Gel'fand-Dikii brackets. (English summary) *Modern Phys. Lett. A* **7** (1992), *no.* 24, 2159–2164. (Vadim G. Bakurov) **93g:58056** 58F07

Huang, Wen Ke (*with* Duan, Chan Lun) Generation of 2-edge-chromatic graphs $K_{22}(3,7)$ and $K_{27}(3,8)$ of increasing type. (Chinese. English summary) *Nei Mongol Daxue Xuebao Ziran Kexue* **23** (1992), *no.* 2, 157–162. (Summary) **93a:05093** 05C55

Huang, Wen Liang (*with* Fang, Chün Hsiung; Chang, Fan Jên) Application of singular system feedback to polynomial matrices and system transformation. (English summary) *Control Theory Adv. Tech.* **8** (1992), *no.* 3, 677–686. 93B17

Huang, Wen Ping A characterization of dual pairs of supplementing radicals. (Chinese. English summary) *Pure Appl. Math.* **7** (1991), *no.* 1, 122–123. 16N80

— On BCI-algebras in which every subalgebra is an ideal. (English summary) *Math. Japon.* **37** (1992), *no.* 4, 645–647. 06F35 (03G25)

Huang, Wên T'ao (*with* Pao, Kuan Min) Minimum distance estimations in a switching regression model. (English summary) *Internat. J. Inform. Management Sci.* **2** (1991), *no.* 1, 119–128. (Summary) **93f:62091** 62J05 (62F12)

— (*with* Chang, San Chyi) Estimations of survival function based on incomplete and missing data. *Internat. J. Inform. Management Sci.* **3** (1992), *no.* 1, 117–130. (Summary) **93h:62082** 62G05 (62N05)

— (*with* Chen, Huann Sheng) Estimation of the exponential mean under type I censored sampling. (English summary) *J. Statist. Plann. Inference* **33** (1992), *no.* 2, 187–196. (Joaquin Diaz Saiz) **93j:62064** 62F10

Huang, Wen Zao (*with* Zhang, Zhi Fen; Ding, Tong Ren; Dong, Zhen Xi) ★ Qualitative theory of differential equations. (English. English summary) Translated from the Chinese by Anthony Wing Kwok Leung. Translations of Mathematical Monographs, 101. *American Mathematical Society, Providence, RI*, 1992. xiv+461 *pp. ISBN* 0-8218-4551-9 (Douglas S. Shafer) **93h:34002** 34-01 (34Axx, 34Cxx, 54H20, 58Fxx)

Huang, Wen Zhang (*with* Cooke, Kenneth L.) A theorem of George Seifert and an equation with state-dependent delay. *Delay and differential equations* (*Ames, IA*, 1991), 65–77, *World Sci. Publishing, River Edge, NJ*, 1992. (Curtis C. Travis) **93d:34128** 34K20 (34K05)

— (*with* Chow, Shui-Nee) Transition layers for a singularly perturbed 2-dimensional system of differential-difference equations. *Oscillation and dynamics in delay equations* (*San Francisco, CA*, 1991), 55–71, *Contemp. Math.*, 129, *Amer. Math. Soc., Providence, RI*, 1992. (Anatolii Fedorovich Ivanov) **93f:34117** 34K15 (34E15, 34K40, 47N20)

— (*with* Chow, Shui-Nee) Singular perturbation for a system of differential-difference equations. *Recent trends in differential equations*, 83–110, *World Sci. Ser. Appl. Anal.*, 1, *World Sci. Publishing, River Edge, NJ*, 1992. (Anatolii Fedorovich Ivanov) **93i:34128** 34K15 (34E15)

— (*with* Hale, Jack K.) Square and pulse waves in matrix delay differential equations. *Dynamic Systems Appl.* **1** (1992), *no.* 1, 51–70. (Ovide Arino) **93f:34112** 34K10 (34E15, 34K15, 58F14, 58F36)

— (*with* Chow, Shui-Nee; Hale, Jack K.) From sine waves to square waves in delay equations. *Proc. Roy. Soc. Edinburgh Sect. A* **120** (1992), *no.* 3-4, 223–229. (John G. Milton) **93b:34085** 34K15 (34C23)

— (*with* Cooke, Kenneth L.; Castillo-Chavez, Carlos) Stability and bifurcation for a multiple-group model for the dynamics of HIV/AIDS transmission. *SIAM J. Appl. Math.* **52** (1992), *no.* 3, 835–854. (Pauline van den Driessche) **93d:92009** 92C60 (34K15, 34K20)

Huang, Wung Hong Hawking radiation of a quantum black hole in an inflationary universe. *Classical Quantum Gravity* **9** (1992), *no.* 5, 1199–1209. (Asghar Qadir) **93f:83057** 83C57 (81T20, 83C47, 83F05)

— Adiabatic regularization of the quantum stress-energy tensor in curved spacetimes: stochastic quantization method. (English summary) *Phys. Rev. D* (3) **46** (1992), *no.* 6, 2560–2569. 81T20 (81S20)

— Gravitational field of radiating cosmic string. (English summary) *Phys. Rev. D* (3) **47** (1993), *no.* 2, 711–713. (Summary) **93k:83071** 83F05 (83C15)

Huang, Xi Yin Factor-nilpotent ideals of rings. (Chinese. English and Chinese summaries) *J. Math. Res. Exposition* **13** (1993), *no.* 1, 111–114. (Summary) **93k:16032** 16N40

Huang, Xian Hua Composition of twist maps and its application to $\ddot{x} + f(x,t) = 0$. *Ann. Differential Equations* **8** (1992), *no.* 1, 25–32. (Helmut Rüssmann) **93d:58142** 58F27 (34C15, 34C27)

Huang, Xian Kai Existence and uniqueness of periodic solutions to higher-order nonconservative systems. (Chinese. Chinese summary) *Chinese Ann. Math. Ser. A* **13** (1992), *no.* 2, 143–152. (Shi Qing Zhang) **93i:34074** 34C25 (34B15, 47H15)

Huang, Xiang You Classical limit of quantum mechanics. (English summary) *Sci. China Ser. A* **36** (1993), *no.* 2, 181–190. 81P05

Huang, Xiao Han (*with* Chen, Lin[4]; Tang, Gong You) A new conclusion on the parameter stability domain of linear time-invariant large-scale systems. (English and Chinese summaries) *Control Theory Appl.* **9** (1992), *no.* 4, 410–415. (Takehiro Mori) **93i:93090** 93D05 (34D20, 93A15, 93C05, 93C15, 93D30)

Huang, Xiao Ling Approximate solutions to singular integral equations. (Chinese. Chinese summary) *Acta Math. Sci.* (*Chinese*) **12** (1992), *no.* 1, 75–85. (Zai-Feng Song) **93j:45011** 45L05 (45E05, 65R20)

— Equilibrium of an anisotropic infinite plate with circular holes when isotropic circular disks are welded to it. (Chinese. Chinese summary) *Acta Math. Sci.* (*Chinese*) **13** (1993), *no.* 1, 100–106. 73K10 (73C35, 73V35)

— Approximation of singular integrals by cubic Birkhoff interpolatory splines. (Chinese. English and Chinese summaries) *Math. Appl.* **6** (1993), *no.* 1, 110–116. 65D30

Huang, Xiaojun Some applications of Bell's theorem to weakly pseudoconvex domains. (English summary) *Pacific J. Math.* **158** (1993), *no.* 2, 305–315. (I. P. Ramadanov) **93m:32032** 32H02 (32F15)

Huang, Xiaoming An extremal property for Chebyshev polynomials. (English summary) *J. Approx. Theory* **71** (1992), *no.* 2, 138–144. (Joseph M. Lambert) **93i:41018** 41A50 (41A65)

Huang, Xin Sheng A higher-order approximate integration method for identification of continuous models. (Chinese. English and Chinese summaries) *Control Theory Appl.* **9** (1992), *no.* 4, 416–420. 93B30

Huang, Xuan Guo Compact hypersurfaces in ellipsoid with prescribed mean curvature. A Chinese summary appears in Chinese Ann. Math. Ser. A **12** (1991), no. 5, 645. *Chinese Ann. Math. Ser. B* **12** (1991), *no.* 4, 468–479. (Friedrich Sauvigny) **93a:53005** 53A10 (35J60)

— Closed surface with prescribed mean curvature in $\mathbf{R}^3$. *Sci. China Ser. A* **34** (1991), *no.* 10, 1162–1173. (Friedrich Sauvigny) **93a:53006** 53A10 (35J60)

Huang, Xun Cheng (*with* Zhou, Zuo Ling) The levels of the set of recurrent points, topological entropy and chaos for self-maps of the interval. *Dynamical systems and related topics* (*Nagoya*, 1990), 603–612, *Adv. Ser. Dyn. Syst.*, 9, *World Sci. Publishing, River Edge, NJ*, 1991. (Helena E. Nusse) **93c:58154** 58F13 (58F03, 58F08)

— (*with* Sun, Ping Tai) Limit cycles in a general predator-prey system with anorexia predator. *Proceedings of Asian Mathematical Conference*, 1990 (*Hong Kong*, 1990), 199–203, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93b:00022**) 92D25 (34C05, 92D40)

— From intermediate value theorem to chaos. *Math. Mag.* **65** (1992), *no.* 2, 91–103. (Frederick R. Marotto) **93e:58054** 58F03 (26A18, 58F13)

Huang, Y. F. *see* **Huang, Yih-Fang**

Huang, Yen Kun Random sets for the pointwise ergodic theorem. *Ergodic Theory Dynamical Systems* **12** (1992), *no.* 1, 85–94. (V. Losert) **93g:28015** 28D05 (47A35, 60F15)

Huang, Yi Sheng[2] (*with* Chen, Zhao Mu) Some equivalent conditions for ideals in implicative BCK-algebras with condition (S). (Chinese. English and Chinese summaries) *Qufu Shifan Daxue Xuebao Ziran Kexue Ban* **18** (1992), *no.* 4, 31–34. 06F35 (03G25)

Huang, Yi Zhi Vertex operator algebras and conformal field theory. *Internat. J. Modern Phys. A* **7** (1992), *no.* 10, 2109–2151. (Chong Ying Dong) **93h:81045** 81R10 (17B37, 81-02, 81T40)

Huang, Yih-Fang (*with* Marcopoli, V. R.; Rao, Ashok K.) An output error adaptive algorithm using membership-set approach. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, I* (*Kobe*, 1991), 665–670, *Mita, Tokyo*, 1992. (*see* **93g:93005**) 93E35

Huang, Yong-nian *see* **Huang, Yong Nian**[2]

Huang, Yong Nian[1] (*with* Wang, De Quan) A growth model for ocean species with delayed nutrient recycling and its asymptotic behavior. (Chinese. English and Chinese summaries) *J. Xinjiang Univ. Natur. Sci.* **9** (1992), *no.* 2, 6–13. 90D25

— (*with* Cui, Jing An) Positive periodic solutions to a class of periodic cooperative systems. (Chinese. English and Chinese summaries) *J. Xinjiang Univ. Natur. Sci.* **9** (1992), *no.* 2, 14–23. (Summary) **93h:34060** 34C25 (34D05, 90D40, 92D25)

— Local stability of one-dimensional discrete population models in the critical case. (Chinese. English and Chinese summaries) *J. Xinjiang Univ. Natur. Sci.* **9** (1992), *no.* 4, 1–3. 92D25

Huang, Yong Nian[2] Global analytical structure of the Mandelbrot set and its generalization. (English summary) *Sci. China Ser. A* **35** (1992), *no.* 2, 175–185. (Fuyao Ren) **93h:30039** 30D05 (58F23)

Huang, Yu Ying (*with* Liu, Zhi Hong) An arbitrary Lagrangian-Eulerian boundary element method for large-amplitude sloshing problems. *Theory and applications of boundary element methods* (*Beijing*, 1991), 153–160, *Internat. Acad. Publ., Beijing*, 1991. (*see* **93b:65008**) 76M15 (65N38)

Huang, Z. J. *see* **Huang, Zhi Jian**

Huang, Z. M. *see* **Huang, Zhi Min**

Huang, Zeng *see* **Integral methods in science and engineering—90, 93f:00014**

Huang, Zhao Bo Hankel operators and Toeplitz operators on Bergman spaces. (Chinese. English summary) *J. Fudan Univ. Natur. Sci.* **30** (1991), *no.* 2, 151–157. (Ke He Zhu) **93a:47027** 47B35 (47B07)

Huang, Zhen Sheng (*with* Wang, Hsiao Fan) The maximal tolerance analysis of the constraint matrix in linear programming. (English and Chinese summaries) *J. Chinese Inst. Engrs.* **15** (1992), *no.* 5, 507–517. (S. R. Arora) **93k:90051** 90C05 (90C31)

Huang, Zheng Da A high-speed parallel disc iteration for determining all zeros of a polynomial. (Chinese. English summary) *J. Hangzhou Univ. Natur. Sci. Ed.* **18** (1991), *no.* 3, 259–265. 65H05 (65Y05)

Huang, Zheng Ming On the coupled vibration of an ideal fluid with a linear elastic structure. *Appl. Math. Mech. (English Ed.)* **13** (1992), *no.* 10, 951–966; *translated from Appl. Math. Mech.* **13** (1992), *no.* 10, 911–924 (*Chinese. English and Chinese summaries*). (Summary) **93j:73060** 73K70 (35Q72, 73K12, 73V99, 76B15)

Huang, Zheng Shu Multi-objective and multiparameter fuzzy linear programming. (Chinese. English summary) *Fujian Shifan Daxue Xuebao Ziran Kexue Ban* **7** (1991), *no.* 4, 12–18. (Zheng Da Jin) **93b:90110** 90C70 (04A72, 90C29)

Huang, Zhi Jian Convergence analysis of the nonlinear block scaled ABS methods. (English summary) *J. Optim. Theory Appl.* **75** (1992), *no.* 2, 331–344. (G. M. Ostrovsky) **93k:65042** 65H10 (65K10)

— A family of discrete ABS type algorithms for nonlinear equations. (Chinese summary) *Numer. Math. J. Chinese Univ.* **14** (1992), *no.* 2, 130–143. (Carl T. Kelley) **93m:65071** 65H10

Huang, Zhi Min (*with* Charnes, Abraham; Cooper, W. W.; Sun, D. B.) Relations between half-space and finitely generated cones in polyhedral cone-ratio DEA models. *Internat. J. Systems Sci.* **22** (1991), *no.* 11, 2057–2077. (S. Dubuc) **93b:52013** 52B30 (52A20, 65D17)

Huang, Zhi Rui Semi-p-functions and p-functions on semigroups. *Proceedings of Asian Mathematical Conference*, 1990 (*Hong Kong*, 1990), 204–208, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93b:00022**) 20M14 (60K05)

Huang, Zhi Tong (*with* Wang, Jia Cun) A new method for the time delay analysis of systems modeled by stochastic Petri nets. (Chinese. English and Chinese summaries) *Control Theory Appl.* **9** (1992), *no.* 4, 329–335. 93A30 (68Q90)

Huang, Zhi Yuan Stochastic calculus of variation on Gaussian spaces and white noise analysis. *Gaussian random fields* (*Nagoya*, 1990), 227–241, *Ser. Probab. Statist.*, 1, *World Sci. Publishing, River Edge, NJ*, 1991. (Shigeo Takenaka) **93m:60114** 60H07

Huang, Zi Ping A multigrid algorithm for the plane elasticity by the mixed finite element approximation. (English summary) *Proceedings of International Conference on Scientific Computation* (*Hangzhou*, 1991), 182–186, *Ser. Appl. Math.*, 1, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93d:65004**) 73B05 (65N30, 65N55)

— A multigrid algorithm for the Stokes equation using the MINI-element approximation. (Chinese. English and Chinese summaries) *Tongji Daxue Xuebao Ziran Kexue Ban* **20** (1992), *no.* 2, 177–183. (Summary) **93m:65167** 65N55

Huang, Zong Xian *see* **Li, Wen Ming**, (**93i:01006**)

Hubbard, John (*with* Bielefeld, Ben; Fisher, Yuval) The classification of critically preperiodic polynomials as dynamical systems. *J. Amer. Math. Soc.* **5** (1992), *no.* 4, 721–762. (Feliks Przytycki) **93h:58128** 58F23 (30D05)

Hubbell, John H. (*with* Evans, James D.; Evans, Valerie D.) Exact series solution to the Epstein-Hubbell generalized elliptic type integral using complex variable residue theory. (English summary) *Appl. Math. Comput.* **53** (1993), *no.* 2-3, 173–189. (Summary) **93h:65028** 65D20 (33E05)

Hubbuck, J. R. (*with* Crabb, M. C.; Xu, Kai) Fields of spaces. *Adams Memorial Symposium on Algebraic Topology*, 1 (*Manchester*, 1990), 241–254, *London Math. Soc. Lecture Note Ser.*, 175, *Cambridge Univ. Press, Cambridge*, 1992. (N. J. Kuhn) **93h:55003** 55P10 (55P42)

Hübel, R. (*with* Eholzer, W.; Flohr, M.; Honecker, A.; Nahm, Werner; Varnhagen, R.) Representations of W-algebras with two generators and new rational models. (English summary) *Nuclear Phys. B* **383** (1992), *no.* 1-2, 249–288. (A. Hamid Bougourzi) **93i:81061** 81R10 (81T40)

Huber, H. (*with* Büttner, H.) On a classical constrained system and its quantum mechanical counterpart. (English summary) *J. Phys. A* **25** (1992), *no.* 18, L1111–L1118. (Summary) **93e:81064** 81S99 (70H05)

Huber, Klaus Solving equations in finite fields and some results concerning the structure of GF(p^m). *IEEE Trans. Inform. Theory* **38** (1992), *no.* 3, 1154–1162. (Rudolf Lidl) **93g:11124** 11T06 (11T30)

Huber-Carol, Catherine (*with* Gross, Shulamith T.) Regression models for truncated survival data. (English summary) *Scand. J. Statist.* **19** (1992), *no.* 3, 193–213. (Ramesh C. Gupta) **93m:62074** 62G05 (62N05)

Huber-Dyson, Verena ★ Gödel's theorems; a workbook on formalization. With German, French and Russian summaries. Teubner-Texte zur Mathematik [Teubner Texts in Mathematics], 122. *B. G. Teubner Verlagsgesellschaft mbH, Stuttgart*, 1991. 292 *pp. ISBN* 3-8154-2023-7 (Peter Johnstone) **93a:03001** 03–01 (00A30, 03A05, 03F03, 03G30, 18B25, 20F10)

sanchez-Hubert, J. *see* **Sanchez-Hubert, J.**

Hübler, Alfred (*with* Wackerbauer, R.; Mayer-Kress, Gottfried) Algebraic calculation of stroboscopic maps of ordinary, nonlinear differential equations. (English summary) Experimental mathematics: computational issues in nonlinear science (Los Alamos, NM, 1991). *Phys. D* **60** (1992), *no.* 1-4, 335–357. (Ana Noronha da Costa) **93m:34015** 34A34 (34A50, 34A99)

Hübner, Matthias Explicit computation of the Bures distance for density matrices. *Phys. Lett. A* **163** (1992), *no.* 4, 239–242. (Summary) **93b:81011** 81P05

Hübsch, Tristan (*with* Candelas, Philip; Green, Paul S.) Rolling among Calabi-Yau vacua. *Mathematical physics* (*Islamabad*, 1989), 59–114, *World Sci. Publishing, River Edge, NJ*, 1990. (Bruce Hunt) **93d:32031a** 32G81 (14J30, 32J17, 32J81, 81T30, 83E30)

— (*with* Candelas, Philip; Green, Paul S.) Rolling among Calabi-Yau vacua. *Superstrings '89* (*Trieste*, 1989), 366–421, *World Sci. Publishing, River Edge, NJ*, 1990. (Bruce Hunt) **93d:32031b** 32G81 (14J30, 32J17, 32J81, 81T30, 83E30)

— (*with* Eastwood, Michael G.) Endomorphism valued cohomology and gauge-neutral matter. *Comm. Math. Phys.* **132** (1990), *no.* 2, 383–413. (Introduction) **93e:14048** 14J30 (14J15, 32G13, 32J27, 53C80, 81T30)

— (*with* Berglund, Per; Parkes, Linda) The complete matter sector in a three-generation compactification. (English summary) *Comm. Math. Phys.* **148** (1992), *no.* 1, 57–100. (Bruce Hunt) **93j:32036** 32J17 (14D07, 14J30, 32G81, 32J81, 81T30, 83E30)

— (*with* Berglund, Per; Greene, Brian R.) Classical vs. Landau-Ginzburg geometry of compactification. *Modern Phys. Lett. A* **7** (1992), *no.* 20, 1855–1869. (C. Gauthier) **93g:81120** 81T30 (32G81, 32J17, 32J81)

Huck, Andreas (*with* Okamura, Haruko) Counterexamples to a conjecture of Mader about cycles through specified vertices in n-edge-connected graphs. (English summary) *Graphs Combin.* **8** (1992), *no.* 3, 253–258. (R. C. Entringer) **93i:05084** 05C40

— Edge-disjoint paths and cycles in n-edge-connected graphs. (English summary) *J. Graph Theory* **16** (1992), *no.* 6, 571–589. (Cun-Quan Zhang) **93j:05094** 05C38 (05C40)

Huckaba, Sam (*with* Huneke, Craig L.) Powers of ideals having small analytic deviation. *Amer. J. Math.* **114** (1992), *no.* 2, 367–403. (J. K. Verma) **93g:13002** 13A30 (13C40, 13H10)

— (*with* Huneke, Craig L.) Rees algebras of ideals having small analytic deviation. *Trans. Amer. Math. Soc.* **339** (1993), *no.* 1, 373–402. (J. K. Verma) **93k:13008** 13A30 (13H10)

Huckenbeck, Ulrich A result about the power of geometric oracle machines. *Theoret. Comput. Sci.* **88** (1991), *no.* 2, 231–251. (Helmut Alt) **93a:68152** 68U05 (51M15, 68Q05, 68Q10)

— Some elementary results about the equivalence of computability and decidability. *Z. Math. Logik Grundlag. Math.* **37** (1991), *no.* 1, 77–84. (Klaus Weihrauch) **93e:03054** 03D10 (03D65, 65Y99, 68Q05)

Huckle, Thomas A note on skewcirculant preconditioners for elliptic problems. (English summary) *Numer. Algorithms* **2** (1992), *no.* 3-4, 279–286. (Summary) **93g:65048** 65F10 (65N06)

— Circulant and skewcirculant matrices for solving Toeplitz matrix problems. Iterative methods in numerical linear algebra (Copper Mountain, CO, 1990). *SIAM J. Matrix Anal. Appl.* **13** (1992), *no.* 3, 767–777. (Michael J. C. Gover) **93e:65073** 65F35

— (*with* Freund, Roland W.) A restricted signature normal form for Hermitian matrices, quasi-spectral decompositions, and applications. (English summary) *Linear Algebra Appl.* **184** (1993), 165–186. (E. W. Ellers) **93m:15037** 15A57 (15A09)

Huczyński, Andrzej Topological properties in models of dynamical systems generated by invertible nonsingular transformations. (English summary) *Bull. Polish Acad. Sci. Math.* **39** (1991), *no.* 1-2, 117–125. (Summary) **93h:28024** 28D05

Huda, S. On some D_3-optimal designs in spherical regions. *Comm. Statist. Theory Methods* **20** (1991), *no.* 9, 2965–2985. (Ling Yau Chan) **93d:62134** 62K05 (62J05)

— (*with* Mukerjee, Rahul) Further results on optimal designs with circular string property. (English summary) *J. Statist. Plann. Inference* **33** (1992), *no.* 3, 403–411. (Ivar Petersen) **93m:62178** 62K15 (62K05)

Hudak, Michael J. RCE classifiers: theory and practice. (English summary) *Cybernet. Systems* **23** (1992), *no.* 5, 483–515. 68T10

Hudec, Oto Vertex location problems. (English summary) *Fourth Czechoslovakian Symposium on Combinatorics, Graphs and Complexity* (*Prachatice*, 1990), 103–105, *Ann. Discrete Math.*, 51, *North-Holland, Amsterdam*, 1992. (*see* **93i:05004**) 05C35

— On alternative p-center problems. (English summary) *Z. Oper. Res.* **36** (1992), *no.* 5, 439–445. (Summary) **93j:90121** 90C35 (05C35, 90C27)

Hudelmaier, Jörg Bounds for cut elimination in intuitionistic propositional logic. *Arch. Math. Logic* **31** (1992), *no.* 5, 331–353. (Mariko Yasugi) **93e:03077** 03F05 (03B20, 03F20)

Hudry, Alain Extensions de représentations d'algèbres. [Extensions of representations of algebras] *Comm. Algebra* **20** (1992), *no.* 7, 2043–2073. (Mike Prest) **93i:16025** 16G99 (20M35)

Hudry, Olivier (*with* Fournier, Irène; Germa, Anne) Encadrement de l'indice de Slater d'un tournoi à l'aide de ses scores. (English and French summaries) [Bounds of Slater's index of a tournament from its scores] *Math. Inform. Sci. Humaines No.* 118 (1992), 53–68. (J. W. Moon) **93h:05083** 05C20

— (*with* Fournier, Irène; Germa, Anne) Utilisation des scores dans des méthodes exactes déterminant les ordres médians de tournois. (English and French summaries) [On the use of scores in exact methods computing the median orders of tournaments] *Math. Inform. Sci. Humaines No.* 119 (1992), 53–74. (Summary) **93j:05068** 05C20 (68R10)

Hudson, D. L. (*with* Cohen, M. E.) The role of approximate reasoning in a medical expert system. *Fuzzy expert systems*, 165–179, *CRC, Boca Raton, FL*, 1992. (*see* **93g:68133**) 68T35 (03B52)

— (*with* Cohen, M. E.) Medical decision making using pattern classification techniques for establishment of knowledge bases. *Fuzzy expert systems*, 225–236, *CRC, Boca Raton, FL*, 1992. (*see* **93g:68133**) 68T35 (03B52)

Hudson, Kiki *see* **Tamura, Itiro**, **93c:57021**

Hudson, R. L. Quantum stochastic flows. *Probability theory and mathematical statistics, Vol. I* (*Vilnius*, 1989), 512–525, "*Mokslas*", *Vilnius*, 1990. (H. Araki) **93d:81096** 81S25 (46L60, 47N50)

— (*with* Shepperson, P. A.) Structure relations for fermionic flows. *Quantum probability & related topics*, 203–209, *QP-PQ, VII, World Sci. Publishing, River Edge, NJ*, 1992. (David Applebaum) **93k:81122** 81S25 (46L50, 46N50)

Hudzik, Henryk Notes on Orlicz spaces. *Function spaces* (*Poznań*, 1989), 23–29, *Teubner-Texte Math.*, 120, *Teubner, Stuttgart*, 1991. (Ting Fu Wang) **93d:46046** 46E30

— (*with* Bastero, Jesús; Steinberg, A. M.) On smallest and largest spaces among rearrangement-invariant p-Banach function spaces ($0 < p < 1$). *Indag. Math. (N.S.)* **2** (1991), *no.* 3, 283–288. (Alexander Mekler) **93f:46038** 46E30 (46A16, 46M35)

— (*with* Grząślewicz, Ryszard; Kurc, W.) Extreme and exposed points in Orlicz spaces. (English summary) *Canad. J. Math.* **44** (1992), *no.* 3, 505–515. (Ting Fu Wang) **93h:46033** 46E30 (46B25)

— (*with* Maligranda, Lech) Some remarks on submultiplicative Orlicz functions. (English summary) *Indag. Math. (N.S.)* **3** (1992), *no.* 3, 313–321. (Ting Fu Wang) **93i:46052** 46E30

— (*with* Landes, Thomas R.) Characteristic of convexity of Köthe function spaces. *Math. Ann.* **294** (1992), *no.* 1, 117–124. (Ting Fu Wang) **93h:46041** 46E40 (46B20, 46E30)

— (*with* Wang, Bao Xiang; Wang, Ting Fu) On the convexity characteristic of Orlicz spaces. (English summary) *Math. Japon.* **37** (1992), *no.* 4, 691–699. (W. A. J. Luxemburg) **93i:46053** 46E30 (46B20)

— (*with* Chen, Shu Tao) On some properties of Musielak-Orlicz spaces and their subspaces of order continuous elements. (English summary) *Period. Math. Hungar.* **25** (1992), *no.* 1, 13–20. (Summary) **93m:46022** 46E30

— (*with* Mastyło, Mieczyslaw) Almost isometric copies of l_∞ in some Banach spaces. *Proc. Amer. Math. Soc.* **119** (1993), *no.* 1, 209–215. (Manuel González) **93k:46007** 46B04 (46B42, 46E30)

Huebschmann, Johannes On the quantization of Poisson algebras. *Symplectic geometry and mathematical physics (Aix-en-Provence, 1990)*, 204–233, *Progr. Math.*, 99, *Birkhäuser Boston, Boston, MA*, 1991. (K. C. H. Mackenzie) **93g:58051** 58F06 (17B66)

Huelsbergen, Lorenz (*with* Bach, Eric) Statistical evidence for small generating sets. (English summary) *Math. Comp.* **61** (1993), *no.* 203, 69–82. (D. R. Heath-Brown) **93k:11089** 11N69

Huen, Y. K. (*with* Wawan, S.; Rangaiah, G. P.; Sim, S. L.) Graphical optimization using HGRAM graphical format. (English summary) *Optimization, Vol.* 1, 2 (*Singapore*, 1992), 167–176, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93d:90005**) 90C30

Huestis, Stephen P. The Backus-Gilbert problem for sampled band-limited functions. (English summary) *Inverse Problems* **8** (1992), *no.* 6, 873–887. (Summary) **93k:86001** 86–08 (65C99, 65U05, 86A22)

— Interpolation formulas for oversampled band-limited functions. (English summary) *SIAM Rev.* **34** (1992), *no.* 3, 477–481. 42–01

— Smallest nonnegative solutions to linear inverse problems. (English summary) *SIAM Rev.* **34** (1992), *no.* 4, 642–647. (Summary) **93i:86004** 86A22 (49N45)

Huet, C. Minimum theorems for viscoelasticity. (English summary) *European J. Mech. A Solids* **11** (1992), *no.* 5, 653–684. (Miroslav Šilhavý) **93j:73034** 73F05 (73V25)

Huet, Gérard Introduction au λ-calcul typé. [Introduction to typed λ-calculus] *Logique et informatique: une introduction*, 137–162, *Collect. Didact.*, 8, *INRIA, Rocquencourt*, 1991. (*see* **93d:68003**) 03B40 (68Q55)

van Huffel, Sabine *see* **Van Huffel, Sabine**

Huffman, W. Cary On extremal self-dual ternary codes of lengths 28 to 40. *IEEE Trans. Inform. Theory* **38** (1992), *no.* 4, 1395–1400. (Summary) **93b:94030** 94B60

— (*with* Job, Vanessa R.; Pless, Vera S.) Multipliers and generalized multipliers of cyclic objects and cyclic codes. (English summary) *J. Combin. Theory Ser. A* **62** (1993), *no.* 2, 183–215. (Derek Smith) **93m:94029** 94B15 (05E20)

Hugger, Jens Adaptive recovery of near optimal meshes in the finite element method for parameter dependent problems. (English summary) Reliability in computational mechanics (Kraków, 1991). *Comput. Methods Appl. Mech. Engrg.* **101** (1992), *no.* 1-3, 127–141. (Summary) **93h:65138** 65N30 (65M60, 73V05, 76M10)

Huggett, S. A. Recent work in twistor field theory. Les Journées Relativistes (Cargèse, 1991). *Classical Quantum Gravity* **9** (1992), *suppl.*, S127–S135. (Nicholas Buchdahl) **93a:81072** 81R25 (32L25, 81T18, 81T40)

Huggins, Richard M. (*with* Sriram, T. N.; Basawa, Ishwar V.) Sequential estimation for branching processes with immigration. *Ann. Statist.* **19** (1991), *no.* 4, 2232–2243. (Valeri Stefanov) **93b:62118** 62L12 (60J80, 62M05)

— (*with* Marschner, Ian C.) Robust analysis of the bifurcating autoregressive model in cell lineage studies. *Austral. J. Statist.* **33** (1991), *no.* 2, 209–220. (Anatolii B. Juditsky) **93a:62047** 62F35 (92D25)

Hughes, Barry D. (*with* Ninham, Barry W.; Frankel, Norman E.; Glasser, M. Lawrence) Möbius, Mellin, and mathematical physics. (English summary) *Phys. A* **186** (1992), *no.* 3-4, 441–481. (D. R. Heath-Brown) **93h:11143** 11Z50 (11M99, 82B05)

Hughes, D. I. (*with* D'Eath, P. D.; Dowker, H. F.) Supersymmetric quantum wormhole states. *Quantum gravity (Moscow*, 1990), 124–143, *World Sci. Publishing, River Edge, NJ*, 1991. (Summary) **93c:83049** 83C45 (81V17)

— (*with* D'Eath, P. D.) Mini-superspace with local supersymmetry. *Nuclear Phys. B* **378** (1992), *no.* 1-2, 381–409. (Summary) **93m:83028** 83C45

Hughes, Daniel R. On some rank 3 partial geometries. *Advances in finite geometries and designs (Chelwood Gate*, 1990), 195–225, *Oxford Sci. Publ., Oxford Univ. Press, New York*, 1991. (F. De Clerck) **93d:51028** 51E24 (51E12, 51E14)

Hughes, H. R. Brownian exit distributions from normal balls in $S^3 \times H^3$. *Ann. Probab.* **20** (1992), *no.* 2, 655–659. (Jacques Vauthier) **93e:58196** 58G32 (60J65)

Hughes, J. B. Interior efficient solutions in bicriterion linear fractional programming—a geometric approach. (English summary) *Math. Comput. Modelling* **17** (1993), *no.* 6, 23–28. (Summary) **93k:90079** 90C29 (90C32)

Hughes, J. G. (*with* An, Zhi; Bell, David Andrew) Relation-based evidential reasoning. (English summary) *Internat. J. Approx. Reason.* **8** (1993), *no.* 3, 231–251. 68T27 (03B70, 68T30)

Hughes, J. W. B. (*with* Van der Jeugt, J.) Unimodal polynomials associated with Lie algebras and superalgebras. *J. Comput. Appl. Math.* **37** (1991), *no.* 1-3, 81–88. (Robert A. Gustafson) **93f:05013** 05A30 (05A20, 05E99, 17B10)

— (*with* King, Ronald Curtis; Van der Jeugt, J.) On the composition factors of Kac modules for the Lie superalgebras sl(m/n). *J. Math. Phys.* **33** (1992), *no.* 2, 470–491. (Hartmut Schlosser) **93a:17003** 17A70 (17B70)

Hughes, John (*with* Launchbury, John) Relational reversal of abstract interpretation. (English summary) *J. Logic Comput.* **2** (1992), *no.* 4, 465–482. (Summary) **93h:68079** 68Q55

— (*with* Launchbury, John) Projections for polymorphic first-order strictness analysis. (English summary) *Math. Structures Comput. Sci.* **2** (1992), *no.* 3, 301–326. (Summary) **93g:68013** 68N20 (68Q55)

Hughes, John Forbes Bordism and regular homotopy of low-dimensional immersions. (English summary) *Pacific J. Math.* **156** (1992), *no.* 1, 155–184. (Vagn Lundsgaard Hansen) **93j:57019** 57R42 (55Q99)

Hughes, M. Newton, Hermes and Berkeley. *British J. Philos. Sci.* **43** (1992), *no.* 1, 1–19. (Eberhard Knobloch) **93c:01015** 01A45 (01A50)

Hughes, Mark Symmetries of homotopy complex projective three spaces. *Trans. Amer. Math. Soc.* **337** (1993), *no.* 1, 291–304. (Mikiya Masuda) **93g:57038** 57R55 (57R65, 57S17)

Hughes, Richard J. On Feynman's proof of the Maxwell equations. *Amer. J. Phys.* **60** (1992), *no.* 4, 301–306. (Summary) **93d:70034** 70H99 (78A25)

Hughes, Shane J. (*with* Brekke, Lee; Dykstra, Hans; Imbo, Tom D.) Knots and links of nonabelian string. (English summary) *Phys. Lett. B* **288** (1992), *no.* 3-4, 273–278. (Summary) **93g:81087** 81T13 (57M25, 81T30)

— (*with* McManus, Des J.; Vandyck, Michel A.) Weak-field gravity of circular cosmic strings. (English summary) *Phys. Rev. D* (3) **47** (1993), *no.* 2, 468–473. (Summary) **93h:83018** 83C25 (83C15, 83F05)

Hughes, Simon Compile-time garbage collection for higher-order functional languages. (English summary) *J. Logic Comput.* **2** (1992), *no.* 4, 483–509. 68Q45

Hughes, Thomas J. R. (*with* Chalot, Frédéric L.) Analysis of hypersonic flows in thermo-chemical equilibrium by application of the Galerkin/least-squares formulation. *ICIAM 91 (Washington, DC*, 1991), 146–159, *SIAM, Philadelphia, PA*, 1992. (*see* **93b:00026**) 76K05 (65M60, 76M10, 76V05)

— (*with* Harari, Isaac) A cost comparison of boundary element and finite element methods for problems of time-harmonic acoustics. (English summary) *Comput. Methods Appl. Mech. Engrg.* **97** (1992), *no.* 1, 77–102. (Summary) **93h:76067** 76Q05 (76M10, 76M15)

— (*with* Harari, Isaac) Analysis of continuous formulations underlying the computation of time-harmonic acoustics in exterior domains. (English summary) *Comput. Methods Appl. Mech. Engrg.* **97** (1992), *no.* 1, 103–124. (Summary) **93h:76068** 76Q05 (76M99)

— (*with* Harari, Isaac) What are C and h?: inequalities for the analysis and design of finite element methods. *Comput. Methods Appl. Mech. Engrg.* **97** (1992), *no.* 2, 157–192. (Michael Fröhner) **93g:65122** 65M60 (65N30, 73V05, 76M10)

— (*with* Barbosa, Helio J. C.) Circumventing the Babuška-Brezzi condition in mixed finite element approximations of elliptic variational inequalities. *Comput. Methods Appl. Mech. Engrg.* **97** (1992), *no.* 2, 193–210. (Ján Lovišek) **93c:65138** 65N30 (35J85, 73V05, 73V25)

— (*with* Harari, Isaac) Galerkin/least-squares finite element methods for the reduced wave equation with nonreflecting boundary conditions in unbounded domains. (English summary) *Comput. Methods Appl. Mech. Engrg.* **98** (1992), *no.* 3, 411–454. (Summary) **93c:76060** 76M10 (65N30, 73D25, 73K70, 76Q05)

— (*with* Barbosa, Helio J. C.) Boundary Lagrange multipliers in finite element methods: error analysis in natural norms. *Numer. Math.* **62** (1992), *no.* 1, 1–15. (Charles I. Goldstein) **93g:65141** 65N30

Hughes-Hallett, A. J. (*with* Fisher, P. G.) Nonstationary model solution techniques and the USA algorithm. (English summary) *Computational economics and econometrics (Minneapolis, MN*, 1990), 107–119, *Adv. Stud. Theoret. Appl. Econometrics*, 22, *Kluwer Acad. Publ., Dordrecht*, 1992. (*see* **93b:90009**) 65H10 (65F10)

Hugly, Philip (*with* Sayward, Charles) Are all tautologies true? *Logique et Anal.* (*N.S.*) **32** (1989), *no.* 125-126, 3–14. (Merrie Bergmann) **93m:03011** 03A05 (03B50, 03B65)

— (*with* Sayward, Charles) Redundant truth. *Ratio* (*N.S.*) **5** (1992), *no.* 1, 24–37. 03A05

— (*with* Sayward, Charles) Two concepts of truth. *Philos. Stud.* **70** (1993), *no.* 1, 35–58. 03A05 (03B65)

Hugo, Arizmendi P. (*with* Carrillo, Angel) On the extended spectral radius in B_0-algebras. *Funct. Approx. Comment. Math.* **19** (1990), 77–81. (Robin Harte) **93c:46084** 46H05

— On the spectral radius of a matrix algebra. *Funct. Approx. Comment. Math.* **19** (1990), 167–176. (Robin Harte) **93c:46083** 46H05

grandet-Hugot, M. *see* **Grandet-Hugot, M.**

Huhn, Edit Recursive algorithm for evaluation of the likelihood function of ARMA processes. (Hungarian. English and Hungarian summaries) *Alkalmaz. Mat. Lapok* **15** (1990/91), *no.* 3-4, 303–307. 62M10

Hui, Kin Ming Comparison theorems for the eigenvalues of the Laplacian in the unit ball in $\mathbf{R}^n$. *Canad. Math. Bull.* **35** (1992), *no.* 2, 214–217. (Jan Bochenek) **93e:35078** 35P05 (34L05, 35J05, 47F05)

Hui, Lucas Chi Kwong (*with* Martel, Charles) On efficient unsuccessful search. *Proceedings of the Third Annual ACM-SIAM Symposium on Discrete Algorithms (Orlando, FL*, 1992), 217–227, *ACM, New York*, 1992. (*see* **93b:68005**) 68P10

Hui, P. M. (*with* Chang, C. Y.; Yu, Kin Wah) Zero-temperature entropy of fully frustrated generalized Sierpiński gaskets. (English summary) *Phys. Lett. A* **172** (1993), *no.* 4, 219–223. (Summary) **93k:82011** 82B20 (82–04)

Hui, S. Y. R. (*with* Woolfson, M. S.) Solution of the continuous Kalman filter equations using the transmission line method. (English summary) *Internat. J. Electron.* **73** (1992), *no.* 2, 271–286. 93E11

Hui, W. H. A new direction in steady supersonic/hypersonic flow computation. *Proceedings of Asian Mathematical Conference*, 1990 (*Hong Kong*, 1990), 209–214, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93b:00022**) 76M25 (76J20, 76K05)

— (*with* Loh, Ching-Yuen) A new Lagrangian method for steady supersonic flow computation. II. Slip-line resolution. (English summary) *J. Comput. Phys.* **103** (1992), *no.* 2, 450–464. (Summary) **93j:76044a** 76M20 (76J20, 76L05)

— (*with* Loh, Ching-Yuen) A new Lagrangian method for steady supersonic flow computation. III. Strong shocks. *J. Comput. Phys.* **103** (1992), *no.* 2, 465–471. (From the introduction) **93j:76044b** 76M20 (76J20, 76L05)

— (*with* Drennan, W. M.; Tenti, G.) Accurate calculations of Stokes water waves of large amplitude. (French summary) *Z. Angew. Math. Phys.* **43** (1992), *no.* 2, 367–384. (Summary) **93b:76010** 76B15 (65M99, 76M25)

— (*with* Yang, J. Y.; Hsu, C. A.) A generalized Lagrangian method for solving the steady shallow water equations. (English summary) *Math. Comput. Simulation* **35** (1993), *no.* 1, 43–61. (Summary) **93h:65127** 65M99 (76B15, 76L05, 76M20, 76M25)

Hui, Yer Van (*with* Lee, Andy H.) Assessing influence in time series. (English summary) *Comm. Statist. Theory Methods* **21** (1992), *no.* 12, 3463–3478. (Summary) **93h:62158** 62M10 (62F35)

Huijben, A. J. M. (*with* Kaasschieter, E. F.) Mixed-hybrid finite elements and streamline computation for the potential flow problem. *Numer. Methods Partial Differential Equations* **8** (1992), *no.* 3, 221–266. (I. Christie) **93b:65169** 65N30 (76B99, 76M10)

Huijberts, H. J. C. Using the physical properties of systems for control: an illustration. (English summary) *Stabilization of flexible structures (Montpellier*, 1989), 322–327, *Lecture Notes in Control and Inform. Sci.*, 147, *Springer, Berlin*, 1990. (*see* **93c:93006**) 93A30 (93B17)

— (*with* Withagen, Cees) Local asymptotic stability of optimal steady states. (English summary) *Econom. Lett.* **40** (1992), *no.* 1, 7–11. (Summary) **93i:90029** 90A16 (34D05, 49K15, 93D05)

— A nonregular solution of the nonlinear dynamic disturbance decoupling problem with an application to a complete solution of the nonlinear model matching problem. *SIAM J. Control Optim.* **30** (1992), *no.* 2, 350–366. (Ülle Kotta) **93b:93049** 93B52 (93A30, 93C10)

— (*with* Nijmeijer, Henk; van der Wegen, L. L. M.) Minimality of dynamic input-output decoupling for nonlinear systems. *Systems Control Lett.* **18** (1992), *no.* 6, 435–443. (David L. Elliott) **93d:93044** 93C10 (93B17, 93B52)

Huijsmans, C. B. *see* **Positive operators and semigroups on Banach lattices, 93e:47003**

Huilgol, R. R. (*with* Crewther, I.; Jozsa, R.) Axisymmetric and nonaxisymmetric flows of a non-Newtonian fluid between coaxial rotating discs. *Philos. Trans. Roy. Soc. London Ser. A* **337** (1991), *no.* 1648, 467–495. (Xue-Ping Wang) **93a:76004** 76A10 (76A05, 76E99)

zimmermann-Huisgen, Birge *see* **Zimmermann-Huisgen, Birge**

Huisman, J. (*with* Bochnak, J.) When is a complex elliptic curve the product of two real algebraic curves? *Math. Ann.* **293** (1992), *no.* 3, 469–474. (Robert Silhol) **93i:14028** 14H52 (11G05, 14G27, 14P05)

— The underlying real algebraic structure of complex elliptic curves. *Math. Ann.* **294** (1992), *no.* 1, 19–35. (Robert Silhol) **93i:14029** 14H52 (11G05, 14G27, 14P05)

Huizinga, John (*with* Cumby, Robert E.) Testing the autocorrelation structure of disturbances in ordinary least squares and instrumental variables regressions. *Econometrica* **60** (1992), *no.* 1, 185–195. (Hilmar Drygas) **93m:62149** 62J05 (62P20)

Hujter, M. (*with* Bíró, M.; Tuza, Zsolt) Precoloring extension. I. Interval graphs. Special volume to mark the centennial of Julius Petersen's "Die Theorie der regulären Graphs", Part I. *Discrete Math.* **100** (1992), *no.* 1-3, 267–279. (Ruth Bari) **93d:05049** 05C15 (68Q25, 68R10)

Huke, J. P. (*with* Broomhead, D. S.; Muldoon, M. R.) Linear filters and nonlinear systems. *J. Roy. Statist. Soc. Ser. B* **54** (1992), *no.* 2, 373–382. (Ye Ji Xu) **93h:93079** 93E11 (58F40)

Hulanicki, Andrzej (*with* Damek, Ewa) Maximal functions related to subelliptic operators invariant under an action of a solvable Lie group. *Studia Math.* **101** (1991), *no.* 1, 33–68. (Michael Cowling) **93c:43009** 43A85 (22E30, 35J70)

— *see also* **Zygmund, Antoni, 93a:01070a; 93a:01070b** *and* **93a:01070c**

Hulbert, Gregory M. Discontinuity-capturing operators for elastodynamics. *Comput. Methods Appl. Mech. Engrg.* **96** (1992), *no.* 3, 409–426. (Summary) **93b:73036** 73V05 (73D15)

— Explicit momentum conserving algorithms for rigid body dynamics. (English summary) *Comput. & Structures* **44** (1992), *no.* 6, 1291–1303. 70-08 (70E15)

Hulek, Klaus (*with* Kahn, Constantin; Weintraub, Steven H.) Singularities of the moduli spaces of certain abelian surfaces. *Compositio Math.* **79** (1991), *no.* 2, 231–253. (Yukihiko Namikawa) **93a:14028** 14J15 (14B05, 14K20, 32J05)

— (*with* Paranjape, Kapil H.; Ramanan, S.) On a conjecture on canonical curves. *J. Algebraic Geom.* **1** (1992), *no.* 3, 335–359. (H. Lange) **93c:14029** 14H45

— (*with* Katz, Sheldon H.; Schreyer, Frank-Olaf) Cremona transformations and syzygies. *Math. Z.* **209** (1992), *no.* 3, 419–443. (Wolfram Decker) **93g:14022** 14E07

— *see also* **Complex algebraic varieties, 93d:14006**

Hulin, D. (*with* Troyanov, M.) Prescribing curvature on open surfaces. *Math. Ann.* **293** (1992), *no.* 2, 277–315. (Robert McOwen) **93d:53047** 53C21 (30F45, 35J60, 53A30)

Hulkó, G. (*with* Sapák, L.; Navračič, I.; Janíková, D.; Kovalcik, J.) Methods of identification of lumped input and distributed output systems. (English summary) *Identification and system parameter estimation* 1991, *Vol.* 1,2 (*Budapest*, 1991), 1161–1166, *IFAC Symp. Ser.*, 3, *Pergamon, Oxford*, 1992. (*see* **93h:93009**) 93B30 (93C20)

Hull, B. D. (*with* Rogers, T. G.; Spencer, A. J. M.) Controllable flows of ideal fibre-reinforced fluids. *Mech. Res. Comm.* **19** (1992), *no.* 6, 527–534. 76A99 (73B99, 73K20)

Hull, C. M. $\mathscr{W}$-gravities, Toda theories and the geometry of the central charge. *Nuclear Phys. B* **364** (1991), *no.* 3, 621–661. (Matthias Blau) **93c:81206** 81T40 (17B81, 81T70)

— (*with* Palacios, L.) Singular contractions of W-algebras. (English summary) *Modern Phys. Lett. A* **7** (1992), *no.* 28, 2619–2626. (D. V. Yur'ev) **93i:81066** 81R10 (17B68)

Hull, David M. How many mating units are needed to have a positive probability of survival? *Math. Mag.* **66** (1993), *no.* 1, 28–33. 92D25

Hull, Richard B. (*with* Yoshikawa, Masatoshi) Object identity and query equivalence [equivalences]. *Theoretical studies in computer science*, 253–286, *Academic Press, Boston, MA*, 1992. (W. Kwasowiec) **93f:68051** 68Q40 (68P15, 68P20, 68T25)

Huiree, Ya. (*with* Namsrai, Kh.; Njamtseren, N.) An overview of the application of the Langevin equation to the description of Brownian and quantum motions of a particle. *Internat. J. Modern Phys. A* **7** (1992), *no.* 12, 2661–2677. (Helmut Rumpf) **93f:81025** 81P20

Hulsbergen, Wilfred W. J. ★ Conjectures in arithmetic algebraic geometry. A survey. Aspects of Mathematics, E18. *Friedr. Vieweg & Sohn, Braunschweig*, 1992. vi+236 *pp.* *ISBN* 3-528-06433-1 (Jan Nekovář) **93h:11066** 11G40 (11G09, 14C35, 14F20, 14G25, 19F27)

Hulshof, Josephus (*with* Fila, Marek; Quittner, Pavol) The quenching problem on the N-dimensional ball. *Nonlinear diffusion equations and their equilibrium states*, 3 (*Gregynog*, 1989), 183–196, *Progr. Nonlinear Differential Equations Appl.*, 7, *Birkhäuser Boston, Boston, MA*, 1992. (Editors) **93c:35078** 35K60 (35B05)

— (*with* Gianni, Roberto) The semilinear heat equation with a Heaviside source term. (English summary) *European J. Appl. Math.* **3** (1992), *no.* 4, 367–379. (Graeme C. Wake) **93k:80008** 80A20 (35K55, 80A25)

— (*with* Bertsch, Michiel; Hilhorst, Danielle) On a free boundary problem arising in detonation theory: convergence to travelling waves. *Emerging applications in free boundary problems* (*Montreal, PQ*, 1990), 146–151, *Pitman Res. Notes Math. Ser.*, 280, *Longman Sci. Tech., Harlow*, 1993. (*see* **93k:00035**) 80A25 (35R35)

— (*with* Bernis, Francisco; Vázquez, Juan Luis) A very singular solution for the dual porous medium equation and the asymptotic behaviour of general solutions. *J. Reine Angew. Math.* **435** (1993), 1–31. (Elena Comparini) **93k:35122** 35K15 (35K55, 35Q35, 76S05)

vlieg-Hulstman, M. *see* **Vlieg-Hulstman, M.**

Hum, Sin Hoon (*with* Leong, Thin Yin) A weighted graph partitioning problem with side constraints. (English summary) *Optimization, Vol.* 1, 2 (*Singapore*, 1992), 235–240, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93d:90005**) 90C27 (90C35)

al Humaidan, S. *see* **Al Humaidan, S.**

Humbert, C. (*with* Hashim, G.; Rachid, A.) Aggregation method for model reduction via Schur decomposition. (English summary) *Mathematical and intelligent models in system simulation, I, II* (*Brussels*, 1990), 11–16, *IMACS Ann. Comput. Appl. Math.*, 10, 11, *Baltzer, Basel*, 1991. (*see* **93c:93005**) 93B11 (93C05)

— (*with* Hassad, H.; Mehdi, D.) On the stability of the generalized predictive control. (English summary) *Mathematics of the analysis and design of process control* (*Dublin*, 1991/*Lille*, 1991), 465–471, *North-Holland, Amsterdam*, 1992. (*see* **93g:93004**) 93C15

Humbert, Georges *see* **Hilbert, David[1], 93g:01101**

Humble, S. (*with* Wand, K.; Wilson, R. J. T.) Explicit modeling of detection within a stochastic duel. (English summary) *Naval Res. Logist.* **40** (1993), *no.* 4, 431–450. (Summary) **93k:90115** 90D15 (90D40)

Hume, D. *see* **Gower, Barry, 93a:01023**

Hume, L. R. (*with* Carey, A. L.) Multiple phases and return to equilibrium. (English summary) *J. Statist. Phys.* **68** (1992), *no.* 5-6, 787–828. (H. Araki) **93m:82024** 82C10 (46L60, 82B23)

Humi, M. Lie algebras of first- and second-order operators. *Nuovo Cimento B* (11) **107** (1992), *no.* 3, 245–254. (É. S. Kryachko) **93e:81031** 81R05 (22E70, 81V70)

Humke, Paul D. (*with* Evans, Michael Jon; Saxe, Karen) A symmetric porosity conjecture of Zajíček. *Real Anal. Exchange* **17** (1991/92), *no.* 1, 258–271. (Tapan Kumar Dutta) **93g:26019** 26A99

— (*with* Freiling, Chris) The exact Borel class where a density completeness axiom holds. *Real Anal. Exchange* **17** (1991/92), *no.* 1, 272–281. (Elżbieta Wagner) **93b:28006** 28A12 (26A21, 28A05)

— (*with* Laczkovich, Miklós) Parametric semicontinuity implies continuity. *Real Anal. Exchange* **17** (1991/92), *no.* 2, 668–680. (James Foran) **93g:26004** 26A15

Humphreys, John F. Projective representations of the generalized symmetric groups. *Topics in algebra, Part* 2 (*Warsaw*, 1988), 299–302, *Banach Center Publ.*, 26, *Part* 2, *PWN, Warsaw*, 1990. (Davison Theo) **93g:20026** 20C25

— Double covers of Weyl subgroups. (Italian summary) *Boll. Un. Mat. Ital. B* (7) **6** (1992), *no.* 4, 887–900. (Davison Theo) **93m:20017** 20C25 (20F55)

— Algebraic decoding of the ternary (13, 7, 5) quadratic residue code. *IEEE Trans. Inform. Theory* **38** (1992), *no.* 3, 1122–1125. (Summary) **93h:94030** 94B35 (11T71)

Humphries, Stephen P. Some subgroups of SL(3, **Z**) generated by transvections. *Comm. Algebra* **20** (1992), *no.* 6, 1675–1703. (Jasbir Singh Chahal) **93h:20052** 20G30

— Normal closures of powers of Dehn twists in mapping class groups. *Glasgow Math. J.* **34** (1992), *no.* 3, 313–317. (Shigeyuki Morita) **93g:57002** 57M07 (57N05)

— An approach to automorphisms of free groups and braids via transvections. *Math. Z.* **209** (1992), *no.* 1, 131–152. (J. S. Birman) **93f:20048** 20F28 (20F29, 20F36, 57M05)

isḥāq ibn Ḥunayn *see* **Isḥāq ibn Ḥunayn**

Ḥunayn ibn Isḥāq *see* **de Young, Gregg, 93b:01012**

Huneke, Craig L. Absolute integral closure and big Cohen-Macaulay algebras. *Proceedings of the International Congress of Mathematicians, Vol. I, II* (*Kyoto*, 1990), 339–349, *Math. Soc. Japan, Tokyo*, 1991. (Liam O'Carroll) **93c:13017** 13H10 (13A35, 13B22)

— Problems on local cohomology. *Free resolutions in commutative algebra and algebraic geometry* (*Sundance, UT*, 1990), 93–108, *Res. Notes Math.*, 2, *Jones and Bartlett, Boston, MA*, 1992. (D.-M. Popescu) **93f:13010** 13D45 (13H10, 14B15)

— (*with* Huckaba, Sam) Powers of ideals having small analytic deviation. *Amer. J. Math.* **114** (1992), *no.* 2, 367–403. (J. K. Verma) **93g:13002** 13A30 (13C40, 13H10)

— (*with* Ulrich, Bernd; Vasconcelos, Wolmer V.) On the structure of certain normal ideals. *Compositio Math.* **84** (1992), *no.* 1, 25–42. (Aron Simis) **93i:13009** 13C40 (13C05, 13H10, 13H15)

— Uniform bounds in Noetherian rings. *Invent. Math.* **107** (1992), *no.* 1, 203–223. (Rafael H. Villarreal) **93b:13027** 13E05 (13E15)

— (*with* Eisenbud, David; Vasconcelos, Wolmer V.) Direct methods for primary decomposition. (English summary) *Invent. Math.* **110** (1992), *no.* 2, 207–235. (Joachim Apel) **93j:13032** 13P10 (13B25, 13C99)

— (*with* Koh, Jee) Resolutions of almost complete intersections. *J. Algebra* **145** (1992), *no.* 1, 22–31. (Andrew Kustin) **93e:13023** 13D25 (13C40, 13H10)

— (*with* Ulrich, Bernd) Local properties of licci ideals. *Math. Z.* **211** (1992), *no.* 1, 129–154. (Andrew Kustin) **93j:13018** 13C40

— (*with* Hochster, Melvin) Phantom homology. *Mem. Amer. Math. Soc.* **103** (1993), *no.* 490, vi+91 *pp.* (Matthew Miller) **93j:13020** 13D25 (13A35, 13C14, 14C17)

— (*with* Huckaba, Sam) Rees algebras of ideals having small analytic deviation. *Trans. Amer. Math. Soc.* **339** (1993), *no.* 1, 373–402. (J. K. Verma) **93k:13008** 13A30 (13H10)

— (*with* Sharp, Rodney Y.) Bass numbers of local cohomology modules. *Trans. Amer. Math. Soc.* **339** (1993), *no.* 2, 765–779. (Gennady Lyubeznik) **93m:13008** 13D45

ngo manh Hung *see* **Ngo Manh Hung**

Hung, Hsien Ming (*with* Chi, G. Y. H.; Lipicky, R. J.) Testing for the existence of a desirable dose combination. (English and French summaries) *Biometrics* **49** (1993), *no.* 1, 85–94. (Summary) **93m:62215** 62P10

Hung, Ken (*with* Kotz, Samuel; Wang, Qiwen) Interrelations among various definitions of bivariate positive dependence. (English summary) *Topics in statistical dependence* (*Somerset, PA*, 1987), 333–349, *IMS Lecture Notes Monograph Ser.*, 16, *Inst. Math. Statist., Hayward, CA*, 1990. (Summary) **93g:62071** 62H05 (62N05)

Hung, Yung Chen (*with* Ch'èn, Chien Hui) Distributed algorithms for the quickest path problem. (English summary) *Parallel Comput.* **18** (1992), *no.* 7, 823–834. 68R10 (68Q22)

Hungerbühler, Norbert Geometrical aspects of the circular billiard problem. (German summary) *Elem. Math.* **47** (1992), *no.* 3, 114–117. (E. J. F. Primrose) **93h:51022** 51M04

lê Hùng So'n *see* **Lê Hùng So'n**

đặng Hùng Thắng *see* **Đặng Hùng Thắng**

trần Hùng Thao *see* **Trần Hùng Thao**

Hunkapillar, T. (*with* Hood, L.; Solomon, J. E.) Computational problems and the human genome project. *Parallel processing for scientific computing* (*Houston, TX*, 1991), 315–331, *SIAM, Philadelphia, PA*, 1992. (*see* **93g:65178**) 92B05 (68T99)

Hunsaker, W. (*with* Fletcher, Peter) Entourage uniformities for frames. *Monatsh. Math.* **112** (1991), *no.* 4, 271–279. (Summary) **93c:54020** 54E15

— (*with* Fletcher, Peter) Completeness using pairs of filters. Proceedings of the Symposium on General Topology and Applications (Oxford, 1989). *Topology Appl.* **44** (1992), *no.* 1-3, 149–155. (Hans-Peter A. Künzi) **93g:54040** 54E15 (54E52)

— (*with* Fletcher, Peter) Symmetry conditions in terms of open sets. *Topology Appl.* **45** (1992), *no.* 1, 39–47. (G. D. Dimov) **93h:54020** 54E05 (54E15)

Hunt, Brian R. (*with* Sauer, Tim; Yorke, James A.) Prevalence: a translation-invariant "almost every" on infinite-dimensional spaces. *Bull. Amer. Math. Soc.* (*N.S.*) **27** (1992), *no.* 2, 217–238. (O. Lipovan) **93k:28018** 28C20 (46G12)

— (*with* Sauer, Tim; Yorke, James A.) Prevalence. An addendum to: "Prevalence: a translation-invariant 'almost every' on infinite-dimensional spaces" [Bull. Amer. Math. Soc. (N.S.) **27** (1992), no. 2, 217–238; MR 93k:28018]. *Bull. Amer. Math. Soc.* (*N.S.*) **28** (1993), *no.* 2, 306–307. (From the text) **93k:28019** 28C20 (46G12)

Hunt, David C. (*with* Joe, Stephen) The number of lattice rules having given invariants. (English summary) *Bull. Austral. Math. Soc.* **46** (1992), *no.* 3, 479–495. (Manfred Dugas) **93k:20074** 20K05 (65D30)

Hunt, Fern Y. (*with* Miller, Walter M.) On the approximation of invariant measures. *J. Statist. Phys.* **66** (1992), *no.* 1-2, 535–548. (Volker Warstat) **93a:58105** 58F11

Hunt, H. B., III (*with* Rosenkrantz, Daniel J.) The complexity of structural containment and equivalence. *Theoretical studies in computer science*, 101–132, *Academic Press, Boston, MA*, 1992. (Helmut Alt) **93j:68113** 68Q50 (68Q15)

Hunt, J. C. R. Using functions and graphs to understand oil wells and business accounts. (English summary) *New applications of mathematics*, 1–32, *Penguin, New York*, 1991. (*see* **93g:00019**) 00A69

— (*with* Sturge, David) Integrating: mixing paint, newspaper pictures and car exhausts. (English summary) *New applications of mathematics*, 73–98, *Penguin, New York*, 1991. (*see* **93g:00019**) 00A69

— Networks: underground maps, decisions and aerodynamics. (English summary) *New applications of mathematics*, 99–123, *Penguin, New York*, 1991. (*see* **93g:00019**) 00A69

— Developments in computational modelling of turbulent flows. (English summary) *Numerical simulation of unsteady flows and transition to turbulence* (*Lausanne*, 1990), 1–76, *Cambridge Univ. Press, Cambridge*, 1992. (Summary) **93f:76050** 76Fxx (76Mxx)

— *see also* **Turbulence and stochastic processes: Kolmogorov's ideas 50 years on, 93f:76051**

Hunt, John H. V. The uniform properties of Fox's spreads. *Bol. Soc. Mat. Mexicana* (2) **34** (1989), *no.* 1-2, 11–21. (Ivan L. Reilly) **93c:54021** 54E15

— A new proof that the first cohomotopy group of a unicoherent space is trivial. *Bol. Soc. Mat. Mexicana* (2) **35** (1990), *no.* 1, 5–13. (Leonard R. Rubin) **93e:54026** 54F55

Hunt, K. J. (*with* Šebek, Michael) Multivariable LQG self-tuning control with disturbance measurement feedforward. (English summary) *Adaptive systems in control and signal processing*, 1989 (*Glasgow*), 37–42, *IFAC Sympos. Ser.*, 1990, *No.* 1, *Pergamon, Oxford*, 1990. (*see* **93j:93007**) 93E35

— Polynomial LQ synthesis for self-tuning control. (English summary) *Advanced methods in adaptive control for industrial applications* (*Praha*, 1990), 110–127, *Lecture Notes in Control and Inform. Sci.*, 158, *Springer, Berlin*, 1991. (*see* **93c:93003**) 93B50

— Progress in polynomial optimisation. (English summary) *Control '91, Vol.* 1, 2 (*Edinburgh*, 1991), 587–591, *IEE Conf. Publ. Ser.*, 332, *IEE, London*, 1991. (*see* **93h:93007**) 93B52

— (*with* Sbarbaro, D.; Gawthrop, P. J.) Designing nonlinear controllers using connectionist networks. (English summary) *Mathematics of the analysis and design of process control* (*Dublin*, 1991/*Lille*, 1991), 535–540, *North-Holland, Amsterdam*, 1992. (*see* **93g:93004**) 93B52 (68T05)

— (*with* Sbarbaro, D.; Żbikowski, R.; Gawthrop, P. J.) Neural networks for control systems—a survey. (English summary) *Automatica J. IFAC* **28** (1992), *no.* 6, 1083–1112. (Summary) **93i:93002** 93–02 (68T05, 92B20, 93C10, 93C83)

— (*with* Kučera, Vladimír) The standard $\mathcal{H}_2$-optimal control problem: a polynomial solution. *Internat. J. Control* **56** (1992), *no.* 1, 245–251. (D. H. Chyung) **93g:93031** 93B36

— (*with* Šebek, Michael) Polynomial LQ optimization for the standard control structure: scalar solution. (English summary) *Automatica J. IFAC* **29** (1993), *no.* 2, 507–509. 93C10 (93B36)

Huntbach, Matthew Parallel branch-and-bound search in Parlog. (English summary) *Internat. J. Parallel Programming* **20** (1991), *no.* 4, 299–314. 68Q22 (68R05)

Huntebrinker, Wolfgang ★ Numerische Bestimmung von Eigenwerten des Laplace-Operators auf hyperbolischen Räumen mit adaptiven Finite-Element-Methoden. (German) [Numerical determination of eigenvalues of the Laplace operator on hyperbolic spaces with adaptive finite element methods] Bonner Mathematische Schriften [Bonn Mathematical Publications], 225. *Universität Bonn, Mathematisches Institut, Bonn*, 1991. iv+101 *pp.* (Wolfgang Moldenhauer) **93f:65079** 65N25 (65N30)

Hunter, C. (*with* Qian, Edward) Two-integral distribution functions for axisymmetric galaxies. (English summary) *Monthly Notices Roy. Astronom. Soc.* **262** (1993), *no.* 2, 401–428. (Summary) **93m:85004** 85A15

Hunter, D. B. The numerical evaluation of definite integrals affected by singularities near the interval of integration. (English summary) *Numerical integration* (*Bergen*, 1991), 111–120, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 357, *Kluwer Acad. Publ., Dordrecht*, 1992. (Summary) **93h:65033** 65D30

Hunter, Daniel Parallel belief revision. *Uncertainty in artificial intelligence*, 4, 241–251, *Mach. Intell. Pattern Recogn.*, 9, *North-Holland, Amsterdam*, 1990. (Summary) **93b:68080** 68T27 (03B45)

Hunter, Henry F. Some special cases of Bang's inequality. *Proc. Amer. Math. Soc.* **117** (1993), *no.* 3, 819–821. (G. D. Chakerian) **93f:52004** 52A10 (52A40)

Hunter, Jeffrey J. A survey of generalized inverses and their use in applied probability. *Math. Chronicle* **20** (1991), 13–26. (From the introduction) **93h:15006** 15A09 (60J10)

— Stationary distributions and mean first passage times in Markov chains using generalized inverses. (English summary) *Asia-Pacific J. Oper. Res.* **9** (1992), *no.* 2, 145–153. (Summary) **93i:60127** 60J10

Hunter, John K. (*with* Saxton, Ralph) Dynamics of director fields. *SIAM J. Appl. Math.* **51** (1991), *no.* 6, 1498–1521. (M. Shearer) **93a:76005** 76A15 (35C20, 35L70)

— (*with* Brio, Moysey) Mach reflection for the two-dimensional Burgers equation. (English summary) Experimental mathematics: computational issues in nonlinear science (Los Alamos, NM, 1991). *Phys. D* **60** (1992), *no.* 1-4, 194–207. (Summary) **93i:35119** 35Q53 (76L05)

— (*with* Embid, Pedro; Majda, Andrew J.) Simplified asymptotic equations for the transition to detonation in reactive granular materials. (English summary) *SIAM J. Appl. Math.* **52** (1992), *no.* 5, 1199–1237. (Summary) **93f:35139** 35L65 (35C20, 76N15, 76T05, 80A25)

— Interaction of elastic waves. *Stud. Appl. Math.* **86** (1992), *no.* 4, 281–314. (Ion Nistor) **93c:73036** 73D99

— (*with* Brio, Moysey) Asymptotic equations for conservation laws of mixed type. *Wave Motion* **16** (1992), *no.* 1, 57–64. (Alan Jeffrey) **93g:35093** 35L65 (76B99, 76L05)

Hunter, M. N. (*with* Love, E. R.) Expansions in series of Legendre functions. *Proc. London Math. Soc.* (3) **64** (1992), *no.* 3, 579–601. (K. Tandori) **93d:42027** 42C05

Huntsberger, T. L. Data fusion: a neural networks implementation. *Data fusion in robotics and machine intelligence*, 507–535, *Academic Press, Boston, MA*, 1992. (*see* **93g:68002**) 68U05 (68T05)

Hunziker, Herbert (*with* Jarchow, Hans) Composition operators which improve integrability. *Math. Nachr.* **152** (1991), 83–99. (Barbara D. MacCluer) **93d:47061** 47B38 (47B07, 47B65)

Huo, Lin Chun Extension and application of Newton's method in nonlinear oscillation theory. *Appl. Math. Mech.* (*English Ed.*) **13** (1992), *no.* 9, 861–876; *translated from Appl. Math. Mech.* **13** (1992), *no.* 9, 829–842 (*Chinese. English and Chinese summaries*). (W. S. Loud) **93j:34057** 34C25 (34C15, 65L10, 70–08, 70K99)

Huo, Quan Zhong (*with* Zhang, Wei; Li, Li[1]) Heteroclinic orbit and subharmonic bifurcations and chaos of nonlinear oscillator. *Appl. Math. Mech.* (*English Ed.*) **13** (1992), *no.* 3, 217–226; *translated from Appl. Math. Mech.* **13** (1992), *no.* 3, 199–208 (*Chinese. English summary*). (Summary) **93f:34067** 34C23 (34C15, 34C37, 58F14, 70K50)

Huo, Teh Ming A corrigendum: "Money and interest in a cash-in-advance economy" [Econometrica **55** (1987), no. 3, 491–513; MR 88c:90030] by R. E. Lucas, Jr. and N. L. Stokey. With a reply by Lucas and Stokey. *Econometrica* **60** (1992), *no.* 2, 435–442. (From the text) **93d:90015** 90A14

Huo, Tong Ru (*with* Du, Qing Hua; Yao, Zhen Han) Shape optimal design by boundary element method and recursive quadratic programming. *Theory and applications of boundary element methods* (*Beijing*, 1991), 399–406, *Internat. Acad. Publ., Beijing*, 1991. (*see* **93b:65008**) 73V10 (49Q10, 65K10, 65N38)

Huo, Yuan Ji (*with* Wan, Zhe Xian) Nonsymmetric association schemes of symmetric matrices. *Chinese Sci. Bull.* **36** (1991), *no.* 18, 1501–1505. (Llorenç Huguet) **93e:05102** 05E30

— (*with* Li, Feng Gao[2]; Su, Jing Guo) Some nonexistence theorems for cyclic near difference sets of type II. (Chinese) *J. Math.* (*Wuhan*) **11** (1991), *no.* 2, 205–210. (Siu Lun Ma) **93a:05029** 05B10

— (*with* Liu, Yingsheng; Wan, Zhe Xian) Lattices generated by transitive sets of subspaces under finite classical groups. I. *Comm. Algebra* **20** (1992), *no.* 4, 1123–1144. (Martin W. Liebeck) **93b:51008** 51D25 (14L30, 20G40)

— (*with* Liu, Yingsheng; Wan, Zhe Xian) Lattices generated by transitive sets of subspaces under finite classical groups. II. The orthogonal case of odd characteristic. *Comm. Algebra* **20** (1992), *no.* 9, 2685–2727. (Martin W. Liebeck) **93j:20097** 20G40

Huotari, Robert The p-limit selection in uniform approximation. *Approximation theory* (*Memphis, TN*, 1991), 325–328, *Lecture Notes in Pure and Appl. Math.*, 138, *Dekker, New York*, 1992. (*see* **93b:41001**) 41A30 (46E30)

— (*with* Sahab, Salem) Simultaneous monotone approximation in low-order mean. *Bull. Austral. Math. Soc.* **45** (1992), *no.* 3, 423–437. (Catalin Badea) **93d:41015** 41A28 (40A30, 41A30, 41A50)

— (*with* Egger, A.) Pólya properties in $\mathbf{R}^n$. *Numer. Funct. Anal. Optim.* **13** (1992), *no.* 1-2, 123–128. (Summary) **93a:41072** 41A99

Huppert, Bertram A remark on the character-degrees of some p-groups. *Arch. Math.* (*Basel*) **59** (1992), *no.* 4, 313–318. (M. E. Harris) **93g:20016** 20C15

Huq, M. Covariant quantization of broken twisted $N = 2$ superparticle. (English summary) *Internat. J. Modern Phys. A* **7** (1992), *no.* 17, 4053–4071. (Summary) **93e:81136** 81T60 (81T70)

Hur, K. A note on fuzzy ideals of rings. *Collection of papers dedicated to Prof. Jong Geun Park on his sixtieth birthday* (*Korean*), 129–135, *Jeonbug, Seoul*, 1989. (*see* **93d:00041**) 16D99 (04A72)

— (*with* Baik, B. S.; Lim, P.-K.; Rhee, C. J.) Hyperspace contractibility of type $\sin(1/x)$-continua. *J. Korean Math. Soc.* **29** (1992), *no.* 1, 15–42. (Sarah E. Holte) **93h:54008** 54B20 (54F15)

— (*with* Lee, S. W.; Lim, P.-K.; Rhee, C. J.) Set-valued contractibility of hyperspaces. *J. Korean Math. Soc.* **29** (1992), *no.* 2, 341–350. (P. J. Collins) **93m:54056** 54F15 (54B20, 54E35)

Hurd, A. E. A guided tour through nonstandard analysis. *Proceedings of the International Conference on Algebra, Part* 3 (*Novosibirsk*, 1989), 555–564, *Contemp. Math.*, 131, *Part* 3, *Amer. Math. Soc., Providence, RI*, 1992. (Perry Smith) **93k:03064** 03H05 (03C60, 12L12, 12L15, 20A15)

Hurd, Harry L. (*with* Leśkow, Jacek) Estimation of the Fourier coefficient functions and their spectral densities for φ-mixing almost periodically correlated processes. (English summary) *Statist. Probab. Lett.* **14** (1992), *no.* 4, 299–306. (P. A. Morettin) **93h:62172** 62M15 (62M20)

Hurd, James K. (*with* Murphy, Frederic H.) Exploiting special structure in primal dual interior point methods. (English summary) *ORSA J. Comput.* **4** (1992), *no.* 1, 38–44. (K. G. Murty) **93h:90057** 90C05

Hurd, Lyman P. (*with* Kari, Jarkko; Culik, Karel, II) The topological entropy of cellular automata is uncomputable. (English summary) *Ergodic Theory Dynamical Systems* **12** (1992), *no.* 2, 255–265. (M. L. Blank) **93f:58124** 58F08 (68Q80)

— (*with* Barnsley, Michael F.) ★ Fractal image compression. Illustrations by Louisa F. Anson. *A K Peters, Ltd., Wellesley, MA*, 1993. xii+244 *pp. ISBN* 1-56881-000-8 (Gilbert Crombez) **93m:68182** 68U10 (00A69)

Hurd, Spencer P. (*with* Blanton, Earle L., Jr.; McCranie, Judson S.) On a digraph defined by squaring modulo n. *Fibonacci Quart.* **30** (1992), *no.* 4, 322–334. (Kevin Lawrence McAvaney) **93j:05066** 05C20 (05C75, 11A07)

Hurd, T. R. (*with* Dimock, J.) A renormalization group analysis of correlation functions for the dipole gas. *J. Statist. Phys.* **66** (1992), *no.* 5-6, 1277–1318. (Tony C. Dorlas) **93g:82047** 82B28 (82B05)

Hurder, Steven Exceptional minimal sets of $C^{1+\alpha}$-group actions on the circle. *Ergodic Theory Dynamical Systems* **11** (1991), *no.* 3, 455–467. (P. G. Walczak) **93e:58109** 58F11 (58F18)

— (*with* Mitsumatsu, Y.) The intersection product of transverse invariant measures. *Indiana Univ. Math. J.* **40** (1991), *no.* 4, 1169–1183. (Summary) **93b:58114** 58F18 (57R30, 58F11)

— Rigidity for Anosov actions of higher rank lattices. *Ann. of Math.* (2) **135** (1992), *no.* 2, 361–410. (T. N. Venkataramana) **93c:22018** 22E40 (57S30)

Hurkens, A. J. C. (*with* Hurkens, C. A. J.; Whitty, R. W.) On generation of a class of flowgraphs. (English summary) *Fourth Czechoslovakian Symposium on Combinatorics, Graphs and Complexity* (*Prachatice*, 1990), 107–112, *Ann. Discrete Math.*, 51, *North-Holland, Amsterdam*, 1992. (Summary) **93j:05070** 05C20

Hurkens, C. A. J. (*with* Hurkens, A. J. C.; Whitty, R. W.) On generation of a class of flowgraphs. (English summary) *Fourth Czechoslovakian Symposium on Combinatorics, Graphs and Complexity (Prachatice, 1990)*, 107–112, *Ann. Discrete Math.*, 51, *North-Holland, Amsterdam*, 1992. (Summary) **93j:05070** 05C20

Hurlburt, Kelleen R. Sufficiency conditions for theories with recursive models. *Ann. Pure Appl. Logic* **55** (1992), *no.* 3, 305–320. (M. Yasuhara) **93b:03056** 03C57 (03D25)

Hurley, D. G. (*with* Siew, P. F.) A first order correction to the theory for the electromagnetic response of a thin conducting sheet. (English summary) *Mini-Conference on Inverse Problems in Partial Differential Equations (Canberra, 1990)*, 143–166, *Proc. Centre Math. Appl. Austral. Nat. Univ.*, 31, *Austral. Nat. Univ., Canberra*, 1992. (*see* **93i:00020**) 78–08 (78A25)

Hurley, James F. (*with* Hu, Shu An[1]; Tam, Tin Yau) Nonconvexity of the permanental numerical range. (English summary) *Linear Algebra Appl.* **180** (1993), 121–131. (Natalia Bebiano) **93m:15010** 15A15 (15A60)

Hurley, Mike Chain recurrence and attraction in noncompact spaces. *Ergodic Theory Dynamical Systems* **11** (1991), *no.* 4, 709–729. (Romeo F. Thomas) **93b:58096** 58F12 (54H20, 58F15)

Hurley, Thaddeus C. (*with* Sehgal, Sudarshan K.) The Lie dimension subgroup conjecture. *J. Algebra* **143** (1991), *no.* 1, 46–56. (Summary) **93c:20010** 20C10 (20F14)

Hürlimann, T. LPL: a mathematical programming language. (English and German summaries) *OR Spektrum* **15** (1993), *no.* 1, 43–55. (Summary) **93k:90009** 90–08 (90C05)

Hürlimann, Werner Ordering of risks through loss ratios. (English summary) *Insurance Math. Econom.* **11** (1992), *no.* 1, 49–54. (Summary) **93f:62140** 62P05

— On parameter orthogonality to the mean. *Statist. Hefte* **33** (1992), *no.* 1, 69–74. (Prafulchandra N. Jani) **93c:62063** 62F99 (62E10)

— On parameter orthogonality to the mean. (English summary) *Statist. Papers* **33** (1992), *no.* 1, 69–74. (Kurt Hoffmann) **93j:62029** 62E10 (62F10)

Hurrelbrink, Jürgen (*with* Morita, Jun; Rehmann, Ulf) On the homological π_0 of Kac-Moody groups over fields. *Algebraic K-theory, commutative algebra, and algebraic geometry (Santa Margherita Ligure, 1989)*, 71–77, *Contemp. Math.*, 126, *Amer. Math. Soc., Providence, RI*, 1992. (Guy Rousseau) **93f:17040** 17B67 (20F14)

Hurri-Syrjänen, Ritva Unbounded Poincaré domains. (English summary) *Ann. Acad. Sci. Fenn. Ser. A I Math.* **17** (1992), *no.* 2, 409–423. (M. Yu. Vasil'chik) **93k:46022** 46E35 (26D10)

Hurtubise, Jacques Algebraic geometry and completely integrable Hamiltonian systems. *Differential geometry, global analysis, and topology (Halifax, NS, 1990)*, 85–104, *CMS Conf. Proc.*, 12, *Amer. Math. Soc., Providence, RI*, 1991. (C. Tomei) **93e:58085** 58F07 (14K20, 58F05)

— (*with* Boyer, Charles P.; Mann, Benjamin M.; Milgram, R. James) The Atiyah-Jones conjecture. *Bull. Amer. Math. Soc. (N.S.)* **26** (1992), *no.* 2, 317–321. (Martin A. Guest) **93c:55008** 55P35 (14D20, 32G13, 58D27)

— (*with* Kamran, Niky) Projective connections, double fibrations, and formal neighbourhoods of lines. *Math. Ann.* **292** (1992), *no.* 3, 383–409. (Michael G. Eastwood) **93f:32033** 32L25 (34A20, 53A55, 53B10, 53C05)

Huruma, A. K. *see* **Khuruma, A. K.**

Huruya, Tadasi (*with* Chō, Muneo) On the joint spectral radius. *Proc. Roy. Irish Acad. Sect. A* **91** (1991), *no.* 1, 39–44. (Summary) **93d:47010** 47A13 (15A18)

— (*with* Chō, Muneo) A note on the joint operator norm of Hermitian operators on Banach spaces. *Glasgow Math. J.* **34** (1992), *no.* 2, 219–220. (Robin Harte) **93e:47008** 47A13 (15A57, 47B20)

— (*with* Chō, Muneo; Wrobel, Volker) On the joint spectral radius. II. *Proc. Amer. Math. Soc.* **116** (1992), *no.* 4, 987–989. (Summary) **93b:47008** 47A13

Hurvich, Clifford M. (*with* Tsai, Chih-Ling) A corrected Akaike information criterion for vector autoregressive model selection. (English summary) *J. Time Ser. Anal.* **14** (1993), *no.* 3, 271–279. 62M10

Husain, I. (*with* Bector, C. R.; Chandra, Suresh) Sufficient optimality conditions and duality for a continuous-time minmax programming problem. (English summary) *Asia-Pacific J. Oper. Res.* **9** (1992), *no.* 1, 55–76. (Bruce D. Craven) **93j:49028** 49K35 (49N15, 90C45)

— (*with* Bector, C. R.; Durga Prasad, Modekurti Venkata) Constrained continuous-time games and symmetric duality. Proceedings of the Twenty-first Manitoba Conference on Numerical Mathematics and Computing (Winnipeg, MB, 1991). *Congr. Numer.* **87** (1992), 33–42. (Bruce D. Craven) **93c:90105** 90D05 (90C48)

— (*with* Bector, C. R.; Singh, Manohar) Second order symmetric dual continuous-time programming problem. Proceedings of the Twenty-first Manitoba Conference on Numerical Mathematics and Computing (Winnipeg, MB, 1991). *Congr. Numer.* **87** (1992), 107–118. (Bruce D. Craven) **93c:90104** 90C45 (49N15)

— (*with* Bector, C. R.) Duality for multiobjective variational problems. *J. Math. Anal. Appl.* **166** (1992), *no.* 1, 214–229. (Đinh Thế Luc) **93f:90141** 90C29 (49N15)

— (*with* Bector, C. R.; Chandra, Suresh) Generalized continuous fractional programming duality: a parametric approach. (English summary) *Utilitas Math.* **42** (1992), 39–60. (Alberto Cambini) **93k:90094** 90C32 (49N15, 90C45)

Husain, S. I. (*with* Ali, Shahid) Submersions of CR-submanifolds of a nearly Kaehler manifold. I. (Serbo-Croatian summary) *Rad. Mat.* **7** (1991), *no.* 2, 197–205. (Aurel Bejancu) **93c:53040** 53C40 (53C55)

Husain, Saadia (*with* Charniak, Eugene) A new admissible heuristic for minimal-cost proofs. (English summary) *AAAI-91. Proceedings, Ninth National Conference on Artificial Intelligence, Vol.* 1, 2, 446–451, *AAAI Press, Menlo Park, CA*, 1991. (Summary) **93m:68153** 68T27

Husain, Taqdir (*with* El-Helaly, Sherif) Orthogonal bases characterizations of the Banach algebras l_1 and c_0. (English summary) *Math. Japon.* **37** (1992), *no.* 4, 649–655. (Krzysztof Jarosz) **93g:46045** 46H20 (46B15)

Husban, Ahmad The multi-centre travelling salesmen problem. (English and Arabic summaries) *Dirāsāt Ser. B Pure Appl. Sci.* **18** (1991), *no.* 4, 27–40 (1992). 90C27 (90C10)

Husch, L. S. (*with* Duvall, P. F., Jr.) Attractors of iterated function systems. *Proc. Amer. Math. Soc.* **116** (1992), *no.* 1, 279–284. (Y. Kodama) **93d:54057** 54H15 (54E40, 54H20)

Huse-Eastwood, Vera R. (*with* Eastwood, Brian J.) Percentiles for Cramér-von Mises functionals of Gaussian processes and some applications to Bayesian tests. (English summary) *Stochastic Process. Appl.* **42** (1992), *no.* 2, 329–344. (Friedrich Liese) **93j:62136** 62G20 (62E20)

Hušek, Miroslav Čech-Stone-like compactifications for general topological spaces. *Comment. Math. Univ. Carolin.* **33** (1992), *no.* 1, 159–163. (Summary) **93f:54035** 54D35 (54C20)

— (*with* Pelant, Jan) Zdeněk Frolík: 1933–1989. Proceedings of the Symposium on General Topology and Applications (Oxford, 1989). *Topology Appl.* **44** (1992), *no.* 1-3, 11–17. (Editors) **93d:01068** 01A70 (54–03)

Husemoller, D. ★ Lectures on cyclic homology. Lecture notes prepared by R. Sujatha. Tata Institute of Fundamental Research Lectures on Mathematics and Physics, 83. *Published for the Tata Institute of Fundamental Research, Bombay, by Springer-Verlag, Berlin*, 1991. viii+101 *pp. ISBN* 3-540-54667-7 (Guillermo Cortiñas) **93d:19004** 19D55 (18G60, 58B30)

Huseyin, K. (*with* Yu, Pei) Sensitivity analysis of certain dynamic bifurcations. (English summary) *Math. Comput. Modelling* **16** (1992), *no.* 10, 45–58. (Summary) **93f:93091** 93C90 (58F40, 93B52)

— (*with* Wang, S.) "Maple" analysis of nonlinear oscillations. (English summary) *Math. Comput. Modelling* **16** (1992), *no.* 11, 49–57. (Summary) **93g:65007** 65–04 (65L99)

Hušková, Marie Sequentially adaptive nonparametric procedures. *Handbook of sequential analysis*, 459–474, *Statist. Textbooks Monographs*, 118, *Dekker, New York*, 1991. (*see* **93g:62102**) 62L10 (62F35, 62G05, 62G10, 62L12)

Hüsler, J. Dependence in multivariate extreme values. (English summary) *Topics in statistical dependence (Somerset, PA, 1987)*, 269–281, *IMS Lecture Notes Monograph Ser.*, 16, *Inst. Math. Statist., Hayward, CA*, 1990. (Summary) **93g:60048** 60F05 (60G70, 62H05, 62H20)

Huson, Daniel H. (*with* Dress, Andreas W. M.) Les pavages d'anges et de diables. [Heaven and hell tilings] Dual French-English text. *Structural Topology No.* 17 (1991), 25–42. (Hanna Nencka) **93b:52022** 52C20 (00A08)

— (*with* Delgado, Olaf; Zamorzaeva, Elizaveta) The classification of 2-isohedral tilings of the plane. *Geom. Dedicata* **42** (1992), *no.* 1, 43–117. (Ren Ding) **93d:52028** 52C20 (05B45)

inayat-Hussain, A. A. *see* **Inayat-Hussain, A. A.**

Hussain, F. *see* **Hussain, Fazle**

Hussain, Faheem (*with* Thompson, George) Noncommutative geometry and supersymmetry. *Phys. Lett. B* **260** (1991), *no.* 3-4, 359–364. (From the introduction) **93i:58014** 58B30 (58Z05, 81T60)

— (*with* Thompson, George) Noncommutative geometry and supersymmetry. II. *Phys. Lett. B* **265** (1991), *no.* 3-4, 307–310. (Summary) **93i:58015** 58B30 (58Z05, 81T60)

Hussain, Fazle (*with* Broze, George) Spatiotemporal dynamics in transitional jet flow. (English summary) *Nonlinear dynamics of structures (Vladimir Maiakovskiĭ, 1990)*, 391–417, *World Sci. Publishing, River Edge, NJ*, 1991. (*see* **93g:76004**) 76F20 (58F40, 76D25, 76E99)

— (*with* Kunin, I. A.; Zhou, Xiaoliang) Stability of the 4-vortex system. *Internat. J. Engrg. Sci.* **30** (1992), *no.* 9, 1233–1236. (Radyadour Kh. Zeytounian) **93g:76031** 76C05 (58F13, 76E10, 76E30)

— *see also* **Nonlinear dynamics of structures, 93g:76004**

Hussain, Salah El Din S. *see* **Hussein, Salah El Din S.**

Hussain, Z. (*with* Srivastava, Hari M.; Saxena, Ram Kishore) Some generating functions for the Jacobi polynomials. *Comput. Math. Appl.* **23** (1992), *no.* 10, 51–56. (Summary) **93b:33012** 33C45

a-Hussain Ali, A-Hamid *see* **A-Hussain Ali, A-Hamid**

al-Hussaini, A. N. *see* **Al-Hussaini, A. N.**

al-Hussaini, Essam K. *see* **Al-Hussaini, Essam K.**

Hussaini, M. Y. (*with* Lasseigne, D. Glenn) Interaction of disturbances with an oblique detonation wave attached to a wedge. (English summary) *Phys. Fluids A* **5** (1993), *no.* 4, 1047–1058. (Summary) **93k:76074** 76L05 (76E99, 76K05, 80A25)

— *see also* **Instability, transition, and turbulence, 93j:76004**

Hussein, D. (*with* Awad, Adnan M.; Azzam, M.) Some results on the Beurling spaces. (English and Arabic summaries) *Dirāsāt Ser. B Pure Appl. Sci.* **17** (1990), *no.* 2, 62–66. (M. Valdivia) **93m:46041** 46F05 (46A30, 46E10)

— (*with* Asad, A.) The ρ-quasi-center of a Banach algebra. (Arabic summary) *Arabian J. Sci. Engrg.* **16** (1991), *no.* 4, 471–474. (Peter Dixon) **93d:46077** 46H05

Hussein, Mohammad L. On convex vector optimization problems with possibilistic weights. (English summary) *Fuzzy Sets and Systems* **51** (1992), *no.* 3, 289–294. (Đinh Thế Luc) **93k:90103** 90C70 (04A72, 90C25, 90C29)

— Qualitative analysis of basic notions in an iterative approach to possibilistic goal programming. (English summary) *Fuzzy Sets and Systems* **54** (1993), *no.* 1, 39–46. 90C70 (04A72)

Hussein, Mounira Ahmed Alternative estimators for stratified random sampling. (English summary) *Egyptian Statist. J.* **35** (1991), *no.* 2, 298–306. 62D05

Hussein, Salah El Din S. (*with* Van Oystaeyen, Freddy) Control subgroups for group graded rings. *Comm. Algebra* **20** (1992), *no.* 8, 2219–2237. (E. Jespers) **93e:16057** 16W50 (16S34)

— (*with* Van Oystaeyen, Freddy) Note on inertia properties of filtrations on group graded rings and modules. (English summary) *Comm. Algebra* **20** (1992), *no.* 10, 3027–3041. (Blas Torrecillas Jover) **93f:16040** 16W50

Hussin, V. (*with* Gazeau, Jean-Pierre) Poincaré contraction of SU(1, 1) Fock-Bargmann structure. *J. Phys. A* **25** (1992), *no.* 6, 1549–1573. (J.-P. Antoine) **93k:81128** 81S30 (22E70, 81R05, 81S10)

— (*with* Winternitz, Pavel; Zassenhaus, H.) Maximal abelian subalgebras of pseudo-orthogonal Lie algebras. (French summary) *Linear Algebra Appl.* **173** (1992), 125–163. (Yong Zheng Zhang) **93f:17015** 17B05

Hustad, Otte Upper semi-continuity of convex functions and openness of affine maps. *Math. Scand.* **70** (1992), *no.* 1, 43–77. (Constantin Zălinescu) **93f:52002** 52A07 (46A03, 46N10)

Huston, T. E. (*with* Davies, K. T. R.; Baranger, M.) Calculations of periodic trajectories for the Hénon-Heiles Hamiltonian using the monodromy method. *Chaos* **2** (1992), *no.* 2, 215–224. (Richard C. Churchill) **93f:58072** 58F05 (34C25, 58F10, 58F14, 58F22, 70H05)

Hutcheson, K. (*with* McCormick, William P.; Lyons, N. I.) Distributional properties of Jaccard's index of similarity. *Comm. Statist. Theory Methods* **21** (1992), *no.* 1, 51–68.

(Tapas K. Chandra) **93e:62046** 62E15 (62P10)

Hutchinson, D. (*with* Khalaf, B. M. S.) Parallel algorithms for initial value problems: parallel shooting. *Parallel Comput.* **18** (1992), *no.* 6, 661–673. (Summary) **93b:65218** 65Y05

Hutchinson, Joan P. (*with* Dean, Alice M.) Relations among embedding parameters for graphs. *Graph theory, combinatorics, and applications, Vol.* 1 (*Kalamazoo, MI*, 1988), 287–296, *Wiley-Intersci. Publ., Wiley, New York*, 1991. (Summary) **93c:05045** 05C10

— (*with* Griggs, Jerrold R.) On the *r*-domination number of a graph. Special volume to mark the centennial of Julius Petersen's "Die Theorie der regulären Graphs", Part II. *Discrete Math.* **101** (1992), *no.* 1-3, 65–72. (Gary MacGillivray) **93h:05100** 05C35

Hutchinson, S. A. (*with* Kak, A. C.) Multisensor strategies using Dempster-Shafer belief accumulation. *Data fusion in robotics and machine intelligence*, 165–209, *Academic Press, Boston, MA*, 1992. (*see* **93g:68002**) 68U05 (68T30)

Hutchinson, T. P. (*with* Ke, Y.) ★ Index to corrections, addenda, and comments that were published in statistics journals, 1970–1991. *Rumsby Scientific Publishing, Adelaide*, 1992. x+296 *pp. ISBN* 0-646-08328-7 (From the introduction) **93d:62001** 62–00

Hutson, Jan E. Undecidability in an adaptive system. (English summary) 1990 *lectures in complex systems* (*Santa Fe, NM*, 1990), 521–526, *Santa Fe Inst. Stud. Sci. Complexity Lectures, III, Addison-Wesley, Redwood City, CA*, 1991. (Summary) **93i:68066** 68Q05 (03D10)

Hutson, V. C. L. (*with* Burton, T. A.) Permanence for nonautonomous predator-prey systems. *Differential Integral Equations* **4** (1991), *no.* 6, 1269–1280. (H. I. Freedman) **93f:34019** 34A34 (34C35, 34D99, 92D40)

— Asymptotics in some biological models. *Wave asymptotics* (*Manchester*, 1990), 86–106, *Cambridge Univ. Press, Cambridge*, 1992. (Peter Moson) **93g:34071** 34C35 (34D40, 35K57, 92D25)

— (*with* Vickers, G. T.) Travelling waves and dominance of ESSs. *J. Math. Biol.* **30** (1992), *no.* 5, 457–471. (Claudia Simionescu-Badea) **93g:90112** 90D80 (35K40, 90D40, 92D15)

— (*with* Schmitt, Klaus) Permanence and the dynamics of biological systems. (English summary) *Math. Biosci.* **111** (1992), *no.* 1, 1–71. (Summary) **93d:92003** 92B05 (92D40)

Huttenlocher, Daniel P. (*with* Kedem, Klara; Kleinberg, Jon M.) Voronoĭ diagrams of rigidly moving sets of points. (English summary) *Inform. Process. Lett.* **43** (1992), *no.* 4, 217–223. (Summary) **93k:68102** 68U05 (68Q25)

Hutter, Kolumban (*with* Haupt, Peter; Pao, Yih Hsing) Theory of incremental motion in a body with initial elastoplastic deformation. (English and German summaries) *J. Elasticity* **28** (1992), *no.* 3, 193–221. (Summary) **93f:73046** 73E05 (73B99, 73C50, 73E70)

Huttner, Marc Problème de Riemann effectif et approximants de Padé-Hermite. (English summary) [Effective Riemann problem and Padé-Hermite approximants] *Approximations diophantiennes et nombres transcendants* (*Luminy*, 1990), 173–193, *de Gruyter, Berlin*, 1992. (F. Beukers) **93j:11044** 11J61 (32G34, 32S40, 33C05, 34A20)

Hutton, Graham Higher-order functions for parsing. (English summary) *J. Funct. Programming* **2** (1992), *no.* 3, 323–343. (Summary) **93h:68077** 68Q52

Hutton, J. E. (*with* Ogunyemi, O. T.; Nelson, Paul I.) Simplified and two-stage quasi-likelihood estimators. *Estimating functions*, 169–187, *Oxford Statist. Sci. Ser.*, 7, *Oxford Univ. Press, New York*, 1991. (Summary) **93a:62120** 62M09

Hutton, Michael D. (*with* Lubiw, Anna) Upward planar drawing of single source acyclic digraphs. (English summary) *Planar graphs* (*New Brunswick, NJ*, 1991), 41–57, *DIMACS Ser. Discrete Math. Theoret. Comput. Sci.*, 9, *Amer. Math. Soc., Providence, RI*, 1993. (*see* **93m:05005**) 05C10 (05C85, 06A07, 68Q20, 68R10)

nguyễn Hữ'u Anh *see* **Nguyễn Hữ'u Anh**

nguyen Huu Cong *see* **Nguyen Huu Cong**

nguyen Huu Dien *see* **Nguyen Huu Dien**

nguyễn Hữ'u Du' *see* **Nguyễn Hữ'u Du'**

nguyễn Hữ'u Đứ'c *see* **Nguyễn Hữ'u Đứ'c**

Huuskonen, Taneli The construction of a definable noncategorical domain. *Z. Math. Logik Grundlag. Math.* **37** (1991), *no.* 3, 217–226. (A. Lévy) **93h:03052** 03C65 (03E47, 30C35)

phạm Hữ'u Tiệp *see* **Phạm Hữ'u Tiệp**

Huxley, Martin N. Area, lattice points and exponential sums. *Proceedings of the International Congress of Mathematicians, Vol. I, II* (*Kyoto*, 1990), 413–417, *Math. Soc. Japan, Tokyo*, 1991. (Wolfgang Müller) **93f:11060** 11L07 (11P21, 11P55)

— Exponential sums and the Riemann zeta function. IV. (English summary) *Proc. London Math. Soc.* (3) **66** (1993), *no.* 1, 1–40. (Matti Jutila) **93j:11056** 11L15 (11M06)

— Corrigenda: "Exponential sums and lattice points" [Proc. London Math. Soc. (3) **60** (1990), no. 3, 471–502; MR 91m:11082]. *Proc. London Math. Soc.* (3) **66** (1993), *no.* 1, 70. (Editors) **93h:11111** 11P21 (11L07, 11P55)

— (*with* Kolesnik, G.) Corrigenda: "Exponential sums and the Riemann zeta function. III" [Proc. London Math. Soc. (3) **62** (1991), no. 3, 449–468; MR 92d:11089]. *Proc. London Math. Soc.* (3) **66** (1993), *no.* 2, 302. (Editors) **93k:11073** 11L15 (11L40, 11M06, 11P05)

phan trung Huy *see* **Phan Trung Huy**

ngô Huy Can *see* **Ngô Huy Can**

van Huyck, John B. *see* **Van Huyck, John B.**

Huygens, Christiaan *see* **Wolf, Emil, 93d:01023** *and* **de Lang, H., 93d:01024**

hà Huy Khoái *see* **Hà Huy Khoái**

dinh van Huynh *see* **Dinh Van Huynh**

Huynh, Dinh van *see* **Dinh Van Huynh**

Huỳnh, Dũng T. Efficient detectors and constructors for simple languages. *Internat. J. Found. Comput. Sci.* **2** (1991), *no.* 3, 183–205. (Summary) **93b:68043** 68Q45 (68Q25)

— (*with* Cho, Sang) The parallel complexity of coarsest set partition problems. *Inform. Process. Lett.* **42** (1992), *no.* 2, 89–94. 68Q25

— The complexity of deciding code and monoid properties for regular sets. *Internat. J. Algebra Comput.* **2** (1992), *no.* 1, 39–55. (Jean-Marc Piveteau) **93g:68043** 68Q15 (68Q50, 68Q68)

— Nonuniform complexity and the randomness of certain complete languages. *Theoret. Comput. Sci.* **96** (1992), *no.* 2, 305–324. (Joos Heintz) **93h:68071** 68Q45 (03D05, 03D15, 68Q15)

Huynh, Tien (*with* Joskowicz, Leo; Lassez, Catherine; Lassez, Jean-Louis) Practical tools for reasoning about linear constraints. *Fund. Inform.* **15** (1991), *no.* 3-4, 357–379. (Summary) **93a:68134** 68T27

nguyễn Huỳnh Phán *see* **Nguyễn Huỳnh Phán**

Huynh-Servet, Madeleine (*with* Pichon, Guy) Distribution de Boltzmann discrète sur un fibré tangent. (English summary) [Discrete Boltzmann distribution on a tangent bundle] *J. Math. Pures Appl.* (9) **71** (1992), *no.* 1, 21–32. (Jaime Muñoz Masqué) **93a:58004** 58A30 (58F40, 82C40)

đặng Huy Ruận *see* **Đặng Huy Ruận**

nguyen Huy Xuong *see* **Nguyen Huy Xuong**

al-Huzali, A. H. *see* **Al-Huzali, A. H.**

Huzii, Mituaki (*with* Tanaka, Minoru[2]) Some properties of moving-average model fittings. *J. Japan Statist. Soc.* **22** (1992), *no.* 1, 33–44. (J. K. Ord) **93j:62231** 62M10

Huzurbazar, S. (*with* Butler, Ronald W.; Booth, James G.) Saddlepoint approximations for tests of block independence, sphericity and equal variances and covariances. (English summary) *J. Roy. Statist. Soc. Ser. B* **55** (1993), *no.* 1, 171–183. 62E20 (62H10)

Hveberg, Ranoo (*with* Srivastava, Jagdish N.) Sequential factorial probing designs for identifying and estimating nonnegligible factorial effects for the 2^m experiment under the tree structure. *J. Statist. Plann. Inference* **30** (1992), *no.* 2, 141–162. 62K15

Hwang, Chii-Ruey *see* **Huang, Ch'i Jui**

Hwang, Ching Lai (*with* Lai, Young-Jou) Interactive fuzzy linear programming. *Fuzzy Sets and Systems* **45** (1992), *no.* 2, 169–183. (Summary) **93h:90104** 90C70 (04A72, 90C05)

— (*with* Lai, Young-Jou) A new approach to some possibilistic linear programming problems. (English summary) *Fuzzy Sets and Systems* **49** (1992), *no.* 2, 121–133. (Friedrich Pukelsheim) **93h:90105** 90C70 (90C08)

— (*with* Lai, Young-Jou) IFLP-II: a decision support system. (English summary) *Fuzzy Sets and Systems* **54** (1993), *no.* 1, 47–56. 90C70 (04A72, 90B50)

Hwang, Chyi *see* **Huang, Ch'i**

Hwang, D. M. (*with* Kelley, C. T.) Convergence of Broyden's method in Banach spaces. *SIAM J. Optim.* **2** (1992), *no.* 3, 505–532. (Jing Xian Sun) **93g:65086** 65J15 (47H17, 90C48)

Hwang, F. K. (*with* Du, Ding Zhu) An approach for proving lower bounds: solution of Gilbert-Pollak's conjecture on Steiner ratio. 31*st Annual Symposium on Foundations of Computer Science, Vol. I, II* (*St. Louis, MO*, 1990), 76–85, *IEEE Comput. Soc. Press, Los Alamitos, CA*, 1990. (Summary) **93a:90075** 90C35 (05C05, 68R10)

— (*with* Du, Ding Zhu; Hsu, D. Frank; Zhang, Xian Mo) The Hamiltonian property of generalized de Bruijn digraphs. *J. Combin. Theory Ser. B* **52** (1991), *no.* 1, 1–8. (Arthur M. Hobbs) **93b:05105** 05C45

— (*with* Li, Wen-Ch'ing Winnie) Reliabilities of double-loop networks. (English summary) *Probab. Engrg. Inform. Sci.* **5** (1991), *no.* 3, 255–272. (Summary) **93e:05057** 05C40 (90B25)

— (*with* Hu, Xiao Dong) An improved upper bound for the subarray partial concentrators. (English summary) *Discrete Appl. Math.* **37/38** (1992), 341–346. (Summary) **93g:94034** 94C10 (68M10)

— (*with* Richards, G. W.) The capacity of the subarray partial concentrators. (English summary) *Discrete Appl. Math.* **39** (1992), *no.* 3, 231–240. (Summary) **93i:05078** 05C35

— (*with* Cheng, Ying; Akyildiz, I. F.; Hsu, D. Frank) Routing algorithms for double loop networks. (English summary) *Internat. J. Found. Comput. Sci.* **3** (1992), *no.* 3, 323–331. (Summary) **93m:68013** 68M10 (68Q25)

— (*with* Hu, Xiao Dong) Reliabilities of chordal rings. *Networks* **22** (1992), *no.* 5, 487–501. (Summary) **93k:05100** 05C40 (68M10, 68R10)

— (*with* Rothblum, Uriel G.) Generalization of an engineering principle. (English summary) *Oper. Res. Lett.* **12** (1992), *no.* 4, 197–199. (Summary) **93f:90081** 90B25

— (*with* Du, Ding Zhu) Reducing the Steiner problem in a normed space. (English summary) *SIAM J. Comput.* **21** (1992), *no.* 6, 1001–1007. (Gerard Sierksma) **93j:52018** 52B12 (90C27)

— (*with* Richards, G. W.) A two-stage network with dual partial concentrators. (English summary) *Networks* **23** (1993), *no.* 1, 53–58. (Summary) **93h:90035** 90B12 (05C90)

Hwang, Geum-Sug (*with* Brualdi, Richard A.) Generalized transitive tournaments and doubly stochastic matrices. Second NIU Conference on Linear Algebra, Numerical Linear Algebra and Applications (DeKalb, IL, 1991). *Linear Algebra Appl.* **172** (1992), 151–168. (Adolf Rhodius) **93g:15013** 15A51 (05C50)

Hwang, Guang Chyan (*with* Lin, Shih Ch'ang) A stability approach to fuzzy control design for nonlinear systems. (English summary) *Fuzzy Sets and Systems* **48** (1992), *no.* 3, 279–287. (J. J. Buckley) **93f:93080** 93C42 (04A72)

Hwang, Hyung-Tae (*with* Kim, Woo Chul) Empirical Bayesian multiple comparisons with the best. *J. Korean Statist. Soc.* **20** (1991), *no.* 2, 108–117. (Summary) **93f:62006** 62C12 (62J15)

Hwang, Jiunn Tzon (*with* Casella, George; Robert, Christian P.; Wells, Martin T.; Farrell, Roger H.) Estimation of accuracy in testing. *Ann. Statist.* **20** (1992), *no.* 1, 490–509. (A. L. Rukhin) **93a:62020** 62F03 (62A99, 62C07, 62C15)

— (*with* Liu, Hung-Kung) Existence and nonexistence theorems of finite diameter sequential confidence regions for errors-in-variables models. *Statist. Probab. Lett.* **13** (1992), *no.* 1, 45–55. (K. F. Yu) **93a:62045** 62F25 (62L12)

Hwang, K. C. *see* **Huang, Ke Zhi**

Hwang, L. J. (*with* Al-Khalidi, H. R.) Some pitfalls of tests of separate families of hypotheses: normality vs. lognormality. *Comm. Statist. Theory Methods* **20** (1991), *no.* 8, 2505–2528. (Adnan M. Awad) **93c:62028** 62F03 (62F05)

— (*with* Burch, J. R.; Clarke, E. M.; McMillan, K. L.; Dill, D. L.) Symbolic model checking: 10^{20} states and beyond. Selections from the 1990 IEEE Symposium on Logic in Computer Science. *Inform. and Comput.* **98** (1992), *no.* 2, 142–170. (Summary) **93c:68065** 68Q60

Hwang, Leng Cheng Empirical Bayes approach to Bayes sequential estimation: the Poisson and Bernoulli cases. (English summary) *Comm. Statist. Theory Methods* **21** (1992), *no.* 8, 2293–2308. (B. L. S. Prakasa Rao) **93m:62182** 62L12

Hwang, Ming Chorng (*with* Han, Anthony Fu Wha) Location-search-based heuristic methods for set covering problems. (English summary) *Optimization, Vol.* 1, 2 (*Singapore*, 1992), 187–196, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93d:90005**) 90C27

Hwang, R. Z. (*with* Lee, R. C. T.; Chang, Ruei Chuan) The slab dividing approach to solve the Euclidean *P*-center problem. (English summary) *Algorithmica* **9** (1993), *no.* 1, 1–22. (Summary) **93k:68103** 68U05 (68Q25, 90B80)

— (*with* Chang, Ruei Chuan; Lee, R. C. T.) The searching over separators strategy to solve some NP-hard problems in subexponential time. (English summary) *Algorithmica* **9** (1993), *no.* 4, 398–423. (Summary) **93m:65189** 65U05 (68Q25)

Hwang, Shin Feng *see* **Huang, Hsin Fêng**

Hwang, Suk Geun (*with* Cheon, Gi-Sang) Maximization of a matrix function related to the Dittert conjecture. *Linear Algebra Appl.* **165** (1992), 153–165. (Peter M. Gibson) **93c:15006** 15A15

Hwang, Sunwook Characterizations of $C(X, \tau)$ among its subalgebras. *Function spaces (Edwardsville, IL, 1990)*, 211–222, *Lecture Notes in Pure and Appl. Math.*, 136, *Dekker, New York*, 1992. (Christopher C. White) **93c:46094** 46J10 (46E25)

Hwang, T. (*with* Parsons, I. D.) A multigrid method for the generalized symmetric eigenvalue problem. I. Algorithm and implementation. (English summary) *Internat. J. Numer. Methods Engrg.* **35** (1992), *no.* 8, 1663–1676. (Summary) **93j:65173** 65N25 (65F15)

— (*with* Parsons, I. D.) A multigrid method for the generalized symmetric eigenvalue problem. II. Performance evaluation. (English summary) *Internat. J. Numer. Methods Engrg.* **35** (1992), *no.* 8, 1677–1696. (Summary) **93j:65174** 65N25 (65F15)

Hwang, Tsung Min (*with* Lin, Wen Wei; Yang, Eugene K.) Rank revealing *LU* factorizations. (English summary) *Linear Algebra Appl.* **175** (1992), 115–141. (Mei-Qin Chen) **93i:15016** 15A23 (65F30)

Hwang, Tzonelih Attacks on Okamoto and Tanaka's one-way ID-based key distribution system. (English summary) *Inform. Process. Lett.* **43** (1992), *no.* 2, 83–86. 68P25

— (*with* Sun, Hung Min) On double-one matrices and double-zero matrices. (English summary) *Linear and Multilinear Algebra* **31** (1992), *no.* 1-4, 47–55. (A. D. Porter) **93m:15026** 15A36

Hwang, Tzy Wei (*with* Wang, Ch'ing An) On multiple solutions for Berman's problem. (English summary) *Proc. Roy. Soc. Edinburgh Sect. A* **121** (1992), *no.* 3-4, 219–230. (Summary) **93f:34041** 34B15 (76D05)

Hwang, Wei-Shien (*with* Chwang, Allen T.) The swirling round laminar jet. *J. Engrg. Math.* **26** (1992), *no.* 2, 339–348. (Summary) **93f:76035** 76D25

Hwang, Wen Liang (*with* Mallat, Stephane) Characterization of singularities. (English summary) *Probabilistic and stochastic methods in analysis, with applications (Il Ciocco, 1991)*, 47–100, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 372, *Kluwer Acad. Publ., Dordrecht*, 1992. (Summary) **93h:94005** 94A11 (42C15, 94A12)

— (*with* Mallat, Stephane) Singularity detection and processing with wavelets. *IEEE Trans. Inform. Theory* **38** (1992), *no.* 2, *part* 2, 617–643. (Summary) **93b:94007** 94A12 (42C15, 94A11)

Hwu, Chyan Bin Thermoelastic interface crack problems in dissimilar anisotropic media. *Internat. J. Solids Structures* **29** (1992), *no.* 16, 2077–2090. (Summary) **93c:73083** 73M25

— Explicit solutions for collinear interface crack problems. (English summary) *Internat. J. Solids Structures* **30** (1993), *no.* 3, 301–312. (Summary) **93i:73041** 73M25 (73B40)

Hwu, Zhong Her (*with* Wu, Kuang Chong; Chiu, Yu Tsung) A new boundary integral equation formulation for linear elastic solids. (English summary) *Trans. ASME J. Appl. Mech.* **59** (1992), *no.* 2, *part* 1, 344–348. (Summary) **93c:73100** 73V10 (73C02)

Hyakutake, Hiroto Selecting the better component of a bivariate exponential distribution. *Statist. Decisions* **10** (1992), *no.* 1-2, 153–162. (I. D. Dhariyal) **93g:62039** 62F07

Hyb, Wojciech The Bergman function of the tube over an open ball. *Classical analysis (Kazimierz Dolny, 1991)*, 17–28, *World Sci. Publishing, River Edge, NJ*, 1992. (Daniel H. Luecking) **93h:32031** 32H10

Hyde, S. T. (*with* Fogden, A.) Parametrization of triply periodic minimal surfaces. I. Mathematical basis of the construction algorithm for the regular class. *Acta Cryst. Sect. A* **48** (1992), *no.* 4, 442–451. (Summary) **93c:53002** 53A10

Hyers, Donald H. (*with* Rassias, Themistocles M.) Approximate homomorphisms. (English summary) *Aequationes Math.* **44** (1992), *no.* 2-3, 125–153. (A. Smajdor) **93i:39007** 39B72 (39B52)

Hyland, J. M. E. First steps in synthetic domain theory. *Category theory (Como, 1990)*, 131–156, *Lecture Notes in Math.*, 1488, *Springer, Berlin*, 1991. (Wesley Phoa) **93g:68075** 68Q55 (03D75, 18B99)

Hylton, Peter The vicious circle principle. Comments on: "Russell and the vicious circle principle" [Philos. Stud. **65** (1992), no. 1-2, 169–182; MR 93e:03002] by P. de Rouilhan. *Philos. Stud.* **65** (1992), *no.* 1-2, 183–191. (Francisco A. Rodriguez Consuegra) **93e:03003** 03-03 (01A60, 03A05)

Hyman, Anthony *see* **Babbage, Charles, 93i:01029**

Hyman, James M. (*with* Knapp, Robert J.; Scovel, James C.) High order finite volume approximations of differential operators on nonuniform grids. (English summary) Experimental mathematics: computational issues in nonlinear science (Los Alamos, NM, 1991). *Phys. D* **60** (1992), *no.* 1-4, 112–138. (Summary) **93i:65110** 65N30

— *see also* **Experimental mathematics: computational issues in nonlinear sciences, 93f:00012**

Hymo, John A. (*with* Parry, Charles J.) On relative integral bases for pure quartic fields. *Indian J. Pure Appl. Math.* **23** (1992), *no.* 5, 359–376. (Juraj Kostra) **93g:11106** 11R16 (11R04)

— (*with* Parry, Charles J.) Steinitz classes of order 2 in quadratic and quartic fields. *J. Number Theory* **41** (1992), *no.* 2, 218–224. (T. Metsänkylä) **93e:11132** 11R29 (11R11, 11R16)

Hyndman, Jennifer (*with* McKenzie, Ralph; Taylor, Walter F.) k-ary monoids of term operations. *Semigroup Forum* **44** (1992), *no.* 1, 21–52. (From the introduction) **93g:20120** 20M20

Hyodo, Osamu On the de Rham-Witt complex attached to a semi-stable family. *Compositio Math.* **78** (1991), *no.* 3, 241–260. (Editors) **93c:14022** 14F40 (14J15)

Hyodo, Yoshifumi Characteristic polynomials of information matrices of some balanced fractional 2^m factorial designs of resolution $2l + 1$. *J. Statist. Plann. Inference* **31** (1992), *no.* 2, 245–252. (Damaraju Raghavarao) **93h:62139** 62K15 (05B15)

— (*with* Yamamoto, Sumiyasu; Fujii, Yoshio; Yumiba, Hiromu) Classification of two-symbol orthogonal arrays of strength 2, size 16, 15 (maximal) constraints and index 4. *SUT J. Math.* **28** (1992), *no.* 1, 47–59. (I. M. Chakravarti) **93m:62176** 62K10 (05B15)

— (*with* Yamamoto, Sumiyasu; Fujii, Yoshio; Yumiba, Hiromu) Classification of two-symbol orthogonal arrays of strength 2, size 20 and 19 (maximal) constraints. (English summary) *SUT J. Math.* **28** (1992), *no.* 2, 191–209. (Summary) **93k:62158** 62K10 (05B15)

Hyslop, Gregory L. (*with* Schättler, Heinz M.; Tarn, Tzyh Jong) A new method for finding optimal periodic amplification functions in output feedback. (Russian) *Optimization: models, methods, solutions (Russian) (Irkutsk, 1989)*, 269–287, "*Nauka*" *Sibirsk. Otdel., Novosibirsk*, 1992. (*see* **93k:90002**) 93B52 (49N35)

— (*with* Schättler, Heinz M.; Tarn, Tzyh Jong) Descent algorithms for optimal periodic output feedback control. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 12, 1893–1904. (Krystyn Styczeń) **93m:49014** 49M07 (49N10, 49N20, 49N35, 93B52)

Hyttinen, Tapani (*with* Tuuri, Heikki) Constructing strongly equivalent nonisomorphic models for unstable theories. *Ann. Pure Appl. Logic* **52** (1991), *no.* 3, 203–248. (John T. Baldwin) **93b:03047** 03C45

— Preservation by homomorphisms and infinitary languages. *Notre Dame J. Formal Logic* **32** (1991), *no.* 2, 167–172. (Yu. G. Ventsov) **93i:03045** 03C40 (03C75)

— On κ-complete reduced products. *Arch. Math. Logic* **31** (1992), *no.* 3, 193–199. (G. Cherlin) **93e:03046** 03C20 (03C75)

Hyun, Seungjoon (*with* Günaydin, Murat) Ternary algebraic approach to extended superconformal algebras. *Nuclear Phys. B* **373** (1992), *no.* 3, 688–712. (Andrèj K. Kwaśniewski) **93b:81095** 81R10 (17A40, 81T40)

Hyvönen, Eero Constraint reasoning based on interval arithmetic: the tolerance propagation approach. (English summary) *Artificial Intelligence* **58** (1992), *no.* 1-3, 71–112. 68T27

–I–

Iachello, F. (*with* Van Isacker, P.) ★ The interacting boson-fermion model. Cambridge Monographs on Mathematical Physics. *Cambridge University Press, Cambridge*, 1991. x+312 *pp. ISBN* 0-521-38092-8 (From the preface) **93m:81163** 81V35 (81–02)

— q-algebras as spectrum generating algebras. (English summary) *Group theory and special symmetries in nuclear physics (Ann Arbor, MI, 1991)*, 211–218, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93e:81150**) 81V15 (81R50, 81V22)

de Iaco, Bettina *see* **De Iaco, Bettina**

Iacob, Caius *see* **Dragoş, Lazăr et al.** *and* **Obituary: Iacob, Caius**

Iagolnitzer, D. Multiparticle structure and Wilson short-distance expansion in field theories. *Constructive quantum field theory, II (Erice, 1988)*, 327–328, *NATO Adv. Sci. Inst. Ser. B Phys.*, 234, *Plenum, New York*, 1990. (*see* **93g:81074**) 81T10

— Causality in local quantum field theory: some general results. *Comm. Math. Phys.* **144** (1992), *no.* 2, 235–255. (Asao Arai) **93c:81103** 81T05 (42B10, 46N50)

Iaia, Joseph A. Isometric embeddings of surfaces with nonnegative curvature in $\mathbb{R}^3$. *Duke Math. J.* **67** (1992), *no.* 2, 423–459. (Philippe Delanoë) **93i:53004** 53A05 (35J60, 53C21)

— The Weyl problem for surfaces of nonnegative curvature. *Geometric analysis and nonlinear partial differential equations (Denton, TX, 1990)*, 213–220, *Lecture Notes in Pure and Appl. Math.*, 144, *Dekker, New York*, 1993. (Vladislav Goldberg) **93k:53062** 53C42

Iakovidis, Ilias (*with* Martin, Clyde Franklin) A model study of instability of the inverse problem in electrocardiography. *Math. Biosci.* **107** (1991), *no.* 1, 127–148. (Stavros Busenberg) **93b:92007** 92C50 (35J25, 35R30)

— (*with* Gulrajani, Ramesh M.) Improving Tikhonov regularization with linearly constrained optimization: application to the inverse epicardial potential solution. (English summary) *Math. Biosci.* **112** (1992), *no.* 1, 55–80. 92Cxx (90Cxx)

Iakovidis, K. G. (*with* Dionysiou, D. D.; Zois, A. K.) Artificial satellites and the three-body problem: a general case. *Astrophys. Space Sci.* **186** (1991), *no.* 1, 101–108. (Summary) **93a:70027** 70M20 (70F07)

Ianiro, N. (*with* Triolo, L.) Initial-boundary value problem for a model Boltzmann equation. (English summary) *Probabilistic methods in mathematical physics (Siena, 1991)*, 256–261, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93h:82055** 82C40

Iankov, P. K. Of the singular points on the periphery of the disk of m-meromorphy of a power series. *C. R. Acad. Bulgare Sci.* **45** (1992), *no.* 5, 19–21. (From the text) **93m:30004** 30B10

— On some qualitative characters of the functions defined by the Taylor series. *C. R. Acad. Bulgare Sci.* **45** (1992), *no.* 6, 13–15. (From the text) **93k:30003** 30B10

Iannacci, Rita (*with* Ding, Tong Ren; Zanolin, Fabio) On periodic solutions of sublinear Duffing equations. *J. Math. Anal. Appl.* **158** (1991), *no.* 2, 316–332. (Jean Mawhin) **93j:34052** 34C25 (34C15)

Iannelli, Angela Bounded and almost-periodic solutions of a Navier-Stokes type equation. *Rend. Accad. Naz. Sci. XL Mem. Mat.* (5) **15** (1991), 71–91. (Nicolae H. Pavel) **93d:35116** 35Q30 (35B15, 76D05)

Iannelli, G. S. (*with* Baker, Allen Jerome) A non-linearly stable implicit finite element algorithm for hypersonic aerodynamics. The Second World Congress of Computational Mechanics, Part II (Stuttgart, 1990). *Internat. J. Numer. Methods Engrg.* **34** (1992), *no.* 2, 419–441. (Summary) **93a:76067** 76M10 (65N30, 76K05)

Iannelli, Mimmo (*with* Busenberg, Stavros N.; Thieme, Horst R.) Global behavior of an age-structured epidemic model. *SIAM J. Math. Anal.* **22** (1991), *no.* 4, 1065–1080. (J. Milota) **93a:92015** 92D30 (35L50, 35L60, 47H20, 47N20)

— (*with* Milner, Fabio A.; Pugliese, Andrea) Analytical and numerical results for the age-structured S-I-S epidemic model with mixed inter-intracohort transmission. *SIAM J. Math. Anal.* **23** (1992), *no.* 3, 662–688. (Qi Xiao Ye) **93e:92017** 92D30 (35L40, 65M25, 92–04)

— (*with* Barbu, Viorel) Approximating some nonlinear equations by a fractional step scheme. *Differential Integral Equations* **6** (1993), *no.* 1, 15–26. (G. F. Webb) **93j:34088** 34G20 (34K30, 47H20, 47N20)

Ianuş, Stere (*with* Ornea, Liviu; Matsumoto, Koji) Immersions sphériques dans une variété de Hopf généralisée. (English and French summaries) [Spherical immersions in a generalized Hopf manifold] *C. R. Acad. Sci. Paris Sér. I Math.* **316** (1993), *no.* 1, 63–66. (Seiichi Yamaguchi) **93m:53067** 53C42 (53C55)

Iarrobino, Anthony (*with* Bernstein, David H.) A nonunimodal graded Gorenstein Artin algebra in codimension five. *Comm. Algebra* **20** (1992), *no.* 8, 2323–2336. (Sverre O. Smalø) **93i:13012** 13E10 (13A02, 13H10)

Ibañez, J. (*with* Feinstein, Alexander) Potential flow around a massless particle in general relativity. (English summary) *Phys. Lett. A* **171** (1992), *no.* 1-2, 3–6. (Summary) **93i:83057** 83C55

— (*with* Feinstein, Alexander) Exact anisotropic scalar field cosmologies. (English summary) *Classical Quantum Gravity* **10** (1993), *no.* 1, 93–98. (Summary) **93i:83020** 83C15 (83C20)

angulo Ibañez, J. M. *see* **Angulo Ibañez, J. M.**

Ibáñez, Luis E. (*with* Lüst, Dieter) Duality-anomaly cancellation, minimal string unification and the effective low-energy Lagrangian of 4D strings. (English summary) *Nuclear Phys. B* **382** (1992), *no.* 2, 305–361. (Piret Kuusk) **93i:81264** 81T50 (81T30)

de campos Ibáñez, Luis Miguel *see* **de Campos Ibáñez, Luis Miguel**

Ibáñez, S. (*with* Rodríguez, J. A.) Chaotic behavior in the unfolding of a nilpotent singularity in dimension three. (Spanish) *Proceedings of the XII Congress on Differential Equations and Applications/II Congress on Applied Mathematics (Spanish)* (*Oviedo*, 1991), 141–146, *Univ. Oviedo, Oviedo*, 1991. (Enrique Outerelo Domínguez) **93k:58021** 58C27 (58F14)

Ibañez-Meier, R. (*with* Polley, L.; Ritschel, U.) Variational principle for effective action and prospects of nonlinear optimization. *Phys. Lett. B* **279** (1992), *no.* 1-2, 106–110. (Summary) **93c:81144** 81T16

Ibaraki, Satoru (*with* Fukushima, Masao; Ibaraki, Toshihide) Dual-based Newton methods for nonlinear minimum cost network flow problems. *J. Oper. Res. Soc. Japan* **34** (1991), *no.* 3, 263–286. (Edward Minieka) **93f:90172** 90C35 (90B10)

Ibaraki, Toshihide (*with* Ibaraki, Satoru; Fukushima, Masao) Dual-based Newton methods for nonlinear minimum cost network flow problems. *J. Oper. Res. Soc. Japan* **34** (1991), *no.* 3, 263–286. (Edward Minieka) **93f:90172** 90C35 (90B10)

— (*with* Nagamochi, Hiroshi) A linear-time algorithm for finding a sparse k-connected spanning subgraph of a k-connected graph. *Algorithmica* **7** (1992), *no.* 5-6, 583–596. (T. R. S. Walsh) **93d:05096** 05C40 (05C85, 68Q25, 68R10)

— (*with* Katoh, Naoki; Koyanagi, Junji; Ohnishi, Masamitsu) Optimal strategies for some team games. *Discrete Appl. Math.* **35** (1992), *no.* 3, 275–291. (Xiao Jun Zeng) **93c:90114** 90D15 (90D40, 90D46, 93E05)

— (*with* Katoh, Naoki; Kameda, Tsunehiko) A multiversion cautious scheduler with dynamic serialization constraints for database concurrency control. (English summary) *Discrete Appl. Math.* **40** (1992), *no.* 3, 379–395. 68P15 (68M20, 90B22)

— (*with* Fukushima, Masao; Takazawa, Keiichi; Ohsaki, Shuichi) Successive linearization methods for large-scale nonlinear programming problems. *Japan J. Indust. Appl. Math.* **9** (1992), *no.* 1, 117–132. (Nada I. Djuranović-Miličić) **93a:90062** 90C30 (65K05)

— (*with* Nagamochi, Hiroshi) A linear time algorithm for computing 3-edge-connected components in a multigraph. *Japan J. Indust. Appl. Math.* **9** (1992), *no.* 2, 163–180. (Alexander M. Barg) **93d:05097** 05C40 (05C85, 68R10)

— (*with* Nakade, Koichi; Ohnishi, Masamitsu; Ohno, Katsuhisa) On the average optimality of circular assignment policy. (English summary) *Queueing Systems Theory Appl.* **11** (1992), *no.* 3, 241–254. (Summary) **93e:60185** 60K25

— (*with* Nagamochi, Hiroshi) Computing edge-connectivity in multigraphs and capacitated graphs. *SIAM J. Discrete Math.* **5** (1992), *no.* 1, 54–66. (Gary MacGillivray) **93d:05098** 05C40 (05C85, 68Q25, 68R10)

Ibaroudene, Djaffer (*with* Acharya, Raj) Linear hypertree for multidimensional image representation. (English summary) *Inform. Sci.* **68** (1993), *no.* 1-2, 123–154. 68P20

Ibarra, Andoni (*with* Echeverría, Javier; Mormann, Thomas) Introductory afterthoughts. *The space of mathematics* (*San Sebastiàn*, 1990), ix–xvi, *Found. Comm. Cogn., de Gruyter, Berlin*, 1992. (*see* **93j:00010**) 00A30 (01A60, 03A05)

— (*with* Mormann, Thomas) L'explication en tant que généralisation théorique. (French summary) [Explanation as theoretical generalization] *Dialectica* **46** (1992), *no.* 2, 151–168. (Summary) **93f:00003** 00A30 (01A60, 03–03, 03A05)

— *see also* **Space of mathematics, 93j:00010**

Ibarra, Oscar H. (*with* Jiang, Tao[1]; Wang, Hui; Zheng, Qi) A hierarchy result for 2-dimensional TMs operating in small space. *Inform. Sci.* **64** (1992), *no.* 1-2, 49–56. (Summary) **93b:68022** 68Q05 (03D10, 03D15, 68Q15)

— (*with* Tràn, Nicholas Q.) On space-bounded synchronized alternating Turing machines. *Theoret. Comput. Sci.* **99** (1992), *no.* 2, 243–264. (Howard Straubing) **93j:68055** 68Q05 (03D10)

— (*with* Jiang, Tao[1]; Wang, Hui) A characterization of exponential-time languages by alternating context-free grammars. *Theoret. Comput. Sci.* **99** (1992), *no.* 2, 301–313. (Summary) **93j:68100** 68Q45 (03D05)

— (*with* Kim, Myung Hee) Quadtree building algorithms on an SIMD hypercube. (English summary) *J. Parallel Distrib. Comput.* **18** (1993), *no.* 1, 71–76. 68P05 (68Q22)

Ibatov, A. Multipoint problems for a nonlinear differential equation with deviating argument. (Russian. Russian summary) *Boundary value problems* (*Russian*), 47–52, *Perm. Politekh. Inst., Perm'*, 1989. (*see* **93k:00022**) 34K10 (34B10)

Ibbini, M. S. (*with* Amin, M. H.) New explicit parameterized state feedback controller. (English summary) *Control Theory Adv. Tech.* **8** (1992), *no.* 3, 659–675. (Sergey K. Korovin) **93k:93047** 93B52

Ibbotson, J. (*with* Zielezny, Z.) Solvability of convolution equations in spaces of generalized distributions with restricted growth. *Hokkaido Math. J.* **21** (1992), *no.* 2, 365–378. (Daniele Struppa) **93i:46068** 46F10 (46F05)

Ibiejugba, M. A. (*with* Aderibigbe, F. M.; Adegboye, O. S.) Parameter selection for a delay equation. *J. Nigerian Math. Soc.* **9** (1990), 77–93. (Takao Nambu) **93f:34137** 34K35 (49K25)

Ibisch, Horst L'œuvre mathématique de Louis Antoine et son influence. (English summary) [The mathematical works of Louis Antoine and their influence] *Exposition. Math.* **9** (1991), *no.* 3, 251–274. (James M. Kister) **93k:01068** 01A70 (01A60, 57–03)

Ibn al-Fath, Sinān *see* **Atik, Youssef, 93g:01018**

Ibn al-Haytham, Ḥasan *see* **ibn al-Haytham, Ḥasan**

Ibort, Luis A. (*with* Cariñena, José F.; Gracia-Bondía, José M.; López Lacasta, Carlos; Várilly, Joseph C.) Distinguished Hamiltonian theorem for homogeneous symplectic manifolds. *Lett. Math. Phys.* **23** (1991), *no.* 1, 35–44. (Summary) **93i:58051** 58F05 (58B20, 70H05, 70H15, 81S10)

— (*with* Marín Solano, J.) A geometric classification of Lagrangian functions and the reduction of evolution space. *J. Phys. A* **25** (1992), *no.* 11, 3353–3367. (Jair Koiller) **93g:58050** 58F05 (70H05, 70H35)

— Hyper-Kähler induction and self-duality on Riemann surfaces. (English summary) *Lett. Math. Phys.* **25** (1992), *no.* 2, 131–137. (Antony Maciocia) **93f:58026** 58D27 (53C07, 58F05)

— (*with* González-Ruiz, A.) Induction of quantum group representations. (English summary) *Phys. Lett. B* **296** (1992), *no.* 1-2, 104–108. (Andrey V. Tsiganov) **93j:17029** 17B37 (81R50)

Ibragimov, I. A. Yu. V. Linnik. Some of his work from the 1950s. (Russian) *Algebra i Analiz* **3** (1991), *no.* 3, 206–215; *translation in St. Petersburg Math. J.* **3** (1992), *no.* 3, 687–696. (I. Kátai) **93c:01044** 01A70 (60–03)

— (*with* Khas'minskii, R. Z.) Asymptotically normal families of distributions and efficient estimation. *Ann. Statist.* **19** (1991), *no.* 4, 1681–1724. (Tapas K. Chandra) **93d:62093** 62G20

— (*with* Borovkov, A. V.; Gonchar, A. A.; Il'in, A. M.; Prokhorov, Yu. V.; Skorokhod, A. V.) Rafail Zalmanovich Khas'minskii (on the occasion of his sixtieth birthday). (Russian) *Uspekhi Mat. Nauk* **47** (1992), *no.* 4(286), 223–225; *translation in Russian Math. Surveys* **47** (1992), *no.* 4, 243–246. (Editors) **93m:01059** 01A70

— Remarks on variations of random functions of several variables. (Russian. Russian summary) *Zap. Nauchn. Sem. S.-Peterburg. Otdel. Mat. Inst. Steklov.* (*POMI*) **194** (1992), *Problemy Teorii Veroyatnost. Raspred.* 12, 91–97, 178. (N. M. Zinchenko) **93i:60097** 60G60 (60G17)

Ibragimov, I. I. (*with* Aleskerov, F. D.) Convergence of the derivatives of singular integrals that depend on two variables. (Russian) *Special problems in function theory, No. IV* (*Russian*), 4–12, "*Élm*", *Baku*, 1989. (*see* **93m:00037**) 42A38

Ibragimov, N. Kh. (*with* Torrisi, M.) A simple method for group analysis and its application to a model of detonation. (English summary) *J. Math. Phys.* **33** (1992), *no.* 11, 3931–3937. (Summary) **93h:35012** 35A30 (35Q35, 80A25)

— Linearization of ordinary differential equations. (English summary) *Differential equations with applications to mathematical physics*, 177–188, *Math. Sci. Engrg.*, 192, *Academic Press, Boston, MA*, 1993. (Summary) **93k:34025** 34A34 (34A26, 34C20)

Ibragimov, V. R. On the maximal degree for a stable forward-difference formula. (Russian. English and Azerbaijani summaries) *Akad. Nauk Azerbaidzhan. SSR Dokl.* **46** (1990), *no.* 4-5, 6–9 (1992). (Summary) **93e:65109** 65L12

Ibragimov, Z. Sh. Quasi-Möbius embeddings on μ-dense sets. (Russian) *Mathematical analysis and differential equations* (*Russian*), 44–52, *Novosibirsk. Gos. Univ., Novosibirsk*, 1991. (*see* **93m:00026**) 30C65

Ibrahim, A. Shawky (*with* Khatab, S. A.) On the level-subgroups representation of a finite fuzzy subgroup. (English summary) *Proc. Pakistan Acad. Sci.* **29** (1992), *no.* 3, 245–250. (Summary) **93j:20145** 20N25 (04A72)

Ibrahim, E. A. (*with* Lin, Sung P.) Corrigenda: "Instability of a viscous liquid jet surrounded by a viscous gas in a vertical pipe" [J. Fluid Mech. **218** (1990), 641–658; MR 91f:76027]. *J. Fluid Mech.* **240** (1992), 685–686. 76E10 (76D25, 76D45)

Ibrahim, E. Y. (*with* Lovass-Nagy, Victor; Mukundan, Rangaswamy; Schilling, Robert J.) Remarks on optimal control and state estimation of a class of linear time-invariant descriptor-variable control systems. (English summary) *IMA J. Math. Control Inform.* **9** (1992), *no.* 2, 103–111. (G. A. Kurina) **93j:93065** 93C05 (49K15, 93C45)

— (*with* Harris, S. L.; Lovass-Nagy, Victor; Schilling, Robert J.) Minimum energy control of linear time-invariant systems with input derivatives. (English summary) *Internat. J. Systems Sci.* **23** (1992), *no.* 7, 1191–1200. 49N10 (93C10)

Ibrahim, Joseph G. (*with* Laud, Purushottam W.) On Bayesian analysis of generalized linear models using Jeffreys's prior. *J. Amer. Statist. Assoc.* **86** (1991), *no.* 416, 981–986. (Joaquin Diaz Saiz) **93d:62045** 62F15 (62J12)

Ibrahim, S. F. M. (*with* Zayed, E. M. E.) Regular eigenvalue problem with eigenparameter in the boundary conditions. (English summary) *Bull. Calcutta Math. Soc.* **84** (1992), *no.* 5, 379–393. (Anton Zettl) **93m:34037** 34B24 (34L15)

Ibrahim, Yaacob Reliability analysis of linear dynamic systems using optimization techniques. (English summary) *Optimization, Vol.* 1, 2 (*Singapore*, 1992), 664–671, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93d:90005**) 90B25

Ibukiyama, Tomoyoshi (*with* Saito, Hiroshi[1]) On zeta functions associated to symmetric matrices and an explicit conjecture on dimensions of Siegel modular forms of general degree. *Internat. Math. Res. Notices* **1992**, *no.* 8, 161–169. (Petra Ploch) **93k:11043** 11F46 (11F72, 11M41)

Icha, Andrzej Solution of a turbulent heat conductivity equation in the Oseen's approximation. *Stochastic methods in experimental sciences* (*Szklarska Poręba*, 1989), 188–199, *World Sci. Publishing, River Edge, NJ*, 1990. (Summary) **93e:76044** 76F99 (76D99, 76M35, 80A20)

Ichida, Ryosuke A certain inequality of Riemannian manifolds of positive curvature. *Mem. Fac. Sci. Kyushu Univ. Ser. A* **46** (1992), *no.* 1, 105–114. (Y. Mutô) **93c:53024** 53C20 (53C21)

Ichihara, Ryo (*with* Kawakami, Satoshi) Radon-Nikodým derivative for operator valued weights. *Bull. Nara Univ. Ed. Natur. Sci.* **40** (1991), *no.* 2, 1–7. (E. Størmer) **93b:46117** 46L10 (46L50)

Ichihashi, Hidetomo (*with* Luhandjula, M. K.; Inuiguchi, Masahiro) Fuzzy and semi-infinite mathematical programming. *Inform. Sci.* **61** (1992), *no.* 3, 233–250. (Stefan Chanas) **93f:90183** 90C70 (04A72, 90C34)

— Fuzzy control and modeling. (Japanese) *Systems Control Inform.* **37** (1993), *no.* 1, 30–37. 93C42 (04A72)

Ichlishi, T. (*with* Idzik, Adam) Closed covers of compact convex polyhedra. *Internat. J. Game Theory* **20** (1991), *no.* 2, 161–169. (Gerard Sierksma) **93c:52011** 52B11 (90D05)

Ichijyō, Yoshihiro Conformally flat Finsler structures. *J. Math. Tokushima Univ.* **25** (1991), 13–25. (Sándor Bácsó) **93a:53012** 53B40 (53C60)

Ichikawa, Akira Quadratic differential games with overtaking optimality. *Differential games—developments in modelling and computation* (*Espoo*, 1990), 207–215, *Lecture Notes in Control and Inform. Sci.*, 156, *Springer, Berlin*, 1991. (*see* **93c:90003**) 90D25

— Steady-state solutions in tracking problems. *Estimation and control of distributed parameter systems* (*Vorau*, 1990), 175–185, *Internat. Ser. Numer. Math.*, 100, *Birkhäuser, Basel*, 1991. (George E. Antoniou) **93c:93030** 93B52 (93C20)

— Differential games and H_∞-problems in Hilbert space. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, I* (*Kobe*, 1991), 115–120, *Mita, Tokyo*, 1992. (*see* **93g:93005**) 93B36 (90D25)

— (*with* Bouslama, Faouzi) Fuzzy control rules and their natural control laws. *Fuzzy Sets and Systems* **48** (1992), *no.* 1, 65–86. (Summary) **93k:93063** 93C42 (04A72)

— (*with* Bouslama, Faouzi) Application of limit fuzzy controllers to stability analysis. (English summary) *Fuzzy Sets and Systems* **49** (1992), *no.* 2, 103–120. 93C42 (04A72)

— (*with* Katayama, Hitoshi) Pole assignment by state transition graph. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 8, *part I*, 1196–1201. (Krzysztof Kuźmiński) **93h:93032** 93B55

Ichikawa, Atsunobu Petri net representation and control of discrete event systems. (English summary) *Systems and control*, 97–109, *Mita, Tokyo*, 1991. (*see* **93f:93007**) 93C83 (68Q90)

Ichikawa, Fumio Thom's conjecture on singularities of gradient vector fields. *Kodai Math. J.* **15** (1992), *no.* 1, 134–140. (V. M. Zakalyukin) **93i:58019** 58C27 (57R25)

Ichikawa, K. Adaptive control based on exact model matching. (English summary) *Adaptive systems in control and signal processing*, 1989 (*Glasgow*), 89–93, *IFAC Sympos. Ser.*, 1990, *No.* 1, *Pergamon, Oxford*, 1990. (*see* **93j:93007**) 93C40

— (*with* Ortega, Romeo) On stabilization of nonlinear systems with enlarged domain of attraction. *Automatica J. IFAC* **28** (1992), *no.* 3, 623–626. (Summary) **93b:93097** 93D15 (93B36)

Ichikawa, Satoshi (*with* Goto, Tsutomu) An analysis for steady-state response of nonlinear systems with sinusoidal inputs. (English summary) *Electron. Comm. Japan Part III Fund. Electron. Sci.* **75** (1992), *no.* 6, 35–45. 93C10

Ichikawa, Takashi The universal periods of curves and the Schottky problem. *Compositio Math.* **85** (1993), *no.* 1, 1–8. (John B. Little) **93m:14026** 14H42 (11F46, 14H15, 14K20)

Ichim, Ion Une généralisation de la méthode du gradient avec le reste minimum. [A generalization of the gradient method with minimum remainder] *Rev. Roumaine Math. Pures Appl.* **37** (1992), *no.* 3, 225–232. (C. Ilioi) **93e:65043** 65F05 (90C06)

— Quelques propriétés des opérateurs quasi-accrétifs. (French summary) [Some properties of quasi-accretive operators] *Rev. Roumaine Math. Pures Appl.* **37** (1992), *no.* 5, 407–414. (A. G. Kartsatos) **93h:47047** 47B99 (47H06)

Ichinose, Ikuo (*with* Mukaida, Hisamitsu) The U(1) gauge-Higgs model in two dimensions and topological field theory. *Nuclear Phys. B* **375** (1992), *no.* 2, 318–340. (Jean-Pierre Ader) **93g:81152** 81T40 (81T18, 81T25, 81T27)

— (*with* Matsui, Tetsuo) Dynamics of the composite gauge boson in the $\mathbf{CP}^{N-1}$ model with fermion and the charge-spin separation. (English summary) *Nuclear Phys. B* **394** (1993), *no.* 2, 281–301. (Summary) **93k:81267** 81V70 (81T25, 82D55)

Ichinose, Shoichi Reexamination of the renormalizability problem in $(3+1)$-dimensional Einstein gravity. *Phys. Lett. B* **284** (1992), *no.* 3-4, 234–241. (Summary) **93c:83051** 83C45

— BRS symmetry on background-field, Kallosh theorem and renormalization. (English summary) *Nuclear Phys. B* **395** (1993), *no.* 1-2, 433–453. (Summary) **93m:81147** 81T70 (81T16, 83C45)

Ichinose, Takashi (*with* Tsuchida, Tetsuo) On Kato's inequality for the Weyl quantized relativistic Hamiltonian. (English summary) *Manuscripta Math.* **76** (1992), *no.* 3-4, 269–280. (Evgeni L. Korotyaev) **93k:81040** 81Q05 (47F05, 81Q10)

Ichiyanagi, Masakazu A projection operator approach to extended irreversible thermodynamics. *Thermal field theories* (*Ibaraki*, 1990), 43–52, *North-Holland Delta Ser., North-Holland, Amsterdam*, 1991. (Summary) **93b:82059** 82C35

— Field-theoretic approach to hydrodynamics. I. The Clebsch transformation of the hydrodynamic equation. *Fortschr. Phys.* **39** (1991), *no.* 1, 41–52. (Summary) **93a:76002a** 76A02 (76M99, 76Y05)

— Field-theoretic approach to hydrodynamics. II. The superfluid hydrodynamics. *Fortschr. Phys.* **39** (1991), *no.* 1, 53–67. (Summary) **93a:76002b** 76A02 (76M99, 76Y05, 82D50)

— New variational approach in the theory of nonequilibrium stationary processes. (English summary) *J. Phys. Soc. Japan* **61** (1992), *no.* 7, 2280–2286. (Summary) **93f:82051** 82C70

Ichtiaroglou, S. (*with* Voyatzis, G.) On the spectral analysis of trajectories in near-integrable Hamiltonian systems. (English summary) *J. Phys. A* **25** (1992), *no.* 22, 5931–5943. (Qi Keith Chen) **93j:58119** 58F27 (58F05, 70H05)

Ida, M. P. (*with* Dendy, J. E., Jr.; Rutledge, J. M.) A semicoarsening multigrid algorithm for SIMD machines. (English summary) *SIAM J. Sci. Statist. Comput.* **13** (1992), *no.* 6, 1460–1469. 65N55 (65Y05)

Idà, Monica (*with* Ellia, Philippe) Some connections between equations and geometric properties of curves in $\mathbf{P}^3$. *Geometry and complex variables* (*Bologna*, 1988/1990), 177–188, *Lecture Notes in Pure and Appl. Math.*, 132, *Dekker, New York*, 1991. (Angelo Lopez) **93d:14046** 14H50 (14H45)

Ida, Tetsuo (*with* Nakamura, Atsushi; Suzuki, Taro; Nakagawa, Koji) Abstract machine approach to operational semantics of Prolog. (English summary) *J. Inform. Process.* **15** (1992), *no.* 4, 545–553. (Summary) **93m:68114** 68Q55 (68N17)

Iddir, N. (*with* Banks, S. P.) Nonlinear systems, the Lie series, and the left shift operator: application to nonlinear optimal control. (English summary) *IMA J. Math. Control Inform.* **9** (1992), *no.* 1, 23–34. (Henry Hermes) **93g:93025** 93B29 (34A34, 34H05, 93B11, 93B18)

Ide, Harry A. Chrysippus's response to Diodorus's master argument. (English summary) *Hist. Philos. Logic* **13** (1992), *no.* 2, 133–148. (James Gasser) **93g:03003** 03A05 (01A20, 03–03)

Idelsohn, Sergio R. (*with* Storti, M. A.; Baumann, C. E.) A preconditioning mass matrix to accelerate the convergence to the steady Euler solutions using explicit schemes. The Second World Congress of Computational Mechanics, Part II (Stuttgart, 1990). *Internat. J. Numer. Methods Engrg.* **34** (1992), *no.* 2, 519–541. (Summary) **93a:76073** 76M20

— (*with* Baumann, C. E.; Storti, M. A.) Improving the convergence rate of the Petrov-Galerkin techniques for the solution of transonic and supersonic flows. The Second World Congress of Computational Mechanics, Part II (Stuttgart, 1990). *Internat. J. Numer. Methods Engrg.* **34** (1992), *no.* 2, 543–568. (Summary) **93a:76064** 76M10 (76–04, 76H05, 76J20)

— *see also* **MECOM '91, 93i:00019**

İdemen, Mithat (*with* Akduman, İbrahim) On inverse scattering problems related to cylindrical bodies with unknown orientations. (English summary) *Wave Motion* **17** (1993), *no.* 1, 33–48. (Summary) **93k:78011** 78A45

Idestam-Almquist, Peter Learning missing clauses by inverse resolution. (English summary) *Fifth generation computer systems, Vol.* 1, 2 (*Tokyo*, 1992), 610–617, *Ohm, Tokyo*, 1992. (*see* **93i:68007**) 68T05

pires Idiart, M. A. *see* **Pires Idiart, M. A.**

Idiart, M. A. P. *see* **Pires Idiart, M. A.**

Idris, Ismail M. On $*$-primes and $*$-valuations. *Kyungpook Math. J.* **32** (1992), *no.* 1, 125–130. (P. M. Cohn) **93i:16029** 16K40

— On *-primes and *-valuations. (English summary) *Period. Math. Hungar.* **24** (1992), *no.* 3, 179–183. (Yonghua Xu) **93k:16068** 16W10 (16W60)

Idrissi, Elhassan Quelques contre-exemples pour la LS-catégorie d'une algèbre de cochaînes. (English summary) [Some counterexamples for the LS-category of a cochain algebra] *Ann. Inst. Fourier* (*Grenoble*) **41** (1991), *no.* 4, 989–1003. (Barry Jessup) **93d:55018** 55P62 (55P50)

Idzik, Adam Theorems on selectors in topological spaces. II. *Transactions of the Tenth Prague Conference on Information Theory, Statistical Decision Functions, Random Processes, Vol. A* (*Prague*, 1986), 405–413, *Reidel, Dordrecht*, 1988. (Summary) **93g:54029** 54C65 (28B20)

— (*with* Ichiishi, T.) Closed covers of compact convex polyhedra. *Internat. J. Game Theory* **20** (1991), *no.* 2, 161–169. (Gerard Sierksma) **93c:52011** 52B11 (90D05)

İe, In' *see* **Ye, Yinyu**

Ielo, C. (*with* Cammaroto, F.) On the invariance of complete regularity and metrizability. (Italian. English summary) *Rend. Istit. Mat. Univ. Trieste* **21** (1989), *no.* 1, 97–104 (1991). (Salvador Romaguera) **93a:54026** 54E30 (54E25, 54E35)

Iengo, Roberto (*with* Lechner, Kurt; Li, Dingping) Chern-Simons-Maxwell theory on the torus. *Phys. Lett. B* **269** (1991), *no.* 1-2, 109–115. (Summary) **93h:81086** 81T13 (81S05)

— (*with* Lechner, Kurt) Anyon mean field as a critical-field theory. (English summary) *Nuclear Phys. B* **384** (1992), *no.* 3, 541–558. (Summary) **93h:81087** 81T13 (81V70)

— (*with* Lechner, Kurt) Anyon quantum mechanics and Chern-Simons theory. *Phys. Rep.* **213** (1992), *no.* 4, 179–269. (Guillermo Zemba) **93e:81073** 81T13 (81S05, 81V70, 82D55)

Ierley, Glenn (*with* Spencer, Brian; Worthing, Rodney) Spectral methods in time for a class of parabolic partial differential equations. (English summary) *J. Comput. Phys.* **102** (1992), *no.* 1, 88–97. (Summary) **93e:65121** 65M70 (76M25)

Ieşan, Dorin (*with* Scalia, Antonio) An existence result in nonlinear theory of electromagnetic fields. (Italian summary) *Atti Accad. Naz. Lincei Cl. Sci. Fis. Mat. Natur. Rend. Lincei* (9) *Mat. Appl.* **2** (1991), *no.* 3, 269–275. (Rolf Leis) **93e:35109** 35Q60

— (*with* Quintanilla, Ramón) On the grade consistent theory of micropolar thermoelasticity. (English summary) *J. Thermal Stresses* **15** (1992), *no.* 3, 393–417. (J. Ignaczak) **93j:73007** 73B30 (73B25, 73D99)

Ifantis, E. K. (*with* Siafarikas, P. D.) Bounds for modified Bessel functions. *Rend. Circ. Mat. Palermo* (2) **40** (1991), *no.* 3, 347–356. (A. de Castro Brzezicki) **93i:33003** 33C10

İftar, Altuğ (*with* Özgüner, Ümit) Techniques in modeling uncertain dynamics for robust control system design. *Robust control system techniques and applications, Part* 1, 255–296, *Control Dyn. Syst. Adv. Theory Appl.*, 50, *Academic Press, San Diego, CA*, 1992. (Valeriu Prepeliţă) **93i:93042** 93B36 (93A30, 93B51, 93B52, 93C85)

— Decentralized estimation and control with overlapping input, state, and output decomposition. (English summary) *Automatica J. IFAC* **29** (1993), *no.* 2, 511–516. 93A15 (93E10)

Iftimie, Viorel Opérateurs de Schrödinger du type à N corps dispersifs. [Dispersive N-body Schrödinger operators] *An. Univ. Bucureşti Mat.* **39** (1990), *no.* 1-2, 27–33. (Denise Huet) **93c:47055** 47F05 (35P25, 47N50, 81Q10, 81U20)

Iftimovici, Andrei On asymptotic completeness for Agmon type Hamiltonians. (French summary) *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 5, 337–342. (Hideo Tamura) **93c:47056** 47F05 (35J10, 47A40, 47N50, 81U10)

Iftode, Vasile Convex control problems for hereditary systems. *Differential Integral Equations* **5** (1992), *no.* 5, 1033–1040. (Teodor Havârneanu) **93e:49044** 49L20 (49J25)

— Viscosity solutions of some Hamilton-Jacobi equations. (English summary) *Stud. Cerc. Mat.* **44** (1992), *no.* 6, 489–496. (Paola Loreti) **93k:49026** 49L25 (35F20)

Igaki, Nobuko Exponential two server queue with N-policy and general vacations. *Queueing Systems Theory Appl.* **10** (1992), *no.* 4, 279–294. (Summary) **93c:60145** 60K25 (90B22)

Igarashi, A. (*with* McClintock, P. V. E.; Stocks, N. G.) Velocity spectrum for non-Markovian Brownian motion in a periodic potential. *J. Statist. Phys.* **66** (1992), *no.* 3-4, 1059–1070. (Cheng Xun Wu) **93d:82062** 82C31 (60K99, 82C80)

Igarashi, Y. *see* **Igarashi, Yuji**

Igarashi, Yoshihide (*with* Han, Yijie; Truszczyński, Miroslaw) Indexing functions and time lower bounds for sorting on a mesh-connected computer. *Discrete Appl. Math.* **36** (1992), *no.* 2, 141–152. (Summary) **93b:68014** 68P10 (68Q25)

— (*with* Osawa, Shingo; Shibata, Yukio) Some language families generated by one-letter languages. *Inform. Sci.* **62** (1992), *no.* 3, 271–276. (Manfred Armbrust) **93c:68049** 68Q45

Igarashi, Yuji (*with* Fujiwara, Takanori; Kubo, J.) Anomaly in the Schrödinger representation of QFT. (English summary) *Nuclear Phys. B* **387** (1992), *no.* 2, 447–463. (Silvio Paolo Sorella) **93m:81142** 81T50 (81T70)

Iggidr, A. (*with* Vivalda, J.-C.) Global stabilization of homogeneous polynomial systems in $\mathbf{R}^n$. *Nonlinear Anal.* **18** (1992), *no.* 12, 1181–1186. (È. G. Al'brekht) **93g:93073** 93D15 (34H05)

Iglesias, J. R. (*with* Arenzon, J. J.; de Almeida, R. M. C.) A multineuron interaction model for neural networks. (English summary) *J. Statist. Phys.* **69** (1992), *no.* 1-2, 385–409. (Summary) **93g:82073** 82C32 (92B20)

torres Iglesias, Miguel *see* **Torres Iglesias, Miguel**

Iglésias, Patrick Une méthode de symplectisation des variétés de contact. [A symplectification method for contact manifolds] *Indag. Math.* (*N.S.*) **2** (1991), *no.* 2, 219–227. (Luis A. Ibort) **93d:53036** 53C15 (58F05)

— Sur les géodésiques qui coupent un convexe en courbure négative ou nulle. (English and French summaries) [On geodesics intersecting a convex domain with nonpositive curvature] *Ann. Fac. Sci. Toulouse Math.* (6) **1** (1992), *no.* 1, 39–42. (L. A. Santaló) **93i:53067** 53C65 (53C22)

Iglewicz, Boris (*with* Gillespie, Brenda; Gillespie, John V.) A comparison of the bias in four versions of the product-limit estimator. *Biometrika* **79** (1992), *no.* 1, 149–155. (Gregory Campbell) **93j:62095** 62G05

Ignaczak, Ewa Convergence of subsequences in W^*-algebras. *Demonstratio Math.* **25** (1992), *no.* 1-2, 305–316. (Carlo Cecchini) **93h:46091** 46L50

Ignaczak, Józef ★ Termosprężystość ze skończonymi prędkościami falowymi. (Polish) [Thermoelasticity with finite wave speeds] Najnowsze Osiągnięcia Nauki. [Advances in Science] *Zakład Narodowy im. Ossolińskich—Wydawnictwo Polskiej Akademii Nauk* (*Ossolineum*), *Wrocław*, 1989. 104 *pp. ISBN* 83-04-03144-2 (Introduction) **93g:73019** 73B30 (80A20)

— (*with* Rao, C. R. A.) A tensorial classification of elastic waves. (English summary) *J. Acoust. Soc. Amer.* **93** (1993), *no.* 1, 17–21. (Summary) **93i:73019** 73D15 (73B40)

Ignat'ev, A. O. Stability with respect to some of the variables under constantly acting perturbations. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* **1991**, *no.* 2, 55–60; *translation in Soviet Math. (Iz. VUZ)* **35** (1991), *no.* 2, 63–69. (M. M. Khapaev) **93e:34071** 34D20

— Application of the direct Lyapunov method to the study of integral sets. (Russian. Russian and Ukrainian summaries) *Ukraïn. Mat. Zh.* **44** (1992), *no.* 10, 1342–1348; *translation in Ukrainian Math. J.* **44** (1992), *no.* 10, 1229–1235 (1993). (Summary) **93h:34085** 34D20 (34C30, 34C45)

Ignat'ev, K. N. On the uniformity of the modal representation on recursively enumerable extensions of arithmetic. (Russian) *Mat. Zametki* **51** (1992), *no.* 1, 93–101; *translation in Math. Notes* **51** (1992), *no.* 1-2, 60–66. (A. Yu. Muravitsky) **93h:03017** 03B45 (03F30, 03F40)

Ignat'ev, V. A. (*with* Ignat'eva, O. M.) Solution of a partial eigenvalue and eigenvector problem by means of a method of the successive condensation of subsystems. (Russian) *Numerical methods for solving problems in elasticity and plasticity theory (Russian)* (*Volgograd*, 1989), 94–98, *Akad. Nauk SSSR Sibirsk. Otdel., Inst. Teoret. i Prikl. Mekh., Novosibirsk*, 1990. (*see* **93k:73001**) 65F15 (70–08, 70J10, 73K12)

Ignat'eva, O. M. (*with* Ignat'ev, V. A.) Solution of a partial eigenvalue and eigenvector problem by means of a method of the successive condensation of subsystems. (Russian) *Numerical methods for solving problems in elasticity and plasticity theory (Russian)* (*Volgograd*, 1989), 94–98, *Akad. Nauk SSSR Sibirsk. Otdel., Inst. Teoret. i Prikl. Mekh., Novosibirsk*, 1990. (*see* **93k:73001**) 65F15 (70–08, 70J10, 73K12)

Ignatiuk, I. A. *see* **Ignatyuk, I. A.**

Ignatov, M. I. (*with* Pevnyĭ, A. B.) Surface smoothing with *B*-spline finite elements. (English summary) *Math. Comput. Modelling* **16** (1992), *no.* 10, 93–100. 65D10 (65D07)

Ignatov, V. V. (*with* Amirkhanov, I. V.; Zhidkov, E. P.; Il'ina, A. N.; Il'in, I. V.; Il'in, V. D.) ★ О стохастизации движения заряженных частиц в геомагнитном поле и поле волнового пакета. (Russian. English and Russian summaries) [Stochastization of the motion of charged particles in a geomagnetic field and a wave packet field] Сообщения Объединенного Института Ядерных Исследований. Дубна [Communications of the Joint Institute for Nuclear Research. Dubna], R11-92-288. *Joint Inst. Nuclear Res., Dubna*, 1992. 13 *pp.* (Introduction) **93m:78008** 78A35 (58F40, 86A10)

Ignatovich, N. V. (*with* Vorob'ev, E. M.) Group analysis of a boundary value problem for equations of a laminar boundary layer. (Russian. English summary) *Mat. Model.* **3** (1991), *no.* 11, 116–123. (Maria Clara Nucci) **93f:76032** 76D10 (35A30)

Ignatyuk, I. A. (*with* Malyshev, V. A.; Sidoravičius, V.) Convergence of the stochastic quantization method. *Probability theory and mathematical statistics, Vol. I (Vilnius*, 1989), 526–538, "*Mokslas*", *Vilnius*, 1990. (G. A. Skorobogatov) **93d:81094** 81S20 (60K35, 81S25, 82C10)

— (*with* Fayolle, G.; Malyshev, V. A.; Men'shikov, M. V.) Random walks in two-dimensional complexes. *Queueing Systems Theory Appl.* **9** (1991), *no.* 3, 269–300. (Kyle Siegrist) **93a:60101** 60J15 (60K25)

— (*with* Boldrighini, C.; Malyshev, V. A.; Pellegrinotti, Alessandro) Random walk in dynamic environment with mutual influence. *Stochastic Process. Appl.* **41** (1992), *no.* 1, 157–177. (Thomas Polaski) **93b:60148** 60J15 (82C44)

Igoshin, V. I. Interval semilattices of distributive and modular semilattices. (Russian) *Algebraic systems (Russian)*, 49–55, *Volgograd. Gos. Ped. Inst., Volgograd*, 1989. (*see* **93m:00015**) 06A12

— ★ Математическая логика и теория алгоритмов. (Russian. Russian summary) [Mathematical logic and the theory of algorithms] *Saratov. Gos. Univ., Saratov*, 1991. 257 *pp. ISBN* 5-292-00259-3 (From the summary) **93m:03002** 03–01 (68Q25)

— Interval lattices and quasivarieties of lattices. (Russian) *Ordered sets and lattices, No.* 10 (*Russian*), 41–51, *Saratov. Gos. Univ., Saratov*, 1991. (M. Kolibiar) **93e:06006** 06B20 (08C15)

— Determination of tree-like semilattices by the semilattice and graph of their intervals. (Russian) *Theory of semigroups and its applications, No.* 10 (*Russian*), 26–36, *Saratov. Gos. Univ., Saratov*, 1991. (M. Kolibiar) **93f:06005** 06A12

Iguchi, Hiroko (*with* Natori, Makoto; Imai, Hitoshi) Reorthogonalization in the block Lanczos method. (Japanese. English summary) *Parallel processing for matrix computation (Yokohama*, 1991), 58–64, *Adv. Numer. Methods Large Sparse Sets Linear Equations*, 7, *Keio Univ., Yokohama*, 1991. (*see* **93e:65040**) 65F25

Iguchi, Kazumoto Quasiperiodic systems without Cantor-set-like energy bands. (English summary) *J. Math. Phys.* **33** (1992), *no.* 11, 3736–3739. (Nariyuki Minami) **93k:81252** 81U40 (47B39, 58F19, 82B20)

Igusa, Jun-ichi A problem on certain *p*-adic zeta functions. *Festschrift in honor of I. I. Piatetski-Shapiro on the occasion of his sixtieth birthday, Part II (Ramat Aviv*, 1989), 67–79, *Israel Math. Conf. Proc.*, 3, *Weizmann, Jerusalem*, 1990. (Da Qing Wan) **93f:11091** 11S40

— Local zeta functions of certain prehomogeneous vector spaces. *Amer. J. Math.* **114** (1992), *no.* 2, 251–296. (Boris Datskovsky) **93m:11125** 11S40 (11G25)

Igusa, Kiyoshi Parametrized Morse theory and its applications. *Proceedings of the International Congress of Mathematicians, Vol. I, II (Kyoto*, 1990), 643–651, *Math. Soc. Japan, Tokyo*, 1991. (Louis Funar) **93c:57022** 57R45 (19D10)

— (*with* Zacharia, Dan) On the cyclic homology of monomial relation algebras. (English summary) *J. Algebra* **151** (1992), *no.* 2, 502–521. (Ulrike Tillmann) **93h:19005** 19D55 (16E10)

Ihara, Masamori (*with* Kano, Yutaka) Asymptotic equivalence of unique variance estimators in marginal and conditional factor analysis models. (English summary) *Statist. Probab. Lett.* **14** (1992), *no.* 5, 337–341. (P. A. K. Covey-Crump) **93h:62117** 62H25

Ihara, Yasutaka (*with* Kaneko, Masanobu) Pro-*l* pure braid groups of Riemann surfaces and Galois representations. *Osaka J. Math.* **29** (1992), *no.* 1, 1–19. (Anatoly Libgober) **93i:14022** 14H30 (14E20, 20F36)

— A remark on higher circular *l*-units. *Proc. Japan Acad. Ser. A Math. Sci.* **68** (1992), *no.* 1, 25–27. (Peter Stevenhagen) **93e:11126** 11R18 (11R27)

Ihler, Edmund (*with* Wagner, Dorothea; Wagner, Frank O.) Modeling hypergraphs by graphs with the same mincut properties. (English summary) *Inform. Process. Lett.* **45** (1993), *no.* 4, 171–175. (Summary) **93k:05122** 05C65 (68Q35)

Ihrig, Edwin C. (*with* Duncan, Della C.) Flat pseudo-Riemannian manifolds with a nilpotent transitive group of isometries. *Ann. Global Anal. Geom.* **10** (1992), *no.* 1, 87–101. (William Goldman) **93f:53055** 53C50 (53C22, 53C30)

— (*with* Anderson, Bruce A.) All groups of odd order have starter-translate 2-sequencings. (English summary) *Australas. J. Combin.* **6** (1992), 135–146. (İ. Ya. Subbotin) **93j:20049** 20D99

— (*with* Duncan, Della C.) Translationally isotropic flat homogeneous manifolds with metric signature $(n, 2)$. (English summary) *Ann. Global Anal. Geom.* **11** (1993), *no.* 1, 3–24. (Yoshinobu Kamishima) **93k:53067** 53C50 (53C30)

Iida, Masato Exponentially asymptotic stability for a certain class of semilinear Volterra diffusion equations. *Osaka J. Math.* **28** (1991), *no.* 2, 411–440. (H. J. Kuiper) **93a:45010** 45K05 (35B40, 35K55, 35R10, 92D25)

Iida, Shinji (*with* Kuratsuji, Hiroshi) Quantum algebra near $q = 1$ and a deformed symplectic structure. (English summary) *Phys. Rev. Lett.* **69** (1992), *no.* 13, 1833–1836. (Summary) **93f:81053** 81R50

Iida, Tadashi (*with* Nishimura, Tsuyoshi) An Ore-type condition for the existence of *k*-factors in graphs. *Graphs Combin.* **7** (1991), *no.* 4, 353–361. (Shinsei Tazawa) **93b:05134** 05C70

Iida, Youichi (*with* Yamada, Toshihiko) Extensions and induced characters of quaternion, dihedral and semidihedral groups. *SUT J. Math.* **27** (1991), *no.* 2, 237–262. (David Chillag) **93b:20017** 20C15

— (*with* Yamada, Toshihiko) Types of faithful metacyclic 2-groups. *SUT J. Math.* **28** (1992), *no.* 1, 23–46. (G. Karpilovsky) **93g:20017** 20C15

Iiyori, Nobuo (*with* Yamaki, Hiroyoshi) A conjecture of Frobenius and the simple groups of Lie type. III. *J. Algebra* **145** (1992), *no.* 2, 329–332. (Introduction) **93c:20033** 20D06

Iizuka, Masaru (*with* Ogura, Yukio) Convergence of one-dimensional diffusion processes to a jump process related to population genetics. *J. Math. Biol.* **29** (1991), *no.* 7, 671–687. (Seiichi Itatsu) **93a:92006** 92D10 (60J60, 60J70)

Iizuka, Takeshi (*with* Nakao, Takenobu; Wadati, Miki) Solitons in inhomogeneous media. (English summary) *Nonlinear dispersive wave systems (Orlando, FL*, 1991), 181–194, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93i:35117** 35Q51 (76B25)

— (*with* Wadati, Miki) Nonlinear waves in inhomogeneous lattices. (English summary) *J. Phys. Soc. Japan* **61** (1992), *no.* 7, 2235–2240. (Summary) **93f:35203** 35Q53

— (*with* Wadati, Miki; Hisakado, Masato) A coupled nonlinear Schrödinger equation and optical solitons. (English summary) *J. Phys. Soc. Japan* **61** (1992), *no.* 7, 2241–2245. (From the introduction) **93e:35106** 35Q55 (35Q51)

Ikai, T. (*with* Kawamura, Y.) A relation between neural network learning and control theory. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, II (Kobe*, 1991), 469–474, *Mita, Tokyo*, 1992. (Summary) **93h:92006** 92B20 (68T05)

Ikeda, Fumio On Finsler spaces with the nonzero constant function L^2C^2. *Tensor (N.S.)* **50** (1991), *no.* 1, 74–78. (Sándor Bácsó) **93b:53019** 53B40

— On three-dimensional Finsler spaces with the nonzero constant unified main scalar. *Tensor (N.S.)* **50** (1991), *no.* 3, 276–280. (Aurel Bejancu) **93e:53026** 53B40

Ikeda, Hiroshi[1] (*with* Kouno, Masaharu) Like a flow-spine. *Kobe J. Math.* **8** (1991), *no.* 1, 93–100. (Sergej V. Matveev) **93a:57004** 57M20 (57N10)

Ikeda, Itsuko (*with* Inoue, Atsushi) Invariant subspaces for closed $*$-representations of $*$-algebras. *Proc. Amer. Math. Soc.* **116** (1992), *no.* 3, 737–745. (W. Timmermann) **93a:47049** 47D40 (46K10, 46L99)

Ikeda, Kaoru The Hamiltonian systems on the Poisson structure of the quasi-classical limit of $GL_q(\infty)$. *Lett. Math. Phys.* **23** (1991), *no.* 2, 121–126. (Gui Zhang Tu) **93d:58073** 58F07 (58F05, 81R50)

— Algebraic study on the Poisson structure of Lax operator of *B* and *C* type and super Lax operator. (English summary) *Infinite analysis, Part A, B (Kyoto*, 1991), 405–418, *Adv. Ser. Math. Phys.*, 16, *World Sci. Publishing, River Edge, NJ*, 1992. (Maarten Bergvelt) **93j:58062** 58F07

Ikeda, Katsuo (*with* Zhang, Hongbin; Minoh, Michihiko) An efficient algorithm for point pattern matching using ordered lists. (English summary) *J. Inform. Process.* **15** (1992), *no.* 1, 108–115. (Sidney Berkowitz) **93j:68169** 68T10

Ikeda, Kazumasa (*with* Ahara, Kazushi; Ishimura, Naoyuki) Linear discrete model for shortening polygons. (English summary) *J. Fac. Sci. Univ. Tokyo Sect. IA Math.* **39** (1992), *no.* 2, 365–377. (Anders Linnér) **93h:52011** 52A40

Ikeda, Kazuyosi (*with* Takano, Takehiko) Statistical mechanics of one-dimensional gases with second-nearest-neighbour interactions. I. Fundamental equations and the high-pressure expansion. *Tech. Rep. Osaka Univ.* **42** (1992), *no.* 2076-2100, 7–18. (Philippe Audit) **93g:82035a** 82B23

— (*with* Takano, Takehiko) Statistical mechanics of one-dimensional gases with second-nearest-neighbour interactions. II. Low-pressure expansion. *Tech. Rep. Osaka Univ.* **42** (1992), *no.* 2076-2100, 19–27. (Philippe Audit) **93g:82035b** 82B23

— (*with* Takano, Takehiko) Statistical mechanics of one-dimensional gases with second-nearest-neighbour interactions. III. High-temperature expansion and the range-constant expansion. *Tech. Rep. Osaka Univ.* **42** (1992), *no.* 2076-2100, 29–38. (Philippe Audit) **93g:82035c** 82B23

— (*with* Nisizima, Kunisuke) Volume-dependent cluster sums for triangular lattice gas. I. Exact expressions for the cluster sums with $l \leq 5$. *Tech. Rep. Osaka Univ.* **42** (1992), *no.* 2076-2100, 39–48. (Summary) **93i:82016** 82B20

— (*with* Nisizima, Kunisuke) Volume-dependent cluster sums for triangular lattice gas. II. Behaviour of the cluster sums. *Tech. Rep. Osaka Univ.* **42** (1992), *no.* 2076-2100, 49–56. (Summary) **93i:82017** 82B20

— (*with* Nisizima, Kunisuke) Volume-dependent cluster sums for triangular lattice gas. III. Behaviour of the irreducible cluster sums. *Tech. Rep. Osaka Univ.* **42** (1992), *no.* 2076-2100, 57–65. (Summary) **93i:82018** 82B20

Ikeda, Kensuke Stationary dissipation due to quantum chaos: simulated light absorption with quantum maps. (English summary) *Phys. Lett. A* **168** (1992), *no.* 4, 248–255. 81V80 (81Q20, 81Q50)

Ikeda, Kiyohiro (*with* Ario, Ichiro; Torii, Kunio) Block-diagonalization analysis of symmetric plates. (English summary) *Internat. J. Solids Structures* **29** (1992), *no.* 22, 2779–2793. (Summary) **93c:73061** 73K10 (73V99)

— (*with* Murota, Kazuo) On random imperfections for structures of regular-polygonal symmetry. (English summary) *SIAM J. Appl. Math.* **52** (1992), *no.* 6, 1780–1803. (Zheng

You Zhu) **93j:73040** 73H05 (73K99, 73V30)
Ikeda, M. *see* **Ikeda, Masatoshi**
Ikeda, Masakazu (*with* Okada, Tsuyoshi; Kihara, Masahiko; Honma, Toshihiro) System observer techniques in robust control systems design synthesis. *Robust control system techniques and applications, Part* 1, 79–118, *Control Dyn. Syst. Adv. Theory Appl.*, 50, *Academic Press, San Diego, CA*, 1992. (*see* **93d:93007**) 93B36 (93D15)
Ikeda, Masao (*with* Tan, Xiang-Ling; Šiljak, Dragoslav D.) Reliable stabilization via factorization methods. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 11, 1786–1791. 93D15
— Inseparability of modeling and controller design. (Japanese) *Systems Control Inform.* **37** (1993), *no.* 1, 7–14. 93B51
Ikeda, Masatoshi Integral domains saturated with respect to polynomial self-maps. (English and Turkish summaries) *Doğa Mat.* **16** (1992), *no.* 3, 206–209. (Summary) **93i:13018** 13G05
Ikeda, Nobuyuki (*with* Matsumoto, Hiroyuki[2]) Short time asymptotics for the traces of heat kernels of Schrödinger operators with magnetic fields. (French summary) *Bull. Sci. Math.* (2) **116** (1992), *no.* 1, 53–66. (H. Hogreve) **93h:58154** 58G18 (47F05, 81Q10)
Ikeda, Noriaki Covariant operator formalism of two-dimensional topological gravity. *Internat. J. Modern Phys. A* **7** (1992), *no.* 13, 3105–3131. (Tsou Sheung Tsun) **93i:81278** 81T70 (81T40)
— Covariant operator formalism of two-dimensional topological gravity. II. *Modern Phys. Lett. A* **7** (1992), *no.* 2, 131–145. (Tsou Sheung Tsun) **93i:81279** 81T70 (81T40)
— (*with* Izawa, Ken-Iti) Quantum gravity with dynamical torsion in two dimensions. (English summary) *Progr. Theoret. Phys.* **89** (1993), *no.* 1, 223–230. (Summary) **93k:81207** 81T40
Ikeda, Satoshi On the theory of gravitational field in Finsler spaces. *Tensor (N.S.)* **50** (1991), *no.* 3, 256–262. (H. Rund) **93e:53027** 53B40 (53B50, 83D05)
— On the theory of gravitational field in Finsler spaces. (English summary) *Rev. Roumaine Math. Pures Appl.* **37** (1992), *no.* 6, 483–489. (Summary) **93k:83063** 83D05 (53B40, 53B50)
Ikeda, Tetsuya (*with* Kunii, Tosiyasu L.; Shinagawa, Yoshihisa; Ueda, Minoru) A geographical database system based on the homotopy model. (English summary) *Modern geometric computing for visualization* (*Tokyo*, 1992), 193–206, *Springer, Tokyo*, 1992. (*see* **93f:68006**) 92H20
Ikeda, Toru Atoroidal decompositions of link exteriors. (English summary) *Kobe J. Math.* **9** (1992), *no.* 1, 71–88. (Martin Scharlemann) **93m:57012** 57M50 (57M25, 57N10)
Ikeda, Toshiharu Derivations and central extensions of a generalized Witt algebra. *Nonassociative algebras and related topics* (*Hiroshima*, 1990), 47–57, *World Sci. Publishing, River Edge, NJ*, 1991. (Janusz Grabowski) **93c:17038** 17B65 (17B40, 17B68)
Ikeda, Tsutomu (*with* Nagai, Toshitaka) Traveling waves in a chemotactic model. *J. Math. Biol.* **30** (1991), *no.* 2, 169–184. (Yuzo Hosono) **93b:92014** 92D25 (35K57)
Ikegami, Kenji (*with* Kimura, Tadahiko; Mochizuki, Riuji) Treatment of constraints in the stochastic quantization method and covariantized Langevin equation. (English summary) *Nuclear Phys. B* **395** (1993), *no.* 1-2, 371–387. (Summary) **93m:81075** 81S20 (82B31)
Ikegami, Mitsuhiro (*with* Nagaoka, Yosuke; Takagi, Shin; Tanzawa, Tōru) Quantum mechanics of a particle on a curved surface—comparison of three different approaches. (English summary) *Progr. Theoret. Phys.* **88** (1992), *no.* 2, 229–249. (Avraham Forge) **93i:81098** 81S05 (81T20)
Ikegami, Takashi (*with* Tsuda, Ichiro) Measuring complexity: a relative aspect of pattern recognition. *Internat. J. Modern Phys. C* **3** (1992), *no.* 3, 447–458. (Summary) **93b:68075** 68T10
Ikehata, M. An inverse boundary value problem for the equation of the plate in the Love-Kirchhoff theory. *Ill-posed problems in natural sciences* (*Moscow*, 1991), 300–306, *VSP, Utrecht*, 1992. (*see* **93m:00041**) 35R30
Ikehata, Ryo On solutions to some quasilinear hyperbolic equations with nonlinear inhomogeneous terms. *Nonlinear Anal.* **17** (1991), *no.* 2, 181–203. (J. A. Donaldson) **93a:34075** 34G20 (35L15, 47H15, 47N20)
Ikehata, Shūichi On *H*-separable polynomials of prime degree. *Math. J. Okayama Univ.* **33** (1991), 21–26. (N. Sankaran) **93g:16043** 16S36 (12E10)
— (*with* Nakajima, Atsushi) On generating elements of ideals in skew polynomial rings. *Math. J. Okayama Univ.* **33** (1991), 27–35. (V. A. Artamonov) **93g:16044** 16S36
Ikemori, Hitoshi Extended form method of antifield-BRST formalism for *BF* theories. (English summary) *Modern Phys. Lett. A* **7** (1992), *no.* 36, 3397–3402. (Bogusław Broda) **93m:81148** 81T70 (81T13)
Ikonić, Z. (*with* Milanović, V.; Tjapkin, D.) Levinson's theorem in semiconductor quantum dots. (English summary) *J. Phys. A* **25** (1992), *no.* 23, L1305–L1309. (Summary) **93k:81254** 81U99
Ikramov, Kh. D. Spectral singularities of special classes of matrices. (Russian) *Computational processes and systems, No.* 8 (*Russian*), 168–203, "*Nauka*", *Moscow*, 1991. (M. Tismenetsky) **93d:15037** 15A57 (65F15)
— Matrix pencils—theory, applications, numerical methods. (Russian) Translated in J. Soviet Math. **64** (1993), no. 2, 783–853. *Mathematical analysis, Vol.* 29 (*Russian*), 3–106, *Itogi Nauki i Tekhniki, Akad. Nauk SSSR, Vsesoyuz. Inst. Nauchn. i Tekhn. Inform., Moscow*, 1991. (Branko Najman) **93e:15005** 15A22 (15A18, 15A21, 47A56, 65F15)
— Block symmetries in spectral problems for matrix pencils. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **32** (1992), *no.* 1, 153–157; *translation in Comput. Math. Math. Phys.* **32** (1992), *no.* 1, 128–131. (V. V. Sergeichuk) **93h:65049** 65F15 (15A22)
— Classes of pseudocommutativity that can be generated by matrices with a multiple pseudospectrum. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **32** (1992), *no.* 6, 835–845; *translation in Comput. Math. Math. Phys.* **32** (1992), *no.* 6, 719–727. (Summary) **93f:15008** 15A21
— On the monotonicity of the eigenvalues of doubly symmetric matrices. (Russian. Russian summary) *Zh. Vychisl. Mat. i Mat. Fiz.* **33** (1993), *no.* 4, 620–624. (Summary) **93m:15029** 15A42
Ikromov, I. A. (*with* Sharipov, F.) The discrete spectrum of the Friedrichs operator. (Russian) *Dokl. Akad. Nauk UzSSR* **1991,** *no.* 9, 7–8. (From the text) **93h:47061** 47G10 (47A10)
Ikuta, Seizo The optimal stopping problem in which the sum of the accepted offer's value and the remaining search budget is an objective function. (English summary) *J. Oper. Res. Soc. Japan* **35** (1992), *no.* 2, 172–193. (Howard Taylor) **93j:60057** 60G40 (90B40)
Ikuta, T. (*with* Ito, Tatsuro; Munemasa, Akihiro) On pseudo-automorphisms and fusions of an association scheme. *European J. Combin.* **12** (1991), *no.* 4, 317–325. (Andrew Woldar) **93a:05132** 05E30 (05E20, 20F29)
Ilamanov, A. I. (*with* Otrokov, N. F.) A class of quadratic systems with stable structures. (Russian) *Differential and integral equations* (*Russian*), 4–17, *Gor'kov. Gos. Univ., Gorki*, 1990. (Author's review (translated from RZhMat 1991:4 B227)) **93j:34036** 34C05 (34D30)
Ilamaran, S. (*with* Balachandran, Krishnan) Existence of solutions of nonlinear differential equations with deviating arguments. *Bull. Austral. Math. Soc.* **44** (1991), *no.* 3, 467–476. (R. R. Akhmerov) **93b:34079** 34K05 (34K40, 47H09, 47H15, 47N20)
Ilardi, G. On just inseparable finite groups. *Note Mat.* **10** (1990), *no.* 1, 97–101. (A. Scarselli) **93d:20045** 20D40
Ilchmann, Achim (*with* Owens, David H.) Threshold switching functions in high-gain adaptive control. Universal stabilizers and high-gain adaptive control. *IMA J. Math. Control Inform.* **8** (1991), *no.* 4, 409–429. (Kimio Kanai) **93b:93061** 93C40
— (*with* Logemann, Hartmut) High-gain adaptive stabilization of multivariable linear systems—revisited. (English summary) *Systems Control Lett.* **18** (1992), *no.* 5, 355–364. (Rui Sheng Li) **93j:93132** 93D21
— (*with* Townley, Stuart) Simple adaptive stabilization of high-gain stabilizable systems. (English summary) *Systems Control Lett.* **20** (1993), *no.* 3, 189–198. (Summary) **93k:93102** 93D21 (93D15)
Ilgauds, Hans-Joachim (*with* Purkert, Walter) ★ Георг Кантор. (Russian) [Georg Cantor] Translated from the 1985 German original by N. M. Flaisher [Norbert M. Fleischer]. "*Osnova*", *Khar'kov*, 1991. 128 *pp. ISBN* 5-11-000711-X (Editors) **93d:01074** 01A70
Iliadis, I. (*with* Fuhrmann, Steve W.) Moment relationships for queues with Poisson input. (English summary) *Queueing Systems Theory Appl.* **12** (1992), *no.* 3-4, 243–256. (Summary) **93h:60152** 60K25 (90B22)
Iliadis, S. D. (*with* Zafiridou, S. S.) Planar rational compacta and universality. (English summary) *Fund. Math.* **141** (1992), *no.* 2, 109–118. (Eliza Wajch) **93j:54022** 54F15 (54D30, 54E45)
Ilias, S. (*with* El Soufi, Ahmed) Une inégalité du type "Reilly" pour les sous-variétés de l'espace hyperbolique. [A Reilly-type inequality for submanifolds of hyperbolic space] *Comment. Math. Helv.* **67** (1992), *no.* 2, 167–181. (Sorin Dragomir) **93i:53059** 53C42 (53C40)
— (*with* El Soufi, Ahmed) Majoration de la seconde valeur propre d'un opérateur de Schrödinger sur une variété compacte et applications. (English summary) [Upper bound for the second eigenvalue of a Schrödinger operator on a compact manifold, and applications] *J. Funct. Anal.* **103** (1992), *no.* 2, 294–316. (Summary) **93g:58150** 58G25 (35J10, 35P15, 58E15)
Ilic, M. A class of moving boundary problems arising in drying processes. (English summary) *SIAM J. Appl. Math.* **52** (1992), *no.* 5, 1342–1359. (Li Shang Jiang) **93h:35219** 35R35 (73B30, 76T05)
Il'ichev, A. P. (*with* Shevchenko, V. I.) Permanents and determinants of square submatrices of incidence matrices of homogeneous hypergraphs. (Russian) *Permanents: theory and applications* (*Russian*), 126–135, *Krasnoyarsk. Politekhn. Inst., Krasnoyarsk*, 1990. (Jorma Kaarlo Merikoski) **93g:15006** 15A15 (05C65)
Il'ichev, A. T. Existence of a family of soliton-like solutions of the Kawahara equation. (Russian. Russian summary) *Mat. Zametki* **52** (1992), *no.* 1, 42–50, 155; *translation in Math. Notes* **52** (1992), *no.* 1-2, 662–668 (1993). (Summary) **93g:35121** 35Q51 (35K55)
Il'ichev, V. G. Criteria for selection in a system of competing species. (Russian) *Modeling of population dynamics* (*Russian*), 7–21, *Nizhegorod. Gos. Univ., Nizhniĭ Novgorod*, 1990. (D. O. Logofet) **93c:92007** 92D25 (34C99, 34D20)
— On the technique of constructing simulation models of ecological systems. Adaptation mechanisms. (Russian. English and Russian summaries) *Mat. Model.* **4** (1992), *no.* 3, 11–19. 92D40 (34C25, 34D99)
Iliev, G. L. Monotone convergence of an iteration process of Newton's type. (English summary) *Serdica* **17** (1991), *no.* 4, 264–269. 65H10 (41A99)
Iliev, Valentin Vankov Semi-symmetric algebras: general constructions. *J. Algebra* **148** (1992), *no.* 2, 479–496. (Liam O'Carroll) **93f:15026** 15A69 (13A99, 15A78)
Ilievski, Borko (*with* Dimitrovski, Dragan S.; Rajović, Miloje) Sur la méthode de l'intégrale généralisée de Laplace appliquée aux équations aréolaires linéaires. (Macedonian summary) [On the Laplace generalized integral method applied to linear areolar equations] *Mat. Bilten* **41** (1991), *no.* 15, 41–48. (Summary) **93c:44001** 44A10
— The areolar Laplace transform and its application to areolar linear differential equations. (Macedonian. Russian summary) *Mat. Bilten* **41** (1991), *no.* 15, 49–57. (Summary) **93c:44002** 44A10 (34A20)
Il'in, A. A. Some dimensionless numbers and the associated inequalities describing the asymptotic behaviour of the solutions to the barotropic vorticity equation. *Russian J. Numer. Anal. Math. Modelling* **7** (1992), *no.* 1, 45–54. (Piotr Biler) **93f:35183** 35Q35 (58F39, 76D99, 76E20, 76U05)
Il'in, A. M. ★ Matching of asymptotic expansions of solutions of boundary value problems. (English. English summary) Translated from the Russian by V. Minachin [V. V. Minakhin]. Translations of Mathematical Monographs, 102. *American Mathematical Society, Providence, RI*, 1992. x+281 *pp. ISBN* 0-8218-4561-6 (Editors) **93g:35016** 35C20 (34B05, 34E05, 35–02, 41A60)
— The bisingular problems. *Symposium* "*Analysis on Manifolds with Singularities*" (*Breitenbrunn*, 1990), 65–68, *Teubner-Texte Math.*, 131, *Teubner, Stuttgart*, 1992. (*see* **93k:35004**) 35C20
— (*with* Borovkov, A. V.; Gonchar, A. A.; Ibragimov, I. A.; Prokhorov, Yu. V.; Skorokhod, A. V.) Rafail Zalmanovich Khas'minskiĭ (on the occasion of his sixtieth birthday). (Russian) *Uspekhi Mat. Nauk* **47** (1992), *no.* 4(286), 223–225; *translation in Russian Math. Surveys* **47** (1992), *no.* 4, 243–246. (Editors) **93m:01059** 01A70
— *see also* **Asymptotic properties of solutions of differential equations, 93m:35033**
Il'in, E. M. Scattering by conic obstacles for the vector Laplace operator under solenoidality conditions. (Russian. Russian summary) *Algebra i Analiz* **4** (1992), *no.* 3, 171–182; *translation in St. Petersburg Math. J.* **4** (1993), *no.* 3, 549–558. (Plamen D. Stefanov) **93k:35201** 35P25 (47A40, 47F05)
Il'in, I. V. (*with* Amirkhanov, I. V.; Zhidkov, E. P.; Ignatov, V. V.; Il'ina, A. N.; Il'in, V. D.) ★ О стохастизации движения заряженных частиц в геомагнитном поле и поле волнового пакета. (Russian. English and Russian summaries) [Stochastization of the

motion of charged particles in a geomagnetic field and a wave packet field] Сообщения Объединенного Института Ядерных Исследований. Дубна [Communications of the Joint Institute for Nuclear Research. Dubna], R11-92-288. *Joint Inst. Nuclear Res., Dubna*, 1992. 13 *pp.* (Introduction) **93m:78008** 78A35 (58F40, 86A10)

Il'in, K. I. Stability of a baroclinic vortex. *Izv. Acad. Sci. USSR Atmospher. Ocean. Phys.* **27** (1991), *no.* 5, 403–406 (1992); *translated from Izv. Akad. Nauk SSSR Ser. Fiz. Atmosfer. i Okeana* **27** (1991), *no.* 5 (*Russian*). (John Adam) **93e:76029** 76E20 (76C05, 76E30, 86A10)

Il'in, V. A. (*with* Baĭkov, P. A.) Status of γ^5 in dimensional regularization. (Russian. English summary) *Teoret. Mat. Fiz.* **88** (1991), *no.* 2, 163–191; *translation in Theoret. and Math. Phys.* **88** (1991), *no.* 2, 789–809 (1992). (E. Wieczorek) **93b:81174** 81T16

Il'in, V. D. (*with* Amirkhanov, I. V.; Zhidkov, E. P.; Ignatov, V. V.; Il'ina, A. N.; Il'in, I. V.) ★ О стохастизации движения заряженных частиц в геомагнитном поле и поле волнового пакета. (Russian. English and Russian summaries) [Stochastization of the motion of charged particles in a geomagnetic field and a wave packet field] Сообщения Объединенного Института Ядерных Исследований. Дубна [Communications of the Joint Institute for Nuclear Research. Dubna], R11-92-288. *Joint Inst. Nuclear Res., Dubna*, 1992. 13 *pp.* (Introduction) **93m:78008** 78A35 (58F40, 86A10)

Il'in, V. P. (*with* Itskovich, E. A.) Experimental analysis of explicit incomplete factorization methods. (Russian) *Numerical methods and mathematical modeling* (*Russian*), 85–94, *Akad. Nauk SSSR Sibirsk. Otdel., Vychisl. Tsentr, Novosibirsk*, 1990. (*see* **93i:65007**) 65F99

— ★ О структурах данных и алгоритмов в задачах математической физики. (Russian. English and Russian summaries) [On the structures of data and algorithms in problems of mathematical physics] Препринт [Preprint], 938. *Akad. Nauk SSSR Sibirsk. Otdel., Vychisl. Tsentr, Novosibirsk*, 1991. 31 *pp.* 65Y10 (00A79, 68P05)

— (*with* Koval', F. F.) Solution of boundary value problems by the method of operator continuation and decomposition for orthogonal functions. (Russian. English summary) *Dokl. Akad. Nauk Ukrain. SSR* **1991**, *no.* 10, 22–25, 180. 65J10 (65L10)

— (*with* Pinkina, N. A.) Investigation of rounding errors for some modifications of the sweep method. (Russian. Russian summary) *Model. Mekh.* **5** (1991), *no.* 1, 31–47. (Summary) **93j:65058** 65F30

— (*with* Han, Hou De; Kellogg, R. B.; Yuan, Wei) Analysis of flow directed iterations. *J. Comput. Math.* **10** (1992), *no.* 1, 57–76. (Jian-Ping Zhu) **93c:65048** 65F10 (65L12, 65M06, 76M20)

— On the influence of the parameters that characterize anisotropic spaces of differentiable functions on the character of possible embedding theorems. (Russian. English summary) *Zap. Nauchn. Sem. S.-Peterburg. Otdel. Mat. Inst. Steklov.* (*POMI*) **201** (1992), *Issled. po Linein. Oper. Teor. Funktsiĭ.* 20, 22–94, 190. (H. Triebel) **93d:46052** 46E35

— On the rate of convergence of iterations of implicit incomplete factorization methods. (Russian. Russian summary) *Zh. Vychisl. Mat. i Mat. Fiz.* **33** (1993), *no.* 1, 3–11; *translation in Comput. Math. Math. Phys.* **33** (1993), *no.* 1, 1–7. (Summary) **93j:65049** 65F10

— *see also* **Numerical methods and mathematical modeling, 93i:65007**

Il'in, Vladimir Aleksandrovich Equiconvergence, with a trigonometric series, of expansions in root functions of the one-dimensional Schrödinger operator with complex potential in the class L_1. (Russian) *Differentsial'nye Uravneniya* **27** (1991), *no.* 4, 577–597, 732; *translation in Differential Equations* **27** (1991), *no.* 4, 401–416. (I. Jóo) **93f:34143** 34L10 (34L40, 47E05)

— Componentwise equiconvergence with a trigonometric series of expansions in root vector functions of the Schrödinger operator with a matrix non-Hermitian potential, all elements of which are only summable. (Russian. Russian summary) *Differentsial'nye Uravneniya* **27** (1991), *no.* 11, 1862–1879, 2020–2021; *translation in Differential Equations* **27** (1991), *no.* 11, 1307–1321 (1992). (From the introduction) **93k:34176** 34L10

— (*with* Nikol'skiĭ, S. M.; Bojarski, Bogdan; Usmanov, Z. D.) Abdukhamid Dzhuraevich Dzhuraev (on the occasion of his sixtieth birthday). (Russian) *Uspekhi Mat. Nauk* **47** (1992), *no.* 3(285), 187–190; *translation in Russian Math. Surveys* **47** (1992), *no.* 3, 201–204. (Editors) **93h:01041** 01A70

— (*with* Epifanov, O. V.; Nikol'skiĭ, S. M.; Sedletskiĭ, A. M.; Ul'yanov, P. L.; Sheremeta, M. N.) Yuriĭ Fedorovich Korobeĭnik (on the occasion of his sixtieth birthday). (Russian) *Uspekhi Mat. Nauk* **47** (1992), *no.* 5(287), 199–200; *translation in Russian Math. Surveys* **47** (1992), *no.* 5, 215–217. 01A70

Il'ina, A. N. (*with* Amirkhanov, I. V.; Zhidkov, E. P.; Ignatov, V. V.; Il'in, I. V.; Il'in, V. D.) ★ О стохастизации движения заряженных частиц в геомагнитном поле и поле волнового пакета. (Russian. English and Russian summaries) [Stochastization of the motion of charged particles in a geomagnetic field and a wave packet field] Сообщения Объединенного Института Ядерных Исследований. Дубна [Communications of the Joint Institute for Nuclear Research. Dubna], R11-92-288. *Joint Inst. Nuclear Res., Dubna*, 1992. 13 *pp.* (Introduction) **93m:78008** 78A35 (58F40, 86A10)

Il'ina, N. I. Construction of extensions βf and νf of a continuous mapping f by means of ultrafilters. (Russian) *Geometry of embedded manifolds* (*Russian*), 105–114, "*Prometeĭ*", *Moscow*, 1989. (*see* **93g:53003**) 54C20 (54C05)

— Construction of an extension $w f$ of a continuous mapping f by means of ultrafilters. (Russian) *Geometry of embedded manifolds* (*Russian*), 115–124, "*Prometeĭ*", *Moscow*, 1989. (*see* **93g:53003**) 54C20 (54C05)

— (*with* Pasynkov, B. A.) On **R**-complete mappings. (Russian) *Geometry of embedded manifolds* (*Russian*), 125–130, "*Prometeĭ*", *Moscow*, 1989. (*see* **93g:53003**) 54D35

Il'ina, S. M. On a solution of a nonlinear boundary value problem. (Russian. Russian summary) *Differential equations and their applications in physics* (*Russian*), 57–60, 109, *Dnepropetrovsk. Gos. Univ., Dnepropetrovsk*, 1989. (*see* **93g:00024**) 65P05

— On the reduction of a nonlinear boundary value problem. (Russian. Russian summary) *Differential equations and their applications in physics* (*Russian*), 44–48, 104–105, *Dnepropetrovsk. Gos. Univ., Dnepropetrovsk*, 1990. (*see* **93k:00023**) 35L75 (35Q53)

Ilinski, K. N. *see* **Il'inskiĭ, K. N.**

Il'inskiĭ, A. N. (*with* Elizarov, A. M.; Il'inskiĭ, N. B.; Potashev, A. V.; Fokin, D. A.) Aerohydrodynamically appropriate velocity distributions in inverse boundary value problems of subsonic aerohydrodynamics. (Russian) *Trudy Sem. Kraev. Zadacham No.* 26 (1991), 115–137. 76B05 (76G25)

Il'inskiĭ, K. N. (*with* Borisov, N. V.; Uzdin, V. M.) Quantum group particles and parastatistical excitations. (English summary) *Phys. Lett. A* **169** (1992), *no.* 6, 427–432. (Michael Schlieker) **93k:81090** 81R50 (81S05)

— (*with* Badanin, A. V.; Belinskiĭ, B. P.; Uzdin, V. M.) Supersymmetry and acoustic problems. (Russian. English and Russian summaries) *Teoret. Mat. Fiz.* **90** (1992), *no.* 3, 407–411; *translation in Theoret. and Math. Phys.* **90** (1992), *no.* 3, 277–280. (Summary) **93f:76080** 76N10 (35Q35, 35Q40, 76Q05)

Il'inskiĭ, N. B. (*with* Elizarov, A. M.; Potashev, A. V.) Inverse boundary value problems of aerohydrodynamics as a theoretical basis for the design of wing profiles in a subsonic flow. (Russian. Russian summary) *Model. Mekh.* **5** (1991), *no.* 1, 121–140. (Summary) **93i:76049** 76G25 (76M25)

— (*with* Elizarov, A. M.; Il'inskiĭ, A. N.; Potashev, A. V.; Fokin, D. A.) Aerohydrodynamically appropriate velocity distributions in inverse boundary value problems of subsonic aerohydrodynamics. (Russian) *Trudy Sem. Kraev. Zadacham No.* 26 (1991), 115–137. 76B05 (76G25)

Iliopoulos, J. (*with* Tomaras, T. N.) Scalar fields on a Robertson-Walker background. *Phys. Lett. B* **255** (1991), *no.* 1, 27–30. (Summary) **93b:81188a** 81T20 (83C15)

— (*with* Tomaras, T. N.) Erratum: "Scalar fields on a Robertson-Walker background". *Phys. Lett. B* **263** (1991), *no.* 3-4, 591. (Summary) **93b:81188b** 81T20 (83C15)

rohál-Ilkiv, Boris *see* **Rohál-Ilkiv, Boris**

Illanes, Alejandro A characterization of dendroids by the n-connectedness of the Whitney levels. *Fund. Math.* **140** (1992), *no.* 2, 157–174. (L. E. Ward, Jr.) **93a:54010** 54B20 (54F15)

Ille, Pierre L'ensemble des intervalles d'une multirelation binaire et reflexive. [The set of intervals of a binary reflexive multirelation] *Z. Math. Logik Grundlag. Math.* **37** (1991), *no.* 3, 227–256. (Péter Komjáth) **93f:04001** 04A05 (08A35)

— The reconstruction of multirelations, at least one component of which is a chain. (English summary) *J. Combin. Theory Ser. A* **61** (1992), *no.* 2, 279–291. (William L. Kocay) **93j:05108** 05C60 (04A05, 05C20, 08A02)

Illés, Ágnes Extremale homogene Kreispackungen auf der Kugelfläche. [Extremal homogeneous circle packings on the surface of a ball] *Ann. Univ. Sci. Budapest. Eötvös Sect. Math.* **34** (1991), 181–200 (1992). (R. Blind) **93d:52021** 52C15

— Extremale homogene Kreisüberdeckungen und enge Packungen auf der Kugelfläche. [Extremal homogeneous circle coverings and dense packings on a spherical surface] *Ann. Univ. Sci. Budapest. Eötvös Sect. Math.* **34** (1991), 201–216 (1992). (R. Blind) **93d:52022** 52C15

Illner, Reinhard Solutions of the steady Boltzmann equation in a slab: applied problems, pure results. (English summary) *Discrete models of fluid dynamics* (*Figueira da Foz*, 1990), 104–112, *Ser. Adv. Math. Appl. Sci.*, 2, *World Sci. Publishing, River Edge, NJ*, 1991. (*see* **93f:82001**) 82C40 (82–02)

— The Wigner-Poisson and Schrödinger-Poisson systems. (English summary) Proceedings of the Fourth International Workshop on Mathematical Aspects of Fluid and Plasma Dynamics (Kyoto, 1991). *Transport Theory Statist. Phys.* **21** (1992), *no.* 4-6, 753–767. (Paul F. Zweifel) **93j:82040** 82C03

Illoussamen, E. (*with* Akkar, Mohamed; Ouadadess, M.) Continuité des modules dérivations dans les algèbres de Fréchet. (English and French summaries) [Continuity of module derivations in Fréchet algebras] *Ann. Sci. Math. Québec* **16** (1992), *no.* 2, 117–124. (Summary) **93m:46054** 46H25 (46H05)

— (*with* Oudadess, M.) Sur des critères de commutativité dans les algèbres de Banach. (French summary) [On commutativity criteria in Banach algebras] *C. R. Math. Rep. Acad. Sci. Canada* **14** (1992), *no.* 5, 183–188. (Summary) **93k:46041** 46H20

Illusie, Luc Ordinarité des intersections complètes générales. [Ordinariness of general complete intersections] *The Grothendieck Festschrift, Vol. II*, 376–405, *Progr. Math.*, 87, *Birkhäuser Boston, Boston, MA*, 1990. (Wayne Raskind) **93h:14015** 14F30 (14F40)

— Réalisation l-adique de l'accouplement de monodromie d'après A. Grothendieck. (English summary) [l-adic realization of monodromy coupling, after A. Grothendieck] Courbes modulaires et courbes de Shimura (Orsay, 1987/1988). *Astérisque No.* 196-197 (1991), 7, 27–44 (1992). (Adolfo Quirós) **93c:14020** 14F20 (14D05, 14G20, 14H25)

Illy, József The correspondence of Albert Einstein and Gustav Mie, 1917–1918. (French summary) *Studies in the history of general relativity* (*Luminy*, 1988), 244–259, 462, *Einstein Stud.*, 3, *Birkhäuser Boston, Boston, MA*, 1992. (H. Treder) **93g:01045** 01A60 (83–03)

Ilmanen, Tom Generalized flow of sets by mean curvature on a manifold. (English summary) *Indiana Univ. Math. J.* **41** (1992), *no.* 3, 671–705. (Anders Linnér) **93k:58057** 58E15 (53A07)

Ilolov, M. (*with* Samoilenko, A. M.) Nonhomogeneous evolution equations with impulse action. (Russian. Russian and Ukrainian summaries) *Ukraïn. Mat. Zh.* **44** (1992), *no.* 1, 93–100; *translation in Ukrainian Math. J.* **44** (1992), *no.* 1, 83–90. (Florin Iacob) **93i:34109** 34G10 (34A37, 47N20)

Il'tyakov, A. V. Finiteness of the basis of identities of a finitely generated alternative PI-algebra over a field of characteristic zero. (Russian) *Sibirsk. Mat. Zh.* **32** (1991), *no.* 6, 61–76, 204; *translation in Siberian Math. J.* **32** (1991), *no.* 6, 948–961 (1992). (S. P. Mishchenko) **93c:17056** 17D05

Il'vovskaya, M. S. (*with* Gusev, A. I.) On the structure of the set of cyclic points of a class of one-dimensional mappings. (Russian) *Application of functional analysis in approximation theory* (*Russian*), 53–61, *Tver. Gos. Univ., Tver'*, 1990. (*see* **93k:00021**) 58F08 (54H20)

magaril-Il'yaev, G. G. *see* **Magaril-Il'yaev, G. G.**

Il'yalov, O. R. (*with* Nyashin, Yu. I.) On the formulation of a boundary value problem on determining residual stresses (in the general case). (Russian. Russian summary) *Boundary value problems* (*Russian*), 156–161, *Perm. Politekh. Inst., Perm'*, 1989. (*see* **93k:00022**) 73E99 (73B30)

Il'yashenko, Yu. S. Nonlinear Stokes phenomena. *Dynamical systems and related topics* (*Nagoya*, 1990), 158–165, *Adv. Ser. Dyn. Syst.*, 9, *World Sci. Publishing, River Edge, NJ*, 1991. (J. S. Joel) **93d:32067** 32S65 (32L30, 34A20, 34C05, 58C27, 58F18, 58F21)

— Finiteness theorems for limit cycles. *Proceedings of the International Congress of Mathematicians, Vol. I, II* (*Kyoto*, 1990), 1259–1269, *Math. Soc. Japan, Tokyo*, 1991. (J. S. Joel) **93d:58128** 58F21 (34C05, 58F14)

— Global analysis of the phase portrait for the Kuramoto-Sivashinsky equation. (English summary) *J. Dynamics Differential Equations* **4** (1992), *no.* 4, 585–615. (Piotr Biler) **93k:35263** 35Q99 (58F39)

— Foreword. *Nonlinear Stokes phenomena*, ix–xiv, *Adv. Soviet Math.*, 14, *Amer. Math. Soc., Providence, RI*, 1993. (Editors) **93m:01045** 01A60 (32–03, 58–03)

— *see also* **Nonlinear Stokes phenomena, 93i:32002**

Il'yasov, N. A. On an inverse theorem in the theory of approximations of periodic functions in different metrics. (Russian. Russian summary) *Mat. Zametki* **52** (1992), *no.* 2, 53–61, 156; *translation in Math. Notes* **52** (1992), *no.* 1-2, 791–798 (1993). (V. A. Baskakov) **93j:41011** 41A17 (41A50)

Il'yazova, D. Z. (*with* Vernik, A. N.) Extremal positive extensions of an infinite-dimensional analogue of the Krein-Feller differentiation operator. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* **1991,** *no.* 11, 19–22 (1992); *translation in Soviet Math. (Iz. VUZ)* **35** (1991), *no.* 11, 18–21. (Björn Textorius) **93i:47070** 47E05 (34L05, 47A20, 47B25)

Ilyin, A. A. *see* **Il'in, A. A.**

Ilyushchenko, V. I. ★ Gauss elimination method (1849 A.D.) in the ancient Chinese script *Mathematics in nine chapters* (152 B.C.). (English. English and Russian summaries) Сообщения Объединенного Института Ядерных Исследований. Дубна [Communications of the Joint Institute for Nuclear Research. Dubna], E10-92-295. *Joint Inst. Nuclear Res., Dubna*, 1992. 5 *pp.* (Catherine Jami) **93i:01003** 01A25

— ★ Reversible mathematics—an artificial science or a scientific art? Сообщения Объединенного Института Ядерных Исследований. Дубна [Communications of the Joint Institute for Nuclear Research. Dubna], E10-92-343. *Joint Inst. Nuclear Res., Dubna*, 1992. 13 *pp.* 65J20 (15A09, 65F99)

— ★ The general structure of solutions of unstable inverse problems. Сообщения Объединенного Института Ядерных Исследований. Дубна [Communications of the Joint Institute for Nuclear Research. Dubna], E10-92-342. *Joint Inst. Nuclear Res., Dubna*, 1992. 7 *pp.* 65J20 (15A09, 65F99)

— ★ A nonstandard matrix derivative obtained from a standard scalar derivative. (English. English and Russian summaries) Сообщения Объединенного Института Ядерных Исследований. Дубна [Communications of the Joint Institute for Nuclear Research. Dubna], E10-92-382. *Joint Inst. Nuclear Res., Dubna*, 1992. 7 *pp.* 03H05 (26E35)

— ★ Inverse combinatorial vector-matrix transforms over finite and infinite algebraic fields. (English. English and Russian summaries) Сообщения Объединенного Института Ядерных Исследований. Дубна [Communications of the Joint Institute for Nuclear Research. Dubna], E10-92-391. *Joint Inst. Nuclear Res., Dubna*, 1992. 5 *pp.* 15A99 (11T30)

Ilyushechkin, N. V. The discriminant of the characteristic polynomial of a normal matrix. (Russian) *Mat. Zametki* **51** (1992), *no.* 3, 16–23, 143; *translation in Math. Notes* **51** (1992), *no.* 3-4, 230–235. (Summary) **93c:15007** 15A15

Il'yuta, G. G. Relations between monodromy groups of a singularity. (Russian) *Funktsional. Anal. i Prilozhen.* **26** (1992), *no.* 1, 9–16; *translation in Functional Anal. Appl.* **26** (1992), *no.* 1, 7–12. (Aleksandr G. Aleksandrov) **93i:32050** 32S40 (14H20, 32S05)

— Monodromy groups of boundary singularities. (Russian. Russian summary) *Mat. Sb.* **183** (1992), *no.* 5, 29–42. (Aleksandr G. Aleksandrov) **93k:32079** 32S40 (58C27)

Im, Bok-Hee Unipotent subgroups of orthogonal and symplectic groups associated with nonreduced root systems of type BC_n. *Honam Math. J.* **14** (1992), *no.* 1, 25–35. (Mark Reeder) **93g:20089** 20G15 (15A30)

Im, Sung Mo (*with* Kim, Won Kyu; Rim, Dong Il) Existence of equilibrium in noncompact sets and its application. *J. Korean Math. Soc.* **29** (1992), *no.* 2, 361–373. (Kok Keong Tan) **93h:47079** 47N10 (47H10, 47H19, 90A14)

Im, Y. H. Approximation of approximate fibrations by bundle maps. (English summary) *Trans. Amer. Math. Soc.* **339** (1993), *no.* 1, 279–295. (Paul F. Duvall) **93k:55019** 55R65 (57N15)

Imae, J. (*with* Perkins, J. E.; Moore, John Barratt) Toward time-varying balanced realization via Riccati equations. *Math. Control Signals Systems* **5** (1992), *no.* 3, 313–326. (Summary) **93b:93025** 93B15 (93C05, 93C50)

Imai, Hiroshi (*with* Yamamoto, Peter; Kato, Kenji; Imai, Keiko) Algorithms for vertical and orthogonal L_1 linear approximation of points. (English summary) *Proceedings of the Fourth Annual Symposium on Computational Geometry (Urbana, IL, 1988)*, 352–361, *ACM, New York*, 1988. (*see* **93k:68003**) 68U05

— (*with* Lee, Der Tsai; Yang, Chung-Do) 1-segment center problems. (English summary) *ORSA J. Comput.* **4** (1992), *no.* 4, 426–434. 90C27

— Simultaneous recovery of loop transfer property and disturbance attenuation property by high gain observer. (English summary) *Internat. J. Control* **57** (1993), *no.* 4, 841–852. (Summary) **93m:93036** 93B50 (93B25, 93B52)

Imai, Hitoshi (*with* Iguchi, Hiroko; Natori, Makoto) Reorthogonalization in the block Lanczos method. (Japanese. English summary) *Parallel processing for matrix computation (Yokohama, 1991)*, 58–64, *Adv. Numer. Methods Large Sparse Sets Linear Equations*, 7, *Keio Univ., Yokohama*, 1991. (*see* **93e:65040**) 65F25

Imai, Isao ★ Applied hyperfunction theory. Translated from the 1981 Japanese original. Mathematics and its Applications (Japanese Series), 8. *Kluwer Academic Publishers Group, Dordrecht*, 1992. xx+438 *pp. ISBN* 0-7923-1507-3 (Yoshifumi Ito) **93i:46073** 46F15 (30E99, 32A45, 42A38, 44A10, 46Fxx)

Imai, Keiko (*with* Yamamoto, Peter; Kato, Kenji; Imai, Hiroshi) Algorithms for vertical and orthogonal L_1 linear approximation of points. (English summary) *Proceedings of the Fourth Annual Symposium on Computational Geometry (Urbana, IL, 1988)*, 352–361, *ACM, New York*, 1988. (*see* **93k:68003**) 68U05

Imai, Naoki (*with* Ishikawa, Kenzo; Tanaka, Ikuo) Quantum theory of a relativistic particle with torsion and Chern-Simons gauge theory. (English summary) *Progr. Theoret. Phys.* **88** (1992), *no.* 2, 351–376. (Susan Mokhtari) **93m:81104** 81T13

Imaizumi, Jun (*with* Morito, Susumu) Studies on tandem queueing system with blocking: a survey. (Japanese. English summary) *Bull. Sci. Engrg. Res. Lab. Waseda Univ. No.* 136 (1992), 42–58. 60K25 (90B22)

Imaizumi, Tadashi (*with* Watanabe, Norio) A fuzzy statistical test of fuzzy hypotheses. (English summary) *Fuzzy Sets and Systems* **53** (1993), *no.* 2, 167–178. 62F99 (04A72)

Imam, Fathia A. Higher-order asymptotic evaluation of definite integrals with a large parameter. (English and Arabic summaries) *Delta J. Sci.* **14** (1990), *no.* 3, 802–830. (Summary) **93f:26007** 26A99 (33C10)

Imanaliev, M. I. *see* **Abstracts: All-Union Conference "Asymptotic Methods in the Theory of Singularly Perturbed Equations and Ill-posed Problems", 93d:00025**

Imanishi, Shigeru (*with* Muranaka, Noriaki) Design of a ternary coding scheme and of single-error-correcting ternary Hamming codes. (English summary) *Electron. Comm. Japan Part III Fund. Electron. Sci.* **75** (1992), *no.* 10, 13–27. 94B60

Imaoka, Teruo (*with* Okamoto, Yosuke) Representations of $\mathscr{P}$-congruences on $\mathscr{P}$-regular semigroups. *Mem. Fac. Sci. Shimane Univ.* **25** (1991), 21–37. (S. Sribala) **93b:20097** 20M10

— (*with* Okamoto, Yosuke) Some remarks on $\mathscr{P}$-congruences on $\mathscr{P}$-regular semigroups. II. $\mathscr{P}$-kernel normal systems. *Proceedings of the 15th Symposium on Semigroups (Matsue, 1991)*, 71–78, *Shimane Univ., Matsue*, 1992. (*see* **93e:20073**) 20M17

— *see also* **Proceedings: Symposium on Semigroups, 93e:20073**

Imbens, Guido W. An efficient method of moments estimator for discrete choice models with choice-based sampling. (English summary) *Econometrica* **60** (1992), *no.* 5, 1187–1214. (Summary) **93e:62262** 62P20 (62F10)

Imbert, J.-F. ★ Analyse des structures par éléments finis. (French) [Finite-element analysis of structures] Third edition. SUP'AÉRO. École Nationale Supérieure de l'Aéronautique et de l'Espace. *Cépaduès Éditions, Toulouse*, 1991. 506 *pp. ISBN* 2-85428-273-6 73V05 (73Kxx)

Imbesi, Maurizio Rank of a finite differential module in mixed characteristic. (Italian. English summary) *Atti Accad. Peloritana Pericolanti Cl. Sci. Fis. Mat. Natur.* **68** (1990), 243–255 (1992). (Alexandru Buium) **93h:13023** 13N05

Imbimbo, Camillo (*with* Mukhi, Sunil) String field theory in minimal model backgrounds and nonperturbative two-dimensional gravity. *Nuclear Phys. B* **364** (1991), *no.* 3, 662–680. (Summary) **93h:81096** 81T27 (81T40)

— Quantization ambiguities for Chern-Simons topological theories. *Phys. Lett. B* **258** (1991), *no.* 3-4, 353–358. (Siye Wu) **93a:81090** 81S10 (58F06, 58Z05, 81T13, 81T40)

— (*with* Mahapatra, Swapna; Mukhi, Sunil) Construction of physical states of nontrivial ghost number in $c < 1$ string theory. *Nuclear Phys. B* **375** (1992), *no.* 2, 399–420. (Stanislav Z. Pakuliak) **93k:81178** 81T30 (17B67, 81R10, 81T40)

Imbo, Tom D. (*with* Brekke, Lee) Statistics of 2D solitons. *Internat. J. Modern Phys. A* **7** (1992), *no.* 11, 2589–2600. (Krzysztof Galicki) **93h:81111** 81T40 (14H55, 35Q51)

— (*with* Brekke, Lee; Dykstra, Hans; Hughes, Shane J.) Knots and links of nonabelian string. (English summary) *Phys. Lett. B* **288** (1992), *no.* 3-4, 273–278. (Summary) **93g:81087** 81T13 (57M25, 81T30)

Imbrie, John Z. Supersymmetry breaking in Wess-Zumino models. *Constructive quantum field theory, II (Erice, 1988)*, 331, *NATO Adv. Sci. Inst. Ser. B Phys.*, 234, *Plenum, New York*, 1990. (*see* **93g:81074**) 81T10 (81R40)

— (*with* Janowsky, Steven A.; Weitsman, Jonathan) Space-dependent Dirac operators and effective quantum field theory for fermions. *Comm. Math. Phys.* **135** (1991), *no.* 3, 421–441. (H. Hogreve) **93b:81140** 81T08 (47N50, 81Q99, 81T40)

— (*with* Golowich, Steven) A new approach to the long-time behavior of self-avoiding random walks. *Ann. Physics* **217** (1992), *no.* 1, 142–169. (Neal Madras) **93h:82025** 82B41 (60J15)

— (*with* Brydges, David; Evans, Steven N.) Self-avoiding walk on a hierarchical lattice in four dimensions. *Ann. Probab.* **20** (1992), *no.* 1, 82–124. (Massimo Campanino) **93b:60150** 60J15 (81T60, 82B41)

— (*with* Borgs, Christian) Finite-size scaling and surface tension from effective one-dimensional systems. *Comm. Math. Phys.* **145** (1992), *no.* 2, 235–280. (Klaus Ziegler) **93i:82040** 82B26 (81T27, 82B20)

— (*with* Borgs, Christian) Crossover finite-size scaling at first-order transitions. (English summary) *J. Statist. Phys.* **69** (1992), *no.* 3-4, 487–537. (Flora Koukiou) **93k:82025** 82B26 (82B20)

Imdad, M. (*with* Ahmad, Aqeel) A common fixed point theorem for four mappings satisfying a rational inequality. (English summary) *Publ. Math. Debrecen* **41** (1992), *no.* 3-4, 181–187. (Summary) **93h:54027** 54H25

Im Hof, H.-C. (*with* Böhm, Johannes) Flächeninhalt verallgemeinerter hyperbolischer Dreiecke. (Nepali summary) [Area of generalized hyperbolic triangles] *Geom. Dedicata* **42** (1992), *no.* 2, 223–233. (Cyril W. L. Garner) **93a:51014** 51M10 (51M25)

— (*with* Fellmann, E. A.) Die Euler-Ausgabe—ein Bericht zu ihrer Geschichte und ihrem aktuellen Stand. [The edition of Euler's works—a report on its history and its current state] *Jahrbuch Überblicke Mathematik*, 1993, 185–198, *Vieweg, Braunschweig*, 1993. (*see* **93j:00006**) 01A50

Imhof, J.-P. A simple proof of Pitman's $2M - X$ theorem. *Adv. in Appl. Probab.* **24** (1992), *no.* 2, 499–501. (Summary) **93b:60185** 60J65

Imkeller, Peter (*with* Frangos, Nikos E.) Adaptedness and existence of occupation densities for stochastic integral processes in the second Wiener chaos. *Stochastic analysis*, 189–212, *Academic Press, Boston, MA*, 1991. (A. Badrikian) **93b:60113** 60H05 (60H07)

— The transformation theorem for two-parameter pure jump martingales. *Probab. Theory Related Fields* **89** (1991), *no.* 3, 261–283. (Yu. S. Mishura) **93d:60084** 60G44 (60G60)

— Occupation densities for stochastic integral processes in the second Wiener chaos. *Probab. Theory Related Fields* **91** (1992), *no.* 1, 1–24. (Philip Protter) **93e:60103** 60H05

Immink, G. K. (*with* Braaksma, Boele L. J.) A Borel-Ritt theorem with prescribed error bounds. *Équations différentielles dans le champ complexe, Vol. I (Strasbourg*, 1985), 1–33, *Publ. Inst. Rech. Math. Av., Univ. Louis Pasteur, Strasbourg*, 1988. (Pablo Martín) **93i:41021** 41A60 (30E15)

— Asymptotic expansions with error bounds for solutions of difference equations of "level 1^+". *Équations différentielles dans le champ complexe, Vol. I (Strasbourg*, 1985), 35–60, *Publ. Inst. Rech. Math. Av., Univ. Louis Pasteur, Strasbourg*, 1988. (J. Albrycht) **93e:39002** 39A10

Imomnazarov, Kh. Kh. Solvability of an inverse problem for the one-dimensional Boltzmann equation. (Russian) *Sibirsk. Mat. Zh.* **33** (1992), *no.* 2, 175–180, 223; *translation in Siberian Math. J.* **33** (1992), *no.* 2, 333–338. (Summary) **93c:35162** 35R30 (35Q99)

Imoru, Christopher Olutunde A remark on inequalities involving convolutions. *J. Math. Anal. Appl.* **164** (1992), *no.* 2, 325–336. (E. R. Love) **93c:26017** 26D15

Impagliazzo, Russell (*with* Edmonds, Jeff; Rudich, Steven; Sgall, Jiří) Communication complexity towards lower bounds on circuit depth. (English summary) 32*nd Annual Symposium on Foundations of Computer Science (San Juan, PR*, 1991), 249–257, *IEEE Comput. Soc. Press, Los Alamitos, CA*, 1991. (Summary) **93g:68035** 68Q10 (68M10, 68Q25)

— (*with* Gupta, Arvind) Computing planar intertwines. (English summary) 32*nd Annual Symposium on Foundations of Computer Science (San Juan, PR*, 1991), 802–811, *IEEE Comput. Soc. Press, Los Alamitos, CA*, 1991. (Summary) **93e:05091** 05C85 (68Q25, 68R10)

— (*with* Nisan, Noam) The effect of random restrictions on formula size. (English summary) *Random Structures Algorithms* **4** (1993), *no.* 2, 121–133. (Norbert Blum) **93m:68076** 68Q25 (03G05, 06E30)

Impens, Chris Nonstandard methods in analysis. *Classical analysis* (*Kazimierz Dolny*, 1991), 29–39, *World Sci. Publishing, River Edge, NJ*, 1992. (Peter W. Day) **93g:01046** 01A60 (00A35, 03H05, 26E35)

— Standard and nonstandard polynomial approximation. (English summary) *J. Math. Anal. Appl.* **171** (1992), *no.* 2, 361–376. (P. A. Loeb) **93m:26031** 26C05 (03H05, 26E35, 30C10, 41A65)

Impey, M. D. (*with* Riley, D. S.; Wheeler, A. A.) Bifurcation analysis of cellular interfaces in unidirectional solidification of a dilute binary mixture. (English summary) *SIAM J. Appl. Math.* **53** (1993), *no.* 1, 78–95. (Summary) **93j:35032** 35B32 (35Q99, 35R35, 76E30, 76R99, 80A22)

Imreh, B. (*with* Gécseg, F.) Finite isomorphically complete systems. *Discrete Appl. Math.* **36** (1992), *no.* 3, 307–311. (Summary) **93b:68055** 68Q70

Imrich, W. *see* **Algebraic graph theory, 93e:05001**

Imura, J. (*with* Sugie, Toshiharu; Yoshikawa, Tsuneo) Adaptive robust control of robot manipulators. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, II* (*Kobe*, 1991), 627–632, *Mita, Tokyo*, 1992. (*see* **93g:93006**) 93C85 (70B15, 70Q05, 93C40)

Inaba, Hiroshi (*with* Okutsu, Noriko) Reduced order stabilizing controllers via normalized coprime factorization. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, I* (*Kobe*, 1991), 443–448, *Mita, Tokyo*, 1992. (*see* **93g:93005**) 93D21 (93B52)

— (*with* Otsuka, Naohisa) Erratum: "Block decoupling by incomplete state feedback for linear multivariable systems" [Internat. J. Systems Sci. **22** (1991), no. 8, 1419–1437; MR 92d:93064]. *Internat. J. Systems Sci.* **23** (1992), *no.* 8, 1391. 93B51

— (*with* Otsuka, Naohisa; Toraichi, Kazuo) Simultaneous triangular-decoupling, disturbance-rejection and stabilization problem for infinite-dimensional systems. (English summary) *Analysis and optimization of systems: state and frequency domain approaches for infinite-dimensional systems* (*Sophia-Antipolis*, 1992), 290–301, *Lecture Notes in Control and Inform. Sci.*, 185, *Springer, Berlin*, 1993. (*see* **93i:93005**) 93C25 (93D15)

— (*with* Wang, Weiben) Block decoupling for linear systems over unique factorization domains. (Japanese. English summary) *Trans. Inst. Systems Control Inform. Engrg.* **6** (1993), *no.* 4, 171–179. 93C05 (93B17)

Inaba, Hisashi Strong ergodicity for perturbed dual semigroups and application to age-dependent population dynamics. *J. Math. Anal. Appl.* **165** (1992), *no.* 1, 102–132. (G. F. Webb) **93d:47146** 47N60 (34G10, 47A35, 47D03, 92D25)

Inaba, Takashi (*with* Tsuchiya, Nobuo) Expansive foliations. *Hokkaido Math. J.* **21** (1992), *no.* 1, 39–49. (Lawrence Conlon) **93d:57057** 57R30 (58F18)

Inada, Kôichi A minimax regret estimator of the normal mean with unknown variance after preliminary test. *Rep. Fac. Sci. Kagoshima Univ. Math. Phys. Chem. No.* **24** (1991), 1–7. (Anirban Dasgupta) **93i:62021** 62F10 (62C20, 62H12)

— (*with* Kim, Hea-Jung) A minimum discrimination information shrinkage to interval estimator of the normal mean. *Bull. Inform. Cybernet.* **25** (1992), *no.* 1-2, 61–69. (Summary) **93a:62037** 62F12 (62B10)

— (*with* Gokhale, D. V.; Kim, Hea-Jung) A minimum discrimination information estimator of preliminary conjectured normal variance. (English summary) *Ann. Inst. Statist. Math.* **45** (1993), *no.* 1, 129–136. (Summary) **93m:62052** 62F10

Inagaki, Yoshio (*with* Shirao, Yoshiaki; Kawabata, Hiroaki; Nagahara, Toshikuni) Bifurcations and chaos phenomena in piecewise linear systems with unsymmetrical restoring force. (English summary) *Bull. Univ. Osaka Prefect. Ser. A* **40** (1991), *no.* 2, 217–231. (Summary) **93h:34052** 34C15 (34C23, 58F13, 70K40, 70K50)

İnal, Ceyhan On the limiting distribution for Bernoulli trials within a Markov chain context. (English summary) *Comm. Fac. Sci. Univ. Ankara Ser. A_1 Math. Statist.* **36** (1987), *no.* 2, 123–129 (1989). 60F05 (60J10)

Inamasu, Yutaka (*with* Yanagiwara, Hiroki) On a modified second order Runge-Kutta method. II. *Bull. College Liberal Arts Kyushu Sangyo Univ.* **28** (1991), *no.* 2, 93–100. (Masaharu Nakashima) **93a:65092** 65L06 (65L20)

— (*with* Yanagiwara, Hiroki) On a modified second order Runge-Kutta method. III. *Bull. College Liberal Arts Kyushu Sangyo Univ.* **29** (1992), *no.* 2, 99–105. 65L06

— (*with* Obayashi, Noboru; Yanagiwara, Hiroki) On a modified second order Runge-Kutta method. IV. *Bull. College Liberal Arts Kyushu Sangyo Univ.* **29** (1993), *no.* 3, 127–143. 65L06

Inami, Takeo (*with* Kanno, Hiroaki) $N = 2$ super W algebras and generalized $N = 2$ super KdV hierarchies based on Lie superalgebras. *J. Phys. A* **25** (1992), *no.* 13, 3729–3736. (Wen Xiu Ma) **93e:58086** 58F07 (17A70, 35Q53, 81R10, 81T40)

— *see also* **Common trends in mathematics and quantum field theories, 93c:00006**

Inamoto, Tadashi (*with* Shimizu, A.; Miyazaki, Tadashi) Path integral quantization of a nonrelativistic particle constrained on a general hypersurface. (English summary) *Nuovo Cimento B* (11) **107** (1992), *no.* 8, 973–976. (Takashi Miura) **93m:81088** 81S40 (58D30)

— Symplectic structures in the chirally gauged Wess-Zumino-Witten model. *Phys. Rev. D* (3) **45** (1992), *no.* 4, 1276–1290. (Joan Soto) **93c:81248** 81T70 (81T50)

Inayat-Hussain, A. A. Steady currents in composite conductors, eigenfunction expansions, and exactly solvable linear integral equations. *J. Math. Phys.* **32** (1991), *no.* 12, 3297–3311. (From the summary) **93c:45004** 45E05 (44A15)

Ince, D. C. *see* **Turing, A. M., 93b:01050**

de la Incera, V. (*with* Ferrer, E. J.; Fradkin, E. S.) Thermodynamics of the neutral string gas in electromagnetic background. *Quantum gravity* (*Moscow*, 1990), 553–563, *World Sci. Publishing, River Edge, NJ*, 1991. (Summary) **93d:83067** 83E30 (81T30)

Indekeu, J. O. Line tension near the wetting transition: results from an interface displacement model. *Phys. A* **183** (1992), *no.* 4, 439–461. (Summary) **93a:82041** 82C24

Indira, R. (*with* Meenakshi, A. R.) On sums of conjugate EP matrices. *Indian J. Pure Appl. Math.* **23** (1992), *no.* 3, 179–184. (Summary) **93f:15024** 15A57 (15A45)

— (*with* Meenakshi, A. R.) On products of conjugate EP_r matrices. *Kyungpook Math. J.* **32** (1992), *no.* 1, 103–110. (Shao Kuan Li) **93g:15014** 15A57 (15A09)

Indira Devi, A. (*with* Bhat, B. R.) Optimality of sequential probability ratio tests for a class of continuous parameter stochastic processes. *Sequential Anal.* **10** (1991), *no.* 3-4, 125–138. (Wolfgang Winkler) **93b:62113** 62L10

Indlekofer, Karl-Heinz (*with* Galambos, Janos) Additive functions vanishing outside a given set of primes. I. Limiting distribution on short intervals. *Publ. Math. Debrecen* **40** (1992), *no.* 3-4, 211–217. (Tian Ze Wang) **93h:11106** 11N60 (11K65)

— (*with* Warlimont, Richard) Remarks on the infinite product representations of holomorphic functions. *Publ. Math. Debrecen* **41** (1992), *no.* 3-4, 263–276. (Eugenijus Manstavičius) **93j:11065** 11N99 (30E99)

Indorato, Luigi (*with* Nastasi, Pietro) Riccati's proof of the parallelogram of forces in the context of the vis viva controversy. (English summary) *Physis Riv. Internaz. Storia Sci. (N.S.)* **28** (1991), *no.* 3, 751–767 (1992). (Summary) **93h:01019** 01A50

Indu, B. D. (*with* Purohit, G. C.) On Laplace equation deduction into the spheroconal harmonics. (English summary) *Pure Appl. Math. Sci.* **36** (1992), *no.* 1-2, 53–57. 33C55

Induráin Eraso, Esteban (*with* Candeal, Juan Carlos) Numerical representation of total orderings. (Spanish. English summary) *Rev. Real Acad. Cienc. Exact. Fís. Natur. Madrid* **84** (1990), *no.* 3, 415–428. (Summary) **93c:06001** 06A05

— (*with* Candeal, Juan Carlos; Hervés, Carlos) Applications économiques des suites dans les espaces vectoriels topologiques. (English summary) [Applications in economics of sequences in topological vector spaces] *Rev. Acad. Cienc. Zaragoza* (2) **47** (1992), 89–102. (Summary) **93j:90024** 90A14 (46N10)

— (*with* Candeal, Juan Carlos; Uriarte, José Ramón) Some issues related to the topological aggregation of preferences. (English summary) *Soc. Choice Welf.* **9** (1992), *no.* 3, 213–227. (Andrey V. Malishevski) **93i:90013** 90A07 (90A06)

Ineichen, Robert Zum Gedenken an Prof. Dr. Max Jeger. [In memory of Max Jeger] *Elem. Math.* **47** (1992), *no.* 1, 1–5. (Editors) **93e:01022** 01A70

— Aus der Vorgeschichte der mathematischen Statistik. (German summary) [From the prehistory of mathematical statistics] *Elem. Math.* **47** (1992), *no.* 3, 93–107. (Zeno G. Swijtink) **93h:01004** 01A05 (62–03)

Infanger, Gerd (*with* Dantzig, George B.) Large-scale stochastic linear programs—importance sampling and Benders decomposition. (English summary) *Computational and applied mathematics, I* (*Dublin*, 1991), 111–120, *North-Holland, Amsterdam*, 1992. (*see* **93j:00007**) 65K05 (90C08, 90C15)

— Monte Carlo (importance) sampling within a Benders decomposition algorithm for stochastic linear programs. (English summary) *Ann. Oper. Res.* **39** (1992), *no.* 1-4, 69–95 (1993). (István Déak) **93m:90054** 90C15 (90C08)

Infeld, E. (*with* Frycz, P.; Rowlands, George) Can the dynamics of structural change be treated theoretically? *Nonlinear dispersive wave systems* (*Orlando, FL*, 1991), 575–589, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93f:00015**) 76E99

— (*with* Grundland, Alfred M.) A family of nonlinear Klein-Gordon equations and their solutions. *J. Math. Phys.* **33** (1992), *no.* 7, 2498–2503. (Woodford W. Zachary) **93f:81027** 81Q05 (35L70, 35Q53, 58F07)

Ingarden, Roman S. A new definition and generalization of squeezed states. (English summary) *Quantum aspects of optical communications* (*Paris*, 1990), 285–290, *Lecture Notes in Phys.*, 378, *Springer, Berlin*, 1991. (*see* **93e:81158**) 81R30 (81V80)

Ingber, Lester (*with* Rosen, Bruce) Genetic algorithms and very fast simulated reannealing: a comparison. (English summary) *Math. Comput. Modelling* **16** (1992), *no.* 11, 87–100. 65K10

Ingber, Marc S. (*with* Li, J.) A method of regularization of the hypersingular integral contained in the traction boundary integral equation for the Stokes flow problem. (English summary) *Boundary element technology, VII* (*Albuquerque, NM*, 1992), 75–89, *Comput. Mech., Southampton*, 1992. (*see* **93b:65002**) 76M15 (65R20, 76D07)

— (*with* Mondy, L. A.) Direct second kind boundary integral formulation for Stokes flow problems. (English summary) *Comput. Mech.* **11** (1993), *no.* 1, 11–27. (Summary) **93i:76058** 76M15 (76D07)

— (*with* Mitra, Ambar K.) A multiple-node method to resolve the difficulties in the boundary integral equation method caused by corners and discontinuous boundary conditions. (English summary) *Internat. J. Numer. Methods Engrg.* **36** (1993), *no.* 10, 1735–1746. (Summary) **93m:73039** 73V10

— *see also* **Boundary element technology, 93b:65002**

Ingberman, Daniel E. Incumbent reputations and ideological campaign contributions in spatial competition. (English summary) Formal theories of politics, II. *Math. Comput. Modelling* **16** (1992), *no.* 8-9, 147–169. (Summary) **93g:92036** 92K10 (90A28, 90D40)

Ingco, Divinagracia I. (*with* Berman, Oded; Odoni, Amedeo R.) Improving the location of minisum facilities through network modification. (English summary) Locational decisions (Fullerton, CA, 1990). *Ann. Oper. Res.* **40** (1992), *no.* 1-4, 1–16 (1993). (Summary) **93m:90028** 90B10 (90B80)

Ingemarsson, I. (*with* Einarsson, G.; Ericson, Thomas H. E.; Johannesson, Rolf; Zigangirov, K. Sh.; Sundberg, C.-E.) ★ Topics in coding theory. In honor of Lars H. Zetterberg. Lecture Notes in Control and Information Sciences, 128. *Springer-Verlag, Berlin*, 1989. viii+176 *pp. ISBN* 3-540-51405-8 94–02 (94A24, 94Bxx)

Ingersoll, Jonathan E., Jr. Optimal consumption and portfolio rules with intertemporally dependent utility of consumption. *J. Econom. Dynamics Control* **16** (1992), *no.* 3-4, 681–712. 90A12

Ingham, D. B. (*with* Yuan, Y.) The boundary element solution of a viscous free surface problem. (English summary) *Boundary elements in fluid dynamics*, 155–166, *Comput. Mech., Southampton*, 1992. (*see* **93i:76003**) 76D99 (76M15)

— (*with* Yan, B.) Fluid flows around cascades. (English summary) *Z. Angew. Math. Phys.* **44** (1993), *no.* 1, 53–72. (Summary) **93m:76018** 76D05 (76D10)

Ingle, V. K. (*with* Kok, A. L.; Manolakis, D. G.) Symmetric noncausal spatial models for 2-D signals with applications in stochastic texture modeling. (English summary) *Multidimens. Systems Signal Process.* **4** (1993), *no.* 2, 125–149. 68U10

Inglese, G. A relation between the Hilbert and Vandermonde matrices. *Calcolo* **27** (1990), *no.* 1-2, 73–79 (1991). (Guo Rong Wang) **93b:15008** 15A12 (65F35)

Inglot, Tadeusz (*with* Kallenberg, Wilbert C. M.; Ledwina, Teresa) Strong moderate deviation theorems. *Ann. Probab.* **20** (1992), *no.* 2, 987–1003. (S. A. Book) **93e:60052** 60F10 (60F17, 62G30)

Ingram, W. T. (*with* Sherling, D. D.) Two continua having a property of J. L. Kelley. *Canad. Math. Bull.* **34** (1991), *no.* 3, 351–356. (Michel Smith) **93a:54032** 54F15

Ingster, Yu. I. Adaptive tests for minimax testing of nonparametric hypotheses. *Probability theory and mathematical statistics, Vol. I* (*Vilnius*, 1989), 539–549, "*Mokslas*", *Vilnius*, 1990. (Summary) **93b:62072** 62G10 (62C20)

Innami, Nobuhiro Jacobi vector fields along geodesic flows. *Dynamical systems and related topics* (*Nagoya*, 1990), 166–174, *Adv. Ser. Dyn. Syst.*, 9, *World Sci. Publishing, River Edge, NJ*, 1991. (Donal Hurley) **93d:53052** 53C22 (58F17)

— Riemannian metrics having poles and nonpoles on surfaces. *Mem. Fac. Sci. Kyushu Univ. Ser. A* **46** (1992), *no.* 1, 79–84. (John Bolton) **93b:53032** 53C21 (53C20, 53C22)

Innamorati, Stefano (*with* Bichara, Alessandro) Note on a characterization of Segre variety in PG(r, q). (English summary) *Combinatorics '90* (*Gaeta*, 1990), 45–47, *Ann. Discrete Math.*, 52, *North-Holland, Amsterdam*, 1992. (E. J. F. Primrose) **93k:51008** 51E20 (05B25)

— (*with* Lo Faro, Giovanni) Constructing Steiner triple systems partially embedded in a projective plane. (English summary) *J. Inform. Optim. Sci.* **13** (1992), *no.* 2, 267–277. (Summary) **93g:05023** 05B07 (05B25)

Inoguti, Jun-iti Rotations and φ-symmetric spaces. *Math. J. Toyama Univ.* **15** (1992), 123–130. (David Blair) **93j:53061** 53C25 (53C15)

Inomata, Akira (*with* Wilson, Raj; van der Merwe, Alwyn) To Asim Orhan Barut on his sixty-fifth birthday. *Found. Phys.* **23** (1993), *no.* 2, 173–176. 01A70

Inooka, Hikaru (*with* Ishihara, Tadashi; Watanabe, Tetsuo) A partial loop recovery for discrete-time systems under feedback delays. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, I* (*Kobe*, 1991), 523–528, *Mita, Tokyo*, 1992. (*see* **93g:93005**) 93C55 (93B52)

— (*with* Zheng, Liang-An; Ishihara, Tadashi) On prediction-type reduced-order observers for discrete-time systems. (English summary) *Internat. J. Control* **57** (1993), *no.* 1, 55–73. 93B07 (93C55)

Inoue, A. *see* **Inoue, Atsushi**

Inoue, Akihiko The Alder-Wainwright effect for stationary processes with reflection positivity. II. *Osaka J. Math.* **28** (1991), *no.* 3, 537–561. (Cheng Xun Wu) **93b:60074** 60G10 (82B31)

— (*with* Okabe, Yasunori) On the exponential decay of the correlation functions for KMO-Langevin equations. *Japan. J. Math. (N.S.)* **18** (1992), *no.* 1, 13–24. (Cheng Xun Wu) **93m:60072** 60G15 (60H10, 82C31)

Inoue, Atsushi (*with* Antoine, Jean-P.) Normal forms on partial O^*-algebras. *J. Math. Phys.* **32** (1991), *no.* 8, 2074–2081. (Camillo Trapani) **93e:47059** 47D40 (46K05, 46L99)

— (*with* Maeda, Yoshiaki) Foundations of calculus on super Euclidean space $\mathbf{R}^{m|n}$ based on a Fréchet-Grassmann algebra. *Kodai Math. J.* **14** (1991), *no.* 1, 72–112. (Alice Rogers) **93c:58034** 58C50 (46G05, 46S99, 58A50)

— (*with* Antoine, Jean-P.; Trapani, Camillo) Partial $*$-algebras of closable operators. II. States and representations of partial $*$-algebras. *Publ. Res. Inst. Math. Sci.* **27** (1991), *no.* 3, 399–430. (Introduction) **93f:47052** 47D40 (46K05, 46L05)

— (*with* Ikeda, Itsuko) Invariant subspaces for closed $*$-representations of $*$-algebras. *Proc. Amer. Math. Soc.* **116** (1992), *no.* 3, 737–745. (W. Timmermann) **93a:47049** 47D40 (46K10, 46L99)

Inoue, Hidehiko (*with* Shibata, Yukio; Miyazaki, Haruo) Generation of interpolation curves with the least energy using dynamic programming. (English summary) *Comput. Math. Appl.* **25** (1993), *no.* 6, 25–34. (Summary) **93h:65014** 65D05

Inoue, Junko L^p-Fourier transforms on nilpotent Lie groups and solvable Lie groups acting on Siegel domains. (English summary) *Pacific J. Math.* **155** (1992), *no.* 2, 295–318. (Bradley N. Currey) **93i:22009** 22E25 (22E30, 32M05)

Inoue, Jyunji (*with* Takahasi, Sin-ei) A note on the largest regular subalgebra of a Banach algebra. *Proc. Amer. Math. Soc.* **116** (1992), *no.* 4, 961–962. (John Duncan) **93b:46099** 46J05 (46H05)

— (*with* Takahasi, Sin-ei) A spectral mapping theorem for some representations of compact abelian groups. *Proc. Edinburgh Math. Soc.* (2) **35** (1992), *no.* 1, 47–52. (John Duncan) **93d:46080** 46H15 (22D12, 47A10)

Inoue, Katsumi Poincaré series for discrete Moebius groups acting on the upper half space. *Tôhoku Math. J.* (2) **44** (1992), *no.* 1, 35–44. (L. Keen) **93d:30057** 30F40

Inoue, Katsumi (*with* Ohta, Yoshihiko) A forward-chaining hypothetical reasoner based on upside-down meta-interpretation. (English summary) *Fifth generation computer systems, Vol.* 1, 2 (*Tokyo*, 1992), 522–529, *Ohm, Tokyo*, 1992. (*see* **93i:68007**) 68T15

Inoue, Katsushi (*with* Hromkovič, Juraj; Itō, Akira; Takanami, Itsuo) On the power of two-dimensional synchronized alternating finite automata. *Fund. Inform.* **15** (1991), *no.* 1, 90–98. (Summary) **93a:68100** 68Q70

— (*with* Itō, Akira; Takanami, Itsuo) Alternating Turing machines with modified accepting structure. *Internat. J. Found. Comput. Sci.* **2** (1991), *no.* 4, 401–417. (Alexey P. Stolboushkin) **93g:68032** 68Q05 (03D10, 03D15, 68Q15)

— (*with* Itō, Akira; Takanami, Itsuo) A relationship between nondeterministic Turing machines and 1-inkdot Turing machines with small space. *Inform. Process. Lett.* **43** (1992), *no.* 4, 225–227. (John Michael Robson) **93j:68061** 68Q15 (03D10, 03D15, 68Q05, 68Q10)

— (*with* Hromkovič, Juraj; Rovan, Branislav; Slobodová, Anna; Takanami, Itsuo; Wagner, Klaus Werner) On the power of one-way synchronized alternating machines with small space. *Internat. J. Found. Comput. Sci.* **3** (1992), *no.* 1, 65–79. (Summary) **93f:68026** 68Q05 (68Q70)

— (*with* Hromkovič, Juraj) A note on realtime one-way synchronized alternating one-counter automata. (English summary) *Theoret. Comput. Sci.* **108** (1993), *no.* 2, 393–400. (Summary) **93k:68072** 68Q70

Inoue, Kazuyuki (*with* Takeda, Hiroshi) An elementary construction of processes with independent increments. *J. Fac. Sci. Shinshu Univ.* **26** (1991), *no.* 1, 17–23. (Jerry Alan Veeh) **93a:60111** 60J30 (60G30)

Inoue, Kouichi The Brown-Peterson cohomology of $BSO(6)$. *J. Math. Kyoto Univ.* **32** (1992), *no.* 4, 655–666. (Nobuaki Yagita) **93k:55018** 55R45 (55N22, 55R40, 55T15)

Inoue, Manabu (*with* Kuriyama, Sennosuke; Nose, Toyokazu; Shiihara, Masatsugu) Studies of inventory and sales plannings for perishable commodities with respect to the properties of procurement leadtime. (Japanese. English summary) *Mem. Osaka Inst. Tech. Ser. A* **37** (1992), *no.* 1, 7–19. 90B05

Inoue, Masayoshi (*with* Anai, Hirokazu; Hata, Hiroki; Fujisaka, Hirokazu) Synchronized states in asymmetric coupled map systems. *Progr. Theoret. Phys.* **87** (1992), *no.* 1, 103–110. (Summary) **93g:58075** 58F10 (58F14)

Inoue, Susumu (*with* Funakoshi, Mitsuaki) Bifurcations and chaos in resonantly forced water waves. (English summary) *Nonlinear dispersive wave systems* (*Orlando, FL*, 1991), 635–666, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93f:00015**) 76B15 (58F13, 58F40, 76F20)

Inoué, Takao On compatibility of theories and equivalent translations. *Bull. Sect. Logic Univ. Lódź* **21** (1992), *no.* 3, 112–119. (Stanisław J. Surma) **93k:03010** 03B22 (03B45, 03F25)

Inoue, Tetsuo Radial segments and conformal mapping of an annulus onto domains bounded by a circle and a k-circle. *Ann. Polon. Math.* **56** (1992), *no.* 2, 157–162. (Summary) **93k:30012** 30C25

Inoue, Tomoki (*with* Ishitani, Hiroshi) Ergodic properties of nonsingular transformations with asymptotically periodic densities. *Dynamical systems and related topics* (*Nagoya*, 1990), 175–182, *Adv. Ser. Dyn. Syst.*, 9, *World Sci. Publishing, River Edge, NJ*, 1991. (Wojciech Bartoszek) **93g:28016** 28D05 (47A35, 60F05)

— (*with* Ishitani, Hiroshi) Asymptotic periodicity of densities and ergodic properties for nonsingular systems. *Hiroshima Math. J.* **21** (1991), *no.* 3, 597–620. (Alexander M. Blokh) **93e:58110** 58F11 (28D05, 58F03)

— Asymptotic stability of densities for piecewise convex maps. (English summary) *Ann. Polon. Math.* **57** (1992), *no.* 1, 83–90. (Ion Cojocaru) **93g:26017** 26A51 (28D05)

— Weakly attracting repellors for piecewise convex maps. (English summary) *Japan J. Indust. Appl. Math.* **9** (1992), *no.* 3, 413–430. (Witold Jarczyk) **93i:58097** 58F12 (26A18, 28D05, 58F11)

Inoue, Yoshinari Twistor spaces of even-dimensional Riemannian manifolds. *J. Math. Kyoto Univ.* **32** (1992), *no.* 1, 101–134. (S. M. Salamon) **93e:32039** 32L25 (53C25)

Inouye, Y. (*with* Tong, L.; Liu, Ruey Wen) Waveform-preserving blind estimation of multiple independent sources. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, I* (*Kobe*, 1991), 607–612, *Mita, Tokyo*, 1992. (*see* **93g:93005**) 93E12

— (*with* Umeda, Tomio) Cumulant-based parameter estimation of multichannel ARMA models. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, I* (*Kobe*, 1991), 625–630, *Mita, Tokyo*, 1992. (*see* **93g:93005**) 93E10

— (*with* Tsuchiya, H.) Identification of linear systems using input-output cumulants. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, I* (*Kobe*, 1991), 647–652, *Mita, Tokyo*, 1992. (*see* **93g:93005**) 93E12

Insall, Matt Some finiteness conditions in lattices—using nonstandard proof methods. (English summary) *J. Austral. Math. Soc. Ser. A* **53** (1992), *no.* 2, 266–280. (Rade Živaljević) **93i:06001** 06B05 (03H05, 26E35)

Insel, Arnold J. (*with* Friedberg, Stephen H.) Hyponormal 2×2 matrices are subnormal. (English summary) *Linear Algebra Appl.* **175** (1992), 31–38. (Fuad Kittaneh) **93i:15001** 15A03 (15A15, 15A18, 15A57)

moreno-Insertis, F. *see* **Moreno-Insertis, F.**

ríos Insua, David *see* **Ríos Insua, David**

ríos-Insúa, Sixto *see* **Ríos-Insúa, Sixto**

In 't Hout, K. J. *see* **in 't Hout, K. J.**

Intissar, Abdelkader (*with* Aimar, Marie-Thérèse; Paoli, Jean-Martin) Densité des vecteurs propres généralisés d'une classe d'opérateurs non auto-adjoints à résolvante compacte. (English and French summaries) [Denseness of the generalized eigenvectors of a class of nonselfadjoint operators with compact resolvent] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 4, 393–396. (Summary) **93f:47023** 47B25 (47A70, 47N50, 81Q10)

Intissar, Ahmed (*with* Boussejra, Abdelhamid) Caractérisation des intégrales de Poisson-Szegő de $L^2(\partial B^n)$ dans la boule de Bergman B^n, $n \geq 2$. (English and French summaries) [Characterization of the Poisson-Szegő integrals of $L^2(\partial B^n)$ in the Bergman ball B^n, $n \geq 2$] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 13, 1353–1357. (I. P. Ramadanov) **93k:32006** 32A37 (32A17, 32A25, 32A45)

Intriligator, K. (*with* Fendley, Paul) Scattering and thermodynamics of fractionally-charged supersymmetric solitons. *Nuclear Phys. B* **372** (1992), *no.* 3, 533–558. (Summary) **93m:81143** 81T60 (81T40)

— (*with* Fendley, Paul) Scattering and thermodynamics in integrable $N = 2$ theories. (English summary) *Nuclear Phys. B* **380** (1992), *no.* 1-2, 265–290. (Summary) **93h:81114** 81T40

Intriligator, M. D. (*with* Kim, Ki Hang; Roush, F. W.) Overview of mathematical social sciences. *Amer. Math. Monthly* **99** (1992), *no.* 9, 838–844. (J. S. Joel) **93j:90001** 90–01 (00A69, 90Axx, 92–01)

Inuiguchi, Masahiro (*with* Kume, Yasufumi) Dominance relations as bases for constructing solution concepts in linear programming with multiple interval objective functions. (English summary) *Bull. Univ. Osaka Prefect. Ser. A* **40** (1991), *no.* 2, 275–292. (Ignacy Kaliszewski) **93j:90088** 90C29 (90A05, 90C08)

— (*with* Kume, Yasufumi) Efficient solutions versus nondominated solutions in linear programming with multiple interval objective functions. (English summary) *Bull. Univ. Osaka Prefect. Ser. A* **40** (1991), *no.* 2, 293–298. (Summary) **93i:90083** 90C29 (90C08)

— (*with* Luhandjula, M. K.; Ichihashi, Hidetomo) Fuzzy and semi-infinite mathematical programming. *Inform. Sci.* **61** (1992), *no.* 3, 233–250. (Stefan Chanas) **93f:90183** 90C70 (04A72, 90C34)

— (*with* Kume, Yasufumi) Fuzzy reasoning based on uncertainty generation rules using necessity measures. (English summary) *Japanese J. Fuzzy Theory Systems* **4** (1992), *no.* 3, 329–344. (Summary) **93m:03041** 03B52

— (*with* Murata, Shinichi; Sakawa, Masatoshi) Optimizing the worst achievement rate in linear programming problems with an interval objective function. (Japanese. English summary) *Trans. Inst. Systems Control Inform. Engrg.* **6** (1993), *no.* 5, 243–251. 90C08

Inutsuka, Makoto (*with* Sasabuchi, Syoichi; Kulatunga, D. D. Sarath) An algorithm for computing multivariate isotonic regression. *Hiroshima Math. J.* **22** (1992), *no.* 3, 551–560. (Harshinder Singh) **93m:62059** 62F30 (62J05)

Inuzuka, Nobuhiro (*with* Takahashi, Ken-ichi; Ishii, Naohiro) Representative sample of LISP program inference from examples. (English summary) *Internat. J. Systems Sci.* **23** (1992), *no.* 8, 1321–1334. (Julian Padget) **93j:68183** 68T25

Inverardi, P. (*with* Boreale, M.; Nesi, M.) Complete sets of axioms for finite basic LOTOS behavioural equivalences. *Inform. Process. Lett.* **43** (1992), *no.* 3, 155–160. 68Q60

Invernizzi, Sergio On a result by Carvalho concerning Šarkovskiĭ's order. *J. Math. Anal. Appl.* **168** (1992), *no.* 1, 284–285. (Gong Fu Liao) **93f:58195** 58F20 (58F13)

d'Inverno, R. A. ★ Introducing Einstein's relativity. *The Clarendon Press, Oxford University Press, New York*, 1992. xii+383 *pp. ISBN* 0-19-859653-7; 0-19-859686-3 (Mary L. Boas) **93i:83002** 83–01

— (*with* Collins, J. M.) The Karlhede classification of type-D nonvacuum spacetimes. (English summary) *Classical Quantum Gravity* **10** (1993), *no.* 2, 343–351. (J. B. Griffiths) **93k:83014** 83C20

Ioakimidis, N. I. The Gauss-Laguerre quadrature rule for finite-part integrals. (English summary) *Comm. Numer. Methods Engrg.* **9** (1993), *no.* 5, 439–450. (Summary) **93m:65031** 65D32

Ioannides, D. A. (*with* Roussas, George G.; Tran, Lanh Tat) Fixed design regression for time series: asymptotic normality. *J. Multivariate Anal.* **40** (1992), *no.* 2, 262–291. (K. C. Chanda) **93j:62105** 62G05 (62E20, 62J02, 62M10)

Ioannou, Petros A. (*with* Sun, Jing) Robust adaptive LQ control scheme. (English summary) *Adaptive systems in control and signal processing*, 1989 (*Glasgow*), 183–188, *IFAC Sympos. Ser.*, 1990, *No.* 1, *Pergamon, Oxford*, 1990. (*see* **93j:93007**) 93B36

— (*with* Datta, Aniruddha) Robust adaptive control: design, analysis and robustness bounds. (English summary) *Foundations of adaptive control* (*Urbana, IL*, 1990), 71–152, *Lecture Notes in Control and Inform. Sci.*, 160, *Springer, Berlin*, 1991. (Norihiko Adachi) **93k:93103** 93D21 (93C40, 93D09)

— (*with* Tsakalis, Kostas S.) ★ Linear time-varying systems. Control and adaptation. *Prentice Hall, Inc., Englewood Cliffs, NJ*, 1993. xiv+270 *pp. ISBN* 0-13-012923-2 (Avraham Feintuch) **93k:93006** 93–02 (93B51, 93C05, 93C40, 93C50)

— (*with* Tsao, T.) On the stability proof of adaptive schemes with static normalizing signals and parameter projection. (English summary) *IEEE Trans. Automat. Control* **38** (1993), *no.* 1, 170–173. (Summary) **93k:93090** 93D09

Iochum, Bruno (*with* Loupias, Guy) Banach power-associative algebras: the complex and (or) noncommutative cases. With a corrigendum: "Banach-power-associative algebras and J-B algebras" [Ann. Inst. H. Poincaré Phys. Théor. **43** (1985), no. 2, 211–225; MR 87e:46093] by Iochum. *Ann. Sci. Univ. Clermont-Ferrand II Math. No.* 27 (1991), 93–106 (1992). (Antonio Fernández López) **93f:46078** 46H70 (17A05)

— (*with* Loupias, Guy) Remarks on the bidual of Banach algebras (the C^* case). *Ann. Sci. Univ. Clermont-Ferrand II Math. No.* 27 (1991), 107–118 (1992). (Horst Behncke) **93d:46115** 46L70 (46H70, 46L05)

— (*with* Testard, D.) Power law growth for the resistance in the Fibonacci model. *J. Statist. Phys.* **65** (1991), *no.* 3-4, 715–723. (Summary) **93f:82006** 82B10

— (*with* Chu, Cho-Ho; Watanabe, Seiji) C^*-algebras with the Dunford-Pettis property. *Function spaces* (*Edwardsville, IL*, 1990), 67–70, *Lecture Notes in Pure and Appl. Math.*, 136, *Dekker, New York*, 1992. (Steve Wright) **93d:46096** 46L05

— (*with* Raymond, L.; Testard, D.) Resistance of one-dimensional quasicrystals. (English summary) *Phys. A* **187** (1992), *no.* 1-2, 353–368. (Hanna Nencka) **93i:82076** 82D25

Iofa, M. Z. (*with* Dëmichev, A. P.) Superharmonic gauge in string theory and double supersymmetric σ-model. *Modern Phys. Lett. A* **7** (1992), *no.* 11, 955–966. (Frans R. Klinkhamer) **93g:81122** 81T30 (58E50)

Ioffe, Alexandre D. (*with* Bonnans, Joseph Frédéric; Shapiro, Alexander) Développement de solutions exactes et approchées en programmation non linéaire. (English and French summaries) [Expansion of exact and approximate solutions in nonlinear programming] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 2, 119–123. 90C30 (49N15)

— *see also* **Optimization and nonlinear analysis, 93d:49004**

Ioffe, M. V. (*with* Cannata, F.) Coupled-channel scattering and separation of coupled differential equations by generalized Darboux transformations. (English summary) *J. Phys. A* **26** (1993), *no.* 3, L89–L92. (Summary) **93m:35010** 35A25 (34L25, 35C99, 81U99)

Iokhannesson, R. *see* **Johannesson, Rolf**

Iokibe, T. Fuzzy clustering method by an arbitrary fuzzy performance function: automatic generation of the fuzzy rule and membership functions. (English summary) *Japanese J. Fuzzy Theory Systems* **4** (1992), *no.* 2, 207–217. 93C42 (04A72)

Ioltukhovskiĭ, A. A. Modeling radiation transfer in the atmosphere with an inhomogeneous and nonorthotropic underlying surface. (Russian. English summary) *Akad. Nauk SSSR Inst. Prikl. Mat. Preprint* **1991**, *no.* 84, 23 *pp.* (Summary) **93a:85002** 85A25

Iommi Amunátegui, Godofredo Identités entre les dimensions des représentations irréductibles des groupes orthogonaux. [Identities between the dimensions of irreducible representations of orthogonal groups] *Ann. Soc. Sci. Bruxelles Sér. I* **105** (1991), *no.* 3, 113–122 (1992). (A. O. Morris) **93d:20081** 20G05

Ionas, P. *see* **Jonas, Peter**

Ionaşcu, Eugen-Julien (*with* Vasilescu, F.-H.) Joint spectral properties for permutable linear transformations. *J. Reine Angew. Math.* **426** (1992), 23–45. (Raúl E. Curto) **93f:47005** 47A13 (46B99, 46M35, 47B25, 47D03)

— Jordan decomposition and factorization for nonnegative operator valued functions. *Rev. Roumaine Math. Pures Appl.* **37** (1992), *no.* 8, 691–699. (Joseph A. Ball) **93h:47043** 47B40 (47A56)

Ionescu, C. Finiteness of the integral closure of a Noetherian ring. *Rend. Sem. Mat. Univ. Politec. Torino* **47** (1989), *no.* 2, 153–162 (1992). (Bernd Herzog) **93j:13013** 13B22 (13B21)

Ionescu, Ioan R. Some existence results in one-dimensional dynamic viscoplasticity with work hardening. *IMA J. Appl. Math.* **47** (1991), *no.* 3, 217–228. (Summary) **93e:73015** 73E50 (34G20, 35Q99, 73E60)

— Dynamic processes for a class of elastic-viscoplastic materials. (English summary) *Stud. Cerc. Mat.* **44** (1992), *no.* 2, 113–125. (Miroslav Šilhavý) **93f:73048** 73E60 (34G20, 47N20, 73E50)

— (*with* Paumier, Jean-Claude) Friction dynamique avec coefficient dépendant de la vitesse de glissement. (English and French summaries) [Dynamical stick-slip motion with sliding velocity-dependent friction] *C. R. Acad. Sci. Paris Sér. I Math.* **316** (1993), *no.* 1, 121–125. (J. T. Oden) **93k:73073** 73T05 (73D40, 73D99)

Ionescu, Lucian (*with* Pripoae, Gabriel) Singular distributions and associated connections. *Classical analysis* (*Kazimierz Dolny*, 1991), 219–223, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93c:58006** 58A30 (53C05)

Ionescu, Nicoleta M. (*with* Dragomir, Sever Silvestru) The Wendroff type lemmas and applications. IV. (Romanian summary) *Bul. Ştiinţ. Inst. Politehn. Cluj-Napoca Ser. Mat. Mec. Apl. Construc. Maş.* **30** (1987), 19–22. (B. G. Pachpatte) **93d:45003a** 45D05

— (*with* Dragomir, Sever Silvestru) The Wendroff type lemmas and applications. V. *Itinerant Seminar on Functional Equations, Approximation and Convexity* (*Cluj-Napoca*, 1989), 147–154, *Preprint*, 89-6, *Univ. "Babeş-Bolyai", Cluj-Napoca*, 1989. (B. G. Pachpatte) **93d:45003b** 45D05

— (*with* Dragomir, Sever Silvestru) On some inequalities for convex-dominated functions. *Anal. Numér. Théor. Approx.* **19** (1990), *no.* 1, 21–27. (Ion Raşa) **93b:26014** 26A51 (26D15)

— (*with* Dragomir, Sever Silvestru) A new refinement of Jensen's inequality. *Anal. Numér. Théor. Approx.* **20** (1991), *no.* 1-2, 39–41. 26D15

— (*with* Dragomir, Sever Silvestru) Some remarks on convex functions. *Rev. Anal. Numér. Théor. Approx.* **21** (1992), *no.* 1, 31–36. (J. Sándor) **93m:26023** 26A51 (26D15)

Ionescu, Vlad (*with* Weiss, Martin) State-space solution for the discrete-time H^∞-control problem. *Rev. Roumaine Sci. Tech. Sér. Électrotech. Énergét.* **36** (1991), *no.* 1, 101–111. (Summary) **93b:93034** 93B36 (93C55)

— (*with* Weiss, Martin) On computing the stabilizing solution of the discrete-time Riccati equation. (English summary) *Linear Algebra Appl.* **174** (1992), 229–238. (Michel Cotsaftis) **93h:93025** 93B40 (93C55, 93D15)

— (*with* Weiss, Martin) The l^2-control problem for time-varying discrete systems. (English summary) *Systems Control Lett.* **18** (1992), *no.* 5, 371–381. (Arno Linnemann) **93f:93061** 93B50 (47N70, 49K30, 93C55, 93D25)

— (*with* Weiss, Martin) Two-Riccati formulae for the discrete-time H^∞-control problem. (English summary) *Internat. J. Control* **57** (1993), *no.* 1, 141–195. (Vladimir B. Larin) **93k:93040** 93B36 (90D05, 93C55, 93D15)

— (*with* Halanay, Aristide) Generalized discrete-time Popov-Yakubovich theory. (English summary) *Systems Control Lett.* **20** (1993), *no.* 1, 1–6. (Denis Khusainov) **93m:93081** 93D10 (93C55)

Ionkin, N. I. (*with* Makarov, Vladimir Leonidovich; Furletov, D. G.) Stability and convergence in the C-norm of difference schemes for a parabolic equation with a nonlocal boundary condition. (Russian. Russian summary) *Mat. Model.* **4** (1992), *no.* 4, 63–73. (I. P. Gavrilyuk) **93m:65131** 65M12

Ionov, S. N. (*with* Borisov, A. B.; Shagalov, A. G.) New types of vortices and the solutions of the boundary value problem for sine-Gordon equation by the inverse scattering transform. *Nonlinear world, Vol.* 1 (*Kiev*, 1989), 65–72, *World Sci. Publishing, River Edge, NJ*, 1990. (*see* **93b:00012**) 35Q53

Iooss, Gérard (*with* Mielke, Alexander; Demay, Yves) Mathematical justification of steady Ginzburg-Landau equation starting from Navier-Stokes. *New trends in nonlinear dynamics and pattern-forming phenomena* (*Cargèse*, 1988), 275–286, *NATO Adv. Sci. Inst. Ser. B Phys.*, 237, *Plenum, New York*, 1990. (Mikhail Zaks) **93f:76048** 76E30 (35Q30, 58F39, 76D05)

— (*with* Mielke, Alexander) Hydrodynamical stability problems in infinitely long cylindrical domains: existence of defects in travelling waves. (English summary) *Waves and stability in continuous media* (*Sorrento*, 1989), 243–257, *Ser. Adv. Math. Appl. Sci.*, 4, *World Sci. Publishing, River Edge, NJ*, 1991. (Summary) **93g:76063** 76E99 (35Q35, 58F14, 76D05)

— (*with* Adelmeyer, Moritz) ★ Topics in bifurcation theory and applications. Advanced Series in Nonlinear Dynamics, 3. *World Scientific Publishing Co., Inc., River Edge, NJ*, 1992. vi+160 *pp. ISBN* 981-02-1009-4 (A. Vanderbauwhede) **93i:58001** 58–02 (34C23, 58F14, 76E99)

— (*with* Vanderbauwhede, André) Center manifold theory in infinite dimensions. *Dynamics reported: expositions in dynamical systems*, 125–163, *Dynam. Report.* (*N.S.*), 1, *Springer, Berlin*, 1992. (Jürgen Scheurle) **93f:58174** 58F14 (34G20, 35Q30, 47N20, 58F39, 76D05)

— (*with* Demay, Yves; Laure, P.) Wave patterns in the small gap Couette-Taylor problem. (English summary) *European J. Mech. B Fluids* **11** (1992), *no.* 5, 621–634. (Peter E. Kloeden) **93k:76048** 76E30 (35B32, 35Q35)

— (*with* Mielke, Alexander) Time-periodic Ginzburg-Landau equations for one-dimensional patterns with large wave length. *Z. Angew. Math. Phys.* **43** (1992), *no.* 1, 125–138. (A. Vanderbauwhede) **93e:58168** 58F39 (35Q55, 58F36, 76D33, 76E30)

Iordache, O. Dyadic frames for intermittency. Perturbed models. *p-adic functional analysis* (*Laredo*, 1990), 89–99, *Lecture Notes in Pure and Appl. Math.*, 137, *Dekker, New York*, 1992. (J. S. Joel) **93b:58134** 58F40 (34A30, 58F99, 82C99, 92C99)

Iordan, Andrei Maximum modulus sets in pseudoconvex boundaries. *J. Geom. Anal.* **2** (1992), *no.* 4, 327–349. (Sergey Ivashkovich) **93h:32018** 32E25 (32F15, 32F25)

Iordanov, Iordan V. Anomalous singularities of semilinear nonstrictly hyperbolic system. *J. Math. Pures Appl.* (9) **70** (1991), *no.* 4, 393–426. (A. O. Oganesyan) **93c:35002** 35A20 (35L45, 35L60, 35L80)

Iordanova, Irena T. *see* **Yordanova, Irena T.**

di Iorio, M. *see* **Di Iorio, M.**

Iosifescu, Marius A survey of the metric theory of continued fractions, fifty years after Doeblin's 1940 paper. *Probability theory and mathematical statistics, Vol. I* (*Vilnius*, 1989), 550–572, "*Mokslas*", *Vilnius*, 1990. (Thomas W. Cusick) **93c:11059** 11K50

— On U-statistics and von Mises statistics for a special class of Markov chains. *J. Statist. Plann. Inference* **30** (1992), *no.* 3, 395–400. (Manfred Denker) **93h:60030** 60F05 (60J10, 62E20)

Iosif'yan, G. A. (*with* Oleĭnik, O. A.; Shamaev, A. S.) ★ Mathematical problems in elasticity and homogenization. Studies in Mathematics and its Applications, 26. *North-Holland Publishing Co., Amsterdam*, 1992. xiv+398 *pp. ISBN* 0-444-88441-6 (Editors) **93k:35025** 35B27 (35Qxx, 49J45, 73-02)

Iotov, Mihail S. (*with* Todorov, Ivan T.) On the universal R-matrix for $U_q(\mathrm{sl}_{r+1})$. *Lett. Math. Phys.* **23** (1991), *no.* 3, 241–250. (Vadim B. Kuznetsov) **93a:17014** 17B37 (16W30, 20F36, 81R50)

Ioulidis, Stavros Hyperespaces vectoriels exceptionnels. (English and Polish summaries) [Exceptional vector hyperspaces] *Bull. Soc. Sci. Lett. Łódź* **40** (1990), *no.* 1-10, 131–145 (1991). (Summary) **93e:15011** 15A99

Iozzi, Alessandra Invariant geometric structures: a nonlinear extension of the Borel identity theorem. *Amer. J. Math.* **114** (1992), *no.* 3, 627–648. (S. G. Dani) **93k:22008** 22E40 (22D40, 28D99)

Ip, Chi Ming (*with* Kyparisis, Jerzy) Solution behavior for parametric implicit complementarity problems. (English summary) *Math. Programming* **56** (1992), *no.* 1, *Ser. A*, 65–70. (R. N. Kaul) **93g:90076** 90C33 (90C31)

— (*with* Kyparisis, Jerzy) Local convergence of quasi-Newton methods for B-differentiable equations. (English summary) *Math. Programming* **56** (1992), *no.* 1, *Ser. A*, 71–89. (Summary) **93c:65072** 65H10 (90C30)

Ipate, D. M. Approximation of upper semicontinuous mappings. (Russian) *Algebraic structures and geometry* (*Russian*), 67–69, 159, "*Shtiintsa*", *Kishinev*, 1991. (From the text) **93f:54018** 54C08

— (*with* Choban, M. M.) The Stone-Weierstrass theorem and approximation of convex-valued continuous multivalued mappings. (Russian. English and Moldavian sum-

maries) *Izv. Akad. Nauk Respub. Moldova Mat.* **1991,** *no.* 2, 13–18, 93. (P. S. Kenderov) **93h:41030** 41A65 (46N10, 47H04)

— (*with* Choban, M. M.) Approximation of multivalued mappings by continuous mappings. (Russian) *Serdica* **17** (1991), *no.* 2-3, 127–136 (1992). (Janina Ewert) **93d:54030** 54C60 (49J45, 54C65)

Ipatova, V. M. (*with* Agoshkov, V. I.) On the solvability of basic and conjugate equations in nonlinear problems. (Russian) *Conjugate equations in problems of mathematical physics* (*Russian*), 3–46, *Akad. Nauk SSSR, Otdel Vychisl. Mat., Moscow*, 1990. (Ya. I. Al'ber) **93g:47081** 47H15 (35Qxx, 47H12, 47N20, 65P05)

İpekoğlu, Y. (*with* Leblanc, Martin; Thomaz, M. T.) Thermal and quantum fluctuations in supersymmetric Chern-Simons theory. *Ann. Physics* **214** (1992), *no.* 1, 160–179. (Summary) **93h:81088** 81T13 (81T60)

Iqbal, M. (*with* Beg, Ismat; Shahzad, N.) Fixed point theorems and best approximation in convex metric spaces. (English summary) *Approx. Theory Appl.* **8** (1992), *no.* 4, 97–105. (Summary) **93k:54074** 54H25 (41A65)

— (*with* Mushtaq, Qaiser) Ternary operations and LA-semigroups. (English summary) *Proc. Pakistan Acad. Sci.* **29** (1992), *no.* 4, 311–317. (Summary) **93j:20129** 20M10

Iqbal, Mohammad Ashraf Approximate algorithms for partitioning problems. (English summary) *Internat. J. Parallel Programming* **20** (1991), *no.* 5, 341–361. 68M20

Iqbal, Q. (*with* Mushtaq, Qaiser) On semilattice structure of LA-semigroups. *Proc. Pakistan Acad. Sci.* **28** (1991), *no.* 2, 197–200. (S. Madhavan) **93i:20083** 20N02 (20M07)

Iqbal Basha, R. (*with* Krishnamoorthy, A.; Narasimhulu, Y. C.) On perishable inventory with Markov chain demand quantities. (English summary) *Internat. J. Inform. Management Sci.* **3** (1992), *no.* 2, 29–37. 90B05

Irac-Astaud, Michèle (*with* Houard, Jean-Claude) Stochastic quantization for quantum mechanics and conditional probabilities. *J. Math. Phys.* **33** (1992), *no.* 4, 1348–1357. (Helmut Rumpf) **93a:81093** 81S20

— (*with* De Bièvre, Stephan; Houard, Jean-Claude) Wave packets localized on closed classical trajectories. (English summary) *Differential equations with applications to mathematical physics*, 25–32, *Math. Sci. Engrg.*, 192, *Academic Press, Boston, MA*, 1993. (*see* **93i:00013**) 81Q20

Irani, Sandy (*with* Karlin, Anna R.; Phillips, Steven J.) Strongly competitive algorithms for paging with locality of reference. *Proceedings of the Third Annual ACM-SIAM Symposium on Discrete Algorithms* (*Orlando, FL*, 1992), 228–236, *ACM, New York*, 1992. (*see* **93b:68005**) 68N25

— (*with* Naor, Moni; Rubinfeld, Ronitt) On the time and space complexity of computation using write-once memory, or Is pen really much worse than pencil? *Math. Systems Theory* **25** (1992), *no.* 2, 141–159. (Peter R. J. Asveld) **93a:68044** 68Q15 (68Q05, 68Q10)

Iraniparast, Nezam A method of solving a class of CIV boundary value problems. (English summary) *Canad. Math. Bull.* **35** (1992), *no.* 3, 371–375. (Summary) **93g:35086** 35L20 (35C15)

Iranzo, V. (*with* Falqués, A.) Some spectral approximations for differential equations in unbounded domains. *Comput. Methods Appl. Mech. Engrg.* **98** (1992), *no.* 1, 105–126. (Summary) **93d:65103** 65N35

Iri, Masao (*with* Kubota, Koichi) Estimates of rounding errors with fast automatic differentiation and interval analysis. *J. Inform. Process.* **14** (1991), *no.* 4, 508–515. 65D15 (65G10)

— Integrability of vector and multivector fields associated with interior point methods for linear programming. Interior point methods for linear programming: theory and practice (Scheveningen, 1990). *Math. Programming* **52** (1991), *no.* 3, *Ser. B*, 511–525 (1992). (Jürgen Köhler) **93a:90037** 90C05 (90C29)

pérez Iribarren, Gonzalo *see* **Pérez Iribarren, Gonzalo**

Irigoyen, Maŷlis (*with* Simó, Carles) Nonintegrability of the J_2 problem. (English summary) *Celestial Mech. Dynam. Astronom.* **55** (1993), *no.* 3, 281–287. (Simos Ichtiaroglou) **93k:70020** 70F15 (70H05, 70M20)

Iritani, Jun (*with* Nagatani, Hiroaki) A neoclassical foundation of the nonlinear input-output model. (English summary) *Metroeconomica* **42** (1991), *no.* 3, 241–256. (Csaba Fabian) **93f:90023** 90A11

Irmay, Shragga New exact solutions of the Navier-Stokes equations near a plane. (English summary) *Internat. J. Engrg. Sci.* **31** (1993), *no.* 3, 397–401. (Summary) **93m:76019** 76D05 (76D25)

Irodova, I. P. (*with* Brudnyĭ, Yu. A.) Nonlinear spline approximation of functions of several variables and B-spaces. (Russian. Russian summary) *Algebra i Analiz* **4** (1992), *no.* 4, 45–79. (Bl. Sendov) **93i:41023** 41A63 (41A50, 46E35)

Irony, Telba Z. (*with* Barlow, Richard E.) Foundations of statistical quality control. (English summary) *Current issues in statistical inference: essays in honor of D. Basu*, 99–112, *IMS Lecture Notes Monograph Ser.*, 17, *Inst. Math. Statist., Hayward, CA*, 1992. (Summary) **93g:62125** 62N10

Irtegov, V. D. (*with* Banshchikov, A. V.; Burlakova, L. A.; Novikov, M. A.) Algorithms for the qualitative investigation of complex systems. (Russian. English and Ukrainian summaries) *Kibernet. Sistem. Anal.* **1992,** *no.* 1, 138–148, 190; *translation in Cybernet. Systems Anal.* **28** (1992), *no.* 1, 119–127. (From the text) **93g:70003** 70–08 (34–04, 70–04, 70E99, 70H35, 70K20)

Irwin, G. W. (*with* Kee, R. J.) Transputer implementation of tracking Kalman filters. (English summary) *Control '91, Vol.* 1, 2 (*Edinburgh*, 1991), 861–866, *IEE Conf. Publ. Ser.*, 332, *IEE, London*, 1991. (*see* **93h:93007**) 93E11

— (*with* Kadlec, Jan; Gaston, F. M. F.) Regularised lattice-ladder adaptive filter. (English summary) *Mutual impact of computing power and control theory* (*Prague*, 1992), 143–149, *Czech. Acad. Sci., Prague*, 1992. (*see* **93f:93005**) 93E11 (93C83)

Irwin, John M. (*with* Dugas, Manfred) On a class of abelian p-groups. *Forum Math.* **4** (1992), *no.* 2, 147–158. (Doyle O. Cutler) **93g:20100** 20K10

— (*with* Hills, Norman L.; Mulla, Fuad) Numerical solution of the heat equation by infinite-order ordinary differential equations. (English summary) *Numer. Methods Partial Differential Equations* **8** (1992), *no.* 6, 505–514. (Zdzisław W. Trzaska) **93m:65150** 65M99 (34A35)

Isaac, R. Mark (*with* Reynolds, Stanley S.) Stochastic innovation and product market organization. (English summary) *Econom. Theory* **2** (1992), *no.* 4, 525–545. 90A60

Isaacs, Frank D. The deficiency indices of $T_0(\tau^+)T_0(\tau)$, where τ is a linear ordinary differential expression. *J. Differential Equations* **98** (1992), *no.* 1, 125–142. (Robert M. Kauffman) **93k:47055** 47E05 (34L05)

Isaacs, I. M. Partial characters of π-separable groups. *Representation theory of finite groups and finite-dimensional algebras* (*Bielefeld*, 1991), 273–287, *Progr. Math.*, 95, *Birkhäuser, Basel*, 1991. (Introduction) **93c:20015** 20C15

— (*with* Navarro, Gabriel) Character correspondences and irreducible induction and restriction. *J. Algebra* **140** (1991), *no.* 1, 131–140. (Reiner Staszewski) **93a:20015** 20C15

— (*with* Robinson, Geoffrey R.) On a theorem of Frobenius: solutions of $x^n = 1$ in finite groups. *Amer. Math. Monthly* **99** (1992), *no.* 4, 352–354. (David Gluck) **93a:20034** 20D60

— Number of modular character degrees and lengths for solvable groups. *J. Algebra* **148** (1992), *no.* 1, 264–273. (David Gluck) **93d:20022** 20C20

Isaacson, David (*with* Cheney, Margaret) Invariant imbedding, layer-stripping, and impedance imaging. *Invariant imbedding and inverse problems* (*Albuquerque, NM*, 1990), 42–50, *SIAM, Philadelphia, PA*, 1992. (*see* **93e:00023**) 92C55 (65R10, 78A55, 78A70)

— (*with* Somersalo, Erkki; Cheney, Margaret) A linearized inverse boundary value problem for Maxwell's equations. (English summary) *J. Comput. Appl. Math.* **42** (1992), *no.* 1, 123–136. (Summary) **93f:35242** 35R30 (35Q60)

— (*with* Somersalo, Erkki; Cheney, Margaret) Existence and uniqueness for electrode models for electric current computed tomography. *SIAM J. Appl. Math.* **52** (1992), *no.* 4, 1023–1040. (Summary) **93f:35052** 35J25 (35Q99, 78A70)

Isaacson, Eli L. (*with* Marchesin, Dan; Palmeira, C. Frederico; Plohr, Bradley J.) A global formalism for nonlinear waves in conservation laws. *Comm. Math. Phys.* **146** (1992), *no.* 3, 505–552. (Alan Jeffrey) **93h:35124** 35L65 (58G16)

— (*with* Temple, Blake) Nonlinear resonance in systems of conservation laws. (English summary) *SIAM J. Appl. Math.* **52** (1992), *no.* 5, 1260–1278. (Summary) **93f:35140** 35L65 (65M12, 76N15, 76S05, 76T05)

Isaacson, Jeffrey A. (*with* Rogers, Barrett) The stability of de Sitter space with a scalar quantum field. II. The linear analysis. *Nuclear Phys. B* **368** (1992), *no.* 2, 415–443. (Enric Verdaguer) **93d:83040** 83C47 (81T20, 83F05)

Isaak, Garth (*with* Tesman, Barry) The weighted reversing number of a digraph. Proceedings of the Twenty-second Southeastern Conference on Combinatorics, Graph Theory, and Computing (Baton Rouge, LA, 1991). *Congr. Numer.* **83** (1991), 115–124. (Prabir Das) **93f:05046** 05C20

— (*with* Kim, Suh-Ryung; McKee, Terry A.; McMorris, F. R.; Roberts, Fred S.) 2-competition graphs. (English summary) *SIAM J. Discrete Math.* **5** (1992), *no.* 4, 524–538. (Robert C. Brigham) **93k:05074** 05C20 (05C75, 05C90, 92D40)

Isac, George Iterative methods for the general order complementarity problem. *Approximation theory, spline functions and applications* (*Maratea*, 1991), 365–380, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 356, *Kluwer Acad. Publ., Dordrecht*, 1992. (J. Parida) **93f:90169** 90C33 (90A11)

— (*with* Németh, Alexandru B.) Isotone projection cones in Euclidean spaces. (French summary) *Ann. Sci. Math. Québec* **16** (1992), *no.* 1, 35–52. (Gerard Sierksma) **93e:52010** 52A20

van Isacker, P. *see* **Van Isacker, P.**

Isaev, A. P. (*with* Filippov, A. T.; Gangopadhyay, Debashis) Quantum discrete gauge models with bosonic and fermionic degrees of freedom. *Internat. J. Modern Phys. A* **7** (1992), *no.* 11, 2487–2507. (M. Carmeli) **93c:81108** 81T10

— (*with* Filippov, A. T.; Gangopadhyay, Debashis) Discrete "strings" and gauge model of three confined relativistic particles. *Internat. J. Modern Phys. A* **7** (1992), *no.* 15, 3639–3663. (Aleksandar R. Miković) **93k:81176** 81T30 (81V05)

— (*with* Filippov, A. T.; Kurdikov, A. B.) Para-Grassmann analysis and quantum groups. *Modern Phys. Lett. A* **7** (1992), *no.* 23, 2129–2141. (Arne Schirrmacher) **93m:81059** 81R50 (15A75, 17B37)

— (*with* Malik, R. P.) Deformed traces and covariant quantum algebras for quantum groups $GL_{qp}(2)$ and $GL_{qp}(1|1)$. *Phys. Lett. B* **280** (1992), *no.* 3-4, 219–226. (Dmitriĭ I. Gurevich) **93g:17026** 17B37 (16W30, 81R50)

— (*with* Popowicz, Ziemowit) q-trace for quantum groups and q-deformed Yang-Mills theory. *Phys. Lett. B* **281** (1992), *no.* 3-4, 271–278. (Robert Coquereaux) **93i:81093** 81R50 (81T13)

Isaev, S. A. The method of fictitious domains for a nonstationary model of the motion of a baroclinic ocean. (Russian) *Theory of functions and problems in numerical mathematics* (*Russian*), 31–35, 71, *Kazakh. Gos. Univ., Alma Ata*, 1990. (Summary) **93c:65150** 65N50 (76M25, 86A25)

— (*with* Dzhaikbaev, A. M.) Parabolic approximation of a diffusion model of an inhomogeneous fluid. (Russian. Russian summary) *Model. Mekh.* **4** (1990), *no.* 6, 27–40. (Lech Slawik) **93k:76038** 76D99 (35Q35, 76R50)

Isaeva, O. V. (*with* Medvedev, N. Ya.) Coverings in a lattice of quasi-varieties of l-groups. (Russian) *Sibirsk. Mat. Zh.* **33** (1992), *no.* 2, 102–107, 220; *translation in Siberian Math. J.* **33** (1992), *no.* 2, 266–271. (S. M. Vovsi) **93g:20045** 20E10

Isailovski, Miodrag (*with* Opricović, Serafim; Eccher, Lorenzo) An optimization procedure for water reservoirs in cascade. (English summary) *Yugosl. J. Oper. Res.* **2** (1992), *no.* 1, 83–95. 90C90

Isaka, K. (*with* Matsushita, Kunio; Omatu, Sigeru) Power generator control by variable structure control theory. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, II* (*Kobe*, 1991), 573–578, *Mita, Tokyo*, 1992. (*see* **93g:93006**) 93C95

Isaka, Satoru (*with* Sebald, A. V.) An optimization approach for fuzzy controller design. (English summary) *IEEE Trans. Systems Man Cybernet.* **22** (1992), *no.* 6, 1469–1473. 93C42 (04A72)

Isaki, Cary T. Model bias effects in small area coverage error estimation. *Comm. Statist. Theory Methods* **21** (1992), *no.* 5, 1213–1231. 62D05

Isakov, A. V. Optimal damping of nutational oscillations of a body stabilized by rotation. A pendulum damper. (Russian. Russian summary) *Development and application of the method of Lyapunov functions* (*Russian*) (*Irkutsk*, 1989), 120–127, 284, "*Nauka*" *Sibirsk. Otdel., Novosibirsk*, 1992. (*see* **93m:93005**) 73K50 (70E15, 70Q05, 93C95)

Isakov, N. M. Local approximations of approximately differentiable functions. (Russian) *Boundary value problems and spaces of differentiable functions* (*Russian*), 12–18, *Univ. Druzhby Narodov, Moscow*, 1989. (*see* **93m:35001**) 41A30 (26B05)

— The C^r property and approximately differentiable functions. (Russian) *Mat. Zametki* **49** (1991), *no.* 6, 59–62, 158; *translation in Math. Notes* **49** (1991), *no.* 5-6, 595–597. (Luděk Zajíček) **93b:26018** 26B05

Isakov, S. B. Statistics in one dimension: Heisenberg and Schrödinger quantizations. (English summary) *Modern Phys. Lett. A* **7** (1992), *no.* 32, 3045–3051. (Yu Liang Liu) **93h:81064** 81S05 (82B23)

Isakov, Victor On uniqueness of the discontinuous conductivity coefficient. (English summary) *Wave propagation and inversion*, 46–55, *SIAM, Philadelphia, PA*, 1992. (*see* **93d:73004**) 35R30 (35J25)

— (*with* Engl, Heinz W.) On the identifiability of steel reinforcement bars in concrete from magnetostatic measurements. (English summary) *European J. Appl. Math.* **3** (1992), *no.* 3, 255–262. (Eduard Eitelberg) **93g:78010** 78A30 (35R30, 78A55)

— (*with* Sun, Zi Qi) Stability estimates for hyperbolic inverse problems with local boundary data. *Inverse Problems* **8** (1992), *no.* 2, 193–206. (Gustavo Perla Menzala) **93g:35140** 35R30 (35L20, 53C65)

— Stability estimates for obstacles in inverse scattering. (English summary) *J. Comput. Appl. Math.* **42** (1992), *no.* 1, 79–88. 35R30 (35P25, 65P05)

Isakowitz, T. Can we transform logic programs into attribute grammars? (French summary) *RAIRO Inform. Théor. Appl.* **25** (1991), *no.* 6, 499–543. (Summary) **93a:68076** 68Q50 (68Q60)

Isambert, Emmanuel (*with* Gautheron, Véronique) Fleuves. (English summary) [Rivers] 2° *Colloque "Phénomènes Micro et Macroscopiques"* (*Oran*, 1987), 78–96, *Publ. Inst. Rech. Math. Av.*, 424, *Univ. Louis Pasteur, Strasbourg*, 1990. (J. S. Joel) **93a:58113** 58F12 (03H05, 26E35, 34C35, 34E15)

— (*with* Gautheron, Véronique) Finitely differentiable ducks and finite expansions. *Dynamic bifurcations* (*Luminy*, 1990), 40–56, *Lecture Notes in Math.*, 1493, *Springer, Berlin*, 1991. (J. S. Joel) **93d:58110** 58F14 (03H05, 34C23, 34E15)

Isamukhamedov, S. S. (*with* Dzhuraev, N.) A nonlocal problem for a degenerate parabolic-hyperbolic equation of the second kind. (Russian) *Boundary value problems for nonclassical equations in mathematical physics* (*Russian*) (*Novosibirsk*, 1989), 29–32, *Akad. Nauk SSSR Sibirsk. Otdel., Inst. Mat., Novosibirsk*, 1989. (*see* **93d:35001**) 35M10

Isaza J., Pedro (*with* Mejía L., Jorge; Stallbohm, Volker) Local solution for the Kadomtsev-Petviashvili equation with periodic conditions. *Manuscripta Math.* **75** (1992), *no.* 4, 383–393. (Pavel Krejčí) **93f:35204** 35Q53 (35A07)

Isbell, John Good packings in bad coverings. *Geombinatorics* **1** (1991), *no.* 2, 10. 52C15 (05B40)

— (*with* Schanuel, Stephen H.) Some closure properties in monoids. *Semigroup Forum* **46** (1993), *no.* 1, 73–77. (From the introduction) **93i:20067** 20M05

Isberg, J. (*with* Lindström, U.; Sundborg, B.) Space-time symmetries of quantized tensionless strings. (English summary) *Phys. Lett. B* **293** (1992), *no.* 3-4, 321–326. (Summary) **93i:81188** 81T30

İşcan, Hülya On class numbers of algebraic function fields defined by $y^2 = x^n + a$ over GF(p). *J. Pure Appl. Algebra* **78** (1992), *no.* 3, 271–273. (Ernst-Ulrich Gekeler) **93b:11156** 11R58 (11R29)

Ischebeck, Friedrich ★ Einladung zur Zahlentheorie. (German) [Invitation to number theory] *Bibliographisches Institut, Mannheim*, 1992. 192 *pp. ISBN* 3-411-15451-9 (J. L. Brenner) **93g:11001** 11–01 (20–01)

Iséki, Kiyoshi Semigroups with topology. *Proceedings of the 15th Symposium on Semigroups* (*Matsue*, 1991), 55–63, *Shimane Univ., Matsue*, 1992. (*see* **93e:20073**) 20M99

Isenberg, James (*with* Choquet-Bruhat, Yvonne; Moncrief, Vincent) Solutions of constraints for Einstein equations. (English and French summaries) *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 3, 349–355. (Philippe-A. Dionne) **93h:58151** 58G16 (83C05)

— (*with* Moncrief, Vincent) On spacetimes containing Killing vector fields with nonclosed orbits. *Classical Quantum Gravity* **9** (1992), *no.* 7, 1683–1691. (Jörg Frauendiener) **93g:83025** 83C20 (53C80, 83C75)

— (*with* Jackson, Martin) Ricci flow of locally homogeneous geometries on closed manifolds. *J. Differential Geom.* **35** (1992), *no.* 3, 723–741. (Dennis M. DeTurck) **93c:58049** 58E11 (53C25, 53C30, 58G11, 58G30)

Iserles, Arieh (*with* Nørsett, S. P.) ★ Order stars. Applied Mathematics and Mathematical Computation, 2. *Chapman & Hall, London*, 1991. xii+248 *pp. ISBN* 0-412-35260-5 D. Gaier (Zbl 738:65059) **93c:41026** 41A20 (30E10, 65D15, 65L07, 65M12)

— Efficient Runge-Kutta methods for Hamiltonian equations. *Bull. Greek Math. Soc.* **32** (1991), 3–20. (Summary) **93e:65102** 65L06 (58F05, 70–08, 70H05)

— (*with* Buhmann, Martin D.) Numerical analysis of functional equations with a variable delay. *Numerical analysis* 1991 (*Dundee*, 1991), 17–33, *Pitman Res. Notes Math. Ser.*, 260, *Longman Sci. Tech., Harlow*, 1992. (J. Gregor) **93g:65162** 65Q05 (34K05, 34K20, 65L20)

— (*with* Buhmann, Martin D.) On the dynamics of a discretized neutral equation. (English summary) IMA Conference on Dynamics of Numerics and Numerics of Dynamics (Bristol, 1990). *IMA J. Numer. Anal.* **12** (1992), *no.* 3, 339–363. (Summary) **93h:34142** 34K40 (58F32, 65L20)

— (*with* Saff, E. B.; Liu, Xiao Yan) On zeros of Hankel determinants with iterated polynomial entries. (English summary) IMA Conference on Dynamics of Numerics and Numerics of Dynamics (Bristol, 1990). *IMA J. Numer. Anal.* **12** (1992), *no.* 3, 387–403. (Kiyoko Nishizawa) **93m:58093** 58F23 (11Z50, 30D05, 65H05)

— (*with* Stuart, A. M.) Unified approach to spurious solutions introduced by time discretization. II. BDF-like methods. (English summary) *IMA J. Numer. Anal.* **12** (1992), *no.* 4, 487–502. (Jacques Reverdy) **93i:65070** 65L05

— Rational approximants and numerical methods for initial value problems. (English summary) Experimental mathematics: computational issues in nonlinear science (Los Alamos, NM, 1991). *Phys. D* **60** (1992), *no.* 1-4, 280–292. (Summary) **93j:65162** 65M99

— (*with* Söderlind, Gustaf) Global bounds on numerical error for ordinary differential equations. (English summary) Festschrift for Joseph F. Traub, Part I. *J. Complexity* **9** (1993), *no.* 1, 97–112. (Summary) **93m:65114** 65L70

— (*with* Buhmann, Martin D.) Stability of the discretized pantograph differential equation. (English summary) *Math. Comp.* **60** (1993), *no.* 202, 575–589. (J. Švejda) **93h:65107** 65L20 (34K20)

— *see also* **Dynamics of numerics and the numerics of dynamics, 93b:65004; Conference: Dynamics of Numerics and Numerics of Dynamics, 93d:65002** *and* **Acta numerica, 93m:65004**

Isermann, Helge *see* **Isermann, Rolf, 93b:93002**

Isermann, Rolf ★ Digital control systems. Vol. 1. (English. English summary) Fundamentals, deterministic control. Second edition. *Springer-Verlag, Berlin*, 1989. xii+334 *pp. ISBN* 3-540-50266-1 (Summary) **93h:93001** 93–01 (93–02, 93C57, 93C62, 93C95)

— (*with* Jordan, M.) Adaptive control with linear nonparametric models. (English summary) *Adaptive systems in control and signal processing*, 1989 (*Glasgow*), 211–216, *IFAC Sympos. Ser.*, 1990, *No.* 1, *Pergamon, Oxford*, 1990. (*see* **93j:93007**) 93C40

— (*with* Peter, K.) Parameter-adaptive PID-control based on continuous-time process models. (English summary) *Adaptive systems in control and signal processing*, 1989 (*Glasgow*), 241–246, *IFAC Sympos. Ser.*, 1990, *No.* 1, *Pergamon, Oxford*, 1990. (*see* **93j:93007**) 93C40

— ★ Digital control systems. Vol. 2. Stochastic control, multivariable control, adaptive control, applications. Translated from the second German edition by Helge Isermann. Second edition. *Springer-Verlag, Berlin*, 1991. xxii+325 *pp. ISBN* 3-540-50997-6 (Andrzej W. Olbrot) **93b:93002** 93–02 (93–01, 93C40, 93Exx)

Ishak, S. (*with* Bassily, N. L.) Applications of Wald's identity with some famous stopping times. *Ann. Univ. Sci. Budapest. Eötvös Sect. Math.* **34** (1991), 93–113 (1992). (Tōru Nakai) **93i:60084** 60G40 (62L15)

— (*with* Bassily, N. L.; Mogyoródi, József) On stable and mixing sequences of σ-fields. *Ann. Univ. Sci. Budapest. Sect. Comput.* **11** (1991), 11–22. (Nathaniel F. G. Martin) **93b:60009** 60A10 (28D05)

— (*with* Bassily, N. L.) Wald's identity, Blackwell's theorem, and Gut and Janson's theorem using martingale techniques. *Ann. Univ. Sci. Budapest. Sect. Comput.* **11** (1991), 75–95. (Summary) **93c:60063** 60G42 (60G40, 60G50)

— Remarks on a theorem of Burkholder and Gundy. *J. Theoret. Probab.* **5** (1992), *no.* 1, 153–158. (Adhir K. Basu) **93b:60090** 60G40 (60G50, 90D60)

Isham, Chris J. An introduction to general topology and quantum topology. *Physics, geometry, and topology* (*Banff, AB*, 1989), 129–189, *NATO Adv. Sci. Inst. Ser. B Phys.*, 238, *Plenum, New York*, 1990. (Summary) **93a:83019** 83C45

— (*with* Kubyshin, Yu. A.; Renteln, P.) Quantum metric topology. *Quantum gravity* (*Moscow*, 1990), 60–81, *World Sci. Publishing, River Edge, NJ*, 1991. (Charles G. Torre) **93i:83049** 83C45 (54A10, 58Z05)

— Conceptual and geometrical problems in quantum gravity. (English summary) *Recent aspects of quantum fields* (*Schladming*, 1991), 123–229, *Lecture Notes in Phys.*, 396, *Springer, Berlin*, 1991. (Charles G. Torre) **93j:83040** 83C45 (81V17)

— Loop algebras and canonical quantum gravity. (English summary) *Mathematical aspects of classical field theory* (*Seattle, WA*, 1991), 419–437, *Contemp. Math.*, 132, *Amer. Math. Soc., Providence, RI*, 1992. (*see* **93d:58006**) 83C45 (46L60)

— (*with* Ashtekar, Abhay) Representations of the holonomy algebras of gravity and nonabelian gauge theories. *Classical Quantum Gravity* **9** (1992), *no.* 6, 1433–1467. (Jorge A. Pullin) **93i:83042** 83C45 (46L60, 81T13)

— (*with* Ashtekar, Abhay) Inequivalent observable algebras. Another ambiguity in field quantisation. *Phys. Lett. B* **274** (1992), *no.* 3-4, 393–398. (Camillo Trapani) **93a:81110** 81T05

Isham, Valerie Stochastic models for epidemics with special reference to AIDS. (English summary) *Ann. Appl. Probab.* **3** (1993), *no.* 1, 1–27. (Summary) **93i:60188** 60K99

Ishankulov, T. I. (*with* Yarmukhamedov, Sh. Ya.; Makhmudov, O. I.) The Cauchy problem for a system of equations in the theory of elasticity in space. (Russian) *Sibirsk. Mat. Zh.* **33** (1992), *no.* 1, 186–190, 221; *translation in Siberian Math. J.* **33** (1992), *no.* 1, 154–158. (Stan Chiriță) **93e:73010** 73C02 (35Q72, 73D30)

Ḥunayn ibn Isḥāq *see* **Ḥunayn ibn Isḥāq**

Isḥāq ibn Ḥunayn *see* **de Young, Gregg, 93b:01012**

Ishchuk, V. V. (*with* Traskovets'ka, L. M.) A class of finite hybrid integral transformations (Bessel, Bessel, Fourier). (Ukrainian. Russian and Ukrainian summaries) *Visnik Kiiv. Unīv. Mat. Mekh. No.* 32 (1990), 35–44. (Summary) **93d:44008** 44A15 (35A22)

— (*with* Tatsii, R. M.; Kīsīlevich, V. V.) Approximation of solutions of differential equations with measures. (Ukrainian. Russian and Ukrainian summaries) *Vīsnik Kiīv. Unīv. Mat. Mekh. No.* 32 (1990), 128–131. (Summary) **93d:34013** 34A30 (34A45)

Ishibashi, Hiroyuki Generators of automorphism groups of modules. (English summary) *Generators and relations in groups and geometries* (*Lucca*, 1990), 47–67, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 333, *Kluwer Acad. Publ., Dordrecht*, 1991. (E. W. Ellers) **93k:20070** 20H25 (15A33)

— (*with* Ellers, Erich W.) Bireflectionality of the orthogonal group over a valuation domain. *J. Algebra* **149** (1992), *no.* 2, 322–325. (Summary) **93f:20064** 20H25

Ishibashi, Makoto A sufficient arithmetical condition for the ideal class group of an imaginary quadratic field to be cyclic. *Proc. Amer. Math. Soc.* **117** (1993), *no.* 3, 613–618. (Charles J. Parry) **93d:11111** 11R11 (11R29)

Ishibashi, Nobuyuki Extra observables in gauged WZW models. *Nuclear Phys. B* **379** (1992), *no.* 1-2, 199–219. (Stanislav Z. Pakuliak) **93e:81113** 81T40 (81R10, 81S10)

Ishibashi, Yasunori (*with* Onoda, Nobuharu) On the ring of constants of a diagonalizable higher derivation. *J. Pure Appl. Algebra* **81** (1992), *no.* 1, 39–47. (Andrzej Nowicki) **93e:13046** 13N05 (13B10)

Ishibashi, Yoshihiro (*with* Orihara, Hiroshi) Spatial correlation functions in two-dimensional XY system consisting of randomly distributed topological defects. *J. Phys. Soc. Japan* **61** (1992), *no.* 1, 1–5. (Summary) **93a:82032** 82B44

Ishibuchi, Hisao (*with* Tanaka, Hideo; Fukuoka, N.) Discriminant analysis of fuzzy data and its application to a gas sensor system. (English summary) *Japanese J. Fuzzy Theory Systems* **1** (1989), *no.* 1, 27–46 (1992). 90C90 (04A72, 90C70)

— (*with* Fujioka, Ryosuke; Tanaka, Hideo) Possibility and necessity pattern classification using neural networks. (English summary) *Fuzzy Sets and Systems* **48** (1992), *no.* 3, 331–340. 68T05

— (*with* Tanaka, Hideo) Fuzzy regression analysis using neural networks. (English summary) *Fuzzy Sets and Systems* **50** (1992), *no.* 3, 257–265. 62J99 (04A72, 68T05)

Ishida, Masa-Nori The duality of cusp singularities. *Math. Ann.* **294** (1992), *no.* 1, 81–97. (Piotr Jaworski) **93g:14004** 14B05

Ishida, Minoru (*with* Kojima, Sadayoshi) Apollonian packings and hyperbolic geometry. (English summary) *Geom. Dedicata* **43** (1992), *no.* 3, 265–283. (Oded Schramm) **93g:30063** 30F40 (20F10, 51M10, 52C15)

Ishida, Yoshiteru A qualitative analysis on dynamical systems: sign structure. *Mem. Fac. Engrg. Kyoto Univ.* **54** (1992), *no.* 1, 21–32. (Richard A. Alò) **93m:68141** 68T01 (58F40)

— A generalization of diagnosability analysis. (English summary) *Mem. Fac. Engrg. Kyoto Univ.* **54** (1992), *no.* 2, 33–47. (Summary) **93h:68012** 68M20 (94C12)

Ishiguro, Akira (*with* Suzuki, Hitoshi; Nishizeki, Takao) Variable-priority queue and doughnut routing. (English summary) *J. Algorithms* **13** (1992), *no.* 4, 606–635. 68P05

Ishiguro, Kenshi Retracts of classifying spaces. *Adams Memorial Symposium on Algebraic Topology*, 1 (*Manchester*, 1990), 271–280, *London Math. Soc. Lecture Note Ser.*, 175, *Cambridge Univ. Press, Cambridge*, 1992. (Donald M. Davis) **93c:55018** 55R35

— Classifying spaces of compact simple Lie groups and *p*-tori. *Algebraic topology* (*San Feliu de Guíxols*, 1990), 210–226, *Lecture Notes in Math.*, 1509, *Springer, Berlin*, 1992. (Donald M. Davis) **93g:55020** 55R35 (55S37)

Ishihara, Hajime (*with* Bridges, Douglas S.) Locating the range of an operator on a Hilbert space. *Bull. London Math. Soc.* **24** (1992), *no.* 6, 599–605. (A. Kučera) **93i:47124** 47S30 (03F60, 46S30, 47A05)

— Continuity properties in constructive mathematics. *J. Symbolic Logic* **57** (1992), *no.* 2, 557–565. (Horst Luckhardt) **93f:03039** 03F55 (03F60, 54C08)

Ishihara, Hideki (*with* Okamura, Takashi) Perturbation of higher-genus spatial surfaces in $(2+1)$-dimensional gravity. *Phys. Rev. D* (3) **46** (1992), *no.* 2, 572–577. (Piotr T. Chruściel) **93d:83008** 83C05 (81T40)

Ishihara, Tadashi (*with* Abe, Ken-ichi; Takeda, Hiroshi) Discrete-time iterative learning controller using approximation inverse model. (English summary) *Adaptive systems in control and signal processing*, 1989 (*Glasgow*), 385–390, *IFAC Sympos. Ser.*, 1990, *No.* 1, *Pergamon, Oxford*, 1990. (*see* **93j:93007**) 93E35

— (*with* Watanabe, Tetsuo; Inooka, Hikaru) A partial loop recovery for discrete-time systems under feedback delays. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, I* (*Kobe*, 1991), 523–528, *Mita, Tokyo*, 1992. (*see* **93g:93005**) 93C55 (93B52)

— (*with* Wu, Min; Guo, Hai Jiao; Rao, Li Chang) A parametrization of discrete-time low-order integral controllers with computation delay. (English and Chinese summaries) *Control Theory Appl.* **10** (1993), *no.* 1, 80–86. 93B52 (93C55)

— (*with* Zheng, Liang-An; Inooka, Hikaru) On prediction-type reduced-order observers for discrete-time systems. (English summary) *Internat. J. Control* **57** (1993), *no.* 1, 55–73. 93B07 (93C55)

Ishihara, Tôru Nonexistence of a projective plane minimally immersed with some embeddedness. (English summary) *J. Math. Tokushima Univ.* **26** (1992), 9–17 (1993). (Kichoon Yang) **93k:53008** 53A10

Ishii, Akira On the moduli of reflexive sheaves on a surface with rational double points. *Math. Ann.* **294** (1992), *no.* 1, 125–150. (Xiao Jiang Tan) **93h:14008** 14D20

Ishii, H. *see* **Ishii, Hiroyuki**

Ishii, Hiroaki[1] (*with* Matutomi, Tatsuo) The asymmetric rectilinear distance location problem with barriers. (English summary) *Optimization, Vol.* 1, 2 (*Singapore*, 1992), 965–969, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93d:90005**) 90B80

— (*with* Matsutomi, Tatsuo) A single facility location problem with fixed orientations. (English summary) *Optimization, Vol.* 1, 2 (*Singapore*, 1992), 970—975, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93d:90005**) 90B80

— (*with* Morita, Hiroshi) A stochastic improvement method for stochastic programming. (English summary) *Comput. Statist. Data Anal.* **14** (1992), *no.* 4, 477–487. (Vlasta Kaňková) **93k:90062** 90C15 (62J05, 90C05)

— (*with* Morita, Hiroshi) An efficient algorithm for a stochastic linear knapsack problem with a single index model. (English summary) *Math. Japon.* **38** (1993), *no.* 1, 17–25. (V. V. Kolbin) **93m:90056** 90C15 (90C10, 90C27)

Ishii, Hiroyuki Transition layer phenomena of the solutions of boundary value problems for differential equations with discontinuity. *Acta Math. Hungar.* **61** (1993), *no.* 1-2, 43–49. (L. E. Bobisud) **93m:34078** 34E15

Ishii, Hitoshi (*with* Menaldi, José-Luis; Zaremba, Leszek S.) Viscosity solutions of the Bellman equation on an attainable set. (Russian summary) *Problems Control Inform. Theory/Problemy Upravlen. Teor. Inform.* **20** (1991), *no.* 5, 317–328. (A. M. Tarasyev) **93a:49018** 49L25

— (*with* Dupuis, Paul) On Lipschitz continuity of the solution mapping to the Skorokhod problem, with applications. *Stochastics Stochastics Rep.* **35** (1991), *no.* 1, 31–62. (Constantin Tudor) **93e:60110** 60H10

— Viscosity solutions for a class of Hamilton-Jacobi equations in Hilbert spaces. *J. Funct. Anal.* **105** (1992), *no.* 2, 301–341. (Florin Iacob) **93f:35035** 35F20 (34G20, 35D05, 47H15, 47N20, 49L25)

— (*with* Giga, Yoshikazu; Goto, Shun'ichi) Global existence of weak solutions for interface equations coupled with diffusion equations. *SIAM J. Math. Anal.* **23** (1992), *no.* 4, 821–835. (Ioan I. Vrabie) **93g:35068** 35K55 (35D05)

Ishii, Katsuya (*with* Iwatsu, R.; Kambe, Tsutomu; Matsumoto, N.) Chaotic streamlines in viscous incompressible flows. *Nonlinear world, Vol.* 1 (*Kiev*, 1989), 490–506, *World Sci. Publishing, River Edge, NJ*, 1990. (*see* **93b:00012**) 76F20 (58F13, 76D05)

Ishii, Masaharu Many-valuedness of first integrals, their domains and many-valued solutions. *Progr. Theoret. Phys.* **87** (1992), *no.* 1, 93–101. (Summary) **93c:34012** 34A20 (34A12)

Ishii, N. *see* **Ishii, Noburo**

Ishii, Naohiro (*with* Inuzuka, Nobuhiro; Takahashi, Ken-ichi) Representative sample of LISP program inference from examples. (English summary) *Internat. J. Systems Sci.* **23** (1992), *no.* 8, 1321–1334. (Julian Padget) **93j:68183** 68T25

Ishii, Naonori Coverings over d-gonal curves. *Tsukuba J. Math.* **16** (1992), *no.* 1, 173–189. (Ciro Ciliberto) **93g:14032** 14H30

Ishii, Noburo (*with* Momose, F.) Hyperelliptic modular curves. *Tsukuba J. Math.* **15** (1991), *no.* 2, 413–423. (Joseph H. Silverman) **93b:14037** 14G35 (11F06, 11G18)

Ishii, Shihoko (*with* Watanabe, Kimio) A geometric characterization of a simple $K3$-singularity. *Tôhoku Math. J.* (2) **44** (1992), *no.* 1, 19–24. (Tadashi Tomaru) **93a:14001** 14B05 (14E15, 14E35, 14J28, 14J30)

Ishijima, Shintaro Controller design based on the system decomposition. *Control theory, stochastic analysis and applications* (*Hangzhou*, 1991), 14–29, *World Sci. Publishing, River Edge, NJ*, 1991. (Krzysztof Malinowski) **93c:93029** 93B51 (93A14)

— (*with* Zheng, Yu Fan) Dynamic decomposition of nonlinear control systems. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, II* (*Kobe*, 1991), 265–270, *Mita, Tokyo*, 1992. (*see* **93g:93006**) 93C10 (93B15)

— Nonlinear control theory at the practical stage(!?). I. Zero dynamics and local stabilization. (Japanese) *Systems Control Inform.* **37** (1993), *no.* 2, 110–117. 93–02 (93C95)

Ishikawa, Akihiko On the joint distribution of the departure intervals in an $M/G/1/N$ queue. *J. Oper. Res. Soc. Japan* **34** (1991), *no.* 4, 422–435. (Summary) **93a:60147** 60K25 (90B22)

Ishikawa, Goo Topologically extremal real algebraic surfaces in $\mathbf{P}^2 \times \mathbf{P}^1$ and $\mathbf{P}^1 \times \mathbf{P}^1 \times \mathbf{P}^1$. *Hokkaido Math. J.* **21** (1992), *no.* 1, 51–78. (From the introduction) **93g:14065** 14P05

— The local model of an isotropic map-germ arising from one-dimensional symplectic reduction. *Math. Proc. Cambridge Philos. Soc.* **111** (1992), *no.* 1, 103–112. (Stanislaw Janeczko) **93a:58022** 58C27 (57R45, 58C25, 58F05)

Ishikawa, Kenzo (*with* Imai, Naoki; Tanaka, Ikuo) Quantum theory of a relativistic particle with torsion and Chern-Simons gauge theory. (English summary) *Progr. Theoret. Phys.* **88** (1992), *no.* 2, 351–376. (Susan Mokhtari) **93m:81104** 81T13

— A mean field theory for the quantum Hall liquid. I. (English summary) *Progr. Theoret. Phys.* **88** (1992), *no.* 5, 881–893. (Summary) **93h:82079** 82D55 (81T13)

Ishikawa, Masaaki On stochastic partial differential equations with subdifferential. (English summary) *Systems and control*, 127–140, *Mita, Tokyo*, 1991. (Summary) **93i:60115** 60H15 (35R60, 49J40)

— (*with* Sunahara, Yoshifumi; Aoki, Takeshi) On the suboptimal control for a class of stochastic distributed parameter systems with nonlinear boundary conditions. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, I* (*Kobe*, 1991), 103–108, *Mita, Tokyo*, 1992. (*see* **93g:93005**) 93E20 (93C20)

— On the mathematical formulation of stochastic distributed parameter systems with state-dependent obstacles. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, II* (*Kobe*, 1991), 233–238, *Mita, Tokyo*, 1992. (*see* **93g:93006**) 93E03 (93A30)

Ishikawa, Shiro (*with* Nussbaum, Roger D.) Some remarks on differential equations of quadratic type. *J. Dynamics Differential Equations* **3** (1991), *no.* 3, 457–490. (Simeon Reich) **93a:47069** 47H20 (34A12, 34G20)

— Uncertainty relations in simultaneous measurements for arbitrary observables. (English summary) *Rep. Math. Phys.* **29** (1991), *no.* 3, 257–273. (Koichiro Matsuno) **93k:81023** 81P15

Ishikawa, Susumu Biharmonic W-surfaces in 4-dimensional pseudo-Euclidean space. (English summary) *Mem. Fac. Sci. Kyushu Univ. Ser. A* **46** (1992), *no.* 2, 269–286. (Bang-yen Chen) **93j:53075** 53C42 (53C40)

Ishimura, Naoyuki (*with* Ahara, Kazushi; Ikeda, Kazumasa) Linear discrete model for shortening polygons. (English summary) *J. Fac. Sci. Univ. Tokyo Sect. IA Math.* **39** (1992), *no.* 2, 365–377. (Anders Linnér) **93h:52011** 52A40

Ishimura, Ryuichi Le foncteur μhom relatif et l'action de $\mathscr{E}^{\mathbf{R}}$ relatif sur les fonctions holomorphes. [The relative functor μhom and the relative action of $\mathscr{E}^{\mathbf{R}}$ on holomorphic functions] *Mem. Fac. Sci. Kyushu Univ. Ser. A* **46** (1992), *no.* 1, 69–77. (P. Schapira) **93c:58206** 58G07 (32C38)

— A remark on the characteristic set for convolution equations. *Mem. Fac. Sci. Kyushu Univ. Ser. A* **46** (1992), *no.* 2, 195–199. (Daniele Struppa) **93k:58210** 58G07

Ishitani, Hiroshi (*with* Inoue, Tomoki) Ergodic properties of nonsingular transformations with asymptotically periodic densities. *Dynamical systems and related topics* (*Nagoya*, 1990), 175–182, *Adv. Ser. Dyn. Syst.*, 9, *World Sci. Publishing, River Edge, NJ*, 1991. (Wojciech Bartoszek) **93g:28016** 28D05 (47A35, 60F05)

— (*with* Inoue, Tomoki) Asymptotic periodicity of densities and ergodic properties for nonsingular systems. *Hiroshima Math. J.* **21** (1991), *no.* 3, 597–620. (Alexander M. Blokh) **93e:58110** 58F11 (28D05, 58F03)

Ishitobi, Mitsuaki Conditions for stable zeros of sampled systems. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 10, 1558–1561. 93D05 (93C57)

Ishizaki, Katsuya On the deficiency sums of meromorphic functions and their derivatives. (English summary) *Bull. Calcutta Math. Soc.* **82** (1990), *no.* 6, 475–479. (Lo Yang) **93k:30047** 30D35

— Admissible solutions of second order differential equations. (English summary) *Tôhoku Math. J.* (2) **44** (1992), *no.* 3, 305–325. (Ilpo Laine) **93h:34008** 34A20 (30D35)

Ishizuka, Wataru (*with* Kikuchi, Yukio) Improved $SU(2)_k$ Wess-Zumino-Witten model. *Phys. Rev. D* (3) **45** (1992), *no.* 12, 4569–4580. (Stanislav Z. Pakuliak) **93e:81116** 81T40 (81R10, 81T60)

Ishkhanov, V. V. (*with* Lur'e, B. B.) An embedding problem with a noncommutative kernel of order p^4. III. (Russian) *Zap. Nauchn. Sem. Leningrad. Otdel. Mat. Inst. Steklov. (LOMI)* **198** (1991), *Voprosy Teor. Predstav. Algebr Grupp.* 2, 20–27, 111; *translation in J. Soviet Math.* **64** (1993), *no.* 1, 716–721. (W. Narkiewicz) **93d:12006** 12F12 (11R32)

Ishlinskiĭ, A. Yu. (*with* Storozhenko, V. A.; Temchenko, M. E.) ★ Вращение твердого тела на струне и смежные задачи. (Russian) [Rotation of a rigid body on a string and related problems] With an English summary. "*Nauka*", *Moscow*, 1991. 332 *pp. ISBN* 5-02-006660-5 (A. Ya. Savchenko) **93d:70010** 70E15 (76B99)

— (*with* Storozhenko, V. A.; Temchenko, M. E.) Quasiparadoxical motions of a rigid body. (Russian. English and Ukrainian summaries) *Prikl. Mekh.* **28** (1992), *no.* 9, 3–17; *translation in Internat. Appl. Mech.* **28** (1992), *no.* 9, 543–555 (1993). (Summary) **93i:70004** 70E15

— *see also* **Bogolyubov, Aleksei Nikolaevich**, **93k:01064**

Ishmukhametov, A. Z. (*with* Avdonin, S. A.; Ivanov, S. A.) A quadratic problem of the optimal control of the vibrations of a string. (Russian) *Dokl. Akad. Nauk SSSR* **316** (1991), *no.* 4, 781–785; *translation in Soviet Math. Dokl.* **43** (1991), *no.* 1, 154–158. (Introduction) **93d:49025** 49K20 (47N70, 73D30, 73K50)

Isichenko, M. B. (*with* Kalda, J.) Statistical topography. II. Two-dimensional transport of a passive scalar. *J. Nonlinear Sci.* **1** (1991), *no.* 4, 375–396. (Summary) **93a:76091** 76Rxx (00A69, 28A80)

— (*with* Horton, Claude Wendell, Jr.; Kim, D. E.; Heo, E. G.; Choi, D.-I.) Stochastic diffusion and Kolmogorov entropy in regular and random Hamiltonians. (English summary) *Phys. Fluids B* **4** (1992), *no.* 12, 3973–3980. (Summary) **93h:76082** 76X05 (58F40, 76F20)

Isidori, Alberto Attenuation of disturbances in nonlinear control systems. *Systems, models and feedback: theory and applications* (*Capri*, 1992), 275–300, *Progr. Systems Control Theory*, 12, *Birkhäuser Boston, Boston, MA*, 1992. (Claude H. Moog) **93f:93047** 93B36 (93C10)

— Topics in nonlinear control theory. (English summary) *Theory & control of dynamical systems* (*Huddinge*, 1991), 61–94, *World Sci. Publishing, River Edge, NJ*, 1992. (*see*

93d:92001) 93-02 (93C10)
— (*with* Astolfi, Alessandro) Disturbance attenuation and H_∞-control via measurement feedback in nonlinear systems. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 9, 1283–1293. (Kang-Zhi Liu) **93i:93043** 93B36 (93C10)
— (*with* Astolfi, Alessandro) Nonlinear H_∞-control via measurement feedback. *J. Math. Systems Estim. Control* **2** (1992), *no.* 1, 31–44. (Ian Petersen) **93a:93041** 93B36 (49J24, 49N55, 93C10)
— *see also* **Systems, models and feedback: theory and applications, 93a:93006** *and* **Schwartz, Carla A., 93b:93063**
Isidro, José-M. Structural characterization of compact operators. (English summary) *Current topics in operator algebras (Nara, 1990)*, 114–129, *World Sci. Publishing, River Edge, NJ*, 1991. (Summary) **93i:46098** 46L05 (46L70, 47B07, 47C15)
— (*with* Kaup, Wilhelm) Weak continuity of holomorphic automorphisms in JB^*-triples. *Math. Z.* **210** (1992), *no.* 2, 277–288. (Harald Upmeier) **93d:46116** 46L70
— (*with* Labastida, J. M. F.; Ramallo, A. V.) Coset constructions in Chern-Simons gauge theory. *Phys. Lett. B* **282** (1992), *no.* 1-2, 63–72. (Summary) **93d:81159** 81T40 (81R10)
Işik, Can (*with* Simon, Dan) A trigonometric trajectory generator for robotic arms. (English summary) *Internat. J. Control* **57** (1993), *no.* 3, 505–517. 93C85
Iskakov, K. M. (*with* Shatalov, Yu. S.; Shayakberov, V. F.) An equation of heat and mass transfer of two-phase media in rotating channels. (Russian. Russian summary) *Boundary value problems (Russian)*, 149–156, *Perm. Politekh. Inst., Perm'*, 1989. (*see* **93k:00022**) 80A25 (76T05)
— (*with* Shatalov, Yu. S.; Trushin, O. V.) Approximation by Laplace integrals of the solution of an inverse problem of the determination of the temperature of an inaccessible surface. (Russian. Russian summary) *Boundary value problems (Russian)*, 170–173, *Perm. Politekh. Inst., Perm'*, 1989. (*see* **93k:00022**) 80A25 (35R30)
Iskandar, Labib (*with* El-Deen Mohamedein, M. Sh.) Solitary waves interaction for the BBM equation. *Comput. Methods Appl. Mech. Engrg.* **96** (1992), *no.* 3, 361–372. (Summary) **93b:65126** 65M06 (35Q35, 76B25)
Iskandarov, S. Modification of V. Volterra's method for studying the asymptotic behavior of solutions of a second-order linear equation. (Russian) *Differentsial'nye Uravneniya* **27** (1991), *no.* 9, 1638–1639, 1655. (Summary) **93b:34043** 34C11 (34D05, 34E05)
Iskander, Awad A. Nonassociative Boolean ring varieties. *J. Algebra* **144** (1991), *no.* 2, 411–435. (Joel Berman) **93c:06019** 06E20 (08B20, 16R10, 17A60)
Iskenderov, A. D. Conditional well-posedness of problems with an unknown boundary of the domain. (Russian) *Dokl. Akad. Nauk SSSR* **314** (1990), *no.* 5, 1062–1064; *translation in Soviet Math. Dokl.* **42** (1991), *no.* 2, 588–591. (Russell C. Thompson) **93f:35246** 35R35 (35B30, 35K85)
Iskenderov, D. Sh. (*with* Nikolaevskiĭ, V. N.) Laminarization of cores of atmospheric turbulent vortices. (Russian) *Dokl. Akad. Nauk SSSR* **319** (1991), *no.* 1, 124–128. (From the introduction) **93e:86002** 86A10 (76C15)
Iskenderov, N. Sh. An inverse nonstationary scattering problem for a hyperbolic system of n first-order equations on the semi-axis. (Russian. Ukrainian summary) *Ukrain. Mat. Zh.* **43** (1991), *no.* 12, 1638–1646; *translation in Ukrainian Math. J.* **43** (1991), *no.* 12, 1524–1532 (1992). (Plamen D. Stefanov) **93h:35208** 35R30 (35L40, 35P25)
Iskenderova, M. B. On summability in the sense of Abel of expansions in a system of eigenfunctions of even-order nonregular boundary value problems. (Russian. English and Azerbaijani summaries) *Akad. Nauk Azerbaidzhan. SSR Dokl.* **46** (1990), *no.* 3, 3–6 (1992). 34L10
— Abel summability of n-fold expansions in root functions of boundary value problems and convolution operators. (Russian. Russian summary) *Differentsial'nye Uravneniya* **28** (1992), *no.* 9, 1647–1650, 1656. (Summary) **93k:34177** 34L10 (34B05, 47B35, 47E05)
Iskhakov, I. F. Electromagnetic field equations in a chronometrically radially invariant formulation of the general theory of relativity. (Russian) *Izv. Vyssh. Uchebn. Zaved. Fiz.* **35** (1992), *no.* 2, 110–115; *translation in Soviet Phys. J.* **35** (1992), *no.* 2, 193–197. 83C50
Iskhokov, S. A. (*with* Gadoev, M. G.) A Hardy-type inequality for bounded domains that satisfy a cone condition. (Russian. Tajiki summary) *Dokl. Akad. Nauk Tadzhik. SSR* **34** (1991), *no.* 3, 146–151. (Vladimir D. Stepanov) **93c:46050** 46E35 (26D10)
— The variational Dirichlet problem for an elliptic system of differential operators that is degenerate on the boundary. (Russian) *Dokl. Akad. Nauk SSSR* **322** (1992), *no.* 1, 33–37; *translation in Soviet Math. Dokl.* **45** (1992), *no.* 1, 26–30. (Introduction) **93d:35042** 35J50 (35J70)
Iskovskikh, V. A. Towards the problem of rationality of conic bundles. *Algebraic geometry (Chicago, IL, 1989)*, 50–56, *Lecture Notes in Math.*, 1479, *Springer, Berlin*, 1991. (Jarosław A. Wiśniewski) **93i:14033** 14J30 (14E35)
— (*with* Tregub, S. L.) Birational automorphisms of rational surfaces. (Russian) *Izv. Akad. Nauk SSSR Ser. Mat.* **55** (1991), *no.* 2, 254–281; *translation in Math. USSR-Izv.* **38** (1992), *no.* 2, 251–275. (Jarosław A. Wiśniewski) **93b:14029** 14E07 (14J26, 14J50)
— Generators of the two-dimensional Cremona group over a nonclosed field. (Russian) *Trudy Mat. Inst. Steklov.* **200** (1991), 157–170; *translation in Proc. Steklov Inst. Math.* **1993**, *no.* 2, 173–188. (I. Dolgachev) **93a:14012** 14E07 (14G27)
Islam, J. N. ★ An introduction to mathematical cosmology. (English. English summary) *Cambridge University Press, Cambridge*, 1992. xii+190 *pp. ISBN* 0-521-37385-9; 0-521-37760-9 (Carl Brans) **93m:83083** 83F05 (83-01)
Islam, Muhammad Nurul (*with* Burton, T. A.; Eloe, Paul W.) Nonlinear integrodifferential equations and a priori bounds on periodic solutions. (English summary) *Ann. Mat. Pura Appl.* (4) **161** (1992), 271–283. (Saber Elaydi) **93f:45011** 45J05 (34K15)
Islamov, G. G. On a method for averaging functional corrections. (Russian. Russian summary) *Boundary value problems (Russian)*, 79–84, *Perm. Politekh. Inst., Perm'*, 1989. (*see* **93k:00022**) 65J10 (47A50)
— On an upper bound for the spectral radius. (Russian) *Dokl. Akad. Nauk* **322** (1992), *no.* 5, 836–838; *translation in Soviet Math. Dokl.* **45** (1992), *no.* 1, 177–179. (Igor M. Novitskiĭ) **93f:47033** 47B38 (47A10, 47G99, 47N20)
Islamov, R. K. (*with* Karimberdieva, S.) A numerical algorithm for solving a transport and diffusion equation. (Russian. Russian summary) *Voprosy Vychisl. i Prikl. Mat. (Tashkent) No.* 88 (1990), 76–89, 161. 76R50 (76M25)
Isler, Karl (*with* Lina, Jean-Marc) Canonical quantization of the induced 2D gravity. *Nuclear Phys. B* **358** (1991), *no.* 3, 713–736. (Summary) **93c:81207** 81T40 (81R10, 81T70)
— (*with* 't Hooft, Gerard; Kalitzin, S.) Quantum field-theoretic behavior of a deterministic cellular automaton. (English summary) *Nuclear Phys. B* **386** (1992), *no.* 3, 495–519. (From the text) **93m:81150** 81T99 (68Q80)
Islomov, B. (*with* Salakhitdinov, M. S.) An analogue of the Tricomi problem for an equation of mixed type with two internal planes of degeneration. (Russian) *Boundary value problems for nonclassical equations in mathematical physics (Russian)* (*Novosibirsk*, 1989), 53–56, *Akad. Nauk SSSR Sibirsk. Otdel., Inst. Mat., Novosibirsk*, 1989. (*see* **93d:35001**) 35M10
Ismaeel, Azeeza Ali (*with* Pollák, György) The translational hull of a subsemigroup of a semilattice of groups. *Semigroup Forum* **45** (1992), *no.* 2, 264–266. (Summary) **93d:20122** 20M99
— On some problems of Petrich concerning Bruck and Reilly semigroups. (English summary) *Semigroup Forum* **45** (1992), *no.* 3, 283–287. (Summary) **93e:20087** 20M18
Ismagilov, R. S. Operators and generalized functions that are developable with respect to coordinate systems. (Russian) *Mat. Zametki* **50** (1991), *no.* 3, 44–53, 157; *translation in Math. Notes* **50** (1991), *no.* 3-4, 912–918 (1992). (Ioana Cioranescu) **93d:46063** 46F10 (47B38)
— Three problems on the group of symplectic morphisms. (Russian) *Funktsional. Anal. i Prilozhen.* **26** (1992), *no.* 1, 66–68; *translation in Functional Anal. Appl.* **26** (1992), *no.* 1, 53–54. (L. S. Polyakova) **93m:58016** 58D05 (58E40, 58F05)
— Homogeneous domains that are connected with type II_∞ factors, and representations of infinite-dimensional groups. (Russian) *Funktsional. Anal. i Prilozhen.* **26** (1992), *no.* 2, 72–74; *translation in Functional Anal. Appl.* **26** (1992), *no.* 2, 133–135. (J. S. Joel) **93i:22023** 22E65 (46L99)
Ismail, M. K. Monotonicity preserving interpolation using C^2 rational cubic Bézier curves. *Mathematical methods in computer aided geometric design, II (Biri*, 1991), 343–350, *Academic Press, Boston, MA*, 1992. (*see* **93d:65022**) 65D05 (65D17)
Ismail, Mourad E. H. (*with* Masson, David R.; Letessier, Jean; Valent, Galliano) Birth and death processes and orthogonal polynomials. *Orthogonal polynomials (Columbus, OH*, 1989), 229–255, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 294, *Kluwer Acad. Publ., Dordrecht*, 1990. (Summary) **93c:42021** 42C05 (33C80, 60J80)
— (*with* Masson, David R.; Rahman, Mizan) Complex weight functions for classical orthogonal polynomials. *Canad. J. Math.* **43** (1991), *no.* 6, 1294–1308. (W. A. Al-Salam) **93a:33031** 33D45
— (*with* Masson, David R.) Two families of orthogonal polynomials related to Jacobi polynomials. Proceedings of the U.S.-Western Europe Regional Conference on Padé Approximants and Related Topics (Boulder, CO, 1988). *Rocky Mountain J. Math.* **21** (1991), *no.* 1, 359–375. (Joaquin Bustoz) **93a:33018** 33C45
— (*with* Letessier, Jean; Valent, Galliano) Birth and death processes with absorption. *Internat. J. Math. Math. Sci.* **15** (1992), *no.* 3, 469–480. (Erik A. van Doorn) **93f:60127** 60J80 (33C45, 42C05)
— (*with* Al-Salam, Nadhla A.) On sieved orthogonal polynomials. VIII. Sieved associated Pollaczek polynomials. *J. Approx. Theory* **68** (1992), *no.* 3, 306–321. (Mizan Rahman) **93b:33004** 33C45 (33D45)
— (*with* Gupta, Dharma P.; Masson, David R.) Contiguous relations, basic hypergeometric functions, and orthogonal polynomials. II. Associated big q-Jacobi polynomials. (English summary) *J. Math. Anal. Appl.* **171** (1992), *no.* 2, 477–497. (W. A. Al-Salam) **93k:33011** 33D45
— (*with* Li, Xin^3) On sieved orthogonal polynomials. IX. Orthogonality on the unit circle. *Pacific J. Math.* **153** (1992), *no.* 2, 289–297. (W. A. Al-Salam) **93b:42038** 42C05 (33C45)
Ismailov, I. G. An algorithm for the problem of the optimization of communications systems. (Russian. Russian summary) *Applied problems in optimal control: models, methods and algorithms (Russian)*, 65–71, 74, *Inst. Problem Upravlen., Moscow*, 1990. (*see* **93m:93004**) 94A05 (90C90)
Ismailov, Z. I. Formally normal extensions of an operator. (Russian. Russian summary) *Differentsial'nye Uravneniya* **28** (1992), *no.* 5, 905–907, 920. (Summary) **93h:47059** 47E05 (34L05, 47A20)
Ismail-Zade, A. T. (*with* Naĭmark, B. M.) Oscillatory instability as a consequence of a random distribution of density. (Russian) *Dokl. Akad. Nauk SSSR* **319** (1991), *no.* 3, 590–595. (From the introduction) **93a:86003** 86A60 (73N20)
Iso, Satoshi (*with* Karabali, Dimitra; Sakita, B.) One-dimensional fermions as two-dimensional droplets via Chern-Simons theory. (English summary) *Nuclear Phys. B* **388** (1992), *no.* 3, 700–714. (Summary) **93i:81309** 81V70 (81T13)
— Phase-space and symplectic structure of the fractional quantum Hall effect. *Progr. Theoret. Phys.* **87** (1992), *no.* 1, 111–125. (Summary) **93b:81313** 81V70 (81S40)
Isobe, Toyosaku (*with* Nagasaka, Kengo; Yamamoto, Shinji) A new approach to kinematic control of simple manipulators. (English summary) *IEEE Trans. Systems Man Cybernet.* **22** (1992), *no.* 5, 1116–1124. 93C85 (70B15, 70Q05)
Isogai, Eiichi A note on the asymptotic normality of sequential density estimators. *Yokohama Math. J.* **39** (1992), *no.* 2, 115–124. (Ryszard Zieliński) **93d:62068** 62G05 (62L12)
Isogawa, Satoru On Berger's conjecture about one-dimensional local rings. *Arch. Math. (Basel)* **57** (1991), *no.* 5, 432–437. (Reinhold Hübl) **93b:13042** 13N05 (14F10)
Isogawa, Yoshiko Finite sample and large sample properties of the OLS and GRLS estimators for a structural relationship with replication. *J. Japan Statist. Soc.* **21** (1991), *no.* 2, 181–188. (A. L. Nagar) **93c:62116** 62J05
— Comparing multivariate linear functional relationships. *Comm. Statist. Theory Methods* **21** (1992), *no.* 2, 319–331. (Dennis L. Young) **93e:62170** 62J05 (62H99)
Isola, S. (*with* D'Alessandro, G.; Politi, Antonio) Geometric properties of the pruning front. *Progr. Theoret. Phys.* **86** (1991), *no.* 6, 1149–1157. (Christian Beck) **93a:58052** 58F03 (58F13, 58F20)
Isopi, Marco (*with* Newman, Charles M.) The triangle law for Lyapunov exponents of large random matrices. *Comm. Math. Phys.* **143** (1992), *no.* 3, 591–598. (Philippe Bougerol) **93d:60045** 60F15 (82B05)
Isozaki, Hideki (*with* Shoham, Yoav) A mechanism for reasoning about time and belief. (English summary) *Fifth generation computer systems, Vol.* 1, 2 (*Tokyo*, 1992), 694–701, *Ohm, Tokyo*, 1992. (*see* **93i:68007**) 03B60 (03B45, 68T27)
Isozaki, Hiroshi On the S-matrix for three-body Schrödinger operators. (English summary) *Schrödinger operators (Aarhus*, 1991), 123–144, *Lecture Notes in Phys.*, 403, *Springer, Berlin*, 1992. (Luciano Canton) **93i:81285** 81U10

— Structures of S-matrices for three body Schrödinger operators. *Comm. Math. Phys.* **146** (1992), *no.* 2, 241–258. (Evgeni L. Korotyaev) **93h:81146** 81U10 (35P25, 47N50, 81U20)

İspir, N. (*with* Özkin, I. K.) Some properties which a ring of holomorphic functions on a nonempty subset of an open Riemann surface might have. (English summary) *Comm. Fac. Sci. Univ. Ankara Ser. A_1 Math. Statist.* **38** (1989), *no.* 1-2, 47–52 (1990). (David Minda) **93m:30053** 30F99

ben-Israel, Adi *see* **Ben-Israel, Adi**

Israel, Werner (*with* Barrabès, Claude) Light-like surface layers in general relativity. *Quantum gravity* (*Moscow*, 1990), 358–364, *World Sci. Publishing, River Edge, NJ*, 1991. (A. D. Popova) **93h:83013** 83C20 (83C75)

— (*with* Anderson, Warren G.; Brady, Patrick R.; Morsink, Sharon M.) Quantum effects in black hole interiors. (English summary) *Phys. Rev. Lett.* **70** (1993), *no.* 8, 1041–1044. (Summary) **93j:83052** 83C57 (83C47)

Israeli, Moshe (*with* Amitai, Dganit; Averbuch, Amir; Itzikowitz, Samuel) Parallel adaptive and time-stabilizing schemes for constant-coefficient parabolic PDEs. (English summary) *Comput. Math. Appl.* **24** (1992), *no.* 10, 33–53. 65M06 (65M12, 65Y05)

— (*with* Bar-Yoseph, Pinchas; Elata, David) On the generalized L_2 Galerkin finite element method for linear hyperbolic equations. (English summary) *Internat. J. Numer. Methods Engrg.* **36** (1993), *no.* 4, 679–694. (Summary) **93j:65146** 65M60

Israelit, Mark (*with* Rosen, Nathan) A simple model of the universe without singularities. *Gravitation and modern cosmology* (*Erice*, 1990), 151–156, *Ettore Majorana Internat. Sci. Ser. Phys. Sci.*, 56, *Plenum, New York*, 1991. (*see* **93j:83004**) 83C15

— (*with* Rosen, Nathan) The static character of prematter particles. *Found. Phys.* **22** (1992), *no.* 4, 549–554. (Carl Brans) **93d:83056** 83D05 (83F05)

— (*with* Rosen, Nathan) Weyl-Dirac geometry and dark matter. *Found. Phys.* **22** (1992), *no.* 4, 555–568. (Summary) **93b:83054** 83D05

Israfilov, D. M. Approximation of the Riemann function by extremal polynomials. (Russian) *Special problems in function theory, No. IV* (*Russian*), 101–122, "Èlm", *Baku*, 1989. (*see* **93m:00037**) 30C35 (41A10)

Israilov, I. (*with* Kirin, N. E.) ★ Оценочные системы в задачах теории управления. (Russian) [Evaluative systems in problems in control theory] "*Fan*", *Tashkent*, 1990. 159 *pp. ISBN* 5-648-00978-X (Vladimir Veliov) **93b:93003** 93–02 (49–02, 93B03, 93C41)

Issa, Salem Abdalla (*with* Kovalev, A. M.) Stabilization of the uniform motions of a rigid body about the principal axis. (Russian. Russian and Ukrainian summaries) *Prikl. Mekh.* **28** (1992), *no.* 9, 73–79; *translation in Internat. Appl. Mech.* **28** (1992), *no.* 9, 607–613 (1993). 70E15 (70K20)

Issard-Roch, F. (*with* Abergel, F.; Hilhorst, Danielle) On a Stefan problem with surface tension in the neighborhood of a stationary solution. *Progress in partial differential equations: elliptic and parabolic problems* (*Pont-à-Mousson*, 1991), 149–155, *Pitman Res. Notes Math. Ser.*, 266, *Longman Sci. Tech., Harlow*, 1992. (Cristina Turner) **93k:35274** 35R35 (35K99, 76R50, 80A22)

— (*with* Hilhorst, Danielle; Seidman, Thomas I.) On a reaction-diffusion equation with a free boundary: the case of an unbounded domain. *Free boundary problems involving solids* (*Montreal, PQ*, 1990), 232–236, *Pitman Res. Notes Math. Ser.*, 281, *Longman Sci. Tech., Harlow*, 1993. (*see* **93k:00037**) 35K57 (35R35)

— (*with* Abergel, F.; Hilhorst, Danielle) On a dissolution-growth problem with surface tension in the neighborhood of a stationary solution. (English summary) *SIAM J. Math. Anal.* **24** (1993), *no.* 2, 299–316. (Summary) **93m:35187** 35R35 (35K50)

Istas, Jacques Wavelet coefficients of a Gaussian process and applications. (English and French summaries) *Ann. Inst. H. Poincaré Probab. Statist.* **28** (1992), *no.* 4, 537–556. (Christian Houdré) **93k:60085** 60G12 (42C15, 94A11)

— (*with* Laredo, Catherine) Estimation de la fonction de covariance d'un processus gaussien stationnaire par méthodes d'échelles. (English and French summaries) [Estimation of the covariance function of a Gaussian stationary process using scaling methods] *C. R. Acad. Sci. Paris Sér. I Math.* **316** (1993), *no.* 5, 495–498. (Summary) **93j:62100** 62G05 (62M05)

Istomin, G. D. (*with* Bedrikovetskii, P. G.) Derivation of averaged equations of filtration-diffusive mass transport in two-layered porous strata. (Russian) *Numerical methods for solving boundary value problems* (*Russian*), 37–46, *Akad. Nauk SSSR Ural. Otdel., Bashkir. Nauchn. Tsentr, Ufa*, 1989. (*see* **93m:00033**) 76S05 (76R50)

Istrail, Sorin (*with* Heath, Lenwood S.) The pagenumber of genus g graphs is $O(g)$. (English summary) *J. Assoc. Comput. Mach.* **39** (1992), *no.* 3, 479–501. (Summary) **93k:05171** 05C85 (05C10, 68Q25, 68R10)

Istrate, Gabriel I. On two generalizations of the Darboux property. *Real Anal. Exchange* **17** (1991/92), *no.* 2, 535–544. (Clifford E. Weil) **93e:26003** 26A21

Itai, Alon (*with* Bar-Yehuda, Reuven; Goldreich, Oded) On the time-complexity of broadcast in multi-hop radio networks: an exponential gap between determinism and randomization. *J. Comput. System Sci.* **45** (1992), *no.* 1, 104–126. 68M10 (68Q25, 90B12)

Itai, Masanori On the strong Martin conjecture. *J. Symbolic Logic* **56** (1991), *no.* 3, 862–875. (O. V. Belegradek) **93g:03027** 03C45 (03C15)

Italiano, Giuseppe F. (*with* Eppstein, David; Tamassia, Roberto; Tarjan, Robert Endre; Westbrook, Jeffery; Yung, Moti) Maintenance of a minimum spanning forest in a dynamic plane graph. *J. Algorithms* **13** (1992), *no.* 1, 33–54. (Mirko Křivánek) **93a:68027** 68P05 (05C05, 05C85, 68Q25, 68R10)

— (*with* Eppstein, David; Galil, Zvi; Giancarlo, Raffaele) Sparse dynamic programming. I. Linear cost functions. (English summary) *J. Assoc. Comput. Mach.* **39** (1992), *no.* 3, 519–545. (Moshe Sniedovich) **93i:90107a** 90C39 (49L20)

— (*with* Eppstein, David; Galil, Zvi; Giancarlo, Raffaele) Sparse dynamic programming. II. Convex and concave cost functions. (English summary) *J. Assoc. Comput. Mach.* **39** (1992), *no.* 3, 546–567. (Moshe Sniedovich) **93i:90107b** 90C39 (49L20)

— (*with* Galil, Zvi) Fully dynamic algorithms for 2-edge connectivity. (English summary) *SIAM J. Comput.* **21** (1992), *no.* 6, 1047–1069. (Summary) **93i:68142** 68R10 (68P05, 68Q25)

— (*with* Galil, Zvi) Maintaining the 3-edge-connected components of a graph on-line. (English summary) *SIAM J. Comput.* **22** (1993), *no.* 1, 11–28. (Narsingh Deo) **93m:68075** 68Q25 (05C40, 68P05, 68R10)

Itamiya, K. (*with* Shin, Seiichi; Ando, Kazuaki) Robust model reference learning control system based on approximated weighting functions. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, II* (*Kobe*, 1991), 407–412, *Mita, Tokyo*, 1992. (*see* **93g:93006**) 93E35

Itenberg, I. V. Rigid classification up to isotopy of curves of degree 6 with a nondegenerate double point. (Russian. English summary) *Zap. Nauchn. Sem. Leningrad. Otdel. Mat. Inst. Steklov.* (*LOMI*) **193** (1991), *Geom. i Topol.* 1, 72–89, 162. (V. M. Kharlamov) **93c:14043** 14P25 (14H45, 14N99)

Itkin, V. È. An algebra of mixed computation. Images of programming. *Theoret. Comput. Sci.* **90** (1991), *no.* 1, 81–93. (David B. Benson) **93e:68014** 68N99 (03G25)

Itō, Akira (*with* Hromkovič, Juraj; Inoue, Katsushi; Takanami, Itsuo) On the power of two-dimensional synchronized alternating finite automata. *Fund. Inform.* **15** (1991), *no.* 1, 90–98. (Summary) **93a:68100** 68Q70

— (*with* Inoue, Katsushi; Takanami, Itsuo) Alternating Turing machines with modified accepting structure. *Internat. J. Found. Comput. Sci.* **2** (1991), *no.* 4, 401–417. (Alexey P. Stolboushkin) **93g:68032** 68Q05 (03D10, 03D15, 68Q15)

— (*with* Inoue, Katsushi; Takanami, Itsuo) A relationship between nondeterministic Turing machines and 1-inkdot Turing machines with small space. *Inform. Process. Lett.* **43** (1992), *no.* 4, 225–227. (John Michael Robson) **93j:68061** 68Q15 (03D10, 03D15, 68Q05, 68Q10)

Ito, H. M. (*with* Ogura, Yukio; Tomisaki, Matsuyo) Stretched-exponential decay laws of general defect diffusion models. *J. Statist. Phys.* **66** (1992), *no.* 1-2, 563–582. (Cheng Xun Wu) **93a:82040** 82C22 (60J60, 60K35, 82C41)

Ito, Hidekazu On Riemann surfaces of solutions for analytic integrable systems and their holonomy representations. *Dynamical systems and related topics* (*Nagoya*, 1990), 183–191, *Adv. Ser. Dyn. Syst.*, 9, *World Sci. Publishing, River Edge, NJ*, 1991. (Ziemowit Popowicz) **93f:58076** 58F05 (70H05)

— Integrability of Hamiltonian systems and Birkhoff normal forms in the simple resonance case. *Math. Ann.* **292** (1992), *no.* 3, 411–444. (Qi Keith Chen) **93b:58128** 58F36 (34C20, 58F05, 58F07, 70H05)

Ito, Hiroshi T. (*with* Tamura, Hideo) Semi-classical asymptotics for total scattering cross sections of 3-body systems. *J. Math. Kyoto Univ.* **32** (1992), *no.* 3, 533–555. (K. Veselić) **93k:81250** 81U10 (47F05, 47N50)

Ito, Ikuo (*with* Kon, Tadashi) Thermal properties of parasupersymmetric oscillator. (English summary) *Internat. J. Modern Phys. A* **7** (1992), *no.* 17, 3997–4014. (Summary) **93e:81056** 81S05 (81Q60, 81R40)

Ito, K. *see* **Ito, Kazufumi**

Ito, Katsushi Quantum Hamiltonian reduction and WB algebra. (English summary) *Internat. J. Modern Phys. A* **7** (1992), *no.* 20, 4885–4898. (Olga Kravchenko) **93i:81067** 81R10 (17B68, 81T40)

— $N = 2$ superconformal CP_n model. *Nuclear Phys. B* **370** (1992), *no.* 1, 123–142. (Alexander W. Smith) **93c:81208** 81T40 (81T60)

— (*with* Madsen, Jens Ole) Hamiltonian reduction and classical extended superconformal algebras. *Phys. Lett. B* **283** (1992), *no.* 3-4, 223–230. (Summary) **93k:17049** 17B67 (17A70, 17B81, 58F07, 81R10)

— (*with* Madsen, Jens Ole; Petersen, Jens Lyng) Free-field representations and screening operators for the $N = 4$ doubly extended superconformal algebras. (English summary) *Phys. Lett. B* **292** (1992), *no.* 3-4, 298–306. (Stanislav Z. Pakuliak) **93i:81068** 81R10 (17B67, 17B81, 81T40)

Ito, Kazufumi (*with* Kappel, Franz) On integro-differential equations with weakly singular kernels. *Differential equations with applications in biology, physics, and engineering* (*Leibnitz*, 1989), 209–218, *Lecture Notes in Pure and Appl. Math.*, 133, *Dekker, New York*, 1991. (Peter Junghanns) **93f:45014** 45J05 (34K05, 47D03, 47N20)

— (*with* Banks, H. T.; Wang, Chunming) Exponentially stable approximations of weakly damped wave equations. *Estimation and control of distributed parameter systems* (*Vorau*, 1990), 1–33, *Internat. Ser. Numer. Math.*, 100, *Birkhäuser, Basel*, 1991. (Alexander Doktor) **93f:35132** 35L20 (34G10, 65N12, 93C20, 93D15)

— (*with* Turi, Janos) Numerical methods for a class of singular integro-differential equations based on semigroup approximation. *SIAM J. Numer. Anal.* **28** (1991), *no.* 6, 1698–1722. (H. Brunner) **93b:34022** 34A50 (34K40, 45J05, 47D06, 47N20, 65R20)

— (*with* Kunisch, K.) Sensitivity analysis of solutions to optimization problems in Hilbert spaces with applications to optimal control and estimation. (English summary) *J. Differential Equations* **99** (1992), *no.* 1, 1–40. (Walter Alt) **93e:49039** 49K40 (49K27, 90C31)

— (*with* Kappel, Franz) Two families of approximation schemes for delay systems. *Results Math.* **21** (1992), *no.* 1-2, 93–137. (G. F. Webb) **93a:34089** 34K35 (47D06, 47N20, 49K25, 49M99, 65Q05, 93B40)

— (*with* Fang, Wei Fu) Identifiability of semiconductor defects from LBIC images. (English summary) *SIAM J. Appl. Math.* **52** (1992), *no.* 6, 1611–1626. (J. W. Jerome) **93j:35186** 35R30 (82D20)

— (*with* Kunisch, K.) On the choice of the regularization parameter in nonlinear inverse problems. *SIAM J. Optim.* **2** (1992), *no.* 3, 376–404. (Arkadiĭ Kryazhimskiĭ) **93h:65086** 65J20 (35R30, 49K20, 49N60)

— (*with* Busenberg, Stavros N.; Fang, Wei Fu) Modeling and analysis of laser-beam-induced current images in semiconductors. (English summary) *SIAM J. Appl. Math.* **53** (1993), *no.* 1, 187–204. (Summary) **93j:35171** 35Q60

Ito, Kei Topological field theory of four-dimensional self-dual target space and twisted harmonic superspace. *Phys. Lett. B* **282** (1992), *no.* 3-4, 335–340. (Sergey Merkulov) **93d:81176** 81T60 (32L25, 81R25)

Itô, Kiyosi Positive generalized functionals on $(\mathbf{R}^\infty, \mathscr{B}^\infty, N^\infty)$. *White noise analysis* (*Bielefeld*, 1989), 166–179, *World Sci. Publishing, River Edge, NJ*, 1990. (David Nualart) **93e:60108** 60H07

— On Malliavin calculus. *Probability theory* (*Singapore*, 1989), 47–72, *de Gruyter, Berlin*, 1992. (David Nualart) **93k:60142** 60H07

Ito, M. *see* **Ito, Masami[1]**

Ito, Masaaki On the fifth-order polynomial evolution equations of not normal type and Miura transformations. *J. Phys. Soc. Japan* **61** (1992), *no.* 5, 1817–1818. 35Q58

Ito, Masami *see* **Ito, Masami[2]**

Ito, Masami[1] (*with* Katsura, Masashi) Dense languages and languages related to primitive words. *Proceedings of Asian Mathematical Conference*, 1990 (*Hong Kong*, 1990), 215–220, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93b:00022**) 68Q45

— (*with* Thierrin, G.; Yū, Shih Shêng) Right k-dense languages. *Proceedings of the 15th Symposium on Semigroups* (*Matsue*, 1991), 1–6, *Shimane Univ., Matsue*, 1992. (*see* **93e:20073**) 20M05

— (*with* Reis, C. M.) Left dense covers of semigroups. *Words, languages and combinatorics* (*Kyoto*, 1990), 202–218, *World Sci. Publishing, River Edge, NJ*, 1992. (Do Long Van) **93h:20066** 20M10 (68Q45)

— (*with* Jürgensen, Helmut; Shih, Hui Jan; Thierrin, G.) Languages whose n-element subsets are codes. *Theoret. Comput. Sci.* **96** (1992), *no.* 2, 325–344. (Jean Moulin Ollagnier) **93f:68059** 68Q45 (68R15, 94B60)

— *see also* **Colloquium: Words, Languages and Combinatorics, 93h:68001**

Ito, Masami[2] (*with* Watanabe, Keiji; Nobuyama, Eitaku; Kitamori, Toshiyuki) A new algorithm for finite spectrum assignment of single-input systems with time delay. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 9, 1377–1383. (T. Kaczorek) **93h:93034** 93B55 (93B40)

Ito, Masatoshi (*with* Morita, Katsusada) Spontaneous breakdown of symmetry in stochastic quantization. *Progr. Theoret. Phys.* **87** (1992), *no.* 1, 207–233. (Summary) **93a:81094** 81S20 (81R40)

Ito, Noboru (*with* Raposa, Blessilda P.) Nearly triply regular DRADs of RH type. *Graphs Combin.* **8** (1992), *no.* 2, 143–153. (Mohan S. Shrikhande) **93i:05016** 05B05

— On cyclic tournaments. *Hokkaido Math. J.* **21** (1992), *no.* 2, 273–277. (Joseph B. Klerlein) **93d:05063** 05C25 (05C20)

Ito, Nobuyasu (*with* Kikuchi, Macoto; Okabe, Yutaka) Recycle of random sequences. (English summary) *Internat. J. Modern Phys. C* **4** (1993), *no.* 3, 569–590. 82B80 (65C20)

Ito, Shunji On a dynamical system related to sequences $[nx+y]-[(n-1)x+y]$, $n=1,2,\cdots$. *Dynamical systems and related topics* (*Nagoya*, 1990), 192–197, *Adv. Ser. Dyn. Syst.*, 9, *World Sci. Publishing, River Edge, NJ*, 1991. (M. Mendès France) **93g:11020** 11B83

— (*with* Kimura, Minako) On Rauzy fractal. *Japan J. Indust. Appl. Math.* **8** (1991), *no.* 3, 461–486. (Tim Bedford) **93d:11084** 11K55 (28A80)

Ito, Tatsuro (*with* Ikuta, T.; Munemasa, Akihiro) On pseudo-automorphisms and fusions of an association scheme. *European J. Combin.* **12** (1991), *no.* 4, 317–325. (Andrew Woldar) **93a:05132** 05E30 (05E20, 20F29)

— (*with* Munemasa, Akihiro; Yamada, Mieko) Amorphous association schemes over the Galois rings of characteristic 4. *European J. Combin.* **12** (1991), *no.* 6, 513–526. (Andrew Woldar) **93a:05133** 05E30 (13B05)

Ito, Yoshifumi Theory of (vector valued) Fourier hyperfunctions. Their realization as boundary values of (vector valued) slowly increasing holomorphic functions. IV. *J. Math. Tokushima Univ.* **24** (1990), 13–21. (J. S. Joel) **93e:32007** 32A45 (32C35, 46F15)

— Errata of: "Theory of (vector valued) Fourier hyperfunctions. Their realization as boundary values of (vector valued) slowly increasing holomorphic functions. III" [J. Math. Tokushima Univ. **23** (1989), 23–38; MR 91a:32007]. *J. Math. Tokushima Univ.* **24** (1990), 23–24. (J. S. Joel) **93e:32006** 32A45 (32C35, 46F15)

— Vector valued Fourier hyperfunctions. *J. Math. Kyoto Univ.* **32** (1992), *no.* 2, 259–285. (Carlos A. Berenstein) **93f:46063** 46F15 (32A45, 46E40)

— Theory of (vector valued) Fourier hyperfunctions. Their realization as boundary values of (vector valued) slowly increasing holomorphic function. V. (English summary) *J. Math. Tokushima Univ.* **26** (1992), 39–50 (1993). (J. S. Joel) **93m:32012** 32A45 (32C35, 46F15)

Ito, Yoshifusa (*with* Kubo, Izumi; Takenaka, Shigeo) Calculus on Gaussian white noise and Kuo's Fourier transform. *White noise analysis* (*Bielefeld*, 1989), 180–207, *World Sci. Publishing, River Edge, NJ*, 1990. (Yuh-Jia Lee) **93m:46043** 46F25 (46G12, 60G20, 60H99)

— Finite mapping by neural networks and truth functions. (English summary) *Math. Sci.* **17** (1992), *no.* 2, 69–77. (Răzvan Andonie) **93j:68065** 68Q22 (92B20)

Ito, Yukio Dynamic game strategies for corporate demand models in national economy. (English summary) *Dynamic games in economic analysis* (*Espoo*, 1990), 204–212, *Lecture Notes in Control and Inform. Sci.*, 157, *Springer, Berlin*, 1991. (*see* **93d:90003**) 90A15

Itoh, Katsumi (*with* Ohta, Nobuyoshi) BRST cohomology and physical states in two-dimensional supergravity coupled to $\tilde{c} \leq 1$ matter. *Nuclear Phys. B* **377** (1992), *no.* 1-2, 113–142. (Stanislav Z. Pakuliak) **93g:81153** 81T40 (17B56, 81T60, 81T70)

Itoh, Masaru (*with* Aoki, Kenichi; Kanezashi, Masakazu; Matsuura, Haruki) Power generation scheduling by neural network. (English summary) *Internat. J. Systems Sci.* **23** (1992), *no.* 11, 1977–1989. 90B35 (92B20)

Itoh, Shiroh Coefficients of normal Hilbert polynomials. *J. Algebra* **150** (1992), *no.* 1, 101–117. (Jian-Pan Wang) **93j:13021** 13D40

Itoh, T. (*with* Sampei, M.; Nakamichi, M.) Application of linearization technique and time scale transformation to trajectory control of tricycle-type mobile robot. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, II* (*Kobe*, 1991), 603–608, *Mita, Tokyo*, 1992. (*see* **93g:93006**) 93C85 (70B15, 70Q05, 93C95)

Itoh, Toshiaki (*with* Cai, DongSheng) Fractal dimension and convergence property of recursively generated symplectic integrators. (English summary) *Phys. Lett. A* **171** (1992), *no.* 3-4, 189–198. (Christoph Bandt) **93j:58050** 58F05 (28A80, 70H05)

Itoh, Toyoharu (*with* Munemasa, Akihiro) An inequality for primitive translation association schemes. *Mem. Fac. Sci. Kyushu Univ. Ser. A* **46** (1992), *no.* 2, 189–194. (Patrick Solé) **93j:05171** 05E30

Itoh, Yoshiaki (*with* Komaki, Fumiyasu) A unified model for Kakutani's interval splitting and Rényi's random packing. *Adv. in Appl. Probab.* **24** (1992), *no.* 2, 502–505. (Summary) **93c:60009** 60D05

Itoh, Yukihisa (*with* Tanii, Yoshiaki) Schwinger-Dyson equations of matrix models for open and closed strings. (English summary) *Phys. Lett. B* **289** (1992), *no.* 3-4, 335–341. (Summary) **93f:81111** 81T30

Itokawa, Yoe (*with* Coghlan, Leslie; Kosecki, Roman) On the solutions to certain Laplace inequalities with applications to geometry of submanifolds. *J. Geom. Anal.* **2** (1992), *no.* 3, 195–211. (Johan Tysk) **93d:58186** 58G30 (53C42, 58G25)

Itovich, G. (*with* Cendra, H.; Salthú, R.; Torresi, A.) Determination of Hopf bifurcation points. (Spanish. Spanish summary) *Proceedings of the First "Dr. Antonio A. R. Monteiro" Congress on Mathematics* (*Spanish*) (*Bahía Blanca*, 1991), 39–50, *Univ. Nac. del Sur, Bahía Blanca*, 1991. (Summary) **93h:34053** 34C23 (58F14)

Itoyama, H. Quantum groups, braiding matrices and coset models. *Differential geometric methods in theoretical physics* (*Davis, CA*, 1988), 223–235, *NATO Adv. Sci. Inst. Ser. B Phys.*, 245, *Plenum, New York*, 1990. (Summary) **93c:81080** 81R50 (16W30, 17B37, 81T40)

— (*with* Korepin, V. E.; Thacker, H. B.) Fredholm determinant representation of quantum correlation function for sine-Gordon at special value of coupling constant. (English summary) *Modern Phys. Lett. B* **6** (1992), *no.* 22, 1405–1411. (Summary) **93g:81079** 81T10

It·s, A. R. (*with* Fokas, A. S.; Kitaev, A. V.) Discrete Painlevé equations and their appearance in quantum gravity. *Comm. Math. Phys.* **142** (1991), *no.* 2, 313–344. (Nikolai A. Kostov) **93a:58080** 58F07 (81T40)

— (*with* Kitaev, A. V.; Fokas, A. S.) Matrix models of two-dimensional quantum gravity, and isomonodromic solutions of Painlevé "discrete equations". (Russian. English summary) *Zap. Nauchn. Sem. Leningrad. Otdel. Mat. Inst. Steklov.* (*LOMI*) **187** (1991), *Differentsial'naya Geom. Gruppy Li i Mekh.* 12, 3–30, 171, 174. (Alexander R. Kavalov) **93e:81114** 81T40 (39A12, 58F07, 83C45)

— (*with* Kitaev, A. V.) The continuum limit in the Hermitian Φ^6 matrix model. (Russian. English summary) *Zap. Nauchn. Sem. Leningrad. Otdel. Mat. Inst. Steklov.* (*LOMI*) **187** (1991), *Differentsial'naya Geom. Gruppy Li i Mekh.* 12, 40–52, 171, 174. (Alexander R. Kavalov) **93b:81198** 81T27 (58F07, 81T40)

— (*with* Fokas, A. S.; Kitaev, A. V.) The isomonodromy approach to matrix models in 2D quantum gravity. *Comm. Math. Phys.* **147** (1992), *no.* 2, 395–430. (Yolanda Lozano) **93h:81115** 81T40 (58F07)

— (*with* Bikbaev, R. F.) Algebrogeometric solutions of a nonlinear boundary value problem on an interval for the sine-Gordon equation. (Russian. Russian summary) *Mat. Zametki* **52** (1992), *no.* 4, 19–28, 128; *translation in Math. Notes* **52** (1992), *no.* 3-4, 1005–1011 (1993). (Summary) **93k:35230** 35Q53 (34L40, 35L60, 58F07)

— (*with* Izergin, A. G.; Korepin, V. E.; Varzugin, G. G.) Large time and distance asymptotics of field correlation function of impenetrable bosons at finite temperature. *Phys. D* **54** (1992), *no.* 4, 351–395. (Tuncay Aktosun) **93b:82046** 82C10 (81T99)

— (*with* Fokas, A. S.) Soliton generation for initial-boundary value problems. *Phys. Rev. Lett.* **68** (1992), *no.* 21, 3117–3120. (Summary) **93a:35130** 35Q51

It·s, E. N. (*with* Lee, J. S.) Green's function and energy integrals for magnetoelastic surface waves in perfectly conducting media. (English summary) *Internat. J. Solids Structures* **29** (1992), *no.* 23, 2959–2971. (Summary) **93f:73089** 73R05 (73D20, 78A25)

Itskovich, E. A. (*with* Il'in, V. P.) Experimental analysis of explicit incomplete factorization methods. (Russian) *Numerical methods and mathematical modeling* (*Russian*), 85–94, *Akad. Nauk SSSR Sibirsk. Otdel., Vychisl. Tsentr, Novosibirsk*, 1990. (*see* **93i:65007**) 65F99

Itskovitš, M. (*with* Lokshin, A. A.) Exact solution to the reflection problem in a hereditary nonlinear composite bar. *Internat. J. Non-Linear Mech.* **27** (1992), *no.* 3, 337–340. (Piotr Borejko) **93c:73034** 73D35 (73C50, 73K12)

Iturralde, Mikel *see* **Lezaun Iturralde, Mikel**

Itzhack, I. Y. *see* **Bar-Itzhack, I. Y.**

Itzhak, Benjamin *see* **Avi-Itzhak, Benjamin**

Itzikowitz, Samuel (*with* Amitai, Dganit; Averbuch, Amir; Israeli, Moshe) Parallel adaptive and time-stabilizing schemes for constant-coefficient parabolic PDEs. (English summary) *Comput. Math. Appl.* **24** (1992), *no.* 10, 33–53. 65M06 (65M12, 65Y05)

Itzkowitz, Gerald (*with* Rothman, Sheldon; Strassberg, Helen; Wu, Ta Sun) Characterization of equivalent uniformities in topological groups. (English summary) *Topology Appl.* **47** (1992), *no.* 1, 9–34. (Worthen Hunsaker) **93k:54060** 54E15 (22D05, 54D45)

Itzykson, Claude (*with* Drouffe, Jean-Michel) ★ Statistical field theory. Vol. 1. From Brownian motion to renormalization and lattice gauge theory. Cambridge Monographs on Mathematical Physics. *Cambridge University Press, Cambridge*, 1989. xvi+403+Ivii *pp. ISBN* 0-521-34058-6; 0-521-40805-9 (C. A. Hurst) **93k:81003a** 81–02 (81T17, 81T25, 82–02)

— (*with* Drouffe, Jean-Michel) ★ Statistical field theory. Vol. 2. Strong coupling, Monte Carlo methods, conformal field theory, and random systems. Cambridge Monographs on Mathematical Physics. *Cambridge University Press, Cambridge*, 1989. *pp.* i–xvi, 405–810 *and* Ii–Ivii. *ISBN* 0-521-37012-4; 0-521-40806-7 (C. A. Hurst) **93k:81003b** 81–02 (81T40, 81T80, 82–02, 82B41, 82B80)

— W-geometry. *Differential geometric methods in theoretical physics* (*Rapallo*, 1990), 222–244, *Lecture Notes in Phys.*, 375, *Springer, Berlin*, 1991. (From the text) **93c:17046** 17B68 (17B81, 58F07)

— (*with* Di Francesco, Ph.; Zuber, J.-B.) Classical W-algebras. *Comm. Math. Phys.* **140** (1991), *no.* 3, 543–567. (Summary) **93e:17041** 17B68 (58F07, 81R10)

— (*with* Bauer, Michel; Di Francesco, Ph.; Zuber, J.-B.) Covariant differential equations and singular vectors in Virasoro representations. *Nuclear Phys. B* **362** (1991), *no.* 3, 515–562. (P. D. Jarvis) **93c:81062** 81R10 (17B68, 81T30, 81T40)

— (*with* Zuber, J.-B.) Combinatorics of mapping class groups and matrix integration. *Quantum mechanics of fundamental systems*, 3 (*Santiago*, 1990), 135–161, *Ser. Cent. Estud. Cient. Santiago, Plenum, New York*, 1992. (*see* **93j:81003**) 57N05 (05C90, 57M99, 58C35, 81–02, 81T40)

— Geometry of differential equations and projective representations of the Witt algebra. (English summary) Topological and quantum group methods in field theory and condensed matter physics. *Internat. J. Modern Phys. B* **6** (1992), *no.* 11-12, 1969–2003. (D. V. Yur'ev) **93j:17052** 17B68 (58A15, 81R10, 81T40)

— *see also* **From number theory to physics, 93m:11001**

Iusem, Alfredo N. (*with* Teboulle, Marc) A primal-dual iterative algorithm for a maximum likelihood estimation problem. (English summary) *Comput. Statist. Data Anal.* **14** (1992), *no.* 4, 443–456. (Summary) **93h:62045** 62F10

— (*with* De Pierro, Alvaro R.) A characterization of the set of fixed points of some smoothed operators. (English summary) *Linear Algebra Appl.* **177** (1992), 1–5. (Summary) **93j:65059** 65F30 (65K99)

Ivan, Mircea Sur une suite d'opérateurs d'interpolation et d'approximation dans un espace de Hilbert. [On a sequence of interpolation and approximation operators in a Hilbert space] *Anal. Numér. Théor. Approx.* **20** (1991), *no.* 1-2, 43–46. 46E22 (41A65)

Ivanauskas, Feliksas (*with* Dement'ev, Aleksandr) Convergence of a splitting scheme for a system of nonlinear nonstationary equations of Schrödinger type. (Russian. English and Lithuanian summaries) *Differentsial'nye Uravneniya i Primenen. No.* 46 (1991), 42–57. (Summary) **93b:65133** 65M12 (35Q55)

— A multiplicative estimate for the norm of a function in C in terms of the norms in L_2 and W_2^n, and the convergence of difference methods for nonlinear evolution equations. (Russian. English and Lithuanian summaries) *Litovsk. Mat. Sb.* **31** (1991), *no.* 2,

311–322; *translation in Lithuanian Math. J.* **31** (1991), *no.* 2, 211–220 (1992). (From the text) **93b:46058** 46E35 (65M06, 65M12)

— Convergence and stability of difference schemes for nonlinear equations of Schrödinger type. (Russian. English and Lithuanian summaries) *Litovsk. Mat. Sb.* **31** (1991), *no.* 4, 606–621; *translation in Lithuanian Math. J.* **31** (1991), *no.* 4, 417–429 (1992). (Zhong Xiong Pan) **93b:65127** 65M06 (35Q55, 65M12)

Ivanchenko, T. S. (*with* Sakhnovich, L. A.) Canonical representations. (Russian) *Sibirsk. Mat. Zh.* **33** (1992), *no.* 2, 172–174, 222; *translation in Siberian Math. J.* **33** (1992), *no.* 2, 330–332. (Mihail Voicu) **93e:15004** 15A21 (15A57, 47A57)

Ivanchov, M. I. An inverse problem on determining the coefficient of heat conduction. (Ukrainian. Russian summary) *Visnik L'viv. Derzh. Univ. Ser. Mekh.-Mat. No.* 30 (1988), 13–16, 73. 35R30

— (*with* Badzo, M. I.; Vasil'eva, N. V.) Some inverse problems of heat conduction with integral overdetermination. (Ukrainian) *Visnik L'viv. Univ. Ser. Mekh. Mat. No.* 34 (1990), 3–7. 35R30 (35K05)

— (*with* Luchko, I. Ya.) On an inverse problem for determining the coefficients of a parabolic equation. (Ukrainian) *Visnik L'viv. Univ. Ser. Mekh. Mat. No.* 34 (1990), 7–10. 35R30 (35K10)

Ivanchov, N. I. An inverse problem of heat conduction in a two-component medium. (Russian. Russian summary) *Differentsial'nye Uravneniya* **28** (1992), *no.* 4, 666–672, 734; *translation in Differential Equations* **28** (1992), *no.* 4, 541–546. (Summary) **93h:35209** 35R30 (35K05, 80A23)

Ivanenko, V. I. The problem of controlling quasi-linear objects with a priori indeterminacy. *J. Automat. Inform. Sci.* **24** (1991), *no.* 6, 30–32 (1993); *translated from Avtomatika* **1991**, *no.* 6, 32–35, 96 (*Russian. English, Russian and Ukrainian summaries*). 93C20

Ivaneshkin, A. I. On complex optimization of the use of information-technological resources in information processing systems with regulated message sizes. (Russian. English and Ukrainian summaries) *Kibernet. Sistem. Anal.* **1991**, *no.* 6, 45–53, 188; *translation in Cybernet. Systems Anal.* **27** (1991), *no.* 6, 833–840 (1992). 68M20 (90C90)

Ivanilov, Yu. P. *see* **Operations research (models, systems, solutions), 93b:90011** *and* **93c:90004**

Ivankov, A. A. (*with* Borisov, V. M.) Calculation of the radiative energy transfer in hypersonic flow around blunt bodies by means of P_1- and P_2-approximations of the method of spherical harmonics. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **32** (1992), *no.* 6, 952–966; *translation in Comput. Math. Math. Phys.* **32** (1992), *no.* 6, 823–835. (Summary) **93d:76036** 76K05

Ivanov, A. A. *see* **Ivanov, Aleksandr Aleksandrovich**

Ivanov, A. F. *see* **Ivanov, Anatolii Fiodorovich**

Ivanov, A. G. Uniform local controllability of a nonlinear system in a class of generalized controls. (Russian. Russian summary) *Nonlinear oscillations and control theory* (*Russian*), 5–18, 87, *Udmurt. Gos. Univ., Izhevsk*, 1989. (*see* **93m:00031**) 93B05 (93C10)

— (*with* Tonkov, E. L.) On the controllability set of a linear almost periodic system. (Russian) *Differentsial'nye Uravneniya* **27** (1991), *no.* 10, 1692–1699, 1835; *translation in Differential Equations* **27** (1991), *no.* 10, 1191–1196 (1992). (M. Krastanov) **93a:93017** 93B05 (34H05, 49N20, 93B28, 93C50)

— An almost periodic Lyapunov problem. (Russian) *Prikl. Mat. Mekh.* **55** (1991), *no.* 5, 718–724; *translation in J. Appl. Math. Mech.* **55** (1991), *no.* 5, 581–588 (1992). (Jaromír Kuben) **93b:49031** 49K27 (90C48)

— Modeling the motion of an aircraft at the landing stage. (Russian. Russian summary) *Control problems with guaranteed result* (*Russian*), 15–26, 116, *Ross. Akad. Nauk, Ural. Otdel., Ekaterinburg*, 1992. (*see* **93b:93008**) 49N55 (93C95)

Ivanov, A. M. The structure of ultrapowers of abelian groups over ω. (Russian) *Mat. Zametki* **51** (1992), *no.* 2, 40–45, 157; *translation in Math. Notes* **51** (1992), *no.* 1-2, 133–137. (From the summary) **93d:20100** 20K99 (20A15)

Ivanov, A. O. (*with* Tuzhilin, Alekseĭ Avgustinovich) The Steiner problem on a plane or planar minimal networks. (Russian) *Mat. Sb.* **182** (1991), *no.* 12, 1813–1844; *translation in Math. USSR-Sb.* **74** (1993), *no.* 2, 555–582. (Sergeĭ L. Bezrukov) **93d:05148** 05C90 (90C35)

— (*with* Tuzhilin, Alekseĭ Avgustinovich) Geometry of minimal nets and the one-dimensional Plateau problem. (Russian. Russian summary) *Uspekhi Mat. Nauk* **47** (1992), *no.* 2(284), 53–115, 222; *translation in Russian Math. Surveys* **47** (1992), *no.* 2, 59–131. (Mirko Křivánek) **93i:05050** 05C05 (05C10, 68U05)

Ivanov, A. P. Shockless motions in systems with unilateral constraints. (Russian) *Prikl. Mat. Mekh.* **56** (1992), *no.* 1, 3–15; *translation in J. Appl. Math. Mech.* **56** (1992), *no.* 1, 1–12. (Summary) **93d:70024** 70F99

— Energetics of an impact with friction. (Russian. Russian summary) *Prikl. Mat. Mekh.* **56** (1992), *no.* 4, 624–631; *translation in J. Appl. Math. Mech.* **56** (1992), *no.* 4, 527–534. (Summary) **93h:70003** 70E99 (70F35, 73T05)

Ivanov, A. V. Uniform Hölder estimates for generalized solutions of quasilinear parabolic equations that admit double degeneration. (Russian) *Algebra i Analiz* **3** (1991), *no.* 2, 139–179; *translation in St. Petersburg Math. J.* **3** (1992), *no.* 2, 363–403. (Wojciech M. Zajaczkowski) **93d:35083** 35K65 (35B45, 35D10)

— (*with* Mkrtychyan, P. Z.) On the regularity up to the boundary of generalized solutions of the first initial-boundary value problem for quasilinear parabolic equations that admit double degeneration. (Russian) *Zap. Nauchn. Sem. Leningrad. Otdel. Mat. Inst. Steklov.* (*LOMI*) **196** (1991), *Modul. Funktsii Kvadrat. Formy.* 2, 83–98, 173–174. (Jinghuang Tian) **93c:35085** 35K65 (35D10)

— The classes $\mathscr{B}_{m,l}$ and Hölder estimates for quasilinear parabolic equations that admit double degeneration. (Russian. English summary) *Zap. Nauchn. Sem. S.-Peterburg. Otdel. Mat. Inst. Steklov.* (*POMI*) **197** (1992), *Kraev. Zadachi Mat. Fiz. Smezh. Voprosy Teor. Funktsii.* 23, 42–70, 179–180. (Summary) **93e:35062** 35K65 (35B45, 46E35)

— (*with* Fraska, M.) Partial regularity for quasilinear non-uniformly elliptic systems of total type. (Russian. English and Russian summaries) *Zap. Nauchn. Sem. S.-Peterburg. Otdel. Mat. Inst. Steklov.* (*POMI*) **200** (1992), *Kraev. Zadachi Mat. Fiz. Smezh. Voprosy Teor. Funktsii.* 24, 62–70, 188. (Summary) **93h:35066** 35J60 (35J50)

Ivanov, A. Yu. (*with* Likhachev, V. N.) The focusing of convergent weak shock waves in a viscous fluid. (Russian. Russian summary) *Applied numerical analysis and mathematical modeling* (*Russian*), 54–60, 175, *Akad. Nauk SSSR, Dal'nevostochn. Otdel., Vladivostok*, 1989. (*see* **93d:00029**) 76L05

Ivanov, Al. Classical theories, atomicity and nonclassical theories. (English summary) *Helv. Phys. Acta* **65** (1992), *no.* 5, 641–651. (M. J. Mączyński) **93g:81007** 81P10 (06C15)

Ivanov, Aleksandr Aleksandrovich *see* **Interactions between algebra and combinatorics, 93f:00008**

Ivanov, Aleksandr Anatol'evich Girth-6 graphs and characterization of odd graphs. (Russian) *Problems in group theory and homological algebra* (*Russian*), 95–110, *Matematika, Yaroslav. Gos. Univ., Yaroslavl'*, 1987. (*see* **93d:20002**) 05C75

— Geometric presentations of groups with an application to the Monster. *Proceedings of the International Congress of Mathematicians, Vol. I, II* (*Kyoto*, 1990), 1443–1453, *Math. Soc. Japan, Tokyo*, 1991. (Gernot Stroth) **93d:20036** 20D08 (20F05)

— A geometric characterization of Fischer's Baby Monster. *J. Algebraic Combin.* **1** (1992), *no.* 1, 45–69. (Ulrich Meierfrankenfeld) **93h:20018** 20D08 (20F32)

— A presentation for J_4. *Proc. London Math. Soc.* (3) **64** (1992), *no.* 2, 369–396. (Gernot Stroth) **93b:20030** 20D08 (20B25, 20F29)

— Totally transcendental theories of unars. (Russian) *Sibirsk. Mat. Zh.* **33** (1992), *no.* 1, 53–61, 219; *translation in Siberian Math. J.* **33** (1992), *no.* 1, 41–47. (O. V. Belegradek) **93g:03028** 03C45 (03C60, 08A60)

— Structural problems for model companions of varieties of polygons. (Russian) *Sibirsk. Mat. Zh.* **33** (1992), *no.* 2, 94–101, 220; *translation in Siberian Math. J.* **33** (1992), *no.* 2, 259–265. (Klaus Denecke) **93i:03039** 03C05 (03C30, 08A60)

Ivanov, Aleksandr Vladimirovich (*with* Grigor'ev, Yu. D.) Asymptotic expansion of the distribution of a functional of the least squares estimate. (Russian. English and Russian summaries) *Dokl. Akad. Nauk Ukrainy* **1992**, *no.* 7, 26–30, 178. (Summary) **93h:62028** 62E20 (62J02)

— (*with* Grigor'ev, Yu. D.) Asymptotic expansions connected with estimators of the observation error variance in Gaussian nonlinear regression. (Russian. English and Ukrainian summaries) *Kibernet. Sistem. Anal.* **1992**, *no.* 1, 75–85, 189; *translation in Cybernet. Systems Anal.* **28** (1992), *no.* 1, 62–71. (Andrej Pázman) **93m:62142** 62J02 (62E20)

Ivanov, Alexander A. *see* **Ivanov, Aleksandr Anatol'evich**

Ivanov, Anatolii Fiodorovich (*with* Kusano, Takaŝi) Oscillation of solutions of second order nonlinear functional-differential equations of neutral type. (Russian and Ukrainian summaries) *Ukrain. Mat. Zh.* **43** (1991), *no.* 12, 1671–1683; *reprinted in Ukrainian Math. J.* **43** (1991), *no.* 12, 1556–1568 (1992). (Yiannis Sficas) **93e:34095** 34K15 (34C10, 34K25, 34K40)

— (*with* Sharkovskiĭ, A. N.) Oscillations in singularly perturbed delay equations. *Dynamics reported: expositions in dynamical systems*, 164–224, *Dynam. Report. (N.S.)*, 1, *Springer, Berlin*, 1992. (V. G. Kurbatov) **93h:34088** 34K15 (34E15, 58F08)

— (*with* Lani-Wayda, Bernhard; Walther, Hans-Otto) Unstable hyperbolic periodic solutions of differential delay equations. (English summary) *Recent trends in differential equations*, 301–316, *World Sci. Ser. Appl. Anal.*, 1, *World Sci. Publishing, River Edge, NJ*, 1992. (John G. Milton) **93h:34125** 34K15 (34K20, 58F32)

— An example of infinitely many sinks for smooth interval maps. (English summary) *Acta Math. Univ. Comenian. (N.S.)* **61** (1992), *no.* 1, 3–9. (Paweł Góra) **93m:58060** 58F08 (54H20, 58F12)

— (*with* Marušiak, Pavol) Asymptotic properties of solutions of functional-differential systems. (Slovak summary) *Math. Bohem.* **117** (1992), *no.* 2, 207–216. (Yiannis Sficas) **93d:34121** 34K15 (34K05)

— (*with* Marušiak, Pavol) On the oscillation and asymptotic behavior of solutions of a system of functional-differential equations of neutral type. (Russian. Russian and Ukrainian summaries) *Ukrain. Mat. Zh.* **44** (1992), *no.* 8, 1044–1049; *translation in Ukrainian Math. J.* **44** (1992), *no.* 8, 945–949 (1993). (István Győri) **93j:34102** 34K15 (34K40)

— (*with* Hale, Jack K.) On a high order differential delay equation. *J. Math. Anal. Appl.* **173** (1993), *no.* 2, 505–514. (George Seifert) **93m:34111** 34K15

Ivanov, Evgeniĭ Alekseevich[2] Harmonic variables: results and perspectives. *Supermembranes and physics in 2+1 dimensions* (*Trieste*, 1989), 286–301, *World Sci. Publishing, River Edge, NJ*, 1990. (*see* **93g:81003**) 81T13 (81T60)

— (*with* Bellucci, Stefano) Liouville realizations of W_∞-algebras. *Modern Phys. Lett. A* **6** (1991), *no.* 14, 1269–1276. (Raiko Zaikov) **93b:81089** 81R10 (17B65)

— (*with* Bellucci, Stefano; Krivonos, S. O.) $N = 2$ chiral bosons in superspace. (English summary) *Ann. Physics* **217** (1992), *no.* 2, 194–221. (W. Cox) **93i:81262** 81T50

— (*with* Krivonos, S. O.; Leviant, V. M.) $N = 3$ and $N = 4$ superconformal WZNW sigma models in superspace. II. The $N = 4$ case. *Internat. J. Modern Phys. A* **7** (1992), *no.* 2, 287–316. (Sergey Merkulov) **93c:81209** 81T40 (17B81, 81R10)

— (*with* Kapustnikov, A. A.) Gauge-covariant Wess-Zumino actions for super p-branes in superspace. *Internat. J. Modern Phys. A* **7** (1992), *no.* 10, 2153–2173. (W. Cox) **93c:81173** 81T30 (81T60)

— (*with* Delduc, François; Sokatchev, E. S.) Twistor-like superstrings with $D = 3, 4, 6$ target superspace and $N = (1, 0), (2, 0), (4, 0)$ world-sheet supersymmetry. (English summary) *Nuclear Phys. B* **384** (1992), *no.* 1-2, 334–351. (Summary) **93f:81104** 81T30 (81R20)

— (*with* Krivonos, S. O.; Pichugin, A.) Nonlinear realizations of W_3 symmetry. *Phys. Lett. B* **284** (1992), *no.* 3-4, 260–267. (Stanislav Z. Pakuliak) **93e:81115** 81T40 (17B68, 17B81, 81R10)

— (*with* Krivonos, S. O.) Superfield realizations of $N = 2$ super-W_3. (English summary) *Phys. Lett. B* **291** (1992), *no.* 1-2, 63–70. (Summary) **93e:81040** 81R10 (17B68, 81T60)

— (*with* Niederle, Jiří) $N = 1$ supergravity as a nonlinear realization. *Phys. Rev. D* (3) **45** (1992), *no.* 12, 4545–4554. (Summary) **93c:83120** 83E50 (81T20, 81V17)

— (*with* Bellucci, Stefano; Krivonos, S. O.) Towards an integrable $N = 3$ super KdV equation. (English summary) *Phys. Lett. A* **173** (1993), *no.* 2, 143–147. (Summary) **93j:58059** 58F07 (17B65, 35Q53)

Ivanov, G. G. (*with* Kravets, T. F.) On the number of periodic and almost periodic solutions of first-order ordinary differential equations. (Russian. English summary) *Vestnik Leningrad. Univ. Mat. Mekh. Astronom.* **1991**, *vyp.* 2, 28–31, 124; *translation in Vestnik Leningrad Univ. Math.* **24** (1991), *no.* 2, 31–34. (P. Talpalaru) **93d:34078** 34C25 (34C27)

Ivanov, I. T. (*with* Uglov, D. B.) R-matrices for the semicyclic representations of $U_q\widehat{\mathrm{sl}}(2)$. *Phys. Lett. A* **167** (1992), *no.* 5-6, 459–464. (Dmitriĭ I. Gurevich) **93j:81045** 81R50 (17B37, 82B23)

Ivanov, Ivan Ganchev Parallel numerical algorithm for spectral problem of block Hermitian matrices. (English summary) *Serdica* **18** (1992), *no.* 1-2, 17–22. (Summary) **93m:65037**

65F05 (65Y05)

Ivanov, K. G. (*with* Khristov, Vladimir Kh.) Constrained approximations. *Approximation, optimization and computing*, 93–96, *North-Holland, Amsterdam*, 1990. (*see* **93a:41001**) 41A29

— (*with* Khristov, Vladimir Kh.) Realization of K-functionals on subsets and constrained approximation. *Math. Balkanica (N.S.)* **4** (1990), *no.* 3, 236–257 (1991). (Fernando Cobos) **93g:46073** 46M35 (41A65, 46B70)

— (*with* Sharma, Ambikeshwar) Walsh equiconvergence and (l, ρ) distinguished points. *Constr. Approx.* **7** (1991), *no.* 3, 315–327. (V. Totik) **93a:41026** 41A25 (30E05, 41A05)

— (*with* Sendov, Bl.) Vasil Atanasov Popov. *Approximation theory (Memphis, TN, 1991)*, v–xiv, *Lecture Notes in Pure and Appl. Math.*, 138, *Dekker, New York*, 1992. (Editors) **93g:01069** 01A70

Ivanov, L. L. Theory of polynions and a modulus-function. (Russian) *Problems in group theory and homological algebra (Russian)*, 114–118, *Matematika, Yaroslav. Gos. Univ., Yaroslavl'*, 1988. (*see* **93b:00020**) 16S99

Ivanov, M. I. *see* **Ivanov, Mikhail Ivanov**

Ivanov, M. N. (*with* Zheleznov, V. S.; Maslov, E. P.; Kurskiĭ, È. A.) On an evasion problem in a space. (Russian. Russian summary) *Avtomat. i Telemekh.* **1992**, *no.* 5, 11–22; *translation in Automat. Remote Control* **53** (1992), *no.* 5, *part* 1, 627–638. (O. A. Malafeyev) **93g:90106** 90D26 (90B40)

— (*with* Maslov, E. P.) Evasion from a rotating zone of detection. (Russian. Russian summary) *Avtomat. i Telemekh.* **1992**, *no.* 6, 30–37; *translation in Automat. Remote Control* **53** (1992), *no.* 6, *part* 1, 809–816. (Summary) **93f:90208** 90D26

Ivanov, M. Ya. (*with* Krupa, V. G.) Calculation of the three-dimensional interaction between a shock wave and a boundary layer on a cylinder. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **32** (1992), *no.* 4, 623–634; *translation in Comput. Math. Math. Phys.* **32** (1992), *no.* 4, 531–541. (Summary) **93d:76037** 76L05 (76M20, 76N15)

— (*with* Byval'tsev, P. M.) A fast method for calculating three-dimensional transonic potential flows in turbomachine blade passages. (Russian. Russian summary) *Zh. Vychisl. Mat. i Mat. Fiz.* **32** (1992), *no.* 7, 1093–1113; *translation in Comput. Math. Math. Phys.* **32** (1992), *no.* 7, 977–994. (Summary) **93h:76054** 76M25 (76H05)

Ivanov, Mikhail Ivanov (*with* Gerdzhikov, V. S.) Expansions over the "squared" solutions and the inhomogeneous nonlinear Schrödinger equation. (English summary) *Inverse Problems* **8** (1992), *no.* 6, 831–847. (Summary) **93j:35187** 35R30 (34A55, 34L25, 34L40, 35Q55)

Ivanov, N. N. *see* **Ivanov, Nikolai Nikolaevich[2]**

Ivanov, N. V. Complexes of curves and Teichmüller spaces. (Russian) *Mat. Zametki* **49** (1991), *no.* 5, 54–61, 158; *translation in Math. Notes* **49** (1991), *no.* 5-6, 479–484. (Colette Anné) **93a:32032** 32G15 (30F60)

— ★ Subgroups of Teichmüller modular groups. Translated from the Russian by E. J. F. Primrose and revised by the author. Translations of Mathematical Monographs, 115. *American Mathematical Society, Providence, RI*, 1992. xii+127 *pp. ISBN* 0-8218-4594-2 (Athanase Papadopoulos) **93k:57031** 57M50 (20F38, 30F60, 57N05)

Ivanov, Nikolai Nikolaevich[2] Conditions for the existence of a limit probability distribution of markings in timed stochastic Petri nets. (Russian. Russian summary) *Avtomat. i Telemekh.* **1992**, *no.* 7, 149–155; *translation in Automat. Remote Control* **53** (1992), *no.* 7, *part* 2, 1085–1090. (Summary) **93h:68107** 68Q90 (68Q75)

Ivanov, Nikolai V. *see* **Ivanov, N. V.**

Ivanov, O. V. Nontangential limits and the Shilov boundary of the algebra H^∞. (Russian. English summary) *Dokl. Akad. Nauk Ukrain. SSR* **1991**, *no.* 7, 5–8, 177. (Summary) **93c:46096** 46J15 (30D50, 30H05, 46J20)

— Fatou's theorem on nontangential limits and problems of extension to an ideal boundary. (Russian. English summary) *Zap. Nauchn. Sem. Leningrad. Otdel. Mat. Inst. Steklov. (LOMI)* **190** (1991), *Issled. po Lineĭn. Oper. i Teor. Funktsiĭ.* 19, 101–109, 186. (Vadim A. Tolokonnikov) **93c:30048** 30D40 (46J15)

— (*with* Demidov, S. S.; Smirnova, G. S.) Computer data bases on Russian scientists in the fields of physics and mathematical sciences. (Russian) *Voprosy Istor. Estestvoznan. i Tekhn.* **1993**, *no.* 1, 105–107. 01A99 (00A20)

Ivanov, Radostin (*with* Kyurkchiev, Nikolaĭ V.) On Lyapunov function method for solving nonlinear systems of equations. *C. R. Acad. Bulgare Sci.* **44** (1991), *no.* 7, 17–20. (George Karakostas) **93a:34017** 34A34 (34D45)

— On viable solutions of feedback controlled system. *Math. Balkanica (N.S.)* **5** (1991), *no.* 3, 177–181. (Halina Frankowska) **93e:93003** 93B03 (49N35, 93B05)

— (*with* Donchev, Tzanko) On the existence of solutions of differential inclusions in uniformly convex Banach space. *Math. Balkanica (N.S.)* **6** (1992), *no.* 1, 13–24. (Evgenios P. Avgerinos) **93i:34023** 34A60 (34G20, 34K30)

Ivanov, S. A. (*with* Avdonin, S. A.; Belishev, M. I.) Dirichlet boundary control in a capture region for the multidimensional wave equation. *Soviet J. Automat. Inform. Sci.* **24** (1991), *no.* 2, 76–80 (1992); *translated from Avtomatika* **1991**, *no.* 2, 78–82, 97 (*Russian. English summary*). (Zbigniew Emirsajlow) **93f:93069** 93C20 (49J20, 93B05)

— (*with* Avdonin, S. A.; Ishmukhametov, A. Z.) A quadratic problem of the optimal control of the vibrations of a string. (Russian) *Dokl. Akad. Nauk SSSR* **316** (1991), *no.* 4, 781–785; *translation in Soviet Math. Dokl.* **43** (1991), *no.* 1, 154–158. (Introduction) **93d:49025** 49K20 (47N70, 73D30, 73K50)

Ivanov, S. K. (*with* Zuev, Yu. A.) "Accelerated" perceptron and self-learning procedures in weighted voting. (Russian) *Dokl. Akad. Nauk* **328** (1993), *no.* 2, 160–163. 92B20 (68T05)

Ivanov, S. V. On the Burnside problem on periodic groups. *Bull. Amer. Math. Soc. (N.S.)* **27** (1992), *no.* 2, 257–260. (Summary) **93a:20061** 20F50 (20E05, 20F05)

— (*with* Ol'shanskiĭ, A. Yu.) On two problems of H. Neumann and J. Wiegold about linked products of groups. (English summary) *Bull. Austral. Math. Soc.* **46** (1992), *no.* 2, 311–315. (Gheorghe Ivan) **93i:20034** 20E99 (20E32, 20E34)

Ivanov, Simeon *see* **Algebra and analysis, 93e:00020; Singularity theory and some problems of functional analysis, 93g:00032; Ordered sets and lattices, 93i:00027** *and* **Proceedings: St. Petersburg Mathematical Society, 93k:00045**

Ivanov, V. A. Discrimination of contiguous hypotheses based on randomly transformed realization. (Russian) *Probabilistic processes and their applications (Russian)*, 74–79, *Moskov. Inst. Èlektron. Mashinostroeniya, Moscow*, 1989. (*see* **93b:60003**) 62F03 (68Q75)

Ivanov, V. K. *see* **Ivanov, Valentin Konstantinovich**

Ivanov, V. N. Periodic processes as solutions of systems of linear differential equations. (Russian) *Differential equations and function theory, No.* 8 (*Russian*), 37–44, *Saratov. Gos. Univ., Saratov*, 1989. (*see* **93b:00016**) 34C25

Ivanov, V. T. *see* **Ivanov, Valentin Timofeevich**

Ivanov, V. V. (*with* Zrelov, P. V.) ★ Критерии согласия, основанные на проверочной статистике $\omega_n^3 = n^{3/2}\int_{-\infty}^{\infty}[S_n(x) - F(x)]^3 dF(x)$. (Russian. English and Russian summaries) [Goodness-of-fit criteria based on the test statistic $\omega_n^3 = n^{3/2}\int_{-\infty}^{\infty}[S_n(x) - F(x)]^3 dF(x)$] Исследование мощности одностороннего критерия для больших n. [Investigation of the power of a one-sided criterion for large n] Сообщения Объединенного Института Ядерных Исследований. Дубна [Communications of the Joint Institute for Nuclear Research. Dubna], R11-92-409. *Joint Inst. Nuclear Res., Dubna*, 1992. 23 *pp.* 62G10

— (*with* Zrelov, P. V.) ★ Интегральные непараметрические статистики $\omega_n^k = n^{k/2}\int_{-\infty}^{\infty}[S_n(x) - P(x)]^k dP(x)$ и их основные свойства. (Russian. English and Russian summaries) [The integral nonparametric statistics $\omega_n^k = n^{k/2}\int_{-\infty}^{\infty}[S_n(x) - P(x)]^k dP(x)$ and their fundamental properties] Алгебраический вид, функции распределения и критерии согласия. [Algebraic form, distribution functions and goodness-of-fit tests] Сообщения Объединенного Института Ядерных Исследований. Дубна [Communications of the Joint Institute for Nuclear Research. Dubna], R10-92-461. *Joint Inst. Nuclear Res., Dubna*, 1992. 29 *pp.* 62G10

Ivanov, V. V. (*with* Zrelov, P. V.) The distribution functions of the statistic $\omega_n^3 = n^{3/2}\int_{-\infty}^{\infty}[S_n(x) - P(x)]^3 dP(x)$ for small n. (Russian. English and Russian summaries) *Mat. Model.* **4** (1992), *no.* 8, 85–93. (Summary) **93k:65115** 65U05

Ivanov, Valentin Konstantinovich (*with* Tanana, V. P.) Well-posedness of conditionally well-posed problems in locally convex spaces. (Russian) *Dokl. Akad. Nauk* **325** (1992), *no.* 6, 1107–1110; *translation in Russian Acad. Sci. Dokl. Math.* **46** (1993), *no.* 1, 165–168. (V. V. Vasin) **93m:47009** 47A50 (65J10)

Ivanov, Valentin Timofeevich (*with* Krizskiĭ, V. N.) Methods for solving some elliptic boundary value problems of mathematical physics and their application to geophysics. (Russian) *Numerical methods for solving boundary value problems (Russian)*, 59–66, *Akad. Nauk SSSR Ural. Otdel., Bashkir. Nauchn. Tsentr, Ufa*, 1989. (*see* **93m:00033**) 86A60

Ivanov, Vladimir Veniaminovich Linear evolution equations and distribution semigroups. (Russian) *Optimizatsiya No.* 48(65) (1990), 63–70. (Ioana Ciorănescu) **93h:47052** 47D06 (34G10, 46F10)

Ivanov, Yu. N. A theorem on the representability of aggregated economic models. (Russian. Russian summary) *Avtomat. i Telemekh.* **1992**, *no.* 7, 128–137; *translation in Automat. Remote Control* **53** (1992), *no.* 7, *part* 2, 1068–1075. 90A15 (90A16)

Ivanova, E. P. Continuous and discrete boundary value problems for second-order differential equations with a deviating parameter. (Russian) *Qualitative methods in the theory of differential equations and their applications (Russian)*, 22–30, *Moskov. Aviatsion. Inst., Moscow*, 1991. (Alexander I. Domoshnitsky) **93m:34101** 34K10

Ivanova, I. A. (*with* Tartakovskiĭ, A. G.) Approximation in sequential rules for discrimination of hypotheses and their accuracy in the case of detecting a signal from sequential data. (Russian) *Problemy Peredachi Informatsii* **28** (1992), *no.* 1, 63–74; *translation in Problems Inform. Transmission* **28** (1992), *no.* 1, 55–65. (Wolfgang Winkler) **93f:62113** 62L10 (62M02)

— (*with* Tartakovskiĭ, A. G.) Comparison of some sequential rules for detecting a change point. (Russian. Russian summary) *Problemy Peredachi Informatsii* **28** (1992), *no.* 2, 21–29; *translation in Problems Inform. Transmission* **28** (1992), *no.* 2, 117–124. (Summary) **93d:94007** 94A13

Ivanova, N. I. Numerical solution of a problem on periodic motions of a non-linearly viscous fluid in a plane slit. (Russian. Russian summary) *Boundary value problems (Russian)*, 134–144, *Perm. Politekh. Inst., Perm'*, 1990. (*see* **93g:00023**) 76D99

Ivanova, O. A. (*with* Andreev, V. A.) The dynamics of three-boson interaction and algebraic Bethe ansatz. (English summary) *Phys. Lett. A* **171** (1992), *no.* 3-4, 145–150. (Yu Kui Zhou) **93k:82004** 82B10 (81V70)

Ivanova, T. A. (*with* Popov, A. D.) Self-dual Yang-Mills fields in $d = 7, 8$, octonions and Ward equations. *Lett. Math. Phys.* **24** (1992), *no.* 2, 85–92. (Jan Segert) **93g:81092** 81T13 (53C07, 58G35)

— Euler equations in models of theoretical physics. (Russian. Russian summary) *Mat. Zametki* **52** (1992), *no.* 2, 44–52, 156; *translation in Math. Notes* **52** (1992), *no.* 1-2, 784–790 (1993). (J. S. Joel) **93i:58032** 58E15 (58E50, 81T10, 81T13)

— (*with* Popov, A. D.) Soliton equations and self-dual gauge fields. (English summary) *Phys. Lett. A* **170** (1992), *no.* 4, 293–299. (R. S. Ward) **93j:81065** 81T13 (35Q40, 35Q51)

— Ward equations and self-dual connections in $\mathbf{R}^8$. (Russian) *Uspekhi Mat. Nauk* **47** (1992), *no.* 2(284), 191–192; *translation in Russian Math. Surveys* **47** (1992), *no.* 2, 217–218. (J. S. Joel) **93i:53026** 53C07 (58F40, 81T13)

Ivanova, T. V. (*with* Lutfullina, S. I.) Asymptotics of the moments of the number of cells containing a given number of particles in an occupancy scheme with evolution. (Russian) *Probabilistic processes and their applications (Russian)*, 80–84, *Moskov. Inst. Èlektron. Mashinostroeniya, Moscow*, 1989. (*see* **93b:60003**) 60C05

Ivanova-Karatopraklieva, I. (*with* Sabitov, I. Kh.) Deformation of surfaces. I. (Russian) *Problems in geometry, Vol.* 23 (*Russian*), 131–184, 187, *Itogi Nauki i Tekhniki, Akad. Nauk SSSR, Vsesoyuz. Inst. Nauchn. i Tekhn. Inform., Moscow*, 1991. (Vladislav Goldberg) **93i:53005** 53A05

Ivanovici, Marian G-controllability. *Mathematica (Cluj)* **32(55)** (1990), *no.* 1, 27–38. (A. Blaquière) **93d:93015** 93B05 (93B06)

Ivanšić, Ivan (*with* Uglešić, Nikica) Shape improvement of FANR compacta. (English summary) *Bull. Polish Acad. Sci. Math.* **39** (1991), *no.* 3-4, 229–233. (J. E. Keesling) **93m:54032** 54C55 (54C56, 55Q07)

Ivansson, Sven (*with* Karasalo, Ilkka) A high-order adaptive integration method for wave propagation in range-independent fluid-solid media. (English summary) *J. Acoust. Soc. Amer.* **92** (1992), *no.* 3, 1569–1577. (Summary) **93g:73113** 73V20 (73D10, 76M25, 76Q05)

Ivanyuta, I. D. Sylow 2-subgroups of the group $U(q^2)$. (Russian. Ukrainian summary) *Ukrain. Mat. Zh.* **43** (1991), *no.* 7-8, 1091–1093; *translation in Ukrainian Math. J.* **43** (1991), *no.* 7-8, 1024–1026 (1992). (Zhi Jie Chen) **93b:20041** 20D20 (20G40)

Ivashchuk, Vladimir D. (*with* Fadeev, S. B.; Mel'nikov, V. N.) Variations of constants and exact solutions in multidimensional gravity. *Gravitation and modern cosmology (Erice*, 1990), 37–49, *Ettore Majorana Internat. Sci. Ser. Phys. Sci.*, 56, *Plenum, New York*, 1991.

(*see* **93j:83004**) 83F05 (83E15)
— (*with* Mel'nikov, V. N.; Fadeev, S. B.) Black holes in multidimensional theory with Ricci-flat internal spaces. (Russian. Russian summary) *Izv. Vyssh. Uchebn. Zaved. Fiz.* **34** (1991), *no.* 9, 62–65; *translation in Soviet Phys. J.* **34** (1991), *no.* 9, 794–797 (1992). (Yu. N. Obukhov) **93m:83076** 83E15 (83C57)
— Multidimensional cosmology and Toda-like systems. (English summary) *Phys. Lett. A* **170** (1992), *no.* 1, 16–20. (S. Kichenassamy) **93j:83070** 83E15 (58F40)
Ivashkovich, S. M. Extension of analytic objects by the Cartan-Thullen method. (Russian. Russian summary) *Complex analysis and mathematical physics* (*Russian*) (*Divnogorsk*, 1987), 53–61, 158, *Akad. Nauk SSSR Sibirsk. Otdel., Inst. Fiz., Krasnoyarsk*, 1988. (*see* **93b:32001**) 32D15
— The Hartogs-type extension theorem for meromorphic maps into compact Kähler manifolds. *Invent. Math.* **109** (1992), *no.* 1, 47–54. (Yukio Fukushima) **93g:32016** 32D15
— Spherical shells as obstructions for the extension of holomorphic mappings. *J. Geom. Anal.* **2** (1992), *no.* 4, 351–371. (Yukio Fukushima) **93g:32017** 32D15 (32H02)
Ivchenko, G. I. (*with* Morozova, N. M.) The negative multinomial distribution and its probabilistic analysis. (Russian) *Probabilistic processes and their applications* (*Russian*), 3–8, *Moskov. Inst. Èlektron. Mashinostroeniya, Moscow*, 1989. (*see* **93b:60003**) 60C05 (62E15)
— (*with* Medvedev, Yu. I.) ★ Mathematical statistics. (English. English summary) Translated from the 1984 Russian edition by Elena Troshneva. "*Mir*", *Moscow*, 1990. 304 *pp. ISBN* 5-03-001531-0 (Editors) **93m:62002** 62–01
— (*with* Medvedev, Yu. I.; Chistyakov, A. V.) ★ Problems in mathematical statistics. Translated from the 1989 Russian original by Elena Troshneva and revised by the authors. "*Mir*", *Moscow*, 1991. 279 *pp. ISBN* 5-03-001538-8 (Editors) **93h:62001** 62–01
Iverson, Geoffrey J. (*with* Sheu, Ching Fan) Characterizing random variables in the context of signal detection theory. *Math. Social Sci.* **23** (1992), *no.* 2, 151–174. (Leonid P. Mourza) **93b:94006** 94A12 (62E10)
Iverson, Paul The number of countable isomorphism types of complete extensions of the theory of Boolean algebras. *Colloq. Math.* **62** (1991), *no.* 2, 181–187. (Leo Esakia) **93a:03038** 03C65 (03C15, 03C35, 03G05)
Ivić, Aleksandar On the kth prime factor of an integer. (Serbo-Croatian summary) *Zb. Rad. Prirod.-Mat. Fak. Ser. Mat.* **20** (1990), *no.* 1, 63–73. (Chao Hua Jia) **93d:11102** 11N37
— (*with* Balasubramanian, Ramachandran; Ramachandra, K.) The mean square of the Riemann zeta-function on the line $\sigma = 1$. (English summary) *Enseign. Math.* (2) **38** (1992), *no.* 1-2, 13–25. (Tom Meurman) **93f:11061** 11M06
— On the error term for the counting functions of finite abelian groups. (English summary) *Monatsh. Math.* **114** (1992), *no.* 2, 115–124. (Hartmut Menzer) **93k:11087** 11N45 (11M06, 20D60)
Ivinskis, Kęstutis ★ Torellisätze für zyklische Überlagerungen. (German) [Torelli theorems for cyclic coverings] Dissertation, Rheinische Friedrich-Wilhelms-Universität Bonn, Bonn, 1990. Bonner Mathematische Schriften [Bonn Mathematical Publications], 215. *Universität Bonn, Mathematisches Institut, Bonn*, 1991. iv+84 *pp.* (J. S. Joel) **93f:14005** 14C34 (14D07, 32G20)
— A variational Torelli theorem for cyclic coverings of high degree. *Compositio Math.* **85** (1993), *no.* 2, 201–228. (Min Ho Lee) **93k:14016** 14D07 (14D20)
Ivković, Zoran A. Representation for a class of nonlinear functionals of Gaussian martingales. (Serbo-Croatian summary) *Zb. Rad. Prirod.-Mat. Fak. Ser. Mat.* **20** (1990), *no.* 1, 129–133. (Summary) **93a:60070** 60G44
— One case of reduction of nonlinear regression to linear. (English summary) *Publ. Inst. Math. (Beograd) (N.S.)* **51(65)** (1992), 121–124. (Summary) **93k:62130** 62J02 (60J25)
Ivnitskiĭ, V. A. Invariance of stationary probability distributions of the states of a multilinear queueing system with a finite number of different customer sources when the arriving customer has absolute priority. (Russian) *Teor. Veroyatnost. i Primenen.* **37** (1992), *no.* 2, 407–410; *translation in Theory Probab. Appl.* **37** (1992), *no.* 2, 376–379. 60K25
Ivochkina, N. M. Variational problems connected with m-curvature equations. *Conference on Differential Equations and Applications* (*Ruse*, 1989), 265–273, *Tech. Univ., Ruse*, 1991. (*see* **93f:34004**) 35J60 (49Q20)
— An optimal property for l-minimal surfaces in viscosity interpretation. (Russian. English and Russian summaries) *Zap. Nauchn. Sem. S.-Peterburg. Otdel. Mat. Inst. Steklov. (POMI)* **200** (1992), *Kraev. Zadachi Mat. Fiz. Smezh. Voprosy Teor. Funktsiĭ*. 24, 71–82, 97, 188. (Summary) **93f:49037** 49Q05 (49L25)
Ivokhin, E. V. Connectedness stability of a system with delay. (Russian. Russian summary) *Vestnik Kiev. Univ. Model. Optim. Slozhn. Sist. No.* 9 (1990), 65–68. 34K20
Ivrii, V. Ya. Linear hyperbolic equations. (Russian. Russian summary) *Partial differential equations*, 4 (*Russian*), 157–247, 254, *Itogi Nauki i Tekhniki, Akad. Nauk SSSR, Vsesoyuz. Inst. Nauchn. i Tekhn. Inform., Moscow*, 1988. (Introduction) **93f:35128** 35Lxx (35A20)
— (*with* Fefferman, Charles; Seco, Luis A.; Sigal, I. M.) The energy asymptotics of large Coulomb systems. *Schrödinger operators* (*Aarhus*, 1991), 79–99, *Lecture Notes in Phys.*, 403, *Springer, Berlin*, 1992. (Introduction) **93h:81150** 81V35 (47N50, 81Q10, 81V45)
Ivshina, G. V. Invariants of a four-dimensional Riemannian space and their changes under conformal transformation. (Russian) *Trudy Geom. Sem. Kazan. Univ. No.* 21 (1991), 57–63. (V. Oproiu) **93j:53028** 53B30 (53B20)
Iwai, Toshihiro The geometry of the SU(2) Kepler problem. *J. Geom. Phys.* **7** (1990), *no.* 4, 507–535 (1991). (Martin Kummer) **93e:58062** 58F05 (70F05, 70H05)
— (*with* Uwano, Y.) The MIC-Kepler problem and its symmetry group for zero energy both in classical and quantum mechanics. *Nuovo Cimento B* (11) **106** (1991), *no.* 11, 1195–1219. (Bruno Cordani) **93b:70008** 70F05 (58F05, 81R05)
— A representation of the Guichardet connection in the Aharonov-Anandan connection. *Phys. Lett. A* **162** (1992), *no.* 4, 289–293. (Summary) **93i:58064** 58F06 (70G99, 81Q99)
— Berry connections as Yang-Mills connections on CP^2. *Phys. Lett. A* **166** (1992), *no.* 2, 89–93. (Jan Segert) **93g:53039** 53C07 (81T13)
Iwai, Z. (*with* Mizumoto, I.) Robust and simple adaptive control systems. *Internat. J. Control* **55** (1992), *no.* 6, 1453–1470. 93C40
Iwaki, Toshihiro (*with* Sasaki, Motofumi; Hayakawa, Yoshikazu; Fujii, Seizo; Koizumi, Kunio) Finite-dimensional model reference adaptive control of a class of nonlinear distributed systems with quasi-sliding mode. (English summary) *Internat. J. Systems Sci.* **24** (1993), *no.* 2, 387–402. 93C40 (93C20)
Iwamura, Kakuzo Discrete decision process model involves greedy algorithm over greedoid. (English summary) *J. Inform. Optim. Sci.* **14** (1993), *no.* 1, 83–86. 90C10 (90C27)
Iwanaga, Hiroaki (*with* Tsuda, Ichiro; Tahara, Takashi) Chaotic pulsation in human capillary vessels and its dependence on mental and physical conditions. (English summary) *Internat. J. Bifur. Chaos Appl. Sci. Engrg.* **2** (1992), *no.* 2, 313–324. (Wei-Min Liu) **93g:92010** 92C30 (58F13, 58F40)
Iwanaga, Yasuo (*with* Sato, Hideo) First two terms in a minimal injective resolution of a Noether ring. *Math. J. Okayama Univ.* **33** (1991), 139–147. (Dinh Van Huynh) **93f:16003** 16D40 (16E10)
Iwaniec, Henryk (*with* Fouvry, Étienne) The divisor function over arithmetic progressions. With an appendix by Nicholas Katz. *Acta Arith.* **61** (1992), *no.* 3, 271–287. (Claudia A. Spiro-Silverman) **93g:11089** 11L05 (11N56, 11N64)
— (*with* Bump, Daniel; Duke, W.; Hoffstein, Jeffrey) An estimate for the Hecke eigenvalues of Maass forms. *Internat. Math. Res. Notices* **1992**, *no.* 4, 75–81. (M. Ram Murty) **93d:11047** 11F11 (11F37, 11F66, 11F70)
— The spectral growth of automorphic L-functions. *J. Reine Angew. Math.* **428** (1992), 139–159. (Tom Meurman) **93g:11049** 11F66 (11F30, 11F72, 11L07)
— (*with* Duke, W.) A relation between cubic exponential and Kloosterman sums. *A tribute to Emil Grosswald: number theory and related analysis*, 255–258, *Contemp. Math.*, 143, *Amer. Math. Soc., Providence, RI*, 1993. (Paul Thomas Young) **93m:11082** 11L05 (11T23)
— (*with* Friedlander, John) Estimates for character sums. *Proc. Amer. Math. Soc.* **119** (1993), *no.* 2, 365–372. (Ronald J. Evans) **93k:11074** 11L40
Iwaniec, Tadeusz (*with* Sbordone, Carlo) On the integrability of the Jacobian under minimal hypotheses. *Arch. Rational Mech. Anal.* **119** (1992), *no.* 2, 129–143. (Paolo Marcellini) **93i:49057** 49Q20 (26B10, 46E35, 49J10)
— (*with* Šverák, Vladimír) On mappings with integrable dilatation. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 1, 181–188. (Summary) **93k:30023** 30C62
Iwanik, Anzelm Positive entropy implies infinite L^p-multiplicity for $p > 1$. *Ergodic theory and related topics, III* (*Güstrow*, 1990), 124–127, *Lecture Notes in Math.*, 1514, *Springer, Berlin*, 1992. (Meir Smorodinsky) **93j:28033** 28D20 (47A35)
— A large set containing few orbits of measure preserving transformations. *Aequationes Math.* **43** (1992), *no.* 2-3, 156–158. (V. S. Prasad) **93e:28021** 28D05
— (*with* Rębowski, R.) Structure of mixing and category of complete mixing for stochastic operators. *Ann. Polon. Math.* **56** (1992), *no.* 3, 233–242. (R. E. Bradley) **93g:47009** 47A35 (28D99, 47B38, 60J15)
— Baire category of mixing for stochastic operators. Measure theory (Oberwolfach, 1990). *Rend. Circ. Mat. Palermo* (2) *Suppl. No.* 28 (1992), 201–217. (Radu Zaharopol) **93j:47011** 47A35 (28D05, 47A65, 47B38)
Iwankiewicz, R. (*with* Nielsen, S. R. K.) Dynamic response of nonlinear inelastic systems to Poisson-driven stochastic excitations. *Stochastic methods in experimental sciences* (*Szklarska Poręba*, 1989), 200–209, *World Sci. Publishing, River Edge, NJ*, 1990. (*see* **93a:60004**) 70L05 (34F05)
Iwano, Masahiro Analytical simplification of a nonlinear autonomous 2-system not satisfying Poincaré's condition. *Japan. J. Math. (N.S.)* **18** (1992), *no.* 1, 75–113. (Andrei Bolibrukh) **93f:34012** 34A20 (34A25, 34C20)
Iwasa, Manabu Admissibility of unbiased tests for a composite hypothesis with a restricted alternative. *Ann. Inst. Statist. Math.* **43** (1991), *no.* 4, 657–665. (V. Ol'man) **93c:62030** 62F03 (62C15)
Iwasa, Yoh (*with* Cohen, Joel E.; Răuţu, Gh.; Ruskai, Mary Beth; Seneta, Eugene; Zbăganu, Gh.) Relative entropy under mappings by stochastic matrices. (English summary) *Linear Algebra Appl.* **179** (1993), 211–235. (Adolf Rhodius) **93m:60145** 60J10 (15A51)
Iwasaki, Katsunori Fuchsian moduli on a Riemann surface—its Poisson structure and Poincaré-Lefschetz duality. (English summary) *Pacific J. Math.* **155** (1992), *no.* 2, 319–340. (William Goldman) **93j:32028** 32G34 (14D20, 58F05)
Iwasaki, Manabu Construction of M-estimators by robustifying orthogonal polynomials associated with the density function. *J. Japan Statist. Soc.* **21** (1991), *no.* 2, 155–171. (M. Hušková) **93e:62072** 62F10 (62F05, 62F35)
Iwasaki, Nobuhisa A parametrix at noninvolutively crossing characteristic points. *J. Math. Kyoto Univ.* **31** (1991), *no.* 4, 899–908. (Jorge Hounie) **93c:35094** 35L30 (35A30, 35C20, 35S10)
— (*with* Komatsu, Hikosaburo; Kaneko, Akira) List of publications of Kôsaku Yosida. *Functional analysis and related topics*, 1991 (*Kyoto*), xi–xxi, *Lecture Notes in Math.*, 1540, *Springer, Berlin*, 1993. (*see* **93m:00049**) 01A70
Iwasaki, Shiro An elementary and unified approach to the Mathieu-Witt systems. II. The uniqueness of W_{22}, W_{23}, W_{24}. *Hokkaido Math. J.* **21** (1992), *no.* 2, 239–250. (Johannes Siemons) **93h:05017** 05B05 (05B07)
Iwasaki, T. (*with* Skelton, Robert E.) Liapunov and covariance controllers. (English summary) *Internat. J. Control* **57** (1993), *no.* 3, 519–536. (Yong Qing Liu) **93k:93075** 93D05 (34D20, 34H05, 93B36)
Iwasaki, Yoichi *see* **Lattice 91, 93d:81130**
Iwasawa, K. (*with* Hashimoto, Yukio; Marumori, T.; Sakata, F.) A microscopic theory of dissipative nuclear collective motions. *Thermal field theories* (*Ibaraki*, 1990), 223–231, *North-Holland Delta Ser., North-Holland, Amsterdam*, 1991. (Summary) **93a:81215** 81V35
Iwasawa, Kenkichi *see* **Takagi, Teiji, 93b:01049**
Iwase, Norio (*with* Maruyama, Ken-ichi; Oka, Shichirô) A note on $\mathscr{E}(\mathbf{HP}^n)$ for $n \leq 4$. *Math. J. Okayama Univ.* **33** (1991), 163–176. (Donald M. Davis) **93b:55010** 55P10
— (*with* Kono, Akira[1]; Mimura, Mamoru) Generalized Whitehead spaces with few cells. *Publ. Res. Inst. Math. Sci.* **28** (1992), *no.* 4, 615–652. (J. Aguadé) **93m:55024** 55Q45 (55P45)
Iwata, Koichiro (*with* Albeverio, Sergio; Kolsrud, Torbjörn) Conformally invariant random fields and processes—old and new. *Stochastic analysis and applications* (*Lisbon*, 1989), 1–10, *Progr. Probab.*, 26, *Birkhäuser Boston, Boston, MA*, 1991. (Helge Holden) **93h:81145** 81T99 (60G60, 81S20)
— (*with* Albeverio, Sergio; Kolsrud, Torbjörn) Random parallel transport on surfaces of finite type, and relations to homotopy. (English summary) *Probabilistic methods in*

mathematical physics (*Siena*, 1991), 50–57, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93g:81002**) 58G32 (55P99, 81T13)

Iwata, Satoru H_∞ optimal control for symmetric linear systems. (English summary) *Japan J. Indust. Appl. Math.* **10** (1993), *no.* 1, 97–107. (Guang Xiong Wang) **93k:93041** 93B36

Iwata, Shigeru Highest predictive density estimator in regression models. (English summary) *J. Econometrics* **53** (1992), *no.* 1-3, 271–295. (Luis Firinguetti) **93j:62245** 62P20 (62F15, 62J05)

— A note on multiple roots of the Tobit log likelihood. (English summary) *J. Econometrics* **56** (1993), *no.* 3, 441–445. 62P20

Iwatsu, R. (*with* Ishii, Katsuya; Kambe, Tsutomu; Matsumoto, N.) Chaotic streamlines in viscous incompressible flows. *Nonlinear world, Vol.* 1 (*Kiev*, 1989), 490–506, *World Sci. Publishing, River Edge, NJ*, 1990. (*see* **93b:00012**) 76F20 (58F13, 76D05)

Iwazaki, Aiichi (*with* Ezawa, Zyun F.) Chern-Simons gauge theory for double-layer electron system. (English summary) *Internat. J. Modern Phys. B* **6** (1992), *no.* 19, 3205–3234. (Summary) **93h:81152** 81V70 (81T13, 82D99)

— (*with* Ezawa, Zyun F.) Derivation of Laughlin's wavefunction in anyon system. *Modern Phys. Lett. B* **6** (1992), *no.* 12, 737–745. (Summary) **93c:81278** 81V70 (82D55)

— (*with* Ezawa, Zyun F.; Hotta, Masahiro) Anyon field theory and fractional quantum Hall states. (English summary) Low-dimensional field theories and condensed matter physics (Kyoto, 1991). *Progr. Theoret. Phys. Suppl. No.* 107 (1992), 185–194. (Summary) **93i:81307** 81V70 (81T40, 82D55)

Iwazumi, Tetsuo (*with* Kando, Hisashi; Yonemoto, Yosifumi) Multi-rate regulator design of two-time-scale systems via digital redesign method. (English summary) *Internat. J. Systems Sci.* **24** (1993), *no.* 4, 691–706. 93C62 (93C70)

Iwiński, Tadeusz *see* **Fidelis, Eugeniusz, 93m:01067**

Iyanaga, S. *see* **Takagi, Teiji, 93b:01049**

Iyengar, N. Sreenivas *see* **Bayesian analysis in statistics and econometrics, 93e:62002**

Iyengar, S. S. (*with* Prasad, Lakshman) An asymptotic equality for the number of necklaces in a shuffle-exchange network. *Theoret. Comput. Sci.* **102** (1992), *no.* 2, 355–365. (Summary) **93f:05009** 05A16 (68Q35)

Iyer, Ashok (*with* Subbarao, G. V.) Nonlinear excitation and governor control using variable structures. (English summary) *Internat. J. Control* **57** (1993), *no.* 6, 1325–1342. 93B12 (70Q05)

Iyer, Sai (*with* Prasanna, A. R.) Centrifugal force in Kerr geometry. (English summary) *Classical Quantum Gravity* **10** (1993), *no.* 1, L13–L16. (Summary) **93h:83009** 83C10 (83C15)

Iyer, Savitri V. (*with* Kozameh, Carlos N.; Newman, Ezra T.) Nonlocal equations for general relativity. *J. Geom. Phys.* **8** (1992), *no.* 1-4, 195–209. (Garry Ludwig) **93e:83029** 83C30 (83C05)

Iyer, Srinivas Availability results for imperfect repair. (English summary) *Sankhyā Ser. B* **54** (1992), *no.* 2, 249–256. (Summary) **93m:90039** 90B25 (60K10)

— The Barlow-Proschan importance and its generalizations with dependent components. (English summary) *Stochastic Process. Appl.* **42** (1992), *no.* 2, 353–359. (Bent Natvig) **93h:60141** 60K10 (62N05, 90B25)

Iyer, Vivek (*with* Szekeres, Peter) Spherically symmetric singularities and strong cosmic censorship. (English summary) *Phys. Rev. D* (3) **47** (1993), *no.* 10, 4362–4371. (Summary) **93m:83063** 83C75

Iyyengar, T. K. V. (*with* Seshagiri Rao, K. V. V.) Oscillating periodic solutions of third order nonlinear differential equations. (English summary) *Indian J. Pure Appl. Math.* **23** (1992), *no.* 11, 777–782. (Ch. G. Philos) **93i:34078** 34C25 (34B15)

Izawa, Ken-Iti (*with* Ikeda, Noriaki) Quantum gravity with dynamical torsion in two dimensions. (English summary) *Progr. Theoret. Phys.* **89** (1993), *no.* 1, 223–230. (Summary) **93k:81207** 81T40

Izé, A. F. Asymptotic behaviour of dynamical systems and processes on Banach infinite-dimensional spaces. *Dynamical systems and related topics* (*Nagoya*, 1990), 198–210, *Adv. Ser. Dyn. Syst.*, 9, *World Sci. Publishing, River Edge, NJ*, 1991. (G. F. Webb) **93f:47048** 47D06 (34G10, 47N20)

Ize, Jorge (*with* Massabò, Ivar; Vignoli, Alfonso) Degree theory for equivariant maps, the general S^1-action. *Mem. Amer. Math. Soc.* **100** (1992), *no.* 481, x+179 *pp.* (Norman Dancer) **93d:58030** 58E09 (34C25, 47H11, 58F22)

Izeki, Hiroyasu On compact conformally flat 4-manifolds. *Tôhoku Math. J.* (2) **44** (1992), *no.* 2, 299–304. (Osamu Kobayashi) **93a:53030** 53C21

— On the conformal transformation group of a compact Riemannian manifold with constant scalar curvature. *Tokyo J. Math.* **15** (1992), *no.* 1, 123–127. (Y. Mutô) **93h:53035** 53C21 (53C20)

— On the decomposition of conformally flat manifolds. *J. Math. Soc. Japan* **45** (1993), *no.* 1, 105–119. (Osamu Kobayashi) **93h:53036** 53C21 (53A30)

Izergin, A. G. (*with* It·s, A. R.; Korepin, V. E.; Varzugin, G. G.) Large time and distance asymptotics of field correlation function of impenetrable bosons at finite temperature. *Phys. D* **54** (1992), *no.* 4, 351–395. (Tuncay Aktosun) **93b:82046** 82C10 (81T99)

— (*with* Colomo, F.; Korepin, V. E.; Tognetti, V.) Correlators in the Heisenberg $XX0$ chain as Fredholm determinants. (English summary) *Phys. Lett. A* **169** (1992), *no.* 4, 243–247. (Summary) **93f:82020** 82B23

Izhikevich, E. M. (*with* Malinetskiĭ, G. G.) On the possible role of chaos in neural systems. (Russian) *Dokl. Akad. Nauk* **326** (1992), *no.* 4, 626–632; *translation in Soviet Phys. Dokl.* **37** (1992), *no.* 10, 492–495 (1993). 92B20 (58F13, 58F40)

Izmailov, A. F. (*with* Kesselʹ, A. R.) Calculation of a quantum partition function of the BCS model in a nonregular phase. (Russian. English and Russian summaries) *Teoret. Mat. Fiz.* **90** (1992), *no.* 2, 233–245; *translation in Theoret. and Math. Phys.* **90** (1992), *no.* 2, 157–165. (Summary) **93i:82080** 82D55 (81V70)

Izmailov, A. F. Higher-order necessary conditions in extremum problems. (Russian. Russian summary) *Zh. Vychisl. Mat. i Mat. Fiz.* **32** (1992), *no.* 8, 1310–1313; *translation in Comput. Math. Math. Phys.* **32** (1992), *no.* 8, 1167–1169. (Summary) **93g:49016** 49K27 (90C48)

— Degenerate extremal problems with inequality-type constraints. (Russian. Russian summary) *Zh. Vychisl. Mat. i Mat. Fiz.* **32** (1992), *no.* 10, 1570–1581; *translation in Comput. Math. Math. Phys.* **32** (1992), *no.* 10, 1413–1421 (1993). (Vasile Postolică) **93j:49022** 49K15 (49J15, 65K10, 90C48)

Izmailov, R. N. (*with* Vladimirov, A. A.) Transients in the case of adaptive control of a deterministic autoregression process. (Russian. Russian summary) *Avtomat. i Telemekh.* **1992**, *no.* 6, 20–24; *translation in Automat. Remote Control* **53** (1992), *no.* 6, *part* 1, 800–803. (Summary) **93f:93076** 93C40

— (*with* Pokrovskiĭ, A. V.) Asymptotic classification of aliasing structures. (English summary) *J. Appl. Math. Stochastic Anal.* **5** (1992), *no.* 3, 193–203. (Mirko Křivánek) **93j:68222** 68U10 (68U05)

— (*with* Delyon, Bernard; Yuditskiĭ, A. B.) On the projection algorithm and delay of peaking in adaptive control. (English summary) *IEEE Trans. Automat. Control* **38** (1993), *no.* 4, 581–584. (Summary) **93m:93054** 93C40

Izosova, L. A. Operators that are invariant with respect to an action of a transformation group. (Russian. Russian summary) *Boundary value problems* (*Russian*), 89–93, *Perm. Politekh. Inst., Permʹ*, 1989. (*see* **93k:00022**) 47B60 (43A07, 43A22)

Izquierdo, J. M. (*with* de Azcárraga, J. A.; Zakrzewski, Wojciech J.) A supergroup based supersigma model. *J. Math. Phys.* **33** (1992), *no.* 7, 2357–2364. (Jaime Muñoz Masqué) **93e:81134** 81T60 (58A50)

— (*with* de Azcárraga, J. A.; Townsend, P. K.) Kaluza-Klein origin for the superstring tension. *Phys. Rev. D* (3) **45** (1992), *no.* 10, R3321–R3325. (Summary) **93a:83036** 83E30 (81T30, 81T50)

Izquierdo Barrios, Milagros Coverings on orbifolds of $(0, +, -, (p^{r_1}, p^{r_2}, p^{r_3}))$ type. (Spanish. English summary) *Proceedings of the XVth Portuguese-Spanish Conference on Mathematics, Vol. III* (*Portuguese*) (*Évora*, 1990), 137–142, *Univ. Évora, Évora*, 1991. (Summary) **93d:57073** 57S30 (30F35)

Izrailev, F. M. Statistical properties of quantum chaos. *Chaos et physique quantique* (*Les Houches*, 1989), 771–792, *North-Holland, Amsterdam*, 1991. (*see* **93e:81003**) 81Q50

Izrailevich, V. L. (*with* Chernyavskiĭ, I. Ya.) A metric approach to Khinchin convergence. (Russian) *Differential equations and function theory, No.* 8 (*Russian*), 17–24, *Saratov. Gos. Univ., Saratov*, 1989. (*see* **93b:00016**) 60B10

Izuchi, Keiji Orbits in the maximal ideal space of H^∞. *Bull. London Math. Soc.* **23** (1991), *no.* 6, 587–595. (Vadim A. Tolokonnikov) **93a:46104** 46J15 (30H05)

— Analysis on sparse parts in the maximal ideal space of H^∞. (English summary) *Canad. J. Math.* **44** (1992), *no.* 4, 805–823. (Pamela Gorkin) **93i:46091** 46J15 (46J20)

— Bourgain algebras of the disk, polydisk, and ball algebras. *Duke Math. J.* **66** (1992), *no.* 3, 503–519. (Oleg V. Ivanov) **93f:46082** 46J15 (46J40, 46L05)

— The Bochner-Schoenberg-Eberlein theorem and spaces of analytic functions on the open unit disc. *Math. Japon.* **37** (1992), *no.* 1, 65–77. (Toma V. Tonev) **93b:46044** 46E15 (30H05, 46J15)

Izumi, Hideo (*with* Yoshida, Mamoru) On the geometry of generalized metric spaces. II. Spaces of isotropic curvature. *Publ. Math. Debrecen* **39** (1991), *no.* 3-4, 185–197. (L. Tamássy) **93a:53013** 53B40

Izumi, Masaki Application of fusion rules to classification of subfactors. *Publ. Res. Inst. Math. Sci.* **27** (1991), *no.* 6, 953–994. (Steve Wright) **93b:46121** 46L37

Izumi, Masao (*with* Guo-Li, Ao; Cui, Yu Jun; Fukunaga, Kunio) Structural representation of the outline and its application. (English summary) *Bull. Univ. Osaka Prefect. Ser. A* **40** (1991), *no.* 1, 43–59. 94A12

Izumi, Shuzo Increase, convergence and vanishing of functions along a Moishezon space. *J. Math. Kyoto Univ.* **32** (1992), *no.* 1, 245–258. (A. Sadullaev) **93k:32011** 32C15 (32B05)

— A criterion for algebraicity of analytic set germs. *Proc. Japan Acad. Ser. A Math. Sci.* **68** (1992), *no.* 10, 307–309. (Wiesław Pawłucki) **93m:32013** 32B10 (32B15, 32J20)

Izumida, Masanori (*with* Murakami, Kenji; Aibara, Tsunehiro) Analysis of neural network energy functions using standard forms. (English summary) *Systems Comput. Japan* **23** (1992), *no.* 8, 36–45. (Philippe De Wilde) **93i:92006** 92B20 (68T05, 90C27)

Izumino, Saichi On the transformer inequality in the Kubo-Ando theory of operator means. *Math. Japon.* **37** (1992), *no.* 1, 23–26. (Fuad Kittaneh) **93b:47036** 47A63 (47B15)

— (*with* Fujii, Junichi; Fujii, Masatoshi; Kubo, Fumio; Nakamoto, Ritsuo) Strang's inequality. *Math. Japon.* **37** (1992), *no.* 3, 479–486. (Frank Hansen) **93h:47020** 47A63 (47A10, 47B15)

— (*with* Fujii, Junichi; Nakamura, Masahiro) On Hummel's theorem. (English summary) *Math. Japon.* **37** (1992), *no.* 5, 985–986. (Summary) **93g:47023** 47B07 (47A99)

Izumiya, S. Generic properties of first order partial differential equations. (English summary) *Topology Hawaii* (*Honolulu, HI*, 1990), 91–100, *World Sci. Publishing, River Edge, NJ*, 1992. (Marek Kossowski) **93m:58004** 58A15 (35F20)

— (*with* Marar, W. L.) The Euler characteristic of a generic wavefront in a 3-manifold. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 4, 1347–1350. (Peter Giblin) **93j:58014** 58C27 (57M20, 57R45)

Izvekov, I. G. Harmonic representations and Fourier transforms of distributions with compact supports. (Russian. Russian summary) *Boundary value problems for operator-differential equations* (*Russian*), 20–27, *Akad. Nauk Ukrainy, Inst. Mat., Kiev*, 1991. (W. Kecs) **93i:46072** 46F12

— On the strengthening of the convergence of Fourier series of periodic generalized functions. (Russian. Russian summary) *Boundary value problems for differential equations* (*Russian*), 43–51, *Akad. Nauk Ukrainy, Inst. Mat., Kiev*, 1992. (*see* **93m:00018**) 42A24 (46F12)

Izvercian, P. N. (*with* Popescu, C.) Applications of the representation of the function spaces to the resolution of linear inhomogeneous differential equations with constant coefficients. (Romanian summary) *Inst. Politehn. "Traian Vuia" Timişoara Lucrăr. Sem. Mat. Fiz.* **1988**, *November*, 45–50. 34A30

— (*with* Popescu, C.) Function spaces representable on algebras. (Romanian summary) *Inst. Politehn. "Traian Vuia" Timişoara Lucrăr. Sem. Mat. Fiz.* **1988**, *November*, 79–82. 46E99 (46J99)

Izydorek, Marek On the Borsuk-Ulam theorem for free Z_p-action. (English summary) *Bull. Polish Acad. Sci. Math.* **38** (1990), *no.* 1-12, 15–21. (Steven R. Costenoble) **93i:55004** 55M35 (55M10)

— (*with* Rybicki, Sławomir) On the number of bifurcation branches of C^2-maps. *J. Math. Anal. Appl.* **168** (1992), *no.* 1, 218–224. (Enrique Outerelo Domínguez) **93f:58035** 58E07 (55M25, 58C30)

— (*with* Rybicki, Sławomir) On the number of branches of bifurcation points. *Kodai Math. J.* **15** (1992), *no.* 1, 122–133. (Jolanta Przybycin) **93d:47114** 47H15 (34B15, 34C25, 47N20)

Izyumchenko, L. V. (*with* Drozd, Yu. A.) Representations of $\mathfrak{D}$-forms. (Russian. Russian and Ukrainian summaries) *Ukraïn. Mat. Zh.* **44** (1992), *no.* 4, 572–574; *translation in*

Ukrainian Math. J. **44** (1992), *no.* 4, 513–515. (Zygmunt Pogorzały) **93h:16021** 16G30 (16S50)

Izzo, Alexander J. Uniform algebras generated by holomorphic and pluriharmonic functions. *Trans. Amer. Math. Soc.* **339** (1993), *no.* 2, 835–847. (Jan Janas) **93m:46060** 46J15 (32E25, 46E15)

– J –

Jaballah, Ali On the numbers of generators of monomial ideals. *Arch. Math.* (*Basel*) **58** (1992), *no.* 3, 231–233. (Liam O'Carroll) **93b:13014** 13C13

Jabara, Enrico On groups where the commutativity is an equivalence relation. (Italian. English and Italian summaries) *Rend. Accad. Naz. Sci. XL Mem. Mat.* (5) **16** (1992), 43–47. (Summary) **93m:20031** 20D99

Jabbari, Faryar (*with* Benson, R. W.) Observers for stabilization of systems with matched uncertainty. *Dynamics Control* **2** (1992), *no.* 3, 303–323. (Summary) **93b:93098** 93D15

— (*with* Schmitendorf, W. E.) Effects of using observers on stabilization of uncertain linear systems. (English summary) *IEEE Trans. Automat. Control* **38** (1993), *no.* 2, 266–271. 93D15

Jabbouri, El Mostafa Sur un critère pour l'indépendance algébrique de P. Philippon. (English summary) [On an algebraic independence criterion of P. Philippon] *Approximations diophantiennes et nombres transcendants* (*Luminy*, 1990), 195–202, *de Gruyter, Berlin*, 1992. (Daniel Bertrand) **93k:11068** 11J85 (13F20)

Jablan, Slavik V. Point groups of simple and multiple antihomology H^1_{30}. (Serbo-Croatian summary) *Zb. Rad. No.* 4 (1990), 35–43. (Vojtěch Kopský) **93d:20032** 20C99 (20H15, 82D25)

— Colored symmetry. (Serbo-Croatian summary) *The present past* (*Serbo-Croatian*), 107–128, *Istor. Mat. Mekh. Nauka*, 4, *Mat. Inst., Belgrade*, 1991. (J. J. Burckhardt) **93j:01006** 01A60 (01A99, 05B30, 52C15)

— $(p2, 2')$-symmetry three-dimensional space groups $G_3^{1,p2}$. *Acta Cryst. Sect. A* **48** (1992), *no.* 3, 322–328. (Summary) **93a:20078** 20H15 (82D25)

— Mackay groups. (English summary) *Acta Cryst. Sect. A* **49** (1993), *no.* 1, 132–137. (Summary) **93i:20056** 20H15 (51F15)

Jabs, Arthur An interpretation of the formalism of quantum mechanics in terms of epistemological realism. (English summary) *British J. Philos. Sci.* **43** (1992), *no.* 3, 405–421. 81P05

Jaćimović, M. (*with* Krnić, I.; Potapov, M. M.) Lagrange multipliers method and quadratic programming in Hilbert space. (Serbo-Croatian summary) *Mat. Vesnik* **42** (1990), *no.* 3-4, 197–205. (Summary) **93b:90060** 90C20 (49M30, 90C48)

Jack, I. (*with* Jones, D. R. T.; West, P. C.) Not the no-renormalisation theorem? *Phys. Lett. B* **258** (1991), *no.* 3-4, 382–385. (From the introduction) **93a:81193** 81T60 (81T15)

— The twisted $N = 2$ supersymmetric sigma model: a four-loop calculation of the beta function. *Nuclear Phys. B* **371** (1992), *no.* 1-2, 482–506. (R. Delbourgo) **93a:81190** 81T60 (81T40)

Jack, N. (*with* Christer, A. H.) An integral-equation approach for replacement modelling over finite time horizons. *IMA J. Math. Appl. Bus. Indust.* **3** (1991), *no.* 1, 31–44. (Summary) **93c:90035** 90B25

Jacka, S. D. Orlicz and Luxemburg norm inequalities. *Diffusion processes and related problems in analysis, Vol. I* (*Evanston, IL*, 1989), 421–443, *Progr. Probab.*, 22, *Birkhäuser Boston, Boston, MA*, 1990. (I. Ya. Novikov) **93b:60071** 60G07 (46E30)

Jackiewicz, Z. (*with* Crisci, M. R.; Russo, E.; Vecchio, A.) Global stability of exact collocation methods for Volterra integro-differential equations. *Atti Sem. Mat. Fis. Univ. Modena* **39** (1991), *no.* 2, 527–536. (From the introduction) **93f:45020** 45L10 (34K05, 65R20)

— (*with* Bellen, Alfredo; Zennaro, Marino) Local error estimation for singly-implicit formulas by two-step Runge-Kutta methods. (English summary) *BIT* **32** (1992), *no.* 1, 104–117. (Summary) **93k:65062** 65L06

— (*with* Bakke, V. L.) Stability analysis of multilag and modified multilag methods for Volterra integrodifferential equations. *IMA J. Numer. Anal.* **12** (1992), *no.* 2, 243–257. (Gene A. Kemper) **93c:34158** 34K99 (45D05, 65R20)

— (*with* Zennaro, Marino) Variable-stepsize explicit two-step Runge-Kutta methods. *Math. Comp.* **59** (1992), *no.* 200, 421–438. (H. Brunner) **93a:65093** 65L06

— (*with* Bellen, Alfredo; Zennaro, Marino) Time-point relaxation Runge-Kutta methods for ordinary differential equations. (English summary) *J. Comput. Appl. Math.* **45** (1993), *no.* 1-2, 121–137. (Summary) **93j:65109** 65L06

Jackiw, R. (*with* Pi, So-Young; Weinberg, Erick J.) Topological and nontopological solitons in relativistic and nonrelativistic Chern-Simons theory. *Particles, strings and cosmology* (*Boston, MA*, 1990), 573–588, *World Sci. Publishing, River Edge, NJ*, 1991. (*see* **93a:81004**) 81T13

— (*with* Pi, So-Young) Time-dependent Chern-Simons solitons and their quantization. *Phys. Rev. D* (3) **44** (1991), *no.* 8, 2524–2532. (A. D. Popova) **93d:81108** 81T10 (81V70)

— (*with* Deser, S.; 't Hooft, Gerard) Physical cosmic strings do not generate closed timelike curves. *Phys. Rev. Lett.* **68** (1992), *no.* 3, 267–269. (Laszlo B. Szabados) **93a:83026** 83C75

— (*with* Cangemi, D.) Gauge-invariant formulations of lineal gravities. *Phys. Rev. Lett.* **69** (1992), *no.* 2, 233–236. (Summary) **93f:81130** 81T40 (83C99)

— *see also* **Hagen, C. R., 93d:81107**

Jackowski, Stefan (*with* McClure, James E.; Oliver, Robert) Homotopy classification of self-maps of BG via G-actions. I. *Ann. of Math.* (2) **135** (1992), *no.* 1, 183–226. (J. P. May) **93e:55019a** 55R35 (55N91, 57T10)

— (*with* McClure, James E.; Oliver, Robert) Homotopy classification of self-maps of BG via G-actions. II. *Ann. of Math.* (2) **135** (1992), *no.* 2, 227–270. (J. P. May) **93e:55019b** 55R35 (55N91, 57T10)

Jackowski, Zygmunt A new characterization of proper interval graphs. (English summary) *Discrete Math.* **105** (1992), *no.* 1-3, 103–109. (Alan Tucker) **93h:05133** 05C75 (05C10)

Jackson, Allyn Canada's Fields Institute opens its doors. *Notices Amer. Math. Soc.* **39** (1992), *no.* 6, 564–566. 01A74

Jackson, Bill (*with* Aldred, R. E. L.; Holton, D. A.) Uniform cyclic edge connectivity in cubic graphs. *Combinatorica* **11** (1991), *no.* 2, 81–96. (Nicholas Wormald) **93e:05055** 05C40

— Supplementary Eulerian vectors in isotropic systems. *J. Combin. Theory Ser. B* **53** (1991), *no.* 1, 93–105. (André Bouchet) **93e:05063** 05C45 (05B35)

— (*with* Li, Hao[1]; Zhu, Yong Jin) Dominating cycles in regular 3-connected graphs. *Discrete Math.* **102** (1992), *no.* 2, 163–176. (H. A. Jung) **93g:05081** 05C38

Jackson, Bradley W. Shortness parameters of r-regular r-connected graphs. *Graph theory, combinatorics, and applications. Vol.* 2 (*Kalamazoo, MI*, 1988), 687–703, *Wiley-Intersci. Publ., Wiley, New York*, 1991. (*see* **93b:05003**) 05C40

Jackson, D. E. *see* **Jackson, Dennis Eugene**

Jackson, D. M. (*with* Canfield, E. Rodney) A D-finiteness result for products of permutations. *Discrete Math.* **99** (1992), *no.* 1-3, 25–30. (Wayne M. Dymacek) **93g:05010** 05A15 (05A05)

— (*with* Goulden, I. P.) The combinatorial relationship between trees, cacti and certain connection coefficients for the symmetric group. (English summary) *European J. Combin.* **13** (1992), *no.* 5, 357–365. (Andrea Brini) **93g:05148** 05E15 (05C25, 20B30)

— (*with* Goulden, I. P.) Immanants of combinatorial matrices. *J. Algebra* **148** (1992), *no.* 2, 305–324. (Ira Gessel) **93i:05132** 05E05 (05E10)

Jackson, Dennis Eugene Error estimates for the semidiscrete Galerkin approximations of the FitzHugh-Nagumo equations. *Appl. Math. Comput.* **50** (1992), *no.* 1, 93–114. (Alexander Ostermann) **93f:65075** 65M60 (65M15, 92C20)

Jackson, E. Atlee (*with* Kodogeorgiou, A.) Entrainment and migration controls of two-dimensional maps. *Phys. D* **54** (1992), *no.* 3, 253–265. (R. Dilão) **93c:58100** 58F08 (58F13)

Jackson, Eric (*with* She, Zhen Su; Orszag, Steven A.) Vortex structure and dynamics in turbulence. (English summary) *Spectral and high order methods for partial differential equations* (*Como*, 1989), 173–183, *North-Holland, Amsterdam*, 1990. (*see* **93d:65005**) 76M25 (76C05, 76F99)

france-Jackson, Halina *see* **France-Jackson, Halina**

Jackson, Martin (*with* Isenberg, James) Ricci flow of locally homogeneous geometries on closed manifolds. *J. Differential Geom.* **35** (1992), *no.* 3, 723–741. (Dennis M. DeTurck) **93c:58049** 58E11 (53C25, 53C30, 58G11, 58G30)

Jackson, Matthew O. Implementation in undominated strategies: a look at bounded mechanisms. (English summary) *Rev. Econom. Stud.* **59** (1992), *no.* 4, 757–775. (Summary) **93f:90007** 90A05 (90A08)

— (*with* Srivastava, Sanjay) On two-person Nash implementable choice functions. (English summary) *Soc. Choice Welf.* **9** (1992), *no.* 3, 263–264. 90A08

Jackson, Peter (*with* Pais, John) Partial monotonicity and a new version of the Ramsey test. *Studia Logica* **51** (1992), *no.* 1, 21–47. (David Makinson) **93i:03036** 03B60 (03B70, 68T27, 68T30)

Jackson, Peter L. (*with* Tunçel, Levent) On the convexity of a function related to the Wagner-Whitin model. (English summary) *Oper. Res. Lett.* **11** (1992), *no.* 4, 255–259. 90A11 (90B80)

Jackson, Philip C., Jr. Proving unsatisfiability for problems with constant cubic sparsity. (English summary) *Artificial Intelligence* **57** (1992), *no.* 1, 125–137. (Peter Clote) **93k:68046** 68Q25 (03B05, 03D15)

Jackson, Stephen Craig (*with* Mauldin, R. Daniel) Some complexity results in topology and analysis. (English summary) *Fund. Math.* **141** (1992), *no.* 1, 75–83. (Klaas Pieter Hart) **93i:03067** 03E15 (28A05, 54C35, 54F45, 54H05)

Jackson, T. L. (*with* Grosch, C. E.; Kapila, A. K.) Nonseparable eigenmodes of the incompressible boundary layer. (English summary) *Instability, transition, and turbulence* (*Hampton, VA*, 1991), 127–136, *ICASE/NASA LaRC Ser., Springer, New York*, 1992. (*see* **93j:76004**) 76E05 (76D10)

Jacob, Bill (*with* Arason, Jón Kr.; Elman, Richard) On indecomposable vector bundles. *Comm. Algebra* **20** (1992), *no.* 5, 1323–1351. (K. Szymiczek) **93e:14051** 14J60 (14F05, 14H60)

— Quadratic forms over dyadic valued fields. II. Relative rigidity and Galois cohomology. *J. Algebra* **148** (1992), *no.* 1, 162–202. (Robert Fitzgerald) **93d:11045** 11E81 (12G05)

Jacob, Caius *see* **Iacob, Caius**

Jacob, Gérard *see* **Workshop: Algebraic and Computer-theoretic Aspects of Formal Power Series, 93a:68010**

Jacob, Mercy K. Periodicity problem for discrete pseudoanalytic functions. *Ganita* **42** (1991), *no.* 1-2, 35–48 (1992). (Kerim Koca) **93k:30077** 30G20

Jacob, Niels (*with* Hoh, Walter) Some Dirichlet forms generated by pseudo differential operators. (English and French summaries) *Bull. Sci. Math.* (2) **116** (1992), *no.* 3, 383–398. (J. A. Van Casteren) **93m:47060** 47G30 (31C25, 35S05, 47B25, 60J25)

— Feller semigroups, Dirichlet forms, and pseudodifferential operators. (English summary) *Forum Math.* **4** (1992), *no.* 5, 433–446. (Tu Sheng Zhang) **93k:60194** 60J35 (31C25, 35S05, 47D07, 47G30)

— (*with* Fukushima, Masatoshi; Kaneko, Hiroshi[2]) On $(r, 2)$-capacities for a class of elliptic pseudo differential operators. *Math. Ann.* **293** (1992), *no.* 2, 343–348. (Yves Le Jan) **93i:31006** 31C25 (35C15, 35S99)

Jacob, Pierre M. (*with* Mendes Lopes, Maria de Nazaré) Un théorème central limite fonctionnel pour un estimateur d'un noyau de transition. (English summary) [A functional central limit theorem for the estimator of a transition kernel] *Portugal. Math.* **48** (1991), *no.* 2, 217–231. (Alan F. Karr) **93c:60070** 60G57 (62M09)

Jacob, Roy Thomas, Jr. (*with* Brand, Neal; Curran, Stephen J.; Das, Sajal K.) Probability of diameter two for Steinhaus graphs. (English summary) *Discrete Appl. Math.* **41** (1993), *no.* 2, 165–171. (Summary) **93m:05130** 05C50

Jacobowitz, Howard ★ An introduction to CR structures. Mathematical Surveys and Monographs, 32. *American Mathematical Society, Providence, RI*, 1990. x+237 *pp. ISBN* 0-8218-1533-4 (E. M. Chirka) **93h:32023** 32F40 (32–02, 32C16, 32F25)

— A nonsolvable complex vector field with Hölder coefficients. *Proc. Amer. Math. Soc.* **116** (1992), *no.* 3, 787–795. (Zai-Feng Song) **93a:35005** 35A07

Jacobs, Bart Semantics of the second order lambda calculus. *Math. Structures Comput. Sci.* **1** (1991), *no.* 3, 327–360. (Summary) **93c:68060** 68Q55 (03B40, 18B99)

— (*with* Margaria, Ines; Zacchi, Maddalena) Filter models with polymorphic types. *Theoret. Comput. Sci.* **95** (1992), *no.* 1, 143–158. (Summary) **93j:03012** 03B40 (68Q55)

Jacobs, D. P. (*with* Hentzel, Irvin Roy) A condition guaranteeing commutativity. (English summary) *Internat. J. Algebra Comput.* **2** (1992), *no.* 3, 291–295. (Ernest Stitzinger) **93h:17006** 17A20

Jacobs, David Supercomputers: How super are they? *New applications of mathematics*, 270–286, *Penguin, New York*, 1991. (*see* **93g:00019**) 68Q10 (00A69)

Jacobs, Konrad Measure-theoretical max-flow problems. Mathematische Wissenschaften gestern und heute. 300 Jahre Mathematische Gesellschaft in Hamburg, Teil 4 (Hamburg, 1990). *Mitt. Math. Ges. Hamburg* **12** (1991), *no.* 4, 989–1011 (1992). (Harold Parks) **93h:49027** 49J45 (49–02, 49N15, 93E20)

— ★ Invitation to mathematics. Translated from the 1987 German edition. Princeton Paperbacks. *Princeton University Press, Princeton, NJ*, 1992. xii+247 *pp. ISBN* 0-691-08567-6; 0-691-02528-2 (Editors) **93d:00004** 00A06 (00A30, 00A35)

— ★ Discrete stochastics. Basler Lehrbücher [Basel Textbooks], 3. *Birkhäuser Verlag, Basel*, 1992. x+283 *pp. ISBN* 3-7643-2591-7 (V. K. Rohatgi) **93e:60001** 60–01

Jacobs, Mark W. (*with* Linder, Eric V.; Wagoner, Robert V.) Obtaining the metric of our universe. *Phys. Rev. D* (3) **45** (1992), *no.* 10, R3292–R3295. (Summary) **93b:83068** 83F05

— (*with* Wilkins, Daniel) Gödel's gravitomagnet. (English summary) *Phys. Rev. D* (3) **46** (1992), *no.* 8, 3395–3402. (Summary) **93e:83012** 83C10 (83C15)

Jacobs, O. L. R. Case studies in application of stochastic control theory. (English summary) *Advanced methods in adaptive control for industrial applications* (*Praha*, 1990), 212–232, *Lecture Notes in Control and Inform. Sci.*, 158, *Springer, Berlin*, 1991. (*see* **93c:93003**) 93Exx (93C95)

Jacobsen, Lisa *see* **Lorentzen, Lisa**

Jacobsen, Martin (*with* Davidsen, Michael) Weak convergence of two-sided stochastic integrals, with an application to models for left truncated survival data. *Statistical inference in stochastic processes*, 167–182, *Probab. Pure Appl.*, 6, *Dekker, New York*, 1991. (Arnold Janssen) **93b:60010** 60B05 (60H05, 62G05, 62M09)

Jacobson, C. A. (*with* Helmicki, A. J.; Nett, C. N.) On zero-order hold equivalents of distributed parameter systems. *IEEE Trans. Automat. Control* **37** (1992), *no.* 4, 488–491. (Summary) **93a:93062a** 93C20 (93B50)

— (*with* Helmicki, A. J.; Nett, C. N.) Worst-case/deterministic identification in H_∞: the continuous-time case. *IEEE Trans. Automat. Control* **37** (1992), *no.* 5, 604–610. (Jan Bialasiewicz) **93c:93019** 93B30 (93B36)

— (*with* Helmicki, A. J.; Nett, C. N.) Correction to: "On zero-order hold equivalents of distributed parameter systems". *IEEE Trans. Automat. Control* **37** (1992), *no.* 6, 895–896. (Editors) **93a:93062b** 93C20 (93B50)

— (*with* Nett, C. N.; Partington, Jonathan R.) Worst case system identification in l_1: optimal algorithms and error bounds. (English summary) *Systems Control Lett.* **19** (1992), *no.* 6, 419–424. (Y. Cherruault) **93j:93037** 93B30 (65K99, 93B40, 93C57)

Jacobson, Dmitry (*with* Maddocks, John H.) On the dynamics of chains. (English summary) *SIAM J. Appl. Math.* **52** (1992), *no.* 6, 1563–1583. (Summary) **93k:73068** 73K99 (34C99, 35Q72, 73D99)

Jacobson, Eliot T. Distribution of the Fibonacci numbers mod 2^k. *Fibonacci Quart.* **30** (1992), *no.* 3, 211–215. (From the introduction) **93f:11014** 11B39 (11B50)

Jacobson, Michael S. (*with* Erdős, Paul; Lehel, Jenő) Graphs realizing the same degree sequences and their respective clique numbers. *Graph theory, combinatorics, and applications, Vol.* 1 (*Kalamazoo, MI*, 1988), 439–449, *Wiley-Intersci. Publ., Wiley, New York*, 1991. (Summary) **93d:05149** 05C99

— (*with* McMorris, F. R.; Mulder, Henry Martyn) An introduction to tolerance intersection graphs. *Graph theory, combinatorics, and applications. Vol.* 2 (*Kalamazoo, MI*, 1988), 705–723, *Wiley-Intersci. Publ., Wiley, New York*, 1991. (Summary) **93b:05142** 05C75

— (*with* Faudree, Ralph J.; Gould, Ronald J.; Lesniak, Linda M.) Generalized degrees, connectivity and Hamiltonian properties in graphs. (English summary) *J. Combin. Inform. System Sci.* **16** (1991), *no.* 1, 93–105. (Summary) **93c:05078** 05C40 (05C45)

— (*with* Faudree, Ralph J.; Gould, Ronald J.; Lesniak, Linda M.; Lindquester, Terri E.) On independent generalized degrees and independence numbers in $K(1, m)$-free graphs. *Discrete Math.* **103** (1992), *no.* 1, 17–24. (Douglas F. Rall) **93d:05115** 05C70

— (*with* Faudree, Ralph J.; Gould, Ronald J.; Lesniak, Linda M.) Neighborhood unions and a generalization of Dirac's theorem. (English summary) *Discrete Math.* **105** (1992), *no.* 1-3, 61–71. (Stanislav Jendrol') **93g:05094** 05C45 (05C38)

— On the p-edge clique cover number of complete bipartite graphs. (English summary) *SIAM J. Discrete Math.* **5** (1992), *no.* 4, 539–544. (Robert C. Brigham) **93i:05099** 05C70 (05C20, 05C35)

— (*with* Chen, Guantao; Gould, Ronald J.; Schelp, Richard H.; West, Douglas B.) A characterization of influence graphs of a prescribed graph. (English summary) *Vishwa Internat. J. Graph Theory* **1** (1992), *no.* 1, 77–81. (W. G. Brown) **93k:05056** 05C12

Jacobson, N. Magnus' method in the theory of free groups. *Ulam Quart.* **1** (1992), *no.* 1, 1*ff.*, *approx.* 11 *pp.* (*electronic only*). (Julian Petresco) **93k:20039** 20E05 (20F14, 20F40, 20F50)

Jacobson, Ted (*with* Capovilla, Riccardo; Dell, J.) Errata: "A pure spin-connection formulation of gravity" [Classical Quantum Gravity **8** (1991), no. 1, 59–73; MR 91m:83005]. *Classical Quantum Gravity* **9** (1992), *no.* 7, 1839–1840. (From the text) **93d:83006** 83C05 (83C60)

— (*with* Romano, Joseph D.) Degenerate extensions of general relativity. (English summary) *Classical Quantum Gravity* **9** (1992), *no.* 9, L119–L124. (Ingemar Bengtsson) **93g:83009** 83C05 (83C45)

— (*with* Capovilla, Riccardo) Remarks on pure spin connection formulations of gravity. *Modern Phys. Lett. A* **7** (1992), *no.* 21, 1871–1877. (Summary) **93c:83080** 83C60 (83C05)

Jacod, Jean (*with* Protter, Philip) Une remarque sur les équations différentielles stochastiques à solutions markoviennes. [A remark on stochastic differential equations with Markov solutions] *Séminaire de Probabilités, XXV*, 138–139, *Lecture Notes in Math.*, 1485, *Springer, Berlin*, 1991. (P. Sundar) **93m:60133** 60H20 (60J25)

— Régularité d'ordre quelconque pour un modèle statistique filtré. [Regularity of any order for a filtered statistical model] *Séminaire de Probabilités, XXV*, 140–161, *Lecture Notes in Math.*, 1485, *Springer, Berlin*, 1991. (Yu. M. Kabanov) **93j:62013** 62B15 (62A10)

Jacqmin, David (*with* Foster, M. R.) Nonparallel effects in the instability of Long's vortex. (English summary) *J. Fluid Mech.* **244** (1992), 289–306. (Summary) **93h:76028** 76E10 (76D25, 76E99)

Jacquemin, Michel (*with* Johnsson, S. Lennart; Krawitz, Robert L.) Communication efficient multi-processor FFT. (English summary) *J. Comput. Phys.* **102** (1992), *no.* 2, 381–397. (Summary) **93h:65176** 65T20

Jacquet, Hervé (*with* Shalika, Joseph) Rankin-Selberg convolutions: Archimedean theory. *Festschrift in honor of I. I. Piatetski-Shapiro on the occasion of his sixtieth birthday, Part I* (*Ramat Aviv*, 1989), 125–207, *Israel Math. Conf. Proc.*, 2, *Weizmann, Jerusalem*, 1990. (Brian E. Blank) **93d:22022** 22E50

— (*with* Rallis, Stephen) Symplectic periods. *J. Reine Angew. Math.* **423** (1992), 175–197. (Stephen Gelbart) **93b:22035** 22E55 (11F70)

— (*with* Rallis, Stephen) Kloosterman integrals for skew symmetric matrices. *Pacific J. Math.* **154** (1992), *no.* 2, 265–283. (Stephen Gelbart) **93d:11054** 11F70 (22E50)

Jacquette, Dale (*with* Johnstone, Henry W., Jr.) Dualities of self-nonapplication and infinite regress. *Logique et Anal.* (*N.S.*) **32** (1989), *no.* 125-126, 29–40. 03A05

— Modal Meinongian logic. (English summary) *Logique et Anal.* (*N.S.*) **32** (1989), *no.* 125-126, 113–130. (Mohamed Amer) **93m:03028** 03B45 (03B50)

Jacquot, S. Comportement asymptotique de l'intervalle spectral d'opérateurs de Kolmogorov sur l'espace de Wiener. (English summary) [Asymptotic behavior of the spectral interval of Kolmogorov operators on Wiener space] *Stochastics Stochastics Rep.* **37** (1991), *no.* 4, 213–223. (Patrick Cattiaux) **93e:60130** 60H30 (35P20, 35R60)

— Comportement asymptotique de la seconde valeur propre des processus de Kolmogorov. (English summary) [Asymptotic behavior of the second eigenvalue of Kolmogorov processes] *J. Multivariate Anal.* **40** (1992), *no.* 2, 335–347. (Patrick Cattiaux) **93e:60129** 60H30 (35P20, 35R60, 60F10)

Jacquotte, Olivier-Pierre (*with* Coussement, Grégory) Structured mesh adaption: space accuracy and interpolation methods. (English summary) Reliability in computational mechanics (Kraków, 1991). *Comput. Methods Appl. Mech. Engrg.* **101** (1992), *no.* 1-3, 397–432. (Summary) **93h:76056** 76M25 (76M10)

Jacroux, Michael A note on the E-optimality of block designs. *Metrika* **38** (1991), *no.* 3-4, 203–214. (Summary) **93d:62135** 62K05 (62K10)

— (*with* Saha Ray, Rita) Run orders of trend resistant 2-level factorial designs. (English summary) *Sankhyā Ser. B* **53** (1991), *no.* 2, 202–212. (Summary) **93e:62197** 62K15

— On the A-optimality of block designs. (English summary) *J. Statist. Plann. Inference* **32** (1992), *no.* 3, 401–415. (William I. Notz) **93i:62064** 62K05 (62K10)

— A note on the determination and construction of minimal orthogonal main-effect plans. *Technometrics* **34** (1992), *no.* 1, 92–96. (Summary) **93b:62110** 62K15

— On the construction of minimal partially replicated orthogonal main-effect plans. (English summary) *Technometrics* **35** (1993), *no.* 1, 32–36. 62K15

Jaeger, François Nowhere-zero flow problems. *Selected topics in graph theory*, 3, 71–95, *Academic Press, San Diego, CA*, 1988. (*see* **93h:05003**) 05C90

— Graph colourings and link invariants. *Graph colourings* (*Milton Keynes*, 1988), 97–114, *Pitman Res. Notes Math. Ser.*, 218, *Longman Sci. Tech., Harlow*, 1990. (*see* **93k:05072**) 57M15 (05C15, 57M25)

— (*with* Linial, Nathan; Payan, Charles; Tarsi, Michael) Group connectivity of graphs—a nonhomogeneous analogue of nowhere-zero flow properties. (English summary) *J. Combin. Theory Ser. B* **56** (1992), *no.* 2, 165–182. (W. T. Tutte) **93h:05088** 05C25 (05C40)

tomczak-Jaegermann, Nicole *see* **Tomczak-Jaegermann, Nicole**

Jaekel, M. T. Stochastic lengths. *J. Math. Phys.* **33** (1992), *no.* 5, 1695–1704. (Summary) **93a:81099** 81S25

Jafari, F. (*with* Evard, Jean-Claude) A complex Rolle's theorem. *Amer. Math. Monthly* **99** (1992), *no.* 9, 858–861. 30-01

Jaffar, Joxan (*with* Maher, Michael J.; Stuckey, Peter J.; Yap, Roland H. C.) Output in CLP($\mathcal{R}$). (English summary) *Fifth generation computer systems, Vol.* 1, 2 (*Tokyo*, 1992), 987–995, *Ohm, Tokyo*, 1992. (Summary) **93m:68026** 68N15 (68N17)

Jaffard, Stéphane Propriétés des matrices "bien localisées" près de leur diagonale et quelques applications. (English summary) [Properties of matrices "well localized" near their diagonal and some applications] *Ann. Inst. H. Poincaré Anal. Non Linéaire* **7** (1990), *no.* 5, 461–476. (B. S. Rubin) **93h:47035** 47B37 (42C15)

— Wavelets and analysis of partial differential equations. (English summary) *Probabilistic and stochastic methods in analysis, with applications* (*Il Ciocco*, 1991), 3–13, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 372, *Kluwer Acad. Publ., Dordrecht*, 1992. (*see* **93e:00029**) 35–02 (35C10, 42C15, 65P05)

— (*with* Laurençot, Ph.) Orthonormal wavelets, analysis of operators, and applications to numerical analysis. *Wavelets*, 543–601, *Wavelet Anal. Appl.*, 2, *Academic Press, Boston, MA*, 1992. (R. A. Lorentz) **93h:42024** 42C15 (65M60, 65N30, 65N55)

— Construction de fonctions multifractales ayant un spectre de singularités prescrit. (English summary) [Construction of multifractal functions with a prescribed spectrum of singularities] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 1, 19–24. (William Douglas Withers) **93h:28011** 28A80

— (*with* Benassi, Albert; Roux, Daniel) Module de continuité des champs aléatoires gaussiens étudiés au moyen d'ondelettes appropriées. (English and French summaries) [Modulus of continuity of Gaussian random fields decomposed in an appropriate wavelet basis] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 4, 441–446. (Summary) **93f:60067** 60G60 (60G15)

— Wavelet methods for fast resolution of elliptic problems. *SIAM J. Numer. Anal.* **29** (1992), *no.* 4, 965–986. (G. Albinus) **93i:35042** 35J20 (65F35, 65N30)

Jaffe, Arthur (*with* Lesniewski, Andrzej) Geometry of supersymmetry. *Constructive quantum field theory, II* (*Erice*, 1988), 283–305, *NATO Adv. Sci. Inst. Ser. B Phys.*, 234, *Plenum, New York*, 1990. (*see* **93g:81074**) 81T60 (58B30, 58C50)

— *see also* **New symmetry principles in quantum field theory, 93h:81002**

Jaffe, David B. Local geometry of smooth curves passing through rational double points. *Math. Ann.* **294** (1992), *no.* 4, 645–660. (Sherwood Washburn) **93m:14002** 14B05 (14H20)

— Extensions of étale by connected group spaces. *Trans. Amer. Math. Soc.* **335** (1993), *no.* 1, 155–173. (R. T. Hoobler) **93f:14025** 14L15 (14E20)

Jaffray, Jean-Yves Bayesian updating and belief functions. (English summary) *IEEE Trans. Systems Man Cybernet.* **22** (1992), *no.* 5, 1144–1152. (Summary) **93j:68202** 68T30 (62A15)

Jagannathan, R. *see* **Jagannathan, Ramaswamy**

Jagannathan, Raj Linear programming with stochastic processes as parameters as applied to production planning. Stochastic programming, Part I (Ann Arbor, MI, 1989). *Ann. Oper. Res.* **30** (1991), *no.* 1-4, 107–114. (Summary) **93a:90048** 90C15 (90B05, 90B30)

Jagannathan, Ramaswamy (*with* Chakrabarti, Ranabir) On the representations of $GL_{p,q}(2)$, $GL_{p,q}(1|1)$ and noncommutative spaces. *J. Phys. A* **24** (1991), *no.* 24, 5683–5701. (Michael Ringe) **93a:17011** 17B37 (58B30, 81R50)

— (*with* Srinivasa Rao, K.; Van der Jeugt, J.; Raynal, J.; Rajeswari, V.) Group theoretical basis for the terminating ${}_3F_2(1)$ series. *J. Phys. A* **25** (1992), *no.* 4, 861–876. (Summary) **93m:33001** 33C20 (20B25, 33C80, 81R05)

— (*with* Chakrabarti, Ranabir) A (p,q)-deformed Virasoro algebra. *J. Phys. A* **25** (1992), *no.* 9, 2607–2614. (D. V. Yur'ev) **93e:17040** 17B68 (17B37, 81R10, 81R50)

— (*with* Chakrabarti, Ranabir) A two-parameter deformation of the Jaynes-Cummings model: path integral representation. (English summary) *J. Phys. A* **25** (1992), *no.* 23, 6399–6408. (Nathalie Debergh) **93k:81092** 81R50 (81R30, 81S40, 81V80)

— (*with* Sridhar, Raghavendra; Vasudevan, R.; et al.) On the number operators of multimode systems of deformed oscillators covariant under quantum groups. (English summary) *J. Phys. A* **25** (1992), *no.* 23, 6429–6453. (J. F. Cornwell) **93m:81061** 81R50 (17B37)

Jäger, Eberhard *see* **Lifshits, E. M., 93b:00001b** *and* **93g:00002**

Jäger, Eva (*with* Segel, Lee A.) On the distribution of dominance in populations of social organisms. (English summary) *SIAM J. Appl. Math.* **52** (1992), *no.* 5, 1442–1468. (Summary) **93h:92039** 92D50 (45K05, 60J20)

Jäger, Gerhard (*with* Primo, Barbara) About the proof-theoretic ordinals of weak fixed point theories. (English summary) *J. Symbolic Logic* **57** (1992), *no.* 3, 1108–1119. (Michael Rathjen) **93i:03082** 03F50 (03F15, 03F35)

— (*with* Stärk, Robert F.) The defining power of stratified and hierarchical logic programs. (English summary) *J. Logic Programming* **15** (1993), *no.* 1-2, 55–77. (Guo Zhu Dong) **93j:68027** 68N15 (03B70, 68P15)

Jager, H. Some metrical observations on the approximation of an irrational number by its nearest mediants. *Period. Math. Hungar.* **23** (1991), *no.* 1, 5–16. (Les Davison) **93a:11060** 11J04 (11J70)

Jäger, Willi (*with* Smith, Hal L.; Tang, Betty) Generic failure of persistence and equilibrium coexistence in a model of m-species competition in an n-vessel gradostat when $m > n$. (English summary) *Differential equations models in biology, epidemiology and ecology* (*Claremont, CA*, 1990), 200–209, *Lecture Notes in Biomath.*, 92, *Springer, Berlin*, 1991. (Summary) **93h:92035** 92D40

Jagerman, David L. (*with* Sengupta, Bhaskar) The $GI/M/1$ processor-sharing queue and its heavy traffic analysis. *Comm. Statist. Stochastic Models* **7** (1991), *no.* 3, 379–395. (W. Szczotka) **93a:60148** 60K25 (90B22)

— (*with* Melamed, Benjamin) The transition and autocorrelation structure of TES processes. I. General theory. *Comm. Statist. Stochastic Models* **8** (1992), *no.* 2, 193–219. (Ed McKenzie) **93h:62159** 62M10 (60G17)

— (*with* Melamed, Benjamin) The transition and autocorrelation structure of TES processes. II. Special cases. (English summary) *Comm. Statist. Stochastic Models* **8** (1992), *no.* 3, 499–527. (Ed McKenzie) **93h:62160** 62M10 (60G17)

Jagers, Bert (*with* Alzer, Horst) A functional inequality for real-analytic functions. *Aequationes Math.* **43** (1992), *no.* 2-3, 225–235. (B. Crstici) **93d:39018** 39B72 (26D20)

Jagers, Peter (*with* Nerman, Olle; Taïb, Ziad) When did Joe's great...grandfather live? Or: On the time scale of evolution. (English summary) *Selected Proceedings of the Sheffield Symposium on Applied Probability* (*Sheffield*, 1989), 118–126, *IMS Lecture Notes Monograph Ser.*, 18, *Inst. Math. Statist., Hayward, CA*, 1991. (Summary) **93g:60184** 60J80

— The growth and stabilization of populations. With comments by Joel E. Cohen, Peter Donnelly and Stanley Sawyer and a rejoinder by the author. *Statist. Sci.* **6** (1991), *no.* 3, 269–283. (Edward Pollak) **93b:60193** 60J80

— Stabilities and instabilities in population dynamics. (English summary) *J. Appl. Probab.* **29** (1992), *no.* 4, 770–780. (John Haigh) **93j:60120** 60J80 (92D25)

Jahangiri, M. (*with* Silvia, E. M.) Some inequalities involving generalized hypergeometric functions. *Univalent functions, fractional calculus, and their applications* (*Kōriyama*, 1988), 65–74, *Ellis Horwood Ser. Math. Appl., Horwood, Chichester*, 1989. (Summary) **93h:30007** 30C45 (33C20)

— (*with* Silvia, E. M.; Silverman, Herb) Classes of functions defined by subordination. *New trends in geometric function theory and applications* (*Madras*, 1990), 34–41, *World Sci. Publishing, River Edge, NJ*, 1991. (T. H. MacGregor) **93d:30014** 30C45

Jahn, Johannes (*with* Merkel, A.) Reference point approximation method for the solution of bicriterial nonlinear optimization problems. *J. Optim. Theory Appl.* **74** (1992), *no.* 1, 87–103. (Andrzej M. J. Skulimowski) **93f:90143** 90C29

— (*with* Đinh Thế Lục) Axiomatic approach to duality in optimization. (English summary) *Numer. Funct. Anal. Optim.* **13** (1992), *no.* 3-4, 305–326. (Summary) **93h:90080** 90C29 (49N15)

Jahn, K.-U. Finite sets of hyperrectangles and applications. (English summary) *Computer arithmetic and enclosure methods* (*Oldenburg*, 1991), 253–258, *North-Holland, Amsterdam*, 1992. (Summary) **93j:65070** 65G10

Jähnichen, Stefan *see* **Weber, Matthias, 93a:68097** *and* **Bittel, Oliver, 93h:03013**

el Jaï, A. *see* **El Jaï, A.**

Jai, M. (*with* Bayada, Guy; Chambat, Michèle) The L.P.D.E.M., a mixed finite difference method for elliptic problems. (English summary) *Numer. Math.* **63** (1992), *no.* 2, 195–211. (C. Wayne Mastin) **93g:65130** 65N06 (65N12, 65N30, 76D08, 76M20)

Jaiani, G. *see* **Dzhaiani, G. V.**

Jaillet, Patrick Rates of convergence for quasi-additive smooth Euclidean functionals and application to combinatorial optimization problems. (English summary) *Math. Oper. Res.* **17** (1992), *no.* 4, 964–980. (Summary) **93k:90076** 90C27 (60C05)

— Shortest path problems with node failures. (English summary) *Networks* **22** (1992), *no.* 6, 589–605. (Frank K. Hwang) **93g:90037** 90B15 (68Q25, 90B25)

Jaimes, Ernesto About factorization of identity operator for a given unbounded operator. *Ann. Univ. Sci. Budapest. Eötvös Sect. Math.* **33** (1990), 39–42 (1991). (Kiran Chandra Das) **93c:47001** 47A05

— A note on operator ranges. *Ann. Univ. Sci. Budapest. Eötvös Sect. Math.* **33** (1990), 49–51 (1991). (Kiran Chandra Das) **93c:47002** 47A05

— On ranges of adjoint operators. *Ann. Univ. Sci. Budapest. Eötvös Sect. Math.* **33** (1990), 235–237 (1991). (Kiran Chandra Das) **93c:47003** 47A05

— (*with* Sebestyén, Zoltán) Some factorization theorems for Hilbert space operators. *Studia Sci. Math. Hungar.* **26** (1991), *no.* 1, 87–89. (From the text) **93b:47039** 47A68 (47B25)

gutiérrez Jáimez, Ramón *see* **Gutiérrez Jáimez, Ramón**

Jain, Anil *see* **Markov random fields, 93j:68224**

Jain, Anurag (*with* Malhotra, Vishv Mohan) On generating functional programs from PROLOG specifications. (English summary) *Comput. Artificial Intelligence* **11** (1992), *no.* 4, 375–384. (Summary) **93g:68087** 68Q60

Jain, Dipak (*with* Chintagunta, Pradeep) A study of manufacturer-retailer marketing strategies: a differential game approach. (English summary) *Dynamic games in economic analysis* (*Espoo*, 1990), 1–10, *Lecture Notes in Control and Inform. Sci.*, 157, *Springer, Berlin*, 1991. (*see* **93d:90003**) 90A80 (90D25)

Jain, J. L. (*with* Sen, Kanwar; Gupta, J. M.) Lattice path approach to transient solution of $M/M/1$ with $(0,k)$ control policy. (English summary) *J. Statist. Plann. Inference* **34** (1993), *no.* 2, 259–267. (Summary) **93j:60147** 60K25 (60C05)

— (*with* Sen, Kanwar) Combinatorial approach to Markovian queueing models. (English summary) *J. Statist. Plann. Inference* **34** (1993), *no.* 2, 269–279. (Summary) **93j:60148** 60K25 (60C05)

Jain, J. P. (*with* Muralidharan, K.) Response to selection under nonrandom mating. II. Prediction. (English summary) *Biometrical J.* **34** (1992), *no.* 5, 633–637. 92D10 (92B15)

Jain, Kalpana (*with* Gupta, Arjun K.; Nagar, Daya K.) Asymptotic distribution of likelihood ratio statistic for testing multisample sphericity. (English summary) *J. Korean Statist. Soc.* **21** (1992), *no.* 1, 14–26. (Summary) **93e:62149** 62H15 (62E20)

— (*with* Gupta, Arjun K.; Nagar, Daya K.) On the asymptotic distribution of likelihood ratio statistic for testing multisample sphericity in the complex case. (English and Italian summaries) *Statistica* (*Bologna*) **52** (1992), *no.* 1, 37–48. 62E20 (62H10)

Jain, L. C. ★ The Taõ of Jaina sciences. With the assistance of Br. Prabha. With a foreword by Shiv Prasad Kosta. With an introduction by R. C. Gupta. *Arihant International, Delhi*, 1992. xxiv+408 *pp. ISBN* 81-7277-001-4 01A32

Jain, M. K. *see* **Jain, Mahinder Kumar**

Jain, Madhu Bala (*with* Sen, Kanwar) Tests for bivariate mean residual life. *Comm. Statist. Theory Methods* **20** (1991), *no.* 8, 2549–2558. (H. L. Harter) **93c:62032** 62F03 (62N05)

— (*with* Sen, Kanwar) A test for bivariate exponentiality against BIFR alternative. *Comm. Statist. Theory Methods* **20** (1991), *no.* 10, 3139–3145. (G. P. Bhattacharjee) **93b:62133** 62N05 (62F05)

Jain, Mahinder Kumar (*with* Jain, Rajinder Kumar; Mohanty, R. K.) Fourth-order finite difference method for three-dimensional elliptic equations with nonlinear first-derivative terms. (English summary) *Numer. Methods Partial Differential Equations* **8** (1992), *no.* 6, 575–591. (Summary) **93h:65128** 65N06 (76M20)

Jain, Naresh C. (*with* Baxter, J. R.; Varadhan, S. R. S.) Some familiar examples for which the large deviation principle does not hold. *Comm. Pure Appl. Math.* **44** (1991), *no.* 8-9, 911–923. (Tsu Shu Chiang) **93d:60038** 60F10 (60J05)

Jain, P. C. *see* **Jain, Padam Chand**

Jain, P. K. *see* **Jain, Pawan Kumar**

Jain, Padam Chand (*with* Shankar, Rama; Singh, T. V.) Cubic spline technique for solution of Burgers' equation with a semi-linear boundary condition. *Comm. Appl. Numer. Methods* **8** (1992), *no.* 4, 235–242. (Summary) **93a:65121** 65M12 (35Q53, 65D07)

Jain, Pawan Kumar (*with* Ahmad, Khalil; Maskey, S. M.) Block sequences of subspaces of a Banach space. *Atti Sem. Mat. Fis. Univ. Modena* **39** (1991), *no.* 2, 413–417. (Summary) **93b:46020** 46B15

— (*with* Sinha, D. P.) On shrinking and boundedly complete Markusevic decompositions of Banach spaces. *J. Indian Math. Soc. (N.S.)* **56** (1991), *no.* 1-4, 247–257. (R. H. Lohman) **93c:46015** 46B15

— (*with* Jarrah, A. M.; Sinha, D. P.) Boundedly complete bases in various locally convex spaces. *Functional analysis and operator theory* (*New Delhi*, 1990), 128–140, *Lecture Notes in Math.*, 1511, *Springer, Berlin*, 1992. (Bor-Luh Lin) **93h:46005** 46A35

Jain, Pramod (*with* Gil, María Angeles) Comparison of experiments in statistical decision problems with fuzzy utilities. (English summary) *IEEE Trans. Systems Man Cybernet.* **22** (1992), *no.* 4, 662–670. (Summary) **93g:90007** 90A05 (04A72)

Jain, R. C. (*with* Nag, Debabrata; Agrawal, Ram Das) A thought on deviational variables of goal programming in social problems. *J. Indian Soc. Statist. Oper. Res.* **13** (1992), *no.* 1-4, 35–38. 90C90

Jain, R. K. *see* **Jain, Rajinder Kumar**

Jain, R. M. (*with* Goyal, S. P.; Gaur, Neelima) Fractional integral operators involving a product of generalized hypergeometric functions and a general class of polynomials. II. *Indian J. Pure Appl. Math.* **23** (1992), *no.* 2, 121–128. (Summary) **93a:33011** 33C20

Jain, R. N. Sum of a special ${}_2F_1$. *J. Indian Acad. Math.* **14** (1992), *no.* 1, 86–87. (Introduction) **93g:33003** 33C05

Jain, Rajinder Kumar (*with* Jain, Mahinder Kumar; Mohanty, R. K.) Fourth-order finite difference method for three-dimensional elliptic equations with nonlinear first-derivative terms. (English summary) *Numer. Methods Partial Differential Equations* **8** (1992), *no.* 6, 575–591. (Summary) **93h:65128** 65N06 (76M20)

Jain, Rashmi (*with* Gupta, Kailash Chandra) A study of multidimensional fractional integral operators involving general class of polynomials and a generalized hypergeometric function. *Gaṇita Sandesh* **5** (1991), *no.* 2, 55–64. (J. V. Baxley) **93k:33008** 33C70 (44A15, 45P05)

— A study of the multidimensional Laplace transform and its applications. *Soochow J. Math.* **18** (1992), *no.* 2, 183–193. (R. S. Dahiya) **93c:44014** 44A30

Jain, Ratan Chandra (*with* Das, M. N.) Efficiency balanced block designs using orthogonal arrays with variable symbols. (English summary) *Calcutta Statist. Assoc. Bull.* **41** (1991), *no.* 161-164, 173–178. 62K10

Jain, S. K. (*with* Nagar, Daya K.; Gupta, Arjun K.) Distribution of LRC for testing sphericity structure of a covariance matrix in multivariate normal distribution. (English and Italian summaries) *Metron* **49** (1991), *no.* 1-4, 435–457 (1992). 62H10

Jain, Sanjay[1] (*with* Hemachandra, Lane A.) On the limitations of locally robust positive reductions. *Internat. J. Found. Comput. Sci.* **2** (1991), *no.* 3, 237–255. (Marius Zimand) **93b:68026** 68Q15 (03D15)

— (*with* Case, John; Sharma, Arun) On learning limiting programs. *Internat. J. Found. Comput. Sci.* **3** (1992), *no.* 1, 93–115. (Costică Cazacu) **93i:68148** 68T05 (03D20)

Jain, Sanjay² (*with* Mathur, Samir D.) World-sheet geometry and baby universes in 2D quantum gravity. (English summary) *Phys. Lett. B* **286** (1992), *no.* 3-4, 239–246. (Summary) **93d:81160** 81T40 (81V17)

— (*with* Deo, Nivedita; Narayan, Onuttom; Tan, Chung I) Effect of topology on the thermodynamic limit for a string gas. *Phys. Rev. D* (3) **45** (1992), *no.* 10, 3641–3650. (Summary) **93a:81152** 81T30 (82B99)

Jain, Sudha² Estimation in $M/E_r/1$ queueing systems. *Comm. Statist. Theory Methods* **20** (1991), *no.* 5-6, 1871–1879. (Summary) **93f:62120** 62M09 (60K25)

Jain, Surender Kumar (*with* López-Permouth, Sergio R.; Singh, Surjeet) On a class of QI-rings. *Glasgow Math. J.* **34** (1992), *no.* 1, 75–81. (Giuseppe Baccella) **93e:16008** 16D50 (16E60, 16L30)

— (*with* Al-Huzali, A. H.; López-Permouth, Sergio R.) Rings whose cyclics have finite Goldie dimension. (English summary) *J. Algebra* **153** (1992), *no.* 1, 37–40. (Summary) **93k:16006** 16D70 (16D50)

— (*with* Al-Huzali, A. H.; López-Permouth, Sergio R.) Weakly-injective rings and modules. *Osaka J. Math.* **29** (1992), *no.* 1, 75–87. (Alberto Facchini) **93b:16005** 16D50 (16L60)

Jain, V. K. *see* **Jain, Vinay Kumar**

Jain, Vidyut (*with* Ogievetskii, O. V.) Classical isomorphisms for quantum groups. (English summary) *Modern Phys. Lett. A* **7** (1992), *no.* 24, 2199–2209. (Aleksandr Panov) **93h:17030** 17B37

Jain, Vinay Kumar A sufficient condition for zeros (of a polynomial) to be in the interior of unit circle. (Polish summary) *Ann. Univ. Mariae Curie-Skłodowska Sect. A* **44** (1990), 19–21 (1991). (N. K. Govil) **93d:30005** 30C10 (30A10, 30C15)

— Converse of an extremal problem in polynomials. *J. Indian Math. Soc. (N.S.)* **56** (1991), *no.* 1-4, 233–236. (Z. Rubinstein) **93e:30011** 30C10 (30C15)

Jain, Vinod Kumar On maximum modulus of polynomials. (English summary) *Indian J. Pure Appl. Math.* **23** (1992), *no.* 11, 815–819. 30C10

— (*with* Srivastava, Hari M.) New results involving a certain class of q-orthogonal polynomials. *J. Math. Anal. Appl.* **166** (1992), *no.* 2, 331–344. (W. A. Al-Salam) **93f:33018** 33D45 (33C45)

Jai Singh, Sawai II *see* **Sharma, Virendra N., 93i:01009**

Ja'Ja', Joseph (*with* Greenberg, Ronald; Krishnamurthy, Sridhar) On the difficulty of Manhattan channel routing. (English summary) *Inform. Process. Lett.* **44** (1992), *no.* 5, 281–284. (Summary) **93k:68049** 68Q35 (68Q25)

Jajte, Ryszard Random ergodic theorem in noncommutative L_2-spaces. (English summary) *Bull. Polish Acad. Sci. Math.* **39** (1991), *no.* 3-4, 185–190. (Summary) **93m:46076** 46L50

— Jensen's inequality for Schwarz maps in von Neumann algebras. (English summary) *Probab. Math. Statist.* **12** (1991), *no.* 2, 251–254 (1992). (Summary) **93m:46077** 46L50

Jaki, Stanley L. *see* **Duhem, Pierre-Maurice-Marie, 93a:01063**

Jakimovski, Amnon *see* **Approximation interpolation and summability, 93k:41001**

Jakob, Rüdiger (*with* Williamson, David L.; Drake, John B.; Hack, James J.; Swarztrauber, Paul N.) A standard test set for numerical approximations to the shallow water equations in spherical geometry. (English summary) *J. Comput. Phys.* **102** (1992), *no.* 1, 211–224. (Summary) **93d:86006** 86A10 (65P05, 76C20, 86–08)

Jakóbczak, Piotr The boundary regularity of the $\overline{\partial}$-equation in the product of domains of holomorphy. *Univ. Iagel. Acta Math. No.* 28 (1991), 215–230. (Jeffery D. McNeal) **93a:32025** 32F20 (32A25, 32A40, 32D05)

— Exhaustion of n-circular domains by strictly pseudoconvex simply connected domains. *Classical analysis (Kazimierz Dolny, 1991)*, 40–45, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93b:00024**) 32F15

Jakóbczyk, Lech Irreducibility and reducing subspaces for Krein space representations of field algebra. *J. Math. Phys.* **33** (1992), *no.* 8, 2884–2888. (Summary) **93c:81104** 81T05 (46L60, 47B50, 47D45)

Jakóbowski, Jan A new generalization of Moulton affine planes. *Geom. Dedicata* **42** (1992), *no.* 3, 243–253. (Franz B. Kalhoff) **93c:51002; EA 93m** 51A35 (51E15, 51G05)

Jakševičius, Šarūnas On the values of the derivatives of a generating function at the origin. (Russian. English and Lithuanian summaries) *Litovsk. Mat. Sb.* **31** (1991), *no.* 3, 557–567; *translation in Lithuanian Math. J.* **31** (1991), *no.* 3, 386–393 (1992). (Gabriele Laue) **93h:60023** 60E07

Jakšić, V. (*with* Molchanov, S. A.; Simon, Barry) Eigenvalue asymptotics of the Neumann Laplacian of regions and manifolds with cusps. *J. Funct. Anal.* **106** (1992), *no.* 1, 59–79. (Günter Berger) **93f:35165** 35P20 (35J05, 47F05, 58G18)

Jakubczyk, B. (*with* Respondek, W.) Feedback classification of analytic control systems in the plane. *Analysis of controlled dynamical systems (Lyon, 1990)*, 263–273, *Progr. Systems Control Theory*, 8, *Birkhäuser Boston, Boston, MA*, 1991. (Allen Tannenbaum) **93b:93027** 93B20

Jakubec, Stanislav (*with* Kostra, Juraj) A note on normal bases of ideals. (English summary) *Math. Slovaca* **42** (1992), *no.* 5, 677–684. (Jean Cougnard) **93m:11116** 11R33 (11R04)

Jakubík, Ján On torsion classes generated by radical classes of lattice ordered groups. (English summary) *Arch. Math. (Brno)* **26** (1990), *no.* 2-3, 115–119. (G. G. Pestov) **93j:06018** 06F15

— Valuations on modular lattices. (Slovak summary) *Math. Bohem.* **116** (1991), *no.* 4, 391–395. (From the text) **93a:06009** 06C05

— On convexities of lattices. *Czechoslovak Math. J.* **42(117)** (1992), *no.* 2, 325–330. (Mary Katherine Bennett) **93i:06002** 06B20 (08B15, 08C99)

— Partially ordered sets with nondistributive lattices of maximal antichains. *Czechoslovak Math. J.* **42(117)** (1992), *no.* 4, 685–691. (Editors) **93h:06001** 06A06

— Sequential convergences in lattices. (English summary) *Math. Bohem.* **117** (1992), *no.* 3, 239–250. (Introduction) **93h:06007** 06B30 (22A26)

— On projective intervals in a modular lattice. (English summary) *Math. Bohem.* **117** (1992), *no.* 3, 293–298. (George Hutchinson) **93h:06011** 06C05

Jakubowski, Jacek (*with* Bojdecki, Tomasz) Stochastic integral with respect to a generalized Wiener process in a conuclear space. *Stochastic systems and optimization (Warsaw, 1988)*, 161–168, *Lecture Notes in Control and Inform. Sci.*, 136, *Springer, Berlin*, 1989. (*see* **93d:93009**) 60H05 (46G12)

— (*with* Bojdecki, Tomasz) The Girsanov theorem and weak solutions of stochastic differential equations in the dual of a nuclear space. *Stochastic Anal. Appl.* **9** (1991), *no.* 4, 401–428. (Víctor Pérez-Abreu) **93b:60127** 60H15 (60H20)

Jakubowski, Zbigniew J. Some problems concerning bounded univalent functions. (English summary) *Univalent functions, fractional calculus, and their applications (Kōriyama, 1988)*, 75–86, *Ellis Horwood Ser. Math. Appl., Horwood, Chichester*, 1989. (*see* **93f:30003**) 30C45 (30C55)

— (*with* Bartnik, D.) On some classes of holomorphic functions. (Russian and Polish summaries) *Zeszyty Nauk. Politech. Rzeszowskiej Mat. Fiz. No.* 12 (1991), 17–35. (Evelyn M. Silvia) **93e:30026** 30C45

lejeune-Jalabert, Monique *see* **Lejeune-Jalabert, Monique**

Jalali, Ahmad (*with* Ferguson, M. J.) Computationally efficient algorithms for on-line optimization of Markov decision processes. *Automatica J. IFAC* **28** (1992), *no.* 1, 107–118. (Peter Köchel) **93b:90105** 90C40

Jalali, Assad (*with* Jordan, J. R.) Identification of all pole systems with Hermite modulating functions. *Control '91, Vol.* 1, 2 (*Edinburgh*, 1991), 617–620, *IEE Conf. Publ. Ser.*, 332, *IEE, London*, 1991. (*see* **93h:93007**) 93B30

— (*with* Hawkes, Alan G.) The distribution of apparent occupancy times in a two-state Markov process in which brief events cannot be detected. *Adv. in Appl. Probab.* **24** (1992), *no.* 2, 288–301. (Summary) **93b:60142** 60J10

— (*with* Hawkes, Alan G.) Generalised eigenproblems arising in aggregated Markov processes allowing for time interval omission. *Adv. in Appl. Probab.* **24** (1992), *no.* 2, 302–321. (Summary) **93b:60164** 60J27

— A representation of Kleene algebras and characterisation of weakly projective Kleene & De Morgan algebras. (English and German summaries) V International Meeting on Topology in Italy (Italian) (Lecce, 1990/Otranto, 1990). *Rend. Circ. Mat. Palermo* (2) *Suppl. No.* 29 (1992), 435–474. (Marcel Erné) **93k:06018** 06D05 (03G25, 06D30, 54F05)

Jalfon, Agnès Cohen (*with* Halevi, Yoram) On partially augmented observers for systems with coloured noises. (English summary) *Internat. J. Control* **57** (1993), *no.* 2, 335–349. (Summary) **93i:93022** 93B07 (93E03)

abdul Jalil, Ithnin *see* **Abdul Jalil, Ithnin**

Jalobeanu, Cireşica Approximation problems in languages. (English summary) *Rev. Anal. Numér. Théor. Approx.* **21** (1992), *no.* 1, 53–58. (Summary) **93m:68100** 68Q45

Jamali, A. R. (*with* Doostie, H.) A class of deficiency zero soluble groups of derived length 4. *Proc. Roy. Soc. Edinburgh Sect. A* **121** (1992), *no.* 1-2, 163–168. (Colin M. Campbell) **93g:20055** 20F05

Jambu, Michel Yves Analysis and topology of hyperplane complements: the generalized Witt formula. *Kodai Math. J.* **15** (1992), *no.* 1, 11–27. (Hiroaki Terao) **93c:52012** 52B30 (17B01, 32S20, 55P62)

Jamburia, L. G. *see* **Dzhamburiya, L. G.**

James, Barry (*with* James, Kang Ling; Siegmund, David O.) Asymptotic approximations for likelihood ratio tests and confidence regions for a change-point in the mean of a multivariate normal distribution. *Statist. Sinica* **2** (1992), *no.* 1, 69–90. (František Rublík) **93f:62025** 62F03 (62F25, 62H10)

saint-James, D. *see* **Saint-James, D.**

James, D. J. G. (*with* Randall, Duane; Burnham, K. J.) A study of Kalman filtering techniques for joint state and parameter estimation in self-tuning control. (Polish summary) *Systems Sci.* **17** (1991), *no.* 3, 31–43 (1992). 93E11

— (*with* Goodhart, S. G.; Burnham, K. J.) Self-tuning control for industrial heating plant: a bilinear approach. (English and Polish summaries) *Systems Sci.* **18** (1992), *no.* 1-2, 129–139 (1993). 93C95

James, Donald G. Generators for orthogonal groups of unimodular lattices. *Linear Algebra Appl.* **157** (1991), 101–111. (Summary) **93c:20077** 20H25 (11H56)

James, Douglas Implicit nullspace iterative methods for constrained least squares problems. Iterative methods in numerical linear algebra (Copper Mountain, CO, 1990). *SIAM J. Matrix Anal. Appl.* **13** (1992), *no.* 3, 962–978. (Summary) **93b:65055** 65F10 (73K20, 76D07, 76M99)

James, François Diphasic equilibrium and chemical engineering. *Mathematical topics in fluid mechanics (Lisbon, 1991)*, 246–250, *Pitman Res. Notes Math. Ser.*, 274, *Longman Sci. Tech., Harlow*, 1992. (Introduction) **93k:80005** 80A15

James, Glenn *see* **Dictionary: Mathematics, 93m:00008**

James, Gordon Representations of S_n and GL_n and the q-Schur algebra. *Topics in algebra, Part* 2 (*Warsaw*, 1988), 303–316, *Banach Center Publ.*, 26, *Part* 2, *PWN, Warsaw*, 1990. (Robert Bédard) **93e:20020** 20C33 (20G05)

— (*with* Dipper, Richard) Representations of Hecke algebras of type B_n. *J. Algebra* **146** (1992), *no.* 2, 454–481. (Robert Bédard) **93c:20019** 20C20 (20C33, 20F55)

James, I. M. Fibrewise reduced product spaces. *Adams Memorial Symposium on Algebraic Topology*, 1 (*Manchester*, 1990), 179–185, *London Math. Soc. Lecture Note Ser.*, 175, *Cambridge Univ. Press, Cambridge*, 1992. (Donald M. Davis) **93e:55021** 55R65 (55P35)

— The Lusternik-Schnirelmann theorem reconsidered. Proceedings of the Symposium on General Topology and Applications (Oxford, 1989). *Topology Appl.* **44** (1992), *no.* 1-3, 197–202. (Yves Félix) **93d:55006** 55M30 (57R70, 58E05)

James, Kang Ling (*with* James, Barry; Siegmund, David O.) Asymptotic approximations for likelihood ratio tests and confidence regions for a change-point in the mean of a multivariate normal distribution. *Statist. Sinica* **2** (1992), *no.* 1, 69–90. (František Rublík) **93f:62025** 62F03 (62F25, 62H10)

James, Matthew R. (*with* Le Gland, François) Numerical approximation for nonlinear filtering and finite-time observers. *Applied stochastic analysis (New Brunswick, NJ*, 1991), 159–175, *Lecture Notes in Control and Inform. Sci.*, 177, *Springer, Berlin*, 1992. (Alexander I. Matasov) **93f:93127** 93E11 (60G35, 62M20)

— (*with* Fleming, Wendell H.) Asymptotic series and exit time probabilities. (English summary) *Ann. Probab.* **20** (1992), *no.* 3, 1369–1384. (Patrick Cattiaux) **93k:60069** 60F10 (35Q99, 35R60, 60J60)

— Asymptotic analysis of nonlinear stochastic risk-sensitive control and differential games. (English summary) *Math. Control Signals Systems* **5** (1992), *no.* 4, 401–417. (Summary) **93e:93067** 93E20 (90D15, 93E05)

James, Richard Dana (*with* Kinderlehrer, David) An example of frustration in a ferromagnetic material. (English summary) *Nematics (Orsay*, 1990), 201–221, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 332, *Kluwer Acad. Publ., Dordrecht*, 1991. (*see* **93d:58007**) 82D40

— (*with* Spector, Scott J.) The formation of filamentary voids in solids. *J. Mech. Phys. Solids* **39** (1991), *no.* 6, 783–813. (John M. Ball) **93d:73059** 73M25 (73B05, 73G05, 73V25)

— (*with* Ball, J. M.) A characterization of plane strain. *Proc. Roy. Soc. London Ser. A* **432** (1991), *no.* 1884, 93–99. (Kewei Zhang) **93b:73014** 73C50 (35B65, 35J60)
— (*with* Spector, Scott J.) Remarks on $W^{1,p}$-quasiconvexity, interpenetration of matter, and function spaces for elasticity. (French summary) *Ann. Inst. H. Poincaré Anal. Non Linéaire* **9** (1992), *no.* 3, 263–280. (John M. Ball) **93h:73013** 73C50 (46E35, 49J40, 73B05, 73V25)
James, Richard E., III (*with* Quesada, Antonio R.; Pritchard, Paul) Additional notes on a practical sieve algorithm. *Comm. ACM* **35** (1992), *no.* 3, 11–14. (From the text) **93e:11151** 11Y11 (11N35)
James, Robert C. *see* **Dictionary: Mathematics, 93m:00008**
Jami, Catherine Propagation of European mathematics in the Kang Xi era—the failure of Jean-François Foucquet's attempt at introducing symbolic algebra. (Chinese) Translated by Yi Bao Xu. *Collected research papers on the history of mathematics, Vol.* 1 (*Chinese*), 117–122, *Inner Mongolia Univ. Press, Hohhot*, 1990. (*see* **93i:01004**) 01A25 (01A05)
ouazzani-Jamil, Mohammed *see* **Ouazzani-Jamil, Mohammed**
Jamison, Beverly (*with* Olariu, Stephan) Recognizing P_4-sparse graphs in linear time. *SIAM J. Comput.* **21** (1992), *no.* 2, 381–406. (Fabrizio Luccio) **93c:68078** 68R10 (05C40, 05C85, 68Q25)
Jamison, J. E. (*with* Fleming, Richard J.; Kamińska, A.) Isometries of Musielak-Orlicz spaces. *Function spaces* (*Edwardsville, IL*, 1990), 139–154, *Lecture Notes in Pure and Appl. Math.*, 136, *Dekker, New York*, 1992. (Ehrhard Behrends) **93b:47059** 47B38 (46E30)
Jamison, Robert E. On the achromatic index of K_{12}. Proceedings of the Twenty-second Southeastern Conference on Combinatorics, Graph Theory, and Computing (Baton Rouge, LA, 1991). *Congr. Numer.* **81** (1991), 143–148. (David M. Berman) **93b:05058** 05C15
— (*with* Shier, D. R.; Valvo, E. J.) Generating the states of a binary stochastic system. (English summary) *Discrete Appl. Math.* **37/38** (1992), 489–500. (Summary) **93e:68009** 68M20
Jamjoom, Fatma B. The connection between the universal enveloping C^*-algebra and the universal enveloping von Neumann algebra of a JW-algebra. (English summary) *Math. Proc. Cambridge Philos. Soc.* **112** (1992), *no.* 3, 575–579. (Bruno Iochum) **93i:46124** 46L70
Jammalamadaka, Sreenivasa R. (*with* Wan, Xinyuan) On a problem in semiparametric estimation. *Nonparametric functional estimation and related topics* (*Spetses*, 1990), 647–656, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 335, *Kluwer Acad. Publ., Dordrecht*, 1991. (M. Hušková) **93b:62060** 62G05 (62E20)
— (*with* Tiwari, Ram C.; Sen, Pranab Kumar; Ebneshahrashoob, M.) A rank test based on the number of "near-matches" for ordered alternatives in randomized blocks. (English summary) *Sankhyā Ser. A* **53** (1991), *no.* 2, 183–193. (Georg Neuhaus) **93k:62114** 62G20 (62E20)
— (*with* Wells, Martin T.; Tiwari, Ram C.) Tests of fit using spacings statistics with estimated parameters. (English summary) *Statist. Probab. Lett.* **13** (1992), *no.* 5, 365–372. (M. Hušková) **93m:62116** 62G10 (62F05)
Jammer, Max Sir Karl Popper and his philosophy of physics. *Found. Phys.* **21** (1991), *no.* 12, 1356–1368. (I. Grattan-Guinness) **93a:01050a** 01A70 (00A30)
Jamshidi, M. (*with* Benítez-Read, J. S.; Kisner, R. A.) Advanced control designs for nuclear reactors. (English summary) *Control Theory Adv. Tech.* **8** (1992), *no.* 3, 447–464. 93C95 (93B52)
— (*with* Benítez-Read, J. S.) Adaptive input-output linearizing control of nuclear reactors. (English summary) *Control Theory Adv. Tech.* **8** (1992), *no.* 3, 525–545. 93B18 (93C95)
— (*with* Geng, Zheng; Carroll, Robert L.; Kisner, R. A.) An adaptive learning control approach with application to water tank level control. (English summary) *Control Theory Adv. Tech.* **8** (1992), *no.* 3, 577–592. 93C95
— (*with* Lee, Soo R.) Stability analysis for large-scale time delay systems via the matrix Lyapunov function. (English summary) *Kybernetika* (*Prague*) **28** (1992), *no.* 4, 271–283. (A. Halanay) **93h:34139** 34K20 (93A15, 93C30, 93D05, 93D30)
Jamshidian, Mortaza (*with* Jennrich, Robert I.) Conjugate gradient acceleration of the EM algorithm. (English summary) *J. Amer. Statist. Assoc.* **88** (1993), *no.* 421, 221–228. (Summary) **93k:62053** 62F10
Jan, Jinn-Ke *see* **Chan, Chin K'o**
Jan, Rong Hong (*with* Hsū, Li Hsing; Lee, Yueh-Ying) The most vital edges with respect to the number of spanning trees in two-terminal series-parallel graphs. (English summary) *BIT* **32** (1992), *no.* 3, 403–412. (Summary) **93i:05123** 05C85 (68R10, 90C35)
— Design of reliable networks. (English summary) *Comput. Oper. Res.* **20** (1993), *no.* 1, 25–34. (Summary) **93h:68007** 68M10 (68M15)
le Jan, Yves *see* **Le Jan, Yves**
Janakiraman, S. Projectives and their generalisations in the category of abelian groups. *Proceedings of the Symposium on Algebra and Number Theory* (*Cochin*, 1990), 99–105, *Publication*, 20, *Centre Math. Sci., Trivandrum*, 1990. (C. Vinsonhaler) **93c:20093** 20K40
Janakiraman, T. N. On pseudogeodetic blocks. (English summary) *Proceedings of the Symposium on Graph Theory and Combinatorics* (*Cochin*, 1991), 19–24, *Publication*, 21, *Centre Math. Sci., Trivandrum*, 1991. (Summary) **93k:05148** 05C75
— On self-centered graphs. (English summary) *J. Ramanujan Math. Soc.* **7** (1992), *no.* 1, 83–92. (Theodore C. Enns) **93h:05134** 05C75 (05C85)
Janardan, K. G. Some properties of the generalized Eulerian distribution. (English summary) *J. Statist. Plann. Inference* **34** (1993), *no.* 2, 159–169. (Summary) **93j:62039** 62E15
Janardan, Ravi (*with* Cheng, Siu Wing) Algorithms for ray-shooting and intersection searching. (English summary) *J. Algorithms* **13** (1992), *no.* 4, 670–692. (Summary) **93g:68134** 68U05
— (*with* Cheng, Siu Wing) Efficient distributed algorithms for single-source shortest paths and related problems on plane networks. *Math. Systems Theory* **25** (1992), *no.* 2, 93–122. (Ventseslav G. Rumchev) **93x:68118** 68R10 (68M10, 68Q22, 90B12, 90C35)
— (*with* Cheng, Siu Wing) New results on dynamic planar point location. (English summary) *SIAM J. Comput.* **21** (1992), *no.* 5, 972–999. (Ruth Silverman) **93k:68099** 68U05 (68Q25)
Janas, Daniel (*with* Falk, Michael) Edgeworth expansions for Studentized and prepivoted sample quantiles. *Statist. Probab. Lett.* **14** (1992), *no.* 1, 13–24. (Gutti J. Babu) **93h:62027** 62E20
Janas, Jan Note on generalized commutation relations. *Classical analysis* (*Kazimierz Dolny*, 1991), 46–52, *World Sci. Publishing, River Edge, NJ*, 1992. (From the introduction) **93e:47027** 47B15 (47N50, 81S05)
— On unbounded hyponormal operators. II. *Integral Equations Operator Theory* **15** (1992), *no.* 3, 470–478. (From the introduction) **93b:47047** 47B20 (47B35, 47D09)
Jancewicz, Bernard Harmonic coordinates and the electromagnetic field. (English summary) *Clifford algebras and their applications in mathematical physics* (*Montpellier*, 1989), 413–424, *Fund. Theories Phys.*, 47, *Kluwer Acad. Publ., Dordrecht*, 1992. (Jules Beckers) **93k:78003** 78A25
Jancovici, B. (*with* Manificat, G.) Classical Coulomb fluids in a confined geometry. (English summary) *J. Statist. Phys.* **68** (1992), *no.* 5-6, 1089–1103. (Summary) **93f:82055** 82D10
— (*with* Forrester, P. J.; Madore, J.) The two-dimensional Coulomb gas on a sphere: exact results. (English summary) *J. Statist. Phys.* **69** (1992), *no.* 1-2, 179–192. (M. Lawrence Glasser) **93h:82018** 82B23 (82D10)
Jänecke, J. *see* **Group theory and special symmetries in nuclear physics, 93e:81150**
Janeczko, S. Coisotropic varieties and their generating families. (English and French summaries) *Ann. Inst. H. Poincaré Phys. Théor.* **56** (1992), *no.* 4, 429–441. (Maria Carmen Romero-Fuster) **93i:58055** 58F05 (58C27)
fiestras-Janeiro, G. *see* **Fiestras-Janeiro, G.**
Janelidze, George *see* **Dzhanelidze, G. Yu.**
Janeva, B. (*with* Čupona, Ǵ.) On free objects in some classes of finite subset structures. *Contributions to general algebra*, 7 (*Vienna*, 1990), 75–85, *Hölder-Pichler-Tempsky, Vienna*, 1991. (Phullendu Das) **93b:20117** 20N99 (20L17)
Janfada, A. S. (*with* Shahabi Shojaei, M. A.) The group of automorphisms of nonassociative commutative algebras associated with the group of automorphisms of 2-designs. *Arch. Math.* (*Basel*) **60** (1993), *no.* 3, 247–251. (Koichiro Harada) **93k:20058** 20F29 (05B30)
Janfalk, Ulf Representation of a p-harmonic function near an isolated singularity in the plane. (English summary) *Ann. Acad. Sci. Fenn. Ser. A I Math.* **17** (1992), *no.* 2, 181–197. (P. Lindqvist) **93k:35090** 35J60 (35C99)
Jang, Cheol Min Julia set of the function $z \exp(z + \mu)$. *Tôhoku Math. J.* (2) **44** (1992), *no.* 2, 271–277. (I. N. Baker) **93e:30058** 30D05 (58F23)
Jang, Gyu-sang (*with* Vemuri, V.) Inversion of Fredholm integral equations of the first kind with fully connected neural networks. *J. Franklin Inst.* **329** (1992), *no.* 2, 241–257. (Frank G. Hagin) **93a:65184** 65R20 (45B05, 92B20)
Jang, Jin Hwang (*with* Ch'ĕn, Chien Hui) An improved parallel algorithm for 0/1 knapsack problem. (English summary) *Parallel Comput.* **18** (1992), *no.* 7, 811–821. 90C10
Jang, Ruey-Jen (*with* Victory, Harold Dean, Jr.) On nonnegative solvability of linear integral equations. *Linear Algebra Appl.* **165** (1992), 197–228. (Da Jun Guo) **93c:47083** 47N20 (45A05, 47A50, 47G10)
Jang, Sun Young (*with* Lee, Sa Ge) Simplicity of crossed products of C^*-algebras. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 3, 823–826. (Robert J. Archbold) **93i:46115** 46L55
Jang-Lewis, Ruey-Jen (*with* Victory, Harold Dean, Jr.) On the ideal structure of positive, eventually compact linear operators on Banach lattices. (English summary) *Pacific J. Math.* **157** (1993), *no.* 1, 57–85. (C. D. Aliprantis) **93m:47042** 47B65 (46B42, 47A10, 47B60)
Jani, P. N. (*with* Dave, H. P.) Minimum variance unbiased estimation in a class of exponential family of distributions and some of its applications. (Italian summary) *Metron* **48** (1990), *no.* 1-4, 493–507 (1991). (Summary) **93d:62037** 62F10
Janiak, T. (*with* Luczak-Kumorek, E.) The theorem of middling for functional-differential equations of neutral type. (English summary) *Discuss. Math.* **11** (1991), 63–73 (1992). (P. K. Palamides) **93i:34133** 34K15 (34K40)
Janicki, Aleksander Computer simulation and visualization of linear stochastic differential equations. *Stochastic methods in experimental sciences* (*Szklarska Poręba*, 1989), 210–216, *World Sci. Publishing, River Edge, NJ*, 1990. (*see* **93a:60004**) 60H10
— (*with* Weron, K.) A fractal time model for non-Debye relaxation in polar dielectrics. *Stochastic methods in experimental sciences* (*Szklarska Poręba*, 1989), 440–448, *World Sci. Publishing, River Edge, NJ*, 1990. (*see* **93a:60004**) 82D20 (78A99)
Janicki, Ryszard (*with* Koutny, Maciej) Invariant semantics of nets with inhibitor arcs. *CONCUR '91* (*Amsterdam*, 1991), 317–331, *Lecture Notes in Comput. Sci.*, 527, *Springer, Berlin*, 1991. (Summary) **93a:68080** 68Q55 (06A06)
Janickienė, D. (*with* Kaminskas, V.; Vitkutė, D.) Self-tuning control of a stochastic nonlinear object. *Adaptive systems in control and signal processing*, 1989 (*Glasgow*), 171–175, *IFAC Sympos. Ser.*, 1990, *No.* 1, *Pergamon, Oxford*, 1990. (*see* **93j:93007**) 93C55 (93C40)
Janiec, Eugeniusz A Riemann integral with values in a metric space. I. *J. London Math. Soc.* (2) **44** (1991), *no.* 3, 445–462. (R. Anantharaman) **93b:28032** 28B99 (26A39)
Janiga, Ladislav (*with* Koubek, Václav) Minimum cut in directed planar networks. *Kybernetika* (*Prague*) **28** (1992), *no.* 1, 37–49. (Summary) **93h:90103** 90C35 (05C85, 90B10)
Janik, Tadeusz *see* **Cheng, Xiao Liang, 93c:65115**
Janíková, D. (*with* Hulkó, G.; Sapák, L.; Navračič, I.; Kovalcik, J.) Methods of identification of lumped input and distributed output systems. (English summary) *Identification and system parameter estimation* 1991, *Vol.* 1,2 (*Budapest*, 1991), 1161–1166, *IFAC Sympos. Ser.*, 3, *Pergamon, Oxford*, 1992. (*see* **93h:93009**) 93B30 (93C20)
Janin, R. (*with* Gauvin, J.) Directional Lipschitzian optimal solutions and directional derivative for the optimal value function in nonlinear mathematical programming. (English summary) *Analyse non linéaire* (*Perpignan*, 1987), 304–324, *Univ. Montréal, Montreal, PQ*, 1989. (*see* **93h:49003**) 90C31 (49J52, 49K45)
Janiš, Vladimír (*with* Riečanová, Zdena) Completeness in sums of Boolean algebras and logics. Quantum logics, Part I (Gdańsk, 1990). *Internat. J. Theoret. Phys.* **31** (1992), *no.* 9, 1689–1697. (S. Gudder) **93j:06009** 06C15 (03G12, 81P10)
— (*with* Gebhard, F.; Strack, R.; Vollhardt, D.) Comment on: "Interacting-electron model exactly solvable in any dimension" [Phys. Rev. Lett. **66** (1991), no. 11, 1383–1387; MR 92b:82032] by A. Montorsi and M. Rasetti. *Phys. Rev. Lett.* **69** (1992), *no.* 16, 2443. (Editors) **93h:82007** 82B20 (82B23)
Janiszczak, Ingo (*with* Fleischmann, Peter) The semisimple conjugacy classes of finite groups of Lie type E_6 and E_7. *Comm. Algebra* **21** (1993), *no.* 1, 93–161. (Jamshid Moori)

93k:20029 20D06 (20G40)

Jank, Gerhard (*with* Terglane, Norbert) Meromorphic functions sharing three values. *Math. Pannon.* **2** (1991), *no.* 2, 37–46. (Fred Gross) **93a:30036** 30D35

— (*with* Abou-Kandil, Hisham) Asymptotic behaviour of coupled matrix-Riccati-differential equation: a computer algebra approach. (English summary) *Computational and applied mathematics, II (Dublin, 1991)*, 247–251, *North-Holland, Amsterdam*, 1992. (*see* **93j:00008**) 93B25 (34A99)

— (*with* Brüggemann, Franz; Volkmann, Lutz) A generalization of a theorem of Marcinkiewicz. *Complex Variables Theory Appl.* **18** (1992), *no.* 1-2, 79–84. (I. V. Ostrovskiĭ) **93e:30068** 30D35 (42A38, 60E10)

— Asymptotic distribution of singularities of solutions of matrix-Riccati differential equations. *J. Austral. Math. Soc. Ser. B* **34** (1992), *no.* 1, 112–131. (Summary) **93d:34005** 34A20

Janke, Wolfhard (*with* Sauer, T.) Properties of higher-order Trotter formulas. *Phys. Lett. A* **165** (1992), *no.* 3, 199–205. (Summary) **93b:81135** 81S40 (47N50, 81–08, 81Q10, 82B80)

Jankó, B. On a unified theory of iteration methods for solving nonlinear operator equations. III. *Studia Sci. Math. Hungar.* **27** (1992), *no.* 1-2, 43–50. (W. C. Rheinboldt) **93m:65078** 65J15 (47H17)

Janko, Zvonimir (*with* Tonchev, Vladimir D.) Cyclic 2-(91, 6, 1) designs with multiplier automorphisms. *Discrete Math.* **97** (1991), *no.* 1-3, 265–268. (Charles J. Colbourn) **93a:05019** 05B05

— Coset enumeration in groups and constructions of symmetric designs. *Combinatorics '90 (Gaeta, 1990)*, 275–277, *Ann. Discrete Math., 52, North-Holland, Amsterdam*, 1992. (*see* **93f:05003**) 05B05 (20B25)

Janková, Katarína *see* **Smítalová, Kristína, 93g:92031**

Janković, Dragan (*with* Hamlett, T. R.) Compactness with respect to an ideal. (Italian summary) *Boll. Un. Mat. Ital. B* (7) **4** (1990), *no.* 4, 849–861. (Douglass L. Grant) **93e:54016** 54D30

— (*with* Hamlett, T. R.) Ideals in topological spaces and the set operator ψ. (Italian summary) *Boll. Un. Mat. Ital. B* (7) **4** (1990), *no.* 4, 863–874. (Douglass L. Grant) **93e:54017** 54D30

— (*with* Hamlett, T. R.; Rose, David Alon) Countable compactness with respect to an ideal. *Math. Chronicle* **20** (1991), 109–126. (Douglas Mooney) **93f:54029** 54D20 (54D25, 54D30)

— (*with* Konstadilaki-Savvopoulou, Ch.) *R*-continuous functions. *Internat. J. Math. Math. Sci.* **15** (1992), *no.* 1, 57–64. (Thomas E. Gantner) **93c:54011** 54C10 (54D10)

Jankovic, S. Preservation of type under mixing. (English summary) *Teor. Veroyatnost. i Primenen.* **37** (1992), *no.* 3, 594–599. (Summary) **93m:60031** 60E05 (62E10)

Janković, Sv. On stochastic differential-difference equations and their random integral contractors. (English, Russian and Latvian summaries) *Mathematics (Russian)*, 74–84, *Latv. Univ. Zināt. Raksti*, 562, *Latv. Univ., Riga*, 1991. (Summary) **93j:60077** 60H10

Jankovský, Zdeněk Professor Bedřich Pondělíček (on the occasion of his sixtieth birthday). (Czech) *Pokroky Mat. Fyz. Astronom.* **37** (1992), *no.* 5, 299–300. 01A70

Jankowski, J. (*with* Cialkowski, M. J.; Grysa, K.) Inverse problems of the linear nonstationary heat transfer equation. Bericht über die Wissenschaftliche Jahrestagung der GAMM (Kraków, 1991). *Z. Angew. Math. Mech.* **72** (1992), *no.* 6, T611–T614. (Ulrich Tautenhahn) **93f:80014** 80A23 (35R30, 65M60, 80–08)

Jankowski, Peter (*with* Heinig, Georg) Kernel structure of block Hankel and Toeplitz matrices and partial realization. (English summary) *Linear Algebra Appl.* **175** (1992), 1–30. (John Maroulas) **93h:47029** 47B35 (15A57, 47A99, 47N70)

Jankowski, Tadeusz A numerical solution of implicit ordinary differential equations. *Demonstratio Math.* **25** (1992), *no.* 1-2, 279–295. (Summary) **93c:65086** 65L05 (34A09, 34A50)

Jänner, Michaela (*with* Stahlecker, Peter) A comparison of maximum likelihood and quasi minimax approach to missing values. (English summary) *Comm. Statist. Theory Methods* **22** (1993), *no.* 2, 319–333. 62J05

Janno, Jaan On determining extremal piezometric heads in one-dimensional model of groundwater flow. (English, Russian and Estonian summaries) *Eesti Tead. Akad. Toimetised Füüs. Mat.* **41** (1992), *no.* 3, 182–198. (J. R. Ockendon) **93k:34033** 34A55 (76S05)

— On a well-posed approximation of an inverse problem in isotropic medium with memory. (English summary) *Numer. Funct. Anal. Optim.* **13** (1992), *no.* 3-4, 277–286. (Zhen-qiu Lu) **93i:45011** 45K05 (35R30, 45D05, 73D50, 73F15)

Jannsen, Uwe Iwasawa modules up to isomorphism. *Algebraic number theory*, 171–207, *Adv. Stud. Pure Math.*, 17, *Academic Press, Boston, MA*, 1989. (Robert Gold) **93c:11095** 11R23 (11R34)

— Motives, numerical equivalence, and semi-simplicity. *Invent. Math.* **107** (1992), *no.* 3, 447–452. (Wayne Raskind) **93g:14009** 14C10

Jannussis, A. (*with* Filippakis, T.; Filippakis, P.; Vavougios, D.) Positive Wigner distribution function as the common base of new creation and annihilation operators in phase space. *Hadronic J.* **13** (1990), *no.* 1, 1–21. (Summary) **93b:81130** 81S30 (81R30)

— (*with* Arigazin, A. K.; Lopez, D. F.; Nishioka, M.; Veljanoski, B.) ★ Santilli's Lie-isotopic generalization of Galilei's and Einstein's relativities. *Kostakaris Publishers, Athens*, 1991. xii+392 *pp. ISBN* 0-911767-56-8 (Maurizio Gasperini) **93j:17056** 17B81 (22E70, 58–01, 70G99, 70H40, 81R05)

— (*with* Brodimas, G.; Mignani, R.) Bose realization of a noncanonical Heisenberg algebra. *J. Phys. A* **25** (1992), *no.* 7, L329–L334. (Ragavachariar Parthasarathy) **93b:81107** 81R50 (81S05)

— (*with* Baskoutas, S.) Quantum tunnelling effect for the inverted Caldirola-Kanai Hamiltonian. (English summary) *J. Phys. A* **25** (1992), *no.* 23, L1299–L1304. (Summary) **93k:81032** 81Q05

— (*with* Baskoutas, S.) Quantum mechanics of the inverted Caldirola-Kanai oscillator. *Nuovo Cimento B* (11) **107** (1992), *no.* 3, 255–267. (Summary) **93b:81041** 81Q05 (81R30)

— (*with* Mignani, R.; Skaltsas, D.) Lie-admissible perturbation methods for open quantum systems. (English summary) *Phys. A* **187** (1992), *no.* 3-4, 575–588. (Robert Alicki) **93j:82041** 82C03

— (*with* Baskoutas, S.; Mignani, R.) Study of the generalized parametric oscillator. *Phys. Lett. A* **164** (1992), *no.* 1, 17–22. (Piotr Kosiński) **93d:81057** 81R05 (81Q05)

Janovský, Vladimír (*with* Marek, Ivo) Generalised Ljapunov-Schmidt reduction and its numerical significance. *Proceedings of the Second International Symposium on Numerical Analysis (Prague, 1987)*, 194–198, *Teubner-Texte Math.*, 107, *Teubner, Leipzig*, 1988. (*see* **93b:65007**) 65J15

— (*with* Werner, Bodo) Computation of Hopf branches bifurcating from Takens-Bogdanov points for problems with symmetries. *Bifurcation and chaos: analysis, algorithms, applications (Würzburg, 1990)*, 377–388, *Internat. Ser. Numer. Math.*, 97, *Birkhäuser, Basel*, 1991. (From the introduction) **93c:58162** 58F14

Janowitz, Melvin F. (*with* Powers, R. C.) A duality between fuzzy and percentile clustering. (English summary) *Fuzzy Sets and Systems* **50** (1992), *no.* 1, 51–58. 62H30 (04A72)

— (*with* Stinebrickner, Ralph) Preservation of weak order equivalence. (English summary) *Math. Social Sci.* **25** (1993), *no.* 2, 181–197. (Joachim Krauth) **93m:62138** 62H30

Janowsky, Steven A. (*with* Imbrie, John Z.; Weitsman, Jonathan) Space-dependent Dirac operators and effective quantum field theory for fermions. *Comm. Math. Phys.* **135** (1991), *no.* 3, 421–441. (H. Hogreve) **93b:81140** 81T08 (47N50, 81Q99, 81T40)

— (*with* Weitsman, Jonathan) The phase structure of the two-dimensional $N = 2$ Wess-Zumino model. *Comm. Math. Phys.* **142** (1991), *no.* 1, 25–66. (H. Araki) **93f:81077** 81T10 (81T08)

— (*with* Weitsman, Jonathan) A vanishing theorem for supersymmetric quantum field theory and finite size effects in multiphase cluster expansions. *Comm. Math. Phys.* **143** (1991), *no.* 1, 85–97. (Summary) **93i:81124** 81T08 (58G10, 58Z05, 81T40, 81T60)

— (*with* Alexander, Francis J.; Cheng, Zheming; Lebowitz, Joel L.) Shock fluctuations in the two-dimensional asymmetric simple exclusion process. (English summary) *J. Statist. Phys.* **68** (1992), *no.* 5-6, 761–785. (Summary) **93g:82066** 82C22 (60K35, 82–04, 82C24)

Jansche, S. (*with* Stens, R. L.) Best weighted polynomial approximation on the real line; a functional-analytic approach. *J. Comput. Appl. Math.* **40** (1992), *no.* 2, 199–213. (J. Szabados) **93f:41013** 41A10 (41A25, 41A50)

Jansen, Johannes (*with* Douven, R. C. M. H.; van Berkum, E. E. M.) An annealing algorithm for searching optimal block designs. (English summary) *Biometrical J.* **34** (1992), *no.* 5, 529–538. 62K05

— ★ Generalized linear mixed models and their application in plant breeding research. (English. English and Dutch summaries) Dissertation, Technische Universiteit Eindhoven, Eindhoven, 1993. *Technische Universiteit Eindhoven, Eindhoven*, 1993. vi+139 *pp.* 62J12 (62P10)

Jansen, Klaus Scheduling with constrained processor allocation for interval orders. (English summary) *Comput. Oper. Res.* **20** (1993), *no.* 6, 587–595. 90B35

— The interconnection problem. (English summary) *J. Comput. System Sci.* **46** (1993), *no.* 1, 27–38. (Summary) **93k:68009** 68M10 (68M07, 68Q25, 68R10)

— Bounds for the general capacitated routing problem. (English summary) *Networks* **23** (1993), *no.* 3, 165–173. (Summary) **93m:90033** 90B10 (90C27)

Jansen, M. J. M. (*with* Jurg, A. P.; Potters, Jos A. M.; Tijs, Stef H.) A symmetrization for finite two-person games. *Z. Oper. Res.* **36** (1992), *no.* 2, 111–123. (Victor J. Baston) **93c:90107** 90D05

Jansen, Wolfgang (*with* Feudel, Ulrike) CANDYS/QA—a software system for qualitative analysis of nonlinear dynamical systems. (English summary) *Internat. J. Bifur. Chaos Appl. Sci. Engrg.* **2** (1992), *no.* 4, 773–794. (Summary) **93k:65001** 65–04 (34–04, 34C23, 58F14)

Janse van Rensburg, E. J. (*with* Whittington, S. G.) The BFACF algorithm and knotted polygons. *J. Phys. A* **24** (1991), *no.* 23, 5553–5567. (Neal Madras) **93g:82058** 82B80 (57M25, 82B41)

— Ergodicity of the BFACF algorithm in three dimensions. *J. Phys. A* **25** (1992), *no.* 5, 1031–1042. (Summary) **93m:82021** 82B80 (82B41)

— On the number of trees in $\mathbf{Z}^d$. *J. Phys. A* **25** (1992), *no.* 12, 3523–3528. (Stuart G. Whittington) **93g:82051** 82B41

— Surfaces in the hypercubic lattice. *J. Phys. A* **25** (1992), *no.* 12, 3529–3547. (Stuart G. Whittington) **93f:82029** 82B41

— (*with* Torrie, G. M.) Estimation of multidimensional integrals: is Monte Carlo the best method? (English summary) *J. Phys. A* **26** (1993), *no.* 4, 943–953. (Summary) **93m:65008** 65C05 (65D30, 81–04)

Janson, Svante Poisson approximation for large deviations. *Random Structures Algorithms* **1** (1990), *no.* 2, 221–229. (Andrew D. Barbour) **93a:60041** 60F10 (05C80, 60C05)

— (*with* Arazy, Jonathan; Fisher, Stephen D.; Peetre, Jaak) Membership of Hankel operators on the ball in unitary ideals. *J. London Math. Soc.* (2) **43** (1991), *no.* 3, 485–508. (Ke He Zhu) **93c:47030** 47B35 (47B10, 47G10)

— (*with* Nowicki, Krzysztof) The asymptotic distributions of generalized U-statistics with applications to random graphs. *Probab. Theory Related Fields* **90** (1991), *no.* 3, 341–375. (Andrew D. Barbour) **93b:62021** 62E20 (05C80, 60C05, 60F05)

— (*with* Barbour, A. D.; Holst, Lars) ★ Poisson approximation. Oxford Studies in Probability, 2. Oxford Science Publications. *The Clarendon Press, Oxford University Press, New York*, 1992. x+277 *pp. ISBN* 0-19-852235-5 (Dietmar Pfeifer) **93g:60043** 60F05 (60C05, 60J80, 62E17)

— (*with* Kratochvíl, Jan) Thresholds for classes of intersection graphs. (English summary) Topological, algebraical and combinatorial structures. Frolík's memorial volume. *Discrete Math.* **108** (1992), *no.* 1-3, 307–326. (Theodore C. Enns) **93h:05143** 05C80 (05C75)

— (*with* Spencer, Joel H.) Probabilistic construction of proportional graphs. *Random Structures Algorithms* **3** (1992), *no.* 2, 127–137. (Andrzej Ruciński) **93a:05113** 05C80

— Multicyclic components in a random graph process. (English summary) *Random Structures Algorithms* **4** (1993), *no.* 1, 71–84. (Andrzej Ruciński) **93i:05117** 05C80 (60C05)

Jansons, Kalvis M. (*with* Rogers, L. C. G.) Probability theory and polymer physics. *J. Statist. Phys.* **65** (1991), *no.* 1-2, 139–165. (Ingemar Kaj) **93b:60187** 60J70 (60J85, 82D60)

— (*with* Rogers, L. C. G.) Decomposing the branching Brownian path. (English summary) *Ann. Appl. Probab.* **2** (1992), *no.* 4, 973–986. (Paavo H. Salminen) **93m:60167** 60J65 (60J70, 60J85)

— (*with* Dean, David S.) A note on the integral of a Brownian bridge. *Proc. Roy. Soc. London Ser. A* **437** (1992), *no.* 1901, 729–730. (Min Ping Qian) **93g:60173** 60J65 (82D60)

Janssen, A. J. E. M. On the asymptotics of some Pearcey-type integrals. *J. Phys. A* **25** (1992), *no.* 13, L823–L831. (Summary) **93f:41047** 41A60 (78A55)

— (*with* Maes, M. J. J. B.) An optimization problem in reflector design. *Philips J. Res.* **47** (1992), *no.* 2, 99–143. (Summary) **93b:90112** 90C90 (78A45)

Janssen, Arnold Optimal k-sample tests for randomly censored data. *Scand. J. Statist.* **18** (1991), *no.* 2, 135–152. (J. V. Deshpande) **93g:62062** 62G10 (62G20)

— Conditions for local asymptotic normality of exponential families. *Statist. Decisions* **10** (1992), *no.* 1-2, 173–182. (R. T. Smythe) **93h:62030** 62E20 (62G30)

Janssen, H. *see* **Janssen, Hugo Leonard**

Janssen, H. K. On the renormalized field theory of nonlinear critical relaxation. *From phase transitions to chaos*, 68–91, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93c:82037** 82C27

Janssen, Hugo Leonard (*with* Van Dooren, R.; De Groote, M.) Numerical evidence of Feigenbaum's number δ in nonlinear oscillations. *J. Comput. Phys.* **105** (1993), *no.* 1, 173–177. 34C15 (58F13, 65L99)

Janssen, Michel H. A. Lorentz's attempt to give a coordinate-free formulation of the general theory of relativity. (French summary) *Studies in the history of general relativity* (*Luminy*, 1988), 344–363, 462, *Einstein Stud.*, 3, *Birkhäuser Boston, Boston, MA*, 1992. (From the introduction) **93d:01041** 01A60 (83–03)

Janssen, Paul (*with* Helmers, R.; Veraverbeke, Noël) Bootstrapping U-quantiles. (English summary) *Exploring the limits of bootstrap* (*East Lansing, MI*, 1990), 145–155, *Wiley Ser. Probab. Math. Statist. Probab. Math. Statist., Wiley, New York*, 1992. (Thomas Mikosch) **93j:62119** 62G09

— (*with* Veraverbeke, Noël) Bootstrapping U-statistics with estimated parameters. *Comm. Statist. Theory Methods* **21** (1992), *no.* 6, 1585–1603. (Gutti J. Babu) **93e:62132** 62G20 (62G05, 62G09)

Janssen, Ted W. J. M. The symmetry operations for n-dimensional periodic and quasi-periodic structures. *Z. Krist.* **198** (1992), *no.* 1-2, 17–32. (G. F. Koster) **93b:20073** 20F50 (20H15, 82D25)

Janssens, F. L. (*with* Breakwell, J. V.) On the traverse vibrations of a revolving tether. (English summary) *Celestial Mech. Dynam. Astronom.* **54** (1992), *no.* 4, 317–341. (Summary) **93h:70023** 70M20 (73K12)

Jansson, C. Rigorous sensitivity analysis for real symmetric matrices with uncertain data. (English summary) *Computer arithmetic, scientific computation and mathematical modelling* (*Albena*, 1990), 293–316, *IMACS Ann. Comput. Appl. Math.*, 12, *Baltzer, Basel*, 1991. (Summary) **93h:65066** 65G10 (65F05)

— A global optimization method using interval arithmetic. (English summary) *Computer arithmetic and enclosure methods* (*Oldenburg*, 1991), 259–267, *North-Holland, Amsterdam*, 1992. (*see* **93i:65006**) 65K10 (65G10, 90C30)

Janszky, J. (*with* Földesi, I.; Adam, P.) Antisymmetric straight line superposition of coherent states. (English summary) *Phys. Lett. A* **173** (1993), *no.* 2, 97–100. (Summary) **93j:81040** 81R30 (81V80)

— (*with* Adam, P.; Földesi, I.) Sudden mass changes of a quantum oscillator and squeezing. (English summary) *Phys. Lett. A* **174** (1993), *no.* 5-6, 368–370. (Summary) **93k:81278** 81V80

Jantzen, Chris Degenerate principal series for symplectic groups. *Mem. Amer. Math. Soc.* **102** (1993), *no.* 488, xiv+111 *pp.* (Marko Tadić) **93g:22018** 22E50

Jantzen, Jens C. (*with* Seitz, Gary M.) On the representation theory of the symmetric groups. *Proc. London Math. Soc.* (3) **65** (1992), *no.* 3, 475–504. (G. D. James) **93k:20026** 20C30

Jantzen, M. *see* **Symposium: Theoretical Aspects of Computer Science, 93k:68005**

Jantzen, Robert T. (*with* Carini, Paolo) Understanding spacetime splittings and their relationships. (English summary) *Classical mechanics and relativity: relationship and consistency* (*Elba*, 1989), 185–241, *Monographs Textbooks Phys. Sci. Lecture Notes*, 20, *Bibliopolis, Naples*, 1991. (Alan D. Rendall) **93i:83072** 83C99

Janus, J. (*with* Gacki, H.) On periodic solutions of second order nonlinear differential equations with singularities. *Comment. Math. Prace Mat.* **30** (1991), *no.* 2, 293–299. (Anthony Uyi Afuwape) **93a:34050** 34C25

Janus, J. Mark (*with* Henley, Gregory J.) Parallelization and convergence of a 3D implicit unsteady turbomachinery flow code. (English summary) *Parallel processing for scientific computing* (*Houston, TX*, 1991), 238–245, *SIAM, Philadelphia, PA*, 1992. (*see* **93g:65178**) 65M06 (65M12, 65Y05, 76M20)

Januškevičienė, O. On limit distributions of inhomogeneous random symmetric polynomials of degree three. Stability problems for stochastic models. *J. Soviet Math.* **59** (1992), *no.* 4, 1011–1019. (Zheng Yan Lin) **93f:60030** 60F05

Janusz, Gerald J. Permutation groups generated by a transposition and another element. (English summary) *Enseign. Math.* (2) **38** (1992), *no.* 1-2, 41–53. (Robert M. Guralnick) **93g:20009** 20B35

Januszkiewicz, Tadeusz Hyperbolizations. *Group theory from a geometrical viewpoint* (*Trieste*, 1990), 464–490, *World Sci. Publishing, River Edge, NJ*, 1991. (Michael Kapovich) **93h:57004** 57M07 (20F32, 53C23, 57Q15)

— (*with* Hajduk, Bogusław) Cobordism of polarized t-structures. *Topology* **31** (1992), *no.* 3, 559–570. (R. E. Stong) **93e:57021** 57M60 (57N10, 57N70)

— (*with* Dobrowolski, Edward) Arithmetic of an elliptic curve and circle actions on four-manifolds. *Colloq. Math.* **64** (1993), *no.* 1, 13–18. (Mark Hovey) **93m:57042** 57S15 (11D25)

Janyška, Josef Remarks on the Nijenhuis tensor and almost complex connections. (English summary) *Arch. Math.* (*Brno*) **26** (1990), *no.* 4, 229–239. (Marco Modugno) **93i:53030** 53C15 (53C05)

— Natural operations with projectable tangent valued forms on a fibred manifold. *Ann. Mat. Pura Appl.* (4) **159** (1991), 171–187. (I. Kolář) **93a:58002** 58A20 (53C05)

Janžura, Martin Asymptotic normality of linear-quadratic statistics for Gaussian random fields. *Limit theorems in probability and statistics* (*Pécs*, 1989), 293–304, *Colloq. Math. Soc. János Bolyai*, 57, *North-Holland, Amsterdam*, 1990. (N. Leonenko) **93i:62084** 62M40 (60F05, 62M10)

— An approximation of the pressure for the two-dimensional Ising model. *Kybernetika* (*Prague*) **28** (1992), *no.* 3, 234–238. (Yu. P. Virchenko) **93i:82013** 82B20 (60K35)

Jaouiche, K. Quelques aspects de l'évolution du rôle de la géométrie en algèbre du IXe au XIIIe siècle. (Arabic summary) [Some aspects of the evolution of the role of geometry in IXth–XIIIth-century algebra] *Deuxième Colloque Maghrebin sur l'Histoire des Mathématiques Arabes* (*Tunis*, 1988), 106–124, A165, *Maghreb, Tunis*, 19??. (J. L. Berggren) **93d:01011** 01A30

— ★ La théorie des parallèles en pays d'Islam. (French) [The theory of parallels in the Islamic world] Contribution à la préhistoire des géométries non-euclidiennes. [Contribution to the prehistory of non-Euclidean geometries] L'Histoire des Sciences: Textes et Études. [History of Science: Texts and Studies] *Librairie Philosophique J. Vrin, Paris*, 1986. 266 *pp. ISBN* 2-7116-0920-0 (Jan P. Hogendijk) **93d:01010a** 01A30 (01A20)

— ★ Naẓariyyah al-mutawāziyāt fī-al-handasah al-Islāmiyyah. (Arabic) [The theory of parallels in Islamic geometry] *Bayt al-Hikmah, Tunis*, 1988. 256 *pp.* (Jan P. Hogendijk) **93d:01010b** 01A30

Jaquet-Chiffelle, David-Olivier Classification des réseaux dans $\mathbf{R}^7$ (via la notion de formes parfaites). (English summary) [Classification of lattices in $\mathbf{R}^7$ (via the notion of perfect forms)] Journées Arithmétiques, 1989 (Luminy, 1989). *Astérisque No.* 198-200 (1991), 7–8, 177–185 (1992). (Summary) **93g:11071** 11H55 (11H06)

Jarachi, F. (*with* Bastin, G.; Wertz, V.) On predictive control of nonlinear recursive systems. (English summary) *Mathematics of the analysis and design of process control* (*Dublin*, 1991/*Lille*, 1991), 445–453, *North-Holland, Amsterdam*, 1992. (*see* **93g:93004**) 93C10 (93C40)

de la Jara F., J. *see* **De La Jara F., J.**

Járai, Antal Differentiation of parametric integrals and regularity of functional equations. *Contributions to the theory of functional equations* (*Graz*, 1991), 45–50, *Grazer Math. Ber.*, 315, *Karl-Franzens-Univ. Graz, Graz*, 1991. (Shigeru Haruki) **93d:26010** 26B05 (39B05)

Jaramillo, Jesús A. Multiplicative functionals on algebras of differentiable functions. *Arch. Math.* (*Basel*) **58** (1992), *no.* 4, 384–387. (Ji Pu Ma) **93c:46097** 46J15

— (*with* Garrido Carballo, María Isabel; Gómez Gil, J.) Homomorphisms on some function algebras. *Extracta Math.* **7** (1992), *no.* 1, 46–52. (W. A. Feldman) **93m:46058** 46J10 (46E25, 54C40)

— (*with* Prieto Yerro, Ángeles) Weak-polynomial convergence on a Banach space. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 2, 463–468. (Richard M. Aron) **93g:46019** 46B99 (46G20, 46J15)

Jarchow, Hans (*with* Hunziker, Herbert) Composition operators which improve integrability. *Math. Nachr.* **152** (1991), 83–99. (Barbara D. MacCluer) **93d:47061** 47B38 (47B07, 47B65)

— Some factorization properties of composition operators. *Progress in functional analysis* (*Peñíscola*, 1990), 405–413, *North-Holland Math. Stud.*, 170, *North-Holland, Amsterdam*, 1992. (Barbara D. MacCluer) **93e:47037** 47B38 (46E30)

Jarczyk, Witold Globally attractive fixed points of continuous self-mappings of a real interval. (English summary) *European Conference on Iteration Theory* (*Batschuns*, 1989), 157–170, *World Sci. Publishing, River Edge, NJ*, 1991. (L. Janos) **93g:58070** 58F08 (26A18, 58F20)

— Remark on: *New directions and open problems in iteration theory* [Forschungszentrum Graz, Graz, 1984; MR 86i:26004] by Gy. Targoński. *European Conference on Iteration Theory* (*Batschuns*, 1989), 369–370, *World Sci. Publishing, River Edge, NJ*, 1991. (*see* **93e:58001**) 26A18 (39B12, 54H20, 58F08)

— On a problem of Z. Daróczy. *Ann. Math. Sil. No.* 5 (1991), 83–90. (A. Haimovici) **93a:39015** 39B05

Jarden, Moshe (*with* Geyer, W.-D.) The Henselian closures of a P_fC field. *Abh. Math. Sem. Univ. Hamburg* **61** (1991), 63–71. (Luc Bélair) **93a:12009** 12J12 (12F05, 12J10)

— (*with* Haran, D.) Compositum of Galois extensions of Hilbertian fields. *Ann. Sci. École Norm. Sup.* (4) **24** (1991), *no.* 6, 739–748. (Jean Cougnard) **93h:12003** 12E25 (12F20)

— Algebraic realization of p-adically projective groups. *Compositio Math.* **79** (1991), *no.* 1, 21–62. (G. Z. Dzhanelidze) **93f:12007** 12F12 (11S20, 12G10, 12J12)

Jardine, J. F. Modelling homotopy coherence. (English summary) *Category theory* 1991 (*Montreal, PQ*, 1991), 267–283, *CMS Conf. Proc.*, 13, *Amer. Math. Soc., Providence, RI*, 1992. (C. Năstăsescu) **93k:18017** 18G30 (55P65, 55U35)

— Cohomological invariants associated to symmetric bilinear forms. *Exposition. Math.* **10** (1992), *no.* 2, 97–134. (Bruno Kahn) **93g:11035** 11E81 (11E04, 12G05, 18G30, 20G10, 55R40)

Jarić, Jovo P. (*with* Golubović, Z.) The balance laws of the interline and the bulk material. *Z. Angew. Math. Mech.* **71** (1991), *no.* 12, 518–521. (From the introduction) **93k:73013** 73B99 (73B30, 73D40)

— On a transport theorem for moving interface. (English summary) The Eringen anniversary issue. *Internat. J. Engrg. Sci.* **30** (1992), *no.* 10, 1535–1542. (From the introduction) **93j:73014** 73B99 (76A02)

Jaritz, Renate On the description of the content-equality by a relation. *Math. Nachr.* **147** (1990), 145–151. (E. Hertel) **93c:52014** 52B45 (28A12)

— Allgemeine Zerlegungstheorie. (English summary) [General decomposition theory] *J. Geom.* **44** (1992), *no.* 1-2, 77–86. (E. Hertel) **93f:52019** 52B45

Jarnicki, Marek (*with* Pflug, Peter; Vigué, Jean-Pierre) A remark on Carathéodory balls. *Arch. Math.* (*Basel*) **58** (1992), *no.* 6, 595–598. (Ian Graham) **93c:32035** 32H15

— (*with* Pflug, Peter; Vigué, Jean-Pierre) An example of a Carathéodory complete but not finitely compact analytic space. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 2, 537–539. (Masaaki Suzuki) **93g:32035** 32H15

Jarník, Jiří (*with* Kurzweil, Jaroslav) Equi-integrability and controlled convergence of Perron-type integrable functions. *Real Anal. Exchange* **17** (1991/92), *no.* 1, 110–139. (Ralph Henstock) **93d:26006** 26A39 (26A42)

— (*with* Kurzweil, Jaroslav) Equivalent definitions of regular generalized Perron integral. *Czechoslovak Math. J.* **42(117)** (1992), *no.* 2, 365–378. (Ralph Henstock) **93m:26017** 26A39 (26B20)

— (*with* Kurzweil, Jaroslav) Differentiability and integrability in n dimensions with respect to α-regular intervals. *Results Math.* **21** (1992), *no.* 1-2, 138–151. (F. Miroslaw Filipczak) **93e:26007** 26B05 (26A39, 26B15, 28A15)

Jaroch, Otakar *see* **Zalcman, Lawrence A., 93a:01041**

Jaroma, J. H. (*with* Kuruklis, S. A.; Ladas, G.) Oscillations and stability of a discrete delay logistic model. (Russian and Ukrainian summaries) *Ukrain. Mat. Zh.* **43** (1991), *no.* 6, 734–744; *reprinted in Ukrainian Math. J.* **43** (1991), *no.* 6, 684–694 (1992). (I. P. Stavroulakis) **93a:39004** 39A10 (34K15, 34K20, 39A11, 92D25)

Jaroš, Jaroslav (*with* Kusano, Takaši) Existence of oscillatory solutions for functional-differential equations of neutral type. *Acta Math. Univ. Comenian.* (*N.S.*) **60** (1991), *no.* 2, 185–194. (Anatolii Fedorovich Ivanov) **93c:34145** 34K15 (34K40)

— (*with* Kitamura, Yuichi; Kusano, Takaši) On a class of functional-differential equations of neutral type. (English summary) *Recent trends in differential equations*, 317–333,

World Sci. Ser. Appl. Anal., 1, *World Sci. Publishing, River Edge, NJ*, 1992. (I. P. Stavroulakis) **93h:34126** 34K15 (34K40)

Jarosz, Krzysztof Small perturbations of algebras of analytic functions on polydiscs. *Function spaces* (*Edwardsville, IL*, 1990), 223–240, *Lecture Notes in Pure and Appl. Math.*, 136, *Dekker, New York*, 1992. (Håkan Hedenmalm) **93f:46083** 46J15 (46H20)

— (*with* Pathak, Vijay D.) Isometries and small bound isomorphisms of function spaces. *Function spaces* (*Edwardsville, IL*, 1990), 241–271, *Lecture Notes in Pure and Appl. Math.*, 136, *Dekker, New York*, 1992. (Ehrhard Behrends) **93b:47061** 47B38 (46E25)

— Finite codimensional ideals in Banach algebras with one generator. *Rocky Mountain J. Math.* **22** (1992), *no.* 2, 631–634. (W. Żelazko) **93h:46060** 46H10 (46J20)

Jaroszewicz, T. (*with* Kurzepa, P. S.) Polyakov spin factors and Laplacians on homogeneous spaces. *Ann. Physics* **213** (1992), *no.* 1, 135–165. (J. Alfredo Jiménez) **93b:58152** 58G25 (58D30, 81S40)

— (*with* Kurzepa, P. S.) Geometry of spacetime propagation of spinning particles. *Ann. Physics* **216** (1992), *no.* 2, 226–267. (W. Cox) **93i:81126** 81T10 (81T18)

Jarrah, A. M. (*with* Jain, Pawan Kumar; Sinha, D. P.) Boundedly complete bases in various locally convex spaces. *Functional analysis and operator theory* (*New Delhi*, 1990), 128–140, *Lecture Notes in Math.*, 1511, *Springer, Berlin*, 1992. (Bor-Luh Lin) **93h:46005** 46A35

Jarre, Florian Interior-point methods for convex programming. (English summary) *Appl. Math. Optim.* **26** (1992), *no.* 3, 287–311. (S. Zlobec) **93h:90071** 90C25 (15A45, 65K05)

Jarušek, Jiří On the regularity of solutions of a thermoelastic system under noncontinuous heating regimes. III. (English summary) *Appl. Math.* **37** (1992), *no.* 4, 275–288. (Reinhard Racke) **93j:35040** 35B65 (35R05, 73B30, 73C99, 73F15)

Jaruszewska-Walczak, Danuta Initial value problems for quasilinear hyperbolic systems of partial differential-functional equations. (English summary) *Atti Sem. Mat. Fis. Univ. Modena* **40** (1992), *no.* 1, 229–246. (Jan Turo) **93g:35134** 35R10 (35L45)

Jarvis, P. D. (*with* McAnally, David S.) Unified models from gauged supergroups. II. Exceptional series $D(2,1;\alpha)$, $G(3)$, $F(4)$. *J. Math. Phys.* **33** (1992), *no.* 1, 399–402. (C. A. Hurst) **93h:81306** 81V22 (17A70, 22E70, 81R40)

— (*with* Warner, Roland C.; Yung, C. M.; Zhang, R. B.) BRST cohomology for $U_q(\mathrm{sl}(2))$ representations. *J. Phys. A* **25** (1992), *no.* 14, L895–L900. (Vladimir A. Stukopin) **93e:17019** 17B37 (17B55, 81R50)

Jarzembski, Grzegorz Free spectra of concrete categories and mixed structures. *Category theory at work* (*Bremen*, 1990), 149–164, *Res. Exp. Math.*, 18, *Heldermann, Berlin*, 1991. (Walter Tholen) **93d:18004** 18A99 (08A55, 18A35, 18C99)

— Elementary reflections of concrete categories of mixed structures. *Category theory* 1991 (*Montreal, PQ*, 1991), 285–298, *CMS Conf. Proc.*, 13, *Amer. Math. Soc., Providence, RI*, 1992. (Peter Johnstone) **93j:18004** 18C10 (08C10)

Jasinevichius, R. Neural-type continuous Petri net concept for system modeling and simulation. (English summary) *Computational systems analysis* 1992 (*Berlin*, 1992), 331–335, *Elsevier, Amsterdam*, 1992. (*see* **93e:00021**) 68Q90 (68U20)

Jaska, P. (*with* Charnes, Abraham; Haag, S.; Semple, John Hartley) Sensitivity of efficiency classifications in the additive model of data envelopment analysis. *Internat. J. Systems Sci.* **23** (1992), *no.* 5, 789–798. (Summary) **93a:90066** 90C31 (90C08)

Jaskólski, Zbigniew The Polyakov path integral over bordered surfaces. II. The closed string off-shell amplitudes. *Comm. Math. Phys.* **139** (1991), *no.* 2, 353–375. (Marc Henneaux) **93j:81081** 81T30 (58G26)

— The Polyakov path integral over bordered surfaces. III. The BRST extended closed string off-shell amplitudes. *Comm. Math. Phys.* **147** (1992), *no.* 2, 343–364. (Marc Henneaux) **93j:81082** 81T30 (58G26, 81T70)

Jatkar, D. P. WKB analysis of the string equation. (English summary) *Matrix models, random surfaces and 2-D gravity* (*Madras*, 1990), 34–41, *IMS Rep.*, 113, *Inst. Math. Sci., Madras*, 199?. (*see* **93h:81001**) 81T40 (58F07)

Jauberteau, François (*with* Rosier, C.; Temam, Roger) A nonlinear Galerkin method for the Navier-Stokes equations. (English summary) *Spectral and high order methods for partial differential equations* (*Como*, 1989), 245–260, *North-Holland, Amsterdam*, 1990. (*see* **93d:65005**) 65N30 (76D05, 76M25)

— (*with* Dubois, Thierry; Temam, Roger) The nonlinear Galerkin method for the two- and three-dimensional Navier-Stokes equations. *Twelfth International Conference on Numerical Methods in Fluid Dynamics* (*Oxford*, 1990), 116–120, *Lecture Notes in Phys.*, 371, *Springer, Berlin*, 1990. (*see* **93e:76002**) 76M25 (76D05)

Jaulent, Jean-François Noyau universel et valeurs absolues. (English summary) [The universal kernel and absolute values] Journées Arithmétiques, 1989 (Luminy, 1989). *Astérisque No.* 198-200 (1991), 8, 187–208 (1992). (Thống Nguyễn-Quang-Đỗ) **93b:11157** 11R70 (19F05)

Jaulin, Luc (*with* Walter, Eric) Guaranteed nonlinear parameter estimation from bounded-error data via interval analysis. (English summary) *Math. Comput. Simulation* **35** (1993), *no.* 2, 123–137. 65C20 (65G10)

Jaumard, Brigitte (*with* Hansen, Pierre; Lu, Shi Hui) Global optimization of univariate Lipschitz functions. (Russian) *Optimization: models, methods, solutions* (*Russian*) (*Irkutsk*, 1989), 287–316, "*Nauka*" *Sibirsk. Otdel., Novosibirsk*, 1992. (*see* **93k:90002**) 90C30

— (*with* Hansen, Pierre; Lu, Shi Hui) Global optimization of univariate Lipschitz functions. II. New algorithms and computational comparison. (Russian) *Optimization: models, methods, solutions* (*Russian*) (*Irkutsk*, 1989), 317–338, "*Nauka*" *Sibirsk. Otdel., Novosibirsk*, 1992. (*see* **93k:90002**) 90C30

— (*with* Hansen, Pierre; Lu, Shi Hui) On using estimates of Lipschitz constants in global optimization. (English summary) *J. Optim. Theory Appl.* **75** (1992), *no.* 1, 195–200. (Ebu Tamm) **93j:90098** 90C30 (65K10)

— (*with* Hansen, Pierre; Lu, Shi Hui) Global optimization of univariate Lipschitz functions. I. Survey and properties. *Math. Programming* **55** (1992), *no.* 3, *Ser. A*, 251–272. (G. R. Wood) **93f:90149** 90C30 (49M37)

— (*with* Hansen, Pierre; Lu, Shi Hui) Global optimization of univariate Lipschitz functions. II. New algorithms and computational comparison. *Math. Programming* **55** (1992), *no.* 3, *Ser. A*, 273–292. (G. R. Wood) **93f:90150** 90C30 (49M37)

— (*with* Hansen, Pierre; Savard, Gilles) New branch-and-bound rules for linear bilevel programming. (English summary) *SIAM J. Sci. Statist. Comput.* **13** (1992), *no.* 5, 1194–1217. (Stephan Dempe) **93f:90151** 90C30 (90C27, 90D05)

Jáuregui, R. (*with* Récamier, J.) Iterative Bogoliubov transformations and anharmonic oscillators. (English summary) *Phys. Rev. A* (3) **46** (1992), *no.* 5, 2240–2249. (Summary) **93e:81017** 81Q05 (81–04)

Jauslin, H. R. (*with* Bleher, Pavel M.; Lebowitz, Joel L.) Floquet spectrum for two-level systems in quasiperiodic time-dependent fields. *J. Statist. Phys.* **68** (1992), *no.* 1-2, 271–310. (Summary) **93c:81046** 81Q50 (58F30)

moser-Jauslin, Lucy *see* **Moser-Jauslin, Lucy**

Javadian, A. D. Variational difference method for elliptic problems with highly quasisingular quadratic forms. *Soviet J. Numer. Anal. Math. Modelling* **5** (1990), *no.* 4-5, 359–367. (Yu. K. Dem′yanovich) **93d:65109** 65N99 (65K10)

Javes, Seema (*with* Mashhood, Asif; Ahmad, Musheer) Neat and neat-high extensions. *Tamkang J. Math.* **23** (1992), *no.* 1, 15–19. (Manfred Dugas) **93c:20092** 20K35 (20K27)

Jávor, A. Petri nets and AI in simulation. (English summary) *Computational systems analysis* 1992 (*Berlin*, 1992), 451–456, *Elsevier, Amsterdam*, 1992. (*see* **93e:00021**) 68Q90 (68U20)

Jawerth, Björn (*with* DeVore, Ronald A.; Lucier, Bradley J.) Surface compression. (English summary) *Comput. Aided Geom. Design* **9** (1992), *no.* 3, 219–239. (S. Dubuc) **93i:65029** 65D17

— (*with* Deliu, Anca) Geometrical dimension versus smoothness. *Constr. Approx.* **8** (1992), *no.* 2, 211–222. (Run Sheng Yang) **93a:28008** 28A80 (46E35, 58F11)

— (*with* Adolfsson, Vilhelm; Goldberg, M.; Lennerstad, H.) Localized Galerkin estimates for boundary integral equations on Lipschitz domains. (English summary) *SIAM J. Math. Anal.* **23** (1992), *no.* 5, 1356–1374. (Weimin Han) **93f:65087** 65N38 (65N30, 65R20)

Jaworowski, Jan (*with* Granas, Andrzej) Reminiscences of Karol Borsuk. *Topol. Methods Nonlinear Anal.* **1** (1993), *no.* 1, 3–8. 01A70

Jaworska, I. (*with* Kurylowicz, A.) Modelling uncertainty estimation to maintain control systems stability. (English summary) *Identification and system parameter estimation* 1991, *Vol.* 1,2 (*Budapest*, 1991), 829–833, *IFAC Sympos. Ser.*, 3, *Pergamon, Oxford*, 1992. (*see* **93h:93009**) 93D09

Jaworska, Joanna (*with* Hallam, Thomas G.; Lassiter, Ray R.; McKinney, William) Physiologically based models in predator-prey ecology: an introduction. (English summary) *Recent trends in differential equations*, 285–299, *World Sci. Ser. Appl. Anal.*, 1, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93e:34005**) 92D40

Jaworski, Jerzy (*with* Berg, Sven) Probability distributions related to the local structure of a random mapping. *Random graphs, Vol.* 2 (*Poznań*, 1989), 1–21, *Wiley-Intersci. Publ., Wiley, New York*, 1992. (Lyuben R. Mutafchiev) **93d:60015** 60C05 (05C80)

Jaworski, M. (*with* Kaup, D. J.) Elliptic sinh-Gordon equation—a multicharge solution. (English summary) *Nonlinear evolution equations and dynamical systems* (*Baia Verde*, 1991), 118–124, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93i:35126** 35Q53

Jaworski, Piotr About estimates on number of squares necessary to represent a positive-definite analytic function. *Arch. Math.* (*Basel*) **58** (1992), *no.* 3, 276–279. (Wiesław Pawłucki) **93c:32008** 32B05 (12D15, 30C15)

— Witt rings of fields of quotients of two-dimensional regular local rings. *Math. Z.* **211** (1992), *no.* 4, 533–546. (Murray Marshall) **93i:11049** 11E81 (13H05)

Jay, C. Barry Fixpoint and loop constructions as colimits. *Category theory* (*Como*, 1990), 187–192, *Lecture Notes in Math.*, 1488, *Springer, Berlin*, 1991. (R. H. Street) **93g:18006** 18A30

— Coherence in category theory and the Church-Rosser property. *Notre Dame J. Formal Logic* **33** (1992), *no.* 1, 140–143. (G. E. Mints) **93a:03062** 03F05 (03G30, 18D99)

— (*with* Steffen, B.; Mendler, M.) Compositional characterization of observable program properties. (English and French summaries) *RAIRO Inform. Théor. Appl.* **26** (1992), *no.* 5, 403–424. (Summary) **93g:68089** 68Q60 (68Q55)

Jayakumar, J. (*with* Ramanujam, N.) A computational method for solving singular perturbation problems. (English summary) *Appl. Math. Comput.* **55** (1993), *no.* 1, 31–48. (Summary) **93k:65065** 65L10 (34B05, 34B15)

Jayakumar, K. (*with* Pillai, R. N.) On class L distributions. (English summary) *J. Indian Statist. Assoc.* **30** (1992), *no.* 2, 103–108. (Mir Masoom Ali) **93m:62034** 62E10

— (*with* Pillai, R. N.) The first-order autoregressive Mittag-Leffler process. (English summary) *J. Appl. Probab.* **30** (1993), *no.* 2, 462–466. 60G99 (60E05, 62M10)

Jaya Lakshmi, K. (*with* Freedman, H. I.; Sree Hari Rao, V.) Stability, persistence, and extinction in a predator-prey system with discrete and continuous time delays. (English summary) *Recent trends in differential equations*, 221–238, *World Sci. Ser. Appl. Anal.*, 1, *World Sci. Publishing, River Edge, NJ*, 1992. (Pauline van den Driessche) **93h:34137** 34K20 (34K15, 92D25)

Jayamala, M. (*with* Padmanabhan, K. S.) A class of univalent functions with varying arguments. *Internat. J. Math. Math. Sci.* **15** (1992), *no.* 3, 517–522. (Summary) **93c:30018** 30C45

Jayannavar, A. M. Comment on some theories of state reduction. *Phys. Lett. A* **167** (1992), *no.* 5-6, 433–434. (Summary) **93c:81007** 81P05

Jayanthi, C. S. (*with* Wu, Shi Yu; Cocks, J. A.) An accelerated inversion algorithm using the resolvent matrix method. (English summary) *Comput. Phys. Comm.* **71** (1992), *no.* 1-2, 125–133. (Summary) **93e:65049** 65F05 (65Y10)

Jayaprakash, C. (*with* Bhagavatula, Ravi; Grinstein, Geoffrey; He, Yu) Algebraic correlations in conserving chaotic systems. (English summary) *Phys. Rev. Lett.* **69** (1992), *no.* 24, 3483–3486. (Summary) **93h:58094** 58F13

Jayaraman, T. (*with* Govindarajan, Suresh; John, Varghese; Majumdar, Parthasarathi) States of nonzero ghost number in $c < 1$ matter coupled to 2D gravity. *Modern Phys. Lett. A* **7** (1992), *no.* 12, 1063–1077. (Stanislav Z. Pakuliak) **93c:81204** 81T40 (81R10, 81T70)

Jayasree, K. N. (*with* Deo, S. G.) On piecewise constant delay differential equations. (English summary) *J. Math. Anal. Appl.* **169** (1992), *no.* 1, 55–69. (S. K. Ntouyas) **93f:34122** 34K15

Jayasuriya, Suhada QFT type design for maximizing tolerable disturbances in structured uncertain systems. *Internat. J. Control* **56** (1992), *no.* 1, 67–85. 93B36 (93B51)

— (*with* Shaw, Jinsiang) Robust stability of an interval plant with respect to a convex region in the complex plane. (English summary) *IEEE Trans. Automat. Control* **38** (1993), *no.* 2, 284–287. (Summary) **93j:93117** 93D09

Jayawardena, Thusitha (*with* Yakowitz, Sid; Li, Shu) Theory for automatic learning under partially observed Markov-dependent noise. (English summary) *IEEE Trans. Automat.*

Control **37** (1992), *no.* 9, 1316–1324. (Vivek S. Borkar) **93j:90127** 90C40 (90B22, 90C15, 93E35)

Jayne, J. E. (*with* Namioka, I.; Rogers, C. Ambrose) Norm fragmented weak* compact sets. *Collect. Math.* **41** (1990), *no.* 2, 133–163 (1991). (John R. Giles) **93d:46035** 46B22 (46G10)

— (*with* Namioka, I.; Rogers, C. Ambrose) σ-fragmentable Banach spaces. *Mathematika* **39** (1992), *no.* 1, 161–188. (V. Zizler) **93i:46027** 46B20

Jaynes, E. T. Probability in quantum theory. (English summary) *Complexity, entropy and the physics of information* (*Santa Fe, NM*, 1989), 381–403, *Santa Fe Inst. Stud. Sci. Complexity Proc., VIII, Addison-Wesley, Redwood City, CA*, 1990. (*see* **93m:81004**) 81P05

Jazaeri, Amin (*with* Satija, Indubala I.) Double devil's staircase in circle maps. (English summary) *Phys. Rev. A* (3) **46** (1992), *no.* 2, 737–742. (Summary) **93d:58082** 58F08 (58F27)

Jazar, M. (*with* Emamirad, H.) Applications of spectral distributions to some Cauchy problems in $L^p(\mathbf{R}^n)$. *Semigroup theory and evolution equations* (*Delft*, 1989), 143–151, *Lecture Notes in Pure and Appl. Math.*, 135, *Dekker, New York*, 1991. (Ming Zhu Yang) **93h:47048** 47D03 (35J10, 35L05, 46F10, 47B40, 47N20)

Jean, Michel Dynamics of rigid bodies with dry friction and partially elastic collisions. *Unilateral problems in structural analysis, IV* (*Capri*, 1989), 57–70, *Internat. Ser. Numer. Math.*, 101, *Birkhäuser, Basel*, 1991. (Summary) **93c:70006** 70E99 (70F35, 73T05)

Jean, Roger V. An application of Zeckendorf's theorem. *Applications of Fibonacci numbers, Vol.* 4 (*Winston-Salem, NC*, 1990), 167–170, *Kluwer Acad. Publ., Dordrecht*, 1991. (*see* **93g:11004**) 11B39

— Nomothetical modelling of spiral symmetry in biology. *Fivefold symmetry*, 505–528, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93i:52002**) 00A69 (92C15)

Jeanblanc-Picqué, Monique (*with* El Karoui, Nicole; Viswanathan, Ravi) Bounds for the price of options. *Applied stochastic analysis* (*New Brunswick, NJ*, 1991), 224–237, *Lecture Notes in Control and Inform. Sci.*, 177, *Springer, Berlin*, 1992. (Summary) **93c:90019** 90A12 (60G99)

Jeandupeux, Denis Integral cohomology of classical groups over a finite field. (English summary) *J. Pure Appl. Algebra* **84** (1993), *no.* 1, 43–58. (Ji-Chun Wang) **93j:20102** 20J06

Jeanjean, L. (*with* Buffoni, B.; Stuart, Charles A.) Existence of a nontrivial solution to a strongly indefinite semilinear equation. *Proc. Amer. Math. Soc.* **119** (1993), *no.* 1, 179–186. (Manfred W. Kracht) **93k:35086** 35J60 (35Q99, 45K05, 47H15, 47N20)

Jean-Marie, Alain (*with* Liu, Zhen) Stochastic comparisons for queueing models via random sums and intervals. (English summary) *Adv. in Appl. Probab.* **24** (1992), *no.* 4, 960–985. (T. Rolski) **93k:60227** 60K25

Jeanneret, Alain (*with* Suter, Ueli) Réalisation topologique de certaines algèbres associées aux algèbres de Dickson. (English summary) [Topological realization of certain algebras associated with the Dickson algebras] *Algebraic topology* (*San Feliu de Guíxols*, 1990), 235–239, *Lecture Notes in Math.*, 1509, *Springer, Berlin*, 1992. (John C. Harris) **93k:55022** 55S25 (55R40, 55S10)

— (*with* Lin, James P.) Connexité des H-espaces finis. (English and French summaries) [Connectivity in finite H-spaces] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 7, 829–832. (A. H. Copeland, Jr.) **93j:55013** 55P45

Jeannin, P. (*with* Fiorot, J.-C.) ★ Rational curves and surfaces. Applications to CAD. Translated from the 1989 French original by M. C. Harrison. *John Wiley & Sons, Ltd., Chichester*, 1992. xiv+322 *pp. ISBN* 0-471-93092-X (Editors) **93f:65023** 65D17

— (*with* Fiorot, J.-C.) ★ Courbes splines rationnelles. (French) [Rational spline curves] Applications à la CAO. [Applications to CAD] Recherches en Mathématiques Appliquées [Research in Applied Mathematics], 24. *Masson, Paris*, 1992. 275 *pp. ISBN* 2-225-82825-3 (Ewald Quak) **93j:65025** 65D17 (41A15)

andré-Jeannin, Richard *see* **André-Jeannin, Richard**

saint Jean Paulin, J. *see* **Saint Jean Paulin, J.**

Jeans, R. (*with* Mathews, I. C.) A comparison of numerical collocation and variational procedures to the hypersingular acoustic integral operator. (English summary) Reliability in computational mechanics (Kraków, 1991). *Comput. Methods Appl. Mech. Engrg.* **101** (1992), *no.* 1-3, 5–26. (Summary) **93m:76066** 76Q05 (76M99)

Jebelean, Tudor An algorithm for exact division. (English summary) *J. Symbolic Comput.* **15** (1993), *no.* 2, 169–180. (Summary) **93m:68092** 68Q40

Jech, Thomas Local topology and a spectral theorem. *Topics in operator theory: Ernst D. Hellinger memorial volume*, 297–306, *Oper. Theory Adv. Appl.*, 48, *Birkhäuser, Basel*, 1990. (Richard A. Alò) **93m:54005** 54A05 (46L10)

— The infinite. *Jahrb. Kurt-Gödel-Ges.* **1990**, 36–44 (1991). (Perry Smith) **93h:03004** 03A05 (01A55, 01A60, 03–03, 04–03)

— (*with* Shelah, Saharon) A partition theorem for pairs of finite sets. *J. Amer. Math. Soc.* **4** (1991), *no.* 4, 647–656. (Carlos A. Di Prisco) **93a:03049** 03E05 (03E35, 04A20, 05D10)

— Singular cardinal problem: Shelah's theorem on $2^{\aleph_\omega}$. *Bull. London Math. Soc.* **24** (1992), *no.* 2, 127–139. (N. H. Williams) **93a:03050** 03E10 (03E50, 04A10, 04A20, 04A30)

— The logarithmic distribution of leading digits and finitely additive measures. Topological, algebraical and combinatorial structures. Frolík's memorial volume. *Discrete Math.* **108** (1992), *no.* 1-3, 53–57. (Kazuo Goto) **93i:11087** 11K16 (11K55)

Jędrzejewski, Janusz (*with* Gruber, Ch.; Lemberger, P.) Ground states of the spinless Falicov-Kimball model. II. *J. Statist. Phys.* **66** (1992), *no.* 3-4, 913–938. (Summary) **93b:82014** 82B20

Jędrzejowski, Mieczysław Transfinite diameter and extremal points for a compact subset of $\mathbf{C}^n$. *Univ. Iagel. Acta Math. No.* 29 (1992), 65–70. (Norman Levenberg) **93g:32020** 32F05 (31C15)

Jedwab, Jonathan Nonexistence results for Barker arrays. *Cryptography and coding, II* (*Cirencester*, 1989), 121–126, *Inst. Math. Appl. Conf. Ser. New Ser.*, 33, *Oxford Univ. Press, New York*, 1992. (Josep Rifà) **93f:11021** 11B83 (94A05, 94A12)

— Generalized perfect arrays and Menon difference sets. *Des. Codes Cryptogr.* **2** (1992), *no.* 1, 19–68. (Siu Lun Ma) **93f:05020** 05B10 (94A55)

— (*with* Lloyd, Sheelagh) A note on the nonexistence of Barker sequences. *Des. Codes Cryptogr.* **2** (1992), *no.* 1, 93–97. (Jeffrey O. Shallit) **93e:11032** 11B85

Jeeawock-Zedek, Fatma Interpolation de Lagrange par des splines quadratiques sur un quadrilatère de $\mathbf{R}^2$. (English and French summaries) [Lagrange interpolation by quadratic splines on a quadrilateral domain in $\mathbf{R}^2$] *RAIRO Modél. Math. Anal. Numér.* **26** (1992), *no.* 5, 575–593. (Christian Coatmélec) **93f:65015** 65D05 (41A15, 65D07)

Jefferies, Brian Processes associated with evolution equations. *J. Funct. Anal.* **91** (1990), *no.* 2, 259–277. (Takashi Ichinose) **93b:47140** 47N20 (47D06, 47N50, 58D25, 58D30, 60J25, 60J75)

— On the additivity of unbounded set functions. *Bull. Austral. Math. Soc.* **45** (1992), *no.* 2, 223–236. (Kenneth G. Miller) **93b:28037** 28C20 (28A10, 47N50, 81S40)

— (*with* Ricker, Werner J.) On the additivity of C. A. McCarthy's product spectral measure. *Integral Equations Operator Theory* **15** (1992), *no.* 4, 706–708. (From the text) **93d:47066** 47B40 (46G12)

— *see also* **Miniconference: Probability and Analysis, 93e:00024**

Jefferies, N. (*with* Walker, Michael) An algebraic zero-knowledge identification scheme. *Cryptography and coding, II* (*Cirencester*, 1989), 127–139, *Inst. Math. Appl. Conf. Ser. New Ser.*, 33, *Oxford Univ. Press, New York*, 1992. (Summary) **93a:94024** 94A60

Jefferson, Thomas R. (*with* Jorjani, Soheila; Scott, Carlton H.) Quality locations for the constrained minimax location model. (English summary) *Internat. J. Systems Sci.* **24** (1993), *no.* 5, 1009–1016. (Summary) **93k:90045** 90B85

Jeffrey, Alan A brief history of solitons. *Waves and stability in continuous media* (*Sorrento*, 1989), 204–218, *Ser. Adv. Math. Appl. Sci.*, 4, *World Sci. Publishing, River Edge, NJ*, 1991. (*see* **93g:00030**) 35Q51 (35–03, 73K12, 76B25, 76D33)

— (*with* Xu, Siqing) On the integrability of $u_t + auu_x + bu_{3x} + cu_{5x} = 0$. *Partial differential equations with real analysis*, 1–14, *Pitman Res. Notes Math. Ser.*, 263, *Longman Sci. Tech., Harlow*, 1992. (Daniel Bättig) **93m:35162** 35Q53 (58G37)

— (*with* Gurevich, Boris; Pelinovskiĭ, E. N.) A method for obtaining evolution equations for nonlinear waves in a random medium. (English summary) *Wave Motion* **17** (1993), *no.* 3, 287–295. (Summary) **93m:35152** 35Q35 (35L05)

— *see also* **Partial differential equations with complex analysis, 93h:35005** *and* **Partial differential equations with real analysis, 93k:35003**

Jeffrey, Lisa C. Chern-Simons-Witten invariants of lens spaces and torus bundles, and the semiclassical approximation. (English summary) *Comm. Math. Phys.* **147** (1992), *no.* 3, 563–604. (Ronald J. Stern) **93f:57042** 57R57 (11L03, 57N10, 58D29, 58G10, 58G18, 58G26)

Jeffrey, Richard ★ Probability and the art of judgment. Cambridge Studies in Probability, Induction, and Decision Theory. *Cambridge University Press, Cambridge*, 1992. xii+244 *pp. ISBN* 0-521-39459-7; 0-521-39770-7 (Zeno G. Swijtink) **93e:00006** 00A30 (01A75, 03B48, 60A05, 62A15, 90A05, 90A06)

Jeffreys, Harold *see* **Cook, Alan H., 93f:01018**

Jeffries, Clark ★ Code recognition and set selection with neural networks. Mathematical Modeling, 7. *Birkhäuser Boston, Inc., Boston, MA*, 1991. viii+166 *pp. ISBN* 0-8176-3585-8 (From the preface) **93i:68067** 68Q05 (68T05, 92B20)

— A new conservation law for classical electrodynamics. (English summary) *SIAM Rev.* **34** (1992), *no.* 3, 386–405. (A. P. Stone) **93i:78005** 78A20 (78A25)

Jeffries, John R. (*with* Paulik, George F.; Mayer, Raymond P.) An analysis of a perfectly conducting capacitive circuit. *J. Phys. A* **25** (1992), *no.* 13, 3827–3834. (John A. DeSanto) **93j:78007** 78A25

Jeger, Max *see* **Ineichen, Robert, 93e:01022**

Jegou, Roland (*with* Bouchitte, Vincent; Rampon, Jean-Xavier) Ordres représentables par des translations de segments dans le plan. (English and French summaries) [Representing orders by translating line-segments in the plane] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 13, 1427–1430. (Summary) **93j:68218** 68U10

Jelić, Milena On pairwise T_D-spaces. (Serbo-Croatian summary) *Mat. Vesnik* **42** (1990), *no.* 3-4, 207–209. (Summary) **93d:54041** 54E55

— On a decomposition of p-continuity. *J. Inst. Math. Comput. Sci. Math. Ser.* **4** (1991), *no.* 1, 57–60. (Ivan L. Reilly) **93a:54029** 54E55 (54C08)

Jelonek, Włodzimierz Affine surfaces with parallel shape operators. *Ann. Polon. Math.* **56** (1992), *no.* 2, 179–186. (Franki Dillen) **93c:53007** 53A15

Jelonek, Zbigniew Identity sets for polynomial automorphisms. *J. Pure Appl. Algebra* **76** (1991), *no.* 3, 333–337. (L. Andrew Campbell) **93c:14018** 14E09 (13B10, 14J50)

— The Jacobian conjecture and the extensions of polynomial embeddings. *Math. Ann.* **294** (1992), *no.* 2, 289–293. (Andrzej Nowicki) **93j:14016** 14E09

Jeltsch, Rolf (*with* Smit, Jacobus Hendrik) ★ Barriers to the accuracy of explicit three-time-level difference schemes for hyperbolic equations. (English. English and Afrikaans summaries) Universiteit van Stellenbosch. Annale [University of Stellenbosch. Annals], 1992/2. *University of Stellenbosch, Stellenbosch*, 1992. vi+34 *pp. ISBN* 0-7972-0389-3 (Bernard Bialecki) **93m:65121** 65M06 (65M12)

Jen, Erica Aperiodicity in one-dimensional cellular automata. *Chaos/Xaoc* (*Woods Hole, MA*, 1989), 121–144, *Amer. Inst. Phys., New York*, 1990. (Summary) **93d:68052** 68Q80 (82C32)

Jena, Subas Chandra (*with* Abid, Mohammad) Absolute summability factors of a Fourier series. *J. Indian Math. Soc. (N.S.)* **56** (1991), *no.* 1-4, 153–158. (Rafat N. Siddiqi) **93a:42004** 42A28

Jenda, Overtoun M. G. (*with* Enochs, Edgar E.) Tensor and torsion products of injective modules. *J. Pure Appl. Algebra* **76** (1991), *no.* 2, 143–149. (Manfred Herrmann) **93b:13013** 13C11 (13C12)

— (*with* Enochs, Edgar E.) Injective covers and resolutions. *Proceedings of the First China-Japan International Symposium on Ring Theory* (*Guilin*, 1991), 42–45, *Okayama Univ., Okayama*, 1992. (*see* **93k:16001**) 16E10

Jendo, Stefan (*with* Paczkowski, Witold M.) Multicriterion discrete optimization of large scale frame structures. (English summary) *Optimization, Vol.* 1, 2 (*Singapore*, 1992), 343–351, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93d:90005**) 90C27 (90C29)

Jendroľ, Stanislav On 3-polytopal graphs with constant edge weight. *Combinatorics* (*Eger*, 1987), 563–570, *Colloq. Math. Soc. János Bolyai*, 52, *North-Holland, Amsterdam*, 1988. (*see* **93m:05002**) 05C75

— On symmetry groups of self-dual convex polyhedra. *Fourth Czechoslovakian Symposium on Combinatorics, Graphs and Complexity* (*Prachatice*, 1990), 129–135, *Ann. Discrete Math.*, 51, *North-Holland, Amsterdam*, 1992. (From the text) **93m:52015** 52B15 (20F29)

Jeney, András Numerical investigation of ABS-methods for solving systems of nonlinear algebraic equations. (Hungarian. English and Hungarian summaries) *Alkalmaz. Mat. Lapok* **15** (1990/91), *no.* 3-4, 353–364. (Summary) **93i:65058** 65H10

— Discretization of a subclass of the ABS-methods for the solution of systems of nonlinear algebraic equations. (Hungarian. English and Hungarian summaries) *Alkalmaz. Mat. Lapok* **15** (1990/91), *no.* 3-4, 365–379. (Summary) **93i:65059** 65H10 (65Y20)

Jeng, Mu Der (*with* DiCesare, Frank) A review of synthesis techniques for Petri nets with applications to automated manufacturing systems. (English summary) *IEEE Trans. Systems Man Cybernet.* **23** (1993), *no.* 1, 301–312. 68Q90

Jeng, Yih Nen (*with* Chen, Jiann Lin) Truncation error analysis of the finite volume method for a model steady convective equation. *J. Comput. Phys.* **100** (1992), *no.* 1, 64–76. (Summary) **93c:76067** 76M25 (76R99)

— (*with* Liou, Yuan Chang) A new adaptive grid generation by elliptic equations with orthogonality at all of the boundaries. *J. Sci. Comput.* **7** (1992), *no.* 1, 63–80. (Summary) **93c:76063** 76M20 (65N50)

— (*with* Payne, Uon Jien) The application of the locally implicit method to upwind TVD schemes. (English summary) *J. Sci. Comput.* **7** (1992), *no.* 4, 339–357. (Summary) **93m:76059** 76M20 (76N10)

Jenkins, James (*with* Smith, Patrick F.) On the prime radical of a module over a commutative ring. *Comm. Algebra* **20** (1992), *no.* 12, 3593–3602. (C. P. L. Rhodes) **93k:13018** 13C13 (13A10)

Jenkins, James A. On quasiconformal mapping of L-strips. Analyse complexe (Bucharest, 1989). *Rev. Roumaine Math. Pures Appl.* **36** (1991), *no.* 7-8, 377–382. (J. Ferrand) **93a:30022** 30C62

— A criterion associated with the schlicht Bloch constant. *Kodai Math. J.* **15** (1992), *no.* 1, 79–81. (James A. Hummel) **93e:30046** 30C55 (30C75)

— Some estimates for harmonic measures. III. *Proc. Amer. Math. Soc.* **119** (1993), *no.* 1, 199–201. (Albert Baernstein II) **93k:30030** 30C85 (31A15)

Jenkins, James T. (*with* Coleman, Bernard D.) On a class of solutions in the theory of nematic phases. (English summary) *Nematics (Orsay,* 1990), 93–105, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 332, *Kluwer Acad. Publ., Dordrecht*, 1991. (Helmut Kaul) **93h:58037** 58E12 (76A15)

Jenkins, Joe (*with* Benson, Chal; Ratcliff, Gail) Bounded K-spherical functions on Heisenberg groups. *J. Funct. Anal.* **105** (1992), *no.* 2, 409–443. (Leonard F. Richardson) **93e:22017** 22E30 (22E25, 33C80)

Jenkins, P. (*with* Heffernan, Daniel M.; Daly, M.; Hawdon, B. J.; O'Gorman, J.) Characterization of chaos. (English summary) *Internat. J. Theoret. Phys.* **31** (1992), *no.* 8, 1345–1362. (Summary) **93d:58097** 58F13 (34C35, 34D45)

Jenner, A. (*with* Parvinmehr, A.; Greenough, R. D.; Wilkinson, A. J.) Discrete variable structure control for an active anti-vibration system. (English summary) *Adaptive systems in control and signal processing*, 1989 (*Glasgow*), 147–152, *IFAC Sympos. Ser.*, 1990, *No.* 1, *Pergamon, Oxford*, 1990. (*see* **93j:93007**) 93B12

Jennings, Alan (*with* McKeown, J. J.) ★ Matrix computation. Second edition. *John Wiley & Sons, Ltd., Chichester*, 1992. xvi+427 *pp. ISBN* 0-471-93527-1 (Heike Faßbender) **93m:65002** 65–01 (15–01, 65Fxx)

Jennings, George (*with* Bergstrand, Deborah; Hodges, Ken; Kuklinski, Lisa; Wiener, Janet; Harary, Frank) Product graphs are sum graphs. (English summary) *Math. Mag.* **65** (1992), *no.* 4, 262–264. (Summary) **93g:05117** 05C75

Jennings, L. S. (*with* Fisher, Michael Ernest) Discrete-time optimal control problems with general constraints. (English summary) *ACM Trans. Math. Software* **18** (1992), *no.* 4, 401–413. 49M05 (65K99)

— (*with* Rehbock, V.; Teo, Kok Lay; Lee, Cho Seng) An exact penalty function approach to all-time-step constrained discrete-time optimal control problems. *Appl. Math. Comput.* **49** (1992), *no.* 2-3, 215–230. (M. Teboulle) **93d:49040** 49M30 (49J52, 65K10, 90C30, 90C45)

— (*with* Rehbock, V.; Teo, Kok Lay) A computational procedure for suboptimal robust controls. (English summary) *Dynamics Control* **2** (1992), *no.* 4, 331–348. (Summary) **93h:93026** 93B40 (93B36)

— (*with* Teo, Kok Lay; Rehbock, V.) A new computational algorithm for functional inequality constrained optimization problems. (English summary) *Automatica J. IFAC* **29** (1993), *no.* 3, 789–792. 90C45 (49M07)

Jennison, Christopher (*with* Turnbull, Bruce W.) Group sequential tests and repeated confidence intervals. *Handbook of sequential analysis*, 283–311, *Statist. Textbooks Monographs*, 118, *Dekker, New York*, 1991. (*see* **93g:62102**) 62L10 (62L12)

— (*with* Turnbull, Bruce W.) Sequential equivalence testing and repeated confidence intervals, with applications to normal and binary responses. (English and French summaries) *Biometrics* **49** (1993), *no.* 1, 31–43. 62P10

Jennrich, Robert I. (*with* Jamshidian, Mortaza) Conjugate gradient acceleration of the EM algorithm. (English summary) *J. Amer. Statist. Assoc.* **88** (1993), *no.* 421, 221–228. (Summary) **93k:62053** 62F10

Jensen, A. *see* **Jensen, Arne[2]**

Jensen, Anders (*with* Jøndrup, Søren) Smash products, group actions and group graded rings. *Math. Scand.* **68** (1991), *no.* 2, 161–170. (Michel Van den Bergh) **93a:16026** 16S40 (16W20, 16W50)

— (*with* Beaulieu, Raymond A.) Exact embeddings into Artinian rings. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 2, 391–399. (K. R. Goodearl) **93g:16031** 16P40 (16S36, 16W50, 16W60)

Jensen, Arne[2] Mapping properties of the wave operators in scattering theory. *Approximation by solutions of partial differential equations (Hanstholm*, 1991), 103–110, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 365, *Kluwer Acad. Publ., Dordrecht*, 1992. (Evgeni L. Korotyaev) **93i:47011** 47A40 (35J10, 35P25, 47F05)

— High energy resolvent estimates for Schrödinger operators. *Ideas and methods in quantum and statistical physics (Oslo*, 1988), 254–260, *Cambridge Univ. Press, Cambridge*, 1992. (*see* **93e:00034**) 47F05 (35J10, 47N50, 81U05)

— (*with* Nakamura, Shu[1]) Mapping properties of wave and scattering operators of two-body Schrödinger operators. *Lett. Math. Phys.* **24** (1992), *no.* 4, 295–305. (Evgeni L. Korotyaev) **93g:35107** 35P25 (35J10, 47F05, 81U05)

Jensen, Bjørn (*with* Soleng, Harald H.) General-relativistic model of a spinning cosmic string. *Phys. Rev. D* (3) **45** (1992), *no.* 10, 3528–3533. (Nora Bretón Báez) **93d:83012** 83C15 (83F05)

— Production of quantum particles on cones. *Phys. Scripta* **45** (1992), *no.* 6, 548–551. (Summary) **93c:81149** 81T20 (83C47)

Jensen, C. U. Finite groups as Galois groups over arbitrary fields. *Proceedings of the International Conference on Algebra, Part* 2 (*Novosibirsk*, 1989), 435–448, *Contemp. Math.*, 131, *Part* 2, *Amer. Math. Soc., Providence, RI*, 1992. (Martin Epkenhans) **93i:12008** 12F12 (12F10)

— (*with* Prestel, Alexander) Unique realizability of finite abelian 2-groups as Galois groups. *J. Number Theory* **40** (1992), *no.* 1, 12–31. (Helmut Völklein) **93d:12007** 12F12 (12J10)

Jensen, D. R. Invariance under dependence by mixing. (English summary) *Topics in statistical dependence (Somerset, PA*, 1987), 283–293, *IMS Lecture Notes Monograph Ser.*, 16, *Inst. Math. Statist., Hayward, CA*, 1990. (Summary) **93i:60024** 60E05 (60F05, 62H05)

— (*with* Ramirez, D. E.) Misspecified T^2 tests. II. Series expansions. *Comm. Statist. Simulation Comput.* **20** (1991), *no.* 1, 97–108. (H. K. Hsieh) **93a:62083b** 62H10 (62H15)

— (*with* Ramirez, D. E.) Misspecified T^2 tests. I. Location and scale. *Comm. Statist. Theory Methods* **20** (1991), *no.* 1, 249–259. (H. K. Hsieh) **93a:62083a** 62H10 (62H15)

— The use of randomization in repeated measurements. *Statist. Probab. Lett.* **13** (1992), *no.* 3, 229–233. (Summary) **93k:62123** 62H15

Jensen, David L. (*with* King, Alan J.) Linear-quadratic efficient frontiers for portfolio optimization. (English summary) *Appl. Stochastic Models Data Anal.* **8** (1992), *no.* 3, 195–207. 90A09 (90C90)

Jensen, Finn M. (*with* Thoft-Christensen, P.) Application of linear decomposition technique in reliability-based structural optimization. (English summary) *System modelling and optimization (Zurich*, 1991), 953–962, *Lecture Notes in Control and Inform. Sci.*, 180, *Springer, Berlin*, 1992. (*see* **93e:90003**) 90B25 (90C90)

Jensen, Gary R. (*with* Rigoli, Marco) Neutral surfaces in neutral four-spaces. *Matematiche (Catania)* **45** (1990), *no.* 2, 407–443 (1991). (Alfonso Romero) **93d:53084** 53C50 (53C42)

Jensen, J. L. Saddlepoint approximations to the distribution of the total claim amount in some recent risk models. (English summary) *Scand. Actuar. J.* **1991**, *no.* 2, 154–168. (Syed N. U. A. Kirmani) **93h:62188** 62P05 (60K99)

bang-Jensen, Jørgen *see* **Bang-Jensen, Jørgen**

Jensen, Jørn M. Cyclic concatenated codes with constacyclic outer codes. *IEEE Trans. Inform. Theory* **38** (1992), *no.* 3, 950–959. (Raymond Hill) **93d:94021** 94B15

Jensen, M. H. (*with* Paladin, Giovanni; Vulpiani, A.) Kolmogorov spectra and intermittency in turbulence. *The global geometry of turbulence (Rota*, 1990), 221–231, *NATO Adv. Sci. Inst. Ser. B Phys.*, 268, *Plenum, New York*, 1991. (*see* **93b:76001**) 76F05 (76F20)

flensted-Jensen, Mogens *see* **Flensted-Jensen, Mogens**

grønbech-Jensen, Niels *see* **Grønbech-Jensen, Niels**

Jensen, O. E. (*with* Grotberg, J. B.) Insoluble surfactant spreading on a thin viscous film: shock evolution and film rupture. (English summary) *J. Fluid Mech.* **240** (1992), 259–288. (Summary) **93f:76026** 76D08 (76D45, 76E99, 76L05, 76Z99)

Jensen, Soren S. (*with* Suri, Manil) On the L_2 error for the p-version of the finite element method over polygonal domains. *Comput. Methods Appl. Mech. Engrg.* **97** (1992), *no.* 2, 233–243. (Summary) **93d:65099** 65N30

— p-version of mixed finite element methods for Stokes-like problems. (English summary) Reliability in computational mechanics (Kraków, 1991). *Comput. Methods Appl. Mech. Engrg.* **101** (1992), *no.* 1-3, 27–41. (A. J. Meir) **93m:76058** 76M10 (65N30, 76D07)

— Adaptive-dimensional reduction numerical solution of monotone quasilinear boundary value problems. (English summary) *SIAM J. Numer. Anal.* **29** (1992), *no.* 5, 1294–1320. (Carsten Carstensen) **93g:65146** 65N30 (65N50, 73C50, 73V25)

Jensen, Søren Tolver (*with* Johansen, Søren; Lauritzen, Steffen L.) Globally convergent algorithms for maximizing a likelihood function. *Biometrika* **78** (1991), *no.* 4, 867–877. (G. P. Bhattacharjee) **93c:62040** 62F10 (65K10, 65U05)

Jensen, Thomas P. Strictness analysis in logical form. *Functional programming languages and computer architecture (Cambridge, MA*, 1991), 352–366, *Lecture Notes in Comput. Sci.*, 523, *Springer, Berlin*, 1991. (Summary) **93a:68081** 68Q55 (03B70, 68N20)

Jensen, Tommy R. *see* **Julius Petersen graph theory centennial, 93i:05003**

Jentsch, Lothar Zur klassischen Kontaktaufgabe der Elastostatik. (English and Russian summaries) [On the classical contact problem of elastostatics] *Z. Anal. Anwendungen* **9** (1990), *no.* 5, 433–453. (Ján Lovišek) **93f:73094** 73T05 (35S15, 65N38, 73C02, 73V10)

— On a bimetal problem for heat conductions. *Symposium "Analysis on Manifolds with Singularities" (Breitenbrunn*, 1990), 69–78, *Teubner-Texte Math.*, 131, *Teubner, Stuttgart*, 1992. (*see* **93k:35004**) 35C99 (80A20)

— (*with* Assaf, M. A.) On the elasticity theory of microporous solids. (English, German and Russian summaries) *Z. Angew. Math. Mech.* **72** (1992), *no.* 8, 321–340. (From the introduction) **93k:73009** 73B99 (35Q72, 73B25, 73C99, 73S10, 73T05, 73V10)

Jeon, Chang Ho (*with* Song, Jong Chul) On the sufficient condition for the linearized approximation of the Bénard convection problem. *Bull. Korean Math. Soc.* **29** (1992), *no.* 1, 125–135. (Karen A. Ames) **93c:76073** 76R05 (76E15)

Jeon, Jong Woo (*with* Park, Byeong U.; Song, Moon S.; Kim, Woo Chul) Local asymptotic normality for independent not identically distributed observations in semiparametric models. *J. Korean Statist. Soc.* **20** (1991), *no.* 1, 84–92. (Arup Bose) **93d:62043** 62F12 (62G20)

— (*with* Lee, Kee-Won) Behrens-Fisher problem from a model selection point of view. *J. Korean Statist. Soc.* **20** (1991), *no.* 2, 99–107. 62F03

— (*with* Choi, Han Sik; Kim, Chi Yong; Kim, Woo Chul) A strong large deviations theorem for the ratio of independent random variables. *J. Korean Math. Soc.* **29** (1992), *no.* 1, 153–163. (V. K. Rohatgi) **93e:60050** 60F10

Jeong, Ja. A. (*with* Lee, Sa Ge) On purely infinite C^*-algebras. *Proc. Amer. Math. Soc.* **117** (1993), *no.* 3, 679–682. (William Paschke) **93d:46099** 46L05

Jeong, Jae-Tack (*with* Moffatt, H. Keith) Free-surface cusps associated with flow at low Reynolds numbers. (English summary) *J. Fluid Mech.* **241** (1992), 1–22. (Summary) **93f:76036** 76D45 (76E99)

Jeong, Jae Ug (*with* Park, Jong Yeoul) Retractions and nonlinear ergodic theorems for commutative semigroups of Lipschitzian mappings in Banach spaces. *Math. Japon.* **37** (1992), *no.* 2, 349–357. (Simeon Reich) **93c:47079** 47H20 (47A35)

Jeong, Joohee Finitary decidability implies congruence permutability for congruence modular varieties. *Algebra Universalis* **29** (1992), *no.* 3, 441–448. (S. Comer) **93h:08010** 08B10 (03B25, 03C05)

— Finitely decidable congruence modular varieties. *Trans. Amer. Math. Soc.* **339** (1993), *no.* 2, 623–642. (E. W. Kiss) **93m:08011** 08B10 (03B25)

Jeong, Kwang Mo (*with* Lee, Kee-Won; Kim, Choongrak; Sohn, Keon Tae) Bootstrapping generalized linear models with random regressors. (English summary) *J. Korean Statist. Soc.* **21** (1992), *no.* 1, 70–79. 62J12

Jeong, Meeseon (*with* Kim, Choongrak) Detecting influential observations on transformation parameter in Box-Cox model. (English summary) *J. Korean Statist. Soc.* **21** (1992),

no. 1, 35–46. 62J05

Jepson, O. N. (*with* Rake, H.) The adjusted least squares method for identification of dynamical systems. (English summary) *Identification and system parameter estimation* 1991, *Vol.* 1,2 (*Budapest*, 1991), 733–736, *IFAC Sympos. Ser.*, 3, *Pergamon, Oxford*, 1992. (*see* **93h:93009**) 93B30 (93B40)

Jerbashian, A. M. *see* **Dzhrbashyan, A. M.**

Jerbi Amamou, Moufida (*with* El Mir, Hassine) Sur le prolongement des courants positifs fermés avec conditions sur les tranches. (English and French summaries) [Extending closed positive currents with conditions on the slices] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 7, 777–780. (Salomon Ofman) **93k:32013** 32C30

Jerebic, Izidor (*with* Trobec, Roman) Optimal routing in toroidal networks. (English summary) *Inform. Process. Lett.* **43** (1992), *no.* 6, 285–291. (Summary) **93i:68020** 68M10 (68Q10)

Jeremías López, Ana ★ El grupo fundamental relativo. Teoría de Galois y localización. (Spanish) [The relative fundamental group. Galois theory and localization] Álxebra [Algebra], 56. *Universidad de Santiago de Compostela, Departamento de Álgebra, Santiago de Compostela*, 1991. xviii+151 *pp. ISBN* 84-404-8451-8 (Editors) **93c:18010** 18E35 (16D90, 55Q99)

Jerison, David Sharp estimates for harmonic measure in convex domains. *Partial differential equations with minimal smoothness and applications* (*Chicago, IL*, 1990), 149–162, *IMA Vol. Math. Appl.*, 42, *Springer, New York*, 1992. (Jiong Qi Wu) **93d:31004** 31B05 (35J60)

— (*with* Jerison, Michael) Approximately rational consumer demand. (English summary) *Econom. Theory* **3** (1993), *no.* 2, 217–241. (Summary) **93m:90020** 90A40

Jerison, Michael (*with* Jerison, David) Approximately rational consumer demand. (English summary) *Econom. Theory* **3** (1993), *no.* 2, 217–241. (Summary) **93m:90020** 90A40

džonova-Jerman-Blažič, B. *see* **Džonova-Jerman-Blažič, B.**

Jermyn, I. H. Self-consistent compactification at finite temperature on $\mathbf{R} \times S^5 \times S^3$. *Phys. Rev. D* (3) **45** (1992), *no.* 10, 3678–3689. (Summary) **93c:81150** 81T20 (83C47, 83E15)

Jernigan, Robert W. (*with* Modarres, Reza) Testing the equality of correlation matrices. (English summary) *Comm. Statist. Theory Methods* **21** (1992), *no.* 8, 2107–2125. (Wanxi Chen) **93h:62114** 62H15

Jerofsky, Thomas (*with* Reitmann, Volker) Global convergence for solutions of pendulum-like differential equations. (English summary) *Wiss. Z. Tech. Univ. Dresden* **41** (1992), *no.* 5, 7–9. (Summary) **93h:65089** 65L05

Jerome, Joseph W. Evolution systems in semiconductor device modeling: a cyclic uncoupled line analysis for the Gummel map. (English summary) *Math. Methods Appl. Sci.* **9** (1987), *no.* 4, 455–492. (Summary) **93i:82087** 82D99 (78A55, 81V10)

— Numerical approximation of PDE system fixed-point maps via Newton's method. Proceedings of the International Symposium on Computational Mathematics (Matsuyama, 1990). *J. Comput. Appl. Math.* **38** (1991), *no.* 1-3, 211–230. (A. Quarteroni) **93b:65085** 65J15 (65N30)

Jeroslow, Robert G. (*with* Martin, Kipp; Rardin, Ronald L.; Wang, Jinchang) Gainfree Leontief substitution flow problems. (English summary) *Math. Programming* **57** (1992), *no.* 3, *Ser. A*, 375–414. (M. Mañas) **93m:90091** 90C35 (90C05, 90C08, 90C10)

Jerri, Abdul J. ★ Integral and discrete transforms with applications and error analysis. Monographs and Textbooks in Pure and Applied Mathematics, 162. *Marcel Dekker, Inc., New York*, 1992. xvi+825 *pp. ISBN* 0-8247-8252-6 (Philip Heywood) **93m:44001** 44–02 (65T20, 94A11)

Jerrum, Mark (*with* Gao, Shaodi; Kaufmann, Michael; Mehlhorn, Kurt; Rülling, Wolfgang; Storb, Christoph) On continuous homotopic one layer routing. (English summary) *Proceedings of the Fourth Annual Symposium on Computational Geometry* (*Urbana, IL*, 1988), 392–402, *ACM, New York*, 1988. (*see* **93k:68003**) 68U05 (68Q25)

— (*with* Sinclair, Alistair; McKay, Brendan D.) When is a graphical sequence stable? *Random graphs, Vol.* 2 (*Poznań*, 1989), 101–115, *Wiley-Intersci. Publ., Wiley, New York*, 1992. (Lyuben R. Mutafchiev) **93d:05130** 05C75

Jeske, Daniel R. (*with* Harville, David A.) Mean squared error of estimation or prediction under a general linear model. (English summary) *J. Amer. Statist. Assoc.* **87** (1992), *no.* 419, 724–731. (A. L. Nagar) **93j:62173** 62J05

— Predicting the value of an integer-valued random variable. (English summary) *Statist. Probab. Lett.* **16** (1993), *no.* 4, 297–300. (Summary) **93m:60076** 60G25 (62J05, 62M20)

Jeske, F. (*with* Demuth, Michael; Kirsch, Werner) Quantitative estimates for Schrödinger and Dirichlet semigroups. (English summary) *Journées "Équations aux Dérivées Partielles"* (*Saint-Jean-de-Monts*, 1992), *Exp. No. XVII*, 6 *pp., École Polytech., Palaiseau*, 1992. (*see* **93e:35005**) 47D03 (47F05, 81Q10)

Jespers, Eric (*with* Beattie, Margaret) On perfect graded rings. *Comm. Algebra* **19** (1991), *no.* 8, 2363–2371. (Piotr Grzeszczuk) **93b:16076** 16W50

— Units of integral group rings. *Proceedings of the First China-Japan International Symposium on Ring Theory* (*Guilin*, 1991), 71–73, *Okayama Univ., Okayama*, 1992. (*see* **93k:16001**) 16U60

— (*with* Leal, Guilherme; Polcino Milies, César) Indecomposable R.A. loops and their loop algebras. *C. R. Math. Rep. Acad. Sci. Canada* **14** (1992), *no.* 5, 189–194. (Orin Chein) **93m:20108** 20N05 (17D05)

— Computing the extended centroid of abelian-group graded rings. (English summary) *Comm. Algebra* **20** (1992), *no.* 12, 3603–3608. (Stefaan Caenepeel) **93k:16078** 16W50 (16S36)

— (*with* Decruyenaere, Fabien) Prüfer domains and graded rings. *J. Algebra* **150** (1992), *no.* 2, 308–320. (Daniel D. Anderson) **93e:13033** 13F05 (13A02, 16S35)

— (*with* Parmenter, M. M.) Commutative absolute subretracts. (English summary) *J. Austral. Math. Soc. Ser. A* **54** (1993), *no.* 1, 128–132. (Summary) **93j:13023** 13E05 (16P40)

Jessup, Barry (*with* Ndombol, Bitjong) Lower bounds for the L.-S. category of products. *Proc. Amer. Math. Soc.* **117** (1993), *no.* 3, 839–842. (Yves Félix) **93d:55015** 55P50 (55M30, 55P60, 55P62)

— Probing L-S category with maps. *Trans. Amer. Math. Soc.* **339** (1993), *no.* 1, 351–360. (Yves Félix) **93k:55004** 55M30 (55P60, 55P62)

Jessup, E. R. Applying divide and conquer techniques to the nonsymmetric eigenvalue problem. (English summary) *Computational and applied mathematics, I* (*Dublin*, 1991), 243–251, *North-Holland, Amsterdam*, 1992. (*see* **93j:00007**) 65F15

— (*with* Geist, G. A.) Parallel implementation of a nonsymmetric tridiagonal eigensolver. (English summary) *Parallel processing for scientific computing* (*Houston, TX*, 1991), 11–15, *SIAM, Philadelphia, PA*, 1992. (*see* **93g:65178**) 65F15 (65Y05)

Jesudason, C. G. Reflections on uncertainty and errors. *J. Indian Inst. Sci.* **72** (1992), *no.* 1, 27–33. (Summary) **93a:81024** 81P15

Jesuraj, Ramasamy (*with* Gowrisankaran, Kohur) Compact multipolar sets. (French summary) *Canad. Math. Bull.* **35** (1992), *no.* 1, 81–83. (Klaus Janssen) **93a:31019** 31D05

Jetschke, Gottfried Lattice approximation of a nonlinear stochastic partial differential equation with white noise. (English summary) *Random partial differential equations* (*Oberwolfach*, 1989), 107–126, *Internat. Ser. Numer. Math.*, 102, *Birkhäuser, Basel*, 1991. (Wilfried Grecksch) **93h:60091** 60H15 (35R60)

Jetter, K. (*with* Chui, Charles K.; Ward, Joseph D.) Cardinal interpolation with differences of tempered functions. (English summary) Advances in the theory and applications of radial basis functions. *Comput. Math. Appl.* **24** (1992), *no.* 12, 35–48. (Antonio López-Carmona) **93i:65016** 65D05 (41A05)

Jetto, L. (*with* Longhi, Sauro; Fratini, A.) Adaptive deadbeat trajectory tracking for robotic manipulators. (English summary) *Mathematics of the analysis and design of process control* (*Dublin*, 1991/*Lille*, 1991), 483–492, *North-Holland, Amsterdam*, 1992. (*see* **93g:93004**) 93C40 (70B15, 70Q05, 93C85)

— A numerical method for computing the approximate solution of the infinite-dimensional discrete-time optimal linear filtering problem. (English summary) *Mutual impact of computing power and control theory* (*Prague*, 1992), 85–90, *Czech. Acad. Sci., Prague*, 1992. (*see* **93f:93005**) 93E11 (93C25)

Jetzer, Philippe (*with* Scialom, David) Dynamical instability of the static real scalar field solutions to the Einstein-Klein-Gordon equations. (English summary) *Phys. Lett. A* **169** (1992), *no.* 1-2, 12–20. (Gheorghe Zet) **93h:83014** 83C20

van der Jeugt, J. *see* **Van der Jeugt, J.**

Jeune, Albert Prescription de la courbure de Ricci sur $\mathbf{C}^n$, $n > 2$. (English summary) [Prescription of Ricci curvature over $\mathbf{C}^n$, $n > 2$] *Bull. Sci. Math.* (2) **116** (1992), *no.* 2, 185–226. (Summary) **93d:32023** 32F07 (35B45, 35J60, 53C21, 53C55)

— (*with* El Soufi, Ahmed) Indice de Morse des applications p-harmoniques. (English and French summaries) [Morse index of p-harmonic maps] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 11, 1189–1192. (Andrea Ratto) **93m:58025** 58E20

Jevicki, Antal Matrix models and field theory. (English summary) *Nonperturbative methods in low-dimensional quantum field theories* (*Debrecen*, 1990), 167–183, *World Sci. Publishing, River Edge, NJ*, 1991. (*see* **93f:81005**) 81T40 (81–02, 81T30)

— (*with* Demeterfi, Krešimir; Rodrigues, João P.) Scattering amplitudes and loop corrections in collective string field theory. II. *Nuclear Phys. B* **365** (1991), *no.* 2, 499–519. (Summary) **93a:81151** 81T30

— (*with* Avan, Jean) Classical integrability and higher symmetries of collective string field theory. *Phys. Lett. B* **266** (1991), *no.* 1-2, 35–41. (Summary) **93e:58078** 58F07 (81R10, 81T30)

— (*with* Avan, Jean) Algebraic structures and eigenstates for integrable collective field theories. (English summary) *Comm. Math. Phys.* **150** (1992), *no.* 1, 149–166. (David Sénéchal) **93i:81183** 81T30 (17B81, 81R05)

— (*with* Avan, Jean) String field actions from W_∞. *Modern Phys. Lett. A* **7** (1992), *no.* 4, 357–370. (C. Gauthier) **93a:81148** 81T30 (81R10)

— Nonperturbative collective field theory. *Nuclear Phys. B* **376** (1992), *no.* 1, 75–98. (Helmut Rumpf) **93f:81112** 81T30

Jevtić, Miroljub A note on the Carleson measure characterization of BMOA functions on the unit ball. *Complex Variables Theory Appl.* **17** (1992), *no.* 3-4, 189–194. (Shobha Madan) **93a:32007** 32A37 (42B30)

Jewell, Nicholas P. (*with* Wang, Mei-Cheng; Brookmeyer, Ron) Statistical models for prevalent cohort data. (English and French summaries) *Biometrics* **49** (1993), *no.* 1, 1–11. (Summary) **93m:62218** 62P10

Jewitt, Ian Applications of likelihood ratio orderings in economics. (English summary) *Stochastic orders and decision under risk* (*Hamburg*, 1989), 174–189, *IMS Lecture Notes Monograph Ser.*, 19, *Inst. Math. Statist., Hayward, CA*, 1991. (Summary) **93i:90008** 90A05 (90A09, 90A19)

Jex, Igor (*with* Drobný, Gabriel) SU(1, 1) and SU(2) squeezing in trilinear optical processes. *J. Modern Opt.* **39** (1992), *no.* 5, 1043–1053. (Summary) **93b:81319** 81V80 (81R30)

Jeyakumar, A. V. (*with* Sarasija, P. B.) Socles of Verma modules in quantum groups. (English summary) *Bull. Austral. Math. Soc.* **47** (1993), *no.* 2, 221–231. (Ya. S. Soĭbel'man) **93k:17029** 17B37 (81R50)

Jeyakumar, V. (*with* Mond, B.) On generalised convex mathematical programming. *J. Austral. Math. Soc. Ser. B* **34** (1992), *no.* 1, 43–53. (Reinhard Nehse) **93d:90056** 90C29 (90C26, 90C32)

— Infinite-dimensional convex programming with applications to constrained approximation. (English summary) *J. Optim. Theory Appl.* **75** (1992), *no.* 3, 569–586. (Blagun Kalchev) **93i:90078** 90C25 (41A65, 49N15)

— (*with* Wolkowicz, Henry) Generalizations of Slater's constraint qualification for infinite convex programs. *Math. Programming* **57** (1992), *no.* 1, *Ser. B*, 85–101. (Doug Ward) **93e:90070** 90C48 (49N15, 90C25)

Jeyaratnam, S. Confidence intervals for the correlation coefficient. (English summary) *Statist. Probab. Lett.* **15** (1992), *no.* 5, 389–393. (Summary) **93g:62083** 62H20 (62F25)

Ježek, J. *see* **Ježek, Jaroslav**

Ježek, Jan (*with* Kučera, Vladimír; Krupička, Miloš) Numerical analysis of Diophantine equations. (English summary) *Advanced methods in adaptive control for industrial applications* (*Praha*, 1990), 128–136, *Lecture Notes in Control and Inform. Sci.*, 158, *Springer, Berlin*, 1991. (Summary) **93e:65077** 65H05 (11Y50)

Ježek, Jaroslav (*with* Kepka, Tomáš) A note on medial division groupoids. *Proc. Amer. Math. Soc.* **119** (1993), *no.* 2, 423–426. (Elena Brožíková) **93k:20100** 20N02

ekiel-Jeżewska, Maria L. *see* **Ekiel-Jeżewska, Maria L.**

Jeżewski, W. Method of characterization of chaotic trajectories. *Phys. Lett. A* **164** (1992), *no.* 3-4, 274–278. (Summary) **93a:58122** 58F13

Jezierski, E. Local assignability of linear time-invariant systems. (English summary) *Computational systems analysis* 1992 (*Berlin*, 1992), 189–194, *Elsevier, Amsterdam*, 1992. (*see* **93e:00021**) 93C05

Jezierski, Jerzy The semi-index product formula. *Fund. Math.* **140** (1992), *no.* 2, 99–120. (Takashi Matsuoka) **93b:55002** 55M20

Jha, M. (*with* Dixon, L. C. W.) The parallel truncated Newton method implemented on a multitransputer network. (English summary) *Parallel computing '91* (*London*, 1991), 175–182, *Adv. Parallel Comput.*, 4, *North-Holland, Amsterdam*, 1992. (*see* **93f:00016**) 65K10 (65Y05)

Jha, Pradip K. Decompositions of the Kronecker product of a cycle and a path into long cycles and long paths. (English summary) *Indian J. Pure Appl. Math.* **23** (1992), *no.* 8, 585–602. (Cun-Quan Zhang) **93g:05082** 05C38 (05C70)

— Hamiltonian decompositions of products of cycles. (English summary) *Indian J. Pure Appl. Math.* **23** (1992), *no.* 10, 723–729. (S. F. Kapoor) **93k:05106** 05C45 (05C38)

— (*with* Tripathy, Kishor C.) Symmetries of the renormalization group equations. *J. Math. Phys.* **33** (1992), *no.* 8, 2675–2681. (Summary) **93d:81123** 81T17 (81V05, 81V10)

— (*with* Slutzki, Giora) A note on outerplanarity of product graphs. (English summary) *Zastos. Mat.* **21** (1993), *no.* 4, 537–544. (Bojan Mohar) **93m:05060** 05C10

Jha, Pranava K. (*with* Slutzki, Giora) Convex-expansions algorithms for recognition and isometric embedding of median graphs. (English summary) *Ars Combin.* **34** (1992), 75–92. (Summary) **93m:05165** 05C75 (05C10, 05C85, 68R10)

Jha, Ramanand A parity-violating U_4-gravitation theory. (English summary) *Gen. Relativity Gravitation* **25** (1993), *no.* 3, 281–290. (Summary) **93j:83066** 83D05

Jha, Somesh (*with* Pardalos, Panos M.) Complexity of uniqueness and local search in quadratic 0-1 programming. *Oper. Res. Lett.* **11** (1992), *no.* 2, 119–123. (Nikolay N. Ivanov) **93e:90042** 90C09 (90C20, 90C60)

Jha, V. *see* **Jha, Vikram**

Jha, V. D. (*with* Khurana, A. P.) Recurrence relations between moments of order statistics from a doubly truncated Pareto distribution. (English summary) *Sankhyā Ser. B* **53** (1991), *no.* 1, 11–16. (Summary) **93e:62138** 62G30 (62E15)

Jha, Vikram (*with* Johnson, Norman Lloyd[1]) On the ubiquity of Denniston-type translation ovals in generalized André planes. (English summary) *Combinatorics '90* (*Gaeta*, 1990), 279–296, *Ann. Discrete Math.*, 52, *North-Holland, Amsterdam*, 1992. (P. B. Kirkpatrick) **93m:51007** 51E15 (51E21)

— (*with* Johnson, Norman Lloyd[1]) Translation planes of large dimension admitting nonsolvable groups. (English summary) *J. Geom.* **45** (1992), *no.* 1-2, 87–104. (T. G. Ostrom) **93i:51013** 51E15 (20B25, 51A40)

Jhajj, H. S. (*with* Sharma, M. K.) A class of estimators of finite population mean using information on two auxiliary variables. *Gaṇita* **42** (1991), *no.* 1-2, 121–132 (1992). 62D05

— (*with* Sharma, M. K.) Generalized class of estimators of finite population mean using multi-auxiliary information when pairwise correlation coefficients are known. (English and Hindi summaries) *J. Indian Soc. Agricultural Statist.* **44** (1992), *no.* 1, 15–26, i. 62D05

Jharnadan (*with* Sen, Rabindranath) On a class of complex nonlinear programming problems. (English summary) *Optimization, Vol.* 1, 2 (*Singapore*, 1992), 98–103, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93d:90005**) 90C30

Jhemi, Ali (*with* Byrnes, Christopher I.) Shock waves for Riccati partial differential equations arising in nonlinear optimal control. *Systems, models and feedback: theory and applications* (*Capri*, 1992), 211–227, *Progr. Systems Control Theory*, 12, *Birkhäuser Boston, Boston, MA*, 1992. (Angelo Favini) **93e:49026** 49K20 (35B37, 93C20)

Ji, Chuanshu Some estimation problems for Gibbs states. (English summary) *Spatial statistics and imaging* (*Brunswick, ME*, 1988), 130–137, *IMS Lecture Notes Monograph Ser.*, 20, *Inst. Math. Statist., Hayward, CA*, 1991. (*see* **93g:62004**) 62M30 (60K35, 82B10)

Ji, D. M. (*with* Yin, Gang George) Weak convergence of term structure movements and the connection of prices and interest rates. (English summary) *Stochastic Anal. Appl.* **11** (1993), *no.* 1, 61–76. 90A09 (60F05)

Ji, Guo Xing (*with* Du, Hong Ke) Williamson's theorem on Hilbert space. *Ann. Differential Equations* **8** (1992), *no.* 1, 13–17. (Matjaž Omladič) **93k:47028** 47A60

Ji, Hai Bo (*with* Wu, Ji Ke; Hu, Hai Chang) Geometric description and computational method for bifurcation. (English summary) *Sci. China Ser. A* **35** (1992), *no.* 5, 597–606. (Jacobo Pejsachowicz) **93j:65084** 65H17 (58–04, 65H10)

Ji, Lizhen (*with* Wentworth, Richard) Spectral convergence on degenerating surfaces. *Duke Math. J.* **66** (1992), *no.* 3, 469–501. (Colette Anné) **93g:32031** 32G20 (58G25)

Ji, Ping (*with* Rohatgi, Vijay K.; Saleh, A. K. Md. Ehsanes; Ahluwalia, Rashpal) Null distribution of locally most powerful tests for the two sample problem when the combined sample is type II censored. *Soochow J. Math.* **18** (1992), *no.* 2, 123–134. (Title) **93f:62069** 62G10

Ji, Ronghui (*with* Pedersen, Steen) Certain full group C^*-algebras without proper projections. *J. Operator Theory* **24** (1990), *no.* 2, 239–253. (Masatoshi Enomoto) **93c:46109** 46L05

Ji, Shanyu (*with* Shiffman, Bernard) Properties of compact complex manifolds carrying closed positive currents. (English summary) *J. Geom. Anal.* **3** (1993), *no.* 1, 37–61. (Salomon Ofman) **93m:32014** 32C30 (32J27)

Ji, Xiao Da (*with* Calogero, Francesco) C-integrable nonlinear PDEs. II. *J. Math. Phys.* **32** (1991), *no.* 10, 2703–2717. (Theodosios Christodoulakis) **93b:58064** 58F07 (35Q58, 58F37)

Ji, Xiao Fu L. V. Kantorovich and linear programming. (Chinese) *Collected research papers on the history of mathematics, Vol.* 3 (*Chinese*), 163–167, *Inner Mongolia Univ. Press, Hohhot*, 1992. (*see* **93i:01006**) 01A60 (01A70)

Ji, Xin Hua Global stability for n-dimensional Lotka-Volterra competition simple chain systems. *Dynamical systems and related topics* (*Nagoya*, 1990), 211–222, *Adv. Ser. Dyn. Syst.*, 9, *World Sci. Publishing, River Edge, NJ*, 1991. (Harlan W. Stech) **93g:92022** 92D25 (34D20)

— (*with* Zhu, Guang Tian; Wu, Jin Gang; Liang, Ben Zhong; Yang, Xue Shi) Existence of solution to transpiration control problem. (English summary) *J. Appl. Math. Stochastic Anal.* **5** (1992), *no.* 4, 339–361. (Summary) **93m:93050** 93C20 (35Q99, 80A20, 93C95)

Ji, Xing (*with* Zheng, Guo Ying) A new approach to BEM of elastic plate. *Theory and applications of boundary element methods* (*Beijing*, 1991), 325–332, *Internat. Acad. Publ., Beijing*, 1991. (*see* **93b:65008**) 73V10 (65N38)

— (*with* Zheng, Guo Ying) An elaboration of integral equations of a new boundary element method for thin elastic shells. (Chinese. English and Chinese summaries) *J. Southeast Univ.* **22** (1992), *no.* 6, 58–65. 73K15 (73V10)

Ji, Xing Zhi (*with* Liu, Xinzhi; Wong, Yau Shu) Monotone iterations for numerical solutions of nonlinear elliptic partial differential equations. *Appl. Math. Comput.* **50** (1992), *no.* 1, 59–91. (Lubor Malina) **93g:65135** 65N22 (65H10)

— (*with* Wong, Yau Shu) On shooting algorithm for Sturm-Liouville eigenvalue problems with periodic and semi-periodic boundary conditions. (English summary) *Appl. Math. Comput.* **51** (1992), *no.* 2-3, 87–104. (Ekkehard Wagenführer) **93j:65122** 65L15 (34A50, 34B24)

— A two-dimensional bisection method for solving two-parameter eigenvalue problems. (English summary) *SIAM J. Matrix Anal. Appl.* **13** (1992), *no.* 4, 1085–1093. (Summary) **93f:65035** 65F15 (65L10, 65N25)

Ji, Yuandong (*with* Chizeck, Howard Jay; Feng, Xiangbo; Loparo, Kenneth A.) Stability and control of discrete-time jump linear systems. *Control Theory Adv. Tech.* **7** (1991), *no.* 2, 247–270. (Summary) **93a:93071** 93C55 (93D05)

— (*with* Feng, Xiangbo; Loparo, Kenneth A.; Chizeck, Howard Jay) Stochastic stability properties of jump linear systems. *IEEE Trans. Automat. Control* **37** (1992), *no.* 1, 38–53. (Summary) **93a:93110** 93E15

— (*with* Chizeck, Howard Jay) Jump linear quadratic Gaussian control in continuous time. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 12, 1884–1892. (William D. Ray) **93m:93098** 93E20 (60G15, 60J75)

Ji, Zhen Yi (*with* Ye, Kai Yuan) An exact element method for bending of nonhomogeneous thin plates. *Appl. Math. Mech.* (*English Ed.*) **13** (1992), *no.* 8, 683–690; *translated from Appl. Math. Mech.* **13** (1992), *no.* 8, 659–666 (*Chinese. English and Chinese summaries*). 73V05 (73K10)

Ji, Zhi Gang A study on Heng Fang Hua's finite difference scheme. (Chinese) *Collected research papers on the history of mathematics, Vol.* 1 (*Chinese*), 149–161, *Inner Mongolia Univ. Press, Hohhot*, 1990. (*see* **93i:01004**) 01A25

— A study of the manuscript of the *He shu shu*. (Chinese) *Collected research papers on the history of mathematics, Vol.* 1 (*Chinese*), 162–169, *Inner Mongolia Univ. Press, Hohhot*, 1990. (*see* **93i:01004**) 01A25

Jia, Bao Fu (*with* Lin, Wei Gan; Liu, Shu Zhang) A strong fluctuation theory and its development. (Chinese. English summary) *Dianzi Keji Daxue Xuebao* **20** (1991), *no.* 5, 473–480. (From the summary) **93a:78017** 78A45

Jia, Bao-Ping (*with* Santoni, Larry) A note on Hilbert's Theorem 90. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 3, 739–744. (W. Narkiewicz) **93i:12005** 12F10 (11R27, 11R29, 11R32)

Jia, Biao (*with* Zhang, Huai Zhong) Neighborhood conditions and the Hamiltonian property. (Chinese. English summary) *Nanjing Daxue Xuebao Ziran Kexue Ban* **27** (1991), *Special Issue*, 15–16, 105. (Zeng Min Song) **93h:05114** 05C45

Jia, Chao Hua On the distribution of αp modulo one. *Lecture notes in contemporary mathematics*, 1989, 39–48, *Science Press, Beijing*, 1990. (Henri Faure) **93g:11088** 11K60 (11K06)

— Three primes theorem in a short interval. II. *International Symposium in Memory of Hua Loo Keng, Vol. I* (*Beijing*, 1988), 103–115, *Springer, Berlin*, 1991. (Jian Hua Ren) **93a:11074** 11N05 (11P32, 11P55)

— Three primes theorem in a short interval. VI. (Chinese) *Acta Math. Sinica* **34** (1991), *no.* 6, 832–850. (Jian Hua Ren) **93h:11104** 11N36 (11N05, 11P32)

— Three primes theorem in a short interval. III. *Sci. China Ser. A* **34** (1991), *no.* 9, 1039–1056. (Jian Hua Ren) **93g:11095** 11N05 (11N36, 11P32, 11P55)

Jia, Fang Estimates of the first eigenvalue for a compact Riemannian manifold whose Ricci curvature has a negative lower bound. (Chinese) *Chinese Ann. Math. Ser. A* **12** (1991), *no.* 4, 496–502. (Ji-Ping Sha) **93b:58153** 58G25 (53C21)

Jia, Lei (*with* Li, Mu Lan) A new method for solving time-varying bilinear systems. (Chinese. English and Chinese summaries) *Math. Appl.* **5** (1992), *no.* 4, 66–71. (Summary) **93k:15026** 15A24 (93B25)

Jia, Li Min (*with* Zhang, Xi Di) Intelligent multiobjective optimal control. (English summary) *Intelligent tuning and adaptive control* (*Singapore*, 1991), 271–276, *IFAC Sympos. Ser.*, 1991, *No.* 7, *Pergamon, Oxford*, 1991. (*see* **93i:93007**) 49N55 (90C29, 93C42, 93C83)

Jia, Min Ping (*with* Huang, Ren) On the stationarity and invertibility of a general bilinear time series model. (English summary) *Gaoxiao Yingyong Shuxue Xuebao* **7** (1992), *no.* 3, 381–390. (Summary) **93h:62161** 62M10

Jia, Ming (*with* Benyamin-Seeyar, Anader; Le-Ngoc, Tho) Exact lower bounds on the codelength of three-step permutation-decodable cyclic codes. (English summary) *IEEE Trans. Inform. Theory* **38** (1992), *no.* 6, 1812–1817. 93B20

Jia, Pei Zhang A new method for obtaining robust initial estimates in a linear model. (Chinese. English and Chinese summaries) *Control Theory Appl.* **9** (1992), *no.* 2, 141–147. 93E10

Jia, Rong Qing Lower bounds on the dimension of spaces of bivariate splines. *Multivariate approximation and interpolation* (*Duisburg*, 1989), 155–165, *Internat. Ser. Numer. Math.*, 94, *Birkhäuser, Basel*, 1990. (Jian Zhong Wang) **93c:41054** 41A65 (41A05, 41A15)

— (*with* Micchelli, Charles A.) Using the refinement equations for the construction of pre-wavelets. II. Powers of two. *Curves and surfaces* (*Chamonix-Mont-Blanc*, 1990), 209–246, *Academic Press, Boston, MA*, 1991. (George A. Anastassiou) **93e:65024** 65D15 (41A15, 42C15)

— (*with* Riemenschneider, Sherman; Shen, Zuowei) Dimension of kernels of linear operators. *Amer. J. Math.* **114** (1992), *no.* 1, 157–184. (B. Wood) **93b:47002** 47A05 (05B35, 41A63, 47A58)

— (*with* Wang, Jian Zhong[2]) Stability and linear independence associated with wavelet decompositions. *Proc. Amer. Math. Soc.* **117** (1993), *no.* 4, 1115–1124. (Charles K. Chui) **93e:42046** 42C15

Jia, Xiao Feng (*with* Qiu, Yi Ping) The maximum size of graphs satisfying a degree condition. *Discrete Math.* **104** (1992), *no.* 2, 201–204. (Summary) **93e:05050** 05C35

Jia, Xing De Extremal bases for finite cyclic groups. *J. Number Theory* **41** (1992), *no.* 1, 116–127. (Georges Grekos) **93f:11012a** 11B13 (20D60)

— Thin bases for finite nilpotent groups. *J. Number Theory* **41** (1992), *no.* 3, 303–313. (Pin Chao Wang) **93i:20019** 20D15

Jia, Xing Qin (*with* Li, Zhong Lin) Submanifolds with parallel mean curvature vector fields. (Chinese. English summary) *Chinese Quart. J. Math.* **7** (1992), *no.* 1, 101–106. (Xue Shan Zhang) **93e:53069** 53C42 (53C20, 53C40)

Jia, Ya (*with* Chen, Li Hua) A nonlinear relaxation time theory for transient stochastic dynamics. (Chinese. English and Chinese summaries) *J. Central China Normal Univ. Natur. Sci.* **26** (1992), *no.* 2, 165–167. 82C99

Jia, Ying Min (*with* Gao, Wei Bing; Cheng, Mian) Robust strict positive real stabilization criteria for SISO uncertain systems. (English summary) *Systems Control Lett.* **19** (1992), *no.* 2, 111–117. (Jacob Hammer) **93g:93074** 93D15 (93D09, 93D21)

Jia, Z. H. (*with* Wu, T. W.) A choice of practical approaches to overcome the nonuniqueness problem of the BEM in acoustic radiation and scattering. (English summary) *Boundary element technology, VII (Albuquerque, NM, 1992)*, 501–510, *Comput. Mech., Southampton*, 1992. (*see* **93b:65002**) 76M15 (65N38, 76Q05)

Jian, Huai Yu Lipschitz estimates for weak solutions of certain second order nonlinear partial differential systems. *Northeast. Math. J.* **7** (1991), *no.* 2, 190–198. (P. W. Bates) **93g:35020** 35D05 (35G20, 35J60)

— Nonexistence of nonordinary solutions to semilinear elliptic equations. (Chinese. Chinese summary) *Huaihua Shizhuan Xuebao* **11** (1992), *no.* 1, 55–57. 35J65

Jian, Jin Bao A globally convergent subfeasible direction method for nonlinear programming programs. (Chinese. English and Chinese summaries) *Qufu Shifan Daxue Xuebao Ziran Kexue Ban* **18** (1992), *no.* 4, 55–61. (Summary) **93m:90077** 90C30

Jian, Ming The dominance principle for analytic functions of operators and their properties. (Chinese. Chinese summary) *Acta Math. Sci. (Chinese)* **12** (1992), *no.* 2, 214–225. (Jin-Chuan Hou) **93j:47010** 47A30 (47A60, 47B15)

Jian, Zhuhan The $N \times N$ inverse spectral problem with poles of higher orders. *Phys. Scripta* **45** (1992), *no.* 2, 65–68. (Tuncay Aktosun) **93d:34022** 34A55 (34L25)

Jianfu, Yang *see* **Yang, Jian Fu**

Jiang, Bin Global pinching theorems for totally real minimal submanifolds of complex space form. (Chinese. English summary) *J. Northeast Univ. Tech.* **12** (1991), *no.* 4, 431–435. (Bao Qiang Wu) **93e:53070** 53C42 (53C40)

Jiang, Bo Ju Topological fixed point theory in China. *Advances in science of China. Mathematics, Vol.* 3, 71–77, *Science Press, Beijing*, 1990. (*see* **93b:00015**) 55–03 (01A65, 55M20)

Jiang, Bo-Nan (*with* Povinelli, Louis A.) Optimal least-squares finite element method for elliptic problems. (English summary) *Comput. Methods Appl. Mech. Engrg.* **102** (1993), *no.* 2, 199–212. (Summary) **93h:65139** 65N30

— Nonoscillatory and nondiffusive solution of convection problems by the iteratively reweighted least-squares finite element method. (English summary) *J. Comput. Phys.* **105** (1993), *no.* 1, 108–121. (Summary) **93k:76077** 76M10 (76R05)

Jiang, Chang Jin (*with* Li, Shao Jiang) On iterative method with multi-parameters for numerical solution of linear systems. (English summary) *Proceedings of International Conference on Scientific Computation (Hangzhou, 1991)*, 187–191, *Ser. Appl. Math.*, 1, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93d:65004**) 65F10

Jiang, Chang Jun (*with* Yan, Chun Gang) The problem of Hamiltonian decomposition for tensor products of graphs with coprime orders. (Chinese. English summary) *J. Lanzhou Railway Inst.* **10** (1991), *no.* 4, 37–46. (Yong Bing Shi) **93c:05094** 05C70 (05C38, 05C45)

— (*with* Diao, Bai Qing) A dimension-lowering algorithm for parametric variable broken line smoothing splines. (Chinese. English and Chinese summaries) *Shandong Kuangye Xueyuan Xuebao* **11** (1992), *no.* 4, 417–419. 65D10 (65D07)

Jiang, Chun (*with* Feng, De Yi; Lin, Ming Zhou; Chen, Rong Hua) Application of fuzzy statistical decision making in countermeasures against great earthquakes. *Combining fuzzy imprecision with probabilistic uncertainty in decision making*, 374–388, *Lecture Notes in Econom. and Math. Systems*, 310, *Springer, Berlin*, 1988. (*see* **93c:90002**) 90A05 (04A72, 90C70)

Jiang, Cui Bo (*with* Xu, Yi Chao) Vertex operators of $G_2^{(1)}$ and $B_l^{(1)}$. (English summary) *Lecture notes in contemporary mathematics*, 1989, 143–159, *Science Press, Beijing*, 1990. (Chong Ying Dong) **93h:17066** 17B67

Jiang, D. (*with* Ditzian, Z.) Approximation of functions by polynomials in $C[-1, 1]$. (English summary) *Canad. J. Math.* **44** (1992), *no.* 5, 924–940. (Chengmin Yang) **93h:41016** 41A25 (41A10, 41A27)

— (*with* Ditzian, Z.; Leviatan, Dany) Shape-preserving polynomial approximation in $C[-1, 1]$. *Math. Proc. Cambridge Philos. Soc.* **112** (1992), *no.* 2, 309–316. (B. Boyanov) **93h:41010** 41A10 (41A25)

Jiang, Dong Ping Corrections of two theorems of Krasnosel'skiĭ and some related problems. (Chinese. English summary) *Nanjing Daxue Xuebao Shuxue Bannian Kan* **8** (1991), *no.* 2, 131–138. 34C25

Jiang, Er Xiong A note on the double-shift QL algorithm. *Linear Algebra Appl.* **171** (1992), 121–132. (James Weldon Demmel) **93e:65059** 65F15

Jiang, Fan (*with* Feng, Zu Ren; Shi, Ren) A study on adaptive impedance control of robots. (Chinese. English summary) *Xi'an Jiaotong Daxue Xuebao* **26** (1992), *no.* 1, 29–38, 46. (Summary) **93b:70032** 70Q05 (70B15, 93C85)

Jiang, Gong Jian Approximation of a new class of operators of Meyer-König and Zeller type for functions of bounded variation. (Chinese. English summary) *Heilongjiang Daxue Ziran Kexue Xuebao* **8** (1991), *no.* 4, 41–47. (Weiyi Su) **93c:41037** 41A35

Jiang, Guo Rui Group structure of the ideal $\operatorname{Im} \sigma_*^{2k+1}$. *Northeast. Math. J.* **7** (1991), *no.* 2, 127–136. (Donald M. Davis) **93c:57027** 57R75

— (*with* Yan, Chong Zheng) Involutions fixing the disjoint union of many projective $2r+1$-spaces. *Northeast. Math. J.* **7** (1991), *no.* 4, 473–479. (Summary) **93d:57070** 57S17 (57S25)

Jiang, He Li An optimal quadratic numerical algorithm for n-fold integrals in a general domain. (Chinese. English summary) *Gaoxiao Yingyong Shuxue Xuebao* **6** (1991), *no.* 4, 604–611. (Huan Min Yao) **93d:65023** 65D20

Jiang, Hong *see* **Jiang, Hong[2]**

Jiang, Hong[1] (*with* Wong, Yau Shu) A parallel alternating direction implicit preconditioning method. *J. Comput. Appl. Math.* **36** (1991), *no.* 2, 209–226. (Summary) **93b:65056** 65F10 (65F35, 65N22, 65Y05)

Jiang, Hong[2] (*with* Wang, Shi An) Optimal estimation of multiparameters. (Chinese. English and Chinese summaries) *Heilongjiang Daxue Ziran Kexue Xuebao* **9** (1992), *no.* 4, 46–50, 53. 62F10

Jiang, J.-P. *see* **Jiang, Jing Ping**

Jiang, Ji Fa Attractors in strongly monotone flows. *J. Math. Anal. Appl.* **162** (1991), *no.* 1, 210–222. (D. N. Cheban) **93c:58179** 58F25 (34C35, 54H20, 58F12)

— On the existence and uniqueness of connecting orbits for cooperative systems. (English summary) *Acta Math. Sinica (N.S.)* **8** (1992), *no.* 2, 184–188. (Romeo F. Thomas) **93h:58131** 58F25

Jiang, Ji Ming Uniform convergence rate of sample ACV and ACR for linear spatial series under more general martingale condition. *Adv. in Math. (China)* **20** (1991), *no.* 1, 39–50. (Summary) **93b:62131** 62M30

— Parameter estimation of spatial AR model. A Chinese summary appears in Chinese Ann. Math. Ser. A **12** (1991), no. 5, 644. *Chinese Ann. Math. Ser. B* **12** (1991), *no.* 4, 432–444. (A. N. Startsev) **93f:62132** 62M30 (62M10)

— (*with* Zheng, Zhong Guo) Asymptotic properties of the Lindstrom-Maddens lower confidence limit. (Chinese. English and Chinese summaries) *Chinese J. Appl. Probab. Statist.* **8** (1992), *no.* 4, 403–410. 62N05

Jiang, Jie Ground states for $\Delta u + k(x) f(u) = 0$. *Math. J. Toyama Univ.* **14** (1991), 157–162. (H.-W. Rohde) **93b:35036** 35J25 (34B15, 35Q40)

— Positive solutions to boundary value problems for a class of singular second-order nonlinear ordinary differential equations. (Chinese. English summary) *Acta Sci. Natur. Univ. Jilin.* **1992,** *no.* 1, 47–50. (Summary) **93c:34054** 34B15

— (*with* Wang, Xue Kong) A singular perturbation nonlinear boundary value problem and the E-condition for a scalar conservation law. (English summary) *Quart. Appl. Math.* **50** (1992), *no.* 3, 547–557. (Robert Peszek) **93f:35141** 35L65 (34B15, 34E15)

Jiang, Jin Liang Use the equations of total pressure and velocity to solve the viscous incompressible flow in the channel. (English summary) *J. Hydrodyn. Ser. B (English Ed.)* **5** (1993), *no.* 1, 63–69. 76M25 (76D05)

Jiang, Jin Sheng (*with* Cheng, Xiao Liang) An additional remark on L^2-norm error estimates for p-type finite element methods. (Chinese. English summary) *Gaoxiao Yingyong Shuxue Xuebao* **6** (1991), *no.* 1, 38–43. (Summary) **93a:65105** 65L60

— (*with* Cheng, Xiao Liang) The velocity-pressure Q_2-Q_1 finite element. (Chinese. English summary) *Gaoxiao Yingyong Shuxue Xuebao* **6** (1991), *no.* 4, 467–473. (Zhimin Zhang) **93d:76038** 76M10 (65M15, 65M60, 76D07)

— (*with* Cheng, Xiao Liang) On the stability of biquadratic-bilinear velocity-pressure finite elements. *J. Comput. Math.* **10** (1992), *no.* 2, 167–170. (From the summary) **93b:65141** 65M60 (76D07, 76M10)

Jiang, Jing-Lin (*with* Chow, Pao Liu) Almost sure convergence of some approximate solutions for random parabolic equations. (English summary) *Random partial differential equations (Oberwolfach, 1989)*, 45–54, *Internat. Ser. Numer. Math.*, 102, *Birkhäuser, Basel*, 1991. (Ralf Manthey) **93j:60082** 60H15 (35R60)

— (*with* Chow, Pao Liu) Almost sure convergence of stochastic integrals in Hilbert spaces. (English summary) *Stochastic Anal. Appl.* **10** (1992), *no.* 5, 533–543. (Summary) **93j:60068** 60H05

Jiang, Jing Ping (*with* Ho, P. L.; Hinton, J. C.) Parallel processing in optimal control of robot drives. *Control '91, Vol.* 1, 2 (*Edinburgh*, 1991), 376–381, *IEE Conf. Publ. Ser.*, 332, *IEE, London*, 1991. (*see* **93h:93007**) 93B40

— (*with* Chen, Shen; Yuan, Hui Gen) Nonlinear self-adaptive control of a CSTR. (Chinese. Chinese summary) *Inform. and Control (Shenyang)* **21** (1992), *no.* 2, 124–128. 93C40

Jiang, Jyh-Ming (*with* Byrne, Charles L.; Haughton, Dominique) High-resolution inversion of the discrete Poisson and binomial transformations. (English summary) *Inverse Problems* **9** (1993), *no.* 1, 39–56. (Michael J. Evans) **93k:62048** 62F10 (65R10, 65U05)

Jiang, Katie (*with* Hassard, Brian) Unfolding a point of degenerate Hopf bifurcation in an enzyme-catalyzed reaction model. (English summary) *SIAM J. Math. Anal.* **23** (1992), *no.* 5, 1291–1304. (Summary) **93f:34065** 34C23 (58F14, 92E20)

Jiang, Li Cai (*with* Duan, Yi Shi; Zhang, Sheng Li[2]) A new coordinate condition in general relativity. (English summary) *Gen. Relativity Gravitation* **24** (1992), *no.* 10, 1033–1045. (Ciprian Dariescu) **93g:83007** 83C05 (53B50, 83C15, 83C20)

Jiang, Li Fan Fault-tolerant analysis of a binary tree configuration. (Chinese. English and Chinese summaries) *Acta Sci. Natur. Univ. Sunyatseni* **31** (1992), *no.* 3, 21–25. 68M20

Jiang, Li Ping A consistent estimator of the bispectral density function and spectral estimation of non-Gaussian series with noise. (Chinese. English and Chinese summaries) *Chinese J. Appl. Probab. Statist.* **8** (1992), *no.* 1, 56–63. 62M15

Jiang, Li Shang (*with* Hoffmann, Karl-Heinz[1]) Optimal control of a phase field model for solidification. *Numer. Funct. Anal. Optim.* **13** (1992), *no.* 1-2, 11–27. (Summary) **93h:35218** 35R35 (35B37, 49K20, 80A22)

— (*with* Guo, Bo Ling; Sun, He Sheng; Ye, Qi Xiao) Happy birthday, Professor Zhou Yulin. *J. Partial Differential Equations* **6** (1993), *no.* 1, 1–9 *pp.* (Editors) **93m:01071** 01A70

Jiang, Lu Min Periodic solutions to nonlinear singularly perturbed parabolic equations with a convection term. (Chinese. English and Chinese summaries) *J. East China Norm. Univ. Natur. Sci. Ed.* **1992,** *no.* 1, 24–28. (Summary) **93f:35018** 35B10 (35B25, 35K60)

Jiang, Mei Yue (*with* Zhang, Gong Qing) The Lagrange intersections for $(\mathbf{CP}^n, \mathbf{RP}^n)$. *Lecture notes in contemporary mathematics*, 1989, 1–9, *Science Press, Beijing*, 1990. (Yong-Geun Oh) **93i:58062** 58F05 (58E05)

— A theorem for Lagrangian intersections. (English summary) *Lecture notes in contemporary mathematics*, 1989, 49–55, *Science Press, Beijing*, 1990. (Yong-Geun Oh) **93g:57031** 57R15 (58F05)

— A symplectic fixed-point theorem. (Chinese. Chinese summary) *Acta Math. Sinica* **35** (1992), *no.* 2, 167–177. (Shi Qing Zhang) **93m:58042** 58F05 (58C30)

Jiang, Ming Nash point equilibria in the calculus of variations. (English summary) *J. Partial Differential Equations* **5** (1992), *no.* 3, 1–20. (Siegfried Carl) **93f:35057** 35J50 (35J55, 35J85, 49J10)

Jiang, N. (*with* Robinson, Alan G.; Lerme, C. S.) On the continuous quadratic knapsack problem. *Math. Programming* **55** (1992), *no.* 1, *Ser. A*, 99–108. (Jacques A. Ferland) **93e:90048** 90C20 (90C25, 90C30)

Jiang, Peiqing (*with* Taha, Thiab R.) A parallel algorithm for solving periodic tridiagonal Toeplitz linear systems. (English summary) *Parallel processing for scientific computing, Vol. I, II (Norfolk, VA, 1993)*, 491–496, *SIAM, Philadelphia, PA*, 1993. (*see* **93k:65003**) 65Y05 (65F99)

Jiang, Qi Bao A result on global linearization. (Chinese. Chinese summary) *Chinese Ann. Math. Ser. A* **13** (1992), *no.* 5, 542–545. (Wan Zhuang) **93k:58195** 58F25 (34C35)

— Two problems related to the invariance principle. (Chinese. English summary) *Nanjing Daxue Xuebao Shuxue Bannian Kan* **9** (1992), *no.* 1, 72–80. (Zhen Xi Dong) **93j:34065** 34C35 (34D99)

Jiang, Qing Tang (*with* Peng, Li Zhong) Toeplitz and Hankel type operators on the upper half-plane. (English summary) *Integral Equations Operator Theory* **15** (1992), *no.* 5, 744–767. (Richard Rochberg) **93g:47031** 47B35 (30H05, 47B10)

— (*with* Peng, Li Zhong) Wavelet transform and Toeplitz-Hankel type operators. *Math. Scand.* **70** (1992), *no.* 2, 247–264. (Krzysztof Nowak) **93i:47028** 47B35 (42B99, 42C15, 47B10)

Jiang, Ren Fang Number of orbits of branch points of R-trees. *Trans. Amer. Math. Soc.* **335** (1993), *no.* 1, 341–368. (Martin A. Roller) **93c:20049** 20E08 (20E06, 20F32, 57M07)

Jiang, Rong Han (*with* Jiang, Zhong Yue) Chaotic phenomena in simple power systems. (Chinese. English and Chinese summaries) *Hunan Daxue Xuebao* **19** (1992), *no.* 3, 1–6, 12. 58F13 (93Dxx)

Jiang, Run Rong An improved estimate of the moduli of derivatives. (Chinese) *Math. Practice Theory* **1992**, *no.* 4, 88–89. 30A10

Jiang, S. W. (*with* Shih, Hui Jan; Yü, Shih Shêng) Completely disjunctive languages. Proceedings of the Second International Mathematical Miniconference, Part II (Budapest, 1988). *Period. Polytech. Transportation Engrg.* **19** (1991), *no.* 1-2, 101–110. (Summary) **93c:68050** 68Q45

Jiang, Sheng Clifford manifolds. (Chinese) *Acta Math. Sinica* **34** (1991), *no.* 5, 604–610. (Zhihua Chen) **93a:53019** 53C15 (15A66, 53A50)

— Generalized Stephani universes. (English summary) *J. Math. Phys.* **33** (1992), *no.* 10, 3503–3505. (Nora Bretón Báez) **93g:83019** 83C15 (83C20)

Jiang, Shi Zhang Sensitivity analysis of estimation in linear simultaneous equation system models. I. (English summary) *Northeast. Math. J.* **8** (1992), *no.* 3, 364–378. 62P20

Jiang, Shou Li (*with* Reilly, Ivan L.) Chain conditions and *S*-closed spaces. *Questions Answers Gen. Topology* **10** (1992), *no.* 1, 9–14. (C. E. Aull) **93j:54013** 54D20

Jiang, Song Global solutions of the Neumann problem in one-dimensional nonlinear thermoelasticity. *Nonlinear Anal.* **19** (1992), *no.* 2, 107–121. (Andrzej Chrzęszczyk) **93f:35227** 35Q72 (35B40, 73B30, 73C50)

Jiang, Tao[1] (*with* McDowell, Edward; Ravikumar, B.) The structure and complexity of minimal NFAs over a unary alphabet. *Internat. J. Found. Comput. Sci.* **2** (1991), *no.* 2, 163–182. (Etsuro Moriya) **93c:68073** 68Q75

— (*with* Li, Ming[1]; Du, Ding Zhu) A note on shortest superstrings with flipping. (English summary) *Inform. Process. Lett.* **44** (1992), *no.* 4, 195–199. (Summary) **93j:68225** 68U15 (68R15, 92D20)

— (*with* Ibarra, Oscar H.; Wang, Hui; Zheng, Qi) A hierarchy result for 2-dimensional TMs operating in small space. *Inform. Sci.* **64** (1992), *no.* 1-2, 49–56. (Summary) **93b:68022** 68Q05 (03D10, 03D15, 68Q15)

— (*with* Ibarra, Oscar H.; Wang, Hui) A characterization of exponential-time languages by alternating context-free grammars. *Theoret. Comput. Sci.* **99** (1992), *no.* 2, 301–313. (Summary) **93j:68100** 68Q45 (03D05)

Jiang, Tie Feng (*with* Wang, Xiang Chen; Rao, M. Bhaskara) Moderate deviations for some weakly dependent random processes. (English summary) *Statist. Probab. Lett.* **15** (1992), *no.* 1, 71–76. (Wlodzimierz Bryc) **93m:60053** 60F10

Jiang, Tom *see* **Jiang, Jyh-Ming**

Jiang, Tong (*with* Wang, Wei[2]) The methods to improve precision of values of internal points in BEM. *Theory and applications of boundary element methods* (*Beijing*, 1991), 73–78, *Internat. Acad. Publ., Beijing*, 1991. (*see* **93b:65008**) 65N38

— (*with* Wang, Wei[2]; Sun, Zu Zhi) The BEM for the multi-body contact problem with friction and its application to the calculation of the rolling wheel. *Theory and applications of boundary element methods* (*Beijing*, 1991), 415–420, *Internat. Acad. Publ., Beijing*, 1991. (*see* **93b:65008**) 73V10 (65N38)

— (*with* Pan, Gu Ning; Liu, Zu De) Analysis of piles in layered soils by the coupling method of FEM-BEM. *Theory and applications of boundary element methods* (*Beijing*, 1991), 453–459, *Internat. Acad. Publ., Beijing*, 1991. (*see* **93b:65008**) 73V05 (65N30, 65N38, 73Q05, 73V10)

Jiang, Wei Sun (*with* Hu, Ze Xin) Dynamic modelling on the basis of pattern recognition. (Chinese. Chinese summary) *Inform. and Control* (*Shenyang*) **21** (1992), *no.* 3, 172–176. 93B30

— (*with* Hu, Ze Xin) A novel predictive control for nonlinear systems with time delay and its application. (Chinese. Chinese summary) *Inform. and Control* (*Shenyang*) **21** (1992), *no.* 5, 310–312. 93E35

Jiang, Wen Jiang Nonnegative optimality of a quadratic estimator in multivariate linear models. (Chinese) *Chinese Ann. Math. Ser. A* **13** (1992), *no.* 1, 51–64. (Wanxi Chen) **93g:62074** 62H12 (62J05)

Jiang, Wenxin (*with* Gürsey, Feza) Extensions of some infinite algebras in space-time. *J. Math. Phys.* **32** (1991), *no.* 9, 2365–2369. (Summary) **93d:17027** 17B65 (57R50, 58Z05, 81R10, 81T13)

— (*with* Gürsey, Feza) Euclidean space-time diffeomorphisms and their Fueter subgroups. *J. Math. Phys.* **33** (1992), *no.* 2, 682–700. (John Ryan) **93a:22016** 22E65 (30G35, 81R10)

Jiang, Xiao Yuan Planetary theories of Babylon and ancient China. (Chinese. English summary) *Acta Astronom. Sinica* **31** (1990), *no.* 4, 342–348. (Keizo Hashimoto) **93a:01005** 01A17 (01A25)

Jiang, Xin Hui (*with* Li, Bing Ren) Traces on AF-algebras. (English summary) *Lecture notes in contemporary mathematics*, 1989, 88–99, *Science Press, Beijing*, 1990. (Judith A. Packer) **93i:46106** 46L30 (06F20, 46A55, 46L80)

Jiang, Xinyan The law of noncontradiction and Chinese philosophy. *Hist. Philos. Logic* **13** (1992), *no.* 1, 1–14. (Perry Smith) **93d:03010** 03A05 (01A20, 01A25, 03-03)

Jiang, Ya Ping (*with* Luo, Xue Bo) The nilpotent Lie group G^{d+2} and a class of differential operators with multiple characteristics. *Harmonic analysis* (*Tianjin*, 1988), 82–83, *Lecture Notes in Math.*, 1494, *Springer, Berlin*, 1991. (*see* **93d:42002**) 22E25 (58G99)

Jiang, Ye (*with* Tang, Huan Wen; Guo, Jian[1]; Hu, Yun Jiao) Fixed point algorithms and its applications to nondifferentiable programming. *Approximation, optimization and computing*, 291–294, *North-Holland, Amsterdam*, 1990. (*see* **93a:41001**) 90C30

Jiang, Yi Cheng A method of finding eigenpairs by the Lanczos process after Rayleigh quotient iteration. (Chinese. English summary) *Numer. Math. J. Chinese Univ.* **14** (1992), *no.* 1, 60–66. (Summary) **93e:65060** 65F15

Jiang, Yin Sheng (*with* Lu, Shan Zhen) A note on oscillatory singular integrals with rough kernel. (Chinese summary) *Beijing Shifan Daxue Xuebao* **27** (1991), *no.* 4, 398–402. (S. G. Samko) **93f:42033** 42B20 (42B25)

— Strong mean boundedness of a class of operators on $H^p(T^n)$ and their approximation. (Chinese. English summary) *J. Xinjiang Univ. Natur. Sci.* **8** (1991), *no.* 3, 32–36. (Weixing Zheng) **93a:42006** 42B10 (42B20, 42B30)

— (*with* Lu, Shan Zhen) L^p boundedness of a class of maximal singular integral operators. (Chinese) *Acta Math. Sinica* **35** (1992), *no.* 1, 63–72. (Bi Yun Yao) **93h:42016** 42B20 (47G10)

Jiang, Ying Le sémantique continue du lambda calcul est incompatible avec l'existence d'un rétraction universelle. (English summary) [The Scott semantics of lambda calculus is incompatible with the existence of a universal retraction] *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 10, 779–782. (Summary) **93c:68061** 68Q55 (03B40)

Jiang, Yong Rational approximation by the method of numerical integration. *Approximation, optimization and computing*, 101–103, *North-Holland, Amsterdam*, 1990. (*see* **93a:41001**) 41A20

Jiang, Yu Ming Random bisection of uniform *B*-spline curve segments and surface patches. (Chinese. English and Chinese summaries) *J. Chengdu Univ. Sci. Tech.* **1992**, *no.* 2, 77–80, 88. (Summary) **93g:65019** 65D07

Jiang, Yue Jun A first step towards autoepistemic logic programming. (Russian summary) *Comput. Artificial Intelligence* **10** (1991), *no.* 5, 419–441. (Summary) **93a:68082** 68Q55 (68N17, 68Q60)

Jiang, Yun Ping (*with* Morita, Takehiko; Sullivan, Dennis) Expanding direction of the period doubling operator. *Comm. Math. Phys.* **144** (1992), *no.* 3, 509–520. (Viviane Baladi) **93c:58169** 58F20 (58F14, 58F19)

Jiang, Z. H. *see* **Jiang, Zhi Hua**

Jiang, Z. P. (*with* Praly, L.; Bastin, G.; Pomet, J.-B.) Adaptive stabilization of nonlinear systems. (English summary) *Foundations of adaptive control* (*Urbana, IL*, 1990), 347–433, *Lecture Notes in Control and Inform. Sci.*, 160, *Springer, Berlin*, 1991. (Vladimir G. Sragovich) **93j:93135** 93D21 (93C40, 93D15)

Jiang, Ze Pei *see* **Probability and statistics, 93b:60004**

Jiang, Zeng Rong (*with* Li, Xiao Mei) ★ Bingxing suanfa. (Chinese. English and Chinese summaries) [Parallel algorithms] *Hunan Science and Technology Publishing House, Changsha*, 1992. xvi+786 *pp. ISBN* 7-5357-1033-6 (Zeng Rong Chen) **93k:65116** 65Y05 (65Fxx, 65K99, 68Q22)

— (*with* Zeng, Yong Hong) Invertible transforms with the cyclic convolution property in polynomial modular rings. (Chinese. English summary) *Numer. Math. J. Chinese Univ.* **14** (1992), *no.* 1, 87–91. 13B25

Jiang, Zhi Hua (*with* Schaufelberger, W.) ★ Block pulse functions and their applications in control systems. Lecture Notes in Control and Information Sciences, 179. *Springer-Verlag, Berlin*, 1992. xii+237 *pp. ISBN* 3-540-55369-X (Wieslaw Marszalek) **93d:93003** 93-02 (93B36, 93B50, 93C50)

— (*with* Schaufelberger, W.) Recursive computational algorithms for a set of block pulse operational matrices. (English summary) *Internat. J. Systems Sci.* **23** (1992), *no.* 11, 1921–1935. 93B40 (93C30)

Jiang, Zhi Min On oscillation of Volterra-Stieltjes integro-differential equations. *Ann. Differential Equations* **6** (1990), *no.* 4, 407–415. (Kenneth B. Hannsgen) **93b:45005** 45D05 (34C10)

— Selfadjoint extensions of vector-valued differential operators. (Chinese. English summary) *J. Xinjiang Univ. Natur. Sci.* **8** (1991), *no.* 4, 37–44. (Jing Lin Liu) **93b:47096** 47E05 (34B20, 34L05, 47A20, 47B25)

— Selfadjoint domains of singular vector-valued differential operators. (Chinese. Chinese summary) *Acta Math. Sinica* **35** (1992), *no.* 2, 220–229. (Editors) **93m:47055** 47E05 (34B20, 34L05, 47A20, 47B25)

— Complete description of symmetric extensions of symmetric vector-valued differential operators. (English and Chinese summaries) *Nei Mongol Daxue Xuebao Ziran Kexue* **23** (1992), *no.* 3, 287–294. (Anton Zettl) **93j:47068** 47E05 (34B20, 34B24, 34L99)

Jiang, Zhi Ming The index of convergence and the set of lengths of cycles of a digraph. (Chinese. English summary) *Nanjing Daxue Xuebao Ziran Kexue Ban* **27** (1991), *Special Issue*, 81–86. (Summary) **93b:05092** 05C38 (05C20)

— (*with* Wu, Xiao Jun) The exponent set of symmetric primitive matrices with zero trace. (Chinese. English and Chinese summaries) *Tongji Daxue Xuebao Ziran Kexue Ban* **20** (1992), *no.* 1, 73–80. (Summary) **93k:15038** 15A57

Jiang, Zhong Hao On medial local semigroups. *Semigroup Forum* **46** (1993), *no.* 1, 120–122. (From the text) **93i:20075** 20M10

Jiang, Zhong Yue (*with* Jiang, Rong Han) Chaotic phenomena in simple power systems. (Chinese. English and Chinese summaries) *Hunan Daxue Xuebao* **19** (1992), *no.* 3, 1–6, 12. 58F13 (93Dxx)

Jiang, Zhuhan (*with* Rauch-Wojciechowski, Stefan) Integrable dynamical systems with quadratic and cubic nonlinearities related to graded Lie algebras. *J. Math. Phys.* **32** (1991), *no.* 7, 1720–1732. (Mark Temple-Raston) **93c:58089** 58F07 (17B70)

— An energy-conserved solitonic cellular automaton. *J. Phys. A* **25** (1992), *no.* 11, 3369–3381. (Fred W. Roush) **93g:58071** 58F08 (68Q80)

Jiang, Zi Mei A class of finite rings having one-sided zero divisors. *Chinese Sci. Bull.* **36** (1991), *no.* 6, 449–453. (J. L. Zemmer) **93b:16040** 16P10

— A class of generalized radical rings. *Proceedings of the First China-Japan International Symposium on Ring Theory* (*Guilin*, 1991), 74–76, *Okayama Univ., Okayama*, 1992. (*see* **93k:16001**) 16N99

Jiang, Zong Li (*with* Wang, Yi He; Liu, Li Zhu) Case-based reasoning: a new technique for artificial intelligence. (Chinese. English and Chinese summaries) *J. Harbin Inst. Tech.* **24** (1992), *no.* 3, 25–29. 68T27 (03B70)

Jianguo, W. *see* **Wang, Jian Guo**

Jiao, Guang Hong (*with* Cui, Ming Gen) A good convexity-preserving smoothing operator. (Chinese. English and Chinese summaries) *J. Harbin Inst. Tech.* **25** (1993), *no.* 1, 1–7. 65D10

Jiao, Kai Mei (*with* Lee, Peng Yee) On Saks-Henstock lemma for the Riemann-type integrals. *Real Anal. Exchange* **17** (1991/92), *no.* 2, 796–801. (Yôto Kubota) **93g:26013** 26A42 (26A39)

Jiao, Wan Tang (*with* Zhu, Xiu Juan) A unified regression estimate for regression coefficients. (Chinese. English and Chinese summaries) *Hunan Daxue Xuebao* **19** (1992), *no.* 3, 118–121, 127. 62J05

Jiao, Xun *see* **Guo, Shi Rong, (93i:01004)**

Jiao, Yang (*with* Wu, Zai De; Liang, Xue Xin; Gu, Yong Geng) Existence and decay estimates of global solutions to a class of quasilinear degenerate parabolic equations. (Chinese. English summary) *Math. Appl.* **4** (1991), *no.* 4, 98–106. (Yun Gang Chen) **93j:35102** 35K65 (35A05, 35B45, 35K55)

Jiao, Yong Chang (*with* Chen, Kai Zhou) A new method for large scale sparse linear programming. *Approximation, optimization and computing*, 249–252, *North-Holland, Amsterdam*, 1990. (*see* **93a:41001**) 90C06

Jiao, Zhao Ping (*with* Wu, Chang Chun; Huang, Mao Guang) A study on completeness of displacement trial functions of incompatible elements with internal parameters. (Chinese. English and Chinese summaries) *J. China Univ. Sci. Tech.* **22** (1992), *no.* 3, 308–317. 65P05 (73V05)

Jibladze, M. *see* **Dzhibladze, M. A.**

Jimack, P. K. On steady and large time solutions of the semi-discrete moving finite element equations for one-dimensional diffusion problems. (English summary) *IMA J. Numer. Anal.* **12** (1992), *no.* 4, 545–564. (Summary) **93g:65123** 65M60

Jimbo, Michio Solvable lattice models and quantum groups. *Proceedings of the International Congress of Mathematicians, Vol. I, II (Kyoto*, 1990), 1343–1352, *Math. Soc. Japan, Tokyo*, 1991. (Tetsuo Deguchi) **93g:82036** 82B23 (16W30, 17B37, 81R50, 82–02)

— (*with* Misra, Kailash C.; Miwa, Tetsuji; Okado, Masato) Combinatorics of representations of $U_q(\hat{\mathfrak{sl}}(n))$ at $q = 0$. *Comm. Math. Phys.* **136** (1991), *no.* 3, 543–566. (Summary) **93a:17015** 17B37 (05E15, 82B23)

— (*with* Date, Etsurō; Miki, Kei; Miwa, Tetsuji) New R matrices associated with cyclic representations of $U_q(A_2^{(2)})$. *Publ. Res. Inst. Math. Sci.* **27** (1991), *no.* 4, 639–655. (Ian M. Musson) **93g:17021** 17B37

— (*with* Date, Etsurō; Miki, Kei; Miwa, Tetsuji) Braid group representations arising from the generalized chiral Potts models. *Pacific J. Math.* **154** (1992), *no.* 1, 37–66. (From the introduction) **93g:20074** 20F36 (57M25, 82B23)

— (*with* Miki, Kei; Miwa, Tetsuji; Nakayashiki, Atsushi) Correlation functions of the XXZ model for $\Delta < -1$. (English summary) *Phys. Lett. A* **168** (1992), *no.* 4, 256–263. (Paul A. Pearce) **93m:82007** 82B23 (17B37)

— *see also* **Manin, Yu. I., 93c:01029** *and* **Infinite analysis, 93g:00027**

Jimbo, Shuichi (*with* Morita, Yoshihisa) Remarks on the behavior of certain eigenvalues on a singularly perturbed domain with several thin channels. *Comm. Partial Differential Equations* **17** (1992), *no.* 3-4, 523–552. (Colette Anné) **93d:58167** 58G18 (35P20, 47F05)

Jiménez, A. (*with* Matía, F.; Galán, R.; Sanz, R.) Fuzzy controllers: lifting the linear-nonlinear frontier. (English summary) *Fuzzy Sets and Systems* **52** (1992), *no.* 2, 113–128. 93C42 (04A72)

alvarez Jimenez, Carlos *see* **Alvarez Jimenez, Carlos**

Jiménez, F. *see* **Jiménez Lorenzo, Fernando**

Jiménez, J. *see* **Jiménez, Juan Francisco**

Jiménez, Javier *see* **Global geometry of turbulence, 93b:76001**

Jiménez, Jesús Contraction of nonsingular curves. *Duke Math. J.* **65** (1992), *no.* 2, 313–332. (Ulf Persson) **93e:14019** 14E05

Jiménez, Juan Francisco (*with* Moreno, J.; Ruggeri, G. J.; Marcano, A.) Detecting chaos with local associative memories. (English summary) *Phys. Lett. A* **169** (1992), *no.* 1-2, 25–30. (Summary) **93f:58151** 58F13

núñez Jiménez, Manuel *see* **Núñez Jiménez, Manuel**

Jiménez, Raúl (*with* Gzyl, Henryk) From heat equations to wave equations: more on transmutation operators. *Math. Comput. Modelling* **16** (1992), *no.* 3, 59–61. (Eugene Schlereth) **93a:35007** 35A22 (35K05, 35L05, 47N20)

— (*with* Betz, C.; Gzyl, Henryk) Probabilistic approach to wave propagations problems. V. A collection of examples. (English summary) *Math. Comput. Modelling* **16** (1992), *no.* 10, 165–176. (Genowefa Majcher) **93k:35154** 35L05 (35A22)

Jiménez B., Luis R. A fixed-point theorem for operators of the class $D(a, b)$. (Spanish) *Bol. Mat.* **22** (1988), *no.* 1-3, 37–40 (1991). 47H10

Jiménez Garijo, Pedro A note on Jordan rings of quotients. *Ann. Sci. Univ. Clermont-Ferrand II Math. No.* 27 (1991), 139–142 (1992). (Khristo N. Boyadzhiev) **93m:46056** 46H70 (17C27, 46L70)

Jiménez Guerra, P. (*with* Escribano, Ma. del Carmen; Fernández y Fernández-Arroyo, Fidel José) On the Orlicz spaces of functions valued in locally convex spaces. (English summary) *Comment. Math. Prace Mat.* **32** (1992), 33–44. (M. M. Popov) **93m:46038** 46E40 (46E30)

Jiménez López, Víctor C^1 weakly chaotic functions with zero topological entropy and nonflat critical points. *Acta Math. Univ. Comenian. (N.S.)* **60** (1991), *no.* 2, 195–209. (Helena E. Nusse) **93b:58100** 58F13 (54H20)

— Large chaos in smooth functions of zero topological entropy. (English summary) *Bull. Austral. Math. Soc.* **46** (1992), *no.* 2, 271–285. (Paweł Góra) **93h:58099** 58F13 (26A18, 54H20)

Jiménez Lorenzo, Fernando The quantized symmetries of $N = 2$ superconformal field theories. *Phys. Lett. B* **273** (1991), *no.* 4, 399–408. (Summary) **93a:81173** 81T40 (81R50)

Jiménez-Melado, A. (*with* García Falset, J.; Llorens Fuster, E.) A characterization of normal structure in Banach spaces. (English summary) *Fixed point theory and applications (Halifax, NS*, 1991), 122–129, *World Sci. Publishing, River Edge, NJ*, 1992. (Józef Banaś) **93j:46019** 46B20

— Stability of weak normal structure in James quasi reflexive space. (English summary) *Bull. Austral. Math. Soc.* **46** (1992), *no.* 3, 367–372. (S. Swaminathan) **93m:46011** 46B20 (47H09, 47H10)

— (*with* Llorens Fuster, E.) Stability of the fixed point property for nonexpansive mappings. *Houston J. Math.* **18** (1992), *no.* 2, 251–257. (K. Goebel) **93d:47097** 47H09 (46B20, 47H10)

Jiménez Olivo, Pedro José (*with* Peña Miralles, Juan; Verdú Martín, Gumersindo; Muñoz-Cobo González, José Luis) Symmetry breaking as a path to chaos in the Duffing oscillator. (Spanish) *Proceedings of the XII Congress on Differential Equations and Applications/II Congress on Applied Mathematics (Spanish) (Oviedo*, 1991), 147–152, *Univ. Oviedo, Oviedo*, 1991. (*see* **93j:00009**) 34C15 (58F13, 70K40, 70K50)

Jiménez Paiz, Mateo M. (*with* González-Vera, Pablo) Multipoint Padé approximants and quadrature formulas. (Spanish. English summary) *Rev. Acad. Canaria Cienc.* **1** (1990), 85–97. (Guillermo López Lagomasino) **93g:41010** 41A21

Jiménez Seral, Paz On fully unsaturated homomorphs of finite groups. *Beiträge Algebra Geom. No.* 32 (1991), 95–101. (Hartmut Laue) **93f:20022** 20D10

— Finite groups with normal projectors. *Comm. Algebra* **19** (1991), *no.* 10, 2677–2686. (From the introduction) **93f:20024** 20D10

— Homomorphs with relative Schunck classes. *Comm. Algebra* **19** (1991), *no.* 10, 2687–2706. (From the introduction) **93f:20023** 20D10

Jimin, Li *see* **Li, Ji Min**

Jin, Cheng Fu (*with* Sandqvist, Allan) Qualitative behavior of the solutions of periodic first order scalar differential equations with weakly concave nonlinearity. *Differential Integral Equations* **5** (1992), *no.* 1, 149–164. (From the introduction) **93g:34075** 34C99 (34B15, 34C25)

Jin, Chun (*with* Pal, Nabendu) A note on the location parameters of two exponential distributions under order restrictions. *Comm. Statist. Theory Methods* **20** (1991), *no.* 10, 3147–3158. (Khursheed Alam) **93e:62109** 62G05 (62C15, 62F10)

— (*with* Berry, J. Calvin) Equivariant estimation of a normal mean vector using a normal concomitant vector for covariance adjustment. (English summary) *Comm. Statist. Theory Methods* **22** (1993), *no.* 2, 335–346. 62H12

Jin, Da Sheng (*with* Guo, Li[2]; Cheng, Yi Min) Design and implementation of discrete-time neural networks. (Chinese. English and Chinese summaries) *J. China Univ. Sci. Tech.* **22** (1992), *no.* 2, 165–173. 68T05 (92B20)

Jin, Fan (*with* Chen, Zhi[3]) A practical method for constructing ARBIBD$(x^2, x(x+1), x+1, x, 1)$. (Chinese. English summary) *Gaoxiao Yingyong Shuxue Xuebao* **6** (1991), *no.* 1, 52–56. (Summary) **93c:05021** 05B05

Jin, Feng (*with* Umlauf, Uwe) Almost $g2$-continuous transitions between sculptured surfaces. *Computer-aided design & computer graphics (Hangzhou*, 1991), 215–220, *Internat. Acad. Publ., Beijing*, 1991. (*see* **93a:68006**) 68U05

Jin, Feng (*with* Zhang, Chu Han; Pekau, O. A.) An infinite boundary element for 2-D dynamic wave problems. *Theory and applications of boundary element methods (Beijing*, 1991), 223–228, *Internat. Acad. Publ., Beijing*, 1991. (*see* **93b:65008**) 73V10 (65N38)

Jin, Fu Some analyses of mathematical thought in the Ming dynasty—a study on the mathematics of the Ming dynasty. (Chinese) *Collected research papers on the history of mathematics, Vol.* 1 (*Chinese*), 94–103, *Inner Mongolia Univ. Press, Hohhot*, 1990. (*see* **93i:01004**) 01A25

Jin, Fu Sheng Variational principles for hydrodynamic impact problems. *Appl. Math. Mech. (English Ed.)* **13** (1992), *no.* 6, 565–575; *translated from Appl. Math. Mech.* **13** (1992), *no.* 6, 543–552 (*Chinese. English and Chinese summaries*). 76B10 (76M30)

Jin, G. T. *see* **Jin, Gyo Taek**

Jin, Guo Ping (*with* Liu, Zhen Hong[1]) Spanning trails of graphs. (English summary) *Systems Sci. Math. Sci.* **4** (1991), *no.* 1, 55–67. (Paul A. Catlin) **93k:05107** 05C45

— (*with* Liu, Zhen Hong[1]; Wang, Chang Fan) Two sufficient conditions for pancyclic graphs. (English summary) *Ars Combin.* **35** (1993), 281–290. (Summary) **93m:05106** 05C38

Jin, Gyo Taek (*with* Kim, B. K.; Ko, Ki Hyoung) Adequate links and the Jones polynomial of unlinks. *Knots* 90 (*Osaka*, 1990), 185–193, *de Gruyter, Berlin*, 1992. (Yongwu Rong) **93e:57008** 57M25

— (*with* Ko, Ki Hyoung) Boundary links and mutations. (English summary) *Canad. Math. Bull.* **35** (1992), *no.* 3, 376–380. (Kimihiko Motegi) **93g:57009** 57M25

Jin, Ji Cheng Numerical solutions to nonlinear two-point boundary value problems with multiple solutions. (Chinese. English and Chinese summaries) *Natur. Sci. J. Xiangtan Univ.* **14** (1992), *no.* 1, 1–7. (Summary) **93e:65104** 65L10

Jin, Jia Liang (*with* Chang, Jian Ming) Composite factorization of a class of combinations of exponential functions. (Chinese. Chinese summary) *J. Math. Res. Exposition* **12** (1992), *no.* 4, 607–611. 30D05

Jin, Jun Topological structure of the singular points of the third order phase locked loop equations with the character of detected phase being $g(\varphi) = (1+k)\sin\varphi/(1+k\cos\varphi)$. *Appl. Math. Mech. (English Ed.)* **13** (1992), *no.* 9, 883–889; *translated from Appl. Math. Mech.* **13** (1992), *no.* 9, 849–854 (*Chinese. English and Chinese summaries*). 34C05 (33C15, 94C05)

Jin, Kun Empirical smoothing parameter selection in adaptive estimation. (English summary) *Ann. Statist.* **20** (1992), *no.* 4, 1844–1874. (B. L. Granovskiy) **93m:62060** 62F35 (62F11, 62G05, 62J05)

Jin, Meng Wei Necessary and sufficient conditions on μ for $R^2(K,\mu) \cap L^\infty(\mu) = R^\infty(K,\mu)$. (Chinese) *Chinese Ann. Math. Ser. A* **13** (1992), *no.* 1, 124–130. (Ji Pu Ma) **93h:46074** 46J15 (46B20)

Jin, Ming Zhong[2] (*with* Yu, Yuan Hong) Oscillation theorems for a second order nonlinear differential equation. *Appl. Math. Mech. (English Ed.)* **13** (1992), *no.* 4, 379–385; *translated from Appl. Math. Mech.* **13** (1992), *no.* 4, 359–365 (*Chinese. English summary*). (Ondřej Došlý) **93f:34059** 34C10

Jin, Ning Conformed relation and U-pairs of sets of contractions. (Chinese summary) *Nanjing Daxue Xuebao Ziran Kexue Ban* **28** (1992), *no.* 1, 1–10. (Olec Troshkin) **93d:58100** 58F13 (28A80)

Jin, Renling Cuts in hyperfinite time lines. *J. Symbolic Logic* **57** (1992), *no.* 2, 522–527. (Žarko Mijajlović) **93j:03029** 03H05 (03H15)

— U-Lusin sets in hyperfinite time lines. *J. Symbolic Logic* **57** (1992), *no.* 2, 528–533. (Žarko Mijajlović) **93j:03030** 03H05 (03H15)

— U-monad topologies of hyperfinite time lines. *J. Symbolic Logic* **57** (1992), *no.* 2, 534–539. (Žarko Mijajlović) **93j:03031** 03H05 (03H15)

— A theorem on the isomorphism property. (English summary) *J. Symbolic Logic* **57** (1992), *no.* 3, 1011–1017. (Ali Enayat) **93m:03103** 03H05 (03C50)

— A model in which every Kurepa tree is thick. *Notre Dame J. Formal Logic* **33** (1992), *no.* 1, 120–125. (Summary) **93g:03047** 03E35 (03E50)

Jin, Shi (*with* Levermore, C. David) The discrete-ordinate method in diffusive regimes. *Transport Theory Statist. Phys.* **20** (1991), *no.* 5-6, 413–439. (Marvin L. Adams) **93c:35004** 35A40 (65D30, 65N99, 82C70)

Jin, Shu Ze Interaction of three progressing waves of higher-order semilinear hyperbolic equations. *Northeast. Math. J.* **7** (1991), *no.* 3, 284–294. (Summary) **93a:35101** 35L55 (35A30)

Jin, Wan Min (*with* Zha, Xuan Fang) Motor method of robot end effector path generation. (English summary) *J. Southeast Univ. (English Ed.)* **8** (1992), *no.* 1, 116–123. 70B15

Jin, Wei Mu The coherent state and the squeezed state in Wigner phase spaces. (Chinese. English summary) *Sichuan Shifan Daxue Xuebao Ziran Kexue Ban* **14** (1991), *no.* 5, 52–60. (Summary) **93c:81075** 81R30

Jin, Xiao-Qing (*with* Chan, Raymond H.) Skew-circulant preconditioners for skew-Hermitian type Toeplitz systems. *Proceedings of Asian Mathematical Conference, 1990 (Hong Kong, 1990)*, 45–50, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93b:00022**) 65F15 (65F35)

— (*with* Chan, Raymond H.) Circulant preconditioners for second order hyperbolic equations. (English summary) *BIT* **32** (1992), *no.* 4, 650–664. (Mark Ainsworth) **93j:65066** 65F35 (65M06)

— (*with* Chan, Raymond H.) A family of block preconditioners for block systems. (English summary) *SIAM J. Sci. Statist. Comput.* **13** (1992), *no.* 5, 1218–1235. (Summary) **93e:65050** 65F10 (65F15, 65F35)

Jin, Yi Hui (*with* Sun, Xi; Fang, Chong Zhi) Globally convergent adaptive control of linear systems with dead-zone nonlinearity. (Chinese. English and Chinese summaries) *Inform. and Control (Shenyang)* **21** (1992), *no.* 6, 326–331. 93C40

— (*with* Sun, Xi; Fang, Chong Zhi) Minimum variance control of a class of bilinear systems and its application. (Chinese. English and Chinese summaries) *J. Tsinghua Univ.* **32** (1992), *no.* 1, 9–16. (Summary) **93h:93039** 93C40 (93B40, 93C10)

Jin, Yuan Yu A new generalized predictive control based on ARMAX models. (Chinese. English and Chinese summaries) *Control Theory Appl.* **9** (1992), *no.* 4, 426–431. 93E03

Jin, Yue Feng (*with* Zhang, Hua Xiao; He, Lun Zhi) The optimality conditions of D-pseudoconvex programming with operator constraints. (English summary) *Systems Sci. Math. Sci.* **5** (1992), *no.* 2, 111–120. (Corneliu Ursescu) **93i:90112** 90C48 (49K27)

Jin, Zai Lu (*with* Wu, Qiong) Numerical analysis on sloshing problem by boundary element method and perturbation method. *Theory and applications of boundary element methods (Beijing, 1991)*, 161–168, *Internat. Acad. Publ., Beijing*, 1991. (*see* **93b:65008**) 76M15 (65N38)

Jin, Zhi Ming The optimal stopping problem of a continuous parameter process. *Gaoxiao Yingyong Shuxue Xuebao* **7** (1992), *no.* 1, 19–31. (Adhir K. Basu) **93h:60067** 60G40 (60G44)

Jin, Zhi Ren A unique continuation property on the boundary for solutions of elliptic equations. *Trans. Amer. Math. Soc.* **336** (1993), *no.* 2, 639–653. (V. M. Isakov) **93f:31009** 31B20 (31B35, 35B60, 35J67)

Jin, Zhiying (*with* Armstrong, Ronald D.) Solving linear bottleneck assignment problems via strong spanning trees. (English summary) *Oper. Res. Lett.* **12** (1992), *no.* 3, 179–180. (Summary) **93f:90130** 90C27 (90B80)

Jing, Fang (*with* Niizeki, Syôzô) On some topological properties of Lebesgue measure in $\mathbf{R}^N$. *Mem. Fac. Sci. Kôchi Univ. Ser. A Math.* **13** (1992), 67–86. (A. de Korvin) **93a:28003** 28A10

Jing, Ji Liang (*with* Yu, Hong Wei; Wang, Yong Jiu) The Newman-Penrose formalism of the coupled SU(5) Einstein-Yang-Mills-Higgs field equations. (English summary) *Sci. China Ser. A* **35** (1992), *no.* 3, 317–325. (Garry Ludwig) **93g:83076** 83C60 (81T13, 83C15)

Jing, Nai Huan Vertex operators and Hall-Littlewood symmetric functions. *Adv. Math.* **87** (1991), *no.* 2, 226–248. (Summary) **93c:17039** 17B65 (05E05)

— (*with* Józefiak, Tadeusz) A formula for two-row Macdonald functions. *Duke Math. J.* **67** (1992), *no.* 2, 377–385. (S. Milne) **93g:05145** 05E05 (05E35, 33D15, 33D45)

— (*with* Ge, Mo Lin; Liu, G.-Q.) On quantum groups for Z_N models. *J. Phys. A* **25** (1992), *no.* 13, L799–L806. (Summary) **93d:82031** 82B23 (17B37, 81R50)

Jing, Si Cong (*with* Fan, Hong Yi[1]) Some representations for time-dependent harmonic oscillator. (English summary) *Comm. Theoret. Phys.* **10** (1988), *no.* 3, 363–369. (K. Wódkiewicz) **93k:81039** 81Q05

— The Jordan-Schwinger realization of two-parametric quantum group $\mathrm{sl}_{q,s}(2)$. (English summary) *Nuovo Cimento A* (11) **105** (1992), *no.* 9, 1267–1273. (A. U. Klimyk) **93k:81097** 81R50 (17B37, 81S05)

Jing, Zhu Jun (*with* Liu, Zhen Rong) Qualitative analysis for a third-order differential equation in a model of chemical systems. (English summary) *Systems Sci. Math. Sci.* **5** (1992), *no.* 4, 299–311. (Summary) **93i:34068** 34C23 (34C25, 58F40, 80A32)

Jingzhong, Mao *see* **Mao, Jing Zhong**

Jinnah, M. I. On a class of reflexive modules. *Proceedings of the Symposium on Algebra and Number Theory (Cochin, 1990)*, 47–49, *Publication*, 20, *Centre Math. Sci., Trivandrum*, 1990. (David C. Lantz) **93g:13011** 13D05 (13C13)

— (*with* Singh, G. Suresh) A note on arithmetic numberings of graphs. (English summary) *Proceedings of the Symposium on Graph Theory and Combinatorics (Cochin, 1991)*, 83–87, *Publication*, 21, *Centre Math. Sci., Trivandrum*, 1991. (Summary) **93k:05164** 05C78

Jiráček, Pavel *see* **McGrath, James H.**

Jo, Young Soo (*with* Kang, Joo Ho) Isomorphisms of $\mathscr{A}^{(3)}_{2n(k)}$. *Math. Japon.* **37** (1992), *no.* 2, 259–265. (Stephen Power) **93c:47050** 47D25 (46K50)

Joag-Dev, Kumar Conditional negative dependence in stochastic ordering and interchangeable random variables. (English summary) *Topics in statistical dependence (Somerset, PA, 1987)*, 295–298, *IMS Lecture Notes Monograph Ser.*, 16, *Inst. Math. Statist., Hayward, CA*, 1990. (Summary) **93g:60042** 60E99 (62H20, 62N05)

Joarder, Anwarul H. (*with* Ali, Mir Maswood) Distribution of the correlation coefficient for the class of bivariate elliptical models. (French summary) *Canad. J. Statist.* **19** (1991), *no.* 4, 447–452. (Hisao Nagao) **93e:62141** 62H10 (62H20)

— (*with* Ali, Mir Maswood) Distribution of the correlation matrix for a class of elliptical models. *Comm. Statist. Theory Methods* **21** (1992), *no.* 7, 1953–1964. (Minoru Siotani) **93h:62106** 62H10

Job, Vanessa R. Some results on equivalence of cyclic codes. Proceedings of the Twenty-second Southeastern Conference on Combinatorics, Graph Theory, and Computing (Baton Rouge, LA, 1991). *Congr. Numer.* **84** (1991), 97–104. (Summary) **93b:94026** 94B15

— (*with* Huffman, W. Cary; Pless, Vera S.) Multipliers and generalized multipliers of cyclic objects and cyclic codes. (English summary) *J. Combin. Theory Ser. A* **62** (1993), *no.* 2, 183–215. (Derek Smith) **93m:94029** 94B15 (05E20)

Jobe, J. Marcus (*with* David, H. T.) Buehler confidence bounds for a reliability-maintainability measure. *Technometrics* **34** (1992), *no.* 2, 214–222. (Summary) **93c:62059** 62F25 (62N05)

Job Flores, J. (*with* Tang, Yu) Adaptive frequency response compensation: experiments on a heat exchanger. (English summary) *Intelligent tuning and adaptive control (Singapore, 1991)*, 157–162, *IFAC Sympos. Ser.*, 1991, *No.* 7, *Pergamon, Oxford*, 1991. (*see* **93i:93007**) 93C40

Jöchner, M. (*with* Hsia, J. S.; Shao, You Yu) A structure theorem for a pair of quadratic forms. *Proc. Amer. Math. Soc.* **119** (1993), *no.* 3, 731–734. (A. G. Earnest) **93m:11027** 11E12

Jöckel, K.-H. (*with* Becher, Heiko; Drescher, K.) Design aspects and odds ratio estimation in multicenter case-control studies. (English and German summaries) *Biometrical J.* **34** (1992), *no.* 6, 675–690. (Summary) **93f:62143** 62P10

Jockusch, Carl (*with* Cenzer, Douglas; Downey, Rodney; Shore, Richard A.) Countable thin Π^0_1 classes. (English summary) *Ann. Pure Appl. Logic* **59** (1993), *no.* 2, 79–139. (Marius Zimand) **93m:03075** 03D30 (03D25, 03D45)

Jockusch, William The lower and upper bound problems for cubical polytopes. (English summary) *Discrete Comput. Geom.* **9** (1993), *no.* 2, 159–163. (Margaret M. Bayer) **93j:52016** 52B05

Jódar, Lucas (*with* Law, A. G.) Solving boundary value problems for systems $X'' - AX = f(t)$, without increasing the data dimension. *Differential equations and control theory (Iaşi, 1990)*, 126–133, *Pitman Res. Notes Math. Ser.*, 250, *Longman Sci. Tech., Harlow*, 1991. (Editors) **93d:34027** 34B05

— A method for solving coupled initial-boundary value systems of second order partial differential equations: exact and accurate approximate solutions. (English summary) *Integral methods in science and engineering—90 (Arlington, TX, 1990)*, 437–447, *Ser. Comput. Phys. Process. Mech. Thermal Sci., Hemisphere, New York*, 1991. (Summary) **93g:65127** 65M99 (35A35, 35C10, 35K45)

— (*with* Law, A. G.) Solving boundary value problems for systems $X'' - AX = f(t)$, without increasing the data dimension. Proceedings of the Twentieth Manitoba Conference on Numerical Mathematics and Computing (Winnipeg, MB, 1990). *Congr. Numer.* **80** (1991), 239–244. (E. S. Chichkin) **93a:34008** 34A12 (34B05)

— (*with* Navarro, Enrique; Abou-Kandil, Hisham) Explicit solutions of coupled Riccati equations occurring in Nash games—the open-loop case. (Russian and Polish summaries) *Control Cybernet.* **20** (1991), *no.* 1, 59–66. (Vladimir B. Larin) **93a:93101** 93E05 (34A05, 34A99, 90D05, 93B40)

— (*with* Navarro, Enrique; Morera, J. L.) Closed form solution for coupled Riccati equation occurring in open loop Nash discrete time linear-quadratic games. (English, Russian and Polish summaries) *Control Cybernet.* **20** (1991), *no.* 3, 63–71. (Summary) **93h:90118** 90D25 (49N10)

— Closed-form solutions for boundary value coupled differential and difference systems. Proceedings of the Fourth International Congress on Computational and Applied Mathematics (Leuven, 1990). *J. Comput. Appl. Math.* **35** (1991), *no.* 1-3, 259–268. (E. S. Chichkin) **93a:34025** 34B10 (34A05, 34A50, 39A10, 65L10)

— (*with* Rubio Navarro, Gregorio) Approximate solutions and error bounds for second order operator differential equations. *Portugal. Math.* **48** (1991), *no.* 2, 165–177. (E. S. Chichkin) **93a:34009** 34A12 (34A50, 65L05, 65L70)

— (*with* Villanueva Micó, R. J.; Navarro, Enrique) Solving nonmonic higher order two-point boundary value matrix problems using quasi-Green's matrix functions. *Analysis* **12** (1992), *no.* 1-2, 139–157. (P. W. Eloe) **93d:34048** 34B27 (34A05, 34B10)

— (*with* Navarro, Enrique; Morera, J. L.) A closed-form solution of singular regular higher-order difference initial and boundary value problems. *Appl. Math. Comput.* **48** (1992), *no.* 2-3, 153–166. (Johnny Henderson) **93a:39011** 39A12 (34A12, 34A30, 34B05)

— Rational approximate solutions and error bounds for the nonsymmetric Riccati matrix differential equation. *Appl. Math. Comput.* **50** (1992), *no.* 1, 23–31. (Summary) **93b:65097** 65L05 (34A50, 41A20)

— (*with* Legua Fernández, Matilde; Law, A. G.) A matrix method of Frobenius, and application to a generalized Bessel equation. Proceedings of the Twenty-first Manitoba Conference on Numerical Mathematics and Computing (Winnipeg, MB, 1991). *Congr. Numer.* **86** (1992), 7–17. (Summary) **93c:34018** 34A25

— (*with* Navarro, Enrique) Analytic solution of a class of singular time varying second order boundary value problems. (English summary) *Dynamic Systems Appl.* **1** (1992), *no.* 3, 317–328. (P. R. Krishnamoorthy) **93m:34023** 34B05 (34A30, 34B10)

— (*with* Navarro, Enrique) Closed analytical solution of Riccati type matrix differential equations. *Indian J. Pure Appl. Math.* **23** (1992), *no.* 3, 185–187. (Introduction) **93b:34008** 34A05 (34A34)

— (*with* Villanueva Micó, R. J.) Generalized Green's functions for higher order boundary value matrix differential systems. *Internat. J. Math. Math. Sci.* **15** (1992), *no.* 3, 523–535. (Summary) **93d:34049** 34B27 (34A05, 34B05)

— Exact, approximate solutions and error bounds for coupled implicit systems of partial differential equations. (English summary) *Internat. J. Math. Math. Sci.* **15** (1992), *no.* 4, 663–672. (Summary) **93i:35006** 35A20 (35A40, 65P05)

— Explicit solutions for second-order operator differential equations with two boundary value conditions. II. *Linear Algebra Appl.* **166** (1992), 207–215. (Summary) **93c:34003** 34A05 (34B05, 34G10)

— On the nonhomogeneous second-order Euler operator differential equation: explicit solutions. (English summary) *Linear Algebra Appl.* **177** (1992), 145–156. (Summary) **93i:34003** 34A05 (34A30, 34B05, 34G10)

— (*with* Law, A. G.; Zhang, C. N.; Rezazadeh, A.) Evaluation of a rational function. (English summary) Extrapolation and rational approximation (Puerto de la Cruz, 1992). *Numer. Algorithms* **3** (1992), *no.* 1-4, 265–272. (Summary) **93h:65021** 65D15

— Solving initial-boundary value problems for coupled systems of partial differential equations. (English summary) *Zastos. Mat.* **21** (1992), *no.* 3, 399–406. (Summary) **93e:35013** 35C10 (35A25)

— (*with* Legua Fernández, Matilde) Solving second-order matrix differential equations with regular singular points avoiding the increase of the problem dimension. (English summary) *Appl. Math. Comput.* **53** (1993), *no.* 2-3, 191–205. (Summary) **93j:34002** 34A05 (34A25)

Joe, Barry (*with* Wang, Cao An) Duality of constrained Voronoï diagrams and Delaunay triangulations. (English summary) *Algorithmica* **9** (1993), *no.* 2, 142–155. (Summary) **93m:68169** 68U05

Joe, Harry (*with* Fang, Zhao Ben) Further developments on some dependence orderings for continuous bivariate distributions. (English summary) *Ann. Inst. Statist. Math.* **44** (1992), *no.* 3, 501–517. (Ramesh C. Gupta) **93j:62038** 62E15 (60E15, 62H20)

— (*with* Smith, Richard L.; Weissman, Ishay) Bivariate threshold methods for extremes. *J. Roy. Statist. Soc. Ser. B* **54** (1992), *no.* 1, 171–183. (Summary) **93b:60104** 60G70 (60G55, 62G30)
— Tests of uniformity for sets of lotto numbers. (English summary) *Statist. Probab. Lett.* **16** (1993), *no.* 3, 181–188. 62G10
Joe, Stephen (*with* Hunt, David C.) The number of lattice rules having given invariants. (English summary) *Bull. Austral. Math. Soc.* **46** (1992), *no.* 3, 479–495. (Manfred Dugas) **93k:20074** 20K05 (65D30)
— (*with* Sloan, Ian H.) On computing the lattice rule criterion *R*. *Math. Comp.* **59** (1992), *no.* 200, 557–568. (S. Dubuc) **93b:65042** 65D30 (65D32)
— (*with* Sloan, Ian H.) Imbedded lattice rules for multidimensional integration. *SIAM J. Numer. Anal.* **29** (1992), *no.* 4, 1119–1135. (Francesco Romani) **93g:65034** 65D32
Joel, J. S. *see* **Shabat, B. V., 93g:32001** *and* **Dynamical systems, 93k:58028**
Joets, A. (*with* Ribotta, R.; Yang, X. D.) Defects of stationary convective structures in a nematic. (English summary) *Nematics* (*Orsay*, 1990), 189–194, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 332, *Kluwer Acad. Publ., Dordrecht*, 1991. (*see* **93d:58007**) 76A15
— (*with* Ribotta, R.) Defects of nonlinear waves in the convection of a nematic liquid crystal. (English summary) *Nematics* (*Orsay*, 1990), 327–340, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 332, *Kluwer Acad. Publ., Dordrecht*, 1991. (Summary) **93e:76007** 76A15 (76E15, 76E30)
Jofré, Alejandro (*with* Thibault, Lionel) Proximal and Fréchet normal formulae for some small normal cones in Hilbert space. *Nonlinear Anal.* **19** (1992), *no.* 7, 599–612. (A. B. Németh) **93k:46033** 46G05 (46N10, 47N10, 49J52, 58C20)
Joglekar, Satish D. (*with* Saini, Gaitri) Compact argument for family of anomalies in path-integral formulation. *Phys. Rev. D* (3) **45** (1992), *no.* 10, 3818–3822. (Summary) **93a:81188** 81T50 (81S40)
Johann, Patricia (*with* Dougherty, Daniel J.) An improved general *E*-unification method. (English summary) *J. Symbolic Comput.* **14** (1992), *no.* 4, 303–320. (From the introduction) **93i:68155** 68T15 (03B35, 03C05)
Johannes, Frank (*with* Kredler, Christian; Zillober, Christian; Sigl, Georg) An application of preconditioned conjugate gradients to relative placement in chip design. (English summary) *Internat. J. Numer. Methods Engrg.* **36** (1993), *no.* 2, 255–271. 90C90 (68Q35)
Johannesson, Henrik (*with* Fröjdh, Per) The two-dimensional tricritical Ising model in restricted domains with free boundaries. *Nuclear Phys. B* **366** (1991), *no.* 3, 429–466. (Giuseppe Mussardo) **93e:81107** 81T40 (81T27)
— Lattice Virasoro algebras, unitarity, and the eight-vertex model. *J. Math. Phys.* **33** (1992), *no.* 1, 1–3. (Ladislav Šamaj) **93g:82037** 82B23 (17B68, 81R10)
— Spin glasses from vertex models. *Phys. A* **183** (1992), *no.* 1-2, 1–11. (Ladislav Šamaj) **93e:82011** 82B20 (82B23, 82B44)
Johannesson, Rolf (*with* Einarsson, G.; Ericson, Thomas H. E.; Ingemarsson, I.; Zigangirov, K. Sh.; Sundberg, C.-E.) ★ Topics in coding theory. In honor of Lars H. Zetterberg. Lecture Notes in Control and Information Sciences, 128. *Springer-Verlag, Berlin*, 1989. viii+176 *pp. ISBN* 3-540-51405-8 94–02 (94A24, 94Bxx)
— (*with* Zigangirov, K. Sh.) A trellis coding scheme based on the splitting of the signal alphabet. (Russian. Russian summary) *Problemy Peredachi Informatsii* **28** (1992), *no.* 4, 14–23; *translation in Problems Inform. Transmission* **28** (1992), *no.* 4, 308–316 (1993). (Summary) **93j:94029** 94B12 (94B35)
Johansen, A. A. Nonrenormalizability of the topological charge as a result of the index theorem for the inverse gluon propagator. *Nuclear Phys. B* **376** (1992), *no.* 2, 432–443. (E. Wieczorek) **93k:81149** 81T15 (58G10, 81T13, 81V05)
— (*with* Axenides, Minos) The global SU(2) anomaly for massive fermions. (English summary) *Phys. Lett. B* **300** (1993), *no.* 3, 251–255. 81T50
Johansen, Søren (*with* Jensen, Søren Tolver; Lauritzen, Steffen L.) Globally convergent algorithms for maximizing a likelihood function. *Biometrika* **78** (1991), *no.* 4, 867–877. (G. P. Bhattacharjee) **93c:62040** 62F10 (65K10, 65U05)
— A representation of vector autoregressive processes integrated of order 2. (English summary) *Econometric Theory* **8** (1992), *no.* 2, 188–202. (J. G. de Gooijer) **93j:62228** 62M10
— Cointegration in partial systems and the efficiency of single-equation analysis. *J. Econometrics* **52** (1992), *no.* 3, 389–402. (Christiaan Heij) **93e:62233** 62M10 (62P20)
Johansen, Thormod (*with* Dahl, Olav; Tveito, Aslak; Winther, Ragnar) Multicomponent chromatography in a two phase environment. *SIAM J. Appl. Math.* **52** (1992), *no.* 1, 65–104. (Alberto Valli) **93c:35098** 35L65 (76S05, 76T05)
Johansson, B. Christer V. Boundary conditions for open boundaries for the incompressible Navier-Stokes equation. (English summary) *J. Comput. Phys.* **105** (1993), *no.* 2, 233–251. (Summary) **93m:76064** 76M99 (35Q30, 76D05, 76M20)
Johansson, Björn (*with* Björk, Tomas) Adaptive prediction and reverse martingales. (English summary) *Stochastic Process. Appl.* **43** (1992), *no.* 2, 191 –222. (M. M. Rao) **93m:60081** 60G35 (62M05, 62M20)
Johansson, Kurt Condensation of a one-dimensional lattice gas. *Comm. Math. Phys.* **141** (1991), *no.* 1, 41–61. (Flora Koukiou) **93e:82023** 82B26 (82B21)
— Separation of phases at low temperatures in a one-dimensional continuous gas. *Comm. Math. Phys.* **141** (1991), *no.* 2, 259–278. (Flora Koukiou) **93e:82003** 82B05 (82B21)
Johansson, L. (*with* Klarbring, Anders) The rigid punch problem with friction using variational inequalities and linear complementarity. (English summary) *Mech. Structures Mach.* **20** (1992), *no.* 3, 293–319. (Ján Lovišek) **93i:73050** 73T05 (73V05, 73V25)
John, Fritz ★ Partial differential equations. Reprint of the fourth edition. Applied Mathematical Sciences, 1. *Springer-Verlag, New York*, 1991. x+249 *pp. ISBN* 0-387-90609-6 (Editors) **93f:35001** 35-01
John, J. K. (*with* Chaudhary, M. S.) Generalized Weber transformation. *Ganita Sandesh* **5** (1991), *no.* 2, 96–98. (Richard D. Carmichael) **93b:46079** 46F12 (44A15)
— (*with* Chaudhary, M. S.) On Bessel transformation and some Abelian theorems. *Sci. Phys. Sci.* **3** (1991), *no.* 2, 113–118. (Summary) **93b:44011** 44A20 (46F12, 47B38)
— (*with* Chaudhary, M. S.) A new generalized Hankel transformation arising from orthonormal series expansion. (English summary) *Ultra Sci. Phys. Sci.* **4** (1992), *no.* 2, 102–105. (Summary) **93j:44007** 44A15 (46F12)
John, K. J. Characterization of a mixture of gamma density. (English summary) *Calcutta Statist. Assoc. Bull.* **41** (1991), *no.* 161-164, 169–171. 62E10
John, Kamil On the uncomplemented subspace $K(X, Y)$. *Czechoslovak Math. J.* **42(117)** (1992), *no.* 1, 167–173. (Christian Samuel) **93b:47085** 47D15 (46B28, 47B07)
John, Peter Eugen Eine zweite graphentheoretische Bemerkung zur Resonanztheorie benzenoider Kohlenwasserstoffe. (English summary) [A second graph-theoretical remark on the resonance theory of benzenoid hydrocarbons] *Match No.* 26 (1991), 155–170. (Dietmar Dorninger) **93d:92016** 92E10 (05C90)
— Two codes for hexagonal systems. (English summary) *Match No.* 28 (1992), 209–218. 92E10 (05C90)
John, Varghese (*with* Govindarajan, Suresh; Jayaraman, T.; Majumdar, Parthasarathi) States of nonzero ghost number in $c < 1$ matter coupled to 2D gravity. *Modern Phys. Lett. A* **7** (1992), *no.* 12, 1063–1077. (Stanislav Z. Pakuliak) **93c:81204** 81T40 (81R10, 81T70)
Johns, Garry L. (*with* Chartrand, Gary; Novotny, Karen S.; Oellermann, Ortrud R.) Subgraph distance in graphs. (English summary) *J. Combin. Inform. System Sci.* **16** (1991), *no.* 1, 67–85. (Donald W. Vanderjagt) **93j:05050** 05C12
— (*with* Chartrand, Gary; Tian, Song Lin) Directed distance in digraphs: centers and peripheries. (English summary) Proceedings of the Twenty-third Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, FL, 1992). *Congr. Numer.* **89** (1992), 89–95. (Summary) **93j:05051** 05C12 (05C20)
Johnsen, Trygve (*with* Coppens, Marc) Secant lines of smooth projective curves; an infinitesimal study of the symmetric products. *Enumerative algebraic geometry* (*Copenhagen*, 1989), 61–87, *Contemp. Math.*, 123, *Amer. Math. Soc., Providence, RI*, 1991. (Jean D'Almeida) **93b:14081** 14N05
— Eight-secant conics for space curves. *Math. Z.* **211** (1992), *no.* 4, 609–626. (Jean D'Almeida) **93k:14075** 14N10 (14H50)
Johnson, A. *see* **Johnson, Alan**
Johnson, Aimee S. A. (*with* Rudolph, Daniel J.) Commuting endomorphisms of the circle. (English summary) *Ergodic Theory Dynamical Systems* **12** (1992), *no.* 4, 743–748. (Viviane Baladi) **93k:58135** 58F11 (58F03, 58F15)
— Measures on the circle invariant under multiplication by a nonlacunary subsemigroup of the integers. (English summary) *Israel J. Math.* **77** (1992), *no.* 1-2, 211–240. (Nathaniel F. G. Martin) **93m:28019** 28D05 (28D20)
Johnson, Alan (*with* Luo, J. S.) Stability robustness of the discrete-time LQG system under plant perturbation and noise uncertainty. *Internat. J. Control* **55** (1992), *no.* 6, 1491–1502. 93D09
— On the sampled-data linear quadratic tracking problem. (English summary) *Dynamics Control* **3** (1993), *no.* 1, 91–100. (Summary) **93j:93090** 93C57 (49N10, 93C55)
Johnson, B. E. Weakly compact homomorphisms between Banach algebras. *Math. Proc. Cambridge Philos. Soc.* **112** (1992), *no.* 1, 157–163. (J. Peter McClure) **93d:46078** 46H05 (43A20)
Johnson, Bruce R. (*with* Leeming, David J.) A study of the digits of π, e and certain other irrational numbers. (English summary) *Sankhyā Ser. B* **52** (1990), *no.* 2, 183–189. (Summary) **93e:65010** 65C10 (11A63)
Johnson, Charles Royal (*with* Drew, John; van den Driessche, P.) Strong forms of nonsingularity. Directions in matrix theory (Auburn, AL, 1990). *Linear Algebra Appl.* **162/164** (1992), 187–204. (Peter M. Gibson) **93c:15002** 15A03 (15A09)
— (*with* Lundquist, Michael) An inertia formula for Hermitian matrices with sparse inverses. Directions in matrix theory (Auburn, AL, 1990). *Linear Algebra Appl.* **162/164** (1992), 541–556. (Shao Kuan Li) **93b:15027** 15A57 (15A18)
— (*with* Schreiner, Erik A.) Explicit Jordan form for certain block triangular matrices. II. Directions in matrix theory (Auburn, AL, 1990). *Linear Algebra Appl.* **162/164** (1992), 601–613. (Ion Zaballa) **93b:15009** 15A18 (15A21)
— (*with* Maybee, John S.) Vanishing minor conditions for inverse zero patterns. (English summary) *Linear Algebra Appl.* **178** (1993), 1–15. (Summary) **93k:15006** 15A09
— (*with* Nylen, Peter) Erratum: "Yamamoto's theorem for generalized singular values" [Linear Algebra Appl. **128** (1990), 147–158; MR 91f:15044]. *Linear Algebra Appl.* **180** (1993), 4. (From the text) **93m:15030** 15A42
Johnson, Claes The characteristic streamline diffusion finite element method. (English and Portuguese summaries) *Mat. Apl. Comput.* **10** (1991), *no.* 3, 229–242. (Summary) **93f:76068** 76M10 (76D05, 76Rxx)
— A new approach to algorithms for convection problems which are based on exact transport + projection. (English summary) *Comput. Methods Appl. Mech. Engrg.* **100** (1992), *no.* 1, 45–62. (Summary) **93g:65124** 65M60
— (*with* Hansbo, Peter) Adaptive finite element methods in computational mechanics. (English summary) Reliability in computational mechanics (Kraków, 1991). *Comput. Methods Appl. Mech. Engrg.* **101** (1992), *no.* 1-3, 143–181. (J. T. Oden) **93m:65157** 65N30 (73V05, 76M10)
— Adaptive finite element methods for the obstacle problem. (English summary) *Math. Models Methods Appl. Sci.* **2** (1992), *no.* 4, 483–487. (Georges A. Lebaud) **93k:65093** 65N30
— (*with* Eriksson, Kenneth) Adaptive streamline diffusion finite element methods for stationary convection-diffusion problems. *Math. Comp.* **60** (1993), *no.* 201, 167–188, S1–S2. (Summary) **93d:65095** 65N15 (65N30, 76M10, 76Rxx)
Johnson, Clifford V. (*with* Dalley, Simon; Morris, Tim R.; Wätterstam, Anders) Unitary matrix models and 2D quantum gravity. (English summary) *Modern Phys. Lett. A* **7** (1992), *no.* 29, 2753–2762. (Nir Sochen) **93j:81075** 81T27 (58F07, 81T40)
— (*with* Dalley, Simon; Morris, Tim R.) Multicritical complex matrix models and nonperturbative two-dimensional quantum gravity. *Nuclear Phys. B* **368** (1992), *no.* 3, 625–654. (Yolanda Lozano) **93g:81143** 81T40 (81T27)
— (*with* Dalley, Simon; Morris, Tim R.) Nonperturbative two-dimensional quantum gravity. *Nuclear Phys. B* **368** (1992), *no.* 3, 655–670. (Yolanda Lozano) **93g:81144** 81T40 (81T27)
— (*with* Ambjørn, Jan; Morris, Tim R.) Stochastic quantization vs. KdV flows in two-dimensional quantum gravity. *Nuclear Phys. B* **374** (1992), *no.* 3, 496–510. (From the text) **93m:81074** 81S20 (58F07, 81T40)
— (*with* Morris, Tim R.; Spence, Bill) Stable nonperturbative minimal models coupled to 2D quantum gravity. (English summary) *Nuclear Phys. B* **384** (1992), *no.* 1-2, 381–410. (Anni Koubek) **93i:81232** 81T40 (58F07, 81T30)
— (*with* Morris, Tim R.; Wätterstam, Anders) Global KdV flows and stable 2D quantum gravity. (English summary) *Phys. Lett. B* **291** (1992), *no.* 1-2, 11–18. (Summary) **93g:81154** 81T40 (58F07)
Johnson, D. L. *see* **Johnson, David Lawrence**

Johnson, D. S. (*with* Pugh, A. C.; Hayton, G. E.) On conditions guaranteeing two polynomial matrices possess identical zero structures. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 9, 1383–1386. (Summary) **93h:93033** 93B55 (15A99)

Johnson, D. W. (*with* Read, P. L.; Bell, M. J.; Small, R. M.) Quasi-periodic and chaotic flow regimes in a thermally driven, rotating fluid annulus. *J. Fluid Mech.* **238** (1992), 599–632. (Summary) **93c:76047** 76F20 (76–05, 76E30, 76U05)

Johnson, Dallas E. (*with* Weerakkody, Govinda J.) Estimation of within model parameters in regression models with a nested error structure. (English summary) *J. Amer. Statist. Assoc.* **87** (1992), *no.* 419, 708–713. (S. K. Tharthare) **93k:62157** 62K10 (62J05)

Johnson, David Lawrence (*with* Song, Hyun-Jong) The growth series of the Gieseking group. *Discrete groups and geometry (Birmingham, 1991)*, 120–124, *London Math. Soc. Lecture Note Ser.*, 173, *Cambridge Univ. Press, Cambridge*, 1992. (N. D. Gupta) **93m:20049** 20F32 (20F34, 20F38)

— (*with* Edjvet, M.) The growth of certain amalgamated free products and HNN-extensions. *J. Austral. Math. Soc. Ser. A* **52** (1992), *no.* 3, 285–298. (Kathryn J. Horadam) **93b:20048** 20E06

— (*with* Kim, Ann Chi) Periodic Fibonacci algebras. *Proc. Edinburgh Math. Soc.* (2) **35** (1992), *no.* 2, 169–172. (Summary) **93f:08008** 08B20 (20K99)

Johnson, David Stifler (*with* Fredman, M. L.; McGeoch, L. A.; Ostheimer, G.) Data structures for traveling salesmen. (English summary) *Proceedings of the Fourth Annual ACM-SIAM Symposium on Discrete Algorithms (Austin, TX, 1993)*, 145–154, *ACM, New York*, 1993. (*see* **93k:05002**) 68P05 (90B10)

Johnson, Ellis L. (*with* Nemhauser, George L.) Recent developments in integer programming. (English summary) *Optimization, Vol.* 1, 2 (*Singapore*, 1992), 179–186, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93d:90005**) 90C27 (90–02, 90C10)

Johnson, F. E. A. Flat algebraic manifolds. *Geometry of low-dimensional manifolds*, 1 (*Durham*, 1989), 73–91, *London Math. Soc. Lecture Note Ser.*, 150, *Cambridge Univ. Press, Cambridge*, 1990. (Elmer G. Rees) **93k:32064** 32J27 (53C55)

Johnson, Frederic A. Three-membered domains for Aristotle's syllogistic. *Studia Logica* **50** (1991), *no.* 2, 181–187. (Summary) **93a:03009** 03B20

Johnson, Gerald W. (*with* Kallianpur, Gopinath) Multiple Wiener integrals on abstract Wiener spaces and liftings of p-linear forms. *White noise analysis (Bielefeld*, 1989), 208–219, *World Sci. Publishing, River Edge, NJ*, 1990. (Dong M. Chung) **93f:60077** 60H05 (28C20)

— The product of strong operator measurable functions is strong operator measurable. *Proc. Amer. Math. Soc.* **117** (1993), *no.* 4, 1097–1104. (Summary) **93e:46049** 46G10 (28B05, 28C15, 47A99)

Johnson, Helen M. Model reference adaptive control of a nonlinear oscillator. (English summary) *Dynamics Control* **2** (1992), *no.* 4, 349–362. (Sauro Longhi) **93k:93061** 93C40 (34C15, 70Q05, 93D05)

Johnson, J. A. *see* **Johnson, Johnny Albert**

Johnson, J. M. (*with* Bajaj, A. K.) On the amplitude dynamics and crisis in resonant motion of stretched strings. *Philos. Trans. Roy. Soc. London Ser. A* **338** (1992), *no.* 1649, 1–41. (Summary) **93a:73053** 73K03 (34C23, 58F13, 73D35, 73K12)

Johnson, Johnny Albert (*with* Dugas, Manfred; Hausen, J.) Rings whose additive endomorphisms are multiplicative. *Period. Math. Hungar.* **23** (1991), *no.* 1, 67–75. (Introduction) **93d:16007** 16D70 (16S99, 20K99)

— (*with* Taylor, Monty B.) New characterization of approximately Gorenstein rings. *Glasgow Math. J.* **34** (1992), *no.* 3, 361–363. (Jürgen Herzog) **93i:13020** 13H10

— (*with* Taylor, Monty B.) A new characterization of principal systems. *Math. Japon.* **37** (1992), *no.* 2, 273–274. (Summary) **93e:13001** 13A15

Johnson, K. W. *see* **Johnson, Kenneth Walter**

kramer Johnson, Kelly *see* **Kramer Johnson, Kelly**

Johnson, Kenneth A. The Dirac equation in a box. (English summary) *J. J. Giambiagi Festschrift*, 235–240, *World Sci. Publishing, River Edge, NJ*, 1990. (Summary) **93d:81033** 81Q05

— (*with* Freedman, Daniel Z.; Latorre, José Ignacio) Differential regularization and renormalization: a new method of calculation in quantum field theory. *Nuclear Phys. B* **371** (1992), *no.* 1-2, 353–414. (Piotr Kosiński) **93b:81172** 81T15 (81T18)

Johnson, Kenneth Walter Some recent results on quasigroup determinants. Universal algebra, quasigroups and related systems (Jadwisin, 1989). *Demonstratio Math.* **24** (1991), *no.* 1-2, 83–93. (A. Schleiermacher) **93d:20124** 20N05 (20C99)

— Some historical aspects of the representation theory of groups and its extension to quasigroups. *Universal algebra and quasigroup theory (Jadwisin*, 1989), 101–117, *Res. Exp. Math.*, 19, *Heldermann, Berlin*, 1992. (Edgar G. Goodaire) **93k:20102** 20N05 (20–02, 20C15)

— (*with* Hoehnke, Hans-Jürgen) The 1-, 2-, and 3-characters determine a group. *Bull. Amer. Math. Soc.* (*N.S.*) **27** (1992), *no.* 2, 243–245. (Roderick Gow) **93d:20017** 20C15

— Latin square determinants. II. (English summary) *Discrete Math.* **105** (1992), *no.* 1-3, 111–130. (Katherine Heinrich) **93i:05031** 05B15 (20N05)

Johnson, M. A. (*with* Beatty, M. F.) The Mullins effect in uniaxial extension and its influence on the transverse vibration of a rubber string. (English summary) *Contin. Mech. Thermodyn.* **5** (1993), *no.* 2, 83–115. 73G05 (73C50, 73D35)

bicknell-Johnson, Marjorie *see* **Bicknell-Johnson, Marjorie**

Johnson, Mark Allyn Graph transforms: a formalism for modeling chemical reaction pathways. *Graph theory, combinatorics, and applications. Vol.* 2 (*Kalamazoo, MI*, 1988), 725–738, *Wiley-Intersci. Publ., Wiley, New York*, 1991. (Summary) **93c:05108** 05C90 (92E10)

Johnson, Michael A. *see* **Adaptive systems in control and signal processing, 93j:93007**

Johnson, N. L. *see* **Johnson, Norman Lloyd[1]**

Johnson, Norman L. *see* **Johnson, Norman Lloyd[2]**

Johnson, Norman Lloyd[1] Derivation by coordinates. *Note Mat.* **10** (1990), *no.* 1, 89–96. (T. G. Ostrom) **93c:51007** 51E14 (51A35, 51A40)

— Conical flocks whose corresponding translation planes are derivable. *Simon Stevin* **65** (1991), *no.* 3-4, 199–215. (T. G. Ostrom) **93e:51010** 51E15 (51A35, 51A40)

— (*with* Jha, Vikram) On the ubiquity of Denniston-type translation ovals in generalized André planes. (English summary) *Combinatorics '90 (Gaeta*, 1990), 279–296, *Ann. Discrete Math.*, 52, *North-Holland, Amsterdam*, 1992. (P. B. Kirkpatrick) **93m:51007** 51E15 (51E21)

— (*with* De Clerck, F.) Subplane covered nets and semipartial geometries. (English summary) A collection of contributions in honour of Jack van Lint. *Discrete Math.* **106/107** (1992), 127–134. (T. G. Ostrom) **93h:51012** 51E14

— (*with* Hiramine, Yutaka) Near nearfield planes. *Geom. Dedicata* **43** (1992), *no.* 1, 17–33. (M. J. Kallaher) **93f:51020** 51J20 (51A40, 51E15)

— (*with* Jha, Vikram) Translation planes of large dimension admitting nonsolvable groups. (English summary) *J. Geom.* **45** (1992), *no.* 1-2, 87–104. (T. G. Ostrom) **93i:51013** 51E15 (20B25, 51A40)

Johnson, Norman Lloyd[2] (*with* Kotz, Samuel) Some (more or less) naturally occurring mixtures. *Math. Sci.* **17** (1992), *no.* 1, 42–48. 62E99 (62N10)

— (*with* Kotz, Samuel) Some further (more or less) naturally occurring mixture distributions. (English summary) *Math. Sci.* **17** (1992), *no.* 2, 95–100. (Summary) **93h:62024** 62E15

— (*with* Ennis, Daniel M.) Noncentral and central chi-square, F and beta distribution functions as special cases of the distribution function of an indefinite quadratic form. (English summary) *Comm. Statist. Theory Methods* **22** (1993), *no.* 3, 897–905. 62E15

Johnson, P. B. κ-Lindelöf locales and their spatial parts. (French summary) *Cahiers Topologie Géom. Différentielle Catégoriques* **32** (1991), *no.* 4, 297–313. (Jirí Rosický) **93g:54036** 54D30 (18B30, 54B30)

Johnson, Paul E. *see* **Formal theories of politics, 93d:92018**

Johnson, Peter D., Jr. (*with* Rogers, D. G.) Compatible additive permutations of finite integral bases. *Graphs Combin.* **2** (1986), *no.* 1, 43–53. (Summary) **93d:05003** 05A05 (20D60)

— (*with* Hilton, A. J. W.) A variation of Ryser's theorem and a necessary condition for the list-colouring problem. *Graph colourings (Milton Keynes*, 1988), 135–143, *Pitman Res. Notes Math. Ser.*, 218, *Longman Sci. Tech., Harlow*, 1990. (*see* **93k:05072**) 05C15

— Product colorings. *Geombinatorics* **1** (1991), *no.* 3, 11–12. 05C15

— (*with* Greenwell, Don) Functions which preserve unit distance. *Geombinatorics* **2** (1993), *no.* 3, 61–64. 51K05

Johnson, R. S. A formulation of a boundary-initial-value problem for the Korteweg-de Vries equation. (English summary) *Nonlinear dispersive wave systems (Orlando, FL*, 1991), 23–40, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93i:35127** 35Q53

— (*with* Parker, A.) A superposition principle for periodic solutions of nonlinear evolution equations. (English summary) *Nonlinear dispersive wave systems (Orlando, FL*, 1991), 383–403, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93i:35014** 35B10 (35Q53, 58D25)

Johnson, R. W. *see* **Johnson, Richard W.**

Johnson, Raymond Chebyshev's inequality for functions whose averages are monotone. *J. Math. Anal. Appl.* **172** (1993), *no.* 1, 221–232. (Chung Lie Wang) **93m:26040** 26D15

Johnson, Richard A. (*with* Langeland, Thore) A linear combination test for detecting serial correlation in multivariate samples. (English summary) *Topics in statistical dependence (Somerset, PA*, 1987), 299–313, *IMS Lecture Notes Monograph Ser.*, 16, *Inst. Math. Statist., Hayward, CA*, 1990. (Summary) **93i:62052** 62H20 (62F05)

— Confidence estimation with discrete reliability growth models. Reliability theory (Columbia, MO, 1988). *J. Statist. Plann. Inference* **29** (1991), *no.* 1-2, 87–97. (Guang Ping Ge) **93a:62136** 62N05

— (*with* Horváth, Lajos) Tests of fit for composite hypotheses with censored data. *Statist. Decisions* **9** (1991), *no.* 1-2, 21–43. (Truc Nguyen) **93f:62028** 62F05 (62E20, 62N05)

— (*with* Wu, K. T.) Inferences about correlation structure based on proof loading experiments. *Statist. Probab. Lett.* **12** (1991), *no.* 6, 517–525. (Mir Maswood Ali) **93d:62069** 62G05 (62F10)

— (*with* Wichern, Dean W.) ★ Applied multivariate statistical analysis. Third edition. *Prentice Hall, Inc., Englewood Cliffs, NJ*, 1992. xiv+642 *pp. ISBN* 0-13-041773-4 (Editors) **93c:62103** 62H15 (62H25, 62H30)

— (*with* Akritas, Michael G.) Symmetrized approximate score rank tests for the two-sample case. (English summary) *Ann. Inst. Statist. Math.* **44** (1992), *no.* 4, 745–753. (P. W. Mielke, Jr.) **93m:62100** 62G10 (62G20)

— (*with* Morrell, Christopher H.; Schick, Anton) Two-sample nonparametric estimation and confidence intervals under truncation. (English and French summaries) *Biometrics* **48** (1992), *no.* 4, 1043–1056. (Summary) **93k:62091** 62G05 (62G15)

— (*with* Morrell, Christopher H.) Estimation from k independent randomly truncated samples: application to neutrino energies. (English summary) *Comm. Statist. Theory Methods* **21** (1992), *no.* 12, 3335–3350. (Summary) **93j:62068** 62F10

— (*with* Weerahandi, Samaradasa) Testing reliability in a stress-strength model when X and Y are normally distributed. *Technometrics* **34** (1992), *no.* 1, 83–91. (Summary) **93b:62134** 62N05

Johnson, Richard W. (*with* MacKinnon, R. J.; Langerman, M. A.) A higher-order accurate Petrov-Galerkin finite-element method for elliptic boundary value problems. (English summary) *Comm. Appl. Numer. Methods* **8** (1992), *no.* 12, 869–874. 65N30

Johnson, Robert A. Smoothness of inverse limits of continua. *Houston J. Math.* **18** (1992), *no.* 3, 361–374. (J. J. Charatonik) **93m:54057** 54F15 (54F55)

Johnson, Russell Oscillation theory and the density of states for the Schrödinger operator in odd dimension. *J. Differential Equations* **92** (1991), *no.* 1, 145–162. (From the introduction) **93b:35033** 35J10 (35P05)

— (*with* Nerurkar, Mahesh G.) On null controllability of linear systems with recurrent coefficients and constrained controls. *J. Dynamics Differential Equations* **4** (1992), *no.* 2, 259–273. (Inge Troch) **93f:93022** 93B05 (34H05)

Johnson, Stewart D. Absorbing Cantor sets and trapping structures. *Ergodic Theory Dynamical Systems* **11** (1991), *no.* 4, 731–736. (Summary) **93f:58138** 58F12

Johnson, T. P. The group of fuzzy homeomorphisms. *Fuzzy Sets and Systems* **45** (1992), *no.* 3, 355–358. (Ivan L. Reilly) **93c:54003** 54A40 (04A72)

— On the lattice of fuzzy topologies. I. *Fuzzy Sets and Systems* **48** (1992), *no.* 1, 133–135. (Summary) **93g:54011** 54A40 (04A72, 06B99)

— Completely homogeneous fuzzy closure spaces and lattice of fuzzy closure operators. (English summary) *Fuzzy Sets and Systems* **52** (1992), *no.* 1, 89–91. (Summary) **93g:06003** 06A15 (04A72, 54A40)

Johnson, Valen E. A technique for estimating marginal posterior densities in hierarchical models using mixtures of conditional densities. (English summary) *J. Amer. Statist. Assoc.* **87** (1992), *no.* 419, 852–860. (J. M. Bernardo) **93m:62057** 62F15 (65D30)

Johnson, William B. (*with* Pisier, Gilles) The proportional UAP characterizes weak Hilbert spaces. *J. London Math. Soc.* (2) **44** (1991), *no.* 3, 525–536. (Juan Ferrera) **93e:46019** 46B20 (46C15)
— (*with* Cole, B. J.; Gamelin, T. W.) Analytic disks in fibers over the unit ball of a Banach space. *Michigan Math. J.* **39** (1992), *no.* 3, 551–569. (Richard M. Aron) **93i:46090** 46J15 (46B20, 46G20, 46M20)
— *see also* **Banach spaces, 93i:46003**
Johnson, William D. (*with* George, Varghese T.) Effect of regression to the mean in multivariate distributions. *Comm. Statist. Theory Methods* **21** (1992), *no.* 2, 333–350. (Summary) **93c:62095** 62H12
Johnsson, S. Lennart (*with* Jacquemin, Michel; Krawitz, Robert L.) Communication efficient multi-processor FFT. (English summary) *J. Comput. Phys.* **102** (1992), *no.* 2, 381–397. (Summary) **93h:65176** 65T20
Johnston, Bernard L. (*with* Verma, J. K.) On the length formula of Hoskin and Deligne and associated graded rings of two-dimensional regular local rings. *Math. Proc. Cambridge Philos. Soc.* **111** (1992), *no.* 3, 423–432. (Andrew Kustin) **93e:13004** 13A30
— (*with* Heinzer, William J.; Lantz, David; Shah, Kishor) The Ratliff-Rush ideals in a Noetherian ring: a survey. *Methods in module theory* (*Colorado Springs, CO*, 1991), 149–159, *Lecture Notes in Pure and Appl. Math.*, 140, *Dekker, New York*, 1993. (L. J. Ratliff, Jr.) **93k:13004** 13A15 (13C99, 13D40)
Johnston, Desmond Alexander (*with* Baillie, C. F.) Strong self-avoidance and crumpling in random surfaces with extrinsic curvature. *Phys. Lett. B* **283** (1992), *no.* 1-2, 55–62. (Summary) **93a:81143** 81T27 (81V70, 83C27)
Johnston, Katherine G. Lattice isomorphisms of orthodox semigroups. *Bull. Austral. Math. Soc.* **45** (1992), *no.* 2, 201–213. (Francis Pastijn) **93d:20114** 20M19
Johnston, Mark D. (*with* Minton, Steven; Philips, Andrew B.; Laird, Philip) Minimizing conflicts: a heuristic repair method for constraint satisfaction and scheduling problems. (English summary) *Artificial Intelligence* **58** (1992), *no.* 1-3, 161–205. 68T20 (68M20, 90B35)
Johnston, P. B. (*with* Butcher, J. C.) Estimating local truncation errors for Runge-Kutta methods. (English summary) *J. Comput. Appl. Math.* **45** (1993), *no.* 1-2, 203–212. 65L06 (65L70)
Johnstone, Henry W., Jr. (*with* Jacquette, Dale) Dualities of self-nonapplication and infinite regress. *Logique et Anal.* (*N.S.*) **32** (1989), *no.* 125-126, 29–40. 03A05
— Argumentation of inconsistency. *Reflexivity*, 443–455, *North-Holland, Amsterdam*, 1992. (*see* **93g:03005**) 03A05
Johnstone, Iain M. (*with* MacGibbon, K. Brenda) Minimax estimation of a constrained Poisson vector. *Ann. Statist.* **20** (1992), *no.* 2, 807–831. (A. L. Rukhin) **93d:62038** 62F10 (62C20)
— (*with* Kerkyacharian, Gérard; Picard, Dominique) Estimation d'une densité de probabilité par méthode d'ondelettes. (English and French summaries) [Density estimation using wavelet methods] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 2, 211–216. (Summary) **93h:62083** 62G05
— (*with* Donoho, David L.; Hoch, Jeffrey C.; Stern, Alan S.) Maximum entropy and the nearly black object. With discussion and a reply by the authors. *J. Roy. Statist. Soc. Ser. B* **54** (1992), *no.* 1, 41–81. (P. N. Rathie) **93d:62010** 62B10 (94A17)
— (*with* Hall, Peter Gavin) Empirical functional and efficient smoothing parameter selection. With discussion and a reply by the authors. *J. Roy. Statist. Soc. Ser. B* **54** (1992), *no.* 2, 475–530. (Wolfgang Wertz) **93i:62029** 62G05
Johnstone, John K. A new intersection algorithm for cyclides and swept surfaces using circle decomposition. (English summary) *Comput. Aided Geom. Design* **10** (1993), *no.* 1, 1–24. (Summary) **93m:53003** 53A05 (65Y25, 68U07)
Johnstone, Peter T. The art of pointless thinking: a student's guide to the category of locales. *Category theory at work* (*Bremen*, 1990), 85–107, *Res. Exp. Math.*, 18, *Heldermann, Berlin*, 1991. (Ieke Moerdijk) **93d:18008** 18B30 (06A23, 54A05)
— (*with* Vickers, Steven) Preframe presentations present. *Category theory* (*Como*, 1990), 193–212, *Lecture Notes in Math.*, 1488, *Springer, Berlin*, 1991. (Jiří Rosický) **93g:06006** 06B35 (08A65, 18B30)
— A constructive theory of uniform locales. I. Uniform covers. *General topology and applications* (*Staten Island, NY*, 1989), 179–193, *Lecture Notes in Pure and Appl. Math.*, 134, *Dekker, New York*, 1991. (Jiří Rosický) **93b:18012** 18B30 (03F65, 06D99, 54B30)
— (*with* Dzhibladze, M. A.) The frame of fibrewise closed nuclei. (French summary) *Cahiers Topologie Géom. Différentielle Catégoriques* **32** (1991), *no.* 2, 99–112. (Jiří Rosický) **93b:18010** 18B30 (06D99, 54B30)
— *see also* **Applications of categories in computer science, 93d:68001**
Joiţa, Maria (*with* Petrescu, Steliana) Property (T) for Kac algebras. *Rev. Roumaine Math. Pures Appl.* **37** (1992), *no.* 2, 163–178. (Claire Anantharaman-Delaroche) **93h:46101** 46L89 (16W30, 22D25)
Jolicard, Georges (*with* Killingbeck, John P.) Perturbation methods for the matrix eigenproblem. (English summary) *J. Phys. A* **25** (1992), *no.* 23, 6455–6459. 65F15 (15A18)
— (*with* Killingbeck, John P.) The folding algorithm for pentadiagonal matrices. *Phys. Lett. A* **166** (1992), *no.* 3-4, 159–162. (Summary) **93c:65053** 65F15
— (*with* Killingbeck, John P.) Two simple eigenvalue shooting algorithms. (English summary) *Phys. Lett. A* **172** (1993), *no.* 5, 313–315. (M. Znojil) **93k:81005** 81–08 (65B05, 65L99)
Jolissaint, Paul (*with* Valette, Alain) Normes de Sobolev et convoluteurs bornés sur $L^2(G)$. (English summary) [Sobolev norms and bounded convolution operators on $L^2(G)$] *Ann. Inst. Fourier* (*Grenoble*) **41** (1991), *no.* 4, 797–822. (Jacques Faraut) **93d:43004** 43A15 (43A35, 46L99)
— Indice d'espérances conditionnelles et algèbres de von Neumann finies. [Conditional-expectation index and finite von Neumann algebras] *Math. Scand.* **68** (1991), *no.* 2, 221–246. (Gabriele Grillo) **93g:46059** 46L10 (46L35)
— A characterization of completely bounded multipliers of Fourier algebras. *Colloq. Math.* **63** (1992), *no.* 2, 311–313. (Michael Cowling) **93j:43007** 43A22 (46L05)
Jolivet, Emmanuel Moment estimation for stationary point processes in $\mathbf{R}^d$. (English summary) *Spatial statistics and imaging* (*Brunswick, ME*, 1988), 138–149, *IMS Lecture Notes Monograph Ser.*, 20, *Inst. Math. Statist., Hayward, CA*, 1991. (*see* **93g:62004**) 62M09 (60G55, 62G05)
Jolly, M. S. Bifurcation computations on an approximate inertial manifold for the 2D Navier-Stokes equations. (English summary) *Phys. D* **63** (1993), *no.* 1-2, 8–20. (Summary) **93m:65143** 65M60 (35Q30, 76D05, 76M25)
Joly, G. C. (*with* MacCallum, M. A. H.; Siklos, S. T. C.) Comment on: "Generalized axisymmetric spacetimes" of F. Bampi and R. Cianci [Comm. Math. Phys. **70** (1979), no. 1, 69–74; MR 80i:83037]. *Classical Quantum Gravity* **9** (1992), *no.* 3, 795–798. (Summary) **93a:83007** 83C15
Joly, Ghyslaine (*with* Quentin, F.; Yvon, J. P.) Optimal control of waves generators in a canal. (English summary) *System modelling and optimization* (*Zurich*, 1991), 344–353, *Lecture Notes in Control and Inform. Sci.*, 180, *Springer, Berlin*, 1992. (*see* **93e:90003**) 49K20 (49N55)
Joly, J.-L. (*with* Métivier, G.; Rauch, Jeffrey) Nonlinear high frequency hyperbolic waves. *Nonlinear hyperbolic equations and field theory* (*Lake Como*, 1990), 121–143, *Pitman Res. Notes Math. Ser.*, 253, *Longman Sci. Tech., Harlow*, 1992. (Vladimir Georgiev) **93j:35112** 35L70 (35L60, 35Q60)
Joly, Patrick (*with* Cohen, Gary) Fourth order schemes for the heterogeneous acoustics equation. *Spectral and high order methods for partial differential equations* (*Como*, 1989), 397–407, *North-Holland, Amsterdam*, 1990. (*see* **93d:65005**) 65M06 (76M20, 76Q05)
— (*with* Bamberger, A.; Kern, Michel) Propagation of elastic surface waves along a cylindrical cavity of arbitrary cross section. (French summary) *RAIRO Modél. Math. Anal. Numér.* **25** (1991), *no.* 1, 1–30. (Akira Tsutsumi) **93f:73036** 73D20 (35Q72)
— (*with* Ha-Duong, Tuong) Estimations d'énergie pour l'équation des ondes avec conditions aux limites d'ordre élevé. (English and French summaries) [Energy estimates for the wave equation with higher-order boundary conditions] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 7, 781–786. (Pavel Krejčí) **93k:35160** 35L20
— (*with* Weder, Ricardo) New results for guided waves in heterogeneous elastic media. (English summary) *Math. Methods Appl. Sci.* **15** (1992), *no.* 6, 395–409. (B. Belinskiy) **93f:73043** 73D99 (35L05, 47F05, 73B27)
— Some trace theorems in anisotropic Sobolev spaces. *SIAM J. Math. Anal.* **23** (1992), *no.* 3, 799–819. (H. Triebel) **93d:46053** 46E35
Joly-Blanchard, G. *see* **Joly, Ghyslaine**
Jona-Lasinio, G. Large deviations for weak solutions of stochastic differential equations. (English summary) *Ideas and methods in mathematical analysis, stochastics, and applications* (*Oslo*, 1988), 162–167, *Cambridge Univ. Press, Cambridge*, 1992. (*see* **93e:00033**) 60H10 (60F10)
Jonas, Peter A note on perturbations of selfadjoint operators in Krein spaces. *Linear operators in function spaces* (*Timişoara*, 1988), 229–235, *Oper. Theory Adv. Appl.*, 43, *Birkhäuser, Basel*, 1990. (Yu. M. Arlīns'kiĭ) **93f:47039** 47B50 (47A55)
— (*with* Azizov, T. Ya.) Compact perturbations of normal operators in a Krein space. (Russian. Ukrainian summary) *Ukrain. Mat. Zh.* **42** (1990), *no.* 10, 1299–1306; *translation in Ukrainian Math. J.* **42** (1990), *no.* 10, 1155–1161 (1991). (T. Ando) **93d:47067** 47B50 (47A55)
Jonckheere, Edmond A. (*with* Li, Rong Sheng[1]) Inner functions and bounded real lemma over simply-connected domain. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, I* (*Kobe*, 1991), 71–76, *Mita, Tokyo*, 1992. (*see* **93g:93005**) 93B25 (30D50, 93C80)
— (*with* Colgren, R. D.) Balanced model reduction for large aircraft models. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, I* (*Kobe*, 1991), 437–442, *Mita, Tokyo*, 1992. (*see* **93g:93005**) 93B11 (93C95)
— (*with* Li, Rong Sheng[1]) Model reduction over simply-connected domain. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, I* (*Kobe*, 1991), 461–466, *Mita, Tokyo*, 1992. (*see* **93g:93005**) 93B11
— (*with* Bar-on, Jonathan R.) The geometry of the multivariable phase margin. *IEEE Trans. Automat. Control* **37** (1992), *no.* 6, 798–800. (Summary) **93b:93080** 93D09 (51M09)
— (*with* Wu, Bing-Fei) A simplified approach to Bode's theorem for continuous-time and discrete-time systems. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 11, 1797–1802. (Summary) **93i:93094** 93D05 (93C55, 93C60)
Jøndrup, Søren (*with* Jensen, Anders) Smash products, group actions and group graded rings. *Math. Scand.* **68** (1991), *no.* 2, 161–170. (Michel Van den Bergh) **93a:16026** 16S40 (16W20, 16W50)
Jones, Alan K. Topological considerations in the interpolation of contour curves. *Topics in surface modeling*, 169–185, *Geom. Des. Publ., SIAM, Philadelphia, PA*, 1992. (*see* **93c:65026**) 65D17 (65D05)
Jones, Alexander Hipparchus's computations of solar longitudes. *J. Hist. Astronom.* **22** (1991), *no.* 2, 101–125. (Raymond Mercier) **93g:01011** 01A20 (01A17)
Jones, Anthony H. (*with* Wang, Hong) A rule based identification algorithm for SISO unknown systems. (English and Polish summaries) *Systems Sci.* **18** (1992), *no.* 4, 5–14 (1993). 93B30
duncan-Jones, Austin *see* **Duncan-Jones, Austin**
Jones, Byron (*with* Kunert, J.; Wynn, Henry P.) Information matrices for mixed effects models with applications to the optimality of repeated measurements designs. (English summary) *J. Statist. Plann. Inference* **33** (1992), *no.* 2, 261–274. (Girdhar G. Agarwal) **93m:62172** 62K05 (62K10)
Jones, C. K. R. T. (*with* Gardner, Robert Alan) A stability index for steady state solutions of boundary value problems for parabolic systems. *J. Differential Equations* **91** (1991), *no.* 2, 181–203. (Roger Lui) **93c:35009** 35B35 (35K50, 35K60, 58C40)
Jones, Curt (*with* Bui, Thang Nguyen) Finding good approximate vertex and edge partitions is NP-hard. *Inform. Process. Lett.* **42** (1992), *no.* 3, 153–159. (Etsuro Moriya) **93h:68111** 68R10 (05C85, 68Q15, 68Q25)
Jones, D. A. *see* **Jones, Don A.**
Jones, D. R. T. (*with* Jack, I.; West, P. C.) Not the no-renormalisation theorem? *Phys. Lett. B* **258** (1991), *no.* 3-4, 382–385. (From the introduction) **93a:81193** 81T60 (81T15)
Jones, D. S. Huygens' principle and a field relation. *Huygens' principle* 1690–1990: *theory and applications* (*The Hague and Scheveningen*, 1990), 193–214, *Stud. Math. Phys.*, 3, *North-Holland, Amsterdam*, 1992. (Summary) **93a:78015** 78A40 (78A25)
— An improved surface radiation condition. *IMA J. Appl. Math.* **48** (1992), *no.* 2, 163–193. (Summary) **93a:76088** 76Q05 (35J05, 35P25, 78A45)
Jones, D. Wayne (*with* Franceschetti, Donald R.; Campbell, Bruce W.; Hanneken, John W.) Hamming sets, Ising sets, cellular automata, neural nets, and the random walk. (English

summary) *Amer. J. Phys.* **61** (1993), *no.* 1, 50–53. 82C32 (68Q90, 82B20, 92B20)

Jones, Don A. (*with* Titi, Edriss S.) On the number of determining nodes for the 2D Navier-Stokes equations. *J. Math. Anal. Appl.* **168** (1992), *no.* 1, 72–88. (Lech Slawik) **93f:35179** 35Q30 (76D05)

— (*with* Titi, Edriss S.) Determining finite volume elements for the 2D Navier-Stokes equations. (English summary) Experimental mathematics: computational issues in nonlinear science (Los Alamos, NM, 1991). *Phys. D* **60** (1992), *no.* 1-4, 165–174. (Summary) **93j:35133** 35Q30 (65M99, 76D05, 76M25)

— (*with* Margolin, L. G.) An approximate inertial manifold for computing Burgers' equation. (English summary) Experimental mathematics: computational issues in nonlinear science (Los Alamos, NM, 1991). *Phys. D* **60** (1992), *no.* 1-4, 175–184. (Summary) **93i:65085** 65M06

Jones, E. R. Ll. (*with* Pugh, A. C.; Hayton, G. E.) General pole structure assignment in singular systems. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, II* (*Kobe*, 1991), 127–132, *Mita, Tokyo*, 1992. (*see* **93g:93006**) 93B55

Jones, Frank ★ Lebesgue integration on Euclidean space. *Jones and Bartlett Publishers, Boston, MA*, 1993. xvi+588 *pp. ISBN* 0-86720-203-3 (C. W. Swartz) **93m:28001** 28–01 (26–01)

Jones, G. A. (*with* Singerman, D.; Wicks, Keith R.) The modular group and generalized Farey graphs. *Groups—St. Andrews* 1989, *Vol.* 2, 316–338, *London Math. Soc. Lecture Note Ser.*, 160, *Cambridge Univ. Press, Cambridge*, 1991. (G. M. Lyan) **93a:20055** 20F32 (05C25, 11F06, 20H05)

Jones, G. N. (*with* Billings, S. A.) Orthogonal least-squares parameter estimation algorithms for nonlinear stochastic systems. (English summary) *Internat. J. Systems Sci.* **23** (1992), *no.* 7, 1019–1032. 93E10 (93B40)

Jones, J. *see* **Jones, James**

Jones, J. P. *see* **Jones, James P.**

Jones, James (*with* Troy, William C.; MacGillivray, A. Dean) Steady solutions of the Kuramoto-Sivashinsky equation for small wave speed. *J. Differential Equations* **96** (1992), *no.* 1, 28–55. (Jürgen Scheurle) **93e:34063** 34C25 (34C35, 35Q53)

Jones, James P. (*with* Matiyasevich, Yu. V.) Basis for the polynomial time computable functions. *Number theory* (*Banff, AB*, 1988), 255–270, *de Gruyter, Berlin*, 1990. (Marius Zimand) **93d:03046** 03D20 (03D15, 11Y16)

— Computational complexity of computing winning strategies in polynomial games. (Chinese summary) *Nanjing Daxue Xuebao Shuxue Bannian Kan* **8** (1991), *no.* 1, 1–5. (Wen Qi Huang) **93a:03039** 03D15 (11Y16, 68Q15, 68Q25)

— (*with* Tsangaris, P. G.) An old theorem on the GCD and its application to primes. *Fibonacci Quart.* **30** (1992), *no.* 3, 194–198. (Stanley J. Benkoski) **93e:11004** 11A05 (11A41)

— (*with* Kiss, Péter) Linear recursive sequences and power series. *Publ. Math. Debrecen* **41** (1992), *no.* 3-4, 295–306. (John H. Loxton) **93k:11008** 11B37

Jones, John D. S. (*with* Cohen, Ralph L.) Representations of braid groups and operators coupled to monopoles. *Geometry of low-dimensional manifolds*, 1 (*Durham*, 1989), 191–205, *London Math. Soc. Lecture Note Ser.*, 150, *Cambridge Univ. Press, Cambridge*, 1990. (Michael Murray) **93g:20073** 20F36 (55N15, 57R50)

— (*with* Léandre, Rémi) L^p-Chen forms on loop spaces. *Stochastic analysis* (*Durham*, 1990), 103–162, *London Math. Soc. Lecture Note Ser.*, 167, *Cambridge Univ. Press, Cambridge*, 1991. (Hélène Airault) **93m:58009** 58B20 (58A10, 58B25, 58G32)

— (*with* McCleary, John) Hochschild homology, cyclic homology, and the cobar construction. *Adams Memorial Symposium on Algebraic Topology*, 1 (*Manchester*, 1990), 53–65, *London Math. Soc. Lecture Note Ser.*, 175, *Cambridge Univ. Press, Cambridge*, 1992. (Zbigniew Marciniak) **93e:19007** 19D55 (18G60, 55N99)

Jones, John, Jr. Nonlinear control theory. *Approximation, optimization and computing*, 253–257, *North-Holland, Amsterdam*, 1990. (*see* **93a:41001**) 93C10 (93B40)

— Nonlinear matrix differential equations. (English summary) *Computational and applied mathematics, II* (*Dublin*, 1991), 49–60, *North-Holland, Amsterdam*, 1992. (Bernard J. Harris) **93m:34005** 34A20 (34A12, 34A34)

sparck Jones, Karen *see* **Sparck Jones, Karen**

Jones, Kingsley R. W. Classical mechanics as an example of generalized quantum mechanics. *Phys. Rev. D* (3) **45** (1992), *no.* 8, R2590–R2594. (Summary) **93e:81010** 81P05 (70G99, 70H05)

Jones, L. E. *see* **Jones, Lowell Edwin**

Jones, Lee K. A simple lemma on greedy approximation in Hilbert space and convergence rates for projection pursuit regression and neural network training. *Ann. Statist.* **20** (1992), *no.* 1, 608–613. (Lionel Weiss) **93b:62089** 62H40 (62J02)

— (*with* González-Velasco, Enrique A.) On the range of an unbounded partly atomic vector-valued measure. *Pacific J. Math.* **154** (1992), *no.* 2, 245–251. (R. Anantharaman) **93f:28009** 28B05 (46G10)

Jones, Lowell Edwin (*with* Farrell, F. Thomas) Rigidity in geometry and topology. *Proceedings of the International Congress of Mathematicians, Vol. I, II* (*Kyoto*, 1990), 653–663, *Math. Soc. Japan, Tokyo*, 1991. (Christopher W. Stark) **93g:57041** 57R67 (19J10, 53C21, 57N37, 57Q10, 57R55, 57R80)

— (*with* Farrell, F. Thomas) Stable pseudoisotopy spaces of compact non-positively curved manifolds. *J. Differential Geom.* **34** (1991), *no.* 3, 769–834. (Ian Hambleton) **93b:57020** 57N15 (19B28, 19D10, 53C21, 57N37)

— (*with* Farrell, F. Thomas) Isomorphism conjectures in algebraic K-theory. *J. Amer. Math. Soc.* **6** (1993), *no.* 2, 249–297. (Masayuki Yamasaki) **93h:57032** 57N37 (19D55)

— (*with* Farrell, Tom) Markov cell structures near a hyperbolic set. *Mem. Amer. Math. Soc.* **103** (1993), *no.* 491, vi+138 *pp.* (Christopher W. Stark) **93j:58102** 58F15 (57Q15, 57R20, 58F12)

Jones, M. C. *see* **Jones, Michael C.**

Jones, M. C. W. On coupled differential equations which model the evolution of interacting capillary-gravity wave modes and related questions of stability. (English summary) *IMA J. Appl. Math.* **50** (1993), *no.* 1, 13–28. (Summary) **93k:76014** 76B15 (76B45, 76E99)

Jones, Mark A. (*with* Eisner, Jason M.) A probabilistic parser applied to software testing documents. (English summary) *AAAI-92. Proceedings, Tenth National Conference on Artificial Intelligence* (*San Jose, CA*, 1992), 322–328, *Amer. Assoc. Artif. Intell., Menlo Park, CA*, 1992. (*see* **93j:68007**) 68Q52

Jones, Mark S. A note on the shape of the generalized C-numerical range. (English summary) *Linear and Multilinear Algebra* **31** (1992), *no.* 1-4, 81–84. (Summary) **93j:47003** 47A12 (15A60)

Jones, Mark T. (*with* Patrick, Merrell L.) The Lanczos algorithm for the generalized symmetric eigenproblem on shared-memory architectures. (English summary) *Computational and applied mathematics, I* (*Dublin*, 1991), 253–265, *North-Holland, Amsterdam*, 1992. (*see* **93j:00007**) 65–04 (65F15)

— (*with* Patrick, Merrell L.) Bunch-Kaufman factorization for real symmetric indefinite banded matrices. (English summary) *SIAM J. Matrix Anal. Appl.* **14** (1993), *no.* 2, 553–559. 65F05 (65Y20)

Jones, Martin R. Some difficulties for Clifton, Redhead, and Butterfield's recent proof of nonlocality. *Found. Phys. Lett.* **4** (1991), *no.* 4, 385–393. (Emilio Santos) **93b:81012** 81P05

Jones, Michael C. Differences and derivatives in kernel estimation. (English summary) *Metrika* **39** (1992), *no.* 6, 335–340. 62G05

Jones, Michael P. (*with* Crowley, John) Nonparametric tests of the Markov model for survival data. (English summary) *Biometrika* **79** (1992), *no.* 3, 513–522. 62G10

Jones, Pat (*with* Ligh, Steve; Beslin, Scott J.) On group-theoretic properties of divisors. *Bull. Number Theory Related Topics* **12** (1988), 3–9. (Jean-Marie De Koninck) **93f:11007** 11A25

Jones, Peter R. (*with* Pustejovsky, Susan) A kernel for relational morphisms of categories. (English summary) *Semigroups with applications* (*Oberwolfach*, 1991), 152–161, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93m:18002** 18A05 (18A32)

Jones, Peter Wilcox (*with* Carleson, Lennart) On coefficient problems for univalent functions and conformal dimension. *Duke Math. J.* **66** (1992), *no.* 2, 169–206. (Ch. Pommerenke) **93c:30022** 30C50 (30C85, 30D05)

— (*with* Garnett, John B.; Marshall, Donald E.) A Lipschitz decomposition of minimal surfaces. *J. Differential Geom.* **35** (1992), *no.* 3, 659–673. (Ivan Sterling) **93d:53010** 53A10 (49Q05)

— (*with* Benedicks, Michael) The 1992 Wolf Prize to Lennart Carleson. (Swedish. English summary) *Normat* **40** (1992), *no.* 3, 97–99, 143. (Summary) **93m:01072** 01A70

Jones, Richard W. (*with* Gawthrop, P. J.; MacKenzie, S. A.) Identification of partially-known systems. (English summary) *Identification and system parameter estimation* 1991, *Vol.* 1,2 (*Budapest*, 1991), 319–324, *IFAC Sympos. Ser.*, 3, *Pergamon, Oxford*, 1992. (*see* **93h:93009**) 93B30

— (*with* Gawthrop, P. J.; MacKenzie, S. A.) Identification of partially-known systems. *Automatica J. IFAC* **28** (1992), *no.* 4, 831–836. 93E10

Jones, Roger L. (*with* Olsen, James) Multi-parameter moving averages. *Almost everywhere convergence, II* (*Evanston, IL*, 1989), 127–149, *Academic Press, Boston, MA*, 1991. (Mariusz Lemańczyk) **93a:28014** 28D05

— (*with* Bellow, Alexandra; Rosenblatt, Joseph) Almost everywhere convergence of weighted averages. *Math. Ann.* **293** (1992), *no.* 3, 399–426. (Richard D. Duncan) **93e:28019** 28D05 (47A35)

— (*with* Akcoglu, Mustafa; Bellow, Alexandra; del Junco, Andrés) Divergence of averages obtained by sampling a flow. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 2, 499–505. (Nathaniel F. G. Martin) **93g:28019** 28D10 (47A35, 58F11)

Jones, S. E. (*with* Butson, G. J.) On Abel's identity. I. Nonlinear differential equations. (English summary) *J. Sound Vibration* **160** (1993), *no.* 2, 243–249. (Summary) **93k:34026a** 34A34

— (*with* Butson, G. J.; Lemmers, P. L.) On Abel's identity. II. The integration of a nonlinear, nonconservative system. (English summary) *J. Sound Vibration* **160** (1993), *no.* 2, 251–257. (Summary) **93k:34026b** 34A34

Jones, Vaughan F. R. Baxterization. *Differential geometric methods in theoretical physics* (*Davis, CA*, 1988), 5–11, *NATO Adv. Sci. Inst. Ser. B Phys.*, 245, *Plenum, New York*, 1990. (P. D. F. Ion) **93e:82018** 82B23 (20F36, 57M25)

— ★ Subfactors and knots. CBMS Regional Conference Series in Mathematics, 80. *Published for the Conference Board of the Mathematical Sciences, Washington, DC*; *by the American Mathematical Society, Providence, RI*, 1991. x+113 *pp. ISBN* 0-8218-0729-3 (Louis H. Kauffman) **93b:57008** 57M25 (46L37, 82B23)

— Knots, braids and statistical mechanics [MR 92d:57006]. *Integrable systems and quantum groups* (*Pavia*, 1990), 1–36, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93b:00028**) 57M25 (82B23)

— Commuting transfer matrices and link polynomials. *Internat. J. Math.* **3** (1992), *no.* 2, 205–212. (Tetsuo Deguchi) **93d:57015** 57M25 (82B23)

— Knots, braids, statistical mechanics and von Neumann algebras. New Zealand Mathematics Colloquium (Dunedin, 1991). *New Zealand J. Math.* **21** (1992), 1–16. (David N. Yetter) **93e:57009** 57M25 (17B37, 20F36, 46L37, 81T99, 82B23)

— *see also* **Birman, Joan S., 93b:01035**; **Eulogy of Vaughan Frederick Randal Jones, 93h:01059** *and* **Schmid, Rudolf, 93i:01023**

Jones, William B. (*with* Bonan-Hamada, Catherine M.; Magnus, Arne) Para-orthogonal Laurent polynomials. *Approximation theory* (*Memphis, TN*, 1991), 125–135, *Lecture Notes in Pure and Appl. Math.*, 138, *Dekker, New York*, 1992. (H. P. Dikshit) **93k:41009** 41A10

— (*with* Thron, W. J.; Wyshinski, Nancy J.) Asymptotic properties of J-fractions and related orthogonal polynomials. *Approximation theory* (*Memphis, TN*, 1991), 329–339, *Lecture Notes in Pure and Appl. Math.*, 138, *Dekker, New York*, 1992. (Abdallah M. Al-Rashed) **93e:41012** 41A10 (41A60)

— (*with* Thron, W. J.; Wyshinski, Nancy J.) An application of separate convergence for continued fractions to orthogonal polynomials. (English summary) *Canad. Math. Bull.* **35** (1992), *no.* 3, 381–389. (Olav Njåstad) **93i:30005** 30B70 (42C05)

— (*with* Cooper, S. Clement; Thron, W. J.) Asymptotics of orthogonal L-polynomials for log-normal distributions. *Constr. Approx.* **8** (1992), *no.* 1, 59–67. (Olav Njåstad) **93b:30003** 30B70 (33C45)

— (*with* Njåstad, Olav; Waadeland, Haakon) Asymptotics for Szegő polynomial zeros. (English summary) Extrapolation and rational approximation (Puerto de la Cruz, 1992). *Numer. Algorithms* **3** (1992), *no.* 1-4, 255–264. (A. Bultheel) **93m:94002** 94A11 (42A05, 42A70, 65T99)

de Jong, Frida (*with* van den Ende, Jan) Die Berechnung von Wasserfluten. Tideforschung in den Niederlanden, 1920–1960. (English and German summaries) [The computation

of floods. Tidal research in the Netherlands, 1920–1960] Translated by Rosi Wiegman. *Ber. Wiss.-Gesch.* **15** (1992), *no.* 2, 119–129. 01A60 (86–03, 86A05)

de Jong, J. L. (*with* Xu, Cheng Xian) Sequential quadratic programming methods for optimal control problems with state constraints. *Optimization, Vol.* 1, 2 (*Singapore*, 1992), 1197–1208, *World Sci. Publishing, River Edge, NJ*, 1992. (From the introduction) **93g:49025** 49M37 (90C30)

de Jong, Theo (*with* van Straten, Duco) Disentanglements. *Singularity theory and its applications, Part I* (*Coventry*, 1988/1989), 199–211, *Lecture Notes in Math.*, 1462, *Springer, Berlin*, 1991. (Jonathan M. Wahl) **93a:14003** 14B07 (14J17, 32S05, 32S25)

— (*with* van Straten, Duco) A construction of Q-Gorenstein smoothings of index two. *Internat. J. Math.* **3** (1992), *no.* 3, 341–347. (Jan Stevens) **93e:32048** 32S45 (14B05, 32S25)

Jongejan, Jan H. Correctness of transformations on register transfers. (English summary) *Sci. Comput. Programming* **19** (1992), *no.* 2, 153–169. (Summary) **93h:68086** 68Q60

Jongen, Hubertus Th. (*with* Twilt, F.; Weber, G.-W.) Semi-infinite optimization: structure and stability of the feasible set. *J. Optim. Theory Appl.* **72** (1992), *no.* 3, 529–552. (Thomas Fischer) **93a:90073** 90C34 (49M39, 90C31)

— (*with* Rückmann, Jan) Nonlinear optimization: on connected components of level sets. (English summary) *SIAM J. Control Optim.* **31** (1993), *no.* 1, 86–100. (D. Klatte) **93j:90111** 90C31 (90C30)

de Jongh, Dick (*with* Hendriks, Lex; Renardel de Lavalette, Gerard R.) Computations in fragments of intuitionistic propositional logic. Automated reasoning and nonclassical logics. *J. Automat. Reason.* **7** (1991), *no.* 4, 537–561. (A. Tauts) **93c:03012** 03B20 (03B35, 03F55)

— (*with* Visser, Albert) Explicit fixed points in interpretability logic. *Studia Logica* **50** (1991), *no.* 1, 39–49. (Alessandro Berarducci) **93d:03025** 03B45 (03F30, 03F40)

— (*with* Jumelet, Marc; Montagna, Franco) On the proof of Solovay's theorem. *Studia Logica* **50** (1991), *no.* 1, 51–69. (Summary) **93b:03022** 03B45 (03F30, 03F40)

— *see also* **Symposium: Provability, Interpretability and Arithmetic, 93k:03003**

de Jonghe, F. *see* **De Jonghe, F.**

Jongmans, François (*with* Butzer, Paul L.) Eugène Catalan and the rise of Russian science. (French summary) *Acad. Roy. Belg. Bull. Cl. Sci.* (6) **2** (1991), *no.* 1-3, 59–90. (Jeremy Gray) **93g:01037** 01A55

Jongschaap, R. J. J. Towards a unified formulation of microrheological models. *Rheological modelling: thermodynamical and statistical approaches* (*San Feliu de Guíxols*, 1990), 215–247, *Lecture Notes in Phys.*, 381, *Springer, Berlin*, 1991. (J. Šťastna) **93h:76005** 76A10 (73B99, 76A99, 80A10)

Jonin, L. (*with* Golets, O. B.) The second Lyapunov method as applied to the stability investigation of nonlinear stochastic equation of the same class. (English and Latvian summaries) *Proceedings of the Latvian Probability Seminar, Vol.* 1 (*Riga*, 1991), 90–100, *Riga Tech. Univ., Riga*, 1992. (*see* **93e:60006**) 60H10

Jónsson, Bjarni The theory of binary relations. *Algebraic logic* (*Budapest*, 1988), 245–292, *Colloq. Math. Soc. János Bolyai*, 54, *North-Holland, Amsterdam*, 1991. (D. Monk) **93b:03114** 03G15 (03G25, 06E25, 08A40, 08A70)

Jónsson, Thórdur Topological lattice theories in two dimensions. *Phys. Lett. B* **265** (1991), *no.* 1-2, 141–145. (From the text) **93g:81155** 81T40 (81T25)

— Intrinsic and extrinsic geometry of random surfaces. *Phys. Lett. B* **278** (1992), *no.* 1-2, 89–93. (Summary) **93d:82047** 82B41

— (*with* Durhuus, Bergfinnur) On subdivision invariant actions for random surfaces. (English summary) *Phys. Lett. B* **297** (1992), *no.* 3-4, 271–274. (Summary) **93k:81243** 81T80 (81S40, 81T30)

Joó, István (*with* Horváth, Miklós; Szalkai, István) On "Banach's principle". (Hungarian. English and Russian summaries) *Mat. Lapok* **34** (1983/87), *no.* 4, 253–300 (1991). (Summary) **93d:47040** 47A99 (03E35, 03E75, 47A05)

— On a theorem of Miklós Horváth. (Hungarian) *Mat. Lapok* **34** (1983/87), *no.* 4, 301–306 (1991). (J. Horváth) **93h:26018** 26B05 (28A20, 46E30, 46E35)

— An inequality between the Helly and Carathéodory numbers ($H \leq C$). *Ann. Univ. Sci. Budapest. Eötvös Sect. Math.* **33** (1990), 143–146 (1991). (Marilyn Breen) **93a:52006** 52A35 (52A01)

— On the order of mean convergence of interpolating processes. *Ann. Univ. Sci. Budapest. Eötvös Sect. Math.* **33** (1990), 147–160 (1991). (Franz Peherstorfer) **93d:41005** 41A05

— (*with* Bogmér, A.) A new approximation for the Fourier transform. I. *Ann. Univ. Sci. Budapest. Eötvös Sect. Math.* **33** (1990), 199–202 (1991). (B. P. Parashar) **93b:42014** 42A38 (65R10)

— Saturation theorems for Hermite-Fourier series. *Acta Math. Hungar.* **57** (1991), *no.* 1-2, 169–179. (Huzoor H. Khan) **93f:42017** 42A38

— On the distribution of the set $\{\sum_{i=1}^{n} \varepsilon_i q^i\colon \varepsilon_i \in \{0,1\},\ n \in \mathbf{N}\}$. *Acta Math. Hungar.* **58** (1991), *no.* 1-2, 199–202. (Rita Giuliano Antonini) **93b:11100** 11K31

— (*with* Erdős, Paul; Horváth, Miklós) On the uniqueness of the expansions $1 = \sum q^{-n_i}$. *Acta Math. Hungar.* **58** (1991), *no.* 3-4, 333–342. (John H. Loxton) **93e:11012** 11A63

— Note on multiplicative functions satisfying a congruence property. *Acta Sci. Math. (Szeged)* **55** (1991), *no.* 3-4, 301–307. (Tian Xin Cai) **93b:11003** 11A07

— Alexits-type theorem for multidimensional trigonometric series. *Ann. Univ. Sci. Budapest. Eötvös Sect. Math.* **34** (1991), 173–180 (1992). (Dinh Dung) **93e:42018** 42B08 (41A25, 42A10)

— On the control of a circular membrane and related problems. *Ann. Univ. Sci. Budapest. Eötvös Sect. Math.* **34** (1991), 231–266 (1992). (Marius Tucsnak) **93m:73028** 73K50 (47N70, 49N55, 73K12, 93C20)

— On some Riesz bases. *Period. Math. Hungar.* **22** (1991), *no.* 3, 187–196. (Summary) **93a:47025** 47A70 (30D50, 35P05, 42A65, 47A57, 47F05, 73D30)

— On ball-filling vector sequences in $\mathbf{R}^N$. *Publ. Math. Debrecen* **39** (1991), *no.* 3-4, 347–351. (Peter J. Hellekalek) **93d:11085** 11K99

— On the control of a rectangular membrane. *Acta Math. Hungar.* **59** (1992), *no.* 1-2, 25–32. (Enrique Zuazua) **93j:35035** 35B37 (35L05, 73F10, 73K50, 93B05, 93C20)

— A remark on the vibration of a circular membrane in different points. *Acta Math. Hungar.* **59** (1992), *no.* 1-2, 245–252. (Sergei Edelstein) **93c:35089** 35L05 (73D15, 73D30)

— On the optimal control of circular membranes. *Acta Math. Hungar.* **59** (1992), *no.* 3-4, 365–376. (Urszula Ledzewicz) **93g:93010** 93B03 (49J20, 73K12, 73K50)

— On the convergence of eigenfunction expansions. *Acta Math. Hungar.* **60** (1992), *no.* 1-2, 125–156. (M. S. Agranovich) **93h:35145** 35P10 (47F05)

— On some notions of harmonic analysis for Sturm-Liouville expansions. *Ann. Univ. Sci. Budapest. Eötvös Sect. Math.* **35** (1992), 77–98. (Walter Eberhard) **93m:34135** 34L10 (33C45, 34B24, 34B30, 47E05)

— (*with* Nguyen Minh Tuan) On controllability of bilinear systems. I. Controllability in finite dimensions. *Ann. Univ. Sci. Budapest. Eötvös Sect. Math.* **35** (1992), 189–215. (F. Silva Leite) **93j:93016** 93B05 (93B03, 93C10)

— (*with* Nguyen Minh Tuan) On controllability of bilinear systems. II. Controllability in two dimensions. *Ann. Univ. Sci. Budapest. Eötvös Sect. Math.* **35** (1992), 217–265. (F. Silva Leite) **93j:93017** 93B05 (93C10)

— (*with* Erdős, Paul; Joó, M.) On a problem of Tamás Varga. (English and French summaries) *Bull. Soc. Math. France* **120** (1992), *no.* 4, 507–521. (F. Schweiger) **93m:11076** 11K55 (11A63)

— (*with* Nguyen Minh Tuan) On controllability of some bilinear systems. (English and French summaries) *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 13, 1393–1398. 93B05

— (*with* Erdős, Paul) Corrigendum: "On the expansion $1 = \sum q^{-n_i}$" [Period. Math. Hungar. **23** (1991), no. 1, 27–30; MR 92i:11030]. *Period. Math. Hungar.* **25** (1992), *no.* 1, 113. (Editors) **93k:11017** 11B83 (11A67)

— A general minimax theorem. *Publ. Math. Debrecen* **41** (1992), *no.* 1-2, 79–82. (N. Pacchiarotti) **93g:49009** 49J35 (49K25, 90D05)

— On the control of a net of strings. *Acta Math. Hungar.* **61** (1993), *no.* 1-2, 101–112. (Introduction) **93m:93012** 93B05 (49K20, 73K12, 73K50, 93C20)

Joó, M. (*with* Erdős, Paul; Joó, István) On a problem of Tamás Varga. (English and French summaries) *Bull. Soc. Math. France* **120** (1992), *no.* 4, 507–521. (F. Schweiger) **93m:11076** 11K55 (11A63)

Joos, Konrad (*with* Gänssler, Peter) Another view on martingale central limit theorems. *Stochastic Process. Appl.* **40** (1992), *no.* 2, 181–197. (N. C. Weber) **93f:60026** 60F05 (60G42)

Joppich, W. (*with* Lorentz, Rudolph Alexander) High-order positive, monotone and convex multigrid interpolations. (English summary) *COMPEL* **12** (1993), *no.* 1, 59–79. 65M55

Jorba, Àngel (*with* Gómez, Gerard; Masdemont, Josep; Simó, Carles) Quasiperiodic orbits as a substitute of libration points in the solar system. *Predictability, stability, and chaos in N-body dynamical systems* (*Cortina d'Ampezzo*, 1990), 433–438, *NATO Adv. Sci. Inst. Ser. B Phys.*, 272, *Plenum, New York*, 1991. (*see* **93i:70002**) 70F07

— Effective reducibility of quasiperiodic linear systems. (Spanish. Spanish summary) *Proceedings of the XII Congress on Differential Equations and Applications/II Congress on Applied Mathematics* (*Spanish*) (*Oviedo*, 1991), 153–158, *Univ. Oviedo, Oviedo*, 1991. (*see* **93j:00009**) 34A30 (34C20, 65L99)

pérez-Jordá, José M. *see* **Pérez-Jordá, José M.**

Jordan, A. K. (*with* Hinton, Don B.; Klaus, Martin; Shaw, J. K.) Inverse scattering on the line for a Dirac system. *J. Math. Phys.* **32** (1991), *no.* 11, 3015–3030. (C. Tomei) **93a:34094** 34L25 (34A55, 34L40)

Jordan, Camille ★ Cours d'analyse de l'École polytechnique. Tome I. (French) [Course in analysis of the École polytechnique. Vol. I] Calcul différentiel. [Differential calculus] Reprint of the third (1909) edition. Les Grands Classiques Gauthier-Villars. [Gauthier-Villars Great Classics] *Éditions Jacques Gabay, Sceaux*, 1991. xvi+621 *pp. ISBN* 2-87647-018-7 01A75 (00A05)

— ★ Cours d'analyse de l'École polytechnique. Tome II. (French) [Course in analysis of the École polytechnique. Vol. II] Calcul intégral. [Integral calculus] Reprint of the third (1913) edition. Les Grands Classiques Gauthier-Villars. [Gauthier-Villars Great Classics] *Éditions Jacques Gabay, Sceaux*, 1991. iv+706 *pp. ISBN* 2-87647-018-7 01A75 (00A05)

— ★ Cours d'analyse de l'École polytechnique. Tome III. (French) [Course in analysis of the École polytechnique. Vol. III] Équations différentielles. [Differential equations] Reprint of the third (1915) edition. Les Grands Classiques Gauthier-Villars. [Gauthier-Villars Great Classics] *Éditions Jacques Gabay, Sceaux*, 1991. iv+631 *pp. ISBN* 2-87647-018-7 01A75 (00A05)

Jordan, David A. Krull and global dimension of certain iterated skew polynomial rings. (English summary) *Abelian groups and noncommutative rings*, 201–213, *Contemp. Math.*, 130, *Amer. Math. Soc., Providence, RI*, 1992. (G. Krause) **93h:16052** 16S36 (16E10, 16P60, 16U20, 17B35)

— Zero-divisors in completions of noncommutative rings. (English summary) *Israel J. Math.* **80** (1992), *no.* 3, 351–358. (Summary) **93i:16059** 16W60

Jordan, J. R. (*with* Jalali, Assad) Identification of all pole systems with Hermite modulating functions. *Control '91, Vol.* 1, 2 (*Edinburgh*, 1991), 617–620, *IEE Conf. Publ. Ser.*, 332, *IEE, London*, 1991. (*see* **93h:93007**) 93B30

Jordan, J. S. The exponential convergence of Bayesian learning in normal form games. *Games Econom. Behav.* **4** (1992), *no.* 2, 202–217. (Nicola Mattoscio) **93f:90215** 90D60 (68T05, 90D40)

Jordan, M. (*with* Isermann, Rolf) Adaptive control with linear nonparametric models. (English summary) *Adaptive systems in control and signal processing*, 1989 (*Glasgow*), 211–216, *IFAC Sympos. Ser.*, 1990, *No.* 1, *Pergamon, Oxford*, 1990. (*see* **93j:93007**) 93C40

Jordan, Michael I. Constrained supervised learning. (English summary) *J. Math. Psych.* **36** (1992), *no.* 3, 396–425. (Summary) **93h:92046** 92J40 (68T05)

Jordens, Olav On modularity in lattices of congruences on ordered sets. *Czechoslovak Math. J.* **42(117)** (1992), *no.* 3, 451–460. (Manfred Armbrust) **93h:06002** 06A06 (06B10, 06C05, 08A30)

Jorge, J. C. (*with* Clavero Gracia, Carmelo; Lisbona, F.) Exponential-fitting and alternating-directions schemes for multidimensional stationary convection-diffusion problems. (Spanish. English summary) *Proceedings of the XII Congress on Differential Equations and Applications/II Congress on Applied Mathematics* (*Spanish*) (*Oviedo*, 1991), 215–220, *Univ. Oviedo, Oviedo*, 1991. (*see* **93j:00009**) 65N06

Jørgensen, Bent ★ Exponential dispersion models. Monografías de Matemática [Mathematical Monographs], 48. *Instituto de Matemática Pura e Aplicada, Rio de Janeiro*, 199?. iv+41 *pp. ISBN* 85-244-0052-8 (Kurt Hoffmann) **93j:62030** 62E10

— (*with* Barndorff-Nielsen, Ole E.) Some parametric models on the simplex. *J. Multivariate Anal.* **39** (1991), *no.* 1, 106–116. (Donald Richards) **93c:62023** 62E15 (62F99, 62H10, 62H99)

— ★ The theory of exponential dispersion models and analysis of deviance. Second edition. Monografías de Matemática [Mathematical Monographs], 51. *Instituto de Matemática*

Pura e Aplicada, Rio de Janeiro, 1992. vi+129 *pp. ISBN* 85-244-0067-6 **(Kurt Hoffmann)** **93j:62164** 62J02 (62E10)

— (*with* Labouriau, Rodrigo S.) ★ Famílias exponenciais e inferência teórica. (Portuguese) [Exponential families and theoretical inference] With the collaboration of José Raúl Martínez. Monografías de Matemática [Mathematical Monographs], 52. *Instituto de Matemática Pura e Aplicada, Rio de Janeiro*, 1992. viii+264 *pp. ISBN* 85-7028-010-6 (Luis Firinguetti) **93m:62011** 62A10 (62B05, 62B10, 62F10)

— Finding rank leverage subsets in regression. *Scand. J. Statist.* **19** (1992), *no.* 2, 139–156. 62J05 (62J12, 62J20)

Jorgensen, David A. (*with* Mahaffy, Joseph M.; Vanderheyden, Robert L.) Oscillations in a model of repression with external control. (English summary) *J. Math. Biol.* **30** (1992), *no.* 7, 669–691. (Yoram Schiffmann) **93h:92003** 92B05 (35B32, 92C15)

— (*with* Mahaffy, Joseph M.; Vanderheyden, Robert L.) Stability results for a model of repression with external control. (English summary) *Quart. Appl. Math.* **50** (1992), *no.* 3, 415–435. (Summary) **93h:92027** 92D25 (92C30)

hoffmann-Jørgensen, J. *see* **Hoffmann-Jørgensen, J.**

Jørgensen, Jørgen Some reflections on reflexivity. *Reflexivity*, 63–74, *North-Holland, Amsterdam*, 1992. (*see* **93g:03005**) 03A05

Jørgensen, Leif K. On p vertices pairwise joined by edge-disjoint paths. *Combinatorics (Eger*, 1987), 571–573, *Colloq. Math. Soc. János Bolyai*, 52, *North-Holland, Amsterdam*, 1988. (*see* **93m:05002**) 05C38

— (*with* Hanson, Denis; Wang, Ping[1]) On cages with given degree sets. Special volume to mark the centennial of Julius Petersen's "Die Theorie der regulären Graphs", Part II. *Discrete Math.* **101** (1992), *no.* 1-3, 109–114. (Farrokh Saba) **93h:05106** 05C38 (05C75)

Jørgensen, Michael F. (*with* Christiansen, Peter L.; De Lillo, Silvana; Cruzeiro-Hansson, Leonor) Note on a complex Eckhaus equation. (English summary) *Chaotic dynamics (Patras*, 1991), 71–73, *NATO Adv. Sci. Inst. Ser. B Phys.*, 298, *Plenum, New York*, 1992. (*see* **93i:58004**) 35Q55

Jorgensen, Palle E. T. Approximately inner derivations, decompositions and vector fields of simple C^*-algebras. *Mappings of operator algebras (Philadelphia, PA*, 1988), 15–113, *Progr. Math.*, 84, *Birkhäuser Boston, Boston, MA*, 1990. (From the introduction) **93e:46081** 46L57 (46L87)

— Intertwining operators, derivations of the CAR-algebra, and representations of $U(p, q)$. (English summary) *Current topics in operator algebras (Nara*, 1990), 381–394, *World Sci. Publishing, River Edge, NJ*, 1991. (From the text) **93j:46075** 46L57 (47B47)

— (*with* Quan, Xiu Chi) Covariance group C^*-algebras and Galois correspondence. *Internat. J. Math.* **2** (1991), *no.* 6, 673–699. (Alain Valette) **93a:46129** 46L55 (16W30, 22D25, 46L89)

— Semigroups of measures in noncommutative harmonic analysis. *Semigroup Forum* **43** (1991), *no.* 3, 263–290. (Summary) **93e:43002** 43A05 (22E25, 47D03, 47N99)

— (*with* Price, Geoffrey L.) Index theory and second quantization of boundary value problems. *J. Funct. Anal.* **104** (1992), *no.* 2, 243–290. (Summary) **93i:46121** 46L57 (46L60, 47B50, 47D03, 47N50, 81T05)

— (*with* Pedersen, Steen) Spectral theory for Borel sets in $\mathbf{R}^n$ of finite measure. *J. Funct. Anal.* **107** (1992), *no.* 1, 72–104. (Raúl E. Curto) **93k:47005** 47A10 (46L99, 47B25)

— Spectral theory of one-parameter groups of isometries. *J. Math. Anal. Appl.* **168** (1992), *no.* 1, 131–146. (Alexander Isaakovich Shtern) **93e:47048** 47D03 (46L40)

Jørgensen, Steffen (*with* Dockner, Engelbert J.) New product advertising in dynamic oligopolies. (English summary) *Z. Oper. Res.* **36** (1992), *no.* 5, 459–473. 90D25 (90A16)

Jørgensen, Sten Bay (*with* Fikar, Miroslav) Multivariable constrained adaptive predictive control based on pole placement design. (English summary) *Mutual impact of computing power and control theory (Prague*, 1992), 215–220, *Czech. Acad. Sci., Prague*, 1992. (*see* **93f:93005**) 93C40 (93B55)

Jørgensen, Troels (*with* Sandler, Hanna) Double points on hyperbolic surfaces. *Proc. Amer. Math. Soc.* **119** (1993), *no.* 3, 893–896. (Ara Basmajian) **93m:30052** 30F45 (51M10, 53A35)

Jorgenson, Jay Some uses of analytic torsion in the study of Weierstrass points. (English summary) *Curves, Jacobians, and abelian varieties (Amherst, MA*, 1990), 255–281, *Contemp. Math.*, 136, *Amer. Math. Soc., Providence, RI*, 1992. (Matthias Flach) **93j:14035** 14H55 (14G40, 14H42, 58G26)

— On directional derivatives of the theta function along its divisor. (English summary) *Israel J. Math.* **77** (1992), *no.* 3, 273–284. (Ryuji Sasaki) **93k:14061** 14K20 (14K25)

Jõricke, Burglind (*with* Khavin, V. P.) The uncertainty principle in harmonic analysis. (Russian) *Commutative harmonic analysis*, 3 (*Russian*), 181–260, 267, *Itogi Nauki i Tekhniki, Akad. Nauk SSSR, Vsesoyuz. Inst. Nauchn. i Tekhn. Inform., Moscow*, 1991. (Yurii Lyubarskii) **93e:42001** 42–02 (30E99, 42A38)

— Envelopes of holomorphy and CR-invariant subsets of CR-manifolds. (English and French summaries) *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 4, 407–411. (Guido Lupacciolu) **93i:32014** 32D20 (32C16, 32D10)

Jorjani, Soheila (*with* Scott, Carlton H.; Jefferson, Thomas R.) Quality locations for the constrained minimax location model. (English summary) *Internat. J. Systems Sci.* **24** (1993), *no.* 5, 1009–1016. (Summary) **93k:90045** 90B85

José, Jorge V. (*with* Chu, G.) The semiclassical limit of a quantum Fermi accelerator. *J. Statist. Phys.* **68** (1992), *no.* 1-2, 153–174. (Summary) **93d:81047** 81Q50 (81S30)

Joseph, Anthony (*with* Perets, Gadi S.; Polo, Patrick) Sur l'équivalence de catégories de Beilinson et Bernstein. (English summary) [On the Beilinson and Bernstein equivalence of categories] *C. R. Acad. Sci. Paris Sér. I Math.* **313** (1991), *no.* 11, 705–709. (Summary) **93h:17021** 17B35 (14F05, 16S32, 32C38)

— Annihilators and associated varieties of unitary highest weight modules. *Ann. Sci. École Norm. Sup.* (4) **25** (1992), *no.* 1, 1–45. (Ronald S. Irving) **93e:17010** 17B10 (17B35, 22E47)

Joseph, D. (*with* Baake, M.; Kramer, Peter) Periodic clustering in the spectrum of quasiperiodic Kronig-Penney models. (English summary) *Phys. Lett. A* **168** (1992), *no.* 3, 199–208. (Summary) **93e:81151** 81V70 (81Q50)

Joseph, Daniel D. Problems associated with the elasticity of liquids. *Rheological modelling: thermodynamical and statistical approaches (San Feliu de Guíxols*, 1990), 22–50, *Lecture Notes in Phys.*, 381, *Springer, Berlin*, 1991. (From the text) **93g:76011** 76A10 (73F05, 73F15)

— (*with* Liao, T. Y. J.; Saut, Jean-Claude) Kelvin-Helmholtz mechanism for side branching in the displacement of light with heavy fluid under gravity. *European J. Mech. B Fluids* **11** (1992), *no.* 3, 253–264. (Summary) **93c:76032** 76E10 (76V05)

— (*with* Hu, Howard H.) Miscible displacement in a Hele-Shaw cell. (English summary) *Z. Angew. Math. Phys.* **43** (1992), *no.* 4, 626–644. (Summary) **93c:76025** 76D99 (76A99, 76E99, 76R99)

Joseph, Deborah (*with* Das, Gautam) Minimum vertex hulls for polyhedral domains. (English summary) 7th Annual Symposium on Theoretical Aspects of Computer Science (STACS 90) (Rouen, 1990). *Theoret. Comput. Sci.* **103** (1992), *no.* 1, 107–135. (Răzvan Andonie) **93j:68211** 68U05 (68Q25)

— (*with* Althöfer, Ingo; Das, Gautam; Dobkin, David P.; Soares, José) On sparse spanners of weighted graphs. (English summary) *Discrete Comput. Geom.* **9** (1993), *no.* 1, 81–100. (Peter B. Gibbons) **93h:05161** 05C99 (05C85, 68R10)

Joseph, Eugene (*with* Skiena, Steven Sol) Model-based probing strategies for convex polygons. (English summary) *Comput. Geom.* **2** (1992), *no.* 4, 209–221. (Summary) **93i:68177** 68U05 (52B55)

Joseph, George Gheverghese ★ The crest of the peacock. Non-European roots of mathematics. Reprint of the 1991 original. *Penguin Books Ltd., London*, 1992. xvi+371 *pp. ISBN* 0-14-012529-9 (Editors) **93g:01003** 01A05

— *see also* **Katz, Victor J.**

paulraj Joseph, J. *see* **Paulraj Joseph, J.**

babu Joseph, K. *see* **Babu Joseph, K.**

Joseph, K. T. (*with* Veerappa Gowda, G. D.) The Hamilton-Jacobi equation $V_t + |V_x| = 0$, in the quarter plane. *Nonlinear Anal.* **18** (1992), *no.* 12, 1147–1158. (Zdzisław W. Trzaska) **93f:35034** 35F15 (65M06)

— (*with* Veerappa Gowda, G. D.) Solution of convex conservation laws in a strip. *Proc. Indian Acad. Sci. Math. Sci.* **102** (1992), *no.* 1, 29–47. (Randall J. LeVeque) **93f:35142** 35L65 (35L50)

Joseph, Mathai (*with* Pandya, Paritosh K.) P-A logic—a compositional proof system for distributed programs. *Distrib. Comput.* **5** (1991), *no.* 1, 37–54. (Summary) **93a:68096** 68Q60

Joseph, Mvogo Ngono (*with* Onana, Awono; Kwankam, S. Yunkap) Solution of the two-dimensional neutron transport equation by a hierarchical finite element method. (English summary) *Internat. J. Numer. Methods Heat Fluid Flow* **3** (1993), *no.* 1, 35–47. 82–08 (82C70)

Josephy, Michael Cyclotomy in the *Disquisitiones arithmeticae. Proceedings of the International Symposium on Mathematics and Theoretical Physics (Guarujá*, 1989), 64–71, *Sympos. Gaussiana Ser. A Math. Theoret. Phys.*, 1, *Inst. Gaussianum, Toronto, ON*, 1990. (Karl-Heinz Schlote) **93b:01026** 01A55 (11–03, 12–03)

Joshi, Aravind K. (*with* Schabes, Yves) Tree-adjoining grammars and lexicalized grammars. *Tree automata and languages (Le Touquet*, 1990), 409–431, *Stud. Comput. Sci. Artif. Intell.*, 10, *North-Holland, Amsterdam*, 1992. (From the introduction) **93j:68109** 68Q50

Joshi, C. M. (*with* Bissu, S. K.) Some inequalities of hypergeometric function of three variables. *Jñānābha* **21** (1991), 151–164. (H. M. Srivastava) **93c:33011** 33C70

— *see also* **Gupta, Mukul, 93g:33014**

Joshi, G. C. (*with* Foot, R.) Symmetries of certain physical theories and the Jordan algebras. *Internat. J. Modern Phys. A* **7** (1992), *no.* 15, 3623–3637. (Dominique Lambert) **93c:81169** 81T30 (17C99, 81R05, 81T60)

— (*with* Foot, R.) An application of the division algebras, Jordan algebras and split composition algebras. (English summary) *Internat. J. Modern Phys. A* **7** (1992), *no.* 18, 4395–4413. (P. D. Jarvis) **93m:17018** 17C90 (17C40, 17C60, 81R25, 81T30)

— (*with* Nash, C. G.) Quaternionic quantum mechanics is consistent with complex quantum mechanics. *Internat. J. Theoret. Phys.* **31** (1992), *no.* 6, 965–981. (S. Gudder) **93d:81013** 81P10

— (*with* Hanlon, B. E.) A three generation unified model from coset space-dimensional reduction. (English summary) *Phys. Lett. B* **298** (1993), *no.* 3-4, 312–317. 81V22 (22E70, 81R05)

Joshi, Mohan C. (*with* George, Raju K.) On the controllability of predator-prey systems. *J. Optim. Theory Appl.* **74** (1992), *no.* 2, 243–258. (Jerzy Klamka) **93f:93023** 93B05 (34H05, 92D25, 93C10)

— (*with* Govindan, T. E.) Stability and optimal control of stochastic functional-differential equations with memory. (English summary) *Numer. Funct. Anal. Optim.* **13** (1992), *no.* 3-4, 249–265. (Summary) **93g:49007** 49J25 (34K35, 49K45, 93E15, 93E20)

— *see also* **Mathematical theory of control, 93g:93003**

Joshi, N. A. (*with* Chawathe, P. D.) On line-graphic degree-sequences. (English summary) *Proceedings of the Symposium on Graph Theory and Combinatorics (Cochin*, 1991), 25–39, *Publication*, 21, *Centre Math. Sci., Trivandrum*, 1991. (Summary) **93k:05144** 05C75

Joshi, Nalini (*with* Kruskal, Martin D.) A direct proof that solutions of the first Painlevé equation have no movable singularities except poles. (English summary) *Nonlinear evolution equations and dynamical systems (Baia Verde*, 1991), 310–317, *World Sci. Publishing, River Edge, NJ*, 1992. (F. Oliveri) **93k:34010** 34A20 (30D05, 34A12)

— (*with* Kruskal, Martin D.) The Painlevé connection problem: an asymptotic approach. I. *Stud. Appl. Math.* **86** (1992), *no.* 4, 315–376. (I. P. Martynov) **93c:34013** 34A20 (34A25, 34A34, 34E05)

Joshi, Pankaj S. Singularities in a new class of inhomogeneous cosmological models. *Phys. Rev. Lett.* **67** (1991), *no.* 15, 2109. (Woodford W. Zachary) **93a:83028** 83C75 (83C20)

— (*with* Dwivedi, I. H.) Cosmic censorship violation in non-self-similar Tolman-Bondi models. *Classical Quantum Gravity* **9** (1992), *no.* 7, L69–L75. (Summary) **93c:83084** 83C75

— (*with* Dwivedi, I. H.) The structure of naked singularity in self-similar gravitational collapse. *Comm. Math. Phys.* **146** (1992), *no.* 2, 333–342. (Alan D. Rendall) **93a:83027** 83C75 (83C20)

— (*with* Dwivedi, I. H.) Strong curvature naked singularities in non-self-similar gravitational collapse. *Gen. Relativity Gravitation* **24** (1992), *no.* 2, 129–137. (Summary) **93e:83049** 83C75

Joshi, S. N. (*with* Ghosh, Jayanta K.) On the asymptotic distribution of an estimate of the change point in a failure rate. (English summary) *Comm. Statist. Theory Methods* **21** (1992), *no.* 12, 3571–3588. (Guang Ping Ge) **93j:62237** 62N05

Joshi, Sanjeevani B. (*with* Abhyankar, Shreeram S.) Generalized rodeletive correspondence between multitableux and multimonomials. *Discrete Math.* **93** (1991), *no.* 1, 1–17. (Daniel Ashlock) **93a:05129** 05E10

Joshi, V. S. (*with* Vaidya, A. M.) On exponentially ternary 2-free integers. *J. Indian Math. Soc. (N.S.)* **57** (1991), *no.* 1-4, 169–177. (M. Ram Murty) **93b:11125** 11N56 (11A25, 11N37)

Joshua, S. J. ★ Symmetry principles and magnetic symmetry in solid state physics. Graduate Student Series in Physics. *Adam Hilger, Ltd., Bristol*, 1991. xiv+270 *pp. ISBN* 0-7503-0070-1; 0-7503-0071-X 82D20 (82-01, 82D25)

Josko, Bernhard A context dependent equivalence relation between Kripke structures. *Computer-aided verification '90 (New Brunswick, NJ*, 1990), 341–358, *DIMACS Ser. Discrete Math. Theoret. Comput. Sci.*, 3, *Amer. Math. Soc., Providence, RI*, 1991. (Neculai Curteanu) **93a:68039** 68Q10 (03B45, 03B70, 68Q90)

Joskowicz, Leo (*with* Huynh, Tien; Lassez, Catherine; Lassez, Jean-Louis) Practical tools for reasoning about linear constraints. *Fund. Inform.* **15** (1991), *no.* 3-4, 357–379. (Summary) **93a:68134** 68T27

Joss, Johann *see* **Marazzi, Alfio, 93j:62086**

Jost, Jürgen ★ Nonlinear methods in Riemannian and Kählerian geometry. Second edition. DMV Seminar, 10. *Birkhäuser Verlag, Basel*, 1991. 154 *pp. ISBN* 3-7643-2685-9 (Editors) **93k:58065** 58E20 (53C07, 58E15, 58G11)

— (*with* Yau, Shing-Tung) Harmonic maps and group representations. *Differential geometry*, 241–259, *Pitman Monographs Surveys Pure Appl. Math.*, 52, *Longman Sci. Tech., Harlow*, 1991. (Martin A. Guest) **93g:58036** 58E20 (22E40, 58E40)

— (*with* Peng, Xiao Wei) The geometry of moduli spaces of stable vector bundles over Riemann surfaces. *Global differential geometry and global analysis (Berlin*, 1990), 79–96, *Lecture Notes in Math.*, 1481, *Springer, Berlin*, 1991. (Steven B. Bradlow) **93i:32024** 32G13 (14J60, 58D27, 58E15)

— Harmonic maps and curvature computations in Teichmüller theory. *Ann. Acad. Sci. Fenn. Ser. A I Math.* **16** (1991), *no.* 1, 13–46. (Colette Anné) **93a:32033** 32G15 (30F60, 58E20)

— (*with* Peng, Xiao Wei) Group actions, gauge transformations, and the calculus of variations. *Math. Ann.* **293** (1992), *no.* 4, 595–621. (Antony Maciocia) **93f:58055** 58E40 (32G15, 53C07, 58B20, 58D27, 58G05)

Jost, Steve D. Relative efficiencies of model robust estimators in two-dimensional situations. *J. Statist. Plann. Inference* **28** (1991), *no.* 3, 369–381. (Jan Ámos Víšek) **93a:62093** 62J02

gnana Jothi, R. B. *see* **Gnana Jothi, R. B.**

Jothi, R. B. Gnana *see* **Gnana Jothi, R. B.**

Jothilingam, P. (*with* Mangayarcarassy, S.) A note on flatness and injectivity of simple modules over a commutative ring. *Comm. Algebra* **21** (1993), *no.* 2, 675–678. (From the text) **93i:13007** 13C11

Jotov, O. Tensor linear groups. (Macedonian summary) *Mat. Bilten* **40** (1990), *no.* 14, 47–54. (Chong Guang Cao) **93a:20075** 20G20 (15A69, 15A72)

Jou, D. *see* **Rheological modelling: thermodynamical and statistical approaches, 93c:76002**

Jou, Emery (*with* Han, Wei Min) Minimal-energy splines with various end constraints. *Curve and surface design (Tempe, AZ*, 1989), 23–40, *Geom. Des. Publ., SIAM, Philadelphia, PA*, 1992. (*see* **93g:65027**) 65D07 (65D17)

Jouanolou, J.-P. Le formalisme du résultant. [The formalism of the resultant] *Adv. Math.* **90** (1991), *no.* 2, 117–263. (P. Abellanas) **93g:14003** 14A99 (12D05, 12Y05, 13P05)

Joubert, G. R. *see* **Parallel computing '91, 93f:00016**

Joubert, Wayne (*with* Highnam, Peter; Carey, Graham) PCG/CM: a package for the iterative solution of large sparse linear systems on the connection machine. (English summary) *Parallel processing for scientific computing (Houston, TX*, 1991), 631–636, *SIAM, Philadelphia, PA*, 1992. (*see* **93g:65178**) 65F50 (65F10, 65Y05)

— Lanczos methods for the solution of nonsymmetric systems of linear equations. Iterative methods in numerical linear algebra (Copper Mountain, CO, 1990). *SIAM J. Matrix Anal. Appl.* **13** (1992), *no.* 3, 926–943. (Heike Faßbender) **93e:65054** 65F10 (65F15)

Jouini, Elyes Structure de l'ensemble des équilibres d'une économie productive. (English summary) [Structure of the equilibrium set of a production economy] *Ann. Inst. H. Poincaré Anal. Non Linéaire* **9** (1992), *no.* 3, 321–336. (Dave Furth) **93f:90031** 90A14 (57M10, 57N75)

— An index theorem for nonconvex production economies. *J. Econom. Theory* **57** (1992), *no.* 1, 176–196. (Alexander I. Sotskov) **93m:90015** 90A14

— The graph of the Walras correspondence: the production economies case. (English summary) *J. Math. Econom.* **22** (1993), *no.* 2, 139–147. (Introduction) **93j:90025** 90A14

Joung, Ming-Huei *see* **Chung, Ming Hui**

Jourani, A. Regularity and strong sufficient optimality conditions in differentiable optimization problems. (English summary) *Numer. Funct. Anal. Optim.* **14** (1993), *no.* 1-2, 69–87. (Asen L. Dontchev) **93k:49023** 49K27 (49J27, 49J52, 90C31, 90C48)

Jourlin, Michel (*with* Laboure, Marie-José; Hivert, Marc) Détection des zones de forte courbure sur la frontière d'un convexe du plan euclidien. [Detection of regions of strong curvature on the boundary of a convex domain in the Euclidean plane] *Publications du Département de Mathématiques. Nouvelle Série. A, Vol.* 1, 67–94, *Publ. Dép. Math. Nouvelle Sér. A*, 89-1, *Univ. Claude-Bernard, Lyon*, 1989. (Introduction) **93d:52002** 52A10

Journé, J.-L. (*with* Soffer, A.; Sogge, Christopher D.) Decay estimates for Schrödinger operators. *Comm. Pure Appl. Math.* **44** (1991), *no.* 5, 573–604. (P. Szeptycki) **93d:35034** 35J10 (35B45, 35P05)

Jovanov, D. S. Variational inequalities with cone constraints. (English summary) *J. Optim. Theory Appl.* **75** (1992), *no.* 1, 87–99. (George Isac) **93h:49019** 49J40 (90C33, 90C48)

Jovanović, Aleksandar A note on ultrafilter selectivity. (English summary) *Math. Balkanica (N.S.)* **6** (1992), *no.* 2, 129–131. (W. W. Comfort) **93i:04002** 04A20 (03E05, 03E35, 06A07)

Jovanović, M. V. (*with* Pečarić, Josip E.) Some inequalities for α-convex functions. *Anal. Numér. Théor. Approx.* **19** (1990), *no.* 1, 67–70. (Ion Raşa) **93d:26021** 26D15 (26A51)

torrecillas Jover, Blas *see* **Torrecillas Jover, Blas**

Joy, M. P. (*with* Sabir, M.) Chaotic behaviour and order to chaos transition of 't Hooft-Polyakov monopoles. *J. Phys. A* **25** (1992), *no.* 13, 3721–3728. (Summary) **93c:81125** 81T13 (81-04)

Joyal, André (*with* Tierney, Myles) Strong stacks and classifying spaces. *Category theory (Como*, 1990), 213–236, *Lecture Notes in Math.*, 1488, *Springer, Berlin*, 1991. (Kimmo I. Rosenthal) **93h:18019** 18G55 (18B25)

— (*with* Street, Ross) An introduction to Tannaka duality and quantum groups. *Category theory (Como*, 1990), 413–492, *Lecture Notes in Math.*, 1488, *Springer, Berlin*, 1991. (David N. Yetter) **93f:18015** 18D10 (16W30, 17B37, 22C05, 22D35)

Joyce, Dominic Compact hypercomplex and quaternionic manifolds. *J. Differential Geom.* **35** (1992), *no.* 3, 743–761. (Krzysztof Galicki) **93g:53064** 53C25 (53C30, 53C56, 57S25)

Joyce, Paul (*with* Donnelly, Peter) Weak convergence of population genealogical processes to the coalescent with ages. *Ann. Probab.* **20** (1992), *no.* 1, 322–341. (S. N. Ethier) **93d:60053** 60F17 (92D15)

— (*with* Tavaré, Simon) A convergence theorem for symmetric functionals of random partitions. *J. Appl. Probab.* **29** (1992), *no.* 2, 280–290. (Peter Donnelly) **93g:60018** 60C05 (60B10, 92D10)

Joye, Alain (*with* Kunz, Hervé; Pfister, Charles-Edouard) Exponential decay and geometric aspect of transition probabilities in the adiabatic limit. *Ann. Physics* **208** (1991), *no.* 2, 299–332. (Brian DeFacio) **93a:81058** 81Q99

— (*with* Pfister, Charles-Edouard) Superadiabatic evolution and adiabatic transition probability between two nondegenerate levels isolated in the spectrum. (English summary) *J. Math. Phys.* **34** (1993), *no.* 2, 454–479. (Szymon Rabsztyn) **93m:81029** 81Q10 (47A55, 47N50)

Joyeux, Roselyne Tests for seasonal cointegration using principal components. *J. Time Ser. Anal.* **13** (1992), *no.* 2, 109–118. (Friedrich Liese) **93i:62081** 62M10 (62H25, 62M15)

Joyner, R. N. (*with* Spickerman, W. R.; Creech, R. L.) On the $(2, F)$ generalizations of the Fibonacci sequence. *Fibonacci Quart.* **30** (1992), *no.* 4, 310–314. 11B39

Józefczyk, J. (*with* Cheshankov, B.; Martowski, K.; Slavkova, M.) A control algorithm for the manipulator of the industrial robot IRb-6. (Polish summary) *Systems Sci.* **17** (1991), *no.* 3, 53–62 (1992). 93C85

Józefiak, Tadeusz A class of projective representations of hyperoctahedral groups and Schur Q-functions. *Topics in algebra, Part* 2 (*Warsaw*, 1988), 317–326, *Banach Center Publ.*, 26, *Part* 2, *PWN, Warsaw*, 1990. (A. O. Morris) **93e:20016** 20C25 (05E05)

— Schur Q-functions and applications. *Proceedings of the Hyderabad Conference on Algebraic Groups (Hyderabad*, 1989), 205–224, *Manoj Prakashan, Madras*, 1991. (Axel Kohnert) **93i:20014** 20C30 (05E05, 05E10, 20C25)

— (*with* Jing, Nai Huan) A formula for two-row Macdonald functions. *Duke Math. J.* **67** (1992), *no.* 2, 377–385. (S. Milne) **93g:05145** 05E05 (05E35, 33D15, 33D45)

— *see also* **Topics in algebra, 93a:00023** *and* **93b:00037**

Jozsa, R. (*with* Crewther, I.; Huilgol, R. R.) Axisymmetric and nonaxisymmetric flows of a non-Newtonian fluid between coaxial rotating discs. *Philos. Trans. Roy. Soc. London Ser. A* **337** (1991), *no.* 1648, 467–495. (Xue-Ping Wang) **93a:76004** 76A10 (76A05, 76E99)

Juang, Jer-Nan (*with* Phan, Minh; Longman, Richard W.) Identification of linear multivariable systems by identification of observers with assigned real eigenvalues. *J. Astronaut. Sci.* **40** (1992), *no.* 2, 261–279. (Summary) **93c:93054** 93E30 (73K50, 93C05)

— (*with* Maghami, Peiman G.) Robust eigensystem assignment for state estimators using second-order models. *J. Guidance Control Dynamics* **15** (1992), *no.* 4, 920–927. 93B55

Juang, Jong (*with* Nelson, Paul, Jr.) Global existence for an abstract Riccati initial value problem with possibly unbounded coefficients. *J. Math. Anal. Appl.* **166** (1992), *no.* 1, 103–111. (H. J. Kuiper) **93c:34132** 34G20 (47N20)

Juan Gonzalez, A. (*with* Gutiérrez Jáimez, Ramón; Angulo Ibañez, J. M.; Pérez, Rigoberto) Inference in lognormal multidimensional diffusion processes with exogenous factors: application to modelling in economics. *Appl. Stochastic Models Data Anal.* **7** (1991), *no.* 4, 295–316. (Summary) **93k:62172** 62M05

— (*with* Gutiérrez Jáimez, Ramón; Román Román, P.) Construction of first-passage-time densities for a diffusion process which is not necessarily time-homogeneous. *J. Appl. Probab.* **28** (1991), *no.* 4, 903–909. (Summary) **93a:60123** 60J60

Juárez, L. Z. (*with* Campos, R. G.) A discretization of the continuous Fourier transform. *Nuovo Cimento B* (11) **107** (1992), *no.* 6, 703–711. (Summary) **93f:65097** 65T20 (33C90, 39A12, 81-04)

al-Juboury, Hussain Ali *see* **Al-Juboury, Hussain Ali**

Juckelandt, S. (*with* Hahn, Siegfried) Zur Approximation von Fixpunkten bei mengenwertigen oberhalbstetigen kompakten Abbildungen. (Serbo-Croatian summary) [On the approximation of fixed points in set-valued upper semicontinuous compact mappings] *Zb. Rad. Prirod.-Mat. Fak. Ser. Mat.* **21** (1991), *no.* 1, 127–133. (L. Janos) **93b:54042** 54H25 (58C06)

Judah, Haim (*with* Shelah, Saharon) Forcing minimal degree of constructibility. *J. Symbolic Logic* **56** (1991), *no.* 3, 769–782. (Janusz Pawlikowski) **93b:03085** 03E45 (03E40)

— (*with* Brendle, Jörg; Shelah, Saharon) Combinatorial properties of Hechler forcing. (English summary) *Ann. Pure Appl. Logic* **58** (1992), *no.* 3, 185–199. (Jakub Jasiński) **93k:03048** 03E40 (03E45)

— (*with* Miller, Arnold W.; Shelah, Saharon) Sacks forcing, Laver forcing, and Martin's axiom. *Arch. Math. Logic* **31** (1992), *no.* 3, 145–161. (Summary) **93e:03074** 03E50 (03E35)

— Exact equiconsistency results for Δ^1_3-sets of reals. (English summary) *Arch. Math. Logic* **32** (1992), *no.* 2, 101–112. (Jakub Jasiński) **93m:03087** 03E35 (03E15)

— (*with* Goldstern, Martin) Iteration of Souslin forcing, projective measurability and the Borel conjecture. (English summary) *Israel J. Math.* **78** (1992), *no.* 2-3, 335–362. (Miroslav Repický) **93m:03086** 03E35 (03E40, 03E47)

— (*with* Bartoszyński, Tomek; Goldstern, Martin; Shelah, Saharon) All meager filters may be null. *Proc. Amer. Math. Soc.* **117** (1993), *no.* 2, 515–521. (Krzysztof Ciesielski) **93d:03055** 03E35 (28A05, 28E15, 54A25)

— (*with* Shelah, Saharon) Adding dominating reals with the random algebra. *Proc. Amer. Math. Soc.* **119** (1993), *no.* 1, 267–273. (Janusz Pawlikowski) **93k:03049** 03E40

Judd, B. R. (*with* Lister, G. M. S.) Complementary groups in the quark model of the atom. *J. Phys. A* **25** (1992), *no.* 9, 2615–2630. (Summary) **93d:81194** 81V45 (81R05)

Judd, J. Stephen Domination and perpetual evasiveness. (English summary) Proceedings of the Twenty-third Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, FL, 1992). *Congr. Numer.* **91** (1992), 117–127. (Summary) **93m:05185** 05C85 (68Q25, 68R10)

Judd, Kenneth L. Projection methods for solving aggregate growth models. (English summary) *J. Econom. Theory* **58** (1992), *no.* 2, 410–452. (Summary) **93i:90020** 90A14 (65J15, 90A05)

Judd, Kevin An improved estimator of dimension and some comments on providing confidence intervals. *Phys. D* **56** (1992), *no.* 2-3, 216–228. (Summary) **93a:58114** 58F12

Judd, Stephen *see* **Judd, J. Stephen**

Judge, George *see* **Readings in econometric theory and practice, 93m:62006**

Judge, J. (*with* Mukhopadhyay, Nitis) Second order expansions for a sequential selection procedure. (English summary) *Sankhyā Ser. A* **51** (1989), *no.* 3, 318–327. (Summary) **93c:62137** 62L99 (62F07)

— (*with* Mukhopadhyay, Nitis) Three-stage procedures for selecting the largest normal mean. (English summary) Modern sequential analysis (SSA), Vol. II (Syracuse, NY, 1989). *Amer. J. Math. Management Sci.* **11** (1991), *no.* 3-4, 241–261. (M. Hušková) **93j:62057** 62F07 (62F12)

Júdice, Joaquím J. (*with* Pires, F. M.) Numerical treatment of unconstrained variables in quadratic programs with side constraints. (Portuguese. English summary) *Proceedings of the XVth Portuguese-Spanish Conference on Mathematics, Vol. IV* (*Portuguese*) (*Évora*, 1990), 445–450, *Univ. Évora, Évora*, 1991. (Summary) **93b:90061** 90C20 (65K05)

— (*with* Machado, J.; Faustino, Ana M.) An extension of Lemke's method for the solution of a generalized linear complementarity problem. (English summary) *System modelling and optimization* (*Zurich*, 1991), 221–230, *Lecture Notes in Control and Inform. Sci.*, 180, *Springer, Berlin*, 1992. (*see* **93e:90003**) 90C33

— (*with* Faustino, Ana M.) A sequential LCP method for bilevel linear programming. Hierarchical optimization. *Ann. Oper. Res.* **34** (1992), *no.* 1-4, 89–106. (Klaus Tammer) **93b:90096** 90C33 (65K10, 90C08)

— (*with* Vicente, Luis N.; Calamai, Paul H.) Generation of disjointly constrained bilinear programming test problems. (English summary) *Comput. Optim. Appl.* **1** (1992), *no.* 3, 299–306. (R. Tichatschke) **93k:90088** 90C30 (90C20, 90C26)

— (*with* Pires, F. M.) Basic-set algorithm for a generalized linear complementarity problem. (English summary) *J. Optim. Theory Appl.* **74** (1992), *no.* 3, 391–411. (S. R. Mohan) **93h:90098** 90C33 (65F99)

Juditsky, A. B. *see* **Yuditskii, A. B.**

Juditsky, Anatoli *see* **Yuditskii, A. B.**

Juditsky, Anatolij *see* **Yuditskii, A. B.**

Juhász, Arye Fusion in Artin groups. I. *J. London Math. Soc.* (2) **44** (1991), *no.* 2, 287–300. (Martin Edjvet) **93e:20054** 20F32

Juhász, I. (*with* Szentmiklóssy, Z.) Convergent free sequences in compact spaces. *Proc. Amer. Math. Soc.* **116** (1992), *no.* 4, 1153–1160. (J. van Mill) **93b:54024** 54D35

— (*with* Shelah, Saharon) On partitioning the triples of a topological space. Proceedings of the Symposium on General Topology and Applications (Oxford, 1989). *Topology Appl.* **44** (1992), *no.* 1-3, 203–208. (Janusz Pawlikowski) **93k:03046** 03E35 (54A25, 54A35)

Juhnke, Fritz (*with* Benjamin, Arthur T.) Another way of counting N^N. *SIAM J. Discrete Math.* **5** (1992), *no.* 3, 377–379. (Xiaodong Liu) **93g:05015** 05A19

Juhnke, M. (*with* Lustfeld, H.; Eilenberger, G.) On Schröder's "generating function" for the logistic map. *From phase transitions to chaos*, 387–412, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93d:58136** 58F23 (30D05)

Juhola, M. (*with* Grönfors, T.) Experiments and comparison of inference methods of regular grammars. (English summary) *IEEE Trans. Systems Man Cybernet.* **22** (1992), *no.* 4, 821–826. 68Q50

Julg, Pierre ★ *K*-théorie des C^*-algèbres associées à certains groupes hyperboliques. (French) [*K*-theory of C^*-algebras associated with certain hyperbolic groups] Dissertation, Université Louis Pasteur (Strasbourg I), Strasbourg, 1991. Publication de l'Institut de Recherche Mathématique Avancée. [Publication of the Institute of Advanced Mathematical Research] *Université Louis Pasteur, Département de Mathématique, Institut de Recherche Mathématique Avancée, Strasbourg*, 1991. 145 *pp.* (Alain Valette) **93b:46135** 46L80 (19K35, 22E40, 58G12)

Julia, Gaston *see* **Picard, Charles-Émile, 93i:01032a**

Julià, Olga (*with* Gómez, Guadalupe; Utzet, Frederic) Survival analysis for left censored data. (English summary) With a discussion by Melvin L. Moeschberger and a rejoinder by the authors. *Survival analysis: state of the art* (*Columbus, OH*, 1991), 269–288, *NATO Adv. Sci. Inst. Ser. E Appl. Sci.*, 211, *Kluwer Acad. Publ., Dordrecht*, 1992. (Summary) **93k:62090** 62G05 (62N05)

Julian, W. H. (*with* Bridges, Douglas S.; Richman, Fred; Mines, Ray) Extensions and fixed points of contractive maps in $\mathbf{R}^n$. *J. Math. Anal. Appl.* **165** (1992), *no.* 2, 438–456. (Mark Mandelkern) **93g:54055** 54H25 (03F60, 26A18, 47H10)

Jumarie, Guy Applications of entropy of patterns and forms to signal processing. (English summary) *Adaptive systems in control and signal processing*, 1989 (*Glasgow*), 471–475, *IFAC Sympos. Ser.*, 1990, *No.* 1, *Pergamon, Oxford*, 1990. (*see* **93j:93007**) 94A12 (93E11)

— Quantum entropies of nonprobabilistic matrices. *J. Math. Phys.* **32** (1991), *no.* 11, 2967–2971. (Summary) **93a:94015** 94A17 (47B99, 81Q99)

— Further results on the application of entropies of deterministic functions to information of fuzzy sets and related topics. *Kybernetes* **20** (1991), *no.* 4, 12–27. (Sankar Kumar Pal) **93b:94011** 94A17 (04A72)

— A (new) measure of fuzzy uncertainty via interval analysis, which is fully consistent with Shannon theory. *Tamkang J. Math.* **22** (1991), *no.* 3, 223–241. (Sankar Kumar Pal) **93a:94016** 94A17 (04A72, 94D05)

— A new framework for systems analysis via geometrical entropy on path space. (English summary) *Computational and applied mathematics, II* (*Dublin*, 1991), 61–69, *North-Holland, Amsterdam*, 1992. (Summary) **93j:94008** 94A17

— An approach to the entropy of (*A* or *B*) via maximization of conditional entropy. (English summary) *Cybernet. Systems* **23** (1992), *no.* 6, 603–620. (Summary) **93j:94009** 94A17

— Tracking control of nonlinear stochastic systems by using path cross-entropy and Fokker-Planck equation. (English summary) *Internat. J. Systems Sci.* **23** (1992), *no.* 7, 1101–1114. (Wilfried Grecksch) **93g:93086** 93E20 (49K45, 93B52)

— A Fokker-Planck equation of fractional order with respect to time. (English summary) *J. Math. Phys.* **33** (1992), *no.* 10, 3536–3542. (Summary) **93j:82054** 82C31

— From entropy of fuzzy sets to fuzzy sets of entropies: a critical review and new results. *Kybernetes* **21** (1992), *no.* 5, 33–51. (Ma. Luisa Menéndez) **93j:94005** 94A15 (04A72, 94D05)

Jumelet, Marc (*with* de Jongh, Dick; Montagna, Franco) On the proof of Solovay's theorem. *Studia Logica* **50** (1991), *no.* 1, 51–69. (Summary) **93b:03022** 03B45 (03F30, 03F40)

Jun, Duk B. A design of adaptive exponential smoothing using a change detection statistic. (English summary) *J. Oper. Res. Soc. Japan* **35** (1992), *no.* 2, 109–118. 93E14

Jun, Sook Heui Univalent harmonic mappings on $\Delta = \{z: |z| > 1\}$. *Proc. Amer. Math. Soc.* **119** (1993), *no.* 1, 109–114. (P. L. Duren) **93k:30022** 30C55 (30C75, 42A16)

Jun, Young Bae Characterization of fuzzy ideals by their level ideals in BCK (BCI)-algebras. (English summary) *Math. Japon.* **38** (1993), *no.* 1, 67–71. (Summary) **93i:06010** 06F35 (03G25, 04A72)

— Closed fuzzy ideals in BCI-algebras. (English summary) *Math. Japon.* **38** (1993), *no.* 1, 199–202. (Summary) **93i:06009** 06F35 (03G25, 04A72)

del Junco, Andrés (*with* Akcoglu, Mustafa; Lee, W. M. F.) A solution to a problem of A. Bellow. *Almost everywhere convergence, II* (*Evanston, IL*, 1989), 1–7, *Academic Press, Boston, MA*, 1991. (Anzelm Iwanik) **93e:28018** 28D05

— (*with* Akcoglu, Mustafa; Bellow, Alexandra; Jones, Roger L.) Divergence of averages obtained by sampling a flow. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 2, 499–505. (Nathaniel F. G. Martin) **93g:28019** 28D10 (47A35, 58F11)

Juneja, O. P. (*with* Srinivas, V.; Kapoor, G. P.) Extreme points and support points of certain class of analytic functions. *New trends in geometric function theory and applications* (*Madras*, 1990), 136–139, *World Sci. Publishing, River Edge, NJ*, 1991. (Shigeyoshi Owa) **93d:30019** 30C45

Junek, H. (*with* Braunss, Hans-Andreas) On types of polynomials and holomorphic functions on Banach spaces. *Note Mat.* **10** (1990), *no.* 1, 47–58. (Miguel Caldas Cueva) **93g:46042** 46G20

Jung, Chih Hui (*with* Shyu, Kuo Kai; Tsai, Yao Wen) A modified variable structure controller. (English summary) *Automatica J. IFAC* **28** (1992), *no.* 6, 1209–1213. (Summary) **93j:93026** 93B12

Jung, H. K. (*with* Lu, I-Tai; Tsai, C. M.) Hybrid combinations of global and local operators for solving Helmholtz and Poisson equations. (English summary) *J. Comput. Phys.* **103** (1992), *no.* 2, 390–401. (Summary) **93k:78013** 78A45 (65N99, 78–08)

Jung, Hermann (*with* Baumgarten, Hanna; Mehlhorn, Kurt) Dynamic point location in general subdivisions. *Proceedings of the Third Annual ACM-SIAM Symposium on Discrete Algorithms* (*Orlando, FL*, 1992), 250–258, *ACM, New York*, 1992. (*see* **93b:68005**) 68U05 (68Q25)

Jung, Hyung Chan Young's lattice and subspace lattice: jump number, greediness. *J. Korean Math. Soc.* **29** (1992), *no.* 2, 423–436. (Eduard Fuchs) **93h:06016** 06D05 (06A07)

— (*with* Brualdi, Richard A.) Maximum and minimum jump number of posets from matrices. Second NIU Conference on Linear Algebra, Numerical Linear Algebra and Applications (DeKalb, IL, 1991). *Linear Algebra Appl.* **172** (1992), 261–282. (Summary) **93c:06004** 06A07 (15A33, 15A36)

Jung, Il Bong (*with* Kim, Yong Chan) On unilateral shift operators and C_0-operators. *J. Austral. Math. Soc. Ser. A* **53** (1992), *no.* 1, 137–142. (László Kérchy) **93e:47034** 47B37 (47A15, 47A45, 47A60)

— (*with* Kim, Yong Chan; Lee, Sang Hun) Coefficient multipliers of $H^{p,q}$ spaces. *Math. Japon.* **37** (1992), *no.* 2, 307–311. (Som Datt Sharma) **93g:30048** 30D55

— (*with* Exner, George R.) Dual operator algebras and a hereditary property of minimal isometric dilations. *Michigan Math. J.* **39** (1992), *no.* 2, 263–270. (Srdjan Petrović) **93d:47037** 47A65 (47A15, 47A20, 47D27)

Jung, Inha Empirical Bayes problem with random sample size components. *J. Korean Statist. Soc.* **20** (1991), *no.* 1, 67–76. (Glen Meeden) **93e:62024** 62C12

Jung, Peter (*with* Hanggi, Peter; Zerbe, Christine; Moss, Frank) Can colored noise improve stochastic resonance? (English summary) *J. Statist. Phys.* **70** (1993), *no.* 1-2, 25–47. 82C35

Jung, Young-Sik (*with* Nagasawa, Hiroyuki; Nishiyama, Noriyuki) Extension of deterministic scheduling in stochastic scheduling. (English summary) *Bull. Univ. Osaka Prefect. Ser. A* **40** (1991), *no.* 2, 265–274. (Roman Słowiński) **93h:90048** 90B35 (60K10)

Jungck, Gerald Coincidence and fixed points for compatible and relatively nonexpansive maps. (English summary) *Internat. J. Math. Math. Sci.* **16** (1993), *no.* 1, 95–100. (Summary) **93i:47087** 47H10 (47H09, 54H25)

Junge, Marius (*with* Defant, Martin) Grothendieck type inequalities and weak Hilbert spaces. *Geometry of Banach spaces* (*Strobl*, 1989), 71–87, *London Math. Soc. Lecture Note Ser.*, 158, *Cambridge Univ. Press, Cambridge*, 1990. (Rajappa K. Asthagiri) **93a:47026** 47A99 (46B99, 46C99, 47B10)

— (*with* Defant, Martin) Random variables in weak type p spaces. *Arch. Math.* (*Basel*) **58** (1992), *no.* 4, 399–406. (Jerzy Szulga) **93a:46018** 46B09 (60B11, 60E15)

— (*with* Defant, Martin) On absolutely summing operators with application to the (p, q)-summing norm with few vectors. *J. Funct. Anal.* **103** (1992), *no.* 1, 62–73. (A. Pietsch) **93b:47044** 47B10 (46B20)

— (*with* Defant, Martin) The iterated weak Hilbert procedure. *Proc. Amer. Math. Soc.* **117** (1993), *no.* 3, 645–651. (Jan H. Fourie) **93d:46013** 46A32 (46C99, 47D50)

Jünger, Michael (*with* Reinelt, Gerhard) Schnittebenenverfahren in der kombinatorischen Optimierung. (German summary) [A cutting plane method in combinatorial optimization] *Mitt. Ges. Angew. Math. Mech.* **15** (1992), *no.* 2, 120–134. 90C27

Junghanns, P. (*with* Oestreich, D.) Application of nonlinear singular integral equations to the numerical solution of a symmetric electrochemical machining problem. (English summary) Second World Congress of Computational Mechanics (Stuttgart, 1990). *Comput. & Structures* **44** (1992), *no.* 1-2, 409–417. (Summary) **93f:80026** 80A99 (45G05)

Jungman, Gerard Further topological proofs of Gribov ambiguities. *Modern Phys. Lett. A* **7** (1992), *no.* 10, 849–853. (Dana S. Fine) **93f:81084** 81T13 (57R19, 58D19, 81T50)

Jungnickel, D. *see* **Jungnickel, Dirk**

Jungnickel, Dieter An anti-polarity in PG(2, q). *Bull. Inst. Combin. Appl.* **3** (1991), 78. (M. J. Kallaher) **93f:51010** 51E15 (05B25, 51A30)

— (*with* Colbourn, Charles J.; Rosa, Alexander) Preface. *Discrete Math.* **97** (1991), *no.* 1-3, 1. (Robin J. Wilson) **93c:01034** 01A70 (05–03)

— (*with* Arasu, K. T.; Pott, Alexander) Symmetric divisible designs with $k - \lambda_1 = 1$. *Discrete Math.* **97** (1991), *no.* 1-3, 25–38. (Sylvia A. Hobart) **93b:05011** 05B05 (05B10, 20D60)

— On the uniqueness of the cyclic group of order n. *Amer. Math. Monthly* **99** (1992), *no.* 6, 545–547. (From the introduction) **93c:20086** 20K01

— (*with* Pfaff, Oliver) On the number of isomorphism classes of complete translation nets. *Arch. Math.* (*Basel*) **59** (1992), *no.* 2, 192–196. (Gary L. Ebert) **93f:51009** 51E14 (05B25)

— (*with* Hachenberger, Dirk) Translation nets: a survey. (English summary) A collection of contributions in honour of Jack van Lint. *Discrete Math.* **106/107** (1992), 231–242. (P. B. Kirkpatrick) **93i:51011** 51E14

— *see also* **Designs and graphs**

Jungnickel, Dirk (*with* Erler, J.; Lauer, J.; Mas, Javier) String emission from twisted sectors: cocycle operators and modular background symmetries. (English summary) *Ann.*

Physics **217** (1992), *no.* 2, 318–363. (C. Gauthier) **93h:81099** 81T30

— (*with* Stieberger, S.; Lauer, J.; Spaliński, Michal) Yukawa couplings for bosonic Z_N orbifolds: their moduli and twisted sector dependence. (English summary) *Modern Phys. Lett. A* **7** (1992), *no.* 33, 3059–3070. (Summary) **93g:81176** 81T40

Jungreis, Douglas S. (*with* Beals, Robert; Gallian, Joseph A.; Headley, Patrick) Harmonious groups. *J. Combin. Theory Ser. A* **56** (1991), *no.* 2, 223–238. (F. Pérez Monasor) **93a:20033** 20D60 (05C25, 20F05)

— (*with* Reid, Michael) Labeling grids. (English summary) *Ars Combin.* **34** (1992), 167–182. (Summary) **93i:05113** 05C78

Jungwirth, Helga Reflections on the foundations of research on women and mathematics. *Math worlds*, 134–149, *SUNY Ser. Sci. Tech. Soc., SUNY Press, Albany, NY*, 1993. (*see* **93m:00025**) 01A80

Junker, Georg (*with* Leschke, Hajo) Remarks on the quasi-classical propagator of area-preserving maps. *Phys. D* **56** (1992), *no.* 2-3, 135–150. (Nariyuki Minami) **93h:81031** 81Q50 (81Q20)

Junkins, John L. (*with* Lee, Sangchul) Explicit generalization of Lagrange's equations for hybrid coordinate dynamical systems. (English summary) *J. Guidance Control Dynamics* **15** (1992), *no.* 6, 1443–1452. (Summary) **93h:70012** 70H35 (70E99, 70F99)

Junnila, Heikki (*with* Yun, Zi Qiu) $\aleph$-spaces and spaces with σ-hereditarily closure-preserving k-network. Proceedings of the Symposium on General Topology and Applications (Oxford, 1989). *Topology Appl.* **44** (1992), *no.* 1-3, 209–215. (Gary Gruenhage) **93m:54045** 54E18

Jupp, A. H. (*with* Brumberg, V. A.) Relativistic effects in the critical inclination problem in artificial satellite theory. *Celestial Mech. Dynam. Astronom.* **52** (1991), *no.* 4, 345–353. (C. Marchal) **93g:70019** 70H40 (70M20, 83B05)

Jupp, P. E. (*with* Cormack, R. M.) Inference for Poisson and multinomial models for capture-recapture experiments. *Biometrika* **78** (1991), *no.* 4, 911–916. (A. Balogh) **93a:62035** 62F12

— (*with* Barndorff-Nielsen, Ole E.; Blæsild, P.; Carey, A. L.; Mora, Marianne; Murray, M. K.) Finite-dimensional algebraic representations of the infinite phylon group. (English summary) *Acta Appl. Math.* **28** (1992), *no.* 3, 219–252. (I. Kolář) **93k:58004** 58A20 (20G05, 53A55, 62B99)

— Derivative strings, differential strings and semi-holonomic jets. (English summary) *Proc. Roy. Soc. London Ser. A* **436** (1992), *no.* 1896, 89–98. (V. Oproiu) **93i:58008** 58A20 (53B99, 62F05)

garcía-Jurado, I. *see* **García-Jurado, I.**

mena-Jurado, Juan F. *see* **Mena-Jurado, Juan F.**

Jurák, Věroslav A remark on 2-(v, k, λ) designs. *Fourth Czechoslovakian Symposium on Combinatorics, Graphs and Complexity* (*Prachatice*, 1990), 137–139, *Ann. Discrete Math.*, 51, *North-Holland, Amsterdam*, 1992. (*see* **93i:05004**) 05B05

Jurasińska, Renata (*with* Stankiewicz, Jan) Special subclasses of Carathéodory functions and their applications. (Russian and Polish summaries) *Zeszyty Nauk. Politech. Rzeszowskiej Mat. Fiz. No.* 12 (1991), 37–45. (Summary) **93f:30010** 30C45

Jurčo, Branislav Classical Yang-Baxter equations and quantum integrable systems (Gaudin models). *Quantum groups* (*Clausthal*, 1989), 219–227, *Lecture Notes in Phys.*, 370, *Springer, Berlin*, 1990. (Márcio José Martins) **93k:82018** 82B23

— (*with* Drabant, Bernhard; Schlieker, Michael; Weich, Wolfgang; Zumino, Bruno) The Hopf algebra of vector fields on complex quantum groups. (English summary) *Lett. Math. Phys.* **26** (1992), *no.* 2, 91–96. (Summary) **93h:17026** 17B37 (16W30, 81R50)

Jurečková, Jana Confidence sets and intervals. *Handbook of sequential analysis*, 269–281, *Statist. Textbooks Monographs*, 118, *Dekker, New York*, 1991. (*see* **93g:62102**) 62L12 (62F25)

— (*with* Dodge, Yadolah) Flexible l-estimation in the linear model. *Comput. Statist. Data Anal.* **12** (1991), *no.* 2, 211–220. (Jan Ámos Víšek) **93a:62095** 62J05 (62F35)

— (*with* Gutenbrunner, C.) Regression rank scores and regression quantiles. *Ann. Statist.* **20** (1992), *no.* 1, 305–330. (Gutti J. Babu) **93c:62069** 62G05 (62J05)

Jurek, Zbigniew J. Operator exponents of probability measures and Lie semigroups. *Ann. Probab.* **20** (1992), *no.* 2, 1053–1062. (S. G. Dani) **93e:60011** 60B11

Jurg, A. P. (*with* Jansen, M. J. M.; Potters, Jos A. M.; Tijs, Stef H.) A symmetrization for finite two-person games. *Z. Oper. Res.* **36** (1992), *no.* 2, 111–123. (Victor J. Baston) **93c:90107** 90D05

Jürgens, Hartmut (*with* Peitgen, Heinz-Otto; Saupe, Dietmar; Maletsky, Evan; Perciante, Terry; Yunker, Lee) ★ Fractals for the classroom: strategic activities. Vol. 1. With a foreword by Benoit B. Mandelbrot. *Springer-Verlag, New York*, 1991. xii+128 *pp. ISBN* 0-387-97346-X (Nima Geffen) **93g:00005a** 00A05 (28–01, 28A80, 58–01, 58Fxx)

— (*with* Peitgen, Heinz-Otto; Saupe, Dietmar; Maletsky, Evan; Perciante, Terry; Yunker, Lee) ★ Fractals for the classroom: strategic activities. Vol. 2. With a foreword by Mitchell J. Feigenbaum. *Springer-Verlag, New York; National Council of Teachers of Mathematics, Reston, VA*, 1992. xii+187 *pp. ISBN* 0-387-97554-3 (Nima Geffen) **93g:00005b** 00A05 (28–01, 28A80, 58–01, 58Fxx)

— (*with* Peitgen, Heinz-Otto; Saupe, Dietmar) ★ Bausteine des Chaos—Fraktale. (German) [The building blocks of chaos—fractals] With a foreword by Benoit B. Mandelbrot. Translated from the 1992 English original by Ernst F. Gucker and Thomas Eberhardt. With an appendix by Yuval Fisher. *Springer-Verlag, Berlin; Klett-Cotta Verlag, Stuttgart*, 1992. xviii+514 *pp. ISBN* 3-540-55781-4 (Editors) **93i:00001** 00A05 (28–01, 28A80, 58–01, 58Fxx)

— (*with* Peitgen, Heinz-Otto; Saupe, Dietmar; Maletsky, Evan; Perciante, Terry; Yunker, Lee) ★ Fraktale. (German) [Fractals] Selbstähnlichkeit, Chaosspiel, Dimension. [Self-similarity, chaos play, dimension] Ein Arbeitsbuch. [A workbook] With a foreword by Benoit B. Mandelbrot. Translated from the 1991 English original by Ernst F. Gucker in collaboration with Gisela Gründl. With an introduction by Günter Schmidt. Reihe Chaos und Fraktale. [Chaos and Fractals Series] *Springer-Verlag, Berlin; Ernst Klett Schulbuchverlag, Stuttgart*, 1992. xiv+132 *pp. ISBN* 3-540-55783-0 (Editors) **93i:00002a** 00A05 (28–01, 28A80, 58–01, 58Fxx)

— (*with* Peitgen, Heinz-Otto; Saupe, Dietmar; Maletsky, Evan; Perciante, Terry; Yunker, Lee) ★ Chaos. (German) Iteration, Sensitivität, Mandelbrot-Menge. [Iteration, sensitivity, Mandelbrot set] Ein Arbeitsbuch. [A workbook] With a foreword by Mitchell J. Feigenbaum. Translated from the 1992 English original by Heinrich Niederhausen. With an introduction by Günter Schmidt. Reihe Chaos und Fraktale. [Chaos and Fractals Series] *Springer-Verlag, Berlin; Ernst Klett Schulbuchverlag, Stuttgart*, 1992. xvi+193 *pp. ISBN* 3-540-55784-9 (Editors) **93i:00002b** 00A05 (28–01, 28A80, 58–01, 58Fxx)

— (*with* Peitgen, Heinz-Otto; Saupe, Dietmar) ★ Fractals for the classroom. Part 2. Complex systems and Mandelbrot set. *Springer-Verlag, New York; National Council of Teachers of Mathematics, Reston, VA*, 1992. xii+500 *pp. ISBN* 0-387-97722-8 (M. Zähle) **93k:00016** 00A69 (00A35, 28A80, 58F13)

— (*with* Peitgen, Heinz-Otto; Saupe, Dietmar) ★ Chaos and fractals. New frontiers of science. With a foreword by Mitchell J. Feigenbaum. Appendix A by Yuval Fisher. Appendix B by Carl J. G. Evertsz and Benoit B. Mandelbrot. *Springer-Verlag, New York*, 1992. xvi+984 *pp. ISBN* 0-387-97903-4 (Frederick R. Marotto) **93k:58157** 58F13 (00A69, 28A80)

Jürgensen, Helmut (*with* Gruska, Jozef) Maturing of informatics. (English summary) *Images of programming*, 155–169, *North-Holland, Amsterdam*, 1991. (*see* **93i:68008**) 01A60 (68–03, 94–03)

— (*with* Ito, Masami[1]; Shih, Hui Jan; Thierrin, G.) Languages whose n-element subsets are codes. *Theoret. Comput. Sci.* **96** (1992), *no.* 2, 325–344. (Jean Moulin Ollagnier) **93f:68059** 68Q45 (68R15, 94B60)

Juriev, D. V. *see* **Yur'ev, D. V.**

Juriev, Denis *see* **Yur'ev, D. V.**

Jurišica, Igor (*with* Greiner, Russell) A statistical approach to solving the EBL utility problem. (English summary) *AAAI-92. Proceedings, Tenth National Conference on Artificial Intelligence* (*San Jose, CA*, 1992), 241–248, *Amer. Assoc. Artif. Intell., Menlo Park, CA*, 1992. (*see* **93j:68007**) 68T05 (68T20)

Jurkat, W. B. (*with* Knizia, R. W.) Generalized absolutely continuous interval functions and multi-dimensional Perron integration. (English summary) *Analysis* **12** (1992), *no.* 3-4, 303–313. (Ralph Henstock) **93h:26016** 26A39 (26A45, 26A46, 26B30)

— (*with* Gérard, R.) Asymptotic implicit function theorems. I. The preparation theorem and division theorem. (English summary) *Asymptotic Anal.* **6** (1992), *no.* 1, 45–71. (Donald A. Lutz) **93j:32012** 32B05 (58C15)

Jurkiewicz, J. *see* **Jurkiewicz, Jerzy Władysław**

Jurkiewicz, Jerzy *see* **Jurkiewicz, Jerzy Władysław**

Jurkiewicz, Jerzy Maciej On some reductive group actions on affine space. II. *Manuscripta Math.* **74** (1992), *no.* 4, 385–390. (From the introduction) **93e:14056** 14L30

Jurkiewicz, Jerzy Władysław Twisted boundary conditions and random surfaces with extrinsic curvature. (English summary) Random surfaces and 2D quantum gravity (Barcelona, 1991). *Nuclear Phys. B Proc. Suppl.* **25A** (1992), 182–194. (Summary) **93f:81150** 81T80 (82B80)

— (*with* Ambjørn, Jan) Four-dimensional simplicial quantum gravity. *Phys. Lett. B* **278** (1992), *no.* 1-2, 42–50. (Annalisa Marzuoli) **93i:83035** 83C27 (83C45)

Jurlewicz, A. (*with* Weron, K.) Two forms of self-similarity as a fundamental feature of the power-law dielectric response. (English summary) *J. Phys. A* **26** (1993), *no.* 2, 395–410. (Summary) **93k:82065** 82C99

Jury, Eliahu I. (*with* Tsypkin, Ya. Z.; Tempo, Roberto; Polyak, B. T.; Lê Hông Vân) Discussion of the robustness problem in control systems. (Russian) *Avtomat. i Telemekh.* **1992**, *no.* 1, 165–176; *translation in Automat. Remote Control* **53** (1992), *no.* 1, *part* 2, 134–143. (Andrzej W. Olbrot) **93m:93078** 93D09 (93–02)

— (*with* Kraus, Frantisek J.; Mansour, Mohamed) Robust Schur stability of interval polynomials. *IEEE Trans. Automat. Control* **37** (1992), *no.* 1, 141–143. (Andrzej Świerniak) **93a:93083** 93D09 (93C55)

— (*with* Katbab, A.) A note on two methods related to stability robustness of polynomials in a sector (relative stability). (English summary) *IEEE Trans. Automat. Control* **38** (1993), *no.* 2, 380–383. (Summary) **93j:93106** 93D09

— (*with* Premaratne, K.) On the Bistritz tabular form and its relationship with the Schur-Cohn minors and inner determinants. (English summary) *J. Franklin Inst.* **330** (1993), *no.* 1, 165–182. (Summary) **93j:93113** 93D09 (93D05)

Just, Bettina Generalizing the continued fraction algorithm to arbitrary dimensions. (English summary) *SIAM J. Comput.* **21** (1992), *no.* 5, 909–926. (Summary) **93k:11065** 11J70 (68Q25)

Just, Wolfram (*with* Fujisaka, Hirokazu) On the scaling laws of higher-order q-phase transitions. *J. Phys. A* **25** (1992), *no.* 12, 3567–3592. (Summary) **93g:82070** 82C26 (58F40)

— Projection operator approach to the thermodynamic formalism of dynamical systems. *J. Statist. Phys.* **67** (1992), *no.* 1-2, 271–287. (Remo Badii) **93b:58091** 58F11 (58F15, 82C10)

Justin, Jacques (*with* Piochi, Brunetto; Pirillo, Giuseppe) On fixed-point-free permutation properties in groups and semigroups. *Ann. Mat. Pura Appl.* (4) **159** (1991), 45–64. (Summary) **93f:20087** 20M99 (20F99)

— (*with* Piochi, Brunetto; Pirillo, Giuseppe) Propriétés de permutabilité avec certaines restrictions. [Permutability properties with some restrictions] *Arch. Math.* (*Basel*) **57** (1991), *no.* 1, 14–20. (From the introduction) **93f:20088** 20M99 (20F99)

zinn-Justin, Jean *see* **Zinn-Justin, Jean**

Jüttler, Bert (*with* Wassum, Peter) Some remarks on geometric continuity of rational surface patches. *Comput. Aided Geom. Design* **9** (1992), *no.* 2, 143–157. (Summary) **93b:65029** 65D17 (53A05)

Jüttner, H.-U. (*with* Münier, M.; Grensing, D.) Exact phase transition points for vertex models on even-coordinated lattices. *J. Phys. A* **25** (1992), *no.* 11, 3133–3142. (Azer Kerimov) **93h:82037** 82C20

Juvan, Martin (*with* Mohar, Bojan) Optimal linear labelings and eigenvalues of graphs. *Discrete Appl. Math.* **36** (1992), *no.* 2, 153–168. (Yixun Lin) **93e:05086** 05C78 (05C35, 05C50, 68R10)

Juyumaya, Jesús Représentation du groupe symétrique par des opérateurs de Fourier-Grassmann. (English and French summaries) [Representation of the symmetric group by Fourier-Grassmann operators] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 7, 755–758. (Summary) **93g:20028** 20C30 (20G40)

– K –

el Kaabouchi, A. *see* **El Kaabouchi, A.**

Kaarli, K. On certain classes of algebras generating arithmetical affine complete varieties. *General algebra and applications* (*Potsdam*, 1992), 152–161, *Res. Exp. Math.*, 20, *Heldermann, Berlin*, 1993. (Ivan Chajda) **93m:08006** 08A30 (08B10)

munthe-Kaas, Hans *see* **Munthe-Kaas, Hans**

Kaas, R. (*with* De Vylder, F.; Goovaerts, M. J.) Stochastic processes defined from a Lagrangian. (English summary) *Insurance Math. Econom.* **11** (1992), *no.* 1, 55–69. (Summary) **93g:60207** 60K99 (62P05)

— (*with* van Heerwaarden, A. E.) Stop-loss order, unequal means, and more dangerous distributions. (English summary) *Insurance Math. Econom.* **11** (1992), *no.* 1, 71–77. (Summary) **93f:62141** 62P05

— (*with* De Schepper, A.; De Vylder, F.; Goovaerts, M. J.) Interest randomness in annuities certain. (English summary) *Insurance Math. Econom.* **11** (1992), *no.* 4, 271–281. (Summary) **93k:62208** 62P05

Kaashoek, Marinus A. (*with* Gohberg, Israel; Goldberg, Seymour) ★ Classes of linear operators. Vol. I. Operator Theory: Advances and Applications, 49. *Birkhäuser Verlag, Basel*, 1990. xiv+468 *pp. ISBN* 3-7643-2531-3 (Henry R. Dowson) **93d:47002** 47–02

— (*with* Gohberg, Israel; Woerdeman, Hugo J.) Time variant extension problems of Nehari type and the band method. (English summary) *H_∞-control theory* (*Como*, 1990), 309–323, *Lecture Notes in Math.*, 1496, *Springer, Berlin*, 1991. (Tiberiu Constantinescu) **93g:47017** 47A57 (47N70, 93B36)

— (*with* Ball, Joseph A.; Gohberg, Israel) Time-varying systems: Nevanlinna-Pick interpolation and sensitivity minimization. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, I* (*Kobe*, 1991), 53–58, *Mita, Tokyo*, 1992. (Summary) **93m:93027** 93B28 (47N70)

— (*with* Ball, Joseph A.; Gohberg, Israel) Nevanlinna-Pick interpolation for time-varying input-output maps: the discrete case. *Time-variant systems and interpolation*, 1–51, *Oper. Theory Adv. Appl.*, 56, *Birkhäuser, Basel*, 1992. (*see* **93d:47148**) 47A57 (93C50)

— (*with* Ball, Joseph A.; Gohberg, Israel) Nevanlinna-Pick interpolation for time-varying input-output maps: the continuous time case. *Time-variant systems and interpolation*, 52–89, *Oper. Theory Adv. Appl.*, 56, *Birkhäuser, Basel*, 1992. (*see* **93d:47148**) 47A57 (93C50)

— (*with* Gohberg, Israel; Lerer, L.) Minimality and realization of discrete time-varying systems. *Time-variant systems and interpolation*, 261–296, *Oper. Theory Adv. Appl.*, 56, *Birkhäuser, Basel*, 1992. (*see* **93d:47148**) 93B15 (47N70)

— (*with* Gohberg, Israel) Asymptotic formulas of Szegő-Kac-Achiezer type. *Asymptotic Anal.* **5** (1992), *no.* 3, 187–220. (Hugo Jan Woerdeman) **93b:47051** 47B35 (47G10)

— (*with* Gohberg, Israel; Ran, André C. M.) Factorizations of and extensions to J-unitary rational matrix functions on the unit circle. *Integral Equations Operator Theory* **15** (1992), *no.* 2, 262–300. (E. R. Tsekanovs'kiĭ) **93b:47024** 47A56 (30E99, 47A56, 47A68, 47B50)

— (*with* Verduyn Lunel, Sjoerd M.) Characteristic matrices and spectral properties of evolutionary systems. *Trans. Amer. Math. Soc.* **334** (1992), *no.* 2, 479–517. (R. Nagel) **93e:47015** 47A45 (34G10, 34K40, 47B38, 47D03, 47N20, 92D25)

— (*with* Gohberg, Israel; van Schagen, F.) On the local theory of regular analytic matrix functions. (English summary) *Linear Algebra Appl.* **182** (1993), 9–25. (Introduction) **93m:47015** 47A56 (15A60, 47A10)

Kaasschieter, E. F. (*with* Huijben, A. J. M.) Mixed-hybrid finite elements and streamline computation for the potential flow problem. *Numer. Methods Partial Differential Equations* **8** (1992), *no.* 3, 221–266. (I. Christie) **93b:65169** 65N30 (76B99, 76M10)

Kabak, S. A. (*with* Mes'kov, V. S.) Inductive and nonmonotone logics (on the example of medical diagnostics). (Russian) *Investigations in current inductive logic* (*Russian*), 27–34, *Akad. Nauk SSSR, Inst. Filos., Moscow*, 1989. (*see* **93m:03039**) 03B48 (03B60)

Kabamba, Pierre T. (*with* Hara, Shinji; Nakajima, Masayuki) Robust stabilization in digital control systems. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, I* (*Kobe*, 1991), 481–486, *Mita, Tokyo*, 1992. (*see* **93g:93005**) 93C62 (93D21)

— (*with* Hara, Shinji) Robust control system design for sampled-data feedback systems. *Robust control* (*Tokyo*, 1991), 56–63, *Lecture Notes in Control and Inform. Sci.*, 183, *Springer, Berlin*, 1992. (*see* **93f:93006**) 93D09 (93C57)

Kabanikhin, S. I. (*with* Grasselli, Maurizio; Lorenzi, Alfredo) An inverse problem for an integro-differential equation. (Russian. Russian summary) *Sibirsk. Mat. Zh.* **33** (1992), *no.* 3, 58–68, 218; *translation in Siberian Math. J.* **33** (1992), *no.* 3, 415–426 (1993). (P. P. Zabreĭko) **93i:45010** 45K05 (35R30)

Kabanov, S. A. (*with* Men'kov, L. Yu.; Shalygin, A. S.) Multicriterional optimization of dynamic systems. *J. Comput. Systems Sci. Internat.* **31** (1993), *no.* 2, 23–29; *translated from Izv. Akad. Nauk SSSR Tekhn. Kibernet.* **1991**, *no.* 6, 60–66 (*Russian*). 90C29 (49K15, 49N55, 90C90)

Kabanova, E. I. Countable nondiscrete fields without nontrivial converging sequences. (Russian. Russian summary) *Mat. Zametki* **52** (1992), *no.* 2, 62–65, 156; *translation in Math. Notes* **52** (1992), *no.* 1-2, 798–801 (1993). (Dan Dăianu) **93j:12007** 12J99 (54H13)

Kabanovich, V. I. Reciprocal logarithmic time-dependence for a simple one-dimensional random walk. (English summary) *J. Phys. A* **25** (1992), *no.* 17, L1055–L1058. (Summary) **93f:60104** 60J15 (82B41)

— (*with* Ermilov, A. N.; Kurbatov, A. M.; Racotoaridzauna, S.) Almeida-Thouless inequality for the quenched Ising models with arbitrary distributions of coupling constants. *Phys. A* **182** (1992), *no.* 1-2, 190–196. (Krystyna Parczyk) **93a:82009** 82B20 (82B26, 82B27)

— (*with* Kurbatov, A. M.) Computation of a lattice function. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **32** (1992), *no.* 4, 645–651; *translation in Comput. Math. Math. Phys.* **32** (1992), *no.* 4, 553–559. (M. I. Israilov) **93i:65036** 65D30 (65U05)

— (*with* Kurbatov, A. M.) On the calculation of a family of triple integrals. (Russian. Russian summary) *Zh. Vychisl. Mat. i Mat. Fiz.* **32** (1992), *no.* 10, 1658–1660; *translation in Comput. Math. Math. Phys.* **32** (1992), *no.* 10, 1487–1489 (1993). (Summary) **93i:65035** 65D30

Kabat, Daniel N. Canonical quantization of abelian Chern-Simons solitons. *Phys. Lett. B* **281** (1992), *no.* 3-4, 265–270. (Summary) **93b:81158** 81T13 (81T70)

— Conditions for the existence of closed timelike curves in 2 + 1 gravity. (English summary) *Phys. Rev. D* (3) **46** (1992), *no.* 6, 2720–2722. (Summary) **93f:83008** 83C10 (81T99, 81V17, 83C15)

Kabatyanskiĭ, G. A. Order statistics and a problem of the time of transmission of messages along a network with packet switching. (Russian) *Probabilistic processes and their applications* (*Russian*), 9–14, *Moskov. Inst. Èlektron. Mashinostroeniya, Moscow*, 1989. (*see* **93b:60003**) 60K99 (62G30, 94A15)

Kabdykairov, F. K. On relations in the two-dimensional Cremona group over a nonclosed field. (Russian. Russian summary) *Vestnik Moskov. Univ. Ser. I Mat. Mekh.* **1991**, *no.* 3, 16–21, 110; *translation in Moscow Univ. Math. Bull.* **46** (1991), *no.* 3, 17–20. (From the text) **93j:14013** 14E07 (14G27)

— On relations in the two-dimensional Cremona group over a nonclosed field. II. (Russian) *Vestnik Moskov. Univ. Ser. I Mat. Mekh.* **1991**, *no.* 4, 81–83; *translation in Moscow Univ. Math. Bull.* **46** (1991), *no.* 4, 61–62. (From the text) **93m:14010** 14E07

Kabe, D. G. On a prediction interval problem of econometric aggregation theory. (English summary) *Indust. Math.* **41** (1991), *no.* 1, 41–52 (1992). (Summary) **93j:62246** 62P20 (62H12, 62J05, 90A19)

— Equivalence of GMANOVA and SUR models. (English summary) *Indust. Math.* **41** (1991), *no.* 1, 53–60 (1992). (Summary) **93f:62092** 62J05 (62P20)

— On solving quadratically constrained linear programs. (English summary) *Indust. Math.* **41** (1991), *no.* 1, 61–71 (1992). (Summary) **93g:90052** 90C08 (90C20)

— On numerical solutions of maximum likelihood equations. (English summary) *Indust. Math.* **41** (1991), *no.* 1, 73–77 (1992). (Summary) **93g:65074** 65H10

— On a constrained least squares hypothesis testing problem. (English summary) *Indust. Math.* **41** (1991), *no.* 2, 145–151 (1992). 62J05

— On some noncentral distribution problems of hypercomplex multivariate normal distribution theory. (English summary) *Indust. Math.* **41** (1991), *no.* 2, 153–162 (1992). 62H10

Kabelka, I. (*with* Guz', A. N.; Markush, Sh.; et al.) ★ Динамика и устойчивость слоистых композитных материалов. (Russian. Russian summary) [Dynamics and stability of layered composite materials] "*Naukova Dumka*", *Kiev*, 1992. 368 *pp. ISBN* 5-12-002204-9 (From the preface) **93g:73084** 73K12 (73D15, 73H10, 73K20, 73S10)

Kabell, Jerald A. Partitioning the vertices of a hypercube. (English summary) *J. Combin. Inform. System Sci.* **16** (1991), *no.* 1, 51–54. (Summary) **93d:05078** 05C35

— (*with* Harary, Frank; McMorris, F. R.) Subtree acyclic digraphs. (English summary) *Ars Combin.* **34** (1992), 93–95. (Summary) **93i:05068** 05C20

Kabenyuk, M. I. Dense pure subgroups of locally compact groups. *Proc. Amer. Math. Soc.* **117** (1993), *no.* 2, 537–539. (Michael Tkačenko) **93d:22003** 22B05

ould Kaber, Sidi M. *see* **Ould Kaber, Sidi M.**

Kabkov, V. Ja. (*with* Dyban, E. P.; Bileka, B. D.) Local one-dimensional method for solving parabolic equations in thermal conductivity process modeling and boundary condition identification problems. (English summary) *Computational systems analysis* 1992 (*Berlin*, 1992), 411–415, *Elsevier, Amsterdam*, 1992. (*see* **93e:00021**) 65M06

Kaburaki, Osamu (*with* Okamoto, Isao; Katz, Joseph) Thermodynamic stability of Kerr black holes. (English summary) *Phys. Rev. D* (3) **47** (1993), *no.* 6, 2234–2241. (Summary) **93m:83054** 83C57

Kabziński, Jacek Optimal control for stabilization of nonlinear systems. (English summary) *System modelling and optimization* (*Zurich*, 1991), 520–529, *Lecture Notes in Control and Inform. Sci.*, 180, *Springer, Berlin*, 1992. (*see* **93e:90003**) 49K15 (93D15)

— Derivatives of eigenvalues and pole-placement problems. (English and Polish summaries) *Systems Sci.* **18** (1992), *no.* 1-2, 109–117 (1993). 93B55

Kac, I. S. *see* **Kats, I. S.**

Kac, Mark (*with* Rota, Gian-Carlo; Schwartz, Jacob T.) ★ Discrete thoughts. Essays on mathematics, science, and philosophy. Revised and corrected reprint of the first edition. With the assistance of Peter Renz. *Birkhäuser Boston, Inc., Boston, MA*, 1992. xii+266 *pp. ISBN* 0-8176-3636-6 (Editors) **93d:00013** 00A30 (00B60, 01A75)

Kac, Victor G. (*with* van de Leur, Johan) On classification of superconformal algebras. *Strings '88* (*College Park, MD*, 1988), 77–106, *World Sci. Publishing, Teaneck, NJ*, 1989. (From the introduction) **93e:17004** 17A70 (17B68, 81R10, 81T40)

— (*with* Schwarz, Albert) Geometric interpretation of the partition function of 2D gravity. *Phys. Lett. B* **257** (1991), *no.* 3-4, 329–334. (Andrew R. Kavalov) **93b:58066** 58F07 (81T40)

— Modular invariance in mathematics and physics. *American Mathematical Society centennial publications, Vol. II* (*Providence, RI*, 1988), 337–350, *Amer. Math. Soc., Providence, RI*, 1992. (J. S. Joel) **93h:17061** 17B67 (11F22, 17B68, 17B81, 58F07, 81R10)

— (*with* Wang, Shu Ping) On automorphisms of Kac-Moody algebras and groups. *Adv. Math.* **92** (1992), *no.* 2, 129–195. (Guy Rousseau) **93f:17041** 17B67 (22E65)

— (*with* Frenkel, Edward; Wakimoto, Minoru) Characters and fusion rules for W-algebras via quantized Drinfel'd-Sokolov reduction. *Comm. Math. Phys.* **147** (1992), *no.* 2, 295–328. (D. V. Yur'ev) **93i:17029** 17B68 (58F07, 81R10)

— (*with* De Concini, Corrado; Procesi, Claudio) Quantum coadjoint action. *J. Amer. Math. Soc.* **5** (1992), *no.* 1, 151–189. (Jie Du) **93f:17020** 17B37 (16W30, 58F06, 81R50)

Kacewicz, B. Z. (*with* Plaskota, L.) Termination conditions for approximating linear problems with noisy information. *Math. Comp.* **59** (1992), *no.* 200, 503–513. (A. Bultheel) **93a:65077** 65J10 (41A65)

Kachakhidze, N. D. On the number of irreducible representations of a symmetric group. II. (Russian. English and Georgian summaries) *Trudy Tbiliss. Univ. Mat. Mekh. Astronom. No.* 26 (1989), 46–59. (Boris Datskovsky) **93g:11041** 11F27 (11F11, 11F20, 20C30)

— On the representation of numbers by sums of quadratic forms of type $x_1^2 + x_1x_2 + x_2^2$. (Russian. English and Georgian summaries) *Soobshch. Akad. Nauk Gruzin. SSR* **139** (1990), *no.* 2, 249–252. (Boris Datskovsky) **93b:11047** 11E25 (11E45, 11F27)

— On the representation of numbers by the direct sum of quadratic forms of type $x_1^2 + x_2^2 + x_3^2 + x_4^2 + x_1x_2 + x_1x_3 + x_2x_4$. (Russian. English and Georgian summaries) *Trudy Tbiliss. Univ. Mat. Mekh. Astronom. No.* 27 (1990), 60–85 (1991). (Summary) **93h:11042** 11E25

Kachanov, B. O. (*with* Khrolovich, K. B.) A method for the identification of dynamical systems with delay. (Russian. Russian summary) *Avtomat. i Telemekh.* **1993**, *no.* 1, 67–72; *translation in Automat. Remote Control* **54** (1993), *no.* 1, *part* 1, 60–64. 93E12

Kachanov, Yu. S. (*with* Ryzhov, O. S.) Formation of solitons in a transitional boundary layer. Theory and experiment. (Russian) *Sibirsk. Fiz.-Tekhn. Zh.* **1992**, *no.* 1, 34–52. (From the introduction) **93d:76017** 76D10 (76–05, 76D33)

Kachkachi, M. (*with* Lhallabi, T.) $N = 2$ superconformal anomalies and curved harmonic superspace. *Internat. J. Modern Phys. A* **7** (1992), *no.* 15, 3601–3621. (Boris Moiseevich Zupnik) **93d:81177** 81T60 (58C50, 81T50, 81T70)

— (*with* Lhallabi, T.) $N = 2$ supergravity in superspace and the BRS symmetry. (English summary) *Internat. J. Modern Phys. A* **7** (1992), *no.* 22, 5461–5474. (Boris Moiseevich Zupnik) **93h:83036** 83E50 (81T50, 81T60)

— (*with* Saidi, E. H.) On the symplectic structure of harmonic superspace. (English summary) *Internat. J. Modern Phys. A* **7** (1992), *no.* 28, 6995–7014. (Boris Moiseevich Zupnik) **93m:58043** 58F05 (58D05, 81S10)

Kachru, Shamit Quantum rings and recursion relations in 2D quantum gravity. *Modern Phys. Lett. A* **7** (1992), *no.* 16, 1419–1425. (C. Gauthier) **93d:81161** 81T40

Kachurik, I. I. (*with* Klimyk, A. U.) General recurrence relations for Clebsch-Gordan coefficients of the quantum algebra $U_q(su_2)$. *J. Phys. A* **24** (1991), *no.* 17, 4009–4015. (From the text) **93g:33017** 33D80 (17B37)

— Asymptotic relations in the q-analogue of the quantum theory of angular momentum. (Russian. English, Russian and Ukrainian summaries) *Ukraïn. Fiz. Zh.* **37** (1992), *no.* 2, 294–303. (A. M. Gavrilik) **93k:81098** 81R50 (33D80)

Kachurovskiĭ, A. G. Boundedness of the fluctuation of means in a statistical ergodic theorem. (Russian) *Optimizatsiya No.* 48(65) (1990), 71–77. (B. M. Gurevich) **93j:28025** 28D05

— A fluctuation ergodic theorem. (Russian) *Dokl. Akad. Nauk SSSR* **317** (1991), *no.* 4, 823–826; *translation in Soviet Math. Dokl.* **43** (1991), *no.* 2, 537–539. (B. Kamiński) **93b:28043** 28D05 (03H05)

— Finite measures that are invariant with respect to the action of an amenable group of homeomorphisms. (Russian) *Optimizatsiya No.* 49(66) (1991), 143–150. (B. M. Gurevich) **93j:28031** 28D15

— Time fluctuations in a statistical ergodic theorem. (Russian. Russian summary) *Mat. Zametki* **52** (1992), *no.* 1, 146–148; *translation in Math. Notes* **52** (1992), *no.* 1-2, 744–745 (1993). (From the text) **93h:28025** 28D05

aït-Kaci, Hassan *see* **Aït-Kaci, Hassan**

el Kacimi-Alaoui, A. *see* **El Kacimi-Alaoui, A.**

Kacprzyk, Janusz (*with* Esogbue, Augustine O.; Fedrizzi, Mario) Fuzzy dynamic programming with stochastic systems. *Combining fuzzy imprecision with probabilistic uncertainty in decision making*, 266–285, *Lecture Notes in Econom. and Math. Systems*, 310, *Springer, Berlin*, 1988. (*see* **93c:90002**) 90C70 (04A72)

— (*with* Fedrizzi, Mario) Brief introduction to fuzzy sets and fuzzy arithmetic. (English summary) *Fuzzy regression analysis*, 14–20, *Stud. Fuzziness*, 1, *Omnitech Press, Warsaw*, 1992. (*see* **93k:62004**) 04A72

— (*with* Fedrizzi, Mario; Nurmi, Hannu) Group decision making and consensus under fuzzy preferences and fuzzy majority. (English summary) *Fuzzy Sets and Systems* **49** (1992), *no.* 1, 21–31. (Summary) **93d:90006** 90A05 (04A72)

— *see also* **Combining fuzzy imprecision with probabilistic uncertainty in decision making**, **93c:90002** *and* **Fuzzy regression analysis**, **93k:62004**

Kaczmarek, M. On kinematics in the theory of multiphase media: comparison between two traditions. *Mech. Res. Comm.* **19** (1992), *no.* 4, 361–368. (From the introduction) **93d:73018** 73B99 (73B27, 73K20)

Kaczorek, Tadeusz General response formula, controllability and observability for singular 2-D linear systems with variable coefficients. (English summary) *Mathematical and intelligent models in system simulation, I, II* (*Brussels*, 1990), 153–158, *IMACS Ann. Comput. Appl. Math.*, 10, 11, *Baltzer, Basel*, 1991. (*see* **93c:93005**) 93B05 (93B07, 93C05)

— ★ Linear control systems. Vol. 1. Analysis of multivariable systems. With a preface by Derek R. Wilson. Industrial Control, Computers and Communications Series, 6. *Research Studies Press, Ltd., Taunton*; *John Wiley & Sons, Inc., New York*, 1992. xx+379 *pp. ISBN* 0-86380-126-9 (P. Brunovský) **93k:93001** 93–01 (93–02, 93B05, 93B15, 93C05, 93C35)

— Local controllability, reachability, and reconstructibility of the general singular model of 2-D systems. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 10, 1527–1530. (Maria Letizia Corradini) **93j:93018** 93B05 (93C10, 93C55)

— Invertibility of 2-D linear systems. (English summary) *Multidimens. Systems Signal Process.* **3** (1992), *no.* 4, 341–351. (Summary) **93e:93041** 93C35 (93B25, 93C05)

Kaczynski, Tomasz Unbounded multivalued Nemytskiĭ operators in Sobolev spaces and their applications to discontinuous nonlinearity. *Rocky Mountain J. Math.* **22** (1992), *no.* 2, 635–643. (T. Runst) **93i:47109** 47H30 (35J65, 35R70, 47N20)

Kada, K. La décomposition de Banach-Tarski utilisant des ensembles ayant la propriété de Baire (d'après M. Foreman et R. Dougherty). [Banach-Tarski decomposition using sets with the Baire property (following M. Foreman and R. Dougherty)] *Séminaire d'Initiation à l'Analyse, Exp. No.* 3, 2 *pp., Publ. Math. Univ. Pierre et Marie Curie*, 104, *Univ. Paris VI, Paris*, 199?. (*see* **93k:00039**) 04A15 (04A20, 54H05)

— Ordre continu croissant entre boréliens. [Increasing continuous order between Borel sets] *Séminaire d'Initiation à l'Analyse, Exp. No.* 13, 3 *pp., Publ. Math. Univ. Pierre et Marie Curie*, 104, *Univ. Paris VI, Paris*, 199?. (*see* **93k:00039**) 54H05

Kadalbajoo, M. K. (*with* Bawa, R. K.) Cubic spline method for a class of nonlinear singularly perturbed boundary value problems. (English summary) *J. Optim. Theory Appl.* **76** (1993), *no.* 3, 415–428. (Summary) **93m:65111** 65L10

— (*with* Bawa, R. K.) Third-order variable-mesh cubic spline methods for nonlinear two-point singularly perturbed boundary value problems. (English summary) *J. Optim. Theory Appl.* **77** (1993), *no.* 2, 439–451. 65L10

Kadane, Joseph B. (*with* Bagchi, Parthasarathy) Laplace approximation for curved surfaces. (English summary) *Bayesian analysis in statistics and econometrics* (*Bangalore*, 1988), 1–12, *Lecture Notes in Statist.*, 75, *Springer, New York*, 1992. (Summary) **93i:62024** 62F15

— (*with* Schervish, Mark J.; Seidenfeld, Teddy) Small worlds and state dependent utilities. (English summary) *Bayesian analysis in statistics and econometrics* (*Bangalore*, 1988), 207–215, *Lecture Notes in Statist.*, 75, *Springer, New York*, 1992. (Summary) **93j:62008** 62A15 (62C10, 90A05, 90A43)

— (*with* Levi, Isaac; Seidenfeld, Teddy) Elicitation for games. *Knowledge, belief, and strategic interaction* (*Castiglioncello*, 1989), 21–26, *Cambridge Stud. Probab. Induc. Decis. Theory, Cambridge Univ. Press, Cambridge*, 1992. (*see* **93i:90006**) 90D40

— (*with* Verdinelli, Isabella) Bayesian designs for maximizing information and outcome. *J. Amer. Statist. Assoc.* **87** (1992), *no.* 418, 510–515. 62F15

— (*with* Wasserman, Larry) Computing bounds on expectations. *J. Amer. Statist. Assoc.* **87** (1992), *no.* 418, 516–522. (Summary) **93c:62058** 62F15

Kadanoff, Leo P. Scaling and multiscaling (fractals and multifractals). *Nonlinear phenomena in fluids, solids and other complex systems* (*Santiago*, 1990), 19–46, *North-Holland Delta Ser., North-Holland, Amsterdam*, 1991. (J. S. Joel) **93c:82076** 82D99 (00A69, 00A73, 76A99)

— (*with* Amick, C. J.; Ching, E. S. C.; Rom-Kedar, Vered) Beyond all orders: singular perturbations in a mapping. *J. Nonlinear Sci.* **2** (1992), *no.* 1, 9–67. (Jürgen Scheurle) **93c:58185** 58F30 (58F15)

Kadeisvili, J. V. ★ Santilli's isotopies of contemporary algebras, geometries and relativities. Hadronic Press Monographs in Mathematics. *Hadronic Press, Inc., Palm Harbor, FL*, 1992. 310 *pp. ISBN* 0-911767-52-5 (From the text) **93f:58077** 58F05 (00A69, 00A79, 70G50, 70H05, 83D05)

Kadets, V. M. The starness of the domain of limits of Riemann integral sums of a vector-valued function. (Russian) *Operator theory, subharmonic functions* (*Russian*), 60–67, "*Naukova Dumka*", *Kiev*, 1991. (A. Precupanu) **93m:26046** 26E20 (28B05, 46G10)

— A remark on Lyapunov's theorem on a vector measure. (Russian) *Funktsional. Anal. i Prilozhen.* **25** (1991), *no.* 4, 78–80; *translation in Functional Anal. Appl.* **25** (1991), *no.* 4, 295–297 (1992). (M. M. Popov) **93f:46067** 46G10

— A remark on a trigonometric basis. (Russian) *Mat. Zametki* **50** (1991), *no.* 3, 54–57, 157; *translation in Math. Notes* **50** (1991), *no.* 3-4, 919–921 (1992). (Summary) **93b:46021** 46B15 (46B25)

— (*with* Korobeinik, Yu. F.) Representing and absolutely representing systems. *Studia Math.* **102** (1992), *no.* 3, 217–223. (Plamen Dzhakov) **93f:46004** 46A35

al-Kadi, Ibrahim A. *see* **Al-Kadi, Ibrahim A.**

Kadianakis, N. Affine connections and frames of reference in classical mechanics. *Rep. Math. Phys.* **30** (1991), *no.* 1, 21–32 (1992). (Hans P. Künzle) **93f:70013** 70G99 (53C80, 58F05, 70G50, 70H99, 73A05)

Kadiev, R. I. Stability with respect to some of the variables of linear functional-differential Itô equations. (Russian. Russian summary) *Functional-differential equations* (*Russian*), 120–127, *Perm. Politekh. Inst., Permʹ*, 1990. (*see* **93m:00024**) 60H99 (34K20, 34K50)

— Stability with respect to some of the variables of linear stochastic functional-differential equations. (Russian. Russian summary) *Functional-differential equations* (*Russian*), 140–148, *Perm. Politekh. Inst., Permʹ*, 1991. (Summary) **93j:60091** 60H99 (34K20, 34K50)

— (*with* Ponosov, A. V.) Stability of linear stochastic functional-differential equations with constantly acting perturbations. (Russian. Russian summary) *Differentsialʹnye Uravneniya* **28** (1992), *no.* 2, 198–207, 364; *translation in Differential Equations* **28** (1992), *no.* 2, 173–179. (From the text) **93i:34147** 34K50 (34K20)

Kadir, Golala A. On the dual of affine planes AG(2, 4). (English and Arabic summaries) *Dirāsāt Ser. B Pure Appl. Sci.* **17** (1990), *no.* 2, 112–117. (Summary) **93e:05015** 05B25 (51E05)

Kadirov, G. M. Construction of a manifold of solutions of a system of differential equations and its application to the solution of the problems. (Russian) *Boundary value problems for nonclassical equations in mathematical physics* (*Russian*) (*Novosibirsk*, 1989), 116–119, *Akad. Nauk SSSR Sibirsk. Otdel., Inst. Mat., Novosibirsk*, 1989. (*see* **93d:35001**) 35G05

— Construction of the fundamental solution of an equation of elliptic type in the plane. (Russian) *Boundary value problems for equations in mathematical physics* (*Russian*), 74–75, *Kuĭbyshev. Gos. Ped. Inst., Kuybyshev*, 1991. (*see* **93f:35006**) 35J70

— (*with* Volkodavov, V. F.) Uniqueness of the solution of a Tricomi-type problem for the Euler-Poisson-Darboux equation with a discontinuous conjugation condition. (Russian. Tajiki summary) *Dokl. Akad. Nauk Tadzhik. SSR* **34** (1991), *no.* 7, 395–398 (1992). 35Q05 (35M10)

Kadison, Lars Cyclic homology of triangular matrix algebras. (English summary) *Topology Hawaii* (*Honolulu, HI*, 1990), 137–148, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93e:19008** 19D55 (16E20, 16S50)

Kadison, Richard V. (*with* Ringrose, John R.) ★ Fundamentals of the theory of operator algebras. Vol. IV. Special topics. Advanced theory—an exercise approach. *Birkhäuser Boston, Inc., Boston, MA*, 1992. *pp.* i–xv *and* 274–859. *ISBN* 0-8176-3498-3 (Robert S. Doran) **93g:46052** 46Lxx (46–01, 47–01, 47Dxx)

Kadiyala, K. R. (*with* Oberhelman, H. Dennis) Optimizing in the class of Fuller modified limited information maximum likelihood estimators. (English summary) *J. Multivariate Anal.* **43** (1992), *no.* 2, 218–236. (Summary) **93g:62041** 62F10 (62F12)

Kadlec, Helena (*with* Townsend, James T.) Implications of marginal and conditional detection parameters for the separabilities and independence of perceptual dimensions. (English summary) *J. Math. Psych.* **36** (1992), *no.* 3, 325–374. 92J30

Kadlec, J. A recursive modified Gram-Schmidt identification with directional tracking of parameters. (English summary) *Identification and system parameter estimation* 1991, *Vol.* 1,2 (*Budapest*, 1991), 1103–1108, *IFAC Sympos. Ser.*, 3, *Pergamon, Oxford*, 1992. (*see* **93h:93009**) 93B30

Kadlec, Jan (*with* Gaston, F. M. F.; Irwin, G. W.) Regularised lattice-ladder adaptive filter. (English summary) *Mutual impact of computing power and control theory* (*Prague*, 1992), 143–149, *Czech. Acad. Sci., Prague*, 1992. (*see* **93f:93005**) 93E11 (93C83)

Kadner, Horst Zur Lösung von Randwertaufgaben gewöhnlicher Differentialgleichungen mittels genähert konstruierter Greenscher Funktionen. [On the solution of boundary value problems of ordinary differential equations via approximate Green functions] *Wiss. Z. Tech. Univ. Dresden* **41** (1992), *no.* 4, 74–77. (Introduction) **93f:65058** 65L10

Kadota, T. T. (*with* Gilbert, Edgar N.) The Lempel-Ziv algorithm and message complexity. (English summary) *IEEE Trans. Inform. Theory* **38** (1992), *no.* 6, 1839–1842. 94A12

Kadoya, Atsushi (*with* Kenmochi, Nobuyuki) Shape optimization on the lateral boundary for multi-phase Stefan problems. *Nonlinear Anal.* **18** (1992), *no.* 10, 937–955. (Bernard Rousselet) **93c:49027** 49Q10 (35K60, 35R35)

Kadymov, V. A. Flows of plastic material in a thin layer under combined force effects. (Russian. English and Azerbaijani summaries) *Izv. Akad. Nauk Azerbaĭdzhan. SSR Ser. Fiz.-Tekhn. Mat. Nauk* **10** (1989), *no.* 2-3, 43–46 (1992). 73E50

Kadyrov, R. R. (*with* Mirsagatov, Sh. Sh.) A priori estimates for solutions of nonlocal boundary value problems for equations of mixed type and their applications. (Russian) *Dokl. Akad. Nauk UzSSR* **1991**, *no.* 5, 6–9. (Bogdan Nowak) **93e:35076** 35M10 (35B45)

Kadyrzhanov, R. K. (*with* Nysanbaev, A. N.) The categorical nature of mathematical cognition. *Philos. Math.* (2) **6** (1991), *no.* 1, 39–52. (V. Ya. Kreinovich) **93e:00007** 00A30

Kaesbauer, D. On robust stability of polynomials with polynomial parameter dependency: two/three parameter cases. (English summary) *Automatica J. IFAC* **29** (1993), *no.* 1, 215–217. 93D09

Kafarov, V. V. (*with* Dorokhov, I. N.; Maseev, Yu. N.) The method of discrete mappings for the prediction of the phase state of a reaction mixture in the production of multifunctional composite materials. (Russian) *Dokl. Akad. Nauk* **324** (1992), *no.* 6, 1207–1212. (Š. Schwabik) **93j:92037** 92E20 (58F13, 58F40)

Kafetzaki, Maria (*with* Barbour, A. D.) A host-parasite model yielding heterogeneous parasite loads. (English summary) *J. Math. Biol.* **31** (1993), *no.* 2, 157–176. (Summary) **93j:92029** 92D30 (60K99)

Kaftal, V. (*with* Larson, David R.; Weiss, Gary) Quasitriangular subalgebras of semifinite von Neumann algebras are closed. *J. Funct. Anal.* **107** (1992), *no.* 2, 387–401. (Alan Hopenwasser) **93g:46060** 46L10 (47D25)

Kagadii, T. S. (*with* Massakovskaya, L. V.; Pavlenko, A. V.) The perturbation method in a three-dimensional problem of linear viscoelasticity of anisotropic bodies. (Russian) *Prikl. Mat. Mekh.* **56** (1992), *no.* 1, 167–171; *translation in J. Appl. Math. Mech.* **56** (1992), *no.* 1, 147–151. (Summary) **93b:73024** 73F99 (73B40, 73K20)

Kagan, A. M. Linearity of regression of the third sample moment of the sample average. (Italian summary) *Metron* **48** (1990), *no.* 1-4, 33–37 (1991). (Summary) **93d:62023** 62E10

Kaganovich, A. S. (*with* Lebedev, N. I.; Sokolov, D. D.) Diffusion of a quantum particle in time-dependent random potential. (English summary) *J. Physique I* **1** (1991), *no.* 9, 1213–1215. 81Q15

Kågedal, Andreas (*with* Maluszyński, Jan; Bonnier, Staffan; Boye, Johan; Kluźniak, Feliks; Nilsson, Ulf) Logic programs with external procedures. (English summary) *Logic programming languages*, 21–48, *MIT Press, Cambridge, MA*, 1993. (*see* **93k:68020**) 68N17

Kagei, Yoshiyuki On weak solutions of nonstationary Boussinesq equations. (English summary) *Differential Integral Equations* **6** (1993), *no.* 3, 587–611. (Bruno Scheurer) **93m:35153** 35Q35 (35D05, 76D05, 76R10)

Kageyama, Sanpei (*with* Banerjee, Shakti; Verma, Arvind) A construction of self complementary semi-regular group divisible designs. (English summary) *Sankhya Ser. B* **51** (1989), *no.* 3, 335–338. 05B05 (62K10)

— (*with* Matsumoto, Tetsuya) A parametric characterization of semi-regular GD designs. (English summary) *Calcutta Statist. Assoc. Bull.* **41** (1991), *no.* 161-164, 197–199. 62K10

— (*with* Sinha, Kishore) Equiblock-sized efficiency-balanced designs. *Comm. Statist. Theory Methods* **20** (1991), *no.* 9, 2933–2941. (Kashinath Chatterjee) **93a:62106** 62K10

— (*with* Ghosh, Dilip Kumar; Divecha, Jyoti) Equireplicate variance-balanced designs from group divisible designs. *J. Japan Statist. Soc.* **21** (1991), *no.* 2, 205–209. (N. R. Mohan) **93d:62137** 62K10 (05B05)

— (*with* Sinha, Kishore; Das, Ashish) Rectangular designs with varying replicates. (English summary) *Ars Combin.* **33** (1992), 27–29. 05B05

— On two efficiency factors of a proper block design. *Bull. Fac. School Ed. Hiroshima Univ. Part II* **14** (1992), 33–37. (Summary) **93b:62107** 62K10

— (*with* Sinha, Kishore) Constructions of some *E*-optimal 3-concurrence most balanced designs. *J. Statist. Plann. Inference* **31** (1992), *no.* 1, 127–132. (N. Gaffke) **93h:62137** 62K10 (05B05, 62K05)

— (*with* Angelis, Lefteris; Moyssiadis, Chronis) Tables of *A*-efficient BTIUB designs. (English summary) *Bull. Fac. School Ed. Hiroshima Univ. Part II* **15** (1993), 45–50. 05B05

— (*with* Banerjee, Shakti) Methods of constructing nested partially balanced incomplete block designs. (English summary) *Utilitas Math.* **43** (1993), 3–6. (Summary) **93m:05019** 05B05 (05E30)

Kagraoka, Yusho (*with* Sugano, Reiji; Kimura, Toshiei) Gauge transformations and gauge-fixing conditions in constraint systems. *Internat. J. Modern Phys. A* **7** (1992), *no.* 1, 61–89. (Marc Henneaux) **93a:81200** 81T70

Kågström, Bo (*with* Dackland, Krister; Elmroth, Erik; Van Loan, Charles) Design and evaluation of parallel block algorithms: *LU* factorization on an IBM 3090 VF/600J. (English summary) *Parallel processing for scientific computing (Houston, TX, 1991)*, 3–10, *SIAM, Philadelphia, PA*, 1992. (*see* **93g:65178**) 65Y05 (65F05)

— (*with* Van Dooren, Paul) A generalized state-space approach for the additive decomposition of a transfer matrix. (English summary) *J. Numer. Linear Algebra Appl.* **1** (1992), *no.* 2, 165–181. (Summary) **93h:65058** 65F30

— (*with* Golub, Gene H.; Van Dooren, Paul) Direct block tridiagonalization of single-input single-output systems. *Systems Control Lett.* **18** (1992), *no.* 2, 109–120. (M. M. Konstantinov) **93b:93021** 93B10 (15A23, 93B40, 93B55)

Kaguei, S. (*with* Ohsato, A.) Algorithm for evaluating the margin rank of a fuzzy matrix. *Fuzzy Sets and Systems* **45** (1992), *no.* 3, 321–326. (Summary) **93a:65058** 65F30 (04A72, 65G10)

Kahale, Nabil Better expansion for Ramanujan graphs. (English summary) *32nd Annual Symposium on Foundations of Computer Science (San Juan, PR, 1991)*, 398–404, *IEEE Comput. Soc. Press, Los Alamitos, CA*, 1991. (Summary) **93f:05094** 05C85

Kahane, Charles S. On the competition-diffusion equations for closely competing species. *Funkcial. Ekvac.* **35** (1992), *no.* 1, 51–64. (Piotr Biler) **93f:35094** 35K40 (35B40, 92D40)

— A note on the maximal function. *Math. Japon.* **37** (1992), *no.* 2, 209–212. (Petr Gurka) **93e:42032** 42B25

Kahane, Jean-Pierre Une construction acrobatique de Robert Kaufman. [An acrobatic construction of Robert Kaufman] *Séminaire d'Analyse Harmonique. Année 1989/90*, 49–55, *Univ. Paris XI, Orsay*, 1990. (Colin C. Graham) **93b:42018** 42A63 (04A15)

— On a theorem of Pólya. *Functional analysis and operator theory (New Delhi, 1990)*, 106–112, *Lecture Notes in Math.*, 1511, *Springer, Berlin*, 1992. (Lo Yang) **93k:30038** 30D15

— À partir et autour de Wiener. [On Wiener and his legacy] *L'émergence de l'analyse harmonique abstraite (1930–1950) (Paris, 1991)*, 65–78, *Cahiers Sém. Hist. Math. Sér.* 2, 2, *Univ. Paris VI, Paris*, 1992. (*see* **93b:01032**) 01A60 (01A70)

— Some continuations of the work of Paley and Zygmund on random trigonometric series. (English summary) *Probabilistic and stochastic methods in analysis, with applications (Il Ciocco, 1991)*, 481–515, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 372, *Kluwer Acad. Publ., Dordrecht*, 1992. (Summary) **93g:60115** 60G99

— Recouvrements aléatoires. [Random coverings] *Gaz. Math. No.* 53 (1992), 115–129. (F. W. Steutel) **93k:60030** 60D05 (30B40, 52A22, 60F20)

Kahane, Sylvain Familles monotones et applications à l'analyse harmonique. [Monotone families and applications to harmonic analysis] *Séminaire d'Initiation à l'Analyse, Exp. No.* 2, 6 *pp., Publ. Math. Univ. Pierre et Marie Curie*, 104, *Univ. Paris VI, Paris*, 199?. (*see* **93k:00039**) 28A05 (54H05)

— (*with* Becker, Howard; Louveau, Alain) Some complete Σ^1_2 sets in harmonic analysis. *Trans. Amer. Math. Soc.* **339** (1993), *no.* 1, 323–336. (Jakub Jasiński) **93k:04002** 04A15 (03E35, 43A46)

Kahlbacher, H. G. (*with* Cheng, T. C. E.) The parallel-machine common due-date assignment and scheduling problem is NP-hard. (English summary) *Asia-Pacific J. Oper. Res.* **9** (1992), *no.* 2, 235–238. (Summary) **93m:90041** 90B35

Kahlig, P. Note on self-similarity and dimensional analysis. *Z. Angew. Math. Mech.* **72** (1992), *no.* 3, 228–230. (From the text) **93b:76080** 76R50 (35K05, 76M99)

Kahn, Bruno The total Stiefel-Whitney class of a regular representation. With an appendix in French. *J. Algebra* **144** (1991), *no.* 1, 214–247. (V. P. Snaith) **93c:20080** 20J05 (57T99)

— Les classes de Chern des représentations galoisiennes complexes. (English summary) [Chern classes of complex Galois representations] *K-Theory* **5** (1991/92), *no.* 6, 555–566. (V. P. Snaith) **93i:12009** 12G05 (20J05)

— The decomposable part of motivic cohomology and bijectivity of the norm residue homomorphism. *Algebraic K-theory, commutative algebra, and algebraic geometry (Santa Margherita Ligure, 1989)*, 79–87, *Contemp. Math.*, 126, *Amer. Math. Soc., Providence, RI*, 1992. (Summary) **93g:14029** 14F20

— K_3 d'un schéma régulier. (English and French summaries) [K_3 of a regular scheme] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 4, 433–436. (Hurşit Önsiper) **93g:19007** 19E08 (14C35, 19D50)

— *see also* **Erratum: "The total Stiefel-Whitney class of a regular representation", 93k:20072**

Kahn, Charles H. Some remarks on the origins of Greek science and philosophy. *Science and philosophy in classical Greece*, 1–10, *Sources Stud. Hist. Philos. Class. Sci.*, 2, *Garland, New York*, 1991. (*see* **93g:01015**) 01A20

Kahn, Constantin (*with* Hulek, Klaus; Weintraub, Steven H.) Singularities of the moduli spaces of certain abelian surfaces. *Compositio Math.* **79** (1991), *no.* 2, 231–253. (Yukihiko Namikawa) **93a:14028** 14J15 (14B05, 14K20, 32J05)

Kahn, Jeff (*with* Linial, Nathan) Balancing extensions via Brunn-Minkowski. *Combinatorica* **11** (1991), *no.* 4, 363–368. (A. Florian) **93e:52017** 52A39 (06A06, 52B11)

— (*with* Seymour, P. D.) A fractional version of the Erdős-Faber-Lovász conjecture. (English summary) *Combinatorica* **12** (1992), *no.* 2, 155–160. (Bruno D'Amore) **93g:05108** 05C65 (05B40, 05C70)

— On a problem of Erdős and Lovász: random lines in a projective plane. (English summary) *Combinatorica* **12** (1992), *no.* 4, 417–423. (Franco Eugeni) **93m:05199** 05D05 (05B40, 05C65, 52C10)

— Coloring nearly-disjoint hypergraphs with $n + o(n)$ colors. *J. Combin. Theory Ser. A* **59** (1992), *no.* 1, 31–39. (Ioan Tomescu) **93b:05127** 05C65 (05C70, 05C80)

Kahn, Jeremy Newtonian graphs for families of complex polynomials. *J. Complexity* **7** (1991), *no.* 4, 425–442. (Timothy Sauer) **93d:26014** 26C10 (12D99, 65H05)

Kahn, Peter B. (*with* Zarmi, Yair) Minimal normal forms in harmonic oscillations with small nonlinear perturbations. *Phys. D* **54** (1991), *no.* 1-2, 65–74. (Summary) **93f:58215** 58F36 (34C20, 70K99)

Kahn, Peter J. (*with* Hopcroft, John E.) A paradigm for robust geometric algorithms. *Algorithmica* **7** (1992), *no.* 4, 339–380. 68U05 (68R10)

Kahng, Andrew B. (*with* Hu, Te Chiang; Robins, Gabriel) Solution of the discrete Plateau problem. (English summary) *Proc. Nat. Acad. Sci. U.S.A.* **89** (1992), *no.* 19, 9235–9236. (Summary) **93h:53010** 53A10

Kaïdi, El Amin Mokhtar Structure des algèbres de Jordan-Banach non commutatives réelles de division. [Structure of real noncommutative Jordan-Banach division algebras] *Ann. Sci. Univ. Clermont-Ferrand II Math. No.* 27 (1991), 119–124 (1992). (Angel Rodríguez-Palacios) **93f:46079** 46H70 (17C60, 17C65)

— (*with* Bouzraa, Habib) Analogues du théorème de Skornyakov-San Soucie. [Analogues of the Skornyakov-San Soucie theorem] *Nonassociative algebraic models (Zaragoza, 1989)*, 25–31, *Nova Sci. Publ., Commack, NY*, 1992. (Antonio Fernández López) **93g:17047** 17C65 (17A30, 17D05)

— (*with* Rochdi, Abdellatif) Sur les algèbres réelles de Jordan non commutatives de division linéaire de dimension 8. (English summary) [On real noncommutative Jordan linear division algebras of dimension 8] *Nonassociative algebraic models (Zaragoza, 1989)*, 183–194, *Nova Sci. Publ., Commack, NY*, 1992. (Michel L. Racine) **93h:17005** 17A15 (17A20, 17A35)

— (*with* Essannouni, H.) Speciality of full subalgebras and rational identities in Jordan algebras. *Mathematika* **39** (1992), *no.* 2, 327–329. (Alexander V. Il'tyakov) **93k:17059** 17C05

Kaigh, W. D. (*with* Cheng, Cheng) Subsampling quantile estimators and uniformity criteria. *Comm. Statist. Theory Methods* **20** (1991), *no.* 2, 539–560. (A. J. van Es) **93b:62061** 62G05 (62G30)

Kaigorodov, S. P. (*with* Sofronov, V. G.) On a problem of simple pursuit. (Russian) *Dynamical systems (Russian)*, 101–105, *Yakutsk. Gos. Univ., Yakutsk*, 1989. (*see* **93b:34004**) 90D26

Kaijser, Sten Continuous functions of probability measures. Proceedings of the Colloquium on Complex Analysis and the Sixth Romanian-Finnish Seminar. *Rev. Roumaine Math. Pures Appl.* **36** (1991), *no.* 9-10, 647–664. (R. Anantharaman) **93i:60007** 60A10 (46E15, 46G99, 46J10)

Kaikina, E. I. The Cauchy problem for the nonlinear nonlocal Schrödinger equation. I, II. (Russian. English summary) *Mat. Model.* **3** (1991), *no.* 11, 83–95, 96–109. (Vladimir Stefanov Gerdjikov) **93d:35152** 35Q55 (35R05, 58G17)

— Generalized solution of the Cauchy problem for a system of surface waves in the conservative case. (Russian. English summary) *Mat. Model.* **3** (1991), *no.* 12, 107–114 (1992). (Summary) **93a:35123** 35Q35 (76B15)

Kailath, Thomas (*with* Viberg, M.; Ottersten, B.) Subspace based detection for linear structural relations. (English summary) *J. Combin. Inform. System Sci.* **16** (1991), *no.* 2-3, 170–189. (Wojciech Zieliński) **93j:62158** 62H15 (62M99)

— (*with* Sayed, A. H.) Fast algorithms for generalized displacement structures. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, II* (*Kobe*, 1991), 27–32, *Mita, Tokyo*, 1992. (*see* **93g:93006**) 93B40
— (*with* Ackner, Reuven) On the Ptàk-Young generalization of the Schur-Cohn theorem. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 10, 1601–1604. (Summary) **93i:93030** 93B25 (93B60)
Kaimanovich, V. A. Boundary and entropy of random walks in random environment. *Probability theory and mathematical statistics, Vol. I* (*Vilnius*, 1989), 573–579, "*Mokslas*", *Vilnius*, 1990. (Yves Derriennic) **93k:60174** 60J15 (60J50, 60J80, 60K05)
— Bowen-Margulis and Patterson measures on negatively curved compact manifolds. *Dynamical systems and related topics* (*Nagoya*, 1990), 223–232, *Adv. Ser. Dyn. Syst.*, 9, *World Sci. Publishing, River Edge, NJ*, 1991. (Viviane Baladi) **93h:58118** 58F17 (58F11)
— Bi-harmonic functions on groups. (French summary) *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 4, 259–264. (Wolfgang Woess) **93e:60160** 60J50 (31C20)
— (*with* Woess, Wolfgang) The Dirichlet problem at infinity for random walks on graphs with a strong isoperimetric inequality. *Probab. Theory Related Fields* **91** (1992), *no.* 3-4, 445–466. (Donald I. Cartwright) **93e:60139** 60J15 (60J10)
Kainen, Paul C. Is the chromatic number of the plane robust? *Geombinatorics* **2** (1992), *no.* 2, 33–36. 05C15
— (*with* Harary, Frank) The cube of a path is maximal planar. (English summary) *Bull. Inst. Combin. Appl.* **7** (1993), 55–56. 05C10
Kainz, A. J. (*with* Titulaer, U. M.) An accurate two-stream moment method for kinetic boundary layer problems of linear kinetic equations. *J. Phys. A* **25** (1992), *no.* 7, 1855–1874. (Luisa Arlotti) **93d:82068** 82C40
— (*with* Titulaer, U. M.) The structure of the stationary kinetic boundary layer for the linear BGK equation. *J. Phys. A* **25** (1992), *no.* 11, 3189–3203. (Summary) **93b:82065** 82C40 (82C23, 82C80)
Kaio, Naoto (*with* Dohi, Tadashi; Osaki, Shunji) Optimal maintenance policies with lead times and repair. (English summary) *Internat. J. Systems Sci.* **23** (1992), *no.* 8, 1299–1308. (Summary) **93f:90091** 90B35
— (*with* Fukumoto, Satoshi; Osaki, Shunji) Optimal checkpointing policies using the checkpointing density. (English summary) *J. Inform. Process.* **15** (1992), *no.* 1, 87–92. 90C90
Kaiser, Friedemann (*with* Eichwald, C.) Bifurcation structure of a driven multi-limit-cycle van der Pol oscillator. II. Symmetry-breaking crisis and intermittency. *Internat. J. Bifur. Chaos Appl. Sci. Engrg.* **1** (1991), *no.* 3, 711–715. (Summary) **93c:34086** 34C23 (34C15, 34C25, 58F14, 70K50)
Kaiser, Gerald (*with* Streater, Raymond F.) Windowed Radon transforms, analytic signals, and the wave equation. *Wavelets*, 399–441, *Wavelet Anal. Appl.*, 2, *Academic Press, Boston, MA*, 1992. (S. Rajasekar) **93g:44008** 44A12 (65R10, 81Q05, 81R20, 94A12)
— Wavelet electrodynamics. (English summary) *Phys. Lett. A* **168** (1992), *no.* 1, 28–34. (Summary) **93f:78006** 78A25 (42C15, 81R30)
— An algebraic theory of wavelets. I. Operational calculus and complex structure. *SIAM J. Math. Anal.* **23** (1992), *no.* 1, 222–243. (Karlheinz Gröchenig) **93a:94008** 94A12 (00A69, 42C15, 44A40)
Kaiser, M. (*with* Pesch, W.; Decker, W.; Feng, Q.; Kramer, Lorenz; Weber, A.) Weakly nonlinear analysis of pattern formation in nematic liquid crystals. *Nematics* (*Orsay*, 1990), 291–301, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 332, *Kluwer Acad. Publ., Dordrecht*, 1991. (*see* **93d:58007**) 76A15
Kaiser, M. J. (*with* Morin, T. L.) Algorithms for computing centroids. (English summary) *Comput. Oper. Res.* **20** (1993), *no.* 2, 151–165. (Summary) **93g:68138** 68U05
Kaiser, Uwe Geometric properties of strong fusion. (English summary) *J. Knot Theory Ramifications* **1** (1992), *no.* 3, 297–302. (G. Burde) **93h:57009** 57M25
— Homology boundary links and fusion constructions. *Osaka J. Math.* **29** (1992), *no.* 3, 573–593. (L. Guillou) **93h:57038** 57Q45
Kaita, Toshiko On a classification of canonical algebras. *Proceedings of the 25th Symposium on Ring Theory* (*Matsumoto*, 1992), 59–65, *Okayama Univ., Okayama*, 1992. (*see* **93i:16001**) 16G10
Kaji, Hajime Characterization of space curves with inseparable Gauss maps in extremal cases. *Arch. Math.* (*Basel*) **58** (1992), *no.* 6, 539–546. (Rosario Strano) **93e:14036** 14H45 (14H50)
— Strangeness of higher order for space curves. *Comm. Algebra* **20** (1992), *no.* 6, 1535–1548. (Rafael Hernandez) **93d:14047** 14H50 (14N05)
— On the inseparable degrees of the Gauss map and the projection of the conormal variety to the dual of higher order for space curves. *Math. Ann.* **292** (1992), *no.* 3, 529–532. (Masaaki Homma) **93j:14038** 14H60 (14H35, 14N05)
— (*with* Homma, Masaaki) On the inseparable degree of the Gauss map of higher order for space curves. *Proc. Japan Acad. Ser. A Math. Sci.* **68** (1992), *no.* 1, 11–14. (R. F. Lax) **93c:14031** 14H50
Kaji, K. (*with* Wong, K. H.; Lock, N.) Output feedback for a class of linear-quadratic systems with jump stochastic parameters. (English summary) *Optimization, Vol.* 1, 2 (*Singapore*, 1992), 645–652, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93d:90005**) 93B52 (93E20)
Kajii, Atsushi A generalization of Scarf's theorem: an α-core extension theorem without transitivity or completeness. *J. Econom. Theory* **56** (1992), *no.* 1, 194–205. (Suchan Chae) **93b:90115** 90D10 (90D06)
— (*with* Grant, Simon; Polak, Ben) Many good choice axioms: when can many-good lotteries be treated as money lotteries? (English summary) *J. Econom. Theory* **56** (1992), *no.* 2, 313–337. (Summary) **93e:90007** 90A08 (90A60)
— (*with* Grant, Simon; Polak, Ben) Many good risks: an interpretation of multivariate risk and risk aversion without the independence axiom. (English summary) *J. Econom. Theory* **56** (1992), *no.* 2, 338–351. (Syed N. U. A. Kirmani) **93e:90021** 90A46 (90A16)
Kajimoto, Hiroshi Supplement to L^2 estimates for the $\overline{\partial}$ operator on a Stein manifold. *Sci. Bull. Fac. Ed. Nagasaki Univ. No.* 47 (1992), 19–22. (Jeffery D. McNeal) **93j:32025** 32F20
Kajitani, Yoji (*with* Arai, Tadashi; Ueno, Shuichi) Generalization of a theorem on the parametric maximum flow problem. (English summary) *Discrete Appl. Math.* **41** (1993), *no.* 1, 69–74. (Summary) **93h:05095** 05C35
Kajitori, K. (*with* Saito, Tatsuhiko; Katsura, Masashi; Kobayashi, Yuji) On totally ordered free monoids. *Words, languages and combinatorics* (*Kyoto*, 1990), 454–479, *World Sci. Publishing, River Edge, NJ*, 1992. (Yves Metivier) **93d:20102** 20M05 (06F05)
Kajiwara, Joji (*with* Nishihara, Masaru; Ohgai, Seiko; Sugawara, Noriko) Uniform approximation of continuous functions and C^∞-functions in nuclear spaces by entire functions. *Portugal. Math.* **48** (1991), *no.* 3, 327–344. (G. Coeuré) **93c:46079** 46G20 (46E50)
— (*with* Watanabe, Hideharu) Real zeros of holomorphic functions with parameters. I. Complex numerical integration using Mathematica. *Mem. Fac. Sci. Kyushu Univ. Ser. A* **46** (1992), *no.* 1, 1–30. (Carlos A. Berenstein) **93h:32002** 32A10 (30C15, 65H05)
Kajiwara, Kenji (*with* Satsuma, Junkichi) q-difference version of the two-dimensional Toda lattice equation. *J. Phys. Soc. Japan* **60** (1991), *no.* 12, 3986–3989. (Summary) **93m:39005** 39A12 (33D15, 58F07, 81R50)
Kajiwara, Tsuyoshi Galois group for finite group action on type III factors. *Math. Japon.* **37** (1992), *no.* 2, 383–384. (Claire Anantharaman-Delaroche) **93d:46105** 46L40
Kak, A. C. (*with* Hutchinson, S. A.) Multisensor strategies using Dempster-Shafer belief accumulation. *Data fusion in robotics and machine intelligence*, 165–209, *Academic Press, Boston, MA*, 1992. (*see* **93g:68002**) 68U05 (68T30)
Kak, Subhash C. *see* **Networks for neural processing, 93h:92001**
Kakarala, Ramakrishna (*with* Bennett, Bruce M.; Hoffman, Donald D.) Modeling performance in observer theory. (English summary) *J. Math. Psych.* **37** (1993), *no.* 2, 220–240. 92J30
Kakas, A. C. (*with* Mancarella, P.) Preferred extensions are partial stable models. (English summary) *J. Logic Programming* **14** (1992), *no.* 3-4, 341–348. (Summary) **93i:68122** 68Q55 (68N17)
Kakazu, Kiyotaka Equivalence classes and generalized coherent states in quantum measurement. *Nuovo Cimento B* (11) **106** (1991), *no.* 10, 1173–1185. (Kotik K. Lee) **93b:81026** 81P15 (81R30)
— One particle as a quantum detector. (English summary) *Nuovo Cimento B* (11) **107** (1992), *no.* 5, 503–512. (Summary) **93i:81016** 81P15
— (*with* Kudaka, Shoju) The Wigner-Araki-Yanase theorem and its extension in quantum measurement with generalized coherent states. *Progr. Theoret. Phys.* **87** (1992), *no.* 1, 61–76. (Summary) **93a:81026** 81P15 (81R30)
— (*with* Kudaka, Shoju; Pascazio, Saverio) Extension of the Wigner-Araki-Yanase theorem in Ozawa's formulation. (English summary) *Phys. Lett. A* **173** (1993), *no.* 2, 92–96. (S. Gudder) **93k:81024** 81P15 (81Q10)
Kakehashi, Tetsujiro An application of the Schwarz-Christoffel formula. (English summary) *Univalent functions, fractional calculus, and their applications* (*Kōriyama*, 1988), 87–96, *Ellis Horwood Ser. Math. Appl., Horwood, Chichester*, 1989. (*see* **93f:30003**) 30C45
Kakehi, Tomoyuki Range characterization of Radon transforms on complex projective spaces. *J. Math. Kyoto Univ.* **32** (1992), *no.* 2, 387–399. (Árpád Kurusa) **93e:53084** 53C65 (44A12, 53C30)
Kakihara, Yûichirô A classification of vector harmonizable processes. *Stochastic Anal. Appl.* **10** (1992), *no.* 3, 277–311. (Jelena Gill) **93g:60075** 60G12 (60G10, 60G99)
Kaklichi, Yoshiaki Another construction of Lie (super) algebras by associative triple systems and Freudenthal-Kantor (super) triple systems. *Nonassociative algebras and related topics* (*Hiroshima*, 1990), 59–63, *World Sci. Publishing, River Edge, NJ*, 1991. (B. N. Allison) **93f:17010** 17A40 (17B60)
Kakimizu, Osamu Finding disjoint incompressible spanning surfaces for a link. *Hiroshima Math. J.* **22** (1992), *no.* 2, 225–236. (D. R. McMillan, Jr.) **93k:57013** 57M25
— Incompressible spanning surfaces and maximal fibred submanifolds for a knot. *Math. Z.* **210** (1992), *no.* 2, 207–223. (Bruno Zimmermann) **93d:57016** 57M25
Kakimizu, Osamu Combinatorial distance between HNN decompositions of a group. (English summary) *J. Pure Appl. Algebra* **82** (1992), *no.* 3, 273–288. (David Meier) **93k:20043** 20E06 (20F05)
Kakita, Takao On the Whitney-Schwartz theorem. *Publ. Res. Inst. Math. Sci.* **28** (1992), *no.* 1, 13–20. (J. Horváth) **93b:46071** 46F10
Kakizaki, Jun-ichi (*with* Kasai, Masumi) The structure of rotating relativistic star. *Sci. Rep. Hirosaki Univ.* **38** (1991), *no.* 1, 8–19. (G. G. Asgekar) **93c:83071** 83C55
Kąkol, Jerzy The Mackey-Arens theorem for non-locally convex spaces. *Collect. Math.* **41** (1990), *no.* 2, 129–132 (1991). (Zoran Kadelburg) **93a:46007** 46A16
— Ultrabarrelled spaces and dense vector subspaces. *Rev. Real Acad. Cienc. Exact. Fís. Natur. Madrid* **84** (1990), *no.* 3, 435–440. (I. Tweddle) **93e:46004** 46A16
— (*with* Sorjonen, Pekka) Locally convex topologies in linear orthogonality spaces. *Comment. Math. Univ. Carolin.* **32** (1991), *no.* 1, 33–37. (Gottfried T. Rüttimann) **93c:46006** 46A16 (46C99)
Kakosyan, A. V. (*with* Klebanov, L. B.; Melamed, Joseph A.) ★ Нелинейное статистическое оценивание параметров линейных регрессионных схем. (Russian) [Nonlinear statistical estimation of the parameters of linear regression schemes] *Erevan. Inst. Narod. Khoz., Erevan*, 1990. 137 *pp. ISBN* 5-8079-0217-3 (Lubomír Kubáček) **93d:62039; EA 93m** 62F10 (62F12)
— (*with* Zinger, A. A.; Klebanov, L. B.) A characterization of distributions by mean values of statistics and certain probabilistic metrics. Stability problems for stochastic models. *J. Soviet Math.* **59** (1992), *no.* 4, 914–920. (Mikhail Sh. Braverman) **93g:60031** 60E05
Kakuta, Neuza (*with* Hefez, Abramo) New bounds for Fermat curves over finite fields. *Enumerative algebraic geometry* (*Copenhagen*, 1989), 89–97, *Contemp. Math.*, 123, *Amer. Math. Soc., Providence, RI*, 1991. (Paulo Viana) **93e:11077** 11G20 (14G15, 14H25)
— (*with* Hefez, Abramo) On the geometry of nonclassical curves. (English summary) *Bol. Soc. Brasil. Mat.* (*N.S.*) **23** (1992), *no.* 1-2, 79–91. (Jonathan M. Wahl) **93m:14030** 14H50
Kakutani, Shizuo (*with* Eigen, Stanley; Hajian, Arshag) Complementing sets of integers—a result from ergodic theory. *Japan. J. Math.* (*N.S.*) **18** (1992), *no.* 1, 205–211. (F. Schweiger) **93g:11087** 11K55 (28D05)
Kakutashvili, Sh. D. (*with* Fedorov, L. I.; Fedorov, E. I.) Calculation of structures for the action of random stochastically dependent loads. (Russian. Russian summary) *Numerical mathematics and mathematical physics* (*Russian*), 73–81, 188, "*Prometei*", *Moscow*, 1988. (*see* **93m:00032**) 73K99 (62N05)
Kalaba, Robert (*with* Moore, James E., II; Kim, Moon-Hyun; Seo, Jong-Gook; Wu, Ying) Linear programming, recurrent associative memories, and feed-forward neural networks. *Comput. Math. Appl.* **22** (1991), *no.* 11, 71–90. (Dorel Duca) **93g:90048** 90C05 (92B20)
— (*with* Udwadia, Firdaus E.) On constrained motion. *Appl. Math. Comput.* **51** (1992), *no.* 1, 85–86. (Naseer Ahmed) **93i:70014** 70F99 (70H30)

— (*with* Udwadia, Firdaus E.) Associative memory approach to the identification of structural and mechanical systems. (English summary) *J. Optim. Theory Appl.* **76** (1993), *no.* 2, 207–223. (Summary) **93i:93034** 93B30 (93C15, 93C85)
— *see also* **Bellman, R., 93i:82066**
Kalachëv, L. V. (*with* Belyanin, M. P.; Mamontov, E. V.) Application of the boundary function method for computing some semiconductor devices. (Russian. English summary) *Mat. Model.* **3** (1991), *no.* 8, 63–71. (Summary) **93b:78010** 78A55 (35J25, 35Q60)
— (*with* Obukhov, I. A.) Asymptotic behavior of a solution of the Poisson equation for a semiconductor structure in an external field. (Russian. English summary) *Mat. Model.* **3** (1991), *no.* 12, 78–85 (1992). (Summary) **93b:78011** 78A55 (78A30)
— (*with* Butuzov, V. F.) Asymptotic derivation of the ambipolar diffusion equation and boundary conditions in the physics of semiconductors. (Russian. English and Russian summaries) *Mat. Model.* **4** (1992), *no.* 8, 66–74. (Summary) **93k:35250** 35Q60
— (*with* Obukhov, I. A.) Asymptotic behavior of a solution of the Poisson equation in a model of a three-dimensional semiconductor structure. (Russian. Russian summary) *Zh. Vychisl. Mat. i Mat. Fiz.* **32** (1992), *no.* 9, 1509–1514; *translation in Comput. Math. Math. Phys.* **32** (1992), *no.* 9, 1361–1366 (1993). (Summary) **93h:78006** 78A30 (78A60, 82D99)
— A relaxation wave solution of the FitzHugh-Nagumo equations. (English summary) *J. Math. Biol.* **31** (1993), *no.* 2, 133–147. (Summary) **93j:92011** 92C20 (35Q80)
Kalai, E. (*with* Neme, Alejandro) The strength of a little perfection. *Internat. J. Game Theory* **20** (1992), *no.* 4, 335–355. (Larry Samuelson) **93b:90116** 90D10 (90D20, 90D35)
Kalai, Gil (*with* Björner, Anders) Extended Euler-Poincaré relations for cell complexes. *Applied geometry and discrete mathematics*, 81–89, *DIMACS Ser. Discrete Math. Theoret. Comput. Sci.*, **4**, *Amer. Math. Soc., Providence, RI*, 1991. (G. Ewald) **93e:57038** 57Q05 (52B05)
— Upper bounds for the diameter and height of graphs of convex polyhedra. (English summary) *Discrete Comput. Geom.* **8** (1992), *no.* 4, 363–372. (P. McMullen) **93i:52017** 52B05
Kalaĭ, Kh. Kh. Topological equivalence of A-diffeomorphisms of two-dimensional manifolds on canonical sets. (Russian) *Methods in qualitative theory and bifurcation theory* (*Russian*), 50–61, *Gor'kov. Gos. Univ., Gorki*, 1989. (From the text) **93g:58074** 58F09
Kalaĭda, A. F. (*with* Moroz, I. P.) Some classes of integrable systems of linear equations. (Ukrainian. Russian and Ukrainian summaries) *Visnik Kiïv. Unty. Mat. Mekh. No.* 32 (1990), 44–52. (Summary) **93d:34010** 34A30 (34A05)
— Eigenelements and eigenvalues of a pair of operators. (Russian) *Vychisl. Prikl. Mat.* (*Kiev*) *No.* 71 (1990), 14–19. (Summary) **93d:47020** 47A50 (34B05, 34K05, 34L05, 47A75, 47N20)
— (*with* Golovach, G. P.) Fredholm-type linear integro-differential equations of the first kind. (Russian) *Vychisl. Prikl. Mat.* (*Kiev*) *No.* 71 (1990), 20–27. (Summary) **93b:45002** 45B05
— Matrix algorithms for the numerical integration of rapidly oscillating functions. (Russian) *Vychisl. Prikl. Mat.* (*Kiev*) *No.* 75 (1991), 12–20. (Summary) **93b:65043** 65D30 (65D32)
— Two-sided linear methods for the numerical solution of the Cauchy problem for normal equations. (Russian) *Vychisl. Prikl. Mat.* (*Kiev*) *No.* 73 (1992), 3–14. (Summary) **93b:65098** 65L05
Kalajdžievski, Sašo Automorphism group of a free group: centralizers and stabilizers. *J. Algebra* **150** (1992), *no.* 2, 435–502. (Martin R. Pettet) **93h:20039** 20F28 (20E36)
— Topographs and groups. *J. Pure Appl. Algebra* **80** (1992), *no.* 1, 47–57. (Raffaele Scapellato) **93f:20007** 20B27 (05C25, 20F05)
Kalalb, M. G. (*with* Kochorbé, F. G.; Palistrant, M. E.) Superconductivity on the basis of a model with three intersecting energy zones with a nonphonon mechanism. (Russian. English and Russian summaries) *Teoret. Mat. Fiz.* **91** (1992), *no.* 3, 483–499; *translation in Theoret. and Math. Phys.* **91** (1992), *no.* 3, 664–676. (Tatiana Bilgildeyeva) **93i:82081** 82D55
Kalamkarov, A. L. (*with* Parton, V. Z.) The general homogenized composite shell model and the applications. *Internat. J. Solids Structures* **29** (1992), *no.* 14-15, 1947–1955. (Ekaterina Guibianskaya) **93e:73024** 73K15 (73B27, 73K20)
Kalanov, T. Z. On a quantum-statistical theory of a monoatomic ideal gas. I. (Russian) *Dokl. Akad. Nauk UzSSR* **1991**, *no.* 4, 20–22. 82B10
Kalanovich, V. D. (*with* Popovich, B. D.) Control of an above-knee prosthesis. (Russian. Russian summary) *Avtomat. i Telemekh.* **1993**, *no.* 1, 127–141; *translation in Automat. Remote Control* **54** (1993), *no.* 1, *part* 2, 119–132. 93C95
Kalantari, Bahman Generalization of Karmarkar's algorithm to convex homogeneous functions. *Oper. Res. Lett.* **11** (1992), *no.* 2, 93–98. (Summary) **93b:90064** 90C25
— (*with* Khachiyan, L. G.) Diagonal matrix scaling and linear programming. (English summary) *SIAM J. Optim.* **2** (1992), *no.* 4, 668–672. (Vladimir I. Venets) **93h:90058** 90C05
Kalantarov, V. K. On the collapse of solutions of systems of nonlinear equations of parabolic-hyperbolic type. (Russian. English and Azerbaijani summaries) *Izv. Akad. Nauk Azerbaĭdzhan. SSR Ser. Fiz.-Tekhn. Mat. Nauk* **10** (1989), *no.* 2-3, 33–37 (1992). (Andreas Müller-Rettkowski) **93j:35117** 35M10 (35B30, 35K55, 35L70)
— On the minimal global attractor of a system of phase field equations. (Russian. English summary) *Zap. Nauchn. Sem. Leningrad. Otdel. Mat. Inst. Steklov.* (*LOMI*) **188** (1991), *Kraev. Zadachi Mat. Fiz. i Smezh. Voprosy Teor. Funktsiĭ.* 22, 70–86, 186. (Antoni Sym) **93f:35121** 35K60 (35B30, 35B45, 58F12, 58F39)
Kalara, S. (*with* Lopez, Jorge L.; Nanopoulos, D. V.) Modular invariance and nonrenormalizable interactions. (English summary) *Phys. Lett. B* **287** (1992), *no.* 1-3, 82–88. (Summary) **93c:81174** 81T30
Kalaš, Ivan (*with* Kelemen, Jozef; Ftáčnik, Milan; Mikulecký, Peter) ★ Základy umelej inteligencie. (Slovak. Slovak summary) [Fundamentals of artificial intelligence] *Alfa—Vydavatel'stvo Technickej a Ekonomickej Literatúry, Bratislava*, 1992. 400 *pp. ISBN* 80-05-00957-7 68–01 (68Txx)
Kalas, Josef Asymptotic behaviour of the equation $\dot{z} = G(t, z)[h(z) + g(t, z)]$. (English summary) *Arch. Math.* (*Brno*) **25** (1989), *no.* 4, 195–206. (Bernard J. Harris) **93g:34010** 34A20 (34D99)
— (*with* Ráb, Miloš) Asymptotic properties of dynamical systems in the plane. *Demonstratio Math.* **25** (1992), *no.* 1-2, 169–185. (From the introduction) **93e:34069** 34D05 (34A34)
Kalashnikov, A. S. On systems of the "reaction-diffusion" class with unbounded functions in the boundary conditions. (Russian. Russian summary) *Vestnik Moskov. Univ. Ser. I Mat. Mekh.* **1991**, *no.* 6, 17–22, 102; *translation in Moscow Univ. Math. Bull.* **46** (1991), *no.* 6, 17–21. (Summary) **93k:35138** 35K57
Kalashnikov, V. V. (*with* Fomenko, A. T.; Nosovskiĭ, G. V.) Statistical analysis and dating of the observations on which Ptolemy's *Almagest* star catalogue is based. *Probability theory and mathematical statistics, Vol. I* (*Vilnius*, 1989), 360–374, "*Mokslas*", *Vilnius*, 1990. (R. Nadal) **93a:01007** 01A20 (00A69, 85–03)
— (*with* Kalashnikova, N. I.) Convergence of the Newton method for the nonlinear complementarity problem. (Russian) *Optimizatsiya No.* 49(66) (1991), 69–78. (Summary) **93c:90091** 90C33 (65K05)
— (*with* Fomenko, A. T.; Nosovskiĭ, G. V.) The dating of Ptolemy's *Almagest* based on the coverings of the stars and on lunar eclipses. (English summary) *Acta Appl. Math.* **29** (1992), *no.* 3, 281–298. (J. S. Joel) **93m:01010** 01A20 (01A35)
— Statistical estimates of transient periods for regenerative models by the coupling method. (English summary) *Math. Methods Statist.* **1** (1992), 39–48. (Summary) **93k:60216** 60K05
— (*with* Kostornoĭ, S. D.) A numerical method for solving a problem on the flow of an ideal fluid around arbitrarily distributed bodies. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **32** (1992), *no.* 6, 967–975; *translation in Comput. Math. Math. Phys.* **32** (1992), *no.* 6, 837–844. (Summary) **93d:76049** 76M25 (65P05, 76B10)
Kalashnikova, N. I. (*with* Kalashnikov, V. V.) Convergence of the Newton method for the nonlinear complementarity problem. (Russian) *Optimizatsiya No.* 49(66) (1991), 69–78. (Summary) **93c:90091** 90C33 (65K05)
Kalau, Wolfgang On Gupta-Bleuler quantization of systems with second-class constraints. (English summary) *Internat. J. Modern Phys. A* **8** (1993), *no.* 2, 391–406. (Rudolf Schmid) **93k:81238** 81T70 (58F05, 81S10)
Kalaydjian, F. (*with* Marle, Charles-Michel) Microscopic flow and generalized Darcy's equations. *The mathematics of oil recovery* (*Cambridge*, 1989), 495–514, *Inst. Math. Appl. Conf. Ser. New Ser.*, 31, *Oxford Univ. Press, New York*, 1992. (*see* **93b:76086**) 76S05
Kalbaugh, D. V. Optimal search among false contacts. (English summary) *SIAM J. Appl. Math.* **52** (1992), *no.* 6, 1722–1750. (René Victor Valqui Vidal) **93i:90057** 90B40 (49J10)
Kalda, J. (*with* Isichenko, M. B.) Statistical topography. II. Two-dimensional transport of a passive scalar. *J. Nonlinear Sci.* **1** (1991), *no.* 4, 375–396. (Summary) **93a:76091** 76Rxx (00A69, 28A80)
Kaldewaij, Anne ★ Programming. The derivation of algorithms. Prentice Hall International Series in Computer Science. *Prentice Hall International, Englewood Cliffs, NJ*, 1990. xii+216 *pp. ISBN* 0-13-204108-1 (Mukkai S. Krishnamoorthy) **93a:68001** 68–01 (68Q20, 68Q25)
— (*with* Udding, Jan Tijmen) Rank order filters and priority queues. (English summary) *Distrib. Comput.* **6** (1992), *no.* 2, 99–105. (Summary) **93g:68009** 68M20 (68Q22, 68Q35)
Kaldis, Byron An epistemic paradox. *Logique et Anal.* (*N.S.*) **31** (1988), *no.* 123-124, 251–256. 03B45
Kale, B. K. (*with* Gather, U.) Outlier generating models—a review. *Contributions to stochastics*, 57–86, *Wiley, New York*, 1992. (*see* **93m:60007**) 62E15 (62F99)
— (*with* Hanagal, David D.) Large sample tests for testing symmetry and independence in some bivariate exponential models. (English summary) *Comm. Statist. Theory Methods* **21** (1992), *no.* 9, 2625–2643. 62F03
— (*with* Suresh, R. P.) Percentile selection differential. (English summary) *Sankhyā Ser. A* **54** (1992), *no.* 2, 271–287. (Summary) **93h:62189** 62P10
Kalé, Laxmikant V. (*with* Ramkumar, Balkrishna) A join algorithm for combining AND parallel solutions in AND/OR parallel systems. (English summary) *Internat. J. Parallel Programming* **21** (1992), *no.* 1, 67–107. 68N17 (68Q22)
Kale, Mohan M. (*with* Deshmukh, Shailaja R.) Estimation of probability of extinction of a multitype branching process. *Comm. Statist. Theory Methods* **20** (1991), *no.* 10, 3405–3419. (B. L. S. Prakasa Rao) **93c:62139** 62M05
— (*with* Deshmukh, Shailaja R.) Estimation in a continuous state space branching process. (English summary) *Biometrical J.* **34** (1992), *no.* 8, 1001–1006. (Summary) **93m:62189** 62M05 (60J80)
— (*with* Deshmukh, Shailaja R.) Estimation of extinction probability in Markov branching process. (English summary) *Statist. Probab. Lett.* **15** (1992), *no.* 3, 173–175. (Summary) **93j:62211** 62M05
Kalf, Hubert On E. E. Levi's method of constructing a fundamental solution for second-order elliptic equations. (French summary) *Rend. Circ. Mat. Palermo* (2) **41** (1992), *no.* 2, 251–294. (Xinhua Ji) **93m:35054** 35J15 (35A08)
Kalhoff, F. B. (*with* Priess-Crampe, S. H. G.) Ordered loops and ordered planar ternary rings. *Quasigroups and loops: theory and applications*, 445–465, *Sigma Ser. Pure Math.*, 8, *Heldermann, Berlin*, 1990. (*see* **93g:20133**) 06F99 (51A25)
— Approximation theorems for uniform valuations. Mathematische Wissenschaften gestern und heute. 300 Jahre Mathematische Gesellschaft in Hamburg, Teil 3 (Hamburg, 1990). *Mitt. Math. Ges. Hamburg* **12** (1991), *no.* 3, 793–808. (Günter Törner) **93b:51001** 51A25
— Semiorderings and localizations of planar ternary rings. (English summary) *Abh. Math. Sem. Univ. Hamburg* **62** (1992), 233–247. (Victor V. Pambuccian) **93j:51012** 51G05 (06F99, 12K99)
— The Tutte group of projective planes. (English summary) *Geom. Dedicata* **43** (1992), *no.* 2, 225–231. (Ferenc Wettl) **93k:51001** 51A25 (05B35, 51A05)
— On multiple-valued ordered projective planes. *J. Geom.* **44** (1992), *no.* 1-2, 87–101. (H. Salzmann) **93i:51029** 51G05
Kalia, R. N. Expansions of special cases of Gauss' hypergeometric functions using generalized calculus. *The mathematical heritage of C. F. Gauss*, 405–415, *World Sci. Publishing, River Edge, NJ*, 1991. (Harold Exton) **93a:33004** 33C05 (33B20, 33C55, 33E05)
Kaliappan, P. (*with* Vani, P. K.; Ramanujam, G. Alagar) Painlevé analysis and particular solutions of a coupled nonlinear reaction diffusion system. (English summary) *J. Phys. A* **26** (1993), *no.* 3, L97–L99. (Summary) **93m:35107** 35K57 (92C40)
Kalik, K. (*with* Wendland, Wolfgang L.) The approximation of closed manifolds by triangulated manifolds and the triangulation of closed manifolds. (German summary) *Computing* **47** (1992), *no.* 3-4, 255–275. (Johannes Elschner) **93c:41023** 41A15 (57Q15, 57Q55, 65D17, 65N38)

Kalikow, Steven (*with* Eigen, Stanley; Hajian, Arshag) Ergodic transformations and sequences of integers. *Israel J. Math.* **75** (1991), *no.* 1, 119–128. (Peter J. Hellekalek) **93c:28014** 28D05 (11B13)
— (*with* Weiss, Benjamin) Explicit codes for some infinite entropy Bernoulli shifts. *Ann. Probab.* **20** (1992), *no.* 1, 397–402. (U. Krengel) **93b:28047** 28D20
Kaliman, Shulim Fundamental group of the complement of affine plane curves. *Topology '90 (Columbus, OH, 1990)*, 207–214, *Ohio State Univ. Math. Res. Inst. Publ.*, 1, *de Gruyter, Berlin*, 1992. (Richard Randell) **93m:14023** 14H30 (57M05)
— Two remarks on polynomials in two variables. *Pacific J. Math.* **154** (1992), *no.* 2, 285–295. (G. K. Sankaran) **93b:32041** 32J15 (14E35, 32A15, 32J05)
— On the Jacobian conjecture. *Proc. Amer. Math. Soc.* **117** (1993), *no.* 1, 45–51. (L. Andrew Campbell) **93c:14017** 14E07 (13B10, 14E20)
— The limiting behavior of the Kobayashi-Royden pseudometric. *Trans. Amer. Math. Soc.* **339** (1993), *no.* 1, 361–371. (L. L. Stachó) **93k:32050** 32H15 (30F45, 32E10, 32G10)
Kalin, Yu. F. Conditions for the topological distinguishability of complete quadratic systems with a center for $K_1 \equiv 0$. (Russian. English, Russian and Moldavian summaries) *Izv. Akad. Nauk Respub. Moldova Mat.* **1992**, *no.* 3, 43–45, 94. (Summary) **93k:34061** 34C05 (58F21)
Kalinauskaitė, N. On multiple points of some stable random fields. (Russian and Lithuanian summaries) *Litovsk. Mat. Sb.* **31** (1991), *no.* 1, 127–135; *reprinted in Lithuanian Math. J.* **31** (1991), *no.* 1, 89–95 (1992). (John P. Nolan) **93e:60097** 60G60 (60G17, 60J30)
Kalinchuk, V. V. (*with* Belyankova, T. I.) Shear vibrations of a stamp on the surface of a prestressed half-space. (Russian. Russian summary) *Prikl. Mat. Mekh.* **56** (1992), *no.* 2, 313–320; *translation in J. Appl. Math. Mech.* **56** (1992), *no.* 2, 267–273. 73D30 (73T05)
Kalinichenko, M. I. (*with* Polyakov, S. V.) Numerical methods for problems of the propagation of diffracting light beams in chemically active gases with thermal diffusion. (Russian. English and Russian summaries) *Mat. Model.* **4** (1992), *no.* 2, 95–109. (Summary) **93g:78020** 78A45 (78–08)
— Difference schemes for a problem of laser thermochemistry in gases. (Russian. Russian summary) *Zh. Vychisl. Mat. i Mat. Fiz.* **32** (1992), *no.* 11, 1767–1777; *translation in Comput. Math. Math. Phys.* **32** (1992), *no.* 11, 1593–1603 (1993). (Summary) **93m:80014** 80A32 (65P05, 80–08)
Kalinin, A. I. Asymptotic solution of a linear optimal control problem with a long horizon. (Russian. English summary) *Dokl. Akad. Nauk BSSR* **35** (1991), *no.* 6, 488–491, 572. (Introduction) **93b:49003** 49J15 (49M99)
Kalinin, O. L. *see* **Kalinina, O. L.**
Kalinin, S. I. Approximation of the solutions of a homogeneous convolution equation with several unknown functions, the components of whose characteristic element satisfy lower bounds. (Russian. Russian summary) *Ordered spaces and operator equations (Russian)*, 117–122, 164, *Syktyvkar. Gos. Univ., Syktyvkar*, 1989. (*see* **93m:00034**) 30H05
— Approximation of solutions of a homogeneous equation of a q-sided convolution whose characteristic function satisfies lower bounds. (Russian) Application of topology in algebra and differential geometry (Tartu, 1991). *Tartu Ül. Toimetised No.* 940 (1992), 107–110. (Valentin Napalkov) **93j:30054** 30H05
— *see also* **Conference: Teachers of Mathematics**
Kalinina, A. V. (*with* Rabinovich, B. I.; Lebedev, V. G.) Magnetohydrodynamics of a rotating magnetized plasma ring. (Russian) *Dokl. Akad. Nauk* **326** (1992), *no.* 5, 801–807; *translation in Soviet Phys. Dokl.* **37** (1992), *no.* 10, 502–505 (1993). (Introduction) **93m:85006** 85A30 (76W05)
Kalinina, O. L. (*with* Boguslavskiĭ, I. A.) Recurrent filtering and identification of dynamical system parameters. *J. Comput. Systems Sci. Internat.* **30** (1992), *no.* 5, 51–59; *translated from Izv. Akad. Nauk SSSR Tekhn. Kibernet.* **1991**, *no.* 4, 60–69 (*Russian. Russian summary*). (L. Stettner) **93m:93088** 93E11 (93E12)
Kalinnikov, V. G. Active damping of oscillations of a rotating linkage. (Russian. Russian summary) *Vestnik Moskov. Univ. Ser. I Mat. Mekh.* **1992**, *no.* 4, 76–82, 102. (Summary) **93k:73059** 73K12 (70–04, 70B15, 70K20, 70Q05, 73H10, 73K50)
Kalinowski, M. W. The nonsymmetric Kaluza-Klein (Jordan-Thiry) theory in the electromagnetic case. *Internat. J. Theoret. Phys.* **31** (1992), *no.* 4, 611–741. (Matej Pavšič) **93c:83110** 83E15 (83D05)
Kalis, Harijs Edmunds Numerical solution of the heat equation in a multilayer medium by the optimal relaxation method. (Russian. English, Italian and Russian summaries) *Applied problems in mathematical physics: mathematical modeling (Russian)*, 105–116, 194, 200, 206, *Latv. Univ. Zināt. Raksti*, 564, *Latv. Univ., Riga*, 1991. (Summary) **93e:80001** 80–08 (65N99, 80A20)
— On a special difference approximation of a nonselfadjoint differential equation of heat conduction in curvilinear orthogonal coordinates. (Russian. English, Russian and Latvian summaries) *Mathematics. Differential equations (Russian)*, 85–93, vii, *Latv. Univ. Zinat. Raksti*, 570, *Latv. Univ., Riga*, 1992. (*see* **93d:00035**) 65M06
Kalish, Diane (*with* Hingston, Nancy) The Morse index theorem in the degenerate endmanifold case. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 2, 663–668. (Dorin Andrica) **93g:58030** 58E10
— Erratum to: "Homotopy type of path spaces" [Proc. Amer. Math. Soc. **116** (1992), no. 1, 259–271; MR 92k:58019]. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 3, 1015. 58B05 (55P99, 58E05, 58E10)
Kalistru, R. K. (*with* Zolotarevskiĭ, V. A.) Approximate solution of systems of singular integro-differential equations on closed smooth contours. II. (Russian) *Mat. Issled. No.* 122, *Prikl. Zadach. Voln. Dinam.* (1991), 9–16, 120. (Peter Junghanns) **93i:45015** 45L05 (34K05, 45E05, 45F15, 47G10, 65R20)
Kalita, E. A. Limit smoothness of solutions of second-order elliptic systems. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* **1992**, *no.* 3, 10–17. (Introduction) **93m:35035** 35B65 (35J60)
— Properties of solutions of semilinear elliptic systems in nondivergence form. (Russian. Russian and Ukrainian summaries) *Ukraïn. Mat. Zh.* **44** (1992), *no.* 2, 184–191; *translation in Ukrainian Math. J.* **44** (1992), *no.* 2, 164–170. (Josef Voldřich) **93i:35046** 35J45 (35B05, 35J60)
Kalitvin, A. S. (*with* Povolotskiĭ, A. I.) Solutions of Hammerstein equations with partial integrals. (Russian. Russian summary) *Ordered spaces and operator equations (Russian)*, 8–15, 158, *Syktyvkar. Gos. Univ., Syktyvkar*, 1989. (*see* **93m:00034**) 47H30 (45K05)
— (*with* Zabreĭko, P. P.) On the theory of partial integral operators. *J. Integral Equations Appl.* **3** (1991), *no.* 3, 351–382. (Anton Schep) **93c:47062** 47G10 (45P05, 46E30, 47B38, 47B60)
Kalitzin, S. (*with* 't Hooft, Gerard; Isler, Karl) Quantum field-theoretic behavior of a deterministic cellular automaton. (English summary) *Nuclear Phys. B* **386** (1992), *no.* 3, 495–519. (From the text) **93m:81150** 81T99 (68Q80)
Kaljević, Igor (*with* Saigal, Sunil; Ali, Ashraf) An infinite boundary element formulation for three-dimensional potential problems. (English summary) *Internat. J. Numer. Methods Engrg.* **35** (1992), *no.* 10, 2079–2100. 65N38
Kalka, Morris (*with* Bland, John; Sharpe, Richard W.) Complete metrics of negative Ricci curvature on open 3-manifolds. *Differential geometry, global analysis, and topology (Halifax, NS, 1990)*, 1–12, *CMS Conf. Proc.*, 12, *Amer. Math. Soc., Providence, RI*, 1991. (George M. Rassias) **93a:53028** 53C21 (57R70)
Kalker, J. J. ★ Three-dimensional elastic bodies in rolling contact. Solid Mechanics and its Applications, 2. *Kluwer Academic Publishers Group, Dordrecht*, 1990. xxvi+314 *pp. ISBN* 0-7923-0712-7 (Meir Shillor) **93e:73037** 73T05 (73–04, 73V20, 73V25)
Kalkreuter, Thomas Projective block spin transformations in lattice gauge theories. *Nuclear Phys. B* **376** (1992), *no.* 3, 637–660. (Summary) **93g:81113** 81T25 (81T80)
Kall, P. A survey of approximation methods in stochastic programming. (Russian) *Optimization: models, methods, solutions (Russian)* (*Irkutsk*, 1989), 125–133, "*Nauka*" *Sibirsk. Otdel., Novosibirsk*, 1992. (*see* **93k:90002**) 90C15 (90–02)
— (*with* Mayer, János) A model management system for stochastic linear programming. *System modelling and optimization (Zurich*, 1991), 580–587, *Lecture Notes in Control and Inform. Sci.*, 180, *Springer, Berlin*, 1992. (*see* **93e:90003**) 90C15
— *see also* **System modelling and optimization, 93e:90003**
Kalla, Shyam L. (*with* Galué, Leda; Kiryakova, Virginia S.) Some expansions related to a family of generalized radiation integrals. *Math. Balkanica (N.S.)* **5** (1991), *no.* 3, 190–202. (T. Erber) **93c:33002** 33C10
— (*with* González, Beatríz) Some results involving generalized Laguerre functions. (English summary) *Ganita Sandesh* **6** (1992), *no.* 2, 118–124. (Summary) **93m:33004** 33C45 (33C20)
— (*with* Galué, Leda; Nishimoto, Katsuyuki) Application of fractional calculus to infinite sums. *J. Fract. Calc.* **1** (1992), 17–21. (B. P. Parashar) **93g:26011c** 26A33 (33B15)
— (*with* Aular de Durán, Judith) An application of fractional calculus to the solution of $(n+1)$th-order ordinary and partial differential equations. (English summary) *J. Fract. Calc.* **2** (1992), 67–76. (S. G. Samko) **93j:26005** 26A33 (34A05, 35C99)
— (*with* Villalobos, A.) Some integrals involving Bessel functions. (Spanish. English summary) *Rev. Técn. Fac. Ingr. Univ. Zulia* **15** (1992), *no.* 1, 51–55. (M. E. Muldoon) **93f:33004** 33C10
Kallaher, M. J. (*with* Goodaire, Edgar G.) Systems with two binary operations, and their planes. *Quasigroups and loops: theory and applications*, 161–195, *Sigma Ser. Pure Math.*, 8, *Heldermann, Berlin*, 1990. (*see* **93g:20133**) 20N05 (51A25)
Kallay, Michael (*with* Fuhr, Richard D.) Monotone linear rational spline interpolation. (English summary) *Comput. Aided Geom. Design* **9** (1992), *no.* 4, 313–319. (Summary) **93g:65018** 65D07 (65D17)
— (*with* Gardner, Richard J.) Subdivision algorithms and the kernel of a polyhedron. (English summary) *Discrete Comput. Geom.* **8** (1992), *no.* 4, 417–427. (Béla Uhrin) **93k:52014** 52B55 (52A10)
van der Kallen, Wilberd (*with* Mehta, V. B.) A simultaneous Frobenius splitting for closures of conjugacy classes of nilpotent matrices. *Compositio Math.* **84** (1992), *no.* 2, 211–221. (Mark Reeder) **93j:14017** 14E15 (14L15, 14M15)
— (*with* Mehta, V. B.) On a Grauert-Riemenschneider vanishing theorem for Frobenius split varieties in characteristic p. *Invent. Math.* **108** (1992), *no.* 1, 11–13. (From the introduction) **93a:14017** 14F17
Kallenberg, Lodewijk C. M. Separable Markovian decision problems. The linear programming method in the multichain case. (German summary) *OR Spektrum* **14** (1992), *no.* 1, 43–52. (Onésimo Hernández Lerma) **93b:90106** 90C40 (90B05)
Kallenberg, Olav Some uses of point processes in multiple stochastic integration. *Math. Nachr.* **151** (1991), 7–31. (Jia Gang Wang) **93a:60080** 60H05 (60G55, 60G57, 60J30)
— Some time change representations of stable integrals, via predictable transformations of local martingales. *Stochastic Process. Appl.* **40** (1992), *no.* 2, 199–223. (Ireneusz Szyszkowski) **93d:60087** 60G55 (60G44, 60H05, 60J30)
Kallenberg, Wilbert C. M. (*with* Inglot, Tadeusz; Ledwina, Teresa) Strong moderate deviation theorems. *Ann. Probab.* **20** (1992), *no.* 2, 987–1003. (S. A. Book) **93e:60052** 60F10 (60F17, 62G30)
— (*with* Kourouklis, Stavros) Hodges-Lehmann optimality of tests. *Statist. Probab. Lett.* **14** (1992), *no.* 1, 31–38. (Hartmut Milbrodt) **93g:62066** 62G20 (62F05)
— (*with* Kroese, Dirk P.) Second-order asymptotics in level crossing for differences of renewal processes. *Stochastic Process. Appl.* **40** (1992), *no.* 2, 309–323. (M. B. Woodroofe) **93k:60217** 60K05 (60F05, 62N05)
Kallianpur, Gopinath Infinite-dimensional stochastic differential equations with applications. *Stochastic methods in experimental sciences (Szklarska Poręba*, 1989), 227–238, *World Sci. Publishing, River Edge, NJ*, 1990. (Summary) **93b:60131** 60H15 (60H99)
— (*with* Johnson, Gerald W.) Multiple Wiener integrals on abstract Wiener spaces and liftings of p-linear forms. *White noise analysis (Bielefeld*, 1989), 208–219, *World Sci. Publishing, River Edge, NJ*, 1990. (Dong M. Chung) **93f:60077** 60H05 (28C20)
— Traces, natural extensions and Feynman distributions. *Gaussian random fields (Nagoya*, 1990), 14–27, *Ser. Probab. Statist.*, 1, *World Sci. Publishing, River Edge, NJ*, 1991. (Ali Süleyman Üstünel) **93k:60143** 60H07 (28C20, 46G12, 60G20)
— A skeletal theory of filtering. *Stochastic analysis*, 213–244, *Academic Press, Boston, MA*, 1991. (Summary) **93d:60074** 60G35
— (*with* Selukar, R. S.) Parameter estimation in linear filtering. *J. Multivariate Anal.* **39** (1991), *no.* 2, 284–304. (P. Papantoni-Kazakos) **93a:62038** 62F12 (62H12)
— Nuclear space-valued stochastic differential equations with applications. (English summary) *Probabilistic and stochastic methods in analysis, with applications (Il Ciocco*, 1991), 631–647, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 372, *Kluwer Acad. Publ., Dordrecht*, 1992. (Summary) **93j:60084** 60H15 (35R15, 35R20, 35R60)
— (*with* Xiong, Jie) A nuclear space-valued stochastic differential equation driven by Poisson random measures. *Stochastic partial differential equations and their applications (Charlotte, NC*, 1991), 135–143, *Lecture Notes in Control and Inform. Sci.*, 176, *Springer, Berlin*, 1992. (*see* **93b:60006**) 60H15 (60G35)

— (*with* Pérez-Abreu, V.) The Skorohod integral and the derivative operator of functionals of a cylindrical Brownian motion. *Appl. Math. Optim.* **25** (1992), *no.* 1, 11–29. (M. Zakai) **93g:60119** 60H07 (60H05)

— (*with* Mitoma, Itaru) A Segal-Langevin type stochastic differential equation on a space of generalized functionals. (English summary) *Canad. J. Math.* **44** (1992), *no.* 3, 524–552. (Vladimir I. Bogachëv) **93m:46044** 46F25 (35R15, 35R60, 46G12, 60F05, 60H15)

— Stochastic differential equation models for spatially distributed neurons and propagation of chaos for interacting systems. (English summary) *Math. Biosci.* **112** (1992), *no.* 2, 207–224. (Summary) **93j:92012** 92C20

— (*with* Karandikar, Rajeeva L.) An introduction to white-noise analysis and nonlinear filtering. *Mathematical theory of control* (*Bombay*, 1990), 173–183, *Lecture Notes in Pure and Appl. Math.*, 142, *Dekker, New York*, 1993. (*see* **93g:93003**) 60H99 (60G35, 93E12)

Kalligas, D. (*with* Wesson, Paul S.; Everitt, C. W. F.) Flat FRW models with variable G and Λ. *Gen. Relativity Gravitation* **24** (1992), *no.* 4, 351–357. (R. C. Roeder) **93b:83069** 83F05 (83D05)

Kallinderis, J. G. (*with* Baron, Judson R.) The finite volume approach for the Navier-Stokes equations. *Computational methods in viscous aerodynamics*, 117–146, *Elsevier, Amsterdam*, 1990. (Timothy Nigel Phillips) **93h:76057** 76M25 (76D05)

Kalliongis, John Realizing automorphisms of the fundamental group of irreducible 3-manifolds containing two-sided projective planes. *Math. Ann.* **293** (1992), *no.* 4, 707–727. (Bruno Zimmermann) **93g:57023** 57N10 (57M05)

— Z_2-equivariant hierarchies of irreducible 3-manifolds containing two-sided projective planes. *Math. Proc. Cambridge Philos. Soc.* **112** (1992), *no.* 1, 109–125. (John Hempel) **93h:57028** 57N10

Kallivokas, L. F. (*with* Zeng, Xiaogang; Bielak, Jacobo) A symmetric variational finite element–boundary integral equation coupling method. (English summary) *Comput. & Structures* **46** (1993), *no.* 6, 995–1000. (Summary) **93k:73087** 73V25 (65N38, 73V05, 73V10, 80–08)

Kallmes, M. H. (*with* Wardi, Y.; Cassandras, Christos G.; Gong, Wei Bo) Smoothed perturbation analysis algorithms for estimating the derivatives of occupancy-related functions in serial queueing networks. (English summary) *Ann. Oper. Res.* **39** (1992), *no.* 1-4, 269–293 (1993). (Summary) **93j:90042** 90B22 (60K25)

Kallosh, Renata (*with* Bergshoeff, E. A.) On the covariant BRST quantization of gauge theories including supermembranes. *Supermembranes and physics in 2+1 dimensions* (*Trieste*, 1989), 136–149, *World Sci. Publishing, River Edge, NJ*, 1990. (*see* **93g:81003**) 81T70 (81T30)

— Geometry of scattering at Planckian energies. *Phys. Lett. B* **275** (1992), *no.* 3-4, 284–288. (André Burnel) **93c:81126** 81T13 (83C45)

— Supersymmetric black holes. *Phys. Lett. B* **282** (1992), *no.* 1-2, 80–88. (Summary) **93b:83043** 83C57 (83E50)

— (*with* Peet, Amanda) Dilaton black holes near the horizon. (English summary) *Phys. Rev. D* (3) **46** (1992), *no.* 12, 5223–5227. (Summary) **93i:83060** 83C57 (81T60)

Kalma, J. N. (*with* Dehling, H. G.; Moes, C.; Schaafsma, W.) The Islamic mean: a peculiar L-statistic. (English summary) *Studia Sci. Math. Hungar.* **26** (1991), *no.* 2-3, 297–308. (Noël Veraverbeke) **93h:62099** 62G30 (62E20)

Kalmykov, G. I. Partial ordering of trees and the classification of connected graphs and blocks. (Russian. Russian summary) *Diskret. Mat.* **4** (1992), *no.* 2, 66–73. (Miroslaw Truszczyński) **93k:05045** 05C05 (05C75)

Kal'nei, S. G. Necessary and sufficient conditions for the summability of Jacobi series. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* **1991**, *no.* 5, 75–78; *translation in Soviet Math.* (*Iz. VUZ*) **35** (1991), *no.* 5, 78–81. (Boris Petrovich Osilenker) **93h:42025** 42C15 (42A24)

Kalniņš, Audris (*with* Auziņš, Andrejs; Bārzdiņš, Jānis; Bičevskis, Jānis; Čerāns, Kārlis) Automatic construction of test sets: theoretical approach. *Baltic computer science*, 286–359, *Lecture Notes in Comput. Sci.*, 502, *Springer, Berlin*, 1991. (Summary) **93h:68083** 68Q60

Kalnins, E. G. (*with* McLenaghan, R. G.; Williams, Graeme C.) Symmetry operators for Maxwell's equations on curved space-time. *Proceedings of the 4th Canadian Conference on General Relativity and Relativistic Astrophysics* (*Winnipeg, MB*, 1991), 129–133, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93c:83029** 83C22 (83C60)

— (*with* Manocha, H. L.; Miller, Willard, Jr.) Models of q-algebra representations: tensor products of special unitary and oscillator algebras. *J. Math. Phys.* **33** (1992), *no.* 7, 2365–2383. (A. U. Klimyk) **93d:17021** 17B37 (33D80, 81R50)

— (*with* Miller, Willard, Jr.) Separable coordinates, integrability and the Niven equations. (English summary) *J. Phys. A* **25** (1992), *no.* 21, 5663–5675. (Summary) **93i:35011** 35A30 (35J05)

— (*with* Miller, Willard, Jr.; Williams, Graeme C.) Recent advances in the use of separation of variables methods in general relativity. (English summary) *Philos. Trans. Roy. Soc. London Ser. A* **340** (1992), *no.* 1658, 337–352. (Niky Kamran) **93i:58169** 58G40 (83C05)

— (*with* McLenaghan, R. G.; Williams, Graeme C.) Symmetry operators for Maxwell's equations on curved space-time. (English summary) *Proc. Roy. Soc. London Ser. A* **439** (1992), *no.* 1905, 103–113. (Peter R. Law) **93j:83050** 83C50 (83C60)

Kalodzhero, F. *see* **Calogero, Francesco**

Kalogeropoulos, Grigoris (*with* Stratis, Ioannis G.) On a generalised linear discrete-time boundary value problem. (English summary) *J. Inst. Math. Comput. Sci. Math. Ser.* **5** (1992), *no.* 3, 333–341. 93C55

Kaloni, P. N. (*with* Qin, Yu) Steady convection in a porous medium based upon the Brinkman model. *IMA J. Appl. Math.* **48** (1992), *no.* 1, 85–95. (Aleksandr A. Papin) **93a:35121** 35Q30 (35D05, 76M30, 76R05, 76S05)

— Some remarks on the boundary conditions for magnetic fluids. (English summary) The Eringen anniversary issue. *Internat. J. Engrg. Sci.* **30** (1992), *no.* 10, 1451–1457. (Summary) **93g:76113** 76W05

— (*with* Qin, Yu) Creeping flow past a porous spherical shell. (English and German summaries) *Z. Angew. Math. Mech.* **73** (1993), *no.* 2, 77–84. (Summary) **93m:76024** 76D07 (76S05)

Kaloper, Nemanja Lorentz Chern-Simons term and the breakdown of the cosmic no-hair conjecture. *Proceedings of the 4th Canadian Conference on General Relativity and Relativistic Astrophysics* (*Winnipeg, MB*, 1991), 160–164, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93c:83088** 83C75 (81V17)

— (*with* Duncan, M. J.; Olive, Keith A.) Axion hair and dynamical torsion from anomalies. (English summary) *Nuclear Phys. B* **387** (1992), *no.* 1, 215–235. (Summary) **93g:83092** 83E30 (81T30, 81T50, 83C57)

— (*with* Campbell, Bruce A.; Olive, Keith A.) Classical hair for Kerr-Newman black holes in string gravity. *Phys. Lett. B* **285** (1992), *no.* 3, 199–205. (Gheorghe Zet) **93f:83082** 83E30 (81T30, 81V17, 83C57)

— Stringy cosmic strings and axion cohomology. (English summary) *Phys. Rev. D* (3) **47** (1993), *no.* 6, 2403–2410. (Summary) **93m:83080** 83E30 (81T30, 81T70, 83F05)

Kalouptsidis, Nicholas (*with* Glentis, George Othon) Efficient algorithms for the solution of block linear system with Toeplitz entries. (English summary) *Linear Algebra Appl.* **179** (1993), 85–104. (Summary) **93h:65056** 65F30 (15A24, 15A57)

Kálovics, F. A reliable method for solving nonlinear systems of equations of few variables. (English and German summaries) *Computing* **48** (1992), *no.* 3-4, 291–302. (R. P. Tewarson) **93g:65075** 65H10 (65K10)

Kalpakidis, V. K. (*with* Massalas, C. V.) Tiersten's theory of thermoelectroelasticity: an extension. (English summary) *Internat. J. Engrg. Sci.* **31** (1993), *no.* 1, 157–164. (Gérard A. Maugin) **93j:73068** 73R05 (73B30, 78A25)

Kalpazidou, Sofia Invariant stochastic properties of a class of directed circuits. *J. Appl. Probab.* **28** (1991), *no.* 4, 727–736. (M. Iosifescu) **93a:60093** 60J10 (05C38, 60K99)

— Circulation distribution on groups. *J. Theoret. Probab.* **4** (1991), *no.* 3, 475–483. (Summary) **93d:60115** 60J15 (20P05, 60B15)

— Continuous parameter circuit processes with finite state space. *Stochastic Process. Appl.* **39** (1991), *no.* 2, 301–323. (Min Ping Qian) **93d:60117** 60J27

— On the weak convergence of sequences of circuit processes: a probabilistic approach. *J. Appl. Probab.* **29** (1992), *no.* 2, 374–383. (Min Ping Qian) **93e:60135** 60J10

— Circuit processes and the corresponding one-parameter semigroup of weight operators. *J. Theoret. Probab.* **5** (1992), *no.* 1, 205–216. (M. Iosifescu) **93c:60106** 60J27 (47D07, 47N30)

— On Kendall's conjecture concerning 0^+-equivalence of Markov transition functions: the circuit processes case. *Rev. Roumaine Math. Pures Appl.* **37** (1992), *no.* 10, 915–928. (Min Ping Qian) **93m:60155** 60J27

— On the asymptotic behaviour of spectral representations for Markov processes. *Stochastic Anal. Appl.* **10** (1992), *no.* 1, 1–16. (M. Iosifescu) **93a:60094** 60J10

— On circuit generating processes. (English summary) *Stochastic Anal. Appl.* **10** (1992), *no.* 5, 591–602. (Min Ping Qian) **93k:60167** 60J10

Kalra, Savita (*with* Parnami, J. C.; Vasudeva, H. L.) A multiplication operator. *J. Indian Math. Soc.* (*N.S.*) **56** (1991), *no.* 1-4, 55–64. (J. W. Baker) **93a:43003** 43A15 (43A22, 47B38)

Kalthia, N. L. (*with* Desai, Trupti D.; Timol, M. G.) A note on some matrix aspects of generalized dimensional analysis. (English summary) *Math. Today* **10** (1992), 37–46. 76A05 (00A73)

Kaltinska, Rumena Methods for the approximate solution of linear transportation problems. (Bulgarian. English and Russian summaries) *Annuaire Univ. Sofia Fac. Math. Méc.* **80** (1986), *no.* 1, 103–117 (1991). 90C08

Kalton, Nigel J. Banach spaces for which the ideal of compact operators is an M-ideal. (French summary) *C. R. Acad. Sci. Paris Sér. I Math.* **313** (1991), *no.* 8, 509–513. (Peter Harmand) **93a:46027** 46B20 (46B04, 46B45, 47D15)

— (*with* Godefroy, Gilles; Saphar, David) Idéaux inconditionnels dans les espaces de Banach. (English summary) [Unconditional ideals in Banach spaces] *C. R. Acad. Sci. Paris Sér. I Math.* **313** (1991), *no.* 12, 845–849. (Ehrhard Behrends) **93h:46013** 46B20 (46B10)

— (*with* Randrianantoanina, Beata) Isometries on rearrangement-invariant spaces. (English and French summaries) *C. R. Acad. Sci. Paris Sér. I Math.* **316** (1993), *no.* 4, 351–355. (Summary) **93m:46025** 46E30 (47B38)

— Lattice structures on Banach spaces. *Mem. Amer. Math. Soc.* **103** (1993), *no.* 493, vi+92 *pp.* (Yu. A. Abramovich) **93j:46024** 46B42 (46B04, 46E30)

Kaluđerčić, P. (*with* Demirdžić, I.) A contribution to solving a system of two nonlinear equations. (Serbo-Croatian summary) *Mat. Vesnik* **42** (1990), *no.* 2, 97–100. (Summary) **93a:65071** 65H10

— (*with* Demirdžić, I.) A contribution to solving a system of two nonlinear equations. (English, German and Serbo-Croatian summaries) *Mat. Vesnik* **43** (1991), *no.* 1-2, 19–22. 65H10

Kaluža, M. (*with* Robnik, Marko) Improved accuracy of the Birkhoff-Gustavson normal form and its convergence properties. (English summary) *J. Phys. A* **25** (1992), *no.* 20, 5311–5327. (Summary) **93i:58135** 58F36 (34C20, 70H05, 70K50)

Kaluzhnin, L. A. *see* **Vyshenskiĭ, V. A., 93d:01083**

Kalvelagen, Erwin (*with* Tijms, Henk) ORSTAT: software for operations research and statistics. (English summary) *Oper. Res. Lett.* **12** (1992), *no.* 2, 125–127. 90–04 (90Bxx)

Kalvouridis, T. (*with* Tsitouras, Ch.; Papageorgiou, George) On the efficiency of Runge-Kutta-Nystrom methods with interpolants for solving equations of the form $Y'' = F(T, Y, Y')$ over short timespans. (English summary) *Celestial Mech. Dynam. Astronom.* **53** (1992), *no.* 4, 329–346. (Summary) **93f:70002** 70–08 (34A50, 65L06, 70F15)

Kalyadina, S. A. (*with* Pavlova, N. Yu.) Wassily Leontief's family in Russia. (Russian) *Voprosy Istor. Estestvoznan. i Tekhn.* **1992**, *no.* 1, 82–87. (R. L. Cooke) **93f:01022** 01A70

Kalyakin, L. A. Long-wave asymptotics of solutions of the multidimensional Boussinesq equation. (Russian) *Asymptotic properties of solutions of differential equations* (*Russian*), 29–45, *Akad. Nauk SSSR Ural. Otdel., Bashkir. Nauchn. Tsentr, Ufa*, 1988. (*see* **93m:35033**) 35Q53

Kalyanasundaram, Bala (*with* Schnitger, Georg) Communication complexity and lower bounds for sequential computation. (English summary) *Informatik*, 253–268, *Teubner-Texte Inform.*, 1, *Teubner, Stuttgart*, 1992. (Jean-Marc Piveteau) **93m:68049** 68Q05 (03D15, 68Q15, 68Q30, 94A05)

— (*with* Schnitger, Georg) The probabilistic communication complexity of set intersection. (English summary) *SIAM J. Discrete Math.* **5** (1992), *no.* 4, 545–557. (Joan Boyar) **93j:68080** 68Q30

Kalynyuk, A. N. A study of second-order differential-difference equations with random deviation of the argument. (Russian. Russian summary) *Asymptotic solutions of nonlinear equations with a small parameter* (*Russian*), 43–51, *Akad. Nauk Ukrainy, Inst. Mat., Kiev*, 1991. (Summary) **93g:34126b** 34K50 (34F05, 70L05)

— Application of asymptotic methods in differential-difference equations with random deviation of the argument. (Russian. Russian summary) *Nonlinear problems in the theory of differential equations (Russian)*, 15–22, *Akad. Nauk Ukrain. SSR, Inst. Mat., Kiev*, 1991. (Summary) **93g:34126a** 34K50 (34C29, 34K25)

Kalyuzhnyi, A. A. An infinitesimal object for Delsarte generalized shift operators. (Russian. Russian summary) *Applications of the methods of functional analysis in mathematical physics (Russian)*, 65–70, *Akad. Nauk Ukrainy, Inst. Mat., Kiev*, 1991. (Summary) **93h:22013** 22E05 (17B35, 47D99)

Kalyuzhnyi, B. I. (*with* Blok, V. R.; Panasov, S. N.) A model of the cold war and optimal response. (Russian. Russian summary) *Avtomat. i Telemekh.* **1992**, *no.* 3, 124–136; *translation in Automat. Remote Control* **53** (1992), *no.* 3, *part* 2, 430–441. 93A30

Kam, Moshe (*with* Chang, Wei; Rorres, Chris) Systems of random mappings with a common fixed point. (English summary) *Internat. J. Systems Sci.* **23** (1992), *no.* 11, 2113–2119. (Shi Sheng Zhang) **93k:54077** 54H25 (60H25, 93D05)

Kam, S. M. (*with* Shum, Kar Ping) Stiff elements in semigroups and their expansions. *Words, languages and combinatorics (Kyoto*, 1990), 219–232, *World Sci. Publishing, River Edge, NJ*, 1992. (Patrice Séébold) **93f:20071** 20M05

— (*with* Shum, Kar Ping) On a problem of P. C. Hammer. (English summary) *Southeast Asian Bull. Math.* **16** (1992), *no.* 2, 123–127. (Péter Komjáth) **93m:04001** 04A05 (05A99, 54G20)

Kamachkin, A. M. The method of separation of motions for studying the dynamics of hysteresis systems with periodic external action. (Russian) *Mathematical methods in problems of control and data processing (Russian)*, 39–44, *Ryazan. Radiotekhn. Inst., Ryazan'*, 1990. (*see* **93m:00028**) 34K15

Kamada, Seiichi Projective planes in 4-sphere obtained by deform-spinnings. *Knots* 90 (*Osaka*, 1990), 125–132, *de Gruyter, Berlin*, 1992. (Daniel Silver) **93k:57055** 57Q45 (57M25)

— Surfaces in $\mathbf{R}^4$ of braid index three are ribbon. *J. Knot Theory Ramifications* **1** (1992), *no.* 2, 137–160. (Dončo Dimovski) **93h:57039** 57Q45 (57M15, 57M25)

Kamae, Teturo (*with* Bedford, Tim) Stieltjes integration and stochastic calculus with respect to self-affine functions. *Japan J. Indust. Appl. Math.* **8** (1991), *no.* 3, 445–459. (Ralph Henstock) **93d:60096** 60H05 (26A39, 26A42)

Kamakoti, V. (*with* Pandu Rangan, C.) An optimal algorithm for reconstructing a binary tree. *Inform. Process. Lett.* **42** (1992), *no.* 2, 113–115. 68Q20 (68Q25, 68R10)

Kamal, A. A. M. Idempotents in polynomial rings. *Acta Math. Hungar.* **59** (1992), *no.* 3-4, 355–363. (P. M. Cohn) **93e:16047** 16S36

Kamal, Aref On weak Chebyshev subspaces. I. Equioscillation of the error in approximation. *J. Approx. Theory* **67** (1991), *no.* 2, 129–141. (F. Deutsch) **93b:41036** 41A65

— On weak Chebyshev subspaces. II. Continuous selection for the metric projection and extension to Mairhuber's theorem. *J. Approx. Theory* **67** (1991), *no.* 2, 142–163. (F. Deutsch) **93b:41037** 41A65

— On certain finite-dimensional subspaces of $C_0(Q)$. (English summary) *Math. Japon.* **37** (1992), *no.* 5, 961–964. (J. B. Prolla) **93j:46031** 46E15

— On the proximinality of compact operators over spaces of measurable functions. (English summary) *Numer. Funct. Anal. Optim.* **13** (1992), *no.* 5-6, 585–590. (Grzegorz Lewicki) **93i:47062** 47D15 (41A35, 41A65, 47B07, 47B38)

Kamal, M. R. (*with* Axelrad, D. R.; Frydrychowicz, W.) Stochastic analysis of polymer melts with a binary structure. *Z. Angew. Math. Phys.* **43** (1992), *no.* 3, 536–552. (Yurii Raikher) **93e:82056** 82D60 (60J99, 82C41)

Kamalesh, V. (*with* Suresh Chandra, K.) Limit theorems on serial moment of a time series and their statistical applications. *J. Indian Statist. Assoc.* **29** (1991), *no.* 2, 95–106. (J. K. Ord) **93f:62126** 62M10 (62E20)

Kamanaka, Y. (*with* Kambe, Tsutomu) Nonlinear dynamics of two-dimensional flows: bifurcation, chaos and turbulence. (English summary) *Nonlinear dynamics of structures (Vladimir Maiakovskiĭ*, 1990), 295–312, *World Sci. Publishing, River Edge, NJ*, 1991. (Summary) **93h:76018** 76D05 (58F13, 58F40, 76F20)

Kamareddine, Fairouz A system at the cross-roads of functional and logic programming. (English summary) *Sci. Comput. Programming* **19** (1992), *no.* 3, 239–279. (Summary) **93k:68064** 68Q55 (03B40, 68N17, 68T15)

Kamath, A. (*with* Karmarkar, Narendra) A continuous approach to compute upper bounds in quadratic maximization problems with integer constraints. *Recent advances in global optimization (Princeton, NJ*, 1991), 125–140, *Princeton Ser. Comput. Sci., Princeton Univ. Press, Princeton, NJ*, 1992. (N. I. Yanev) **93b:90049** 90C09 (65K10, 90C20)

Kamath, Chandrika (*with* Weeratunga, Sisira) Projection methods on a distributed memory MIMD multiprocessor. (English summary) *Parallel processing for scientific computing (Houston, TX*, 1991), 92–97, *SIAM, Philadelphia, PA*, 1992. (*see* **93g:65178**) 65F50 (65N22, 65Y10)

Kambe, Tsutomu (*with* Ishii, Katsuya; Iwatsu, R.; Matsumoto, N.) Chaotic streamlines in viscous incompressible flows. *Nonlinear world, Vol.* 1 (*Kiev*, 1989), 490–506, *World Sci. Publishing, River Edge, NJ*, 1990. (*see* **93b:00012**) 76F20 (58F13, 76D05)

— (*with* Kamanaka, Y.) Nonlinear dynamics of two-dimensional flows: bifurcation, chaos and turbulence. (English summary) *Nonlinear dynamics of structures (Vladimir Maiakovskiĭ*, 1990), 295–312, *World Sci. Publishing, River Edge, NJ*, 1991. (Summary) **93h:76018** 76D05 (58F13, 58F40, 76F20)

— (*with* Nakamura, F.; Hattori, Y.) Geodesics and curvature of a group of diffeomorphisms and motion of an ideal fluid. *J. Phys. A* **25** (1992), *no.* 2, L45–L50. (Frans Cantrijn) **93c:58036** 58D05 (35Q30, 53C80, 58B20, 76C99)

Kamberov, Georgi I. Prescribing the strain of a diffeomorphism and solvability of the singular Cauchy problem. *Duke Math. J.* **65** (1992), *no.* 3, 421–448. (Dennis M. DeTurck) **93m:58032** 58E50 (35A10, 35P05, 73C50)

Kambo, N. S. (*with* Handa, B. R.; Al-Hemyari, Z. A.) On Huntsberger type shrinkage estimator. *Comm. Statist. Theory Methods* **21** (1992), *no.* 3, 823–841. (Khursheed Alam) **93h:62046** 62F10

— (*with* Tiku, M. L.) Estimation and hypothesis testing for a new family of bivariate nonnormal distributions. *Comm. Statist. Theory Methods* **21** (1992), *no.* 6, 1683–1705. 62F10

Kamburowski, Jerzy Bounding the distribution of project duration in PERT networks. (English summary) *Oper. Res. Lett.* **12** (1992), *no.* 1, 17–22. (Summary) **93f:90067** 90B15

— (*with* Bein, Wolfgang W.; Stallmann, Matthias F. M.) Optimal reduction of two-terminal directed acyclic graphs. (English summary) *SIAM J. Comput.* **21** (1992), *no.* 6, 1112–1129. (Summary) **93j:68152** 68R10 (05C85, 68Q25, 90B35, 90C35)

Kamchatnov, A. M. Periodic solutions and Whitham equations for the Heisenberg continuous classical spin model. *Phys. Lett. A* **162** (1992), *no.* 5, 389–396. (Krystyna Parczyk) **93g:82006** 82B05 (35B10, 35Q40, 82C24)

— Periodic nonlinear waves in a uniaxial ferromagnet. *Soviet Phys. JETP* **75** (1992), *no.* 5, 868–872; *translated from Zh. Èksper. Teoret. Fiz.* **102** (1992), *no.* 5, 1606–1614 (*Russian*). (Victor A. L'vov) **93k:82069** 82D40 (35B10, 35Q55)

Kameda, Tsunehiko (*with* Katoh, Naoki; Ibaraki, Toshihide) A multiversion cautious scheduler with dynamic serialization constraints for database concurrency control. (English summary) *Discrete Appl. Math.* **40** (1992), *no.* 3, 379–395. 68P15 (68M20, 90B22)

— (*with* Pilarski, Sławomir) Simple bounds on the convergence rate of an ergodic Markov chain. (English summary) *Inform. Process. Lett.* **45** (1993), *no.* 2, 81–87. (Summary) **93k:60169** 60J10 (68Q25)

— (*with* de Werra, D.; Hell, Pavol; Katoh, Naoki; Solot, Ph.; Yamashita, Masafumi) Graph endpoint coloring and distributed processing. (English summary) *Networks* **23** (1993), *no.* 2, 93–98. (Summary) **93i:68031** 68M20 (05C15, 90B12, 94C05)

Kamei, Elzaburo (*with* Fujii, Masatoshi; Furuta, Takayuki) Operator functions associated with Furuta's inequality. *Functional analysis & related topics (Sapporo*, 1990), 148–151, *World Sci. Publishing, River Edge, NJ*, 1991. (Fuad Kittaneh) **93a:47022** 47A63 (47B15)

— (*with* Fujii, Masatoshi) Furuta's inequality for the chaotic order. I, II. *Math. Japon.* **36** (1991), *no.* 4, 603–606, 717–722. (Frank Hansen) **93f:47017** 47A63 (47B15)

— (*with* Fujii, Masatoshi; Furuta, Takayuki) Furuta's inequality and its application to Ando's theorem. (English summary) *Linear Algebra Appl.* **179** (1993), 161–169. (Summary) **93j:47026** 47A63 (47B15)

Kamel, Aladin H. (*with* Sguazzero, P.; Kindelan, M.) Dispersion-bounded numerical integration of the elastodynamic equations with cost-effective staggered schemes. (English summary) *Spectral and high order methods for partial differential equations (Como*, 1989), 165–172, *North-Holland, Amsterdam*, 1990. (*see* **93d:65005**) 65M06 (73D99, 73V15)

Kamel, M. S. (*with* Selim, Shokri Z.) On the mathematical and numerical properties of the fuzzy c-means algorithm. (English summary) *Fuzzy Sets and Systems* **49** (1992), *no.* 2, 181–191. 90C70 (04A72)

Kamel, Nabil (*with* King, Roger) Intelligent database caching through the use of page-answers and page-traces. (English summary) *ACM Trans. Database Systems* **17** (1992), *no.* 4, 601–646. 68P20

Kamen', V. B. Construction of a convolution of generalized functions with moving supports. II. (Russian. Russian summary) *Differential equations and their applications in physics (Russian)*, 23–30, 106–107, *Dnepropetrovsk. Gos. Univ., Dnepropetrovsk*, 1989. (*see* **93g:00024**) 46F10

Kamenetskiĭ, D. S. (*with* Tsynkov, S. V.) On the construction of images of simply connected domains realized by solutions of a system of Beltrami equations. (Russian. English summary) *Akad. Nauk SSSR Inst. Prikl. Mat. Preprint* **1990**, *no.* 155, 18 *pp.* (Summary) **93d:35036** 35J25 (30C65, 65N50, 76M99)

Kamenev, G. K. (*with* Kondrat'ev, D. L.) A method for studying nonclosed nonlinear models. (Russian. English and Russian summaries) *Mat. Model.* **4** (1992), *no.* 3, 105–118. 93A30 (90A14)

— A class of adaptive algorithms for the approximation of convex bodies by polyhedra. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **32** (1992), *no.* 1, 136–152; *translation in Comput. Math. Math. Phys.* **32** (1992), *no.* 1, 114–127. (Summary) **93c:65024** 65D17 (90C08)

Kamenshchik, A. Yu. (*with* Barvinskiĭ, A. O.) One-loop quantum cosmology: the general semiclassical solution of the Wheeler-DeWitt equations and its applications. *Quantum gravity (Moscow*, 1990), 407–422, *World Sci. Publishing, River Edge, NJ*, 1991. (From the text) **93c:83046** 83C45 (83F05)

— (*with* Barvinskiĭ, A. O.; Karmazin, I. P.) One-loop quantum cosmology: ζ-function technique for the Hartle-Hawking wave function of the Universe. (English summary) *Ann. Physics* **219** (1992), *no.* 2, 201–242. (Dmitri V. Vassilevich) **93k:83026** 83C45 (58G26, 81T20)

— (*with* Barvinskiĭ, A. O.; Karmazin, I. P.; Mishakov, I. V.) 1-loop quantum cosmology: the contributions of matter fields to the wavefunctions of the Universe. *Classical Quantum Gravity* **9** (1992), *no.* 2, L27–L32. (Asghar Qadir) **93d:83028** 83C45 (58G26, 83F05)

— (*with* Mishakov, I. V.) ζ-function technique for quantum cosmology: the contributions of matter fields to the Hartle-Hawking wave function of the Universe. *Internat. J. Modern Phys. A* **7** (1992), *no.* 16, 3713–3746. (Philippe-A. Dionne) **93f:83041** 83C45 (58G26, 81T20, 83C47)

— (*with* Mishakov, I. V.) Fermions in one-loop quantum cosmology. (English summary) *Phys. Rev. D* (3) **47** (1993), *no.* 4, 1380–1390. (Summary) **93m:83032** 83C45 (58G26)

Kamenskaya, N. E. (*with* Abrashin, V. N.; Dzyuba, I. A.) Efficient methods for solving multidimensional thermoelasticity problems. (Russian. Russian summary) *Differentsial'nye Uravneniya* **28** (1992), *no.* 2, 290–305, 366; *translation in Differential Equations* **28** (1992), *no.* 2, 249–261. (Michael Fröhner) **93j:65208** 65P05 (35Q99, 73B30, 73V15)

Kamenskiĭ, G. A. Boundary value problems for differential-difference equations arising from variational problems. *Nonlinear Anal.* **18** (1992), *no.* 8, 801–813. (M. M. Konstantinov) **93h:34119** 34K10 (49K25)

Kamenskiĭ, M. I. (*with* Obukhovskiĭ, V. V.) On periodic solutions of differential inclusions with unbounded operators in Banach spaces. (Serbo-Croatian summary) *Zb. Rad. Prirod.-Mat. Fak. Ser. Mat.* **21** (1991), *no.* 1, 173–191. (Michał Kisielewicz) **93c:34043** 34A60 (34C25, 34G20, 47H15, 47N20)

Kametani, Makoto On multi-valued analytic solutions of first order nonlinear Cauchy problems. *Publ. Res. Inst. Math. Sci.* **27** (1991), *no.* 1, 1–131. (Andrei Baran) **93a:35008** 35A27 (32B05, 35A20)

Kameyama, Michitaka (*with* Aoki, Takafumi; Higuchi, Tatsuo) Design of an ultrahigher-valued biocomputing system based on set-valued logic networks. (English summary) *Systems Comput. Japan* **23** (1992), *no.* 7, 35–43. 68Q05 (94C10)

Kamien, Morton I. (*with* Schwartz, Nancy L.) ★ Dynamic optimization. The calculus of variations and optimal control in economics and management. Second edition. Advanced Textbooks in Economics, 31. *North-Holland Publishing Co., Amsterdam*, 1991. xviii+377 *pp. ISBN* 0-444-01609-0 (From the preface) **93d:90001** 90–01 (49–01, 90Axx)

— (*with* Oren, Shmuel S.; Tauman, Yair) Optimal licensing of cost-reducing innovation. (English summary) *J. Math. Econom.* **21** (1992), *no.* 5, 483–508. (Summary) **93i:90034**

90A53 (90A11)

Kamienny, S. Torsion points on elliptic curves over fields of higher degree. *Internat. Math. Res. Notices* **1992**, *no.* 6, 129–133. (Philippe Satgé) **93e:11072** 11G05

— Torsion points on elliptic curves and q-coefficients of modular forms. *Invent. Math.* **109** (1992), *no.* 2, 221–229. (Glenn Stevens) **93h:11054** 11G05 (11F30, 11G18, 14H52)

Kamimura, Kiyoshi (*with* Makita, Shinobu; Fukuyama, Takeshi) Metric from nonmetric action of gravity. (English summary) *Internat. J. Modern Phys. D* **1** (1992), *no.* 2, 363–370. (Peter Peldán) **93k:83007** 83C05

Kamimura, Shuichi (*with* Fuji-Hara, Ryoh) Orthogonal arrays from Baer subplanes. (English summary) *Utilitas Math.* **43** (1993), 65–70. (Summary) **93m:05036** 05B15 (51E20)

Kamin, Shoshana (*with* Peletier, L. A.; Vázquez, Juan Luis) On the Barenblatt equation of elastoplastic filtration. *Indiana Univ. Math. J.* **40** (1991), *no.* 4, 1333–1362. (Antonio Fasano) **93b:35117** 35Q35 (35B40, 35K15, 73E99, 76A99, 76S05)

— (*with* Peletier, L. A.; Vázquez, Juan Luis) A nonlinear diffusion-absorption equation with unbounded initial data. *Nonlinear diffusion equations and their equilibrium states*, 3 (*Gregynog*, 1989), 243–263, *Progr. Nonlinear Differential Equations Appl.*, 7, *Birkhäuser Boston, Boston, MA*, 1992. (Enrique Zuazua) **93f:35103** 35K55 (35B05, 35K65)

— (*with* Vázquez, Juan Luis) The propagation of turbulent bursts. (English summary) *European J. Appl. Math.* **3** (1992), *no.* 3, 263–272. (Gaston E. Hernandez) **93m:35094** 35K15 (35Q35, 76F99, 76S05)

— (*with* Brézis, Haïm) Sublinear elliptic equations in $\mathbf{R}^n$. *Manuscripta Math.* **74** (1992), *no.* 1, 87–106. (C. A. Swanson) **93f:35062** 35J60 (35B05)

— (*with* Peletier, L. A.; Vázquez, Juan Luis) A nonlinear diffusion-absorption equation with unbounded initial data. *Free boundary problems in fluid flow with applications* (*Montreal, PQ*, 1990), 157–160, *Pitman Res. Notes Math. Ser.*, 282, *Longman Sci. Tech., Harlow*, 1993. (*see* **93k:00036**) 35K55 (35R35)

— (*with* Véron, Laurent) Flat core properties associated to the p-Laplace operator. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 4, 1079–1085. (Philip W. Schaefer) **93j:35071** 35J60 (35J70)

Kaminer, Isaac (*with* Khargonekar, Pramod P.; Rotea, Mario A.) Mixed $\mathscr{H}_2/\mathscr{H}_\infty$ control for discrete-time systems via convex optimization. (English summary) *Automatica J. IFAC* **29** (1993), *no.* 1, 57–70. (Dieter Franke) **93j:93043** 93B36 (90C25, 93B51, 93C55)

Kaminker, Jerome Analytic invariants for algebraic K-theory. (English summary) *Current topics in operator algebras* (*Nara*, 1990), 246–254, *World Sci. Publishing, River Edge, NJ*, 1991. (Introduction) **93k:19007** 19K56 (46L87, 58G12)

— (*with* Wojciechowski, K. P.) Index theory of $\mathbf{Z}/k$ manifolds and the Grassmannian. *Operator algebras and topology* (*Craiova*, 1989), 82–92, *Pitman Res. Notes Math. Ser.*, 270, *Longman Sci. Tech., Harlow*, 1992. (John Roe) **93j:58127** 58G12

Kamińska, A. (*with* Fleming, Richard J.; Jamison, J. E.) Isometries of Musielak-Orlicz spaces. *Function spaces* (*Edwardsville, IL*, 1990), 139–154, *Lecture Notes in Pure and Appl. Math.*, 136, *Dekker, New York*, 1992. (Ehrhard Behrends) **93b:47059** 47B38 (46E30)

Kaminskas, V. (*with* Janickienė, D.; Vitkutė, D.) Self-tuning control of a stochastic nonlinear object. *Adaptive systems in control and signal processing*, 1989 (*Glasgow*), 171–175, *IFAC Sympos. Ser.*, 1990, *No.* 1, *Pergamon, Oxford*, 1990. (*see* **93j:93007**) 93C55 (93C40)

Kaminski, D. Asymptotics of the swallowtail integral near the cusp of the caustic. *SIAM J. Math. Anal.* **23** (1992), *no.* 1, 262–285. (A. S. Silbergleit) **93a:41058** 41A60 (58C27, 58G18)

Kaminski, Michael (*with* Tiomkin, Michael) Finite and circular path models for branching time logics. *J. Logic Comput.* **1** (1990), *no.* 1, 71–82. (M. A. Taitslin) **93e:68062** 68Q55 (03B45, 03B70)

— Embedding a default system into nonmonotonic logics. *Fund. Inform.* **14** (1991), *no.* 3, 345–353. (Giovanni Criscuolo) **93b:68081** 68T27 (03B60)

— (*with* Tiomkin, Michael) Nonmonotonic default modal logics. *J. Assoc. Comput. Mach.* **38** (1991), *no.* 4, 963–984. (J.-J. Ch. Meyer) **93b:68083** 68T27 (03B45, 03B60, 68T30)

— (*with* Averbuch, Amir; Bshouty, Nader H.) A classification of algorithms for multiplying polynomials of small degree over finite fields. (English summary) *J. Algorithms* **13** (1992), *no.* 4, 577–588. (Jacques Calmet) **93k:68051** 68Q40 (68Q25)

— (*with* Pinter, Shlomit S.) Finite automata on directed graphs. *J. Comput. System Sci.* **44** (1992), *no.* 3, 425–446. (Summary) **93m:68124** 68Q70 (68R10)

Kamiya, Hisao Generic curve families on 2-dimensional manifold. (English summary) *J. Fac. Sci. Shinshu Univ.* **27** (1992), *no.* 1, 1–6. (Jian Hua Sun) **93k:58131** 58F10 (58F09)

Kamiya, N. *see* **Kamiya, Norio**

Kamiya, Noriaki The construction of all simple Lie algebras over $\mathbf{C}$ from balanced Freudenthal-Kantor triple systems. *Contributions to general algebra*, 7 (*Vienna*, 1990), 205–213, *Hölder-Pichler-Tempsky, Vienna*, 1991. (B. N. Allison) **93d:17026** 17B60

— On (ε,δ)-Freudenthal-Kantor triple systems. *Nonassociative algebras and related topics* (*Hiroshima*, 1990), 65–75, *World Sci. Publishing, River Edge, NJ*, 1991. (B. N. Allison) **93f:17009** 17A40 (17B60)

— A structure theory of Freudenthal-Kantor triple systems. IV. *Mem. Fac. Sci. Shimane Univ.* **25** (1991), 45–51. (Ernest Stitzinger) **93b:17007** 17A40

— On a generalization of structurable algebras. (English summary) *Algebras Groups Geom.* **9** (1992), *no.* 1, 35–47. (S. C. Althoen) **93k:17001** 17A30 (17B60)

Kamiya, Norio (*with* Andoh, E.) Standard eigenvalue analysis by boundary-element method. (English summary) *Comm. Numer. Methods Engrg.* **9** (1993), *no.* 6, 489–495. 65N25 (65N38)

Kamiya, Shigeyasu Discrete subgroups of convergence type of $\mathrm{U}(1,n;\mathbf{C})$. *Hiroshima Math. J.* **21** (1991), *no.* 1, 1–21. (William Harvey) **93e:22020a** 22E40 (20H10, 30F40)

— Notes on elements of $\mathrm{U}(1,n;\mathbf{C})$. *Hiroshima Math. J.* **21** (1991), *no.* 1, 23–45. (William Harvey) **93e:22020b** 22E40 (20H10, 30F40)

— The action of discrete subgroups of $\mathrm{U}(1,n;\mathbf{C})$ on ∂B^n. (English summary) *Math. Japon.* **37** (1992), *no.* 5, 927–933. (Peter J. Nicholls) **93h:30064** 30F40 (22E40)

— Notes on some classical series associated with discrete subgroups of $\mathrm{U}(1,n;\mathbf{C})$ on $\partial B^n \times \partial B^n \times \partial B^n$. *Proc. Japan Acad. Ser. A Math. Sci.* **68** (1992), *no.* 6, 137–139. (O. V. Shvartsman) **93j:22021** 22E40

Kamiyama, Shinichi (*with* Murata, Yasuo) The discrete-time model of Bagchi's regional investment allocation problem. (English summary) *Comput. Math. Appl.* **24** (1992), *no.* 8-9, 181–194. (Summary) **93d:90079** 90D40 (90A53)

Kamiyama, Yasuhiko Topology of moduli space of certain SU(2) connections of degree 2 over S^4. *Hiroshima Math. J.* **22** (1992), *no.* 1, 23–31. (Donald M. Davis) **93b:58027** 58D27 (57R99)

Kammatov, K. (*with* Utepkaliev, S. U.; Khammetov, A.) Stability of motion of a certain form of essentially nonlinear systems of differential equations. (Russian) *Mathematical analysis* (*Russian*), 152–156, *Ross. Gos. Ped. Univ., Leningrad*, 1991. (*see* **93d:00034**) 34D10

Kammerer, Jean-Bertrand (*with* Valton, Michel) Produit de Moyal dans une supervariété plate; spin $\frac{1}{2}$. (English and French summaries) [Moyal product in a flat supermanifold; spin $\frac{1}{2}$] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 12, 1319–1322. (Frans Cantrijn) **93k:58033** 58C50 (58A50, 81Q99)

Kammerer, Lothar (*with* Bauer, Helmut F.) Natural frequencies and axial response of a spinning liquid layer in a micro-gravity field. (English and German summaries) *Z. Angew. Math. Phys.* **44** (1993), *no.* 2, 348–369. (Summary) **93m:76070** 76U05 (76E10)

Kammeyer, Janet Whalen A classification of the isometric extensions of a multidimensional Bernoulli shift. (English summary) *Ergodic Theory Dynamical Systems* **12** (1992), *no.* 2, 267–282. (B. Kamiński) **93i:28015** 28D15

— A classification of the finite extensions of a multidimensional Bernoulli shift. *Trans. Amer. Math. Soc.* **335** (1993), *no.* 1, 443–457. (Yves Derriennic) **93c:28015** 28D05

Kamont, A. ε-entropy and moduli of smoothness in L^p-spaces. *Studia Math.* **102** (1992), *no.* 3, 277–302. (K. G. Ivanov) **93k:41022** 41A46 (41A63, 62G05)

Kamont, Zdzisław The method of lines for parabolic differential-functional equations with initial-boundary conditions of the Dirichlet type. *An. Ştiinţ. Univ. "Al. I. Cuza" Iaşi Sect. I a Mat. (N.S.)* **36** (1990), *no.* 3, 215–224. (Michael Fröhner) **93e:65116** 65M20 (65Q05)

Kamornikov, S. F. (*with* Shemetkov, L. A.) Decomposable idempotents of the semigroup of formations of finite groups. (Russian. English summary) *Dokl. Akad. Nauk BSSR* **35** (1991), *no.* 10, 869–871, 963. (From the text) **93a:20028** 20D10 (20F17)

— On a problem of Kegel. (Russian. Russian summary) *Mat. Zametki* **51** (1992), *no.* 5, 51–56, 157; *translation in Math. Notes* **51** (1992), *no.* 5-6, 458–461. (B. Hartley) **93j:20061** 20E15

Kamoun, M. B. A. (*with* Derbel, N.; Ouali, A.) Application de la programmation dynamique différentielle avec contraintes pour la commande d'une grue. (English and French summaries) [An application of constrained differential dynamical programming to the control of a container crane] *RAIRO Automat.-Prod. Inform. Ind.* **26** (1992), *no.* 5-6, 385–397. 49M25

Kampe, L. (*with* Liepiņš, A.) A semi-illusion of continuity. (English, Russian and Latvian summaries) *Mathematics* (*Russian*), 175–176, *Latv. Univ. Zinat. Raksti*, 562, *Latv. Univ., Riga*, 1991. (Editors) **93h:54028** 54H25 (54C30, 54D30)

van Kampen, N. G. How do stochastic processes enter into physics? *Stochastic methods in experimental sciences* (*Szklarska Poręba*, 1989), 239–248, *World Sci. Publishing, River Edge, NJ*, 1990. (Andrzej Fuliński) **93b:82036** 82C03 (82C05, 82C31)

— Determinism and predictability. *Synthese* **89** (1991), *no.* 2, 273–281. (Summary) **93c:00001** 00A30

— Short first-passage times. (English summary) *J. Statist. Phys.* **70** (1993), *no.* 1-2, 15–23. (Cheng Xun Wu) **93m:82032** 82C31 (60J60, 82C70)

— Macroscopic systems in quantum mechanics. (English summary) Statistical physics (Berlin, 1992). *Phys. A* **194** (1993), *no.* 1-4, 542–550. (Summary) **93k:81025** 81P15 (82C03)

Kamphorst Leal da Silva, J. (*with* das Neves, A.; Plascak, J. A.) Some exact results from the mean field renormalization group. (English summary) *Phys. A* **189** (1992), *no.* 1-2, 367–376. (M. Lawrence Glasser) **93i:82015** 82B20 (82–08)

Kampowsky, Wilfried (*with* Rentrop, Peter; Schmidt, Walter) Classification and numerical simulation of electric circuits. (English summary) *Surveys Math. Indust.* **2** (1992), *no.* 1, 23–65. (W.-K. Chen) **93h:94038** 94C05 (34A09, 65C20, 65L05)

Kamps, K. H. (*with* Hardie, K. A.) Variations on a theme of Dold. (English summary) *Category theory* 1991 (*Montreal, PQ*, 1991), 201–209, *CMS Conf. Proc.*, 13, *Amer. Math. Soc., Providence, RI*, 1992. (John F. Oprea) **93i:55007** 55P10 (55P05)

Kamran, Niky (*with* González-López, Artemio; Olver, Peter J.) Lie algebras of first order differential operators in two complex variables. *Differential geometry, global analysis, and topology* (*Halifax, NS*, 1990), 51–84, *CMS Conf. Proc.*, 12, *Amer. Math. Soc., Providence, RI*, 1991. (Helmut Boseck) **93c:17041** 17B66 (17B56)

— (*with* González-López, Artemio; Olver, Peter J.) Lie algebras of differential operators in two complex variables. *Amer. J. Math.* **114** (1992), *no.* 6, 1163–1185. (S. V. Duzhin) **93k:17047** 17B66 (58H10)

— (*with* Hurtubise, Jacques) Projective connections, double fibrations, and formal neighbourhoods of lines. *Math. Ann.* **292** (1992), *no.* 3, 383–409. (Michael G. Eastwood) **93f:32033** 32L25 (34A20, 53A55, 53B10, 53C05)

— (*with* Olver, Peter J.) Equivalence of higher-order Lagrangians. III. New invariant differential equations. *Nonlinearity* **5** (1992), *no.* 2, 601–621. (J. Chrastina) **93d:58042** 58E30 (49S05, 58G35)

Kamthan, P. K. (*with* Gupta, Manjul) Characterizations of almost shrinking bases. *Note Mat.* **10** (1990), *no.* 1, 67–73. (W. H. Ruckle) **93e:46007** 46A35 (46A45)

Kamyad, A. Vahidian Strong controllability of the diffusion equation in n-dimensions. *Bull. Iranian Math. Soc.* **18** (1992), *no.* 1, 39–49. (Jerzy Klamka) **93b:93016** 93B05 (35B37, 35K05, 49J20)

— (*with* Rubio, J. E.; Wilson, D. A.) An optimal control problem for the multidimensional diffusion equation with a generalized control variable. (English summary) *J. Optim. Theory Appl.* **75** (1992), *no.* 1, 101–132. (Summary) **93j:49025** 49K20 (49J20, 49Q20)

Kamynin, V. L. On passage to the limit in the inverse problems for nondivergence parabolic equations. (English summary) *Ill-posed problems in natural sciences* (*Moscow*, 1991), 326–332, *VSP, Utrecht*, 1992. (*see* **93m:00041**) 35R30 (35K10, 65M30)

— Passage to the limit in an inverse problem for parabolic equations in nondivergence form with a condition of final overdetermination. (Russian. Russian summary) *Differentsial'nye Uravneniya* **28** (1992), *no.* 2, 247–253, 365; *translation in Differential Equations* **28** (1992), *no.* 2, 213–218. (Summary) **93g:35141** 35R30 (35K50)

Kamyshnikov, A. I. A boundary value problem for a class of second-order equations. (Russian) *Nonclassical equations and equations of mixed type* (*Russian*), 99–104, *Akad. Nauk SSSR Sibirsk. Otdel., Inst. Mat., Novosibirsk*, 1990. (*see* **93b:35002**) 35L70

rinnooy Kan, A. H. G. *see* **Rinnooy Kan, A. H. G.**

Kan, Ching Yü (*with* Chang, Ch'i) A note on the nucleolus. (English summary) *Chinese J. Math.* **20** (1992), *no.* 4, 307–311. (Suchan Chae) **93m:90116** 90D12
— (*with* Chang, Ch'i) The kernel, the bargaining set and the reduced game. (English summary) *Internat. J. Game Theory* **21** (1992), *no.* 1, 75–83. (Roy Gardner) **93f:90190** 90D12
— (*with* Chang, Ch'i) The bound of the kernel. (English summary) *Math. Social Sci.* **25** (1992), *no.* 1, 87–93. (Rajiv Vohra) **93k:90110** 90D12
Kan, Ittai (*with* Alexander, J. C.; Yorke, James A.; You, Zhiping) Riddled basins. (English summary) *Internat. J. Bifur. Chaos Appl. Sci. Engrg.* **2** (1992), *no.* 4, 795–813. (Ian Melbourne) **93k:58140** 58F12 (34D08, 34D45)
Kan, Jia Hai On the upper bound for the number of primes or almost primes in a given integer sequence. *Period. Math. Hungar.* **22** (1991), *no.* 1, 61–69. (Andrew Granville) **93a:11077** 11N36 (11N25)
— On the problem of Goldbach's type. *Math. Ann.* **292** (1992), *no.* 1, 31–42. (Daniel A. Goldston) **93f:11071** 11P32 (11N36)
Kan, Pui Tak (*with* Miranker, Willard L.) Entropy in multilevel algorithms. (English summary) *Computer arithmetic, scientific computation and mathematical modelling* (*Albena*, 1990), 317–327, *IMACS Ann. Comput. Appl. Math.*, 12, *Baltzer, Basel*, 1991. (Summary) **93g:65102** 65L50 (65N55)
bar-Kana, Izhak *see* **Bar-Kana, Izhak**
Kanagawa, A. (*with* Tamaki, F.; Ohta, Hiroshi[1]) A fuzzy design of sampling inspection plans by attributes. (English summary) *Japanese J. Fuzzy Theory Systems* **3** (1991), *no.* 4, 315–327 (1992). 90C70 (04A72)
Kanagawa, S. (*with* Mochizuki, Y.; Tanaka, Hiroshi[1]) Limit theorems for the minimum interpoint distance between any pair of i.i.d. random points in $\mathbf{R}^d$. *Ann. Inst. Statist. Math.* **44** (1992), *no.* 1, 121–131. (Ken-ichi Yoshihara) **93h:60031** 60F05 (60G55, 62E20)
Kanai, Yasuo On a variant of weak Chang's conjecture. *Z. Math. Logik Grundlag. Math.* **37** (1991), *no.* 4, 289–292. (Donna M. Carr) **93m:03057** 03C55 (03E05, 03E10)
Kanal, Laveen N. (*with* Mahanti, Ambuj; Ghosh, Subrata; Nau, Dana S.; Pal, Asim K.) Performance of IDA* on trees and graphs. (English summary) *AAAI-92. Proceedings, Tenth National Conference on Artificial Intelligence* (*San Jose, CA*, 1992), 539–544, *Amer. Assoc. Artif. Intell., Menlo Park, CA*, 1992. (*see* **93j:68007**) 68T20 (68R10)
— (*with* Bhatnagar, Raj K.) Reasoning by hypothesizing causal models. (English summary) *Analysis and management of uncertainty: theory and applications* (*College Park, MD*, 1990), 93–106, *Mach. Intell. Pattern Recogn.*, 13, *North-Holland, Amsterdam*, 1992. (*see* **93f:68004**) 68T27
— *see also* **Analysis and management of uncertainty: theory and applications, 93f:68004**
Kanamori, Tadashi (*with* Kawamura, Tadashi) Abstract interpretation based on OLDT resolution. (English summary) *J. Logic Programming* **15** (1993), *no.* 1-2, 1–30. (Summary) **93j:68035** 68N20 (68N17, 68Q60)
— Abstract interpretation based on Alexander templates. (English summary) *J. Logic Programming* **15** (1993), *no.* 1-2, 31–54. (Summary) **93j:68036** 68N20 (68N17, 68P20)
Kanaun, S. K. (*with* Vil'chevskaya, E. N.) Integral equations for a problem on a thin inclusion in a homogeneous elastic medium. (Russian. Russian summary) *Prikl. Mat. Mekh.* **56** (1992), *no.* 2, 275–285; *translation in J. Appl. Math. Mech.* **56** (1992), *no.* 2, 235–243. (Summary) **93f:73026** 73C02 (73B27, 73M25)
Kanazawa, Yuichiro An optimal variable cell histogram based on the sample spacings. *Ann. Statist.* **20** (1992), *no.* 1, 291–304. (M. Bertrand-Retali) **93d:62070** 62G05 (62G20)
Kanchanasut, Kanchana (*with* Stuckey, Peter J.) Transforming normal logic programs to constraint logic programs. (English summary) Second International Conference on Algebraic and Logic Programming (Nancy, 1990). *Theoret. Comput. Sci.* **105** (1992), *no.* 1, 27–56. (Summary) **93h:68019** 68N17 (68Q55)
khe Kan Cher *see* **Khe Kan Cher**
Kanda, Mamoru (*with* Fitzsimmons, P. J.) On Choquet's dichotomy of capacity for Markov processes. *Ann. Probab.* **20** (1992), *no.* 1, 342–349. (Klaus Janssen) **93b:60172** 60J40 (31C15, 60J30, 60J45)
Kandamby, N. H. (*with* Ellis, J. E.; Roberts, P. D.) Rationalization and application of algorithms for integrated system optimization and parameter estimation. (English summary) *Internat. J. Systems Sci.* **24** (1993), *no.* 2, 219–229. 93A13 (93C20)
Kandel, Abraham Theory and applications of fuzzy statistics. *Combining fuzzy imprecision with probabilistic uncertainty in decision making*, 89–112, *Lecture Notes in Econom. and Math. Systems*, 310, *Springer, Berlin*, 1988. (*see* **93c:90002**) 04A72 (62A99)
— (*with* Cao, Zhi Qiang; Li, Lihong; Han, J.) The mechanism of fuzzy logic controllers. (English summary) *Analysis and management of uncertainty: theory and applications* (*College Park, MD*, 1990), 199–208, *Mach. Intell. Pattern Recogn.*, 13, *North-Holland, Amsterdam*, 1992. (*see* **93f:68004**) 03B52
— (*with* Hall, Lawrence O.) The evolution from expert systems to fuzzy expert systems. *Fuzzy expert systems*, 3–21, *CRC, Boca Raton, FL*, 1992. (*see* **93g:68133**) 68T35 (03B52, 68T30)
— (*with* Schneider, Moti) General purpose fuzzy expert systems. *Fuzzy expert systems*, 23–41, *CRC, Boca Raton, FL*, 1992. (*see* **93g:68133**) 68T35 (03B52)
— (*with* Hall, Lawrence O.) Fess: a reusable fuzzy expert system. *Fuzzy expert systems*, 181–193, *CRC, Boca Raton, FL*, 1992. (*see* **93g:68133**) 68T35 (03B52)
— (*with* Friedman, Menahem) On the design of a fuzzy intelligent differential equation solver. *Fuzzy expert systems*, 203–212, *CRC, Boca Raton, FL*, 1992. (*see* **93g:68133**) 68T35 (03B52)
— (*with* Hawkes, Lois Wright; Derry, Sharon) Fuzzy expert systems for an intelligent computer-based tutor. *Fuzzy expert systems*, 237–257, *CRC, Boca Raton, FL*, 1992. (*see* **93g:68133**) 68T35 (03B52)
— (*with* Schneider, Moti; Perl, Joseph M.) COMEX—an autonomous fuzzy expert system for tactical communications networks. *Fuzzy expert systems*, 291–304, *CRC, Boca Raton, FL*, 1992. (*see* **93g:68133**) 68T35
— (*with* Li, Lihong; Cao, Zhi Qiang) Fuzzy inference and its applicability to control systems. *Fuzzy Sets and Systems* **48** (1992), *no.* 1, 99–111. 93C42 (04A72)
— (*with* Park, Daihee; Cao, Zhi Qiang) Investigations on the applicability of fuzzy inference. (English summary) *Fuzzy Sets and Systems* **49** (1992), *no.* 2, 151–169. (Summary) **93e:03036** 03B52
— *see also* **Fuzzy expert systems, 93g:68133**
Kandelaki, T. L. (*with* Bogolyubov, Alekseĭ Nikolaevich) ★ Леонид Самуилович Лейбензон. 1879–1951. (Russian. Russian summary) [Leonid Samuilovich Leĭbenson. 1879–1951] With a preface by A. Yu. Ishlinskiĭ and V. N. Shchelkachev. Научно-Биографическая Литература. [Scientific-Biographic Literature] "*Nauka*", *Moscow*, 1991. 285 *pp. ISBN* 5-02-003477-0 (Peeter Müürsepp) **93k:01064** 01A70
Kandil, A. (*with* Kerre, E. E.; Nouh, A. A.) Operations and mappings on fuzzy topological spaces. (English summary) *Ann. Soc. Sci. Bruxelles Sér. I* **105** (1991), *no.* 4, 167–188 (1992). 54A40 (04A72)
— (*with* Kerre, E. E.; El-Shafee, M. E.; Nouh, A. A.) Quasi θ-spaces and pairwise θ-perfect irreducible mappings. *J. Austral. Math. Soc. Ser. A* **52** (1992), *no.* 3, 322–333. (Summary) **93h:54010** 54C10 (54E05, 54E55)
abou-Kandil, Hisham *see* **Abou-Kandil, Hisham**
Kandlur, Dilip D. (*with* Shin, Kang G.) Traffic routing for multicomputer networks with virtual cut-through capability. (English summary) *IEEE Trans. Comput.* **41** (1992), *no.* 10, 1257–1270. 68M10 (68Q25)
Kando, Hisashi (*with* Yonemoto, Yosifumi; Iwazumi, Tetsuo) Multi-rate regulator design of two-time-scale systems via digital redesign method. (English summary) *Internat. J. Systems Sci.* **24** (1993), *no.* 4, 691–706. 93C62 (93C70)
Kandori, Michihiro Repeated games played by overlapping generations of players. *Rev. Econom. Stud.* **59** (1992), *no.* 1, 81–92. (Sylvain Sorin) **93a:90092** 90D20 (90D06, 90D12)
— The use of information in repeated games with imperfect monitoring. *Rev. Econom. Stud.* **59** (1992), *no.* 3, 581–593. (Sylvain Sorin) **93f:90201** 90D20 (90D12)
— (*with* Mailath, George J.; Rob, Rafael) Learning, mutation, and long run equilibria in games. (English summary) *Econometrica* **61** (1993), *no.* 1, 29–56. (Summary) **93m:90129** 90D40 (90A14)
Kandrup, Henry E. (*with* Habib, Salman) Nonlinear noise in cosmology. (English summary) *Phys. Rev. D* (3) **46** (1992), *no.* 12, 5303–5314. (Summary) **93h:83037** 83F05 (82C35)
Kaneko, Akira (*with* Komatsu, Hikosaburo; Iwasaki, Nobuhisa) List of publications of Kôsaku Yosida. *Functional analysis and related topics*, 1991 (*Kyoto*), xi–xxi, *Lecture Notes in Math.*, 1540, *Springer, Berlin*, 1993. (*see* **93m:00049**) 01A70
Kaneko, H. *see* **Kaneko, Hiroshi[2]**
Kaneko, Hideaki (*with* Noren, Richard D.) An application of approximation theory to numerical solutions for Fredholm integral equations of the second kind. *Numer. Funct. Anal. Optim.* **12** (1991), *no.* 5-6, 517–523 (1992). (Summary) **93a:65182** 65R20
— (*with* Xu, Yuesheng; Kerr, Gilbert) Degenerate kernel method for multi-variable Hammerstein equations. (English summary) *Appl. Numer. Math.* **10** (1992), *no.* 6, 473–479. (Baruch Cahlon) **93k:65109** 65R20
— (*with* Noren, Richard D.; Xu, Yuesheng) Numerical solutions for weakly singular Hammerstein equations and their superconvergence. (English summary) *J. Integral Equations Appl.* **4** (1992), *no.* 3, 391–407. (P. Uba) **93j:65223** 65R20
— (*with* Daffer, Peter Z.) On expansive mappings. (English summary) *Math. Japon.* **37** (1992), *no.* 4, 733–735. (Summary) **93f:54042** 54E40 (54H25)
Kaneko, Hiroshi[2] (*with* Fukushima, Masatoshi; Jacob, Niels) On $(r, 2)$-capacities for a class of elliptic pseudo differential operators. *Math. Ann.* **293** (1992), *no.* 2, 343–348. (Yves Le Jan) **93i:31006** 31C25 (35C15, 35S99)
Kaneko, Kunihiko Simulating physics with coupled map lattices—pattern dynamics, information flow, and thermodynamics of spatiotemporal chaos. *Formation, dynamics and statistics of patterns, Vol.* 1, 1–54, *World Sci. Publishing, River Edge, NJ*, 1990. (Yong Nian Huang) **93a:58155** 58F40 (58F13, 76F20, 82C44)
— Overview of coupled map lattices. (English summary) *Chaos* **2** (1992), *no.* 3, 279–282. (Preben Alstrøm) **93h:58100** 58F13 (58F40, 92C15)
— (*with* Konishi, Tetsuro) Clustered motion in symplectic coupled map systems. (English summary) *J. Phys. A* **25** (1992), *no.* 23, 6283–6296. (Helmut Rüssmann) **93k:58152** 58F13 (58F05)
Kaneko, Mamoru (*with* Kimura, Toshiyuki) Conventions, social prejudices and discrimination: a festival game with merrymakers. (English summary) *Games Econom. Behav.* **4** (1992), *no.* 4, 511–527. (Summary) **93g:90109** 90D40 (92H99)
Kaneko, Masanobu (*with* Ihara, Yasutaka) Pro-l pure braid groups of Riemann surfaces and Galois representations. *Osaka J. Math.* **29** (1992), *no.* 1, 1–19. (Anatoly Libgober) **93i:14022** 14H30 (14E20, 20F36)
Kanellakis, A. (*with* Tzafestas, Spyros G.; Theodorou, N. J.) Computation of the stability margin of two-dimensional discrete systems. *IEEE Trans. Automat. Control* **37** (1992), *no.* 6, 824–827. (Summary) **93b:93077** 93D05 (93B40)
Kanellakopoulos, I. (*with* Kokotović, P. V.; Morse, A. Stephen) Adaptive feedback linearization of nonlinear systems. (English summary) *Foundations of adaptive control* (*Urbana, IL*, 1990), 311–346, *Lecture Notes in Control and Inform. Sci.*, 160, *Springer, Berlin*, 1991. (Kimio Kanai) **93h:93040** 93C40 (93C10)
— (*with* Kokotović, P. V.; Morse, A. Stephen) Adaptive output-feedback control of systems with output nonlinearities. (English summary) *Foundations of adaptive control* (*Urbana, IL*, 1990), 495–525, *Lecture Notes in Control and Inform. Sci.*, 160, *Springer, Berlin*, 1991. (Kimio Kanai) **93h:93041** 93C40 (93C10, 93D25)
— (*with* Kokotović, P. V.; Morse, A. Stephen) Adaptive output-feedback control of systems with output nonlinearities. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 11, 1666–1682. (B. I. Anan'ev) **93m:93037** 93B50 (93D15)
— (*with* Kokotović, P. V.; Morse, A. Stephen) A toolkit for nonlinear feedback design. *Systems Control Lett.* **18** (1992), *no.* 2, 83–92. (Summary) **93g:93042** 93B52 (93B51, 93D15)
Kanemitsu, Mitsuo (*with* Sugatani, Takasi; Yoshida, Ken-ichi) Note on the dual of an ideal in a Noetherian domain. *C. R. Math. Rep. Acad. Sci. Canada* **13** (1991), *no.* 6, 255–258. (From the summary) **93a:13012** 13G05 (13A15)
Kanenaga, Masahiko (*with* Tanaka, Satoshi; Namiki, Mikio; Ohba, Ichiro; Mizutani, Masashi; Komoike, Nobuyuki) Stochastic quantization of bottomless systems based on a kerneled Langevin equation. (English summary) *Phys. Lett. B* **288** (1992), *no.* 1-2, 129–139. (Summary) **93g:81060** 81S20
Kanenobu, Taizo (*with* Sumi, Toshio) Polynomial invariants of 2-bridge links through 20 crossings. *Aspects of low-dimensional manifolds*, 125–145, *Adv. Stud. Pure Math.*, 20, *Kinokuniya, Tokyo*, 1992. (Wilbur Whitten) **93m:57007** 57M25
— Genus and Kauffman polynomial of a 2-bridge knot. *Osaka J. Math.* **29** (1992), *no.* 3, 635–651. (Wilbur Whitten) **93h:57010** 57M25
— (*with* Sumi, Toshio) Polynomial invariants of 2-bridge knots through 22 crossings. (English summary) *Math. Comp.* **60** (1993), *no.* 202, 771–778, S17–S28. (Charles

Livingston) **93h:57011** 57M25

Kaneta, H. (*with* Maruta, Tatsuya) The discriminant of a cubic curve. *Advances in finite geometries and designs* (*Chelwood Gate*, 1990), 237–249, *Oxford Sci. Publ., Oxford Univ. Press, New York*, 1991. (J. W. P. Hirschfeld) **93d:14048** 14H52 (51N35)

Kanevsky, Dimitri (*with* Burshtein, David; Della Pietra, Vincent; Nádas, Arthur) Minimum impurity partitions. (English summary) *Ann. Statist.* **20** (1992), *no.* 3, 1637–1646. (Summary) **93i:62054** 62H30 (62C05, 62C10, 62J02, 68T10)

Kaneyuki, Soji Homogeneous symplectic manifolds and dipolarizations in Lie algebras. *Tokyo J. Math.* **15** (1992), *no.* 2, 313–325. (Kazufumi Nakajima) **93m:53046** 53C30 (17B99, 53C15)

Kanezashi, Masakazu (*with* Aoki, Kenichi; Itoh, Masaru; Matsuura, Haruki) Power generation scheduling by neural network. (English summary) *Internat. J. Systems Sci.* **23** (1992), *no.* 11, 1977–1989. 90B35 (92B20)

Kang, Bu-Hyeon (*with* Pahk, Dae Hyeon) Wellposedness of the Cauchy problems. *J. Korean Math. Soc.* **29** (1992), *no.* 1, 141–151. (Qing Yi Chen) **93b:35025** 35E15 (46F10)

Kang, Chunghyuk On the type of plane curve singularities analytically equivalent to the equation $z^n + y^k = 0$ with $\gcd(n,k) = 1$. *J. Korean Math. Soc.* **29** (1992), *no.* 2, 281–295. (Şerban Bărcănescu) **93j:14027** 14H20

Kang, E. (*with* Haghighi, K.) A knowledge-based a priori approach to mesh generation in thermal problems. (English summary) *Internat. J. Numer. Methods Engrg.* **35** (1992), *no.* 4, 915–937. (Summary) **93d:80001** 80–08

Kang, Eun Mee A study of a new statistic for detection of outliers and/or influential observations in regression diagnostics. (English and Korean summaries) *Korean J. Appl. Statist.* **6** (1993), *no.* 1, 67–78. 62J20

Kang, H. C. (*with* Evans, James William) Analytic observations for the $d = 1 + 1$ bridge site (or single-step) deposition model. *J. Math. Phys.* **32** (1991), *no.* 10, 2918–2922. (Summary) **93a:82010** 82B20

Kang, H. I. (*with* Barmish, B. Ross) Extreme point results for robust stability of interval plants: beyond first order compensators. (English summary) *Automatica J. IFAC* **28** (1992), *no.* 6, 1169–1180. (Hong Zhang) **93m:93067** 93D09

— (*with* Barmish, B. Ross; Tempo, Roberto; Hollot, Christopher V.) An extreme point result for robust stability of a diamond of polynomials. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 9, 1460–1462. (Ian Petersen) **93j:93099** 93D09 (93D20, 93D22)

Kang, I. S. (*with* Leal, L. G.) Orthogonal grid generation in a 2D domain via the boundary integral technique. (English summary) *J. Comput. Phys.* **102** (1992), *no.* 1, 78–87. (Summary) **93f:76076** 76M25 (65N38)

Kang, Joo Ho (*with* Jo, Young Soo) Isomorphisms of $\mathscr{A}^{(3)}_{2n(k)}$. *Math. Japon.* **37** (1992), *no.* 2, 259–265. (Stephen Power) **93c:47050** 47D25 (46K50)

Kang, Li Shan (*with* Rao, Chuan Xia) Symmetric domain decomposition and symmetric space decomposition. (English summary) *Proceedings of International Conference on Scientific Computation* (*Hangzhou*, 1991), 211–215, *Ser. Appl. Math.*, 1, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93d:65004**) 65N55 (65Y05)

Kang, Lian Cheng On singular perturbation for a nonlinear initial-boundary value problem. II. *Appl. Math. Mech.* (*English Ed.*) **13** (1992), *no.* 2, 149–157; *translated from Appl. Math. Mech.* **13** (1992), *no.* 2, 135–143 (*Chinese. English summary*). (Fu Ru Jiang) **93f:35020** 35B25 (35L80, 35M10)

Kang, Ming Chang (*with* Hajja, Mowaffaq) Finite group actions on rational function fields. *J. Algebra* **149** (1992), *no.* 1, 139–154. (James K. Deveney) **93d:12009** 12F20

— A note on the birational cancellation problem. *J. Pure Appl. Algebra* **77** (1992), *no.* 2, 141–154. (M. Hajja) **93d:12010** 12F20

— Injective morphisms of affine varieties. *Proc. Amer. Math. Soc.* **119** (1993), *no.* 1, 1–4. (P. Abellanas) **93k:14006** 14A10 (13B10)

Kang, Pyung-Lyun (*with* Bae, Sung Han) On Tate-Drinfel'd modules. *Canad. Math. Bull.* **35** (1992), *no.* 2, 145–151. (David Goss) **93b:11073** 11G09

— (*with* Bae, Sung Han) Local isogeny theorem for Drinfel'd modules with nonintegral invariants. *Proc. Amer. Math. Soc.* **119** (1993), *no.* 1, 19–25. (David Goss) **93k:11054** 11G09 (14F30)

Kang, Qing De (*with* Chang, Yan Xun) A completion of the spectrum for large sets of disjoint transitive triple systems. *J. Combin. Theory Ser. A* **60** (1992), *no.* 2, 287–294. (Charles C. Lindner) **93i:05024** 05B07

Kang, Sang Gil (*with* Sohn, Joong Kweon) On the estimation of the true probability of a correct selection. *Comm. Statist. Simulation Comput.* **21** (1992), *no.* 2, 445–462. 62F07

Kang, Seok-Jin (*with* Kashiwara, Masaki; Misra, Kailash C.; Miwa, Tetsuji; Nakashima, Toshiki; Nakayashiki, Atsushi) Vertex models and crystals. (English and French summaries) *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 4, 375–380. (From the summary) **93g:17027** 17B37 (82B23)

— Kac-Moody Lie algebras, spectral sequences, and the Witt formula. *Trans. Amer. Math. Soc.* **339** (1993), *no.* 2, 463–493. (Kailash C. Misra) **93m:17013** 17B67

Kang, Shi Kun (*with* Zhang, Shi Sheng; Huang, Nan Jing) Fixed point theorems for mappings in probabilistic metric spaces and their applications. (Chinese. English summary) *J. Chengdu Univ. Sci. Tech.* **1991**, *no.* 3, 1–4. 54H25 (54E70)

— (*with* Zhang, Shi Sheng; Song, Jian Wei) The theory of probabilistically semicompact 1-set-contraction mappings and some fixed point theorems. (Chinese. English summary) *J. Chengdu Univ. Sci. Tech.* **1991**, *no.* 3, 5–12. 54H25 (54E70)

— (*with* Zhang, Shi Sheng; Luo, Qun) A generalization of Ky Fan's section theorem. (Chinese. English summary) *J. Chengdu Univ. Sci. Tech.* **1991**, *no.* 4, 61–64, 84. (Yuan Guo Zhu) **93e:47089** 47H19 (49J40)

— (*with* Zhang, Shi Sheng; Ding, Zuo Hua) Differential inclusions with nonlinear semigroups. (Chinese. English and Chinese summaries) *J. Chengdu Univ. Sci. Tech.* **1992**, *no.* 2, 29–33. (Qi Ji Zhu) **93i:34123** 34G20 (34A60, 47H20, 47N20)

— (*with* Zhang, Shi Sheng) Fixed-point theorems for a class of expansion mappings. (Chinese. English and Chinese summaries) *J. Chengdu Univ. Sci. Tech.* **1992**, *no.* 2, 41–42, 94. 54H25

— (*with* Zhang, Shi Sheng; Huang, Nan Jing) Coincidence points of mappings in convex metric spaces and nonexpansive mappings in product spaces. (Chinese. English and Chinese summaries) *J. Chengdu Univ. Sci. Tech.* **1992**, *no.* 3, 1–6, 14. 54H25

— (*with* Zhang, Shi Sheng; Wei, Yong) Fixed-point theorems for some classes of mappings. (Chinese. English and Chinese summaries) *J. Chengdu Univ. Sci. Tech.* **1992**, *no.* 3, 7–13. 54H25

— (*with* Zhang, Shi Sheng; Peng, Yong Cheng) The Browder fixed point theorem in H-spaces and its application to social equilibrium problems. (Chinese. English and Chinese summaries) *J. Chengdu Univ. Sci. Tech.* **1992**, *no.* 4, 57–60. 54H25 (90A14, 92H10)

Kang, Shin Min *see* **Kang, Sin Min**

Kang, Si-Ho (*with* Chang, Seung Jun) A sequential approach to conditional Wiener integrals. *Bull. Korean Math. Soc.* **29** (1992), *no.* 2, 301–314. (Chull Park) **93m:28016** 28C20 (60G15)

Kang, Sin Min (*with* Kim, Young Pyo) Common fixed point theorems. (English summary) *Math. Japon.* **37** (1992), *no.* 6, 1031–1039. (W. Kulpa) **93m:54073** 54H25

— *see also* **Zhang, Shi Sheng**

Kang, Soon Ja Conditional generalized Wiener measures. *Bull. Korean Math. Soc.* **28** (1991), *no.* 2, 147–161. (Denis R. Bell) **93b:28038** 28C20 (46G12)

Kang, Sungkwon (*with* Burns, John A.) A stabilization problem for Burgers' equation with unbounded control and observation. *Estimation and control of distributed parameter systems* (*Vorau*, 1990), 51–72, *Internat. Ser. Numer. Math.*, 100, *Birkhäuser, Basel*, 1991. (Summary) **93a:93091** 93D15 (35B37, 35Q53, 93C20)

Kang, Wei (*with* Krener, Arthur J.) Extended quadratic controller normal form and dynamic state feedback linearization of nonlinear systems. (English summary) *SIAM J. Control Optim.* **30** (1992), *no.* 6, 1319–1337. (Ülle Kotta) **93k:93054** 93C10 (93B17, 93B18, 93B52, 93C15)

Kangas, A. (*with* Karlsson, E.) Adaptive root estimation algorithms. (English summary) *Identification and system parameter estimation* 1991, *Vol.* 1,2 (*Budapest*, 1991), 743–748, *IFAC Sympos. Ser.*, 3, *Pergamon, Oxford*, 1992. (*see* **93h:93009**) 93B30

Kaniel, Shmuel (*with* Shafrir, Itai) A new symmetrization method for vector valued maps. (English and French summaries) *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 4, 413–416. (Summary) **93g:58037** 58E20 (35J85, 49K10)

Kanimetov, K. A. The choice of weight function in the construction of adaptive grids. (Russian. Russian summary) *Izv. Akad. Nauk Respub. Kyrgyzstan* **1991**, *no.* 1, 16–22, 79. 65M50

Kaniok, Lothar On sequential measures of noncompactness in topological vector spaces. (Serbo-Croatian summary) *Zb. Rad. Prirod.-Mat. Fak. Ser. Mat.* **21** (1991), *no.* 1, 117–125. (Louis A. Talman) **93d:47098** 47H09 (47H10, 54H25)

Kaniovskaya, I. Yu. (*with* Zaigraev, A. Yu.) A problem of predicting a linear regression function with random regression coefficients. (Russian) *Issled. Operatsii i ASU No.* 37 (1991), 3–8. (Summary) **93c:62124** 62J05

Kaniuth, Eberhard (*with* Echterhoff, Siegfried; Kumar, Ajay[1]) A qualitative uncertainty principle for certain locally compact groups. *Forum Math.* **3** (1991), *no.* 4, 355–369. (Michael Cowling) **93a:43005** 43A30 (43A32)

— Topological Frobenius properties for nilpotent groups. II. *Math. Scand.* **68** (1991), *no.* 1, 89–107. (Rainer Felix) **93c:22009** 22D10 (22E25, 43A70)

— (*with* Markfort, Annette) The conjugation representation and inner amenability of discrete groups. *J. Reine Angew. Math.* **432** (1992), 23–37. (E. Thoma) **93m:22006** 22D10 (43A07, 46L99)

— (*with* Markfort, Annette) Irreducible subrepresentations of the conjugation representation of finite p-groups. *Manuscripta Math.* **74** (1992), *no.* 2, 161–175. (Gerhard Hiss) **93d:20018** 20C15

— (*with* Taylor, Keith F.) Kazhdan constants and the dual space topology. *Math. Ann.* **293** (1992), *no.* 3, 495–508. (Alexander Isaakovich Shtern) **93i:22003** 22D10 (22D15, 22D30)

— (*with* Gröchenig, Karlheinz; Taylor, Keith F.) Compact open sets in duals and projections in L^1-algebras of certain semi-direct product groups. *Math. Proc. Cambridge Philos. Soc.* **111** (1992), *no.* 3, 545–556. (Robert S. Doran) **93c:43003** 43A20 (22D30, 43A65)

Kanjin, Yûichi A transplantation theorem for Laguerre series. *Tôhoku Math. J.* (2) **43** (1991), *no.* 4, 537–555. (R. A. Askey) **93a:42011** 42C05 (33C45)

Kanjo, Anis I. Improving estimates in P.B.I.B. designs. *Statist. Probab. Lett.* **12** (1991), *no.* 2, 175–181. (Girdhar G. Agarwal) **93d:62138** 62K10

— An exact test for NBUE class of survival functions. (English summary) *Comm. Statist. Theory Methods* **22** (1993), *no.* 3, 787–795. 62N05

Kankaanrinta, Marja Proper real analytic actions of Lie groups on manifolds. *Ann. Acad. Sci. Fenn. Ser. A I Math. Dissertationes No.* 83 (1991), 41 *pp.* (F. E. A. Johnson) **93b:57039** 57S20 (32B20, 32B25)

Kannai, Yakar I. Nonstandard concave utility functions. *J. Math. Econom.* **21** (1992), *no.* 1, 51–58. (Frank Wattenberg) **93d:90011** 90A10 (03H10, 90A06)

Kánnai, Zoltán An existence theorem for differential inclusions in Banach spaces. *Pure Math. Appl. Ser. B* **2** (1991), *no.* 1, 23–31. (Michel Valadier) **93c:34044** 34A60 (34G20, 49J24)

Kannan, R. *see* **Kannan, Ravindran**

Kannan, Rangachary (*with* Fix, George J.) A random direction algorithm for an intersection problem. (English and German summaries) *Computing* **48** (1992), *no.* 3-4, 381–385. (H. R. Shen) **93g:65085** 65J15 (65F10, 65K10)

— (*with* Fix, George J.) Nonplanar oscillation of beams under periodic forcing. *J. Differential Equations* **96** (1992), *no.* 2, 419–429. (Takashi Narazaki) **93f:35226** 35Q72 (35B10, 35L75, 35R10, 73K12)

Kannan, Ravindran (*with* Cook, William J.; Hartmann, Mark E.; McDiarmid, Colin J. H.) On integer points in polyhedra. *Combinatorica* **12** (1992), *no.* 1, 27–37. (Paul R. Scott) **93e:52025** 52B12 (11P21)

— Lattice translates of a polytope and the Frobenius problem. (English summary) *Combinatorica* **12** (1992), *no.* 2, 161–177. (Gerard Sierksma) **93k:52015** 52B55 (52C07, 90C60)

Kannan, Sampath K. (*with* Soroker, Danny) Tiling polygons with parallelograms. *Discrete Comput. Geom.* **7** (1992), *no.* 2, 175–188. (Michael B. Dillencourt) **93b:52023** 52C20 (52B55, 68U05)

— (*with* Warnow, Tandy J.) Triangulating 3-colored graphs. *SIAM J. Discrete Math.* **5** (1992), *no.* 2, 249–258. (Summary) **93j:05147** 05C85 (05C10, 05C15, 68Q25, 68R10)

— (*with* Naor, Moni; Rudich, Steven) Implicit representation of graphs. (English summary) *SIAM J. Discrete Math.* **5** (1992), *no.* 4, 596–603. (Summary) **93g:68107** 68R10 (05C85, 68P05)

Kánnár, János (*with* Rácz, István) On the strength of space-time singularities. *J. Math. Phys.* **33** (1992), *no.* 8, 2842–2848. (Paul E. Ehrlich) **93f:53057** 53C50 (83C75)

Kanno, Hiroaki Observables in topological Yang-Mills theory and the Gribov problem. *Differential geometric methods in theoretical physics (Davis, CA, 1988)*, 563–570, *NATO Adv. Sci. Inst. Ser. B Phys.*, 245, *Plenum, New York*, 1990. (Rudolf Schmid) **93g:58022** 58D29 (57R57, 81T70)

— (*with* Inami, Takeo) $N = 2$ super W algebras and generalized $N = 2$ super KdV hierarchies based on Lie superalgebras. *J. Phys. A* **25** (1992), *no.* 13, 3729–3736. (Wen Xiu Ma) **93e:58086** 58F07 (17A70, 35Q53, 81R10, 81T40)

— (*with* Chair, Noureddine; Dobrev, V. K.) SO(2, **C**) invariant ring structure of BRST cohomology and singular vectors in 2D gravity with $c < 1$ matter. *Phys. Lett. B* **283** (1992), *no.* 3-4, 194–202. (A. K. Raina) **93j:81100** 81T70 (17B68, 17B81, 81T40)

— (*with* Eguchi, Tohru; Yang, Sung-Kil) W_∞ algebra in a two-dimensional black hole. (English summary) *Phys. Lett. B* **298** (1993), *no.* 1-2, 73–78. (Stanislav Z. Pakuliak) **93k:81200** 81T40 (17B67, 17B68, 81R10)

Kanno, Sachio Convergence theorems for the method of tangent hyperbolas. (English summary) *Math. Japon.* **37** (1992), *no.* 4, 711–722. (Xiaojun Chen) **93f:65043** 65H05

Kannurpatti, Raghavan (*with* Brémaud, Pierre; Mazumdar, Ravi R.) Event and time averages: a review. *Adv. in Appl. Probab.* **24** (1992), *no.* 2, 377–411. (Masakiyo Miyazawa) **93i:60092** 60G55 (60G44, 60K25)

— (*with* Mazumdar, Ravi R.; Guillemin, Fabrice; Badrinath, Vivek) On pathwise behavior of queues. (English summary) *Oper. Res. Lett.* **12** (1992), *no.* 4, 263–270. (Summary) **93g:90038** 90B22 (60K25)

Kano, H. *see* **Kano, Hiroyuki[1]**

Kanō, Hiroyuki *see* **Kano, Hiroyuki[2]**

Kano, Hiroyuki[1] (*with* Nishimura, Toshimitsu) Generalized existence conditions for real symmetric solutions of algebraic matrix Riccati equations. (English summary) *Systems and control*, 175–190, *Mita, Tokyo*, 1991. (Vladimir B. Larin) **93i:93052** 93B40 (15A24, 49N10, 93C05)

— Self-excited oscillations in periodic matrix Riccati equations. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, I (Kobe, 1991)*, 165–170, *Mita, Tokyo*, 1992. (Summary) **93j:34058** 34C25 (34C15, 34H05, 49N10, 93C05)

Kano, Hiroyuki[2] (*with* Shiokawa, Iekata) On the sums of digits of integers. (Japanese) *Seminar on Diophantine Approximation (Japanese) (Yokohama, 1987)*, 43–48, *Sem. Math. Sci.*, 12, *Keio Univ., Yokohama*, 1988. (Zun Shan) **93e:11013** 11A63

Kano, Mikio (*with* Chen, Ci Ping) Odd and even factors with given properties. (Chinese summary) *Chinese Quart. J. Math.* **7** (1992), *no.* 1, 65–71. (Samuel Stueckle) **93g:05111** 05C70

— (*with* Tokushige, Norihide) Binding numbers and f-factors of graphs. *J. Combin. Theory Ser. B* **54** (1992), *no.* 2, 213–221. (W. T. Tutte) **93a:05102** 05C70

Kano, Yutaka (*with* Ihara, Masamori) Asymptotic equivalence of unique variance estimators in marginal and conditional factor analysis models. (English summary) *Statist. Probab. Lett.* **14** (1992), *no.* 5, 337–341. (P. A. K. Covey-Crump) **93h:62117** 62H25

— Robust statistics for test-of-independence and related structural models. (English summary) *Statist. Probab. Lett.* **15** (1992), *no.* 1, 21–26. (Khursheed Alam) **93j:62051** 62F05 (62F35, 62H15)

Kanold, Hans-Joachim Einige Bemerkungen über vollkommene und mehrfach vollkommene Zahlen. [Some comments on perfect and multiply perfect numbers] *Abh. Braunschweig. Wiss. Ges.* **42** (1990/91), 49–55. (John B. Friedlander) **93c:11002** 11A25

— Über eine neue Verallgemeinerung eines Satzes von L. E. Dickson. II. [On a new generalization of a theorem by L. E. Dickson. II] *Arch. Math. (Basel)* **59** (1992), *no.* 5, 436–441. (Neville Robbins) **93i:11008** 11A25

Kan-on, Yukio (*with* Narukawa, Kimiaki; Teramoto, Yoshiaki) On the equations of bioconvective flow. *J. Math. Kyoto Univ.* **32** (1992), *no.* 1, 135–153. (Andro Mikelić) **93b:35118** 35Q35 (76D05, 76Z05)

Kanovei, V. G. Undecidable hypotheses in Edward Nelson's internal set theory. (Russian) *Uspekhi Mat. Nauk* **46** (1991), *no.* 6(282), 3–50, 240; *translation in Russian Math. Surveys* **46** (1991), *no.* 6, 1–54. (Pavol Zlatoš) **93i:03097** 03H05 (03E35, 03E70)

Kansa, Edward J. *see* **Advances in the theory and applications of radial basis functions, 93g:65008**

Kan Sen Cher (*with* Buza, M. K.) On a normalized rank-free system in a residue code. (Russian. Russian summary) *Vestnik Beloruss. Gos. Univ. Ser. I Fiz. Mat. Mekh.* **1992**, *no.* 1, 64–66, 79. 94B60

Kant, Immanuel *see* **Kant's philosophy of mathematics, 93i:00007**

Kant, Shashi (*with* Koul, C. L.) On finite summation formulae. II. *Ganita* **42** (1991), *no.* 1-2, 103–112 (1992). (From the introduction) **93k:33007** 33C60

— (*with* Koul, C. L.) On fractional integral operators. *J. Indian Math. Soc. (N.S.)* **56** (1991), *no.* 1-4, 97–107. (Ram Kishore Saxena) **93c:33007** 33C50 (33C60)

— (*with* Koul, C. L.) On functional relations. *Proc. Nat. Acad. Sci. India Sect. A* **61** (1991), *no.* 2, 229–235. (Jean Lavoine) **93e:26005** 26A33 (33C99)

— (*with* Koul, C. L.) On functional relations. II. (English summary) *Indian J. Pure Appl. Math.* **23** (1992), *no.* 10, 739–742. (Jean Lavoine) **93g:33006** 33C20 (26A33)

Kantam, R. R. L. (*with* Rosaiah, K.; Narasimham, V. L.) Optimum linear unbiased estimation of scale parameter by absolute values of order statistics in symmetric distributions. *Comm. Statist. Simulation Comput.* **20** (1991), *no.* 4, 1159–1172. (H. L. Harter) **93b:62039** 62F10 (62G30)

— (*with* Narasimham, V. L.) Linear estimation in reflected gamma distribution. (English summary) *Sankhya Ser. B* **53** (1991), *no.* 1, 25–47. 62F10 (62G30)

Kantawala, P. S. (*with* Agrawal, S. R.; Patel, C. M.) On strong approximation of Nörlund and Euler means of orthogonal series. *Indian J. Math.* **33** (1991), *no.* 2, 99–117. (K. Tandori) **93d:42036** 42C15

Kantchev, Vesselin Superconvergence of the gradient for linear finite elements for nonlinear elliptic problems. *Proceedings of the Second International Symposium on Numerical Analysis (Prague, 1987)*, 199–204, *Teubner-Texte Math.*, 107, *Teubner, Leipzig*, 1988. (*see* **93b:65007**) 65N30 (65N12)

Kantor, B. E. An existence theorem for the solution of a boundary value problem for a system of elliptic Monge-Ampère equations. (Russian) *Problems of geometry in the large for embedded manifolds (Russian)*, 12–15, *Ross. Gos. Ped. Univ., St. Petersburg*, 1991. (*see* **93k:53001**) 35J65

— (*with* Tukanaev, T.) On the regularity of the solution of the nonclosed Christoffel problem. (Russian) *Problems of geometry in the large for embedded manifolds (Russian)*, 20–26, *Ross. Gos. Ped. Univ., St. Petersburg*, 1991. (Vladislav Goldberg) **93m:53072** 53C45

Kantor, Georg *see* **Cantor, Georg**

Kantor, I. L. Jordan and Lie superalgebras determined by a Poisson algebra. *Algebra and analysis (Tomsk, 1989)*, 55–80, *Amer. Math. Soc. Transl. Ser.* 2, 151, *Amer. Math. Soc., Providence, RI*, 1992. (Dominique Lambert) **93j:17004** 17A70 (17C50)

Kantor, Jean-Michel Sur le polynôme associé à un polytope à sommets entiers dans $\mathbf{R}^n$. (English summary) [On the polynomial associated with an integral polytope in $\mathbf{R}^n$] *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 9, 669–672. (Michel Brion) **93d:52016** 52B20

Kantor, Jeffrey C. (*with* Spencer, Billie F., Jr.) On real parameter stability margins and their computation. (English summary) *Internat. J. Control* **57** (1993), *no.* 2, 453–462. (Summary) **93i:93097** 93D09

Kantor, William M. Finding composition factors of permutation groups of degree $n \leq 10^6$. Computational group theory, Part 2. *J. Symbolic Comput.* **12** (1991), *no.* 4-5, 517–526. (Peter M. Neumann) **93d:20009** 20B40 (68Q40)

— Notes on polynomial-time group theory. *CWI Quarterly* **5** (1992), *no.* 2, 93–105. (Cheryl E. Praeger) **93k:20006** 20B40 (03D15, 68Q25, 68Q40)

— Kerdock codes and related planes. (English summary) A collection of contributions in honour of Jack van Lint. *Discrete Math.* **106/107** (1992), 297–302. (Vikram Jha) **93i:51022** 51E23 (51A40, 51A50, 51E22, 94B27)

— Two families of flag-transitive affine planes. *Geom. Dedicata* **41** (1992), *no.* 2, 191–200. (Gary L. Ebert) **93d:51019** 51E15 (51A35, 51A40)

Kantorovich, L. V. *see* **Ji, Xiao Fu, (93i:01006)**

Kantowski, R. (*with* Marzban, Caren) One-loop Vilkovisky-DeWitt counterterms for two-dimensional gravity plus scalar field theory. (English summary) *Phys. Rev. D* (3) **46** (1992), *no.* 12, 5449–5457. (Summary) **93k:81208** 81T40 (81T15)

Kan Van Tuat Exponential dichotomy of differential systems with small retarded arguments. (Russian. Russian summary) *Asymptotic solutions of nonlinear equations with a small parameter (Russian)*, 51–58, *Akad. Nauk Ukrainy, Inst. Mat., Kiev*, 1991. (Anatolii Fedorovich Ivanov) **93i:34134** 34K15 (34K20)

Kanwal, R. P. (*with* Estrada, Ricardo) Distributional solutions of the Wiener-Hopf integral and integro-differential equations. *J. Integral Equations Appl.* **3** (1991), *no.* 4, 489–514. (N. L. Vasilevskii) **93a:45005** 45E10 (34K05, 47B35, 47G10)

— (*with* Estrada, Ricardo) The asymptotic expansion of certain multidimensional generalized functions. *J. Math. Anal. Appl.* **163** (1992), *no.* 1, 264–283. (J. P. Singhal) **93e:41044** 41A60 (46F10)

Kanzo, Tadashi Nagata criterion for Buchsbaum loci. *Math. J. Toyama Univ.* **14** (1991), 177–184. (P. Schenzel) **93b:13039** 13H10 (13B02)

Kao, Chien Chung (*with* Wang, Wèn Chün; Chen, Chin Shaw) Stabilization, estimation and robustness for large scale time-delay systems. *Control Theory Adv. Tech.* **7** (1991), *no.* 4, 569–585. (Andrzej Sosnowski) **93b:93058** 93C30 (93D15)

Kao, Edward P. C. (*with* Smith, Marion Spokony) On excess- , current- , and total-life distributions of phase-type renewal processes. (English summary) *Naval Res. Logist.* **39** (1992), *no.* 6, 789–799. 60K10

— Using state reduction for computing steady state vectors in Markov chains of $M/G/1$ type. *Queueing Systems Theory Appl.* **10** (1992), *no.* 1-2, 89–104. (Summary) **93b:60218** 60K25 (65U05, 90B22)

— (*with* Smith, Marion Spokony) On renewal processes relating to counter models: the case of phase-type interarrival times. (English summary) *J. Appl. Probab.* **30** (1993), *no.* 1, 175–183. (Summary) **93j:60126** 60K05 (60J05, 60K10)

Kao, Hsien-Chung (*with* Lee, Kimyeong) Self-dual Chern-Simons Higgs systems with an $N = 3$ extended supersymmetry. (English summary) *Phys. Rev. D* (3) **46** (1992), *no.* 10, 4691–4697. (Susan Mokhtari) **93m:81144** 81T60 (81T13)

Kao, Ming-Yang (*with* Wan, Fang) Not all planar digraphs have small cycle separators. (English summary) *Inform. Process. Lett.* **44** (1992), *no.* 2, 79–83. (Summary) **93i:05070** 05C20

Kao, W. F. Scale-invariant effective action with torsion. (French summary) *Canad. J. Phys.* **70** (1992), *no.* 4, 238–241. (Summary) **93c:83097** 83D05 (83F05)

— Induced Einstein-Kalb-Ramond theory in four dimensions. (English summary) *Phys. Rev. D* (3) **46** (1992), *no.* 12, 5421–5428. (Summary) **93h:83029** 83C99 (83E15)

Kao, Y. H. (*with* Wang, C. S.; Yang, T. H.) Influence of harmonic coupling on bifurcations in Duffing oscillator with bounded potential well. (English summary) *J. Sound Vibration* **159** (1992), *no.* 1, 13–21. (Summary) **93i:70024** 70K50 (34C15, 34C23)

Kapadia, C. H. (*with* Lee, K. R.) Restricted maximum likelihood estimation under Eisenhart model III. *Statist. Neerlandica* **45** (1991), *no.* 3, 271–282. (Masafumi Akahira) **93c:62041** 62F10 (62J05)

Kapanadze, D. V. The Dirichlet problem for a bi-elliptic equation and a problem with an oblique derivative. (Russian) *Trudy Inst. Vychisl. Mat. Akad. Nauk Gruzin. SSR* **27** (1987), *no.* 1, 91–98. (A. S. Berdyshev) **93c:35033** 35J40

— Uniqueness of the solution of an inverse problem. (Russian. English and Georgian summaries) *Soobshch. Akad. Nauk Gruzii* **140** (1990), *no.* 3, 529–532 (1991). 31A25

— A nonlocal boundary value problem in an exterior domain. (Russian. Russian summary) *Differentsial'nye Uravneniya* **28** (1992), *no.* 8, 1381–1386, 1469; *translation in Differential Equations* **28** (1992), *no.* 8, 1126–1131 (1993). (Summary) **93k:35077** 35J25

— An inverse problem in potential theory for piecewise-smooth multiply connected domains. (Russian) *Sibirsk. Mat. Zh.* **33** (1992), *no.* 1, 196–200, 222; *translation in Siberian Math. J.* **33** (1992), *no.* 1, 161–165. (Summary) **93c:31003** 31A25

Kapania, R. K. (*with* Eldred, L. B.) Solution of nonlinear partial differential equations using the Chebyshev spectral method. (English summary) *Comput. Mech.* **8** (1991), *no.* 3, 173–179. (Summary) **93e:65122** 65M70

Kapella-Economou, A. (*with* Chiou-Lahanas, C.; Lahanas, A. B.; Maintas, X. N.) Gravitational radiative corrections in $N = 1$ supergravity. *Phys. Rev. D* (3) **45** (1992), *no.* 2, 534–544. (Nguyen Anh Ky) **93c:83118** 83E50 (81T20, 81T60)

de doncker-Kapenga, Elise *see* **de Doncker-Kapenga, Elise**

Kaper, Hans G. (*with* Kwong, Man Kam) Ground states of semi-linear diffusion equations. *Differential equations with applications in biology, physics, and engineering (Leibnitz,*

1989), 219–226, *Lecture Notes in Pure and Appl. Math.*, 133, *Dekker, New York*, 1991. (*see* **93a:00021**) 35K55 (35B05)

— (*with* Kwong, Man Kam) A free boundary problem arising in plasma physics. *Nonlinear diffusion equations and their equilibrium states*, 3 (*Gregynog*, 1989), 265–273, *Progr. Nonlinear Differential Equations Appl.*, 7, *Birkhäuser Boston, Boston, MA*, 1992. (Summary) **93c:34024** 34A34 (76X05)

— (*with* Chern, I-Liang; Colin, Thierry) Classical solutions of the nondivergent barotropic equations on the sphere. (English summary) *Comm. Partial Differential Equations* **17** (1992), *no.* 5-6, 1001–1019. (J. Thomas Beale) **93g:76109** 76U05 (35A05, 35Q99, 76C15, 86A10)

— (*with* Garbey, Marc; Leaf, Gary K.; Matkowsky, Bernard J.) Quasi-periodic waves and the transfer of stability in condensed-phase surface combustion. *SIAM J. Appl. Math.* **52** (1992), *no.* 2, 384–395. (V. A. Sobolev) **93f:80019** 80A25 (35B32)

— (*with* Kwong, Man Kam) On two conjectures concerning the multiplicity of solutions of a Dirichlet problem. *SIAM J. Math. Anal.* **23** (1992), *no.* 3, 571–578. (Jesús Hernández) **93c:34055** 34B15 (34A47, 34C10, 35J25, 73K12)

— *see also* **Asymptotic and numerical methods for partial differential equations with critical parameters, 93m:65006**

Kaper, Tasso J. (*with* Wiggins, Stephen) Commentary: "On the periodic solutions of a forced second-order equation [J. Nonlinear Sci. **1** (1991), no. 2, 225–245; MR 93e:34060a] by S. P. Hastings and J. B. McLeod. *J. Nonlinear Sci.* **1** (1991), *no.* 2, 247–253. (Mikhail Zaks) **93e:34060b** 34C25 (34C37, 35Q35, 58F22, 76B15)

— (*with* Wiggins, Stephen) On the structure of separatrix-swept regions in singularly-perturbed Hamiltonian systems. (English summary) *Differential Integral Equations* **5** (1992), *no.* 6, 1363–1381. (Martin Kummer) **93m:58100** 58F30 (34C37, 34E15, 58F05, 70H05)

Kapetanakis, D. (*with* Zoupanos, G.) Coset-space-dimensional reduction of gauge theories. (English summary) *Phys. Rep.* **219** (1992), *no.* 1-2, 76 *pp.* (Roberto Percacci) **93m:83077** 83E15 (81T13, 81V17)

Kapila, A. K. An introduction to detonation theory. *Fluid dynamical aspects of combustion theory*, 143–160, *Pitman Res. Notes Math. Ser.*, 223, *Longman Sci. Tech., Harlow*, 1991. (From the introduction) **93h:80005** 80A25 (76L05)

— (*with* Grosch, C. E.; Jackson, T. L.) Nonseparable eigenmodes of the incompressible boundary layer. (English summary) *Instability, transition, and turbulence* (*Hampton, VA*, 1991), 127–136, *ICASE/NASA LaRC Ser., Springer, New York*, 1992. (*see* **93j:76004**) 76E05 (76D10)

Kapitan, Tomis Peirce and the autonomy of abductive reasoning. (English summary) *Erkenntnis* **37** (1992), *no.* 1, 1–26. (Charles F. Kielkopf) **93d:03011** 03A05 (01A55, 03-03)

Kapitaniak, T. Strange nonchaotic transients. *J. Sound Vibration* **158** (1992), *no.* 1, 189–194. (W.-H. Steeb) **93g:70026** 70K50 (34C15)

Kapitonov, B. V. Stabilization of solutions of an exterior boundary value problem for some class of evolution systems. *Partial differential equations, Part* 1, 2 (*Warsaw*, 1990), 197–205, *Banach Center Publ.*, 27, *Part* 1, 2, *Polish Acad. Sci., Warsaw*, 1992. (Reinhard Racke) **93m:35031** 35B40 (35L30, 35L35)

— Sharp estimates for the rate of stabilization of solutions of exterior mixed problems for a class of evolution systems. (Russian. Russian summary) *Mat. Sb.* **183** (1992), *no.* 7, 81–114. (Ya. A. Roitberg) **93k:35034** 35B35 (35L35)

Kapitonov, V. M. Joint distribution of the products of random variables on a compact group that are distinguishable by a permutation of multipliers. (Russian) *Diskret. Mat.* **4** (1992), *no.* 1, 146–158; *translation in Discrete Math. Appl.* **2** (1992), *no.* 6, 645–657. (Gennadiy M. Fel'dman) **93m:60025** 60B15

Kapitonov, V. S. (*with* Popov, V. N.) The functional approach to the theory of Coulomb crystals. (Russian) Translated in Proc. Steklov Inst. Math. **1991**, no. 2, 189–217. Theory of operators with a random potential and some problems in statistical physics (Russian). *Trudy Mat. Inst. Steklov.* **184** (1990), 170–195. (Volker Warstat) **93a:82057** 82D25 (81S40, 82B31, 82D55)

Kapitula, Todd M. Stability of weak shocks in λ–ω systems. *Indiana Univ. Math. J.* **40** (1991), *no.* 4, 1193–1219. (Roger Lui) **93d:35073** 35K57 (35B35)

Kaplan, A. A. (*with* Tichatschke, Rainer) Adaptive methods for solving ill-posed semi-infinite problems of convex optimization. (Russian) *Dokl. Akad. Nauk SSSR* **322** (1992), *no.* 3, 460–464; *translation in Soviet Math. Dokl.* **45** (1992), *no.* 1, 119–123. (From the introduction) **93c:90094** 90C34 (65K05)

— (*with* Tichatschke, Rainer) Stable approximation schemes for ill-posed convex variational problems. Siberian Advances in Mathematics. *Siberian Adv. Math.* **2** (1992), *no.* 1, 123–132. (Marco Gaviano) **93e:49050** 49M25 (90C34, 90C48)

Kaplan, Alexander Remark on certain C^*-algebra extensions considered by G. Skandalis. *Proc. Amer. Math. Soc.* **117** (1993), *no.* 4, 1047–1050. (Mahmood Khoshkam) **93e:46068** 46L05 (22D25, 46L80)

Kaplan, David B. A method for simulating chiral fermions on the lattice. (English summary) *Phys. Lett. B* **288** (1992), *no.* 3-4, 342–347. (Summary) **93f:81099** 81T25 (81T50)

Kaplan, Michael A. A class of cosets of second order Reed-Muller codes. *Combinatorics* '88, *Vol.* 2 (*Ravello*, 1988), 115–128, *Res. Lecture Notes Math., Mediterranean, Rende*, 1991. (*see* **93m:00040**) 94B60

Kaplan, Pierre (*with* Halter-Koch, Franz; Williams, Kenneth S.; Yamamoto, Yoshihiko) Infrastructure des classes ambiges d'idéaux des ordres des corps quadratiques réels. [Infrastructure of ambiguous classes of ideals of the orders of real quadratic fields] *Enseign. Math.* (2) **37** (1991), *no.* 3-4, 263–292. (Stéphane Louboutin) **93b:11147** 11R29 (11E41, 11R11)

Kaplan, Wilfred (*with* Sleator, Frederick B.) Procedures for multiple integration. (English summary) *Comput. Math. Appl.* **24** (1992), *no.* 7, 125–126. 65D30

Kaplansky, Felix (*with* Berezovsky, Arkady) Dynamics of thin vortex rings in a viscous fluid. (Russian and Estonian summaries) *Eesti Tead. Akad. Toimetised Füüs. Mat.* **41** (1992), *no.* 2, 95–103, 173. (Summary) **93g:76044** 76D99

Kaplunov, Yu. D. (*with* Nol'de, E. V.) The Lamb problem for the case of a generalized plane stress state. (Russian) *Dokl. Akad. Nauk* **322** (1992), *no.* 6, 1043–1047; *translation in Soviet Phys. Dokl.* **37** (1992), *no.* 2, 88–90. (M. O. Basheleishvili) **93i:73011** 73C02 (73K10)

Kaplunovsky, Vadim S. Erratum: "One-loop threshold effects in string unification" [Nuclear Phys. B **307** (1988), no. 1, 145–156; MR 89f:81254]. *Nuclear Phys. B* **382** (1992), *no.* 2, 436–438. (From the text) **93g:81126** 81T30 (81V25)

Kapoor, Ashok K. (*with* Shanta, P.; Chaturvedi, S.; Srinivasan, V.) Parastatistical systems at finite temperatures in thermofield dynamics. *Internat. J. Modern Phys. A* **7** (1992), *no.* 16, 3807–3816. (Lech Jakóbczyk) **93f:82007** 82B10 (81S05)

— *see also* **Namiki, Mikio, 93m:81076**

Kapoor, G. P. (*with* Srinivas, V.; Juneja, O. P.) Extreme points and support points of certain class of analytic functions. *New trends in geometric function theory and applications* (*Madras*, 1990), 136–139, *World Sci. Publishing, River Edge, NJ*, 1991. (Shigeyoshi Owa) **93d:30019** 30C45

Kapoor, Sanjiv (*with* Ramesh, H.) Algorithms for generating all spanning trees of undirected, directed and weighted graphs. (English summary) *National Seminar on Theoretical Computer Science* (*Madras*, 1991), 74–83, *IMS Rep.*, 115, *Inst. Math. Sci., Madras*, 199?. (*see* **93b:68006**) 68R10 (68Q20, 68Q25)

Kaporin, I. E. Iterative solution of systems of linear equations with the application of incomplete inverse triangular decomposition. (Russian. Russian summary) *Direct and inverse problems in mathematical physics* (*Russian*), 71–77, 261, *Moskov. Gos. Univ., Moscow*, 1991. (Summary) **93g:65049** 65F10

— Two-level explicit preconditionings for the conjugate gradient method. (Russian. Russian summary) *Differentsial'nye Uravneniya* **28** (1992), *no.* 2, 329–339, 367; *translation in Differential Equations* **28** (1992), *no.* 2, 280–289. (Summary) **93f:65030** 65F10

Kapos, L. (*with* Paez, J.) Unique extremal extensions of suboperators. *Ann. Univ. Sci. Budapest. Eötvös Sect. Math.* **34** (1991), 15–19 (1992). (Karim Seddighi) **93f:47007** 47A20 (47A05, 47B99)

Kapouleas, Nicolaos Complete constant mean curvature surfaces in Euclidean three-space. *Ann. of Math.* (2) **131** (1990), *no.* 2, 239–330. (Rob Kusner) **93a:53007a** 53A10 (49R10, 58G30)

— Compact constant mean curvature surfaces in Euclidean three-space. *J. Differential Geom.* **33** (1991), *no.* 3, 683–715. (Rob Kusner) **93a:53007b** 53A10 (49R10, 58G30)

— Constant mean curvature surfaces constructed by fusing Wente tori. *Proc. Nat. Acad. Sci. U.S.A.* **89** (1992), *no.* 12, 5695–5698. (Rob Kusner) **93h:53011** 53A10 (49Q10)

skorin-Kapov, Jadranka *see* **Skorin-Kapov, Jadranka**

Kapovich, M. È. Deformations of representations of fundamental groups of three-dimensional manifolds. (Russian) *Sibirsk. Mat. Zh.* **32** (1991), *no.* 1, 43–49, 219; *translation in Siberian Math. J.* **32** (1991), *no.* 1, 33–38. (Andrey V. Tetenov) **93m:57013** 57M50

— (*with* Potyagaĭlo, L. D.) On the absence of finiteness theorems of Ahlfors and Sullivan for Kleinian groups in higher dimensions. (Russian) *Sibirsk. Mat. Zh.* **32** (1991), *no.* 2, 61–73, 212; *translation in Siberian Math. J.* **32** (1991), *no.* 2, 227–237. (V. V. Chueshev) **93g:30064** 30F40 (20F34, 20H10, 53A30, 57S30)

— Flat conformal structures on 3-manifolds (survey). *Proceedings of the International Conference on Algebra, Part* 1 (*Novosibirsk*, 1989), 551–570, *Contemp. Math.*, 131, *Part* 1, *Amer. Math. Soc., Providence, RI*, 1992. (William Goldman) **93f:57015** 57M50 (53A30, 57N10)

Kappe, Luise-Charlotte (*with* Ying, John H.) On exact power margin groups. *Rend. Sem. Mat. Univ. Padova* **87** (1992), 245–265. (W. E. Deskins) **93h:20045** 20F99 (20D15)

Kappel, Franz (*with* Ito, Kazufumi) On integro-differential equations with weakly singular kernels. *Differential equations with applications in biology, physics, and engineering* (*Leibnitz*, 1989), 209–218, *Lecture Notes in Pure and Appl. Math.*, 133, *Dekker, New York*, 1991. (Peter Junghanns) **93f:45014** 45J05 (34K05, 47D03, 47N20)

— (*with* Banks, H. T.; Wang, Chunming) Weak solutions and differentiability for size structured population models. *Estimation and control of distributed parameter systems* (*Vorau*, 1990), 35–50, *Internat. Ser. Numer. Math.*, 100, *Birkhäuser, Basel*, 1991. (Hassan Emamirad) **93f:92020** 92D25 (35Q80, 47D03)

— (*with* Ito, Kazufumi) Two families of approximation schemes for delay systems. *Results Math.* **21** (1992), *no.* 1-2, 93–137. (G. F. Webb) **93a:34089** 34K35 (47D06, 47N20, 49K25, 49M99, 65Q05, 93B40)

— *see also* **Differential equations with applications in biology, physics, and engineering, 93a:00021**

Kappeler, Thomas Smoothing of dispersive waves. *Journées "Équations aux Dérivées Partielles"* (*Saint-Jean-de-Monts*, 1992), *Exp. No. X*, 4 *pp., École Polytech., Palaiseau*, 1992. (*see* **93e:35005**) 35Q53

— (*with* Craig, Walter; Strauss, Walter Alexander) Gain of regularity for equations of KdV type. (French summary) *Ann. Inst. H. Poincaré Anal. Non Linéaire* **9** (1992), *no.* 2, 147–186. (V. V. Kovrizhkin) **93j:35153** 35Q53 (35B65, 76B25)

— (*with* Burghelea, D.; Friedlander, Leonid) Erratum: "On the determinant of elliptic differential and finite difference operators in vector bundles over S^1" [Comm. Math. Phys. **138** (1991), no. 1, 1–18, MR 92f:58193]. *Comm. Math. Phys.* **150** (1992), *no.* 2, 431. (Editors) **93k:58231** 58G26 (58G03)

— (*with* Burghelea, D.; Friedlander, Leonid) Meyer-Vietoris type formula for determinants of elliptic differential operators. *J. Funct. Anal.* **107** (1992), *no.* 1, 34–65. (Steven Rosenberg) **93f:58242** 58G26 (35S15, 58G20)

— (*with* Cohen, Amy) Solutions to the cubic Schrödinger equation by the inverse scattering method. *SIAM J. Math. Anal.* **23** (1992), *no.* 4, 900–922. (Vadim G. Bakurov) **93f:35213** 35Q55 (34A55, 34L25)

Kappen, Bert (*with* Maes, M. J. J. J. B.) On the permutahedron and the quadratic placement problem. (English summary) *Philips J. Res.* **46** (1992), *no.* 6, 267–292. (Gerard Sierksma) **93k:52011** 52B12 (90C27, 90C90)

Kappos, Efthimios A global geometrical input-output linearization theory. (English summary) *IMA J. Math. Control Inform.* **9** (1992), *no.* 1, 1–21. (Henk Nijmeijer) **93f:93034** 93B18 (93B17, 93B29, 93C10)

Kappraff, Jay The relationship between mathematics and mysticism of the golden mean through history. *Fivefold symmetry*, 33–65, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93i:52002**) 01A99 (00A69, 11B39)

Kapral, Raymond (*with* Cosenza, Mario G.) Coupled maps and pattern formation on the Sierpiński gasket. (English summary) *Chaos* **2** (1992), *no.* 3, 329–335. (G. Ambika) **93g:58095** 58F13 (58F40, 82D30)

— (*with* Cosenza, Mario G.) Coupled maps on fractal lattices. (English summary) *Phys. Rev. A* (3) **46** (1992), *no.* 4, 1850–1858. (Summary) **93e:82030** 82C05 (58F08)

— *see also* **Homoclinic chaos, 93i:58005**

Kapralov, Stoyan N. (*with* Daskalov, Rumen N.) New minimum distance bounds for certain binary linear codes. (English summary) *IEEE Trans. Inform. Theory* **38** (1992), *no.* 6, 1795–1796. (Summary) **93g:94013** 94B05 (94B65)

Kapralski, A. Problems of inclusion and equivalence of digital systems. Proceedings of the Second International Mathematical Miniconference, Part I (Budapest, 1988). *Period. Polytech. Transportation Engrg.* **18** (1990), *no.* 1-2, 47–53. (Michael Bauer) **93f:68027** 68Q05 (68Q25)

Kapräne, I. (*with* Liepiņš, A.) Fixed time of a sand glass. (Latvian. English and Russian summaries) *Mathematics (Russian)*, 167–170, *Latv. Univ. Zināt. Raksti*, 562, *Latv. Univ., Riga*, 1991. (*see* **93f:00009**) 54H25

— (*with* Liepiņš, A.) To Jonathan Livingston Seagull. (English, Russian and Latvian summaries) *Mathematics (Russian)*, 171–174, *Latv. Univ. Zināt. Raksti*, 562, *Latv. Univ., Riga*, 1991. (*see* **93f:00009**) 54A40 (54H25)

Kapranov, M. M. (*with* Voevodskii, V. A.) ∞-groupoids and homotopy types. (French summary) International Category Theory Meeting (Bangor, 1989 and Cambridge, 1990). *Cahiers Topologie Géom. Différentielle Catégoriques* **32** (1991), *no.* 1, 29–46. (Ronald Brown) **93c:55006** 55P15 (18D05, 55U10)

— (*with* Sturmfels, Bernd; Zelevinsky, A. V.) Chow polytopes and general resultants. *Duke Math. J.* **67** (1992), *no.* 1, 189–218. (Michel Brion) **93e:14062** 14M25 (14C05, 52B20)

Kapsiotis, G. (*with* Tzafestas, Spyros G.; Reveliotis, S.) The generalized network approach to optimized decision making and planning. (English summary) *Computational systems analysis*, 227–252, *Elsevier, Amsterdam*, 1992. (*see* **93b:93006**) 90A05

Kaptanoğlu, H. Turgay Möbius-invariant spaces and algebras in polydiscs. (English summary) *Indiana Univ. Math. J.* **41** (1992), *no.* 2, 339–362. (Steven George Krantz) **93i:32004** 32A07 (46E25, 46J15)

Kaptsov, O. V. Invariant sets of evolution equations. *Nonlinear Anal.* **19** (1992), *no.* 8, 753–761. (J. Chrastina) **93j:35015** 35A30 (35Q35)

Kapur, Deepak (*with* Narendran, Paliath) Complexity of unification problems with associative-commutative operators. (English summary) *J. Automat. Reason.* **9** (1992), *no.* 2, 261–288. (Summary) **93h:68123** 68T15 (03B35, 03D15, 68Q25)

Kapur, J. N. Some mathematical models in biosciences. (English summary) *Bull. Math. Assoc. India* **19** (1987), *no.* 1-4, 56 *pp.* (Summary) **93i:92001** 92B05 (00A71)

— (*with* Kapur, Sanjay; Kumar, Uma) Birth and death processes with multiple births and deaths and with immigrations and emigrations. (English summary) *Bull. Math. Assoc. India* **23** (1991), *no.* 1-4, 1–22. 60J80

— A family of difference equation models in population dynamics. (English summary) *Bull. Math. Assoc. India* **23** (1991), *no.* 1-4, 23–34. (Summary) **93i:92013** 92D25 (39A10)

— Pareto-optimal solution for competitive exploitation of restricted-access common-property fishery resources. (English summary) *Bull. Math. Assoc. India* **23** (1991), *no.* 1-4, 50–60. 90A30

— Dual problems arising from entropy optimisation principles. *J. Math. Phys. Sci.* **25** (1991), *no.* 3, 191–215. (Summary) **93a:49022** 49N15 (49M37, 94A17)

— Generalised Fermi-Dirac distributions and maximum-entropy principle. (English and Italian summaries) *Metron* **49** (1991), *no.* 1-4, 119–132 (1992). 82B03

— A note on coding theorems of information theory. *Nat. Acad. Sci. Lett.* **14** (1991), *no.* 4, 175–179. (Summary) **93b:94017** 94A45 (94B75)

— Burg's and Shannon's measures of entropy as limiting cases of two families of measures of entropy. *Proc. Nat. Acad. Sci. India Sect. A* **61** (1991), *no.* 3, 375–387. (Summary) **93b:94010** 94A15

— (*with* Tripathi, G. P.) Information-theoretic proofs of some inequalities. *Proc. Nat. Acad. Sci. India Sect. A* **61** (1991), *no.* 4, 481–493. (L. Losonczi) **93g:26033** 26D20 (94A15, 94A17)

— (*with* Kesavan, H. K.) ★ Entropy optimization principles with applications. *Academic Press, Inc., Boston, MA*, 1992. xx+408 *pp. ISBN* 0-12-397670-7 (Guy Jumarie) **93k:94003** 94A17 (62B10)

— Development of mathematical sciences in India during the twentieth century. (English summary) *Indian J. Hist. Sci.* **27** (1992), *no.* 4, 389–407. 01A60 (01A80)

— Application of generalised maximum-entropy principle to population dynamics, innovation diffusion models and chemical reactions. (English summary) *J. Math. Phys. Sci.* **26** (1992), *no.* 2, 183–211. (Summary) **93k:92008** 92D25 (94A17)

— *see also* **Some eminent Indian mathematicians of the twentieth century, 93k:01084** *and* **93k:01085**

Kapur, Sanjay (*with* Kapur, J. N.; Kumar, Uma) Birth and death processes with multiple births and deaths and with immigrations and emigrations. (English summary) *Bull. Math. Assoc. India* **23** (1991), *no.* 1-4, 1–22. 60J80

Kapur, Shyam (*with* Bilardi, Gianfranco) On uniform learnability of language families. *Inform. Process. Lett.* **44** (1992), *no.* 1, 35–38. (From the introduction) **93i:68109** 68Q45 (68T05)

Kapuścik, Edward (*with* Horzela, Andrzej; Kempczyński, Jarosław; Uzes, Charles) On discrete models of space-time. (English summary) *Progr. Theoret. Phys.* **88** (1992), *no.* 6, 1065–1071. (Lawrence Sklar) **93j:83006** 83A05

Kapustin, A. N. (*with* Pronin, P. I.) Chern-Simons theory in axial gauge. *Phys. Lett. B* **274** (1992), *no.* 3-4, 363–366. (Alexander W. Smith) **93a:81129** 81T13 (81T15)

Kapustin, N. Yu. A property of generalized analytic functions. (Russian) *Dokl. Akad. Nauk SSSR* **322** (1992), *no.* 3, 465–468; *translation in Soviet Math. Dokl.* **45** (1992), *no.* 1, 124–128. (Marin S. Marinov) **93e:30089** 30G20 (30G12)

Kapustin, V. V. Reflexivity of operators: general methods and a criterion for almost isometric contractions. (Russian. Russian summary) *Algebra i Analiz* **4** (1992), *no.* 2, 141–160; *translation in St. Petersburg Math. J.* **4** (1993), *no.* 2, 319–335. (Hari Bercovici) **93j:47028** 47A65 (47A45, 47B38, 47D99)

— Almost isometric operators: a functional model, invariant subspaces, the commutant. (Russian. English summary) *Zap. Nauchn. Sem. S.-Peterburg. Otdel. Mat. Inst. Steklov. (POMI)* **201** (1992), *Issled. po Lineĭn. Oper. Teor. Funktsiĭ.* 20, 95–116, 191. (Hari Bercovici) **93j:47016** 47A45 (47A20)

Kapustnikov, A. A. (*with* Ivanov, Evgenii Alekseevich[2]) Gauge-covariant Wess-Zumino actions for super p-branes in superspace. *Internat. J. Modern Phys. A* **7** (1992), *no.* 10, 2153–2173. (W. Cox) **93c:81173** 81T30 (81T60)

Kapustyan, V. E. Minimax estimation for singularly perturbed boundary problems of transport in a planar layer. *Soviet J. Automat. Inform. Sci.* **24** (1991), *no.* 2, 29–34 (1992); *translated from Avtomatika* **1991,** *no.* 2, 31–36, 96 (*Russian. English summary*). (Summary) **93c:45011** 45K05 (49N55, 82C70)

— Asymptotics of bounded controls in optimal elliptic problems. (Russian. English and Russian summaries) *Dokl. Akad. Nauk Ukrainy* **1992,** *no.* 2, 70–74, 170. (A. Göpfert) **93h:49045** 49K40 (35B37, 35J25, 49K20, 49M05)

— Asymptotics of bounded controls in optimal bilinear elliptic problems. (Russian. English and Russian summaries) *Dokl. Akad. Nauk Ukrainy* **1992,** *no.* 9, 35–39, 169. (G. A. Kurina) **93i:49033** 49K40 (35B37, 35J99, 49K20)

Kar, Kadambini (*with* Nanda, Sudarsan) Convex fuzzy mappings. *Fuzzy Sets and Systems* **48** (1992), *no.* 1, 129–132. (Summary) **93d:04002** 04A72 (52A99)

Kar, Sayan An instanton approach to quantum tunnelling for a particle on a rotating circle. (English summary) *Phys. Lett. A* **168** (1992), *no.* 3, 179–186. (Summary) **93e:81023** 81Q20 (81V17)

— (*with* Bhawal, Biplab) Lorentzian wormholes in Einstein-Gauss-Bonnet theory. (English summary) *Phys. Rev. D* (3) **46** (1992), *no.* 6, 2464–2468. (Summary) **93e:83062** 83E15 (83D05)

Kar, Supriya K. (*with* Khastgir, S. Pratik; Kumar, Alok[2]) An algorithm to generate classical solutions of string effective action. *Modern Phys. Lett. A* **7** (1992), *no.* 17, 1545–1551. (Summary) **93b:81219** 81T30

— (*with* Kumar, Alok[2]) Target space structure of a chiral gauged Wess-Zumino-Witten model. (English summary) *Phys. Lett. B* **291** (1992), *no.* 3, 246–250. 81T13

Kara, A. H. (*with* Mahomed, F. M.) Equivalent Lagrangians and the solution of some classes of nonlinear equations $\ddot{q} + p(t)\dot{q} + r(t)q = \mu\dot{q}^2q^{-1} + f(t)q^n$. (English summary) *Internat. J. Non-Linear Mech.* **27** (1992), *no.* 6, 919–927. (P. G. L. Leach) **93i:70019** 70H35 (34A05, 34A26, 58F05, 70H33)

Karabali, Dimitra Gauged WZW models and the coset construction of conformal field theories. *Differential geometric methods in theoretical physics (Davis, CA*, 1988), 237–249, *NATO Adv. Sci. Inst. Ser. B Phys.*, 245, *Plenum, New York*, 1990. (Summary) **93c:81210** 81T40 (17B81, 81R10)

— (*with* Iso, Satoshi; Sakita, B.) One-dimensional fermions as two-dimensional droplets via Chern-Simons theory. (English summary) *Nuclear Phys. B* **388** (1992), *no.* 3, 700–714. (Summary) **93i:81309** 81V70 (81T13)

Karaballi, A. A. (*with* El Tarazi, M. N.) Direct nonperiodic and periodic cubic splines. *Serdica* **17** (1991), *no.* 2-3, 111–119 (1992). (L. L. Schumaker) **93c:41019** 41A15 (41A05)

— (*with* El Tarazi, M. N.) Solving second order initial value problems by cubic splines. (English summary) *J. Inst. Math. Comput. Sci. Math. Ser.* **5** (1992), *no.* 2, 133–145. (Summary) **93m:65091** 65L05 (65D07)

Karachik, V. V. On a representation of analytic functions by harmonic functions. (Russian. Russian summary) *Voprosy Vychisl. i Prikl. Mat. (Tashkent) No.* 88 (1990), 90–101, 161. (Harold P. Boas) **93j:41018** 41A58 (32A05, 42C15)

— A problem for a polyharmonic equation in a ball. (Russian) *Sibirsk. Mat. Zh.* **32** (1991), *no.* 5, 51–58, 207; *translation in Siberian Math. J.* **32** (1991), *no.* 5, 767–774 (1992). (M. A. Atakhodzhaev) **93e:31010** 31B30 (35J40)

— Solvability of a boundary value problem for the Helmholtz equation with higher-order normal derivatives on the boundary. (Russian. Russian summary) *Differentsial'nye Uravneniya* **28** (1992), *no.* 5, 907–909, 920. (Summary) **93j:35054** 35J05

Karade, T. M. (*with* Bajpai, Kamini) On Eulerian angles. *Indian J. Pure Appl. Math.* **23** (1992), *no.* 7, 509–530. (Gestur Olafsson) **93h:51032** 51N30 (22E15, 51F25)

Karadzhov, Georgi E. Uniform asymptotics of the spectral function of a perturbed harmonic oscillator and the equiconvergence of series in eigenfunctions. (Russian. English and Russian summaries) *Annuaire Univ. Sofia Fac. Math. Inform.* **83** (1989), 51–65 (1992). (Boris Skachek) **93f:35166** 35P20 (34L10, 34L20, 35P10)

Karadžić, Žarko (*with* Novak, Ladislav A.; Acketa, Dragan M.) A space optimal algorithm for enumerating spanning trees of a connected graph. (Serbo-Croatian summary) *Zb. Rad. Prirod.-Mat. Fak. Ser. Mat.* **21** (1991), *no.* 1, 39–56. (Pawel Winter) **93b:05154** 05C85 (05C05, 05C30, 68R10)

Karaev, Khudoyar The Riemann-Hilbert problem for a generalization of the Moisil-Teodorescu system. (Russian. English and Lithuanian summaries) *Differentsial'nye Uravneniya i Primenen. No.* 45 (1990), 34–50. (M. Yu. Vasil'chik) **93a:35042** 35J55 (35Q15)

Karafiat, A. (*with* Demkowicz, Leszek; Oden, J. Tinsley) Solution of elastic scattering problems in linear acoustics using h-p boundary element method. (English summary) Reliability in computational mechanics (Kraków, 1991). *Comput. Methods Appl. Mech. Engrg.* **101** (1992), *no.* 1-3, 251–282. (Summary) **93j:73028** 73D25 (73V10, 76M15, 76Q05)

Karageorghis, A. (*with* Sivaloganathan, S.) A Chebyshev spectral collocation method for the computation of buoyancy-induced flows. (English summary) *Appl. Math. Comput.* **55** (1993), *no.* 2-3, 297–308. (Summary) **93k:76087** 76M25

Karagodov, V. P. Unique solvability in the large of three-dimensional problems on the convection of a viscous incompressible fluid. (Russian) *Akad. Nauk Ukrainy Inst. Mat. Preprint* **1991,** *no.* 54, 26 *pp.* (Summary) **93c:35130** 35Q30 (76D05, 76R05)

Karaivanov, V. D. Correspondence between spin-1 and dilute spin-$\frac{1}{2}$ models and exact solution for a chain. (English summary) *Phys. Lett. A* **173** (1993), *no.* 1, 13–16. 82B20

Karakaş, H. İbrahim Forms and m-applications. (Turkish summary) *Doğa Mat.* **16** (1992), *no.* 1, 1–11. (B. Reichstein) **93d:15002** 15A04 (11E76, 15A69)

Karakaşoğlu, Ahmet (*with* Sundareshan, Malur K.) A neural network-based approach for the intelligent adaptive control of robotic manipulators. (English and Polish summaries) *Systems Sci.* **18** (1992), *no.* 1-2, 153–163 (1993). 93C40 (93C85)

Karakhanyan, M. I. The operator equation $HY - YK = C$. (Russian. English and Armenian summaries) *Izv. Akad. Nauk Armyan. SSR Ser. Mat.* **25** (1990), *no.* 4, 353–360, 414; *translation in Soviet J. Contemporary Math. Anal.* **25** (1990), *no.* 4, 41–48 (1991). (B. Nagy) **93a:47021** 47A62 (47B40)

Karakostas, George Terminal controllability in cooperative systems. *Conference on Differential Equations and Applications (Ruse*, 1989), 374–380, *Tech. Univ., Ruse*, 1991. (*see* **93f:34004**) 93C05 (34H05, 92D25)

— (*with* Wu, Yumei) Oscillation in dynamical systems. *Nonlinear Anal.* **20** (1993), *no.* 3, 269–283. (W. R. Utz) **93j:34066** 34C35 (34C10, 34K15)

Karakozov, S. D. Integrability of the algebra of vector fields (a functional approach). (Russian) *Geometry and topology of homogeneous spaces (Russian)*, 35–43, *Altaĭsk. Gos. Univ., Barnaul*, 1988. (J. S. Joel) **93e:17034** 17B66 (22E65, 57S99)

Karaliūnas, Romas J. Formal averaging of equations in plasticity theory in the case of two-stage deformation processes. (Russian. Lithuanian summary) *Liet. Mat. Rink.* **32** (1992), *no.* 1, 80–93. (Introduction) **93j:73056** 73K20 (73B27, 73E05)

Karamancıoğlu, A. (*with* Lewis, Frank L.) Geometric theory for the singular Roesser model. *IEEE Trans. Automat. Control* **37** (1992), *no.* 6, 801–806. (Summary) **93b:93028** 93B25 (93C05)

Karam Filho, José (*with* Franca, Leopoldo P.; Loula, Abimael F. D.; Stenberg, R.) A convergence analysis of a stabilized method for the Stokes flow. (Portuguese summary) *Mat. Apl. Comput.* **10** (1991), *no.* 1, 19–26. (Rolf Rannacher) **93b:65168** 65N30 (76D07, 76M10)

— (*with* Loula, Abimael F. D.) A nonstandard application of Babuška-Brezzi theory to finite element analysis of Stokes problem. (English and Portuguese summaries) *Mat. Apl. Comput.* **10** (1991), *no.* 3, 243–262. (Summary) **93c:65117** 65M60 (65M12, 76D07, 76M10)

— (*with* Loula, Abimael F. D.) On stable equal-order finite element formulations for incompressible flow problems. The Second World Congress of Computational Mechanics, Part II (Stuttgart, 1990). *Internat. J. Numer. Methods Engrg.* **34** (1992), *no.* 2, 655–665. (W. Langlois) **93e:76049** 76M10 (76D05)

Karampetakis, N. P. (*with* Vardulakis, A. I.) Matrix fractions and full system equivalence. (English summary) *IMA J. Math. Control Inform.* **9** (1992), *no.* 2, 147–160. (Leslie R. Fletcher) **93m:93024** 93B17 (93B25, 93C05)

Karamzin, Yu. N. (*with* Zakharova, I. G.; Trofimov, V. A.) Numerical modeling of thermal self-action of scanned light pulses. (Russian. English and Russian summaries) *Mat. Model.* **4** (1992), *no.* 3, 84–90. 78A55 (80A99)

— (*with* Trofimov, V. A.; Zakharova, I. G.) Difference schemes for optical thermal blooming problems. (English summary) *Russian J. Numer. Anal. Math. Modelling* **7** (1992), *no.* 4, 299–323. (J. D. P. Donnelly) **93f:80002** 80–08 (65M06, 78–08, 80A20)

Karandikar, Rajeeva L. On almost sure convergence of modified Euler-Peano approximation of solution to an S.D.E. driven by a semimartingale. *Séminaire de Probabilités, XXV*, 113–120, *Lecture Notes in Math.*, 1485, *Springer, Berlin*, 1991. (Eckhard Platen) **93j:60078** 60H10 (65L99)

— Multiplicative decomposition of nonsingular matrix valued semimartingales. *Séminaire de Probabilités, XXV*, 262–269, *Lecture Notes in Math.*, 1485, *Springer, Berlin*, 1991. (Jia Gang Wang) **93m:60086** 60G44 (60H05)

— (*with* Kallianpur, Gopinath) An introduction to white-noise analysis and nonlinear filtering. *Mathematical theory of control* (*Bombay*, 1990), 173–183, *Lecture Notes in Pure and Appl. Math.*, 142, *Dekker, New York*, 1993. (*see* **93g:93003**) 60H99 (60G35, 93E12)

Karanikas, A. I. (*with* Ktorides, C. N.) Field theoretical origin of excitation path integrals. *Phys. Lett. B* **275** (1992), *no.* 3-4, 403–409. (From the text) **93a:81102** 81S40 (81T99)

Karanikas, C. (*with* Bisbas, A.) On the entropy of certain stochastic measures. (English summary) *Probabilistic and stochastic methods in analysis, with applications* (*Il Ciocco*, 1991), 663–668, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 372, *Kluwer Acad. Publ., Dordrecht*, 1992. (Summary) **93f:28007** 28A80 (28D20, 60J10, 60J50)

Karanjai, M. (*with* Karanjai, S.) The zeros of some transcendental functions of transport theory. (English summary) *Astrophys. Space Sci.* **196** (1992), *no.* 2, 231–236. (From the introduction) **93g:85004** 85A25 (33E20)

Karanjai, S. (*with* Deb, T. K.; Biswas, G.) Time-dependent scattering and transmission function in an anisotropic two-layered atmosphere. *Astrophys. Space Sci.* **189** (1992), *no.* 1, 95–117. (Masamichi Matsumoto) **93d:85001** 85A20

— (*with* Deb, T. K.) An exact solution of the equation of transfer for coherent scattering in an exponential atmosphere. *Astrophys. Space Sci.* **189** (1992), *no.* 1, 119–122. (L. F. Oster) **93a:85003** 85A25 (44A10)

— (*with* Deb, T. K.) The time-dependent X- and Y-functions. (English summary) *Astrophys. Space Sci.* **196** (1992), *no.* 2, 223–229. (Carl T. Kelley) **93j:85006** 85A25 (45G10, 82C70)

— (*with* Karanjai, M.) The zeros of some transcendental functions of transport theory. (English summary) *Astrophys. Space Sci.* **196** (1992), *no.* 2, 231–236. (From the introduction) **93g:85004** 85A25 (33E20)

— (*with* Talukder, M.) Solution of the equation of transfer with general phase function by a modified spherical-harmonic method. (English summary) *Astrophys. Space Sci.* **197** (1992), *no.* 2, 309–336. (B. K. Datta) **93m:85005** 85A25

Karantonis, Antonis (*with* Pagitsas, Michael; Sazou, Dimitra) Dynamical response of the quasiperiodically forced Franck-FitzHugh model for the electrodissolution of iron in sulfuric acid solutions: observation of quasiperiodic, strange nonchaotic and chaotic behavior. (English summary) *Internat. J. Bifur. Chaos Appl. Sci. Engrg.* **2** (1992), *no.* 2, 295–311. (Summary) **93f:92030** 92E20

Karapetyan, A. O. (*with* Dzhrbashyan, M. M.) Integral representations in a generalized upper half-plane. (Russian. English and Armenian summaries) *Izv. Akad. Nauk Armyan. SSR Ser. Mat.* **25** (1990), *no.* 6, 507–533, 605 (1991); *translation in Soviet J. Contemporary Math. Anal.* **25** (1990), *no.* 6, 1–28 (1991). (Alexandr M. Kytmanov) **93c:32004** 32A25 (32A37)

Karapetyan, A. V. Phase portraits of dissipative systems with symmetry. (Russian) *Problems in the investigation of the stability and stabilization of motion* (*Russian*), 17–24, *Akad. Nauk SSSR, Vychisl. Tsentr, Moscow*, 1991. (From the text) **93g:70016** 70H05 (58F05, 70E15)

— Qualitative investigation of the dynamics of a top on a plane with friction. (Russian) *Prikl. Mat. Mekh.* **55** (1991), *no.* 4, 698–701; *translation in J. Appl. Math. Mech.* **55** (1991), *no.* 4, 563–565 (1992). (From the text) **93b:70005** 70E15 (58F14, 70F99, 70H05)

Karapetyants, N. K. (*with* Askhabov, S. N.) Discrete equations of convolution type with monotone nonlinearity in complex spaces. (Russian) *Dokl. Akad. Nauk* **322** (1992), *no.* 6, 1015–1018; *translation in Soviet Math. Dokl.* **45** (1992), *no.* 1, 206–210. (From the text) **93d:47110** 47H15 (39A12, 47B35, 47N99)

Karas', E. V. (*with* Dement'ev, O. N.) Stability of the stretching of a rectangular band. (Russian) *Vestnik Chelyabinsk. Univ. Ser. Mat. Mekh. No.* 1 (1991), 121–128. (From the text) **93g:73059** 73E60 (73H99, 76A05)

Karas, Vladimír (*with* Vokrouhlický, David) Dynamics of charged particles near a black hole in a magnetic field. (English summary) *J. Physique I* **1** (1991), *no.* 7, 1005–1012. 83C57 (83C10)

— (*with* Vokrouhlický, David) Chaotic motion of test particles in the Ernst space-time. *Gen. Relativity Gravitation* **24** (1992), *no.* 7, 729–743. (W. B. Bonnor) **93d:83010** 83C10 (58F13)

Karasalo, Ilkka (*with* Ivansson, Sven) A high-order adaptive integration method for wave propagation in range-independent fluid-solid media. (English summary) *J. Acoust. Soc. Amer.* **92** (1992), *no.* 3, 1569–1577. (Summary) **93g:73113** 73V20 (73D10, 76M25, 76Q05)

Karasëv, A. Yu. On a correction model in classification problems. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **32** (1992), *no.* 3, 453–460; *translation in Comput. Math. Math. Phys.* **32** (1992), *no.* 3, 389–396. (Summary) **93b:68085** 68T30 (65K05)

Karasëv, M. V. (*with* Maslov, V. P.) ★ Нелинейные скобки Пуассона. Геометрия и квантование. (Russian) [Nonlinear Poisson brackets. Geometry and quantization] With an English summary. "*Nauka*", *Moscow*, 1991. 368 *pp. ISBN* 5-02-014325-1 (V. Oproiu) **93a:58062** 58F05 (58F06, 58H05, 81S10)

— Simple quantization formula. *Symplectic geometry and mathematical physics* (*Aix-en-Provence*, 1990), 234–244, *Progr. Math.*, 99, *Birkhäuser Boston, Boston, MA*, 1991. (Yihren Wu) **93b:58060** 58F06 (81Q20, 81S10)

— (*with* Vorob'ev, Yu. M.) Quasimodes generated by characters of a dynamical group, and deformation of the Kirillov form. (Russian) *Funktsional. Anal. i Prilozhen.* **26** (1992), *no.* 1, 71–73; *translation in Functional Anal. Appl.* **26** (1992), *no.* 1, 57–59. (L. S. Polyakova) **93m:58045** 58F05 (58F06, 81S10)

— (*with* Novikova, E. M.) On the asymptotic behavior of the solution of the Cauchy problem for the one-dimensional Schrödinger equation. (Russian) *Mat. Zametki* **51** (1992), *no.* 1, 156–159; *translation in Math. Notes* **51** (1992), *no.* 1-2, 100–102. (Victor A. Galaktionov) **93f:35026** 35B40 (35J10)

Karasëv, V. P. Oscillator and other groups in optics. (Russian. Russian summary) *Trudy Fiz. Inst. Lebedev.* **191** (1989), 120–132, 246. (K. Wódkiewicz) **93f:81170** 81V80 (78A10, 81R05)

— (*with* Puzyrevskiĭ, V. I.) Generalized coherent states in quantum optics. (Russian. English summary) *Trudy Fiz. Inst. Lebedev.* **211** (1991), 161–180. (Summary) **93c:81280** 81V80 (81R30)

— Polynomial deformations of oscillator algebras in quantum theories with internal symmetries. *Sakharov Memorial Lectures in Physics, Vol.* 1, 2 (*Moscow*, 1991), 291–301, *Nova Sci. Publ., Commack, NY*, 1992. (A. U. Klimyk) **93k:81073** 81R05 (17B81, 81V70, 81V80)

— Algebras of the SU(n) invariants: structure, representations and applications. *J. Phys. A* **25** (1992), *no.* 2, 393–399. (Ronald C. King) **93d:81060** 81R05 (17B10)

Karasözen, Bülent (*with* Somalı, Şennur) Iterated defect correction methods for differential-algebraic equations. (English and Turkish summaries) *Doğa Mat.* **16** (1992), *no.* 3, 230–249. (Alexander Ostermann) **93m:65097** 65L05

Karassiov, V. P. *see* **Karasëv, V. P.**

Karasu, Atalay (*with* Gürses, Metin; Satir, Ahmet) Linearization as a new test for integrability. (English summary) *Nonlinear evolution equations and dynamical systems* (*Baia Verde*, 1991), 303–309, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93i:35141** 35Q58 (35A25, 58F07)

Karasudhi, P. ★ Foundations of solid mechanics. Solid Mechanics and its Applications, 3. *Kluwer Academic Publishers Group, Dordrecht*, 1991. xvi+439 *pp. ISBN* 0-7923-0772-0 (Shaya Lokshin) **93d:73001** 73–01 (73Bxx, 73Cxx)

Karatopraklïev, G. D. Boundary value problems for equations of mixed type. (Russian) *Conference on Differential Equations and Applications* (*Ruse*, 1989), 205–216, *Tech. Univ., Ruse*, 1991. (*see* **93f:34004**) 35M10

Ivanova-Karatopraklieva, I. *see* **Ivanova-Karatopraklieva, I.**

Karatsuba, A. A. On the zeros of Riemann's zeta-function on the critical line. *International Symposium in Memory of Hua Loo Keng, Vol. I* (*Beijing*, 1988), 117–162, *Springer, Berlin*, 1991. (Daniel A. Goldston) **93c:11067** 11M06

— Zeros of linear combinations of Z-functions that correspond to Dirichlet series. (Russian) *Dokl. Akad. Nauk SSSR* **317** (1991), *no.* 5, 1053–1054; *translation in Soviet Math. Dokl.* **43** (1991), *no.* 2, 589–590. (Don Redmond) **93a:11072** 11M26

— Distribution of values of Dirichlet characters on additive sequences. (Russian) *Dokl. Akad. Nauk SSSR* **319** (1991), *no.* 3, 543–545; *translation in Soviet Math. Dokl.* **44** (1992), *no.* 1, 145–148. (Antal Balog) **93b:11103** 11L40

— On zeros of a special form of functions connected with Dirichlet series. (Russian) *Izv. Akad. Nauk SSSR Ser. Mat.* **55** (1991), *no.* 3, 483–514; *translation in Math. USSR-Izv.* **38** (1992), *no.* 3, 471–502. (Don Redmond) **93c:11070** 11M41

— (*with* Vladimirov, V. S.; Shafarevich, I. R.) On the centennial of the birth of Academician I. M. Vinogradov. (Russian) *Vestnik Akad. Nauk SSSR* **1991**, *no.* 9, 91–103. (Karl-Heinz Schlote) **93d:01082** 01A70 (11–03)

— (*with* Voronin, S. M.) ★ The Riemann zeta-function. Translated from the Russian by Neal Koblitz. de Gruyter Expositions in Mathematics, 5. *Walter de Gruyter & Co., Berlin*, 1992. xii+396 *pp. ISBN* 3-11-013170-6 (Matti Jutila) **93b:11096** 11M06 (11–02, 11L15, 11M26, 11N05)

— On the distribution of real zeros of the function $\zeta(\frac{1}{2}+it)$. (Russian) *Dokl. Akad. Nauk SSSR* **322** (1992), *no.* 2, 217–218; *translation in Soviet Math. Dokl.* **45** (1992), *no.* 1, 46–47. (Antanas Laurinčikas) **93e:11098** 11M06

— On the number of zeros of the Riemann zeta function lying on almost all short intervals of the critical line. (Russian. Russian summary) *Izv. Ross. Akad. Nauk Ser. Mat.* **56** (1992), *no.* 2, 372–397; *translation in Russian Acad. Sci. Izv. Math.* **40** (1993), *no.* 2, 353–376. (Aleksandar Ivić) **93i:11105** 11M26

— Sharpening of theorems on the number of zeros, lying in intervals of the critical line, of some Dirichlet series. (Russian) *Uspekhi Mat. Nauk* **47** (1992), *no.* 2(284), 193–194; *translation in Russian Math. Surveys* **47** (1992), *no.* 2, 219–220. (From the text) **93f:11065** 11M26

Karatsuba, E. A. Fast computations of transcendental functions. (Russian) *Problemy Peredachi Informatsii* **27** (1991), *no.* 4, 76–99; *translation in Problems Inform. Transmission* **27** (1991), *no.* 4, 339–360 (1992). (A. Pethő) **93c:65027** 65D20 (11Y60, 65Y20)

Karatueva, N. A. *see* **Development and application of the method of Lyapunov functions, 93m:93005**

Karatzas, Ioannis (*with* Ocone, Daniel L.) Feynman-Kac formula for a degenerate planar diffusion and an application in stochastic control. *Stochastic analysis*, 273–296, *Academic Press, Boston, MA*, 1991. (H.-J. Engelbert) **93b:60177** 60J60 (93E20)

— (*with* El Karoui, Nicole) A new approach to the Skorohod problem, and its applications. *Stochastics Stochastics Rep.* **34** (1991), *no.* 1-2, 57–82. (H.-J. Engelbert) **93b:60088a**

60G40 (60J50, 60J65, 93E20)
— (*with* Ocone, Daniel L.) A generalized Clark representation formula, with application to optimal portfolios. *Stochastics Stochastics Rep.* **34** (1991), *no.* 3-4, 187–220. (John P. Lehoczky) **93b:60098** 60G44 (60H05, 90A09)
— (*with* El Karoui, Nicole) Correction: "A new approach to the Skorohod problem, and its applications". *Stochastics Stochastics Rep.* **36** (1991), *no.* 3-4, 265. (H.-J. Engelbert) **93b:60088b** 60G40 (60J50, 60J65, 93E20)
— (*with* Ocone, Daniel L.; Li, Jinlu) An extension of Clark's formula. *Stochastics Stochastics Rep.* **37** (1991), *no.* 3, 127–131. (Ali Süleyman Üstünel) **93f:60078** 60H05 (60H07)
— (*with* Ocone, Daniel L.) The resolvent of a degenerate diffusion on the plane, with application to partially observed stochastic control. (English summary) *Ann. Appl. Probab.* **2** (1992), *no.* 3, 629–668. (Jerzy Zabczyk) **93h:60100** 60H30 (93E03, 93E20)
— (*with* Cvitanić, Jakša) Convex duality in constrained portfolio optimization. (English summary) *Ann. Appl. Probab.* **2** (1992), *no.* 4, 767–818. (Yu. M. Kabanov) **93j:90068** 90C15 (49N15, 60G57, 60H30, 90A09, 93E20)
— *see also* **Applied stochastic analysis, 93a:93100**

Karayannakis, Dimitri Spectral decompositions of hyperbolic isometric groups in Hardy spaces of the disk. *J. Math. Anal. Appl.* **160** (1991), *no.* 2, 342–357. (T. A. Gillespie) **93b:47069** 47B40 (46E15, 46J15, 47B38, 47D03)

Karbanovski, Valeri (*with* Frolov, B. N.) The asymptotical solutions near the singular points for perfect fluid configurations in the conformal Poincaré-gauge theory of gravitation. (English summary) *Phys. Lett. A* **169** (1992), *no.* 1-2, 1–4. (Kishore Marathe) **93g:83086** 83D05

Karcanias, Nicos (*with* Eliopoulou, H.) Geometric properties of the Segre characteristic at infinity of a singular pencil. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, II* (*Kobe*, 1991), 109–114, *Mita, Tokyo*, 1992. (*see* **93g:93006**) 93B29 (15A22)
— Geometric properties and invariants of rational vector spaces. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, II* (*Kobe*, 1991), 115–120, *Mita, Tokyo*, 1992. (*see* **93g:93006**) 93B27
— (*with* Leventides, John) A new sufficient condition for arbitrary pole placement by real constant output feedback. *Systems Control Lett.* **18** (1992), *no.* 3, 191–199. (Summary) **93a:93057** 93B55 (93B27)

Karcher, Hermann (*with* Hoffman, David A.; Rosenberg, Harold) Embedded minimal annuli in $\mathbf{R}^3$ bounded by a pair of straight lines. *Comment. Math. Helv.* **66** (1991), *no.* 4, 599–617. (Cun-Jin Sun) **93d:53012** 53A10

Karcher, W. (*with* Busam, R.; Freitag, E.) Ein Ring elliptischer Modulformen. [A ring of elliptic modular forms] *Arch. Math.* (*Basel*) **59** (1992), *no.* 2, 157–164. (Harvey Cohn) **93g:11036** 11F06 (11F11)

Karchevskiĭ, M. M. (*with* Lyashko, A. D.; Pavlova, M. F.) ★ Методы вычислений: численные методы решения дифференциальных уравнений. (Russian) [Computational methods: numerical methods for solving differential equations] *Kazan. Gos. Univ., Kazan'*, 1990. 127 *pp. ISBN* 5-7464-0319-9 (Editors) **93a:65001** 65–01 (65Lxx, 65Mxx, 65Nxx)
— (*with* Badriev, I. B.) Convergence of an iterative process in a Banach space. (Russian) *Issled. Prikl. Mat. No.* 17 (1990), 3–15. (Hong Kun Xu) **93a:47067** 47H17 (47H05, 47H15, 65J15)

Kardanov, S. O. Limit regularity of solutions of parabolic equations with one-sided constraints on the boundary. (Russian. English and Russian summaries) *Vestnik Leningrad. Univ. Mat. Mekh. Astronom.* **1991,** *vyp.* 3, 119–121, 134–135; *translation in Vestnik Leningrad Univ. Math.* **24** (1991), *no.* 3, 64–65. (Summary) **93k:35014** 35B05 (35K60)

Karel, M. L. Eisenstein series on tube domains. *Abh. Math. Sem. Univ. Hamburg* **62** (1992), 81–116. (Antonia Wilson Bluher) **93h:11046** 11F30 (11F46, 11F55)

Karelin, B. M. A criterion for the unique solvability of the Cauchy problem for functional-differential equations. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* **1990,** *no.* 3, 16–23; *translation in Soviet Math.* (*Iz. VUZ*) **34** (1990), *no.* 3, 17–25. (From the text) **93d:34114** 34K05

Karger, David R. (*with* Koller, Daphne; Phillips, Steven J.) Finding the hidden path: time bounds for all-pairs shortest paths. (English summary) *32nd Annual Symposium on Foundations of Computer Science* (*San Juan, PR*, 1991), 560–568, *IEEE Comput. Soc. Press, Los Alamitos, CA*, 1991. (Summary) **93e:05093** 05C85 (68Q25, 68R10)
— Global min-cuts in RNC, and other ramifications of a simple min-cut algorithm. (English summary) *Proceedings of the Fourth Annual ACM-SIAM Symposium on Discrete Algorithms* (*Austin, TX*, 1993), 21–30, *ACM, New York*, 1993. (Summary) **93m:68134** 68R10 (05C85, 68Q25)

Karger, Élizabeth Syllogistique buridanienne. [The Buridanian syllogistic] *Dialogue* **31** (1992), *no.* 3, 445–458. 03–03 (01A35, 03B20)

Kargin, B. A. (*with* Rakimgulov, K. B.) A weighting Monte Carlo method for modelling the optical radiation field in the ocean-atmosphere system. *Russian J. Numer. Anal. Math. Modelling* **7** (1992), *no.* 3, 221–240. (Summary) **93c:65010** 65C05 (78A45, 86A05)

Karhumäki, J. Equations over finite sets of words and equivalence problems in automata theory. *Words, languages and combinatorics* (*Kyoto*, 1990), 233–250, *World Sci. Publishing, River Edge, NJ*, 1992. (Patrice Séébold) **93d:20119** 20M35 (68Q70)

Kari, Jarkko (*with* Hurd, Lyman P.; Culik, Karel, II) The topological entropy of cellular automata is uncomputable. (English summary) *Ergodic Theory Dynamical Systems* **12** (1992), *no.* 2, 255–265. (M. L. Blank) **93f:58124** 58F08 (68Q80)
— (*with* Sântean, Lila) The impact of the number of cooperating grammars on the generative power. *Theoret. Comput. Sci.* **98** (1992), *no.* 2, 249–262. (Jetty Kleijn) **93g:68069** 68Q50

Karidi, Ron Ricci curvature and volume growth in nilpotent and some solvable Lie groups. (French summary) *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 7, 551–556. (Summary) **93d:53060** 53C30 (53C20)

Karim, Jehangir P. (*with* Hill, Raymond) Searching with lies: the Ulam problem. (English summary) A collection of contributions in honour of Jack van Lint. *Discrete Math.* **106/107** (1992), 273–283. (A. Pultr) **93h:05004** 05A05 (90D05)

Karimberdieva, S. (*with* Islamov, R. K.) A numerical algorithm for solving a transport and diffusion equation. (Russian. Russian summary) *Voprosy Vychisl. i Prikl. Mat.* (*Tashkent*) *No.* 88 (1990), 76–89, 161. 76R50 (76M25)

Karimov, G. K. (*with* Makhmudov, A. A.; Safarov, M. Zh.) Decay of rectangular pulses in the Boussinesq approximation. (Russian) *Dokl. Akad. Nauk UzSSR* **1991,** *no.* 4, 11–12. 65P05

Karimova, M. M. Tauberian-type theorems for multiple Dirichlet series. (Russian) *Functional analysis, No.* 33 (*Russian*), 29–38, *Ul'yanovsk. Gos. Ped. Inst., Ul'yanovsk*, 1992. (*see* **93g:47002**) 30B50

Kariya, Takeaki (*with* Kuwana, Yoichi) LBI tests for multivariate normality in exponential power distributions. *J. Multivariate Anal.* **39** (1991), *no.* 1, 117–134. (N. Giri) **93a:62087** 62H15
— (*with* Toyooka, Yasuyuki) Bounds for normal approximations to the distributions of generalized least squares predictors and estimators. *J. Statist. Plann. Inference* **30** (1992), *no.* 2, 213–221. (Bert M. Steece) **93e:62166** 62J02 (62E99, 62J05)
— (*with* Cohen, Arthur) On the invariance structure of the one-sided testing problem for a multivariate normal mean. *Statist. Sinica* **2** (1992), *no.* 1, 221–236. (Jack C. Lee) **93g:62078a** 62H15
— (*with* Cohen, Arthur) Corrigenda: "On the invariance structure of the one-sided testing problem for a multivariate normal mean". *Statist. Sinica* **2** (1992), *no.* 2, 619. (Jack C. Lee) **93g:62078b** 62H15

Karlander, Johan (*with* Björner, Anders; Lindström, Bernt) Communication complexity of two decision problems. (English summary) *Discrete Appl. Math.* **39** (1992), *no.* 2, 161–163. (Summary) **93f:94001** 94A05 (68Q25)
— (*with* Björner, Anders) Invertibility of the base Radon transform of a matroid. (English summary) Topological, algebraical and combinatorial structures. Frolík's memorial volume. *Discrete Math.* **108** (1992), *no.* 1-3, 139–147. (Joseph Kung) **93i:05042** 05B35 (05B20, 15A03)

Karlhede, Anders (*with* Westerberg, Erik) Anyons in a magnetic field. *Internat. J. Modern Phys. B* **6** (1992), *no.* 10, 1595–1621. (Summary) **93c:81057** 81Q99 (81V10)

Karlin, Anna R. (*with* Irani, Sandy; Phillips, Steven J.) Strongly competitive algorithms for paging with locality of reference. *Proceedings of the Third Annual ACM-SIAM Symposium on Discrete Algorithms* (*Orlando, FL*, 1992), 228–236, *ACM, New York*, 1992. (*see* **93b:68005**) 68N25

Karlin, I. V. (*with* Gorban', A. N.) Thermodynamic parameterization. (English summary) *Phys. A* **190** (1992), *no.* 3-4, 393–404. (A. D. Khon'kin) **93m:82040** 82C40
— Simplest nonlinear regularization. *Transport Theory Statist. Phys.* **21** (1992), *no.* 3, 291–293. (A. D. Khon'kin) **93d:82069** 82C40

Karlin, Samuel ★ Mathematical methods and theory in games, programming, and economics. Vol. I: Matrix games, programming, and mathematical economics. Vol. II: The theory of infinite games. Reprint of the 1959 original. *Dover Publications, Inc., New York*, 1992. *Vol.* I: x+433 *pp.*; *Vol.* II: x+386 *pp. ISBN* 0-486-67020-1 (Editors) **93a:90001** 90–01 (01A75, 90Axx, 90Dxx)
— Stochastic comparisons between means and medians for i.i.d. random variables. (English summary) *The art of statistical science*, 261–274, *Wiley Ser. Probab. Math. Statist. Probab. Math. Statist., Wiley, Chichester*, 1992. (Yosef Rinott) **93m:60039** 60E15
— (*with* Dembo, Amir) Limit distributions of maximal segmental score among Markov-dependent partial sums. *Adv. in Appl. Probab.* **24** (1992), *no.* 1, 113–140. (Esa Nummelin) **93b:60042** 60F05 (60G70, 60K15)
— R. A. Fisher and evolutionary theory. *Statist. Sci.* **7** (1992), *no.* 1, 13–33. (Jon Stene) **93k:01051** 01A60 (01A70, 92–03)
— (*with* Lindqvist, Bo Henry; Yao, Yi-Ching) Markov chains on hypercubes: spectral representations and several majorization relations. (English summary) *Random Structures Algorithms* **4** (1993), *no.* 1, 1–36. (David J. Aldous) **93k:60168** 60J10

Karliner, Marek (*with* Susskind, Leonard; Klebanov, Igor R.) Strings in space. *Quantum mechanics of fundamental systems*, 2 (*Santiago*, 1987), 153–165, *Ser. Cent. Estud. Cient. Santiago, Plenum, New York*, 1989. (*see* **93e:81005**) 81T30 (81V05)

Karlinger, Michael R. (*with* Troutman, Brent M.) A note on subtrees rooted along the primary path of a binary tree. (English summary) *Discrete Appl. Math.* **42** (1993), *no.* 1, 87–93. (J. W. Moon) **93k:05048** 05C05

Karloff, Howard (*with* Fiat, Amos; Foster, Dean P.; Rabani, Yuval; Ravid, Yiftach; Vishwanathan, Sundar) Competitive algorithms for layered graph traversal. (English summary) *32nd Annual Symposium on Foundations of Computer Science* (*San Juan, PR*, 1991), 288–297, *IEEE Comput. Soc. Press, Los Alamitos, CA*, 1991. (Summary) **93e:68100** 68R10 (05C85, 68Q25)

Karlov, V. I. Combined optimization of observation and control processes. *Soviet J. Comput. Systems Sci.* **30** (1992), *no.* 1, 22–29; *translated from Izv. Akad. Nauk SSSR Tekhn. Kibernet.* **1990,** *no.* 6, 192–199 (*Russian*). (Summary) **93e:93034** 93B51 (49K15, 49N35, 93E11)

Karlovich, Yu. I. (*with* Aĭzenshtat, A. V.; Litvinchuk, G. S.) Defect numbers of the D. Kveselava–N. Vekua operator with a discontinuous shift derivative. (Russian) *Dokl. Akad. Nauk SSSR* **318** (1991), *no.* 1, 11–16; *translation in Soviet Math. Dokl.* **43** (1991), *no.* 3, 633–638 (1992). (Sergeĭ Grudskiĭ) **93d:30008** 30C35 (30E25, 31A25, 45E10, 47G10)

Karlsson, Anders (*with* Kristensson, Gerhard; Otterheim, Henrik) Transient wave propagation in gyrotropic media. (English summary) *Invariant imbedding and inverse problems* (*Albuquerque, NM*, 1990), 77–89, *SIAM, Philadelphia, PA*, 1992. (*see* **93e:00023**) 78A40 (76X05)
— (*with* Kreider, K.; Kristensson, Gerhard) Wave splitting and imbedding equations for a spherically symmetric dispersive medium. (English summary) *Invariant imbedding and inverse problems* (*Albuquerque, NM*, 1990), 103–113, *SIAM, Philadelphia, PA*, 1992. (*see* **93e:00023**) 78A45

Karlsson, E. (*with* Kangas, A.) Adaptive root estimation algorithms. (English summary) *Identification and system parameter estimation* 1991, *Vol.* 1,2 (*Budapest*, 1991), 743–748, *IFAC Sympos. Ser.*, 3, *Pergamon, Oxford*, 1992. (*see* **93h:93009**) 93B30

Karma, Otto On the concept of discrete convergence. *Numer. Funct. Anal. Optim.* **13** (1992), *no.* 1-2, 129–142. (Mihai Turinici) **93b:65086** 65J15 (47A50, 47H17)
— On the concept of discrete convergence in the case of normed spaces. (Russian summary) *Tartu Ül. Toimetised No.* 937 (1992), 47–62. (A. B. Bakushinskiĭ) **93h:65079** 65J05 (47A50)

Karmanov, V. G. (*with* Berezněv, V. A.; Tret'yakov, A. A.) Stable methods for solving extremal problems with approximate information. (Russian) *Cybernetics and computer technology, No.* 5 (*Russian*), 169–208, "*Nauka*", *Moscow*, 1991. (Bernd Engelmann) **93f:90146** 90C30 (49M37, 65K05)

Karmarkar, Narendra (*with* Resende, Mauricio G. C.; Ramakrishnan, K. G.) An interior point algorithm to solve computationally difficult set covering problems. Interior point methods for linear programming: theory and practice (Scheveningen, 1990). *Math. Programming* **52** (1991), *no.* 3, *Ser. B*, 597–618 (1992). (Panos M. Pardalos) **93b:90050** 90C10 (65K05)

— Interior-point methods in optimization. *ICIAM* 91 (*Washington, DC*, 1991), 160–181, *SIAM, Philadelphia, PA*, 1992. (*see* **93b:00026**) 90C05 (65K10, 90C30)

— (*with* Kamath, A.) A continuous approach to compute upper bounds in quadratic maximization problems with integer constraints. *Recent advances in global optimization* (*Princeton, NJ*, 1991), 125–140, *Princeton Ser. Comput. Sci., Princeton Univ. Press, Princeton, NJ*, 1992. (N. I. Yanev) **93b:90049** 90C09 (65K10, 90C20)

Karmazin, I. P. (*with* Barvinskiĭ, A. O.; Kamenshchik, A. Yu.) One-loop quantum cosmology: ζ-function technique for the Hartle-Hawking wave function of the Universe. (English summary) *Ann. Physics* **219** (1992), *no.* 2, 201–242. (Dmitri V. Vassilevich) **93k:83026** 83C45 (58G26, 81T20)

— (*with* Barvinskiĭ, A. O.; Kamenshchik, A. Yu.; Mishakov, I. V.) 1-loop quantum cosmology: the contributions of matter fields to the wavefunctions of the Universe. *Classical Quantum Gravity* **9** (1992), *no.* 2, L27–L32. (Asghar Qadir) **93d:83028** 83C45 (58G26, 83F05)

Karmazina, V. V. (*with* Ligun, A. A.) Reconstruction of a probability distribution function by means of spline-normal distributions. (Russian. Russian summary) *Model. Mekh.* **5** (1991), *no.* 5, 61–69. (Summary) **93j:65228** 65U05

Karmeshu Queueing models with threshold phenomena: with special reference to machine interference problems. (English summary) *Sādhanā* **15** (1990), *no.* 4-5, 319–330. 90B22

Karmoker, P. K. (*with* Ghosh, Dilip Kumar; Divecha, Jyoti) On comparison of ternary efficiency balanced and ternary variance balanced designs. *Utilitas Math.* **40** (1991), 257–271. (Summary) **93a:05017** 05B05

Karnaukhov, A. V. (*with* Karnaukhova, E. V.) The neural network as an object of dynamical description. *Neural network—theory and architecture* (*Pushchino*, 1988), 83–94, *Proc. Nonlinear Sci., Manchester Univ. Press, Manchester*, 1990. (Summary) **93i:92007** 92B20

Karnaukhov, V. M. (*with* Onishchenko, A. M.) Attribute selection from reference descriptions of normal three-dimensional sets. *Soviet J. Comput. Systems Sci.* **30** (1992), *no.* 1, 70–76; *translated from Izv. Akad. Nauk SSSR Tekhn. Kibernet.* **1991**, *no.* 1, 101–107 (*Russian*). (Summary) **93c:68087** 68T10

Karnaukhova, E. V. (*with* Karnaukhov, A. V.) The neural network as an object of dynamical description. *Neural network—theory and architecture* (*Pushchino*, 1988), 83–94, *Proc. Nonlinear Sci., Manchester Univ. Press, Manchester*, 1990. (Summary) **93i:92007** 92B20

Karner, Georg (*with* Man'ko, V. I.; Streit, Ludwig) Quasi-energies, loss-energies and stochasticity. *Rep. Math. Phys.* **29** (1991), *no.* 2, 177–193. (M. Combescure) **93a:81049** 81Q50

— On limits in complete semirings. *Semigroup Forum* **45** (1992), *no.* 2, 148–165. (C. J. Maxson) **93h:16078** 16Y60

— Nivat's theorem for pushdown transducers. *Theoret. Comput. Sci.* **97** (1992), *no.* 2, 245–262. (J. Gruska) **93m:68125** 68Q70 (68Q45)

— (*with* Man'ko, V. I.; Streit, Ludwig) Quantum kicks, quasi-energy and chaos. (Russian. Russian summary) *Trudy Fiz. Inst. Lebedev.* **208** (1992), 226–242, 246. (J. S. Joel) **93m:81035** 81Q50 (58F07, 58F13)

Karner, Gunther The classical limit of Floquet operators with singular spectrum. *J. Math. Anal. Appl.* **164** (1992), *no.* 1, 206–218. (Russell A. Johnson) **93a:47080** 47N50 (81Q50)

Karni, Edi Utility theory with probability-dependent outcome valuation. *J. Econom. Theory* **57** (1992), *no.* 1, 111–124. (K. Zimmermann) **93e:90011** 90A10 (90A43)

— A definition of subjective probabilities with state-dependent preferences. (English summary) *Econometrica* **61** (1993), *no.* 1, 187–198. (Eugenio Regazzini) **93k:90012** 90A05 (60A05, 62C05)

Karni, Smadar Viscous shock profiles and primitive formulations. (English summary) *SIAM J. Numer. Anal.* **29** (1992), *no.* 6, 1592–1609. (Summary) **93j:65163** 65M99 (35L67, 76L05, 76N15)

Karniadakis, George Em. Spectral element–Fourier methods for incompressible turbulent flows. (English summary) *Spectral and high order methods for partial differential equations* (*Como*, 1989), 367–380, *North-Holland, Amsterdam*, 1990. (*see* **93d:65005**) 65N35 (76D05, 76F99, 76M25)

— (*with* Henderson, Ron) Hybrid spectral element methods for flows over rough walls. (English summary) *Fifth International Symposium on Domain Decomposition Methods for Partial Differential Equations* (*Norfolk, VA*, 1991), 485–497, *SIAM, Philadelphia, PA*, 1992. (*see* **93g:65009**) 65M55 (76D05, 76M25)

— (*with* Sidilkover, David) Nonoscillatory spectral element Chebyshev method for shock wave calculations. (English summary) *Fifth International Symposium on Domain Decomposition Methods for Partial Differential Equations* (*Norfolk, VA*, 1991), 566–585, *SIAM, Philadelphia, PA*, 1992. (*see* **93g:65009**) 65M70

— (*with* Tomboulides, A. G.; Triantafyllou, G. S.) A new mechanism of period doubling in free shear flows. *Phys. Fluids A* **4** (1992), *no.* 7, 1329–1332. (Summary) **93c:76031** 76E05 (76F10)

Karnishin, S. G. Stability of solutions of a second-order differential equation. (Russian. Russian summary) *Boundary value problems* (*Russian*), 9–11, *Perm. Politekh. Inst., Permʹ*, 1989. (*see* **93k:00022**) 34D99

Kárný, Miroslav (*with* Nagy, Ivan) Recursive least squares approximation of Bayesian non-Gaussian/nonlinear estimation. (English summary) *Mutual impact of computing power and control theory* (*Prague*, 1992), 71–76, *Czech. Acad. Sci., Prague*, 1992. (Summary) **93h:93074** 93E10 (65U05)

— (*with* Halousková, Alena; Böhm, Josef) MIMO—a set of SISO? Multivariate system adaptively controlled as a set of single-input single-output models. (English summary) *Mutual impact of computing power and control theory* (*Prague*, 1992), 121–126, *Czech. Acad. Sci., Prague*, 1992. (Mikołaj Busłowicz) **93m:93055** 93C40 (93C35)

— Parametrization of multi-output autoregressive-regressive models for self-tuning control. (English summary) *Kybernetika* (*Prague*) **28** (1992), *no.* 5, 402–412. (Summary) **93j:93148** 93E12 (93E35)

— (*with* Nagy, Ivan) A view on filtering of continuous data signals. (English summary) *Kybernetika* (*Prague*) **28** (1992), *no.* 6, 494–505. (Summary) **93k:93111** 93E11 (41A15, 94A12)

— (*with* Halousková, Alena; Nagy, Ivan) Adaptive cross-direction control of paper basis weight. (English summary) *Automatica J. IFAC* **29** (1993), *no.* 2, 425–429. 93C95

— *see also* **Advanced methods in adaptive control for industrial applications, 93c:93003** *and* **Mutual impact of computing power and control theory, 93f:93005**

Karolʹ, A. I. Complex powers of the Schrödinger operator with degenerate homogeneous potential. (Russian) *Mat. Sb.* **183** (1992), *no.* 1, 65–88; *translation in Russian Acad. Sci. Sb. Math.* **75** (1993), *no.* 1, 61–83. (B. Hellwig) **93j:47071** 47F05 (35J10, 35P05, 47N50, 81Q10)

Károlyi, Gy. On point covers of parallel rectangles. *Period. Math. Hungar.* **23** (1991), *no.* 2, 105–107. (Dobromir Todorov) **93b:05036** 05B40

el Karoui, Nicole *see* **El Karoui, Nicole**

Karowski, M. Yang-Baxter algebra, Bethe ansatz, conformal quantum field theories, quantum groups. (English summary) *Quantum groups* (*Clausthal*, 1989), 183–218, *Lecture Notes in Phys.*, 370, *Springer, Berlin*, 1990. (David Sénéchal) **93j:82021** 82B23 (81R10, 81R50, 81T40)

— (*with* Müller, Werner[1]; Schrader, Robert) State sum invariants of compact 3-manifolds with boundary and 6*j*-symbols. *Quantum groups and related topics* (*Wrocław*, 1991), 189–196, *Math. Phys. Stud.*, 13, *Kluwer Acad. Publ., Dordrecht*, 1992. (Emil Vinţeler) **93k:57037** 57N10 (57M25)

Karp, K. A. Probabilistic analysis of nonlinear discrete dynamical systems. (Russian) *Analysis and design of dynamical systems under conditions of uncertainty* (*Russian*), 4–10, *Moskov. Aviatsion. Inst., Moscow*, 1990. (*see* **93g:00022**) 93E03 (39A12)

Karp, Lavi Construction of quadrature domains in $\mathbf{R}^n$ from quadrature domains in $\mathbf{R}^2$. *Complex Variables Theory Appl.* **17** (1992), *no.* 3-4, 179–188. (Heinrich Begehr) **93e:30085** 30E99 (31B35, 35J05)

Karp, Leon (*with* Chavel, Isaac) Large time behavior of the heat kernel: the parabolic λ-potential alternative. *Comment. Math. Helv.* **66** (1991), *no.* 4, 541–556. (Robert Brooks) **93a:58160** 58G11

Karp, Richard M. Three-stage generalized connectors. *SIAM J. Discrete Math.* **5** (1992), *no.* 2, 259–272. (D. M. Topkis) **93e:68102** 68R10 (68M10)

— (*with* Alizadeh, Farid; Newberg, Lee Aaron; Weisser, Deborah K.) Physical mapping of chromosomes: a combinatorial problem in molecular biology. *Proceedings of the Fourth Annual ACM-SIAM Symposium on Discrete Algorithms* (*Austin, TX*, 1993), 371–381, *ACM, New York*, 1993. (*see* **93k:05002**) 92D20

Karpelevich, F. I. (*with* Baccelli, François; Kelʹbert, M. Ya.; Pukhalʹskiĭ, A. A.; Rybko, A. N.; Sukhov, Yu. M.) A mean-field limit for a class of queueing networks. *J. Statist. Phys.* **66** (1992), *no.* 3-4, 803–825. (K. M. Ramachandran) **93i:60165** 60K25

— (*with* Kreinin, A. Ya.) Joint distributions in Poissonian tandem queues. (English summary) *Queueing Systems Theory Appl.* **12** (1992), *no.* 3-4, 273–286. (Summary) **93h:60153** 60K25

Karpenko, D. Ya. (*with* Borgardt, A. A.) Fundamental solutions of the wave equation. (Russian. English and Russian summaries) *Dokl. Akad. Nauk Ukrainy* **1992**, *no.* 2, 19–22, 169. (Summary) **93f:35129** 35L05 (35A08)

— (*with* Borgardt, A. A.) The Cauchy problem for the wave equation with a localized source. (Russian. Russian summary) *Mat. Fiz. Nelinein. Mekh. No.* 17(51) (1992), 89–95. (Summary) **93m:35115** 35L05

Karpenko, N. A. Chow groups of quadrics and the stabilization conjecture. *Algebraic K-theory*, 3–8, *Adv. Soviet Math.*, 4, *Amer. Math. Soc., Providence, RI*, 1991. (Wayne Raskind) **93d:19006** 19E15 (14C05, 14C35)

Karpenko, V. A. (*with* Galkin, V. Ya.; Pliskin, S. Yu.) The accuracy of spectral estimates in problems of the identification of signals of a certain class. (Russian. Russian summary) *Direct and inverse problems in mathematical physics* (*Russian*), 39–45, 260, *Moskov. Gos. Univ., Moscow*, 1991. (*see* **93f:00006**) 94A13

— (*with* Galkin, V. Ya.) A unified approach to the creation of knowledge-based systems for identification of some classes of nonstationary processes. (English summary) *Ill-posed problems in natural sciences* (*Moscow*, 1991), 525–534, *VSP, Utrecht*, 1992. (*see* **93m:00041**) 68T35

— (*with* Galkin, V. Ya.) The maximum entropy principle in problems of the identification of nonstationary processes of a certain class. (Russian. Russian summary) *Vestnik Moskov. Univ. Ser. XV Vychisl. Mat. Kibernet.* **1993**, *no.* 1, 35–42, 64. 62M15

Karpenko, Yu. I. (*with* Shkilʹ, N. I.) Asymptotic solutions of the Cauchy problem for a linear system of second-order differential equations in the presence of a turning point. (Russian. English and Russian summaries) *Dokl. Akad. Nauk Ukrainy* **1992**, *no.* 3, 11–14, 159. (Summary) **93d:34098** 34E20 (34A12)

Karpeshina, Yu. E. Geometrical background for the perturbation theory of the polyharmonic operator with periodic potentials. *Topological phases in quantum theory* (*Dubna*, 1988), 251–276, *World Sci. Publishing, Teaneck, NJ*, 1989. (H. Baumgärtel) **93c:81044** 81Q15 (47A55)

Karpilovsky, Gregory ★ The Schur multiplier. London Mathematical Society Monographs. New Series, 2. *The Clarendon Press, Oxford University Press, New York*, 1987. x+302 *pp. ISBN* 0-19-853554-6 (From the preface) **93j:20002** 20-02 (20C25)

— ★ The Jacobson radical of classical rings. Pitman Monographs and Surveys in Pure and Applied Mathematics, 53. *Longman Scientific & Technical, Harlow; copublished in the United States with John Wiley & Sons, Inc., New York*, 1991. xvi+563 *pp. ISBN* 0-582-05947-X (E. Jespers) **93a:16001** 16–02 (16N20, 16S34, 16S36, 16W50)

— ★ Group representations. Vol. 1. Part A. Background material. North-Holland Mathematics Studies, 175. *North-Holland Publishing Co., Amsterdam*, 1992. lxii+620 *pp. ISBN* 0-444-88632-X (J. L. Alperin) **93j:20001a** 20–01

— ★ Group representations. Vol. 1. Part B. Introduction to group representations and characters. North-Holland Mathematics Studies, 175. *North-Holland Publishing Co., Amsterdam*, 1992. *pp.* i–xiv *and* 621–1274. *ISBN* 0-444-88632-X (J. L. Alperin) **93j:20001b** 20–01

— The Jacobson radical of monoid-graded algebras. (English summary) *Tsukuba J. Math.* **16** (1992), *no.* 1, 19–52. (E. Jespers) **93h:16028** 16N20 (16W50)

Karpinskaya, L. V. (*with* Fedorenko, A. D.) Ordering algorithms for symbolic calculations with matrices that reduce to block-triangular form. (Russian. Russian summary) *Filtering and control in mechanical systems* (*Russian*), 22–27, *Akad. Nauk Ukrain. SSR, Inst. Mat., Kiev*, 1991. (Summary) **93h:65059** 65F30 (15A21)

Karpiński, Marek (*with* Grigor'ev, D. Yu.) An approximation algorithm for the number of zeros of arbitrary polynomials over GF[q]. (English summary) *32nd Annual Symposium on Foundations of Computer Science (San Juan, PR, 1991)*, 662–669, *IEEE Comput. Soc. Press, Los Alamitos, CA*, 1991. (H. J. Godwin) **93h:11141** 11Y16 (11T06, 68Q25)

— (*with* Bürgisser, Peter; Lickteig, Thomas) Some computational problems in linear algebra as hard as matrix multiplication. *Comput. Complexity* **1** (1991), *no.* 2, 131–155. (D. Bini) **93d:68030** 68Q25 (68Q40)

— (*with* Clausen, Michael; Dress, Andreas W. M.; Grabmeier, Johannes) On zero-testing and interpolation of k-sparse multivariate polynomials over finite fields. *Theoret. Comput. Sci.* **84** (1991), *no.* 2, *Algorithms Automat. Complexity Games*, 151–164. (B. David Saunders) **93e:68045** 68Q40 (12Y05, 41A05)

— (*with* Dahlhaus, Elias; Kelsen, Pierre) An efficient parallel algorithm for computing a maximal independent set in a hypergraph of dimension 3. (English summary) *Inform. Process. Lett.* **42** (1992), *no.* 6, 309–313. (Summary) **93e:68097** 68R10 (68Q22)

— (*with* Dahlhaus, Elias) Perfect matching for regular graphs is AC^0-hard for the general matching problem. *J. Comput. System Sci.* **44** (1992), *no.* 1, 94–102. (Italo José Dejter) **93g:05113** 05C70 (68Q15, 68R10)

Karpishpan, Yakov Erratum: "Torelli theorems for singularities" [Invent. Math. **100** (1990), no. 1, 97–141; MR 91b:32040]. *Invent. Math.* **108** (1992), *no.* 3, 667–668. (Editors) **93c:14011** 14C34 (14B07, 32G20, 32S30, 32S35, 32S40)

Karpman, V. I. (*with* Kaufman, R. N.; Shagalov, A. G.) Self-focusing of whistler waves. (English summary) *Phys. Fluids B* **4** (1992), *no.* 10, 3087–3100. (Summary) **93f:76102** 76W05 (35Q35, 35Q60, 76X05)

Karpov, A. O. Inverted structure—a relational model for data identification. (Russian. English, Russian and Ukrainian summaries) *Kibernet. Sistem. Anal.* **1992**, *no.* 3, 144–164, 190; *translation in Cybernet. Systems Anal.* **28** (1992), *no.* 3, 451–468 (1993). (Summary) **93g:68015** 68P05

Karpov, B. V. Semistable sheaves on a two-dimensional quadric and Kronecker modules. (Russian) *Izv. Ross. Akad. Nauk Ser. Mat.* **56** (1992), *no.* 1, 38–74; *translation in Russian Acad. Sci. Izv. Math.* **40** (1993), *no.* 1, 33–66. (Summary) **93f:14007** 14D20

Karpov, Yu. G. Coherence of communicating processes. (English summary) *Comput. Artificial Intelligence* **11** (1992), *no.* 3, 241–252. (Summary) **93g:68038** 68Q10

Karpushkin, V. N. Classification of Hessians for curves of the third degree. (Russian summary) *Problems in geometry, topology and mathematical physics (Russian)*, 49–50, 74, *Novoe Global. Anal.*, 12, *Voronezh. Gos. Univ., Voronezh*, 1992. (*see* **93k:00026**) 14H45

— Oscillatory integrals and volumes with a semiquasihomogeneous phase. (Russian) *Funktsional. Anal. i Prilozhen.* **26** (1992), *no.* 1, 59–61; *translation in Functional Anal. Appl.* **26** (1992), *no.* 1, 46–48. (J. S. Joel) **93d:58168** 58G18 (41A60, 58C27)

Karr, Alan F. Markov processes. *Stochastic models*, 95–123, *Handbooks Oper. Res. Management Sci.*, 2, *North-Holland, Amsterdam*, 1990. (*see* **93a:60001**) 60J05 (60J10, 60J25, 60J60)

Karra, G. (*with* Grammaticos, B.; Papageorgiou, V. G.; Ramani, A.) Integrability of discrete-time systems. (English summary) *Chaotic dynamics (Patras, 1991)*, 75–90, *NATO Adv. Sci. Inst. Ser. B Phys.*, 298, *Plenum, New York*, 1992. (Summary) **93k:39004** 39A12 (58F07)

— (*with* Ramani, A.; Grammaticos, B.) Linearizable mappings. *Phys. A* **180** (1992), *no.* 1-2, 115–127. (Frederick R. Marotto) **93e:39005** 39A10 (34A34, 58F07)

Karrakchou, J. (*with* Namir, A.) A new approach for a linear quadratic optimal-control problem of distributed systems with delays in the control. (English summary) *IMA J. Math. Control Inform.* **9** (1992), *no.* 3, 221–230. (Wen Huan Yu) **93k:49021** 49K25 (49N10, 49R20, 93C20)

Karray, Fakhreddine (*with* Dwyer, Thomas A. W., III) On the robust control aspect of a class of systems involving interconnected rigid and flexible appendages: case study. (English summary) *Internat. J. Control* **57** (1993), *no.* 1, 29–54. 93B36 (93C95)

Karsai, J. On the asymptotic behaviour of the solutions of a second order linear differential equation with small damping. *Acta Math. Hungar.* **61** (1993), *no.* 1-2, 123–129. (George Karakostas) **93m:34062** 34D05 (34K20)

Karshon, Yael An algebraic proof for the symplectic structure of moduli space. *Proc. Amer. Math. Soc.* **116** (1992), *no.* 3, 591–605. (William Goldman) **93a:14010** 14D22 (32G13, 55N99, 57R15, 58F05)

Karstoft, Henrik Conformal imbeddings of the complex projective plane and self-dual connections. (English summary) *Math. Scand.* **70** (1992), *no.* 2, 207–226. (Nicholas Buchdahl) **93j:58019** 58D27 (53C07)

— Homogeneous connections and moduli spaces. (English summary) *Math. Scand.* **70** (1992), *no.* 2, 227–246. (Nicholas Buchdahl) **93j:58020** 58D27 (53C07, 53C56)

Kart, Cevat A class of nonlinear second order differential equation solvable by means of a linear differential equation. (English summary) *Comm. Fac. Sci. Univ. Ankara Ser. A_1 Math. Statist.* **38** (1989), *no.* 1-2, 15–20 (1990). 34A05 (34A34)

Kartashov, N. V. Inequalities in the Rényi theorem. (Russian) *Teor. Veroyatnost. i Mat. Statist. No.* 45 (1991), 27–33; *translation in Theory Probab. Math. Statist. No.* 45 (1992), 23–28. (Dominik Szynal) **93k:60055** 60F05 (60G50)

Kartashov, V. K. Characterization of the lattice of quasivarieties of the algebras $\mathfrak{A}_{1,1}$. (Russian) *Algebraic systems (Russian)*, 37–45, *Volgograd. Gos. Ped. Inst., Volgograd*, 1989. (*see* **93m:00015**) 08C15

— (*with* Makaronov, S. P.) Quasivarieties of unars with zero. (Russian) *Algebraic systems (Russian)*, 139–143, *Volgograd. Gos. Ped. Inst., Volgograd*, 1989. (*see* **93m:00015**) 08C15 (08A60)

— *see also* **Algebraic systems, 93m:00015**

Kartashova, I. I. (*with* Zvyagintsev, A. I.) A boundary value problem with parameters. (Russian. English, Russian and Latvian summaries) *Mathematics. Differential equations (Russian)*, 72–79, vi, *Latv. Univ. Zināt. Raksti*, 570, *Latv. Univ., Riga*, 1992. (Summary) **93e:34034** 34B15

Karter, R. U. *see* **Carter, Roger William**

Kärtner, F. (*with* Schack, R.; Schenzle, A.) Consistent linearization for quasi-probabilities. *J. Modern Opt.* **39** (1992), *no.* 5, 917–925. (Summary) **93b:81320** 81V80 (81S30)

Karunakaran, V. (*with* Vijayan, A.) Periodic generalized functions and boundary values of holomorphic functions. *Proceedings of Asian Mathematical Conference*, 1990 (*Hong Kong*, 1990), 229–233, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93b:00022**) 46F05 (46F20)

Karunamuni, R. J. (*with* Yang, Song) Weak and strong uniform consistency rates of kernel density estimates for randomly censored data. (French summary) *Canad. J. Statist.* **19** (1991), *no.* 4, 349–359. (M. Bertrand-Retali) **93g:62054** 62G05 (62G20)

— Empirical Bayes sequential estimation of the mean. *Sequential Anal.* **11** (1992), *no.* 1, 37–53. (Arup Bose) **93j:62204** 62L12 (62C12)

Karwan, Mark H. (*with* Sivakumar, Raj A.; Batta, Rajan) A network-based model for transporting extremely hazardous materials. (English summary) *Oper. Res. Lett.* **13** (1993), *no.* 2, 85–93. 90B10

Karwowski, W. *see* **Karwowski, Witold**

Karwowski, Waldemar Z. (*with* Przeworska-Rolewicz, Danuta) General linear boundary value problems for polynomials in right invertible operators. *Demonstratio Math.* **25** (1992), *no.* 1-2, 325–340. (M. Z. Nashed) **93g:47012** 47A50 (47A05)

Karwowski, Witold Abelian partial $*$-algebras: the case of normal commuting operators. (English summary) *Current topics in operator algebras (Nara*, 1990), 297–303, *World Sci. Publishing, River Edge, NJ*, 1991. (Giuseppina Epifanio) **93m:47052** 47D40 (46K05)

— (*with* Albeverio, Sergio) Diffusion on p-adic numbers. *Gaussian random fields (Nagoya*, 1990), 86–99, *Ser. Probab. Statist.*, 1, *World Sci. Publishing, River Edge, NJ*, 1991. (Eugen Belokolos) **93d:60123** 60J60

— (*with* Albeverio, Sergio; Fenstad, Jens Erik; Høegh-Krohn, Raphael; Lindstrøm, Tom) Schrödinger operators with potentials supported by null sets. (English summary) *Ideas and methods in quantum and statistical physics (Oslo*, 1988), 63–95, *Cambridge Univ. Press, Cambridge*, 1992. (Sylvie Paycha) **93m:81025** 81Q10 (31B99, 35J10, 47F05, 47N50, 81Q15)

— (*with* Gesztesy, F.; Zhao, Zhong Xin) New types of soliton solutions. *Bull. Amer. Math. Soc. (N.S.)* **27** (1992), *no.* 2, 266–272. (James Powell) **93c:35138** 35Q51 (35Q53)

Karyakin, M. I. (*with* Eremeev, V. A.; Zubov, L. M.; Chernega, N. Ya.) Cavitation in non-linearly elastic bodies with dislocations and disclinations. (Russian) *Dokl. Akad. Nauk* **326** (1992), *no.* 6, 968–971; *translation in Soviet Phys. Dokl.* **37** (1992), *no.* 10, 518–520 (1993). (From the text) **93j:73018** 73C50 (73G05, 73S10)

Karzanov, A. V. A fast algorithm for determining the distances from the points of a given set of an integer lattice to the complement. (Russian. English and Ukrainian summaries) *Kibernet. Sistem. Anal.* **1992**, *no.* 2, 177–181, 192; *translation in Cybernet. Systems Anal.* **28** (1992), *no.* 2, 316–319. 68U05

Karzel, Helmut Finite reflection groups and their corresponding structures. (English summary) *Combinatorics '90 (Gaeta*, 1990), 317–336, *Ann. Discrete Math.*, 52, *North-Holland, Amsterdam*, 1992. (Rolfdieter Frank) **93j:51011** 51F15

— (*with* Marchi, Mario; Pianta, Silvia) On commutativity in point-reflection geometries. *J. Geom.* **44** (1992), *no.* 1-2, 102–106. (E. W. Ellers) **93c:51013** 51F15

Kása, Z. Computing the d-complexity of words. *Seminar on Complexity of Algorithms*, 64–69, *Preprint*, 89-10, "*Babeş-Bolyai*" *Univ., Cluj-Napoca*, 1991. (Pascal Weil) **93c:68082** 68R15 (05A15)

Kasahara, Masao (*with* Morii, Masakatu) Generalized key-equation of remainder decoding algorithm for Reed-Solomon codes. (English summary) *IEEE Trans. Inform. Theory* **38** (1992), *no.* 6, 1801–1807. (Summary) **93g:94025** 94B35

— (*with* Morii, Masakatu) Perfect staircase profile of linear complexity for finite sequences. (English summary) *Inform. Process. Lett.* **44** (1992), *no.* 2, 85–89. (Summary) **93j:68081** 68Q30 (68P05, 68P25, 94A60)

Kasahara, Yasushi Reducibility and orders of periodic automorphisms of surfaces. *Osaka J. Math.* **28** (1991), *no.* 4, 985–997. (William Harvey) **93g:57021** 57N05 (30F10)

Kasahara, Yuji (*with* Maejima, Makoto) Limit theorems for trimmed sums. (English summary) *J. Theoret. Probab.* **5** (1992), *no.* 4, 617–628. (R. A. Maller) **93k:60056** 60F05 (60F17, 62E20, 62F12, 62F35)

Kasai, Masumi (*with* Kakizaki, Jun-ichi) The structure of rotating relativistic star. *Sci. Rep. Hirosaki Univ.* **38** (1991), *no.* 1, 8–19. (G. G. Asgekar) **93c:83071** 83C55

— Construction of inhomogeneous universes which are Friedmann-Lemaître-Robertson-Walker on average. (English summary) *Phys. Rev. Lett.* **69** (1992), *no.* 16, 2330–2332. (Summary) **93f:83012** 83C15 (83F05)

— Inhomogeneous cosmological models which are homogeneous and isotropic on average. (English summary) *Phys. Rev. D* (3) **47** (1993), *no.* 8, 3214–3221. (Summary) **93m:83084** 83F05 (83C25)

Kasami, Tadao (*with* Seki, Hiroyuki; Matsumura, Takashi; Fujii, Mamoru) On multiple context-free grammars. *Theoret. Comput. Sci.* **88** (1991), *no.* 2, 191–229. (François Lepage) **93d:68041** 68Q50

— (*with* Seki, Hiroyuki; Nabika, Eiji; Matsumura, Takashi) A method for translating natural language program specifications into algebraic specifications. (English summary) *Systems Comput. Japan* **23** (1992), *no.* 11, 1–16. 68Q65

— (*with* Takata, Toyoo; Fujiwara, Toru; Lin, Shu) On the optimum bit orders with respect to the state complexity of trellis diagrams for binary linear codes. (English summary) *IEEE Trans. Inform. Theory* **39** (1993), *no.* 1, 242–245. (Summary) **93m:94027** 94B05

Kasana, H. S. The proximate type and its reference to analytic functions. *Math. Chronicle* **19** (1990), 35–43. (G. P. Kapoor) **93k:30039** 30D15

— Asymptotic properties and construction of proximate orders for analytic functions. *Mathematica (Cluj)* **32(55)** (1990), *no.* 1, 39–47. 30D99 (30D20)

— (*with* Kumar, Deepak; Srivastava, G. S.) Approximation of entire harmonic functions in $\mathbf{R}^3$ having index-pair (p, q). *Anal. Numér. Théor. Approx.* **20** (1991), *no.* 1-2, 47–57. (O. P. Juneja) **93k:31004** 31B05 (30E10)

— (*with* Agrawal, Purshottam Narain; Gupta, Vijay) Inverse and saturation theorems for linear combination of modified Baskakov operators. *Approx. Theory Appl.* **7** (1991), *no.* 2, 65–82. (Geetha S. Rao) **93a:41029** 41A27 (41A35, 41A40, 47B38)

— On simultaneous approximation by linear combination of Szász-Mirakian operators. *Rev. Roumaine Math. Pures Appl.* **37** (1992), *no.* 6, 491–498. (Francesco Altomare) **93h:41017** 41A28 (41A25, 41A35)

Kasangian, S. (*with* Vigna, S.) Trees in distributive categories. *Category theory (Como*, 1990), 237–248, *Lecture Notes in Math.*, 1488, *Springer, Berlin*, 1991. (Jürgen Koslowski) **93h:18016** 18D99 (05C05)

— (*with* Vigna, S.) Introducing a calculus of trees. *TAPSOFT '91, Vol.* 1 (*Brighton*, 1991), 215–240, *Lecture Notes in Comput. Sci.*, 493, *Springer, Berlin*, 1991. (Heinrich Seidel) **93d:68050** 68Q70 (18B20, 68Q65, 68R99)

Kašanin, Radivoje Professor Kašanin about himself. (Serbo-Croatian) *The present past (Serbo-Croatian)*, 29–31, *Istor. Mat. Mekh. Nauka*, 4, *Mat. Inst., Belgrade*, 1991.

(Editors) **93a:01059c** 01A70

— *see also* **Tomić, Miodrag, 93a:01059a; Bibliography: Kašanin, Radivoje, 93a:01059b** *and* **Reminscences: Kašanin, Radivoje, 93a:01059d**

Käschel, Joachim A note to the paper: "An efficient algorithm for linear programming" [Proc. Indian Acad. Sci. Math. Sci. **100** (1990), no. 3, 295–301; MR 91k:90103] by V. Ch. Venkaiah. (English summary) *Proc. Indian Acad. Sci. Math. Sci.* **102** (1992), *no.* 2, 155–158. (Summary) **93j:90052** 90C05

Kaschiev, M. S. (*with* Koleva, M. G.; Dimova-Borshukova, Stefka) ★ Исследование собственных функций горения нелинейной среды в полярных координатах методом конечных элементов. (Russian) [Investigation of the eigenfunctions of the burning of a nonlinear medium in polar coordinates by the finite element method] With an English summary. Сообщения Объединенного Института Ядерных Исследований. Дубна [Communications of the Joint Institute for Nuclear Research. Dubna], R11-91-552. *Joint Inst. Nuclear Res., Dubna*, 1991. 17 *pp.* (Summary) **93a:65128** 65M60 (65M12, 80A25)

— (*with* Zikatanov, L. T.) ★ Метод конечных элементов для моделирования полупроводниковых приборов. (Russian) [The finite-element method for modeling semiconductor devices] With an English summary. Сообщения Объединенного Института Ядерных Исследований. Дубна [Communications of the Joint Institute for Nuclear Research. Dubna], R11-91-371. *Joint Inst. Nuclear Res., Dubna*, 1991. 13 *pp.* (Summary) **93a:65131** 65M60 (78–08, 78A55)

Kascieva, V. A. (*with* Andreev, A. B.; Vanmaele, M.) Some results in lumped mass finite-element approximation of eigenvalue problems using numerical quadrature formulas. (English summary) *J. Comput. Appl. Math.* **43** (1992), *no.* 3, 291–311. (Georges A. Lebaud) **93k:65088** 65N30 (65N25)

Kasenally, E. M. (*with* Limebeer, David J. N.; Perkins, J. D.) On the design of robust two degree of freedom controllers. (English summary) *Automatica J. IFAC* **29** (1993), *no.* 1, 157–168. 93B51 (93B36)

Kaser, Owen (*with* Pawagi, Shaunak) Optimal parallel algorithms for multiple updates of minimum spanning trees. (English summary) *Algorithmica* **9** (1993), *no.* 4, 357–381. (Summary) **93m:68067** 68Q22 (05C85, 68R10)

Kashaev, R. M. (*with* Osipov, A. A.) Extension of the Krichever-Novikov algebra in the theory of a closed string. (Russian) *Current group analysis* (*Russian*) (*Baku*, 1988), 106–113, "*Élm*", *Baku*, 1989. (*see* **93d:58002**) 81R10 (17B81, 81T30)

— (*with* Bazhanov, V. V.; Mangazeev, V. V.; Stroganov, Yu. G.) $(Z_N\times)^{n-1}$ generalization of the chiral Potts model. *Comm. Math. Phys.* **138** (1991), *no.* 2, 393–408. (Summary) **93d:82019** 82B20 (17B37, 81R50, 82B23)

— (*with* Mangazeev, V. V.; Nakanishi, Tomoki) Yang-Baxter equation for the sl(n) chiral Potts model. *Nuclear Phys. B* **362** (1991), *no.* 3, 563–582. (Jacques H. H. Perk) **93d:82034** 82B23 (81T40, 82B20, 82B27)

— (*with* Mangazeev, V. V.; Stroganov, Yu. G.) N^3-state R-matrix related with $U_q(\mathrm{sl}(3))$ algebra at $q^{2N}=1$. (English summary) *Infinite analysis, Part A, B* (*Kyoto*, 1991), 485–492, *Adv. Ser. Math. Phys.*, 16, *World Sci. Publishing, River Edge, NJ*, 1992. (A. Hamid Bougourzi) **93m:82008** 82B23 (17B37, 81R50)

— (*with* Mangazeev, V. V.) $N^{n(n-1)/2}$-state intertwiner related to $U_q(\mathrm{sl}(n))$ algebra at $q^{2N}=1$. (English summary) *Modern Phys. Lett. A* **7** (1992), *no.* 30, 2827–2835. (Uwe Grimm) **93k:81099** 81R50 (17B37, 82B23)

Kashani, S. M. B. Quadratic isoparametric systems in $\mathbf{R}^{n+m}_p$. *Proceedings of the* 21*st. Annual Iranian Mathematics Conference* (*Isfahan*, 1990), 172–185, *Univ. Isfahan, Isfahan*, 199?. (Joel L. Weiner) **93c:53043** 53C40 (53A40)

Kashchenko, S. A. Rapidly oscillating traveling waves in systems with small diffusion. (Russian. Russian summary) *Differentsial'nye Uravneniya* **28** (1992), *no.* 2, 254–262, 365; *translation in Differential Equations* **28** (1992), *no.* 2, 218–225. (Guang Chang Dong) **93k:35015** 35B05 (35B10, 35K55)

— A study of the stability of solutions of linear parabolic equations with nearly constant coefficients and small diffusion. (English summary) *J. Soviet Math.* **60** (1992), *no.* 6, 1742–1764. (W. Watzlawek) **93i:35067** 35K15 (34D99, 34G10, 35B35)

al-Kāshī, Ghiyāth al-Dīn Jamshīd *see* **Dold-Samplonius, Yvonne, 93k:01010**

Kashihara, Kenji (*with* Katayama, Shin-ichi) On the structure of the integer solutions of $z^2=(x^2-1)(y^2-1)+a$. *J. Math. Tokushima Univ.* **24** (1990), 1–11. (Andrew Bremner) **93c:11013** 11D25

Kashima, Ryo (*with* Komori, Yuichi) The word problem for free BCI-algebras is decidable. (English summary) *Math. Japon.* **37** (1992), *no.* 6, 1025–1029. (Summary) **93k:06026** 06F35 (03B25, 03D40, 03F05, 03G25)

Kashin, B. S. Algebraic polynomials with integer coefficients that deviate little from zero on an interval. (Russian) *Mat. Zametki* **50** (1991), *no.* 3, 58–67, 157; *translation in Math. Notes* **50** (1991), *no.* 3-4, 921–927 (1992). (Walter Gautschi) **93e:41013** 41A10 (41A17)

Kashin, V. V. Orbits of an adjoint and co-adjoint action of Borel subgroups of a semisimple algebraic group. (Russian) *Problems in group theory and homological algebra* (*Russian*), 141–158, *Matematika, Yaroslav. Gos. Univ., Yaroslavl'*, 1990. (From the introduction) **93m:20058** 20G15

Kashintsev, E. V. Small cancellation conditions and embeddability of semigroups in groups. *Internat. J. Algebra Comput.* **2** (1992), *no.* 4, 433–441. (P. M. Higgins) **93j:20123** 20M05

Kashits'ka, L. Yu. (*with* Gupalo, G.-V. S.) On the generalized Riquier problem for the biharmonic equation. (Ukrainian. Russian summary) *Visnik L'viv. Derzh. Univ. Ser. Mekh.-Mat. No.* 30 (1988), 18–20, 73. 35J40

Kashiwa, Bryan (*with* Lee, Wen Ho) Comparisons between the cell-centered and staggered mesh Lagrangian hydrodynamics. (English summary) *Advances in the free-Lagrange method* (*Moran, WY*, 1990), 277–288, *Lecture Notes in Phys.*, 395, *Springer, Berlin*, 1991. (*see* **93g:76001**) 76M25 (76M20)

Kashiwa, Tarō (*with* Seto, K.; Takahashi, Yasushi) Some results in Galilei-invariant field theories. (English summary) *Nuovo Cimento B* (11) **107** (1992), *no.* 7, 745–754. (Summary) **93e:81143** 81T99 (70G50, 81R05)

Kashiwabara, Toshinobu (*with* Kotani, Ken; Masuda, Sumio) An algorithm for embedding a biconnected planar graph to maximize the total sum of vertex- and edge-weights on the exterior window. (English summary) *Electron. Comm. Japan Part III Fund. Electron. Sci.* **75** (1992), *no.* 5, 1–14. (Summary) **93i:68143** 68R10 (05C10, 05C85, 68Q35)

— (*with* Masuda, Sumio) An algorithm for testing the planarity of a hierarchical graph. (English summary) *Electron. Comm. Japan Part III Fund. Electron. Sci.* **75** (1992), *no.* 5, 36–50. (Summary) **93h:05153** 05C85 (05C10, 68R10)

Kashiwagi, Masahide (*with* Makino, Mitsunori; Oishi, Shin'ichi; Horiuchi, Kazuo) Computational complexity of the homotopy method for calculating solutions of strongly monotonic resistive circuit equations. *Electron. Comm. Japan Part III Fund. Electron. Sci.* **74** (1991), *no.* 11, 90–100 (1992). (S. Hitotumatu) **93b:65078** 65H20 (65Y20, 68Q25, 94C05)

Kashiwagi, Nobuhisa On use of the Kalman filter for spatial smoothing. (English summary) *Ann. Inst. Statist. Math.* **45** (1993), *no.* 1, 21–34. (Summary) **93m:62205** 62M30

Kashiwara, Masaki (*with* Tanisaki, Toshiyuki) Kazhdan-Lusztig conjecture for symmetrizable Kac-Moody Lie algebra. II. Intersection cohomologies of Schubert varieties. *Operator algebras, unitary representations, enveloping algebras, and invariant theory* (*Paris*, 1989), 159–195, *Progr. Math.*, 92, *Birkhäuser Boston, Boston, MA*, 1990. (Bhama Srinivasan) **93a:17027** 17B67 (14M15)

— Kazhdan-Lusztig conjecture for a symmetrizable Kac-Moody Lie algebra. *The Grothendieck Festschrift, Vol. II*, 407–433, *Progr. Math.*, 87, *Birkhäuser Boston, Boston, MA*, 1990. (Ivan Mirković) **93a:17026** 17B67 (14M15, 32C38)

— Crystallizing the q-analogue of universal enveloping algebras. *Proceedings of the International Congress of Mathematicians, Vol. I, II* (*Kyoto*, 1990), 791–797, *Math. Soc. Japan, Tokyo*, 1991. (Kailash C. Misra) **93b:17046** 17B37 (17B10, 17B67)

— On crystal bases of the Q-analogue of universal enveloping algebras. *Duke Math. J.* **63** (1991), *no.* 2, 465–516. (Kailash C. Misra) **93b:17045** 17B37 (17B10, 17B67)

— (*with* Kang, Seok-Jin; Misra, Kailash C.; Miwa, Tetsuji; Nakashima, Toshiki; Nakayashiki, Atsushi) Vertex models and crystals. (English and French summaries) *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 4, 375–380. (From the summary) **93g:17027** 17B37 (82B23)

— *see also* **D-modules and microlocal geometry, 93j:58001**

Kashyap, R. L. (*with* Cheng, Yizong) Recursive fusion operators: desirable properties and illustrations. *Data fusion in robotics and machine intelligence*, 245–265, *Academic Press, Boston, MA*, 1992. (*see* **93g:68002**) 68T30

Kasi, M. S. On a subclass of alpha quasi convex functions. *Ganita* **42** (1991), *no.* 1-2, 55–58 (1992). 30C45

— On an application of differential subordination. *J. Math. Phys. Sci.* **25** (1991), *no.* 4, 447–450. 30C45

Kasif, Simon (*with* Delcher, Arthur L.) Efficient parallel term matching and anti-unification. (English summary) *J. Automat. Reason.* **9** (1992), *no.* 3, 391–406. (Summary) **93m:68064** 68Q22 (68Q25, 68T15)

Kasitskaya, E. I. (*with* Knopov, P. S.) About one approach to the nonlinear estimating problem. *Probability theory and mathematical statistics* (*Kiev*, 1991), 151–157, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93k:60008**) 62M09

Kaśkosz, Barbara (*with* Lojasiewicz, Stanisław, Jr.) Lagrange-type extremal trajectories in differential inclusions. (English summary) *Systems Control Lett.* **19** (1992), *no.* 3, 241–247. (B. Mordukhovich) **93i:49030** 49K24 (34A60, 49J24, 49J52)

Kasparek, Andreas On commutants of symmetric operators and O^*-algebras. *Math. Nachr.* **150** (1991), 163–174. (Subhash J. Bhatt) **93b:47090** 47D40

Kasparian, V. (*with* Batur, C.) Fuzzy adaptive control. (English summary) *Internat. J. Systems Sci.* **24** (1993), *no.* 2, 301–314. 93C40 (93C42)

Kasperski, Andrzej Modular approximation in X^1_φ by a filtered family of Hammerstein operators. (English summary) *Comment. Math. Prace Mat.* **32** (1992), 69–74. (W. A. J. Luxemburg) **93m:46026** 46E30 (28B20, 46A80)

— The modular spaces of multifunctions. III. *Demonstratio Math.* **25** (1992), *no.* 3, 435–446. (W. A. J. Luxemburg) **93j:46034** 46E30 (26A45, 26A46, 46A80)

— Modular approximation in $\bar{X}_\varphi$ by a filtered family of dist-sublinear operators and dist-convex operators. (English summary) *Math. Japon.* **38** (1993), *no.* 1, 119–125. (W. A. J. Luxemburg) **93m:46027** 46E30 (28B20, 46A80)

Kasprzak, A. (*with* Grzech, A.; Chouigui, N.) The new expression for blocking probability for route in integrated services digital networks. (English summary) *Computational systems analysis* 1992 (*Berlin*, 1992), 313–318, *Elsevier, Amsterdam*, 1992. (*see* **93e:00021**) 90B22

Kasprzak, W. *see* **Stochastic methods in experimental sciences, 93a:60004**

Kasprzyk, J. (*with* Figwer, J.; Niederliński, A.) A new approach to the identification of linear discrete-time MISO systems. (English summary) *Identification and system parameter estimation* 1991, *Vol.* 1,2 (*Budapest*, 1991), 145–150, *IFAC Sympos. Ser.*, 3, *Pergamon, Oxford*, 1992. (*see* **93h:93009**) 93B30 (93C55)

Kasrashvili, I. S. (*with* Gershuni, D. S.) Investigation of the characteristics of an algorithm for the configuration of a local rigid real-time computer network. (Russian. Russian summary) *Avtomat. i Telemekh.* **1992**, *no.* 8, 175–186; *translation in Automat. Remote Control* **53** (1992), *no.* 8, *part* 2, 1286–1296 (1993). 68M10

Kass, Robert E. (*with* Vaidyanathan, Suresh K.) Approximate Bayes factors and orthogonal parameters, with application to testing equality of two binomial proportions. *J. Roy. Statist. Soc. Ser. B* **54** (1992), *no.* 1, 129–144. (Summary) **93k:62067** 62F15 (62F03)

Kass, Seymour (*with* DuPré, Arthur M.) Distance and parallelism between flats in $\mathbf{R}^n$. *Linear Algebra Appl.* **171** (1992), 99–107. (B. Reichstein) **93f:15001** 15A03 (15A06)

Kassab, A. J. (*with* Pollard, J. E.) Automated solution of an inverse heat conduction problem for the nondestructive detection of subsurface cavities using boundary elements. (English summary) *Boundary element technology, VII* (*Albuquerque, NM*, 1992), 441–456, *Comput. Mech., Southampton*, 1992. (*see* **93b:65002**) 80A23 (65N38, 80–08)

— (*with* Chesla, S.) CVBEM solution of nonlinear heat conduction problems. (English summary) *Boundary element technology, VII* (*Albuquerque, NM*, 1992), 457–471, *Comput. Mech., Southampton*, 1992. (*see* **93b:65002**) 80–08 (65N38, 80A20)

— (*with* Hsieh, Chung Kuo; Choi, C.-Y.) Solution of Stefan problems by a boundary element method. (English summary) *Boundary element technology, VII* (*Albuquerque, NM*, 1992), 473–490, *Comput. Mech., Southampton*, 1992. (*see* **93b:65002**) 80A22 (65N38, 80–08)

Kassandrov, V. V. Physical fields as superanalytic mappings on the algebraic structure of space-time. (Russian summary) Quasigroups and nonassociative algebras in physics (Russian) (Tartu, 1989). *Eesti NSV Tead. Akad. Füüs. Inst. Uurim. No.* 66 (1990), 202–212. (Summary) **93d:81182** 81T99

el-Kassar, Nasser (*with* Beslin, Scott J.) GCD matrices and Smith's determinant for a U.F.D. (English summary) *Bull. Number Theory Related Topics* **13** (1989), 17–22. (J. L. Brenner) **93f:11005** 11A25 (11C20, 13F15, 15A33)

Kassay, G. (*with* Kolumbán, I.) On the Knaster-Kuratowski-Mazurkiewicz and Ky Fan's theorem. *Seminar on Mathematical Analysis (Cluj-Napoca, 1989–1990), 87–100, Preprint, 90-7, "Babeş-Bolyai" Univ., Cluj-Napoca,* 1990. (Sehie Park) **93e:46008** 46A50 (47H10)

Kassel, Christian ★ Cours sur les groupes quantiques. 1ière Partie. (French) [Course on quantum groups. Part 1] Publication de l'Institut de Recherche Mathématique Avancée [Publication of the Institute of Advanced Mathematical Research], 492. *Université Louis Pasteur, Département de Mathématique, Institut de Recherche Mathématique Avancée, Strasbourg,* 1992. vi+150 *pp.* (E. J. Taft) **93k:17030** 17B37 (16S80, 16W30, 81R50)

— Cyclic homology of differential operators, the Virasoro algebra and a q-analogue. *Comm. Math. Phys.* **146** (1992), *no.* 2, 343–356. (Lars Kadison) **93g:17040** 17B56 (17B37, 17B68)

— (*with* Vigué-Poirrier, Micheline) Homologie des quotients primitifs de l'algèbre enveloppante de $\mathfrak{sl}(2)$. [Homology of the primitive quotients of the enveloping algebra of $\mathfrak{sl}(2)$] *Math. Ann.* **294** (1992), *no.* 3, 483–502. (Lars Kadison) **93k:19002** 19D55 (16E40)

— A Künneth formula for the decomposition of the cyclic homology of commutative algebras. Appendix to: "Decomposition of the bivariate cyclic cohomology of commutative algebras" [Math. Scand. **70** (1992), no. 1, 5–26; MR 93j:18011] by P. Nuss. (French) *Math. Scand.* **70** (1992), *no.* 1, 27–33. (Guillermo Cortiñas) **93j:18012** 18G60 (16E40, 19D55)

— (*with* Sletsjøe, Arne B.) Base change, transitivity and Künneth formulas for the Quillen decomposition of Hochschild homology. *Math. Scand.* **70** (1992), *no.* 2, 186–192. (Guillermo Cortiñas) **93i:16017** 16E40

Kassner, K. (*with* Misbah, C.) Similarity equation in nonaxisymmetric lamellar eutectic growth. *J. Phys. A* **25** (1992), *no.* 11, 3213–3237. (Summary) **93b:82084** 82D35 (82C24)

Kastenbaum, Marvin A. (*with* Bowman, K. O.; Shenton, L. R.) The negative hypergeometric distribution and estimation by moments. *Comm. Statist. Simulation Comput.* **21** (1992), *no.* 2, 301–332. 62E15

Kastler, Daniel Cyclic cohomology, supersymmetry and KMS states: the KMS states as generalized elliptic operators. *Differential geometric methods in theoretical physics (Davis, CA,* 1988), 105–116, *NATO Adv. Sci. Inst. Ser. B Phys.*, 245, *Plenum, New York,* 1990. (Paula Beazley Cohen) **93j:19006** 19K56 (19D55, 46L80, 46L85, 58G12, 82B10)

— KMS states, cyclic cohomology and supersymmetry. (English summary) *Quantum groups (Clausthal,* 1989), 375–397, *Lecture Notes in Phys.*, 370, *Springer, Berlin,* 1990. (G. L. Litvinov (Zbl 738:46030)) **93m:46081** 46L55 (19D55, 46L60, 46L85, 82B10)

— (*with* Mebkhout, Mohammed; Rehren, Karl-Henning) Introduction to the algebraic theory of superselection sectors (space-time dimension = 2; strictly localized morphisms). *The algebraic theory of superselection sectors (Palermo,* 1989), 113–214, *World Sci. Publishing, River Edge, NJ,* 1990. (*see* **93i:81122**) 81T05 (46L60)

— A list of papers on algebraic field theory and related subjects. *The algebraic theory of superselection sectors (Palermo,* 1989), 527–570, *World Sci. Publishing, River Edge, NJ,* 1990. (*see* **93i:81122**) 81T05 (81–00)

— Algebraic field theory: recollections and thoughts about the future. (English summary) Special issue dedicated to R. Haag on the occasion of his 70th birthday. *Rev. Math. Phys.* **1992,** *Special Issue,* 159–166. (Helmut R. Reeh) **93k:81004** 81–03 (01A60, 01A67, 46–03, 81T05)

— *see also* **Algebraic theory of superselection sectors, 93i:81122**

Kästner, J. (*with* Zylka, Ch.) On generalized uniformly tapered matrices. (English summary) *Linear Algebra Appl.* **181** (1993), 221–232. (Marc Artzrouni) **93k:15037** 15A51 (15A45)

Kastner-Maresch, Alois E. The implicit midpoint rule applied to discontinuous differential equations. (English and German summaries) *Computing* **49** (1992), *no.* 1, 45–62. (Beny Neta) **93h:65090** 65L05 (34A45)

Kasue, Atsushi Harmonic functions with growth conditions on a manifold of asymptotically nonnegative curvature. II. *Recent topics in differential and analytic geometry,* 283–301, *Adv. Stud. Pure Math.*, 18-I, *Academic Press, Boston, MA,* 1990. (Robert Brooks) **93e:53043** 53C20 (58G99)

— (*with* Washio, Takumi) Errata to: "Growth of equivariant harmonic maps and harmonic morphisms" [Osaka J. Math. **27** (1990), no. 4, 899–928; MR 92d:58043]. *Osaka J. Math.* **29** (1992), *no.* 2, 419–420. (Editors) **93e:58038** 58E20 (58E40)

Kasugai, Hiroshi (*with* Kubo, Mikio) The precedence constrained traveling salesman problem. *J. Oper. Res. Soc. Japan* **34** (1991), *no.* 2, 152–172. (Summary) **93a:90045** 90C10 (90C27)

— (*with* Kubo, Mikio) On the core of the network design game. (English summary) *J. Oper. Res. Soc. Japan* **35** (1992), *no.* 3, 250–255. (Summary) **93h:90125** 90D35 (90B10, 90C27, 90D12)

— (*with* Kubo, Mikio) The probabilistic network design problem. (English summary) *J. Oper. Res. Soc. Japan* **35** (1992), *no.* 3, 256–272. (Summary) **93h:90036** 90B15

— (*with* Kubo, Mikio) On symmetric subtour problems. (English summary) *Japan J. Indust. Appl. Math.* **9** (1992), *no.* 3, 383–396. (P. F. Körner) **93j:90082** 90C27 (90C10, 90C11)

Kas'yanov, V. N. (*with* Evstigneev, V. A.) ★ Алгоритмы на деревьях. (Russian) [Algorithms on trees] *Akad. Nauk SSSR Sibirsk. Otdel., Vychisl. Tsentr, Novosibirsk,* 1989. 312 *pp.* (Vladimir V. Markov) **93i:05122** 05C85 (05C05, 68Q25, 68R10)

Kasymov, K. A. (*with* Abil'daev, E. A.) On an initial jump of any order for linear differential equations. (Russian) *Vestnik Akad. Nauk Kazakh. SSR* **1991,** *no.* 12, 45–48. (Vasiliy Pavlovich Yakovets) **93h:34092** 34E15 (34B05)

— (*with* Abil'daev, E. A.) Asymptotic estimates for solutions of singularly perturbed boundary value problems with initial jumps for linear differential equations. (Russian. Russian summary) *Differentsial'nye Uravneniya* **28** (1992), *no.* 10, 1659–1668, 1837; *translation in Differential Equations* **28** (1992), *no.* 10, 1345–1352 (1993). (Summary) **93k:34120** 34E15 (34B05)

Kasymov, N. Kh. Positive models and universal propositions. (Russian) *Vychisl. Sistemy No.* 133, *Logich. Metody v Programmirovanii* (1990), 3–13, 186. (Summary) **93g:03031** 03C57 (03D45, 68P99)

— Positive algebras with congruences of finite index. (Russian. Russian summary) *Algebra i Logika* **30** (1991), *no.* 3, 293–305, 380; *translation in Algebra and Logic* **30** (1991), *no.* 3, 190–199 (1992). (Sergey T. Fedoryaev) **93m:03058** 03C57 (03C60, 03D45)

— On an algebraic property of simple nonhypersimple sets. (Russian) *Dokl. Akad. Nauk UzSSR* **1991,** *no.* 3, 3–4. 03D25

— The number of congruences of algebras over simple sets. (Russian) *Mat. Zametki* **52** (1992), *no.* 2, 150–152; *translation in Math. Notes* **52** (1992), *no.* 1-2, 861–862 (1993). (Andrzej Orlicki) **93k:03041** 03D45 (08A30)

— Positive algebras with Noetherian congruence lattices. (Russian) *Sibirsk. Mat. Zh.* **33** (1992), *no.* 2, 181–185, 223; *translation in Siberian Math. J.* **33** (1992), *no.* 2, 338–341. (Ivan Chajda) **93m:08001** 08A05 (08A30)

— Nonconstructive negative algebras with finiteness conditions. (Russian. Russian summary) *Sibirsk. Mat. Zh.* **33** (1992), *no.* 6, 195–198, 233; *translation in Siberian Math. J.* **33** (1992), *no.* 6, 1126–1128 (1993). (Summary) **93k:08003** 08A30 (03D45)

Kasymov, Sh. M. Nil-elements and nil-subsets in n-Lie algebras. (Russian) *Sibirsk. Mat. Zh.* **32** (1991), *no.* 6, 77–80, 204; *translation in Siberian Math. J.* **32** (1991), *no.* 6, 962–964 (1992). (S. P. Mishchenko) **93c:17005** 17A42

Kátai, Imre On the number of prime factors of $\varphi(\varphi(n))$. *Acta Math. Hungar.* **58** (1991), *no.* 1-2, 211–225. (M. Ram Murty) **93d:11100** 11N35 (11N37, 11N56)

— Multiplicative functions with regularity properties. VI. *Acta Math. Hungar.* **58** (1991), *no.* 3-4, 343–350. (Leo Murata) **93c:11080** 11N37

— Arithmetical functions satisfying some relations. *Acta Sci. Math. (Szeged)* **55** (1991), *no.* 3-4, 249–268. (Jean-Marie De Koninck) **93f:11006** 11A25

— Distribution of $\omega(\sigma(p+1))$. *Ann. Univ. Sci. Budapest. Eötvös Sect. Math.* **34** (1991), 217–225 (1992). (Claudia A. Spiro-Silverman) **93g:11099** 11N60 (11N64)

— (*with* Daróczy, Z.) On positive additive functions with respect to interval filling sequences, and some sequences of integers with gap conditions. (Russian and Lithuanian summaries) *Litovsk. Mat. Sb.* **31** (1991), *no.* 1, 62–75; *reprinted in Lithuanian Math. J.* **31** (1991), *no.* 1, 42–52 (1992). (Armel Mercier) **93d:11078** 11K31

— (*with* van Rossum-Wijsmuller, M.) Additive functions satisfying congruences. *Acta Sci. Math. (Szeged)* **56** (1992), *no.* 1-2, 63–72. (Paul J. McCarthy) **93m:11008** 11A25

— (*with* Környei, I.) On number systems in algebraic number fields. *Publ. Math. Debrecen* **41** (1992), *no.* 3-4, 289–294. (D. Boyd) **93m:11107** 11R04 (52C22)

— *see also* **Probability theory and applications, 93i:60005**

Katajainen, Jyrki (*with* Pasanen, Tomi) Stable minimum space partitioning in linear time. (English summary) *BIT* **32** (1992), *no.* 4, 580–585. (Summary) **93i:68046** 68P10

Katanaev, M. O. Conformal invariance, extremals, and geodesics in two-dimensional gravity with torsion. *J. Math. Phys.* **32** (1991), *no.* 9, 2483–2496. (Summary) **93h:81124** 81T40 (81T20)

— (*with* Volovich, I. V.) Theory of defects in solids and three-dimensional gravity. *Ann. Physics* **216** (1992), *no.* 1, 1–28. (Dimitris C. Lagoudas) **93c:73017** 73B99 (53C80, 73S10)

Katanova, A. A. Explicit form of certain multivector invariants. *Lie groups, their discrete subgroups, and invariant theory,* 87–93, *Adv. Soviet Math.*, 8, *Amer. Math. Soc., Providence, RI,* 1992. (P. E. Newstead) **93d:15043** 15A72 (14L30)

Kataoka, H. (*with* Munakata, H.; Sato, Hikaru; Tanaka, S.) Unique flipped SO(10) SUSY-GUT from Z orbifold. (English summary) *Phys. Lett. B* **289** (1992), *no.* 3-4, 321–326. (Summary) **93f:81160** 81V22 (81R05, 81T30)

Kataoka, Hidemi (*with* Takada, Ken-Ichi; Kuratsuji, Hiroshi) A dynamics of monopole in gauge space and quantization of dyon charge. (English summary) *Modern Phys. Lett. A* **7** (1992), *no.* 24, 2165–2171. (Summary) **93f:81092** 81T13

Kataoka, Toshitaka (*with* Cameron, Peter J.; Kiyota, Masao) Sharp characters of finite groups of type $\{-1, 1\}$. *J. Algebra* **152** (1992), *no.* 1, 248–258. (David Gluck) **93j:20017** 20C15

Katauskis, Pranas On the solvability of a magnetization problem. (Russian. English and Lithuanian summaries) *Litovsk. Mat. Sb.* **31** (1991), *no.* 4, 622–632; *translation in Lithuanian Math. J.* **31** (1991), *no.* 4, 430–438 (1992). (Alexey V. Samokhin) **93e:35110** 35Q60 (35A07, 78A25)

Katayama, Hitoshi (*with* Ichikawa, Akira) Pole assignment by state transition graph. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 8, *part I,* 1196–1201. (Krzysztof Kuźmiński) **93h:93032** 93B55

Katayama, Noriaki On an extension of Perelomov transformation. *Bull. Osaka Prefect. College Tech.* **25** (1991), 15–17. (Chris Athorne) **93c:70010** 70H05 (34A05, 58F37)

— A note on a quantum-mechanical harmonic oscillator in a space of constant curvature. (English summary) *Nuovo Cimento B* (11) **107** (1992), *no.* 7, 763–768. (Summary) **93e:81029** 81Q99 (81T20)

Katayama, Shigeru On certain real quadratic fields with class number 2. (English summary) *Math. Japon.* **37** (1992), *no.* 6, 1105–1115. (Teruo Takeuchi) **93k:11101** 11R29 (11R11, 11Y40)

— A note on a deformation of Dirichlet's class number formula. *Proc. Japan Acad. Ser. A Math. Sci.* **68** (1992), *no.* 3, 58–61. (Charles J. Parry) **93i:11125** 11R29 (11R11)

Katayama, Shin-ichi (*with* Kashihara, Kenji) On the structure of the integer solutions of $z^2 = (x^2-1)(y^2-1) + a$. *J. Math. Tokushima Univ.* **24** (1990), 1–11. (Andrew Bremner) **93c:11013** 11D25

— On fundamental units of real quadratic fields with norm -1. *Proc. Japan Acad. Ser. A Math. Sci.* **67** (1991), *no.* 10, 343–345. (Charles J. Parry) **93b:11135** 11R11 (11R27)

— On fundamental units of real quadratic fields with norm $+1$. *Proc. Japan Acad. Ser. A Math. Sci.* **68** (1992), *no.* 1, 18–20. (H. Yokoi) **93d:11115** 11R27 (11R11)

Katayama, Tohru Solution to Wiener filtering problem via H_2 optimal control theory. (English summary) *Systems and control,* 191–200, *Mita, Tokyo,* 1991. (From the introduction) **93k:93110** 93E11 (93–02, 93B36)

— A spectral factorization for discrete-time system via state-space method. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, I (Kobe,* 1991), 517–522, *Mita, Tokyo,* 1992. (*see* **93g:93005**) 93C55 (93B28)

— A simple state-space approach to spectral factorization for discrete-time system. (English summary) *Control Theory Adv. Tech.* **8** (1992), *no.* 3, 647–657. (Summary) **93i:93044** 93B36 (93C05, 93C55)

Katayama, Tsuyoshi (*with* Takahashi, Yoshitaka) Analysis of a two-class priority queue with Bernoulli schedules. (English summary) *J. Oper. Res. Soc. Japan* **35** (1992), *no.* 3, 236–249. (Summary) **93i:60174** 60K25 (90B22)

— A note on conservation laws for a multi-class service queueing system with setup times. (English summary) *Queueing Systems Theory Appl.* **11** (1992), *no.* 3, 299–306. (Summary) **93f:60141** 60K25 (90B22)

Katayama, Yoshikazu Asymptotic Galois correspondence on AFD factors. (English summary) *Current topics in operator algebras (Nara,* 1990), 33–37, *World Sci. Publishing, River Edge, NJ,* 1991. (Summary) **93h:46093** 46L55 (46L35)

— (*with* Takesaki, Masamichi) Asymptotic Galois correspondence for discrete amenable group actions on factors. *J. Funct. Anal.* **103** (1992), *no.* 1, 128–137. (Summary) **93i:46116** 46L55 (46L35)

Katbab, A. (*with* Jury, Eliahu I.) A note on two methods related to stability robustness of polynomials in a sector (relative stability). (English summary) *IEEE Trans. Automat. Control* **38** (1993), *no.* 2, 380–383. (Summary) **93j:93106** 93D09

Katchalski, M. (*with* Abbott, H. L.) Estimates for snakes and pseudosnakes in K_n^d. (English summary) *Utilitas Math.* **43** (1993), 97–100. (Summary) **93m:05104** 05C38

Kateb, M. E. D. *see* **El Djalil Kateb, Mohamed**

el djalil Kateb, Mohamed *see* **El Djalil Kateb, Mohamed**

Katechou, E. K. (*with* Bailin, David; Love, Alex) Flipped SU(5) × U(1) in superconformal models. *Internat. J. Modern Phys. A* **7** (1992), *no.* 1, 153–169. (Summary) **93m:81159** 81V22 (81T30, 81T40)

Katehakis, Michael N. (*with* Govindarajulu, Z.) Dynamic allocation in survey sampling. (English summary) Modern sequential analysis (SSA), Vol. II (Syracuse, NY, 1989). *Amer. J. Math. Management Sci.* **11** (1991), *no.* 3-4, 199–221. (Robert Kertz) **93j:62021** 62D05 (62L12, 90C39)

Katerinis, P. Regular factors in regular graphs. (English summary) *Discrete Math.* **113** (1993), *no.* 1-3, 269–274. (Summary) **93k:05129** 05C70

Kates, Ronald *see* **Schwabl, Franz, 93a:81002**

Katětov, Miroslav On entropy-like functionals and codes for metrized probability spaces. II. *Comment. Math. Univ. Carolin.* **33** (1992), *no.* 1, 79–95. (Viktor A. Obuljen) **93i:94004** 94A17 (54E35)

Kath, W. L. (*with* Minzoni, Antonmaria; Kriegsmann, Gregory A.; Reiss, E. L.) Energy leakage and reflection in slowly varying waveguides. (English summary) *J. Acoust. Soc. Amer.* **93** (1993), *no.* 1, 182–187. (Summary) **93i:76082** 76Q05

Kathiresan, Km. Subdivision[s] of ladders are graceful. *Indian J. Pure Appl. Math.* **23** (1992), *no.* 1, 21–23. (Indrakanty H. Nagaraja Rao) **93f:05081** 05C78

Kathirkamanayagan, M. (*with* Ladde, G. S.) Singularly perturbed linear boundary value problems. (English summary) *J. Math. Anal. Appl.* **168** (1992), *no.* 2, 430–459. (Shu Mei Miao) **93g:34084** 34E15 (34B05)

Kathuria, O. P. (*with* Agarwal, R. C.) The effect of two-stage sampling on OLS estimators. (English and Hindi summaries) *J. Indian Soc. Agricultural Statist.* **44** (1992), *no.* 3, 227–235, ii. 62J05

Katkauskaitė, Aldona The rate of convergence of a Shepard estimate in the presence of random interference. *Soviet J. Automat. Inform. Sci.* **24** (1991), *no.* 5, 19–24 (1992); *translated from Avtomatika* **1991**, *no.* 5, 21–26, 96 (*Russian. English, Russian and Ukrainian summaries*). (Summary) **93h:41002** 41A05 (41A63, 62G05)

Katkova, O. M. On a problem of Fekete. (Russian. Ukrainian summary) *Ukrain. Mat. Zh.* **43** (1991), *no.* 9, 1255–1259; *translation in Ukrainian Math. J.* **43** (1991), *no.* 9, 1170–1173 (1992). (Ralitza Kovacheva) **93c:30042** 30D15

Kato, Akio Elementary submodels for a partition of $\beta\omega \setminus \omega$. (English summary) *Topology Proc.* **16** (1991), 95–107. (Klaas Pieter Hart) **93m:54043** 54D35 (03C65, 54D40)

Kato, Goro A p-adic cohomological method for the Weierstrass family and its zeta invariants. (English summary) *p-adic methods in number theory and algebraic geometry*, 141–162, *Contemp. Math.*, 133, *Amer. Math. Soc., Providence, RI*, 1992. (*see* **93d:11003**) 14F30

Kato, H. *see* **Câteau, Hideyuki**

Kato, Hisako (*with* Nakao, Mitsuhiro) On periodic solutions of a semilinear hyperbolic parabolic equation. (English summary) *Bull. Austral. Math. Soc.* **46** (1992), *no.* 2, 245–261. (Eduard Feireisl) **93g:35094** 35L70 (34G20, 35B10)

Kato, Hisao A note on embeddings manifolds into topological groups preserving dimensions. *Czechoslovak Math. J.* **42(117)** (1992), *no.* 4, 619–622. (Michael Tkačenko) **93h:22001** 22A05 (54H11)

— Embeddability into the plane and movability on inverse limits of graphs whose shift maps are expansive. *Topology Appl.* **43** (1992), *no.* 2, 141–156. (Jacek Nikiel) **93b:54039** 54H20 (54B35, 54F50)

— Expansive homeomorphisms in continuum theory. (English summary) Proceedings of the Tsukuba Topology Symposium (Tsukuba, 1990). *Topology Appl.* **45** (1992), *no.* 3, 223–243. (J. J. Charatonik) **93j:54023** 54F15 (54B10, 54E40, 54F50)

Kato, Junji Boundedness in linear functional-differential equations with infinite delay. (English summary) *Recent trends in differential equations*, 347–354, *World Sci. Ser. Appl. Anal.*, 1, *World Sci. Publishing, River Edge, NJ*, 1992. (Klaus Morgenthal) **93i:34135** 34K15 (34K20)

Kato, Kazuya Generalized class field theory. *Proceedings of the International Congress of Mathematicians, Vol. I, II* (*Kyoto*, 1990), 419–428, *Math. Soc. Japan, Tokyo*, 1991. (Luca Barbieri Viale) **93e:19011** 19F05 (11R37, 11R70, 14C25, 19E15)

— (*with* Messing, William) Syntomic cohomology and p-adic étale cohomology. *Tôhoku Math. J.* (2) **44** (1992), *no.* 1, 1–9. (Adolfo Quirós) **93b:14035** 14F30 (11G25, 14F20, 14G20)

Kato, Kenji (*with* Yamamoto, Peter; Imai, Keiko; Imai, Hiroshi) Algorithms for vertical and orthogonal L_1 linear approximation of points. (English summary) *Proceedings of the Fourth Annual Symposium on Computational Geometry* (*Urbana, IL*, 1988), 352–361, *ACM, New York*, 1988. (*see* **93k:68003**) 68U05

Kato, M. *see* **Kato, Mitsuhiro**

Kato, Masahide On characteristic forms on complex manifolds. *J. Algebra* **138** (1991), *no.* 2, 424–439. (Summary) **93b:32042** 32J27

Kato, Mitsuhiro Flat connection, conformal field theory and quantum group. *Differential geometric methods in theoretical physics* (*Davis, CA*, 1988), 251–256, *NATO Adv. Sci. Inst. Ser. B Phys.*, 245, *Plenum, New York*, 1990. (From the introduction) **93d:81162** 81T40 (17B37, 81R50)

— (*with* Di Vecchia, Paolo; Ohta, Nobuyoshi) Double scaling limit in O(N) vector models in D dimensions. *Internat. J. Modern Phys. A* **7** (1992), *no.* 7, 1391–1413. (Asao Arai) **93b:81197** 81T27 (81T10)

Kato, Suehiro (*with* Aoki, Shigeru) On invariant eigendistributions on $U(p,q)/(U(r) \times U(p-r,q))$. *Proc. Japan Acad. Ser. A Math. Sci.* **67** (1991), *no.* 6, 203–207. (Christopher Meaney) **93c:22015** 22E30 (33C80)

Kato, T. (*with* Hamada, Nozomu) Stability conditions of 2-D system in terms of its line spectrum pair. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, II* (*Kobe*, 1991), 171–176, *Mita, Tokyo*, 1992. (*see* **93g:93006**) 93D05 (93C35)

Kato, Tosio Strong solutions of the Navier-Stokes equation in Morrey spaces. (English summary) *Bol. Soc. Brasil. Mat. (N.S.)* **22** (1992), *no.* 2, 127–155. (Summary) **93i:35104** 35Q30

Kato, Yasumasa (*with* Tanahashi, Takahiko) Finite element analysis of natural convection in concentric horizontal annuli using simultaneous relaxation of velocity and Bernoulli function. (Japanese. English summary) *Parallel processing for scientific computing* (*Yokohama*, 1992), 1–7, *Adv. Numer. Methods Large Sparse Sets Linear Equations*, 8, *Keio Univ., Yokohama*, 1992. (*see* **93f:65027**) 65M60 (76M10)

Kato, Yoshifumi (*with* Aomoto, Kazuhiko; Mimachi, Katsuhisa) A solution of the Yang-Baxter equation as connection coefficients of a holonomic q-difference system. *Internat. Math. Res. Notices* **1992**, *no.* 1, 7–15. (P. D. F. Ion) **93d:39007** 39A12 (16W30, 33D80, 82B23)

Kato, Yoshio On a Bingham fluid whose viscosity and yield limit depend on the temperature. *Nagoya Math. J.* **128** (1992), 1–14. (Michael Renardy) **93j:76010** 76A05 (35Q35)

Katoh, Hisao (*with* Funahashi, Yasuyuki) Robust-tracking deadbeat control. *Internat. J. Control* **56** (1992), *no.* 1, 213–225. 93B51

— (*with* Funahashi, Yasuyuki) Input/output deadbeat control. (English summary) *Internat. J. Control* **56** (1992), *no.* 3, 515–530. (Summary) **93f:93064** 93B51 (93C40)

Katoh, Naoki (*with* Koyanagi, Junji; Ohnishi, Masamitsu; Ibaraki, Toshihide) Optimal strategies for some team games. *Discrete Appl. Math.* **35** (1992), *no.* 3, 275–291. (Xiao Jun Zeng) **93c:90114** 90D15 (90D40, 90D46, 93E05)

— (*with* Ibaraki, Toshihide; Kameda, Tsunehiko) A multiversion cautious scheduler with dynamic serialization constraints for database concurrency control. (English summary) *Discrete Appl. Math.* **40** (1992), *no.* 3, 379–395. 68P15 (68M20, 90B22)

— (*with* de Werra, D.; Hell, Pavol; Kameda, Tsunehiko; Solot, Ph.; Yamashita, Masafumi) Graph endpoint coloring and distributed processing. (English summary) *Networks* **23** (1993), *no.* 2, 93–98. (Summary) **93i:68031** 68M20 (05C15, 90B12, 94C05)

Katok, A. (*with* Flaminio, L.) Rigidity of symplectic Anosov diffeomorphisms on low-dimensional tori. *Ergodic Theory Dynamical Systems* **11** (1991), *no.* 3, 427–441. (Nicolaï T. A. Haydn) **93a:58133** 58F15 (53C05, 58F05)

— (*with* Lewis, J.) Local rigidity for certain groups of toral automorphisms. *Israel J. Math.* **75** (1991), *no.* 2-3, 203–241. (Steven E. Hurder) **93g:58076** 58F10 (22A30, 22D40, 22E40, 58F15, 58F30)

Katok, Svetlana Elliptic operators and solutions of cohomological equations for geodesic flows with hyperbolic behavior. *Internat. J. Math.* **2** (1991), *no.* 6, 701–709. (Valery Covachev) **93b:58113** 58F17 (58G05)

— ★ Fuchsian groups. Chicago Lectures in Mathematics. *University of Chicago Press, Chicago, IL*, 1992. x+175 *pp. ISBN* 0-226-42582-7; 0-226-42583-5 (I. Kra) **93d:20088** 20H10 (30F35)

Katona, Gyula O. H. (*with* Demetrovics, János; Miklós, Dezső) Partial dependencies in relational databases. (Hungarian. English summary) *Alkalmaz. Mat. Lapok* **15** (1990/91), *no.* 1-2, 163–179 (1992). (Ana Pasztor) **93h:68029** 68P15

— (*with* Demetrovics, János; Sali, Attila) Branching dependency in relational databases. (Hungarian. English summary) *Alkalmaz. Mat. Lapok* **15** (1990/91), *no.* 1-2, 181–196 (1992). (Ana Pasztor) **93h:68030** 68P15

— Rényi and the combinatorial search problems. *Studia Sci. Math. Hungar.* **26** (1991), *no.* 2-3, 363–378. (Andrzej Pelc) **93j:68052** 68P20

— (*with* Demetrovics, János; Miklós, Dezső) Partial dependencies in relational databases and their realization. (English summary) *Discrete Appl. Math.* **40** (1992), *no.* 2, 127–138. (Summary) **93g:68022** 68P15

— (*with* Demetrovics, János; Sali, Attila) The characterization of branching dependencies. (English summary) *Discrete Appl. Math.* **40** (1992), *no.* 2, 139–153. (Summary) **93h:68031** 68P15

Katona, Gyula Y. Searching for f-Hamiltonian circuits. (English summary) *Combinatorica* **12** (1992), *no.* 2, 241–245. (Summary) **93e:05064** 05C45 (05C85, 68Q25, 68R10)

Katori, Makoto (*with* Konno, Norio) Upper bounds for order parameters of a class of attractive nearest-particle systems with finite ranges. *J. Phys. Soc. Japan* **61** (1992), *no.* 3, 806–811. (Krystyna Parczyk) **93g:82072** 82C31 (60J25, 82C27)

Katrakhov, V. V. (*with* Sitnik, S. M.) The factorization method in the theory of transformation operators. (Russian) *Nonclassical equations and equations of mixed type* (*Russian*), 104–122, *Akad. Nauk SSSR Sibirsk. Otdel., Inst. Mat., Novosibirsk*, 1990. (From the introduction) **93g:47065** 47G10 (44A05, 44A20, 47B38, 47N20)

Katriel, Jacob (*with* Kibler, Maurice) Normal ordering for deformed boson operators and operator-valued deformed Stirling numbers. *J. Phys. A* **25** (1992), *no.* 9, 2683–2691. (Summary) **93b:81083** 81R05 (05A10, 81R50)

Katriňák, Tibor (*with* Hedlíková, Jarmila) On a characterization of lattices by the betweenness relation—on a problem of M. Kolibiar. *Algebra Universalis* **28** (1991), *no.* 3, 389–400. (Editors) **93f:06007** 06B05

— Seventy years of Professor Milan Kolibiar. *Czechoslovak Math. J.* **42(117)** (1992), *no.* 1, 187–190. (Editors) **93a:01051** 01A70

— The 70th anniversary of Professor Milan Kolibiar. *Math. Slovaca* **42** (1992), *no.* 2, 251–256. (Editors) **93e:01023** 01A70

Kats, A. *see* **Kats, Amoz**

Kats, A. V. The exact nonstationary solutions of the generalized Smolukhowsky equation in the availability of the source. *Nonlinear world, Vol.* 1 (*Kiev*, 1989), 151–165, *World Sci. Publishing, River Edge, NJ*, 1990. (*see* **93b:00012**) 82C99

Kats, Amoz (*with* Thisse, Jacques-François) Unilaterally competitive games. *Internat. J. Game Theory* **21** (1992), *no.* 3, 291–299. (Dan Butnariu) **93k:90109** 90D10 (90D05, 90D06)

Kats, B. A. Conditions for the solvability of the Riemann boundary value problem on nonsmooth curves. (Russian) *Dokl. Akad. Nauk SSSR* **314** (1990), *no.* 1, 67–71; *translation in Soviet Math. Dokl.* **42** (1991), *no.* 2, 302–306. (N. K. Karapetyants) **93d:30052** 30E25

— On the homogeneous Riemann problem on curves of infinite length. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* **1992**, *no.* 1, 98–101. 30E25

Kats, I. S. Reconstruction of a string from its principal spectral matrix function. (Russian. English and Russian summaries) *Dokl. Akad. Nauk Ukrainy* **1992**, *no.* 1, 5–10, 176. (Summary) **93h:34024** 34A55 (34B99, 34L05)

— The behaviour of spectral functions of the string with boundary condition at a singular entrance endpoint. (English summary) *Integral Equations Operator Theory* **15** (1992), *no.* 5, 768–783. (Björn Textorius) **93j:47069** 47E05 (34B05, 34L05, 47N20)

Katsaran, T. K. Application of the method of similar operators in the study of the spectral properties of differential operators of Sturm-Liouville type. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* **1991**, *no.* 6, 72–75; *translation in Soviet Math. (Iz. VUZ)* **35** (1991), *no.* 6, 73–76. (Jan Bochenek) **93a:47050** 47E05 (34L99, 47B38)

Katsaras, A. K. The non-Archimedean Grothendieck's completeness theorem. *Bull. Inst. Math. Acad. Sinica* **19** (1991), *no.* 4, 351–354. (Wim H. Schikhof) **93a:46142** 46S10 (46A30)

— Non-Archimedean A-nuclear spaces. *p-adic functional analysis (Laredo, 1990)*, 101–119, *Lecture Notes in Pure and Appl. Math.*, 137, *Dekker, New York*, 1992. (N. De Grande-De Kimpe) **93d:46134** 46S10 (46A11, 46A45)

— (*with* Martínez-Maurica, J.) Approximation numbers of continuous linear mappings and compact operators on non-Archimedean spaces. (English and Italian summaries) *Rend. Mat. Appl.* (7) **12** (1992), *no.* 2, 329–343. (Niel Shell) **93h:47086** 47S10 (47B06, 47B07)

Katscher, U. (*with* Schneider, V.; Rischke, D. H.; Waldhauser, B.; Maruhn, J. A.; Munz, C.-D.) New algorithms for ultra-relativistic numerical hydrodynamics. (English summary) *J. Comput. Phys.* **105** (1993), *no.* 1, 92–107. (Summary) **93k:76091** 76M25 (76Y05)

Katsevich, A. I. (*with* Ramm, A. G.) Inversion of incomplete Radon transform. *Appl. Math. Lett.* **5** (1992), *no.* 2, 41–45. (Khélifa Trimèche) **93c:44010** 44A12

— (*with* Ramm, A. G.) Filtered back projection method for inversion of incomplete tomographic data. *Appl. Math. Lett.* **5** (1992), *no.* 3, 77–80. (L. A. Shepp) **93c:44009** 44A12 (92C55)

Katsoprinakis, Emmanuel S. On the Sendov-Ilyeff conjecture. *Bull. London Math. Soc.* **24** (1992), *no.* 5, 449–455. (Z. Rubinstein) **93f:30005** 30C15

— Taylor series with limit-points on a finite number of circles. *Trans. Amer. Math. Soc.* **337** (1993), *no.* 1, 437–450. (D. C. Russell) **93g:30002** 30B10 (42A99)

Katsoulis, E. G. (*with* Moore, Robert Laurens) On compact operators in certain reflexive operator algebras. *J. Operator Theory* **25** (1991), *no.* 1, 177–182. (John Froelich) **93i:47065** 47D25 (47B07, 47B10, 47C05)

— (*with* Anoussis, Michalis) Complemented subspaces of C_p spaces and CSL algebras. *J. London Math. Soc.* (2) **45** (1992), *no.* 2, 301–313. (David R. Pitts) **93i:47064** 47D25 (46K50, 47B10, 47D50)

— (*with* Anoussis, Michalis; Moore, Robert Laurens; Trent, T. T.) Interpolation problems for ideals in nest algebras. *Math. Proc. Cambridge Philos. Soc.* **111** (1992), *no.* 1, 151–160. (Xing De Dai) **93b:47087** 47D25 (47D50)

Katsumi, Itoh Partially broken rigid supersymmetry on world-volume in super p-brane theories. *Supermembranes and physics in 2+1 dimensions (Trieste, 1989)*, 126–135, *World Sci. Publishing, River Edge, NJ*, 1990. (*see* **93g:81003**) 81T30

Katsuno, Hirofumi (*with* Mendelzon, Alberto O.) Propositional knowledge base revision and minimal change. *Artificial Intelligence* **52** (1991), *no.* 3, 263–294. (Jian Ming Gao) **93h:68133** 68T30 (03B70)

— (*with* Mendelzon, Alberto O.) On the difference between updating a knowledge base and revising it. *Belief revision*, 183–203, *Cambridge Tracts Theoret. Comput. Sci.*, 29, *Cambridge Univ. Press, Cambridge*, 1992. (*see* **93g:68131**) 68T30 (03B60, 03B70, 68T27)

Katsura, Masashi (*with* Ito, Masami[1]) Dense languages and languages related to primitive words. *Proceedings of Asian Mathematical Conference*, 1990 (*Hong Kong*, 1990), 215–220, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93b:00022**) 68Q45

— (*with* Saito, Tatsuhiko) Maximal inverse subsemigroups of the full transformation semigroup. *Proceedings of the 15th Symposium on Semigroups (Matsue, 1991)*, 41–47, *Shimane Univ., Matsue*, 1992. (*see* **93e:20073**) 20M18 (20M20)

— (*with* Saito, Tatsuhiko) Maximal inverse subsemigroups of the full transformation semigroup. *Semigroups with applications (Oberwolfach, 1991)*, 101–113, *World Sci. Publishing, River Edge, NJ*, 1992. (Mária B. Szendrei) **93k:20097** 20M20 (20M18)

— (*with* Tanaka, Genjiro) Groups of finite elementary codes. *Words, languages and combinatorics (Kyoto, 1990)*, 251–261, *World Sci. Publishing, River Edge, NJ*, 1992. (Dong Yang Long) **93e:94007** 94A45 (20M35, 94B60)

— (*with* Saito, Tatsuhiko; Kobayashi, Yuji; Kajitori, K.) On totally ordered free monoids. *Words, languages and combinatorics (Kyoto, 1990)*, 454–479, *World Sci. Publishing, River Edge, NJ*, 1992. (Yves Metivier) **93d:20102** 20M05 (06F05)

— (*with* Shikishima-Tsuji, Kayoko) Hypertranscendental elements of a formal power-series ring of positive characteristic. *Nagoya Math. J.* **125** (1992), 93–103. (Paul M. Eakin) **93e:13043** 13J05 (12F10, 12H05)

Katsura, Toshiyuki (*with* Shimizu, Yuji; Ueno, Kenji) Complex cobordism ring and conformal field theory over **Z**. *Math. Ann.* **291** (1991), *no.* 3, 551–571. (Andrew J. Baker) **93c:55004** 55N22 (57R77, 81T40)

Katsurada, Hidenori A generalized Igusa local zeta function and local densities of quadratic forms. *Tôhoku Math. J.* (2) **44** (1992), *no.* 2, 211–218. (K.-B. Gundlach) **93h:11041** 11E08 (11E95, 11M41)

Katsylo, P. I. Birational geometry of moduli varieties of vector bundles over $\mathbf{P}^2$. (Russian) *Izv. Akad. Nauk SSSR Ser. Mat.* **55** (1991), *no.* 2, 429–438; *translation in Math. USSR-Izv.* **38** (1992), *no.* 2, 419–428. (P. E. Newstead) **93c:14014** 14D20 (14E05, 14J60)

— Rationality of the variety of moduli of curves of genus 5. (Russian) *Mat. Sb.* **182** (1991), *no.* 3, 457–464; *translation in Math. USSR-Sb.* **72** (1992), *no.* 2, 439–445. (From the introduction) **93b:14044** 14H10

— On the birational geometry of the space of ternary quartics. *Lie groups, their discrete subgroups, and invariant theory*, 95–103, *Adv. Soviet Math.*, 8, *Amer. Math. Soc., Providence, RI*, 1992. (P. E. Newstead) **93d:14069** 14L30 (15A72)

— Rationality of the module variety of mathematical instantons with $c_2 = 5$. *Lie groups, their discrete subgroups, and invariant theory*, 105–111, *Adv. Soviet Math.*, 8, *Amer. Math. Soc., Providence, RI*, 1992. (Bernd Kreussler) **93e:14017** 14D20 (14D25, 14F05)

Katulska, Krystyna (*with* Ceranka, Bronisław) Relations between optimum chemical balance weighing designs for v and $v + 1$ objects. *Zastos. Mat.* **21** (1991), *no.* 2, 207–209. (Girdhar G. Agarwal) **93a:62102** 62K05

— (*with* Ceranka, Bronisław) Optimum biased spring balance weighing designs with nonhomogeneity of the variances of errors. *J. Statist. Plann. Inference* **30** (1992), *no.* 2, 185–193. (Girdhar G. Agarwal) **93f:62102** 62K05 (62K15)

Katyal, Vijay (*with* Pal, Satyabrata) Analysis and connectedness of four-dimensional designs. (Hindi summary) *J. Indian Soc. Agricultural Statist.* **43** (1991), *no.* 3, 296–309, ii. (Summary) **93c:62129** 62K10

Katyar, N. P. (*with* Singh, Housila Prasad; Chand, Lal) Estimation of inverse of population mean when the coefficient of variation is known. (English summary) *J. Indian Statist. Assoc.* **30** (1992), *no.* 1, 51–62. 62F10

Katyshev, P. K. On uniformly optimal coding of Gaussian messages in white Gaussian channels with feedback. (English summary) *New trends in probability and statistics, Vol.* 1 (*Bakuriani*, 1990), 436–444, *VSP, Utrecht*, 1991. (Summary) **93h:94011** 94A40 (94A24)

Katyshev, V. V. Regular solution of a one-sided problem for the wave equation with a constraint on the solution. (Russian) *Mathematical analysis and differential equations (Russian)*, 59–64, *Novosibirsk. Gos. Univ., Novosibirsk*, 1991. (*see* **93m:00026**) 35L05 (35L85)

Katz, Jerrold J. The new intensionalism. *Mind* **101** (1992), *no.* 404, 689–719. 03A05 (01A55, 01A60, 03–03)

Katz, Joseph (*with* Kaburaki, Osamu; Okamoto, Isao) Thermodynamic stability of Kerr black holes. (English summary) *Phys. Rev. D* (3) **47** (1993), *no.* 6, 2234–2241. (Summary) **93m:83054** 83C57

— (*with* Bičák, Jiří; Lynden-Bell, D.) Relativistic disks as sources of static vacuum spacetimes. (English summary) *Phys. Rev. D* (3) **47** (1993), *no.* 10, 4334–4343. (Summary) **93m:83008** 83C15

Katz, Matthew J. (*with* Overmars, Mark H.; Sharir, Micha) Efficient hidden surface removal for objects with small union size. (English summary) *Comput. Geom.* **2** (1992), *no.* 4, 223–234. 68U05

Katz, Mikhail The rational filling radius of complex projective space. *Topology Appl.* **42** (1991), *no.* 3, 201–215. (A. R. Aithal) **93c:53031** 53C23 (55R20)

Katz, Nicholas M. ★ Exponential sums and differential equations. Annals of Mathematics Studies, 124. *Princeton University Press, Princeton, NJ*, 1990. xii+430 *pp. ISBN* 0-691-08598-6; 0-691-08599-4 (Hernando Enrique Sierra-Morales) **93a:14009** 14D10 (11L03, 11T23, 14G15)

— *see also* **Fouvry, Étienne, 93g:11089**

Katz, Sheldon H. Discriminants and limits of duals of plane curves. *Enumerative algebraic geometry (Copenhagen, 1989)*, 99–106, *Contemp. Math.*, 123, *Amer. Math. Soc., Providence, RI*, 1991. (Raquel Mallavibarrena) **93d:14082** 14N10 (14C17)

— Recent work on Cremona transformations. *Free resolutions in commutative algebra and algebraic geometry (Sundance, UT, 1990)*, 109–119, *Res. Notes Math.*, 2, *Jones and Bartlett, Boston, MA*, 1992. (Georgy Khristov Georgiev) **93f:14009** 14E07 (14E05)

— (*with* Morrison, David R.) Gorenstein threefold singularities with small resolutions via invariant theory for Weyl groups. *J. Algebraic Geom.* **1** (1992), *no.* 3, 449–530. (Alessio Corti) **93b:14030** 14E30 (13A50, 14E15)

— (*with* Hulek, Klaus; Schreyer, Frank-Olaf) Cremona transformations and syzygies. *Math. Z.* **209** (1992), *no.* 3, 419–443. (Wolfram Decker) **93g:14022** 14E07

Katz, Shmuel (*with* Peled, Doron) Verification of distributed programs using representative interleaving sequences. (English summary) *Distrib. Comput.* **6** (1992), *no.* 2, 107–120. (Summary) **93g:68085** 68Q60 (03B70, 68Q55)

— (*with* Peled, Doron) Defining conditional independence using collapses. (English summary) Selected papers of the International BCS-FACS Workshop on Semantics for Concurrency (Leicester, 1990). *Theoret. Comput. Sci.* **101** (1992), *no.* 2, 337–359. (B. H. Mayoh) **93g:68076** 68Q55 (03B70, 68Q60)

Katz, Victor J. Essay reviews of *Ethnomathematics* [Brooks/Cole, Pacific Grove, CA, 1991; MR 92c:01006] by M. Ascher and *The crest of the peacock* [Tauris, London, 1991; MR 92g:01004] by G. G. Joseph. *Historia Math.* **19** (1992), *no.* 3, 310–315. 01A07 (00A30)

Katzenbeisser, Walter (*with* Panny, Wolfgang) On the number of times where a simple random walk reaches its maximum. *J. Appl. Probab.* **29** (1992), *no.* 2, 305–312. (Summary) **93b:60152** 60J15 (62G30)

— (*with* Panny, Wolfgang) Some further results on the height of lattice paths. (English summary) *J. Statist. Plann. Inference* **34** (1993), *no.* 2, 171–181. (Summary) **93j:60098** 60J15 (62G30)

Katzenberger, G. S. Solutions of a stochastic differential equation forced onto a manifold by a large drift. *Ann. Probab.* **19** (1991), *no.* 4, 1587–1628. (S. N. Ethier) **93d:60102** 60H10 (60F17)

Katzin, Gerald H. (*with* Levine, Jack) Use of the characteristic functional structure of a symmetry mapping to obtain (by means of a related integral theorem) a prescribed deformation of a given set of constants of motion of a dynamical system. *Tensor (N.S.)* **50** (1991), *no.* 2, 110–121. (Frans Cantrijn) **93e:58165** 58F35 (34A26, 34A99)

Kaucher, Edgar Area-preserving mappings, their application for parallel and partially validated computations of Navier-Stokes-problems. (English summary) *Computer arithmetic, scientific computation and mathematical modelling (Albena, 1990)*, 425–436, *IMACS Ann. Comput. Appl. Math.*, 12, *Baltzer, Basel*, 1991. (Summary) **93g:65134** 65N22 (65Y05, 76D05, 76M25)

— (*with* Dobner, Hans-Jürgen) Inclusion methods for integral equations. (English summary) *Computer arithmetic and enclosure methods (Oldenburg, 1991)*, 13–24, *North-Holland, Amsterdam*, 1992. (Summary) **93j:65219** 65R20 (65G05)

— (*with* Dobner, Hans-Jürgen) Singular operator equations with functional constraints. (English summary) *Computer arithmetic and enclosure methods (Oldenburg, 1991)*, 235–241, *North-Holland, Amsterdam*, 1992. (Summary) **93j:65069** 65G10 (65N99, 65R20)

— *see also* **Computer arithmetic, scientific computation and mathematical modelling, 93e:00022**

Kauffman, Louis H. Knots and physics. Conference on Differential Geometry and Topology (Italian) (Lecce, 1989). *Note Mat.* **9** (1989), *suppl.*, 17–32. (Yongwu Rong) **93a:57009** 57M25 (17B37, 82B23)

— Addendum: "Statistical mechanics and the Jones polynomial" [in *Braids (Santa Cruz, CA, 1986)*, 263–297, Contemp. Math., 78, Amer. Math. Soc., Providence, RI, 1988; MR 89j:57002]. *New problems, methods and techniques in quantum field theory and statistical mechanics*, 210–222, *Ser. Adv. Statist. Mech.*, 6, *World Sci. Publishing, River Edge, NJ*, 1990. (H. N. V. Temperley) **93b:57009** 57M25 (05C15, 82B23)

— ★ Knots and physics. Series on Knots and Everything, 1. *World Scientific Publishing Co., Inc., River Edge, NJ*, 1991. xii+538 *pp. ISBN* 981-02-0343-8; 981-02-0344-6 (Claude Itzykson) **93b:57010** 57M25 (17B37, 81T40, 82B23)

— (*with* Saleur, H.) Free fermions and the Alexander-Conway polynomial. *Comm. Math. Phys.* **141** (1991), *no.* 2, 293–327. (Tetsuo Deguchi) **93d:57017** 57M25 (16W30, 17B37, 81R50, 82B23)

— Knots and physics. (English summary) *New scientific applications of geometry and topology* (*Baltimore, MD*, 1992), 131–246, *Proc. Sympos. Appl. Math.*, **45**, *Amer. Math. Soc., Providence, RI*, 1992. (Yu. N. Bespalov) **93k:57014** 57M25 (16W30, 17B37, 57N10)

— (*with* Lins, Sóstenes) Decomposition of the vertex group of 3-manifolds. *Discrete Math.* **103** (1992), *no.* 1, 49–55. (Mario Pezzana) **93i:57026** 57N10 (57M05, 57M15)

Kauffman, Robert M. (*with* Hinton, Don B.) Discreteness of some continuous spectrum eigenfunction expansions. *Proc. Amer. Math. Soc.* **119** (1993), *no.* 1, 235–243. (Zoran Kadelburg) **93k:34175** 34L10 (47A70, 47E05)

Kauffman, Stuart A. Random grammars: a new class of models for functional integration and transformation in the biological, neural, and social sciences. (English summary) 1990 *lectures in complex systems* (*Santa Fe, NM*, 1990), 427–460, *Santa Fe Inst. Stud. Sci. Complexity Lectures, III, Addison-Wesley, Redwood City, CA*, 1991. (*see* **93h:68003**) 68Q50 (92B05, 92D20)

Kaufman, Allan N. (*with* Brizard, Alain J.; Cook, Daniel R.) Wave-action conservation for pseudo-Hermitian fields. (English summary) *Phys. Rev. Lett.* **70** (1993), *no.* 5, 521–524. (Summary) **93m:82046** 82D10 (76W05)

Kaufman, E., Jr. (*with* Angelos, James R.; Lenker, T.; Henry, M. S.) Bounds for extended Lipschitz constants. *Acta Math. Hungar.* **58** (1991), *no.* 1-2, 81–93. (Martin Bartelt) **93c:41010** 41A10 (41A50)

Kaufman, J. S. (*with* Sengupta, Bhaskar; Wong, Wing Shing) Performance analysis of a packet assembly function. (English summary) *IEEE Trans. Automat. Control* **38** (1993), *no.* 1, 109–114. 68M10

Kaufman, Linda (*with* Gay, David M.) Tradeoffs in algorithms for separable nonlinear least squares. (English summary) *Computational and applied mathematics, I* (*Dublin*, 1991), 179–183, *North-Holland, Amsterdam*, 1992. (*see* **93j:00007**) 65K05

— An algorithm for the banded symmetric generalized matrix eigenvalue problem. (English summary) *SIAM J. Matrix Anal. Appl.* **14** (1993), *no.* 2, 372–389. (Summary) **93m:65046** 65F15

Kaufman, R. *see* **Kaufman, Robert P.**

Kaufman, R. N. (*with* Karpman, V. I.; Shagalov, A. G.) Self-focusing of whistler waves. (English summary) *Phys. Fluids B* **4** (1992), *no.* 10, 3087–3100. (Summary) **93f:76102** 76W05 (35Q35, 35Q60, 76X05)

Kaufman, Robert P. Bernoulli convolutions—an application of set theory in analysis. *Colloq. Math.* **60/61** (1990), *no.* 1, 93–98. (Colin C. Graham) **93b:42017** 42A63 (04A15)

— Topics on analytic sets. *Fund. Math.* **139** (1991), *no.* 3, 215–229. (Gabriel Debs) **93d:28005** 28A05 (04A15)

— *M*-sets and measures. *Ann. of Math.* (2) **135** (1992), *no.* 1, 125–130. (Colin C. Graham) **93b:42019** 42A63 (43A65)

Kaufmann, Arnold Expert appraisements and counter-appraisements with experton processes. (English summary) *Analysis and management of uncertainty: theory and applications* (*College Park, MD*, 1990), 109–132, *Mach. Intell. Pattern Recogn.*, 13, *North-Holland, Amsterdam*, 1992. (*see* **93f:68004**) 68T30 (68T35)

Kaufmann, Edgar (*with* Reiss, Rolf-Dieter) On conditional distributions of nearest neighbors. (English summary) *J. Multivariate Anal.* **42** (1992), *no.* 1, 67–76. (Michael Falk) **93g:60102** 60G55 (62G05, 62G30)

Kaufmann, Matt An extension of the Boyer-Moore theorem prover to support first-order quantification. (English summary) *J. Automat. Reason.* **9** (1992), *no.* 3, 355–372. (Summary) **93j:68176** 68T15 (03B35)

Kaufmann, Michael (*with* Gao, Shaodi; Jerrum, Mark; Mehlhorn, Kurt; Rülling, Wolfgang; Storb, Christoph) On continuous homotopic one layer routing. (English summary) *Proceedings of the Fourth Annual Symposium on Computational Geometry* (*Urbana, IL*, 1988), 392–402, *ACM, New York*, 1988. (*see* **93k:68003**) 68U05 (68Q25)

— (*with* Hoffmann, Frank; Kriegel, Klaus) The art gallery theorem for polygons with holes. (English summary) *32nd Annual Symposium on Foundations of Computer Science* (*San Juan, PR*, 1991), 39–48, *IEEE Comput. Soc. Press, Los Alamitos, CA*, 1991. (Summary) **93i:68175** 68U05

— (*with* Alt, Helmut; Fleischer, Rudolf; Mehlhorn, Kurt; Näher, Stefan; Schirra, Stefan; Uhrig, Christian) Approximate motion planning and the complexity of the boundary of the union of simple geometric figures. (English summary) 1990 Computational Geometry Symposium (Berkeley, CA, 1990). *Algorithmica* **8** (1992), *no.* 5-6, 391–406. (Summary) **93k:68097** 68U05 (52B55, 68Q25)

— (*with* Mehlhorn, Kurt) On local routing of two-terminal nets. *J. Combin. Theory Ser. B* **55** (1992), *no.* 1, 33–72. (Peter J. Slater) **93e:05094** 05C85 (68R10)

— (*with* Maley, F. Miller) Parity conditions in homotopic knock-knee routing. (English summary) *Algorithmica* **9** (1993), *no.* 1, 47–63. (Summary) **93j:68159** 68R10 (68Q25, 68Q35)

— (*with* Klär, Gerhard) Routing in polygons without rectilinearly visible corners. (English summary) *Inform. and Comput.* **102** (1993), *no.* 2, 218–262. (Summary) **93m:68014** 68M10 (68Q20)

Kaufmann, Z. Characteristic quantities of multifractals—application to the Feigenbaum attractor. *Phys. D* **54** (1991), *no.* 1-2, 75–84. (Summary) **93f:58133** 58F11 (58F12)

Kaul, C. N. (*with* Gupta, D. K.) Two sided iteration with generalised bisection technique for real roots of $f(x) = 0$. *J. Math. Phys. Sci.* **25** (1991), *no.* 4, 431–436. 65H05

— (*with* Gupta, D. K.) A note on the computation of fixed points in interval analysis. *Z. Angew. Math. Mech.* **72** (1992), *no.* 11, 607. 65G10

Kaul, R. K. *see* **Kaul, Raj K.**

Kaul, R. N. (*with* Suneja, S. K.; Singh, Chanchal) Optimality and duality in continuous-time nonlinear fractional programming. (English summary) *J. Austral. Math. Soc. Ser. B* **34** (1992), *no.* 2, 229–244. (Siegfried Schaible) **93i:90096** 90C32 (90C30, 90C45)

Kaul, Raj K. (*with* Hoffend, T. R., Jr.) Relativistic theory of superpotentials for a nonhomogeneous spatially isotropic medium. (English summary) *Gen. Relativity Gravitation* **24** (1992), *no.* 11, 1143–1168. (Summary) **93g:83059** 83C50

Kaul, Romesh K. Functional measure in topological field theories. *Matrix models, random surfaces and 2-D gravity* (*Madras*, 1990), 66–78, *IMS Rep.*, 113, *Inst. Math. Sci., Madras*, 199?. (*see* **93h:81001**) 81T70 (58D30, 81T40)

— (*with* Govindarajan, T. R.) Three-dimensional Chern-Simons theory as a theory of knots and links. (English summary) *Nuclear Phys. B* **380** (1992), *no.* 1-2, 293–333. (Emil Vinţeler) **93i:81233** 81T40 (57M25, 81T13)

Kaul, Saroop K. On impulsive semidynamical systems. III. Lyapunov stability. (English summary) *Recent trends in differential equations*, 335–345, *World Sci. Ser. Appl. Anal.*, 1, *World Sci. Publishing, River Edge, NJ*, 1992. (W. R. Utz) **93h:34074** 34C35 (34A37, 34D20, 54H20)

Kault, David Abraham Modelling the effects of AIDS on gonorrhea epidemiology. (English summary) *Math. Comput. Modelling* **16** (1992), *no.* 11, 3–14. 92C60

Kaunzner, Wolfgang Zum Stand der westeuropäischen Mathematik zur Zeit der Entdeckung Amerikas. [On the state of the mathematics of Western Europe at the time of the discovery of America] *Amphora*, 359–374, *Birkhäuser, Basel*, 1992. (P. Bockstaele) **93m:01020** 01A40 (01A35)

— *see also* **Ries, Adam**, **93g:01027**

Kaup, D. J. Two new aspects of the inverse scattering transform: (1) the elliptic sinh-Gordon equation, and (2) growing solitons. *Nonlinear world, Vol. 1* (*Kiev*, 1989), 139–150, *World Sci. Publishing, River Edge, NJ*, 1990. (*see* **93b:00012**) 35Q53

— (*with* Jaworski, M.) Elliptic sinh-Gordon equation—a multicharge solution. (English summary) *Nonlinear evolution equations and dynamical systems* (*Baia Verde*, 1991), 118–124, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93i:35126** 35Q53

— (*with* Paine, Gregory H.) A closed form solution of the one-dimensional Born-Green-Yvon equation for a hard-rod fluid. (English summary) *J. Math. Phys.* **33** (1992), *no.* 11, 3907–3910. (M. Lawrence Glasser) **93i:82026** 82B21 (34K10, 35Q99, 58F07)

— (*with* Malomed, B. A.) The resonant three-wave interaction in an inhomogeneous medium. (English summary) *Phys. Lett. A* **169** (1992), *no.* 5, 335–340. (Summary) **93h:35198** 35Q58 (78A55, 82D10)

Kaup, Ludger (*with* Fieseler, Karl-Heinz) Quasi-isomorphic perversities and obstruction theory for pseudomanifolds. *Singularities* (*Warsaw*, 1985), 169–193, *Banach Center Publ.*, 20, *PWN, Warsaw*, 1988. (M. Oka (Zbl 664:32006)) **93i:32052** 32S60 (55N30, 57R19)

— (*with* Fieseler, Karl-Heinz) The vanishing invariants in intersection homology of complex spaces. *Singularities* (*Warsaw*, 1985), 195–205, *Banach Center Publ.*, 20, *PWN, Warsaw*, 1988. (M. Oka (Zbl 664:32007)) **93i:32053** 32S60 (55N30, 57R19)

Kaup, Wilhelm (*with* Isidro, José-M.) Weak continuity of holomorphic automorphisms in JB*-triples. *Math. Z.* **210** (1992), *no.* 2, 277–288. (Harald Upmeier) **93d:46116** 46L70

Kaur, Man Mohan (*with* Nath, Prem) Quasicyclic symmetry and the Shannon entropy. *J. Inform. Optim. Sci.* **13** (1992), *no.* 1, 165–172. (Summary) **93a:94018** 94A17 (94A24)

Kaur, Surinder (*with* Singh, Padam) On nearly πPS sampling scheme. (English and Hindi summaries) *J. Indian Soc. Agricultural Statist.* **44** (1992), *no.* 2, 106–121, i. 62D05

Kausch, H. G. (*with* Watts, G. M. T.) Quantum Toda theory and the Casimir algebra of B_2 and C_2. (English summary) *Internat. J. Modern Phys. A* **7** (1992), *no.* 17, 4175–4187. (P. D. Jarvis) **93m:81045** 81R10 (17B65, 17B68, 81T40)

— (*with* Watts, G. M. T.) Duality in quantum Toda theory and W-algebras. (English summary) *Nuclear Phys. B* **386** (1992), *no.* 1, 166–190. (Niall J. MacKay) **93i:81234** 81T40 (17B68, 81–04, 81R10)

Kaushal, R. S. (*with* Parashar, D.) On the quantum bound states for the potential $V(r) = ar^2 + br^{-4} + cr^{-6}$. (English summary) *Phys. Lett. A* **170** (1992), *no.* 5, 335–338. (Summary) **93g:81019** 81Q05 (34L40)

Kaushik, Sumanth (*with* Hagelstein, Peter L.) The application of the preconditioned biconjugate gradient algorithm to NLTE rate matrix equations. *J. Comput. Phys.* **101** (1992), *no.* 2, 360–367. (Summary) **93c:65042** 65F05 (65F50, 65L12)

Kauthen, J.-P. The method of lines for parabolic partial integro-differential equations. *J. Integral Equations Appl.* **4** (1992), *no.* 1, 69–81. (G. F. Miller) **93d:65113** 65R20 (45K05)

Kautschitsch, Hermann Rings with feedback cyclization-property. *Contributions to general algebra*, 7 (*Vienna*, 1990), 215–220, *Hölder-Pichler-Tempsky, Vienna*, 1991. (Cornelia Naudé) **93a:93030** 93B25 (13A10, 93B55)

Kautský, Jaroslav (*with* Elhay, Sylvan; Golub, Gene H.) Jacobi matrices for sums of weight functions. (English summary) *BIT* **32** (1992), *no.* 1, 143–166. (Summary) **93k:65036** 65F30 (65D15)

— Gauss quadratures: an inverse problem. *SIAM J. Matrix Anal. Appl.* **13** (1992), *no.* 1, 402–417. (Summary) **93d:65027** 65D32 (65F30)

Kautz, Henry A. (*with* Ladkin, Peter B.) Integrating metric and qualitative temporal reasoning. (English summary) *AAAI-91. Proceedings, Ninth National Conference on Artificial Intelligence, Vol.* 1, 2, 241–246, *AAAI Press, Menlo Park, CA*, 1991. (Summary) **93k:68088** 68T27 (03B45, 03B70)

— (*with* Selman, Bart) Forming concepts for fast inference. (English summary) *AAAI-92. Proceedings, Tenth National Conference on Artificial Intelligence* (*San Jose, CA*, 1992), 786–793, *Amer. Assoc. Artif. Intell., Menlo Park, CA*, 1992. (Summary) **93j:68192** 68T27 (03B35, 03B70, 68T30)

Kavalov, Al. R. (*with* Mkrtchyan, R. L.) The lattice topological gauge theory. Construction and observables. *Thermal field theories* (*Ibaraki*, 1990), 347–355, *North-Holland Delta Ser., North-Holland, Amsterdam*, 1991. (Summary) **93b:81194** 81T25 (57R99, 81T13)

— (*with* Kavalov, An. R.; Mkrtchyan, R. L.) Construction of the field theory of $(2+1)$-dimensional universes filled by topological Yang-Mills fields. *Internat. J. Modern Phys. A* **6** (1991), *no.* 21, 3797–3805. (Viktor A. Abramov) **93f:83042** 83C45 (81T13)

— Extrinsic geometry sensitive bosonic string theory. *JETP Lett.* **56** (1992), *no.* 9, 477–480; *translated from Pis'ma Zh. Èksper. Teoret. Fiz.* **56** (1992), *no.* 9, 493–496 (*Russian*). (Summary) **93i:81189** 81T30

Kavalov, An. R. (*with* Kavalov, Al. R.; Mkrtchyan, R. L.) Construction of the field theory of $(2+1)$-dimensional universes filled by topological Yang-Mills fields. *Internat. J. Modern Phys. A* **6** (1991), *no.* 21, 3797–3805. (Viktor A. Abramov) **93f:83042** 83C45 (81T13)

Kaveh, A. ★ Structural mechanics: graph and matrix methods. Applied and Engineering Mathematics Series, 6. *Research Studies Press, Ltd., Taunton*; *John Wiley & Sons, Inc., New York*, 1992. xvi+348 *pp. ISBN* 0-86380-133-1 (N. Gass) **93g:73074** 73K05 (05–02, 65K05, 73–02, 73V99)

— (*with* Behravesh, A.; Davaran, A.) A finite difference scheme with variable rectilinear mesh for solving multi-harmonic partial differential equations. (English summary) *Comput. & Structures* **44** (1992), *no.* 4, 789–795. (Summary) **93f:65063** 65M06 (73V15)

— Bandwidth reduction of rectangular matrices. (English summary) *Comm. Numer. Methods Engrg.* **9** (1993), *no.* 3, 259–267. 15–04 (73K99)

— Matroids in structural mechanics. (English summary) *Comput. & Structures* **47** (1993), *no.* 1, 169–174. (Summary) **93m:05051** 05B35 (73K99)

Kavian, Otared (*with* Coulaud, Olivier; Funaro, Daniele) Laguerre spectral approximation of elliptic problems in exterior domains. *Spectral and high order methods for partial differential equations* (*Como*, 1989), 451–458, *North-Holland, Amsterdam*, 1990. (*see* **93d:65005**) 65N35

Kawabata, Hiroaki (*with* Shirao, Yoshiaki; Nagahara, Toshikuni; Inagaki, Yoshio) Bifurcations and chaos phenomena in piecewise linear systems with unsymmetrical restoring force. (English summary) *Bull. Univ. Osaka Prefect. Ser. A* **40** (1991), *no.* 2, 217–231. (Summary) **93h:34052** 34C15 (34C23, 58F13, 70K40, 70K50)

Kawabata, Shigetoku (*with* Yamada, Toshio) On Newton's method for stochastic differential equations. *Séminaire de Probabilités, XXV*, 121–137, *Lecture Notes in Math.*, 1485, *Springer, Berlin*, 1991. (G. N. Mil'shtein) **93j:60079** 60H10 (34F05)

Kawabata, Tsutomu (*with* Yeung, Raymond W.) The structure of the *I*-measure of a Markov chain. *IEEE Trans. Inform. Theory* **38** (1992), *no.* 3, 1146–1149. (Summary) **93a:94017** 94A17

Kawabe, Tetsuji Onset of chaos in SU(2) Yang-Mills-Higgs theory with monopole. *Phys. Lett. B* **274** (1992), *no.* 3-4, 399–403. (Mark Temple-Raston) **93c:81127** 81T13 (58F13)

Kawada, Yutaka On minimal spanning systems over semiperfect rings. *Proceedings of the First China-Japan International Symposium on Ring Theory* (*Guilin*, 1991), 83–85, *Okayama Univ., Okayama*, 1992. (*see* **93k:16001**) 16L30

Kawaguchi, Hiroaki (*with* Anastasiei, Mihai) Geometry of multiparametrized Lagrangians. *Publ. Math. Debrecen* **42** (1993), *no.* 1-2, 29–37. (Frans Cantrijn) **93m:58038** 58F05 (53C05, 58E30, 70G99, 70H35)

Kawaguchi, Kimio (*with* Wada, Koichi) Efficient fault-tolerant fixed routings on $(k+1)$-connected digraphs. (English summary) *Discrete Appl. Math.* **37/38** (1992), 539–552. (Summary) **93d:05061** 05C20 (68M20)

— (*with* Wada, Koichi; Moritani, Yukio; Morishita, Masahiro) Distributed algorithms for connectivity problem of networks with faulty elements. (English summary) *Systems Comput. Japan* **23** (1992), *no.* 7, 12–21. 68M15

Kawaguchi, M. F. (*with* Da-te, T.) On calculation of fundamental operations of weakly noninteractive fuzzy numbers using digital representation. (English summary) *Japanese J. Fuzzy Theory Systems* **4** (1992), *no.* 3, 273–288. (Summary) **93m:04014** 04A72

Kawaguchi, Tomoaki (*with* Miron, Radu) Generalized Lagrange metric derived from a Finsler function. *Rep. Math. Phys.* **30** (1991), *no.* 1, 41–52 (1992). (László Kozma) **93g:53036** 53B40 (53B50)

— (*with* Asanov, G. S.) Anomalously-Finslerian corrections to speed-of-light given by metric tensor $g_{ij}(x,\dot{x}) = r_{ij}(x) + \beta l_i l_j$. *Tensor (N.S.)* **50** (1991), *no.* 2, 170–176. (H. Rund) **93c:53012** 53B40 (53B50, 83D05)

— (*with* Yamada, Masashi; Miyata, Manabu) On a Riemannian approach to some relative entropies and statistical divergences. *Proceedings of the* 3*rd Congress of Geometry* (*Thessaloniki*, 1991), 458–472, *Aristotle Univ. Thessaloniki, Thessaloniki*, 1992. (*see* **93d:53003**) 94A17 (53B99)

Kawaguchi, Y. (*with* Kikuta, T.; Miyazaki, F.) Map aided flexible trajectory generation for a mobile robot. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, II* (*Kobe*, 1991), 615–620, *Mita, Tokyo*, 1992. (*see* **93g:93006**) 93C85 (70B15, 70Q05)

Kawahara, Takuji (*with* Araki, Keisuke; Toh, Sadayoshi) Interactions of two-dimensionally localized pulses of the regularized-long-wave equation. (English summary) *Phys. D* **59** (1992), *no.* 1-3, 79–89. 65P05 (35Q53)

Kawahara, Yasuo (*with* Lee, Hyen Yeal) On dynamical behaviors of cellular automata ca-60. *Bull. Inform. Cybernet.* **25** (1992), *no.* 1-2, 21–25. (Robert M. Baer) **93f:68068** 68Q80

Kawahigashi, Yasuyuki Group actions on injective factors. (English summary) *Current topics in operator algebras* (*Nara*, 1990), 2–12, *World Sci. Publishing, River Edge, NJ*, 1991. (Summary) **93h:46094** 46L55 (46L35)

— One-parameter automorphism groups of the hyperfinite type II_1 factor. *J. Operator Theory* **25** (1991), *no.* 1, 37–59. (William Paschke) **93j:46071** 46L55 (46L40)

— (*with* Sutherland, Colin E.; Takesaki, Masamichi) The structure of the automorphism group of an injective factor and the cocycle conjugacy of discrete abelian group actions. *Acta Math.* **169** (1992), *no.* 1-2, 105–130. (Yoshikazu Katayama) **93j:46068** 46L40

— (*with* Takesaki, Masamichi) Compact abelian group actions on injective factors. *J. Funct. Anal.* **105** (1992), *no.* 1, 112–128. (Yoshikazu Katayama) **93e:46077** 46L55

Kawai, E. A novel feature of the Kac-Moody algebra and nonlinear integrable models. *Phys. Lett. B* **271** (1991), *no.* 3-4, 347–349. (Olga Kravchenko) **93d:17029** 17B67 (58F07)

Kawai, Hikaru (*with* Fukuma, Masafumi; Nakayama, Ryuichi) Infinite-dimensional Grassmannian structure of two-dimensional quantum gravity. *Comm. Math. Phys.* **143** (1992), *no.* 2, 371–403. (Andrei D. Mironov) **93j:81030** 81R10 (58B25, 58F07, 81T40)

— Quantum gravity and random surfaces. (English summary) Lattice 91 (Tsukuba, 1991). *Nuclear Phys. B Proc. Suppl.* **26** (1992), 93–110. (Summary) **93g:81156** 81T40 (81–02, 81T25, 81T27)

Kawai, Shigeo On the Dirichlet problem of the equation $-\Delta u = Ku^5$ on the ball in $\mathbf{R}^3$. *Funkcial. Ekvac.* **35** (1992), *no.* 2, 321–331. (Xin Kang Guo) **93k:35105** 35J65 (35B65)

— Concerning a type of Sobolev inequality on the sphere. *Math. Ann.* **293** (1992), *no.* 1, 7–16. (J. Michael Pearson) **93d:53048** 53C21 (46A35, 53A30, 58G99)

Kawai, Toshiharu (*with* Toma, Naoki) A charged Kerr metric solution in new general relativity. *Progr. Theoret. Phys.* **87** (1992), *no.* 3, 583–598. (Summary) **93c:83098** 83D05 (83C15)

Kawai, Toshiya (*with* Nakatsu, Toshio) Comments on generalized quantum Hamiltonian reductions. *Modern Phys. Lett. A* **6** (1991), *no.* 38, 3557–3564. (Satoru Saito) **93g:81157a** 81T40 (58F07)

— (*with* Nakatsu, Toshio) Errata: "Comments on generalized quantum Hamiltonian reductions". *Modern Phys. Lett. A* **7** (1992), *no.* 3, 267. (Satoru Saito) **93g:81157b** 81T40 (58F07)

— (*with* Eguchi, Tohru; Mizoguchi, Shun'ya; Yang, Sung-Kil) Character formulas for coset $N = 2$ superconformal theories. (English summary) *Rev. Math. Phys.* **4** (1992), *no.* 3, 329–381. (Mark A. Walton) **93k:81199** 81T40 (17B81, 81R10, 81T60)

Kawakami, Norio (*with* Yang, Sung-Kil) Conformal field theory approach to one-dimensional quantum liquids. (English summary) Low-dimensional field theories and condensed matter physics (Kyoto, 1991). *Progr. Theoret. Phys. Suppl. No.* 107 (1992), 59–75. (David Sénéchal) **93k:81268** 81V70 (81R10, 82D20)

Kawakami, Satoshi (*with* Ichihara, Ryo) Radon-Nikodým derivative for operator valued weights. *Bull. Nara Univ. Ed. Natur. Sci.* **40** (1991), *no.* 2, 1–7. (E. Størmer) **93b:46117** 46L10 (46L50)

Kawakami, Shin-ichi (*with* Tanaka, Hiroaki; Yamada, Shigeru; Osaki, Shunji) Software reliability growth model with continuous error domain—application of a linear stochastic differential equation. *Electron. Comm. Japan Part III Fund. Electron. Sci.* **75** (1992), *no.* 3, 37–46. 90B25

Kawakami, Tomohiro An equivariant generalization of Nash vector bundles. (English summary) *Bull. Osaka Prefect. College Tech.* **26** (1992), 79–83. (Karl Heinz Dovermann) **93i:58007** 58A07 (14P20, 57S15)

Kawakatsu, Toshihiro (*with* Kawasaki, Kyozi) Projector formalism of generalized Brownian motion theory applied to dissipative and noisy systems. *J. Statist. Phys.* **67** (1992), *no.* 3-4, 795–811. (Raffaele Esposito) **93i:82057** 82C35 (60J60, 82D60)

Kawakubo, Katsuo ★ The theory of transformation groups. Translated from the 1987 Japanese edition. *The Clarendon Press, Oxford University Press, New York*, 1991. x+338 *pp. ISBN* 0-19-853212-1 (Karl Heinz Dovermann) **93g:57044** 57Sxx (20F32, 54H11, 57S15)

Kawamata, M. (*with* Deng, T.; Higuchi, Tatsuo) Design of two-dimensional recursive digital filters based on the optimal decomposition of magnitude specifications. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, II* (*Kobe*, 1991), 153–158, *Mita, Tokyo*, 1992. (*see* **93g:93006**) 94A12 (93E11)

Kawamata, Yujiro Canonical and minimal models of algebraic varieties. *Proceedings of the International Congress of Mathematicians, Vol. I, II* (*Kyoto*, 1990), 699–707, *Math. Soc. Japan, Tokyo*, 1991. (Marco Andreatta) **93d:14029** 14E30 (14J10, 14J40)

— Boundedness of Q-Fano threefolds. *Proceedings of the International Conference on Algebra, Part* 3 (*Novosibirsk*, 1989), 439–445, *Contemp. Math.*, 131, *Part* 3, *Amer. Math. Soc., Providence, RI*, 1992. (Jarosław A. Wiśniewski) **93g:14047** 14J45 (14E30)

— Log canonical models of algebraic 3-folds. *Internat. J. Math.* **3** (1992), *no.* 3, 351–357. (Marco Andreatta) **93d:14030** 14E30 (14J10, 14J30)

— Termination of log flips for algebraic 3-folds. *Internat. J. Math.* **3** (1992), *no.* 5, 653–659. (Georgy Khristov Georgiev) **93j:14019** 14E30 (14E05, 14J30)

— Abundance theorem for minimal threefolds. *Invent. Math.* **108** (1992), *no.* 2, 229–246. (Jarosław A. Wiśniewski) **93f:14012** 14E30 (14E05, 14E35)

— Unobstructed deformations. A remark on a paper of Z. Ran: "Deformations of manifolds with torsion or negative canonical bundle" [J. Algebraic Geom. **1** (1992), no. 2, 279–291; MR 93e:14015]. *J. Algebraic Geom.* **1** (1992), *no.* 2, 183–190. (Bruce Hunt) **93e:14016** 14D15 (14J40, 32G05, 32J18)

— *see also* **Shokurov, V. V., 93j:14012**

Kawamoto, Noboru (*with* Watabiki, Yoshiyuki) Even-dimensional generalization of Chern-Simons action and new gauge symmetry. *Comm. Math. Phys.* **144** (1992), *no.* 3, 641–648. (Bogusław Broda) **93c:81128** 81T13 (53C80, 58Z05)

— (*with* Watabiki, Yoshiyuki) Topological particle field theory, general coordinate invariance and generalized Chern-Simons actions. (English summary) *Comm. Math. Phys.* **148** (1992), *no.* 1, 169–176. (Henrik Aratyn) **93g:81093** 81T13

— (*with* Watabiki, Yoshiyuki) Graded Lie algebra and generalized Chern-Simons actions in arbitrary dimensions. *Modern Phys. Lett. A* **7** (1992), *no.* 13, 1137–1147. (Bogusław Broda) **93e:81074** 81T13 (58Z05)

Kawamura, Kazuhiro On a compactification of the homeomorphism group of the pseudo-arc. *Colloq. Math.* **62** (1991), *no.* 2, 325–330. (Michel Smith) **93d:54048** 54F15 (54D35, 57N20)

Kawamura, R. (*with* Oikawa, Y.) The study of three-dimensional magnetic problem using direct integration on time of the fundamental solution. (English summary) *Boundary element technology, VII* (*Albuquerque, NM*, 1992), 349–357, *Comput. Mech., Southampton*, 1992. (*see* **93b:65002**) 65N38 (78A25)

Kawamura, Tadashi Derivation of efficient logic programs by synthesizing new predicates. (English summary) *Logic programming* (*San Diego, CA*, 1991), 611–625, *MIT Press Ser. Logic Program., MIT Press, Cambridge, MA*, 1991. (*see* **93i:68009**) 68N17

— Logic program synthesis from first order logic specifications. (English summary) *Fifth generation computer systems, Vol.* 1, 2 (*Tokyo*, 1992), 463–472, *Ohm, Tokyo*, 1992. (Summary) **93j:68029** 68N17 (68Q65)

— (*with* Kanamori, Tadashi) Abstract interpretation based on OLDT resolution. (English summary) *J. Logic Programming* **15** (1993), *no.* 1-2, 1–30. (Summary) **93j:68035** 68N20 (68N17, 68Q60)

Kawamura, Y. (*with* Ikai, T.) A relation between neural network learning and control theory. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, II* (*Kobe*, 1991), 469–474, *Mita, Tokyo*, 1992. (Summary) **93h:92006** 92B20 (68T05)

Kawanaka, Noriaki On subfield symmetric spaces over a finite field. *Osaka J. Math.* **28** (1991), *no.* 4, 759–791. (Bhama Srinivasan) **93d:20082** 20G05 (20G40)

Kawarada, Hideo (*with* Koshigoe, Hideyuki; Sasamoto, Akira) The behavior of free surface appearing in the flow through the porous media. *Adv. Math. Sci. Appl.* **1** (1992), *no.* 1, 157–174. (Summary) **93b:76084** 76S05

— (*with* Koshigoe, Hideyuki) The behavior of free surfaces appearing in flow problems. *Free boundary problems in fluid flow with applications* (*Montreal, PQ*, 1990), 161–165, *Pitman Res. Notes Math. Ser.*, 282, *Longman Sci. Tech., Harlow*, 1993. (*see* **93k:00036**) 35R35 (76B99)

Kawasaki, Harumi (*with* Shibata, Fumiaki; Watabe, Miki) Path integral theory of Brownian motion. (English summary) *Natur. Sci. Rep. Ochanomizu Univ.* **43** (1992), *no.* 1, 25–44. (Summary) **93k:82057** 82C41 (60H10, 60J65)

Kawasaki, Hidefumi Second-order necessary and sufficient optimality conditions for minimizing a sup-type function. *Appl. Math. Optim.* **26** (1992), *no.* 2, 195–220. (Hubertus Th. Jongen) **93d:49032** 49K35 (49K40, 90C31)

Kawasaki, Kyozi (*with* Kawakatsu, Toshihiro) Projector formalism of generalized Brownian motion theory applied to dissipative and noisy systems. *J. Statist. Phys.* **67** (1992), *no.* 3-4, 795–811. (Raffaele Esposito) **93i:82057** 82C35 (60J60, 82D60)

Kawashima, Naoki (*with* Kinosita, Yosinori; Suzuki, Masuo) Coherent-anomaly analysis of series expansions and its application to the Ising model. (English summary) *J. Phys. Soc. Japan* **61** (1992), *no.* 11, 3887–3901. (Summary) **93j:82037** 82B80 (82–04, 82B20, 82B26)

Kawashima, Shuichi Asymptotic behavior of solutions to the discrete Boltzmann equation. *Discrete models of fluid dynamics (Figueira da Foz, 1990)*, 35–44, *Ser. Adv. Math. Appl. Sci.*, 2, *World Sci. Publishing, River Edge, NJ*, 1991. (Carlo Cercignani) **93k:82053** 82C40 (76P05)

— (*with* Shibata, Yoshihiro) Global existence and exponential stability of small solutions to nonlinear viscoelasticity. (English summary) *Comm. Math. Phys.* **148** (1992), *no.* 1, 189–208. (Albert J. Milani) **93i:35092** 35L70 (35B65, 73F15)

— Exponential stability of stationary solutions to the discrete Boltzmann equation in a bounded domain. *Math. Models Methods Appl. Sci.* **2** (1992), *no.* 2, 239–248. (Giuseppe Toscani) **93g:82084** 82C40 (76P05)

Kawashima, Takashi A drone representation of the two-dimensional Heisenberg antiferromagnet. *Bull. Gen. Ed. Dokkyo Univ. School Medicine* **14** (1991), 83–93. 82D40 (82B20)

Kawashita, Mishio On the local-energy decay property for the elastic wave equation with the Neumann boundary condition. *Duke Math. J.* **67** (1992), *no.* 2, 333–351. (Gustavo Perla Menzala) **93k:35161** 35L20 (35Q72, 73C02, 73D30)

Kawata, Tsutomu Relations between dressing method and inverse scattering method in second matrix-order and 1 + 1 dimensions. (English summary) *J. Phys. Soc. Japan* **61** (1992), *no.* 10, 3479–3487. (Summary) **93j:35125** 35P25 (34A55, 34L25, 35Q15, 35Q58, 58F19)

Kawauchi, Akio Almost identical link imitations and the skein polynomial. *Knots* 90 (*Osaka*, 1990), 465–476, *de Gruyter, Berlin*, 1992. (Wilbur Whitten) **93g:57010** 57M25 (57M50, 57M60)

— Almost identical imitations of (3, 1)-dimensional manifold pairs and the branched coverings. *Osaka J. Math.* **29** (1992), *no.* 2, 299–327. (William Dunbar) **93m:57019** 57N10 (57M12, 57M25, 57M50, 57M60)

— *see also* **Knots 90, 93b:57003**

Kawazoe, T. *see* **Representation theory of Lie groups and Lie algebras, 93e:22002**

Kawazu, Kiyoshi (*with* Tamura, Yozo; Tanaka, Hiroshi[1]) Localization of diffusion processes in one-dimensional random environment. *J. Math. Soc. Japan* **44** (1992), *no.* 3, 515–550. (Maria E. Vares) **93k:60201** 60J60 (60K99)

Kawczyński, A. L. (*with* Górecki, J.; Frankowicz, M.) Molecular dynamics simulations of oscillations in thermochemical systems. *Stochastic methods in experimental sciences (Szklarska Poręba, 1989)*, 167–187, *World Sci. Publishing, River Edge, NJ*, 1990. (*see* **93a:60004**) 82C99 (82–04)

— (*with* Misiurewicz, Michał) Periodic orbits for interval maps with sharp cusps. *Phys. D* **52** (1991), *no.* 2-3, 191–203. (Gong Fu Liao) **93a:58141** 58F20 (58F03, 58F13)

Kawohl, Bernhard Remarks on the operator $\operatorname{div}(\nabla u/|\nabla u|)$. *Geometry and nonlinear partial differential equations (Fayetteville, AR, 1990)*, 69–83, *Contemp. Math.*, 127, *Amer. Math. Soc., Providence, RI*, 1992. (Ya Zhe Chen) **93b:35052** 35J70 (35K65)

— On a class of singular elliptic equations. (English summary) *Progress in partial differential equations: elliptic and parabolic problems (Pont-à-Mousson, 1991)*, 156–163, *Pitman Res. Notes Math. Ser.*, 266, *Longman Sci. Tech., Harlow*, 1992. (Yao Tian Shen) **93m:35082** 35J65

— (*with* Fila, Marek; Levine, Howard A.) Quenching for quasilinear equations. *Comm. Partial Differential Equations* **17** (1992), *no.* 3-4, 593–614. (Zhen Chao Cao) **93f:35101** 35K55 (35B05, 35B30, 35K60)

— (*with* Kersner, Robert) On degenerate diffusion with very strong absorption. (English summary) *Math. Methods Appl. Sci.* **15** (1992), *no.* 7, 469–477. (Maura Ughi) **93i:35086** 35K65

— (*with* Fila, Marek) Asymptotic analysis of quenching problems. *Rocky Mountain J. Math.* **22** (1992), *no.* 2, 563–577. (Victor A. Galaktionov) **93h:35093** 35K55 (35B40)

— (*with* Levine, Howard A.; Velte, Waldemar) Buckling eigenvalues for a clamped plate embedded in an elastic medium and related questions. (English summary) *SIAM J. Math. Anal.* **24** (1993), *no.* 2, 327–340. (Summary) **93j:35121** 35P15 (35J40, 49R05, 73H05, 73K10)

Kay, Bernard S. (*with* Wald, Robert M.) Theorems on the uniqueness and thermal properties of stationary, nonsingular, quasifree states on spacetimes with a bifurcate Killing horizon. *Phys. Rep.* **207** (1991), *no.* 2, 49–136. (Stephen J. Summers) **93b:81189** 81T20 (46L60, 81T05, 83C47)

— (*with* Hájíček, Petr; Kuchař, Karel V.) Quantum collapse of a self-gravitating shell: equivalence to Coulomb scattering. (English summary) *Phys. Rev. D* (3) **46** (1992), *no.* 12, 5439–5448. (Summary) **93j:83039** 83C45 (81V17)

— The principle of locality and quantum field theory on (non-globally hyperbolic) curved spacetimes. (English summary) Special issue dedicated to R. Haag on the occasion of his 70th birthday. *Rev. Math. Phys.* **1992**, *Special Issue*, 167–195. (Stephen J. Summers) **93k:81157** 81T20 (46N50, 81T05)

Kay, J. W. A comparison of smoothing parameter choices in image restoration. (English summary) *Spatial statistics and imaging (Brunswick, ME, 1988)*, 163–175, *IMS Lecture Notes Monograph Ser.*, 20, *Inst. Math. Statist., Hayward, CA*, 1991. (*see* **93g:62004**) 62M30 (62G05, 68U10)

— (*with* Cheng, Bing) Multiresolution reconstruction of a corrupted image using the wavelet transform. (English summary) *Computational statistics, Vol. 2 (Neuchâtel, 1992)*, 293–298, *Physica, Heidelberg*, 1992. (*see* **93k:62003**) 68U10 (94A11)

Kay, Kenneth G. Hamiltonian formulation of quantum mechanics with semiclassical implications. II. Variational treatment. (English summary) *Phys. Rev. A* (3) **46** (1992), *no.* 3, 1213–1232. (Summary) **93f:81037** 81Q20

Kaya, Arif On nonsingular rings. (English and Turkish summaries) *Doğa Mat.* **16** (1992), *no.* 2, 148–150. (W. K. Nicholson) **93g:16003** 16D50 (16E50)

Kaya, R. (*with* Özcan, E.; Olgun, Şükrü) On the line classes in some finite hyperbolic planes. (English summary) *Comm. Fac. Sci. Univ. Ankara Ser. A_1 Math. Statist.* **38** (1989), *no.* 1-2, 7–13 (1990). (T. G. Ostrom) **93i:51023** 51E25 (51E21)

Kayalar, S. (*with* Sinha, A. S. C.; Yurtseven, H. O.) State-space approach to nonlinear model reference adaptive control. *Internat. J. Systems Sci.* **23** (1992), *no.* 5, 833–837. (Summary) **93a:93068** 93C40

Kaye, M. (*with* Reuster, D.) A technique for developing complete orthonormal basis sets using general solutions of Bessel's differential equation. (English summary) *Appl. Math. Comput.* **55** (1993), *no.* 2-3, 255–264. (Summary) **93m:65025** 65D20 (33C10, 34B30)

Kaye, Richard William (*with* Kossak, Roman; Kotlarski, Henryk) Automorphisms of recursively saturated models of arithmetic. *Ann. Pure Appl. Logic* **55** (1991), *no.* 1, 67–99. (Ali Enayat) **93c:03047** 03C62 (20B27)

— (*with* Forster, Thomas) End-extensions preserving power set. *J. Symbolic Logic* **56** (1991), *no.* 1, 323–328. (A. Lévy) **93b:03086** 03E47 (03C62, 03E55, 03E70)

— A generalization of Specker's theorem on typical ambiguity. *J. Symbolic Logic* **56** (1991), *no.* 2, 458–466. (C. Ward Henson) **93h:03077** 03E70

— The automorphism group of a countable recursively saturated structure. *Proc. London Math. Soc.* (3) **65** (1992), *no.* 2, 225–244. (O. V. Belegradek) **93g:03026** 03C15 (03C57, 20B27)

Kayihura, Aloys (*with* Mawanda, Mbila-Mambu) On a categorical analysis of Zadeh generalized subsets of sets. II. (English summary) *Fuzzy Sets and Systems* **51** (1992), *no.* 2, 219–226. (T. Thrivikraman) **93m:18006** 18B05 (03E72, 04A72, 18B25)

Kaymakçalan, Billur Lyapunov stability theory for dynamic systems on time scales. (English summary) *J. Appl. Math. Stochastic Anal.* **5** (1992), *no.* 3, 275–281. (Summary) **93i:34094** 34D20

Kaynak, Okyay (*with* Denker, Ahmet) Discrete-time sliding mode control in the presence of system uncertainty. (English summary) *Internat. J. Control* **57** (1993), *no.* 5, 1177–1189. (Summary) **93m:93019** 93B12 (70B15, 70Q05, 93C55)

Kayumov, Sh. Construction of multiparametric two-dimensional mathematical models in the theory of the filtration of viscoplastic fluids. (Russian. Russian summary) *Voprosy Vychisl. i Prikl. Mat. (Tashkent) No.* 87 (1989), 78–93, 164. 76S05 (73E50, 76A05)

— Construction of an analogue of the Dupuy formula for some problems of nonlinear filtration. (Russian. Russian summary) *Voprosy Vychisl. i Prikl. Mat. (Tashkent) No.* 88 (1990), 102–107, 161–162. 76S05

Kazachĕk, S. A. Sharpening an upper bound for Lebesgue functions of systems of even and odd ultraspherical polynomials. (Russian) *Application of functional analysis in approximation theory (Russian)*, 69–73, *Tver. Gos. Univ., Tver'*, 1990. (*see* **93k:00021**) 33C55

Kazakos, D. J. Canonical form observability for discrete-time affine nonlinear systems. (English summary) *Internat. J. Systems Sci.* **24** (1993), *no.* 4, 769–776. (Summary) **93j:93025** 93B07 (93B10)

Kazakos, Dimitri Asymptotic error probability expressions for multihypothesis testing using multisensor data. (English summary) *IEEE Trans. Systems Man Cybernet.* **21** (1991), *no.* 5, 1101–1114. (Summary) **93j:62052** 62F05 (62M05)

— (*with* Papantoni-Kazakos, P.; Birmiwal, Kailash) Predictive analog-to-digital conversion for resistance to data outliers. *Inform. and Comput.* **98** (1992), *no.* 1, 56–98. (Summary) **93a:94019** 94A29

papantoni-Kazakos, P. *see* **Papantoni-Kazakos, P.**

Kazakov, A. Ya. Breakdown phenomena in singularly perturbed systems. (Russian. English and Russian summaries) *Zap. Nauchn. Sem. S.-Peterburg. Otdel. Mat. Inst. Steklov. (POMI)* **203** (1992), *Mat. Voprosy Teor. Rasprostr. Voln.* 22, 83–91, 175. (Eugeni P. Gomozov) **93j:34082** 34E20 (34C23, 58F14)

Kazakov, D. I. (*with* Avdeev, L. V.; Grigoryev, G. V.) Renormalizations in abelian Chern-Simons field theories with matter. (English summary) *Nuclear Phys. B* **382** (1992), *no.* 3, 561–580. (Summary) **93g:81084** 81T13 (81T15)

Kazakov, I. E. (*with* Borisenko, I. I.) Synthesis of control and data processing strategies on the basis of decomposition and reduction of multidimensional dynamical systems (a survey). *Soviet J. Comput. Systems Sci.* **30** (1992), *no.* 4, 51–75; *translated from Izv. Akad. Nauk SSSR Tekhn. Kibernet.* **1991**, *no.* 3, 198–225 (*Russian. Russian summary*). (Krzysztof Malinowski) **93i:93009** 93A14 (93B51, 93C83)

Kazakov, Vladimir Aleksandrovich[1] (*with* Kostov, Ivan K.) Loop gas model for open strings. (English summary) *Nuclear Phys. B* **386** (1992), *no.* 3, 520–557. (David Sénéchal) **93m:81118** 81T30

— (*with* Bulatov, D. V.) Vortex-antivortex sector of one-dimensional string theory via the upside-down matrix oscillator. Random surfaces and 2D quantum gravity (Barcelona, 1991). *Nuclear Phys. B Proc. Suppl.* **25A** (1992), 38–53. (Yolanda Lozano) **93k:81194** 81T40 (81T27)

— (*with* Bulatov, D. V.) One-dimensional string theory with vortices as the upside-down matrix oscillator. (English summary) *Internat. J. Modern Phys. A* **8** (1993), *no.* 5, 809–851. (David Sénéchal) **93k:81169** 81T30 (81Q99)

Kazanovich, Ya. B. (*with* Borisyuk, G. N.; Borisyuk, R. M.; Luzyanina, T. B.; Turova, T. S.; Tsymbalyuk, G. S.) Oscillatory neural networks. Mathematical results and applications. (Russian. English and Russian summaries) *Mat. Model.* **4** (1992), *no.* 1, 3–43. (Summary) **93h:92004** 92B20 (34C99, 58F40)

Kazantsev, I. G. Information content of projections. *Inverse Problems* **7** (1991), *no.* 6, 887–898. (Manfred Tasche) **93b:65030** 65D17

Kazantsev, V. P. (*with* Zolotov, O. A.) Variational principles of superconductor magnetostatics. I, II. (Russian. Russian summary) *Izv. Vyssh. Uchebn. Zaved. Fiz.* **34** (1991), *no.* 9, 97–102, 103–109; *translation in Soviet Phys. J.* **34** (1991), *no.* 9, 824–829, 829–835 (1992). (Editors) **93m:78007** 78A30 (82D55)

Kazarin, L. S. Baer formations. (Russian) *Problems in group theory and homological algebra (Russian)*, 18–21, *Matematika, Yaroslav. Gos. Univ., Yaroslavl'*, 1987. (*see* **93d:20002**) 20F17

— Finite groups with an abelian TI-subgroup. (Russian) *Group-theoretic investigations (Russian)*, 34–42, *Akad. Nauk SSSR Ural. Otdel., Sverdlovsk*, 1990. (İ. Ya. Subbotin) **93f:20025** 20D10

— On finite ABA-groups. (Russian) *Problems in group theory and homological algebra (Russian)*, 92–97, *Matematika, Yaroslav. Gos. Univ., Yaroslavl'*, 1990. (From the introduction) **93c:20044** 20D40 (20F16)

— The product of a group with a cyclic Sylow p-subgroup and a group with a nontrivial center. (Russian. Russian and Ukrainian summaries) *Ukraïn. Mat. Zh.* **44** (1992), *no.* 6, 773–779; *translation in Ukrainian Math. J.* **44** (1992), *no.* 6, 697–702 (1993). (N. F. Kuzennyi) **93m:20026** 20D20 (20D10)

— (*with* Kurdachenko, L. A.) Conditions for finiteness and factorization in infinite groups. (Russian. Russian summary) *Uspekhi Mat. Nauk* **47** (1992), *no.* 3(285), 75–114, 207; *translation in Russian Math. Surveys* **47** (1992), *no.* 3, 81–126. (Gheorghe Ivan) **93i:20041** 20F22 (20F16)

Kazarinoff, Nicholas D. (*with* Wang, Hsin Hua) Bifurcation and stability of positive solutions of a two-point boundary value problem. *J. Austral. Math. Soc. Ser. A* **52** (1992), *no.* 3, 334–342. (Pavel Drábek) **93c:34064** 34B15 (34C23, 34D99, 58F14)

— (*with* Wang, Hsin Hua) Bifurcation of steady-state solutions of a scalar reaction-diffusion equation in one space variable. *J. Austral. Math. Soc. Ser. A* **52** (1992), *no.* 3, 343–355.

(Pavel Drábek) **93c:34065** 34B15 (34C23, 35B32, 35K57, 58F14)

Kazaryan, G. G. Strictly hypoelliptic operators with constant coefficients. (Russian) *Mat. Sb.* **183** (1992), *no.* 2, 121–133; *translation in Russian Acad. Sci. Sb. Math.* **75** (1993), *no.* 1, 265–276. (A. I. Atanasov) **93f:35037** 35H05

Kazaryan, M. È. Flattenings of projective curves, singularities of the Schubert stratifications of Grassmannian and flag manifolds, and ramifications of Weierstrass points of algebraic curves. (Russian) *Uspekhi Mat. Nauk* **46** (1991), *no.* 5(281), 79–119, 190; *translation in Russian Math. Surveys* **46** (1991), *no.* 5, 91–136. (J. S. Joel) **93d:32057** 32S30 (14D15, 14M15, 58C27, 58F14)

Kazaryan, M. V. On the holomorphic continuation of a function with algebraic singularities. (Russian. Armenian summary) *Akad. Nauk Armyan. SSR Dokl.* **91** (1990), *no.* 1, 11–14. (Sergey Ivashkovich) **93b:32014** 32D15

Kazaryan, S. S. Integral inequalities in the spaces $L^{\Phi}_{\omega}(S^{n-1})$. (Russian) *Dokl. Akad. Nauk SSSR* **319** (1991), *no.* 6, 1301–1304; *translation in Soviet Math. Dokl.* **44** (1992), *no.* 1, 318–321. (Petr Gurka) **93d:42015** 42B25 (46E35, 47B38)

Kazhdan, David (*with* Savin, Gordan) The smallest representation of simply laced groups. *Festschrift in honor of I. I. Piatetski-Shapiro on the occasion of his sixtieth birthday, Part I* (*Ramat Aviv*, 1989), 209–223, *Israel Math. Conf. Proc.*, 2, *Weizmann, Jerusalem*, 1990. (David Joyner) **93f:22019** 22E50

— (*with* Gel'fand, S. I.) Extensions of representations of p-adic nilpotent groups. *Adv. Math.* **94** (1992), *no.* 2, 240–255. (Alain Valette) **93i:22021** 22E50 (18G15, 22E27)

— (*with* Gel'fand, S. I.) Examples of tensor categories. *Invent. Math.* **109** (1992), *no.* 3, 595–617. (H. H. Andersen) **93m:20057** 20G05 (17B37, 57M25)

— (*with* Lusztig, George) Tensor structures arising from affine Lie algebras. I, II. *J. Amer. Math. Soc.* **6** (1993), *no.* 4, 905–947, 949–1011. (Ya. S. Soĭbel'man) **93m:17014** 17B67 (17B37)

Kazhikhov, A. V. A two-dimensional problem on the passage of an ideal fluid through a given region. (Russian) *Boundary value problems for nonclassical equations in mathematical physics* (*Russian*) (*Novosibirsk*, 1989), 32–37, *Akad. Nauk SSSR Sibirsk. Otdel., Inst. Mat., Novosibirsk*, 1989. (*see* **93d:35001**) 76C99 (35Q30)

— An approach to boundary value problems for equations of composite type. (Russian. Russian summary) *Sibirsk. Mat. Zh.* **33** (1992), *no.* 6, 47–53, 229; *translation in Siberian Math. J.* **33** (1992), *no.* 6, 980–986 (1993). (Summary) **93m:35131** 35M20

Kazimierczyk, Piotr Consistent ML estimator for drift parameters of both ergodic and nonergodic diffusions. (English summary) *Stochastic systems and optimization* (*Warsaw*, 1988), 318–327, *Lecture Notes in Control and Inform. Sci.*, 136, *Springer, Berlin*, 1989. (*see* **93d:93009**) 93E10 (62M05)

— Parametric identification of diffusions with constraints; applications in fracture mechanics and vehicle dynamics. *Stochastic methods in experimental sciences* (*Szklarska Poręba*, 1989), 249–264, *World Sci. Publishing, River Edge, NJ*, 1990. (*see* **93a:60004**) 73M25

— Explicit correction formulae for parametric identification of stochastic differential systems. (English summary) Collected papers on stochastic systems modelling. *Math. Comput. Simulation* **34** (1992), *no.* 5, 433–450. (Summary) **93g:62114** 62M09

Kazlauskas, Kazys A unified view on block and scalar impulse responses. (English, Russian and Lithuanian summaries) *Informatica* **2** (1991), *no.* 4, 552–563, 599, 608. 93C57

Kazumi, Tetsuya Refinement in terms of capacities of certain limit theorems on an abstract Wiener space. *J. Math. Kyoto Univ.* **32** (1992), *no.* 1, 1–29. (Hélène Airault) **93c:60081** 60H07 (28C20, 31C15, 46G12, 60B12)

Kazyutinskiĭ, V. V. Public "execution" of relativistic cosmology (events of the 1930s and 1940s). (Russian) *Istor.-Astronom. Issled. No.* 22 (1990), 277–300. (B. Rosenfeld) **93b:01051** 01A80 (01A60)

Ke, Heng Yu (*with* Huang, Si Wen; Li, Wen Jun) A study of electromagnetic scattering from a dielectric-coated conducting cylinder. (English summary) *Acta Math. Sci.* (*English Ed.*) **12** (1992), *no.* 2, 179–189. (Summary) **93j:78017** 78A45

Ke, Huei Yaw (*with* Lee, Sen Yung) Flexural wave propagation in an elastic beam with periodic structure. (English summary) *Trans. ASME J. Appl. Mech.* **59** (1992), *no.* 2, *part* 2, 5189–5196. (Summary) **93c:73030** 73D15 (73K05, 73K12)

Ke, Jyh Sheng (*with* Chen, Shyi Ming; Chang, Chin Fu) Fuzzy reasoning based on fuzzy Petri nets. *Internat. J. Inform. Management Sci.* **3** (1992), *no.* 1, 39–51. (Richard A. Alò) **93h:68128** 68T27 (03B52, 03E72, 68Q90)

— (*with* Chen, Shyi Ming; Chang, Chin Fu) An inexact reasoning algorithm based on fuzzy rule matrix transformations. *J. Automat. Reason.* **8** (1992), *no.* 1, 77–90. (Summary) **93a:68130** 68T27 (03B52)

Ke, W. F. *see* **K'o, Wên Fêng**

Ke, Wen-Fong *see* **K'o, Wên Fêng**

Ke, Y. (*with* Hutchinson, T. P.) ★ Index to corrections, addenda, and comments that were published in statistics journals, 1970–1991. *Rumsby Scientific Publishing, Adelaide*, 1992. x+296 *pp. ISBN* 0-646-08328-7 (From the introduction) **93d:62001** 62–00

Keam, Ron (*with* Butcher, J. C.) Garry John Tee. *New Zealand Math. Soc. Newslett. No.* 54 (1992), 20–21. (Editors) **93g:01063** 01A70

Keane, A. J. Energy flows between arbitrary configurations of conservatively coupled multi-modal elastic subsystems. (English summary) *Proc. Roy. Soc. London Ser. A* **436** (1992), *no.* 1898, 537–568. 73K12 (73K99)

Keane, Michael S. Ergodic theory and subshifts of finite type. *Ergodic theory, symbolic dynamics, and hyperbolic spaces* (*Trieste*, 1989), 35–70, *Oxford Sci. Publ., Oxford Univ. Press, New York*, 1991. (*see* **93e:58002**) 28D05

— (*with* Burton, Robert M., Jr.) Topological and metric properties of infinite clusters in stationary two-dimensional site percolation. (English summary) *Israel J. Math.* **76** (1991), *no.* 3, 299–316. (B. M. Gurevich) **93i:60182** 60K35

— (*with* den Hollander, Frank; Hooghiemstra, G.; Resing, J.) Strong law and central limit theorem for a process between maxima and sums. *Probab. Theory Related Fields* **90** (1991), *no.* 1, 37–55. (Sándor Csörgő) **93a:60030** 60F05 (60F15, 60G99)

— (*with* Aaronson, Jon; Gilat, David) On the structure of 1-dependent Markov chains. (English summary) *J. Theoret. Probab.* **5** (1992), *no.* 3, 545–561. (Vincent De Valk) **93i:60123** 60J10 (28D05, 54H20, 60G10)

— (*with* Gandolfi, Alberto; Newman, Charles M.) Uniqueness of the infinite component in a random graph with applications to percolation and spin glasses. *Probab. Theory Related Fields* **92** (1992), *no.* 4, 511–527. (G. R. Grimmett) **93f:60149** 60K35 (05C80, 82B43, 82B44, 82D30)

— *see also* **Ergodic theory, symbolic dynamics, and hyperbolic spaces, 93e:58002**

Kearfott, Ralph Baker (*with* Hu, Chen-Yi) A pivoting scheme for the interval Gauss-Seidel method: numerical experiments. *Approximation, optimization and computing*, 97–100, *North-Holland, Amsterdam*, 1990. (*see* **93a:41001**) 65H10

— (*with* Hu, Chen-Yi; Novoa, Manuel, III) A review of preconditioners for the interval Gauss-Seidel method. (English and Russian summaries) *Interval Comput./Interval. Vychisl.* **1991**, *no.* 1, 59–85. (Summary) **93d:65051** 65H10 (65G10)

— (*with* Hu, Chen-Yi; Bayoumi, M.; Yang, Qing) A parallelized algorithm for the all-row preconditioned interval Newton/generalized bisection method. (English summary) *Parallel processing for scientific computing* (*Houston, TX*, 1991), 205–209, *SIAM, Philadelphia, PA*, 1992. (*see* **93g:65178**) 65H10 (65Y05, 90C30)

Kearnes, Keith A. Residual bounds for varieties of modules. *Algebra Universalis* **28** (1991), *no.* 3, 448–452. (Leonid Krop) **93b:08005** 08B10 (16R10)

Kearney, Peter (*with* Staples, John) An extensional fixed-point semantics for nondeterministic data flow. *Theoret. Comput. Sci.* **91** (1991), *no.* 2, 129–179. (Gabriel Ciobanu) **93a:68083** 68Q55 (68Q10)

Kearns, Michael J. (*with* Haussler, David; Littlestone, Nick; Warmuth, Manfred K.) Equivalence of models for polynomial learnability. *Inform. and Comput.* **95** (1991), *no.* 2, 129–161. (Summary) **93b:68074** 68T05

— Oblivious PAC learning of concept hierarchies. (English summary) *AAAI-92. Proceedings, Tenth National Conference on Artificial Intelligence* (*San Jose, CA*, 1992), 215–222, *Amer. Assoc. Artif. Intell., Menlo Park, CA*, 1992. (Summary) **93j:68163** 68T05

Kearton, C. (*with* Wilson, S. M. J.) Cyclic group actions and knots. (English summary) *Proc. Roy. Soc. London Ser. A* **436** (1992), *no.* 1898, 527–535. (Alexander I. Suciu) **93m:57026** 57Q45 (11J86)

Keast, Patrick Software for integration over triangles and general simplices. (English summary) *Numerical integration* (*Bergen*, 1991), 283–294, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 357, *Kluwer Acad. Publ., Dordrecht*, 1992. (*see* **93f:65006**) 65Y15 (65D30)

— (*with* Majaess, Fouad; Fairweather, Graeme; Bennett, Karin R.) The solution of almost block diagonal linear systems arising in spline collocation at Gaussian points with monomial basis functions. *ACM Trans. Math. Software* **18** (1992), *no.* 2, 193–204. (Summary) **93a:65002** 65–04 (65D15, 65F05)

— (*with* Majaess, Fouad; Fairweather, Graeme; Bennett, Karin R.) Algorithm 704: ABDPACK and ABBPACK-FORTRAN programs for the solution of almost block diagonal linear systems arising in spline collocation at Gaussian points with monomial basis functions. *ACM Trans. Math. Software* **18** (1992), *no.* 2, 205–210. (Summary) **93a:65003** 65–04 (65F05)

Keating, J. P. *see* **Keating, Jonathan Peter**

Keating, Jerome P. (*with* Fountain, Robert L.; Rao, Calyampudi Radhakrishna) An example arising from Berkson's conjecture. Pitman's measure of closeness. *Comm. Statist. Theory Methods* **20** (1991), *no.* 11, 3457–3472. (Summary) **93a:62027** 62F10 (62J02, 62P10)

— Karlin's corollary: a topological approach to Pitman's measure. Pitman's measure of closeness. *Comm. Statist. Theory Methods* **20** (1991), *no.* 11, 3729–3750. (Summary) **93e:62073** 62F10 (62F15)

Keating, Jonathan Peter The semiclassical functional equation. *Chaos* **2** (1992), *no.* 1, 15–17. (Derek Raine) **93h:81032** 81Q50 (11M41, 81Q20)

— Periodic orbit resummation and the quantization of chaos. (English summary) *Proc. Roy. Soc. London Ser. A* **436** (1992), *no.* 1896, 99–108. (Muthusamy Lakshmanan) **93m:81036** 81Q50 (35P05, 41A60, 58F20, 81Q20)

— (*with* Berry, Michael Victor) A new asymptotic representation for $\zeta(\frac{1}{2}+it)$ and quantum spectral determinants. (English summary) *Proc. Roy. Soc. London Ser. A* **437** (1992), *no.* 1899, 151–173. (Jack Quine) **93j:11057** 11M06 (11M41, 11Z50, 58F20, 81Q50)

Keating, Kevin Automorphisms and extensions of $k((t))$. *J. Number Theory* **41** (1992), *no.* 3, 314–321. (Summary) **93d:13015** 13B02

hamill-Keays, William J. P. *see* **Hamill-Keays, William J. P.**

Kebbour, R. (*with* Crouzeix, Jean-Pierre) Index multiplicatifs de convexité/concavité et applications. (English and French summaries) [Multiplicative convexity/concavity indices and applications] *Cahiers Centre Études Rech. Opér.* **34** (1992), *no.* 1, 7–23. (Pierre Loridan) **93k:90070** 90C25 (90A05, 90C05, 90C26)

Kebede, Temesgen (*with* Bander, Myron) Contribution of heavy bosons and fermions to the action for a Robertson-Walker metric. *Phys. Rev. D* (3) **45** (1992), *no.* 10, 3604–3606. (Summary) **93b:83034** 83C47

Kechagias, Nondas E. The Steenrod algebra action on generators of rings of invariants of subgroups of $GL_n(\mathbf{Z}/p\mathbf{Z})$. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 3, 943–952. (Hans-Werner Henn) **93i:55023** 55S10

Kechkić, Jovan D. *see* **Kečkić, Jovan D.**

Kechris, Alexander S. The classification of hyperfinite Borel equivalence relations. *Séminaire d'Initiation à l'Analyse, Exp. No.* 22, 2 *pp., Publ. Math. Univ. Pierre et Marie Curie*, 104, *Univ. Paris VI, Paris*, 199?. (*see* **93k:00039**) 54J05 (03E15, 03H05, 54H05)

— Hereditary properties of the class of closed sets of uniqueness for trigonometric series. *Israel J. Math.* **73** (1991), *no.* 2, 189–198. (C. McGehee) **93c:42008** 42A63 (04A15, 43A46, 54H05)

— Amenable equivalence relations and Turing degrees. *J. Symbolic Logic* **56** (1991), *no.* 1, 182–194. (Peter G. Hinman) **93c:03061** 03D30 (03E15, 03E60, 06A05)

— (*with* Louveau, Alain) Descriptive set theory and harmonic analysis. *J. Symbolic Logic* **57** (1992), *no.* 2, 413–441. (Marek Balcerzak) **93e:04001** 04A15 (42A63, 54H05)

— (*with* Becker, Howard) Borel actions of Polish groups. (English summary) *Bull. Amer. Math. Soc.* (*N.S.*) **28** (1993), *no.* 2, 334–341. (Miroslav Repický) **93m:03083** 03E15 (03C75, 28E99, 54E99, 54H11)

Kečkemétyová, Mária Continuous solutions of nonlinear boundary value problems for ODEs on unbounded intervals. (English summary) *Math. Slovaca* **42** (1992), *no.* 3, 279–297. (Mauro Marini) **93k:34048** 34B15 (34C11, 47H15, 47N20)

Kečkić, Jovan D. On some forgotten results from the magister's thesis of Yu. V. Sokhotskiĭ. (Serbo-Croatian. English summary) *The present past* (*Serbo-Croatian*), 85–94, *Istor. Mat. Mekh. Nauka*, 4, *Mat. Inst., Belgrade*, 1991. (Summary) **93a:01052** 01A70 (01A55)

— On some classes of linear equations. VI. *Univ. Beograd. Publ. Elektrotehn. Fak. Ser. Mat.* **2** (1991), 55–60. (B. Crstici) **93d:15004** 15A06 (47A50)

rom-Kedar, Vered *see* **Rom-Kedar, Vered**

Kedem, Benjamin (*with* Li, Ta-Hsin) Monotone gain, first-order autocorrelation and zero-crossing rate. *Ann. Statist.* **19** (1991), *no.* 3, 1672–1676. (I. V. Basawa) **93c:62149** 62M10

— (*with* Lopes, Silvia) Fixed points in mixed spectrum analysis. (English summary) *Probabilistic and stochastic methods in analysis, with applications* (*Il Ciocco*, 1991), 573–591, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 372, *Kluwer Acad. Publ., Dordrecht*, 1992. (*see* **93e:00029**) 60G35 (62M15)

— (*with* Pavlopoulos, Harry) Stochastic modeling of rain rate processes: a diffusion model. (English summary) *Comm. Statist. Stochastic Models* **8** (1992), *no.* 3, 397–420. (Summary) **93e:60168** 60J70

— (*with* Martin, Donald E. K.) Estimation of the period of periodically correlated sequences. (English summary) *J. Time Ser. Anal.* **14** (1993), *no.* 2, 193–205. (Summary) **93k:62188** 62M10

Kedem, Klara (*with* Sharir, Micha) An automatic motion planning system for a convex polygonal mobile robot in 2-D polygonal space. (English summary) *Proceedings of the Fourth Annual Symposium on Computational Geometry* (*Urbana, IL*, 1988), 329–340, *ACM, New York*, 1988. (*see* **93k:68003**) 68U05

— (*with* Huttenlocher, Daniel P.; Kleinberg, Jon M.) Voronoĭ diagrams of rigidly moving sets of points. (English summary) *Inform. Process. Lett.* **43** (1992), *no.* 4, 217–223. (Summary) **93k:68102** 68U05 (68Q25)

Kędzia, Katarzyna Clifford analysis and systems of condensed phase. (English summary) *Clifford algebras and their applications in mathematical physics* (*Montpellier*, 1989), 425–436, *Fund. Theories Phys.*, 47, *Kluwer Acad. Publ., Dordrecht*, 1992. (Dominique Lambert) **93j:81115** 81V70 (15A66)

Kędzierawski, Andrzej W. The determination of the surface impedance of an obstacle. (English summary) *Proc. Edinburgh Math. Soc.* (2) **36** (1993), *no.* 1, 1–15. (V. M. Isakov) **93m:35181** 35R30 (35J05, 76Q05)

Kee, R. J. (*with* Irwin, G. W.) Transputer implementation of tracking Kalman filters. (English summary) *Control* '91, *Vol.* 1, 2 (*Edinburgh*, 1991), 861–866, *IEE Conf. Publ. Ser.*, 332, *IEE, London*, 1991. (*see* **93h:93007**) 93E11

Keedwell, A. D. Proper loops of order n in which each nonidentity element has left order n. Universal algebra, quasigroups and related systems (Jadwisin, 1989). *Demonstratio Math.* **24** (1991), *no.* 1-2, 27–33. (Elena Brožíková) **93a:20113** 20N05

— (*with* Dénes, József) On two conjectures related to admissible groups and quasigroups. Proceedings of the Second International Mathematical Miniconference, Part II (Budapest, 1988). *Period. Polytech. Transportation Engrg.* **19** (1991), *no.* 1-2, 33–35. (From the text) **93f:20030** 20D99 (20N05)

— (*with* Dénes, József) A new authentication scheme based on Latin squares. (English summary) A collection of contributions in honour of Jack van Lint. *Discrete Math.* **106/107** (1992), 157–161. (Charles Laywine) **93g:05025** 05B15 (11T71)

Keef, Patrick On products of primary abelian groups. (English summary) *J. Algebra* **152** (1992), *no.* 1, 116–134. (B. Goldsmith) **93j:20119** 20K25 (20K10, 20K30, 20K45)

— An application of set theory to the torsion product of abelian groups. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 3, 735–738. (Doyle O. Cutler) **93i:20063** 20K10 (03E75, 20K40)

Keefe, Laurence R. (*with* Moin, Parviz; Kim, Jeongbin John) The dimension of attractors underlying periodic turbulent Poiseuille flow. (English summary) *J. Fluid Mech.* **242** (1992), 1–29. (Summary) **93f:76057** 76F20 (58F13, 58F40)

— Two nonlinear control schemes contrasted on a hydrodynamiclike model. (English summary) *Phys. Fluids A* **5** (1993), *no.* 4, 931–947. (Summary) **93k:76096** 76M99 (76D99, 76E30, 76F20)

Keel, L. H. (*with* Shaw, J.; Bhattacharyya, Shankar Prashad) Robust control of interval systems. (English summary) *Robust control* (*Tokyo*, 1991), 24–31, *Lecture Notes in Control and Inform. Sci.*, 183, *Springer, Berlin*, 1992. (*see* **93f:93006**) 93D09

Keel, Sean Intersection theory of linear embeddings. *Trans. Amer. Math. Soc.* **335** (1993), *no.* 1, 195–212. (Paolo Aluffi) **93c:14007** 14C17 (14E25)

— Functorial construction of Le Barz's triangle space with applications. *Trans. Amer. Math. Soc.* **335** (1993), *no.* 1, 213–229. (Gary P. Kennedy) **93c:14006** 14C05 (14M15)

Keem, Changho (*with* Kim, SeonJa) Irreducibility of a subscheme of the Hilbert scheme of complex space curves. *J. Algebra* **145** (1992), *no.* 1, 240–248. (H. Lange) **93a:14004** 14C05 (14H10, 14H50)

— (*with* Coppens, Marc; Martens, Gerriet) Primitive linear series on curves. (English summary) *Manuscripta Math.* **77** (1992), *no.* 2-3, 237–264. (Montserrat Teixidor i Bigas) **93j:14028** 14H40 (14C20, 14H45)

Keen, C. D. *see* **Conference: Computer Science, 93i:68005** *and* **93i:68006**

Keenan, Daniel Random surface geometries with applications to image processing. (English summary) *Probabilistic and stochastic methods in analysis, with applications* (*Il Ciocco*, 1991), 469–477, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 372, *Kluwer Acad. Publ., Dordrecht*, 1992. (Summary) **93g:68148** 68U10 (65Y25)

Keener, James P. Uses and abuses of numerical methods in cardiology. *The dynamics of numerics and the numerics of dynamics* (*Bristol*, 1990), 195–213, *Inst. Math. Appl. Conf. Ser. New Ser.*, 34, *Oxford Univ. Press, New York*, 1992. (*see* **93b:65004**) 92C50 (65P05)

— The core of the spiral. (English summary) *SIAM J. Appl. Math.* **52** (1992), *no.* 5, 1370–1390. (Summary) **93f:35112** 35K57 (92B99)

Keener, Robert W. Limit theorems for random walks conditioned to stay positive. *Ann. Probab.* **20** (1992), *no.* 2, 801–824. (Gerold Alsmeyer) **93g:60150** 60J15 (60G50)

— (*with* Woodroofe, Michael) Fixed width interval estimation for the reciprocal drift of Brownian motion. *J. Statist. Plann. Inference* **30** (1992), *no.* 1, 1–12. (A. A. Novikov) **93c:62134** 62L12 (60G40)

Keer, L. M. Bruno and Northwestern—a happy marriage. Sixty-fifth Birthday of Bruno A. Boley Symposium, Part 2 (Atlanta, GA, 1991). *J. Thermal Stresses* **15** (1992), *no.* 2, ix–x. (Editors) **93e:01030b** 01A70

Keerthi, S. Sathiya (*with* Phatak, Makarand S.) A homotopy approach for stabilizing single-input systems with control structure constraints. (English summary) *Automatica J. IFAC* **28** (1992), *no.* 5, 981–987. (Summary) **93f:93115** 93D15 (93B40)

Keesling, James (*with* Block, L. S.) Computing the topological entropy of maps of the interval with three monotone pieces. *J. Statist. Phys.* **66** (1992), *no.* 3-4, 755–774. (Hu Yi Hu) **93f:58121** 58F08 (54C70, 58F11)

Keet, Arnold Additive families of invariants of forms of degree d. (English summary) *Quaestiones Math.* **15** (1992), *no.* 4, 451–466. (A. Prószyński) **93m:11032** 11E76 (15A15, 15A72, 15A75)

Kegel, Otto H. (*with* Shi, Wu Jie) On the orders of elements of a locally finite simple group. *C. R. Math. Rep. Acad. Sci. Canada* **13** (1991), *no.* 6, 253–254. (B. Hartley) **93c:20068** 20F50 (20E32)

Kehagias, Alexandros A. (*with* Batakis, Nicolaos A.) A class of monopole vacua. *Phys. Lett. B* **271** (1991), *no.* 1-2, 68–72. (Summary) **93e:81068** 81T13 (81R20)

— (*with* Batakis, Nicolaos A.) On certain topological aspects of the family problem. *Modern Phys. Lett. A* **7** (1992), *no.* 19, 1699–1706. (Summary) **93a:81122** 81T13 (58G40, 58Z05)

— The $SU(3)/Z_3$ gauge theory in a non-simply connected spacetime. (English summary) *Phys. Lett. B* **292** (1992), *no.* 1-2, 77–82. (Summary) **93g:81094** 81T13 (81T20, 81V05)

Kehayopulu, Niovi On prime, weakly prime ideals in ordered semigroups. *Semigroup Forum* **44** (1992), *no.* 3, 341–346. (From the text) **93a:06016** 06F05

Kehoe, Patrick J. (*with* Chari, V. V.) Sustainable plans and mutual default. (English summary) *Rev. Econom. Stud.* **60** (1993), *no.* 1, 175–195. (Summary) **93h:90017** 90A14

Keiding, H. (*with* Abdou, J.) ★ Effectivity functions in social choice. Theory and Decision Library. Series C: Game Theory, Mathematical Programming and Operations Research, 8. *Kluwer Academic Publishers Group, Dordrecht*, 1991. x+198 *pp. ISBN* 0-7923-1147-7 (Maurice Salles) **93m:90001** 90–02 (90A08, 90D12)

Keil, J. Mark (*with* Asano, Tetsuo; Bhattacharya, Binay; Yao, Foong Frances) Clustering algorithms based on minimum and maximum spanning trees. (English summary) *Proceedings of the Fourth Annual Symposium on Computational Geometry* (*Urbana, IL*, 1988), 252–257, *ACM, New York*, 1988. (*see* **93k:68003**) 68R05 (68U05)

— (*with* Schaefer, Doug) An optimal algorithm for finding dominating cycles in circular-arc graphs. *Discrete Appl. Math.* **36** (1992), *no.* 1, 25–34. (Gary MacGillivray) **93c:05105** 05C85 (68Q25, 68R10)

— (*with* Gutwin, Carl A.) Classes of graphs which approximate the complete Euclidean graph. *Discrete Comput. Geom.* **7** (1992), *no.* 1, 13–28. (Gui Zhen Liu) **93a:05059** 05C12

— (*with* Gewali, Laxmi P.; Ntafos, Simeon) On covering orthogonal polygons with star-shaped polygons. *Inform. Sci.* **65** (1992), *no.* 1-2, 45–63. (Summary) **93b:68021** 68Q05 (68T10)

— On the complexity of scheduling tasks with discrete starting times. (English summary) *Oper. Res. Lett.* **12** (1992), *no.* 5, 293–295. 90B35

— (*with* El-Gindy, Hossam) Efficient algorithms for the capacitated 1-median problem. (English summary) *ORSA J. Comput.* **4** (1992), *no.* 4, 418–425. 90C27

— The complexity of domination problems in circle graphs. (English summary) *Discrete Appl. Math.* **42** (1993), *no.* 1, 51–63. (Dieter Kratsch) **93m:68078** 68Q25 (05C85, 68R10)

Keil'man, N. È. Stabilization of flows of a barotropic gas with viscosity that depends on density. (Russian. Russian summary) *Dinamika Sploshn. Sredy No.* 97 (1990), 29–36, 212. (Summary) **93d:35117** 35Q30 (76E99, 76N15)

Keimel, Klaus (*with* Roth, Walter) ★ Ordered cones and approximation. Lecture Notes in Mathematics, 1517. *Springer-Verlag, Berlin*, 1992. vi+134 *pp. ISBN* 3-540-55445-9 (Pando Georgiev) **93i:46017** 46A40 (41A65, 46–02, 46B99)

Kein, V. M. (*with* Patsko, V. S.; Turova, V. L.) The problem of landing an aircraft under windshear conditions. (Russian. Russian summary) *Control in dynamical systems* (*Russian*), 52–64, 125, *Akad. Nauk SSSR Ural. Otdel., Sverdlovsk*, 1990. (*see* **93f:93004**) 93C95 (70Q05)

Keis, Igor The exponential realization of the prescribed motion by the controllable Hamiltonian system via the decomposition method. (Russian and Estonian summaries) *Eesti Tead. Akad. Toimetised Füüs. Mat.* **41** (1992), *no.* 1, 28–38, 74. (Vimal Singh) **93e:93012** 93B15 (34H05, 93B40)

Keisler, H. Jerome From discrete to continuous time. International Symposium on Mathematical Logic and its Applications (Nagoya, 1988). *Ann. Pure Appl. Logic* **52** (1991), *no.* 1-2, 99–141. (Summary) **93a:03075** 03H05 (03C65, 60G48)

— (*with* Leth, Steven C.) Meager sets on the hyperfinite time line. *J. Symbolic Logic* **56** (1991), *no.* 1, 71–102. (Nigel J. Cutland) **93a:03074** 03H05 (54H05)

— (*with* Schmerl, James H.) Making the hyperreal line both saturated and complete. *J. Symbolic Logic* **56** (1991), *no.* 3, 1016–1025. (Editors) **93h:03087** 03H05 (03C50, 03C62)

Keitel, C. H. (*with* Wódkiewicz, K.) On the information entropy of squeezed states and the entropic uncertainty relation. *Phys. Lett. A* **167** (1992), *no.* 2, 151–160. (Alexei D. Kiselev) **93g:81013** 81P15 (62B10, 81V80)

Keith, Alexander (*with* Abraham, Ralph; Koebbe, Matthew; Mayer-Kress, Gottfried) Computational unfolding of double-cusp models of opinion formation. *Internat. J. Bifur. Chaos Appl. Sci. Engrg.* **1** (1991), *no.* 2, 417–430. (D. R. J. Chillingworth) **93b:58023** 58C28 (58–04, 58F13, 58F14, 92K10)

Keitoku, Masahiro (*with* Sato, Enji) Block spaces on the unit sphere in $\mathbf{R}^n$. *Proc. Amer. Math. Soc.* **119** (1993), *no.* 2, 453–455. (Donald Krug) **93k:42012** 42B20 (46E30)

Kekäläinen, Pekka Step algebras of quantum $\mathfrak{sl}(n)$. *J. Algebra* **150** (1992), *no.* 1, 245–253. (Dmitriĭ I. Gurevich) **93h:17031** 17B37

Kelarev, A. V. Radicals commuting with bands of semigroups. *Acta Math. Univ. Comenian.* (*N.S.*) **60** (1991), *no.* 2, 243–252. (T. Tamura) **93a:20098** 20M11 (20M10)

— Structure of radicals in bands of semigroups. *Semigroup Forum* **43** (1991), *no.* 3, 291–298. (Juturu Hanumanthachari) **93b:20101** 20M11

— Radicals of graded rings and applications to semigroup rings. *Comm. Algebra* **20** (1992), *no.* 3, 681–700. (From the text) **93b:16037** 16N80 (16S36, 16W50, 20M25)

— Radicals and semilattice sums of rings revisited. *Comm. Algebra* **20** (1992), *no.* 3, 701–709. (M. Stefănescu) **93e:16031** 16N80 (16S90, 16W50)

— On the Jacobson radical of graded rings. *Comment. Math. Univ. Carolin.* **33** (1992), *no.* 1, 21–24. (Cao Yu Chen) **93e:16058** 16W50 (20M14)

— The regular radical of semigroup rings of commutative semigroups. *Glasgow Math. J.* **34** (1992), *no.* 2, 133–141. (Jan Okniński) **93d:16030** 16S36 (16E50, 16N99, 20M25)

— The Jacobson radical of commutative semigroup rings. *J. Algebra* **150** (1992), *no.* 2, 378–387. (I. S. Ponizovskiĭ) **93g:20121** 20M25 (16N20, 16N40, 20M14)

Kel'bert, M. Ya. (*with* Sukhov, Yu. M.) Nonlinear law of large numbers and Gaussian fluctuation for star-like networks. *Probability theory and mathematical statistics, Vol. I* (*Vilnius*, 1989), 580–589, "*Mokslas*", *Vilnius*, 1990. (Peter Gerrard Taylor) **93b:60219** 60K25 (60F05, 60K30, 68M20)

— (*with* Sazonov, I. A.) ★ Распространение импульсов в жидкостях. (Russian. English and Russian summaries) [Pulse propagation in fluids] "*Nauka*", *Moscow*, 1991. 159 *pp. ISBN* 5-02-000162-7 (Sergei Grudskiĭ) **93m:76028** 76D33 (35Q35, 76Q05, 76V05)

— (*with* Baccelli, François; Karpelevich, F. I.; Pukhal'skiĭ, A. A.; Rybko, A. N.; Sukhov, Yu. M.) A mean-field limit for a class of queueing networks. *J. Statist. Phys.* **66** (1992),

no. 3-4, 803–825. (K. M. Ramachandran) **93i:60165** 60K25

Kelch, Rainer Numerical quadrature by extrapolation with automatic result verification. (English summary) *Scientific computing with automatic result verification*, 143–185, *Math. Sci. Engrg.*, 189, *Academic Press, Boston, MA*, 1993. (Mariano Gasca) **93m:65032** 65D32 (65–04, 65Y20)

Keldysh, L. V. *see* **Sakharov Memorial Lectures in Physics, 93h:81003**

Kelejian, Harry H. The logit model and panel data via repeated observations: a clarification and extension of the literature. (English summary) *Econom. Lett.* **40** (1992), *no.* 2, 135–140 (1993). 62P20

Kelemen, Jozef (*with* Ftáčnik, Milan; Kalaš, Ivan; Mikulecký, Peter) ★ Základy umelej inteligencie. (Slovak. Slovak summary) [Fundamentals of artificial intelligence] *Alfa—Vydavatel'stvo Technickej a Ekonomickej Literatúry, Bratislava*, 1992. 400 *pp. ISBN* 80-05-00957-7 68–01 (68Txx)

— A note on learning, fallibility, and cognitive resources use. (English summary) *Comput. Artificial Intelligence* **11** (1992), *no.* 3, 217–227. 68T05 (68Q42, 68Q45, 68Q50)

— (*with* Kelemenová, Alica) A grammar-theoretic treatment of multiagent systems. (English summary) *Cybernet. Systems* **23** (1992), *no.* 6, 621–633. (Summary) **93h:68075** 68Q50 (68T01)

— (*with* Păun, Gheorghe) Generative paradigm in the study of complex symbol systems: some variants of grammar systems. (English summary) *Cybernetica* **35** (1992), *no.* 3, 241–256. 68T01 (93A05)

Kelemenová, Alica Minimal context in regenerative IL-systems. Automata, languages and programming systems (Salgótarján, 1990). *Pure Math. Appl. Ser. A* **1** (1991), *no.* 3-4, 329–336. (Robert M. Baer) **93b:92001** 92B05 (68Q45, 68Q50, 92D20)

— (*with* Kelemen, Jozef) A grammar-theoretic treatment of multiagent systems. (English summary) *Cybernet. Systems* **23** (1992), *no.* 6, 621–633. (Summary) **93h:68075** 68Q50 (68T01)

Keleş, S. (*with* Güneş, R.; Hacısalihoğlu, H. Hilmi) Two corollaries of Holditch's theorem for one-parameter closed spatial motions. (English summary) *Comm. Fac. Sci. Univ. Ankara Ser. A_1 Math. Statist.* **38** (1989), *no.* 1-2, 53–58 (1990). (Andrzej Bucki) **93k:53017a** 53A17

— (*with* Güneş, R.; Hacısalihoğlu, H. Hilmi) Two corollaries of Holditch's theorem for the parts of surface in E^3. (English summary) *Comm. Fac. Sci. Univ. Ankara Ser. A_1 Math. Statist.* **38** (1989), *no.* 1-2, 59–66 (1990). (Andrzej Bucki) **93k:53017b** 53A17

Keleti, Tamás The mountain climbers' problem. *Proc. Amer. Math. Soc.* **117** (1993), *no.* 1, 89–97. (G. A. Heuer) **93c:26001** 26A12 (26A15, 26A48)

Kella, Offer (*with* Whitt, Ward) Useful martingales for stochastic storage processes with Lévy input. *J. Appl. Probab.* **29** (1992), *no.* 2, 396–403. (Haya Kaspi) **93j:60154** 60K30 (60J30)

Keller, Georg Fusion rules of $U_q(\mathrm{sl}(2,\mathbf{C}))$, $q^m = 1$. *Lett. Math. Phys.* **21** (1991), *no.* 4, 273–286. (Introduction) **93a:17016** 17B37 (16W30, 81R50)

— (*with* Kopper, C.; Salmhofer, M.) Perturbative renormalization and effective Lagrangians in Φ^4_4. *Helv. Phys. Acta* **65** (1992), *no.* 1, 32–52. (Charles Nash) **93e:81081** 81T15

Keller, Gerhard Lyapunov exponents and complexity for interval maps. *Lyapunov exponents (Oberwolfach, 1990)*, 216–226, *Lecture Notes in Math.*, 1486, *Springer, Berlin*, 1991. (Alexander M. Blokh) **93g:58080** 58F11 (28D20, 58F03)

— (*with* Nowicki, Tomasz) Spectral theory, zeta functions and the distribution of periodic points for Collet-Eckmann maps. (English summary) *Comm. Math. Phys.* **149** (1992), *no.* 1, 31–69. (Viviane Baladi) **93i:58123** 58F20 (58F11, 58F19, 60F05, 60F10)

— (*with* Künzle, Martin) Transfer operators for coupled map lattices. (English summary) *Ergodic Theory Dynamical Systems* **12** (1992), *no.* 2, 297–318. (Paweł Góra) **93h:58085** 58F11 (58F19)

— (*with* Künzle, Martin; Nowicki, Tomasz) Some phase transitions in coupled map lattices. (English summary) *Phys. D* **59** (1992), *no.* 1-3, 39–51. (M. L. Blank) **93j:58074** 58F11 (28D10, 58F03)

— (*with* Burton, Robert M., Jr.) Stationary measures for randomly chosen maps. (English summary) *J. Theoret. Probab.* **6** (1993), *no.* 1, 1–16. (M. Iosifescu) **93m:60141** 60J05 (60K99)

Keller, Gordon E. (*with* Costa, Douglas L.) Radix redux: normal subgroups of symplectic groups. *J. Reine Angew. Math.* **427** (1992), 51–105. (Chong Guang Cao) **93h:20053** 20G35 (20E07)

Keller, Herbert B. (*with* Doedel, Eusebius; Kernévez, Jean-Pierre) Numerical analysis and control of bifurcation problems. I. Bifurcation in finite dimensions. *Internat. J. Bifur. Chaos Appl. Sci. Engrg.* **1** (1991), *no.* 3, 493–520. (Alois Klíč) **93c:34001a** 34–01 (34–04, 34C23, 34G20, 65H17)

— (*with* Doedel, Eusebius; Kernévez, Jean-Pierre) Numerical analysis and control of bifurcation problems. II. Bifurcation in infinite dimensions. *Internat. J. Bifur. Chaos Appl. Sci. Engrg.* **1** (1991), *no.* 4, 745–772. (Alois Klíč) **93c:34001b** 34–01 (34–04, 34C23, 65M06)

— ★ Numerical methods for two-point boundary value problems. (English. English summary) Corrected reprint of the 1968 edition. *Dover Publications, Inc., New York*, 1992. x+397 *pp. ISBN* 0-486-66925-4 (From the preface) **93k:65066** 65L10 (34A50, 34B15)

— A numerical approach to Hilbert's sixteenth problem. *The dynamics of numerics and the numerics of dynamics (Bristol, 1990)*, 127–135, *Inst. Math. Appl. Conf. Ser. New Ser.*, 34, *Oxford Univ. Press, New York*, 1992. (Summary) **93d:34052** 34C05 (34A50, 58F21, 65L99)

Keller, J. Y. (*with* Nowakowski, S.; Darouach, Mohamed) State estimation and failure detection in singular systems. (English summary) *Control Theory Adv. Tech.* **8** (1992), *no.* 4, 755–762. 93E10

Keller, Jaime (*with* Viniegra, Fermin) The multivector structure of the matter and interaction field theories. (English summary) *Clifford algebras and their applications in mathematical physics (Montpellier, 1989)*, 437–445, *Fund. Theories Phys.*, 47, *Kluwer Acad. Publ., Dordrecht*, 1992. (Summary) **93i:81077** 81R20 (81V10)

— (*with* Rodríguez, Adán) Geometric superalgebra and the Dirac equation. *J. Math. Phys.* **33** (1992), *no.* 1, 161–170. (Dominique Lambert) **93a:81073** 81R25 (15A66)

Keller, Joseph B. (*with* Givoli, Dan; Rivkin, Leonid) A finite element method for domains with corners. (English summary) *Internat. J. Numer. Methods Engrg.* **35** (1992), *no.* 6, 1329–1345. (Summary) **93f:65081** 65N30 (73V05)

— (*with* Knessl, Charles) Stability of rotating shear flows in shallow water. (English summary) *J. Fluid Mech.* **244** (1992), 605–614. (Summary) **93h:76033** 76E20 (76E05, 76U05)

— (*with* Merchant, Gregory J.) Contact angles. *Phys. Fluids A* **4** (1992), *no.* 3, 477–485. (Summary) **93a:76017** 76B45

— Phase fronts in reaction-diffusion problems. *Emerging applications in free boundary problems (Montreal, PQ, 1990)*, 24–28, *Pitman Res. Notes Math. Ser.*, 280, *Longman Sci. Tech., Harlow*, 1993. (*see* **93k:00035**) 35K57 (35B40)

Keller, Karsten (*with* Bandt, Christoph) Self-similar sets. II. A simple approach to the topological structure of fractals. *Math. Nachr.* **154** (1991), 27–39. (Tim Bedford) **93e:28011** 28A80 (54F65)

— Structure of the set of annihilators. *Internat. J. Theoret. Phys.* **31** (1992), *no.* 5, 835–842. (S. S. Holland, Jr.) **93h:06012** 06C15 (81P10)

Kellerer, Hans² (*with* Csirik, János; Woeginger, Gerhard J.) The exact LPT-bound for maximizing the minimum completion time. (English summary) *Oper. Res. Lett.* **11** (1992), *no.* 5, 281–287. (Summary) **93f:90127** 90C25 (90B35)

Kellerer, Hans G. Uniqueness in bounded moment problems. *Trans. Amer. Math. Soc.* **336** (1993), *no.* 2, 727–757. (L. A. Shepp) **93f:44003** 44A60 (44A12, 46G99)

Kellerhals, Ruth The dilogarithm and volumes of hyperbolic polytopes. *Structural properties of polylogarithms*, 301–336, *Math. Surveys Monographs*, 37, *Amer. Math. Soc., Providence, RI*, 1991. (*see* **93b:11158**) 52A38 (11R42, 33B10, 52A55)

— On the volumes of hyperbolic 5-orthoschemes and the trilogarithm. *Comment. Math. Helv.* **67** (1992), *no.* 4, 648–663. (Chih-Han Sah) **93g:52006** 52A38 (51M25, 52A55)

Kelley, C. T. (*with* Sachs, Ekkehard) Mesh independence of Newton-like methods for infinite-dimensional problems. *J. Integral Equations Appl.* **3** (1991), *no.* 4, 549–573. (Paul Eggermont) **93g:65166** 65R20 (65J99)

— (*with* Hwang, D. M.) Convergence of Broyden's method in Banach spaces. *SIAM J. Optim.* **2** (1992), *no.* 3, 505–532. (Jing Xian Sun) **93g:65086** 65J15 (47H17, 90C48)

Kelley, M. (*with* Dixon, J. M.; Tuszyński, J. A.) Coherent structures from the three-dimensional nonlinear Schrödinger equation. (English summary) *Phys. Lett. A* **170** (1992), *no.* 2, 77–83. (Woodford W. Zachary) **93m:81023** 81Q05 (35Q55)

Kelley, Walter G. (*with* Peterson, Allan C.) ★ Difference equations. An introduction with applications. *Academic Press, Inc., Boston, MA*, 1991. xii+455 *pp. ISBN* 0-12-403325-3 (Bernd Aulbach) **93f:39002** 39A10 (39–01, 39A05, 39A11)

— Travelling wave solutions of reaction-diffusion equations with convection. (English summary) *Recent trends in differential equations*, 355–363, *World Sci. Ser. Appl. Anal.*, 1, *World Sci. Publishing, River Edge, NJ*, 1992. (Gunter Bengel) **93k:35139** 35K57

— Solutions with spikes for quasilinear boundary value problems. *J. Math. Anal. Appl.* **170** (1992), *no.* 2, 581–590. (Dietrich Göhde) **93i:34037** 34B15 (34E15, 34E20)

Kellogg, R. B. (*with* Han, Hou De; Il'in, V. P.; Yuan, Wei) Analysis of flow directed iterations. *J. Comput. Math.* **10** (1992), *no.* 1, 57–76. (Jian-Ping Zhu) **93c:65048** 65F10 (65L12, 65M06, 76M20)

Kelly, David (*with* Habib, Michel; Möhring, Rolf H.) Interval dimension is a comparability invariant. Combinatorics of ordered sets (Oberwolfach, 1988). *Discrete Math.* **88** (1991), *no.* 2-3, 211–229. (K. P. Bogart) **93a:06004** 06A07

Kelly, F. P. (*with* Laws, C. N.) Dynamic routing in open queueing networks: Brownian models, cut constraints and resource pooling. (English summary) *Queueing Systems Theory Appl.* **13** (1993), *no.* 1-3, 47–86. 60K25 (90B22)

Kelly, G. M. A note on relations relative to a factorization system. *Category theory (Como, 1990)*, 249–261, *Lecture Notes in Math.*, 1488, *Springer, Berlin*, 1991. (R. H. Street) **93g:18007** 18B10

— On clubs and data-type constructors. *Applications of categories in computer science (Durham, 1991)*, 163–190, *London Math. Soc. Lecture Note Ser.*, 177, *Cambridge Univ. Press, Cambridge*, 1992. (Eugenio Moggi) **93j:68120** 68Q55 (18D15)

Kelly, Jerry S. Abelian symmetry groups in social choice. (English summary) *Math. Social Sci.* **25** (1992), *no.* 1, 15–25. (Bernhard von Stengel) **93j:90014** 90A08 (20K01)

— Almost all social choice rules are highly manipulable, but a few aren't. (English summary) *Soc. Choice Welf.* **10** (1993), *no.* 2, 161–175. (Summary) **93m:90010** 90A08

— *see also* **Fishburn, Peter C., 93g:90006**

Kelly, John B. Schur functions and Fibonacci identities. *Fibonacci Quart.* **30** (1992), *no.* 2, 148–156. (Jian Yi Shi) **93c:11010** 11B39 (05A19, 05E05)

Kelly, Kevin A. (*with* Goldstein, Sheldon; Speer, Eugene R.) The fractal structure of rarefied sums of the Thue-Morse sequence. (English summary) *J. Number Theory* **42** (1992), *no.* 1, 1–19. (Jau-Shyong Shiue) **93m:11020** 11B75 (11B83)

Kelly, Kevin T. Reichenbach, induction, and discovery. *Erkenntnis* **35** (1991), *no.* 1-3, 123–149. (Lawrence Sklar) **93a:01036** 01A60 (00A30, 00A35)

— (*with* Glymour, Clark) Inductive inference from theory laden data. *J. Philos. Logic* **21** (1992), *no.* 4, 391–444. (Lawrence Sklar) **93i:03029** 03B48 (03B30)

Kelly, L. M. Multiply perspective simplices, desmic triads and the Edelstein theorems. *Applied geometry and discrete mathematics*, 413–422, *DIMACS Ser. Discrete Math. Theoret. Comput. Sci.*, 4, *Amer. Math. Soc., Providence, RI*, 1991. (Béla Uhrin) **93a:51009** 51E30

Kelly, Michael R. Minimizing the cardinality of the fixed point set for self-maps of surfaces with boundary. *Michigan Math. J.* **39** (1992), *no.* 2, 201–217. (Helga Schirmer) **93g:55002** 55M20 (57N05)

Kelly, P. F. Erratum: "Expansions of nonsymmetric gravitational theories about a GR background" [Classical Quantum Gravity **8** (1991), no. 6, 1217–1229; MR 92b:83086]. *Classical Quantum Gravity* **9** (1992), *no.* 5, 1423. (From the text) **93g:83088** 83D05 (83C25)

Kelly, Robert Edward (*with* Hu, H.-C.) The onset of Rayleigh-Bénard convection in nonplanar oscillatory flows. (English summary) *J. Fluid Mech.* **249** (1993), 373–390. (Summary) **93m:76034** 76E15

Kelmans, A. K. Spanning trees of extended graphs. *Combinatorica* **12** (1992), *no.* 1, 45–51. (A. Meir) **93e:05081** 05C75 (05C05, 05C30)

Kelnhofer, Gerald A relation between group- and Čech-cohomology in principal fiber bundles and anomalies. *J. Math. Phys.* **33** (1992), *no.* 6, 2071–2079. (Summary) **93c:55015** 55R10 (81T50)

Kelsen, Pierre (*with* Han, Xiaofeng; Ramachandran, Vijaya; Tarjan, Robert Endre) Computing minimal spanning subgraphs in linear time. *Proceedings of the Third Annual ACM-SIAM Symposium on Discrete Algorithms (Orlando, FL, 1992)*, 146–156, *ACM, New York*, 1992. (Summary) **93e:05092** 05C85 (68Q25, 68R10)

— (*with* Dahlhaus, Elias; Karpiński, Marek) An efficient parallel algorithm for computing a maximal independent set in a hypergraph of dimension 3. (English summary) *Inform. Process. Lett.* **42** (1992), *no.* 6, 309–313. (Summary) **93e:68097** 68R10 (68Q22)

Kelsey, David Risk and risk aversion for state-dependent utility. *Theory and Decision* **33** (1992), *no.* 1, 71–82. (J. W. Pratt) **93i:90033** 90A43 (90A10)

Kel'zon, A. A. Functions of (m, Φ)-bounded variation. (Russian) *Dokl. Akad. Nauk SSSR* **321** (1991), *no.* 4, 670–672; *translation in Soviet Math. Dokl.* **44** (1992), *no.* 3, 768–770. (Maciej Sablik) **93g:26016** 26A45 (42A32)

Kel'zon, A. S. (*with* Meller, A. S.) On the dynamics of a rotor in rolling-contact bearings. (Russian) *Dokl. Akad. Nauk* **323** (1992), *no.* 5, 851–857; *translation in Soviet Phys. Dokl.* **37** (1992), *no.* 4, 184–187. 73K12 (70K99)

Kemelov, D. U. Solvability of an inverse problem for a system of Lamé equations. (Russian) *Boundary value problems for nonclassical equations in mathematical physics (Russian)* (*Novosibirsk*, 1989), 119–122, *Akad. Nauk SSSR Sibirsk. Otdel., Inst. Mat., Novosibirsk*, 1989. (*see* **93d:35001**) 35R30

Kemeny, John *see* **Obituary: Kemeny, John G.**

Kemer, A. R. Identities of associative algebras. *Proceedings of the International Congress of Mathematicians, Vol. I, II (Kyoto*, 1990), 351–359, *Math. Soc. Japan, Tokyo*, 1991. (P. M. Cohn) **93d:16027** 16R10

Kemnitz, Arnfried (*with* Harborth, Heiko; Möller, Meinhard) An upper bound for the minimum diameter of integral point sets. (English summary) *Discrete Comput. Geom.* **9** (1993), *no.* 4, 427–432. (Martin Henk) **93m:52018** 52C10 (11H99)

Kemoto, Nobuyuki The shrinking property of products of cardinals. *Fund. Math.* **137** (1991), *no.* 1, 59–63. (Hao Xuan Zhou) **93b:54005** 54A25 (54B10, 54D15, 54D20)

— Paracompactness in perfect locally Lindelöf spaces. (English summary) *Rocky Mountain J. Math.* **22** (1992), *no.* 3, 917–934. (Judith Roitman) **93k:54053** 54D20 (03E50, 03E75)

— (*with* Ohta, Haruto; Tamano, Ken-ichi) Products of spaces of ordinal numbers. (English summary) Proceedings of the Tsukuba Topology Symposium (Tsukuba, 1990). *Topology Appl.* **45** (1992), *no.* 3, 245–260. (J. Mioduszewski) **93j:54001** 54B10 (54D15, 54F05)

Kemp, Adrienne W. Heine-Euler extensions of the Poisson distribution. *Comm. Statist. Theory Methods* **21** (1992), *no.* 3, 571–588. 62E15

— Steady-state Markov chain models for the Heine and Euler distributions. (English summary) *J. Appl. Probab.* **29** (1992), *no.* 4, 869–876. (Summary) **93h:60107** 60J10 (60J25)

— Certain inequalities involving fractional powers. *J. Austral. Math. Soc. Ser. A* **53** (1992), *no.* 1, 131–136. (L. Losonczi) **93g:26031** 26D20 (26D05)

Kemp, David B. (*with* Stuckey, Peter J.; Srivastava, Divesh) Magic sets and bottom-up evaluation of well-founded models. (English summary) *Logic programming (San Diego, CA*, 1991), 337–351, *MIT Press Ser. Logic Program., MIT Press, Cambridge, MA*, 1991. (*see* **93i:68009**) 68N17

— (*with* Stuckey, Peter J.) Semantics of logic programs with aggregates. (English summary) *Logic programming (San Diego, CA*, 1991), 387–401, *MIT Press Ser. Logic Program., MIT Press, Cambridge, MA*, 1991. (*see* **93i:68009**) 68N17 (68Q55)

Kemp, Gordon C. R. The joint distribution of forecast errors in the AR(1) model. *Econometric Theory* **7** (1991), *no.* 4, 497–518. (Baldev Raj) **93f:62130** 62M20 (62M10, 62P20)

— On Wald tests for globally and locally quadratic restrictions. *J. Econometrics* **50** (1991), *no.* 3, 257–272. (Hilmar Drygas) **93g:62091** 62J05 (62G10, 62P20)

— The potential for efficiency gains in estimation from the use of additional moment restrictions. (English summary) *J. Econometrics* **53** (1992), *no.* 1-3, 387–399. (Tom Wansbeek) **93i:62092** 62P20

Kemp, Murray C. (*with* Shimomura, Koji) A dynamic model of the distribution of wealth among households and nations. (English summary) Nonlinear methods in economic dynamics and optimal control (Vienna, 1990). *Ann. Oper. Res.* **37** (1992), *no.* 1-4, 245–272. (Mikuláš Luptáčik) **93h:90018** 90A14 (49J15, 90A16)

Kemp, Paula (*with* Abian, Alexander) On properties of derivatives of continuous functions. (English summary) *Simon Stevin* **66** (1992), *no.* 1-2, 19–27. (Ryszard J. Pawlak) **93m:26007** 26A24

Kemp, Rainer On the stack size of a class of backtrack trees. (English summary) *Informatik*, 269–282, *Teubner-Texte Inform.*, 1, *Teubner, Stuttgart*, 1992. (Summary) **93i:68044** 68P05

— On the stack ramification of binary trees. *Random graphs, Vol.* 2 (*Poznań*, 1989), 117–138, *Wiley-Intersci. Publ., Wiley, New York*, 1992. (Zbigniew Palka) **93d:05138** 05C80

Kempczyński, Jarosław (*with* Horzela, Andrzej; Kapuścik, Edward; Uzes, Charles) On discrete models of space-time. (English summary) *Progr. Theoret. Phys.* **88** (1992), *no.* 6, 1065–1071. (Lawrence Sklar) **93j:83006** 83A05

Kemperman, J. H. B. Mixtures with a limited number of modal intervals. *Ann. Statist.* **19** (1991), *no.* 4, 2120–2144. (D. N. Shanbhag) **93f:60020** 60E05 (62E10)

Kempf, Achim Quantum group-symmetric Fock spaces with Bargmann-Fock representation. (English summary) *Lett. Math. Phys.* **26** (1992), *no.* 1, 1–12. (Albert Jeu-Liang Sheu) **93k:81100** 81R50 (17B37, 46N50, 81S05)

— Quantum group symmetric Bargmann-Fock space: integral kernels, Green functions, driving forces. (English summary) *J. Math. Phys.* **34** (1993), *no.* 3, 969–987. (Summary) **93m:81062** 81R50 (17B37, 46N50, 81S05)

Kempf, George R. More on computing invariants. *Algebraic geometry (Chicago, IL*, 1989), 87–89, *Lecture Notes in Math.*, 1479, *Springer, Berlin*, 1991. (V. L. Popov) **93k:14020** 14D25 (14L30)

— Effective methods in invariant theory. *Algebraic geometry (Chicago, IL*, 1989), 90–93, *Lecture Notes in Math.*, 1479, *Springer, Berlin*, 1991. (V. L. Popov) **93k:14021** 14D25 (20G30)

— The Ext-dual of a Verma module is a Verma module. *J. Pure Appl. Algebra* **75** (1991), *no.* 1, 47–49. (Serge M. Skryabin) **93b:17023** 17B10

— Equations of Kummer varieties. *Amer. J. Math.* **114** (1992), *no.* 1, 229–232. (José M. Muñoz Porras) **93a:14040** 14K05 (14H42, 14K25)

— Deformations of semi-Euler characteristics. *Amer. J. Math.* **114** (1992), *no.* 5, 973–978. (Nitin Nitsure) **93k:14025** 14F05 (14D99)

— Syzygies for points in projective space. *J. Algebra* **145** (1992), *no.* 1, 219–223. (Luchezar L. Avramov) **93b:13021** 13D03 (14M99)

— Openness of stability. *J. Math. Kyoto Univ.* **32** (1992), *no.* 1, 53–55. (Xiao Jiang Tan) **93a:14015** 14F05 (14C20)

— Pulling back bundles. *Pacific J. Math.* **152** (1992), *no.* 2, 319–322. (Wolfram Decker) **93c:14019** 14F05

Kempf, Peter (*with* Berghammer, Rudolf; Schmidt, Gunther W.; Ströhlein, Thomas) Relation algebra and logic of programs. *Algebraic logic (Budapest*, 1988), 37–58, *Colloq. Math. Soc. János Bolyai*, 54, *North-Holland, Amsterdam*, 1991. (D. Rosenblatt) **93d:03065** 03G15 (03B70, 05C50, 68N05, 68Q60)

Kempthorne, Oscar Intervention experiments, randomization and inference. (English summary) *Current issues in statistical inference: essays in honor of D. Basu*, 13–31, *IMS Lecture Notes Monograph Ser.*, 17, *Inst. Math. Statist., Hayward, CA*, 1992. (Summary) **93g:62101** 62K99

Kendall, David G. Kolmogorov as I remember him. *Statist. Sci.* **6** (1991), *no.* 3, 303–312. (C. J. Scriba) **93b:01039** 01A70

— Alfréd Rényi: a true European. *Studia Sci. Math. Hungar.* **26** (1991), *no.* 2-3, 151–152. 01A70

— Spherical triangles revisited. (English summary) *The art of statistical science*, 105–113, *Wiley Ser. Probab. Math. Statist. Probab. Math. Statist., Wiley, Chichester*, 1992. (L. A. Santaló) **93f:60014** 60D05

Kendall, Maurice *see* **Stuart, Alan, 93d:62004**

Kendall, Wilfrid S. Convex geometry and nonconfluent Γ-martingales. I. Tightness and strict convexity. *Stochastic analysis (Durham*, 1990), 163–178, *London Math. Soc. Lecture Note Ser.*, 167, *Cambridge Univ. Press, Cambridge*, 1991. (Jean Picard) **93e:58197** 58G32 (58E20, 60G46)

— (*with* Huang, Hui) Correction note to: "Martingales on manifolds and harmonic maps" [in *Geometry of random motion (Ithaca, NY, 1987)*, 121–157, Contemp. Math., 73, Amer. Math. Soc., Providence, RI, 1988; MR 90d:58163] by Kendall. *Stochastics Stochastics Rep.* **37** (1991), *no.* 4, 253–257. (Summary) **93d:58187** 58G32 (58E20, 60G44, 60J65)

— A remark on the proof of Itô's formula for C^2 functions of continuous semimartingales. *J. Appl. Probab.* **29** (1992), *no.* 1, 216–221. (A. N. Al-Hussaini) **93b:60096** 60G44 (60H05)

Kenderov, P. S. (*with* Revalski, Julian Petrov) Winning strategies in the Banach-Mazur game. *C. R. Acad. Bulgare Sci.* **44** (1991), *no.* 11, 13–15. 90D44

— (*with* Revalski, Julian Petrov) The Banach-Mazur game and generic existence of solutions to optimization problems. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 3, 911–917. (Jacqueline Morgan) **93i:49012** 49J27 (90C48, 90D44)

Kendrick, Brian (*with* Bohm, Arno; Loewe, Mark E.; Boya, Luis J.) The Berry connection and Born-Oppenheimer method. *J. Math. Phys.* **33** (1992), *no.* 3, 977–989. (Shinichi Tajima) **93d:81051** 81Q99 (81V55)

— (*with* Bohm, Arno; Boya, Luis J.) On the uniqueness of the Berry connection. *J. Math. Phys.* **33** (1992), *no.* 7, 2528–2532. (Piotr Kosiński) **93d:81052** 81Q99 (81S99)

— Invariance of the geometrical phase under time-dependent unitary transformations. *J. Phys. A* **25** (1992), *no.* 4, 885–897. (A. O. Barut) **93d:81054** 81Q99

Kenig, Carlos E. (*with* Fefferman, R. A.; Pipher, J.) The theory of weights and the Dirichlet problem for elliptic equations. *Ann. of Math.* (2) **134** (1991), *no.* 1, 65–124. (Gottfried Anger) **93h:31010** 31B35 (35B20, 35J25, 35J40)

— (*with* Dahlberg, Björn E. J.) Weak solutions of the porous medium equation in a cylinder. *Trans. Amer. Math. Soc.* **336** (1993), *no.* 2, 701–709. (Nicolae H. Pavel) **93g:35019** 35D05 (35K55, 76S05)

— (*with* Dahlberg, Björn E. J.) Weak solutions of the porous medium equation. *Trans. Amer. Math. Soc.* **336** (1993), *no.* 2, 711–725. (Nicolae H. Pavel) **93g:35018** 35D05 (35K55, 76S05)

falbo-Kenkel, M. K. *see* **Falbo-Kenkel, M. K.**

Kenley, Susan S. (*with* Chiang, Chin Long; Brand, Richard J.) A two-state recurrent stochastic model with time-dependent transition rates. (English summary) *Math. Biosci.* **111** (1992), *no.* 2, 249–259. (Summary) **93e:92018** 92D30 (92C60)

Kenmochi, Nobuyuki Global existence of solutions of two-phase Stefan problems with nonlinear flux conditions described by time-dependent subdifferentials. (Russian and Polish summaries) *Control Cybernet.* **19** (1990), *no.* 1-2, 7–39. (From the introduction) **93j:35195** 35R35 (80A22)

— (*with* Damlamian, A.) Uniqueness of the solution of a Stefan problem with variable lateral boundary conditions. *Adv. Math. Sci. Appl.* **1** (1992), *no.* 1, 175–194. (Summary) **93c:35165** 35R35 (80A22)

— (*with* Kadoya, Atsushi) Shape optimization on the lateral boundary for multi-phase Stefan problems. *Nonlinear Anal.* **18** (1992), *no.* 10, 937–955. (Bernard Rousselet) **93c:49027** 49Q10 (35K60, 35R35)

— (*with* Aiki, Toyohiko; Shinoda, Junichi) Periodic stability for Stefan problems with flux boundary conditions. *Free boundary problems involving solids (Montreal, PQ*, 1990), 158–163, *Pitman Res. Notes Math. Ser.*, 281, *Longman Sci. Tech., Harlow*, 1993. (*see* **93k:00037**) 35R35 (35B35)

Kennedy, A. D. *see* **Lattice 90, 93b:81195**

Kennedy, Douglas P. (*with* Kertz, Robert P.) Comparisons of optimal stopping values and expected suprema for i.i.d. r.v.'s with costs and discounting. *Strategies for sequential search and selection in real time (Amherst, MA*, 1990), 217–230, *Contemp. Math.*, 125, *Amer. Math. Soc., Providence, RI*, 1992. (Vladimir Mazalov) **93j:60024** 60F05 (60G40, 62L15)

— (*with* Kertz, Robert P.) Limit theorems for suprema, threshold-stopped random variables and last exits of i.i.d. random variables with costs and discounting, with applications to optimal stopping. *Adv. in Appl. Probab.* **24** (1992), *no.* 2, 241–266. (Sidney I. Resnick) **93k:60132** 60G70 (60G40)

— (*with* Hill, Theodore P.) Sharp inequalities for optimal stopping with rewards based on ranks. *Ann. Appl. Probab.* **2** (1992), *no.* 2, 503–517. (Minoru Sakaguchi) **93f:60058** 60G40 (62L15)

Kennedy, E. S. Transcription of Arabic letters in geometric figures. (Arabic summary) *Z. Gesch. Arab.-Islam. Wiss.* **7** (1991/92), 21–22, *Arabic paging* 8. 01A30

Kennedy, Gary (*with* Colley, Susan Jane) Triple and quadruple contact of plane curves. *Enumerative algebraic geometry (Copenhagen*, 1989), 31–59, *Contemp. Math.*, 123, *Amer. Math. Soc., Providence, RI*, 1991. (Ming Wei Xu) **93c:14042** 14N10 (14C25)

Kennedy, J. G. (*with* Simo, Juan C.) On a stress resultant geometrically exact shell model. V. Nonlinear plasticity: formulation and integration algorithms. *Comput. Methods Appl. Mech. Engrg.* **96** (1992), *no.* 2, 133–171. (Summary) **93e:73026** 73K15 (73E99, 73G20)

Kennedy, John W. (*with* Farrell, Edward J.; Quintas, Louis V.; Wahid, Shanaz A.) Graphs with palindromic matching and characteristic polynomials. (English summary) *Vishwa*

Internat. J. Graph Theory **1** (1992), *no.* 1, 59–76. (Norbert Seifter) **93m:05150** 05C70 (05C15)
— *see also* **Quo vadis, graph theory, 93k:05003**
Kennedy, Judy The construction of chaotic homeomorphisms on chainable continua. *Topology Appl.* **43** (1992), *no.* 2, 91–116. (M. Rees) **93b:54040** 54H20 (54F15, 58F13)
Kennedy, Ken *see* **Parallel processing for scientific computing, 93g:65178**
Kennedy, R. A. (*with* Anderson, Brian D. O.; Bitmead, Robert R.) Stochastic dynamics of blind decision feedback equalizer adaptation. (English summary) *Adaptive systems in control and signal processing*, 1989 (*Glasgow*), 579–584, *IFAC Sympos. Ser.*, 1990, *No.* 1, *Pergamon, Oxford*, 1990. (*see* **93j:93007**) 93C40 (93B52)
Kennedy, Robert E. (*with* Cooper, Curtis N.) An extension of a theorem by Cheo and Yien concerning digital sums. *Fibonacci Quart.* **29** (1991), *no.* 2, 145–149. (Georges Grekos) **93b:11010** 11A63
— (*with* Cooper, Curtis N.) The statistics of the smallest space on a lottery ticket. *Fibonacci Quart.* **29** (1991), *no.* 4, 367–370. (D. P. Roselle) **93c:05018** 05A99
— (*with* Cooper, Curtis N.) Digital sum sums. *J. Inst. Math. Comput. Sci. Math. Ser.* **5** (1992), *no.* 1, 45–49. (Ti Zuo Xuan) **93j:11059** 11N37
Kennedy, S. F. The topology of the periodic point set of a family of circle maps. *Topology Proc.* **15** (1990), 83–112. (Mahesh Nerurkar) **93e:58131** 58F13 (54H20, 58F12, 58F20)
Kennedy, Thomas Garrett (*with* Tasaki, Hal) Hidden symmetry breaking and the Haldane phase in $S = 1$ quantum spin chains. (English summary) *Comm. Math. Phys.* **147** (1992), *no.* 3, 431–484. (Victor I. Gerasimenko) **93h:82008** 82B20 (82B26)
— Solutions of the Yang-Baxter equation for isotropic quantum spin chains. *J. Phys. A* **25** (1992), *no.* 10, 2809–2817. (Ladislav Šamaj) **93f:82021** 82B23 (82B20)
Kennel, C. F. (*with* Hamilton, R. L.; Mjølhus, E.) Stability and bifurcation of quasiparallel Alfvén solitons. (English summary) *Phys. Scripta* **46** (1992), *no.* 3, 230–236. (Summary) **93j:35149** 35Q51 (35Q55, 76E25, 76W05, 85A30)
— (*with* Hamilton, R. L.; Mjølhus, E.) Formation of quasiparallel Alfvén solitons. (English summary) *Phys. Scripta* **46** (1992), *no.* 3, 237–247. (Summary) **93j:35150** 35Q51 (35Q55, 76W05, 85A30)
Kennel, M. B. (*with* Abarbanel, H. D. I.; Brown, Reggie) Local Lyapunov exponents computed from observed data. (English summary) *J. Nonlinear Sci.* **2** (1992), *no.* 3, 343–365. (Summary) **93f:58140** 58F13 (58F40)
Kennes, Robert Computational aspects of the Möbius transformation of graphs. *IEEE Trans. Systems Man Cybernet.* **22** (1992), *no.* 2, 201–223. (D. Cvetković) **93m:68156** 68T30 (05C85, 68R10)
Kennett, B. L. N. Earthquake location as an inverse problem. *Mini-Conference on Inverse Problems in Partial Differential Equations* (*Canberra*, 1990), 59–63, *Proc. Centre Math. Appl. Austral. Nat. Univ.*, 31, *Austral. Nat. Univ., Canberra*, 1992. (*see* **93i:00020**) 86A17 (86A22)
Kenney, Charles (*with* Pandey, Pradeep; Laub, Alan J.) Solving the algebraic Riccati equation on supercomputers. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, II* (*Kobe*, 1991), 3–8, *Mita, Tokyo*, 1992. (Petko Petkov) **93j:93052** 93B40
— (*with* Gudmundsson, Thorkell; Laub, Alan J.) Scaling of the discrete-time algebraic Riccati equation to enhance stability of the Schur solution method. *IEEE Trans. Automat. Control* **37** (1992), *no.* 4, 513–518. (Ian Petersen) **93b:93042** 93B40 (49N10, 93C55, 93D05)
— (*with* Laub, Alan J.) On scaling Newton's method for polar decomposition and the matrix sign function. *SIAM J. Matrix Anal. Appl.* **13** (1992), *no.* 3, 698–706. (Summary) **93a:65060** 65F35 (65F30)
Kennison, John F. The fundamental localic groupoid of a topos. *J. Pure Appl. Algebra* **77** (1992), *no.* 1, 67–86. (Ieke Moerdijk) **93b:18009** 18B25 (20L15)
Kensaku, Gomi (*with* Makoto, Hayashi) A pushing-up approach to the quasithin simple finite groups with solvable 2-local subgroups. *J. Algebra* **146** (1992), *no.* 2, 412–426. (Ulrich Meierfrankenfeld) **93a:20025** 20D05 (20E25)
Kent, Adrian Signature characters for the Virasoro algebra. *Phys. Lett. B* **269** (1991), *no.* 3-4, 315–318. (Yu Ting Jia) **93d:17032** 17B68 (81R10)
— Projections of Virasoro singular vectors. *Phys. Lett. B* **278** (1992), *no.* 4, 443–448. (A. J. Coleman) **93e:17042** 17B68 (17B81, 81R10, 81T40)
Kent, D. C. (*with* Richardson, Gary D.) p-regular convergence spaces. *Math. Nachr.* **149** (1990), 215–222. (M. Schroder) **93a:54018** 54D15 (54A20)
— (*with* Frič, Roman) Regular $\mathscr{L}$-spaces. *Czechoslovak Math. J.* **42(117)** (1992), *no.* 3, 475–486. (Vinodkumar) **93k:54003** 54A05 (18A40, 54A20, 54B30)
— (*with* Frič, Roman) Regularity and extension of maps. (English summary) *Math. Slovaca* **42** (1992), *no.* 3, 349–357. (Richard Wilson) **93k:54004** 54A05 (54C20, 54D10)
Kent, John T. (*with* Wright, Christopher) Some suggestions for transmission tomography based on the EM algorithm. (English summary) *Stochastic models, statistical methods, and algorithms in image analysis* (*Rome*, 1990), 219–232, *Lecture Notes in Statist.*, 74, *Springer, Berlin*, 1992. (*see* **93e:62005**) 68U10 (65R10)
— New directions in shape analysis. (English summary) *The art of statistical science*, 115–127, *Wiley Ser. Probab. Math. Statist. Probab. Math. Statist., Wiley, Chichester*, 1992. (*see* **93b:62003**) 60D05 (62H11)
Kent, Phillip (*with* Elgin, John) Travelling-waves of the Kuramoto-Sivashinsky equation: period-multiplying bifurcations. *Nonlinearity* **5** (1992), *no.* 4, 899–919. (Jürgen Scheurle) **93g:58106** 58F14 (34C25, 34C37, 35Q58)
Kent, Steven (*with* Chakravarty, Sarbarish; Newman, Ezra T.) Diffeomorphism algebras and the Nahm and Ward equations. *J. Math. Phys.* **33** (1992), *no.* 1, 382–387. (Jan Segert) **93a:81124** 81T13 (17B68, 53C80, 58D05, 82B21)
Kenyon, Claire (*with* Kenyon, Richard) How to take short cuts. ACM Symposium on Computational Geometry (North Conway, NH, 1991). *Discrete Comput. Geom.* **8** (1992), *no.* 3, 251–264. (Michael S. Martin) **93h:65184** 65Y25 (52B55)
— (*with* Goddard, Wayne D.; King, Valerie; Schulman, Leonard J.) Optimal randomized algorithms for local sorting and set-maxima. (English summary) *SIAM J. Comput.* **22** (1993), *no.* 2, 272–283. (Summary) **93j:68043** 68P10 (68Q20)
Kenyon, James R. Calculating improved bounds and approximations for sequential testing procedures. (English summary) *Topics in statistical dependence* (*Somerset, PA*, 1987), 315–332, *IMS Lecture Notes Monograph Ser.*, 16, *Inst. Math. Statist., Hayward, CA*, 1990. (Summary) **93g:62104** 62L10
Kenyon, Richard (*with* Kenyon, Claire) How to take short cuts. ACM Symposium on Computational Geometry (North Conway, NH, 1991). *Discrete Comput. Geom.* **8** (1992), *no.* 3, 251–264. (Michael S. Martin) **93h:65184** 65Y25 (52B55)
— Erratum: "Rigidity of planar tilings" [Invent. Math. **107** (1992), no. 3, 637–651; MR 92m:52049]. *Invent. Math.* **112** (1993), *no.* 1, 223. (Editors) **93m:52022** 52C25 (52C20, 52C22, 57M50)
Kephart, Thomas W. (*with* Hochberg, David) Wormhole cosmology and the horizon problem. (English summary) *Phys. Rev. Lett.* **70** (1993), *no.* 18, 2665–2668. (Summary) **93m:83072** 83E05 (83F05)
Kepka, Tomáš Multiplication groups of quasigroups and loops. *Universal algebra and quasigroup theory* (*Jadwisin*, 1989), 119–122, *Res. Exp. Math.*, 19, *Heldermann, Berlin*, 1992. (*see* **93e:08001**) 20N05
— (*with* Birkenmeier, Gary F.; Heatherly, Henry) Rings with left self-distributive multiplication. *Acta Math. Hungar.* **60** (1992), *no.* 1-2, 107–114. (N. Divinsky) **93i:16044** 16U99
— (*with* Niemenmaa, Markku) On connected transversals to abelian subgroups in finite groups. *Bull. London Math. Soc.* **24** (1992), *no.* 4, 343–346. (From the summary) **93b:20035** 20D10 (20N05)
— (*with* Niemenmaa, Markku) On a general associativity law in groupoids. *Monatsh. Math.* **113** (1992), *no.* 1, 51–57. (D. V. Dekov) **93b:20112** 20N02 (20A05)
— (*with* Polak, P.) Groupoids of fractions. I. *Riv. Mat. Pura Appl. No.* 10 (1992), 109–124. (Jaroslav Ježek) **93g:20129** 20N02
— (*with* Niemenmaa, Markku) On loops with cyclic inner mapping groups. *Arch. Math. (Basel)* **60** (1993), *no.* 3, 233–236. (Miklós Csikós) **93m:20109** 20N05
— (*with* Ježek, Jaroslav) A note on medial division groupoids. *Proc. Amer. Math. Soc.* **119** (1993), *no.* 2, 423–426. (Elena Brožíková) **93k:20100** 20N02
Kepler, Johannes Keplers Elegie in obitum Tychonis Brahe. [Kepler's elegy in obitum Tychonis Brahe] Translated from the Latin and with a commentary by Hans Wieland. *Bayer. Akad. Wiss. Math.-Natur. Kl. Abh.* (*N.F.*) *No.* 168 (1992), 45 *pp.* 01A70 (01A45)
— *see also* **Guillemin, Victor, 93a:58071** *and* **Crombie, A. C., 93g:01020**
Kepler, Thomas B. Geometric phase shifts in dissipative classical systems. (English summary) *Modern Phys. Lett. B* **6** (1992), *no.* 26, 1613–1622. 81Q99
Kerada, Mohamed Polynôme de petite mesure. [Polynomials with small measure] *Groupe de Travail en Théorie Analytique et Élémentaire des Nombres*, 1989–1990, 53–63, *Publ. Math. Orsay*, 92-01, *Univ. Paris XI, Orsay*, 1992. (D. Boyd) **93k:11096** 11R06
Kerbelev, A. M. Asymptotically optimal linear filtering in the presence of high-frequency uncertainty in the dynamics of the process. (Russian. Russian summary) *Avtomat. i Telemekh.* **1992**, *no.* 8, 74–83; *translation in Automat. Remote Control* **53** (1992), *no.* 8, *part* 1, 1193–1201 (1993). (Summary) **93m:93090** 93E11
— (*with* Tsypkin, Ya. Z.) Robust nonlinear discrete control systems. (Russian) *Dokl. Akad. Nauk* **327** (1992), *no.* 4-6, 450–454; *translation in Soviet Phys. Dokl.* **37** (1992), *no.* 12, 570–572 (1993). (Andrzej Świerniak) **93m:93079** 93D09 (93C10, 93C55, 93C80)
Kerber, Adalbert (*with* Kohnert, Axel; Lascoux, Alain) SYMMETRICA, an object oriented computer-algebra system for the symmetric group. (English summary) *J. Symbolic Comput.* **14** (1992), *no.* 2-3, 195–203. (Summary) **93g:68062** 68Q40 (05E10, 20C30, 20C40)
— (*with* Grund, R.; Laue, R.) MOLGEN, ein Computeralgebra-System für die Konstruktion molekularer Graphen. [MOLGEN, a computer algebra system for the construction of molecular graphs] *Match No.* 27 (1992), 87–131. 92E10 (05C90)
— *see also* **Seminar: Combinatorics, 93g:00029** *and* **Constructive applications of algebra and combinatorics, 93k:00033**
Kerber, Dirk On the determination of the worst sampling error in a communication system for pulse amplitude modulated signals. II. The finite-dimensional model. *Z. Angew. Math. Phys.* **42** (1991), *no.* 5, 757–773. (Summary) **93a:94009** 94A12 (90D43)
— On the determination of the worst sampling error in a communication system for pulse-amplitude-modulated signals. I. The general model. (English summary) *Math. Methods Appl. Sci.* **15** (1992), *no.* 7, 511–523. (L. L. Campbell) **93h:94001** 94A05 (90C90, 90D05)
Kerbl, Monika Stepsize control strategies for inclusion algorithms for ODEs. (English summary) *Computer arithmetic, scientific computation and mathematical modelling* (*Albena*, 1990), 437–452, *IMACS Ann. Comput. Appl. Math.*, 12, *Baltzer, Basel*, 1991. (Summary) **93h:65091** 65L05 (34A45, 65G10)
Kerckhoff, Steven P. Lines of minima in Teichmüller space. *Duke Math. J.* **65** (1992), *no.* 2, 187–213. (Colette Anné) **93b:32027** 32G15 (30F60, 57N05)
Keremedis, Kyriakos A note on Shoenfield's unramified forcing. *Z. Math. Logik Grundlag. Math.* **37** (1991), *no.* 2, 183–186. (Jakub Jasiński) **93c:03069** 03E40
Kereselidze, T. M. (*with* Mourad, H. A.; Tzulukidze, M. F.) Electron in the field of three Coulomb centres: asymptotic solutions. *J. Phys. B* **25** (1992), *no.* 13, 2957–2968. (Summary) **93c:81029** 81Q05 (81V45, 81V55)
Keresztes, A. (*with* Michelberger, P.; Bokor, J.; Várlaki, Peter M.) Statistical identification of nonlinear vehicle vibrating structures. (English summary) *Identification and system parameter estimation* 1991, *Vol.* 1,2 (*Budapest*, 1991), 841–845, *IFAC Sympos. Ser.*, 3, *Pergamon, Oxford*, 1992. (*see* **93h:93009**) 93B30 (93C95)
Keresztfalvi, Tibor Operations on fuzzy numbers extended by Yager's family of t-norms. (English summary) *Modelling uncertain data* (*Freiberg*, 1992), 163–167, *Math. Res.*, 68, *Akademie-Verlag, Berlin*, 1992. (*see* **93i:00021**) 04A72
— (*with* Fullér, Róbert) t-norm-based addition of fuzzy intervals. (English summary) *Fuzzy Sets and Systems* **51** (1992), *no.* 2, 155–159. (W. J. Kotzé) **93k:04004** 04A72 (26E50)
de Kerf, E. A. *see* **Bergvelt, Maarten, 93h:17057**
Kerimov, G. A. Euclidean formulation of quantum field theory in the anti-de Sitter space. (Russian) *Current group analysis* (*Russian*) (*Baku*, 1988), 113–119, "*Élm*", *Baku*, 1989. (*see* **93d:58002**) 81T20
Kerkyacharian, Gérard (*with* Picard, Dominique) Estimation de densité par méthode de noyau et d'ondelettes: les liens entre la géométrie du noyau et les contraintes de régularité. (English summary) [Density estimation by the kernel and wavelet method: link between kernel geometry and regularity constraints] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 1, 79–84. (Summary) **93c:62072** 62G05
— (*with* Johnstone, Iain M.; Picard, Dominique) Estimation d'une densité de probabilité par méthode d'ondelettes. (English and French summaries) [Density estimation using

wavelet methods] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 2, 211–216. (Summary) **93h:62083** 62G05

— (*with* Picard, Dominique) Density estimation in Besov spaces. *Statist. Probab. Lett.* **13** (1992), *no.* 1, 15–24. (Summary) **93a:62060** 62G05 (62C20)

— (*with* Baldi, Paolo; Ben Arous, Gérard) Large deviations and the Strassen theorem in Hölder norm. *Stochastic Process. Appl.* **42** (1992), *no.* 1, 171–180. (Tzong-Yow Lee) **93f:60034** 60F10

Kerler, T. (*with* Fröhlich, Jürg; Marchetti, P. A.) Nonabelian bosonization in two-dimensional condensed matter physics. *Nuclear Phys. B* **374** (1992), *no.* 3, 511–542. (Ilya Shapiro) **93i:82007** 82B10 (81V70)

Kerman, Ronald (*with* Cwikel, Michael) Positive multilinear operators acting on weighted L^p spaces. *J. Funct. Anal.* **106** (1992), *no.* 1, 130–144. (Luboš Pick) **93f:47031** 47B38

Kern, Jörg-Detlef (*with* Heinrich, Stefan) Parallel information-based complexity. *J. Complexity* **7** (1991), *no.* 4, 339–370. (Arthur G. Werschulz) **93a:68063** 68Q30

Kern, Michel (*with* Bamberger, A.; Joly, Patrick) Propagation of elastic surface waves along a cylindrical cavity of arbitrary cross section. (French summary) *RAIRO Modél. Math. Anal. Numér.* **25** (1991), *no.* 1, 1–30. (Akira Tsutsumi) **93f:73036** 73D20 (35Q72)

Kern, Uwe Ableitungsgleichungen und Vertauschbarkeitsrelationen. (German summary) [Derivative equations and commutation relations] *Proceedings of the 3rd Congress of Geometry (Thessaloniki, 1991)*, 220–229, *Aristotle Univ. Thessaloniki, Thessaloniki*, 1992. (Introduction) **93m:53012** 53A15 (53A07)

Kern, Walter Learning convex bodies under uniform distribution. (English summary) *Inform. Process. Lett.* **43** (1992), *no.* 1, 35–39. (Summary) **93i:68150** 68T05

— (*with* Faigle, Ulrich) The Shapley value for cooperative games under precedence constraints. (English summary) *Internat. J. Game Theory* **21** (1992), *no.* 3, 249–266. (Summary) **93m:90118** 90D12

Kerner, Edward H. Note on the representation of many-particle dynamics as higher-order single-particle dynamics, with a means to relativistic elevation of Newtonian dynamics. *J. Math. Phys.* **33** (1992), *no.* 5, 1675–1684. (Hans P. Künzle) **93b:70019** 70H40 (83A05)

Kerner, Otto Universal exact sequences for torsion theories. *Topics in algebra, Part* 1 (*Warsaw*, 1988), 317–326, *Banach Center Publ.*, 26, *Part* 1, *PWN, Warsaw*, 1990. (Luise Unger) **93h:16019** 16G20 (16G70, 16S90)

— (*with* Lukas, Frank) Regular modules over wild hereditary algebras. *Representations of finite-dimensional algebras (Tsukuba*, 1990), 191–208, *CMS Conf. Proc.*, 11, *Amer. Math. Soc., Providence, RI*, 1991. (Peter Dräxler) **93c:16017** 16G60 (16D20, 16G70)

— On socle-projective categories and tilting modules. *Comm. Algebra* **20** (1992), *no.* 9, 2459–2470. (Luise Unger) **93i:16021** 16G20 (16G30)

Kerner, Richard (*with* Balbinot, Roberto; Fabris, Júlio C.) Cosmological solutions from supersymmetric Kaluza-Klein theory. *Quantum gravity (Moscow*, 1990), 633–642, *World Sci. Publishing, River Edge, NJ*, 1991. (Summary) **93c:83111** 83E15 (83C20, 83E50)

— (*with* Dubois-Violette, Michel; Madore, J.) Super matrix geometry. *Classical Quantum Gravity* **8** (1991), *no.* 6, 1077–1089. (J. S. Joel) **93b:58014** 58B30 (58A10, 58H05, 81T60, 81V15, 83D05)

— Z_3-graded algebras and the cubic root of the supersymmetry translations. *J. Math. Phys.* **33** (1992), *no.* 1, 403–411. (Hartmut Schlosser) **93a:17030** 17B70 (17A70, 17B81, 81R05)

Kernévez, Jean-Pierre (*with* Doedel, Eusebius; Keller, Herbert B.) Numerical analysis and control of bifurcation problems. I. Bifurcation in finite dimensions. *Internat. J. Bifur. Chaos Appl. Sci. Engrg.* **1** (1991), *no.* 3, 493–520. (Alois Klíč) **93c:34001a** 34–01 (34–04, 34C23, 34G20, 65H17)

— (*with* Doedel, Eusebius; Keller, Herbert B.) Numerical analysis and control of bifurcation problems. II. Bifurcation in infinite dimensions. *Internat. J. Bifur. Chaos Appl. Sci. Engrg.* **1** (1991), *no.* 4, 745–772. (Alois Klíč) **93c:34001b** 34–01 (34–04, 34C23, 65M06)

Kerov, S. V. (*with* Vershik, A. M.) The Grothendieck group of infinite symmetric group and symmetric functions (with the elements of the theory of K_0-functor of AF-algebras). *Representation of Lie groups and related topics*, 39–117, *Adv. Stud. Contemp. Math.*, 7, *Gordon and Breach, New York*, 1990. (Tadeusz Józefiak) **93c:19001** 19A31 (05E10, 20B30, 20C32, 46L80)

— Characters of Hecke and Birman-Wenzl algebras. *Quantum groups (Leningrad*, 1990), 335–340, *Lecture Notes in Math.*, 1510, *Springer, Berlin*, 1992. (From the introduction) **93k:20061** 20F36 (05E10, 17B37, 57M25)

— Triangularity of transition matrices for generalized Hall-Littlewood polynomials. *Quantum groups (Leningrad*, 1990), 389–390, *Lecture Notes in Math.*, 1510, *Springer, Berlin*, 1992. (*see* **93d:00038**) 05E05

— q-analogue of the hook walk algorithm and random Young tableaux. (Russian) *Funktsional. Anal. i Prilozhen.* **26** (1992), *no.* 3, 35–45; *translation in Functional Anal. Appl.* **26** (1992), *no.* 3, 179–187. (Andrzej Daszkiewicz) **93j:05167** 05E10 (05E05, 20C32, 60J99)

— Gaussian limit for the Plancherel measure of the symmetric group. (English and French summaries) *C. R. Acad. Sci. Paris Sér. I Math.* **316** (1993), *no.* 4, 303–308. (From the summary) **93k:20106** 20P05 (20B30, 60B15)

Kerr, Fiona H. Fractional powers of Hankel transforms in the Zemanian spaces. *J. Math. Anal. Appl.* **166** (1992), *no.* 1, 65–83. (Antonio J. Durán) **93d:46065** 46F12 (44A15)

Kerr, Gilbert (*with* Kaneko, Hideaki; Xu, Yuesheng) Degenerate kernel method for multi-variable Hammerstein equations. (English summary) *Appl. Numer. Math.* **10** (1992), *no.* 6, 473–479. (Baruch Cahlon) **93k:65109** 65R20

Kerr, Oliver S. Two-dimensional instabilities of steady double-diffusive interleaving. (English summary) *J. Fluid Mech.* **242** (1992), 99–116. (Summary) **93f:76044** 76E15 (76R50)

Kerr, R. P. On stationary axially-symmetric gravitational metrics of rational type. (English summary) *Classical mechanics and relativity: relationship and consistency (Elba*, 1989), 107–120, *Monographs Textbooks Phys. Sci. Lecture Notes*, 20, *Bibliopolis, Naples*, 1991. (Nora Bretón Báez) **93m:83013** 83C20

Kerre, E. E. (*with* Kandil, A.; Nouh, A. A.) Operations and mappings on fuzzy topological spaces. (English summary) *Ann. Soc. Sci. Bruxelles Sér. I* **105** (1991), *no.* 4, 167–188 (1992). 54A40 (04A72)

— (*with* De Cooman, G.; Vanmassenhove, F. R.) Possibility theory: an integral-theoretic approach. *Fuzzy Sets and Systems* **46** (1992), *no.* 2, 287–299. (Introduction) **93e:28023** 28E10 (04A72)

— (*with* Kandil, A.; El-Shafee, M. E.; Nouh, A. A.) Quasi θ-spaces and pairwise θ-perfect irreducible mappings. *J. Austral. Math. Soc. Ser. A* **52** (1992), *no.* 3, 322–333. (Summary) **93h:54010** 54C10 (54E05, 54E55)

Kerrick, David (*with* Halpern, Paul) Five-dimensional solutions for the modified Einstein-Hilbert Lagrangian. (English summary) *Gen. Relativity Gravitation* **25** (1993), *no.* 1, 41–53. (Summary) **93i:83084** 83E15

Kersch, A. (*with* Heil, Alions Anton; Papadopoulos, N. A.; Reifenhäuser, B.; Scheck, F.) Structure of the space of reducible connections for Yang-Mills theories. *J. Geom. Phys.* **7** (1990), *no.* 4, 489–505 (1991). (Dana S. Fine) **93a:58029** 58D19 (53C07, 81T13)

— (*with* Heil, Alions Anton; Papadopoulos, N. A.; Reifenhäuser, B.) Abelian charges in a nonabelian Yang-Mills theory from the stratification of the space of gauge potentials. (English summary) *Ann. Physics* **217** (1992), *no.* 2, 173–193. (Jan Segert) **93h:58032** 58D29 (58D30, 81R40)

Kersey, Scott N. (*with* Barnhill, Robert E.; Frost, Todd M.) Self-intersections and offset surfaces. *Geometry processing for design and manufacturing*, 35–44, *SIAM, Philadelphia, PA*, 1992. (*see* **93b:65035**) 65D17

Kersken, Masumi (*with* Storch, Uwe) Some applications of the trace mapping for differentials. *Topics in algebra, Part* 2 (*Warsaw*, 1988), 141–148, *Banach Center Publ.*, 26, *Part* 2, *PWN, Warsaw*, 1990. (Hiroshi Niitsuma) **93g:13021** 13N05 (14F10, 32B05, 32C38)

Kersner, Robert (*with* Nicolosi, Francesco) The nonlinear heat equation with absorption: effects of variable coefficients. (English summary) *J. Math. Anal. Appl.* **170** (1992), *no.* 2, 551–566. (Maura Ughi) **93k:35132** 35K55 (35K65)

— (*with* Kawohl, Bernhard) On degenerate diffusion with very strong absorption. (English summary) *Math. Methods Appl. Sci.* **15** (1992), *no.* 7, 469–477. (Maura Ughi) **93i:35086** 35K65

Kersten, Annette G. Shared Secret Schemes aus geometrischer Sicht. [Shared secret schemes from a geometric point of view] Dissertation, Johannes Gutenberg-Universität Mainz, Mainz, 1991. *Mitt. Math. Sem. Giessen No.* 208 (1992), xiv+155 *pp.* (Andrea Sgarro) **93h:94016** 94A60 (51E15)

Kersten, Ina ★ Brauergruppen von Körpern. (German) [Brauer groups of fields] Aspects of Mathematics, D6. *Friedr. Vieweg & Sohn, Braunschweig*, 1990. viii+176 *pp. ISBN* 3-528-06380-7 (Adrian R. Wadsworth) **93e:16026** 16K20 (12G05, 13A20, 19C30)

Kersten, Paul H. M. (*with* van Bemmelen, Theo) Nonlocal symmetries and recursion operator of the Landau-Lifshitz equation. *J. Math. Phys.* **32** (1991), *no.* 7, 1709–1716. (Summary) **93b:58167** 58G35

— The general symmetry algebra structure of the underdetermined equation $u_x = (v_{xx})^2$. *J. Math. Phys.* **32** (1991), *no.* 8, 2043–2050. (Summary) **93e:58204** 58G37 (35A30, 35M99)

— (*with* Roelofs, Marcel) Supersymmetric extensions of the nonlinear Schrödinger equation. (English summary) *Nonlinear evolution equations and dynamical systems (Baia Verde*, 1991), 125–134, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93i:35131** 35Q55 (58E50)

— (*with* Roelofs, G. H. M.) Supersymmetric extensions of the nonlinear Schrödinger equation: symmetries and coverings. *J. Math. Phys.* **33** (1992), *no.* 6, 2185–2206. (Ismagil T. Khabibullin) **93d:58148** 58F37 (35Q55, 58F07, 58G37)

— The Lie-Bäcklund algebra for the general underdetermined equation $u_t = f(x, u, \cdots, u_{r-1}, v, \cdots, v_k)$. *Nonlinearity* **5** (1992), *no.* 3, 763–770. (Niky Kamran) **93i:58168** 58G37

Kersting, Götz A law of large numbers for stochastic difference equations. *Stochastic Process. Appl.* **40** (1992), *no.* 1, 1–13. (R. J. Tomkins) **93a:60048** 60F15 (60G42, 60J80)

— Asymptotic Γ-distribution for stochastic difference equations. *Stochastic Process. Appl.* **40** (1992), *no.* 1, 15–28. (M. P. Quine) **93d:60033** 60F05 (60J15, 60J80)

Kerszberg, Pierre ★ The invented universe. The Einstein-de Sitter controversy (1916–17) and the rise of relativistic cosmology. Oxford Science Publications. *The Clarendon Press, Oxford University Press, New York*, 1989. x+403 *pp. ISBN* 0-19-851876-5 (Dennis Dieks) **93j:01007** 01A60 (83–03)

— The Einstein-de Sitter controversy of 1916–1917 and the rise of relativistic cosmology. *Einstein and the history of general relativity (North Andover, MA*, 1986), 325–366, *Einstein Stud.*, 1, *Birkhäuser Boston, Boston, MA*, 1989. (From the introduction) **93i:01020** 01A60 (83–03)

Kertz, Robert P. (*with* Hill, Theodore P.) A survey of prophet inequalities in optimal stopping theory. *Strategies for sequential search and selection in real time (Amherst, MA*, 1990), 191–207, *Contemp. Math.*, 125, *Amer. Math. Soc., Providence, RI*, 1992. (Douglas P. Kennedy) **93g:60089** 60G40

— (*with* Kennedy, Douglas P.) Comparisons of optimal stopping values and expected suprema for i.i.d. r.v.'s with costs and discounting. *Strategies for sequential search and selection in real time (Amherst, MA*, 1990), 217–230, *Contemp. Math.*, 125, *Amer. Math. Soc., Providence, RI*, 1992. (Vladimir Mazalov) **93j:60024** 60F05 (60G40, 62L15)

— (*with* Kennedy, Douglas P.) Limit theorems for suprema, threshold-stopped random variables and last exits of i.i.d. random variables with costs and discounting, with applications to optimal stopping. *Adv. in Appl. Probab.* **24** (1992), *no.* 2, 241–266. (Sidney I. Resnick) **93k:60132** 60G70 (60G40)

Kervaire, Michel (*with* Eliahou, Shalom; Saffari, Bahman) On Golay polynomial pairs. *Adv. in Appl. Math.* **12** (1991), *no.* 3, 235–292. (Michio Ozeki) **93b:68066** 68R05 (05A19, 11B83)

— (*with* Eliahou, Shalom) Barker sequences and difference sets. *Enseign. Math.* (2) **38** (1992), *no.* 3-4, 345–382. (Alexander Pott) **93i:11018** 11B50 (05B10, 68R05)

Kesavan, H. K. (*with* Kapur, J. N.) ★ Entropy optimization principles with applications. *Academic Press, Inc., Boston, MA*, 1992. xx+408 *pp. ISBN* 0-12-397670-7 (Guy Jumarie) **93k:94003** 94A17 (62B10)

Keshavan, H. R. (*with* Chandrasekharaiah, D. S.) Thermoelastic effects due to a laser pulse in a half space. (English summary) *Panamer. Math. J.* **2** (1992), *no.* 4, 1–18. 73B30

Kesidis, G. (*with* Courcoubetis, C.; Ridder, A.; Walrand, Jean; Weber, Richard R.) Adaptive control of admissions and routing in an ATM network. (English summary) *Stochastic theory and adaptive control (Lawrence, KS*, 1991), 121–126, *Lecture Notes in Control and Inform. Sci.*, 184, *Springer, Berlin*, 1992. (*see* **93g:93007**) 93E35

Kessel', A. R. (*with* Gusev, V. I.) The kinetics of a percolation lattice as a model of the filtration of an oil stratum. (Russian) *Dokl. Akad. Nauk SSSR* **321** (1991), *no.* 3, 509–512; *translation in Soviet Phys. Dokl.* **36** (1991), *no.* 11, 763–764 (1992). (Jerzy Stopa) **93f:76094** 76S05 (76M25)

— (*with* Izmailov, A. F.) Calculation of a quantum partition function of the BCS model in a nonregular phase. (Russian. English and Russian summaries) *Teoret. Mat. Fiz.* **90**

(1992), *no.* 2, 233–245; *translation in Theoret. and Math. Phys.* **90** (1992), *no.* 2, 157–165. (Summary) **93i:82080** 82D55 (81V70)

Kessler, Volker On the minimum of the unit lattice. *Sém. Théor. Nombres Bordeaux* (2) **3** (1991), *no.* 2, 377–380. (Christopher Smyth) **93a:11093** 11R27 (11H06)

Kesteloot, K. Multimarket cooperation with scope effects in demand. (English summary) *Z. Nationalökonom.* **55** (1992), *no.* 3, 245–264. 90A60

Kesten, Harry (*with* Durrett, Richard; Lawler, Gregory F.) Making money from fair games. *Random walks, Brownian motion, and interacting particle systems*, 255–267, *Progr. Probab.*, 28, *Birkhäuser Boston, Boston, MA*, 1991. (A. Spătaru) **93a:60075** 60G50 (60J15)

— Asymptotics in high dimensions for the Fortuin-Kasteleyn random cluster model. *Spatial stochastic processes*, 57–85, *Progr. Probab.*, 19, *Birkhäuser Boston, Boston, MA*, 1991. (Richard Holley) **93e:60196** 60K35 (82B20)

— Some caricatures of multiple contact diffusion-limited aggregation and the η-model. *Stochastic analysis* (*Durham*, 1990), 179–227, *London Math. Soc. Lecture Note Ser.*, 167, *Cambridge Univ. Press, Cambridge*, 1991. (Pablo A. Ferrari) **93j:60156** 60K35 (82B41)

— (*with* Lawler, Gregory F.) A necessary condition for making money from fair games. *Ann. Probab.* **20** (1992), *no.* 2, 855–882. (N. H. Bingham) **93e:60140** 60J15 (60F99)

Kestenband, Barbu C. Generalizing a nonexistence theorem in finite projective planes. (English summary) *Geom. Dedicata* **44** (1992), *no.* 2, 123–126. (M. J. Kallaher) **93k:51010** 51E20 (51A45)

— New families of balanced incomplete block designs with block size $q + 1$. *J. Statist. Plann. Inference* **30** (1992), *no.* 1, 83–91. (Ryoh Fuji-Hara) **93c:05022** 05B05 (62K10)

— Quadrics as hyperplanes in finite affine geometries. (English summary) *Linear Algebra Appl.* **174** (1992), 165–182. (J. W. P. Hirschfeld) **93k:51011** 51E20 (51E22)

Keswani, Navin (*with* Boyd, Sarah; Raeburn, Iain) Faithful representations of crossed products by endomorphisms. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 2, 427–436. (John Quigg) **93g:46066** 46L55

Keszthelyi, Bettina (*with* Kleppe, Gary) Renormalizability of $D = 3$ topologically massive gravity. *Phys. Lett. B* **281** (1992), *no.* 1-2, 33–35. (Summary) **93b:81144** 81T10 (83C45)

Ketema, Yohannes A physical interpretation of Mel′nikov's method. *Internat. J. Bifur. Chaos Appl. Sci. Engrg.* **2** (1992), *no.* 1, 1–9. (Alexander Burov) **93f:34075** 34C37 (34C23, 58F13, 70H05, 70K50)

Ketoja, Jukka A. Renormalisation in a circle map with two inflection points. *Phys. D* **55** (1992), *no.* 1-2, 45–68. (Jaroslav Stark) **93c:58137** 58F13 (58F03, 58F27)

— Universal criterion for the breakup of invariant tori in dissipative systems. (English summary) *Phys. Rev. Lett.* **69** (1992), *no.* 15, 2180–2183. (Summary) **93f:58211** 58F27 (34C15, 58F13)

Ketonen, Jussi (*with* Bellin, Gianluigi) A decision procedure revisited: notes on direct logic, linear logic and its implementation. *Theoret. Comput. Sci.* **95** (1992), *no.* 1, 115–142. (P. Štěpánek) **93g:03010** 03B25 (03B10, 68T27)

Ketov, S. V. (*with* Gates, S. James, Jr.; Nishino, Hitoshi) Extended supersymmetry and self-duality in $2 + 2$ dimensions. (English summary) *Phys. Lett. B* **297** (1992), *no.* 1-2, 99–104. (Summary) **93j:81099** 81T60 (81V17, 83E50)

Kettani, Ossama (*with* Oral, Muhittin) A linearization procedure for quadratic and cubic mixed-integer problems. *Oper. Res.* **40** (1992), *suppl.* 1, S109–S116. (Klaus Hofstedt) **93a:90047** 90C11 (90C20)

van Keulen, B. A. M. (*with* Peters, Marc; Curtain, Ruth F.) H_∞-optimal control with state feedback for infinite-dimensional systems. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, I* (*Kobe*, 1991), 121–126, *Mita, Tokyo*, 1992. (*see* **93g:93005**) 93B36 (93C25)

— (*with* Curtain, Ruth F.) Robust control with respect to coprime factors of infinite-dimensional positive real systems. *IEEE Trans. Automat. Control* **37** (1992), *no.* 6, 868–871. (K. Maciej Przyłuski) **93a:93098** 93D21 (93B35, 93C20, 93D09)

— (*with* Peters, Marc; Curtain, Ruth F.) H_∞-control with state-feedback: the infinite-dimensional case. (English summary) *J. Math. Systems Estim. Control* **3** (1993), *no.* 1, 1–39. (L. Rodman) **93i:93045** 93B36 (93C25)

Keune, Frans Quadratic reciprocity and finite fields. *Nieuw Arch. Wisk.* (4) **9** (1991), *no.* 3, 263–266. (Michael D. Hendy) **93g:11006** 11A15 (11T23)

Keviczky, L. *see* **Identification and system parameter estimation, 93h:93009**

Kevorkian, J. (*with* Pernarowski, Mark; Miura, Robert M.) The Sherman-Rinzel-Keizer model for bursting electrical activity in the pancreatic β-cell. (English summary) *Differential equations models in biology, epidemiology and ecology* (*Claremont, CA*, 1990), 34–53, *Lecture Notes in Biomath.*, 92, *Springer, Berlin*, 1991. (*see* **93g:92001**) 92C05

— (*with* Yu, Jun^2) Nonlinear evolution of small disturbances into roll waves in an inclined open channel. (English summary) *J. Fluid Mech.* **243** (1992), 575–594. (Summary) **93g:76043** 76D33 (76E30)

— (*with* Bosley, D. L.) Adiabatic invariance and transient resonance in very slowly varying oscillatory Hamiltonian systems. *SIAM J. Appl. Math.* **52** (1992), *no.* 2, 494–527. (James A. Murdock) **93c:34081** 34C15 (70H05, 70K30)

— (*with* Pernarowski, Mark; Miura, Robert M.) Perturbation techniques for models of bursting electrical activity in pancreatic β-cells. (English summary) *SIAM J. Appl. Math.* **52** (1992), *no.* 6, 1627–1650. (Summary) **93h:92010** 92C05 (34C15, 34C23)

Kevorkyants, S. S. Integral equations of electrodynamics in problems of diffraction by a bounded body in a layerwise nonhomogeneous anisotropic medium. (Russian. Russian summary) *Fiz. Zemli* **1992,** *no.* 8, 59–71. (Summary) **93h:86005** 86A20 (78A45, 78A55)

Kevrekidis, I. G. (*with* Frouzakis, C. E.; Adomaitis, R. A.; Golden, M. P.; Ydstie, B. Erik) The structure of basin boundaries in a simple adaptive control system. (English summary) *Chaotic dynamics* (*Patras*, 1991), 195–210, *NATO Adv. Sci. Inst. Ser. B Phys.*, 298, *Plenum, New York*, 1992. (Summary) **93k:58205** 58F40 (58F13, 93C40)

Kexin, Wen *see* **Wen, Ke Xin**

Key, Eric S. Rare numbers. *J. Theoret. Probab.* **5** (1992), *no.* 2, 375–389. (Peter Schatte) **93e:60060** 60F15 (60F05)

Key, J. D. (*with* Assmus, E. F., Jr.) ★ Designs and their codes. Cambridge Tracts in Mathematics, 103. *Cambridge University Press, Cambridge*, 1992. x+352 *pp. ISBN* 0-521-41361-3 (Vera Pless) **93j:51003** 51E05 (05B05, 05B25, 51E22, 94B25)

— (*with* Mackenzie, Kirsten) Ovals in the designs $W(2^m)$. (English summary) *Ars Combin.* **33** (1992), 113–117. (Summary) **93d:05035** 05B30 (05B25)

— Extendable Steiner designs. *Geom. Dedicata* **41** (1992), *no.* 2, 201–205. (Douglas R. Stinson) **93h:05036** 05B30

— On a class of 1-designs. (English summary) *European J. Combin.* **14** (1993), *no.* 1, 37–41. (Vladimir D. Tonchev) **93m:05021** 05B05 (20E32, 51E12)

Keyes, Brian (*with* Stenger, Frank; O'Reilly, Mike; Parker, Ken) Sinc indefinite integration and initial value problems. (English summary) *Numerical integration* (*Bergen*, 1991), 281–282, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 357, *Kluwer Acad. Publ., Dordrecht*, 1992. (*see* **93f:65006**) 65D30

Keyes, David E. (*with* Cai, Xiao-Chuan; Gropp, William D.) A comparison of some domain decomposition algorithms for nonsymmetric elliptic problems. (English summary) *Fifth International Symposium on Domain Decomposition Methods for Partial Differential Equations* (*Norfolk, VA*, 1991), 224–235, *SIAM, Philadelphia, PA*, 1992. (Summary) **93h:65149** 65N55 (65–04)

— (*with* Gropp, William D.) Domain decomposition with local mesh refinement. *SIAM J. Sci. Statist. Comput.* **13** (1992), *no.* 4, 967–993. (Summary) **93b:65189** 65N55 (65Y05)

— (*with* Gropp, William D.) Domain decomposition as a mechanism for using asymptotic methods. (English summary) *Asymptotic and numerical methods for partial differential equations with critical parameters* (*Beaune*, 1992), 93–105, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 384, *Kluwer Acad. Publ., Dordrecht*, 1993. (*see* **93m:65006**) 65N55

— *see also* **Symposium: Domain Decomposition Methods for Partial Differential Equations, 93g:65009** *and* **Parallel processing for scientific computing, 93k:65003**

Keyfitz, Barbara Lee Change of type in simple models for two-phase flow. *Viscous profiles and numerical methods for shock waves* (*Raleigh, NC*, 1990), 84–104, *SIAM, Philadelphia, PA*, 1991. (M. Shearer) **93d:76071** 76T05 (35L65, 35M10, 76N10)

Keynes, John Maynard ★ The collected writings of John Maynard Keynes. Vol. VIII. A treatise on probability. Edited and with a foreword by R. B. Braithwaite. Reprint of the 1973 edition. *Macmillan Press Ltd., London; Cambridge University Press, New York*, 1988. xxvi+514 *pp. ISBN* 0-521-22100-5; 0-521-37986-5 (Zeno G. Swijtink) **93c:01050; EA 93m** 01A75 (00A30, 60–03, 60A05)

Keyser, Paul A new look at Heron's "steam engine". *Arch. Hist. Exact Sci.* **44** (1992), *no.* 2, 107–124. (J. L. Berggren) **93k:01005** 01A20

Kézdy, André (*with* McGuinness, Patrick) Sequential and parallel algorithms to find a K_5 minor. *Proceedings of the Third Annual ACM-SIAM Symposium on Discrete Algorithms* (*Orlando, FL*, 1992), 345–356, *ACM, New York*, 1992. (From the introduction) **93e:05095** 05C85 (68Q22, 68Q25, 68R10)

Kezlan, Thomas P. A commutativity theorem involving certain polynomial constraints. *Math. Japon.* **36** (1991), *no.* 4, 785–789. (Summary) **93d:16042** 16U80 (16R10)

— On additive epimorphisms and commutativity of rings. *Proc. Roy. Irish Acad. Sect. A* **91** (1991), *no.* 1, 45–49. (Summary) **93a:16028** 16U80

Kfoury, A. J. (*with* Tiuryn, J.; Urzyczyn, P.) On the expressive power of finitely typed and universally polymorphic recursive procedures. *Theoret. Comput. Sci.* **93** (1992), *no.* 1, 1–41. (Eugenio Moggi) **93e:68017** 68Q05 (68N05)

Khabakhpasheva, T. I. The Fredholm property of a problem on small perturbations of a wave of limit amplitude on deep water. (Russian. Russian summary) *Dinamika Sploshn. Sredy No.* 95 (1990), 156–160, 165. (Summary) **93e:76011** 76B15 (86A05)

Khabalov, V. D. (*with* Miroshin, R. N.) Computation of the mean number of zeros of a Gaussian random polynomial with dependent coefficients. (Russian. English and Russian summaries) *Vestnik Leningrad. Univ. Mat. Mekh. Astronom.* **1991,** *vyp.* 3, 121–123, 135; *translation in Vestnik Leningrad Univ. Math.* **24** (1991), *no.* 3, 66–68. (Summary) **93m:60103** 60G99

Khabbaz, S. A. Singular solutions as semi-algebraic sets: the singular solutions of generic first order differential equations. *Proceedings of the International Conference on Algebra, Part 1* (*Novosibirsk*, 1989), 571–590, *Contemp. Math.*, 131, *Part* 1, *Amer. Math. Soc., Providence, RI*, 1992. (Summary) **93f:34009** 34A09 (14P10, 34A26)

Khabibullin, B. N. Sets of uniqueness in spaces of entire functions of one variable. (Russian) *Izv. Akad. Nauk SSSR Ser. Mat.* **55** (1991), *no.* 5, 1101–1123; *translation in Math. USSR-Izv.* **39** (1992), *no.* 2, 1063–1084. (Mikhail L. Sodin) **93e:30062** 30D20

— A uniqueness theorem for subharmonic functions of finite order. (Russian) *Mat. Sb.* **182** (1991), *no.* 6, 811–827; *translation in Math. USSR-Sb.* **73** (1992), *no.* 1, 195–210. (Vladimir Logvinenko) **93a:31003** 31A05 (30B60, 30D20, 31B05)

— Estimates for the volume of null sets of holomorphic functions. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* **1992,** *no.* 3, 58–63. (Harold P. Boas) **93k:32003** 32A22 (32A40)

Khabibullin, I. T. Backlund transformation and integrable boundary-initial value problems. *Nonlinear world, Vol.* 1 (*Kiev*, 1989), 130–138, *World Sci. Publishing, River Edge, NJ*, 1990. (*see* **93b:00012**) 35A30 (35Q58, 58F37)

— Boundary value problems on a half-plane for the Ishimori equation that are consistent with the method of the inverse scattering problem. (Russian. English and Russian summaries) *Teoret. Mat. Fiz.* **91** (1992), *no.* 3, 363–376; *translation in Theoret. and Math. Phys.* **91** (1992), *no.* 3, 581–590. (Vadim G. Bakurov) **93m:35170** 35Q55 (34A55, 34L25, 58F37)

Khabirov, S. V. Group classification of the Monge-Ampère equation. (Russian) *Current group analysis* (*Russian*) (*Baku*, 1988), 227–231, "*Élm*", *Baku*, 1989. (*see* **93d:58002**) 35J60

— Lie pseudogroups of transformations in the plane and their differential invariants. (Russian. Russian summary) *Model. Mekh.* **4** (1990), *no.* 6, 151–159. (Summary) **93h:53017** 53A55 (58H05)

pham Khac Ban *see* **Pham Khac Ban**

Khachai, O. A. On the equivalence and uniqueness of results on the interpretation of alternating two- and three-dimensional electromagnetic fields. (Russian. Russian summary) *Izv. Akad. Nauk SSSR Ser. Fiz. Zemli* **1991,** *no.* 6, 65–72. (Summary) **93j:86001** 86A20 (86A22)

Khachatrian, Levon H. *see* **Khachatryan, L. G.**

Khachatryan, G. G. (*with* Agalovyan, L. A.) An asymptotic method for solving boundary value problems in the theory of elasticity for nonclassical domains. (Russian) *Issled. Teor. Plastin i Obolochek No.* 23 (1991), 17–21. 73C02 (73V99)

Khachatryan, L. G. Methods for constructing de Bruijn sequences. (Russian) *Diskret. Mat.* **3** (1991), *no.* 4, 62–78; *translation in Discrete Math. Appl.* **2** (1992), *no.* 6, 607–622. (Ja. N. Nuzhin) **93g:05016** 05A99

— The lower bound of the quadratic spans of de Bruijn sequences. (English summary) *Des. Codes Cryptogr.* **3** (1993), *no.* 1, 29–32. (Bernard J. M. Smeets) **93j:94016** 94A55 (11B83)

Khachiyan, L. G. (*with* Kalantari, Bahman) Diagonal matrix scaling and linear programming. (English summary) *SIAM J. Optim.* **2** (1992), *no.* 4, 668–672. (Vladimir I. Venets)

93h:90058 90C05

Khadivi, Mohammad R. Pairs of operators with trivial range intersection. *J. Math. Anal. Appl.* **157** (1991), *no.* 1, 179–188. (Summary) **93e:47023** 47A63 (47A05, 47B99)

— On solution of $AX + aXB = A$, range inclusion and parallel sum. *J. Math. Anal. Appl.* **169** (1992), *no.* 2, 499–505. (Takayuki Furuta) **93i:47021** 47A62 (47A63)

Khadra, Khodor (*with* Angot, Philippe; Caltagirone, Jean-Paul) Une méthode adaptative de raffinement local: la correction du flux à l'interface. (English and French summaries) [An adaptative method for local mesh refinement: the flux interface correction] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 6, 739–745. 65N55

Khadzhiev, Dzh. Properties of the operations of extension and restriction of ideals of algebras of invariants of reductive groups in positive characteristic. (Russian) *Funktsional. Anal. i Prilozhen.* **25** (1991), *no.* 4, 53–61, 96; *translation in Functional Anal. Appl.* **25** (1991), *no.* 4, 273–280 (1992). (V. L. Popov) **93g:16051** 16W20 (13A50, 14D25, 20G99)

Khadzhiivanov, L. K. (*with* Stoyanov, D. Ts.) On a class of infinite-dimensional representations of $U_q(\mathrm{sl}(2))$. *J. Phys. A* **24** (1991), *no.* 16, L907–L912. (From the text) **93c:17026** 17B37

— (*with* Paunov, R. R.; Todorov, Ivan T.) U_q covariant oscillators and vertex operators. *J. Math. Phys.* **33** (1992), *no.* 4, 1379–1394. (Nathalie Debergh) **93a:81082** 81R50 (17B37)

— (*with* Furlan, Paolo; Todorov, Ivan T.) Quantum deformation of the ladder representations of U(1, 1) for $|q| = 1$. (English summary) *J. Math. Phys.* **33** (1992), *no.* 12, 4255–4258. (Branislav Jurčo) **93j:17025** 17B37 (81R50)

— (*with* Stanev, Ya. S.; Todorov, Ivan T.) Braid invariant rational conformal models with a quantum group symmetry. *Phys. Lett. B* **276** (1992), *no.* 1-2, 87–94. (From the text) **93c:81226** 81T40 (20F36, 81R50)

Khadzhiivanov, Nikolai G. On the maximum number of edges in a graph. (Russian. English and Russian summaries) *Annuaire Univ. Sofia Fac. Math. Inform.* **82** (1988), 25–35 (1991). (Felix Lazebnik) **93k:05087** 05C35 (05C38)

— On the maximum number of triangles with a common edge. (Russian. English and Russian summaries) *Annuaire Univ. Sofia Fac. Math. Inform.* **82** (1988), 37–52 (1991). (Felix Lazebnik) **93j:05088** 05C35 (05C38)

— (*with* Pashov, Ivan Zh.) Ramsey multiplicity $M(3, 6)$ is 2. (English and Russian summaries) *Annuaire Univ. Sofia Fac. Math. Inform.* **83** (1989), 17–28 (1992). (Summary) **93d:05111** 05C55

Khafif *see* **Saliba, George, 93e:01003**

Khafizov, M. Kh. Absolute equicontinuity of a family of set functions. (Russian) *Functional analysis, No.* 30 (*Russian*), 101–105, *Ul'yanovsk. Gos. Ped. Inst., Ul'yanovsk*, 1989. (*see* **93k:00024**) 28A10

le mayu Khaĭ *see* **Le Mayu Khaĭ**

Khailov, E. N. (*with* Sturua, B. G.) On the reduction of a linear time-optimality problem with control that is restricted with respect to value and derivative to the Cauchy problem. (Russian) *Vestnik Moskov. Univ. Ser. XV Vychisl. Mat. Kibernet.* **1992,** *no.* 1, 59–64; *translation in Moscow Univ. Comput. Math. Cybernet.* **47** (1992), *no.* 1, 54–58. (From the introduction) **93k:49030** 49M30 (49K15, 49M05)

Khaints, I. *see* **Heintz, Joos**

Khairullin, R. S. Potential theory for a model equation of the second kind. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* **1992,** *no.* 3, 64–73. (From the introduction) **93k:35113** 35J70

Khaĭslop, G. L. *see* **Hyslop, Gregory L.**

Khaĭtin, Arièl A formulation of a problem on the stability of motion based on the virtual power equation. (Russian. English summary) *Tartu Ül. Toimetised No.* 939 (1992), 103–112. (A. Ya. Savchenko) **93k:70033** 70K20

Khakimdzhanov, Yu. B. Variété des lois d'algèbres de Lie nilpotentes. (English summary) [The variety of laws of nilpotent Lie algebras] *Geom. Dedicata* **40** (1991), *no.* 3, 269–295. (Roger Carles) **93b:17035** 17B30

— (*with* Ancochéa-Bermúdez, José María; Goze, Michel) Sur les composantes de la variété des algèbres de Lie nilpotentes. (English summary) [On the components of the variety of nilpotent Lie algebras] *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 9, 657–660. (Roger Carles) **93g:17015** 17B30

Khakimov, F. Kh. (*with* Abdulloev, Kh. O.; Lebedev, D. R.) The hierarchy of integrable nonlocal equations connected with the Riemann problem on a one-dimensional complex torus. (Russian. Tajiki summary) *Dokl. Akad. Nauk Tadzhik. SSR* **34** (1991), *no.* 1, 19–22. (B. A. Kupershmidt) **93c:35149** 35Q58 (35R10, 58F07)

Khakimov, M. (*with* Rozenfel'd, G. O.) A conveyer method for solving two-dimensional problems of thermoelasticity. (Russian) *Theory of functions and problems in numerical mathematics* (*Russian*), 46–53, 72, *Kazakh. Gos. Univ., Alma Ata*, 1990. (*see* **93a:00020**) 73B30 (73V15)

Khakimova, Z. N. On a discrete group analysis of a class of second-order nonlinear equations. (Russian) *Current group analysis* (*Russian*) (*Baku*, 1988), 231–236, "*Élm*", *Baku*, 1989. (*see* **93d:58002**) 34A26 (34A34)

Khakimullin, E. R. (*with* Ènat-skaya, N. Yu.) The rate of convergence of the distribution of waiting time to the limit distribution in an equiprobable scheme for the allocation of particles in groups. (Russian) *Probabilistic processes and their applications* (*Russian*), 123–130, *Moskov. Inst. Élektron. Mashinostroeniya, Moscow*, 1989. (*see* **93b:60003**) 60C05

Khakimzyanov, G. S. (*with* Shokin, Yu. I.) Numerical calculation of stationary subsonic gas dynamics problems. *Proceedings of the Eighth GAMM-Conference on Numerical Methods in Fluid Mechanics* (*Delft*, 1989), 513–521, *Notes Numer. Fluid Mech.*, 29, *Vieweg, Braunschweig*, 1990. (*see* **93b:76002**) 76M20 (76G25, 76N15)

Khaladi, Mohamed (*with* Penot, Jean-Paul) Estimates of the exact penalty coefficient threshhold. (English summary) *Utilitas Math.* **42** (1992), 147–161. (Doug Ward) **93m:49016** 49M30 (49J52, 90C30)

Khalaf, B. M. S. (*with* Hutchinson, D.) Parallel algorithms for initial value problems: parallel shooting. *Parallel Comput.* **18** (1992), *no.* 6, 661–673. (Summary) **93b:65218** 65Y05

Khalatnikov, I. M. Qualitative cosmology. (English summary) *Gravitation and modern cosmology* (*Erice*, 1990), 65–85, *Ettore Majorana Internat. Sci. Ser. Phys. Sci.*, 56, *Plenum, New York*, 1991. (*see* **93j:83004**) 83F05

— (*with* Carter, Brandon) Momentum, vorticity, and helicity in covariant superfluid dynamics. (English summary) *Ann. Physics* **219** (1992), *no.* 2, 243–265. (S. Kichenassamy) **93m:83046** 83C55 (76Y05, 82D50)

— (*with* Mezhlumyan, A.) The classical and quantum cosmology with a complex scalar field. (English summary) *Phys. Lett. A* **169** (1992), *no.* 4, 308–312. (Summary) **93g:83051** 83C45 (83F05)

— (*with* Carter, Brandon) Equivalence of convective and potential variational derivations of covariant superfluid dynamics. *Phys. Rev. D* (3) **45** (1992), *no.* 12, 4536–4544. (Summary) **93g:83061** 83C55

Khaled, Abdelhamid Équations définissant des variétés abéliennes. (English and French summaries) [Equations defining abelian varieties] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 5, 571–576. (H. Lange) **93k:14056** 14K05

Khaleeva, I. V. (*with* Zakharov, E. V.) On the hypersingular first kind integral equations for problems of electromagnetic scattering from screen surfaces. (English summary) *Ill-posed problems in natural sciences* (*Moscow*, 1991), 584–594, *VSP, Utrecht*, 1992. (*see* **93m:00041**) 45K05 (45L10)

— (*with* Zakharov, E. V.) Hypersingular integral equations of the first kind of problems of the diffraction of electromagnetic waves by nonclosed surfaces. (Russian. Russian summary) *Zh. Vychisl. Mat. i Mat. Fiz.* **33** (1993), *no.* 2, 313–318; *translation in Comput. Math. Math. Phys.* **33** (1993), *no.* 2, 281–286. (Summary) **93m:78017** 78A45 (45E10)

Khalfan, H. Fayez (*with* Byrd, Richard H.; Schnabel, Robert B.) A theoretical and experimental study of the symmetric rank-one update. (English summary) *SIAM J. Optim.* **3** (1993), *no.* 1, 1–24. (Summary) **93h:65087** 65K05 (90C30)

Khalfin, L. A. (*with* Tsirelson, Boris S.) Quantum/classical correspondence in the light of Bell's inequalities. (English summary) *Found. Phys.* **22** (1992), *no.* 7, 879–948. (Jeffrey Bub) **93k:81017** 81P10 (81–02, 82C10)

Khalgui, Mohamed Salah (*with* Torasso, Pierre) Transformée de Fourier d'intégrales orbitales. (English summary) [Fourier transform of orbital integrals] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 1, 1–4. (Summary) **93e:22024** 22E45

al-Khalidi, H. R. *see* **Al-Khalidi, H. R.**

Khalid Nauman, S. *see* **Nauman, Syed Khalid**

Khalifa, Azza Kamal A constructive version of Sperner's lemma and Brouwer's fixed point theorem. *Z. Math. Logik Grundlag. Math.* **36** (1990), *no.* 3, 247–251. (From the introduction) **93b:03109** 03F65

Khalil, Hassan K. ★ Nonlinear systems. *Macmillan Publishing Company, New York*, 1992. xii+564 *pp. ISBN* 0-02-363541-X (A. Halanay) **93k:34001** 34–01 (34–02, 34Cxx, 34H05, 93–01, 93–02, 93C10)

— (*with* Chen, Fu Chuang) Adaptive control of nonlinear systems using neural networks. *Internat. J. Control* **55** (1992), *no.* 6, 1299–1317. (Ventseslav G. Rumchev) **93f:93074** 93C40 (68T05, 92D20, 93D15)

— (*with* Esfandiari, Farzad) Output feedback stabilization of fully linearizable systems. (English summary) *Internat. J. Control* **56** (1992), *no.* 5, 1007–1037. (Wolfgang Kliemann) **93h:93057** 93D15 (93B18, 93B52)

— (*with* Chen, Fu Chuang) H_∞ control of two-time-scale systems. *Systems Control Lett.* **19** (1992), *no.* 1, 35–42. 93B36 (93C70)

Khalil, R. (*with* Deeb, W.) Exposed and smooth points of some classes of operation in $L(l^p)$. *J. Funct. Anal.* **103** (1992), *no.* 2, 217–228. (Marco P. Baronti) **93f:46016** 46B20 (46E99, 47D20)

— (*with* Deeb, W.) The sum of proximinal subspaces. *Soochow J. Math.* **18** (1992), *no.* 2, 163–167. (G. Godini) **93m:46008** 46B20 (41A65)

Khalil, Zohel (*with* Rachev, Svetlozar T.; Dimitrov, B.) A probabilistic approach to optimal quality usage. (English summary) *Comput. Math. Appl.* **24** (1992), *no.* 8-9, 219–227. (Peter R. Nelson) **93m:60175** 60K10 (90B25)

— (*with* Falin, G. I.; Yang, Tao) Some analytical results for congestion in subscriber line modules. *Queueing Systems Theory Appl.* **10** (1992), *no.* 4, 381–402. (Summary) **93c:60146** 60K25 (90B06)

Khalin, V. G. The K_2 group of a multidimensional local field. (Russian) *Rings and linear groups* (*Russian*), 107–118, *Kuban. Gos. Univ., Krasnodar*, 1988. (*see* **93i:00023**) 19C99

Khaliq, A. Q. M. (*with* Twizell, E. H.; Voss, D. A.) On parallel algorithms for semidiscretized parabolic partial differential equations based on subdiagonal Padé approximations. (English summary) *Numer. Methods Partial Differential Equations* **9** (1993), *no.* 2, 107–116. (Summary) **93m:65122** 65M06 (65Y05)

Khalique, A. (*with* Abouammoh, A. M.; Ahmed, Abdul-Hadi Nabih) Stochastic classes of life distributions. (English and Arabic summaries) *Qatar Univ. Sci. Bull.* **10** (1990), 11–24. (Summary) **93c:62157** 62N05

Khalis, Mohammed (*with* Anderson, David F.; Dobbs, David E.; Fontana, Marco) Catenarity of formal power series rings over a pullback. *J. Pure Appl. Algebra* **78** (1992), *no.* 2, 109–122. (J. W. Brewer) **93d:13022** 13C15 (13J05)

Khalmosh, Pol *see* **Halmos, Paul Richard**

Khamdan, I. Subgroups of the special linear group over a local ring of principal ideals. (Russian) *Rings and linear groups* (*Russian*), 119–126, *Kuban. Gos. Univ., Krasnodar*, 1988. (*see* **93i:00023**) 20G25

Khametov, V. M. Asymptotic solution of inverse Kolmogorov equation for diffusion processes with small diffusion. *Probability theory and mathematical statistics, Vol. I* (*Vilnius*, 1989), 590–601, "*Mokslas*", *Vilnius*, 1990. (George Yin) **93a:60124** 60J60

— (*with* Piunovskiĭ, A. B.) New exactly solvable examples for controllable Markov chains with discrete time. (Russian. English and Ukrainian summaries) *Kibernetika* (*Kiev*) **1991,** *no.* 3, 82–90, 135; *translation in Cybernetics* **27** (1991), *no.* 3, 420–433 (1992). (From the introduction) **93j:49032** 49L20 (49N10, 93B55, 93E20)

Khamidova, T. A. Description of the space of anisotropic Riesz potentials in terms of Strichartz-type constructions. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* **1991,** *no.* 6, 76–79; *translation in Soviet Math.* (*Iz. VUZ*) **35** (1991), *no.* 6, 79–81. (Takahide Kurokawa) **93c:46051** 46E35 (31B15)

Khamisov, O. V. (*with* Bulatov, V. P.) The branch and bound method with cuts in E^{n+1} for solving concave programming problem. *System modelling and optimization* (*Zurich*, 1991), 273–281, *Lecture Notes in Control and Inform. Sci.*, 180, *Springer, Berlin*, 1992. (*see* **93e:90003**) 90C30

Khamisy, Asad (*with* Sidi, Moshe) Discrete-time priority queues with two-state Markov modulated arrivals. *Comm. Statist. Stochastic Models* **8** (1992), *no.* 2, 337–357. (Summary) **93c:60147** 60K25 (90B22)

— (*with* Altman, Eitan; Yechiali, Uri) On elevator polling with globally gated regime. (English summary) *Queueing Systems Theory Appl.* **11** (1992), *no.* 1-2, 85–90. (Summary)

93f:60132 60K25 (68M20)

Khammash, Mustafa H. (*with* Pearson, J. Boyd, Jr.) Robustness in the presence of structured uncertainty. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, I* (*Kobe*, 1991), 337–342, *Mita, Tokyo*, 1992. (*see* **93g:93005**) 93B36

— (*with* Dahleh, Mohammed A.) Time-varying control and the robust performance of systems with structured norm-bounded perturbations. *Automatica J. IFAC* **28** (1992), *no.* 4, 819–821. 93B35 (93C73)

— (*with* Dahleh, Munther A.) Controller design for plants with structured uncertainty. (English summary) *Automatica J. IFAC* **29** (1993), *no.* 1, 37–56. (Arno Linnemann) **93j:93040** 93B35 (90C05, 93B28, 93B50, 93C05)

— (*with* Pearson, J. Boyd, Jr.) Analysis and design for robust performance with structured uncertainty. (English summary) *Systems Control Lett.* **20** (1993), *no.* 3, 179–187. (Summary) **93k:93085** 93D09 (93B36, 93C55)

Khammetov, A. (*with* Utepkaliev, S. U.; Kammatov, K.) Stability of motion of a certain form of essentially nonlinear systems of differential equations. (Russian) *Mathematical analysis* (*Russian*), 152–156, *Ross. Gos. Ped. Univ., Leningrad*, 1991. (*see* **93d:00034**) 34D10

Khamraev, Yu. Yu. (*with* Razzakov, Sh. I.) On a variational-difference scheme for the eigenvalue problem. (Russian. Russian summary) *Voprosy Vychisl. i Prikl. Mat.* (*Tashkent*) *No.* 88 (1990), 135–141, 163. 34A50 (34B24)

Khamsi, Mohamed Amine Fixed point theory in nonclassical Banach spaces. (English summary) *Fixed point theory and applications* (*Halifax, NS*, 1991), 130–136, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93f:46077** 46H10 (46B20)

— (*with* Lin, Michael; Sine, Robert) On the fixed points of commuting nonexpansive maps in hyperconvex spaces. (English summary) *J. Math. Anal. Appl.* **168** (1992), *no.* 2, 372–380. (Simeon Reich) **93j:47080** 47H09 (47H10, 47H20, 54H25)

— Nonlinear semigroups in modular function spaces. *Math. Japon.* **37** (1992), *no.* 2, 291–299. (E. Lami Dozo) **93g:47085** 47H20 (34G20, 46A80, 46E30, 47B38)

— Uniform smoothness implies super-normal structure property. *Nonlinear Anal.* **19** (1992), *no.* 11, 1063–1069. (S. Swaminathan) **93k:46012** 46B20 (46B08, 46M07)

— (*with* Nymann, J. E.) A strengthening of Leth and Malitz's uniqueness condition for sequences. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 1, 233–238. (Arun Kumar) **93f:40003** 40A05

khodadad Khan, A. F. M. *see* **Khodadad Khan, A. F. M.**

Khan, Abdul Rahim (*with* Khan, S. H.) Principle of equicontinuity for topological groups. *Punjab Univ. J. Math.* (*Lahore*) **24** (1991), 67–73. (Luchezar Stojanov) **93d:22002** 22A05

Khan, Chi-Gen *see* **Han, Chi-Geun**

Khan, F. M. (*with* Khan, Mushir Ahmad) The sequence space Ces(p, s) and related matrix transformations. (Serbo-Croatian summary) *Zb. Rad. Prirod.-Mat. Fak. Ser. Mat.* **21** (1991), *no.* 1, 95–104. (K. Chandrasekhara Rao) **93c:46013** 46A45 (40H05)

Khan, Iqbal Ahmad Comments on the paper: "A generalization of Khan's result involving Kampé de Fériet's double hypergeometric function of superior order" [Math. Balkanica **5** (1975), 17–20; MR **58** #17243] by S. L. Bhattacharya. (English summary) *Math. Balkanica* (*N.S.*) **6** (1992), *no.* 3, 214. (Editors) **93i:33005** 33C45

— Some results for extended Jacobi polynomials. (English summary) *Math. Ed.* (*Siwan*) **26** (1992), *no.* 3, 163–167. 33C45

Khan, Liaqat Ali Seminorm separability in function spaces. (English summary) *Math. Japon.* **37** (1992), *no.* 4, 687–689. (Summary) **93f:46053** 46E40

Khan, M. A. *see* **Khan, Mushir Ahmad**

Khan, M. Ali (*with* Rustichini, Aldo) Cournot-Nash equilibrium distributions of games with uncertainty and imperfect information. (English summary) *J. Math. Econom.* **22** (1993), *no.* 1, 35–59. (Christian Gilles) **93j:90136** 90D15 (93E05)

Khan, M. F. (*with* Ahsan, J.; Shabir, M.; Takahashi, Michihiro) Characterizations of monoids by p-injective and normal S-systems. *Kobe J. Math.* **8** (1991), *no.* 2, 173–190. (H. J. Weinert) **93d:20118** 20M30 (20M14, 20M35)

Khan, M. S. *see* **Khan, Mohd. Saeed**

Khan, M. Z. *see* **Khan, Mohammad Zubair**

Khan, Mohammad Kazim On the Bernstein-type operator of Bleimann, Butzer and Hahn. *J. Natur. Sci. Math.* **29** (1989), *no.* 2, 133–148. (Martin E. Price) **93b:41010** 41A10 (41A25)

— (*with* Bojanić, Ranko) Rate of convergence of some operators of functions with derivatives of bounded variation. *Atti Sem. Mat. Fis. Univ. Modena* **39** (1991), *no.* 2, 495–512. (Masaru Kamada) **93d:41021** 41A36 (44A45, 47B38)

Khan, Mohammad Zubair (*with* Saud, Ibne) Axiomatic characterization of a generalized information improvement. (English summary) *J. Statist. Res.* **23** (1989), *no.* 1-2, 57–67. 94A15 (62B10)

— (*with* Bano, R.) Some decomposition theorems in abelian groups like modules. *Soochow J. Math.* **18** (1992), *no.* 1, 1–7. (John D. O'Neill) **93c:16002** 16D10 (20K99)

Khan, Moharram A. (*with* Abujabal, Hamza A. S.) On commutativity of one-sided s-unital rings. (English summary) *Internat. J. Math. Math. Sci.* **15** (1992), *no.* 4, 813–818. (Summary) **93h:16063** 16U80

— (*with* Abujabal, Hamza A. S.; Khan, Mohd. Saeed) On commutativity of semi-prime rings. (English summary) *Math. Japon.* **37** (1992), *no.* 6, 1041–1046. (Hal G. Moore) **93k:16062** 16U80 (16N60, 16R40)

— (*with* Abujabal, Hamza A. S.; Samman, M. S.) On commutativity of one-sided s-unital rings. (English summary) *Tamkang J. Math.* **23** (1992), *no.* 3, 253–268. (Summary) **93j:16021** 16U80

Khan, Mohd. Saeed (*with* Abujabal, Hamza A. S.) Commutativity results for rings via iteration. *J. Nigerian Math. Soc.* **9** (1990), 1–5. (Summary) **93b:16062** 16U80

— (*with* Abujabal, Hamza A. S.) Commutativity theorems for s-unital rings. (Chinese summary) *Acta Sci. Natur. Univ. Jilin.* **1991**, *no.* 3, 37–41. 16U80

— (*with* Abujabal, Hamza A. S.; Khan, Moharram A.) On commutativity of semi-prime rings. (English summary) *Math. Japon.* **37** (1992), *no.* 6, 1041–1046. (Hal G. Moore) **93k:16062** 16U80 (16N60, 16R40)

— (*with* Abujabal, Hamza A. S.) Results on commutativity of rings. *Soochow J. Math.* **18** (1992), *no.* 1, 29–33. (Silvia Pellegrini) **93c:16033** 16U80

Khan, Mumtaz Ahmad On a calculus for the $T_{k,g,x}$-operator. *Math. Balkanica* (*N.S.*) **6** (1992), *no.* 1, 83–90. (Summary) **93m:33015** 33D45

Khan, Mushir Ahmad (*with* Khan, F. M.) The sequence space Ces(p, s) and related matrix transformations. (Serbo-Croatian summary) *Zb. Rad. Prirod.-Mat. Fak. Ser. Mat.* **21** (1991), *no.* 1, 95–104. (K. Chandrasekhara Rao) **93c:46013** 46A45 (40H05)

Khan, Rasul A. On the monotonicity of a certain expectation. *Ann. Statist.* **19** (1991), *no.* 3, 1677–1680. (H.-J. Engelbert) **93b:62114** 62L10 (60G40, 62A99)

— A remark on Dubins-Savage inequality. *Statist. Probab. Lett.* **13** (1992), *no.* 3, 189–192. (R. J. Tomkins) **93d:60027** 60E15 (60G42)

Khan, S. *see* **Khan, Subhan**

Khan, S. H. (*with* Khan, Abdul Rahim) Principle of equicontinuity for topological groups. *Punjab Univ. J. Math.* (*Lahore*) **24** (1991), 67–73. (Luchezar Stojanov) **93d:22002** 22A05

Khan, Subhan (*with* Sharma, P. L.) Fixed-point theorem in bimetric space. (Hindi. English summary) *Vijnana Parishad Anusandhan Patrika* **34** (1991), *no.* 3, 133–137. 54H25

Khandekar, Dilip (*with* Gopalsamy, S.; Mudur, S. P.) A new method of evaluating compact geometric bounds for use in subdivision algorithms. *Comput. Aided Geom. Design* **8** (1991), *no.* 5, 337–356. (S. Dubuc) **93b:65090** 65K10 (26D05, 65D17, 68U05)

Khandekar, Dinkar C. White-noise analysis as a tool in computing Feynman integrals. *White noise analysis* (*Bielefeld*, 1989), 220–230, *World Sci. Publishing, River Edge, NJ*, 1990. (Summary) **93a:81103** 81S40 (60H99)

— (*with* Streit, Ludwig) Constructing the Feynman integrand. *Ann. Physik* (8) **1** (1992), *no.* 1, 49–55. (Summary) **93a:60081** 60H05 (60G20, 81S40)

Khanduja, Sudesh K. (*with* Garg, Usha) On residually generic prolongations of a valuation to a simple transcendental extension. *J. Indian Math. Soc.* (*N.S.*) **57** (1991), *no.* 1-4, 101–108. (M. Hajja) **93g:12010** 12J20

— Value groups and simple transcendental extensions. *Mathematika* **38** (1991), *no.* 2, 381–385 (1992). (Francis J. Rayner) **93c:12016** 12J25 (12F20)

— Prolongations of valuations to simple transcendental extensions with given residue field and value group. *Mathematika* **38** (1991), *no.* 2, 386–390 (1992). (Francis J. Rayner) **93c:12017** 12J25 (12F20)

fo tkhi nguet Khang *see* **Fo Tkhi Nguet Khang**

phan quốc Khánh *see* **Phan Quốc Khánh**

Khanh, P. Q. *see* **Phan Quốc Khánh**

le Khanh Chau *see* **Le Khanh Chau**

Khanin, A. G. (*with* Khanin, S. G.) Estimating the quality of a method of modeling random variables by means of interpolational cubic splines. (Russian) *Infinite-dimensional stochastic analysis* (*Russian*), 109–114, *Akad. Nauk Ukrain. SSR, Inst. Mat., Kiev*, 1990. (M. Bertrand-Retali) **93e:62110** 62G05 (62E20)

Khanin, K. M. Universal estimates for critical circle mappings. *Chaos* **1** (1991), *no.* 2, 181–186. (Lluís Alsedà) **93a:58106** 58F11 (58F13)

— (*with* Sinaĭ, Ya. G.) Mixing of some classes of special flows over rotations of the circle. (Russian) *Funktsional. Anal. i Prilozhen.* **26** (1992), *no.* 3, 1–21; *translation in Functional Anal. Appl.* **26** (1992), *no.* 3, 155–169. (M. L. Blank) **93j:58079** 58F11 (28D05, 28D15)

Khanin, L. G. (*with* Rachev, Svetlozar T.; Yakovlev, A. Yu.) On the optimal control of cancer radiotherapy for nonhomogeneous cell populations. (English summary) *Adv. in Appl. Probab.* **25** (1993), *no.* 1, 1–23. (Summary) **93j:60015** 60E05 (62P10, 92C50)

Khanin, S. G. (*with* Khanin, A. G.) Estimating the quality of a method of modeling random variables by means of interpolational cubic splines. (Russian) *Infinite-dimensional stochastic analysis* (*Russian*), 109–114, *Akad. Nauk Ukrain. SSR, Inst. Mat., Kiev*, 1990. (M. Bertrand-Retali) **93e:62110** 62G05 (62E20)

Khanna, Saroj (*with* Gupta, Anju; Puri, M. C.) Paradoxical situations in transportation problems. (English summary) *Cahiers Centre Études Rech. Opér.* **34** (1992), *no.* 1, 37–49. (Štefan Peško) **93m:90053** 90C08 (90B06)

Khansen, P. *see* **Hansen, Pierre**

Khaoulani, B. Sur la représentation intégrale en termes de mesures de Jensen. [On integral representation in terms of Jensen measures] *Séminaire d'Initiation à l'Analyse, Exp. No.* 27, 8 *pp., Publ. Math. Univ. Pierre et Marie Curie*, 95, *Univ. Paris VI, Paris*, 199?. (Summary) **93f:46018** 46B20 (46A55)

— A vectorial Slepian type inequality. Applications. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 1, 95–102. (Werner Linde) **93f:60045** 60G15 (46B07, 47N30)

Khapaev, Mikhail Mikhailovich ★ Усреднение и устойчивость. (Russian) [Averaging and stability] Новое в Жизни, Науке, Технике: Серия "Математика, Кибернетика" [Current Life, Science and Technology: Series "Mathematics and Cybernetics"], 91-9. "*Znanie*", *Moscow*, 1991. 48 *pp. ISBN* 5-07-001739-K (Henryk Żołądek) **93a:34044** 34C15 (34C29, 34D20, 58F10, 58F30, 70F07)

— (*with* Postnikova, N. V.; Razumovskiĭ, S. N.) Problems of controlling the accuracy of processes of integrating differential equations while obtaining analytical results. (Russian. Russian summary) *Computer systems and problems in decision making* (*Russian*), 184–194, 213, *Moskov. Gos. Univ., Moscow*, 1991. (Summary) **93j:65107** 65L05 (34A45, 65L70)

— Singular differential equations in problems on the investigation of functions for a conditional extremum. (Russian) *Dokl. Akad. Nauk* **323** (1992), *no.* 2, 250–252; *translation in Russian Acad. Sci. Dokl. Math.* **45** (1992), *no.* 3, 706–709 (1993). 90C30 (34A99, 34C05)

— Singular differential equations in control problems with constraints. (Russian) *Dokl. Akad. Nauk* **324** (1992), *no.* 6, 1166–1168; *translation in Russian Acad. Sci. Dokl. Math.* **45** (1992), *no.* 3, 706–709 (1993). 49K15 (34H05)

Khapalov, A. Yu. (*with* Kurzhanskiĭ, A. B.) The state estimation problem for parabolic systems. *Estimation and control of distributed parameter systems* (*Vorau*, 1990), 219–246, *Internat. Ser. Numer. Math.*, 100, *Birkhäuser, Basel*, 1991. (Fumio Kojima) **93b:93057** 93C20 (35K40, 93B07)

— Optimal measurement trajectories for distributed parameter systems. *Systems Control Lett.* **18** (1992), *no.* 6, 467–477. (Summary) **93b:93055** 93C20 (49K20, 93B36)

— Observability of hyperbolic systems with interior moving sensors. *Analysis and optimization of systems: state and frequency domain approaches for infinite-dimensional systems* (*Sophia-Antipolis*, 1992), 489–499, *Lecture Notes in Control and Inform. Sci.*, 185, *Springer, Berlin*, 1993. (*see* **93i:93005**) 93B07 (93C20)

Khapalyuk, A. P. Diffraction of electromagnetic waves by the edge of an impedance half-plane. (Russian. English and Russian summaries) *Vestst Akad. Navuk Belarust Ser. Fiz. Mat. Navuk* **1992**, *no.* 5-6, 61–68, 126. 78A45

Khapko, R. S. The first boundary value problem for the telegraph equation on nonclosed contours. (Ukrainian. Russian summary) *Visnik L'viv. Derzh. Univ. Ser. Mekh.-Mat. No.* 29 (1988), 33–37, 64. 65M99

— Numerical solutions of the first boundary value problem for the telegraph equation on nonclosed contours. (Russian) *Vychisl. Prikl. Mat. (Kiev) No.* 72 (1990), 57–62 (1991). (Summary) **93b:65195** 65N99

— Three approaches to the numerical solution of nonstationary problems on nonclosed surfaces by means of the method of integral equations. (Russian. English and Russian summaries) *Dokl. Akad. Nauk Ukrainy* **1991**, *no.* 12, 19–22, 169. (Summary) **93d:65091** 65M99 (65R20)

Kharaghani, H. A new class of orthogonal designs. (English summary) *Ars Combin.* **35** (1993), 129–134. (Summary) **93m:05038** 05B15

— (*with* Craigen, R.) On the nonexistence of Hermitian circulant complex Hadamard matrices. (English summary) *Australas. J. Combin.* **7** (1993), 225–227. (Summary) **93k:05033** 05B20

Kharazishvili, A. B. ★ Теорема Витали и ее обобщения. (Russian) [Vitali's theorem and its generalizations] With Georgian and English summaries. *Tbilis. Gos. Univ., Tbilisi*, 1991. 108 *pp.* (Janusz Pawlikowski) **93d:28002** 28Axx (01A60, 28–02, 28–03)

— Some problems in measure theory. *Colloq. Math.* **62** (1991), *no.* 2, 197–220. (Gabriel Debs) **93e:28002** 28–03 (01A60)

— (*with* Cichoń, J.; Węglorz, B.) On sets of Vitali's type. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 4, 1243–1250. (Endre Pap) **93j:28015** 28B20 (03C62, 03E35, 54C65)

Kharchenko, V. K. ★ Automorphisms and derivations of associative rings. Translated from the Russian by L. Yuzina. Mathematics and its Applications (Soviet Series), 69. *Kluwer Academic Publishers Group, Dordrecht*, 1991. xiv+385 *pp. ISBN* 0-7923-1382-8 (Donald S. Passman) **93i:16048** 16W20 (16–02, 16N60, 16W25)

— Skew derivations of semiprime rings. (Russian) *Sibirsk. Mat. Zh.* **32** (1991), *no.* 6, 178–186, 206; *translation in Siberian Math. J.* **32** (1991), *no.* 6, 1045–1051 (1992). (Andrzej Nowicki) **93b:16032** 16N60 (16R50, 16W25)

— (*with* Popov, A. Z.) Skew derivations of prime rings. (English summary) *Comm. Algebra* **20** (1992), *no.* 11, 3321–3345. (Andrzej Nowicki) **93k:16071** 16W25 (16N60)

Kharchev, S. M. (*with* Mironov, A. D.) Integrable structures of unitary matrix models. (English summary) *Internat. J. Modern Phys. A* **7** (1992), *no.* 20, 4803–4824. (David Sénéchal) **93h:81125** 81T40 (58F07)

— (*with* Andreev, V. A.; Shmakova, M. V.) The supersymmetric structure of the Kadomtsev-Petviashvili equation: a connection between supersymmetry and Bäcklund transformations. (Russian. English and Russian summaries) *Teoret. Mat. Fiz.* **91** (1992), *no.* 3, 426–432; *translation in Theoret. and Math. Phys.* **91** (1992), *no.* 3, 623–628. (Vladimir Mikhalev) **93h:58064** 58F07 (35Q58, 58F37, 81T60)

Khare, Avinash (*with* Law, J.; Srivastava, M. K.; Bhaduri, R. K.) Mott scattering of anyons: some exact results. *J. Phys. A* **25** (1992), *no.* 4, L183–L187. (Summary) **93b:81299** 81U05 (81S99)

— Parasupersymmetric quantum mechanics of arbitrary order. *J. Phys. A* **25** (1992), *no.* 12, L749–L754. (Summary) **93d:81178** 81T60

— Countable infinite number of sum rules for the self-dual Maxwell as well as Chern-Simons vortices. *Phys. Lett. B* **277** (1992), *no.* 1-2, 123–129. (From the text) **93k:81143** 81T13

— (*with* Comtet, Alain) Self-dual Maxwell-Chern-Simons vortices in the background of gravity. *Phys. Lett. B* **278** (1992), *no.* 3, 236–239. (Summary) **93a:81126** 81T13 (81T20, 81V17)

— Semilocal self-dual Chern-Simons vortices. (English summary) *Phys. Rev. D* (3) **46** (1992), *no.* 6, R2287–R2289. (Susan Mokhtari) **93h:81089** 81T13

Khare, Piyush (*with* Rai, Bindhyachal) Mathematical analysis of a two species model with a differential nature of interaction. *Indian J. Pure Appl. Math.* **22** (1991), *no.* 8, 669–678. (K. E. Swick) **93b:92016** 92D25

Khare, S. P. *see* **Khare, Satya Prakash**

Khare, S. S. (*with* Das, A. K.) Cobcat and singular bordism. (English summary) *Pacific J. Math.* **155** (1992), *no.* 2, 215–227. (R. E. Stong) **93i:57042** 57R75 (55M30)

Khare, Satya Prakash (*with* Singh, Man) Summability of Laguerre series. *Bull. Calcutta Math. Soc.* **83** (1991), *no.* 2, 160–164. (Joaquin Bustoz) **93g:40009** 40G05 (33C45)

— (*with* Pathak, Pramod) Summability of Fourier-Jacobi series at the point $x = 1$. *Indian J. Pure Appl. Math.* **22** (1991), *no.* 12, 1027–1034. (Dharma P. Gupta) **93b:42041** 42C10 (33C45, 40G05)

— (*with* Singh, Man) Summability of Legendre series. *Proc. Nat. Acad. Sci. India Sect. A* **61** (1991), *no.* 1, 77–83. (Dharma P. Gupta) **93b:42042** 42C10 (33C45, 40G05)

Khargonekar, Pramod P. (*with* Sivashankar, N.) $\mathscr{H}_2$ optimal control for sampled-data systems. *Systems Control Lett.* **17** (1991), *no.* 6, 425–436. (Summary) **93f:93048** 93B36 (93C57)

— (*with* Sivashankar, N.) Induced norms for sampled-data systems. (English summary) *Automatica J. IFAC* **28** (1992), *no.* 6, 1267–1272. 93C57

— (*with* Krause, James M.; Stein, Gunter) Robust adaptive control: stability and asymptotic performance. *IEEE Trans. Automat. Control* **37** (1992), *no.* 3, 316–331. (Edward Jezierski) **93b:93043** 93B50 (93C40, 93D21)

— (*with* Gu, Guoxiang) Linear and nonlinear algorithms for identification in $\mathscr{H}_\infty$ with error bounds. *IEEE Trans. Automat. Control* **37** (1992), *no.* 7, 953–963. (Summary) **93f:93046** 93B36 (93B40, 93C55)

— (*with* Krause, James M.) A comparison of classical stochastic estimation and deterministic robust estimation. *IEEE Trans. Automat. Control* **37** (1992), *no.* 7, 994–1000. (Summary) **93d:93080** 93E10 (93B30, 93B36, 93E12)

— (*with* Limebeer, David J. N.; Anderson, Brian D. O.; Green, Michael) A game-theoretic approach to $\mathscr{H}^\infty$ control for time-varying systems. *SIAM J. Control Optim.* **30** (1992), *no.* 2, 262–283. (Tamer Başar) **93c:93022** 93B36 (90D25, 93C60)

— (*with* Gu, Guoxiang; Lee, E. Bruce; Misra, Pradeep) Finite-dimensional approximations of unstable infinite-dimensional systems. *SIAM J. Control Optim.* **30** (1992), *no.* 3, 704–716. (Vladimir B. Larin) **93c:93026** 93B40

— (*with* Gu, Guoxiang; Li, Yanlin) Robust convergence of two-stage nonlinear algorithms for identification in $\mathscr{H}_\infty$. *Systems Control Lett.* **18** (1992), *no.* 4, 253–263. (R. Haber) **93b:93110** 93E12 (93B36, 93B40)

— (*with* Ravi, R.; Pascoal, A. M.) Normalized coprime factorizations for linear time-varying systems. *Systems Control Lett.* **18** (1992), *no.* 6, 455–465. (Summary) **93b:93036** 93B36

— (*with* Kaminer, Isaac; Rotea, Mario A.) Mixed $\mathscr{H}_2/\mathscr{H}_\infty$ control for discrete-time systems via convex optimization. (English summary) *Automatica J. IFAC* **29** (1993), *no.* 1, 57–70. (Dieter Franke) **93j:93043** 93B36 (90C25, 93B51, 93C55)

— (*with* Akçay, Hüseyin; Gu, Guoxiang) A class of algorithms for identification in $\mathscr{H}_\infty$: continuous-time case. (English summary) *IEEE Trans. Automat. Control* **38** (1993), *no.* 2, 289–294. (Summary) **93j:93035** 93B30 (93B36, 93B40)

— (*with* Ravi, R.) Exponential and input-output stability are equivalent for linear time-varying systems. (English summary) *Sādhanā* **18** (1993), *no.* 1, 31–37. (Summary) **93m:93066** 93D05 (34D99, 34H05)

Kharik, V. M. Generation of internal waves in a rotating, stratified fluid: some symmetry properties. (English summary) *J. Math. Phys.* **34** (1993), *no.* 1, 206–213. (Summary) **93j:76064** 76V05 (76C10, 76U05)

Kharin, Yu. S. (*with* Medvedev, A. G.) Asymptotic robustness of discriminant procedures for dependent and nonhomogeneous observations. *Probability theory and mathematical statistics, Vol. I (Vilnius*, 1989), 602–610, "*Mokslas*", *Vilnius*, 1990. (Summary) **93a:62092** 62H30

— Asymptotic analysis of the robustness of minimum contrast estimates. (Russian) *Vestnik Beloruss. Gos. Univ. Ser. I Fiz. Mat. Mekh.* **1991**, *no.* 3, 55–58, 78. (Marek Męczarski) **93e:62095** 62F35 (62F12)

— (*with* Vasenkova, E. I.) Stability of statistical decision rules under parametric distortions of probability distributions. (Russian. English and Russian summaries) *Vestsī Akad. Navuk Belarust Ser. Fiz. Mat. Navuk* **1992**, *no.* 3-4, 22–27, 124. (Summary) **93m:62139** 62H30 (62F35)

Kharisov, V. N. (*with* Bovbel', D. O.) Algorithms for filtering the parameters of signals on the basis of new approximation methods. *Soviet J. Comput. Systems Sci.* **30** (1992), *no.* 4, 98–107; *translated from Izv. Akad. Nauk SSSR Tekhn. Kibernet.* **1991**, *no.* 4, 70–80 (*Russian. Russian summary*). 93E11 (93B40)

Kharitonov, V. L. Families of stable quasipolynomials. (Russian) *Avtomat. i Telemekh.* **1991**, *no.* 7, 75–88; *translation in Automat. Remote Control* **52** (1991), *no.* 7, *part* 1, 946–957. (Andrzej W. Olbrot) **93f:93104** 93D09 (34K35)

— Global stability with respect to shifts in perturbed systems of difference equations. *Soviet J. Automat. Inform. Sci.* **24** (1991), *no.* 3, 1–6 (1992); *translated from Avtomatika* **1991**, *no.* 3, 3–8, 96 (*Russian. English summary*). (B. Ross Barmish) **93c:93043** 93D09 (34D99)

— Preservation of the property of global stability with respect to shifts under parameter variations. (Russian. Russian summary) *Avtomat. i Telemekh.* **1992**, *no.* 5, 26–30; *translation in Automat. Remote Control* **53** (1992), *no.* 5, *part* 1, 642–646. (B. T. Polyak) **93k:93086** 93D09

Kharitonov, Yu. I. (*with* Smirnov, Yu. F.; Tolstoĭ, V. N.) Projection operator method and q-analog of angular momentum theory. *Group theoretical methods in physics (Moscow*, 1990), 183–194, *Lecture Notes in Phys.*, 382, *Springer, Berlin*, 1991. (Anthony J. Bracken) **93d:81090** 81R50 (17B37)

— (*with* Smirnov, Yu. F.; Tolstoĭ, V. N.) The quantum algebra $u_q(3)$. *Soviet J. Nuclear Phys.* **54** (1991), *no.* 3, 437–445 (1992); *translated from Yadernaya Fiz.* **54** (1991), *no.* 3, 721–736 (*Russian*). (A. U. Klimyk) **93a:17019** 17B37 (16W30, 81R50)

Kharitonova, O. I. On an investigation of gyroscopic systems. (Russian) *Dynamical systems* (*Russian*), 84–90, *Yakutsk. Gos. Univ., Yakutsk*, 1989. (*see* **93b:34004**) 34C15 (70K99)

Kharkevich, Yu. I. Approximation of classes of (ψ, β)-differentiable functions by linear methods of summation of Fourier series. (Russian. Russian summary) *Studies in the theory of the approximation of functions* (*Russian*), 110–121, *Akad. Nauk Ukrain. SSR, Inst. Mat., Kiev*, 1991. (Summary) **93k:42004** 42A10 (42A24)

— Approximation of (ψ, β)-differentiable functions, defined on the entire axis, by operators that can be generated by rectangular Λ-methods of integral summation. (Russian) *Akad. Nauk Ukrain. SSR Inst. Mat. Preprint* **1991**, *no.* 36, 39 *pp.* (Summary) **93b:41028** 41A35

Kharlamov, B. P. On statistics of continuous Markov processes: semi-Markov approach. *Probability theory and mathematical statistics, Vol. I (Vilnius*, 1989), 504–511, "*Mokslas*", *Vilnius*, 1990. (O. K. Zakusilo) **93d:60148** 60K15

Kharlamov, P. V. Commentaries to a paper of L. A. Stepanova: "An unsuccessful attempt to defend the priority of the classics of Russian mechanics in constructing exact solutions in the mechanics of a rigid body" [Mekh. Tverd. Tela No. 22 (1990), 19–33] and of A. I. Khokhlov: "An unsuccessful attempt to defend a result of V. A. Steklov" [Mekh. Tverd. Tela No. 23 (1991), 26–36; MR 93g:01039]. (Russian) *Mekh. Tverd. Tela No.* 23 (1991), 36–43. (Peeter Müürsepp) **93g:01040** 01A55 (70–03, 70E15)

— A critique of some mathematical models of mechanical systems with differential constraints. (Russian) *Prikl. Mat. Mekh.* **56** (1992), *no.* 4, 683–692; *translation in J. Appl. Math. Mech.* **56** (1992), *no.* 4, 584–594. (Galina G. Okuneva) **93m:70014** 70F20 (70A05)

Kharlamova, E. I. Integrable cases of the problem of the motion of a gyrostat subject to a nonholonomic constraint. (Russian) *Mekh. Tverd. Tela No.* 23 (1991), 6–8. (Summary) **93a:70005** 70E15 (70F25, 70H05)

Kharlamova, V. I. Finite groups with a given embedding of primary subgroups in $\mathscr{F}$-admissible subgroups. (Russian. Russian summary) *Mat. Zametki* **51** (1992), *no.* 5, 135–140, 159; *translation in Math. Notes* **51** (1992), *no.* 5-6, 518–521. (Czesław Bagiński) **93k:20034** 20D10

Kharlampovich, O. (*with* Gildenhuys, D.) Identities in the variety of center-by-$\mathfrak{N}_2\mathfrak{A}$ Lie algebras. *Internat. J. Algebra Comput.* **1** (1991), *no.* 4, 493–521. (S. P. Mishchenko) **93c:17008** 17B01 (08B05, 17B30)

— The word problem for solvable groups and Lie algebras, a boundary between solvability and unsolvability. *Proceedings of the International Conference on Algebra, Part* 2 (*Novosibirsk*, 1989), 53–57, *Contemp. Math.*, 131, *Part* 2, *Amer. Math. Soc., Providence, RI*, 1992. (From the text) **93e:20044** 20F10 (03D40)

Kharrasov, M. Kh. Asymptotic behavior of solutions of the Fokker-Planck equation as $t \to \infty$. (Russian) *Dokl. Akad. Nauk* **325** (1992), *no.* 2, 280–283; *translation in Soviet Phys. Dokl.* **37** (1992), *no.* 7, 341–342. (From the text) **93i:34102** 34F05 (60H10, 82C05)

Kharrazova, I. R. (*with* Vidyakin, V. V.) On the solution of stationary problems of the filtration of a viscoplastic fluid with a variable initial gradient. (Russian. Russian summary) *Vestnik Beloruss. Gos. Univ. Ser. I Fiz. Mat. Mekh.* **1992**, *no.* 2, 53–56, i. 76S05 (76A05, 76E99)

mokhtar-Kharroubi, Mustapha *see* **Mokhtar-Kharroubi, Mustapha**

Kharshiladze, A. F. (*with* Hambleton, Ian) A spectral sequence in surgery theory. (Russian. Russian summary) *Mat. Sb.* **183** (1992), *no.* 9, 3–14. (A. A. Ranicki) **93m:57036** 57R67 (18G40, 19G24)

Khartvig, K.-Kh. *see* **Hartwig, Karl-Heinz**

Khasanov, A. B. (*with* Danielyan, A. A.; Levitan, B. M.) Asymptotics of the Weyl-Titchmarsh m-function in the case of the Dirac system. (Russian) *Mat. Zametki* **50** (1991), *no.* 2, 67–76; *translation in Math. Notes* **50** (1991), *no.* 1-2, 816–823 (1992). (P. A. Mishnayevskiy) **93c:34068** 34B20 (34L40)

— (*with* Levitan, B. M.) An estimate for the Cauchy function in the case of finite-gap nonperiodic potentials. (Russian) *Funktsional. Anal. i Prilozhen.* **26** (1992), *no.* 2, 18–28, 96; *translation in Functional Anal. Appl.* **26** (1992), *no.* 2, 91–98. (Summary) **93c:34159** 34L25 (34A55, 34A99)

Khasanov, M. M. (*with* Baĭkov, V. A.; Gazizov, R. K.) Formation of stationary structures in anisotropic filtration of a fluid with negative viscosity. (Russian) *Numerical methods for solving boundary value problems* (*Russian*), 30–36, *Akad. Nauk SSSR Ural. Otdel., Bashkir. Nauchn. Tsentr, Ufa*, 1989. (*see* **93m:00033**) 76S05

Khashina, Yu. A. Schreier varieties of n-Lie algebras. (Russian) *Sibirsk. Mat. Zh.* **32** (1991), *no.* 2, 197–199, 215; *translation in Siberian Math. J.* **32** (1991), *no.* 2, 348–349. (S. P. Mishchenko) **93c:17052** 17B99

Khasilev, V. Ya. Envelope solitons with different carrier frequencies in a dispersive nonlinear medium. *JETP Lett.* **56** (1992), *no.* 4, 194–197; *translated from Pis'ma Zh. Èksper. Teoret. Fiz.* **56** (1992), *no.* 4, 197–200 (*Russian*). (Summary) **93g:78002** 78A10

Khas'minskiĭ, R. Z. (*with* Ibragimov, I. A.) Asymptotically normal families of distributions and efficient estimation. *Ann. Statist.* **19** (1991), *no.* 4, 1681–1724. (Tapas K. Chandra) **93d:62093** 62G20

— (*with* Lazareva, B. V.) On some filtration procedure for jump Markov process observed in white Gaussian noise. (English summary) *Ann. Statist.* **20** (1992), *no.* 4, 2153–2160. (A. F. Gualtierotti) **93m:60082** 60G35 (62M20)

— *see also* **Topics in nonparametric estimation**, **93e:62006** *and* **Borovkov, A. V. et al., 93m:01059**

Khassa, Dharam Singh (*with* Srinivasan, Seshadri) A transcendence measure for e. *J. Indian Math. Soc.* (*N.S.*) **56** (1991), *no.* 1-4, 145–152. (Noriko Hirata-Kohno) **93c:11049** 11J82 (11J20, 11N05)

Khastgir, P. (*with* Choudhury, P. K.; Ojha, S. P.) A mathematically rigorous cutoff analysis of parabolic cylindrical waveguides. (English summary) *J. Phys. Soc. Japan* **61** (1992), *no.* 11, 3874–3877. (Summary) **93j:78019** 78A50

Khastgir, S. Pratik (*with* Kar, Supriya K.; Kumar, Alok^2) An algorithm to generate classical solutions of string effective action. *Modern Phys. Lett. A* **7** (1992), *no.* 17, 1545–1551. (Summary) **93b:81219** 81T30

Khatab, S. A. (*with* Sidky, F. I.) Nil radical of fuzzy ideal. *Fuzzy Sets and Systems* **47** (1992), *no.* 1, 117–120. (Summary) **93d:13014** 13A99 (04A72)

— (*with* Ibrahim, A. Shawky) On the level-subgroups representation of a finite fuzzy subgroup. (English summary) *Proc. Pakistan Acad. Sci.* **29** (1992), *no.* 3, 245–250. (Summary) **93j:20145** 20N25 (04A72)

Khatiashvili, G. M. On the bending by a transverse force of composite cylindrical bodies with rectilinear anisotropy of general form. (Russian) *Trudy Inst. Vychisl. Mat. Akad. Nauk Gruzin. SSR* **29** (1990), *no.* 1, 209–233. (From the text) **93j:73062** 73K99 (73B40, 73C99, 73K20)

el-Khatib, A. *see* **El-Khatib, A.**

Khatkevich, L. A. Statistical properties of a modified estimate for a covariance function. (Russian. Russian summary) *Vestnik Beloruss. Gos. Univ. Ser. I Fiz. Mat. Mekh.* **1992**, *no.* 3, 65–70, 80. 62M10

Khatri, C. G. (*with* Rao, Calyampudi Radhakrishna) Multivariate linear model with latent variables: problems of estimation. (English summary) *J. Combin. Inform. System Sci.* **16** (1991), *no.* 2-3, 137–154. (Raúl Pedro Mentz) **93j:62154** 62H12

— (*with* Khattree, Ravindra; Gupta, Rameshwar D.) On a class of orthogonal invariant and residual independent matrix distributions. (English summary) *Sankhyā Ser. B* **53** (1991), *no.* 1, 1–10. (Tõnu Kollo) **93k:62120** 62H10

— (*with* Rao, Calyampudi Radhakrishna) Empirical hierarchical Bayes estimation. (English summary) *Bayesian analysis in statistics and econometrics* (*Bangalore*, 1988), 147–161, *Lecture Notes in Statist.*, 75, *Springer, New York*, 1992. (Summary) **93j:62014** 62C12

Khatskevich, V. A. (*with* Khatskevich, V. L.) A variational method for investigating periodic Hamiltonian systems. (Russian) *Functional analysis, No.* 29 (*Russian*), 129–140, *Ul'yanovsk. Gos. Ped. Inst., Ul'yanovsk*, 1989. (V. V. Obukhovskiĭ) **93k:34091** 34C25 (47H15, 47N20, 58F05, 58F22)

— (*with* Senderov, V. A.) Generalization of a property of cyclotomic polynomials. (Russian) *Functional analysis, No.* 32 (*Russian*), 71–73, *Ul'yanovsk. Gos. Ped. Inst., Ul'yanovsk*, 1991. (From the text) **93k:12005** 12E10

— (*with* Senderov, V. A.) On properties of linear operators of certain classes in rigged spaces with indefinite metric. *Integral Equations Operator Theory* **15** (1992), *no.* 2, 301–324. (Aurelian Gheondea) **93b:47072** 47B50 (46C20, 47A70)

— (*with* Senderov, V. A.) Powers of plus-operators. *Integral Equations Operator Theory* **15** (1992), *no.* 5, 784–795. (J. Bognár) **93i:47046** 47B50

Khatskevich, V. L. (*with* Khatskevich, V. A.) A variational method for investigating periodic Hamiltonian systems. (Russian) *Functional analysis, No.* 29 (*Russian*), 129–140, *Ul'yanovsk. Gos. Ped. Inst., Ul'yanovsk*, 1989. (V. V. Obukhovskiĭ) **93k:34091** 34C25 (47H15, 47N20, 58F05, 58F22)

— (*with* Azizov, T. Ya.) Some applications of operator theory in Kreĭn spaces to the solvability of nonlinear Hamiltonian systems. (Russian) *Mat. Zametki* **50** (1991), *no.* 4, 3–9, 157; *translation in Math. Notes* **50** (1991), *no.* 3-4, 987–992 (1992). (Pavel Drábek) **93c:47082** 47N20 (34B15, 47A75, 47B50, 58F05)

Khattab, Ahmad (*with* Riedel, Roland) Eine verbesserte Lubkintransformation zur Konvergenzbeschleunigung bei Potenzreihen. [An improved Lubkin transformation for accelerating convergence in power series] *Wiss. Z. Martin-Luther-Univ. Halle-Wittenberg Math.-Natur. Reihe* **41** (1992), *no.* 3, 37–42. 65B10 (40A05)

Khattree, Ravindra (*with* Sen, Pranab Kumar; Nayak, Tapan K.) Comparison of estimators of a dispersion matrix under generalized Pitman nearness criterion. Pitman's measure of closeness. *Comm. Statist. Theory Methods* **20** (1991), *no.* 11, 3473–3486. (A. L. Rukhin) **93a:62033** 62F10 (62E15, 62H12)

— (*with* Peddada, Shyamal Das) Comparison of estimators of the location parameter using Pitman's closeness criterion. Pitman's measure of closeness. *Comm. Statist. Theory Methods* **20** (1991), *no.* 11, 3525–3534. (Adnan M. Awad) **93b:62038** 62F10 (62J07)

— (*with* Khatri, C. G.; Gupta, Rameshwar D.) On a class of orthogonal invariant and residual independent matrix distributions. (English summary) *Sankhyā Ser. B* **53** (1991), *no.* 1, 1–10. (Tõnu Kollo) **93k:62120** 62H10

— Estimation of guarantee time and mean life after warranty for two-parameter exponential failure model. (English summary) *Austral. J. Statist.* **34** (1992), *no.* 2, 207–215. (Kurt Hoffmann) **93j:62065** 62F10 (62N05)

— (*with* Gupta, Rameshwar D.) Some probability distributions connected with beta and gamma matrices. *Comm. Statist. Theory Methods* **21** (1992), *no.* 2, 369–390. (Summary) **93b:62081** 62H10

Khatuntsev, A. P. (*with* Korepanov, È. R.; Pugachev, V. S.; Sinitsyn, I. N.; Shin, V. I.; Sinitsyn, V. I.) Mathematical software for the design of conditionally optimal filters and the analysis of processes in discrete stochastic systems. (Russian. Russian summary) *Avtomat. i Telemekh.* **1992**, *no.* 6, 78–85; *translation in Automat. Remote Control* **53** (1992), *no.* 6, *part* 1, 851–857. 93E11 (93–04)

Khavin, V. P. (*with* Veksler, A. I.; Vladimirov, D. A.; Makarov, B. M.) Recollections of G. P. Akilov (Leningrad, the 1950s and 1960s). (Russian) *Optimizatsiya No.* 48(65) (1990), 35–40. (Editors) **93g:01080b** 01A70

— Methods and structure of commutative harmonic analysis [see MR 91b:42021]. *Commutative harmonic analysis, I*, 1–111, *Encyclopaedia Math. Sci.*, 15, *Springer, Berlin*, 1991. (*see* **93b:42001**) 42–02 (43–02)

— (*with* Jöricke, Burglind) The uncertainty principle in harmonic analysis. (Russian) *Commutative harmonic analysis*, 3 (*Russian*), 181–260, 267, *Itogi Nauki i Tekhniki, Akad. Nauk SSSR, Vsesoyuz. Inst. Nauchn. i Tekhn. Inform., Moscow*, 1991. (Yuriĭ Lyubarskiĭ) **93e:42001** 42–02 (30E99, 42A38)

— *see also* **Commutative harmonic analysis**, **93b:42001**

Khavinson, Dmitry (*with* Duren, Peter; Shapiro, Harold S.; Sundberg, Carl) Contractive zero-divisors in Bergman spaces. *The Madison Symposium on Complex Analysis* (*Madison, WI*, 1991), 217–220, *Contemp. Math.*, 137, *Amer. Math. Soc., Providence, RI*, 1992. (*see* **93e:32001**) 30D55

— An extremal problem for harmonic functions in the ball. *Canad. Math. Bull.* **35** (1992), *no.* 2, 218–220. (From the text) **93d:31005** 31B10

— (*with* Arazy, Jonathan) Spectral estimates of Cauchy's transform in $L^2(\Omega)$. (English summary) *Integral Equations Operator Theory* **15** (1992), *no.* 6, 901–919. (N. K. Karapetyants) **93k:47058** 47G10 (47B06)

— (*with* Anderson, James Milne; Lomonosov, V.) Spectral properties of some integral operators arising in potential theory. *Quart. J. Math. Oxford Ser.* (2) **43** (1992), *no.* 172, 387–407. (Krzysztof Samotij) **93j:47073** 47G10 (30E20, 31A15, 31B15, 47A10)

— *see also* **Commutative harmonic analysis**, **93b:42001**

Khavinson, S. Ya. A method for removing the multivalence of analytic functions. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* **1990**, *no.* 11, 64–72; *translation in Soviet Math.* (*Iz. VUZ*) **34** (1990), *no.* 11, 80–90. (S. R. Nasyrov) **93d:30051** 30E20 (30E25, 30F15)

al-Khayyal, Faiz A. *see* **Al-Khayyal, Faiz A.**

al-Khāzinī, Abū'l-Fatḥ 'Abd ar-Rahmān al-Mansur *see* **Rozhanskaya, M. M., 93g:01021**

Khedr, F. H. co-continuity in bitopological spaces. (English and Arabic summaries) *Arabian J. Sci. Engrg.* **17** (1992), *no.* 1, 85–89. 54E55

— (*with* Al-Areefi, S. M.; Noiri, Takashi) Precontinuity and semiprecontinuity in bitopological spaces. (English summary) *Indian J. Pure Appl. Math.* **23** (1992), *no.* 9, 625–633. (C. V. Riecke) **93k:54064** 54E55 (54C08)

— (*with* Al-Shibani, A. M.) On pairwise weakly θ-continuous mappings. (English summary) *J. Inst. Math. Comput. Sci. Math. Ser.* **5** (1992), *no.* 1, 81–91. 54E55 (54C08)

Kheifits, A. I. Boundary behavior of generalized Poisson integrals for the half-space and the Dirichlet problem for the Schrödinger operator. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 4, 1199–1204. (N. V. Rao) **93j:31009** 31B25 (32J10)

Khe Kan Cher Darboux and Goursat problems for a hyperbolic equation with a Bessel operator. (Russian) *Nonclassical equations and equations of mixed type* (*Russian*), 250–258, *Akad. Nauk SSSR Sibirsk. Otdel., Inst. Mat., Novosibirsk*, 1990. (*see* **93b:35002**) 35L10

Khelemskiĭ, A. Ya. (*with* Dobrushin, R. L.; Kirillov, Anatoli A.; Malyshev, V. A.; Sinaĭ, Ya. G.) Robert Adol'fovich Minlos (on the occasion of his sixtieth birthday). (Russian) *Uspekhi Mat. Nauk* **47** (1992), *no.* 1(283), 225–226; *translation in Russian Math. Surveys* **47** (1992), *no.* 1, 275–277. 01A70

Khembiton, I. *see* **Hambleton, Ian**

Khenkin, G. M. (*with* Shananin, A. A.) The Bernstein theorems for the Fantappiè indicatrix and their applications to mathematical economics. *Geometry and complex variables* (*Bologna*, 1988/1990), 221–227, *Lecture Notes in Pure and Appl. Math.*, 132, *Dekker, New York*, 1991. (Árpád Kurusa) **93d:44004** 44A12 (90A11)

— La transformation de Radon pour la cohomologie de Dolbeault et un théorème d'Abel inverse. (English and French summaries) [Radon transform for Dolbeault cohomology and an inverse Abel theorem] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 9, 973–978. (Salomon Ofman) **93j:32017** 32C30 (32A25)

Khersonskaya, L. V. (*with* Davydov, È. G.) Reduction of some multiple minimax problems with related constraints. (Russian. Russian summary) *Vestnik Moskov. Univ. Ser. XV Vychisl. Mat. Kibernet.* **1992**, *no.* 2, 51–54, 74; *translation in Moscow Univ. Comput. Math. Cybernet.* **47** (1992), *no.* 2, 49–51. 90C30

— A problem on the allocation of resources on transportation networks with two types of indeterminate factors. (Russian) *Vestnik Moskov. Univ. Ser. XV Vychisl. Mat. Kibernet.* **1992**, *no.* 4, 63–66; *translation in Moscow Univ. Comput. Math. Cybernet.* **47** (1992), *no.* 4, 57–59. 90C08

Khesin, B. A. (*with* Kravchenko, O. S.) A central extension of the algebra of pseudodifferential symbols. (Russian) *Funktsional. Anal. i Prilozhen.* **25** (1991), *no.* 2, 83–85; *translation in Functional Anal. Appl.* **25** (1991), *no.* 2, 152–154. (J. S. Joel) **93b:58147** 58G15 (17B66)

— (*with* Arnol'd, V. I.) Topological methods in hydrodynamics. *Annual review of fluid mechanics, Vol.* 24, 145–166, *Annual Reviews, Palo Alto, CA*, 1992. (Bing Hong Wang) **93d:58020** 58D05 (58B20, 58F32, 76A02)

— (*with* Shapiro, B. Z.) Nondegenerate curves on S^2 and orbit classification of the Zamolodchikov algebra. *Comm. Math. Phys.* **145** (1992), *no.* 2, 357–362. (C. J. Atkin) **93f:58100** 58F07 (17B68)

— A hierarchy of centrally extended algebras and the logarithm of the derivative operator. *Internat. Math. Res. Notices* **1992**, *no.* 1, 1–5. (Vadim B. Kuznetsov and Andrey V.

Tsiganov) **93c:17040** 17B65 (17B67, 17B68, 58F07, 58G15)

— Ergodic interpretation of integral hydrodynamic invariants. *J. Geom. Phys.* **9** (1992), *no.* 1, 101–110. (Serge L. Tabachnikov) **93d:58124** 58F18 (57R99, 58A10, 58F11, 76C99)

Kheyfets, Arkady (*with* Miller, Warner A.) The boundary of a boundary principle in field theories and the issue of austerity of the laws of physics. *J. Math. Phys.* **32** (1991), *no.* 11, 3168–3175. (Summary) **93a:81203** 81T99 (53C80, 83C99)

— (*with* Miller, Warner A.) É. Cartan moment of rotation in Ashtekar's self-dual representation of gravitation. *J. Math. Phys.* **33** (1992), *no.* 6, 2242–2248. (Jorge A. Pullin) **93g:83010** 83C05 (83C60)

Khibnik, A. I. (*with* Kuznetsov, Yurii Aleksandrovich; Levitin, V. V.; Nikolaev, Eugene V.) Continuation techniques and interactive software for bifurcation analysis of ODEs and iterated maps. (English summary) Homoclinic chaos (Brussels, 1991). *Phys. D* **62** (1993), *no.* 1-4, 360–371. (Summary) **93k:58169** 58F14 (34-04, 34A50, 34C23, 65L99)

nguyen tien Khiem *see* **Nguyen Tien Khiem**

Khilenko, V. V. (*with* Grishchenko, A. Z.) Determination of the number of fast and slow motions in the decomposition of linear dynamical models of arbitrarily large dimension. (Russian. English and Ukrainian summaries) *Kibernet. Sistem. Anal.* **1991,** *no.* 6, 3–9, 187; *translation in Cybernet. Systems Anal.* **27** (1991), *no.* 6, 795–801 (1992). (Summary) **93g:65090** 65L05 (34A65, 65F15)

Khimich, A. N. (*with* Molchanov, I. N.; Popov, A. V.) An algorithm for solving a partial eigenvalue problem for large profile matrices. (Russian. English and Ukrainian summaries) *Kibernet. Sistem. Anal.* **1992,** *no.* 2, 141–147, 191; *translation in Cybernet. Systems Anal.* **28** (1992), *no.* 2, 281–286. 65F15

Khimshiashvili, G. N. The Riemann-Hilbert problem for a compact Lie group. (Russian) *Dokl. Akad. Nauk SSSR* **310** (1990), *no.* 5, 1055–1058; *translation in Soviet Math. Dokl.* **41** (1990), *no.* 1, 165–169. (Translated from RZhMat 1990:7 B189) **93b:22038** 22E67 (58B25)

— Lie groups and transmission problems on Riemann surfaces. *Proceedings of the International Conference on Algebra, Part* 1 (*Novosibirsk,* 1989), 591–601, *Contemp. Math.,* 131, *Part* 1, *Amer. Math. Soc., Providence, RI,* 1992. (Helmut Boseck) **93g:58006** 58B15 (22E67, 47A53)

Khinich, V. A. On Brieskorn's theorem. (English summary) *Israel J. Math.* **76** (1991), *no.* 1-2, 153–160. (P. Abellanas) **93g:14005** 14B05 (14L30, 17B20)

Khisamiev, N. G. Constructive abelian *p*-groups. (English summary) Siberian Advances in Mathematics. *Siberian Adv. Math.* **2** (1992), *no.* 2, 68–113. (Manfred Dugas) **93f:03040** 03F65 (03C57, 03C60, 20K10)

Khisamutdinov, A. I. (*with* Kobeleva, N. F.) On the property of "molecular chaos" for spatially inhomogeneous rarefied gases. (Russian. Russian summary) *Questions of well-posedness in problems of analysis* (*Russian*), 85–94, 183–184, *Akad. Nauk SSSR Sibirsk. Otdel., Inst. Mat., Novosibirsk,* 1989. (*see* **93e:00018**) 82C05 (58F13, 76P05)

— An approximate method for the statistical modeling of the Boltzmann equation using the weak dependence of the subparts. (Russian. Russian summary) *Questions of well-posedness in problems of analysis* (*Russian*), 154–160, 186–187, *Akad. Nauk SSSR Sibirsk. Otdel., Inst. Mat., Novosibirsk,* 1989. (*see* **93e:00018**) 35Q99 (35A35, 76P05, 82C40)

— Algorithms with "different time coordinates" of Monte Carlo methods for a nonlinear "smoothed" Boltzmann equation. (Russian) *Dokl. Akad. Nauk SSSR* **316** (1991), *no.* 4, 829–833; *translation in Soviet Math. Dokl.* **43** (1991), *no.* 1, 209–213. (From the text) **93b:82078** 82C80 (76M35, 76P05, 82C40)

— (*with* Kobeleva, N. F.) "Nonsymmetric" interactions in Monte Carlo methods with continuous time and the approximation of the Boltzmann equation. (Russian. English and Russian summaries) *Mat. Model.* **4** (1992), *no.* 2, 110–119. (Summary) **93g:82093** 82C80 (65C05, 76M25, 76P05)

— (*with* Shishmarëva, S. O.) Nonsimulation estimates in Monte Carlo methods. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **32** (1992), *no.* 1, 115–122; *translation in Comput. Math. Math. Phys.* **32** (1992), *no.* 1, 96–102. (Summary) **93b:65009** 65C05

Khlamov, E. V. (*with* Bludov, V. V.; Kleimenov, V. F.) A counterexample to a problem of A. Yu. Ol'shanskiĭ. (Russian) *Algebra i Logika* **29** (1990), *no.* 2, 139–140, 260; *translation in Algebra and Logic* **29** (1990), *no.* 2, 95–96 (1991). (Vesselin Drensky) **93a:20053** 20F18 (20E25)

Khlebnikov, V. I. *see* **Polubarinova-Kochina, P. Ya., 93a:01067**

Khlebopros, R. G. *see* **Mathematical modeling in biology and chemistry, 93m:00029**

Khleborodova, Oksana *see* **Mathematical methods of analysis of biopolymer sequences, 93f:92019**

Khlentzos, Drew Can deduction be justified? *Logique et Anal.* (*N.S.*) **31** (1988), *no.* 123-124, 199–212. 03A05

Khlobystov, V. V. (*with* Makarov, Vladimir Leonidovich) On the general structure of polynomial functional interpolants. (Russian) *Dokl. Akad. Nauk SSSR* **318** (1991), *no.* 4, 805–808; *translation in Soviet Math. Dokl.* **43** (1991), *no.* 3, 771–774 (1992). (Weiyi Su) **93b:41004** 41A05 (41A10)

— (*with* Makarov, Vladimir Leonidovich) Polynomial interpolation of nonlinear functionals. (Russian) *Dokl. Akad. Nauk SSSR* **321** (1991), *no.* 3, 470–473; *translation in Soviet Math. Dokl.* **44** (1992), *no.* 3, 721–725. (D. N. Zarnadze) **93a:41004** 41A05 (46E99, 65D05)

— (*with* Makarov, Vladimir Leonidovich) On the general structure of interpolational functional polynomials. (Russian. Ukrainian summary) *Ukrain. Mat. Zh.* **43** (1991), *no.* 10, 1361–1368; *translation in Ukrainian Math. J.* **43** (1991), *no.* 10, 1264–1269 (1992). (Kh. Ī. Kuchmīns'ka) **93a:41005** 41A05

— (*with* Makarov, Vladimir Leonidovich) Polynomial interpolation of operators in Hilbert spaces. (Russian) *Dokl. Akad. Nauk* **324** (1992), *no.* 4, 742–745; *translation in Russian Acad. Sci. Dokl. Math.* **45** (1992), *no.* 3, 624–628 (1993). (D. Przeworska-Rolewicz) **93m:47022** 47A99 (41A05, 47A57, 47A99)

Khludnev, A. M. Extremal forms of cuts in a plate that is in contact with a rigid stamp. (Russian) *Boundary value problems for nonclassical equations in mathematical physics* (*Russian*) (*Novosibirsk,* 1989), 60–67, *Akad. Nauk SSSR Sibirsk. Otdel., Inst. Mat., Novosibirsk,* 1989. (*see* **93d:35001**) 73T05 (73M25, 73V25)

— (*with* Hoffmann, Karl-Heinz[1]) A variational inequality in a contact elastoplastic problem for a bar. *Adv. Math. Sci. Appl.* **1** (1992), *no.* 1, 127–136. (Summary) **93a:73072** 73T05 (49J40, 73E99, 73V25)

Khludneva, E. Yu. A problem on the contact of an inelastic plate with a rigid stamp. (Russian. Russian summary) *Dinamika Sploshn. Sredy No.* 98 (1990), 67–79, 115–116. (Summary) **93e:73038** 73T05 (73K10, 73V25)

Khmel'nik, M. I. A mathematical model of flow on multiply connected and multisheeted surfaces. (Russian) *Some questions of mathematics in problems of physics and mechanics* (*Russian*), 95–100, *Moskov. Fiz.-Tekhn. Inst., Moscow,* 1988. (*see* **93m:00036**) 76B10

nguen van Khoa *see* **Nguen Van Khoa**

hà huy Khoái *see* **Hà Huy Khoái**

Khoai, Ha Huy *see* **Hà Huy Khoái**

Khoang Van Kuang *see* **Hoang Van Quang**

Khoang Zyong Tuan An averaging theorem for differential inclusions with fast and slow variables in a Banach space. (Russian. Russian summary) *Differentsial'nye Uravneniya* **28** (1992), *no.* 2, 360–363, 368. (Pando Georgiev) **93i:34026** 34A60 (34C29, 34G20)

— On the controllability of a class of nonlinear and singularly perturbed systems. (Russian. English and Ukrainian summaries) *Kibernet. Sistem. Anal.* **1992,** *no.* 4, 61–66, 188; *translation in Cybernet. Systems Anal.* **28** (1992), *no.* 4, 540–545 (1993). (T. R. Gichev) **93m:93015** 93B05 (34E15, 34H05, 93C70)

nguyễn Khoa So'n *see* **Nguyễn Khoa So'n**

Khobzei, P. K. *see* **Kravchuk, M. F., 93g:01047**

Khoda, K. M. (*with* Liu, Yu[3]; Storey, Colin) Generalized Polak-Ribière algorithm. (English summary) *J. Optim. Theory Appl.* **75** (1992), *no.* 2, 345–354. 65K10

Khodadad Khan, A. F. M. (*with* Ahsanullah, T. M. G.) Sequential convergence in fuzzy neighborhood spaces. *Fuzzy Sets and Systems* **46** (1992), *no.* 1, 115–120. (A. Shostak) **93a:54005** 54A40 (04A72, 54E70)

Khodja, Khadidja (*with* Moussaoi, Mohand) Régularité des solutions d'un problème mêlé Dirichlet-Signorini dans un domaine polygonal plan. (English and French summaries) [Regularity of the solutions of a mixed Dirichlet-Signorini problem in a plane polygonal domain] *Comm. Partial Differential Equations* **17** (1992), *no.* 5-6, 805–826. (B. Hellwig) **93h:35055** 35J25 (35B65)

Khodkar, A. Construction of some balanced ternary designs from one factorizations. (English summary) *Utilitas Math.* **42** (1992), 213–217. (Elizabeth J. Billington) **93k:05016** 05B05 (05C70)

— Balanced ternary designs with holes and numbers of common triples. (English summary) *Australas. J. Combin.* **7** (1993), 111–122. (Summary) **93k:05017** 05B05

Khodunov, A. V. (*with* Zhytnikov, V. V.) Gravitational equations in space-time with torsion. (English summary) *J. Math. Phys.* **33** (1992), *no.* 10, 3509–3520. (Michael O. Katanaev) **93h:83031** 83D05

Khodzhiev, Sh. Kh. (*with* Glazunov, N. M.) Interval extensions of direct methods for solving degenerate systems of linear algebraic equations. (Russian. Russian summary) *Kibernet. i Vychisl. Tekhn. No.* 95 (1992), 50–52. 65G10 (65F05)

bùi Kho'i Đàm *see* **Bùi Kho'i Đàm**

nguen Khoi Ngia *see* **Nguen Khoi Ngia**

Khokhlov, A. I. An unsuccessful attempt to defend a result of V. A. Steklov. (Russian) *Mekh. Tverd. Tela No.* 23 (1991), 26–36. (Peeter Müürsepp) **93g:01039** 01A55 (70–03, 70E15)

— *see also* **Kharlamov, P. V., 93g:01040**

Khokhlov, A. P. (*with* Fedorov, Alexandre V.) Sensitivity of a supersonic boundary layer to acoustic disturbances. *Fluid Dynamics* **27** (1992), *no.* 1, 29–34; *translated from Izv. Ross. Akad. Nauk Mekh. Zhidk. Gaza* **1992,** *no.* 1, 40–47 (*Russian. Russian summary*). (Summary) **93k:76071** 76J20 (76E99, 76N20)

Khokhlov, V. I. (*with* Burkov, V. N.) Anti-expenditure taxation mechanisms. (Russian. Russian summary) *Avtomat. i Telemekh.* **1992,** *no.* 5, 89–97; *translation in Automat. Remote Control* **53** (1992), *no.* 5, *part* 2, 703–709. 90A70

Khokhlov, Yu. E. (*with* Howison, Sam D.) Classification of solutions in a problem of Hele-Shaw flows with an unknown boundary. (Russian) *Dokl. Akad. Nauk* **325** (1992), *no.* 6, 1161–1166; *translation in Soviet Phys. Dokl.* **37** (1992), *no.* 8, 416–418 (1993). (Martin Senkyrik) **93k:35278** 35R35 (35Q35, 76D99)

Khokhlov, Yu. S. The domain of normal attraction of a stable probability measure on a nilpotent group. *Probability measures on groups, X* (*Oberwolfach,* 1990), 239–247, *Plenum, New York,* 1991. (Eberhard Siebert) **93k:60022** 60B15

Kholevo, A. S. (*with* Denisov, L. V.) Conditionally positive definite functions on the coefficient algebra of a nonabelian group. *Probability theory and mathematical statistics, Vol. I* (*Vilnius,* 1989), 261–270, "*Mokslas*", *Vilnius,* 1990. (Jan Hamhalter) **93d:46107** 46L50 (22D10, 81P10)

— Statistical inference for quantum processes. *Quantum aspects of optical communications* (*Paris,* 1990), 127–137, *Lecture Notes in Phys.,* 378, *Springer, Berlin,* 1991. (*see* **93e:81158**) 81S25 (81-02, 81P15)

— An analog of the Itô decomposition for multiplicative processes with values in a Lie group. (English summary) *Sankhya Ser. A* **53** (1991), *no.* 2, 158–161. (Summary) **93i:60016** 60B15 (46N30, 60H10)

— Time-ordered exponentials in quantum stochastic calculus. *Quantum probability & related topics,* 175–202, *QP-PQ, VII, World Sci. Publishing, River Edge, NJ,* 1992. (David Applebaum) **93k:81123** 81S25 (46L50, 60H05)

Kholmatov, T. Kh. (*with* Radzhabov, N. A.; Agzamov, I.) Fundamental solutions of a problem in the theory of elasticity in stresses. (Russian. Russian summary) *Voprosy Vychisl. i Prikl. Mat.* (*Tashkent*) *No.* 87 (1989), 121–126, 166. 73C02

Kholodovskiĭ, S. E. On the solution of problems of two-dimensional linear filtration in layered soils. (Russian) *Prikl. Mekh. Tekhn. Fiz.* **1991,** *no.* 6, 119–122; *translation in J. Appl. Mech. Tech. Phys.* **32** (1991), *no.* 6, 931–933 (1992). (From the text) **93b:76085** 76S05

Kholostova, O. V. On the stability of a particular motion of a rigid body with an elastoviscous membrane on a circular orbit. (Russian) *Prikl. Mat. Mekh.* **56** (1992), *no.* 1, 29–33; *translation in J. Appl. Math. Mech.* **56** (1992), *no.* 1, 25–29. (Summary) **93d:70012** 70E99 (70K20, 70M20, 73F15, 73H10, 73K12)

Kholshchevnikova, N. N. Generalized Bari theorem for the Walsh system. (Russian. Russian summary) *Mat. Sb.* **183** (1992), *no.* 10, 3–12. (Summary) **93m:42016** 42C15

Kholyavka, Ya. M. Estimation of the degree and length of an algebraic number of a special type. (Ukrainian) *Visnik L'vīv. Derzh. Univ. Ser. Mekh.-Mat. No.* 32 (1989), 57–58. 11J89

— On the approximation of some numbers related to $\wp(z)$. (Ukrainian) *Visnik L'vīv. Univ. Ser. Mekh. Mat. No.* 34 (1990), 88–89. 11J89

Khoma, G. P. (*with* Mitropol'skiĭ, Yu. A.; Gromyak, M. I.) ★ Асимптотические методы исследования квазиволновых уравнений гиперболического типа. (Russian) [Asymptotic

methods for investigating quasiwave equations of hyperbolic type] "*Naukova Dumka*", *Kiev*, 1991. 232 *pp. ISBN* 5-12-002214-6 (Genowefa Majcher) **93f:35131** 35L10 (34Gxx, 35B40, 35L70)

Khomami, B. (*with* Su, Y. Y.) Numerical solution of eigenvalue problems using spectral techniques. *J. Comput. Phys.* **100** (1992), *no.* 2, 297–305. (Summary) **93a:65142** 65N25 (65N35)

Khomenko, G. A. (*with* Moiseev, S. S.; Oganyan, K. R.; Rutkevich, P. B.; Tur, A. V.; Yanovskiĭ, V. V.) A vortex dynamo in helical turbulence. (Russian) *Integrability and kinetic equations for solitons* (*Russian*), 280–332, "*Naukova Dumka*", *Kiev*, 1990. (Radyadour Kh. Zeytounian) **93d:76032** 76F99 (76C05, 76D99, 76E99)

— (*with* Druzhinin, O. A.) Nonlinear hydrodynamic alpha-effect and inverse energy cascade in turbulence of compressible fluid. *Nonlinear world, Vol.* 1 (*Kiev*, 1989), 470–489, *World Sci. Publishing, River Edge, NJ*, 1990. (*see* **93b:00012**) 76F99 (76E99)

— (*with* Druzhinin, O. A.; Moiseev, S. S.) Turbulent forcing and large-scale instability of compressible flows. (English summary) *Nonlinear dynamics of structures* (*Vladimir Maiakovskiĭ*, 1990), 369–386, *World Sci. Publishing, River Edge, NJ*, 1991. (*see* **93g:76004**) 76F05 (76N10)

Khomenko, L. P. (*with* Kotlyar, V. Yu.) Classes of "ageing" distributions. (Russian. English and Ukrainian summaries) *Kibernet. Sistem. Anal.* **1992**, *no.* 3, 92–113, 189; *translation in Cybernet. Systems Anal.* **28** (1992), *no.* 3, 403–421 (1993). 62N05

Khonin, V. A. Realization of algorithms for the upper approximation of the information domain of a dynamical system. (Russian) *Analysis and design of dynamical systems under conditions of uncertainty* (*Russian*), 52–55, *Moskov. Aviatsion. Inst., Moscow*, 1990. (*see* **93g:00022**) 93B03

Khonov, S. A. A maximum likelihood estimate for the sizes of strata of a finite population. (Russian) *Probabilistic processes and their applications* (*Russian*), 144–147, *Moskov. Inst. Èlektron. Mashinostroeniya, Moscow*, 1989. (*see* **93b:60003**) 62D05 (62F10)

Khoo, David S. P. (*with* Loxton, J. H.; Bird, Gregory J.; Seberry, Jennifer) A cubic RSA code equivalent to factorization. *J. Cryptology* **5** (1992), *no.* 2, 139–150. (Summary) **93c:94004** 94A60

Khoong, C. M. (*with* Leong, H.-W.) Sorting by distribution in parallel. (English summary) Fifteenth Australian Computer Science Conference (ACSC-15) (Hobart, 1992). *Austral. Comput. Sci. Comm.* **14** (1992), *no.* 1, *part B*, 447–458. (Summary) **93m:68038** 68P10 (68Q22)

Khoromskaya, V. Kh. (*with* Khoromskiĭ, B. N.) ★ On the computing complexity of iterative substructuring algorithms in nonlinear magnetostatic problems. (English. English and Russian summaries) Сообщения Объединенного Института Ядерных Исследований. Дубна [Communications of the Joint Institute for Nuclear Research. Dubna], E5-92-450. *Joint Inst. Nuclear Res., Dubna*, 1992. 17 *pp.* (Summary) **93k:65094** 65N30 (65Y20, 78–08)

Khoromskiĭ, B. N. (*with* Khoromskaya, V. Kh.) ★ On the computing complexity of iterative substructuring algorithms in nonlinear magnetostatic problems. (English. English and Russian summaries) Сообщения Объединенного Института Ядерных Исследований. Дубна [Communications of the Joint Institute for Nuclear Research. Dubna], E5-92-450. *Joint Inst. Nuclear Res., Dubna*, 1992. 17 *pp.* (Summary) **93k:65094** 65N30 (65Y20, 78–08)

— (*with* Mazurkevich, G. E.) Preconditioners for one class of elliptic problems in not simply connected domains. (English summary) *Fifth International Symposium on Domain Decomposition Methods for Partial Differential Equations* (*Norfolk, VA*, 1991), 56–61, *SIAM, Philadelphia, PA*, 1992. (Summary) **93h:65154** 65N55

Khoroshkin, S. M. (*with* Tolstoĭ, V. N.) Universal *R*-matrix for quantized (super)algebras. *Comm. Math. Phys.* **141** (1991), *no.* 3, 599–617. (Dmitriĭ I. Gurevich) **93a:16031** 16W30 (16W55, 17A70)

— Projective functors and the restriction of a Verma module to a subalgebra of Levi type. *Ann. Global Anal. Geom.* **10** (1992), *no.* 1, 81–86. (Serge M. Skryabin) **93h:17013** 17B10 (22E47)

— (*with* Tolstoĭ, V. N.) Universal *R*-matrix for quantized nontwisted affine Lie algebras. (Russian) *Funktsional. Anal. i Prilozhen.* **26** (1992), *no.* 1, 85–88; *translation in Functional Anal. Appl.* **26** (1992), *no.* 1, 69–71. (L. L. Vaksman) **93e:17029** 17B37

— (*with* Tolstoĭ, V. N.) The uniqueness theorem for the universal *R*-matrix. *Lett. Math. Phys.* **24** (1992), *no.* 3, 231–244. (Petr Hellinger) **93e:17020** 17B37 (16S30, 16W30, 17B67, 81R50)

Khorozov, E. I. On the isoenergetical nondegeneracy of the spherical pendulum. (English summary) *Phys. Lett. A* **173** (1993), *no.* 3, 279–283. (Summary) **93k:70027** 70H05 (58F05)

Khorozov, O. A. (*with* Klimenko, Yu. A.; Samoilenko, Yu. I.) A model of a controlled microlevel logic element. I. *J. Automat. Inform. Sci.* **25** (1992), *no.* 1, 14–23 (1993); *translated from Avtomatika* **1992**, *no.* 1, 15–25, 95 (*Russian. English, Russian and Ukrainian summaries*). 49N55 (93C95)

Khorrami, Mehdi R. (*with* Duck, Peter W.) A note on the effects of viscosity on the stability of a trailing-line vortex. [English summary) *J. Fluid Mech.* **245** (1992), 175–189. (Summary) **93k:76055** 76E99 (76D99)

Khorunzhii, A. M. (*with* Pastur, L. A.) Integrated density of states of a deformed Wigner ensemble. (Russian. English and Russian summaries) *Dokl. Akad. Nauk Ukrainy* **1992**, *no.* 12, 21–24, 170. (Summary) **93k:82007** 82B10 (60F99)

— (*with* Molchanov, S. A.; Pastur, L. A.) Distribution of the eigenvalues of random band matrices in the limit of their infinite order. (Russian. English and Russian summaries) *Teoret. Mat. Fiz.* **90** (1992), *no.* 2, 163–178; *translation in Theoret. and Math. Phys.* **90** (1992), *no.* 2, 108–118. (Krystyna Parczyk) **93g:82056** 82B44 (47B37, 47N55, 60F20, 60K35)

Khoruzhenko, B. A. (*with* Shcherbina, M. V.) The limit of an infinitely large number of spin components of an unordered *n*-vector model. (Russian. Russian summary) *Methods of mathematical physics in infinite systems* (*Russian*), 90–104, *Akad. Nauk Ukrainy, Inst. Mat., Kiev*, 1991. (Summary) **93g:82011** 82B10 (82D40)

Khoruzhii, S. S. (*with* Voronin, A. V.) BRST quantization of the Schwinger model. *J. Math. Phys.* **33** (1992), *no.* 8, 2823–2841. (Rudolf Schmid) **93i:81280** 81T70 (17B81, 81T10)

— (*with* Voronin, A. V.) True algebra of BRST-symmetry and the theory of its representations. (Russian. English and Russian summaries) *Teoret. Mat. Fiz.* **91** (1992), *no.* 1, 3–16; *translation in Theoret. and Math. Phys.* **91** (1992), *no.* 1, 327–335. (Krzysztof Galicki) **93k:81242** 81T70 (17A70, 17B81, 81R10, 81T60)

Khoshnevisan, Davar Moment inequalities for functionals of the Brownian convex hull. *Ann. Probab.* **20** (1992), *no.* 2, 627–630. (Michael Cranston) **93e:60079** 60G17 (60J65)

— (*with* Bass, Richard F.) Local times on curves and uniform invariance principles. *Probab. Theory Related Fields* **92** (1992), *no.* 4, 465–492. (P. Révész) **93e:60161** 60J55 (60F17, 60J65)

— Local asymptotic laws for the Brownian convex hull. (English summary) *Probab. Theory Related Fields* **93** (1992), *no.* 3, 377–392. (Steven N. Evans) **93k:60096** 60G17 (60F15, 60J15, 60J65)

Khosrovshahi, G. B. (*with* Majumdar, Dibyen; Widel, Mario) On the structure of basic trades. (English summary) *J. Combin. Inform. System Sci.* **17** (1992), *no.* 1-2, 102–107. (Summary) **93m:05044** 05B30

Khoudraji, A. (*with* Baccini, Alain) Application d'un modèle d'association à l'analyse d'une table de taux. (English and French summaries) [Application of an association model to the analysis of a table of rates] *Rev. Statist. Appl.* **40** (1992), *no.* 4, 59–75. 62H17 (62H20)

Khoukhi, A. (*with* Hamam, Y.) Optimal control for robot manipulators. (English summary) *Optimization, optimal control and partial differential equations* (*Iaşi*, 1992), 207–218, *Internat. Ser. Numer. Math.*, 107, *Birkhäuser, Basel*, 1992. (*see* **93m:00044**) 49N55 (93C85)

el-Khoury, Mario *see* **El-Khoury, Mario**

Khoury, Raja Nicolas $\lambda(n)$-convex functions. *J. Math. Anal. Appl.* **163** (1992), *no.* 1, 1–14. (Summary) **93f:26010** 26B25 (15A15)

Khovanskiĭ, A. G. Newton polytopes (algebra and geometry). (Russian) *Theory of operators in function spaces* (*Russian*) (*Kuybyshev*, 1988), 202–221, *Saratov. Gos. Univ., Kuĭbyshev. Filial, Kuybyshev*, 1989. (Michael M. Kapranov) **93g:14061** 14M25 (52A39)

— (*with* Pukhlikov, A. V.) Finitely additive measures of virtual polyhedra. (Russian. Russian summary) *Algebra i Analiz* **4** (1992), *no.* 2, 161–185; *translation in St. Petersburg Math. J.* **4** (1993), *no.* 2, 337–356. (E. Hertel) **93i:52024** 52B45 (52B11)

Khovison, S. D. *see* **Howison, Sam D.**

Khrapchenko, V. M. *see* **Nigmatullin, R. G., 93e:94021**

Khrebtukov, D. B. The exact numerical solution of a Schrödinger equation with two-Coulomb centres plus oscillator potential. *J. Phys. A* **25** (1992), *no.* 11, 3319–3328. (Summary) **93a:81033** 81Q05 (65P05, 81–08)

Khrennikov, A. Yu. The central limit theorem for a quasi-Gaussian distribution on an infinite-dimensional superspace. (Russian) *Teor. Veroyatnost. i Primenen.* **35** (1990), *no.* 3, 599–602; *translation in Theory Probab. Appl.* **35** (1990), *no.* 3, 580–583 (1991). (Yu. L. Daletskiĭ) **93a:60011** 60B12

— Hilbert superspace. (Russian) *Dokl. Akad. Nauk SSSR* **321** (1991), *no.* 2, 298–301; *translation in Soviet Phys. Dokl.* **36** (1991), *no.* 11, 759–760 (1992). (Christian Lyubenov Yankov) **93b:58011** 58A50 (46A19, 46C99, 46S99)

— Noncommutative differential calculus and projective tensor products of noncommutative Banach algebras. (Russian) *Dokl. Akad. Nauk SSSR* **321** (1991), *no.* 4, 722–726; *translation in Soviet Phys. Dokl.* **36** (1991), *no.* 12, 832–834 (1992). (J. S. Joel) **93a:58020** 58C20 (46G05, 46H35, 58C50)

— Generalized functions on a non-Archimedean superspace. (Russian) *Izv. Akad. Nauk SSSR Ser. Mat.* **55** (1991), *no.* 6, 1257–1286; *translation in Math. USSR-Izv.* **39** (1992), *no.* 3, 1209–1238. (Christian Lyubenov Yankov) **93c:58035** 58C50 (46F99, 46S10, 81Q60)

— The Trotter formula for the heat equation and the Schrödinger equation on a non-Archimedean superspace. (Russian) *Sibirsk. Mat. Zh.* **32** (1991), *no.* 5, 155–165, 209; *translation in Siberian Math. J.* **32** (1991), *no.* 5, 860–870 (1992). (V. S. Ol'khovskiĭ) **93f:46114** 46S10 (46F99, 47D03, 47N50, 47S10, 58C50, 81S40)

— Fundamental solutions over the field of *p*-adic numbers. (Russian. Russian summary) *Algebra i Analiz* **4** (1992), *no.* 3, 248–266; *translation in St. Petersburg Math. J.* **4** (1993), *no.* 3, 613–628. (From the introduction) **93k:46060** 46S10 (11S85, 35S99, 46F99, 47G30, 81T99)

— Theory of probability and theory of numbers. *Comment. Math. Univ. St. Paul.* **41** (1992), *no.* 2, 135–140. 60A99 (11K41)

— Generalized functions on infinite-dimensional spaces of sources. (Russian) *Dokl. Akad. Nauk* **322** (1992), *no.* 4, 692–696; *translation in Soviet Phys. Dokl.* **37** (1992), *no.* 2, 73–75. (Lech Jakóbczyk) **93d:81102** 81T05 (46F25, 46N50)

— Noncommutative functional analysis. (Russian) *Dokl. Akad. Nauk* **326** (1992), *no.* 4, 612–616. (J. S. Joel) **93k:58017** 58C20 (46L89, 46N50, 46S99, 58C50)

— Axiomatics of *p*-adic probability theory. (Russian) *Dokl. Akad. Nauk* **326** (1992), *no.* 5, 796–800. 60A99 (11S99)

— (*with* Endo, Mikihiko) Unboundedness of the *p*-adic Gaussian distribution. (Russian. Russian summary) *Izv. Ross. Akad. Nauk Ser. Mat.* **56** (1992), *no.* 5, 1104–1115. (Evgenii I. Zelenov) **93m:46095** 46S10 (11S80)

— Statistical interpretation of *p*-adic quantum field theory. (Russian. Russian summary) *Izv. Vyssh. Uchebn. Zaved. Fiz.* **35** (1992), *no.* 11, 51–55; *translation in Russian Phys. J.* **35** (1992), *no.* 11, 1036–1039 (1993). (Summary) **93k:81245** 81T99 (11S85, 11Z50, 81P99)

— Analysis on the *p*-adic superspace. I. Generalized functions: Gaussian distribution. *J. Math. Phys.* **33** (1992), *no.* 5, 1636–1642. (Alice Rogers) **93g:58016** 58C50 (11S80, 46F99, 46S10)

— Analysis on the *p*-adic superspace. II. Differential equations on *p*-adic superspace. *J. Math. Phys.* **33** (1992), *no.* 5, 1643–1647. (Alice Rogers) **93g:58017** 58C50 (11S80, 46S10, 81Q60)

— The infinite-dimensional Liouville equation. (Russian) *Mat. Sb.* **183** (1992), *no.* 1, 20–44; *translation in Russian Acad. Sci. Sb. Math.* **75** (1993), *no.* 1, 17–41. (Summary) **93m:81101** 81T10 (35Q40, 35R15, 47N50)

Khriptun, M. D. Sonin-type expansions in Neumann-type series and their application. (Russian. Russian summary) *Questions of well-posedness in problems of analysis* (*Russian*), 161–172, 187, *Akad. Nauk SSSR Sibirsk. Otdel., Inst. Mat., Novosibirsk*, 1989. (*see* **93e:00018**) 33C99

Khripunov, A. P. On the solution of game-theoretic problems in the plane by means of a computer. (Russian. Russian summary) *Control in dynamical systems* (*Russian*), 116–122, 127, *Akad. Nauk SSSR Ural. Otdel., Sverdlovsk*, 1990. (*see* **93f:93004**) 90D25

Khripunova, M. B. Sums of multiplicative functions with shifted arguments. (Russian) *Mat. Zametki* **51** (1992), *no.* 4, 136–138; *translation in Math. Notes* **51** (1992), *no.* 3-4, 421–423. (From the introduction) **93e:11110** 11N37

Khrishchenyuk, V. A. Solvability of the Cauchy problem for equations of a relaxing and reacting medium. (Russian. English and Russian summaries) *Dokl. Akad. Nauk Ukrainy* **1992,** *no.* 1, 16–18, 176. (Summary) **93f:35184** 35Q35 (76N15)

Khristov, Kh. I. *see* **Christov, Christo Ivanov**

Khristov, Khristo I. *see* **Christov, Christo Ivanov**

Khristov, Vladimir Kh. (*with* Ivanov, K. G.) Constrained approximations. *Approximation, optimization and computing*, 93–96, *North-Holland, Amsterdam*, 1990. (*see* **93a:41001**) 41A29

— (*with* Ivanov, K. G.) Realization of K-functionals on subsets and constrained approximation. *Math. Balkanica (N.S.)* **4** (1990), *no.* 3, 236–257 (1991). (Fernando Cobos) **93g:46073** 46M35 (41A65, 46B70)

Khristova, S. G. (*with* Bainov, Drumi Dimitrov) Method for solving the periodic problem for integro-differential equations. (English summary) *Anal. Numér. Théor. Approx.* **19** (1990), *no.* 2, 137–142. 65R99 (34K10, 45J05)

— (*with* Bainov, Drumi Dimitrov) Numeric-analytic method for finding the periodic solutions of nonlinear differential-difference equations with impulses. *Mathematica (Cluj)* **32(55)** (1990), *no.* 1, 19–25. (R. M. M. Mattheij) **93c:34146** 34K15 (34A37, 34A50, 65Q05)

— (*with* Bainov, Drumi Dimitrov) Asymptotics of the solution of the initial value problem for a nonlinear singularly perturbed system of impulsive differential equations. *Riv. Mat. Pura Appl. No.* 10 (1992), 67–87. (Snezhana Khristova) **93f:34021** 34A37 (34A12, 34E15)

Khritonenko, N. V. Controllability of nonlinear dynamical systems with respect to the Hamiltonian. (Russian. Russian summary) *Boundary value problems (Russian)*, 125–132, *Perm. Politekh. Inst., Perm'*, 1991. (*see* **93m:00017**) 93B05 (93C10)

— (*with* Semenov, K. E.; Yatsenko, Yu. P.) Turnpike properties of the optimal periods of the service of funds. (Russian. English and Russian summaries) *Dokl. Akad. Nauk Ukrainy* **1992,** *no.* 11, 76–80, 173. 90A16

Khrolovich, K. B. (*with* Kachanov, B. O.) A method for the identification of dynamical systems with delay. (Russian. Russian summary) *Avtomat. i Telemekh.* **1993,** *no.* 1, 67–72; *translation in Automat. Remote Control* **54** (1993), *no.* 1, *part* 1, 60–64. 93E12

Khromulyak, O. M. (*with* Zelenyuk, E. G.; Protasov, I. V.) Topologies on countable groups and rings. (Russian. English summary) *Dokl. Akad. Nauk Ukrain. SSR* **1991,** *no.* 8, 8–11, 182. (Michael Tkačenko) **93a:54036** 54H11 (13J20, 22A05, 54H13)

Khrushchëv, S. *see* **Birman, M. Sh., 93g:47001**

Khruslov, Ē. Ya. (*with* Levchenko, E. P.) Inverse problems of magnetotelluric sounding in the case of horizontal propagation of generating waves. (Russian) *Izv. Akad. Nauk SSSR Ser. Fiz. Zemli* **1991,** *no.* 12, 73–83. (From the introduction) **93e:86004** 86A22 (34A55, 34L25, 86–04, 86–08, 86A25)

— (*with* Berezanskiĭ, Yu. M.; Mitropol'skiĭ, Yu. A.; Ostrovskiĭ, I. V.; Pastur, L. A.; Pogorelov, A. V.) Volodimir Oleksandrovich Marchenko (on the occasion of his seventieth birthday). (Ukrainian) *Ukraïn. Mat. Zh.* **44** (1992), *no.* 8, 1113; *translation in Ukrainian Math. J.* **44** (1992), *no.* 8, 1014–1015 (1993). 01A70

Khrustalev, M. M. (*with* Savastyuk, S. V.) Optimization of stochastic systems of diffusion type with constraints on the control-observation process. I. Sufficient conditions for optimality. (Russian) *Avtomat. i Telemekh.* **1991,** *no.* 7, 89–96; *translation in Automat. Remote Control* **52** (1991), *no.* 7, *part* 1, 958–963. (Věra Lánská) **93a:49016a** 49K45 (93E20)

— (*with* Savastyuk, S. V.) Optimization of stochastic systems of diffusion type with constraints on the control-observation process. II. Necessary conditions for optimality. (Russian) *Avtomat. i Telemekh.* **1991,** *no.* 8, 94–101; *translation in Automat. Remote Control* **52** (1991), *no.* 8, *part* 2, 1109–1114 (1992). (Věra Lánská) **93a:49016b** 49K45 (93E20)

Khrustalev, O. A. (*with* Silaev, P. K.) A connection between fields, quantized in overlapping regions, and the Unruh effect. (Russian. English and Russian summaries) *Teoret. Mat. Fiz.* **91** (1992), *no.* 2, 217–233; *translation in Theoret. and Math. Phys.* **91** (1992), *no.* 2, 481–489. (Michael B. Mensky) **93i:81171** 81T20 (81T40, 83C47)

Khudaiverenov, N. O. Solutions of elliptic equations. (Russian. English summary) *Izv. Akad. Nauk Turkm. Ser. Fiz.-Mat. Tekhn. Khim. Geol. Nauk* **1992,** *no.* 3, 90–92. 35J15

Khudyakov, S. P. A differential inequality for equations with retarded argument. (Russian. Russian summary) *Boundary value problems (Russian)*, 53–56, *Perm. Politekh. Inst., Perm'*, 1989. (*see* **93k:00022**) 34K05

nguyễn văn khuê *see* **Nguyễn Văn Khuê**

Khue, N. V. *see* **Nguyễn Văn Khuê**

Khukhro, E. I. Nilpotency in varieties of groups with operators. (Russian) *Mat. Zametki* **50** (1991), *no.* 2, 142–145; *translation in Math. Notes* **50** (1991), *no.* 1-2, 869–871 (1992). (R. Stöhr) **93b:20057** 20E36 (20E10, 20F16, 20F18)

Khuller, Samir (*with* Schieber, Baruch) On independent spanning trees. (English summary) *Inform. Process. Lett.* **42** (1992), *no.* 6, 321–323. (Summary) **93f:05035** 05C05 (68R10)

— (*with* Mitchell, Stephen G.; Vazirani, Vijay V.) Processor efficient parallel algorithms for the two disjoint paths problem and for finding a Kuratowski homeomorph. *SIAM J. Comput.* **21** (1992), *no.* 3, 486–506. (T. R. S. Walsh) **93c:05106** 05C85 (05C38, 68Q10, 68Q25, 68R10)

Khurana, A. P. (*with* Jha, V. D.) Recurrence relations between moments of order statistics from a doubly truncated Pareto distribution. (English summary) *Sankhyā Ser. B* **53** (1991), *no.* 1, 11–16. (Summary) **93e:62138** 62G30 (62E15)

Khurana, Satish K. (*with* Ram, Babu) M-cohyponormal powers of composition operators. *J. Austral. Math. Soc. Ser. A* **53** (1992), *no.* 1, 9–16. (Karim Seddighi) **93f:47034** 47B38 (47B20)

Khuri, André I. Blocking with rotatable designs. (English summary) *Calcutta Statist. Assoc. Bull.* **41** (1991), *no.* 161-164, 81–98. (S. K. Tharthare) **93k:62154** 62K10 (62J05)

— (*with* Cooray-Wijesinha, Manel) Robust designs for first-order multiple design multivariate models. *Comm. Statist. Theory Methods* **20** (1991), *no.* 9, 2987–2999. (Girdhar G. Agarwal) **93c:62127** 62K05

— (*with* Vining, G. G.) Conditions required for the mean response to fall within specified bounds. *J. Statist. Plann. Inference* **28** (1991), *no.* 1, 125–136. (Summary) **93e:62202** 62K99

— Diagnostic results concerning a measure of rotatability. *J. Roy. Statist. Soc. Ser. B* **54** (1992), *no.* 1, 253–267. (Bhagwandas) **93e:62198** 62K15

Khuri, Hala Halim *see* **King, Hala Khuri**

Khuri, Ramzi R. (*with* Duff, M. J.; Lu, Jian Xin) String and five-brane solitons: singular or nonsingular? *Nuclear Phys. B* **377** (1992), *no.* 1-2, 281–294. (Summary) **93c:83113** 83E30 (81T30, 83E50)

— Monopoles and instantons in string theory. (English summary) *Phys. Rev. D* (3) **46** (1992), *no.* 10, 4526–4532. (Summary) **93g:81127** 81T30

— (*with* La, HoSeong) Orbits of a string around a five-brane. *Phys. Rev. Lett.* **68** (1992), *no.* 23, 3391–3393. (Summary) **93a:83037** 83E30 (81T30)

— (*with* La, HoSeong) String motion in five-brane geometry. (English summary) *Phys. Rev. D* (3) **47** (1993), *no.* 2, 570–577. (Summary) **93j:83075** 83E30 (81T30)

Khurodze, T. A. Application of the harmonic balance method to the calculation of self-oscillating regimes in systems with delay. (Russian) *Avtomat. i Telemekh.* **1991,** *no.* 10, 73–82; *translation in Automat. Remote Control* **52** (1991), *no.* 10, *part* 1, 1388–1396 (1992). (Andrzej Sosnowski) **93b:90085** 90C30 (34K15)

Khuruma, A. K. (*with* Zhdanok, A. I.) Operators of countable Markov chains in spaces of unbounded and purely finite-additive measures. (English and Latvian summaries) *Proceedings of the Latvian Probability Seminar, Vol.* 1 (*Riga*, 1991), 175–188, *Riga Tech. Univ., Riga*, 1992. (*see* **93e:60006**) 60J05 (47N30)

Khusainov, A. A. On the Hochschild-Mitchell dimension of the number line. (Russian) *Dokl. Akad. Nauk SSSR* **322** (1992), *no.* 2, 259–261; *translation in Soviet Math. Dokl.* **45** (1992), *no.* 1, 89–92. (Eduard Fuchs) **93g:18010** 18B35 (04A20, 06A05)

— Groups of extensions in the category of abelian diagrams. (Russian) *Sibirsk. Mat. Zh.* **33** (1992), *no.* 1, 179–185, 221; *translation in Siberian Math. J.* **33** (1992), *no.* 1, 149–154. (From the summary) **93k:18018** 18G40

— The Hochschild-Mitchell dimension of ordered sets. (Russian. Russian summary) *Sibirsk. Mat. Zh.* **33** (1992), *no.* 6, 211–215, 234; *translation in Siberian Math. J.* **33** (1992), *no.* 6, 1140–1143 (1993). (Summary) **93m:06002** 06A05 (04A30)

Khusainov, B. M. On the spectrum of autodimensions of homomorphic images of models. (Russian) *Dokl. Akad. Nauk UzSSR* **1991,** *no.* 3, 4–5. 03C57

Khusainov, D. Ya. (*with* Stadnik, O. I.) An algorithm for identifying the parameters of systems of differential equations. (Russian. Russian summary) *Vestnik Kiev. Univ. Model. Optim. Slozhn. Sist. No.* 9 (1990), 58–61. 93B30

— (*with* Nechaeva, I. G.) The stability of linear stochastic functional-differential systems. (Russian. Russian summary) *Vestnik Kiev. Univ. Model. Optim. Slozhn. Sist. No.* 9 (1990), 61–65. (Summary) **93d:34130** 34K20 (34K50)

— (*with* Stadnik, O. I.) Application of gradient search algorithms for studying the stability of nonlinear difference systems. (Russian) *Vychisl. Prikl. Mat. (Kiev) No.* 75 (1991), 35–38. (Summary) **93b:65201** 65Q05

— (*with* Nechaeva, I. G.) Obtaining estimates for the stability of solutions of stochastic functional-differential equations. (Russian. Russian summary) *Differentsial'nye Uravneniya* **28** (1992), *no.* 3, 405–414, 547; *translation in Differential Equations* **28** (1992), *no.* 3, 338–346. (Summary) **93h:60102** 60H99 (34K20, 34K50)

— An estimate for the stability of controllable systems with deviating argument of neutral type. (Russian. English and Russian summaries) *Dokl. Akad. Nauk Ukrainy* **1992,** *no.* 5, 76–78, 161. 93D05 (34K20)

— (*with* Nechaeva, I. G.) Stability under constantly acting perturbations of linear stochastic systems with delay. (Russian. Russian summary) *Sibirsk. Mat. Zh.* **33** (1992), *no.* 5, 107–114, 223; *translation in Siberian Math. J.* **33** (1992), *no.* 5, 842–849 (1993). (Summary) **93j:60080** 60H10 (34K20, 34K50)

— (*with* Nechaeva, I. G.) Investigation of conditions for the stability of stochastic perturbed systems with delay. (Russian. Russian and Ukrainian summaries) *Ukraïn. Mat. Zh.* **44** (1992), *no.* 8, 1060–1064; *translation in Ukrainian Math. J.* **44** (1992), *no.* 8, 960–964 (1993). (Summary) **93f:34138** 34K50 (34K20)

Khusainov, R. N. Inverse problems for the Bloch equation. (Russian) *Application of the methods of functional analysis to nonclassical equations of mathematical physics (Russian)*, 165–172, *Akad. Nauk SSSR Sibirsk. Otdel., Inst. Mat., Novosibirsk*, 1988. (R. G. Mukhometov) **93e:35119** 35R30 (35Q60)

Khusnutdinova, N. V. (*with* Vlaskin, A. V.) Solvability of boundary value problems for a degenerate quasilinear parabolic equation. (Russian. Russian summary) *Dinamika Sploshn. Sredy No.* 95 (1990), 40–55, 162. 35K60 (35K65)

— A model of a boundary layer with separation. (Russian. Russian summary) *Dinamika Sploshn. Sredy No.* 97 (1990), 146–166, 214. (Summary) **93d:35129** 35Q35 (76D10, 76D15)

Khutortsev, V. V. Use of the method of invariant embedding for synthesizing an iterative algorithm for finding an optimal control of a measurement process. *J. Comput. Systems Sci. Internat.* **30** (1992), *no.* 6, 133–137; *translated from Izv. Ross. Akad. Nauk Tekhn. Kibernet.* **1992,** *no.* 1, 200–203 (*Russian. Russian summary*). 93E11

— (*with* Strotsev, A. A.) A modified method of invariant embedding and its application for solving linear two-point boundary value problems. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **32** (1992), *no.* 5, 807–810; *translation in Comput. Math. Math. Phys.* **32** (1992), *no.* 5, 707–709. (Summary) **93b:65108** 65L10

Khutoryanskiĭ, N. M. The nonstationary dynamic Green tensor for a three-dimensional transversally isotropic elastic medium. (Russian) *Prikl. Problemy Proch. i Plast. No.* 44 (1990), 30–34. (From the text) **93b:73012** 73C02 (73B40, 73D15)

abi-Khuzam, Faruk F. *see* **Abi-Khuzam, Faruk F.**

abu-Khuzam, H. *see* **Abu-Khuzam, H.**

Khuzhaev, T. Kh. (*with* Pulatov, A. K.) On the combinatorial structure and cardinality of classes of linearly deformable polyhedra. (Russian) *Probabilistic methods and cybernetics, No.* 24 (*Russian*), 42–55, *Kazan. Gos. Univ., Kazan'*, 1990. (Yu. A. Shashkin) **93b:52009** 52B05 (52B10)

Khvedelidze, B. V. (*with* Vladimirov, V. S.; Kudryavtsev, L. D.; Mitropol'skiĭ, Yu. A.; Nikol'skiĭ, S. M.) Georgiĭ Semenovich Litvinchuk (on the occasion of his sixtieth birthday). (Russian) *Uspekhi Mat. Nauk* **47** (1992), *no.* 1(283), 221–223; *translation in Russian Math. Surveys* **47** (1992), *no.* 1, 271–274. (Editors) **93e:01028** 01A70

Khvedelidze, G. On the approximate solution of a class of singular integral equations. (Georgian. English and Russian summaries) *Soobshch. Akad. Nauk Gruzii* **144** (1991), *no.* 3, 357–360 (1992). 45E05 (65R20)

Khviengia, Zurab (*with* Das, Ashok; Sezgin, Ergin) Self-duality in 3 + 3 dimensions and the KP equation. (English summary) *Phys. Lett. B* **289** (1992), *no.* 3-4, 347–353. (Ziemowit Popowicz) **93k:58110** 58F07 (35Q53, 81T13)

Khvisevich, V. M. Solution of the exterior and interior Dirichlet problem of potential theory in a multiply connected domain. *J. Engrg. Phys.* **61** (1991), *no.* 5, 1435–1438 (1992); *translated from Inzh.-Fiz. Zh.* **61** (1991), *no.* 5, 858–862 (*Russian*). (Summary) **93c:31010** 31B20 (35K05, 80A20)

al-Khwārizmī, Muḥammad ibn Mūsā *see* **Rosenfeld, Boris A., 93a:01010** *and* **Allard, André, 93c:01013**

chan Khyu Bong *see* **Chan Khyu Bong**

Ki, U-Hang (*with* Kim, He-Jin; Nakagawa, Hisao) Real hypersurfaces with η-harmonic Weyl tensor of a complex space form. *Collection of papers dedicated to Prof. Jong Geun Park on his sixtieth birthday* (*Korean*), 89–102, *Jeonbug, Seoul*, 1989. (Bang-yen Chen) **93f:53045** 53C40

— (*with* Kim, Nam-Gil; Lee, Sung-Baik) On certain real hypersurfaces of a complex space form. *J. Korean Math. Soc.* **29** (1992), *no.* 1, 63–77. (Stere Ianus) **93d:53069** 53C40

— (*with* Kim, Byung Hak) Manifolds with Kaehler-Bochner metric. (English summary) *Kyungpook Math. J.* **32** (1992), *no.* 2, 285–290. (Bang-yen Chen) **93m:53075** 53C55

Ki, Yuen-Ching Fanny Multiple shrinkage estimators in multiple linear regression. *Comm. Statist. Theory Methods* **21** (1992), *no.* 1, 111–136. (Summary) **93d:62128** 62J07

Kia, Omid (*with* Sparmo, Joseph R.; Nguyen, Charles C.; Zhou, Zhen-Lei) Force control of robot manipulators using on-line scheduling and path-dependent linearization. (English and Polish summaries) *Systems Sci.* **18** (1992), *no.* 3, 67–77 (1993). 93C85 (93C95)

Kiang, T. *see* **Fang, Li Zhi, 93b:83065**

Kibalczyc, Krystyna (*with* Matula, Joanna) On an optimization problem with a cost of the variation of control. (Polish summary) *Bull. Soc. Sci. Lett. Łódź* **40** (1990), *no.* 11-20, 63–72. (Summary) **93h:49009** 49J15 (49K15)

Kibble, T. W. B. Cosmic strings. *J. J. Giambiagi Festschrift*, 241–257, *World Sci. Publishing, River Edge, NJ*, 1990. (*see* **93b:81004**) 83F05

von Kibed, Matthias Varga On some nonparadoxical self-referential sentences. *Logique et Anal.* (*N.S.*) **31** (1988), *no.* 123-124, 227–234. 03A05

Kibenko, A. V. On linear asymptotic equilibrium. (Russian. Russian summary) *Differential equations and their applications in physics* (*Russian*), 43–48, 108, *Dnepropetrovsk. Gos. Univ., Dnepropetrovsk*, 1989. (*see* **93g:00024**) 34D05

— On a boundary value problem on the semi-axis. (Russian. Russian summary) *Differential equations and their applications in physics* (*Russian*), 96–101, 108, *Dnepropetrovsk. Gos. Univ., Dnepropetrovsk*, 1990. (*see* **93k:00023**) 34B15 (34A34)

Kibler, Maurice (*with* Négadi, Tidjani) On quantum groups and their potential use in mathematical chemistry. (English summary) Concepts in mathematical chemistry (Bled, 1991). *J. Math. Chem.* **11** (1992), *no.* 1-3, 13–25. (A. J. Coleman) **93k:81101** 81R50 (16W30, 17B37, 81–02)

— (*with* Négadi, Tidjani) A q-deformed Aufbau Prinzip. *J. Phys. A* **25** (1992), *no.* 4, L157–L160. (A. Ventura) **93b:81116** 81R50 (81V45)

— (*with* Tuszyński, J. A.) The formation of coherent structures in strongly interacting q-boson systems. *J. Phys. A* **25** (1992), *no.* 9, 2425–2435. (K. Wódkiewicz) **93f:81051** 81R30 (81R50, 81V35)

— (*with* Katriel, Jacob) Normal ordering for deformed boson operators and operator-valued deformed Stirling numbers. *J. Phys. A* **25** (1992), *no.* 9, 2683–2691. (Summary) **93b:81083** 81R05 (05A10, 81R50)

— (*with* Drăgănescu, Gh. E.; Campigotto, C.) On a generalized Aharonov-Bohm plus Coulomb system. (English summary) *Phys. Lett. A* **170** (1992), *no.* 5, 339–343. (Nathalie Debergh) **93m:81054** 81R30 (22E70, 81R50)

Kibzun, A. I. (*with* Zabelin, S. A.) Control of a linear scalar fuzzy system. (Russian. Russian summary) *Avtomat. i Telemekh.* **1992,** *no.* 7, 62–69; *translation in Automat. Remote Control* **53** (1992), *no.* 7, *part* 1, 1006–1012. (Jiří Šůstal) **93j:93084** 93C42 (93B40, 93C55)

Kichenassamy, S. Dirac equations in curved space-time. (French summary) *Studies in the history of general relativity* (*Luminy*, 1988), 383–392, 462, *Einstein Stud.*, 3, *Birkhäuser Boston, Boston, MA*, 1992. (*see* **93a:01001**) 01A60 (83–03)

Kichenassamy, Satyanad (*with* Olver, Peter J.) Existence and nonexistence of solitary wave solutions to higher-order model evolution equations. (English summary) *SIAM J. Math. Anal.* **23** (1992), *no.* 5, 1141–1166. (R. M. Gundersen) **93h:35165** 35Q35 (35Q53, 76B15, 76B25)

Kida, Hiroshi (*with* Kokame, Hideki; Mori, Takehiro) A lower bound of the degree of stability for a matrix polytope and its applications. *Mem. Osaka Inst. Tech. Ser. A* **36** (1992), *no.* 2, 43–61. (Summary) **93a:93082** 93D09

Kida, Kenshi A note on integral representations of alternating groups. (English summary) *SUT J. Math.* **27** (1991), *no.* 1, 43–48. (William H. Gustafson) **93j:20015** 20C10 (20C30)

Kida, Shigeo (*with* Orszag, Steven A.) Energy and spectral dynamics in decaying compressible turbulence. *J. Sci. Comput.* **7** (1992), *no.* 1, 1–34. (Summary) **93c:76051** 76F99 (76N15)

Kida, Takuro (*with* Mochizuki, Hiroshi) Study of the superiority of generalized linear interpolation approximation. *Electron. Comm. Japan Part III Fund. Electron. Sci.* **74** (1991), *no.* 11, 15–27 (1992). (Summary) **93a:94010** 94A12 (41A30, 41A63)

— (*with* Sa-nguankotchakorn, Somsak) A study of generating functions of sampling theorems and optimum interpolation functions minimizing some kinds of measures. (English summary) *Electron. Comm. Japan Part III Fund. Electron. Sci.* **75** (1992), *no.* 8, 1–18. (Summary) **93m:94003** 94A11

Kider, J. R. (*with* Naoum, Adil G.; Al-Hashimi, Basil Atta) On the module of homomorphisms on finitely generated multiplication modules. I. *Period. Math. Hungar.* **22** (1991), *no.* 2, 97–105. (From the introduction) **93f:13005** 13C13

— (*with* Naoum, Adil G.; Al-Hashimi, Basil Atta) On the module of homomorphisms on finitely generated multiplication modules. II. *Period. Math. Hungar.* **22** (1991), *no.* 3, 153–160. (Shi Zhong Pan) **93f:13006** 13C13

Kidera, Toru (*with* Miyajima, Shizuo) Contractive completions of operator matrices. (English summary) *SUT J. Math.* **27** (1991), *no.* 1, 49–71. (Joseph A. Ball) **93k:47012** 47A20

Kidjégbo Touré, Augustin Orbites tempérées et orbits fermées de la représentation coadjointe d'un groupe de Lie résoluble. (English and French summaries) [Tempered orbits and closed orbits of the coadjoint representation of a solvable Lie group] *C. R. Acad. Sci. Paris Sér. I Math.* **316** (1993), *no.* 3, 225–227. (Summary) **93m:22009** 22E25 (22E60)

Kido, Kunihiko The Artin index of $SL(2, q)$. (English summary) *SUT J. Math.* **27** (1991), *no.* 1, 17–41. (Jia-Chen Ye) **93j:20020** 20C15 (20G40)

Kidwell, Peggy Aldrich *see* **Martin, Ernst, 93d:01044**

Kieboom, R. W. Notes on homotopy pull-backs. *Quaestiones Math.* **14** (1991), *no.* 4, 445–452. (Timothy Porter) **93b:55027** 55U35

Kiechle, Hubert Erweiterungen lokal endlicher André-Systeme. [Extensions of locally finite André systems] *Abh. Math. Sem. Univ. Hamburg* **62** (1992), 147–161. (Franz B. Kalhoff) **93i:51004** 51A40 (12K99, 51E15)

— Der Kern einer automorphen Ableitung und eine Anwendung auf normale Teilkörper verallgemeinerter André-Systeme. [The kernel of an automorphic derivation and an application to normal subfields of generalized André systems] *Arch. Math.* (*Basel*) **58** (1992), *no.* 5, 514–520. (Franz B. Kalhoff) **93e:51004** 51A40 (12K99, 51E15, 51J99)

Kiefer, Nicholas M. (*with* Christensen, Bent Jesper) The exact likelihood function for an empirical job search model. *Econometric Theory* **7** (1991), *no.* 4, 464–486. (Manfred Kraft) **93c:62168** 62P20 (62A10, 90A19)

Kiehl, M. (*with* von Stryk, O.) Real-time optimization of a hydroelectric power plant. (English and German summaries) *Computing* **49** (1992), *no.* 3, 171–191. 49N55 (65K10, 90C90)

Kiehn, R. M. Compact dissipative flow structures with topological coherence, embedded in Eulerian environments. (English summary) *Nonlinear dynamics of structures* (*Vladimir Maiakovskiĭ*, 1990), 139–163, *World Sci. Publishing, River Edge, NJ*, 1991. (Summary) **93h:76019** 76D05 (58F40)

Kielhöfer, Hansjörg Hopf bifurcation from a differentiable viewpoint. *J. Differential Equations* **97** (1992), *no.* 2, 189–232. (Norman Dancer) **93f:58036** 58E07 (34C23, 34C25, 47H15, 58F14)

— Smoothness of global positive branches of nonlinear elliptic problems over symmetric domains. *Math. Z.* **211** (1992), *no.* 1, 41–48. (H. J. Kuiper) **93k:35106** 35J65 (35B32, 35B65, 47H15, 47N20, 58G28)

— (*with* Healey, Timothy J.) Hidden symmetry of fully nonlinear boundary conditions in elliptic equations: global bifurcation and nodal structure. *Results Math.* **21** (1992), *no.* 1-2, 83–92. (J. López Gómez) **93d:35053** 35J65 (35B32, 47H15, 47N20, 58G28)

— Smoothness and asymptotics of global positive branches of $\Delta u + \lambda f(u) = 0$. *Z. Angew. Math. Phys.* **43** (1992), *no.* 1, 139–153. (H. J. Kuiper) **93b:35047** 35J65 (35B32)

le duc Kiem *see* **Le Duc Kiem**

pham le Kien *see* **Pham Le Kien**

Kiendl, H. (*with* Adamy, J.; Stelzner, P.) Vector norms as Lyapunov functions for linear systems. *IEEE Trans. Automat. Control* **37** (1992), *no.* 6, 839–842. (Denis Khusainov) **93f:34083** 34D20 (93D05)

Kienel, Christoph (*with* Klingler, Anton) Campbell-Baker-Hausdorff formula and Lie-series: formula manipulation in TURBO-PROLOG. (English summary) *European Conference on Iteration Theory* (*Batschuns*, 1989), 171–176, *World Sci. Publishing, River Edge, NJ*, 1991. (Summary) **93g:22001** 22–04

Kienitz, K. H. Stabilization of uncertain sampled-data systems. (English summary) *Control of uncertain systems* (*Bremen*, 1989), 163–178, *Progr. Systems Control Theory*, 6, *Birkhäuser Boston, Boston, MA*, 1990. (Summary) **93i:93105** 93D15 (93C57)

Kierlik, E. (*with* Rosinberg, M. L.) The classical fluid of associating hard rods in an external field. (English summary) *J. Statist. Phys.* **68** (1992), *no.* 5-6, 1037–1063. (Victor I. Gerasimenko) **93i:82048** 82B99 (82D15)

Kiers, Henk A. L. (*with* ten Berge, Jos M. F.) Minimization of a class of matrix trace functions by means of refined majorization. (English summary) *Psychometrika* **57** (1992), *no.* 3, 371–382. (Summary) **93e:62140** 62H05 (62P15)

— (*with* Lazraq, Aziz; Cléroux, Robert) Mesures de liaison vectorielle et généralisation de l'analyse canonique. (English summary) [Vector measures of association and a generalization of the canonical analysis] *Rev. Statist. Appl.* **40** (1992), *no.* 1, 23–35. 62H20

Kierstead, H. A. (*with* Trotter, William T.) A note on removable pairs. *Graph theory, combinatorics, and applications. Vol.* 2 (*Kalamazoo, MI*, 1988), 739–742, *Wiley-Intersci. Publ., Wiley, New York*, 1991. (*see* **93b:05003**) 06A07

— (*with* Trotter, William T.) Colorful induced subgraphs. Special volume to mark the centennial of Julius Petersen's "Die Theorie der regulären Graphs", Part II. *Discrete Math.* **101** (1992), *no.* 1-3, 165–169. (András Gyárfás) **93e:05031** 05C15 (05C20)

— (*with* Trotter, William T.) Planar graph coloring with an uncooperative partner. (English summary) *Planar graphs* (*New Brunswick, NJ*, 1991), 85–93, *DIMACS Ser. Discrete Math. Theoret. Comput. Sci.*, 9, *Amer. Math. Soc., Providence, RI*, 1993. (*see* **93m:05005**) 05C35 (05C10)

Kiesel, Rüdiger Power series methods and almost sure convergence. *Math. Proc. Cambridge Philos. Soc.* **113** (1993), *no.* 1, 195–204. (N. H. Bingham) **93i:60061** 60F15

Kieser, R. (*with* Schwab, Christoph; Wendland, Wolfgang L.) Numerical evaluation of singular and finite-part integrals on curved surfaces using symbolic manipulation. (English and German summaries) *Computing* **49** (1992), *no.* 3, 279–301. (Summary) **93i:65037** 65D30

Kiessler, Peter C. (*with* Wortman, Martin A.; Disney, Ralph L.) The $M/GI/1$ Bernoulli feedback queue with vacations. *Queueing Systems Theory Appl.* **9** (1991), *no.* 4, 353–363. (U. Narayan Bhat) **93d:60159** 60K25 (90B22)

— (*with* Wortman, Martin A.) Workload in queues having priorities assigned according to service time. *Queueing Systems Theory Appl.* **10** (1992), *no.* 4, 403–408. (Summary) **93c:60148** 60K25 (90B22)

Kiessling, Michael K.-H. Finite-volume statistical mechanics of two-component Coulomb-like systems and the principle of macroscopic equivalence. *Comm. Math. Phys.* **146** (1992), *no.* 2, 311–331. (Krystyna Parczyk) **93g:82007** 82B05 (82B26, 82B30)

— Uniform upper bounds (and thermodynamic limit) for the correlation functions of symmetric Coulomb-type systems. *J. Statist. Phys.* **66** (1992), *no.* 5-6, 1359–1382. (M. Lawrence Glasser) **93d:82010** 82B05 (82B10)

— (*with* Gebhardt, Ute) The structure of ideal magnetohydrodynamics with incompressible steady flow. *Phys. Fluids B* **4** (1992), *no.* 7, *part* 1, 1689–1701. (Summary) **93a:76107** 76W05

— On a recently proposed method for the calculation of partition functions. Comment on: "Exact calculation method of the partition function for one-component classical systems with two-body interactions" [Phys. Lett. A **147** (1990), no. 8-9, 442–444; MR 92a:82010] by A. Yu. Zakharov. With a reply by Zakharov. *Phys. Lett. A* **167** (1992), *no.* 2, 220–225. 82B05

— Statistical mechanics of classical particles with logarithmic interactions. (English summary) *Comm. Pure Appl. Math.* **46** (1993), *no.* 1, 27–56. (Flora Koukiou) **93k:82003** 82B05 (82B21)

Kifer, Michael (*with* Subrahmanian, V. S.) Theory of generalized annotated logic programming and its applications. *J. Logic Programming* **12** (1992), *no.* 4, 335–367. (Summary) **93b:68082** 68T27 (68N17)

Kifer, Yuri Large deviations for random expanding maps. (English summary) *Lyapunov exponents (Oberwolfach, 1990)*, 178–186, *Lecture Notes in Math.*, **1486**, *Springer, Berlin*, 1991. (M. L. Blank) **93g:28021** 28D20 (58F11, 60F10)

— (*with* Newhouse, Sheldon E.) A global volume lemma and applications. *Israel J. Math.* **74** (1991), *no.* 2-3, 209–223. (Romeo F. Thomas) **93a:58134** 58F15 (58F25)

— Averaging in dynamical systems and large deviations. (English summary) *Invent. Math.* **110** (1992), *no.* 2, 337–370. (Manfred Denker) **93m:60118** 60H10 (58F11, 60F10)

— Equilibrium states for random expanding transformations. (English summary) *Random Comput. Dynamics* **1** (1992/93), *no.* 1, 1–31. (Ladislav Andrey) **93j:58075** 58F11

Kigami, Jun On Laplacians on self-similar sets—analysis on fractals. (Japanese) *Sūgaku* **44** (1992), *no.* 1, 13–28. (Yasushi Ishikawa) **93k:60003** 60–02 (31C25, 60J45)

— Harmonic calculus on p.c.f. self-similar sets. *Trans. Amer. Math. Soc.* **335** (1993), *no.* 2, 721–755. (Shigeru Haruki) **93d:39008** 39A12 (31C05)

Kiguradze, I. T. An oscillation criterion for a class of ordinary differential equations. (Russian. Russian summary) *Differentsial'nye Uravneniya* **28** (1992), *no.* 2, 207–219, 364; *translation in Differential Equations* **28** (1992), *no.* 2, 180–190. (L. Pintér) **93k:34073** 34C10

— *see also* **Reports: Seminar of the I. N. Vekua Institute of Applied Mathematics, Extended Sessions, 93a:00015c**

Kihara, Masahiko (*with* Okada, Tsuyoshi; Ikeda, Masakazu; Honma, Toshihiro) System observer techniques in robust control systems design synthesis. *Robust control system techniques and applications, Part* 1, 79–118, *Control Dyn. Syst. Adv. Theory Appl.*, 50, *Academic Press, San Diego, CA*, 1992. (*see* **93d:93007**) 93B36 (93D15)

Kiho, T. Optimality region of the m-step Lavrentiev method. (English summary) *Ill-posed problems in natural sciences (Moscow, 1991)*, 44–47, *VSP, Utrecht*, 1992. (*see* **93m:00041**) 65J99

Kiihl, J. Carlos de S. (*with* Demaria, Davide C.) On the simple quotients of tournaments that admit exactly one Hamiltonian cycle. (Italian summary) *Atti Accad. Sci. Torino Cl. Sci. Fis. Mat. Natur.* **124** (1990), *no.* 3-4, 94–108. (Brian Alspach) **93c:05050** 05C20

— (*with* Demaria, Davide C.) Some remarks on the enumeration of the Douglas tournaments. (Italian summary) *Atti Accad. Sci. Torino Cl. Sci. Fis. Mat. Natur.* **124** (1990), *no.* 5-6, 169–185. (Brian Alspach) **93c:05051** 05C20

— (*with* Demaria, Davide C.) On the complete digraphs which are simply disconnected. (English summary) *Publ. Mat.* **35** (1991), *no.* 2, 517–525. (Zhaojun Liang) **93m:05077** 05C20 (05C40)

— Bordism ring of complex involutions. (English summary) V International Meeting on Topology in Italy (Italian) (Lecce, 1990/Otranto, 1990). *Rend. Circ. Mat. Palermo* (2) *Suppl. No.* 29 (1992), 251–287. (R. E. Stong) **93i:57045** 57R85

— (*with* Demaria, Davide C.) On complete digraphs which are associated to spheres. (English summary) V International Meeting on Topology in Italy (Italian) (Lecce, 1990/Otranto, 1990). *Rend. Circ. Mat. Palermo* (2) *Suppl. No.* 29 (1992), 495–510. (Joseph Zaks) **93k:57051** 57Q05 (05C20, 57M15, 57Q99)

Kiiveri, H. T. Fitting spatial correlation models: approximating a likelihood approximation. (English summary) *Austral. J. Statist.* **34** (1992), *no.* 3, 497–512. (Summary) **93k:62185** 62M10 (62H11)

— Canonical variate analysis of high-dimensional spectral data. (English summary) *Technometrics* **34** (1992), *no.* 3, 321–331. 62H30

Kijima, Kyoichi (*with* Tanaka, Kenji) Universal maps for binary preference structure generating decision principle functors. (English summary) *Internat. J. Systems Sci.* **23** (1992), *no.* 7, 1083–1099. (Summary) **93c:90008** 90A05 (93A05)

Kijima, Masaaki (*with* Sumita, Ushio) Theory and algorithms of the Laguerre transform. II. Algorithm. *J. Oper. Res. Soc. Japan* **34** (1991), *no.* 4, 449–477. (P. M. Gupta) **93b:65203** 65R10 (65Dxx, 65U05, 90B22)

— (*with* Abate, Joseph; Whitt, Ward) Decompositions of the $M/M/1$ transition function. *Queueing Systems Theory Appl.* **9** (1991), *no.* 3, 323–336. (Brian Conolly) **93b:60205** 60K25

— Further monotonicity properties of renewal processes. *Adv. in Appl. Probab.* **24** (1992), *no.* 3, 575–588. (Philip J. Boland) **93g:60026** 60E05 (60K05)

— (*with* Makimoto, Naoki) A unified approach to $GI/M(n)/1/K$ and $M(n)/G/1/K$ queues via finite quasi-birth-death processes. *Comm. Statist. Stochastic Models* **8** (1992), *no.* 2, 269–288. (Summary) **93i:60175** 60K25

— On the existence of quasi-stationary distributions in denumerable R-transient Markov chains. *J. Appl. Probab.* **29** (1992), *no.* 1, 21–36. (Rita Chattopadhyay) **93c:60099** 60J10

— Evaluation of the decay parameter for some specialized birth-death processes. (English summary) *J. Appl. Probab.* **29** (1992), *no.* 4, 781–791. (Erik A. van Doorn) **93i:60156** 60J80

— (*with* Makimoto, Naoki) Computation of the quasi-stationary distributions in $M(n)/GI/1/K$ and $GI/M(n)/1/K$ queues. (English summary) *Queueing Systems Theory Appl.* **11** (1992), *no.* 3, 255–272. (Summary) **93g:60192** 60K25

Kijima, Yōichi A fixed point theorem for nonexpansive self-maps of a metric space with some convexity. (English summary) *Math. Japon.* **37** (1992), *no.* 4, 707–709. 54H25

Kijowski, Jerzy (*with* Thielmann, Artur) A lattice approximation of the Dirac equation. (English summary) *Differential geometry, group representations, and quantization*, 85–97, *Lecture Notes in Phys.*, 379, *Springer, Berlin*, 1991. (Summary) **93e:81018** 81Q05

— (*with* Magli, Giulio) A generalization of the relativistic equilibrium equations for a nonrotating star. *Gen. Relativity Gravitation* **24** (1992), *no.* 2, 139–158. (G. G. Asgekar) **93c:83072** 83C55

— (*with* Magli, Giulio) Relativistic elastomechanics as a Lagrangian field theory. *J. Geom. Phys.* **9** (1992), *no.* 3, 207–223. (Jaime Muñoz Masqué) **93i:58040** 58E30 (73B99, 73C50)

Kikkawa, Michihiko Projectivity of homogeneous left loops on Lie groups. II. Local theory. *Mem. Fac. Sci. Shimane Univ.* **24** (1990), 1–16. (Summary) **93a:53041** 53C30 (20N05)

— Projectivity of homogeneous left loops. *Nonassociative algebras and related topics (Hiroshima, 1990)*, 77–99, *World Sci. Publishing, River Edge, NJ*, 1991. (Summary) **93g:53023** 53A60 (20N05, 22A30)

— (*with* Sanami, Manabu) A class of double Lie algebras on simple Lie algebras and projectivity of simple Lie groups. *Mem. Fac. Sci. Shimane Univ.* **25** (1991), 39–44. (Joseph C. Ferrar) **93b:17017** 17B05 (53C30)

— Symmetrizability of geodesic homogeneous left Lie loops. *Proceedings of the* 3*rd Congress of Geometry (Thessaloniki, 1991)*, 230–238, *Aristotle Univ. Thessaloniki, Thessaloniki*, 1992. (Vladislav Goldberg) **93j:17064** 17D99 (20N05, 22A30, 53C05)

Kikuchi, Fumio (*with* Yamada, Takahiro; Wada, A.) A 9-node mixed shell element based on the Hu-Washizu principle. (English summary) *Comput. Mech.* **7** (1991), *no.* 3, 149–171. (Summary) **93c:73097** 73V05 (73K15, 73V25)

— (*with* Yamada, Takahiro) An arbitrary Lagrangian-Eulerian finite element method for incompressible hyperelasticity. (English summary) *Comput. Methods Appl. Mech. Engrg.* **102** (1993), *no.* 2, 149–177. (Summary) **93i:73056** 73V05 (73G05, 73V25)

Kikuchi, Kazunori Representing positive homology classes of $\mathbf{CP}^2\#2\overline{\mathbf{CP}}^2$ and $\mathbf{CP}^2\#3\overline{\mathbf{CP}}^2$. *Proc. Amer. Math. Soc.* **117** (1993), *no.* 3, 861–869. (Terry Lawson) **93d:57065** 57R95 (57N13)

Kikuchi, Macoto (*with* Ito, Nobuyasu; Okabe, Yutaka) Recycle of random sequences. (English summary) *Internat. J. Modern Phys. C* **4** (1993), *no.* 3, 569–590. 82B80 (65C20)

Kikuchi, Masato Improved ratio inequalities for martingales. *Studia Math.* **99** (1991), *no.* 2, 109–113. (R. F. Gundy) **93b:60097** 60G44

Kikuchi, Noboru (*with* Suzuki, Katsuyuki) Generalized layout optimization of three-dimensional shell structures. *Geometric aspects of industrial design (Wright-Patterson Air Force Base, OH, 1990)*, 62–88, *SIAM, Philadelphia, PA*, 1992. (Summary) **93a:73063** 73K40 (73K15, 73K20)

— (*with* Diaz, Alejandro R.) Solutions to shape and topology eigenvalue optimization problems using a homogenization method. (English summary) *Internat. J. Numer. Methods Engrg.* **35** (1992), *no.* 7, 1487–1502. (Summary) **93f:73073** 73K40 (73K12, 73K20)

Kikuchi, Norio An approach to the construction of Morse flows for variational functionals. *Nematics (Orsay, 1990)*, 195–199, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 332, *Kluwer Acad. Publ., Dordrecht*, 1991. (From the text) **93i:58041** 58E30 (49Q20)

Kikuchi, Shigetaka (*with* Miron, Radu) Legendre transformations of the generalized Lagrange space. *Tensor (N.S.)* **50** (1991), *no.* 2, 177–182. (H. Rund) **93c:53014** 53B40 (70G99)

Kikuchi, Yukio (*with* Bougourzi, A. H.; Ho-Kim, Q.; Lam, C. S.) Screening currents in free-field representations of Kac-Moody algebras. *Internat. J. Modern Phys. A* **6** (1991), *no.* 23, 4181–4208. (Alex Jay Feingold) **93a:17025** 17B67 (81R10, 81T40)

— (*with* Bougourzi, H. A.) Bernstein-Gel'fand-Gel'fand resolution of W_3 algebra in the lattice approach. *Internat. J. Modern Phys. A* **7** (1992), *no.* 10, 2219–2244. (Katsushi Ito) **93c:81063** 81R10 (17B10, 81T40)

— (*with* Ishizuka, Wataru) Improved $SU(2)_k$ Wess-Zumino-Witten model. *Phys. Rev. D* (3) **45** (1992), *no.* 12, 4569–4580. (Stanislav Z. Pakuliak) **93e:81116** 81T40 (81R10, 81T60)

Kikukawa, Yoshio Chiral symmetry and operator mixing in lattice $SU(N)$ Thirring model with shift symmetry. *Modern Phys. Lett. A* **7** (1992), *no.* 10, 871–880. (Summary) **93b:81199** 81T27 (81T25)

Kikuta, Kensaku A search game with traveling cost. *J. Oper. Res. Soc. Japan* **34** (1991), *no.* 4, 365–382. (Teruhisa Nakai) **93a:90100** 90D44 (90B40)

Kikuta, T. (*with* Kawaguchi, Y.; Miyazaki, F.) Map aided flexible trajectory generation for a mobile robot. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, II (Kobe, 1991)*, 615–620, *Mita, Tokyo*, 1992. (*see* **93g:93006**) 93C85 (70B15, 70Q05)

Kilakos, K. (*with* Reed, Bruce) A semi-integral total colouring. (English summary) *Sets, graphs and numbers (Budapest, 1991)*, 429–438, *Colloq. Math. Soc. János Bolyai*, 60, *North-Holland, Amsterdam*, 1992. (Summary) **93m:05070** 05C15

Kilbas, A. A. (*with* Vasilets, S. I.) On the solution of integral equations of the first kind with weak singularities in an n-dimensional spherical layer. (Russian) *Dokl. Akad. Nauk SSSR* **321** (1991), *no.* 5, 880–884; *translation in Soviet Math. Dokl.* **44** (1992), *no.* 3, 804–808. (Józef Banaś) **93b:45006** 45E10

Kilgore, Theodore Simultaneous approximation of derivatives. *Approximation theory (Memphis, TN, 1991)*, 353–361, *Lecture Notes in Pure and Appl. Math.*, 138, *Dekker, New York*, 1992. (Mircea Ivan) **93h:41018** 41A28

— (*with* Balázs, Katherine) Pointwise exponentially weighted estimates for approximation on the half-line. (English summary) *Numer. Funct. Anal. Optim.* **13** (1992), *no.* 3-4, 223–232. (Ying Guang Shi) **93f:41027** 41A28

— An elementary simultaneous approximation theorem. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 2, 529–536. (Joseph M. Lambert) **93g:41011** 41A28 (41A65, 42A10)

Kilgour, D. Marc (*with* Gerchak, Yigal) Sequential competitions with nondecreasing levels of difficulty. (English summary) *Oper. Res. Lett.* **13** (1993), *no.* 1, 49–58. (Summary) **93k:90106** 90C90 (90C39)

Kilibarda, G. A new proof of the Budach-Podkolzin theorem. (Russian) *Diskret. Mat.* **3** (1991), *no.* 3, 135–146. (From the text) **93a:68101** 68Q70

Kilic, Veli On the absolute summability factors of infinite series. *Pure Appl. Math. Sci.* **35** (1992), *no.* 1-2, 13–17. (Amnon Jakimovski) **93k:40002** 40D15 (40F05, 40G99)

Killgrove, Ray (*with* Gordon, Carl E.; Tamez, Rodolfo) Local motions using 5-arcs. Proceedings of the Twenty-first Southeastern Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, FL, 1990). *Congr. Numer.* **79** (1990), 101–118. (From the introduction) **93g:51011** 51E21

— (*with* Sternfeld, Robert; Gordon, Carl E.; Tamez, Rodolfo; Koster, David; Wilkens, John) Local motions in sets of MOLS. Proceedings of the Twenty-second Southeastern Conference on Combinatorics, Graph Theory, and Computing (Baton Rouge, LA, 1991). *Congr. Numer.* **83** (1991), 97–113. (J. Dénes) **93c:05029** 05B15

— (*with* Tamez, Rodolfo; Sternfeld, Robert; et al.) Local isotopy and local motions in Steiner systems. Proceedings of the Twenty-third Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, FL, 1992). *Congr. Numer.* **89** (1992), 129–151. (Ian Blake) **93m:05032** 05B07 (05B15, 05B25)

Killingback, T. P. Quantization of SL(2, **R**) Chern-Simons theory. *Comm. Math. Phys.* **145** (1992), *no.* 1, 1–16. (Michael Thaddeus) **93f:58090** 58F06 (22E70, 32G81, 81S10, 81T13)

Killingbeck, John P. ★ Microcomputer algorithms. Action from algebra. *Adam Hilger, Ltd., Bristol*, 1991. xvi+235 *pp. ISBN* 0-7503-0097-3 65–04 (65Fxx, 65Yxx)

— (*with* Jolicard, Georges) Perturbation methods for the matrix eigenproblem. (English summary) *J. Phys. A* **25** (1992), *no.* 23, 6455–6459. 65F15 (15A18)

— (*with* Jolicard, Georges) The folding algorithm for pentadiagonal matrices. *Phys. Lett. A* **166** (1992), *no.* 3-4, 159–162. (Summary) **93c:65053** 65F15
— (*with* Jolicard, Georges) Two simple eigenvalue shooting algorithms. (English summary) *Phys. Lett. A* **172** (1993), *no.* 5, 313–315. (M. Znojil) **93k:81005** 81–08 (65B05, 65L99)
Killingbergtrø, Hans Georg *see* **Hansen, H. C., 93j:52012**
Kilmer, Shelby J. (*with* Kozłowski, Wojciech M.) On some properties of sets of best approximants in Musielak-Orlicz spaces. *Comment. Math. Prace Mat.* **31** (1991), 59–71. (L. G. Labsker) **93b:41038** 41A65 (41A30, 41A50, 46E30)
— (*with* Kozłowski, Wojciech M.; Lewicki, Grzegorz) Sigma order continuity and best approximation in L_p-spaces. *Comment. Math. Univ. Carolin.* **32** (1991), *no.* 2, 241–250. (Khalil Ahmad) **93a:41065** 41A65 (41A50, 46E30)
— Best approximants in Musielak-Orlicz spaces. *Approximation theory* (*Memphis, TN*, 1991), 363–376, *Lecture Notes in Pure and Appl. Math.*, 138, *Dekker, New York*, 1992. (From the introduction) **93e:41050** 41A65 (46E30)
Kilp, Mati (*with* Knauer, Ulrich) Characterization of monoids by properties of generators. *Comm. Algebra* **20** (1992), *no.* 7, 1841–1856. (Alessandra Cherubini) **93g:20126** 20M50
— Mathematics in Tartu University (a historical survey). (English summary) *Proceedings of the First Estonian Conference on Graphs and Applications* (*Tartu-Kääriku*, 1991), 74–76, *Tartu Univ., Tartu*, 1993. (*see* **93m:05006**) 01A73
— *see also* **Proceedings: Conference on Graphs and Applications, 93m:05006**
Kilpeläinen, Tero (*with* Malý, Jan) Supersolutions to degenerate elliptic equation on quasi open sets. *Comm. Partial Differential Equations* **17** (1992), *no.* 3-4, 371–405. (Juha Heinonen) **93g:31022** 31C45 (35B65, 35J70)
— (*with* Heinonen, J.; Martio, Olli) Harmonic morphisms in nonlinear potential theory. *Nagoya Math. J.* **125** (1992), 115–140. (S. K. Vodop'yanov) **93e:30052** 30C65 (35J60)
Kim, A. V. (*with* Dolgii, Yu. F.) On the method of Lyapunov functionals for systems with aftereffect. (Russian) *Differentsial'nye Uravneniya* **27** (1991), *no.* 8, 1313–1318, 1468; *translation in Differential Equations* **27** (1991), *no.* 8, 918–922 (1992). (Denis Khusainov) **93b:34099** 34K20
— Bellman's equation for systems with after-effect. *Soviet J. Comput. Systems Sci.* **30** (1992), *no.* 2, 77–83; *translated from Izv. Akad. Nauk SSSR Tekhn. Kibernet.* **1991,** *no.* 2, 54–60 (*Russian*). (Min Sun) **93d:49035** 49L20 (34K35, 49K25)
— On the dynamic programming method for systems with delays. (English summary) *Computational systems analysis* 1992 (*Berlin*, 1992), 61–66, *Elsevier, Amsterdam*, 1992. (*see* **93e:00021**) 49L20 (49K25)
Kim, Ann Chi (*with* Neumann, B. H.) Laws in a class of groupoids. *Discrete Math.* **92** (1991), *no.* 1-3, 145–158. (D. V. Dekov) **93a:20100** 20M14 (20N02)
— (*with* Niemenmaa, Markku; Rosenberger, Gerhard) A note on the Lonergan-Hosack presentation. *Hokkaido Math. J.* **20** (1991), *no.* 3, 519–521. (Benjamin Fine) **93f:20040** 20F05
— (*with* Song, Hyun-Jong) On a family of hyperbolic 3-manifolds. *Proceedings of Asian Mathematical Conference*, 1990 (*Hong Kong*, 1990), 234–241, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93b:00022**) 57M50
— (*with* Johnson, David Lawrence) Periodic Fibonacci algebras. *Proc. Edinburgh Math. Soc.* (2) **35** (1992), *no.* 2, 169–172. (Summary) **93f:08008** 08B20 (20K99)
Kim, B. K. (*with* Jin, Gyo Taek; Ko, Ki Hyoung) Adequate links and the Jones polynomial of unlinks. *Knots* 90 (*Osaka*, 1990), 185–193, *de Gruyter, Berlin*, 1992. (Yongwu Rong) **93e:57008** 57M25
Kim, Bang-Ok Some bounds in a nonlinear eigenvalue problem on Riemannian manifold. *Honam Math. J.* **14** (1992), *no.* 1, 51–58. (Laurent Véron) **93i:58165** 58G30 (35J65, 35P30)
Kim, Byeong Man (*with* Lee, Sang-Ho; Maeng, Seung Ryoul; Cho, Jung Wan) A new algorithm for subsumption test. (English summary) *Fifth generation computer systems, Vol.* 1, 2 (*Tokyo*, 1992), 643–649, *Ohm, Tokyo*, 1992. (Summary) **93j:68177** 68T15
— (*with* Cho, Jung Wan) A new subsumption method in the connection graph proof procedure. (English summary) *Theoret. Comput. Sci.* **103** (1992), *no.* 2, 283–309. (Summary) **93j:68178** 68T15 (03B35)
Kim, Byung Chun (*with* Lee, Byung Gook) An efficient algorithm for the nonparametric regression estimation. (English summary) *J. Japanese Soc. Comput. Statist.* **5** (1992), *no.* 1, 65–73. 62G05
Kim, Byung Hak (*with* Ki, U-Hang) Manifolds with Kaehler-Bochner metric. (English summary) *Kyungpook Math. J.* **32** (1992), *no.* 2, 285–290. (Bang-yen Chen) **93m:53075** 53C55
Kim, Byung Hwee A class of admissible estimators in the one parameter exponential family. *J. Korean Statist. Soc.* **20** (1991), *no.* 1, 57–66. (Kurt Hoffmann) **93b:62012** 62C15 (62F15)
Kim, Byung Soo (*with* Park, Cheolyong) Some remarks on testing goodness of fit for the Poisson assumption. *Comm. Statist. Theory Methods* **21** (1992), *no.* 4, 979–995. (Title) **93f:62026** 62F03 (62G10)
Kim, Chang-Ho (*with* Kim, Y. S.) Space-time geometry of relativistic particles in four-dimensional phase space. *J. Math. Phys.* **32** (1991), *no.* 8, 1998–2006. (Summary) **93g:81065** 81S30
Kim, Chi Yong (*with* Choi, Han Sik; Kim, Woo Chul; Jeon, Jong Woo) A strong large deviations theorem for the ratio of independent random variables. *J. Korean Math. Soc.* **29** (1992), *no.* 1, 153–163. (V. K. Rohatgi) **93e:60050** 60F10
Kim, Chkhor-Khun Operator multiplicative martingales with a finite number of jumps. (Russian. Russian summary) *Stochastic equations and boundary theorems* (*Russian*), 65–73, *Akad. Nauk Ukrainy, Inst. Mat., Kiev*, 1991. (Summary) **93k:60118** 60G48
Kim, Chol-Bu (*with* Shimizu, Tadayoshi; Yoshida, Katsuhiko) $(2+1)$-dimensional quantum gravity with spinor field. *Classical Quantum Gravity* **9** (1992), *no.* 5, 1211–1216. (Jorge A. Pullin) **93e:83035** 83C45 (83C60)
Kim, Choongrak (*with* Jeong, Meeseon) Detecting influential observations on transformation parameter in Box-Cox model. (English summary) *J. Korean Statist. Soc.* **21** (1992), *no.* 1, 35–46. 62J05
— (*with* Lee, Kee-Won; Sohn, Keon Tae; Jeong, Kwang Mo) Bootstrapping generalized linear models with random regressors. (English summary) *J. Korean Statist. Soc.* **21** (1992), *no.* 1, 70–79. 62J12
Kim, Chul Solving a differential equation by using the C_0 linear semigroup and fractional powers. *Panamer. Math. J.* **2** (1992), *no.* 4, 77–88. (Yuri Sil'chenko) **93k:34137** 34G10 (47D03, 47D06, 47N20)
Kim, Chulki (*with* Komo, John J.) A new family of nonbinary sequences with large linear span. (English summary) *Finite fields, coding theory, and advances in communications and computing* (*Las Vegas, NV*, 1991), 123–130, *Lecture Notes in Pure and Appl. Math.*, 141, *Dekker, New York*, 1993. (Summary) **93j:94017** 94A55 (11B50)
Kim, D. *see* **Kim, Dohan**
Kim, D. E. (*with* Isichenko, M. B.; Horton, Claude Wendell, Jr.; Heo, E. G.; Choi, D.-I.) Stochastic diffusion and Kolmogorov entropy in regular and random Hamiltonians. (English summary) *Phys. Fluids B* **4** (1992), *no.* 12, 3973–3980. (Summary) **93h:76082** 76X05 (58F40, 76F20)
Kim, Do Sang (*with* Lee, Gue Myung) On converse duality for nonsmooth optimization problem. (English summary) *J. Inform. Optim. Sci.* **14** (1993), *no.* 2, 149–153. 49J52 (49N15)
Kim, Dohan (*with* Chung, Soon-Yeong; Kim, Sung Ki) Equivalence of the spaces of ultradifferentiable functions and its applications to Whitney extension theorem. (English and Italian summaries) *Rend. Mat. Appl.* (7) **12** (1992), *no.* 2, 365–380. (Michael Langenbruch) **93k:46030** 46F05 (26A24, 46E10)
— (*with* Chung, Jaeyoung; Chung, Soon-Yeong) Une caractérisation de l'espace $\mathscr{S}'$ de Schwartz. (English and French summaries) [A characterization of the Schwartz space $\mathscr{S}'$] *C. R. Acad. Sci. Paris Sér. I Math.* **316** (1993), *no.* 1, 23–25. (Summary) **93m:46040** 46F05
— (*with* Chung, Soon-Yeong) Equivalence of the defining sequences for ultradistributions. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 1, 93–94. (J. Horváth) **93f:46057** 46F05 (26E10)
Kim, Dong Soo (*with* Chung, Jin Myung; Rim, Joong Kyu; Ahn, Seung Ho) A proof of the Peter-Weyl theorem by Laplacian. *Collection of papers dedicated to Prof. Jong Geun Park on his sixtieth birthday* (*Korean*), 29–44, *Jeonbug, Seoul*, 1989. (Stig I. Andersson) **93g:58134** 58G03 (22E30)
Kim, Dongsu (*with* Haiman, Mark D.) A characterization of generalized staircases. *Discrete Math.* **99** (1992), *no.* 1-3, 115–122. (Andrea Brini) **93h:05174** 05E10 (05E05, 20F55)
— A combinatorial approach to biorthogonal polynomials. *SIAM J. Discrete Math.* **5** (1992), *no.* 3, 413–421. (Wenchang Chu) **93f:05006** 05A15 (05E35, 42C05)
Kim, Doochul (*with* Noh, Jae Dong) Phase boundary and universality of the triangular lattice antiferromagnetic Ising model. (English summary) *Internat. J. Modern Phys. B* **6** (1992), *no.* 17, 2913–2924. (Summary) **93f:82012** 82B20 (82–04)
Kim, E. I. Solution of a class of singular integral equations. I. (Russian. English, Russian and Kazakh summaries) *Izv. Akad. Nauk Kazakh. SSR Ser. Fiz.-Mat.* **1991,** *no.* 5, 31–34. (Summary) **93g:45006** 45E10
— *see also* **Birthday: Kim, E. I.**
Kim, Eun Sup (*with* Choi, Chang Woo) On multiplication modules. *Kyungpook Math. J.* **32** (1992), *no.* 1, 97–102. (Kalathoor Varadarajan) **93g:13008** 13C13 (13E15)
Kim, Goansu On polygonal products of finitely generated abelian groups. *Bull. Austral. Math. Soc.* **45** (1992), *no.* 3, 453–462. (R. B. J. T. Allenby) **93e:20039** 20E06 (20K05)
— (*with* Tang, Francis C. Y.) On the residual finiteness of polygonal products of nilpotent groups. (English summary) *Canad. Math. Bull.* **35** (1992), *no.* 3, 390–399. (N. F. Kuzennyi) **93m:20035** 20E26 (20E22)
Kim, Hae Kyung (*with* Walschap, Gerard) Riemannian foliations on compact hyperbolic manifolds. *Indiana Univ. Math. J.* **41** (1992), *no.* 1, 37–42. (James J. Hebda) **93a:53016** 53C12 (57R30)
Kim, Hae Sik (*with* Park, Young Soo) A weak projective cover of a module. *Kyungpook Math. J.* **31** (1991), *no.* 2, 201–205. (S. S. Page) **93d:16004** 16D40
Kim, Hang Bae (*with* Kim, Jihn E.) An orbifold compactification with three families from twisted sectors. (English summary) *Phys. Lett. B* **300** (1993), *no.* 4, 343–346. (Summary) **93m:81160** 81V22 (81T30)
Kim, He-Jin (*with* Ki, U-Hang; Nakagawa, Hisao) Real hypersurfaces with η-harmonic Weyl tensor of a complex space form. *Collection of papers dedicated to Prof. Jong Geun Park on his sixtieth birthday* (*Korean*), 89–102, *Jeonbug, Seoul*, 1989. (Bang-yen Chen) **93f:53045** 53C40
Kim, Hea-Jung A test for equality form of covariance matrices of multivariate normal populations. *J. Korean Statist. Soc.* **20** (1991), *no.* 2, 191–201. 62H15
— (*with* Inada, Kôichi) A minimum discrimination information shrinkage to interval estimator of the normal mean. *Bull. Inform. Cybernet.* **25** (1992), *no.* 1-2, 61–69. (Summary) **93a:62037** 62F12 (62B10)
— A variable selection in heteroscedastic discriminant analysis: general predictive discrimination case. (English summary) *J. Korean Statist. Soc.* **21** (1992), *no.* 1, 1–13. 62H30
— (*with* Gokhale, D. V.; Inada, Kôichi) A minimum discrimination information estimator of preliminary conjectured normal variance. (English summary) *Ann. Inst. Statist. Math.* **45** (1993), *no.* 1, 129–136. (Summary) **93m:62052** 62F10
Kim, Henry H. Eisenstein series on quaternion half-space of degree n. (English summary) *Manuscripta Math.* **77** (1992), *no.* 2-3, 215–235. (Aloys Krieg) **93m:11039** 11F55
Kim, Hong Oh (*with* Park, Yeon Yong) Maximal functions of plurisubharmonic functions. (English summary) *Tsukuba J. Math.* **16** (1992), *no.* 1, 11–18. (Lawrence Gruman) **93m:32010** 32A35 (31C10, 32A40, 32F05)
Kim, Honggie Measures of influence in correspondence analysis. (English summary) *J. Statist. Comput. Simulation* **40** (1992), *no.* 3-4, 201–217. 62H25
Kim, Hyuk (*with* Lee, Hyunkoo; Yoon, Jaihan) Moduli of flat pseudo-Riemannian structures on nilpotent Lie groups. *Internat. J. Math.* **3** (1992), *no.* 4, 483–498. (Michel Nguiffo B. Boyom) **93g:53091** 53C50 (22E25, 53C30, 58D27)
— (*with* Lee, Hyunkoo) The Euler characteristic of projectively flat manifolds with amenable fundamental groups. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 1, 311–315. (Yoshinobu Kamishima) **93f:57028** 57R20
Kim, Hyun Jeong (*with* Cho, Nak Eun) On certain classes of multivalent functions with negative coefficients. (English summary) *J. Inst. Math. Comput. Sci. Math. Ser.* **5** (1992), *no.* 2, 271–282. (Summary) **93m:30011** 30C45
Kim, Hyun S. (*with* Prosperetti, Andrea) Numerical simulation of the motion of rigid spheres in potential flow. (English summary) *SIAM J. Appl. Math.* **52** (1992), *no.* 6, 1533–1562. (Summary) **93h:76074** 76T05 (76B99, 76M25)
Kim, Hyune-Ju Boundary crossing probabilities by nondifferentiable processes and applications to two-phase regression. *Statist. Probab. Lett.* **14** (1992), *no.* 2, 97–102. 60J15 (62J02, 62M99)
Kim, Il-Woo (*with* Sukhatme, Uday P.) Alternative approach to nonrelativistic perturbation theory. *J. Phys. A* **25** (1992), *no.* 11, L647–L650. (Summary) **93b:81061** 81Q15

Kim, In Kyu (*with* Kim, Won Kyung) Autocorrelation function structure of bilinear time series models. (English summary) *J. Korean Statist. Soc.* **21** (1992), *no.* 1, 47–58. 62M10

Kim, In Su (*with* Park, Heung-Kee) Remarks on relative bundles. I. *Collection of papers dedicated to Prof. Jong Geun Park on his sixtieth birthday* (*Korean*), 181–187, *Jeonbug, Seoul*, 1989. (M. Mimura) **93g:55021** 55R65

Kim, J. (*with* Park, J.-h.; Koh, H. M.) Fluid-structure interaction analysis by a coupled boundary element-finite element method in time domain. (English summary) *Boundary element technology, VII* (*Albuquerque, NM*, 1992), 227–243, *Comput. Mech., Southampton*, 1992. (*see* **93b:65002**) 76M15 (65N30, 65N38, 73K70, 76M10)

Kim, J. D. (*with* Cho, H. S.; Koh, In Gyu) D_5 affine Toda field theory. *J. Math. Phys.* **33** (1992), *no.* 8, 2889–2897. (Summary) **93d:81105** 81T10 (58F07)

Kim, J.-H. *see* **Kim, Jong-Hwan**

Kim, J. K. *see* **Kim, Jae Kwan**

Kim, J. S. (*with* Libby, Paul A.; Williams, Forman A.) Influences of swirl on the structure and extinction of strained premixed flames. II. Strong rates of rotation. *Phys. Fluids A* **4** (1992), *no.* 2, 391–408. (Summary) **93b:80008** 80A25

Kim, J. W. *see* **Kim, Jewan**

Kim, Jae Kwan (*with* Kim, Won-Tae; Park, Young-Jai) Minimal chiral Schwinger model in the matter gauge. (English summary) *J. Math. Phys.* **33** (1992), *no.* 12, 4283–4287. (Alexander W. Smith) **93j:81066** 81T13 (81T50)

— (*with* Kwon, Ohjong; Lee, Chahn) Berry phase memorizes the motion of a boundary. *Phys. Rev. A* (3) **45** (1992), *no.* 9, 6884–6886. (Shinichi Tajima) **93i:81032** 81Q15

— (*with* Shin, Hyeonjoon; Kim, Won-Tae; Park, Young-Jai) BRST formulation of Chern-Simons gauge theory coupled to matter fields. (English summary) *Phys. Rev. D* (3) **46** (1992), *no.* 6, 2730–2733. (Summary) **93f:81091** 81T13

Kim, Jae Moon (*with* Bae, Sung Han; Lee, In-Sok) Cyclotomic units in $\mathbf{Z}_p$-extensions. *Israel J. Math.* **75** (1991), *no.* 2-3, 161–165. (Nancy Childress) **93i:11120** 11R23

Kim, Jae-Ryong (*with* Woo, Moo Ha) Note on a lower bound of Nielsen number. *J. Korean Math. Soc.* **29** (1992), *no.* 1, 117–125. (Helga Schirmer) **93c:55003** 55M20 (54H25, 55R05)

Kim, Jae-Uk (*with* Kim, Moon Uhn) Stokes drag on a circular annulus. *J. Phys. Soc. Japan* **60** (1991), *no.* 11, 3679–3691. (A. M. J. Davis) **93d:76014** 76D07

Kim, Jeongbin John (*with* Keefe, Laurence R.; Moin, Parviz) The dimension of attractors underlying periodic turbulent Poiseuille flow. (English summary) *J. Fluid Mech.* **242** (1992), 1–29. (Summary) **93f:76057** 76F20 (58F13, 58F40)

Kim, Jewan (*with* Cho, Y. M.; Park, D. H.) Fermionic vortex solutions in Chern-Simons electrodynamics. *Phys. Rev. D* (3) **45** (1992), *no.* 10, 3802–3806. (Summary) **93a:81125** 81T13 (81T99, 81V10)

Kim, Jihn E. (*with* Kim, Hang Bae) An orbifold compactification with three families from twisted sectors. (English summary) *Phys. Lett. B* **300** (1993), *no.* 4, 343–346. (Summary) **93m:81160** 81V22 (81T30)

Kim, Jin Bai A note on idempotent matrices of complex numbers. *Collection of papers dedicated to Prof. Jong Geun Park on his sixtieth birthday* (*Korean*), 11–18, *Jeonbug, Seoul*, 1989. (J. L. Zemmer) **93i:15017** 15A23 (15A33, 16S50)

— (*with* Kim, Seong-A.) A note on $\int_0^\infty (\sin x/x)^n\,dx$. (English summary) *Collection of papers dedicated to Prof. Jong Geun Park on his sixtieth birthday* (*Korean*), 19–27, *Jeonbug, Seoul*, 1989. (*see* **93d:00041**) 65D20

— (*with* Kim, Young-Hee) A determinant theorem for fuzzy matrices and canonical matrices. *Pure Math. Appl. Ser. A* **2** (1991), *no.* 1-2, 55–58. (S. Lajos) **93d:15010** 15A15 (04A72, 15A99)

Kim, Jin Hong (*with* Chi, Dong Pyo) On the estimate of the first eigenvalue of the Laplacian on a compact Riemannian manifold. *J. Korean Math. Soc.* **29** (1992), *no.* 1, 55–62. (Novica Blažić) **93d:58172** 58G25 (58G20)

Kim, Jin-Hoon (*with* Bien, Zeungnam) Some bounds of the solution of the algebraic Riccati equation. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 8, *part I*, 1209–1210. (Summary) **93e:93039** 93B60 (93B40)

— (*with* Bien, Zeungnam) Comments on: "Stability analysis of a family of matrices" [IEEE Trans. Automat. Control **35** (1990), no. 11, 1257–1259; MR 91j:93069] by Y. K. Foo and Y. C. Soh. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 9, 1470–1472. (Summary) **93j:93107** 93D09 (15A42)

— (*with* Bien, Zeungnam) A robust stability bound of linear systems with structured uncertainty. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 10, 1549–1551. 93D09

Kim, John *see* **Kim, Jeongbin John**

Kim, Jong Chul Causal structures of Lorentzian manifold. *J. Korean Math. Soc.* **29** (1992), *no.* 1, 9–14. (J. K. Beem) **93b:53054** 53C50 (53C80, 83C99)

Kim, Jong-Hwan Direct adaptive control using specially structured nonminimal model. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, II* (*Kobe*, 1991), 419–424, *Mita, Tokyo*, 1992. (*see* **93g:93006**) 93C40

— Comments on: "Robust pole placement direct adaptive control" [IEEE Trans. Automat. Control **34** (1989), no. 3, 356–359] by F. Giri, J.-M. Dion, L. Dugard and M. M'Saad. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 8, *part I*, 1273–1274. 93B55 (93B35, 93C40)

Kim, Jong Uhn Exact semi-internal control of an Euler-Bernoulli equation. (English summary) *SIAM J. Control Optim.* **30** (1992), *no.* 5, 1001–1023. (L. P. Lebedev) **93h:35026** 35B37 (35Q72, 73K12, 73K50, 93C20)

— On the energy decay of a linear thermoelastic bar and plate. *SIAM J. Math. Anal.* **23** (1992), *no.* 4, 889–899. (Zdzisław W. Trzaska) **93f:35159** 35M10 (35B40, 73B30, 73K05, 73K12)

Kim, Jongsik Korean mathematics. (Japanese) *Sūgaku* **44** (1992), *no.* 2, 168–174. 01A60

Kim, Junguk L. (*with* Liu, Xiao Qing) An efficient parallel sorting algorithm. *Inform. Process. Lett.* **43** (1992), *no.* 3, 129–133. (From the introduction) **93i:68079** 68Q22 (68P10)

Kim, K. H. *see* **Kim, Ki Hang**

Kim, Kang Tae Domains in $\mathbf{C}^n$ with a piecewise Levi flat boundary which possess a noncompact automorphism group. *Math. Ann.* **292** (1992), *no.* 4, 575–586. (Autorreferat (Zbl 735:32021)) **93h:32024** 32F99 (32M05)

— Asymptotic behavior of the curvature of the Bergman metric of the thin domains. *Pacific J. Math.* **155** (1992), *no.* 1, 99–110. (I. P. Ramadanov) **93f:32025** 32H10

Kim, Kee Yong (*with* Ahn, Chang-Jun; Kim, Won-Tae; Park, Young-Jai; Kim, Yong Duk) Equivalence of light-cone and conformal gauges in two-dimensional quantum gravity. (English summary) *Modern Phys. Lett. A* **7** (1992), *no.* 25, 2263–2268. (Summary) **93e:81067** 81T13

— (*with* Kim, Yong-Wan; Kim, Seung-Kook; Kim, Won-Tae; Park, Young-Jai; Kim, Yong Duk) Chiral Schwinger model based on the Batalin-Fradkin-Vilkovisky formalism. (English summary) *Phys. Rev. D* (3) **46** (1992), *no.* 10, 4574–4579. (Wolfgang Kalau) **93k:81239** 81T70 (81T10, 81T40, 81T50)

Kim, Ki Hang (*with* Roush, F. W.) On finite subsemigroups of $\mathrm{GLS}_n(\mathbf{C})$. *Pure Math. Appl. Ser. A* **1** (1991), *no.* 3-4, 241–244. (Summary) **93c:20104** 20M20

— (*with* Roush, F. W.) An approach to rational Diophantine undecidability. *Proceedings of Asian Mathematical Conference*, 1990 (*Hong Kong*, 1990), 242–248, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93b:00022**) 11U05 (03D35)

— (*with* Roush, F. W.; Intriligator, M. D.) Overview of mathematical social sciences. *Amer. Math. Monthly* **99** (1992), *no.* 9, 838–844. (J. S. Joel) **93j:90001** 90–01 (00A69, 90Axx, 92–01)

— (*with* Roush, F. W.) Diophantine undecidability of $\mathbf{C}(t_1, t_2)$. (English summary) *J. Algebra* **150** (1992), *no.* 1, 35–44. (Wiktor Dańko) **93h:03062** 03D35 (03C57, 11U05)

— (*with* Roush, F. W.) Diophantine unsolvability for function fields over certain infinite fields of characteristic p. (English summary) *J. Algebra* **152** (1992), *no.* 1, 230–239. (Zhi Wei Sun) **93k:11114** 11U05 (03D35)

— (*with* Roush, F. W.; Wagoner, J. B.) Automorphisms of the dimension group and gyration numbers. *J. Amer. Math. Soc.* **5** (1992), *no.* 1, 191–212. (Manfred Denker) **93h:54026** 54H20 (20F28, 28D99, 58F03)

— (*with* Roush, F. W.) Strong shift equivalence of Boolean and positive rational matrices. *Linear Algebra Appl.* **161** (1992), 153–164. (Summary) **93h:15012** 15A33

— (*with* Roush, F. W.) Automorphisms of λ-matrices. (English summary) *Linear Algebra Appl.* **174** (1992), 75–90. (K. Chandrasekhara Rao) **93g:15021** 15A99

— (*with* Roush, F. W.) Automorphisms of full shifts and Turing machines. *Pure Math. Appl. Ser. A* **2** (1992), *no.* 3-4, 205–213. (François Blanchard) **93j:54031** 54H20 (03D10, 68Q05)

— (*with* Roush, F. W.) Undecidability of parametric solutions of polynomial equations. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 2, 345–348. (Summary) **93g:03040** 03D35 (03D80, 11U05, 12L05)

Kim, Kichul (*with* Heinrich, Katherine; Prasanna Kumar, V. K.) Perfect Latin squares. (English summary) *Discrete Appl. Math.* **37/38** (1992), 281–286. (V. Havel) **93h:05025** 05B15

Kim, Kisu (*with* Seila, Andrew F.) A generalized cost model for stochastic clearing systems. (English summary) *Comput. Oper. Res.* **20** (1993), *no.* 1, 67–82. 60K25 (90B22)

Kim, Kwanghun (*with* Stufken, John) Optimal group divisible treatment designs for comparing a standard treatment with test treatments. *Utilitas Math.* **41** (1992), 211–227. (Summary) **93d:62139** 62K10 (05B05)

Kim, L. S. On the continuity of the modulus of a family of curves. (Russian. Russian summary) *Dinamika Sploshn. Sredy No.* 95 (1990), 70–78, 162. (Summary) **93d:30031** 30C65

Kim, M. Ho Toral actions on 4-manifolds and their classifications. *Trans. Amer. Math. Soc.* **335** (1993), *no.* 1, 105–130. (Katsuo Kawakubo) **93c:57031** 57S25 (57N13)

Kim, Moon-Hyun (*with* Moore, James E., II; Seo, Jong-Gook; Wu, Ying; Kalaba, Robert) Linear programming, recurrent associative memories, and feed-forward neural networks. *Comput. Math. Appl.* **22** (1991), *no.* 11, 71–90. (Dorel Duca) **93g:90048** 90C05 (92B20)

Kim, Moon Uhn (*with* Kim, Jae-Uk) Stokes drag on a circular annulus. *J. Phys. Soc. Japan* **60** (1991), *no.* 11, 3679–3691. (A. M. J. Davis) **93d:76014** 76D07

Kim, Myung Hee (*with* Ibarra, Oscar H.) Quadtree building algorithms on an SIMD hypercube. (English summary) *J. Parallel Distrib. Comput.* **18** (1993), *no.* 1, 71–76. 68P05 (68Q22)

Kim, Myung-Hwan[1] (*with* Chung, Jae Myung) A correspondence between Hecke rings $\mathscr{L}_0^n(q)$ and $\mathscr{D}^n$. *Bull. Korean Math. Soc.* **29** (1992), *no.* 1, 101–116. (From the introduction) **93g:11045** 11F60 (11F46)

— Invariance of the space of theta-series under theta operators. *Bull. Korean Math. Soc.* **29** (1992), *no.* 2, 245–256. (Marvin I. Knopp) **93h:11045** 11F27 (11F37, 11F46)

— The canonical decomposition of Siegel modular forms. II. *J. Korean Math. Soc.* **29** (1992), *no.* 1, 209–223. (From the introduction) **93k:11044** 11F46 (11F60)

Kim, Myung Soo (*with* Bajaj, Chanderjit L.) Convex hulls of objects bounded by algebraic curves. *Algorithmica* **6** (1991), *no.* 4, 533–553. (From the introduction) **93c:52016** 52B55 (68U05)

Kim, Myung-Sun (*with* Chu, Chinku; Lee, Keon Hee) Lipschitz stability and Lyapunov stability in dynamical systems. *Nonlinear Anal.* **19** (1992), *no.* 10, 901–909. (Frank Hubbuch) **93i:58086** 58F10 (34C35, 34D20)

Kim, Myunghwan (*with* Lee, Cheol-Hoon; Lee, Dongmyun) Optimal task assignment in linear array networks. (English summary) *IEEE Trans. Comput.* **41** (1992), *no.* 7, 877–880. (Summary) **93h:68013** 68M20

Kim, Nam-Gil (*with* Cho, Jong-Ki; Lee, Sung-Baik) Real hypersurfaces with infinitesimal invariant Ricci tensor of a complex projective space. *Honam Math. J.* **13** (1991), *no.* 1, 15–20. (F. Urbano) **93a:53045** 53C40

— (*with* Ahn, Seong-Soo; Lee, Sung-Baik; Lim, In-Taik) On characterizations of a real hypersurface of type A in a complex space form. *Honam Math. J.* **14** (1992), *no.* 1, 37–44. (Alfonso Romero) **93j:53069** 53C40

— (*with* Ki, U-Hang; Lee, Sung-Baik) On certain real hypersurfaces of a complex space form. *J. Korean Math. Soc.* **29** (1992), *no.* 1, 63–77. (Stere Ianus) **93d:53069** 53C40

Kim, Nam Kil (*with* Kim, Sunah; Park, Soon-Cheol) On projective R_f-modules over polynomial rings. (English summary) *Honam Math. J.* **14** (1992), *no.* 1, 19–24. (Chang M. Bang) **93h:13010** 13C10

Kim, Peter T. (*with* Chapman, G. Robert) Group action on a lattice and an application to time series analysis. (English summary) *J. Statist. Plann. Inference* **34** (1993), *no.* 2, 183–195. (Summary) **93j:60042** 60G10 (62M15)

ho-Kim, Q. *see* **Ho-Kim, Q.**

Kim, Rak-Joong Energy integrals for partial differential operators of quasihomogeneous type. *Honam Math. J.* **14** (1992), *no.* 1, 85–92. (Yu. V. Egorov) **93k:35288** 35S99 (35B45)

Kim, S. (*with* Tewarson, R. P.) A quasi-Newton method for solving nonlinear algebraic equations. *Comput. Math. Appl.* **24** (1992), *no.* 4, 93–97. (Summary) **93a:65072** 65H10

Kim, S. B. *see* **Kim, Sang Boo**

Kim, S. K. *see* **Kim, Sung Kwon**

Kim, S. S. (*with* Freese, R. W.; Cho, Yeol Je) Strictly 2-convex linear 2-normed spaces. *J. Korean Math. Soc.* **29** (1992), *no.* 2, 391–400. (Wolfgang Lusky) **93h:46010** 46A99 (15A03, 46B20, 52A07)

Kim, Sang Boo (*with* Bai, Do Sun) Economic design of one-sided screening procedures based on a correlated variable with all parameters unknown. *Metrika* **39** (1992), *no.* 2, 85–93. (Elart von Collani) **93e:62255** 62N10

Kim, Sang-Ik Minimal balanced 2^t fractional factorial designs of resolution V and Taguchi method. (English and Korean summaries) *Korean J. Appl. Statist.* **5** (1992), *no.* 1, 19–28. (Summary) **93h:62140** 62K15 (62N10)

Kim, Sang Pyo (*with* Page, Don N.) Wormhole spectrum of a quantum Friedmann-Robertson-Walker cosmology minimally coupled to a power-law scalar field and the cosmological constant. *Phys. Rev. D* (3) **45** (1992), *no.* 10, R3296–R3300. (Summary) **93a:83020** 83C45 (83F05)

— Quantum mechanics of conformally and minimally coupled Friedmann-Robertson-Walker cosmology. (English summary) *Phys. Rev. D* (3) **46** (1992), *no.* 8, 3403–3434. (Viqar Husain) **93j:83041** 83C45 (81T20)

Kim, Sang-Yoon (*with* Lee, Duck-Sung) Transition to chaos in a dissipative standardlike map. *Phys. Rev. A* (3) **45** (1992), *no.* 8, 5480–5487. (Summary) **93b:58101** 58F13

— (*with* Kook, Hyung-tae) Critical behavior in coupled nonlinear systems. (English summary) *Phys. Rev. A* (3) **46** (1992), *no.* 8, R4467–R4470. (Summary) **93h:58113** 58F14

Kim, Sehun (*with* Cho, Seong-Cheol) Average shadow prices in mathematical programming. *J. Optim. Theory Appl.* **74** (1992), *no.* 1, 57–74. (Summary) **93b:49039** 49N15 (90C11, 90C25, 90C30)

Kim, Seong-A. (*with* Kim, Jin Bai) A note on $\int_0^\infty (\sin x/x)^n\,dx$. (English summary) *Collection of papers dedicated to Prof. Jong Geun Park on his sixtieth birthday* (*Korean*), 19–27, *Jeonbug, Seoul*, 1989. (*see* **93d:00041**) 65D20

Kim, Seong In (*with* Sherali, Hanif D.) Variational problems for determining optimal paths of a moving facility. (English summary) *Transportation Sci.* **26** (1992), *no.* 4, 330–345. (From the summary) **93i:90114** 90C90 (49N55, 90B06)

Kim, Seong Won Some properties of spectrum-preserving maps. *Collection of papers dedicated to Prof. Jong Geun Park on his sixtieth birthday* (*Korean*), 201–204, *Jeonbug, Seoul*, 1989. (W. Żelazko) **93g:47005** 47A10 (46H30, 47B48, 47B49, 47D30)

Kim, SeonJa (*with* Keem, Changho) Irreducibility of a subscheme of the Hilbert scheme of complex space curves. *J. Algebra* **145** (1992), *no.* 1, 240–248. (H. Lange) **93a:14004** 14C05 (14H10, 14H50)

Kim, Seung-hwan (*with* Baesens, Claude; Guckenheimer, John; MacKay, Robert S.) Three coupled oscillators: mode-locking, global bifurcations and toroidal chaos. *Phys. D* **49** (1991), *no.* 3, 387–475. (Henk Broer) **93c:58155** 58F14 (34C15, 34C23, 58F13, 58F27, 70K50)

Kim, Seung-Kook (*with* Kim, Yong-Wan; Kim, Won-Tae; Park, Young-Jai; Kim, Kee Yong; Kim, Yong Duk) Chiral Schwinger model based on the Batalin-Fradkin-Vilkovisky formalism. (English summary) *Phys. Rev. D* (3) **46** (1992), *no.* 10, 4574–4579. (Wolfgang Kalau) **93k:81239** 81T70 (81T10, 81T40, 81T50)

Kim, Seungnam (*with* Meerkov, S. M.; Runolfsson, T.) Aiming control: residence probability and (D, T)-stability. *Automatica J. IFAC* **28** (1992), *no.* 3, 549–555. (Summary) **93e:93056** 93E03 (93B51, 93D15, 93E15)

— (*with* Meerkov, S. M.; Runolfsson, T.) Aiming control: design of residence probability controllers. *Automatica J. IFAC* **28** (1992), *no.* 3, 557–564. (Summary) **93e:93057** 93E03 (93B51, 93D15, 93E15)

Kim, Seyong The root number class and Chinburg's second invariant. *J. Algebra* **153** (1992), *no.* 1, 133–202. (David Holland) **93m:11117** 11R33 (11R65, 20C10)

Kim, Si Joo Some remarks on extremally convertible matrices. *Bull. Korean Math. Soc.* **29** (1992), *no.* 2, 315–323. (Natalia Bebiano) **93i:15006** 15A15

Kim, Soon-Ki A lower bound on the probability of correct selection for two-stage selection procedure. (English summary) *J. Korean Statist. Soc.* **21** (1992), *no.* 1, 27–34. (Summary) **93e:62063** 62F07 (62L10)

Kim, Soon-Kwi (*with* Park, Sung Hyun) On sensitivity analysis in principal component regression. *J. Korean Statist. Soc.* **20** (1991), *no.* 2, 177–190. 62H25 (62J05)

Kim, Suh-Ryung (*with* Isaak, Garth; McKee, Terry A.; McMorris, F. R.; Roberts, Fred S.) 2-competition graphs. (English summary) *SIAM J. Discrete Math.* **5** (1992), *no.* 4, 524–538. (Robert C. Brigham) **93k:05074** 05C20 (05C75, 05C90, 92D40)

Kim, Sunah Efficient generation of maximal ideals in polynomial rings. *Bull. Korean Math. Soc.* **29** (1992), *no.* 1, 137–143. (Shrikant M. Bhatwadekar) **93b:13034** 13F20 (13B25)

— (*with* Park, Soon-Cheol; Kim, Nam Kil) On projective R_f-modules over polynomial rings. (English summary) *Honam Math. J.* **14** (1992), *no.* 1, 19–24. (Chang M. Bang) **93h:13010** 13C10

Kim, Sung-Ju A note on a fundamental solution of the heat equation. *Honam Math. J.* **14** (1992), *no.* 1, 93–98. (Nicolai N. Shopolov) **93i:35061** 35K05 (35A08)

Kim, Sung Ki (*with* Chung, Soon-Yeong; Kim, Dohan) Equivalence of the spaces of ultradifferentiable functions and its applications to Whitney extension theorem. (English and Italian summaries) *Rend. Mat. Appl.* (7) **12** (1992), *no.* 2, 365–380. (Michael Langenbruch) **93k:46030** 46F05 (26A24, 46E10)

Kim, Sung Ku (*with* Min, Hyunsoo) Statistical interactions between Chern-Simons vortices. *Phys. Lett. B* **281** (1992), *no.* 1-2, 81–85. (Summary) **93b:81159** 81T13

— (*with* Namgung, Wuk; Soh, Kwang Sup; Yee, Jae Hyung) Zero modes of the solitons of the principal chiral model and the nonrelativistic Chern-Simons systems. (English summary) *Phys. Lett. B* **292** (1992), *no.* 1-2, 99–103. (Summary) **93f:81133** 81T40

— (*with* Namgung, Wuk; Soh, Kwang Sup; Yee, Jae Hyung) Zero modes of the nonrelativistic SU(2) Chern-Simons solitons. (English summary) *Phys. Rev. D* (3) **46** (1992), *no.* 8, 3544–3549. (Summary) **93g:81095** 81T13

— (*with* Soh, Kwang Sup; Yee, Jae Hyung) $(1+1)$-dimensional gravity through a dimensional reduction. (English summary) *Phys. Lett. B* **300** (1993), *no.* 3, 223–226. (Summary) **93k:81209** 81T40 (81T13)

Kim, Sung Kwon (*with* Chandran, Sharat; Mount, David M.) Parallel computational geometry of rectangles. *Algorithmica* **7** (1992), *no.* 1, 25–49. (Peter Gritzmann) **93e:68128** 68U05 (52B55, 68U10)

— (*with* Chronopoulos, Anthony T.) An efficient nonsymmetric Lanczos method on parallel vector computers. (English summary) *J. Comput. Appl. Math.* **42** (1992), *no.* 3, 357–374. (Ming Kui Chen) **93h:65050** 65F15 (65F50, 65Y05)

Kim, Sung S. (*with* Kwon, Kil H.; Han, Sung S.) Orthogonalizing weights of Tchebychev sets of polynomials. *Bull. London Math. Soc.* **24** (1992), *no.* 4, 361–367. (Hans-Jürgen Glaeske) **93g:33007** 33C45 (42C05)

Kim, Sung Sook Divisibility conditions on signatures of fixed point sets. *Osaka J. Math.* **29** (1992), *no.* 2, 387–392. (Katsuo Kawakubo) **93e:57065** 57S17 (58G10)

Kim, Sung-Won Schwarzschild-de Sitter type wormhole. *Phys. Lett. A* **166** (1992), *no.* 1, 13–16. (Summary) **93f:83013** 83C15

— Particle creation for time travel through a wormhole. (English summary) *Phys. Rev. D* (3) **46** (1992), *no.* 6, 2428–2434. (Summary) **93f:83050** 83C47 (83C10)

Kim, Tae-Hwa Nonlinear ergodic theorems of almost-orbits of non-Lipschitzian semigroups. (English summary) *Kodai Math. J.* **15** (1992), *no.* 2, 296–309. (Simeon Reich) **93j:47090** 47H20 (47A35, 47H09)

Kim, Tae-Sung (*with* Baek, Jong-il) Relationships among some concepts of multivariate negative dependence. *J. Korean Statist. Soc.* **20** (1991), *no.* 1, 77–83. (Ramesh C. Gupta) **93b:62087** 62H20

Kim, Wan Se The asymptotic behavior of nonlinear dissipative hyperbolic equations. *Proceedings of Asian Mathematical Conference*, 1990 (*Hong Kong*, 1990), 249–252, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93b:00022**) 35L70 (35B40)

— The asymptotic behavior of nonlinear dissipative hyperbolic equations. *Bull. Korean Math. Soc.* **29** (1992), *no.* 1, 1–7. (Ilya A. Kuzin) **93a:35110** 35L70 (35B40)

Kim, Won Kyu (*with* Rim, Dong Il) A fixed point theorem and existence of equilibrium for abstract economies. *Bull. Austral. Math. Soc.* **45** (1992), *no.* 3, 385–394. (Anton S. Mureşan) **93g:47074** 47H10 (47N10, 90A14, 90D10)

— (*with* Tan, Kok-Keong) A variational inequality in noncompact sets and its applications. *Bull. Austral. Math. Soc.* **46** (1992), *no.* 1, 139–148. (Yuan Guo Zhu) **93e:47087** 47H19 (47H10, 49J40)

— (*with* Ding, Xie Ping; Tan, Kok-Keong) A selection theorem and its applications. (English summary) *Bull. Austral. Math. Soc.* **46** (1992), *no.* 2, 205–212. (Summary) **93g:47072** 47H10 (47H04, 47N10, 54C60, 90A14)

— A new equilibrium existence theorem. (English summary) *Econom. Lett.* **39** (1992), *no.* 4, 387–390. (From the text) **93i:90131** 90D44 (90A14)

— (*with* Im, Sung Mo; Rim, Dong Il) Existence of equilibrium in noncompact sets and its application. *J. Korean Math. Soc.* **29** (1992), *no.* 2, 361–373. (Kok Keong Tan) **93h:47079** 47N10 (47H10, 47H19, 90A14)

— (*with* Ding, Xie Ping; Tan, Kok-Keong) Equilibria of noncompact generalized games with $\mathscr{F}^*$-majorized preference correspondences. *J. Math. Anal. Appl.* **164** (1992), *no.* 2, 508–517. (Dave Furth) **93d:90014** 90A14 (46N10, 90D40)

— Existence of maximal element and equilibrium for a nonparacompact N-person game. *Proc. Amer. Math. Soc.* **116** (1992), *no.* 3, 797–807. (Julian Revalski) **93a:90083** 90D06 (47H99, 90A14)

Kim, Won Kyung (*with* Kim, In Kyu) Autocorrelation function structure of bilinear time series models. (English summary) *J. Korean Statist. Soc.* **21** (1992), *no.* 1, 47–58. 62M10

Kim, Won-Tae (*with* Kim, Jae Kwan; Park, Young-Jai) Minimal chiral Schwinger model in the matter gauge. (English summary) *J. Math. Phys.* **33** (1992), *no.* 12, 4283–4287. (Alexander W. Smith) **93j:81066** 81T13 (81T50)

— (*with* Ahn, Chang-Jun; Park, Young-Jai; Kim, Kee Yong; Kim, Yong Duk) Equivalence of light-cone and conformal gauges in two-dimensional quantum gravity. (English summary) *Modern Phys. Lett. A* **7** (1992), *no.* 25, 2263–2268. (Summary) **93e:81067** 81T13

— (*with* Shin, Hyeonjoon; Kim, Jae Kwan; Park, Young-Jai) BRST formulation of Chern-Simons gauge theory coupled to matter fields. (English summary) *Phys. Rev. D* (3) **46** (1992), *no.* 6, 2730–2733. (Summary) **93f:81091** 81T13

— (*with* Kim, Yong-Wan; Kim, Seung-Kook; Park, Young-Jai; Kim, Kee Yong; Kim, Yong Duk) Chiral Schwinger model based on the Batalin-Fradkin-Vilkovisky formalism. (English summary) *Phys. Rev. D* (3) **46** (1992), *no.* 10, 4574–4579. (Wolfgang Kalau) **93k:81239** 81T70 (81T10, 81T40, 81T50)

Kim, Woo Chul (*with* Park, Byeong U.; Jeon, Jong Woo; Song, Moon S.) Local asymptotic normality for independent not identically distributed observations in semiparametric models. *J. Korean Statist. Soc.* **20** (1991), *no.* 1, 84–92. (Arup Bose) **93d:62043** 62F12 (62G20)

— (*with* Hwang, Hyung-Tae) Empirical Bayesian multiple comparisons with the best. *J. Korean Statist. Soc.* **20** (1991), *no.* 2, 108–117. (Summary) **93f:62006** 62C12 (62J15)

— (*with* Choi, Han Sik; Kim, Chi Yong; Jeon, Jong Woo) A strong large deviations theorem for the ratio of independent random variables. *J. Korean Math. Soc.* **29** (1992), *no.* 1, 153–163. (V. K. Rohatgi) **93e:60050** 60F10

Kim, Y. H. (*with* Park, Sung Hyun; Toutenburg, H.) Regression diagnostics for removing an observation with animating graphics. (English summary) *Statist. Papers* **33** (1992), *no.* 3, 227–240. (Summary) **93f:62101** 62J20

Kim, Y. M. (*with* Chung, T. J.) Analysis of turbulent reacting flows in combustion. *Finite elements in fluids, Vol.* 8 (*Huntsville, AL*, 1989), 333–354, *Ser. Comput. Phys. Process. Mech. Thermal Sci., Hemisphere, Washington, DC*, 1992. (*see* **93e:76050**) 80A25 (76F99, 76N15)

Kim, Y. S. (*with* Kim, Chang-Ho) Space-time geometry of relativistic particles in four-dimensional phase space. *J. Math. Phys.* **32** (1991), *no.* 8, 1998–2006. (Summary) **93g:81065** 81S30

— Entropy in the Wigner phase space picture of quantum mechanics and Feynman's rest of the universe. (English summary) *Sakharov Memorial Lectures in Physics, Vol.* 1, 2 (*Moscow*, 1991), 229–235, *Nova Sci. Publ., Commack, NY*, 1992. (*see* **93h:81003**) 81P15

— (*with* Yeh, Leehwa) $E(2)$-symmetric two-mode sheared states. *J. Math. Phys.* **33** (1992), *no.* 4, 1237–1246. (G. Vitiello) **93g:81216** 81V80 (81R05)

— (*with* Yeh, Leehwa) O(2, 1)-like little group for spacelike four-momenta and localized light waves in continuous media. (English summary) *J. Math. Phys.* **33** (1992), *no.* 9, 3190–3196. (Summary) **93e:81154** 81V80 (22E70, 81R05)

Kim, Yangkon (*with* Kwak, Hyochul) A note on Lie algebras $L(K)$ and $L_v(K)$. (English summary) *Collection of papers dedicated to Prof. Jong Geun Park on his sixtieth birthday* (*Korean*), 157–165, *Jeonbug, Seoul*, 1989. (Hartmut Schlosser) **93f:17018** 17B20 (17B10)

— (*with* Park, Jungsu) Uniqueness of an Albanese variety. *Collection of papers dedicated to Prof. Jong Geun Park on his sixtieth birthday* (*Korean*), 189–191, *Jeonbug, Seoul*, 1989.

(*see* **93d:00041**) 14K05

— On whole regular germs for p-adic $S_{p_k}(F)$. *J. Korean Math. Soc.* **28** (1991), *no.* 2, 207–213. (Introduction) **93c:22029** 22E50

Kim, Yeong-Dae A new branch and bound algorithm for minimizing mean tardiness in two-machine flowshops. (English summary) *Comput. Oper. Res.* **20** (1993), *no.* 4, 391–401. 90B35

Kim, Yong Chan (*with* Park, Young Soo; Srivastava, Hari M.) A class of inclusion theorems associated with some fractional integral operators. *Proc. Japan Acad. Ser. A Math. Sci.* **67** (1991), *no.* 9, 313–318. (D. K. Thomas) **93f:30011** 30C45

— (*with* Jung, Il Bong) On unilateral shift operators and C_0-operators. *J. Austral. Math. Soc. Ser. A* **53** (1992), *no.* 1, 137–142. (László Kérchy) **93e:47034** 47B37 (47A15, 47A45, 47A60)

— (*with* Jung, Il Bong; Lee, Sang Hun) Coefficient multipliers of $H^{p,q}$ spaces. *Math. Japon.* **37** (1992), *no.* 2, 307–311. (Som Datt Sharma) **93g:30048** 30D55

Kim, Yong Duk (*with* Kwon, Ohjong; Lee, Chahn) Berry's phase in a moving boundary problem. (English summary) *J. Phys. A* **25** (1992), *no.* 22, 6113–6121. (Piotr Kosiński) **93j:81015** 81Q05 (81S99)

— (*with* Ahn, Chang-Jun; Kim, Won-Tae; Park, Young-Jai; Kim, Kee Yong) Equivalence of light-cone and conformal gauges in two-dimensional quantum gravity. (English summary) *Modern Phys. Lett. A* **7** (1992), *no.* 25, 2263–2268. (Summary) **93e:81067** 81T13

— (*with* Kim, Yong-Wan; Kim, Seung-Kook; Kim, Won-Tae; Park, Young-Jai; Kim, Kee Yong) Chiral Schwinger model based on the Batalin-Fradkin-Vilkovisky formalism. (English summary) *Phys. Rev. D* (3) **46** (1992), *no.* 10, 4574–4579. (Wolfgang Kalau) **93k:81239** 81T70 (81T10, 81T40, 81T50)

Kim, Yong In (*with* Lee, Eok Kyun) The subharmonic bifurcation in area-preserving maps. *J. Korean Math. Soc.* **29** (1992), *no.* 1, 91–115. (R. Dilão) **93c:58159** 58F14 (58F36)

Kim, Yong-Wan (*with* Kim, Seung-Kook; Kim, Won-Tae; Park, Young-Jai; Kim, Kee Yong; Kim, Yong Duk) Chiral Schwinger model based on the Batalin-Fradkin-Vilkovisky formalism. (English summary) *Phys. Rev. D* (3) **46** (1992), *no.* 10, 4574–4579. (Wolfgang Kalau) **93k:81239** 81T70 (81T10, 81T40, 81T50)

Kim, Yonne Mi Carleman inequalities with same exponent. *Bull. Korean Math. Soc.* **29** (1992), *no.* 2, 205–214. (Jiří Rákosník) **93j:46037** 46E35 (26D10)

Kim, Yoonbai Chiral anomalies of higher-derivative theories from stochastic quantization. (English summary) *Modern Phys. Lett. A* **7** (1992), *no.* 30, 2861–2866. (Helmut Rumpf) **93k:81115** 81S20 (81T50)

Kim, Young B. (*with* Noah, Sherif T.) Periodic response and crisis behavior for a system with piecewise-smooth nonlinearities. (English summary) *Internat. J. Non-Linear Mech.* **27** (1992), *no.* 5, 833–843. (Summary) **93f:70026** 70K50 (34C15, 70K20, 70K40)

Kim, Young-Hee (*with* Kim, Jin Bai) A determinant theorem for fuzzy matrices and canonical matrices. *Pure Math. Appl. Ser. A* **2** (1991), *no.* 1-2, 55–58. (S. Lajos) **93d:15010** 15A15 (04A72, 15A99)

Kim, Young Pyo (*with* Kang, Sin Min) Common fixed point theorems. (English summary) *Math. Japon.* **37** (1992), *no.* 6, 1031–1039. (W. Kulpa) **93m:54073** 54H25

Kim, Young-Won (*with* Basawa, Ishwar V.) Empirical Bayes estimation for first-order autoregressive processes. (English summary) *Austral. J. Statist.* **34** (1992), *no.* 1, 105–114. (A. N. Startsev) **93m:62198** 62M10 (62C12)

Kimball, Miles S. Standard risk aversion. (English summary) *Econometrica* **61** (1993), *no.* 3, 589–611. 90A10

Kimber, A. C. (*with* Crowder, Martin; Smith, Robert L.; Sweeting, Trevor J.) ★ Statistical analysis of reliability data. *Chapman & Hall, London*, 1991. xii+250 *pp. ISBN* 0-412-30560-7 (Bo Bergman) **93d:62167** 62N05 (90B25)

Kimberling, Clark A new kind of golden triangle. *Applications of Fibonacci numbers, Vol.* 4 (*Winston-Salem, NC*, 1990), 171–176, *Kluwer Acad. Publ., Dordrecht*, 1991. (H. W. Guggenheimer) **93i:51036** 51M04 (11A55)

— Terms common to two sequences satisfying the same linear recurrence. *Applications of Fibonacci numbers, Vol.* 4 (*Winston-Salem, NC*, 1990), 177–188, *Kluwer Acad. Publ., Dordrecht*, 1991. (Péter Kiss) **93j:11009** 11B37

— Second-order Stolarsky arrays. *Fibonacci Quart.* **29** (1991), *no.* 4, 339–342. (Ronald J. Evans) **93b:11025** 11B83 (11B39)

— Interspersions and dispersions. *Proc. Amer. Math. Soc.* **117** (1993), *no.* 2, 313–321. (Anne Ludington Young) **93d:11026** 11B75 (11B37)

Kimbrel, Tracy (*with* Sinha, Rakesh Kumar) A probabilistic algorithm for verifying matrix products using $O(n^2)$ time and $\log_2 n + O(1)$ random bits. *Inform. Process. Lett.* **45** (1993), *no.* 2, 107–110. 15-04 (65-04, 65F99, 68Q25)

Kimeldorf, George (*with* Sampson, Allan R.; Whitaker, Lyn R.) Min and max scorings for two-sample ordinal data. *J. Amer. Statist. Assoc.* **87** (1992), *no.* 417, 241–247. (Sotiris Loukas) **93e:62126** 62G10

Kimia, Benjamin B. (*with* Tannenbaum, Allen R.; Zucker, Steven W.) On the evolution of curves via a function of curvature. I. The classical case. *J. Math. Anal. Appl.* **163** (1992), *no.* 2, 438–458. (Anders Linnér) **93a:58037** 58E10 (53A04, 73B99)

Kiming, Ian (*with* Olsson, Jørn B.) Congruences like Ramanujan's for powers of the partition function. *Arch. Math. (Basel)* **59** (1992), *no.* 4, 348–360. (Richard P. Lewis) **93g:11105** 11P83 (11F11)

Kimmel, Marek (*with* Sanchez, Eva; Arino, Ovide) Noncompact semigroups of operators generated by cell kinetics models. *Differential Integral Equations* **4** (1991), *no.* 6, 1233–1249. (V. N. Razzhevaikin) **93e:47090** 47H20 (34K25, 47N60, 92C05)

Kimmerle, W. (*with* Roggenkamp, Klaus W.) A Sylow-like theorem for integral group rings of finite solvable groups. *Arch. Math. (Basel)* **60** (1993), *no.* 1, 1–6. (William H. Gustafson) **93j:20012** 20C05 (20D20)

— *see also* **Roggenkamp, Klaus W., 93i:20007**

Kimoto, T. (*with* Hashimoto, K.; Ebine, T.; Kimura, Hidenori) Image-based dynamic visual servo for a hand-eye manipulator. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, II* (*Kobe*, 1991), 609–614, *Mita, Tokyo*, 1992. (*see* **93g:93006**) 93C85

de grande-de Kimpe, N. *see* **De Grande-De Kimpe, N.**

vũ Kim Tuấn *see* **Vũ Kim Tuấn**

Kim-Tyan, L. R. (*with* Loginov, B. V.; Rusak, Yu. B.) Stability of branching solutions under group symmetry conditions. (Russian) *Current group analysis* (*Russian*) (*Baku*, 1988), 146–151, "*Élm*", *Baku*, 1989. (*see* **93d:58002**) 47H15 (58E09)

— (*with* Loginov, B. V.) On the stability of solutions of differential equations with an operator of zero index multiplying the derivative. (Russian) *Boundary value problems for differential equations of mixed types* (*Russian*), 27–34, 201, "*Fan*", *Tashkent*, 1991. (Summary) **93a:34076** 34G20 (34A47, 34D20, 47H15, 47N20)

Kimura, Hidenori (*with* Hashimoto, K.; Kimoto, T.; Ebine, T.) Image-based dynamic visual servo for a hand-eye manipulator. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, II* (*Kobe*, 1991), 609–614, *Mita, Tokyo*, 1992. (*see* **93g:93006**) 93C85

— (J, J')-lossless factorization based on conjugation. (English summary) *Systems Control Lett.* **19** (1992), *no.* 2, 95–109. (Andrzej Świerniak) **93j:93044** 93B36 (42B30, 93B51, 93C05)

— (*with* Zhou, Tong) Time domain identification for robust control. (English summary) *Systems Control Lett.* **20** (1993), *no.* 3, 167–178. (Summary) **93k:93035** 93B30 (93B35, 93E12)

— *see also* **Recent advances in mathematical theory of systems, control, networks and signal processing, 93g:93005** *and* **93g:93006**

Kimura, Hironobu (*with* Matumiya, Atusi; Takano, Kyoichi) A reduction of Hamiltonian systems with multi-time variables along a regular singularity. *Proc. Japan Acad. Ser. A Math. Sci.* **67** (1991), *no.* 7, 226–231. (Malcolm Adams) **93d:58054** 58F05 (34A20)

Kimura, Kazuhiro Hamiltonian reduction of super OSp(1, 2) and SL(2, 1) Kac-Moody algebras. (English summary) *Infinite analysis, Part A, B* (*Kyoto*, 1991), 533–544, *Adv. Ser. Math. Phys.*, 16, *World Sci. Publishing, River Edge, NJ*, 1992. (Nir Sochen) **93j:81031** 81R10 (17B67, 58F07, 81T40)

Kimura, Makoto (*with* Maeda, Sadahiro) Characterizations of geodesic hyperspheres in a complex projective space in terms of Ricci tensors. *Yokohama Math. J.* **40** (1992), *no.* 1, 35–43. (Bang-yen Chen) **93i:53053** 53C40

Kimura, Masahiro Homogeneous Einstein metrics on certain Kähler C-spaces. *Recent topics in differential and analytic geometry*, 303–320, *Adv. Stud. Pure Math.*, 18-I, *Academic Press, Boston, MA*, 1990. (Walery Kaiser) **93b:53039** 53C25 (53C30)

Kimura, Minako (*with* Ito, Shunji) On Rauzy fractal. *Japan J. Indust. Appl. Math.* **8** (1991), *no.* 3, 461–486. (Tim Bedford) **93d:11084** 11K55 (28A80)

Kimura, Minoru (*with* Morioka, Hiroyuki) Extension of Noether's theorem to nonlocal field theory. *Sci. Rep. Kanazawa Univ.* **36** (1991), *no.* 2, 83–90. (Paweł Urbanski) **93f:58056** 58E40 (81T99)

— (*with* Tanaka, Giichi) Critical temperatures and mean-field critical coefficients for the Heisenberg model based on CVM. (English summary) *Internat. J. Modern Phys. B* **6** (1992), *no.* 13, 2363–2374. 82B20

Kimura, Morishige Conversion of discrete-time time-invariant linear systems into continuous systems. (English summary) *Internat. J. Systems Sci.* **23** (1992), *no.* 11, 2063–2089. (Jan Bialasiewicz) **93k:93027** 93B17 (93B30, 93C05, 93C55)

Kimura, Shun-ichi Fractional intersection and bivariant theory. *Comm. Algebra* **20** (1992), *no.* 1, 285–302. (Gary P. Kennedy) **93d:14010** 14C15 (14J17)

Kimura, T. (*with* Hara, Shinji; Kondō, Ryōji) H_∞ control system design by a parameter space approach. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, I* (*Kobe*, 1991), 287–292, *Mita, Tokyo*, 1992. (Han Sheng Wu) **93k:93039** 93B36 (93B25, 93B52, 93D09)

Kimura, Tadahiko (*with* Ikegami, Kenji; Mochizuki, Riuji) Treatment of constraints in the stochastic quantization method and covariantized Langevin equation. (English summary) *Nuclear Phys. B* **395** (1993), *no.* 1-2, 371–387. (Summary) **93m:81075** 81S20 (82B31)

Kimura, Toshiei (*with* Sugano, Reiji; Kagraoka, Yusho) Gauge transformations and gauge-fixing conditions in constraint systems. *Internat. J. Modern Phys. A* **7** (1992), *no.* 1, 61–89. (Marc Henneaux) **93a:81200** 81T70

— (*with* Ohta, Tadayuki) Derivation of many-body potential among charged particles in the S-matrix method. *J. Math. Phys.* **33** (1992), *no.* 6, 2303–2322. (Summary) **93c:81268** 81V10 (81U20)

Kimura, Toshikazu Interpolation approximations for the mean waiting time in a multi-server queue. *J. Oper. Res. Soc. Japan* **35** (1992), *no.* 1, 77–92. 60K25 (90B22)

Kimura, Toshiyuki (*with* Kaneko, Mamoru) Conventions, social prejudices and discrimination: a festival game with merrymakers. (English summary) *Games Econom. Behav.* **4** (1992), *no.* 4, 511–527. (Summary) **93g:90109** 90D40 (92H99)

Kimura, Tosihusa (*with* Shima, Kazuhisa) On the monodromy representation of an irreducible hypergeometric differential equation. *Mem. Fac. Sci. Kyushu Univ. Ser. A* **46** (1992), *no.* 1, 137–167. (N. Hayek Calil) **93d:33001** 33C05 (32G34, 34A20)

Kimura, Yoshifumi (*with* Holm, Darryl D.) Zero-helicity Lagrangian kinematics of three-dimensional advection. (English summary) Symposium on Fluid Mechanics of Stirring and Mixing (La Jolla, CA, 1990). *Phys. Fluids A* **3** (1991), *no.* 5, *part* 2, 1033–1038. (Summary) **93k:76095** 76M99 (76D99, 76E15, 76F20)

— (*with* Omoto, Hideo) On ε-approximate singularities of autonomous systems of vortex type. *Nagoya Math. J.* **125** (1992), 15–31. (Jair Koiller) **93f:34013** 34A20 (58F05, 76C05)

el Kinani, A. *see* **El Kinani, A.**

Kinash, O. M. Asymptotic behavior of the transition probability of a homogeneous Markov process with a finite number of states in a scheme of arrays. (Russian. Russian and Ukrainian summaries) *Ukraïn. Mat. Zh.* **44** (1992), *no.* 4, 574–576; *translation in Ukrainian Math. J.* **44** (1992), *no.* 4, 515–517. (Summary) **93g:60159** 60J27

Kinash, S. M. Transition phenomena for Markov processes with a finite number of states. (Russian. Russian summary) *Stochastic equations and boundary theorems* (*Russian*), 73–79, *Akad. Nauk Ukrainy, Inst. Mat., Kiev*, 1991. (Summary) **93k:60189** 60J27

Kinateder, John G. An invariance principle applicable to the bootstrap. *Exploring the limits of bootstrap* (*East Lansing, MI*, 1990), 157–181, *Wiley Ser. Probab. Math. Statist. Probab. Math. Statist., Wiley, New York*, 1992. (Gutti J. Babu) **93m:62095** 62G09 (60F05)

Kinber, E. B. On complete sets of samples for generalized regular expressions. *Theoret. Comput. Sci.* **91** (1991), *no.* 1, 101–117. (Summary) **93a:68095** 68Q60

Kincaid, David R. (*with* Young, David M.) Stationary second-degree iterative methods and recurrences. *Iterative methods in linear algebra* (*Brussels*, 1991), 27–47, *North-Holland, Amsterdam*, 1992. (Zdeněk Dostál) **93d:65038** 65F10 (65N22, 65Q05)

Kincanon, Eric Approximate solution to the Gel'fand-Levitan equation. (English summary) *Appl. Math. Comput.* **53** (1993), *no.* 2-3, 121–128. (Summary) **93k:35012** 35A35 (35P25, 45L05)

Kindelan, M. (*with* Sguazzero, P.; Kamel, Aladin H.) Dispersion-bounded numerical integration of the elastodynamic equations with cost-effective staggered schemes. (English

summary) *Spectral and high order methods for partial differential equations* (*Como*, 1989), 165–172, *North-Holland, Amsterdam*, 1990. (*see* **93d:65005**) 65M06 (73D99, 73V15)

Kinderlehrer, David (*with* James, Richard Dana) An example of frustration in a ferromagnetic material. (English summary) *Nematics* (*Orsay*, 1990), 201–221, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 332, *Kluwer Acad. Publ., Dordrecht*, 1991. (*see* **93d:58007**) 82D40

— Some methods of analysis in the study of microstructure. *Transactions of the Tenth Army Conference on Applied Mathematics and Computing* (*West Point, NY*, 1992), 613–633, *ARO Rep.*, 93-1, *U.S. Army Res. Office, Research Triangle Park, NC*, 1993. (*see* **93m:00047**) 82D20 (73B99, 73V25)

Kindervater, G. A. P. ★ Exercises in parallel combinatorial computing. CWI Tract, 78. *Stichting Mathematisch Centrum, Centrum voor Wiskunde en Informatica, Amsterdam*, 1991. vi+110 *pp. ISBN* 90-6196-400-8 (From the introduction) **93b:68031** 68Q22 (68–01)

Kindler, Jürgen Ideals of null sets of set functions. *Arch. Math.* (*Basel*) **58** (1992), *no.* 1, 81–91. (Walter Trockel) **93b:90119** 90D12 (28Axx, 46N10)

— Topological intersection theorems. *Proc. Amer. Math. Soc.* **117** (1993), *no.* 4, 1003–1011. (P. S. Kenderov) **93f:54025** 54C60 (49J35, 54D05)

Kindler-Carrère, Frédérique Dérivations parallèles et langages k-adjacents. [Parallel derivations and k-adjacent languages] *Séminaire d'Analyse*, 1988–89 (*Clermont-Ferrand*, 1988/1989), *Exp. No.* 16, 16 *pp., Univ. Clermont-Ferrand II, Clermont-Ferrand*, 199?. (Robert M. Baer) **93c:68057** 68Q50

Kindybalyuk, A. Yu. Application of a variant of the projection-iterative method to the solution of Hammerstein-type integral equations. (Russian. Russian summary) *Asymptotic integration of nonlinear equations* (*Russian*), 58–62, *Akad. Nauk Ukrainy, Inst. Mat., Kiev*, 1992. (*see* **93m:00016**) 65R20 (45L05)

King, A. C. *see* **King, Andrew Charles**

King, A. D. (*with* Kotschick, Dieter) The deformation theory of anti-self-dual conformal structures. *Math. Ann.* **294** (1992), *no.* 4, 591–609. (Antony Maciocia) **93j:58021** 58D27 (32G13, 53A30, 53C25, 58G05)

King, Alan J. (*with* Jensen, David L.) Linear-quadratic efficient frontiers for portfolio optimization. (English summary) *Appl. Stochastic Models Data Anal.* **8** (1992), *no.* 3, 195–207. 90A09 (90C90)

— (*with* Rockafellar, R. Tyrrell) Sensitivity analysis for nonsmooth generalized equations. *Math. Programming* **55** (1992), *no.* 2, *Ser. A*, 193–212. (B. Mordukhovich) **93d:90064** 90C31 (49J40, 49J52)

King, Andrew Charles (*with* Needham, D. J.) On a singular initial-boundary value problem for a reaction-diffusion equation arising from a simple model of isothermal chemical autocatalysis. *Proc. Roy. Soc. London Ser. A* **437** (1992), *no.* 1901, 657–671. (Reinhard Redlinger) **93g:92035** 92E20 (35K57, 35Q80, 80A32, 92D30)

— (*with* Tuck, E. O.; Vanden-Broeck, Jean-Marc) Air-blown waves on thin viscous sheets. (English summary) *Phys. Fluids A* **5** (1993), *no.* 4, 973–978. (Summary) **93k:76035** 76D33 (76D08)

King, Christopher K. (*with* Fröhlich, Jürg) Two-dimensional conformal field theory and three-dimensional topology. *Constructive quantum field theory, II* (*Erice*, 1988), 121–199, *NATO Adv. Sci. Inst. Ser. B Phys.*, 234, *Plenum, New York*, 1990. (*see* **93g:81074**) 81T40 (57M25)

— Scattering theory for a model of an atom in a quantized field. (English summary) *Lett. Math. Phys.* **25** (1992), *no.* 1, 17–28. (R. G. Newton) **93i:81290** 81U99 (81Q99, 81U40, 81V10)

King, D. H. Gravity-wave insights to Bianchi type-IX universes. *Phys. Rev. D* (3) **44** (1991), *no.* 8, 2356–2368. (B. K. Datta) **93a:83014** 83C35 (83C20)

King, David Anthony An overview of the sources for the history of astronomy in the medieval Maghrib. (Arabic summary) *Deuxième Colloque Maghrebin sur l'Histoire des Mathématiques Arabes* (*Tunis*, 1988), 125–157, A166–A167, *Maghreb, Tunis*, 19??. (Raymond Mercier) **93h:01009** 01A30

— The ciphers of the monks and the astrolabe of Berselius reconsidered. *Amphora*, 375–388, *Birkhäuser, Basel*, 1992. (*see* **93g:01001**) 01A35 (01A40)

King, Donald R. The component groups of nilpotents in exceptional simple real Lie algebras. *Comm. Algebra* **20** (1992), *no.* 1, 219–284. (Dragomir Ž. Djoković) **93c:17018** 17B25

King, G. P. (*with* Stewart, Ian N.) Symmetric chaos. *Nonlinear equations in the applied sciences*, 257–315, *Math. Sci. Engrg.*, 185, *Academic Press, Boston, MA*, 1992. (Helena E. Nusse) **93c:58138** 58F13 (34C15, 70K50, 76F20)

— *see also* **Interpretation of time series from nonlinear systems, 93d:58005**

King, H. *see* **King, Henry Churchill**

King, Hala Khuri Heights on the moduli space of Riemann surfaces with circle boundaries. *Duke Math. J.* **64** (1991), *no.* 3, 555–570. (Subhashis Nag) **93c:58227** 58G26 (32G15, 58D17)

— Determinants of Laplacians on the space of conical metrics on the sphere. *Trans. Amer. Math. Soc.* **339** (1993), *no.* 2, 525–536. (Steven Rosenberg) **93m:58118** 58G26

King, Henry Churchill (*with* Akbulut, Selman) Rational structures on 3-manifolds. *Pacific J. Math.* **150** (1991), *no.* 2, 201–214. (A. Tognoli) **93c:57028** 57R99 (14P99)

— Topological problems arising from real algebraic geometry. (English summary) *Topology Hawaii* (*Honolulu, HI*, 1990), 149–156, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93e:57063** 57R99 (14P99)

— (*with* Akbulut, Selman) On approximating submanifolds by algebraic sets and a solution to the Nash conjecture. *Invent. Math.* **107** (1992), *no.* 1, 87–98. (A. Tognoli) **93d:57051** 57R19 (14P05)

King, Ian (*with* Welling, Linda; McAfee, R. Preston) Investment decisions under first and second price auctions. (English summary) *Econom. Lett.* **39** (1992), *no.* 3, 289–293. (Summary) **93g:90028** 90A60

King, J. R. *see* **King, John Robert**

King, J. Thomas (*with* French, Donald A.) Analysis of a robust finite element approximation for a parabolic equation with rough boundary data. *Math. Comp.* **60** (1993), *no.* 201, 79–104. (Georges A. Lebaud) **93d:65098** 65N30

King, James A. (*with* Collins, Emmanuel G., Jr.; Bernstein, Dennis S.) Application of maximum entropy/optimal projection design synthesis to a benchmark problem. (English summary) *J. Guidance Control Dynamics* **15** (1992), *no.* 5, 1094–1102. 93B50

King, Jerry P. ★ The art of mathematics. *Plenum Press, New York*, 1992. vi+313 *pp. ISBN* 0-306-44129-2 (Pierre Crépel) **93d:00014** 00A30 (01A99)

King, John Robert Exact results for the nonlinear diffusion equations $\partial u/\partial t = (\partial/\partial x)(u^{-4/3}\partial u/\partial x)$ and $\partial u/\partial t = (\partial/\partial x)(u^{-2/3}\partial u/\partial x)$. *J. Phys. A* **24** (1991), *no.* 24, 5721–5745. (Summary) **93g:35069** 35K55 (35A25, 35C05, 35K60)

— Surface-concentration-dependent nonlinear diffusion. *European J. Appl. Math.* **3** (1992), *no.* 1, 1–20. (Elena Comparini) **93b:35067** 35K55 (35C05, 76R50, 78A55, 80A20)

— Local transformations between some nonlinear diffusion equations. *J. Austral. Math. Soc. Ser. B* **33** (1992), *no.* 3, 321–349. (H. Marcinkowska) **93b:35068** 35K55 (35A30)

— Some non-self-similar solutions to a nonlinear diffusion equation. (English summary) *J. Phys. A* **25** (1992), *no.* 18, 4861–4868. (Summary) **93f:35104** 35K55 (35C05)

— Exact polynomial solutions to some nonlinear diffusion equations. (English summary) *Phys. D* **64** (1993), *no.* 1-3, 35–65. (Summary) **93k:35057** 35C05 (35K55)

King, Jonathan L. Closure properties of the class of uniform sweeping-out transformations. *Illinois J. Math.* **36** (1992), *no.* 2, 233–237. (Nathaniel Friedman) **93b:28044** 28D05

King, Oliver The subgroup structure of the classical groups. *Proceedings of the International Conference on Algebra, Part* 1 (*Novosibirsk*, 1989), 209–215, *Contemp. Math.*, 131, *Part* 1, *Amer. Math. Soc., Providence, RI*, 1992. (*see* **93b:00029**) 20G15

King, P. D. (*with* Chicone, Carmen; Cai, Z.-S.; Forker, E. L.) A parameter identification problem arising from a model of canalicular bile formation. (English summary) *J. Math. Biol.* **31** (1993), *no.* 3, 273–289. (Summary) **93m:92010** 92C30 (34B15, 34C99)

King, Peter Robert *see* **Mathematics of oil recovery, 93b:76086**

King, R. B. (*with* Canfield, E. Rodney) Icosahedral symmetry and the quintic equation. *Comput. Math. Appl.* **24** (1992), *no.* 3, 13–28. (S. D. Cohen) **93g:12003** 12E05 (12F10, 68Q20)

King, R. C. *see* **King, Ronald Curtis**

King, Roger (*with* Kamel, Nabil) Intelligent database caching through the use of page-answers and page-traces. (English summary) *ACM Trans. Database Systems* **17** (1992), *no.* 4, 601–646. 68P20

King, Ronald Curtis S-functions and characters of Lie algebras and Lie groups. *Topics in algebra, Part* 2 (*Warsaw*, 1988), 327–344, *Banach Center Publ.*, 26, *Part* 2, *PWN, Warsaw*, 1990. (Joris Van der Jeugt) **93e:22028** 22E46 (05E05, 17B10, 22E60)

— (*with* Fulling, Stephen A.; Wybourne, B. G.; Cummins, C. J.) Normal forms for tensor polynomials. I. The Riemann tensor. *Classical Quantum Gravity* **9** (1992), *no.* 5, 1151–1197. (J. F. Cornwell) **93j:53084** 53C80 (20C30, 22E70, 81T15, 83C47)

— (*with* Wybourne, B. G.) Representations and traces of the Hecke algebras $H_n(q)$ of type A_{n-1}. *J. Math. Phys.* **33** (1992), *no.* 1, 4–14. (Robert Bédard) **93c:20028** 20C30 (05E99, 16S34, 20F55, 57M25)

— (*with* Hughes, J. W. B.; Van der Jeugt, J.) On the composition factors of Kac modules for the Lie superalgebras $\mathrm{sl}(m/n)$. *J. Math. Phys.* **33** (1992), *no.* 2, 470–491. (Hartmut Schlosser) **93a:17003** 17A70 (17B70)

— (*with* Cummins, C. J.) Characters of A_{n-1} Hecke algebras at roots of unity. *J. Phys. A* **25** (1992), *no.* 13, L789–L797. (Joris Van der Jeugt) **93g:05147** 05E10 (17B37)

King, Stephen P. Is perfect information perfectly useless? (English summary) *Econom. Lett.* **39** (1992), *no.* 4, 415–418. 90A35

King, Valerie An $\Omega(n^{5/4})$ lower bound on the randomized complexity of graph properties. *Combinatorica* **11** (1991), *no.* 1, 23–32. (Summary) **93a:68058** 68Q25 (05C85, 68R10)

— (*with* Rao, Satish; Tarjan, Robert Endre) A faster deterministic maximum flow algorithm. *Proceedings of the Third Annual ACM-SIAM Symposium on Discrete Algorithms* (*Orlando, FL*, 1992), 157–164, *ACM, New York*, 1992. (Summary) **93f:90062** 90B10 (05C85)

— (*with* Goddard, Wayne D.; Kenyon, Claire; Schulman, Leonard J.) Optimal randomized algorithms for local sorting and set-maxima. (English summary) *SIAM J. Comput.* **22** (1993), *no.* 2, 272–283. (Summary) **93j:68043** 68P10 (68Q20)

Kingdon, R. D. (*with* Schofield, P.; White, L.) A lattice Boltzmann model for the simulation of fluid flow. *J. Phys. A* **25** (1992), *no.* 12, 3559–3566. (Summary) **93d:76054** 76M99 (76D05, 76M25, 76P05)

— (*with* Schofield, P.) A reaction-flow lattice Boltzmann model. *J. Phys. A* **25** (1992), *no.* 14, L907–L910. (Summary) **93d:82074** 82C70 (76P05, 82C40)

conrady Kingslake, Hilda G. *see* **Conrady Kingslake, Hilda G.**

Kingslake, Rudolf *see* **Conrady, A. E., 93j:78001b**

Kinjo, Yoshiyuki Differential forms of a motion on S^{n-1}. *Ryukyu Math. J.* **4** (1991), 15–24. (V. Oproiu) **93d:57056** 57R25 (53C30)

Kinnaert, Michel (*with* Blondel, Vincent) Discrete-time pole placement with stable controller. (English summary) *Automatica J. IFAC* **28** (1992), *no.* 5, 935–943. (Summary) **93e:93036** 93B55 (93C55)

— (*with* Peng, You Bin) Explicit solution to the singular LQ regulation problem. *IEEE Trans. Automat. Control* **37** (1992), *no.* 5, 633–636. (Summary) **93b:93050** 93B52 (49N10, 93E24)

Kinnersley, Nancy G. The vertex separation number of a graph equals its path-width. (English summary) *Inform. Process. Lett.* **42** (1992), *no.* 6, 345–350. (Summary) **93d:05143** 05C85 (68R10)

Kinoshita, Shin'ichi (*with* Harikae, Toshio) On spatial embeddings of $\mathbf{R}_3$-graphs. *Kwansei Gakuin Univ. Annual Stud.* **40** (1991), 145–148. (I. Broere) **93h:05062** 05C10 (57M15)

Kinosita, Yosinori (*with* Kawashima, Naoki; Suzuki, Masuo) Coherent-anomaly analysis of series expansions and its application to the Ising model. (English summary) *J. Phys. Soc. Japan* **61** (1992), *no.* 11, 3887–3901. (Summary) **93j:82037** 82B80 (82–04, 82B20, 82B26)

Kinouchi, Osame (*with* Caticha, Nestor) Optimal generalization in perceptrons. (English summary) *J. Phys. A* **25** (1992), *no.* 23, 6243–6250. 92B20 (82C32)

Kinton, W. (*with* Dupont, T.; Glowinski, Roland; Wheeler, Mary Fanett) Mixed finite-element methods for time-dependent problems: application to control. *Finite elements in fluids, Vol.* 8 (*Huntsville, AL*, 1989), 119–136, *Ser. Comput. Phys. Process. Mech. Thermal Sci., Hemisphere, Washington, DC*, 1992. (Introduction) **93h:65122** 65M60 (35A15, 35B37, 93B40, 93C20)

Kinyon, Michael K. (*with* Sagle, Arthur A.) Quadratic dynamical systems. *Nonassociative algebras and related topics* (*Hiroshima*, 1990), 101–114, *World Sci. Publishing, River Edge, NJ*, 1991. (Georgii Osipenko) **93e:58161** 58F25 (34C05, 34C35)

Kipnis, M. M. Local stability of impulse systems and the stability of the zero solution of quasilinear discrete convolution equations. (Russian. Russian summary) *Avtomat. i*

Telemekh. **1992,** *no.* 3, 92–100; *translation in Automat. Remote Control* **53** (1992), *no.* 3, *part* 2, 401–409. (Vladimir G. Sragovich) **93g:93058** 93D05 (93C57)

— Application of discrete convolution equations for testing the stability of periodic processes in pulse-width systems. (Russian. Russian summary) *Avtomat. i Telemekh.* **1992,** *no.* 4, 86–93; *translation in Automat. Remote Control* **53** (1992), *no.* 4, *part* 2, 547–553. 93D15

— Symbolic and chaotic dynamics of a pulse-width control system. (Russian) *Dokl. Akad. Nauk* **324** (1992), *no.* 2, 273–276; *translation in Soviet Phys. Dokl.* **37** (1992), *no.* 5, 217–219. (From the introduction) **93i:93065** 93C10 (93B55, 93C15)

— Chaotic phenomena in a deterministic single-dimensional pulse-width control system. *J. Comput. Systems Sci. Internat.* **30** (1992), *no.* 6, 47–51; *translated from Izv. Ross. Akad. Nauk Tekhn. Kibernet.* **1992,** *no.* 1, 108–112 (*Russian. Russian summary*). (Summary) **93g:93048** 93C10 (34C15, 93C57)

Kipnis, Patricia (*with* Bailey, R. A.; Cheng, Ching-Shui) Construction of trend-resistant factorial designs. (English summary) *Statist. Sinica* **2** (1992), *no.* 2, 393–411. (Bhagwandas) **93j:62197** 62K15

Kipnis, Victor Bootstrap assessment of prediction in exploratory regression analysis. (English summary) *Exploring the limits of bootstrap* (*East Lansing, MI,* 1990), 363–387, *Wiley Ser. Probab. Math. Statist. Probab. Math. Statist., Wiley, New York,* 1992. (*see* **93f:62003**) 62G09 (62J05)

Kipriyanov, I. A. (*with* Zasorin, Yu. V.) The Newton principle for the wave equation. (Russian) *Mat. Zametki* **51** (1992), *no.* 4, 36–42, 140; *translation in Math. Notes* **51** (1992), *no.* 3-4, 351–355. (Summary) **93c:35090** 35L05

Kiran, Shashi (*with* Singh, Ajit Iqbal) Role of James like spaces in multiplicative linear functionals on operator algebras. *Functional analysis and operator theory* (*New Delhi,* 1990), 172–180, *Lecture Notes in Math.,* 1511, *Springer, Berlin,* 1992. (Gunnar Hans Olsen) **93i:46028** 46B20 (46L05, 47D30)

Kiranagi, B. S. (*with* Prema, G.; Chidambara, C.) Rigidity theorem for Lie algebra bundles. *Comm. Algebra* **20** (1992), *no.* 6, 1549–1556. (Yu Cai Su) **93f:17032** 17B55 (17B20)

Kirane, M. Blow-up for some equations with semilinear dynamical boundary conditions of parabolic and hyperbolic type. *Hokkaido Math. J.* **21** (1992), *no.* 2, 221–229. (Gary M. Lieberman) **93h:35107** 35K60 (35B05, 35J65)

— (*with* Kouachi, S.) Asymptotic behaviour for a system describing epidemics with migration and spatial spread of infection. (English summary) *Dynamic Systems Appl.* **2** (1993), *no.* 1, 121–130. (Summary) **93j:92018** 92C60 (34G20, 35K57, 92D30)

Kirby, Michael Minimal dynamical systems from PDEs using Sobolev eigenfunctions. (English summary) *Phys. D* **57** (1992), *no.* 3-4, 466–475. (Summary) **93f:58217** 58F39 (35K55, 58F19, 65M60)

Kirby, Robion (*with* Melvin, Paul) Evaluations of the 3-manifold invariants of Witten and Reshetikhin-Turaev for sl(2, **C**). *Geometry of low-dimensional manifolds,* 2 (*Durham,* 1989), 101–114, *London Math. Soc. Lecture Note Ser.,* 151, *Cambridge Univ. Press, Cambridge,* 1990. (Bruce W. Westbury) **93e:57027** 57N10 (57M25)

Kirby, V. G. (*with* Brown, B. Malcolm; Evans, W. D.; Plum, Michael) Safe numerical bounds for the Titchmarsh-Weyl $m(\lambda)$-function. (English summary) *Math. Proc. Cambridge Philos. Soc.* **113** (1993), *no.* 3, 583–599. (J. K. Shaw) **93k:34052** 34B20 (34L40, 47E05)

Kirchberg, Eberhard (*with* Vaillant, Ghislain) On C^*-algebras having linear, polynomial and subexponential growth. *Invent. Math.* **108** (1992), *no.* 3, 635–652. (G. A. Elliott) **93h:46079** 46L05

Kirchberg, K.-D. Properties of Kählerian twistor-spinors and vanishing theorems. *Math. Ann.* **293** (1992), *no.* 2, 349–369. (Oussama Hijazi) **93i:58158** 58G25 (53C21, 53C55)

Kirchgässner, G. (*with* Wolters, J.) Implications of temporal aggregation on the relation between two time series. *Statist. Hefte* **33** (1992), *no.* 1, 1–19. (Summary) **93b:62127** 62M10

Kirchgässner, Klaus On the nonlinear dynamics of travelling fronts. *J. Differential Equations* **96** (1992), *no.* 2, 256–278. (Victor A. Galaktionov) **93a:35073** 35K55 (35A30, 35B40)

Kirchgraber, Urs Chaotisches Verhalten in einfachen Systemen. (German summary) [Chaotic behavior in simple systems] *Elem. Math.* **47** (1992), *no.* 4, 137–157. (Remo Badii) **93k:58172** 58F15 (58F13)

— Mathematik im Chaos. Ein Zugang auf dem Niveau der Sekundarstufe II. [Mathematics in chaos. An approach accessible to students on secondary level II] *Math. Semesterber.* **39** (1992), *no.* 1, 43–68. (Summary) **93b:58102** 58F13 (58–01)

Kirchheim, B. (*with* Natkaniec, Tomasz) Exceptional directions for Sierpiński's nonmeasurable sets. *Fund. Math.* **140** (1992), *no.* 3, 237–245. (Elżbieta Wagner) **93k:28002** 28A05

Kirchherr, Walter W. Algebraic approaches to cordial labeling. *Graph theory, combinatorics, algorithms, and applications* (*San Francisco, CA,* 1989), 294–299, *SIAM, Philadelphia, PA,* 1991. (Qing De Kang) **93f:05082** 05C78

Kirchhoff, N. (*with* Nessel, R. J.) Divergence almost everywhere of a pointwise comparison of trigonometric convolution processes with their discrete analogues. *J. Approx. Theory* **70** (1992), *no.* 1, 29–38. (J. Szabados) **93e:42006** 42A10

Kirchner, Claude (*with* Adi, Mohamed) AC-unification race: the system solving approach, implementation and benchmarks. (English summary) *J. Symbolic Comput.* **14** (1992), *no.* 1, 51–70. (Ralph W. Wilkerson) **93j:68170** 68T15

Kirchner, Hélène (*with* Hsiang, Jieh; Lescanne, Pierre; Rusinowitch, Michael) The term rewriting approach to automated theorem proving. (English summary) *J. Logic Programming* **14** (1992), *no.* 1-2, 71–99. (Michael Bauer) **93m:68148** 68T15 (03B35, 68Q42)

— To Prof. Dr. Wolfgang Wechler. Second International Conference on Algebraic and Logic Programming (Nancy, 1990). *Theoret. Comput. Sci.* **105** (1992), *no.* 1, 4–5. (Editors) **93h:01042** 01A70

— *see also* **Conference: Algebraic and Logic Programming, 93e:68002**

Kireev, A. N. (*with* Takahashi, Yasushi) On the field description of conformal Galilean particle with intrinsic rotations. *Modern Phys. Lett. A* **7** (1992), *no.* 16, 1443–1448. (Zhong Qi Ma) **93c:81071** 81R20 (81T05)

Kireeva, A. V. Some correspondences between the lattice of subautomata and the lattice of congruences of an automaton. (Russian) *Ordered sets and lattices, No.* 10 (*Russian*), 51–56, *Saratov. Gos. Univ., Saratov,* 1991. (*see* **92m:06001**) 06B10 (68Q70)

— Congruences and automorphisms of root trees. (Russian) *Theory of semigroups and its applications, No.* 10 (*Russian*), 37–42, *Saratov. Gos. Univ., Saratov,* 1991. (Marek Kubale) **93g:05040** 05C05 (68R10)

Kireĭtov, V. R. Mechanical interpretation of the square of the modulus of the total amplitude of a discontinuous solution in the propagation conoid for a linear hyperbolic system. II. (Russian. Russian summary) *Questions of well-posedness in problems of analysis* (*Russian*), 60–84, 183, *Akad. Nauk SSSR Sibirsk. Otdel., Inst. Mat., Novosibirsk,* 1989. (*see* **93e:00018**) 35L40

— The Dirichlet problem for the equation $\Delta^{1/2}u = f$ in a domain with a compact regular boundary. (Russian) *Dokl. Akad. Nauk SSSR* **321** (1991), *no.* 5, 896–899; *translation in Soviet Math. Dokl.* **44** (1992), *no.* 3, 820–823. (V. M. Isakov) **93g:35155** 35S15 (31B99, 35J25, 35J70)

Kiriaki, Kiriakie (*with* Gintides, Drossos) On the continuity dependence of elastic scattering amplitudes upon the shape of the scatterer. *Inverse Problems* **8** (1992), *no.* 1, 95–118. (Gustavo Perla Menzala) **93e:35079** 35P25 (35Q99, 73D25)

— (*with* Charalambopoulos, Antonios) Characterization of functions as radiation patterns in linear elasticity. (English summary) *Math. Methods Appl. Sci.* **15** (1992), *no.* 8, 547–558. (B. Belinskiy) **93j:73030** 73D30 (35Q72, 73B40, 73D25)

Kiriakidis, K. I. (*with* Krikelis, N. J.) Optimal feedback control of nonlinear systems. (English summary) *Internat. J. Systems Sci.* **23** (1992), *no.* 12, 2141–2153. (From the introduction) **93k:93049** 93B52 (49N35, 93C10, 93D15)

Kiriazov, P. *see* **Kiryazov, P.**

Kirichenko, N. F. Control theory. A survey of the scientific results of the author. (Russian. Russian summary) *Kibernet. i Vychisl. Tekhn. No.* 91 (1991), 1–10. 93–02 (93Bxx)

Kirichenko, V. F. Conformally flat and locally conformally Kähler manifolds. (Russian. Russian summary) *Mat. Zametki* **51** (1992), *no.* 5, 57–66, 157; *translation in Math. Notes* **51** (1992), *no.* 5-6, 462–468. (Novica Blažić) **93i:53065** 53C55

— (*with* Fomenko, A. T.; Goldberg, Vladislav V.; Ryzhkov, V. V.; Shelekhov, A. M.) Maks Aizikovich Akivis. *Webs & quasigroups,* 4–8, *Tver. Gos. Univ., Tver',* 1993. (*see* **93m:53002**) 01A70

Kirichenko, V. V. (*with* Usenko, V. M.) On a general theory of additive functions on groups. (Russian. English and Russian summaries) *Dokl. Akad. Nauk Ukrainy* **1992,** *no.* 11, 3–5, 170. (Summary) **93m:20055** 20F99

Kirichenko, Yu. A. A mean-field limit in infinite systems of quantum gases. (Russian. Russian summary) *Methods of mathematical physics in infinite systems* (*Russian*), 53–67, *Akad. Nauk Ukrainy, Inst. Mat., Kiev,* 1991. (Summary) **93j:82005** 82B10

Kirichinskaya, I. B. Glueing together of two semicontinuous processes with independent increments. (Russian. Ukrainian summary) *Ukrain. Mat. Zh.* **43** (1991), *no.* 5, 596–600; *translation in Ukrainian Math. J.* **43** (1991), *no.* 5, 552–556 (1992). (Gh. Oprişan) **93c:60108** 60J30 (60J25)

— Continuation of semicontinuous processes with independent increments. (Russian. Ukrainian summary) *Ukrain. Mat. Zh.* **43** (1991), *no.* 9, 1269–1272; *translation in Ukrainian Math. J.* **43** (1991), *no.* 9, 1182–1185 (1992). (Summary) **93b:60167** 60J30

Kirichuk, P. A. Periodic solutions of second-order differential equations in a Banach space perturbed by random processes. (Russian. Russian summary) *Asymptotic methods in problems in the theory of random evolutions* (*Russian*), 59–66, *Akad. Nauk Ukrain. SSR, Inst. Mat., Kiev,* 1991. (Summary) **93f:34094** 34G10 (34C25, 34F05, 47D09, 60H10)

— Well-posedness of the Cauchy problem for the complete third-order equation in a Banach space. (Russian. English and Russian summaries) *Dokl. Akad. Nauk Ukrainy* **1992,** *no.* 1, 10–16, 176. (Enrico Obrecht) **93j:34085** 34G10 (34A12, 47D09, 47N20)

Kirilich, V. M. A problem on modeling the dynamics of biological populations. (Ukrainian. Russian summary) *Visnik L'viv. Derzh. Univ. Ser. Mekh.-Mat. No.* 30 (1988), 5–7, 72. 92D25

— On the determination of the boundary condition of a mixed problem for the wave equation. (Ukrainian) *Visnik L'viv. Univ. Ser. Mekh. Mat. No.* 34 (1990), 31–33. 35L20 (35R30)

— (*with* Myshkis, A. D.) A boundary value problem without initial conditions for a linear one-dimensional system of hyperbolic-type equations. (Russian. Russian summary) *Differentsial'nye Uravneniya* **28** (1992), *no.* 3, 463–469, 548–549; *translation in Differential Equations* **28** (1992), *no.* 3, 393–399. (Summary) **93j:35109** 35L50

Kirillina, L. M. (*with* Shamaev, I. I.) Regular sets in $\mathbf{R}^n$. (Russian) *Methods in applied mathematics and mathematical physics* (*Russian*), 100–102, *Akad. Nauk SSSR Sibirsk. Otdel., Yakut-sk. Filial, Yakutsk,* 1987. (From the text) **93h:54011** 54C30 (54E40)

Kirillov, A. A. Quantum birth of a universe near a cosmological singularity. *JETP Lett.* **55** (1992), *no.* 10, 561–563; *translated from Pis'ma Zh. Èksper. Teoret. Fiz.* **55** (1992), *no.* 10, 541–543 (*Russian*). (Summary) **93d:83072** 83F05 (83C45, 83C75)

Kirillov, A. I. On the separability of L^p spaces in the case of measures on locally convex spaces. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* **1991,** *no.* 7, 77; *translation in Soviet Math. (Iz. VUZ)* **35** (1991), *no.* 7, 74. (A. V. Uglanov) **93h:46043** 46E50 (46E30, 46G12)

— Two mathematical problems of canonical quantization. III. Stochastic vacuum mechanics. (Russian. English and Russian summaries) *Teoret. Mat. Fiz.* **91** (1992), *no.* 3, 377–395; *translation in Theoret. and Math. Phys.* **91** (1992), *no.* 3, 591–603. (Summary) **93k:81112** 81S05 (46N50, 47N50, 60B11)

Kirillov, A. N. (*with* Liskova, N. A.) Clebsch-Gordan and Racah-Wigner coefficients for $U_q(\mathrm{SU}(1,1))$. (English summary) *Infinite analysis, Part A, B* (*Kyoto,* 1991), 611–621, *Adv. Ser. Math. Phys.,* 16, *World Sci. Publishing, River Edge, NJ,* 1992. (A. U. Klimyk) **93i:17017** 17B37 (33D80, 81R50)

— Unimodality of generalized Gaussian coefficients. (English and French summaries) *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 5, 497–501. (P. Bundschuh) **93h:05013** 05A30 (11B65)

Kirillov, Anatoli A. (*with* Dobrushin, R. L.; Malyshev, V. A.; Sinaĭ, Ya. G.; Khelemskiĭ, A. Ya.) Robert Adol'fovich Minlos (on the occasion of his sixtieth birthday). (Russian) *Uspekhi Mat. Nauk* **47** (1992), *no.* 1(283), 225–226; *translation in Russian Math. Surveys* **47** (1992), *no.* 1, 275–277. 01A70

Kirillova, F. M. (*with* Gabasov, R. F.) Dual optimization of dynamical systems. (Russian) *Dokl. Akad. Nauk SSSR* **317** (1991), *no.* 1, 15–19; *translation in Soviet Math. Dokl.* **43** (1991), *no.* 2, 306–310. (From the introduction) **93d:49042** 49N15 (49M35)

— (*with* Gabasov, R. F.; Gaĭshun, P. V.) Optimal estimator for linear systems. (Russian and Lithuanian summaries) *Informatica* **2** (1991), *no.* 2, 195–220, 313, 321. (Srinivasu Maka) **93c:93025** 93B40 (49J35, 93C55, 93C60, 93E10)

— (*with* Gabasov, R. F.; Prishchepova, S. V.) Optimal identificator of dynamic systems. (English, Russian and Lithuanian summaries) *Informatica* **2** (1991), *no.* 3, 367–377, 457, 464. (Nikolai N. Sal'nikov) **93h:93020** 93B30 (49K05, 49M35)

— (*with* Gabasov, R. F.) Optimization of dynamical systems with identification of input perturbations. (Russian summary) *Problems Control Inform. Theory/Problemy Upravlen. Teor. Inform.* **20** (1991), *no.* 3, 233–244. (Stefan Mirică) **93c:49021** 49N05 (49N30, 93B30, 93C41)

— (*with* Gabasov, R. F.; Gaishun, P. V.; Prishchepova, S. V.) Optimal feedback for a discrete system with disturbance compensation. I. Synthesis of an optimal estimator. (Russian) *Avtomat. i Telemekh.* **1992,** *no.* 1, 52–62; *translation in Automat. Remote Control* **53** (1992), *no.* 1, *part* 1, 44–51. (Summary) **93b:49041** 49N35 (93B51)

— (*with* Gabasov, R. F.; Gaishun, P. V.; Prishchepova, S. V.) Optimal feedback for a discrete system with disturbance compensation. II. Synthesis of an optimal regulator. (Russian. Russian summary) *Avtomat. i Telemekh.* **1992,** *no.* 4, 33–39; *translation in Automat. Remote Control* **53** (1992), *no.* 4, *part* 1, 500–505. (From the introduction) **93f:49032** 49N35 (93B51)

— (*with* Gabasov, R. F.; Kostyukova, O. I.) Construction of optimal estimators for linear dynamical systems. (Russian. Russian summary) *Vestnik Beloruss. Gos. Univ. Ser. I Fiz. Mat. Mekh.* **1992,** *no.* 2, 45–49, 80. (Ognyan Kounchev) **93k:93020** 93B07 (93B30, 93C05)

— (*with* Gabasov, R. F.; Kostina, E. A.) Global maximization of special classes of convex functions on a convex polyhedral set. (Russian. Russian summary) *Zh. Vychisl. Mat. i Mat. Fiz.* **32** (1992), *no.* 8, 1313–1320; *translation in Comput. Math. Math. Phys.* **32** (1992), *no.* 8, 1171–1177. (From the text) **93h:90069** 90C20 (90C08)

Kirilyuk, O. L. (*with* Prokopovich, P. V.) The decision function method in differential-difference pursuit games. (Russian. Russian summary) *Methods for solving problems of nonlinear and discrete programming (Russian)*, 46–51, *Akad. Nauk Ukrain. SSR, Inst. Kibernet., Kiev*, 1991. (*see* **93b:90010**) 90D26

Kirilyuk, V. S. An approximation of a lower semicontinuous function. (Russian. Russian summary) *Methods for solving problems of nonlinear and discrete programming (Russian)*, 9–13, *Akad. Nauk Ukrain. SSR, Inst. Kibernet., Kiev*, 1991. (*see* **93b:90010**) 41A63

Kirin, N. E. (*with* Israilov, I.) ★ Оценочные системы в задачах теории управления. (Russian) [Evaluative systems in problems in control theory] "*Fan*", *Tashkent*, 1990. 159 *pp. ISBN* 5-648-00978-X (Vladimir Veliov) **93b:93003** 93–02 (49–02, 93B03, 93C41)

— (*with* Saukhanova, Zh.) Two-sided estimates in the problem of predicting the components of discrete systems. (Russian) *Mathematical methods in problems of control and data processing (Russian)*, 44–47, *Ryazan. Radiotekhn. Inst., Ryazan'*, 1990. (*see* **93m:00028**) 93B30 (93C55)

Kiritsis, Elias B. (*with* Bakas, Ioannis) Structure and representations of the W_∞ algebra. (English summary) Common trends in mathematics and quantum field theories (Kyoto, 1990). *Progr. Theoret. Phys. Suppl. No.* 102 (1990), 15–37 (1991). (Katsushi Ito) **93g:81034** 81R10 (17B68)

— (*with* Giveon, Amit; Halpern, M. B.; Obers, N. A.) Exact C-function and C-theorem on affine-Virasoro space. *Nuclear Phys. B* **357** (1991), *no.* 2-3, 655–690. (P. D. Jarvis) **93d:81069** 81R10 (17B65, 17B68, 81T30, 81T40)

— (*with* Bakas, Ioannis) Beyond the large N limit: nonlinear W_∞ as symmetry of the $SL(2,\mathbf{R})/U(1)$ coset model. (English summary) *Infinite analysis, Part A, B (Kyoto, 1991)*, 55–81, *Adv. Ser. Math. Phys.*, 16, *World Sci. Publishing, River Edge, NJ*, 1992. (Katsushi Ito) **93m:81041** 81R10 (17B81, 58F07, 81T30)

— (*with* Bakas, Ioannis) Target space description of W_∞ symmetry in coset models. (English summary) *Phys. Lett. B* **301** (1993), *no.* 1, 49–52. (C. Gauthier) **93m:81042** 81R10 (81T40)

Kiriyak, L. L. Topology of free topological algebras with the Mal'tsev condition and a k-space. (Russian) *Izv. Akad. Nauk Moldav. SSR Mat.* **1990,** *no.* 3, 7–13, 77. (Robert Wisbauer) **93a:16033** 16W80 (46H99)

Kiriyama, Eiji (*with* Ono, Hiroakira) The contraction rule and decision problems for logics without structural rules. *Studia Logica* **50** (1991), *no.* 2, 299–319. (W. Rautenberg) **93b:03014** 03B22 (03B25, 03D35)

Kirjackis, Edward G. On a condition for univalence. (Russian. English, Russian and Lithuanian summaries) *Differentsial'nye Uravneniya i Primenen. No.* 47 (1991), 33–36. (Georgi Dimkov) **93h:30026** 30C55

Kirk, W. A. Nonexpansive mappings and nonexpansive retracts. (English summary) *Fixed point theory and applications (Halifax, NS*, 1991), 137–155, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93f:47069** 47H09 (46B20, 47H10, 54H25)

— Common fixed points and nonexpansive retracts. *Optimization and nonlinear analysis (Haifa*, 1990), 155–168, *Pitman Res. Notes Math. Ser.*, 244, *Longman Sci. Tech., Harlow*, 1992. (Tadeusz Kuczumow) **93i:47088** 47H10 (47H09)

Kirkland, Stephen (*with* Gregory, David A.; Pullman, Norman J.) Row-stochastic matrices with a common left fixed vector. *Linear Algebra Appl.* **169** (1992), 131–149. (D. J. Hartfiel) **93d:15034** 15A51 (52B11, 90C06)

— (*with* de Caen, D.; Gregory, David A.; Pullman, Norman J.; Maybee, John S.) Algebraic multiplicity of the eigenvalues of a tournament matrix. *Linear Algebra Appl.* **169** (1992), 179–193. (Qiao Li) **93b:05115** 05C50 (15A18)

— (*with* Pullman, Norman J.) Boolean spectral theory. (English summary) *Linear Algebra Appl.* **175** (1992), 177–190. (F. D. Veldkamp) **93i:15025** 15A36 (06E20)

— On the spectrum of a Leslie matrix with a near-periodic fecundity pattern. (English summary) *Linear Algebra Appl.* **178** (1993), 261–279. (Summary) **93m:92018** 92D25

— (*with* Gregory, David A.; Pullman, Norman J.) Power convergent Boolean matrices. (English summary) *Linear Algebra Appl.* **179** (1993), 105–117. (D. Rosenblatt) **93j:15013** 15A33 (03G05, 03G15, 06E99)

Kirkman, E. (*with* Kuzmanovich, J.; Small, L.) Finitistic dimensions of Noetherian rings. *J. Algebra* **147** (1992), *no.* 2, 350–364. (C. R. Hajarnavis) **93h:16008** 16E10 (16P40)

Kirkovits, Magdalen Sz. On k-Lagrange geometry. *Publ. Math. Debrecen* **39** (1991), *no.* 3-4, 263–282. (H. Rund) **93c:58058** 58E30 (53C60)

Kirkpatrick, David G. (*with* Mishra, Bhubaneswar; Yap, Chee-Keng) Quantitative Steinitz's theorems with applications to multifingered grasping. *Discrete Comput. Geom.* **7** (1992), *no.* 3, 295–318. (Rephael Wenger) **93h:52007** 52A35 (52B55, 68U05)

— (*with* Klawe, Maria M.; Tarjan, Robert Endre) Polygon triangulation in $O(n \log\log n)$ time with simple data structures. *Discrete Comput. Geom.* **7** (1992), *no.* 4, 329–346. (Ruth Silverman) **93c:68101** 68U05 (68Q25)

— (*with* Hell, Pavol) Algorithms for degree constrained graph factors of minimum deficiency. (English summary) *J. Algorithms* **14** (1993), *no.* 1, 115–138. (Norbert Blum) **93m:68133** 68R10 (05–04, 68Q25)

Kirkpatrick, P. B. Finite cubes and finite affine spaces. (English summary) *Australas. J. Combin.* **6** (1992), 89–106. (T. G. Ostrom) **93j:51008** 51E26 (05B25, 51E20)

Kirlinger, G. (*with* Corliss, George F.) On implicit Taylor series methods for stiff ODEs. (English summary) *Computer arithmetic and enclosure methods (Oldenburg*, 1991), 371–379, *North-Holland, Amsterdam*, 1992. (*see* **93i:65006**) 65L05

— (*with* Auzinger, W.; Frank, Reinhard M.) Modern convergence theory for stiff initial value problems. (English summary) *J. Comput. Appl. Math.* **45** (1993), *no.* 1-2, 5–16. (Summary) **93j:65124** 65L20 (65L05, 65L70)

Kirmani, S. N. U. A. (*with* Peddada, Shyamal Das) Stochastic ordering approach to off-line quality control. (English summary) *J. Roy. Statist. Soc. Ser. C* **42** (1993), *no.* 2, 271–281. 62N10

Kirov, Georgi Khr. ★ Approximation with quasi-splines. Translated from the Bulgarian. *Institute of Physics, Bristol*, 1992. viii+251 *pp. ISBN* 0-7503-0181-3 (L. L. Schumaker) **93f:41001** 41–02 (41A15, 65D07)

Kirpichnikov, S. N. (*with* Kokorev, A. A.) On the first type of steady motions of two gravitating bodies, one axisymmetric and one spherically symmetric. (Russian. English summary) *Vestnik Leningrad. Univ. Mat. Mekh. Astronom.* **1991,** *vyp.* 2, 115–123, 127. (Summary) **93b:70013** 70F15 (85A05)

— On the second type of steady motions of two gravitating bodies: one axisymmetric and one spherically symmetric. (Russian. English and Russian summaries) *Vestnik Leningrad. Univ. Mat. Mekh. Astronom.* **1991,** *vyp.* 3, 92–97, 134. (Summary) **93m:70012** 70F15 (70K20)

Kirpichnikova, N. Ya. Equations of a wave front, rays and a phase function near a nonsingular part of a caustic formed by a field of space-time rays. (Russian. English and Russian summaries) *Zap. Nauchn. Sem. S.-Peterburg. Otdel. Mat. Inst. Steklov. (POMI)* **203** (1992), *Mat. Voprosy Teor. Rasprostr. Voln.* 22, 92–100, 112, 175. (J. S. Joel) **93k:58022** 58C27 (35L05, 78A05)

Kirrmann, Georg A short proof of an algorithm by Boehm. *Comput. Aided Geom. Design* **9** (1992), *no.* 1, 69–71. (Summary) **93a:65014** 65D07 (65D17)

Kirrmann, Pius (*with* Schneider, Guido; Mielke, Alexander) The validity of modulation equations for extended systems with cubic nonlinearities. (English summary) *Proc. Roy. Soc. Edinburgh Sect. A* **122** (1992), *no.* 1-2, 85–91. (Summary) **93i:35132** 35Q55 (35B35, 35K55, 35Q53)

Kirsanov, V. S. The earliest copy in Russia of Newton's *Principia*: is it David Gregory's annotated copy? *Notes and Records Roy. Soc. London* **46** (1992), *no.* 2, 203–218. (Massimo Galuzzi) **93g:01030** 01A45

— Newton and his epoch. (Russian) *Voprosy Istor. Estestvoznan. i Tekhn.* **1993,** *no.* 1, 16–18. 01A45 (01A70)

Kirsch, Andreas (*with* Xiong, Zonghou) Three-dimensional earth conductivity inversion. (English summary) *J. Comput. Appl. Math.* **42** (1992), *no.* 1. 109–121. (Summary) **93e:86006** 86A22

— (*with* Colton, David) The use of polarization effects in electromagnetic inverse scattering problems. *Math. Methods Appl. Sci.* **15** (1992), *no.* 1, 1–10. (Sergej M. Zverev) **93g:78013** 78A40 (86A22, 86A25)

— (*with* Angell, Thomas S.) Multicriteria optimization in antenna design. (English summary) *Math. Methods Appl. Sci.* **15** (1992), *no.* 9, 647–660. (Summary) **93h:90078** 90C29 (78A50, 90C90)

— (*with* Angell, Thomas S.) The conductive boundary condition for Maxwell's equations. (English summary) *SIAM J. Appl. Math.* **52** (1992), *no.* 6, 1597–1610. (W. E. Williams) **93k:78009** 78A45 (35Q60, 86A20)

— The domain derivative and two applications in inverse scattering theory. (English summary) *Inverse Problems* **9** (1993), *no.* 1, 81–96. (Summary) **93m:35182** 35R30 (35J05, 65P05, 76Q05)

Kirsch, S. Über den p-Modul eines mehrfach zusammenhängenden Vierecks und quasikonforme Abbildungen. (English summary) [On the p-module of a multiply connected quadrilateral and quasiconformal mappings] *Z. Anal. Anwendungen* **10** (1991), *no.* 4, 541–550. (Keiichi Shibata) **93e:30054** 30C70 (30C62, 30C75)

Kirsch, Werner (*with* Cycon, Hans L.; Froese, Richard; Simon, Barry) ★ Операторы Шрёдингера с приложениями к квантовой механике и глобальной геометрии. (Russian. Russian summary) [Schrödinger operators with applications to quantum mechanics and global geometry] Translated from the English by A. V. Sobolev. Translation edited and with a preface by D. R. Yafaev. "*Mir*", *Moscow*, 1990. 408 *pp. ISBN* 5-03-001422-5 (Editors) **93k:35002** 35–02 (35J10, 47F05, 47N50, 58G40, 81Q10)

— (*with* Pastur, L. A.) Large time behaviour of moments of fundamental solutions of the random parabolic equation. *Random partial differential equations (Oberwolfach*, 1989), 127–132, *Internat. Ser. Numer. Math.*, 102, *Birkhäuser, Basel*, 1991. (*see* **93e:60007**) 60H15 (35R60)

— Point interactions as solvable models. *Ideas and methods in quantum and statistical physics (Oslo*, 1988), 261–279, *Cambridge Univ. Press, Cambridge*, 1992. (Nicolae Angelescu) **93i:81003** 81–02 (81Q10, 81Q15, 82B44)

— (*with* Demuth, Michael; Jeske, F.) Quantitative estimates for Schrödinger and Dirichlet semigroups. (English summary) *Journées "Équations aux Dérivées Partielles" (Saint-Jean-de-Monts*, 1992), *Exp. No. XVII*, 6 *pp., École Polytech., Palaiseau*, 1992. (*see* **93e:35005**) 47D03 (47F05, 81Q10)

Kirschenhofer, Peter Enumeration of trees. *Séminaire Lotharingien de Combinatoire (Salzburg*, 1990), 19–61, *Publ. Inst. Rech. Math. Av.*, 462, *Univ. Louis Pasteur, Strasbourg*, 1991. (J. W. Moon) **93h:05058** 05C05 (05C30, 68P10, 68R10)

— (*with* Prodinger, Helmut) A coin tossing algorithm for counting large numbers of events. (English summary) *Math. Slovaca* **42** (1992), *no.* 5, 531–545. (Summary) **93j:68073** 68Q25

— *see also* **Andersson, Arne, 93k:68021**

Kirschenmann, Peter P. Does the anthropic principle live up to scientific standards? (English summary) *Ann. Japan Assoc. Philos. Sci.* **8** (1992), *no.* 2, 69–96. 83F05

Kirschvink, Stephen J. Shock layer behavior for a quasilinear boundary value problem. *Rocky Mountain J. Math.* **22** (1992), *no.* 1, 209–225. (Summary) **93c:34119** 34E15 (34B15, 76D30)

Kirsh, David *see* **Foundations of artificial intelligence, 93d:68059**

Kirsh, V. *see* **Kirsch, Werner**

Kirstein, Bernd (*with* Dubovoĭ, V. K.; Fritzsche, Bernd) ★ Matricial version of the classical Schur problem. With German, French and Russian summaries. Teubner-Texte zur Mathematik [Teubner Texts in Mathematics], 129. *B. G. Teubner Verlagsgesellschaft mbH, Stuttgart*, 1992. 355 *pp. ISBN* 3-8154-2015-6 (Joseph A. Ball) **93e:47021** 47A57 (30E05, 47A56, 47B50, 47N70)

— (*with* Arov, D. Z.; Fritzsche, Bernd) Completion problems for j_{pq}-inner functions. I. (English summary) *Integral Equations Operator Theory* **16** (1993), *no.* 2, 155–185. (Joseph A. Ball) **93k:47027** 47A57 (47A56)

— (*with* Fritzsche, Bernd) Inverse problems for positive Hermitian block Toeplitz matrices and nondegenerate Schur sequences. (English summary) *Linear Algebra Appl.* **179** (1993), 237–270. (Hugo Jan Woerdeman) **93j:47021** 47A57 (15A57)

— *see also* **Herglotz, G. et al., 93d:01095**

müller-Kirsten, H. J. W. *see* **Müller-Kirsten, H. J. W.**

Kirsten, Klaus Inhomogeneous multidimensional Epstein zeta functions. *J. Math. Phys.* **32** (1991), *no.* 11, 3008–3014. (A. Perelli) **93a:11028** 11E45 (11M41, 81T20)

— Connections between Kelvin functions and zeta functions with applications. (English summary) *J. Phys. A* **25** (1992), *no.* 23, 6297–6305. (Alfred Actor) **93k:11079** 11M35 (81T20)

Kirtadze, A. P. Nonseparable extensions of invariant measures and the uniqueness property. (Russian. English and Georgian summaries) *Soobshch. Akad. Nauk Gruzii* **142** (1991), *no.* 2, 261–264. 28A10

Kirwan, Frances ★ Complex algebraic curves. London Mathematical Society Student Texts, 23. *Cambridge University Press, Cambridge*, 1992. viii+264 *pp. ISBN* 0-521-41251-X; 0-521-42353-8 (S. Zdravkovska and Daniel M. Burns, Jr.) **93j:14025** 14Hxx (14–01)

— The cohomology rings of moduli spaces of bundles over Riemann surfaces. *J. Amer. Math. Soc.* **5** (1992), *no.* 4, 853–906. (P. E. Newstead) **93g:14016** 14D20 (14F25, 14H60, 55N25)

— Corrigendum: "On the homology of compactifications of moduli spaces of vector bundles over a Riemann surface" [Proc. London Math. Soc. (3) **53** (1986), no. 2, 237–266; MR 88e:14012]. *Proc. London Math. Soc.* (3) **65** (1992), *no.* 3, 474. (From the text) **93h:14009** 14D20 (14D22, 14F05)

Kir'yakov, V. A. Program realization of a finitely converging algorithm for the identification of parameters. (Russian. Russian summary) *Kibernet. i Vychisl. Tekhn. No.* 93 (1992), 64–68. 93B30 (93B40)

Kiryakova, Virginia S. An application of the generalized operators of fractional integration to dual integral equations involving Meijer's G-function. *Pliska Stud. Math. Bulgar.* **10** (1989), 93–107. (D. G. Natroshvili) **93f:45007** 45F10 (33C60)

— Poisson and Rodrigues type fractional differintegral formulas for the generalized hypergeometric functions ${}_pF_q$. *Atti Sem. Mat. Fis. Univ. Modena* **39** (1991), *no.* 2, 557–568. (C. L. Koul) **93a:33013** 33C20 (26A33)

— (*with* Kalla, Shyam L.; Galué, Leda) Some expansions related to a family of generalized radiation integrals. *Math. Balkanica (N.S.)* **5** (1991), *no.* 3, 190–202. (T. Erber) **93c:33002** 33C10

— (*with* Saxena, Ram Kishore) On a relation between the two-dimensional H-transforms in terms of Erdélyi-Kober operators. (English summary) *Math. Balkanica (N.S.)* **6** (1992), *no.* 2, 133–140. (Summary) **93g:44015** 44A15 (26A33)

Kir'yanova, L. V. Nonclassical estimates for the accuracy of the normal approximation for martingales. (Russian. Russian summary) *Mat. Zametki* **52** (1992), *no.* 5, 56–62, 141; *translation in Math. Notes* **52** (1992), *no.* 5-6, 1116–1120 (1993). (Summary) **93m:60046** 60F05 (60G48)

Kir'yatskiĭ, Evgeniĭ *see* **Kirjackis, Edward G.**

Kiryazov, P. (*with* Marinov, P.) On the optimal control synthesis for a class of nonlinear mechanical systems. *Approximation, optimization and computing*, 259–262, *North-Holland, Amsterdam*, 1990. (*see* **93a:41001**) 49N55 (93C95)

Kiselev, A. A. (*with* Pavlov, B. S.; Penkina, N. N.; Suturin, M. G.) A technique of the theory of extensions using interaction symmetry. (Russian. English and Russian summaries) *Teoret. Mat. Fiz.* **91** (1992), *no.* 2, 179–191; *translation in Theoret. and Math. Phys.* **91** (1992), *no.* 2, 453–461. (H. Baumgärtel) **93m:47078** 47N50 (47B25, 81Q10)

Kiselĭv, A. I. (*with* Krasnov, M.; Makarenko, G. I.) ★ Problemas de ecuaciones diferenciales ordinarias. (Spanish. Spanish summary) [Problems in ordinary differential equations] Translated from the second Russian edition by Emiliano Aparicio Bernardo. "*Mir*", *Moscow*, 1988. 255 *pp. ISBN* 5-03-000149-2 (Editors) **93i:34001** 34–01

Kiselev, A. V. (*with* Nasyrov, S. R.) The structure of the set of roots of F. D. Gakhov's equation for a simply connected and a multiply connected domain. (Russian) *Trudy Sem. Kraev. Zadacham No.* 24 (1990), 105–115. (Guo Chun Wen) **93c:30010** 30C15 (30E25, 31A25)

— (*with* Petrov, V. A.) The proton spin: the role of quark-gluonic and hadronic degrees of freedom. (Russian. English and Russian summaries) *Teoret. Mat. Fiz.* **91** (1992), *no.* 2, 234–267; *translation in Theoret. and Math. Phys.* **91** (1992), *no.* 2, 490–513. 81V05

Kiselev, M. I. Applied aspects of the theory of adiabatic invariants. (Russian. Russian summary) *Mat. Metody i Fiz.-Mekh. Polya No.* 35 (1992), 163–167. 70K99 (34C15)

Kiselev, M. V. (*with* Asanov, G. S.) Comparing the Finslerian gauge approach with the SU(3) × SU(2) × U(1)-model. *Rep. Math. Phys.* **26** (1988), *no.* 3, 401–411. (H. Rund) **93c:81117** 81T13 (53C60, 53C80, 81V15)

Kiselĭv, O. M. Some properties of the Hilbert singular integral. (Russian) *Trudy Sem. Kraev. Zadacham No.* 24 (1990), 92–104. (M. Cotlar) **93d:42009** 42A50 (45E05)

— (*with* Validova, Z. N.) A problem of the interaction of two plane jets with different total pressures. (Russian) *Trudy Sem. Kraev. Zadacham No.* 26 (1991), 79–95. (Adrian Carabineanu) **93j:76015** 76B10

Kiselev, O. N. (*with* Polyak, B. T.) Ellipsoidal estimation based on a generalized criterion. (Russian) *Avtomat. i Telemekh.* **1991**, *no.* 9, 133–145; *translation in Automat. Remote Control* **52** (1991), *no.* 9, *part* 2, 1281–1292 (1992). (Nikolaĭ N. Sal'nikov) **93b:93010** 93B03 (65D99, 93B30)

Kiselĭv, V. D. (*with* Sukmanov, S. A.) Application of duality in improving the efficiency of methods for solving a quadratic knapsack problem. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **33** (1993), *no.* 2, 318–319; *translation in Comput. Math. Math. Phys.* **33** (1993), *no.* 2, 287–288. 90C10 (90C27)

Kiselev, V. V. (*with* Borisov, A. B.) Inverse spectral solution of elliptic sine-Gordon equation with nontrivial asymptotic behaviour. *Nonlinear world, Vol.* 1 (*Kiev*, 1989), 73–83, *World Sci. Publishing, River Edge, NJ*, 1990. (*see* **93b:00012**) 35Q53 (58F19)

Kiselĭv, Yu. N. A time-optimality problem with a linear terminal set. (Russian) *Vestnik Moskov. Univ. Ser. XV Vychisl. Mat. Kibernet.* **1991**, *no.* 4, 39–43; *translation in Moscow Univ. Comput. Math. Cybernet.* **1991**, *no.* 4, 36–40. (Vladimir Veliov) **93g:49024** 49M05 (49K15, 93B03)

— (*with* Orlov, M. V.) Numerical algorithms for linear time-optimalities. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **31** (1991), *no.* 12, 1763–1771; *translation in Comput. Math. Math. Phys.* **31** (1991), *no.* 12, 1–7 (1992). (Mikhail I. Sumin) **93b:49035** 49M05 (49N05, 65K10)

— (*with* Orlov, M. V.; Fedotova, E. L.) Projection of a point on an ellipsoid. (Russian. Russian summary) *Vestnik Moskov. Univ. Ser. XV Vychisl. Mat. Kibernet.* **1993**, *no.* 1, 45–50, 64. 65K05

Kiseleva, E. A. (*with* Maslov, V. P.) Asymptotics of convective gas flow through a heat-releasing multiscale porous medium. (Russian) *Dokl. Akad. Nauk SSSR* **322** (1992), *no.* 2, 284–288; *translation in Soviet Phys. Dokl.* **37** (1992), *no.* 1, 27–29. (Andro Mikelić) **93k:76112** 76S05 (35K99, 35Q35, 76N15, 76R99)

Kiselĕva, E. M. Solution of the generalized Neyman-Pearson problem using optimal set-partitioning methods. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **32** (1992), *no.* 1, 167–173; *translation in Comput. Math. Math. Phys.* **32** (1992), *no.* 1, 142–147. (Summary) **93b:62026** 62F03 (90C45)

Kiselevskiĭ, A. G. (*with* Ulitko, A. F.; Shorfi, L.) Discrete spectrum of the Sturm-Liouville operator in the third boundary value problem for a truncated one-sheeted hyperboloid of revolution. (Russian) *Differentsial'nye Uravneniya* **27** (1991), *no.* 10, 1807–1812, 1838; *translation in Differential Equations* **27** (1991), *no.* 10, 1283–1287 (1992). (Summary) **93a:34100** 34L40 (34B24, 35J05)

Kiseliev, V. V. *see* **Kiselev, V. V.**

Kiseliov, A. *see* **Kiselĭv, A. I.**

Kisenkova, N. A. Estimation of the characteristics of objects and random perturbations by the minimal distance method. (Russian. Russian summary) *Avtomat. i Telemekh.* **1992**, *no.* 7, 70–78; *translation in Automat. Remote Control* **53** (1992), *no.* 7, *part* 1, 1013–1020. (Wolfgang J. Runggaldier) **93i:93125** 93E12 (62F10, 93E24)

Kishi, Genya (*with* Kishimoto, Wataru; Takeuchi, Masashi) Synthesis of flow networks minimizing the sum of edge capacities. (English summary) *Electron. Comm. Japan Part III Fund. Electron. Sci.* **75** (1992), *no.* 9, 1–13. (Summary) **93m:90034** 90B10 (05C35, 90B12)

Kishima, Akira (*with* Matsuo, Tetsuji) A method for numerical analysis of bifurcation of periodic solutions in nonautonomous systems with hysteretic elements. *Electron. Comm. Japan Part III Fund. Electron. Sci.* **74** (1991), *no.* 12, 33–42 (1992). (From the summary) **93a:65108** 65L99 (58F14)

— (*with* Matsuo, Tetsuji) Numerical analysis of bifurcations in Duffing's equation with hysteretic functions. (English summary) *Electron. Comm. Japan Part III Fund. Electron. Sci.* **75** (1992), *no.* 9, 61–71. (Summary) **93j:65130** 65L99

Kishimoto, Akitaka (*with* Bratteli, Ola) Noncommutative spheres. III. Irrational rotations. (English summary) *Comm. Math. Phys.* **147** (1992), *no.* 3, 605–624. (Palle E. T. Jørgensen) **93g:58008** 58B30 (19K14, 46L87)

— (*with* Arveson, William) A note on extensions of semigroups of $*$-endomorphisms. *Proc. Amer. Math. Soc.* **116** (1992), *no.* 3, 769–774. (Sze-Kai Tsui) **93a:46133** 46L57

Kishimoto, Wataru (*with* Takeuchi, Masashi; Kishi, Genya) Synthesis of flow networks minimizing the sum of edge capacities. (English summary) *Electron. Comm. Japan Part III Fund. Electron. Sci.* **75** (1992), *no.* 9, 1–13. (Summary) **93m:90034** 90B10 (05C35, 90B12)

Kishka, Z. M. G. Functions of several square commutative complex matrices. (English summary) *Simon Stevin* **66** (1992), *no.* 1-2, 69–77. (Sergey Ivashkovich) **93m:32007** 32A25

Kishta, M. A. (*with* Zayed, E. M. E.; Hassan, A. A. M.) The wave equation approach to an inverse problem for a general convex domain: an extension to higher dimensions. (English summary) *Bull. Calcutta Math. Soc.* **82** (1990), *no.* 6, 457–474. (P. Günther) **93m:35136** 35P20 (35R30, 58G18)

Kisielewicz, Andrzej (*with* Dudek, Józef) Totally commutative semigroups. *J. Austral. Math. Soc. Ser. A* **51** (1991), *no.* 3, 381–399. (T. E. Hall) **93d:20103** 20M07 (08B15)

— All pseudovarieties of commutative semigroups. *Semigroups with applications (Oberwolfach*, 1991), 78–89, *World Sci. Publishing, River Edge, NJ*, 1992. (Francis Pastijn) **93k:20086** 20M07 (20M14)

— (*with* Grätzer, George) A survey of some open problems on p_n-sequences and free spectra of algebras and varieties. (English summary) *Universal algebra and quasigroup theory (Jadwisin*, 1989), 57–88, *Res. Exp. Math.*, 19, *Heldermann, Berlin*, 1992. (Tadeusz Wesołowski) **93j:08003** 08A40 (08B20)

— (*with* Grätzer, George; Wolk, B.) An equational basis in four variables for the three-element tournament. *Colloq. Math.* **63** (1992), *no.* 1, 41–44. (From the text) **93c:08004** 08B05 (05C20)

Kisielewicz, Michał (*with* Dawidowski, Marian; Kubiaczyk, Ireneusz) Existence theorem for hyperbolic differential inclusion with Carathéodory right hand side. *Discuss. Math.* **10** (1990), 69–75 (1991). (Summary) **93a:35161** 35R70 (35L70)

— Existence of solutions of neutral functional-differential inclusions. *Discuss. Math.* **10** (1990), 77–97 (1991). (Zvi Artstein) **93a:34090** 34K40 (34K05)

— ★ Differential inclusions and optimal control. Mathematics and its Applications (East European Series), 44. *Kluwer Academic Publishers Group, Dordrecht; PWN—Polish Scientific Publishers, Warsaw*, 1991. xx+240 *pp. ISBN* 0-7923-0675-9 (Nikolaos S. Papageorgiou) **93c:49001** 49–02 (34A60, 34H05, 49J24, 49K24)

— (*with* Motyl, Jerzy) Existence of solutions of boundary value problems of differential inclusions. *Appl. Math. Comput. Sci.* **1** (1991), *no.* 1, 117–126. (Salvatore A. Marano) **93c:34045** 34A60 (34B15, 49J24)

Kisil', V. V. Algebra of two-sided convolutions on the Heisenberg group. (Russian) *Dokl. Akad. Nauk* **325** (1992), *no.* 1, 20–23; *translation in Russian Acad. Sci. Dokl. Math.* **46** (1993), *no.* 1, 12–16. (J. S. Joel) **93j:22018** 22E30 (22E25, 43A80, 58G15)

Kisilevich, A. V. (*with* Chemeris, V. V.) Integrable Hamiltonian systems on orbits of the coadjoint representation of a loop algebra. (Russian. English and Russian summaries) *Dokl. Akad. Nauk Ukrainy* **1992**, *no.* 12, 53–57, 171. (J. S. Joel) **93k:58116** 58F07 (22E67, 58F06)

Kisilevich, V. V. (*with* Tatsii, R. M.; Ishchuk, V. V.) Approximation of solutions of differential equations with measures. (Ukrainian. Russian and Ukrainian summaries)

Vtsnik Kiïv. Univ. Mat. Mekh. No. 32 (1990), 128–131. (Summary) **93d:34013** 34A30 (34A45)

Kisin, Vitaly I. *see* **Martynov, G. A., 93i:82001**

Kislyakov, S. V. Classical themes of Fourier analysis [see MR 91b:42021]. *Commutative harmonic analysis, I*, 113–165, *Encyclopaedia Math. Sci.*, 15, *Springer, Berlin*, 1991. (*see* **93b:42001**) 42-01 (46E30)

— Absolutely summing operators on the disc algebra. (Russian) *Algebra i Analiz* **3** (1991), *no.* 4, 1–77; *translation in St. Petersburg Math. J.* **3** (1992), *no.* 4, 705–774. (P. Wojtaszczyk) **93b:47062** 47B38 (30H05, 46J15, 47B10)

— *see also* **Commutative harmonic analysis, 93b:42001**

Kisner, R. A. (*with* Benítez-Read, J. S.; Jamshidi, M.) Advanced control designs for nuclear reactors. (English summary) *Control Theory Adv. Tech.* **8** (1992), *no.* 3, 447–464. 93C95 (93B52)

— (*with* Berkan, R. C.; Upadhyaya, B. R.; Fitzpatrick, Ben G.) Inverse dynamics paradigm: adaptive nonlinear control and identification of large-scale power systems. (English summary) *Control Theory Adv. Tech.* **8** (1992), *no.* 3, 465–477. 93C40 (93C95)

— (*with* Geng, Zheng; Carroll, Robert L.; Jamshidi, M.) An adaptive learning control approach with application to water tank level control. (English summary) *Control Theory Adv. Tech.* **8** (1992), *no.* 3, 577–592. 93C95

Kiss, Béla (*with* Molnárka, Győző) A preconditioned domain decomposition algorithm for the solution of the elliptic Neumann problem. *Parallel algorithms for partial differential equations* (*Kiel*, 1990), 129–139, *Notes Numer. Fluid Mech.*, 31, *Vieweg, Braunschweig*, 1991. (Summary) **93a:65172** 65N55 (65F35, 65N30, 65Y05)

— (*with* Molnárka, Győző) A preconditioned domain decomposition algorithm for the solution of the elliptic Neumann problem. (English summary) *Period. Math. Hungar.* **24** (1992), *no.* 3, 151–165. (Włodzimierz Proskurowski) **93m:65168** 65N55

Kiss, Emil W. (*with* Pröhle, Péter) Problems and results in tame congruence theory. A survey of the '88 Budapest Workshop. *Algebra Universalis* **29** (1992), *no.* 2, 151–171. (David Hobby) **93g:08004** 08A30 (08B05)

— On the Loewy rank of infinite algebras. *Algebra Universalis* **29** (1992), *no.* 3, 437–440. (Sheila Oates-Williams) **93f:08007** 08B10 (08A30)

— Three remarks on the modular commutator. (English summary) *Algebra Universalis* **29** (1992), *no.* 4, 455–476. (Pavol Zlatoš) **93m:08002** 08A05 (08A30, 08B10, 08B25, 08B26)

Kiss, Péter (*with* Tropak, Bogdan) Average order of logarithms of terms in binary recurrences. *Discuss. Math.* **10** (1990), 29–39 (1991). (T. N. Shorey) **93e:11021** 11B37 (11J86)

— (*with* Sinka, Zs.) On the ratios of the terms of second order linear recurrences. *Period. Math. Hungar.* **23** (1991), *no.* 2, 139–143. (Robert F. Tichy) **93g:11072** 11J68 (11B37)

— (*with* Zay, Béla) On a generalization of a recursive sequence. *Fibonacci Quart.* **30** (1992), *no.* 2, 103–109. (Shiro Ando) **93e:11022** 11B37

— (*with* Jones, James P.) Linear recursive sequences and power series. *Publ. Math. Debrecen* **41** (1992), *no.* 3-4, 295–306. (John H. Loxton) **93k:11008** 11B37

Kissin, Edward Deficiency-indices sets of unbounded derivations of C^*-algebras. *Operator algebras and operator theory* (*Craiova*, 1989), 128–139, *Pitman Res. Notes Math. Ser.*, 271, *Longman Sci. Tech., Harlow*, 1992. (Geoffrey Price) **93m:46085** 46L57 (47B25)

— Indices of unbounded derivations of C^*-algebras. *Pacific J. Math.* **152** (1992), *no.* 1, 125–150. (Geoffrey Price) **93a:46134** 46L57 (47B50, 47D03)

Kissiov, V. T. (*with* Hadjitodorov, S. T.) A fuzzy version of the K-NN method. (English summary) *Fuzzy Sets and Systems* **49** (1992), *no.* 3, 323–329. 68T10 (04A72, 68T30)

Kistlerov, V. L. (*with* Aleksandrov, A. G.) Computer method in calculating b-functions of nonisolated singularities. *Proceedings of the International Conference on Algebra, Part* 3 (*Novosibirsk*, 1989), 319–335, *Contemp. Math.*, 131, *Part* 3, *Amer. Math. Soc., Providence, RI*, 1992. (Introduction) **93k:32077** 32S40 (32-04, 32S30)

Kistner, K.-P. (*with* Srinivasan, S. K.; Subramanian, Ramachandran) Control of repair rates in cold standby systems. (English and German summaries) *OR Spektrum* **14** (1992), *no.* 3, 129–136. 90B25

Kisyński, Jan Local uniqueness of Feller processes with integrodifferential generators. (English summary) *Stochastic systems and optimization* (*Warsaw*, 1988), 98–111, *Lecture Notes in Control and Inform. Sci.*, 136, *Springer, Berlin*, 1989. (*see* **93d:93009**) 60J25 (60J35)

— On Markov processes generated by boundary systems of Ventcel. *Classical analysis* (*Kazimierz Dolny*, 1991), 53–99, *World Sci. Publishing, River Edge, NJ*, 1992. (Niels Jacob) **93h:58168** 58G32 (47D07, 47N30, 60J35)

Kita, Hiroō Convergence of Fourier series of a function on generalized Wiener's class $BV(p(n)\uparrow\infty)$. *Acta Math. Hungar.* **57** (1991), *no.* 3-4, 233–243. (William T. Sledd) **93d:42008** 42A20

— On control functions of a.e. convergence of the Fourier series of bounded functions. *Math. Japon.* **36** (1991), *no.* 4, 649–655. (S. Aljančić) **93e:42010** 42A20

— (*with* Yoneda, Kaoru) A treatment of Orlicz spaces as a ranked space. (English summary) *Math. Japon.* **37** (1992), *no.* 4, 775–802. (Mikhail Ostrovskiĭ) **93i:46054** 46E30 (46A19)

Kitaev, A. V. (*with* Fokas, A. S.; It·s, A. R.) Discrete Painlevé equations and their appearance in quantum gravity. *Comm. Math. Phys.* **142** (1991), *no.* 2, 313–344. (Nikolai A. Kostov) **93a:58080** 58F07 (81T40)

— (*with* It·s, A. R.; Fokas, A. S.) Matrix models of two-dimensional quantum gravity, and isomonodromic solutions of Painlevé "discrete equations". (Russian. English summary) *Zap. Nauchn. Sem. Leningrad. Otdel. Mat. Inst. Steklov.* (*LOMI*) **187** (1991), *Differentsial'naya Geom. Gruppy Li i Mekh.* 12, 3–30, 171, 174. (Alexander R. Kavalov) **93e:81114** 81T40 (39A12, 58F07, 83C45)

— (*with* It·s, A. R.) The continuum limit in the Hermitian Φ^6 matrix model. (Russian. English summary) *Zap. Nauchn. Sem. Leningrad. Otdel. Mat. Inst. Steklov.* (*LOMI*) **187** (1991), *Differentsial'naya Geom. Gruppy Li i Mekh.* 12, 40–52, 171, 174. (Alexander R. Kavalov) **93b:81198** 81T27 (58F07, 81T40)

— (*with* Fokas, A. S.; It·s, A. R.) The isomonodromy approach to matrix models in 2D quantum gravity. *Comm. Math. Phys.* **147** (1992), *no.* 2, 395–430. (Yolanda Lozano) **93h:81115** 81T40 (58F07)

Kitagawa, Hiroyuki (*with* Chen, Hanxiong; Xu, Yu; Yamaguchi, Kazunori; Ohbo, Nobuo; Fujiwara, Yuzuru) Decomposition—an approach for optimizing queries including ADT functions. *Inform. Process. Lett.* **43** (1992), *no.* 6, 327–333. 68P15

Kitagawa, Keiichiro Sur des conditions nécessaires pour les équations en évolution pour que les problèmes de Cauchy soient uniformément bien posés dans les classes de fonctions C^∞. III. [Necessary conditions for the uniform well-posedness of the Cauchy problem in classes of C^∞-functions for evolution equations. III] *J. Math. Kyoto Univ.* **32** (1992), *no.* 3, 485–514. (Laurent Véron) **93k:35125** 35K22 (35A27, 35G10)

Kitagawa, Masahiro (*with* Ueda, Masahito) Reversibility in quantum measurement processes. *Phys. Rev. Lett.* **68** (1992), *no.* 23, 3424–3427. (Summary) **93b:81031** 81P15

Kitahara, Kazuaki (*with* Nishi, Akihiro) Best approximations by vector-valued monotone increasing or convex functions. (English summary) *J. Math. Anal. Appl.* **172** (1993), *no.* 1, 166–178. (J. Borwein) **93m:41021** 41A30 (41A50)

Kitahara, M. Boundary element methods for multi-defects characterizations. *Theory and applications of boundary element methods* (*Beijing*, 1991), 215–222, *Internat. Acad. Publ., Beijing*, 1991. (*see* **93b:65008**) 73V10 (65N38)

Kitai, Carol (*with* Herrero, Domingo A.) On invertible hypercyclic operators. *Proc. Amer. Math. Soc.* **116** (1992), *no.* 3, 873–875. (Summary) **93a:47023** 47A65 (47A15, 47B99)

Kitakado, S. (*with* Ohnuki, Yoshio) On quantum mechanics on compact space. (English summary) *Modern Phys. Lett. A* **7** (1992), *no.* 27, 2477–2482. (Summary) **93e:81030** 81Q99 (81P05)

Kitamori, Toshiyuki (*with* Shin, Seiichi) Model reference learning control for discrete-time nonlinear system. (English summary) *Adaptive systems in control and signal processing*, 1989 (*Glasgow*), 101–106, *IFAC Sympos. Ser.*, 1990, *No.* 1, *Pergamon, Oxford*, 1990. (*see* **93j:93007**) 93E35 (93C55)

— (*with* Tsumura, K.) Structural minor primeness in multi-variable polynomial matrices and its applications to 2-D systems. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, II* (*Kobe*, 1991), 183–188, *Mita, Tokyo*, 1992. (*see* **93g:93006**) 93B36 (93B60)

— (*with* Nobuyama, Eitaku; Shin, Seiichi) Deadbeat control of continuous-time systems. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, I* (*Kobe*, 1991), 191–196, *Mita, Tokyo*, 1992. (Summary) **93j:93092** 93C60 (93B52)

— (*with* Ohara, A.) Distances on Grammians and their applications. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, I* (*Kobe*, 1991), 449–454, *Mita, Tokyo*, 1992. (Summary) **93j:93032** 93B27 (93B05, 93B07)

— (*with* Watanabe, Keiji; Nobuyama, Eitaku; Ito, Masami[2]) A new algorithm for finite spectrum assignment of single-input systems with time delay. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 9, 1377–1383. (T. Kaczorek) **93h:93034** 93B55 (93B40)

Kitamura, Kazuo Trace forms of quadratic extensions over a commutative ring. (Japanese summary) *Mem. Osaka Kyoiku Univ. III Natur. Sci. Appl. Sci.* **40** (1991), *no.* 1, 1–5. (Zensho Nakao) **93i:13003** 13B02 (13B05)

— The trace form of a cubic algebra over a commutative ring. (Japanese summary) *Mem. Osaka Kyoiku Univ. III Natur. Sci. Appl. Sci.* **40** (1992), *no.* 2, 143–145. (Zensho Nakao) **93i:13004** 13B02 (13B05)

Kitamura, Mitsuru (*with* Ohtsubo, Hideomi) Element by element a posteriori error estimation of the finite element analysis for three-dimensional elastic problems. *Internat. J. Numer. Methods Engrg.* **33** (1992), *no.* 8, 1755–1769. (Summary) **93a:73081** 73V05

Kitamura, Yuichi (*with* Jaroš, Jaroslav; Kusano, Takaši) On a class of functional-differential equations of neutral type. (English summary) *Recent trends in differential equations*, 317–333, *World Sci. Ser. Appl. Anal.*, 1, *World Sci. Publishing, River Edge, NJ*, 1992. (I. P. Stavroulakis) **93h:34126** 34K15 (34K40)

— (*with* Kusano, Takaši) Asymptotic analysis of solutions of systems of neutral functional-differential equations. (English summary) Asymptotic methods in analysis and combinatorics. *J. Comput. Appl. Math.* **41** (1992), *no.* 1-2, 23–33. (Harlan W. Stech) **93f:34123** 34K15 (34K25, 34K40)

Kitazawa, Yoshihisa Random surfaces and the Liouville theory. *Internat. J. Modern Phys. A* **7** (1992), *no.* 15, 3403–3433. (Summary) **93e:81096** 81T30 (81–02, 81T40, 82B20)

— L_{-1} constraint in Liouville gravity. *Modern Phys. Lett. A* **7** (1992), *no.* 20, 1817–1824. (Summary) **93i:81235** 81T40

Kitazoe, Tetsuro (*with* Anada, Hajime; Mizumoto, Yoshihiko) Perturbative method to solve the quantum gravity equation. (Japanese. English summary) *Mem. Fac. Engrg. Miyazaki Univ. No.* 22 (1993), 83–89. 83C45

Kitchen, J. W. (*with* Robbins, D. A.) Pullbacks of Banach bundles. (English summary) *Rocky Mountain J. Math.* **22** (1992), *no.* 2, 653–668. (Guy Noël) **93i:46135** 46M15 (46B20, 46H25, 46M20)

Kitchens, Bruce (*with* Schmidt, Klaus D.) Markov subgroups of $(\mathbf{Z}/2\mathbf{Z})^{\mathbf{Z}^2}$. (English summary) *Symbolic dynamics and its applications* (*New Haven, CT*, 1991), 265–283, *Contemp. Math.*, 135, *Amer. Math. Soc., Providence, RI*, 1992. (Pierre Michel) **93k:58136** 58F11 (28D15, 54H20, 58F03)

Kitover, A. K. (*with* Arenson, E. L.) Compact operators that preserve disjointness. (Russian) *Funktsional. Anal. i Prilozhen.* **26** (1992), *no.* 2, 55–57; *translation in Functional Anal. Appl.* **26** (1992), *no.* 2, 119–121. (From the text) **93d:47069** 47B60

Kittaneh, Fuad Some trace class commutators of trace zero. *Proc. Amer. Math. Soc.* **113** (1991), *no.* 3, 655–661. (Summary) **93a:47035** 47B47 (47B10)

— Trace norm inequalities for hyponormal pairs of operators. (Italian summary) *Boll. Un. Mat. Ital. A* (7) **6** (1992), *no.* 3, 333–338. (Mihai Putinar) **93k:47036** 47B20 (47A30)

— (*with* Bhatia, Rajendra) Approximation by positive operators. *Linear Algebra Appl.* **161** (1992), 1–9. (Richard Bouldin) **93a:47019** 47A58 (47B10)

— A note on the arithmetic-geometric-mean inequality for matrices. *Linear Algebra Appl.* **171** (1992), 1–8. (Shao Kuan Li) **93c:15018** 15A42

Kittel, Achim (*with* Peinke, Joachim; Klein, Michael; et al.) How two competing characteristic exponents generate different classes of fractal boundaries. *Internat. J. Bifur. Chaos Appl. Sci. Engrg.* **1** (1991), *no.* 3, 599–604. (Christoph Bandt) **93i:58110** 58F13 (28A80)

Kiuchi, Hirobumi (*with* Takahashi, Wataru) Asymptotic behavior of almost-orbits of nonexpansive semigroups without convexity. (English summary) *Kodai Math. J.* **15** (1992), *no.* 2, 185–192. (Simeon Reich) **93j:47092** 47H20 (47H09)

Kiuchi, Isao (*with* Matsumoto, Kohji) Mean value results for the approximate functional equation of the square of the Riemann zeta-function. *Acta Arith.* **61** (1992), *no.* 4, 337–345. (Tom Meurman) **93f:11063** 11M06

Kivelson, S. A. (*with* Chakravarty, Sarbarish; Chayes, L.) Absence of pair binding in the $U=\infty$ Hubbard model. *Lett. Math. Phys.* **23** (1991), *no.* 4, 265–270. (N. N. Ganikhodzhaev) **93a:82005** 82B20

Kiventidis, Thomas Positive solutions of integrodifferential and difference equations with unbounded delay. (English summary) *Glasgow Math. J.* **35** (1993), *no.* 1, 105–113. (V. Lakshmikantham) **93m:34112** 34K15 (39A10, 45J05)

Kivijärvi, Hannu (*with* Soismaa, Margareta) Investment, harvest, and taxation strategies of the forest sector: a differential game approach with a computational decision-aid. *Dynamic games in economic analysis (Espoo, 1990)*, 170–182, *Lecture Notes in Control and Inform. Sci.*, 157, *Springer, Berlin*, 1991. (*see* **93d:90003**) 90A09

Kivshar, Yu. S. (*with* Virchenko, Yu. P.; Soboleva, T. K.) Kink in randomly inhomogeneous system. *Nonlinear world, Vol. 2 (Kiev, 1989)*, 1343–1351, *World Sci. Publishing, River Edge, NJ*, 1990. (*see* **93b:00013**) 82D30

— (*with* Gredeskul, S. A.) Propagation and scattering of nonlinear waves in disordered systems. *Phys. Rep.* **216** (1992), *no.* 1, 1–61. (Summary) **93d:82079** 82D30 (82–04)

Kiwata, Hirohito (*with* Akutsu, Yasuhiro) Exactly solvable SU(M) spin chain with long-range interactions. *J. Phys. Soc. Japan* **61** (1992), *no.* 5, 1441–1444. (Summary) **93e:82019** 82B23 (35Q58, 82B20)

— (*with* Akutsu, Yasuhiro) Long-range SU(M) spin chain: exact ground state with arbitrary symmetry. (English summary) *J. Phys. Soc. Japan* **61** (1992), *no.* 7, 2161–2164. (Ladislav Šamaj) **93k:82019** 82B23

Kiwi, Marcos (*with* Goles Ch., Eric) One-dimensional sand piles, cellular automata and related models. *Nonlinear phenomena in fluids, solids and other complex systems (Santiago, 1990)*, 169–185, *North-Holland Delta Ser., North-Holland, Amsterdam*, 1991. (Karel Culik, II) **93c:68074** 68Q80 (82C20)

Kiwi, Miguel (*with* Lazo, Edmundo; Rössler, Jaime) Periodic modulation of a logistic oscillator. (English summary) *Instabilities and nonequilibrium structures, III (Valparaíso, 1989)*, 59–64, *Math. Appl.*, 64, *Kluwer Acad. Publ., Dordrecht*, 1991. (Summary) **93d:58046** 58F03

— (*with* Rössler, Jaime; Lazo, Edmundo) Effect of a resonant periodic perturbation on nonlinear processes. *Nonlinear phenomena in fluids, solids and other complex systems (Santiago, 1990)*, 419–433, *North-Holland Delta Ser., North-Holland, Amsterdam*, 1991. (Summary) **93b:58124** 58F30 (58F14)

Kiwiel, Krzysztof A method of feasible directions for certain quasi-differentiable inequality constrained minimization problems. (Russian and Polish summaries) *Control Cybernet.* **19** (1990), *no.* 1-2, 117–129. (Summary) **93h:90086** 90C30 (49J52, 65K10)

Kiyek, K. (*with* Micus, M.) Semigroup of a quasiordinary singularity. *Topics in algebra, Part 2 (Warsaw, 1988)*, 149–156, *Banach Center Publ.*, 26, *Part 2, PWN, Warsaw*, 1990. (Gerhard Pfister) **93k:14008** 14B05 (32S05)

Kiyoi, Masahiro (*with* Yamamura, Kiyotaka; Arai, Kaori) A piecewise-linear homotopy method for nonlinear programming. *Electron. Comm. Japan Part III Fund. Electron. Sci.* **74** (1991), *no.* 10, 28–38 (1992). (Jürgen Guddat) **93h:90094** 90C30 (65H20, 65K10, 90C31)

— (*with* Yamamura, Kiyotaka) Algorithms for detecting separability of nonlinear mappings using computational graphs. (English summary) *Electron. Comm. Japan Part III Fund. Electron. Sci.* **75** (1992), *no.* 6, 93–105. (Summary) **93h:65073** 65H05 (65Y20)

Kiyota, Masao (*with* Cameron, Peter J.; Kataoka, Toshitaka) Sharp characters of finite groups of type $\{-1, 1\}$. *J. Algebra* **152** (1992), *no.* 1, 248–258. (David Gluck) **93j:20017** 20C15

Kiyota, Takanori (*with* Kondo, Eiji; Sunaga, Teruo) Closed-loop expressions of minimum energy control for single-input linear digital systems. (English summary) *IEEE Trans. Automat. Control* **38** (1993), *no.* 4, 603–606. (Summary) **93m:93061** 93C57

Kızılersü, A. (*with* Akdeniz, K. G.; Dayi, Ömer F.) Canonical description of a two-dimensional gravity. *Modern Phys. Lett. A* **7** (1992), *no.* 19, 1757–1764. (Gheorghe Zet) **93e:81099** 81T40

Kjurkchiev, N. *see* **Kyurkchiev, Nikolaĭ V.**

Kjurkchiev, N. V. *see* **Kyurkchiev, Nikolaĭ V.**

Kladinoga, V. S. (*with* Trotsenko, V. A.) Eigenoscillations of a hyperelastic annular membrane, predeformed by an axisymmetric load, with a rigid disk. (Russian. Russian summary) *Akad. Nauk Ukrainy Inst. Mat. Preprint* **1992**, *no.* 19, 49 *pp.* (Summary) **93k:73060** 73K12 (73G05, 73K15)

Klafke, J. C. (*with* Ferraz-Mello, S.; Tsuchida, M.) On symmetrical planetary corotations. (English summary) *Celestial Mech. Dynam. Astronom.* **55** (1993), *no.* 1, 25–45. (Summary) **93k:70013** 70F07 (70F15)

Klafszky, Emil (*with* Terlaky, Tamás) The role of pivoting in proving some fundamental theorems of linear algebra. *Linear Algebra Appl.* **151** (1991), 97–118. (From the text) **93a:15030** 15A99 (65F05, 90C27)

Klainerman, S. Remark on the asymptotic behavior of the Klein-Gordon equation in $\mathbf{R}^{n+1}$. *Comm. Pure Appl. Math.* **46** (1993), *no.* 2, 137–144. (Piotr T. Chruściel) **93k:35046** 35B40 (35B45, 35L05, 35Q40)

Klamka, Jerzy Optimal control problems for singular 2-D systems. (English summary) *Mathematical and intelligent models in system simulation, I, II (Brussels, 1990)*, 159–162, *IMACS Ann. Comput. Appl. Math.*, 10, 11, *Baltzer, Basel*, 1991. (*see* **93c:93005**) 49N10 (49K15)

— Controllability of infinite-dimensional dynamical systems. *System modelling and optimization (Zurich, 1991)*, 354–363, *Lecture Notes in Control and Inform. Sci.*, 180, *Springer, Berlin*, 1992. (*see* **93e:90003**) 93B05 (93C25)

— Approximate controllability of second order dynamical systems. *Appl. Math. Comput. Sci.* **2** (1992), *no.* 1, 135–148. (Summary) **93b:93017** 93B05 (93C25)

Klamkin, Murray S. On two classes of extremum problems without calculus. *Math. Mag.* **65** (1992), *no.* 2, 113–117. (H. W. Guggenheimer) **93d:49001** 49–01 (26–01, 26D99)

Klapper, I. A study of fast dynamo action in chaotic helical cells. *J. Fluid Mech.* **239** (1992), 359–381. (Summary) **93c:76085** 76W05 (58F13, 58F40, 76F20)

Klär, Gerhard (*with* Kaufmann, Michael) Routing in polygons without rectilinearly visible corners. (English summary) *Inform. and Comput.* **102** (1993), *no.* 2, 218–262. (Summary) **93m:68014** 68M10 (68Q20)

Klarbring, Anders (*with* Mikelić, Andro; Shillor, Meir) A global existence result for the quasistatic frictional contact problem with normal compliance. *Unilateral problems in structural analysis, IV (Capri, 1989)*, 85–111, *Internat. Ser. Numer. Math.*, 101, *Birkhäuser, Basel*, 1991. (P. D. Panagiotopoulos) **93g:73104** 73T05 (73V25)

— The rigid punch problem in nonlinear elasticity: formulation, variational principles and linearization. (Russian and Polish summaries) *J. Tech. Phys.* **32** (1991), *no.* 1, 45–60. (Meir Shillor) **93e:73039** 73T05 (73C50, 73V05, 73V25)

— (*with* Mikelić, Andro; Shillor, Meir) Optimal shape design in contact problems with normal compliance and friction. *Appl. Math. Lett.* **5** (1992), *no.* 2, 51–55. (From the introduction) **93d:73054** 73K40 (49Q10, 73T05, 73V25)

— (*with* Edlund, Ulf) A geometrically nonlinear model of the adhesive joint problem and its numerical treatment. *Comput. Methods Appl. Mech. Engrg.* **96** (1992), *no.* 3, 329–350. (Summary) **93b:73034** 73T05 (73V05)

— (*with* Björkman, Gunnar) Solution of large displacement contact problems with friction using Newton's method for generalized equations. The Second World Congress of Computational Mechanics, Part I (Stuttgart, 1990). *Internat. J. Numer. Methods Engrg.* **34** (1992), *no.* 1, 249–269. (Summary) **93a:73073** 73T05 (73G05, 73V25)

— On the problem of optimizing contact force distributions. *J. Optim. Theory Appl.* **74** (1992), *no.* 1, 131–150. (Muhammad Aslam Noor) **93f:73095** 73T05 (49N55, 73K40)

— (*with* Johansson, L.) The rigid punch problem with friction using variational inequalities and linear complementarity. (English summary) *Mech. Structures Mach.* **20** (1992), *no.* 3, 293–319. (Ján Lovišek) **93i:73050** 73T05 (73V05, 73V25)

— (*with* Mikelić, Andro; Shillor, Meir) On the rigid punch with friction. *Free boundary problems involving solids (Montreal, PQ, 1990)*, 35–40, *Pitman Res. Notes Math. Ser.*, 281, *Longman Sci. Tech., Harlow*, 1993. (*see* **93k:00037**) 73T05 (73V25)

Klarlund, Nils Progress measures for complementation of ω-automata with applications to temporal logic. (English summary) *32nd Annual Symposium on Foundations of Computer Science (San Juan, PR, 1991)*, 358–367, *IEEE Comput. Soc. Press, Los Alamitos, CA*, 1991. (Summary) **93i:68134** 68Q70 (68T27)

Klarner, David A. (*with* Post, K. A.) Some fascinating integer sequences. (English summary) A collection of contributions in honour of Jack van Lint. *Discrete Math.* **106/107** (1992), 303–309. (Jeffrey O. Shallit) **93i:11031** 11B85 (11B34, 68Q68)

Klasa, S. L. Fourier fractals and shapes. Proceedings of the Twenty-second Southeastern Conference on Combinatorics, Graph Theory, and Computing (Baton Rouge, LA, 1991). *Congr. Numer.* **83** (1991), 3–9. (Summary) **93a:68124** 68T10

Klass, Reinhold (*with* Kuhn, Bernhard) Fillet and surface intersections defined by rolling balls. (English summary) *Comput. Aided Geom. Design* **9** (1992), *no.* 3, 185–193. 65D17

Klassen, Eric P. (*with* Frohman, Charles D.) Deforming representations of knot groups in SU(2). *Comment. Math. Helv.* **66** (1991), *no.* 3, 340–361. (Daniel Lines) **93a:57001** 57M05 (57M25)

Klassen, Timothy R. (*with* Melzer, Ezer) On the relation between scattering amplitudes and finite-size mass corrections in QFT. *Nuclear Phys. B* **362** (1991), *no.* 1-2, 329–388. (Summary) **93c:81256** 81T99 (81T40, 81U20)

— (*with* Melzer, Ezer) Spectral flow between conformal field theories in 1 + 1 dimensions. *Nuclear Phys. B* **370** (1992), *no.* 3, 511–550. (Stanislav Z. Pakuliak) **93b:81254** 81T40 (81T25)

— (*with* Melzer, Ezer) Kinks in finite volume. (English summary) *Nuclear Phys. B* **382** (1992), *no.* 3, 441–485. (Niall J. MacKay) **93i:81236** 81T40

Klauder, John R. (*with* Tomé, Wolfgang A.) The universal propagator for affine [or SU(1, 1)] coherent states. (English summary) *J. Math. Phys.* **33** (1992), *no.* 11, 3700–3709. (Nathalie Debergh) **93i:81085** 81R30 (81S40)

Klaus, Martin (*with* Hinton, Don B.; Jordan, A. K.; Shaw, J. K.) Inverse scattering on the line for a Dirac system. *J. Math. Phys.* **32** (1991), *no.* 11, 3015–3030. (C. Tomei) **93a:34094** 34L25 (34A55, 34L40)

— (*with* Hinton, Don B.; Shaw, J. K.) Embedded half-bound states for potentials of Wigner-von Neumann type. *Proc. London Math. Soc.* (3) **62** (1991), *no.* 3, 607–646. (Horst Behncke) **93b:34110** 34L40 (34B24, 34L25, 47E05, 81Q10, 81U05)

— (*with* Aktosun, Tuncay; van der Mee, Cornelis) Explicit Wiener-Hopf factorization for certain nonrational matrix functions. (English summary) *Integral Equations Operator Theory* **15** (1992), *no.* 6, 879–900. (I. Spitkovsky) **93j:47030** 47A68 (15A23, 34A55, 34L25, 47B35, 81U99)

— (*with* Aktosun, Tuncay; van der Mee, Cornelis) Scattering and inverse scattering in one-dimensional nonhomogeneous media. *J. Math. Phys.* **33** (1992), *no.* 5, 1717–1744. (Woodford W. Zachary) **93g:81200** 81U40 (34A55, 34L25, 81U05)

Klavžar, Sandi Two remarks on retracts of graph products. (English summary) Algebraic graph theory (Leibnitz, 1989). *Discrete Math.* **109** (1992), *no.* 1-3, 155–160. (N. Z. Li) **93j:05046** 05C10 (05C15)

— Homomorphisms in graph theory. (Slovenian. English and Slovenian summaries) *Obzornik Mat. Fiz.* **39** (1992), *no.* 4, 97–104. 05C25

— Strong products of χ-critical graphs. (English summary) *Aequationes Math.* **45** (1993), *no.* 2-3, 153–162. (Ruth Bari) **93m:05071** 05C15

Klawe, Maria M. (*with* Kirkpatrick, David G.; Tarjan, Robert Endre) Polygon triangulation in $O(n \log\log n)$ time with simple data structures. *Discrete Comput. Geom.* **7** (1992), *no.* 4, 329–346. (Ruth Silverman) **93c:68101** 68U05 (68Q25)

— (*with* Leighton, Frank Thomson) A tight lower bound on the size of planar permutation networks. (English summary) *SIAM J. Discrete Math.* **5** (1992), *no.* 4, 558–563. (Summary) **93h:05101** 05C35 (68R10, 94C15)

— (*with* Mumey, Brendan) Upper and lower bounds on constructing alphabetic binary trees. (English summary) *Proceedings of the Fourth Annual ACM-SIAM Symposium on Discrete Algorithms (Austin, TX, 1993)*, 185–193, *ACM, New York*, 1993. (Summary) **93m:68135** 68R10 (68Q25)

Klawonn, F. (*with* Kruse, Rudolf) Equality relations as a basis for fuzzy control. (English summary) *Fuzzy Sets and Systems* **54** (1993), *no.* 2, 147–156. 93C42 (04A72)

Klazar, Martin (*with* Adamec, Radek; Valtr, Pavel) Generalized Davenport-Schinzel sequences with linear upper bound. Topological, algebraical and combinatorial structures. Frolík's memorial volume. *Discrete Math.* **108** (1992), *no.* 1-3, 219–229. (Péter Komjáth) **93k:05015** 05A99

Kleban, P. (*with* Vassileva, I.) Domain boundary energies in finite regions at 2D criticality via conformal field theory. (English summary) *J. Phys. A* **25** (1992), *no.* 22, 5779–5787. (Summary) **93i:81237** 81T40 (82B24)

Klebaner, Fima C. Asymptotic behavior of near-critical multitype branching processes. *J. Appl. Probab.* **28** (1991), *no.* 3, 512–519. (Tetsuo Nakagawa) **93b:60194a** 60J80

— Correction: "Asymptotic behavior of near-critical multitype branching processes". *J. Appl. Probab.* **28** (1991), *no.* 4, 962. (Tetsuo Nakagawa) **93b:60194b** 60J80

Klebanov, Igor R. (*with* Susskind, Leonard; Karliner, Marek) Strings in space. *Quantum mechanics of fundamental systems*, 2 (*Santiago*, 1987), 153–165, *Ser. Cent. Estud. Cient. Santiago, Plenum, New York*, 1989. (*see* **93e:81005**) 81T30 (81V05)

— Ward identities in two-dimensional string theory. *Modern Phys. Lett. A* **7** (1992), *no.* 8, 723–731. (Summary) **93b:81255** 81T40 (81T30)

Klebanov, L. B. (*with* Kakosyan, A. V.; Melamed, Joseph A.) ★ Нелинейное статистическое оценивание параметров линейных регрессионных схем. (Russian) [Nonlinear statistical estimation of the parameters of linear regression schemes] *Erevan. Inst. Narod. Khoz., Erevan*, 1990. 137 *pp. ISBN* 5-8079-0217-3 (Lubomír Kubáček) **93d:62039; EA 93m** 62F10 (62F12)

— (*with* Zinger, A. A.) Characterization of distributions: problems, methods, applications. *Probability theory and mathematical statistics, Vol. I* (*Vilnius*, 1989), 611–617, "*Mokslas*", *Vilnius*, 1990. (Summary) **93a:62015** 62E10

— (*with* Melamed, Joseph A.) Generalized Marcinkiewicz's theorem and asymptotic expansions in the central limit theorem. (English summary) *New trends in probability and statistics, Vol.* 1 (*Bakuriani*, 1990), 30–37, *VSP, Utrecht*, 1991. (Summary) **93h:60019** 60E05 (60F05, 62E10)

— (*with* Melamed, Joseph A.; Umarov, A. Yu.) An analogue of A. N. Kolmogorov's uniform limit theorem under summation of a geometric number of random variables. (Russian. English and Georgian summaries) *Soobshch. Akad. Nauk Gruzii* **143** (1991), *no.* 2, 129–131 (1992). 60F05

— (*with* Zinger, A. A.; Kakosyan, A. V.) A characterization of distributions by mean values of statistics and certain probabilistic metrics. Stability problems for stochastic models. *J. Soviet Math.* **59** (1992), *no.* 4, 914–920. (Mikhail Sh. Braverman) **93g:60031** 60E05

Kleczka, M. (*with* Kreuzer, E. J.; Schiehlen, W.) Local and global stability of a piecewise linear oscillator. *Philos. Trans. Roy. Soc. London Ser. A* **338** (1992), *no.* 1651, 533–546. (Martin Kummer) **93i:58107** 58F13 (34C15, 70K50)

Klee, Victor (*with* Gritzmann, Peter) Inner and outer j-radii of convex bodies in finite-dimensional normed spaces. *Discrete Comput. Geom.* **7** (1992), *no.* 3, 255–280. (Wolfgang Lusky) **93a:52008** 52B11 (46B20, 52A21, 52A41)

— (*with* Gritzmann, Peter) Deciding uniqueness in norm maximization. (English summary) *Math. Programming* **57** (1992), *no.* 2, *Ser. B*, 203–214. (N. I. Yanev) **93i:90068** 90C10 (68Q15, 90C20, 90C27)

Klee, W. E. (*with* Beukemann, A.) Minimal nets. (English summary) *Z. Krist.* **201** (1992), *no.* 1-2, 37–51. (Summary) **93d:05127** 05C75 (82D25)

de Kleer, Johan (*with* Mackworth, Alan K.; Reiter, Raymond) Characterizing diagnoses and systems. (English summary) *Artificial Intelligence* **56** (1992), *no.* 2-3, 197–222. (Summary) **93g:68007** 68M15

Kleffe, J. (*with* Rao, J. N. K.) Estimation of mean square error of empirical best linear unbiased predictors under a random error variance linear model. (English summary) *J. Multivariate Anal.* **43** (1992), *no.* 1, 1–15. (Mir Masoom Ali) **93m:62152** 62J05

Klei, Heinz-Albrecht Convergences faible, en mesure et au sens de Cesàro dans $L^1(\mathbf{R})$. (English summary) [Weak convergence, convergence in measure and convergence in the sense of Cesàro in $L^1(\mathbf{R})$] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 1, 9–12. (Summary) **93e:28005** 28A20

Kleidman, Peter B. (*with* Guralnick, Robert M.; Lyons, Richard) Sylow p-subgroups and subnormal subgroups of finite groups. *Proc. London Math. Soc.* (3) **66** (1993), *no.* 1, 129–151. (È. M. Pal'chik) **93k:20036** 20D20 (20D35)

Kleijn, H. C. M. (*with* Harju, T.; Latteux, Michel) Deterministic sequential functions. (English summary) *Acta Inform.* **29** (1992), *no.* 6-7, 545–554. (Summary) **93h:68093** 68Q70 (68Q45)

— (*with* Harju, T.; Latteux, Michel) Compositional representation of rational functions. (French summary) *RAIRO Inform. Théor. Appl.* **26** (1992), *no.* 3, 243–255. (Pascal Weil) **93j:68144** 68Q70 (68Q45, 68Q68)

Kleiman, Steven (*with* Piene, Ragni) On the inseparability of the Gauss map. *Enumerative algebraic geometry* (*Copenhagen*, 1989), 107–129, *Contemp. Math.*, 123, *Amer. Math. Soc., Providence, RI*, 1991. (Susan J. Colley) **93b:14082** 14N05 (14M10, 14N10)

Kleimenov, A. F. A nonantagonistic differential game with a nominal solution and payoffs. (Russian. Russian summary) *Control in dynamical systems* (*Russian*), 65–76, 125, *Akad. Nauk SSSR Ural. Otdel., Sverdlovsk*, 1990. (Jacek B. Krawczyk) **93h:90119** 90D25 (93A13)

— Solutions of a nonantagonistic two-person differential game in the presence of noise. (Russian. Russian summary) *Control problems with guaranteed result* (*Russian*), 27–38, 116, *Ross. Akad. Nauk, Ural. Otdel., Ekaterinburg*, 1992. (M. S. Shtil'man) **93k:90118** 90D25 (90D05)

Kleimenov, V. F. (*with* Bludov, V. V.; Khlamov, E. V.) A counterexample to a problem of A. Yu. Ol'shanskiĭ. (Russian) *Algebra i Logika* **29** (1990), *no.* 2, 139–140, 260; *translation in Algebra and Logic* **29** (1990), *no.* 2, 95–96 (1991). (Vesselin Drensky) **93a:20053** 20F18 (20E25)

Klein, A. *see* **Klein, Abraham**

Klein, Abel (*with* Perez, J. Fernando) Localization in the ground state of a disordered array of quantum rotators. *Comm. Math. Phys.* **147** (1992), *no.* 2, 241–252. (Massimo Campanino) **93i:82046** 82B44 (60K35)

— (*with* Acosta, Victor) Analyticity of the density of states in the Anderson model on the Bethe lattice. (English summary) *J. Statist. Phys.* **69** (1992), *no.* 1-2, 277–305. (Nariyuki Minami) **93m:82018** 82B44

Klein, Abraham (*with* Walet, Niels R.; Geyer, H. B.; Hahne, F. J. W.) Vector coherent state, quantized Bogoliubov transformation, and boson expansions. (English summary) *Group theory and special symmetries in nuclear physics* (*Ann Arbor, MI*, 1991), 233–247, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93e:81150**) 81R05 (81V35)

— (*with* Zhang, Qing Ying) On the problem of analytic boson realizations of vacuum irrepresentations of an Sp(8) in the shell model algebra. (Chinese. English and Chinese summaries) *Hunan Daxue Xuebao* **19** (1992), *no.* 3, 97–104. (Summary) **93i:81302** 81V35 (81R05)

— (*with* Walet, Niels R.; Dang, G. Do) Quantum corrections to the cranking model. (English summary) *Internat. J. Modern Phys. E* **1** (1992), *no.* 1, 95–130. (Summary) **93f:81161** 81V35

Klein, Abraham A. (*with* Bell, Howard E.) On rings with Engel cycles. II. *Results Math.* **21** (1992), *no.* 3-4, 264–273. (A. Yaqub) **93d:16039** 16U80 (16D70)

Klein, D. J. (*with* Liu, X.) Theorems for carbon cages. (English summary) Concepts in mathematical chemistry (Bled, 1991). *J. Math. Chem.* **11** (1992), *no.* 1-3, 199–205. (Summary) **93h:92041** 92E10

Klein, David (*with* Blank, Brian E.; Fan, Da Shan; Krantz, Steven G.; Ma, Dao Wei; Pang, Myung-Yull) The Kobayashi metric of a complex ellipsoid in $\mathbf{C}^2$. (English summary) *Experiment. Math.* **1** (1992), *no.* 1, 47–55. (Ian Graham) **93h:32032** 32H15

Klein, Felix ★ Einleitung in die analytische Mechanik. (German) [Introduction to analytical mechanics] Vorlesung, gehalten in Göttingen 1886/87. [Class given in Göttingen 1886/87]. Lecture notes prepared by F. Pockels. With a preface by Hans Triebel. Edited and with a foreword by E. Dietzel and M. Geisler. With an appendix by F. König. With English, French and Russian summaries. Teubner-Archiv zur Mathematik [Teubner Archive on Mathematics], 15. *B. G. Teubner Verlagsgesellschaft mbH, Stuttgart*, 1991. 155 *pp. ISBN* 3-8154-2013-X (Peeter Müürsepp) **93a:01065** 01A75 (70–01, 70–03)

— *see also* **Chowdhury, M. R., 93c:01033** *and* **Tobies, Renate, 93i:01025**

Klein, John P. Small sample moments of some estimators of the variance of the Kaplan-Meier and Nelson-Aalen estimators. *Scand. J. Statist.* **18** (1991), *no.* 4, 333–340. (Summary) **93b:62062** 62G05 (62N05)

— *see also* **Survival analysis: state of the art, 93b:62005**

Klein, John R. A functional relation in stable knot theory. *Math. Ann.* **292** (1992), *no.* 1, 103–109. (Alexander I. Suciu) **93d:57044** 57Q45

Klein, M. *see* **Klein, Michael**

Klein, Markus (*with* Martinez, André; Seiler, Ruedi; Wang, Xue Ping[1]) On the Born-Oppenheimer expansion for polyatomic molecules. *Comm. Math. Phys.* **143** (1992), *no.* 3, 607–639. (Georgi E. Karadzhov) **93b:81069** 81Q20 (35Q40, 35S05, 81V55, 81V70)

Klein, Michael (*with* Peinke, Joachim; Baier, G.; et al.) Nowhere differentiable boundaries in differentiable systems. A proposed explanation. *Europhys. Lett.* **14** (1991), *no.* 7, 615–620. (Summary) **93e:58133** 58F13

— (*with* Peinke, Joachim; Kittel, Achim; et al.) How two competing characteristic exponents generate different classes of fractal boundaries. *Internat. J. Bifur. Chaos Appl. Sci. Engrg.* **1** (1991), *no.* 3, 599–604. (Christoph Bandt) **93i:58110** 58F13 (28A80)

Klein, Monica Classification of Minkowski planes by transitive groups of homotheties. *J. Geom.* **43** (1992), *no.* 1-2, 116–128. (H. Salzmann) **93e:51006** 51B20

Klein, Peter Paul Inclusion of eigenvalues for nonselfadjoint eigenvalue problems. *Proceedings of the Second International Symposium on Numerical Analysis* (*Prague*, 1987), 205–209, *Teubner-Texte Math.*, 107, *Teubner, Leipzig*, 1988. (*see* **93b:65007**) 65F15 (47A75, 65F10, 65G99)

Klein, Philip (*with* Stein, Clifford) A parallel algorithm for approximating the minimum cycle cover. (English summary) *Algorithmica* **9** (1993), *no.* 1, 23–31. (Summary) **93k:68040** 68Q22 (68Q25, 68R10)

Klein, R. *see* **Klein, Rupert**

Klein, Rachelle S. (*with* Luss, Hanan; Smith, Donald Robert) A lexicographic minimax algorithm for multiperiod resource allocation. *Math. Programming* **55** (1992), *no.* 2, *Ser. A*, 213–234. (I. Norman Katz) **93c:90097** 90C35 (90A80, 90B80)

Klein, Roger W. (*with* Spady, Richard H.) An efficient semiparametric estimator for binary response models. (English summary) *Econometrica* **61** (1993), *no.* 2, 387–421. (Summary) **93k:62214** 62P20 (62G05)

Klein, Rolf Walking an unknown street with bounded detour. (English summary) 32*nd Annual Symposium of Computer Science* (*San Juan, PR*, 1991), 304–313, *IEEE Comput. Soc. Press, Los Alamitos, CA*, 1991. (*see* **93d:68005**) 68U05

— (*with* Mehlhorn, Kurt; Meiser, Stefan) Randomized incremental construction of abstract Voronoĭ diagrams. (English summary) *Informatik*, 283–308, *Teubner-Texte Inform.*, 1, *Teubner, Stuttgart*, 1992. (Summary) **93f:65013** 65C99 (65Y10, 68U05)

— Walking an unknown street with bounded detour. *Comput. Geom.* **1** (1992), *no.* 6, 325–351. (Evangelos Kranakis) **93g:68139** 68U05

Klein, Rupert (*with* Ting, L.) ★ Viscous vortical flows. Lecture Notes in Physics, 374. *Springer-Verlag, Berlin*, 1991. vi+222 *pp. ISBN* 3-540-53713-9 (J. Thomas Beale) **93a:76025** 76D05 (76C05, 76E99, 76M20, 76N10)

— (*with* Majda, Andrew J.; McLaughlin, Richard M.) Asymptotic equations for the stretching of vortex filaments in a background flow field. (English summary) *Phys. Fluids A* **4** (1992), *no.* 10, 2271–2281. (Summary) **93h:76025** 76D99 (76C05, 76E30)

— (*with* Majda, Andrew J.) An asymptotic theory for the nonlinear instability of antiparallel pairs of vortex filaments. (English summary) *Phys. Fluids A* **5** (1993), *no.* 2, 369–379. (Summary) **93m:76014** 76C05 (76D99, 76E30)

Klein, Wolfram Inclusion methods for linear and nonlinear systems of Fredholm integral equations of the second kind. (English summary) *Computer arithmetic, scientific computation and mathematical modelling* (*Albena*, 1990), 453–458, *IMACS Ann. Comput. Appl. Math.*, 12, *Baltzer, Basel*, 1991. (*see* **93e:00022**) 65R20 (65G10)

— Enclosure methods for linear and nonlinear systems of Fredholm integral equations of the second kind. (English summary) *Scientific computing with automatic result verification*, 255–282, *Math. Sci. Engrg.*, 189, *Academic Press, Boston, MA*, 1993. (Summary) **93i:65128** 65R20 (65G10)

Kleinau, M. (*with* Bräsel, H.) On number problems for the open shop problem. (English summary) *System modelling and optimization* (*Zurich*, 1991), 145–154, *Lecture Notes in Control and Inform. Sci.*, 180, *Springer, Berlin*, 1992. (*see* **93e:90003**) 90C27

Kleinau, Ulf Two-machine shop scheduling problems with batch processing. (English summary) *Math. Comput. Modelling* **17** (1993), *no.* 6, 55–66. (Summary) **93k:90043** 90B35

Kleinberg, Jon M. (*with* Huttenlocher, Daniel P.; Kedem, Klara) Voronoĭ diagrams of rigidly moving sets of points. (English summary) *Inform. Process. Lett.* **43** (1992), *no.* 4, 217–223. (Summary) **93k:68102** 68U05 (68Q25)

Kleindienst, H. A remark on the Fourier coefficients of the quasianalytic function $\exp(-|\sin x|^{-\alpha})$. *Z. Angew. Math. Mech.* **72** (1992), *no.* 12, 690. 42A16 (30D60)

Kleine Büning, H. (*with* Stamm-Wilbrandt, H.) Evaluating production systems with delete operator is PSPACE-complete. (English summary) *Comput. Artificial Intelligence* **11** (1992), *no.* 4, 321–333. (Summary) **93g:68132** 68T35 (68Q25)

Kleiner, Bruce (*with* Croke, Christopher B.) A warped product splitting theorem. *Duke Math. J.* **67** (1992), *no.* 3, 571–574. (Midori Goto) **93h:53033** 53C20

— (*with* Epstein, Charles L.) Spherical means in annular regions. *Comm. Pure Appl. Math.* **46** (1993), *no.* 3, 441–451. (Tomasz Przebinda) **93m:43005** 43A85 (35A22, 44A12)

Kleiner, Israel Emmy Noether: highlights of her life and work. *Enseign. Math.* (2) **38** (1992), *no.* 1-2, 103–124. (C. R. Fletcher) **93g:01070** 01A70 (01A60)

— (*with* Avital, S.) Themes in the evolution of number systems. *Internat. J. Math. Ed. Sci. Tech.* **23** (1992), *no.* 3, 445–461. (Victor J. Katz) **93g:00016** 00A35 (01A99, 11–03)

Kleiner, Mark (*with* Bautista Ramos, Raymundo) On the existence of almost split sequences in subcategories. *Topics in algebra, Part* 1 (*Warsaw*, 1988), 193–197, *Banach Center Publ.*, 26, *Part* 1, *PWN, Warsaw*, 1990. (Sverre O. Smalø) **93g:16022** 16G70 (16G30)

— (*with* Auslander, Maurice) The Green correspondence for adjoint functors. (English summary) *Proceedings of the Sixth International Conference on Representations of Algebras* (*Ottawa, ON*, 1992), 12 *pp.*, *Carleton-Ottawa Math. Lecture Note Ser.*, 14, *Carleton Univ., Ottawa, ON*, 1992. (*see* **93j:16001**) 20C20

— (*with* Lbekkouri, Aboubakr) Splitters and relative homological algebra. *J. Algebra* **153** (1992), *no.* 2, 476–493. (Wolfgang Grölz) **93k:16015** 16E30 (16D99)

— On the almost split sequences for relatively projective modules over a finite group. *Proc. Amer. Math. Soc.* **116** (1992), *no.* 4, 943–947. (Hagen Meltzer) **93b:16023** 16G70

Kleinert, Ernst Hegel über die Mathematik. [Hegel on mathematics] *Math. Semesterber.* **38** (1991), *no.* 2, 151–174. (Erhard Scholz) **93e:01011** 01A55 (00A30)

— Group orders and multiple fibre products. *Arch. Math.* (*Basel*) **59** (1992), *no.* 3, 223–231. (Wolfgang Rump) **93f:16021** 16H05 (20C05)

Kleinert, Hagen ★ Path integrals in quantum mechanics, statistics, and polymer physics. *World Scientific Publishing Co., Inc., River Edge, NJ*, 1990. xxii+664 *pp. ISBN* 981-02-0196-6; 981-02-0197-4 (E. Wieczorek) **93f:81070** 81S40 (46G12, 46N50, 46N55, 81-02)

— The extra gauge symmetry of string deformations in electromagnetism with charges and Dirac monopoles. (English summary) *Internat. J. Modern Phys. A* **7** (1992), *no.* 19, 4693–4705. 81V10 (78A25)

— Improving the variational approach to path integrals. *Phys. Lett. B* **280** (1992), *no.* 3-4, 251–260. (Summary) **93b:81136** 81S40 (81Q05)

Kleinfeld, Erwin Proving $(x, x, x) = 0$. *Proceedings of the International Conference on Algebra, Part* 2 (*Novosibirsk*, 1989), 605–612, *Contemp. Math.*, 131, *Part* 2, *Amer. Math. Soc., Providence, RI*, 1992. (Harry F. Smith) **93f:17001** 17–06 (17A30, 17D20)

— (*with* Smith, Harry F.) Prime rings in the join of alternative and $(-1, 1)$ rings. *Proceedings of the International Conference on Algebra, Part* 2 (*Novosibirsk*, 1989), 613–624, *Contemp. Math.*, 131, *Part* 2, *Amer. Math. Soc., Providence, RI*, 1992. (Edgar G. Goodaire) **93f:17048** 17D15

— (*with* Smith, Harry F.) Right alternative algebras with commutators in a nucleus. *Bull. Austral. Math. Soc.* **46** (1992), *no.* 1, 81–90. (Irvin Roy Hentzel) **93c:17059** 17D15

— (*with* Hentzel, Irvin Roy; Smith, Harry F.) On rings in the join of associative and commutative. *J. Algebra* **149** (1992), *no.* 2, 528–537. (Santos González) **93h:17008** 17A30

Kleinman, David L. (*with* Miao, Xiyi; Luh, Peter B.) Distributed hierarchical team resource allocation. (English summary) *Dynamic games in economic analysis* (*Espoo*, 1990), 48–57, *Lecture Notes in Control and Inform. Sci.*, 157, *Springer, Berlin*, 1991. (*see* **93d:90003**) 90B80

— (*with* Tang, Zhuang-Bo; Pattipati, Krishna R.) Optimization of detection networks. I. Tandem structures. (English summary) *IEEE Trans. Systems Man Cybernet.* **21** (1991), *no.* 5, 1044–1059. 49N55 (90B10)

— (*with* Tang, Zhuang-Bo; Pattipati, Krishna R.) A distributed M-ary hypothesis testing problem with correlated observations. *IEEE Trans. Automat. Control* **37** (1992), *no.* 7, 1042–1046. 93E10

Kleinman, Ralph E. (*with* Angell, Thomas S.) A constructive method for shape optimization: a problem in hydromechanics. *IMA J. Appl. Math.* **47** (1991), *no.* 3, 265–281. (Masato Koda) **93d:49045** 49Q10 (49K20, 49K22, 76B99)

— (*with* Hsiao, George C.) Feasible error estimates in boundary element methods. (English summary) *Boundary element technology, VII* (*Albuquerque, NM*, 1992), 875–886, *Comput. Mech., Southampton*, 1992. (*see* **93b:65002**) 65N38 (65N15)

— (*with* van den Berg, P. M.) A modified gradient method for two-dimensional problems in tomography. (English summary) *J. Comput. Appl. Math.* **42** (1992), *no.* 1, 17–35. 78–08

— *see also* **Direct and inverse boundary value problems, 93k:00034**

Kleinmichel, H. (*with* Fernández Rodríguez, C. A.; Schönefeld, K.) Algorithm for the solution of nonlinear constrained optimization problems. (Spanish. English and Spanish summaries) *Investigación Oper.* **12** (1991), *no.* 1, 3–9. (Summary) **93k:90083** 90C30 (65K05)

— (*with* Richter, Claus; Schönefeld, K.) On a class of hybrid methods for smooth constrained optimization. *J. Optim. Theory Appl.* **73** (1992), *no.* 3, 465–499. (Rumena Kaltinska) **93e:90058** 90C30 (65K10)

Kleinschmidt, Peter (*with* Smilansky, Zeev) New results for simplicial spherical polytopes. *Discrete and computational geometry* (*New Brunswick, NJ*, 1989/1990), 187–197, *DIMACS Ser. Discrete Math. Theoret. Comput. Sci.*, 6, *Amer. Math. Soc., Providence, RI*, 1991. (Jacques F. Bair) **93b:52011** 52B12

— (*with* Onn, Shmuel) On the diameter of convex polytopes. *Discrete Math.* **102** (1992), *no.* 1, 75–77. (Hari Pulapaka) **93d:52013** 52B05

Kleiss, Ronald Average-case complexity distributions: a generalization of the Woźniakowski lemma for multidimensional numerical integration. (English summary) *Comput. Phys. Comm.* **71** (1992), *no.* 1-2, 39–46. (Summary) **93d:65024** 65D30 (65C05)

Kleitman, Daniel J. (*with* Alon, Noga) Piercing convex sets and the Hadwiger-Debrunner (p, q)-problem. (English summary) *Adv. Math.* **96** (1992), *no.* 1, 103–112. (John D. Baildon) **93m:52008** 52A35 (52A30)

— (*with* Alon, Noga) Piercing convex sets. *Bull. Amer. Math. Soc.* (*N.S.*) **27** (1992), *no.* 2, 252–256. (Marilyn Breen) **93a:52005** 52A35

— (*with* Erdős, Péter L.; Frankl, Peter; Saks, Michael E.; Székely, László A.) Sharpening the LYM inequality. (English summary) *Combinatorica* **12** (1992), *no.* 3, 287–293. (G. F. Clements) **93m:05198** 05D05

— (*with* Alon, Noga) Partitioning a rectangle into small perimeter rectangles. *Discrete Math.* **103** (1992), *no.* 2, 111–119. (Jonathan I. Hall) **93f:05028** 05B40

— (*with* Füredi, Zoltán) On zero-trees. *J. Graph Theory* **16** (1992), *no.* 2, 107–120. (A. D. Korshunov) **93c:05039** 05C05

Kleiza, Jonas (*with* Kleiza, Vytautas) Properties and calculation of an integral with power singularities. (Russian. Russian summary) *Zh. Vychisl. Mat. i Mat. Fiz.* **32** (1992), *no.* 10, 1554–1569; *translation in Comput. Math. Math. Phys.* **32** (1992), *no.* 10, 1399–1411 (1993). (Summary) **93j:65033** 65D30 (33E05)

Kleiza, Vytautas (*with* Kleiza, Jonas) Properties and calculation of an integral with power singularities. (Russian. Russian summary) *Zh. Vychisl. Mat. i Mat. Fiz.* **32** (1992), *no.* 10, 1554–1569; *translation in Comput. Math. Math. Phys.* **32** (1992), *no.* 10, 1399–1411 (1993). (Summary) **93j:65033** 65D30 (33E05)

Klemisch-Ahlert, Marlies Distributive justice of bargaining and risk sensitivity. *Theory and Decision* **32** (1992), *no.* 3, 303–318. (Summary) **93a:90018** 90A60

Klemm, Albrecht (*with* Fuchs, Jürgen; Schmidt, Michael G.) Orbifolds by cyclic permutations in Gepner type superstrings and in the corresponding Calabi-Yau manifolds. *Ann. Physics* **214** (1992), *no.* 2, 221–257. (Tristan Hübsch) **93b:81247** 81T40 (14J30, 32J17, 32J25)

— (*with* Fuchs, Jürgen; Schmidt, Michael G.; Verstegen, Dirk) New exceptional $(A_1^{(1)})^{\oplus r}$ invariants and the associated Gepner models. *Internat. J. Modern Phys. A* **7** (1992), *no.* 10, 2245–2264. (Mehmet Koca) **93i:81062** 81R10 (17B67, 17B81, 32J81, 81T30, 81T40)

— (*with* Theisen, Stefan; Schmidt, Michael G.) Correlation functions for topological Landau-Ginzburg models with $c \leq 3$. (English summary) *Internat. J. Modern Phys. A* **7** (1992), *no.* 25, 6215–6244. (Mehmet Koca) **93k:81210** 81T40

Klemm, Michael Dualität in partiell balancierten Blockplänen. [Duality in partially balanced block plans] *Arch. Math.* (*Basel*) **57** (1991), *no.* 4, 406–410. (From the introduction) **93b:05015** 05B05

Klemp, Bogumiła (*with* Simson, Daniel) On pure semisimplicity and representation-finite piecewise prime rings. *Topics in algebra, Part* 1 (*Warsaw*, 1988), 327–339, *Banach Center Publ.*, 26, *Part* 1, *PWN, Warsaw*, 1990. (Dieter Happel) **93g:16013** 16G10 (16N60)

Klepikov, N. P. (*with* Ternov, I. M.) Distance dependence of radiation energy flux. (English summary) *J. Phys. A* **25** (1992), *no.* 23, 6371–6377. (Summary) **93j:78011** 78A35

Klepp, Francisc C. (*with* Stavre, Petre) About the N-lifts of $F\Gamma(N)$ Finsler connections to $T(M)$. (Romanian summary) *Inst. Politehn. "Traian Vuia" Timişoara Lucrăr. Sem. Mat. Fiz.* **1988**, *November*, 1–4. 53C60

— (*with* Stavre, Petre) Connections of jets on the total space of a vector bundle. *Tensor* (*N.S.*) **50** (1991), *no.* 3, 224–232. (Marco Modugno) **93f:53020** 53C05 (53C60, 58A20)

Klepp, Horst J. Approximate solutions, numerical errors and chaos of the logistic equation. *Z. Angew. Math. Mech.* **71** (1991), *no.* 7-8, 289–291. (Introduction) **93f:58152** 58F13 (58F40, 65L20, 65Q05)

— Stopping check for systems with friction-affected constraints. (English, German and Russian summaries) *Z. Angew. Math. Mech.* **72** (1992), *no.* 11, 539–548. (Summary) **93j:70005** 70F20 (70B15, 70E99)

— Parameters of the periodic response of a system with friction-affected constraints and harmonic excitation. (German summary) *Z. Angew. Math. Phys.* **43** (1992), *no.* 2, 335–356. (Summary) **93a:70013** 70F99 (70E99, 70K99)

Kleppe, Gary (*with* Keszthelyi, Bettina) Renormalizability of $D = 3$ topologically massive gravity. *Phys. Lett. B* **281** (1992), *no.* 1-2, 33–35. (Summary) **93b:81144** 81T10 (83C45)

Klerlein, Joseph B. (*with* Carr, Edward C.) Hamiltonian cycles in $C_n \times_s C_m$. Proceedings of the Twenty-second Southeastern Conference on Combinatorics, Graph Theory, and Computing (Baton Rouge, LA, 1991). *Congr. Numer.* **83** (1991), 213–221. (Introduction) **93b:05100** 05C45

Kleshchev, A. S. Extensions of modules of truncated polynomials and exterior powers over a finite special linear group. (Russian) *Mat. Zametki* **51** (1992), *no.* 4, 43–53, 140; *translation in Math. Notes* **51** (1992), *no.* 3-4, 356–363. (Ja. N. Nuzhin) **93i:20054** 20G40

Klesov, O. I. On integrability of $\sup |S_{n_k}/n_k|$. (English summary) *New trends in probability and statistics, Vol.* 1 (*Bakuriani*, 1990), 38–42, *VSP, Utrecht*, 1991. (Summary) **93h:60074** 60G50

— A renewal theorem for a random walk with multidimensional time. (Russian. Ukrainian summary) *Ukrain. Mat. Zh.* **43** (1991), *no.* 9, 1161–1167; *translation in Ukrainian Math. J.* **43** (1991), *no.* 9, 1089–1094 (1992). (M. S. Sgibnev) **93d:60144** 60K05

— Multiple sums of random variables and laws of large numbers. (Russian) *Mathematics today* '92, *No.* 7 (*Russian*), 146–168, "*Vishcha Shkola*", *Kiev*, 1992. (*see* **93j:00003**) 60F15

Klette, Reinhard *see* **Theoretical foundations of computer vision, 93j:68009**

Klevansky, S. P. The Nambu-Jona-Lasinio model of quantum chromodynamics. (English summary) *Rev. Modern Phys.* **64** (1992), *no.* 3, 649–708. (Summary) **93f:81156** 81V05

Kleyle, R. (*with* de Korvin, A.) Selecting a set of simultaneous courses of action when imprecision is involved. (English summary) *Math. Comput. Modelling* **16** (1992), *no.* 11, 157–162. 90A05 (04A72)

— (*with* de Korvin, A.; Espino, V.) Using multiple sources of information to recognize and classify objects. (English summary) *Stochastic Anal. Appl.* **10** (1992), *no.* 5, 573–589. 68T10 (04A72)

Kleyn, A. W. (*with* Horn, T. C. M.; Dijkhuis, B.) Catastrophes and classical surface scattering. *Chem. Phys.* **149** (1990), *no.* 3, 275–298. (D. R. J. Chillingworth) **93e:58020** 58C28 (78A05)

Klibanov, M. V. Inverse problems and Carleman estimates. (English summary) *Inverse Problems* **8** (1992), *no.* 4, 575–596. (Charles Bu) **93h:35210** 35R30 (35A25)

— (*with* Sacks, Paul E.) Phaseless inverse scattering and the phase problem in optics. (English summary) *J. Math. Phys.* **33** (1992), *no.* 11, 3813–3821. (Zhen-qiu Lu) **93k:78012** 78A45 (35R30, 44A15)

— (*with* Rakesh) Numerical solution of a time-like Cauchy problem for the wave equation. (English summary) *Math. Methods Appl. Sci.* **15** (1992), *no.* 8, 559–570. (Summary) **93h:35117** 35L15 (65M99)

Klibi, A. (*with* Alexopoulos, A. H.; Wiest, J. M.) Singularity cancellation in boundary integral equations for axisymmetric Stokes flow. *Internat. J. Numer. Methods Fluids* **15** (1992), *no.* 4, 491–497. 76M99 (76D07)

Kliem, A. (*with* Blumenhagen, R.; Flohr, M.; Nahm, Werner; Recknagel, A.; Varnhagen, R.) $\mathscr{W}$-algebras with two and three generators. *Nuclear Phys. B* **361** (1991), *no.* 1, 255–289. (Edward P. Osipov) **93a:81063** 81R10 (17B65, 17B81, 81T40)

Kliem, W. R. Symmetrizable systems in mechanics and control theory. (English summary) *Trans. ASME J. Appl. Mech.* **59** (1992), *no.* 2, *part* 1, 454–456. (Summary) **93d:70035** 70J25 (34A30, 70Q05, 93B52)

Kliemann, Wolfgang (*with* Colonius, Fritz) Stability radii and Lyapunov exponents. (English summary) *Control of uncertain systems* (*Bremen*, 1989), 19–55, *Progr. Systems Control Theory*, 6, *Birkhäuser Boston, Boston, MA*, 1990. (Summary) **93i:93091** 93D05 (34D08, 34D99, 34H05, 93E15)

— (*with* Colonius, Fritz) Lyapunov exponents of control flows. (English summary) *Lyapunov exponents* (*Oberwolfach*, 1990), 331–365, *Lecture Notes in Math.*, 1486, *Springer, Berlin*, 1991. (Summary) **93f:93118** 93D20 (58F40)

— (*with* Colonius, Fritz) Remarks on ergodic theory of stochastic flows and control flows. (English summary) *Diffusion processes and related problems in analysis, Vol. II (Charlotte, NC, 1990)*, 203–239, *Progr. Probab.*, 27, *Birkhäuser Boston, Boston, MA*, 1992. (M. J. Chappell) **93i:60110** 60H10 (58E07, 58G35, 93C10, 93E03)

— (*with* Colonius, Fritz) Minimal and maximal Lyapunov exponents of bilinear control systems. (English summary) *J. Differential Equations* **101** (1993), *no.* 2, 232–275. (Wolfdietrich Müller) **93j:93096** 93D05 (34D08, 34H05, 93B10, 93D15)

— *see also* **Delay and differential equations, 93a:34003**

Kligienė, Nerutė Likelihood inference about a change point in switching autoregression. (Russian and Lithuanian summaries) *Informatica* **2** (1991), *no.* 1, 53–65, 137, 144. (Summary) **93d:62161** 62M10 (62M07, 62M09)

— Prediction of a structural instability in stochastic process. (English, Russian and Lithuanian summaries) *Informatica* **3** (1992), *no.* 1, 21–36, 120, 128. (Summary) **93k:62186** 62M10

Klimchuk, O. G. An upper bound on the exponents of a linear system as functions of perturbation parameters. (Russian. English and Russian summaries) *Vestst Akad. Navuk Belarust Ser. Ftz. Mat. Navuk* **1992**, *no.* 5-6, 32–37, 125. (Summary) **93k:34106** 34D08 (34A30, 34D10)

Klimek, Maciej ★ Pluripotential theory. London Mathematical Society Monographs. New Series, 6. Oxford Science Publications. *The Clarendon Press, Oxford University Press, New York*, 1991. xiv+266 *pp. ISBN* 0-19-853568-6 (Norman Levenberg) **93h:32021** 32F07 (32F05, 35J60)

Klimek, Sławomir (*with* Lesniewski, Andrzej) Pfaffians on Banach spaces. *J. Funct. Anal.* **102** (1991), *no.* 2, 314–330. (Alan L. Carey) **93e:58007** 58B15 (46G99, 47A99, 47B10, 58G26, 81T40)

— (*with* Lesniewski, Andrzej) Quantum Riemann surfaces. I. The unit disc. *Comm. Math. Phys.* **146** (1992), *no.* 1, 103–122. (Mauro Spera) **93g:58009** 58B30 (14H55, 46L87, 47B35, 47N99)

— (*with* Lesniewski, Andrzej) Quantum Riemann surfaces. II. The discrete series. *Lett. Math. Phys.* **24** (1992), *no.* 2, 125–139. (Mauro Spera) **93k:58011** 58B30 (30F35, 46L87, 58F06)

Klimenko, E. V. (*with* Gritsevskiĭ, A. È.; Chikriĭ, A. A.) Stochastic models for conflict-control systems with discrete time. (Russian. Russian summary) *Kibernet. i Vychisl. Tekhn. No.* 89 (1991), 47–52. (Summary) **93c:90116** 90D25 (49K45)

Klimenko, O. A. (*with* Yakhno, V. G.) A problem of integral geometry with exponential weight. (Russian. Russian summary) *Questions of well-posedness in problems of analysis (Russian)*, 173–180, 187, *Akad. Nauk SSSR Sibirsk. Otdel., Inst. Mat., Novosibirsk*, 1989. (*see* **93e:00018**) 44A99 (35A22, 35R30, 44A12)

— Numerical solution of a problem of integral geometry with exponential weight. (Russian. Russian summary) *Methods for solving inverse problems (Russian)*, 72–79, 144, *Akad. Nauk SSSR Sibirsk. Otdel., Inst. Mat., Novosibirsk*, 1990. (Béla Uhrin) **93m:52005** 52A22

Klimenko, Yu. A. (*with* Samoilenko, Yu. I.; Khorozov, O. A.) A model of a controlled microlevel logic element. I. *J. Automat. Inform. Sci.* **25** (1992), *no.* 1, 14–23 (1993); *translated from Avtomatika* **1992**, *no.* 1, 15–25, 95 (*Russian. English, Russian and Ukrainian summaries*). 49N55 (93C95)

Klimik, A. U. *see* **Klimyk, A. U.**

Klimkin, V. M. (*with* Sribnaya, T. A.) Set functions with values in a partially ordered space. I. (Russian) *Functional analysis, No.* 30 (*Russian*), 58–67, *Ul'yanovsk. Gos. Ped. Inst., Ul'yanovsk*, 1989. (Summary) **93k:28015** 28B15

— (*with* Sribnaya, T. A.) Exhaustibility of a regular set function in a topological space. (Russian) *Mat. Zametki* **50** (1991), *no.* 5, 43–47, 160; *translation in Math. Notes* **50** (1991), *no.* 5-6, 1123–1126 (1992). (Janina Ewert) **93d:54033** 54C99

Klimontovich, Yu. L. Some problems of statistical theory of open systems. Criteria of self-organization. Kinetic description of active media. *Nonlinear world, Vol.* 2 (*Kiev*, 1989), 1437–1453, *World Sci. Publishing, River Edge, NJ*, 1990. (*see* **93b:00013**) 82C05

Klimov, A. B. (*with* Dodonov, V. V.; Man'ko, V. I.) Quantum multidimensional systems with quadratic Hamiltonians. Evolution of distinguished subsystems. (Russian. Russian summary) *Trudy Fiz. Inst. Lebedev.* **208** (1992), 105–178, 245–246. (P. A. Mishnayevskiy) **93k:81264** 81V70

Klimov, G. P. (*with* Rajaonera, Ida C.) Décisions statistiques invariantes: invariance et théorie fiducielle. [Invariant statistical decisions: invariance and fiducial theory] *Cahiers Centre Études Rech. Opér.* **33** (1991), *no.* 3-4, 207–245. (Zeno G. Swijtink) **93e:62013** 62A30 (62C05)

Klimov, V. S. (*with* Senchakova, N. V.) On the relative rotation of multivalued potential vector fields. (Russian) *Mat. Sb.* **182** (1991), *no.* 10, 1393–1407; *translation in Math. USSR-Sb.* **74** (1993), *no.* 1, 131–144. (Hans-Peter Scheffler) **93b:49023** 49J52 (47H04, 58C06, 58C20)

— Bounded and almost periodic solutions of differential inclusions of parabolic type. (Russian. Russian summary) *Differentsial'nye Uravneniya* **28** (1992), *no.* 6, 1049–1056, 1103; *translation in Differential Equations* **28** (1992), *no.* 6, 849–856. (Summary) **93j:35199** 35R70 (35B15)

Klimyk, A. U. (*with* Vilenkin, N. Ya.) Representations of Lie groups and integral transforms. *Symmetries in science, III (Vorarlberg*, 1988), 365–376, *Plenum, New York*, 1989. (From the introduction) **93f:22014** 22E45 (33C80, 33D80)

— (*with* Vilenkin, N. Ya.) ★ Representation of Lie groups and special functions. Vol. 1. Simplest Lie groups, special functions and integral transforms. Translated from the Russian by V. A. Groza and A. A. Groza. Mathematics and its Applications (Soviet Series), 72. *Kluwer Academic Publishers Group, Dordrecht*, 1991. xxiv+608 *pp. ISBN* 0-7923-1466-2 (Robert A. Gustafson) **93h:33009** 33C80 (22E99, 33C05, 33C15)

— (*with* Kachurik, I. I.) General recurrence relations for Clebsch-Gordan coefficients of the quantum algebra $U_q(su_2)$. *J. Phys. A* **24** (1991), *no.* 17, 4009–4015. (From the text) **93g:33017** 33D80 (17B37)

— (*with* Sitenko, A. G.; Yatsun, V. A.) Ostap Stepanovich Parasyuk (on the occasion of his seventieth birthday). (Ukrainian) *Ukrain. Fiz. Zh.* **36** (1991), *no.* 12, 1765–1768. (Editors) **93d:01079** 01A70 (81-03)

— (*with* Smirnov, Yu. F.) The Wigner-Eckart theorem in the quantum algebra $U_q(su_2)$ and the quantum group $SU_q(2)$. (Ukrainian. English, Russian and Ukrainian summaries) *Ukrain. Fiz. Zh.* **36** (1991), *no.* 12, 1840–1846. (Summary) **93f:17023** 17B37 (81R50)

— (*with* Pakulyak, S. Z.) Representations of the quantum algebras $\mathcal{U}_q(u_{r,s})$ and $\mathcal{U}_q(u_{r+s})$ related to the quantum hyperboloid and sphere. *J. Math. Phys.* **33** (1992), *no.* 6, 1937–1947. (Chang Pu Sun) **93h:17032** 17B37 (16W30, 17B10, 81R50)

— Wigner-Eckart theorem for the quantum group $U_q(n)$. *J. Phys. A* **25** (1992), *no.* 10, 2919–2927. (Dmitriĭ I. Gurevich) **93h:17033** 17B37 (81R50)

Klin, M. Kh. (*with* Dress, Andreas W. M.; Muzichuk, M. E.) On p-configurations with few slopes in the affine plane over $\mathbf{F}_p$ and a theorem of W. Burnside's. *Bayreuth. Math. Schr. No.* 40 (1992), 7–19. (Summary) **93f:20006** 20B20

— (*with* Lebedev, O. V.; Pivina, T. S.; Zefirov, N. S.) Nonisomorphic cycles of maximum length in a series of chemical graphs and the problem of application of IUPAC nomenclature rules. (English summary) *Match No.* 27 (1992), 133–151. (Haruo Hosoya) **93j:92036** 92E10 (05C38, 05C90)

— *see also* **Interactions between algebra and combinatorics, 93f:00008**

Kling, Bart (*with* Wolthuis, Henk) Ordering of risks in life insurance. (English summary) *Insurance Math. Econom.* **11** (1992), *no.* 2, 139–152. (Summary) **93g:62131** 62P05

Klingen, Norbert (*with* Kürten, Karl E.) Hadamard design and artificial neural nets. (English summary) *J. Statist. Phys.* **71** (1993), *no.* 1-2, 327–339. (Summary) **93m:92005** 92B20 (05B20)

Klingenberg, Wilhelm P. A. ★ Selected papers. Series in Pure Mathematics, 14. *World Scientific Publishing Co., Inc., River Edge, NJ*, 1991. xiv+532 *pp. ISBN* 981-02-0764-6 (Viktor Schroeder) **93a:01066** 01A75 (53-03)

Klingler, Anton (*with* Kienel, Christoph) Campbell-Baker-Hausdorff formula and Lie-series: formula manipulation in TURBO-PROLOG. (English summary) *European Conference on Iteration Theory (Batschuns*, 1989), 171–176, *World Sci. Publishing, River Edge, NJ*, 1991. (Summary) **93g:22001** 22–04

Klingler, Lee (*with* Haefner, Jeremy) Integral representations of finite groups with finite representation type. *Azumaya algebras, actions, and modules (Bloomington, IN*, 1990), 73–82, *Contemp. Math.*, 124, *Amer. Math. Soc., Providence, RI*, 1992. (Lawrence S. Levy) **93c:20009** 20C10 (16G30)

— Commutative group rings of finite representation type. *J. Pure Appl. Algebra* **80** (1992), *no.* 2, 159–176. (Lawrence S. Levy) **93i:16040** 16S34 (16G30, 16G60)

Klingsberg, Paul (*with* Woldar, Andrew J.) Nested permutations. (English summary) *Bull. Inst. Combin. Appl.* **8** (1993), 61–74. (Summary) **93m:05007** 05A05

Klink, W. H. (*with* Ton-That, Tuong) The Schur-Weyl duality and its generalizations in group representations. *Proceedings of Asian Mathematical Conference*, 1990 (*Hong Kong*, 1990), 253–257, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93b:00022**) 20C15

— Clebsch-Gordan and Racah coefficients of the Poincaré group. *Ann. Physics* **213** (1992), *no.* 1, 31–53. (Hartmut Schlosser) **93e:81032** 81R05 (22E70)

— SU(3) Clebsch-Gordan coefficients with definite permutation symmetry. *Ann. Physics* **213** (1992), *no.* 1, 54–73. (Hartmut Schlosser) **93e:81033** 81R05 (17B10, 22E70)

— (*with* Ton-That, Tuong) Duality in representation theory. (English summary) *Ulam Quart.* **1** (1992), *no.* 1, 44*ff.*, *approx.* 9 *pp.* (*electronic only*). (Jing-Song Huang) **93m:22017** 22E46 (22E70)

Klinkhamer, Frans R. General covariance and strings. *Differential geometric methods in theoretical physics (Davis, CA*, 1988), 493–495, *NATO Adv. Sci. Inst. Ser. B Phys.*, 245, *Plenum, New York*, 1990. (*see* **93a:00022**) 81T30

Klinkhammer, Gunnar Vacuum polarization of scalar and spinor fields near closed null geodesics. (English summary) *Phys. Rev. D* (3) **46** (1992), *no.* 8, 3388–3394. (A. D. Popova) **93i:83054** 83C47 (81T20, 83C75)

Klinowski, Jacek (*with* Cvijović, Djurdje) The T and CLP families of triply periodic minimal surfaces. I. Derivation of parametric equations. (English summary) *J. Physique I* **2** (1992), *no.* 2, 137–147. (Kichoon Yang) **93h:53007** 53A10 (33E05)

Klinshpont, N. È. A topological invariant of the Lorenz attractor. (Russian) *Uspekhi Mat. Nauk* **47** (1992), *no.* 2(284), 195–196; *translation in Russian Math. Surveys* **47** (1992), *no.* 2, 221–223. (Tadeusz Nadzieja) **93i:58098** 58F12 (58F13)

Kliokys, E. (*with* Kulhavý, Rudolf) Bayesian filtering for discrete-time systems with random structure. (English summary) *Adaptive systems in control and signal processing*, 1989 (*Glasgow*), 483–487, *IFAC Sympos. Ser.*, 1990, *No.* 1, *Pergamon, Oxford*, 1990. (*see* **93j:93007**) 93E11 (93C55)

Klionskiĭ, A. B. Application of the Bruno formula to solve the Cauchy problem for normal systems of first-order ordinary differential equations with constant coefficients. (Russian) *Dynamical systems (Russian)*, 25–29, *Yakutsk. Gos. Univ., Yakutsk*, 1989. (*see* **93b:34004**) 34A12

Klipec, Kathy (*with* Flamm, David S.) Numerical methods for H^∞ control of distributed parameter systems. (English summary) *Analysis and optimization of systems: state and frequency domain approaches for infinite-dimensional systems (Sophia-Antipolis*, 1992), 598–609, *Lecture Notes in Control and Inform. Sci.*, 185, *Springer, Berlin*, 1993. (*see* **93i:93005**) 93B36 (93B40, 93C20)

Klippenstein, John New relationships between Steenrod operations for certain spaces. A Chinese summary appears in Acta Math. Sinica **36** (1993), no. 2, 288. *Acta Math. Sinica (N.S.)* **8** (1992), *no.* 1, 99–111. (Don Shimamoto) **93b:55023** 55S10 (19L41, 55S25, 55T15)

Klir, G. J. Probabilistic versus possibilistic conceptualization of uncertainty. (English summary) *Analysis and management of uncertainty: theory and applications (College Park, MD*, 1990), 13–25, *Mach. Intell. Pattern Recogn.*, 13, *North-Holland, Amsterdam*, 1992. (*see* **93f:68004**) 68T30

Kliś, C. (*with* Pilipović, Stevan) Remarks on absolutely regular and regular tempered distributions. *Publ. Inst. Math. (Beograd) (N.S.)* **49(63)** (1991), 137–140. (J. Horváth) **93c:46065** 46F05

Klitzing, R. (*with* Baake, M.; Schlottmann, M.) Fractally shaped acceptance domains of quasiperiodic square-triangle tilings with dodecagonal symmetry. (English summary) Fractals and disorder (Hamburg, 1992). *Phys. A* **191** (1992), *no.* 1-4, 554–558. (Marjorie Senechal) **93j:52032** 52C20

Kloch, Jacenty (*with* Hejmo, Władysław) Dynamic behaviour of a planar feedback-system. (English summary) *Bull. Polish Acad. Sci. Math.* **39** (1991), *no.* 3-4, 249–258. (P. Brunovský) **93m:34097** 34H05 (34A60, 93B52)

Kloeden, P. E. (*with* Platen, Eckhard) Stratonovich and Itô stochastic Taylor expansions. *Math. Nachr.* **151** (1991), 33–50. (Michèle Mastrangelo-Dehen) **93a:60082** 60H05 (60H30)

— (*with* Platen, Eckhard; Schurz, H.) Effective simulation of optimal trajectories in stochastic control. (English summary) *Optimization, Vol.* 1, 2 (*Singapore*, 1992), 633–644, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93d:90005**) 93E20 (49K45)

— (*with* Platen, Eckhard) Higher-order implicit strong numerical schemes for stochastic differential equations. *J. Statist. Phys.* **66** (1992), *no.* 1-2, 283–314. (G. N. Mil'shteĭn) **93e:60111** 60H10 (65L06, 65U05)

— (*with* Platen, Eckhard; Wright, I. W.) The approximation of multiple stochastic integrals. (English summary) *Stochastic Anal. Appl.* **10** (1992), *no.* 4, 431–441. (G. N. Mil'shteĭn) **93k:60139** 60H05

Kloek, Teun (*with* Heij, Christiaan; Lucas, André) Positivity conditions for stochastic state space modelling of time series. (English summary) *Econometric Rev.* **11** (1992), *no.* 3, 379–396. (Luis Firinguetti) **93m:62197** 62M10 (62P20)

Kloesel, Christian *see* **Peirce, Charles Sanders, 93c:01052; 93c:01053** *and* **93k:01092**

Klokov, Yu. A. (*with* Bespalova, S. A.) On a singular boundary value problem for a system of second-order ordinary differential equations. (Russian. Russian summary) *Differentsial'nye Uravneniya* **28** (1992), *no.* 6, 1067–1069, 1103. (Summary) **93h:34030** 34B15

— (*with* Bespalova, S. A.) A boundary value problem for a fourth-order singular system. (Russian. Russian summary) *Differentsial'nye Uravneniya* **28** (1992), *no.* 9, 1484–1490, 1651; *translation in Differential Equations* **28** (1992), *no.* 9, 1206–1212 (1993). (Summary) **93k:34045** 34B15

— (*with* Mikhailov, A. P.) Singular boundary value problems in localization theory. (Russian. Russian summary) *Mat. Model.* **4** (1992), *no.* 4, 101–108. (Summary) **93g:34032** 34B15 (34A12, 76N15)

— *see also* **Mathematics. Differential equations, 93d:00035**

Klompstra, M. *see* **Klompstra, Martin H.**

Klompstra, Margriet B. A nonzero-sum game with variable final time. (English summary) *Dynamic games in economic analysis* (*Espoo*, 1990), 122–131, *Lecture Notes in Control and Inform. Sci.*, 157, *Springer, Berlin*, 1991. (Summary) **93e:90077** 90D25 (90A60)

— (*with* Olsder, G. J.; van Brunschot, P. K. G. M.) The isopone method in optimal control. *Dynamics Control* **2** (1992), *no.* 3, 281–301. (M. Krastanov) **93c:49024** 49N55 (93B03, 93C95)

Klompstra, Martin H. (*with* van den Boom, T.; Damen, A.) System identification for H_∞-robust control design. (English summary) *Identification and system parameter estimation* 1991, *Vol.* 1,2 (*Budapest*, 1991), 971–976, *IFAC Sympos. Ser.*, 3, *Pergamon, Oxford*, 1992. (*see* **93h:93009**) 93B30 (93B36)

Klonecki, Witold (*with* Zontek, Stefan) Admissible estimators of variance components obtained via submodels. (English summary) *Ann. Statist.* **20** (1992), *no.* 3, 1454–1467. (A. L. Rukhin) **93h:62047** 62F10 (62C15, 62J10)

Kloosterziel, R. C. (*with* Carnevale, G. F.) Formal stability of circular vortices. (English summary) *J. Fluid Mech.* **242** (1992), 249–278. (Olec Troshkin) **93m:76041** 76E30 (76C05, 76E20, 86A05)

Klop, J. W. (*with* Bergstra, J. A.) An introduction to process algebra. *Applications of process algebra*, 1–21, *Cambridge Tracts Theoret. Comput. Sci.*, 17, *Cambridge Univ. Press, Cambridge*, 1990. (*see* **93g:68090**) 68Q60 (68Q10)

Klopp, Frédéric Étude semi-classique d'une perturbation d'un opérateur de Schrödinger périodique. (English summary) [Semiclassical study of a perturbation of a periodic Schrödinger operator] *Ann. Inst. H. Poincaré Phys. Théor.* **55** (1991), *no.* 1, 459–509. (B. Hellwig) **93c:35027** 35J10 (35B20, 35P05, 81Q20)

Klose, Jürgen Sensitivity analysis using the tangent derivative. *Numer. Funct. Anal. Optim.* **13** (1992), *no.* 1-2, 143–153. (Alexander Shapiro) **93d:49018** 49J52 (49K40, 90C29, 90C31)

Klostermeyer, William On the complexity of scheduling to optimize average response time. (English summary) *J. Inform. Optim. Sci.* **14** (1993), *no.* 1, 21–32. 90B35

Klotz, Lutz Some Banach spaces of measurable operator-valued functions. *Probab. Math. Statist.* **12** (1991), *no.* 1, 85–97 (1992). (Kevin T. Andrews) **93k:46025** 46E40 (47A56, 47B10)

— A Vitali-Hahn-Saks theorem for matrix-valued measures. *Arch. Math.* (*Basel*) **60** (1993), *no.* 2, 164–166. (J. B. Robertson) **93m:28012** 28B05 (46G10)

Klötzler, Rolf A strengthening of a lemma on continuous families of closed convex sets. *Z. Anal. Anwendungen* **10** (1991), *no.* 3, 415–416. (Summary) **93a:54016** 54C60

— Pontryagin's maximum principle for multiple integrals. *System modelling and optimization* (*Zurich*, 1991), 323–333, *Lecture Notes in Control and Inform. Sci.*, 180, *Springer, Berlin*, 1992. (*see* **93e:90003**) 49K15

— The Lagrange multiplier rule for multi-dimensional problems of optimal control. (English summary) Nonlinear methods in economic dynamics and optimal control (Vienna, 1990). *Ann. Oper. Res.* **37** (1992), *no.* 1-4, 403–413. (Giles Auchmuty) **93h:49033** 49K20 (49L10)

Kløve, Torleiv (*with* Chen, Wen De) Lower bounds on multiple difference sets. *Discrete Math.* **98** (1991), *no.* 1, 9–21. (Otokar Grošek) **93a:05028** 05B10

— (*with* Helleseth, Tor) The number of cross-join pairs in maximum length linear sequences. *IEEE Trans. Inform. Theory* **37** (1991), *no.* 6, 1731–1733. (Shojiro Sakata) **93a:94021** 94A55

— Support weight distribution of linear codes. (English summary) A collection of contributions in honour of Jack van Lint. *Discrete Math.* **106/107** (1992), 311–316. (Bal Kishan Dass) **93g:94014** 94B05

— Optimal codes for error detection. *IEEE Trans. Inform. Theory* **38** (1992), *no.* 2, *part* 1, 479–489. (Summary) **93b:94033** 94B70 (94B60)

— (*with* Helleseth, Tor; Ytrehus, Øyvind) Generalized Hamming weights of linear codes. *IEEE Trans. Inform. Theory* **38** (1992), *no.* 3, 1133–1140. (Summary) **93a:94028** 94B05 (94B65)

Kluberg-Stern, H. (*with* Cohen, Eyal; Navelet, H.) Regulated propagator on the flat torus and its Weyl properties. (English summary) *J. Math. Phys.* **33** (1992), *no.* 9, 3150–3158. (Enric Verdaguer) **93j:81070** 81T16 (58G26)

Kluge, Werner ★ The organization of reduction, data flow, and control flow systems. (English. English summary) The MIT Press Series in Computer Systems. *MIT Press, Cambridge, MA*, 1992. x+470 *pp. ISBN* 0-262-61081-7 (Mukkai S. Krishnamoorthy) **93m:68009** 68M07

Klughertz, Martine Existence d'une intégrale première méromorphe pour des germes de feuilletages à feuilles fermées du plan complexe. [Existence of a meromorphic first integral for germs of foliations with closed leaves in the complex plane] *Topology* **31** (1992), *no.* 2, 255–269. (Yih-Nan David Gau) **93i:32036** 32L30 (32G07, 32S70)

Kluitenberg, Gerrit Alfred (*with* Restuccia, Liliana) On the heat dissipation function for dielectric relaxation phenomena in anisotropic media. *Internat. J. Engrg. Sci.* **30** (1992), *no.* 3, 305–315. (Summary) **93a:73011** 73B30 (73R05, 78A25)

Kluving, R. (*with* Capel, Hans W.; Pasmanter, R. A.) The phase transition in the bungalow-tent map. *From phase transitions to chaos*, 413–433, *World Sci. Publishing, River Edge, NJ*, 1992. (Frederick R. Marotto) **93f:58061** 58F03 (28D20, 58F13)

— (*with* Capel, Hans W.; Pasmanter, R. A.) Symbolic dynamics of fully developed chaos. I. Statistics and characteristics of two-symbol sequences. *Phys. A* **183** (1992), *no.* 1-2, 67–95. (Frederick R. Marotto) **93f:58062** 58F03 (28D20, 58F13)

— (*with* Capel, Hans W.; Pasmanter, R. A.) Symbolic dynamics of fully developed chaos. II. Random and order-1 Markovian two-symbol sequences. *Phys. A* **183** (1992), *no.* 1-2, 96–129. (Frederick R. Marotto) **93f:58063** 58F03 (28D20, 58F13)

— (*with* Capel, Hans W.; Pasmanter, R. A.) Symbolic dynamics of fully developed chaos. III. Infinite-memory sequences and phase transitions. (English summary) *Phys. A* **186** (1992), *no.* 3-4, 405–440. (Frederick R. Marotto) **93g:58043** 58F03 (28D20, 58F13, 82C26)

Klümper, Andreas (*with* Pearce, Paul A.) Conformal weights of RSOS lattice models and their fusion hierarchies. *Phys. A* **183** (1992), *no.* 3, 304–350. (H. S. Green) **93i:82032** 82B23

— (*with* Bariev, R. Z.; Schadschneider, A.; Zittartz, J.) Exact solution of a one-dimensional model of hole superconductivity. (English summary) *J. Phys. A* **26** (1993), *no.* 5, 1249–1257. 82D55

Klunnik, A. A. (*with* Prikazchikov, V. G.) A projection method of increased accuracy for a fourth-order differential equation. (Russian) *Vychisl. Prikl. Mat.* (*Kiev*) *No.* 71 (1990), 27–33. (Summary) **93b:65103** 65L10

Klüppelberg, Claudia (*with* Barndorff-Nielsen, Ole E.) A note on the tail accuracy of the univariate saddlepoint approximation. (English and French summaries) *Ann. Fac. Sci. Toulouse Math.* (6) **1** (1992), *no.* 1, 5–14. (Gábor J. Székely) **93k:60033** 60E05 (62E17)

Klusch, Dieter The sampling theorem, Dirichlet series and Hankel transforms. (English summary) *J. Comput. Appl. Math.* **44** (1992), *no.* 3, 261–273. (Ahmed I. Zayed) **93j:94010** 94A24 (11M41, 33D10, 44A15)

— On the Taylor expansion of the Lerch zeta-function. *J. Math. Anal. Appl.* **170** (1992), *no.* 2, 513–523. (Matti Jutila) **93k:11080** 11M35

Klutke, Georgia-Ann (*with* Foley, R. D.; König, Dieter) Stationary increments of accumulation processes in queues and generalized semi-Markov schemes. *J. Appl. Probab.* **28** (1991), *no.* 4, 864–872. (Masakiyo Miyazawa) **93b:60212** 60K25 (60J25)

Kluvánek, Igor Extensions of the Paley-Wiener-Zygmund integral. Measure theory (Oberwolfach, 1990). *Rend. Circ. Mat. Palermo* (2) *Suppl. No.* 28 (1992), 409–424. (S. N. Mukhopadhyay) **93k:28020** 28C99 (28B05, 42A16, 42A24)

Kluvánek, Pavol (*with* Černý, Ján) ★ Základy matematickej teórie dopravy. (Slovak) [Foundations of the mathematical theory of transportation] With Russian and English summaries. *VEDA, Vydavateľstvo Slovenskej Akadémie Vied, Bratislava*, 1991. 280 *pp. ISBN* 80-224-0099-8 (From the summary) **93a:90002** 90-02 (90B06, 90C08, 90C10, 90C35)

Kluwick, A. (*with* Cox, Edward A.) Propagation of weakly nonlinear waves in stratified media having mixed nonlinearity. (English summary) *J. Fluid Mech.* **244** (1992), 171–185. (Alexandre Fedorov) **93i:76096** 76V05 (76Q05)

Kluźniak, Feliks (*with* Maluszyński, Jan; Bonnier, Staffan; Boye, Johan; Kågedal, Andreas; Nilsson, Ulf) Logic programs with external procedures. (English summary) *Logic programming languages*, 21–48, *MIT Press, Cambridge, MA*, 1993. (*see* **93k:68020**) 68N17

Klyachin, A. A. (*with* Miklyukov, V. M.) Space-like hypersurfaces and a problem on the continuation of a function with constraints on the gradient. (Russian) *Dokl. Akad. Nauk SSSR* **320** (1991), *no.* 4, 781–784; *translation in Soviet Math. Dokl.* **44** (1992), *no.* 2, 521–524. (From the introduction) **93h:49058** 49Q05 (26B35, 53A10)

— (*with* Miklyukov, V. M.) Traces of functions with spacelike graphs and a problem of extension with constraints imposed on the gradient. (Russian. Russian summary) *Mat. Sb.* **183** (1992), *no.* 7, 49–64. (Vladimir D. Stepanov) **93i:46060** 46E35 (49Q05)

Klyachin, V. A. Estimation of the expansion of tubular minimal surfaces of arbitrary codimension. (Russian. Russian summary) *Sibirsk. Mat. Zh.* **33** (1992), *no.* 5, 201–205, 224; *translation in Siberian Math. J.* **33** (1992), *no.* 5, 928–932 (1993). (Summary) **93g:53012** 53A10

Klyachko, A. A. Equivariant vector bundles on toric varieties and some problems of linear algebra. *Topics in algebra, Part* 2 (*Warsaw*, 1988), 345–355, *Banach Center Publ.*, 26, *Part* 2, *PWN, Warsaw*, 1990. (Summary) **93i:14052** 14M25

Klyatskin, V. I. Statistical theory of radiation transport in stratified random media. *Izv. Acad. Sci. USSR Atmospher. Ocean. Phys.* **27** (1991), *no.* 1, 31–44 (1992); *translated from Izv. Akad. Nauk SSSR Ser. Fiz. Atmosfer. i Okeana* **27** (1991), *no.* 1 (*Russian*). (D. ter Haar) **93c:86002** 86A10 (35Q60)

— (*with* Guzev, M. A.; Popov, G. V.) Phase fluctuations and localization length in layered randomly inhomogeneous media. *Waves Random Media* **2** (1992), *no.* 2, 117–123. (Summary) **93b:34108** 34L25 (34F05)

Klyuchkovskiĭ, Yu. B. (*with* Navrotskiĭ, P. P.) Transformation properties of certain characteristics of the motion of a deformable solid in different forms of relativistic dynamics. (Ukrainian) *Mat. Metody i Fiz.-Mekh. Polya No.* 33 (1991), 53–56; *translation in J. Soviet Math.* **65** (1993), *no.* 5, 1861–1864. (Summary) **93c:73018** 73B99 (73A05, 83A05)

— (*with* Duviryak, A. A.) Covariant two-particle light lines in relativistic Hamiltonian mechanics. (Ukrainian. Ukrainian summary) *Mat. Metody i Fiz.-Mekh. Polya No.* 34 (1991), 100–105. 70H40 (83A05)

— (*with* Duviryak, A. A.) Space-time interpretation of relativistic Hamiltonian mechanics of a system of particles. (Ukrainian. English, Russian and Ukrainian summaries) *Ukraïn. Fiz. Zh.* **37** (1992), *no.* 2, 313–321. (Summary) **93g:70018** 70H40

Kmit', I. Ya. Nonlocal problems for hyperbolic systems in three-dimensional domains. (Ukrainian) *Visnik L'viv. Univ. Ser. Mekh. Mat. No.* 34 (1990), 18–23. 35L45

Knaap, M. C. (*with* Budd, C. J.; Peletier, L. A.) Asymptotic behavior of solutions of elliptic equations with critical exponents and Neumann boundary conditions. *Proc. Roy. Soc.*

Edinburgh Sect. A **117** (1991), *no.* 3-4, 225–250. (Cornelius O. Horgan) **93b:35044** 35J65 (35B40)

— (*with* Adimurthi; Yadava, S. L.) A note on a critical exponent problem with Neumann boundary conditions. *Nonlinear Anal.* **18** (1992), *no.* 3, 287–294. (Cornelius O. Horgan) **93b:35045** 35J65 (35B40)

Knabner, Peter (*with* Hoffmann, Karl-Heinz[1]; Seifert, W.) Adaptive methods for parameter identification in ground water hydrology. *Adv. in Water Res.* **14** (1991), *no.* 5, 220–239. (From the summary) **93a:76076** 76M25 (35J25, 35R30, 76S05, 86A05)

— (*with* von Wolfersdorf, Lothar) Travelling wave solutions of a system of nonlinear diffusion equations with integral term. *Z. Anal. Anwendungen* **10** (1991), *no.* 4, 503–512. (Hans Engler) **93f:35236** 35R10 (35Q80, 45K05)

— (*with* Friedman, Avner) A transport model with micro- and macro-structure. *J. Differential Equations* **98** (1992), *no.* 2, 328–354. (Adrian Carabineanu) **93g:35114** 35Q35 (76S05, 80A30)

Knapp, Anthony W. ★ Elliptic curves. Mathematical Notes, 40. *Princeton University Press, Princeton, NJ*, 1992. xvi+427 *pp. ISBN* 0-691-08559-5 (Joseph H. Silverman) **93j:11032** 11G05 (11-01, 11F11, 14H52)

— (*with* Baldoni Silva, M. W.) Intertwining operators into $L^2(G/H)$. *Representation theory of Lie groups and Lie algebras* (*Fuji-Kawaguchiko*, 1990), 95–119, *World Sci. Publishing, River Edge, NJ*, 1992. (Roger Zierau) **93m:22015** 22E46 (22E30)

— (*with* Barchini, Leticia; Zierau, R.) Intertwining operators into Dolbeault cohomology representations. *J. Funct. Anal.* **107** (1992), *no.* 2, 302–341. (Floyd L. Williams) **93e:22026** 22E46 (22E45, 32L10)

Knapp, Edgar Derivation of concurrent programs: two examples. (English summary) *Sci. Comput. Programming* **19** (1992), *no.* 1, 1–23. 68Q22

Knapp, Robert (*with* Camassa, Roberto; Forest, M. Gregory) Enhancement of optical bistability by periodic layering. *Nonlinearity* **5** (1992), *no.* 3, 721–742. (Summary) **93b:78014** 78A60

Knapp, Robert J. (*with* Hyman, James M.; Scovel, James C.) High order finite volume approximations of differential operators on nonuniform grids. (English summary) Experimental mathematics: computational issues in nonlinear science (Los Alamos, NM, 1991). *Phys. D* **60** (1992), *no.* 1-4, 112–138. (Summary) **93i:65110** 65N30

Knarr, Norbert A geometric construction of generalized quadrangles from polar spaces of rank three. *Results Math.* **21** (1992), *no.* 3-4, 332–344. (Hendrik Van Maldeghem) **93b:51009** 51E12

Knauer, Ulrich (*with* Mikhalëv, A. V.) Endomorphism monoids of generators in the category of S-acts. (English summary) *Semigroups with applications* (*Oberwolfach*, 1991), 132–151, *World Sci. Publishing, River Edge, NJ*, 1992. (Walter Tholen) **93m:18010** 18B99 (20M50)

— Endomorphism types of trees. *Words, languages and combinatorics* (*Kyoto*, 1990), 273–287, *World Sci. Publishing, River Edge, NJ*, 1992. (A. Pultr) **93f:05072** 05C75 (05C25, 20M20)

— (*with* Kilp, Mati) Characterization of monoids by properties of generators. *Comm. Algebra* **20** (1992), *no.* 7, 1841–1856. (Alessandra Cherubini) **93g:20126** 20M50

— (*with* Böttcher, Michael) Endomorphism spectra of graphs. (English summary) Algebraic graph theory (Leibnitz, 1989). *Discrete Math.* **109** (1992), *no.* 1-3, 45–57. (A. Pultr) **93m:05159** 05C75

Knauf, Andreas (*with* Gérard, C.) Collisions for the quantum Coulomb Hamiltonian. *Comm. Math. Phys.* **143** (1991), *no.* 1, 17–26. (Evgeni L. Korotyaev) **93f:81155** 81U05 (35P25, 70H05, 81Q20)

— (*with* Helffer, Bernard; Siedentop, Heinz; Weikard, Rudi) On the absence of a first order correction for the number of bound states of a Schrödinger operator with Coulomb singularity. *Comm. Partial Differential Equations* **17** (1992), *no.* 3-4, 615–639. (Vesselin M. Petkov) **93h:35149** 35P20 (35J10, 47F05, 58G18)

Knaust, Helmut (*with* Odell, Edward) Weakly null sequences with upper l_p-estimates. *Functional analysis* (*Austin, TX*, 1987/1989), 85–107, *Lecture Notes in Math.*, 1470, *Springer, Berlin*, 1991. (From the introduction) **93g:46009** 46B15

— Orlicz sequence spaces of Banach-Saks type. *Arch. Math.* (*Basel*) **59** (1992), *no.* 6, 562–565. (Ting Fu Wang) **93i:46039** 46B45 (46A45)

— p-Hilbertian subsequences in $l_1(X)$. (English summary) *Banach spaces* (*Mérida*, 1992), 159–163, *Contemp. Math.*, 144, *Amer. Math. Soc., Providence, RI*, 1993. (Summary) **93j:46026** 46B45

Knautz, Henning (*with* Wilde, Joachim) $\mathbf{R}^2$ in restricted linear models. (English summary) *Comm. Statist. Theory Methods* **22** (1993), *no.* 3, 641–645. 62J05

— (*with* Trenkler, Götz) On the correlation between $\overline{X}$ and S^2. (English summary) *Statist. Probab. Lett.* **16** (1993), *no.* 3, 235–237. (Summary) **93k:62028** 62E15 (62E10)

Kneale, William C. *see* **Anellis, Irving H., 93m:01050**

Knecht, M. (*with* Lazzarini, S.; Stora, Raymond) On holomorphic factorization for free conformal fields. II. *Phys. Lett. B* **273** (1991), *no.* 1-2, 63–66. (A. K. Raina) **93a:81174** 81T40 (14H55, 58G26)

Kneip, Alois (*with* Gasser, Theo) Analysis of samples of curves. *Nonparametric functional estimation and related topics* (*Spetses*, 1990), 99–110, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 335, *Kluwer Acad. Publ., Dordrecht*, 1991. (Summary) **93a:62055** 62G05

— (*with* Gasser, Theo; Köhler, Walter) A flexible and fast method for automatic smoothing. *J. Amer. Statist. Assoc.* **86** (1991), *no.* 415, 643–652. (G. Roussas) **93d:62063** 62G05 (62G20, 62J02)

— (*with* Gasser, Theo) Statistical tools to analyze data representing a sample of curves. (English summary) *Ann. Statist.* **20** (1992), *no.* 3, 1266–1305. (Ulrich Stadtmüller) **93h:62084** 62G05

Kneipp, Marco A. C. Generalized abelian Chern-Simons theories and their connection to conformal field theories. (English summary) *Internat. J. Modern Phys. A* **7** (1992), *no.* 19, 4477–4486. (Summary) **93c:81211** 81T40 (81T13)

Kneser, M. (*with* Hauser, Kai; Herrlich, F.; Opolka, Hans; Schappacher, Norbert; Scholz, Erhard) Oswald Teichmüller—Leben und Werk. [Oswald Teichmüller—his life and work] *Jahresber. Deutsch. Math.-Verein.* **94** (1992), *no.* 1, 1–39. (J. Dieudonné) **93b:01037** 01A70 (01A60)

Knessl, Charles Asymptotic approximations for the $GI/M/1$ queue with processor-sharing service. *Comm. Statist. Stochastic Models* **8** (1992), *no.* 1, 1–34. (John P. Lehoczky) **93f:60142** 60K25 (68M20, 90B22)

— (*with* Keller, Joseph B.) Stability of rotating shear flows in shallow water. (English summary) *J. Fluid Mech.* **244** (1992), 605–614. (Summary) **93h:76033** 76E20 (76E05, 76U05)

— (*with* Xie, Shisheng) On the transient behavior of the $M/M/1$ and $M/M/1/K$ queues. (English summary) *Stud. Appl. Math.* **88** (1993), *no.* 3, 191–240. (Summary) **93m:60192** 60K25

Knežević, Julka On the asymptotic properties of the solutions of a second-order nonlinear equation. (Russian) *Uspekhi Mat. Nauk* **47** (1992), *no.* 3(285), 163–164; *translation in Russian Math. Surveys* **47** (1992), *no.* 3, 178–179. (Pavol Marušiak) **93h:34045** 34C10 (34D99)

Knickerbocker, C. J. (*with* Dean, Alice M.; Lock, Patti Frazer; Sheard, Michael) A survey of graphs Hamiltonian-connected from a vertex. *Graph theory, combinatorics, and applications, Vol. 1* (*Kalamazoo, MI*, 1988), 297–313, *Wiley-Intersci. Publ., Wiley, New York*, 1991. (*see* **93b:05002**) 05C45

— (*with* Herman, R. L.) Numerically induced phase shift in the KdV soliton. (English summary) *J. Comput. Phys.* **104** (1993), *no.* 1, 50–55. 65M06 (35Q53)

Knight, Frank B. Regular, stationary Gaussian processes with the Markov property of infinite order, and diffusive filtrations. *Diffusion processes and related problems in analysis, Vol. I* (*Evanston, IL*, 1989), 399–409, *Progr. Probab.*, 22, *Birkhäuser Boston, Boston, MA*, 1990. (Robert J. Adler) **93e:60076** 60G15 (60J25)

— Forms of inclusion between processes. *Seminar on Stochastic Processes*, 1991 (*Los Angeles, CA*, 1991), 73–81, *Progr. Probab.*, 29, *Birkhäuser Boston, Boston, MA*, 1992. (H.-J. Engelbert) **93i:60069** 60G05 (60J25)

Knight, J. F. (*with* Ash, C. J.) Relatively recursive expansions. *Fund. Math.* **140** (1992), *no.* 2, 137–155. (Yu. G. Ventsov) **93h:03048** 03C57 (03C75)

Knight, Keith Asymptotics of Boscovich-type parameter estimates for infinite variance autoregressive process. (English summary) *L_1-statistical analysis and related methods* (*Neuchâtel*, 1992), 245–252, *North-Holland, Amsterdam*, 1992. (*see* **93k:62005**) 62M10 (62M09)

— (*with* Davis, Richard Alan; Liu, Jian[3]) M-estimation for autoregressions with infinite variance. *Stochastic Process. Appl.* **40** (1992), *no.* 1, 145–180. (Pham Dinh Tuan) **93c:62145** 62M10 (62F12, 62F35)

Knight, M. J. An "oceans of zeros" proof that a certain non-Liouville number is transcendental. *Amer. Math. Monthly* **98** (1991), *no.* 10, 947–949. (A. J. van der Poorten) **93d:11075** 11J81

Knightly, G. H. (*with* Sather, D.) Time-periodic states in problems containing a structure parameter. *Progress in partial differential equations: elliptic and parabolic problems* (*Pont-à-Mousson*, 1991), 34–42, *Pitman Res. Notes Math. Ser.*, 266, *Longman Sci. Tech., Harlow*, 1992. (*see* **93f:35007**) 34G20 (34C25, 47N20)

Knijnenburg, P. M. W. (*with* van Leeuwen, Jan) On models for propositional dynamic logic. *Theoret. Comput. Sci.* **91** (1991), *no.* 2, 181–203. (Alexey P. Stolboushkin) **93h:03033** 03B70 (68Q60)

Knill, Oliver The upper Lyapunov exponent of $SL(2,\mathbf{R})$ cocycles: discontinuity and the problem of positivity. (English summary) *Lyapunov exponents* (*Oberwolfach*, 1990), 86–97, *Lecture Notes in Math.*, 1486, *Springer, Berlin*, 1991. (Manfred Denker) **93g:58081** 58F11 (28D20)

— Positive Lyapunov exponents for a dense set of bounded measurable $SL(2,\mathbf{R})$-cocycles. (English summary) *Ergodic Theory Dynamical Systems* **12** (1992), *no.* 2, 319–331. (G. R. Goodson) **93j:28034** 28D20 (58F11)

Knio, Omar M. (*with* Ghoniem, Ahmed F.) The three-dimensional structure of periodic vorticity layers under nonsymmetric conditions. (English summary) *J. Fluid Mech.* **243** (1992), 353–392. (Summary) **93g:76030** 76C05 (76F10)

Knisely, J. (*with* Wallis, C.; Domke, Gayla S.) The partitioned graph isomorphism problem. (English summary) Proceedings of the Twenty-third Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, FL, 1992). *Congr. Numer.* **89** (1992), 39–44. (Summary) **93j:05040** 05C05 (68R10)

Knizhnerman, L. A. (*with* Druskin, Vladimir) The Lanczos optimization of a splitting-up method to solve homogeneous evolutionary equations. (English summary) *J. Comput. Appl. Math.* **42** (1992), *no.* 2, 221–231. (Summary) **93g:65089** 65L05

— Error estimates for the Arnoldi method: the normal matrix case. (Russian. Russian summary) *Zh. Vychisl. Mat. i Mat. Fiz.* **32** (1992), *no.* 9, 1347–1360; *translation in Comput. Math. Math. Phys.* **32** (1992), *no.* 9, 1199–1211 (1993). (Cs. J. Hegedűs) **93j:65053** 65F15

Knizia, R. W. (*with* Jurkat, W. B.) Generalized absolutely continuous interval functions and multi-dimensional Perron integration. (English summary) *Analysis* **12** (1992), *no.* 3-4, 303–313. (Ralph Henstock) **93h:26016** 26A39 (26A45, 26A46, 26B30)

Knobel, A. Constructive λ-models. *J. Pure Appl. Algebra* **79** (1992), *no.* 3, 271–279. (Summary) **93b:03018** 03B40 (68Q55)

Knobloch, E. *see* **Knobloch, Edgar**

Knobloch, Eberhard Eulers früheste Studie zum Dreikörperproblem. (English summary) [Euler's earliest paper concerning the three-body problem] *Amphora*, 389–405, *Birkhäuser, Basel*, 1992. (Peeter Müürsepp) **93k:01030** 01A50

— *see also* **Leibniz, Gottfried Wilhelm, 93h:01063**

Knobloch, Edgar (*with* Dangelmayr, Gerhard) Hopf bifurcation with broken circular symmetry. *Nonlinearity* **4** (1991), *no.* 2, 399–427. (Michael J. Field) **93a:58035** 58E09 (34C23, 58F14)

— (*with* Proctor, M. R. E.; Weiss, N. O.) Heteroclinic bifurcations in a simple model of double-diffusive convection. *J. Fluid Mech.* **239** (1992), 273–292. (Summary) **93c:76034** 76E15 (34C23, 58F14, 76F20, 76R99)

— (*with* Goldstein, H. F.; Mercader, I.; Net, M.) Convection in a rotating cylinder. I. Linear theory for moderate Prandtl numbers. (English summary) *J. Fluid Mech.* **248** (1993), 583–604. 76E15 (76U05)

Knobloch, Hans-W. (*with* Flockerzi, Dietrich) Invariant manifolds, zero dynamics and stability. *Nonlinear synthesis* (*Sopron*, 1989), 132–140, *Progr. Systems Control Theory*, 9, *Birkhäuser Boston, Boston, MA*, 1991. (P. Brunovský) **93c:34106** 34C30 (34D45, 93D05)

— Foundation of invariant manifold theory for ordinary differential equations. (English summary) *Recent trends in differential equations*, 365–392, *World Sci. Ser. Appl. Anal.*, 1, *World Sci. Publishing, River Edge, NJ*, 1992. (Georgii Osipenko) **93h:34073** 34C30 (34A30, 34C45)

— Control under uncertain dynamics. Nonlinear methods in economic dynamics and optimal control (Vienna, 1990). *Ann. Oper. Res.* **37** (1992), *no.* 1-4, 415–422. (Silvana Stefani) **93i:93079** 93C41 (93B30, 93B35, 93E10)

Knockaert, Luc Stability of linear predictors and numerical range of shift operators in normed spaces. (English summary) *IEEE Trans. Inform. Theory* **38** (1992), *no.* 5, 1483–1486. (Summary) **93e:47100** 47N70 (47B37, 65J99)

Knödel, G. (*with* Schenzel, Peter; Zonsarow, R.) Explicit computations on symbolic powers of monomial curves in affine space. *Comm. Algebra* **20** (1992), *no.* 7, 2113–2126. (Jean-Luc Chabert) **93h:14021** 14H45 (13C40, 13F20, 14M10)

Knoester, H. (*with* van der Zanden, J.) On the stability of multi-layered fluids. I. Analysis. (English summary) *Appl. Sci. Res.* **49** (1992), *no.* 4, 307–334. (Summary) **93g:76052** 76E05 (76M25)

Knöll, Ludwig (*with* Leonhardt, Ulf) Quantum optics in oscillator media. *J. Modern Opt.* **39** (1992), *no.* 6, 1253–1264. (Summary) **93b:81321** 81V80

Knop, Friedrich (*with* Assadi, Amir H.; Barlow, Rebecca) Abelian group actions on algebraic varieties with one fixed point. *Math. Z.* **210** (1992), *no.* 1, 129–136. (From the introduction) **93b:14071** 14L30 (57S17)

Knop, Jadwiga Lip C^r-solution depending on an arbitrary function of a functional equation. (Russian and Polish summaries) *Zeszyty Nauk. Politech. Łódz. Mat. No.* 22 (1991), 89–96. (L. Losonczi) **93a:39019** 39B22

Knopf, G. K. (*with* Gupta, Madan M.) Fuzzy neural network approach to control systems. (English summary) *Analysis and management of uncertainty: theory and applications* (*College Park, MD*, 1990), 183–197, *Mach. Intell. Pattern Recogn.*, 13, *North-Holland, Amsterdam*, 1992. (*see* **93f:68004**) 03B52

Knopfmacher, Arnold (*with* Lucht, Lutz) The radius of convergence of power product expansions. *Analysis* **11** (1991), *no.* 1, 91–99. (Summary) **93a:40003** 40A20 (30B10)

— Infinite product factorizations of analytic functions. *J. Math. Anal. Appl.* **162** (1991), *no.* 2, 526–536. (Summary) **93i:30001** 30B10 (30B70)

— (*with* Knopfmacher, John; Warlimont, Richard) "Factorisatio numerorum" in arithmetical semigroups. *Acta Arith.* **61** (1992), *no.* 4, 327–336. (W. Schwarz) **93f:11069** 11N80 (11N37)

— Elementary properties of the subtractive Euclidean algorithm. *Fibonacci Quart.* **30** (1992), *no.* 1, 80–83. (H. L. Abbott) **93a:11002** 11A05 (11B39)

— (*with* Knopfmacher, John) Infinite series expansions for p-adic numbers. *J. Number Theory* **41** (1992), *no.* 2, 131–145. (Vichian Laohakosol) **93f:11051** 11J61 (11J70, 11S85)

Knopfmacher, John (*with* Knopfmacher, Arnold; Warlimont, Richard) "Factorisatio numerorum" in arithmetical semigroups. *Acta Arith.* **61** (1992), *no.* 4, 327–336. (W. Schwarz) **93f:11069** 11N80 (11N37)

— Ergodic properties of some inverse polynomial series expansions of Laurent series. *Acta Math. Hungar.* **60** (1992), *no.* 3-4, 241–246. (Pierre Liardet) **93m:11077** 11K55

— (*with* Knopfmacher, Arnold) Infinite series expansions for p-adic numbers. *J. Number Theory* **41** (1992), *no.* 2, 131–145. (Vichian Laohakosol) **93f:11051** 11J61 (11J70, 11S85)

Knopov, P. S. Estimation of the drift parameter of random fields. (Russian) *Teor. Veroyatnost. i Mat. Statist. No.* 45 (1991), 33–38; *translation in Theory Probab. Math. Statist. No.* 45 (1992), 29–33. (Summary) **93d:62163** 62M40

— (*with* Kasitskaya, E. I.) About one approach to the nonlinear estimating problem. *Probability theory and mathematical statistics* (*Kiev*, 1991), 151–157, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93k:60008**) 62M09

— (*with* Yatsenko, V. A.) Estimation of unknown parameters of an almost periodic signal from controlled bilinear observations. (Russian. Russian summary) *Avtomat. i Telemekh.* **1992**, *no.* 3, 65–73; *translation in Automat. Remote Control* **53** (1992), *no.* 3, *part* 1, 376–383. 93E10

Knopp, Marvin I. (*with* Hawkins, John H.) A Hecke correspondence theorem for automorphic integrals with rational period functions. *Illinois J. Math.* **36** (1992), *no.* 2, 178–207. (YoungJu Choie) **93d:11052** 11F66 (11F12)

— (*with* Bressoud, David M.; Sheingorn, Mark) In appreciation of Emil Grosswald. *A tribute to Emil Grosswald: number theory and related analysis*, 1–8, *Contemp. Math.*, 143, *Amer. Math. Soc., Providence, RI*, 1993. (*see* **93j:11002**) 01A70 (11–03)

— On the cuspidal spectrum of the arithmetic Hecke groups. (English summary) *Math. Comp.* **61** (1993), *no.* 203, 269–275. (Thomas R. Shemanske) **93k:11038** 11F25 (11F30, 11F72)

— (*with* Newman, Morris) On groups related to the Hecke groups. *Proc. Amer. Math. Soc.* **119** (1993), *no.* 1, 77–80. (O. V. Shvartsman) **93k:20068** 20H10

— *see also* **Tribute to Emil Grosswald: number theory and related analysis, 93j:11002**

Knops, R. J. Spatial decay estimates in the vibrating anisotropic elastic beam. (English summary) *Waves and stability in continuous media* (*Sorrento*, 1989), 192–203, *Ser. Adv. Math. Appl. Sci.*, 4, *World Sci. Publishing, River Edge, NJ*, 1991. (*see* **93g:00030**) 35B40 (73K05, 73K12)

— (*with* Flavin, J. N.; Payne, L. E.) Asymptotic and other estimates for a semilinear elliptic equation in a cylinder. (English summary) *Quart. J. Mech. Appl. Math.* **45** (1992), *no.* 4, 617–627. (Summary) **93k:35089** 35J60 (73C02)

— (*with* Flavin, J. N.; Payne, L. E.) Asymptotic behaviour of solutions to semi-linear elliptic equations on the half-cylinder. *Z. Angew. Math. Phys.* **43** (1992), *no.* 3, 405–421. (Allan L. Edelson) **93k:35102** 35J65 (35B40)

Knor, M. (*with* Niepel, Ľ.; Šoltés, Ľubomír) Centers in iterated line graphs. (English summary) *Acta Math. Univ. Comenian. (N.S.)* **61** (1992), *no.* 2, 237–241. (Summary) **93k:05180** 05C99

Knörr, Reinhard Counting blocks of defect zero. *Representation theory of finite groups and finite-dimensional algebras* (*Bielefeld*, 1991), 419–424, *Progr. Math.*, 95, *Birkhäuser, Basel*, 1991. (Introduction) **93a:20021** 20C20

Knorr, Wilbur R. What Euclid meant: on the use of evidence in studying ancient mathematics. *Science and philosophy in classical Greece*, 119–163, *Sources Stud. Hist. Philos. Class. Sci.*, 2, *Garland, New York*, 1991. (*see* **93g:01015**) 01A20

— On the principle of linear perspective in Euclid's *Optics*. *Centaurus* **34** (1991), *no.* 3, 193–210. (Richard L. Francis) **93d:01006** 01A20

— On hearts and ivy leaves: what the ancient Greeks did with curves. (Spanish) 2nd International Colloquium on Philosophy and History of Mathematics (Spanish) (México City, 1990). *Mathesis* **7** (1991), *no.* 3, 303–319. (H. W. Guggenheimer) **93c:01005** 01A20

— When circles don't look like circles: an optical theorem in Euclid and Pappus. *Arch. Hist. Exact Sci.* **44** (1992), *no.* 4, 287–329. (H. W. Guggenheimer) **93k:01006** 01A20 (51–03, 51N05)

Knorrenschild, Michael Differential/algebraic equations as stiff ordinary differential equations. (English summary) *SIAM J. Numer. Anal.* **29** (1992), *no.* 6, 1694–1715. (Alexander Ostermann) **93k:65063** 65L06 (34A09, 34A65, 65L05)

Knörrer, Horst (*with* Bättig, Daniel; Trubowitz, Eugene) A directional compactification of the complex Fermi surface. *Compositio Math.* **79** (1991), *no.* 2, 205–229. (H. Hogreve) **93g:35118** 35Q40 (35R30, 58G25, 81Q99)

— (*with* Feldman, Joel; Trubowitz, Eugene) There is no two-dimensional analogue of Lamé's equation. *Math. Ann.* **294** (1992), *no.* 2, 295–324. (Eugen Belokolos) **93m:35133** 35P05 (34L40, 35J10, 81Q05)

Knott, Martin (*with* Smith, Cyril) On Hoeffding-Fréchet bounds and cyclic monotone relations. *J. Multivariate Anal.* **40** (1992), *no.* 2, 328–334. (Ludger Rüschendorf) **93a:60024** 60E99 (62E10)

Knowles, Elizabeth (*with* Fisher, David C.; Lee, Roderick N.) If f has Lipschitz constant less than 2.17008, then $x_{i+1} = x_i + f(x_i)$ has no odd periodic solutions. *J. Math. Anal. Appl.* **160** (1991), *no.* 2, 459–467. (C. Praagman) **93b:39004** 39B12 (58F08, 58F22)

Knowles, James K. On a minimization problem associated with linear dynamical systems. *Linear Algebra Appl.* **165** (1992), 173–184. (Ilmar Arro) **93a:93036** 93B30 (34A30, 70J99, 93B40)

— (*with* Abeyaratne, Rohan) Wave propagation in linear, bilinear and trilinear elastic bars. *Wave Motion* **15** (1992), *no.* 1, 77–92. (Introduction) **93g:73047** 73D35 (73D30, 73D40, 73K05)

Knowles, Paul H. Integration of a class of transcendental Liouvillian functions with error-functions. I. *J. Symbolic Comput.* **13** (1992), *no.* 5, 525–543. (Summary) **93m:68093** 68Q40

Knox, Steven W. Fibonacci sequences in finite groups. *Fibonacci Quart.* **30** (1992), *no.* 2, 116–120. (H. L. Abbott) **93c:20046** 20D60 (11B39)

Knupp, Patrick M. A robust elliptic grid generator. *J. Comput. Phys.* **100** (1992), *no.* 2, 409–418. (Summary) **93j:65198** 65N50

Knüppel, Frieder Factorization into symmetries and transvections of given conjugacy classes. (English summary) *Canad. Math. Bull.* **35** (1992), *no.* 3, 400–409. (E. W. Ellers) **93i:11048** 11E57 (15A23, 51N30)

Knus, Max-Albert (*with* Schofield, Aidan) Aspects of the Pfaffian. *Comm. Algebra* **19** (1991), *no.* 7, 1959–1969. (R. Parimala) **93b:12004** 12E15 (16E99)

— (*with* Parimala, R.; Sridharan, Raman) Involutions on rank 16 central simple algebras. *J. Indian Math. Soc. (N.S.)* **57** (1991), *no.* 1-4, 143–151. (B. Fein) **93c:16020** 16K20

Knuth, Donald E. A simple program whose proof isn't. *Beauty is our business*, 233–242, *Texts Monographs Comput. Sci., Springer, New York*, 1990. (F. J. van der Linden) **93c:68035** 68Q20 (11A67, 68–04)

— Textbook examples of recursion. *Artificial intelligence and mathematical theory of computation*, 207–229, *Academic Press, Boston, MA*, 1991. (William Gasarch) **93a:68093** 68Q60 (03B70, 03D20, 68R05)

— Efficient representation of perm groups. *Combinatorica* **11** (1991), *no.* 1, 33–43. (W. M. Kantor) **93a:20009** 20B40 (20–04, 68Q25)

— (*with* Sallows, Lee C. F.; Gardner, Martin; Guy, Richard K.) Serial isogons of 90 degrees. *Math. Mag.* **64** (1991), *no.* 5, 315–324. (From the text) **93h:05050** 05B50

— Context-free multilanguages. *Theoretical studies in computer science*, 1–13, *Academic Press, Boston, MA*, 1992. (*see* **93a:68009**) 68Q45

— (*with* Guibas, Leonidas J.; Sharir, Micha) Randomized incremental construction of Delaunay and Voronoi diagrams. *Algorithmica* **7** (1992), *no.* 4, 381–413. (David Fernández-Baca) **93e:68130** 68U05 (52B55, 68Q25, 68R10)

— Two notes on notation. *Amer. Math. Monthly* **99** (1992), *no.* 5, 403–422. (W. Dörfler) **93f:05001** 05–01 (00A35)

— (*with* Raghunathan, Arvind) The problem of compatible representatives. *SIAM J. Discrete Math.* **5** (1992), *no.* 3, 422–427. (Konrad Engel) **93h:90076** 90C27 (68R10)

— *see also* **Gardner, Martin**

Knutsen, Henning Physical properties of an exact spherically symmetric solution with shear in general relativity. (English summary) *Gen. Relativity Gravitation* **24** (1992), *no.* 12, 1297–1313. (A. H. Taub) **93k:83011** 83C15 (83C20, 83C55, 83C75)

Knuuttila, Simo Buridan and Aristotle's modal syllogistic. *Historia philosophiae medii aevi, Band I, II*, 477–488, *Grüner, Amsterdam*, 1991. (James Gasser) **93i:01011** 01A35 (01A20, 03–03, 03B45)

Knyazev, Andrei Vladimirovich (*with* Bakhvalov, N. S.) Methods for the effective computation of averaged characteristics of composites of periodic structure consisting of essentially different materials. (Russian) *Computational processes and systems, No.* 8 (*Russian*), 52–94, "*Nauka*", *Moscow*, 1991. (Alexander Belyaev) **93c:35006** 35B27 (35J55, 65N55, 73B27)

— (*with* Bakhvalov, N. S.) An effective iterative method for the solution of Lamé equations for almost incompressible media and of Stokes equations. (Russian) *Dokl. Akad. Nauk SSSR* **319** (1991), *no.* 1, 13–17; *translation in Soviet Math. Dokl.* **44** (1992), *no.* 1, 4–9. (Michael Fröhner) **93b:65194** 65N99 (65J10, 73C02, 73V99)

— (*with* Skorokhodov, A. L.) Iterative methods of gradient type in a subspace for a partial symmetric generalized eigenvalue problem. (Russian) *Dokl. Akad. Nauk* **323** (1992), *no.* 6, 1020–1023; *translation in Russian Acad. Sci. Dokl. Math.* **45** (1992), *no.* 2, 474–478 (1993). (C. Ilioi) **93m:65075** 65J10 (47A75, 65F15)

Knyazev, I. A. Robust control under nonstationary disturbances. (Russian. Russian summary) *Avtomat. i Telemekh.* **1992**, *no.* 3, 45–50; *translation in Automat. Remote Control* **53** (1992), *no.* 3, *part* 1, 357–361. 93B36

Knyazev, O. V. On spectra of attainability and solvability of varieties of Clifford semigroups. (Russian) *Sibirsk. Mat. Zh.* **32** (1991), *no.* 5, 59–67, 208; *translation in Siberian Math. J.* **32** (1991), *no.* 5, 775–782 (1992). (Francis Pastijn) **93f:20075** 20M07 (20M11)

Knysh, B. A. A packet criterion for optimality in a problem of the control of a discrete system by two opponents. (Russian. Russian summary) *Vestnik Beloruss. Gos. Univ. Ser. I Fiz. Mat. Mekh.* **1992**, *no.* 1, 57–60, 78. (Dimitrii Serkov) **93m:90124** 90D25 (93B55)

— Synthesis of an optimal controller under conditions of active noise. (Russian. English and Russian summaries) *Vestsi Akad. Navuk Belarusi Ser. Fiz. Mat. Navuk* **1992**, *no.* 5-6, 40–46, 125. (Summary) **93j:90137** 90D25 (49N35, 93B50)

Knyukh, V. I. The Cauchy problem for an even-order binomial operator-differential equation on the semi-axis. (Russian. Russian summary) *Boundary value problems for*

operator-differential equations (*Russian*), 27–36, *Akad. Nauk Ukrainy, Inst. Mat., Kiev*, 1991. (Alexei I. Filinkov) **93m:34086** 34G10 (34A12, 47N20)

Ko, Daijin Robust estimation of the concentration parameter of the von Mises-Fisher distribution. *Ann. Statist.* **20** (1992), *no.* 2, 917–928. (Friedrich Liese) **93j:62150** 62H11 (62F35, 62H12)

Ko, Hong Seung (*with* Takine, Tetsuya; Takahashi, Yutaka[3]; Hasegawa, Toshiharu) Performance analysis of a flexible manufacturing cell with waiting storage. (English and Polish summaries) *Systems Sci.* **18** (1992), *no.* 1-2, 27–36 (1993). 90B22

Ko, Hyoung J. Cauchy decomposition formulas for Schur modules. *Bull. Korean Math. Soc.* **29** (1992), *no.* 1, 41–55. (Piotr Pragacz) **93f:20057** 20G05 (20G15)

— (*with* Chun, Yoo Bong) Certain exact complexes associated to the Pieri type skew Young diagrams. *Bull. Korean Math. Soc.* **29** (1992), *no.* 2, 265–275. (Mihalis Maliakas) **93i:20049** 20G05 (05E10)

Ko, Ker-I ★ Complexity theory of real functions. Progress in Theoretical Computer Science. *Birkhäuser Boston, Inc., Boston, MA*, 1991. x+309 *pp. ISBN* 0-8176-3586-6 (Douglas S. Bridges) **93i:03057** 03D15 (03–02, 03F60, 26E40, 65Y20, 68Q15)

— (*with* Tzeng, Wen-Guey) Three Σ_2^p-complete problems in computational learning theory. *Comput. Complexity* **1** (1991), *no.* 3, 269–310. (Sanjay Jain) **93h:68121** 68T05 (68Q25)

— On the computational complexity of integral equations. (English summary) *Ann. Pure Appl. Logic* **58** (1992), *no.* 3, 201–228. (M. I. Dekhtyar) **93m:68079** 68Q25 (03D15, 03F60, 45D05)

— (*with* Du, Ding Zhu) A note on best fractions of a computable real number. (English summary) *J. Complexity* **8** (1992), *no.* 3, 216–229. (Zhuo Jun Liu) **93j:68071** 68Q25 (03D15)

Ko, Ki Hyoung (*with* Jin, Gyo Taek; Kim, B. K.) Adequate links and the Jones polynomial of unlinks. *Knots* 90 (*Osaka*, 1990), 185–193, *de Gruyter, Berlin*, 1992. (Yongwu Rong) **93e:57008** 57M25

— (*with* Smolinsky, Lawrence) The framed braid group and representations. *Knots* 90 (*Osaka*, 1990), 289–297, *de Gruyter, Berlin*, 1992. (Darren D. Long) **93f:20050** 20F36 (20C15, 57M25, 57N10)

— (*with* Jin, Gyo Taek) Boundary links and mutations. (English summary) *Canad. Math. Bull.* **35** (1992), *no.* 3, 376–380. (Kimihiko Motegi) **93g:57009** 57M25

Ko, Kwang-Soob (*with* Read, Russell K.) Stochastic robot forward dynamics with spatially distributed measurement noise. (English summary) *Internat. J. Systems Sci.* **24** (1993), *no.* 3, 419–440. 93C85 (70B15, 70Q05)

Ko, M. T. (*with* Ching, Yu Tai) Linear time algorithms for the weighted tailored 2-partition problem and the weighted 2-center problem under l_∞-distance. (English summary) *Discrete Appl. Math.* **40** (1992), *no.* 3, 397–410. (András Faragó) **93m:90062** 90C27 (05D05, 90B80)

Ko, Tsz-Mei (*with* Dolinar, Sam; McEliece, Robert J.) Some VLSI decompositions of the de Bruijn graph. (English summary) A collection of contributions in honour of Jack van Lint. *Discrete Math.* **106/107** (1992), 189–198. (Qing De Kang) **93h:05159** 05C90 (68Q35)

K'o, Wên Fêng (*with* Wang, K. S.) On the Frobenius groups with kernel of order 64. *Contributions to general algebra*, 7 (*Vienna*, 1990), 221–233, *Hölder-Pichler-Tempsky, Vienna*, 1991. (Yu. I. Merzlyakov) **93c:20054** 20E34 (20E22)

— On nonisomorphic BIBD with identical parameters. (English summary) *Combinatorics* '90 (*Gaeta*, 1990), 337–346, *Ann. Discrete Math.*, 52, *North-Holland, Amsterdam*, 1992. (Elizabeth J. Billington) **93k:05018** 05B05

— (*with* Fong, Yuen; Huang, F. K.) Syntactic linear[near]-rings associated with groups semiautomata. *Pure Math. Appl. Ser. A* **2** (1992), *no.* 3-4, 187–204. (Günter Pilz) **93i:16061** 16Y30 (16N80, 68Q70)

Ko, Younhee An asymptotic stability and a uniform asymptotic stability for functional-differential equations. *Proc. Amer. Math. Soc.* **119** (1993), *no.* 2, 535–545. (L. Hatvani) **93k:34166** 34K20

Koay, H. L. (*with* Wong, P. C.) Generalized free products of π_c groups. (English summary) *Rocky Mountain J. Math.* **22** (1992), *no.* 4, 1589–1593. (Summary) **93j:20055** 20E06

Kobal, Damjan (*with* Šemrl, Peter) A result concerning additive maps on the set of quaternions and an application. *Bull. Austral. Math. Soc.* **44** (1991), *no.* 3, 477–482. (C. T. Ng) **93d:39016** 39B52 (39B32)

— (*with* Šemrl, Peter) Generalized Cauchy functional equation and characterizations of inner product spaces. *Aequationes Math.* **43** (1992), *no.* 2-3, 183–190. (S. Kurepa) **93e:46027** 46C15 (39B52, 46B20)

Koban, M. A. Conditions for the expressibility of one-place formulas in the logic of the 8-element topo-Boolean algebra with one open atom. (Russian) *Izv. Akad. Nauk Moldav. SSR Mat.* **1990**, *no.* 3, 71–73, 79. (Leo Esakia) **93e:03027** 03B45 (06E25)

Kobayashi, H. *see* **Kobayashi, Hisato P.**

Kobayashi, Hidetsune (*with* Murao, Hirokazu; Fujise, Tetsuro) Evaluation of symbolic expression of the first derivative of determinant. (English summary) *J. Inform. Process.* **15** (1992), *no.* 2, 195–201. 68Q40

— (*with* Murao, Hirokazu; Fujise, Tetsuro) On factorizing the symbolic U-resultant—application of the ddet operator. (English summary) *J. Symbolic Comput.* **15** (1993), *no.* 2, 123–142. (Summary) **93m:68095** 68Q40

Kobayashi, Hisato P. A nonlinear feedback control for multi-link manipulators. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, II* (*Kobe*, 1991), 633–638, *Mita, Tokyo*, 1992. (*see* **93g:93006**) 93C85 (93B52)

Kobayashi, Katsumasa Asymptotic stability in functional-differential equations. *Nonlinear Anal.* **20** (1993), *no.* 4, 359–364. (S. Leela) **93m:34127** 34K20

Kobayashi, Kazuaki Standard spatial graph. *Hokkaido Math. J.* **21** (1992), *no.* 1, 117–140. (Martin Scharlemann) **93e:57010** 57M25 (05C10, 57M15)

Kobayashi, Ken-ichiro (*with* Uematsu, Tsuneo) $N = 2$ supersymmetric sine-Gordon theory and conservation laws. *Phys. Lett. B* **264** (1991), *no.* 1-2, 107–113. (Nikolai A. Kostov) **93f:81134** 81T40 (58F07, 81T60)

— (*with* Uematsu, Tsuneo) S-matrix of $N = 2$ supersymmetric sine-Gordon theory. *Phys. Lett. B* **275** (1992), *no.* 3-4, 361–370. (From the text) **93h:81126** 81T40 (81R50)

Kobayashi, Mahito Simplifying certain mappings from simply connected 4-manifolds into the plane. *Tokyo J. Math.* **15** (1992), *no.* 2, 327–349. (Claudio Martins Mendes) **93k:57062** 57R45

Kobayashi, Masako Cut-and-pastes of incompressible surfaces in 3-manifolds. *Osaka J. Math.* **29** (1992), *no.* 3, 617–634. (Sergej V. Matveev) **93j:57006** 57N10

Kobayashi, Masanori The complementary scheme for massive totally antisymmetric tensor field theories. (English summary) *Progr. Theoret. Phys.* **88** (1992), *no.* 6, 1231–1232. 81T99

Kobayashi, Midori (*with* Nakamura, Gisaku) Resolvable coverings of 2-paths by 4-cycles. *J. Combin. Theory Ser. A* **60** (1992), *no.* 2, 295–297. (Summary) **93b:05028** 05B30 (05C38)

— (*with* Nakamura, Gisaku) Exact coverings of 2-paths by Hamilton cycles. *J. Combin. Theory Ser. A* **60** (1992), *no.* 2, 298–304. (Summary) **93b:05107** 05C45 (05C38)

Kobayashi, Reido (*with* Chadan, K.; Musette, M.) The inverse problem in the coupling constant for the Schrödinger equation. II. *Inverse Problems* **8** (1992), *no.* 1, 45–57. (R. G. Newton) **93c:34033** 34A55 (34L40, 81U20)

Kobayashi, Ryo (*with* Mimura, Masayasu; Tsujikawa, Tohru) Formation of band-type electric patterns in Characean cells. *J. Math. Biol.* **30** (1992), *no.* 5, 513–545. (Yoram Schiffmann) **93d:92007** 92C15 (35B32, 35K57)

Kobayashi, Ryoichi Moduli of Einstein metrics on a $K3$ surface and degeneration of type I. *Kähler metric and moduli spaces*, 257–311, *Adv. Stud. Pure Math.*, 18-II, *Academic Press, Boston, MA*, 1990. (Hajime Tsuji) **93a:32046** 32L07 (32G13, 32J15, 53C25)

— Uniformization of complex surfaces. *Kähler metric and moduli spaces*, 313–394, *Adv. Stud. Pure Math.*, 18-II, *Academic Press, Boston, MA*, 1990. (Hajime Tsuji) **93g:32042** 32L07 (14J25, 32J15)

— An application of Kähler-Einstein metrics to singularities of plane curves. *Recent topics in differential and analytic geometry*, 321–326, *Adv. Stud. Pure Math.*, 18-I, *Academic Press, Boston, MA*, 1990. (S. Allen Broughton) **93i:14020** 14H20 (32L07, 32S50, 53C25)

— Holomorphic curves into algebraic subvarieties of an abelian variety. *Internat. J. Math.* **2** (1991), *no.* 6, 711–724. (Marcus Wright) **93b:32036** 32H30 (32H20)

Kobayashi, S. *see* **Kobayashi, Shoichi**

Kobayashi, Shigeru On growth of finitely generated algebras. *Proceedings of the First China-Japan International Symposium on Ring Theory* (*Guilin*, 1991), 86–88, *Okayama Univ., Okayama*, 1992. (*see* **93k:16001**) 16P90

— (*with* Nakagawa, Hiroshi) Resolution of solvable quintic equation. (English summary) *Math. Japon.* **37** (1992), *no.* 5, 883–886. (James K. Deveney) **93i:12001** 12D10 (12F10)

Kobayashi, Shoichi Some techniques for accurate and high-speed computation in BEM. *Theory and applications of boundary element methods* (*Beijing*, 1991), 85–94, *Internat. Acad. Publ., Beijing*, 1991. (*see* **93b:65008**) 65N38 (65Y10)

Kobayashi, Shoshichi *see* **Matsushima, Yozô, 93d:01098**

Kobayashi, Sigeru *see* **Kobayashi, Shigeru**

Kobayashi, T. *see* **Kobayashi, Tsunehiro**

Kobayashi, Takayuki (*with* Muramatu, Tosinobu) Abstract Besov space approach to the nonstationary Navier-Stokes equations. (English summary) *Math. Methods Appl. Sci.* **15** (1992), *no.* 9, 599–620. (Michael Wiegner) **93m:35143** 35Q30 (46E35, 47N20, 76D05)

Kobayashi, Teiichi A nonembedding theorem up to homotopy type for quaternionic spherical space forms. *Mem. Fac. Sci. Kôchi Univ. Ser. A Math.* **12** (1991), 1–4. (Y. Furukawa (Zbl 724:55014)) **93b:57037** 57S17 (55P99, 57R40, 57R42, 57S25)

— (*with* Komatsu, Kazushi) Stable homotopy types of stunted quaternionic spherical space forms. *Mem. Fac. Sci. Kôchi Univ. Ser. A Math.* **12** (1991), 33–38. (Y. Furukawa (Zbl 726:55005)) **93b:57038** 57S17 (55P99, 57R40, 57R42, 57S25)

— Nonembeddability and nonimmersibility of products of quaternionic spherical space forms. *Mem. Fac. Sci. Kôchi Univ. Ser. A Math.* **13** (1992), 1–14. (From the introduction) **93i:57039** 57R40 (57R42)

Kobayashi, Toshihiro Pole assignment problem of a distributed parameter system with unbounded feedback. *Internat. J. Systems Sci.* **23** (1992), *no.* 4, 473–487. (Hien T. Tran) **93e:93037** 93B55

— Zeros and design of control systems for distributed parameter systems. (English summary) *Internat. J. Systems Sci.* **23** (1992), *no.* 9, 1507–1515. (De Xing Feng) **93f:93070** 93C20 (93B15, 93B28, 93B60)

Kobayashi, Toshiyuki A necessary condition for the existence of compact Clifford-Klein forms of homogeneous spaces of reductive type. *Duke Math. J.* **67** (1992), *no.* 3, 653–664. (Philippos J. Xenos) **93h:53048** 53C30 (53C35)

Kobayashi, Tsunehiro Wave-function collapse induced by thermal fluctuations of detector variables. Statistical collapse of wave functions. *Found. Phys. Lett.* **5** (1992), *no.* 3, 265–278. (Summary) **93a:81025** 81P15

— Mechanisms of the wave-packet collapse and macroscopic limits in the quantum theory of measurement. *Nuovo Cimento B* (11) **107** (1992), *no.* 6, 657–667. 81P15

Kobayashi, Tsuyoshi Fibered links which are band connected sum of two links. *Knots* 90 (*Osaka*, 1990), 9–23, *de Gruyter, Berlin*, 1992. (Martin Scharlemann) **93m:57008** 57M25

— A construction of 3-manifolds whose homeomorphism classes of Heegaard splittings have polynomial growth. *Osaka J. Math.* **29** (1992), *no.* 4, 653–674. (Michael Motto) **93j:57007** 57N10

Kobayashi, Y. *see* **Kobayashi, Yuji**

Kobayashi, Yasuhiro[1] (*with* Ohkita, Masaaki; Miyata, Hitoshi) Piecewise-linear approximation of solutions of delay-differential systems by Walsh functions. (English summary) *Computational and applied mathematics, II* (*Dublin*, 1991), 201–205, *North-Holland, Amsterdam*, 1992. (*see* **93j:00008**) 65L99 (34K05, 65L05)

Kobayashi, Yoshikazu (*with* Tanaka, Naoki) Evolution governed by "generalized" dissipative operators. *Proc. Japan Acad. Ser. A Math. Sci.* **68** (1992), *no.* 8, 223–226. (From the text) **93i:34116** 34G20 (34A12, 47H15, 47N20)

Kobayashi, Yuji Partial commutation, homology, and the Möbius inversion formula. *Words, languages and combinatorics* (*Kyoto*, 1990), 288–298, *World Sci. Publishing, River Edge, NJ*, 1992. (Ira Gessel) **93j:05174** 05E99

— (*with* Saito, Tatsuhiko; Katsura, Masashi; Kajitori, K.) On totally ordered free monoids. *Words, languages and combinatorics* (*Kyoto*, 1990), 454–479, *World Sci. Publishing, River Edge, NJ*, 1992. (Yves Metivier) **93d:20102** 20M05 (06F05)

— (*with* Nagamachi, Shigeaki) Hilbert superspace. (English summary) *J. Math. Phys.* **33** (1992), *no.* 12, 4274–4282. (Daniel Hernández Ruipérez) **93i:58011** 58A50 (46C99, 46S99)

— Note on compatible well orders on a free monoid. *Semigroup Forum* **45** (1992), *no.* 1, 23–25. (From the text) **93b:20094** 20M05 (06F05)

Kobelev, V. V. Microstructural model of a fibrous composite fracture. *Mech. Structures Mach.* **20** (1992), *no.* 1, 1–16. (Summary) **93c:73089** 73S10 (35Q99, 73K20, 73M25)

Kobeleva, N. F. (*with* Khisamutdinov, A. I.) On the property of "molecular chaos" for spatially inhomogeneous rarefied gases. (Russian. Russian summary) *Questions of well-posedness in problems of analysis (Russian)*, 85–94, 183–184, *Akad. Nauk SSSR Sibirsk. Otdel., Inst. Mat., Novosibirsk*, 1989. (*see* **93e:00018**) 82C05 (58F13, 76P05)

— (*with* Khisamutdinov, A. I.) "Nonsymmetric" interactions in Monte Carlo methods with continuous time and the approximation of the Boltzmann equation. (Russian. English and Russian summaries) *Mat. Model.* **4** (1992), *no.* 2, 110–119. (Summary) **93g:82093** 82C80 (65C05, 76M25, 76P05)

Kobel'kov, G. M. Numerical methods for solving Navier-Stokes equations in velocity-pressure variables. (Russian) *Computational processes and systems, No. 8 (Russian)*, 204–236, "*Nauka*", *Moscow*, 1991. (Lutz Tobiska) **93b:76025** 76D05 (65F10, 65N22, 76M20)

Kobilinsky, A. (*with* Monod, H.) Experimental design generated by group morphisms: an introduction. *Scand. J. Statist.* **18** (1991), *no.* 2, 119–134. (Summary) **93e:62191** 62K10 (05B05)

Köbler, Johannes (*with* Schöning, Uwe; Toda, Seinosuke; Torán, Jacobo) Turing machines with few accepting computations and low sets for PP. *J. Comput. System Sci.* **44** (1992), *no.* 2, 272–286. (Juraj Hromkovič) **93b:68027** 68Q15 (03D10, 03D15, 68Q10)

Koblitz, Neal Elliptic curve implementation of zero-knowledge blobs. (English summary) *J. Cryptology* **4** (1991), *no.* 3, 207–213. (Johan Håstad) **93m:68080** 68Q25 (68R99, 94A60)

— (*with* Fellows, Michael R.) Self-witnessing polynomial-time complexity and prime factorization. (English summary) *Des. Codes Cryptogr.* **2** (1992), *no.* 3, 231–235. (Summary) **93e:68032** 68Q25 (03D15)

— *see also* **Karatsuba, A. A., 93h:11096**

Kobotis, A. The spectrum of the one parameter family of operators for Einstein manifolds. *J. Inst. Math. Comput. Sci. Math. Ser.* **4** (1991), *no.* 2, 261–266. (Stig I. Andersson) **93d:58176** 58G25 (53C25, 58G11)

— (*with* Tsagas, Gr.) Classification of special nilpotent Lie algebras of dimension nine and their invariants. *Tensor (N.S.)* **50** (1991), *no.* 1, 51–54. (Michel Goze) **93b:17020** 17B05

Kobozeva, A. A. (*with* Maslovskaya, L. V.) A generalized Cholesky algorithm in problems in the theory of plates and shells. (Russian. Russian summary) *Zh. Vychisl. Mat. i Mat. Fiz.* **32** (1992), *no.* 9, 1492–1499; *translation in Comput. Math. Math. Phys.* **32** (1992), *no.* 9, 1339–1345 (1993). (Summary) **93h:73039** 73V05 (65F99, 65N30, 73K10, 73K15)

— (*with* Filippovich, A. P.) Frontal and profile methods for solving systems of linear algebraic equations in mixed finite-element methods. (Russian. Russian summary) *Zh. Vychisl. Mat. i Mat. Fiz.* **32** (1992), *no.* 11, 1697–1708; *translation in Comput. Math. Math. Phys.* **32** (1992), *no.* 11, 1523–1532 (1993). 65F99

Kobrinets, N. I. (*with* Minchenko, L. I.) On the maximum principle for discrete inclusions. (Russian. English and Russian summaries) *Vestsī Akad. Navuk Belarusī Ser. Fīz. Mat. Navuk* **1992**, *no.* 1, 17–20, 123. (Summary) **93f:49023** 49K24 (49J52)

Kobza, Jiří Quadratic splines smoothing the first derivatives. (Czech summary) *Appl. Math.* **37** (1992), *no.* 2, 149–156. (Guido Walz) **93b:41015** 41A15 (65D05)

Koç, Çetin Kaya An improved algorithm for mixed-radix conversion of residue numbers. *Comput. Math. Appl.* **22** (1991), *no.* 8, 63–71. (Summary) **93b:11164** 11Y16

— (*with* Eğecioğlu, Ömer) Parallel prefix computation with few processors. *Comput. Math. Appl.* **24** (1992), *no.* 4, 77–84. (Summary) **93b:65221** 65Y10

— (*with* Eğecioğlu, Ömer) A parallel algorithm for generating discrete orthogonal polynomials. *Parallel Comput.* **18** (1992), *no.* 6, 649–659. (Summary) **93c:68037** 68Q22 (42C05, 68Q25)

— (*with* Chen, Guan Rong) A fast algorithm for scalar Nevanlinna-Pick interpolation. (English summary) *Numer. Math.* **64** (1993), *no.* 1, 115–126. (A. Bultheel) **93k:65011** 65D05 (30E05, 65Y20)

Koca, Mehmet E_8 lattice with octonions and icosians. *Mathematical physics (Islamabad, 1989)*, 233–257, *World Sci. Publishing, River Edge, NJ*, 1990. (Ronald C. King) **93d:17013** 17B20 (81R05)

— Symmetries of the octonionic root system of E_8. *J. Math. Phys.* **33** (1992), *no.* 2, 497–510. (Mohammad Hailat) **93g:17013** 17B20 (17B25, 22E60, 82B20)

Koçak, Hüseyin (*with* Hale, Jack K.) ★ Dynamics and bifurcations. Texts in Applied Mathematics, 3. *Springer-Verlag, New York*, 1991. xiv+568 *pp. ISBN* 0-387-97141-6 (D. R. J. Chillingworth) **93e:58047** 58Fxx (34–01, 34C23, 58–01, 58F14)

Kocay, William (*with* Hartnell, Bert L.) On minimal neighbourhood-connected graphs. *Discrete Math.* **92** (1991), *no.* 1-3, 95–105. (Georg Günther) **93b:05080** 05C35 (05C40)

— (*with* Van Rees, G. H. J.) Some nonisomorphic $(4t+4, 8t+6, 4t+3, 2t+2, 2t+1)$-BIBDs. *Discrete Math.* **92** (1991), *no.* 1-3, 159–172. (Vasanti N. Bhat-Nayak) **93c:05023** 05B05

— An extension of the multi-path algorithm for finding Hamilton cycles. Special volume to mark the centennial of Julius Petersen's "Die Theorie der regulären Graphs", Part II. *Discrete Math.* **101** (1992), *no.* 1-3, 171–188. (Martin Sonntag) **93g:05095** 05C45 (05C38, 05C85)

— Reconstructing graphs as subsumed graphs of hypergraphs, and some self-complementary triple systems. (English summary) *Graphs Combin.* **8** (1992), *no.* 3, 259–276. (R. L. Hemminger) **93h:05117** 05C60 (05C65)

— (*with* Stone, D. M. F.) Balanced network flows. (English summary) *Bull. Inst. Combin. Appl.* **7** (1993), 17–32. (Summary) **93j:05148** 05C85 (05C90)

Koch, B. P. (*with* Bruhn, B.) Chaotic scattering in a near-integrable system. *J. Phys. A* **25** (1992), *no.* 14, 3945–3954. (Summary) **93d:70029** 70H05 (34C23, 58F13, 70D99, 70K50)

Koch, Donald L. Hydrodynamic diffusion in dilute sedimenting suspensions at moderate Reynolds numbers. (English summary) *Phys. Fluids A* **5** (1993), *no.* 5, 1141–1155. (Summary) **93m:76067** 76R50 (76D99, 76T05)

halter-Koch, Franz *see* **Halter-Koch, Franz**

Koch, Giorgio (*with* Bruni, C.) Some results about two-mode stochastic compartmental models. *Stochastic systems and optimization (Warsaw, 1988)*, 3–17, *Lecture Notes in Control and Inform. Sci.*, 136, *Springer, Berlin*, 1989. (*see* **93d:93009**) 60K99 (92D25)

— (*with* Del Grosso, G.; Gerardi, A.) Optimality in accelerated life tests. (English summary) *Math. Oper. Res.* **17** (1992), *no.* 4, 866–881. (Harshinder Singh) **93k:62202** 62N05 (90B25)

Koch, Hans A scaling limit of the Glauber dynamics for a class of neural network models. *J. Math. Phys.* **32** (1991), *no.* 11, 3162–3167. (Min Ping Qian) **93c:82040** 82C32 (60K35, 82C20, 82C44)

Koch, Lisa K. Chains, null-chains, and CR geometry. *Trans. Amer. Math. Soc.* **338** (1993), *no.* 1, 245–261. (H. Jacobowitz) **93j:32026** 32F40 (53C56)

Koch, Per Erik Minimization of interpolating spline curves with bounded derivatives. *Mathematical methods in computer aided geometric design, II (Biri, 1991)*, 351–358, *Academic Press, Boston, MA*, 1992. (*see* **93d:65022**) 65D05 (65D07)

Koch, Richard Spezielle flächentreue Abbildungen einer nichtebenen Minimalfläche in die euklidische Ebene. (English summary) [Special area-preserving mappings of a nonplanar minimal surface into the Euclidean plane] *Proceedings of the 3rd Congress of Geometry (Thessaloniki, 1991)*, 239–243, *Aristotle Univ. Thessaloniki, Thessaloniki*, 1992. (Summary) **93d:53013** 53A10

Koch, Richard Increasing the size of a network by a constant factor can increase performance by more than a constant factor. (English summary) *SIAM J. Comput.* **21** (1992), *no.* 5, 801–823. (Qiao Li) **93j:68014** 68M10 (68M20)

Koch, Werner On a degeneracy of temporal secondary instability modes in Blasius boundary-layer flow. (English summary) *J. Fluid Mech.* **243** (1992), 319–351. (Summary) **93g:76053** 76E05 (76D10, 76E30)

Kochar, Subhash C. (*with* Hawkins, D. L.) Inference for the crossing point of two continuous CDFs. *Ann. Statist.* **19** (1991), *no.* 3, 1626–1638. (S. Rao Jammalamadaka) **93e:62125** 62G10 (62G05)

— (*with* Hawkins, D. L.; Loader, Clive R.) Testing exponentiality against IDMRL distributions with unknown change point. *Ann. Statist.* **20** (1992), *no.* 1, 280–290. (J. V. Deshpande) **93b:62071** 62G10 (62N05)

— (*with* Woodworth, George) Rank order probabilities for the dispersion problem. *Statist. Probab. Lett.* **13** (1992), *no.* 3, 203–208. (Arnold Janssen) **93e:62127** 62G10 (62F15)

— On the "triples test" for symmetry. (English summary) *Statist. Probab. Lett.* **14** (1992), *no.* 4, 311–312. (Hartmut Milbrodt) **93i:62044** 62G10

Kocharyan, A. A. Instability in superspace. *Comm. Math. Phys.* **143** (1991), *no.* 1, 27–42. (J. E. Marsden) **93d:58021** 58D17 (83C45)

Kocherga, Yu. L. Minimax forecasting in a class of linear models under interval constraints. *Soviet J. Automat. Inform. Sci.* **24** (1991), *no.* 5, 77–83 (1992); *translated from Avtomatika* **1991**, *no.* 5, 80–87, 97 (*Russian. English, Russian and Ukrainian summaries*). (Summary) **93h:93075** 93E10

Kochergin, V. P. (*with* Sklyar, S. N.) Semianalytical version of approximation of system of equations in the "b-ε" turbulence model. (English summary) *Russian J. Numer. Anal. Math. Modelling* **7** (1992), *no.* 5, 405–418. 86A05 (76F99)

Kocherlakota, Kathleen (*with* Kocherlakota, Subrahmaniam) ★ Bivariate discrete distributions. Statistics: Textbooks and Monographs, 132. *Marcel Dekker, Inc., New York*, 1992. xvi+361 *pp. ISBN* 0-8247-8702-1 (Sotiris Loukas) **93h:62003** 62–02 (62E15, 62H10)

Kocherlakota, Subrahmaniam (*with* Kocherlakota, Kathleen) ★ Bivariate discrete distributions. Statistics: Textbooks and Monographs, 132. *Marcel Dekker, Inc., New York*, 1992. xvi+361 *pp. ISBN* 0-8247-8702-1 (Sotiris Loukas) **93h:62003** 62–02 (62E15, 62H10)

Kochetkov, Yu. Yu. Singular vectors and discrete modules. II. (Russian) *Problems in group theory and homological algebra (Russian)*, 115–117, *Matematika, Yaroslav. Gos. Univ., Yaroslavl'*, 1987. (*see* **93d:20002**) 17A70

— Singular vectors of height 2. (Russian) *Problems in group theory and homological algebra (Russian)*, 128–132, *Matematika, Yaroslav. Gos. Univ., Yaroslavl'*, 1990. (Marek Golasiński) **93g:17042** 17B66 (17B70)

— (*with* Leĭtes, D. A.; Vaĭntrob, A. Yu.) New invariant differential operators on supermanifolds and pseudo-(co)homology. *General topology and applications (Staten Island, NY, 1989)*, 217–238, *Lecture Notes in Pure and Appl. Math.*, 134, *Dekker, New York*, 1991. (Akira Asada) **93j:58016** 58C50 (17B65, 58G05)

— Homology of nilpotent subalgebras of the Lie superalgebra $K(1,1)$. (Russian) *Funktsional. Anal. i Prilozhen.* **25** (1991), *no.* 4, 86–88; *translation in Functional Anal. Appl.* **25** (1991), *no.* 4, 302–303 (1992). (Hartmut Schlosser) **93d:17024** 17B56 (17A70)

— (*with* Leĭtes, D. A.) Simple Lie algebras in characteristic 2 recovered from superalgebras and on the notion of a simple finite group. *Proceedings of the International Conference on Algebra, Part 2 (Novosibirsk, 1989)*, 59–67, *Contemp. Math.*, 131, *Part 2, Amer. Math. Soc., Providence, RI*, 1992. (Guang Yu Shen) **93g:17035** 17B50 (17B20)

Kochina, N. N. On the motion of a viscous fluid in a pipe of finite length. (Russian. Russian summary) *Prikl. Mat. Mekh.* **56** (1992), *no.* 2, 335–342; *translation in J. Appl. Math. Mech.* **56** (1992), *no.* 2, 287–292. (From the text) **93g:76046** 76D99 (76M99)

polubarinova-Kochina, P. Ya. *see* **Polubarinova-Kochina, P. Ya.**

Kochinats, Lyubisha *see* **Kočinac, Ljubiša D.**

Kochkarev, B. S. Generalized-actual systems of matrices. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* **1991**, *no.* 5, 22–25; *translation in Soviet Math. (Iz. VUZ)* **35** (1991), *no.* 5, 21–24. (Konrad Engel) **93b:15022** 15A48

Kochman, Stanley O. A lambda complex for the Adams-Novikov spectral sequence for spheres. *Amer. J. Math.* **114** (1992), *no.* 5, 979–1005. (Donald M. Davis) **93f:55024** 55T15 (55Q40)

Kochneff, Elizabeth (*with* Sagher, Yoram; Tan, Ruby) On Bernstein's inequality. *Illinois J. Math.* **36** (1992), *no.* 2, 297–309. (Z. Rubinstein) **93h:42008** 42A38 (26D10, 44A15)

— (*with* Sagher, Yoram; Zhou, Ke Cheng) Homogeneous solutions of the heat equation. *J. Approx. Theory* **69** (1992), *no.* 1, 35–47. (Mario Primicerio) **93f:35085** 35K05 (35A22, 35C10)

— (*with* Sagher, Yoram) Conjugate temperatures. *J. Approx. Theory* **70** (1992), *no.* 1, 39–49. (Francesco Zirilli) **93h:35083** 35K05 (35A22)

Kochneva, T. V. A saddle point search algorithm in a problem on the plane motion of a nonlinearly viscous incompressible fluid. (Russian. Russian summary) *Boundary value problems (Russian)*, 145–152, *Perm. Politekh. Inst., Perm'*, 1990. (*see* **93g:00023**) 76A05

Kochol, Martin Varieties of modular p-algebras not containing $M_{3,3}$. *Algebra Universalis* **28** (1991), *no.* 4, 559–588. (Joel Berman) **93c:06018** 06D15 (06C05, 08B15)

— The notion and basic properties of M-transversals. *Discrete Math.* **104** (1992), *no.* 2, 191–196. (Summary) **93d:05152** 05D15 (05B35)

— A note on the arboricity of graphs. (English summary) *Graphs Combin.* **8** (1992), *no.* 4, 313–315. (C. St. J. A. Nash-Williams) **93k:05130** 05C70

Kochorbé, F. G. (*with* Kalalb, M. G.; Palistrant, M. E.) Superconductivity on the basis of a model with three intersecting energy zones with a nonphonon mechanism. (Russian. English and Russian summaries) *Teoret. Mat. Fiz.* **91** (1992), *no.* 3, 483–499; *translation*

in Theoret. and Math. Phys. **91** (1992), *no.* 3, 664–676. (Tatiana Bilgildeyeva) **93i:82081** 82D55

Kochubei, A. N. Parabolic equations over the field of p-adic numbers. (Russian) *Izv. Akad. Nauk SSSR Ser. Mat.* **55** (1991), *no.* 6, 1312–1330; *translation in Math. USSR-Izv.* **39** (1992), *no.* 3, 1263–1280. (A. Borzymowski) **93e:35050** 35K30 (35A08, 35B35)

— Selfadjoint extensions of the Schrödinger operator with a singular potential. (Russian) *Sibirsk. Mat. Zh.* **32** (1991), *no.* 3, 60–69; *translation in Siberian Math. J.* **32** (1991), *no.* 3, 401–409 (1992). (R. C. Gilbert) **93b:47097** 47E05 (34L40, 35J10, 47B25)

— The Liouville operator. (Russian. Ukrainian summary) *Ukrain. Mat. Zh.* **43** (1991), *no.* 12, 1664–1671; *translation in Ukrainian Math. J.* **43** (1991), *no.* 12, 1549–1555 (1992). (J. S. Joel) **93e:58063** 58F05 (47N99, 70H05)

— Manifolds with an invariant almost product semi-Riemannian structure. (Russian. Russian and Ukrainian summaries) *Ukraïn. Mat. Zh.* **44** (1992), *no.* 7, 926–931; *translation in Ukrainian Math. J.* **44** (1992), *no.* 7, 836–840 (1993). (V. Oproiu) **93m:53024** 53C05 (53C15, 53C30)

Kocić, Ljubiša M. (*with* Milovanović, G. V.) Integral spline operators in CAGD. *Atti Sem. Mat. Fis. Univ. Modena* **39** (1991), *no.* 2, 433–454. (Shou Shan Jiang) **93b:41018** 41A15 (65D17)

— Approximation theorems for functions convex with respect to Chebyshev system. *Univ. Beograd. Publ. Elektrotehn. Fak. Ser. Mat.* **2** (1991), 3–10. (Joseph M. Lambert) **93b:41033** 41A50 (41A65)

— (*with* Della Vecchia, B.) Linear positive operators and their degeneracy sets. (English summary) *Atti Sem. Mat. Fis. Univ. Modena* **40** (1992), *no.* 2, 689–703. (George A. Anastassiou) **93k:41021** 41A36

Kocić, V. Lj. (*with* DeVault, R.; Ladas, G.) Global stability of a recursive sequence. *Dynamic Systems Appl.* **1** (1992), *no.* 1, 13–21. (Sui Sun Cheng) **93b:39002** 39A11 (39A10)

— (*with* Ladas, G.) Linearized oscillations for difference equations. *Hiroshima Math. J.* **22** (1992), *no.* 1, 95–102. (Shao Zhu Chen) **93e:39007** 39A12 (34K15, 92B20)

— (*with* Ladas, G.; Qian, Chuan Xi) Linearized oscillations in nonautonomous delay differential equations. (English summary) *Differential Integral Equations* **6** (1993), *no.* 3, 671–683. (Binggen Zhang) **93k:34159** 34K15

Kocięcki, M. (*with* Banaszuk, A.; Beauchamps, G.; Lewis, Frank L.) Observability with unknown input and dual properties for singular systems. (English summary) *Mathematical and intelligent models in system simulation, I, II* (*Brussels*, 1990), 125–129, *IMACS Ann. Comput. Appl. Math.*, 10, 11, *Baltzer, Basel*, 1991. (*see* **93c:93005**) 93B07

— (*with* Banaszuk, A.; Lewis, Frank L.) Kalman decomposition for implicit linear systems. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 10, 1509–1514. (Henk Nijmeijer) **93h:93035** 93C05 (93B25, 93B27)

Kočinac, Ljubiša D. (*with* Cammaroto, F.; Bella, Angelo) Some results on splittability of topological spaces. *Atti Accad. Peloritana Pericolanti Cl. Sci. Fis. Mat. Natur.* **68** (1990), 41–60 (1992). (Summary) **93c:54001** 54A20 (54A25, 54C05, 54C10)

— (*with* Predić, Bogoljub) Maximal topologies. (Russian. Serbo-Croatian summary) *Mat. Vesnik* **42** (1990), *no.* 3-4, 211–215. (G. D. Dimov) **93h:54018** 54D25 (54A10, 54D20)

Kock, Anders Algebras for the partial map classifier monad. *Category theory* (*Como*, 1990), 262–278, *Lecture Notes in Math.*, 1488, *Springer, Berlin*, 1991. (C. J. Mikkelsen) **93g:18012** 18C20

— (*with* Moerdijk, Ieke) Every étendue comes from a local equivalence relation. (English summary) *J. Pure Appl. Algebra* **82** (1992), *no.* 2, 155–174. (M. Barr) **93i:18005** 18B25 (18E20)

Kõck, Bernhard The Lefschetz theorem in higher equivariant K-theory. *Comm. Algebra* **19** (1991), *no.* 12, 3411–3422. (Steven E. Landsburg) **93g:19008** 19E99

— Das Adams-Riemann-Roch-Theorem in der höheren äquivarianten K-Theorie. [The Adams-Riemann-Roch theorem in higher equivariant K-theory] *J. Reine Angew. Math.* **421** (1991), 189–217. (Wayne Raskind) **93g:14015** 14C40 (14C35, 19L10, 55S25)

— Higher K'-groups of integral group rings. *K-Theory* **5** (1991), *no.* 2, 177–187. (Ian Hambleton) **93a:19002** 19D50 (19D99, 20C05)

Kočvara, Michal (*with* Outrata, J. V.) A nondifferentiable approach to the solution of optimum design problems with variational inequalities. (English summary) *System modelling and optimization* (*Zurich*, 1991), 364–373, *Lecture Notes in Control and Inform. Sci.*, 180, *Springer, Berlin*, 1992. (*see* **93e:90003**) 49J40 (49Q10)

— An algebraic study of a local multigrid method for variational problems. (English summary) *Appl. Math. Comput.* **51** (1992), *no.* 1, 17–41. (From the summary) **93f:65083** 65N30 (49M05, 65K10, 65N55)

— An iterative method for adaptive finite element computation. (English summary) Reliability in computational mechanics (Kraków, 1991). *Comput. Methods Appl. Mech. Engrg.* **101** (1992), *no.* 1-3, 433–442. (Summary) **93j:65181** 65N30 (73V05)

Koczan, L. On radii of univalence, starlikeness and bounded turning. (Polish summary) *Ann. Univ. Mariae Curie-Skłodowska Sect. A* **43** (1989), 15–21 (1991). (Summary) **93b:30011** 30C45 (30C55)

— Typically real functions convex in the direction of the real axis. (Polish summary) *Ann. Univ. Mariae Curie-Skłodowska Sect. A* **43** (1989), 23–29 (1991). (Summary) **93b:30012** 30C45

— (*with* Szapiel, W.) Extremal problems in some classes of measures. III. Functions of positive real part. (Polish summary) *Ann. Univ. Mariae Curie-Skłodowska Sect. A* **43** (1989), 31–53 (1991). (S. Sridhar) **93c:30032** 30C75 (26E25, 28B20, 30C45)

— (*with* Szapiel, W.) Extremal problems in some classes of measures. IV. Typically real functions. (Polish summary) *Ann. Univ. Mariae Curie-Skłodowska Sect. A* **43** (1989), 55–68 (1991). (S. Sridhar) **93c:30033** 30C75 (26E25, 28B20, 30C45)

Kóczy, László T. Fuzzy graphs in the evaluation and optimization of networks. Industrial engineering methods (Seattle, WA, 1989). *Fuzzy Sets and Systems* **46** (1992), *no.* 3, 307–319. (Summary) **93c:05109** 05C99 (04A72, 68M10)

Koda, Masato Sensitivity analysis of stochastic dynamical systems. (English summary) *Internat. J. Systems Sci.* **23** (1992), *no.* 12, 2187–2195. (Summary) **93i:93113** 93E03 (93B35)

Koda, Takashi The first Chern class of Riemannian 3-symmetric spaces: the classical case. *Note Mat.* **10** (1990), *no.* 1, 141–156. (Philippos J. Xenos) **93c:53037** 53C35 (53C30)

— (*with* Watanabe, Yoshiyuki) Geometry of $SU(2) \times SU(2) \times U(1)/U(1) \times U(1)$. *Math. J. Toyama Univ.* **14** (1991), 193–207. (Philippos J. Xenos) **93j:53065** 53C30

Koda, Yasunori Orderly algorithms for generating k-colored graphs. (English summary) Proceedings of the Twenty-third Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, FL, 1992). *Congr. Numer.* **91** (1992), 223–238. (Summary) **93j:05149** 05C85 (05C15)

Kodaira, Kunihiko *see* **Takagi, Teiji, 93b:01049**

Kodaka, Kazunori A note on monomorphisms of irrational rotation C^*-algebras into their matrix algebras. *Ryukyu Math. J.* **4** (1991), 25–33. (Yasuo Watatani) **93b:46119** 46L35 (46L37, 46L80)

Kodama, Akio Characterizations of certain weakly pseudoconvex domains in $\mathbf{C}^n$ from the viewpoint of biholomorphic automorphism groups. *Several complex variables and complex geometry, Part 2* (*Santa Cruz, CA*, 1989), 291–296, *Proc. Sympos. Pure Math.*, 52, *Part 2, Amer. Math. Soc., Providence, RI*, 1991. (From the introduction) **93e:32020** 32F15 (32A07, 32H20)

— A characterization of certain domains with good boundary points in the sense of Greene-Krantz. II. *Tôhoku Math. J.* (2) **43** (1991), *no.* 1, 9–25. (Sergey Ivashkovich) **93a:32002** 32A07 (32H20)

— (*with* Krantz, Steven G.; Ma, Dao Wei) A characterization of generalized complex ellipsoids in $\mathbf{C}^n$ and related results. *Indiana Univ. Math. J.* **41** (1992), *no.* 1, 173–195. (Ian Graham) **93d:32033** 32H02

Kodama, Kouzi (*with* Sakuma, Makoto) Symmetry groups of prime knots up to 10 crossings. *Knots* 90 (*Osaka*, 1990), 323–340, *de Gruyter, Berlin*, 1992. (G. Burde) **93h:57012** 57M25 (57–04)

Kodama, Shinzo (*with* Ohta, Yoshito; Maeda, Hajime) Unit interpolation in H_∞: bounds of norm and degree of interpolants. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, I* (*Kobe*, 1991), 281–286, *Mita, Tokyo*, 1992. (*see* **93g:93005**) 93B36

— (*with* Ohta, Yoshito; Maeda, Hajime) l_1-interpolation problem: J-contraction unimodular factorizability. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, I* (*Kobe*, 1991), 331–336, *Mita, Tokyo*, 1992. (*see* **93g:93005**) 93B28 (93B36)

— (*with* Ohta, Yoshito; Maeda, Hajime) Rational approximation of L_1-optimal controller. (English summary) *Robust control* (*Tokyo*, 1991), 40–47, *Lecture Notes in Control and Inform. Sci.*, 183, *Springer, Berlin*, 1992. (*see* **93f:93006**) 93B36 (93C80)

— (*with* Takai, Shigemasa; Ushio, Toshimitsu) Decentralized state feedback control of large-scale discrete event systems. (Japanese. English summary) *Trans. Inst. Systems Control Inform. Engrg.* **6** (1993), *no.* 4, 196–203. 93A14 (93C55)

— *see also* **Recent advances in mathematical theory of systems, control, networks and signal processing, 93g:93005** *and* **93g:93006**

Kodama, Tetsuo (*with* Washio, Tadashi) Explicit formulas of L-functions of some hyperelliptic curves. *Sci. Bull. Fac. Ed. Nagasaki Univ. No.* 47 (1992), 1–9. (Amílcar Pacheco) **93i:11069** 11G20 (14G10, 14G15)

Kodama, Yuji (*with* Gibbons, John) Integrability of the dispersionless KP hierarchy. *Nonlinear world, Vol.* 1 (*Kiev*, 1989), 166–180, *World Sci. Publishing, River Edge, NJ*, 1990. (*see* **93b:00012**) 58F07 (35Q58)

— (*with* Bloch, Anthony M.) Dispersive regularization of the Whitham equation for the Toda lattice. *SIAM J. Appl. Math.* **52** (1992), *no.* 4, 909–928. (Victor V. Zharinov) **93g:35123** 35Q53 (34A20, 35L67, 58F07, 70F99)

Kodama, Yukihiro *see* **Proceedings: Topology Symposium, 93d:54004**

Kodiyalam, Vijay Homological invariants of powers of an ideal. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 3, 757–764. (Jürgen Herzog) **93i:13022** 13H15 (13D40)

Kodnár, Rudolf (*with* Tesár, Alexander) Some remarks to transfer matrix method. *Acta Tech. ČSAV* **36** (1991), *no.* 6, 717–735. (Introduction) **93a:73059** 73K12 (34A30, 73D30)

Kodogeorgiou, A. (*with* Jackson, E. Atlee) Entrainment and migration controls of two-dimensional maps. *Phys. D* **54** (1992), *no.* 3, 253–265. (R. Dilão) **93c:58100** 58F08 (58F13)

Koebbe, Matthew (*with* Abraham, Ralph; Keith, Alexander; Mayer-Kress, Gottfried) Computational unfolding of double-cusp models of opinion formation. *Internat. J. Bifur. Chaos Appl. Sci. Engrg.* **1** (1991), *no.* 2, 417–430. (D. R. J. Chillingworth) **93b:58023** 58C28 (58–04, 58F13, 58F14, 92K10)

Koebe, Manfred On a new class of intersection graphs. (English summary) *Fourth Czechoslovakian Symposium on Combinatorics, Graphs and Complexity* (*Prachatice*, 1990), 141–143, *Ann. Discrete Math.*, 51, *North-Holland, Amsterdam*, 1992. (*see* **93i:05004**) 05C75

Koecher, Max *see* **Krieg, Aloys, 93m:01073**

Koehler, Kenneth Rowland (*with* Mansouri, F.; Vaz, Cenalo; Witten, L.) Scattering in Chern-Simons gravity. (English summary) *Nonperturbative methods in low-dimensional quantum field theories* (*Debrecen*, 1990), 421–435, *World Sci. Publishing, River Edge, NJ*, 1991. (*see* **93f:81005**) 81T40 (81–02, 81T30)

Koelink, H. T. Quantum group-theoretic proof of the addition formula for continuous q-Legendre polynomials. *Deformation theory and quantum groups with applications to mathematical physics* (*Amherst, MA*, 1990), 139–140, *Contemp. Math.*, 134, *Amer. Math. Soc., Providence, RI*, 1992. (*see* **93e:17001**) 33D80 (17B37, 33D45, 81R50)

— (*with* Koornwinder, T. H.) q-special functions, a tutorial. *Deformation theory and quantum groups with applications to mathematical physics* (*Amherst, MA*, 1990), 141–142, *Contemp. Math.*, 134, *Amer. Math. Soc., Providence, RI*, 1992. (*see* **93e:17001**) 33D15 (33–01, 33D45)

Koenig, Herbert A. (*with* Bolle, Norman A.) Nonlinear formulation for elastic rods in three-space. (English summary) *Internat. J. Non-Linear Mech.* **28** (1993), *no.* 3, 329–335. (Summary) **93k:73049** 73K05

Koepf, Wolfram Parallel accessible domains and domains that are convex in some direction. (English summary) *Partial differential equations with complex analysis*, 93–105, *Pitman Res. Notes Math. Ser.*, 262, *Longman Sci. Tech., Harlow*, 1992. (A. W. Goodman) **93m:30012** 30C45

— Power series in computer algebra. (English summary) *J. Symbolic Comput.* **13** (1992), *no.* 6, 581–603. (Summary) **93j:68087** 68Q40

Koetsier, Teun ★ Lakatos' philosophy of mathematics. A historical approach. Studies in the History and Philosophy of Mathematics, 3. *North-Holland Publishing Co., Amsterdam*, 1991. xii+312 *pp. ISBN* 0-444-88944-2 (Pierluigi Miraglia) **93a:00005** 00A30 (01A60, 03A05)

Koga, Toshikatsu (*with* Kryachko, E. S.; Ludeña, Eduardo V.) Formulation of N- and v-representable density functional theory. III. Excited states. (English summary) *J. Math. Chem.* **11** (1992), *no.* 4, 325–339. (A. O. Barut) **93m:81164** 81V45

Kogalovskiĭ, S. R. (*with* Soldatova, V. V.) Congruence lattices of partial algebras. II. (Russian) *Ordered sets and lattices, No.* 10 (*Russian*), 56–69, *Saratov. Gos. Univ., Saratov*, 1991. (Danica Jakubíková-Studenovská) **93h:08005** 08A55 (08A30)

— (*with* Brodskiĭ, S. D.) Limits with respect to ultrafilters as a bridge between topology and algebra. (Russian) *Theory of semigroups and its applications, No.* 10 (*Russian*), 42–71, *Saratov. Gos. Univ., Saratov*, 1991. (Jan Chvalina) **93k:08006** 08A65 (08C10, 08C15, 54A20)

— Lattices of equational theories of unary algebras. (Russian) *Studia Sci. Math. Hungar.* **26** (1991), *no.* 1, 53–62. (Danica Jakubíková-Studenovská) **93b:08003** 08A60 (08B05, 20M99)

Kogan, I. I. *see* **Kogan, Ya. I.**

Kogan, Ian I. *see* **Kogan, Ya. I.**

Kogan, Jacob Computation of stability radius for families of bivariate polynomials. (English summary) *Multidimens. Systems Signal Process.* **4** (1993), *no.* 2, 151–165. (Adam Lozowicki) **93m:93071** 93D09 (93B40)

Kogan, M. M. (*with* Neĭmark, Yu. I.) Adaptive control of a stochastic object with an unmeasurable state under conditions of nonidentifiability. (Russian. Russian summary) *Avtomat. i Telemekh.* **1992**, *no.* 6, 114–122; *translation in Automat. Remote Control* **53** (1992), *no.* 6, *part* 2, 884–891. (Bojan Popović) **93i:93134** 93E35

Kogan, Nataly (*with* Agha, Nader; Hershkowitz, Daniel) A solution to an inverse height and level characteristics problem. (English summary) *Linear and Multilinear Algebra* **31** (1992), *no.* 1-4, 139–146. (Jia-yu Shao) **93k:15047** 15A99

Kogan, Ya. A. (*with* Birman, Alexander) Asymptotic evaluation of closed queueing networks with many stations. (English summary) *Comm. Statist. Stochastic Models* **8** (1992), *no.* 3, 543–563. (Summary) **93e:60180** 60K25

— Another approach to asymptotic expansions for large closed queueing networks. (English summary) *Oper. Res. Lett.* **11** (1992), *no.* 5, 317–321. (Summary) **93f:90073** 90B22 (90C35)

Kogan, Ya. I. (*with* Bilal, Adel; Fok, V. V.) On the origin of W-algebras. *Nuclear Phys. B* **359** (1991), *no.* 2-3, 635–672. (Vladimir A. Stukopin) **93b:81090** 81R10 (17B68, 81T40)

— Quantum Liouville theory from topologically massive gravity: $1 + 1$ cosmological constant as square of $2 + 1$ graviton mass. *Nuclear Phys. B* **375** (1992), *no.* 2, 362–380. (Ilya Shapiro) **93h:81127** 81T40

— Quantum versus continuum spectrum of compactification radius in string theory. *Phys. Lett. B* **281** (1992), *no.* 3-4, 233–240. (Summary) **93c:81175** 81T30

Kogan, Yaakov *see* **Kogan, Ya. A.**

Koganov, A. V. Inductor spaces and processes. (Russian) *Dokl. Akad. Nauk* **324** (1992), *no.* 5, 953–958; *translation in Soviet Phys. Dokl.* **37** (1992), *no.* 6, 275–278. (Introduction) **93i:93008** 93A05 (03D99, 54H99, 93C85)

Koganov, L. M. ★ Псевдопорождаемые двухиндексные последовательности. (Russian. Russian summary) [Pseudogenerable two-index sequences] With a preface by A. S. Solodovnikov. "*Nedra*", *Moscow*, 1989. 88 *pp. ISBN* 5-247-02206-8 (Editors) **93m:05010** 05A10

— Coding and enumeration of spanning trees in Kleitman-Golden graphs. (Russian. English and Ukrainian summaries) *Kibernetika* (*Kiev*) **1991**, *no.* 3, 1–7, 133; *translation in Cybernetics* **27** (1991), *no.* 3, 311–319 (1992). (Mirko Křivánek) **93e:05043** 05C30 (05C05)

Kogut, John B. (*with* Catterall, Simon M.; Renken, Ray L.) Numerical study of field theories coupled to 2D quantum gravity. (English summary) Random surfaces and 2D quantum gravity (Barcelona, 1991). *Nuclear Phys. B Proc. Suppl.* **25A** (1992), 69–86. (Summary) **93f:81149** 81T80 (81T40)

— (*with* Renken, Ray L.; Catterall, Simon M.) Three-dimensional quantum gravity coupled to Ising matter. (English summary) *Nuclear Phys. B* **389** (1993), *no.* 3, 601–610. (Summary) **93j:83043** 83C45 (83C27)

Kogut, P. I. Regularity of solutions, and the state space of stochastic control systems of neutral type. (Russian. Russian summary) *Differential equations and their applications in physics* (*Russian*), 86–92, 111, *Dnepropetrovsk. Gos. Univ., Dnepropetrovsk*, 1989. (*see* **93g:00024**) 34K35 (34K40, 34K50)

— The stochastic Itô differential. (Russian. Russian summary) *Differential equations and their applications in physics* (*Russian*), 75–82, 107, *Dnepropetrovsk. Gos. Univ., Dnepropetrovsk*, 1990. (*see* **93k:00023**) 60H20

— State exponential stability of a denumerable system of Volterra integral equations. *Soviet J. Automat. Inform. Sci.* **24** (1991), *no.* 5, 37–46 (1992); *translated from Avtomatika* **1991**, *no.* 5, 38–47, 96 (*Russian. English, Russian and Ukrainian summaries*). (Summary) **93g:45003** 45D05 (34H05, 93D05)

Koh, E. L. On the Jensen functional equation in distributions. (English summary) *Progr. Math.* (*Varanasi*) **24** (1990), *no.* 1-2, 87–93. (Summary) **93m:39009** 39B52 (46F10)

— (*with* Li, C. K.) The complex Hankel transformation on M'_μ. Proceedings of the Twenty-first Manitoba Conference on Numerical Mathematics and Computing (Winnipeg, MB, 1991). *Congr. Numer.* **87** (1992), 145–151. (Summary) **93d:44009** 44A15

— (*with* Deeba, E. Y.) A characterization of the generalized Meijer transform. (English summary) *Internat. J. Math. Math. Sci.* **15** (1992), *no.* 4, 823–827. (Summary) **93i:44006** 44A15 (46F12)

— (*with* Li, C. K.) The Hankel transformation of Banach-space-valued generalized functions. *Proc. Amer. Math. Soc.* **119** (1993), *no.* 1, 153–163. (Jean Lavoine) **93k:46032** 46F12 (44A15)

Koh, H. M. (*with* Park, J.-h.; Kim, J.) Fluid-structure interaction analysis by a coupled boundary element-finite element method in time domain. (English summary) *Boundary element technology, VII* (*Albuquerque, NM*, 1992), 227–243, *Comput. Mech., Southampton*, 1992. (*see* **93b:65002**) 76M15 (65N30, 65N38, 73K70, 76M10)

Koh, In Gyu (*with* Chung, H. J.) Solutions to the quantum Yang-Baxter equation for the exceptional Lie algebras with a spectral parameter. *J. Math. Phys.* **32** (1991), *no.* 9, 2406–2408. (Summary) **93f:82019** 82B23 (17B37)

— (*with* Cho, H. S.; Kim, J. D.) D_5 affine Toda field theory. *J. Math. Phys.* **33** (1992), *no.* 8, 2889–2897. (Summary) **93d:81105** 81T10 (58F07)

— (*with* Han, Yeong Deok) Topological nature of the Aharonov-Casher effect. *Phys. Lett. A* **167** (1992), *no.* 4, 341–344. (Summary) **93c:81266** 81V10

Koh, Jae-moon (*with* Tcha, Dong-wan) Local broadcasting in a tree under minisum criterion. (English summary) *Networks* **23** (1993), *no.* 1, 71–79. (Summary) **93j:90039** 90B12 (68M10)

Koh, Jee (*with* Eisenbud, David) Some linear syzygy conjectures. *Adv. Math.* **90** (1991), *no.* 1, 47–76. (Summary) **93e:13019** 13D02 (13D25)

— (*with* Huneke, Craig L.) Resolutions of almost complete intersections. *J. Algebra* **145** (1992), *no.* 1, 22–31. (Andrew Kustin) **93e:13023** 13D25 (13C40, 13H10)

Koh, Khee Meng (*with* Teo, C. P.) Chromatic equivalence of a graph and its complement. *Bull. Inst. Combin. Appl.* **3** (1991), 81–82. (T. T. Raghunathan) **93e:05032** 05C15 (05C75)

— Inequalities associated with the principle of inclusion and exclusion. *Math. Medley* **19** (1991), *no.* 2, 43–52. (Editors) **93f:05011** 05A19

— (*with* Peng, Yee-Hock; Chen, Chuan Chong) On edge-disjoint spanning forests of multigraphs. *Soochow J. Math.* **17** (1991), *no.* 2, 317–326. (L. W. Beineke) **93b:05045** 05C05 (05C70)

— (*with* Chen, Chuan Chong) ★ Principles and techniques in combinatorics. *World Scientific Publishing Co., Inc., River Edge, NJ*, 1992. xii+298 *pp. ISBN* 981-02-1114-7; 981-02-1139-2 (Peter Kirschenhofer) **93h:05001** 05-01

— (*with* Teo, C. P.) Some results on chromatically unique graphs. *Proceedings of Asian Mathematical Conference*, 1990 (*Hong Kong*, 1990), 258–262, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93b:00022**) 05C15

— (*with* Peng, Yee-Hock; Chen, Chuan Chong) On the existence of balanced graphs with given edge-toughness and edge-connectivity. (English summary) *Ars Combin.* **33** (1992), 129–143. (Summary) **93d:05082** 05C35

— (*with* Poh, Roger K. S.) On the spectrum of the closed-set lattice of a graph. *Australas. J. Combin.* **5** (1992), 253–259. (Summary) **93a:05123** 05C99

— (*with* Teo, C. P.) The number of shortest cycles and the chromatic uniqueness of a graph. *J. Graph Theory* **16** (1992), *no.* 1, 7–15. (R. C. Read) **93b:05061** 05C15 (05C35, 05C38)

— (*with* Chen, Chuan Chong; Peng, Yee-Hock) On the higher-order edge toughness of a graph. (English summary) Graph theory and combinatorics (Marseille-Luminy, 1990). *Discrete Math.* **111** (1993), *no.* 1-3, 113–123. (Summary) **93m:05114** 05C40

Koh, Sung Eun (*with* Chung, In Jae) A note on totally geodesic maps. *Bull. Korean Math. Soc.* **29** (1992), *no.* 2, 233–236. (Xiao Wei Peng) **93j:58031** 58E20 (53C40)

Koh, Winston T. H. A note on modelling tournaments. (English summary) *Z. Nationalökonom.* **55** (1992), *no.* 3, 297–308. (Summary) **93e:90078** 90D40 (90D60)

Kohara, Takashi (*with* Suzuki, Shin'ichi) Some remarks on knots and links in spatial graphs. (English summary) *Knots* 90 (*Osaka*, 1990), 435–445, *de Gruyter, Berlin*, 1992. (Peter R. Cromwell) **93i:57004** 57M15

Kohatsu-Higa, Arturo Weak convergence of infinite order U-processes. *Statist. Probab. Lett.* **12** (1991), *no.* 2, 145–150. (Summary) **93a:60032** 60F05 (62E20)

Kohayakawa, Y. (*with* Wojciechowski, Jerzy) On small graphs with highly imperfect powers. *Discrete Math.* **104** (1992), *no.* 3, 245–261. (Mario Gionfriddo) **93h:05077** 05C15

Kohda, Atsuhito Some remarks on the conformal transformations of the unit disk. (English summary) *J. Math. Tokushima Univ.* **26** (1992), 31–37 (1993). (Summary) **93k:30032** 30C99 (49Q05)

Kohlbeck, F. A method for the numerical integration of unequally spaced data. *Appl. Math. Comput.* **50** (1992), *no.* 1, 45–49. (Summary) **93b:65044** 65D30

Kohlenbach, Ulrich Pointwise hereditary majorization and some applications. *Arch. Math. Logic* **31** (1992), *no.* 4, 227–241. (Peter Päppinghaus) **93b:03106** 03F35 (03D65, 03F10, 03F50)

— Remarks on Herbrand normal forms and Herbrand realizations. *Arch. Math. Logic* **31** (1992), *no.* 5, 305–317. (Roman Murawski) **93d:03060** 03F05 (03F30, 03F35)

Köhler, Adelhard E. A fuzzy symmetry concept for forms with imperfect symmetries. *Comput. Math. Appl.* **22** (1991), *no.* 9, 35–50. (Summary) **93d:51045** 51M99 (04A72)

— A second approach to fuzzy symmetries: fuzzy symmetry requirements. (English summary) *Comput. Math. Appl.* **25** (1993), *no.* 1, 17–34. 00A69 (04A72)

Köhler, Egmont Zur Klassifikation und Komplexität von Akkorden. [On the classification and complexity of chords] With an afterword by Christoph J. Scriba. Mathematische Wissenschaften gestern und heute. 300 Jahre Mathematische Gesellschaft in Hamburg, Teil 2. *Mitt. Math. Ges. Hamburg* **12** (1991), *no.* 2, 363–394. (J. S. Joel) **93d:00020** 00A69 (01A70, 05A99)

— *see also* **Colbourn, Charles J. et al., 93c:01034**; **Lenz, Hanfried, 93c:01035** *and* **Designs and graphs**

Kohler, W. *see* **Kohler, Werner E.**

Köhler, Walter (*with* Gasser, Theo; Kneip, Alois) A flexible and fast method for automatic smoothing. *J. Amer. Statist. Assoc.* **86** (1991), *no.* 415, 643–652. (G. Roussas) **93d:62063** 62G05 (62G20, 62J02)

Kohler, Werner E. (*with* Asch, M.; Papanicolaou, G. C.; Postel, M.; White, Benjamin S.) Frequency content of randomly scattered signals. *SIAM Rev.* **33** (1991), *no.* 4, 519–625. (Marcel Ovidiu Vlad) **93f:73041** 73D35 (60H15, 73B35, 76Q05, 86A15)

Kohli, J. K. A framework including the theories of continuous functions and certain noncontinuous functions. *Note Mat.* **10** (1990), *no.* 1, 37–45. (Summary) **93c:54005** 54C08

— (*with* Ajmal, Naseem) Properties of hyperconnected spaces, their mappings into Hausdorff spaces and embeddings into hyperconnected spaces. *Acta Math. Hungar.* **60** (1992), *no.* 1-2, 41–49. (Vesko Valov) **93m:54025** 54C08 (54C05, 54D05)

— D-continuous functions, D-regular spaces and D-Hausdorff spaces. (English summary) *Bull. Calcutta Math. Soc.* **84** (1992), *no.* 1, 39–46. (Summary) **93k:54035** 54C08

— (*with* Kumar, Rajesh) On fuzzy inner product spaces and fuzzy co-inner product spaces. (English summary) *Fuzzy Sets and Systems* **53** (1993), *no.* 2, 227–232. (Summary) **93m:46096** 46S40 (04A72, 46C99)

Kohli, Rajeev (*with* Krishnamurti, Ramesh) A total-value greedy heuristic for the integer knapsack problem. (English summary) *Oper. Res. Lett.* **12** (1992), *no.* 2, 65–71. (Regina Hildenbrandt) **93k:90055** 90C10 (90A99, 90C27)

Kohlmann, Peter Curvature measures and Steiner formulae in space forms. *Geom. Dedicata* **40** (1991), *no.* 2, 191–211. (J. E. Brothers) **93d:53070** 53C40 (52A39)

Kohmoto, Mahito (*with* Hatsugai, Yasuhiro) Exactly solvable model of correlated lattice electrons in any dimensions. (English summary) *J. Phys. Soc. Japan* **61** (1992), *no.* 6, 2056–2069. (Summary) **93g:82033** 82B23 (82D30)

— Dynamical system related to quasiperiodic Schrödinger equations in one dimension. *J. Statist. Phys.* **66** (1992), *no.* 3-4, 791–796. (Eugen Belokolos) **93b:39003** 39A12 (58F19)
— (*with* Hatsugai, Yasuhiro; Wu, Yong Shi[1]) Braid groups, anyons and gauge invariance: on topologically nontrivial surfaces. (English summary) Low-dimensional field theories and condensed matter physics (Kyoto, 1991). *Progr. Theoret. Phys. Suppl. No.* 107 (1992), 101–119. (Summary) **93m:81090** 81S99 (20F36, 81–02, 81T99)
Kohn, J. J. Microlocal analysis on three-dimensional CR manifolds. *Geometry and complex variables* (*Bologna*, 1988/1990), 229–238, *Lecture Notes in Pure and Appl. Math.*, 132, *Dekker, New York*, 1991. (Nguyen Huu Duc) **93a:32028** 32F40 (32F20, 35A27)
Kohn, Robert Jacob (*with* Ansley, Craig F.; Wong, Chi-Ming) Nonparametric spline regression with autoregressive moving average errors. (English summary) *Biometrika* **79** (1992), *no.* 2, 335–346. (Summary) **93h:62085** 62G05 (62M10)
— (*with* Ansley, Craig F.; Shively, Thomas S.) Computing *p*-values for the generalized Durbin-Watson and other invariant test statistics. (English summary) *J. Econometrics* **54** (1992), *no.* 1-3, 277–300. (Peter M. Robinson) **93k:62211** 62P20 (62M10)
Kohn, Robert V. The relaxation of a double-well energy. *Contin. Mech. Thermodyn.* **3** (1991), *no.* 3, 193–236. (M. A. Grinfel'd) **93d:73014** 73B30 (49J10, 73C99, 73V25, 80A22)
— (*with* Filippas, Stathis) Refined asymptotics for the blowup of $u_t - \Delta u = u^p$. *Comm. Pure Appl. Math.* **45** (1992), *no.* 7, 821–869. (Victor A. Galaktionov) **93g:35066** 35K55 (35B40, 35K65)
Kohnert, Axel Weintrauben, Polynome, Tableaux. [Grapes, polynomials, tableaux] Dissertation, Universität Bayreuth, Bayreuth, 1990. *Bayreuth. Math. Schr. No.* 38 (1991), 1–97. (Volker Strehl) **93d:05155** 05E10 (05A10, 05A17, 14M15, 20C30)
— (*with* Kerber, Adalbert; Lascoux, Alain) SYMMETRICA, an object oriented computer-algebra system for the symmetric group. (English summary) *J. Symbolic Comput.* **14** (1992), *no.* 2-3, 195–203. (Summary) **93g:68062** 68Q40 (05E10, 20C30, 20C40)
hirata-Kohno, Noriko *see* **Hirata-Kohno, Noriko**
Kohno, Toshitake Invariants of 3-manifolds based on conformal field theory and Heegaard splitting. *Quantum groups* (*Leningrad*, 1990), 341–349, *Lecture Notes in Math.*, 1510, *Springer, Berlin*, 1992. (Emil Vinţeler) **93j:57008** 57N10 (81T40)
— Three-manifold invariants derived from conformal field theory and projective representations of modular groups. Topological and quantum group methods in field theory and condensed matter physics. *Internat. J. Modern Phys. B* **6** (1992), *no.* 11-12, 1795–1805. (Yongwu Rong) **93k:57015** 57M25 (57N10, 81T40)
— Topological quantum field theory—applications to 3-dimensional manifolds. (Japanese) *Sūgaku* **44** (1992), *no.* 1, 29–43. (Toshie Takata) **93k:57038** 57N10 (57M25, 81T40)
Koibuchi, Hiroshi Virasoro algebra in the KN algebra: bosonic string with fermionic ghosts on Riemann surfaces. *Modern Phys. Lett. A* **6** (1991), *no.* 31, 2861–2870. (P. D. Jarvis) **93c:81066** 81R10 (17B65, 17B68, 81T30)
Koicheva, Maia On an inequality and the related characterization of the gamma distribution. (English summary) *Appl. Math.* **38** (1993), *no.* 1, 11–18. (Summary) **93k:60049** 60E15 (62E10)
Koikawa, Takao (*with* Azuma, Takahiro) Classification of an infinite series of static solutions to the vacuum Einstein equations. (English summary) *Gen. Relativity Gravitation* **24** (1992), *no.* 12, 1223–1234. (Ciprian Dariescu) **93j:83020** 83C20 (35Q51, 83C15)
Koike, F. Explicit formulae of angular momentum coupling coefficients. (English summary) *Comput. Phys. Comm.* **72** (1992), *no.* 2-3, 154–164. (Summary) **93i:81054** 81R05 (22E70, 81–04)
Koike, Masao Hypergeometric series over finite fields and Apéry numbers. *Hiroshima Math. J.* **22** (1992), *no.* 3, 461–467. (F. Beukers) **93i:11146** 11T24 (11A07, 11L10)
Koiki, Satoshi On strong C^0-equivalence of real analytic functions. *J. Math. Soc. Japan* **45** (1993), *no.* 2, 313–320. (Paulo Ferreira da Silva Porto, Jr.) **93k:58023** 58C27
Koiller, Jair (*with* Cascon, Ana; Rezende, Sergio M.) Bifurcations of mode equations: spin waves. *Phys. D* **54** (1991), *no.* 1-2, 98–124. (Tatiana Bilgildeyeva) **93g:82100** 82D30 (34C23, 34L40, 58F14, 58F40)
— Reduction of some classical nonholonomic systems with symmetry. *Arch. Rational Mech. Anal.* **118** (1992), *no.* 2, 113–148. (Larisa E. Veselova) **93e:70005** 70F25 (58F05, 70G99, 70H33)
Koinuma, Hideyuki (*with* Sakai, Ken-ichiro; Morisue, Mititada) Simulation of neural network digital adder and multiplier. *Electron. Comm. Japan Part III Fund. Electron. Sci.* **75** (1992), *no.* 2, 47–58. 68T05
Koiso, Norihito On rotationally symmetric Hamilton's equation for Kähler-Einstein metrics. *Recent topics in differential and analytic geometry*, 327–337, *Adv. Stud. Pure Math.*, 18-I, *Academic Press, Boston, MA*, 1990. (Hajime Tsuji) **93d:53057** 53C25 (32L07, 53C55, 58G30)
— Motion of a springy circle wire. *Sci. Rep. College Gen. Ed. Osaka Univ.* **40** (1991), *no.* 1-2, 15–19. (Summary) **93d:73056** 73K70 (35Q99, 76D99)
— Elasticae in a Riemannian submanifold. *Osaka J. Math.* **29** (1992), *no.* 3, 539–543. (Joel L. Weiner) **93g:58031** 58E10 (53C22)
Koivo, H. N. (*with* Tanttu, J. T.) Tuning of PID controllers: survey of SISO and MIMO techniques. (English summary) *Intelligent tuning and adaptive control* (*Singapore*, 1991), 75–80, *IFAC Sympos. Ser.*, 1991, *No.* 7, *Pergamon, Oxford*, 1991. (*see* **93i:93007**) 93C40
Koizumi, Kunio (*with* Sasaki, Motofumi; Hayakawa, Yoshikazu; Fujii, Seizo; Iwaki, Toshihiro) Finite-dimensional model reference adaptive control of a class of nonlinear distributed systems with quasi-sliding mode. (English summary) *Internat. J. Systems Sci.* **24** (1993), *no.* 2, 387–402. 93C40 (93C20)
Kojecký, Tomáš An approximative solution of the generalized eigenvalue problem. (Russian and Czech summaries) *Acta Univ. Palack. Olomuc. Fac. Rerum Natur. Math.* **29** (1990), 65–72. (Alan L. Andrew) **93a:65078** 65J10 (47A75)
Kojima, Akira (*with* Uchida, Kenko; Shimemura, Etsujiro) Robust stabilization of time delay systems based on Riccati type operator equation arising in differential games. (English summary) *Differential games—developments in modelling and computation* (*Espoo*, 1990), 197–206, *Lecture Notes in Control and Inform. Sci.*, 156, *Springer, Berlin*, 1991. (Andrzej Sosnowski) **93j:93133** 93D21 (34K20, 34K35, 90D25, 93C30)
— (*with* Uchida, Kenko; Shimemura, Etsujiro) Robust stabilization of uncertain time delay systems via combined internal-external approach. (English summary) *IEEE Trans. Automat. Control* **38** (1993), *no.* 2, 373–378. (Summary) **93j:93134** 93D21 (93C30, 93D09, 93D15)
Kojima, Fumio Shape identification of material flaws in thermal tomography. (English summary) *Systems and control*, 201–208, *Mita, Tokyo*, 1991. (*see* **93f:93007**) 93B30
— A computational method for estimating cracks inside materials using thermal tomography: boundary integral equation approach. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, I* (*Kobe*, 1991), 109–114, *Mita, Tokyo*, 1992. (*see* **93g:93005**) 65P05
Kojima, Masakazu (*with* Megiddo, Nimrod; Noma, Toshihito) Homotopy continuation methods for nonlinear complementarity problems. *Math. Oper. Res.* **16** (1991), *no.* 4, 754–774. (Hubertus Th. Jongen) **93b:90097** 90C33
— (*with* Megiddo, Nimrod; Ye, Yinyu) An interior point potential reduction algorithm for the linear complementarity problem. *Math. Programming* **54** (1992), *no.* 3, *Ser. A*, 267–279. (Joaquím J. Júdice) **93d:90065** 90C33 (65K05)
Kojima, Michitaka On the almost everywhere divergence of Bochner-Riesz means of multiple Fourier series and integrals. *Math. Japon.* **37** (1992), *no.* 2, 243–258. (S. Baron) **93g:42008** 42B08 (40C15)
— On the almost everywhere convergence of Bochner-Riesz means of multiple Fourier integrals for radial functions. *Nihonkai Math. J.* **3** (1992), *no.* 1, 9–21. (G. V. Welland) **93f:42027** 42B08
Kojima, Sadayoshi (*with* Ishida, Minoru) Apollonian packings and hyperbolic geometry. (English summary) *Geom. Dedicata* **43** (1992), *no.* 3, 265–283. (Oded Schramm) **93g:30063** 30F40 (20F10, 51M10, 52C15)
— (*with* Yamashita, Yasushi) Shapes of stars. *Proc. Amer. Math. Soc.* **117** (1993), *no.* 3, 845–851. (N. V. Ivanov) **93d:57021** 57M50 (51M04, 51M09, 51M20)
Kojima, Yasufumi Equations governing the nonradial oscillations of a slowly rotating relativistic star. (English summary) *Phys. Rev. D* (3) **46** (1992), *no.* 10, 4289–4303. (Summary) **93g:85003** 85A05
— *see also* **Leaver, Edward W., 93g:83066**
Kojman, Menachem (*with* Shelah, Saharon) The universality spectrum of stable unsuperstable theories. *Ann. Pure Appl. Logic* **58** (1992), *no.* 1, 57–72. (Bruno Poizat) **93h:03043** 03C45 (03C55)
de Kok, A. G. (*with* van der Heijden, M. C.) Customer waiting times in an (R,S) inventory system with compound Poisson demand. (English summary) *Z. Oper. Res.* **36** (1992), *no.* 4, 315–332. (Upendra Dave) **93j:90036** 90B05
Kok, A. L. (*with* Manolakis, D. G.; Ingle, V. K.) Symmetric noncausal spatial models for 2-D signals with applications in stochastic texture modeling. (English summary) *Multidimens. Systems Signal Process.* **4** (1993), *no.* 2, 125–149. 68U10
Kok, Joost N. (*with* de Boer, Frank S.; Palamidessi, Catuscia; Rutten, Jan J. M. M.) From failure to success: comparing a denotational and a declarative semantics for Horn clause logic. (English summary) Selected papers of the International BCS-FACS Workshop on Semantics for Concurrency (Leicester, 1990). *Theoret. Comput. Sci.* **101** (1992), *no.* 2, 239–263. (Summary) **93i:68116** 68Q55 (03B70)
— (*with* de Boer, Frank S.; Palamidessi, Catuscia; Rutten, Jan J. M. M.) A paradigm for asynchronous communication and its application to concurrent constraint programming. (English summary) *Logic programming languages*, 82–114, *MIT Press, Cambridge, MA*, 1993. (*see* **93k:68020**) 68N17
Kokado, Akira (*with* Konisi, Gaku; Takahasi, Wataru) Path-integral quantization of para-gauge field theory. *Kwansei Gakuin Univ. Annual Stud.* **40** (1991), 149–156. (Summary) **93a:81209** 81V05 (81S40)
Kokal, S. L. (*with* Easwaran, C. V.) A theory for transient discharge in tubes with applications to a new type of viscometer. (English summary) *SIAM J. Appl. Math.* **52** (1992), *no.* 6, 1501–1508. (Summary) **93h:76024** 76D99 (76Z05, 92C10)
Kokame, Hideki (*with* Mori, Takehiro) Boundary implications for stability of Lur'e systems with interval plants. *Mem. Fac. Engrg. Design Kyoto Inst. Tech. Ser. Sci. Tech.* **40** (1991), 51–61 (1992). (Summary) **93b:93086** 93D09 (93C80)
— (*with* Mori, Takehiro) Stability of interval polynomials with vanishing extreme coefficients. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, I* (*Kobe*, 1991), 409–414, *Mita, Tokyo*, 1992. (Hong Zhang) **93m:93073** 93D09
— (*with* Mori, Takehiro) Comments on: "A necessary and sufficient condition for the stability of nonnegative interval discrete systems" [IEEE Trans. Automat. Control **36** (1991), no. 6, 742–746; MR 92f:93092] by B. Shafai, K. Perev, D. Cowley and Y. Chehab. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 11, 1853–1854. (Summary) **93j:93110** 93D09
— (*with* Kida, Hiroshi; Mori, Takehiro) A lower bound of the degree of stability for a matrix polytope and its applications. *Mem. Osaka Inst. Tech. Ser. A* **36** (1992), *no.* 2, 43–61. (Summary) **93a:93082** 93D09
— (*with* Mori, Takehiro) An exact quadratic stability condition of uncertain linear systems. (English summary) *IEEE Trans. Automat. Control* **38** (1993), *no.* 2, 280. 93D05
— (*with* Nishimura, Tsuyoshi; Mori, Takehiro; Kuroe, Yasuaki) On application of Popov's theorem for Lur'e systems with interval plants. (Japanese. English summary) *Trans. Inst. Systems Control Inform. Engrg.* **6** (1993), *no.* 4, 165–170. 93D09 (93D10)
Kokarev, V. N. Normal image of a complete relatively minimal surface. (Russian) *Mat. Sb.* **183** (1992), *no.* 2, 112–120; *translation in Russian Acad. Sci. Sb. Math.* **75** (1993), *no.* 1, 257–264. (Yi Bing Shen) **93e:53007** 53A10 (58E12)
Kokernak, J. M. (*with* Beatovic, D.; Levin, P. L.; Gan, H.; Hansen, A. J.) Numerical analysis of open boundary problems using finite element substructuring and Galerkin boundary elements. *COMPEL* **11** (1992), *no.* 2, 295–309. (Summary) **93c:65139** 65N30 (65N38)
Koketsu, Y. (*with* Uosaki, K.) Optimal state estimation for nonlinear dynamical systems using stochastic approximation. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, I* (*Kobe*, 1991), 631–636, *Mita, Tokyo*, 1992. (*see* **93g:93005**) 93E10
Kokhov, V. A. (*with* Gryzunov, A. B.) Algorithms for the isomorphic embedding of graphs and their application in designing electron devices. (Russian) *Modeling in information science and computer technology* (*Russian*), 25–39, *Sistem. Model.*, 13, *Akad. Nauk SSSR Sibirsk. Otdel., Vychisl. Tsentr, Novosibirsk*, 1988. (Introduction) **93a:05121** 05C90 (05C10, 05C85)
Kokhova, S. V. (*with* Davydov, È. G.) Some dynamic time-optimality problems for the distribution of several types of resources on network graphs. (Russian. Russian summary) *Vestnik Moskov. Univ. Ser. XV Vychisl. Mat. Kibernet.* **1992**, *no.* 1, 42–49, 82; *trans-*

lation in Moscow Univ. Comput. Math. Cybernet. **47** (1992), *no.* 1, 40–44. (Summary) **93m:90089** 90C35

Kokilashvili, V. M. Weighted estimates for classical integral operators. *Nonlinear analysis, function spaces and applications, Vol. 4 (Roudnice nad Labem, 1990)*, 86–103, *Teubner-Texte Math.*, 119, *Teubner, Leipzig*, 1990. (From the introduction) **93m:42008** 42B25 (47A30, 47G10)

— (*with* Krbec, Miroslav) ★ Weighted inequalities in Lorentz and Orlicz spaces. *World Scientific Publishing Co., Inc., River Edge, NJ*, 1991. xii+233 *pp. ISBN* 981-02-0612-7 (Vladimir D. Stepanov) **93g:42013** 42B25 (26D10, 42B10, 46E30, 47B38, 47G10)

— (*with* Rákosník, Jiří) A two weight weak inequality for potential type operators. *Comment. Math. Univ. Carolin.* **32** (1991), *no.* 2, 251–263. (Takahide Kurokawa) **93c:31007** 31B15 (42B20, 46E30, 47G10)

Kokk, Arne A note on joint spectra. (English summary) *Elementary operators and applications (Blaubeuren, 1991)*, 197–203, *World Sci. Publishing, River Edge, NJ*, 1992. (Robin Harte) **93h:46063** 46H30 (47A13)

Kokkotas, K. (*with* Bonatsos, Dennis; Daskaloyannis, C.) WKB equivalent potentials for q-deformed harmonic and anharmonic oscillators. (English summary) *J. Math. Phys.* **33** (1992), *no.* 9, 2958–2965. (Summary) **93f:81034** 81Q20 (81R50, 81S05)

— (*with* Bonatsos, Dennis; Daskaloyannis, C.) Classical potentials for q-deformed anharmonic oscillators. *Phys. Rev. A* (3) **45** (1992), *no.* 9, R6153–R6156. (Summary) **93b:81106** 81R50 (81Q05)

Kokologiannaki, C. G. (*with* Siafarikas, P. D.) Nonexistence of complex and purely imaginary zeros of a transcendental equation involving Bessel functions. *Z. Anal. Anwendungen* **10** (1991), *no.* 4, 563–567. (Andrea Laforgia) **93a:33008** 33C10 (47B25)

— (*with* Siafarikas, P. D.; Kouris, C. B.) On the complex zeros of $H_\mu(z)$, $J'_\mu(z)$, $J''_\mu(z)$ for real or complex order. *J. Comput. Appl. Math.* **40** (1992), *no.* 3, 337–344. (Summary) **93g:33004** 33C10

Kokonendji, Célestin Clotaire Caractérisation des fonctions variances de Seshadri des familles exponentielles sur **R**. (English summary) [A characterization of Seshadri's variance functions of exponential families in **R**] *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 13, 1063–1068. (Summary) **93e:62042** 62E10

Kokorev, A. A. (*with* Kirpichnikov, S. N.) On the first type of steady motions of two gravitating bodies, one axisymmetric and one spherically symmetric. (Russian. English summary) *Vestnik Leningrad. Univ. Mat. Mekh. Astronom.* **1991**, *vyp.* 2, 115–123, 127. (Summary) **93b:70013** 70F15 (85A05)

Kokosiński, Z. Iterative decomposition of permutations. Proceedings of the Second International Mathematical Miniconference, Part II (Budapest, 1988). *Period. Polytech. Transportation Engrg.* **19** (1991), *no.* 1-2, 49–55. (Summary) **93f:20009** 20B30

Kokotov, A. Yu. Representation of C^*-algebras generated by pseudodifferential operators in a polyhedron. (Russian) *Algebra i Analiz* **3** (1991), *no.* 3, 57–77; *translation in St. Petersburg Math. J.* **3** (1992), *no.* 3, 541–562. (G. V. Rozenblyum) **93c:47067** 47G30 (46L99, 47D25)

Kokotović, P. V. (*with* Kanellakopoulos, I.; Morse, A. Stephen) Adaptive feedback linearization of nonlinear systems. (English summary) *Foundations of adaptive control (Urbana, IL, 1990)*, 311–346, *Lecture Notes in Control and Inform. Sci.*, 160, *Springer, Berlin*, 1991. (Kimio Kanai) **93h:93040** 93C40 (93C10)

— (*with* Kanellakopoulos, I.; Morse, A. Stephen) Adaptive output-feedback control of systems with output nonlinearities. (English summary) *Foundations of adaptive control (Urbana, IL, 1990)*, 495–525, *Lecture Notes in Control and Inform. Sci.*, 160, *Springer, Berlin*, 1991. (Kimio Kanai) **93h:93041** 93C40 (93C10, 93D25)

— (*with* Freeman, R. A.) Design and comparison of globally stabilizing controllers for an uncertain nonlinear system. *Systems, models and feedback: theory and applications (Capri, 1992)*, 249–264, *Progr. Systems Control Theory*, 12, *Birkhäuser Boston, Boston, MA*, 1992. (*see* **93a:93006**) 93D15

— (*with* Kanellakopoulos, I.; Morse, A. Stephen) Adaptive output-feedback control of systems with output nonlinearities. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 11, 1666–1682. (B. I. Anan'ev) **93m:93037** 93B50 (93D15)

— (*with* Kanellakopoulos, I.; Morse, A. Stephen) A toolkit for nonlinear feedback design. *Systems Control Lett.* **18** (1992), *no.* 2, 83–92. (Summary) **93g:93042** 93B52 (93B51, 93D15)

— *see also* **Foundations of adaptive control, 93c:93004**

Kokovikhina, O. V. Application of Galerkin's method to a problem on the propagation of acoustic vibrations. (Russian) *Model. Mekh.* **5** (1991), *no.* 3, 73–87. (Summary) **93c:76072** 76Q05 (76M25, 76N10)

Koksch, N. (*with* Leonov, G. A.; Morozov, A. V.; Ponomarenko, D. V.) Zur Eingrenzung des Lorenz-Attraktors durch die Anwendung der nichtlokalen Reduktionsmethode und mit Hilfe von Vergleichssystemen zweiter Ordnung. (English and Russian summaries) [Estimation of the Lorenz attractor based on the nonlocal reduction method and on comparison systems of second order] *Z. Angew. Math. Mech.* **70** (1990), *no.* 2, 117–127. (Summary) **93e:58119** 58F12 (34C23, 34D45, 76D05)

— Anwendung der direkten Methode von Ljapunow zum Nachweis der Stabilisierbarkeit des Lorenz-Systems durch eine äußere periodische Erregung. [Application of the direct method of Lyapunov for proving the stabilizability of the Lorenz system by an external periodic excitation] *Math. Nachr.* **151** (1991), 357–371. (W.-H. Steeb) **93f:34084** 34D20

Kokubu, Hiroshi Heteroclinic bifurcations associated with different saddle-indices. *Dynamical systems and related topics (Nagoya, 1990)*, 236–260, *Adv. Ser. Dyn. Syst.*, 9, *World Sci. Publishing, River Edge, NJ*, 1991. (A. Vanderbauwhede) **93h:58114** 58F14 (34C23, 34C37)

Kokubu, Masatoshi Isometric deformations of hypersurfaces in a Euclidean space preserving mean curvature. (English summary) *Tôhoku Math. J.* (2) **44** (1992), *no.* 3, 433–442. (Vladislav Goldberg) **93j:53004** 53A07

Kolaitis, Phokion G. (*with* Vardi, Moshe Y.) Infinitary logics and 0-1 laws. Selections from the 1990 IEEE Symposium on Logic in Computer Science. *Inform. and Comput.* **98** (1992), *no.* 2, 258–294. (Alexey P. Stolboushkin) **93h:03038** 03C13 (03B48, 03C75, 03D70, 68P15)

Kolany, Adam (*with* Wojtylak, Piotr) Restricted versions of the compactness theorem. (English summary) *Rep. Math. Logic No.* 25 (1991), 91–103. (G. Asser) **93m:03016** 03B05 (03E25)

Kolář, Ivan Natural bundles and operators. (Russian) *Problems in geometry, Vol.* 23 (*Russian*), 67–98, 187, *Itogi Nauki i Tekhniki, Akad. Nauk SSSR, Vsesoyuz. Inst. Nauchn. i Tekhn. Inform., Moscow*, 1991. (Jan Slovák) **93b:58007** 58A20 (53A55, 53C05, 58G99)

— Gauge-natural operators transforming connections to the tangent bundle. *The mathematical heritage of C. F. Gauss*, 416–426, *World Sci. Publishing, River Edge, NJ*, 1991. (Béla Kis) **93b:53022** 53C05 (58A20)

— (*with* Doupovec, Miroslav) Natural affinors on time-dependent Weil bundles. (English summary) *Arch. Math. (Brno)* **27B** (1991), 205–209. (Marco Modugno) **93j:58004** 58A20 (53A55)

Kolář, M. *see* **Kolář, Miroslav**

Kolář, Martin Envelopes of holomorphy for solutions of the Laplace and Dirac equations. *Comment. Math. Univ. Carolin.* **32** (1991), *no.* 3, 479–494. (Manfred W. Kracht) **93e:35012** 35B60 (30G35, 32D10, 35J05)

Kolář, Miroslav Substitutions, finite automata and number systems. (English summary) *Progr. Theoret. Phys.* **88** (1992), *no.* 2, 211–217. (Summary) **93h:68094** 68Q70 (11B85)

— (*with* O'Shea, Seamus F.) Fast, portable, and reliable algorithm for the calculation of Halton numbers. (English summary) *Comput. Math. Appl.* **25** (1993), *no.* 7, 3–13. 65C99

Kolář, V. On the critical points in the description of vortical flows. *Acta Mech.* **89** (1991), *no.* 1-4, 241–245. (Summary) **93d:76013** 76C05 (76F99)

Kolarzh, Ivan *see* **Kolář, Ivan**

Kolassa, John E. Saddlepoint approximations in the case of intractable cumulant generating functions. (English summary) *Selected Proceedings of the Sheffield Symposium on Applied Probability (Sheffield, 1989)*, 236–255, *IMS Lecture Notes Monograph Ser.*, 18, *Inst. Math. Statist., Hayward, CA*, 1991. (Summary) **93g:62030** 62E20

Kolassis, Ch. (*with* Grammenos, Th.) An analytic model of radiating spherical gravitational collapse. (English summary) *Phys. Lett. A* **169** (1992), *no.* 1-2, 5–11. (Summary) **93g:83062** 83C55

Kolb, Edward W. (*with* Turner, Michael S.) ★ The early universe. With a foreword by David Pines. Frontiers in Physics, 69. *Addison-Wesley Publishing Company, Advanced Book Program, Redwood City, CA*, 1990. xxii+547 *pp. ISBN* 0-201-11603-0 (Markku Lehto) **93e:83073** 83F05 (83-01, 83-02)

Kolb, Emanuel A topological characterization of norms on a nearfield. *Results Math.* **21** (1992), *no.* 3-4, 345–354. (J. L. Zemmer) **93e:12006** 12K05 (12J05, 16Y30)

— Projective Klingenberg planes over nearrings. (English summary) *J. Geom.* **46** (1993), *no.* 1-2, 82–91. (Dirk Keppens) **93j:51002** 51C05 (16Y30)

Kolb, Rickey A. (*with* Arkin, Joseph; Arney, David C.; Giordano, Frank R.) A note on fundamental properties of recurring series. *Applications of Fibonacci numbers, Vol.* 4 (*Winston-Salem, NC, 1990*), 33–36, *Kluwer Acad. Publ., Dordrecht*, 1991. (Ronald J. Evans) **93m:11004** 11A07 (11B65)

— (*with* Arkin, Joseph; Arney, David C.; Giordano, Frank R.; Smith, Paul) Reverse digit constructions of perfect, magic, and doubly magic cubes. (English summary) *Transactions of the Tenth Army Conference on Applied Mathematics and Computing (West Point, NY, 1992)*, 91–101, *ARO Rep.*, 93-1, *U.S. Army Res. Office, Research Triangle Park, NC*, 1993. (*see* **93m:00047**) 05B15

Kolchin, A. V. Some extremal properties of sums of independent random variables. (Russian) *Vestnik Moskov. Univ. Ser. XV Vychisl. Mat. Kibernet.* **1991**, *no.* 4, 68–71; *translation in Moscow Univ. Comput. Math. Cybernet.* **1991**, *no.* 4, 64–66. (Eugeniusz Rychlik) **93e:60036** 60E15 (60G50)

Kolchin, Ellis *see* **Bass, Hyman, 93h:01035**

Kolchin, V. F. The number of permutations with cycle lengths from a fixed set. *Random graphs, Vol.* 2 (*Poznań*, 1989), 139–149, *Wiley-Intersci. Publ., Wiley, New York*, 1992. (Shaocen Han) **93b:05009** 05A16 (05A05)

Kolchinskii, V. I. The entropy order of operators and limit theorems in Banach spaces. *Probability theory and mathematical statistics, Vol. I (Vilnius*, 1989), 618–626, "*Mokslas*", *Vilnius*, 1990. (Evarist Giné) **93k:60016** 60B12 (47B99, 47N30)

— On the accuracy of the approximation of an empirical process by a Brownian bridge. (Russian) *Sibirsk. Mat. Zh.* **32** (1991), *no.* 4, 48–60, 227; *translation in Siberian Math. J.* **32** (1991), *no.* 4, 578–588 (1992). (R. M. Dudley) **93a:60012** 60B12 (60F05)

van Kolck, U. (*with* Foong, See Kit) Poisson random walk for solving wave equations. *Progr. Theoret. Phys.* **87** (1992), *no.* 2, 285–292. (Summary) **93b:81043** 81Q05 (81S40)

Koldoba, A. V. (*with* Drëmov, O. A.; Poveshchenko, Yu. A.) Study of difference schemes of the supporting operator method. (Russian. Russian summary) *Zh. Vychisl. Mat. i Mat. Fiz.* **32** (1992), *no.* 9, 1433–1446; *translation in Comput. Math. Math. Phys.* **32** (1992), *no.* 9, 1281–1293 (1993). (V. D. Glushenkov) **93k:65084** 65N06

Koldobskii, A. L. Inverse problem for potentials of measures in Banach spaces. *Probability theory and mathematical statistics, Vol. I (Vilnius*, 1989), 627–637, "*Mokslas*", *Vilnius*, 1990. (A. V. Uglanov) **93h:46051** 46G12 (28C20, 60B11)

— The Schoenberg problem on positive-definite functions. (Russian) *Algebra i Analiz* **3** (1991), *no.* 3, 78–85; *translation in St. Petersburg Math. J.* **3** (1992), *no.* 3, 563–570. (Lutz Peter Klotz) **93c:42014** 42B10 (60E05)

— Isometries of $L_p(X; L_q)$ and equimeasurability. *Indiana Univ. Math. J.* **40** (1991), *no.* 2, 677–705. (Werner Linde) **93b:46064** 46E40 (28C20, 46E30, 46G12, 47B38)

— Generalized Lévy representation of norms and isometric embeddings into L_p-spaces. (English and French summaries) *Ann. Inst. H. Poincaré Probab. Statist.* **28** (1992), *no.* 3, 335–353. (Summary) **93f:46040** 46E30 (42B10, 46B25, 60E07)

— The Fourier transform and convolution in the space l_1. (Russian. Russian summary) *Zap. Nauchn. Sem. S.-Peterburg. Otdel. Mat. Inst. Steklov. (POMI)* **194** (1992), *Problemy Teorii Veroyatnost. Raspred.* 12, 98–105, 178. (Wlodzimierz Smolenski) **93j:60002** 60B11 (28C20, 46N30)

Koldunov, A. V. Dedekind-type extensions of (S, ρ)-lattices. (Russian. Russian summary) *Ordered spaces and operator equations (Russian)*, 16–23, 158, *Syktyvkar. Gos. Univ., Syktyvkar*, 1989. (*see* **93m:00034**) 06B05 (46A40)

— Generalized Dedekind completions generated by isotonic operators. (Russian) *Optimizatsiya No.* 48(65) (1990), 78–87. (Yu. A. Abramovich) **93h:46006** 46A40 (06A23, 47B60)

— Q-generated completions of Dedekind type of ordered spaces. (Russian) *Ordered sets and lattices, No.* 10 (*Russian*), 69–78, *Saratov. Gos. Univ., Saratov*, 1991. (F. Šik) **93h:06026** 06F30 (46A40)

— Order properties of the completion with respect to the metric of an ordered group. (Russian) *Semigroups and their homomorphisms (Russian)*, 19–26, *Ross. Gos. Ped. Univ., Leningrad*, 1991. (From the text) **93f:06017** 06F15

— (*with* Veksler, A. I.) Countable generalizations of pseudocompactifications and maximal compactifications. (Russian) *Dokl. Akad. Nauk SSSR* **320** (1991), *no.* 1, 15–19; *translation in Soviet Math. Dokl.* **44** (1992), *no.* 2, 370–374. (From the text) **93d:54038** 54D35

— Automatic continuity of operators in vector lattices. (Russian) *Mat. Zametki* **50** (1991), *no.* 4, 67–74, 158; *translation in Math. Notes* **50** (1991), *no.* 3-4, 1031–1035 (1992). (Yu. A. Abramovich) **93h:47063** 47H07 (46A40)

Kolesík, M. (*with* Šamaj, L.) Mapping of p-state symmetric vertex model on the honeycomb lattice onto its Ising-spin counterpart. *Internat. J. Modern Phys. B* **6** (1992), *no.* 2, 251–260. (Peter J. Forrester) **93g:82023** 82B20

— (*with* Šamaj, L.) Solvable cases of the general spin-one Ising model on the honeycomb lattice. *Internat. J. Modern Phys. B* **6** (1992), *no.* 9, 1529–1538. (Peter J. Forrester) **93g:82038** 82B23

— Correlation functions of the two-state vertex model on the Cayley tree. (English summary) *Internat. J. Modern Phys. B* **6** (1992), *no.* 21, 3469–3477. (H. N. V. Temperley) **93j:82009** 82B20 (82B26)

— (*with* Šamaj, L.; Markoš, P.) Solvable weak-graph duals of partially frozen vertex models. (English summary) *J. Physique I* **2** (1992), *no.* 7, 1317–1323. (Summary) **93g:82039** 82B23 (82B20)

— (*with* Šamaj, L.) Mapping of the symmetric vertex model onto the Ising model for an arbitrary lattice coordination. *Phys. A* **182** (1992), *no.* 3, 455–466. (Yu Kui Zhou) **93f:82014** 82B20 (82B23)

— (*with* Šamaj, L.) Exactly solvable weak-graph duals of a generalized Ising model on the Kagomé lattice. (English summary) *Phys. Scripta* **46** (1992), *no.* 4, 332–336. (Author's review (L.Š.)) **93j:82027** 82B23 (82B20)

— (*with* Šamaj, L.) New variational series expansions for lattice models. (English summary) *J. Physique I* **3** (1993), *no.* 1, 93–106. (Summary) **93m:82004** 82B20

Kolesnichenko, V. I. (*with* Kolpakov, N. Yu.) The influence of a meridional electrovortical flow on the azimuthal rotation of a liquid. (Russian. Russian summary) *Prikl. Mat. Mekh.* **56** (1992), *no.* 3, 404–411; *translation in J. Appl. Math. Mech.* **56** (1992), *no.* 3, 333–339. (From the text) **93g:76114** 76W05 (76D05)

Kolesnik, A. D. (*with* Plotkin, D. Ya.) A transformation of Markovian random evolution equations. (Russian. Russian summary) *Asymptotic methods in problems in the theory of random evolutions* (*Russian*), 67–70, *Akad. Nauk Ukrain. SSR, Inst. Mat., Kiev*, 1991. (*see* **93e:60002**) 60H10

— (*with* Turbin, A. F.) Hyperbolic equations of the random evolutions in $\mathbf{R}^m$. *Probability theory and mathematical statistics* (*Kiev*, 1991), 397–402, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93k:60008**) 60H15

Kolesnik, G. (*with* Huxley, Martin N.) Corrigenda: "Exponential sums and the Riemann zeta function. III" [Proc. London Math. Soc. (3) **62** (1991), no. 3, 449–468; MR 92d:11089]. *Proc. London Math. Soc.* (3) **66** (1993), *no.* 2, 302. (Editors) **93k:11073** 11L15 (11L40, 11M06, 11P05)

Kolesnik, I. G. (*with* Bertsik, P. P.) Smoothed particle hydrodynamics and its application to the solution of astrophysical problems. (Russian. English, Russian and Ukrainian summaries) *Kinemat. Fiz. Nebesn. Tel* **9** (1993), *no.* 2, 3–14. 85–08

Kolesov, A. Yu. Specific relaxation cycles of systems of Lotka-Volterra type. *Izv. Akad. Nauk SSSR Ser. Mat.* **55** (1991), *no.* 3, 515–536; *reprinted in Math. USSR-Izv.* **38** (1992), *no.* 3, 503–523. (M. M. Khapaev) **93e:34039** 34C05 (34D99, 34E15)

— (*with* Mishchenko, E. F.) Asymptotic theory of relaxation oscillations. (Russian) *Trudy Mat. Inst. Steklov.* **197** (1991), 3–84; *translation in Proc. Steklov Inst. Math.* **1993**, *no.* 1, 1–93. (From the text) **93b:34048** 34C15 (34–02, 34C05, 34C23, 34C25, 34E15, 35B25, 35K57)

— (*with* Kolesov, Yu. S.) Relaxation cycles of differential-difference equations. (Russian. Russian summary) *Izv. Ross. Akad. Nauk Ser. Mat.* **56** (1992), *no.* 4, 790–812. (J. Milota) **93m:34113** 34K15 (34K25, 92D25)

— (*with* Kolesov, Yu. S.) Relaxation cycles in systems with delay. (Russian. Russian summary) *Mat. Sb.* **183** (1992), *no.* 8, 141–159. (L. Hatvani) **93m:34114** 34K15 (34E15, 34K20, 81V80, 92D40)

— Stability of self-induced oscillations of the telegraph equation that bifurcate from the equilibrium state. (Russian) *Mat. Zametki* **51** (1992), *no.* 2, 59–65, 157; *translation in Math. Notes* **51** (1992), *no.* 1-2, 147–151. (Summary) **93b:35093** 35L70 (35B32)

Kolesov, Yu. S. Null asymptotics of the relaxation cycle of a mathematical model of the Belousov reaction. (Russian) *Modeling of population dynamics* (*Russian*), 28–35, *Nizhegorod. Gos. Univ., Nizhniĭ Novgorod*, 1990. (Jun Ping Chen) **93g:34074** 34C99 (34E99, 92E20)

— Nonlinear parametric resonance in a singularly perturbed telegraph equation. (Russian) *Differentsial'nye Uravneniya* **27** (1991), *no.* 10, 1828–1829, 1839. (Summary) **93c:35105** 35L70 (35B25)

— The relaxation character of the interaction of a strongly fertile population with its food base with moderate natural fluctuations. (Russian. Russian summary) *Differentsial'nye Uravneniya* **28** (1992), *no.* 12, 2182–2184, 2208. 92D25 (92D40)

— (*with* Kolesov, A. Yu.) Relaxation cycles of differential-difference equations. (Russian. Russian summary) *Izv. Ross. Akad. Nauk Ser. Mat.* **56** (1992), *no.* 4, 790–812. (J. Milota) **93m:34113** 34K15 (34K25, 92D25)

— (*with* Kolesov, A. Yu.) Relaxation cycles in systems with delay. (Russian. Russian summary) *Mat. Sb.* **183** (1992), *no.* 8, 141–159. (L. Hatvani) **93m:34114** 34K15 (34E15, 34K20, 81V80, 92D40)

Kolev, Boris (*with* Bonatti, Christian) Existence de points fixes enlacés à une orbite périodique d'un homéomorphisme du plan. (English and French summaries) [Existence of fixed points linked with a periodic orbit of a homeomorphism of the plane] *Ergodic Theory Dynamical Systems* **12** (1992), *no.* 4, 677–682. (Edward Slaminka) **93j:58112** 58F20

Kolev, Lubomir V. (*with* Nenov, I.) Approximate interval solution of an initial value problem for linear ODEs. *Computer arithmetic, scientific computation and mathematical modelling* (*Albena*, 1990), 459–468, *IMACS Ann. Comput. Appl. Math.*, 12, *Baltzer, Basel*, 1991. (*see* **93e:00022**) 65L05 (34A50, 65G10, 65L70)

— (*with* Mladenov, V. M.) An interval method for determining all T-periodical solutions of nonlinear ODE systems. *Computer arithmetic, scientific computation and mathematical modelling* (*Albena*, 1990), 469–473, *IMACS Ann. Comput. Appl. Math.*, 12, *Baltzer, Basel*, 1991. (*see* **93e:00022**) 65L05 (34A50, 34C25, 65G10)

— On the stability of dynamic interval systems. *Mathematical modelling and scientific computations* (*Albena*, 1990), 27–36, *Bulgar. Acad. Sci., Sofia*, 1992. (Ke Chen) **93f:39008** 39A11 (34D05, 65G10)

— Approximate solution of a transient tolerance problem for linear circuits. (English summary) *IEEE Trans. Circuits Systems I Fund. Theory Appl.* **39** (1992), *no.* 8, 666–673. (Summary) **93k:94013** 94C12 (65G10)

Koleva, M. G. (*with* Dimova-Borshukova, Stefka; Kaschiev, M. S.) ★ Исследование собственных функций горения нелинейной среды в полярных координатах методом конечных элементов. (Russian) [Investigation of the eigenfunctions of the burning of a nonlinear medium in polar coordinates by the finite element method] With an English summary. Сообщения Объединенного Института Ядерных Исследований. Дубна [Communications of the Joint Institute for Nuclear Research. Dubna], R11-91-552. *Joint Inst. Nuclear Res., Dubna*, 1991. 17 *pp.* (Summary) **93a:65128** 65M60 (65M12, 80A25)

Kolibiar, Milan Median groups. (English summary) *Arch. Math.* (*Brno*) **25** (1989), *no.* 1-2, 73–82. (Annabelle McIver) **93h:20046** 20F99 (17A40)

— Direct factors of multilattice groups. (English summary) *Arch. Math.* (*Brno*) **26** (1990), *no.* 2-3, 121–127. (Thérèse Merlier) **93h:06025** 06F15

— Convex lines in median groups. (English summary) *Arch. Math.* (*Brno*) **28** (1992), *no.* 1-2, 67–75. (J. R. Isbell) **93k:06024** 06F15 (08A99)

— *see also* **Katriňák, Tibor, 93a:01051** *and* **93e:01023**

Kolikov, Kiril Kh. Augmentation ideal and Jacobson radical of crossed products. (Russian) *Serdica* **17** (1991), *no.* 2-3, 92–98 (1992). (L. Márki) **93e:16044** 16S35 (20C99)

Koliopulos, P. K. (*with* Bishop, S. R.; Stefanou, G. D.) Effect of variation of input bandwidth on the response of hardening Duffing oscillators. (English summary) *Comput. Mech.* **9** (1992), *no.* 6, 405–415. (Summary) **93f:70028** 70L05 (34C15, 34F05, 70K40)

— (*with* Langley, R. S.) Improved stability analysis of the response of a Duffing oscillator under filtered white noise. (English summary) *Internat. J. Non-Linear Mech.* **28** (1993), *no.* 2, 145–155. (Summary) **93k:70037** 70L05 (70K20)

Kolitsch, Louis Worthy Generalized Frobenius partitions, k-cores, k-quotients, and cranks. *Acta Arith.* **62** (1992), *no.* 1, 97–102. (George E. Andrews) **93i:11115** 11P83 (11B65)

— A congruence for $c\varphi_{h,k}(n)$. (English summary) *Rocky Mountain J. Math.* **22** (1992), *no.* 3, 935–941. (George E. Andrews) **93i:11116** 11P83 (05A17)

Kolk, Enno The statistical convergence in Banach spaces. (Estonian summary) *Tartu Ül. Toimetised No.* 928 (1991), 41–52. (John A. Fridy) **93c:40003** 40J05 (40F05, 46B99)

Kolk, Johan A. C. (*with* Varadarajan, V. S.) Riesz distributions. *Math. Scand.* **68** (1991), *no.* 2, 273–291. (D. Miličić) **93c:46069** 46F10 (22E30)

— (*with* Varadarajan, V. S.) Lorentz invariant distributions supported on the forward light cone. *Compositio Math.* **81** (1992), *no.* 1, 61–106. (Roger Zierau) **93a:22010** 22E43 (22E70, 81T08)

Kolk, W. Richard (*with* Lerman, Robert A.) ★ Nonlinear system dynamics. *Van Nostrand Reinhold Co., New York*, 1992. x+350 *pp. ISBN* 0-442-00428-1 (Florin Iacob) **93k:34027** 34A34 (34–04, 34C99, 34D99, 34H05, 93D05)

Kolkka, Robert W. (*with* Malkus, David S.; Tsai, Yi-Cheng) New transient algorithms for non-Newtonian flows. *Finite elements in fluids, Vol.* 8 (*Huntsville, AL*, 1989), 401–424, *Ser. Comput. Phys. Process. Mech. Thermal Sci., Hemisphere, Washington, DC*, 1992. (*see* **93e:76050**) 76A05 (76M20, 76M25)

Kolla, Reiner (*with* Hinsberger, Uwe) Performance optimization of combinational circuits. (English summary) *Informatik*, 185–208, *Teubner-Texte Inform.*, 1, *Teubner, Stuttgart*, 1992. (*see* **93d:68002**) 90C35

Kolla, Sri R. (*with* Farison, James B.) Stability robustness bounds for discrete-time linear regulators. *Internat. J. Systems Sci.* **22** (1991), *no.* 11, 2285–2298. (Summary) **93f:93100** 93D09 (49N10, 93C55)

— (*with* Farison, James B.) Techniques in stability robustness bounds for linear discrete-time systems. *Robust control system techniques and applications, Part* 1, 395–454, *Control Dyn. Syst. Adv. Theory Appl.*, 50, *Academic Press, San Diego, CA*, 1992. (From the introduction) **93h:93054** 93D09 (93–02, 93C55)

Kollár, I. (*with* Pintelon, R.) Exact discrete time representation of continuous time systems. (English summary) *Identification and system parameter estimation* 1991, *Vol.* 1,2 (*Budapest*, 1991), 609–614, *IFAC Sympos. Ser.*, 3, *Pergamon, Oxford*, 1992. (*see* **93h:93009**) 93C60 (93B55)

Kollár, János Flip and flop. *Proceedings of the International Congress of Mathematicians, Vol. I, II* (*Kyoto*, 1990), 709–714, *Math. Soc. Japan, Tokyo*, 1991. (Marco Andreatta) **93d:14023** 14E05 (14E30, 14J30)

— Flips, flops, minimal models, etc. *Surveys in differential geometry* (*Cambridge, MA*, 1990), 113–199, *Lehigh Univ., Bethlehem, PA*, 1991. (Bruce Hunt) **93b:14059** 14J10 (14E30, 14J40)

— Cone theorems and bug-eyed covers. *J. Algebraic Geom.* **1** (1992), *no.* 2, 293–323. (Yujiro Kawamata) **93e:14022** 14E30

— (*with* Miyaoka, Yoichi; Mori, Shigefumi) Rationally connected varieties. *J. Algebraic Geom.* **1** (1992), *no.* 3, 429–448. (Yuri G. Prokhorov) **93i:14014** 14E30 (14E05, 14E35)

— (*with* Mori, Shigefumi) Classification of three-dimensional flips. *J. Amer. Math. Soc.* **5** (1992), *no.* 3, 533–703. (Ulf Persson) **93i:14015** 14E30 (14B07, 14E05, 14E35, 14J30)

Koller, Daphne (*with* Karger, David R.; Phillips, Steven J.) Finding the hidden path: time bounds for all-pairs shortest paths. (English summary) 32*nd Annual Symposium on Foundations of Computer Science* (*San Juan, PR*, 1991), 560–568, *IEEE Comput. Soc. Press, Los Alamitos, CA*, 1991. (Summary) **93e:05093** 05C85 (68Q25, 68R10)

Kollerstrom, Nick Newton's two "moon-tests". *British J. Hist. Sci.* **24** (1991), *no.* 82, *part* 3, 369–372. (Massimo Galuzzi) **93b:01018** 01A45 (01A50)

— Thomas Simpson and "Newton's method of approximation": an enduring myth. *British J. Hist. Sci.* **25** (1992), *no.* 86, *part* 3, 347–354. (I. Tweddle) **93k:01031** 01A50 (01A45, 65–03)

— The hollow world of Edmond Halley. *J. Hist. Astronom.* **23** (1992), *no.* 3, 185–192. 01A45

Kollewe, Wolfgang (*with* Bokowski, Jürgen) On representing contexts in line arrangements. *Order* **8** (1991/92), *no.* 4, 393–403. (Ren Ding) **93g:52009** 52B40 (05B35)

Kollo, T. ★ Матричная производная для многомерной статистики. (Russian) [A matrix derivative for multidimensional statistics] *Tartu Univ., Tartu*, 1991. 156 *pp.* (V. L. Girko) **93f:62076** 62H05

Kolmanovskiĭ, V. B. (*with* Kolosov, G. E.) Approximate and numerical methods of the optimal control synthesis for stochastic systems. *Modelling and inverse problems of*

control for distributed parameter systems (*Laxenburg*, 1989), 63–80, *Lecture Notes in Control and Inform. Sci.*, 154, *Springer, Berlin*, 1991. (*see* **93d:93006**) 49N35 (49M27)

— (*with* Bainov, Drumi Dimitrov) Periodic solutions of stochastic functional-differential equations. *Math. J. Toyama Univ.* **14** (1991), 1–39. (From the text) **93i:60119** 60H99 (34K15, 34K20, 34K50)

— (*with* Koroleva, N. I.) Control of a predator-prey system with intraspecies competition. (Russian) *Prikl. Mat. Mekh.* **55** (1991), *no.* 5, 725–731; *translation in J. Appl. Math. Mech.* **55** (1991), *no.* 5, 588–595 (1992). (Summary) **93b:92012** 92D25 (34H05, 92D40, 93C95)

— (*with* Drozdov, A. D.) The stability of viscoelastic rods under a random longitudinal load. (Russian) *Prikl. Mekh. Tekhn. Fiz.* **1991**, *no.* 5, 124–131; *translation in J. Appl. Mech. Tech. Phys.* **32** (1991), *no.* 5, 772–779 (1992). (From the text) **93e:73019** 73H10 (73F15, 73K05, 73K35)

— (*with* Andreeva, E. A.; Shaikhet, L. E.) ★ Управление системами с последействием. (Russian. English and Russian summaries) [Control of systems with aftereffect] "*Nauka*", *Moscow*, 1992. 336 *pp. ISBN* 5-02-014875-X (B. Mordukhovich) **93i:49001** 49–02 (34K35, 49K25, 93–02, 93C30)

— (*with* Buyvolova, A. G.; Koroleva, N. I.) The time optimal control of predator-prey system with intraspecific struggle. (English summary) *Differential equations* (*Plovdiv*, 1991), 59–70, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93i:49048** 49N55 (34C99, 34H05, 92D25)

— On the stability of a chemostat. (Russian. Russian summary) *Differentsial'nye Uravneniya* **28** (1992), *no.* 11, 1915–1918, 2022. (Summary) **93m:34128** 34K20 (92D25)

— (*with* Drozdov, A. D.) Stochastic stability of viscoelastic bars. *Stochastic Anal. Appl.* **10** (1992), *no.* 3, 265–276. (From the introduction) **93a:73032** 73F15 (73H05, 73K05)

Kolmogorov, A. N. ★ Алгоритм, информация, сложность. (Russian) [Algorithms, information and complexity] Новое в Жизни, Науке, Технике: Серия "Математика, Кибернетика" [Current Life, Science and Technology: Series "Mathematics and Cybernetics"], 91-1. "*Znanie*", *Moscow*, 1991. 45 *pp. ISBN* 5-07-001613-X (A. A. Mullin) **93b:01047** 01A75 (03B70, 68Q30)

— ★ Selected works of A. N. Kolmogorov. Vol. I. Mathematics and mechanics. With commentaries by V. I. Arnol'd, V. A. Skvortsov, P. L. Ul'yanov et al. Translated from the Russian original by V. M. Volosov. Edited and with a preface, foreword and brief biography by V. M. Tikhomirov. Mathematics and its Applications (Soviet Series), 25. *Kluwer Academic Publishers Group, Dordrecht*, 1991. xx+551 *pp. ISBN* 90-277-2796-1 (Editors) **93d:01096** 01A75 (60–03)

— ★ Математика в ее историческом развитии. (Russian) [Mathematics and its historical development] With a biography of the author by P. S. Aleksandrov. Edited and with a preface by V. A. Uspenskiĭ. "*Nauka*", *Moscow*, 1991. 224 *pp. ISBN* 5-02-014453-3 (B. Rosenfeld) **93d:01097** 01A75 (01A05)

— Tables of random numbers. (Russian) *Current Life, Science, and Technology: Series "Mathematics and Cybernetics"*, 91-2 (*Russian*), 43–48, *Novoe Zhizni Nauk. Tekhn. Ser. "Mat. Kibernet."*, 91-2, "*Znanie*", *Moscow*, 1991. (A. A. Mullin) **93b:01048** 01A75 (65C10)

— (*with* Uspenskiĭ, V. A.) Algorithms and randomness. (Bulgarian) Translated from the Russian by Pl. Mateev. *Fiz.-Mat. Spis. B"lgar. Akad. Nauk.* **33(66)** (1991), *no.* 3-4, 223–247 (1992). (Editors) **93e:68038** 68Q30

— *see also* **Terpe, Frank**, **93b:01034**; **Kendall, David G.**, **93b:01039**; **Shiryaev, A. N.**, **93b:01040** *and* **Mathematics of the 19th century**, **93c:01023**

Kolmykov, V. A. Some relations for characteristic polynomials of graphs. (Russian. Russian summary) *Vychisl. Sistemy No.* 136, *Mat. Issled. v Khim. Inform.* (1990), 35–37, 142. 05C50 (92E10)

Kolnogorov, A. V. On the justification of two heuristic methods in the problem of appropriate behavior in a stationary environment. (Russian. Russian summary) *Avtomat. i Telemekh.* **1992**, *no.* 8, 83–85; *translation in Automat. Remote Control* **53** (1992), *no.* 8, *part* 1, 1202–1204 (1993). 93C85 (93E03)

Kolobov, B. P. (*with* Molorodov, Yu. I.) Application of schemes of a high order of accuracy to the solution of problems on graphs. (Russian. Russian summary) *Model. Mekh.* **4** (1990), *no.* 5, 111–123. (Summary) **93j:65129** 65L99 (05C85)

Kolobov, M. G. State estimation of a dynamical system in the presence of uncertain state and noise measurement components. *Soviet J. Comput. Systems Sci.* **30** (1992), *no.* 1, 77–83; *translated from Izv. Akad. Nauk SSSR Tekhn. Kibernet.* **1991**, *no.* 1, 108–114 (*Russian*). (Summary) **93b:93107** 93E10 (93C41)

Kołodziej, S. (*with* Siciak, J.) Laplace domains. *Classical analysis* (*Kazimierz Dolny*, 1991), 247–264, *World Sci. Publishing, River Edge, NJ*, 1992. (Norman Levenberg) **93g:31006** 31B05 (40A30)

Kołodziejczyk, Krzysztof (*with* Reay, John R.) Primitive and mensurable hex-triangles. (English summary) *Geom. Dedicata* **43** (1992), *no.* 2, 233–241. (Paul R. Scott) **93g:52016** 52C20 (52C05)

Kolokolov, Yu. V. (*with* Baushev, V. S.; Zhusubaliev, Zh. T.; Terekhin, I. V.) On the calculation of local stability of periodic regimes in automatic control impulse systems. (Russian. Russian summary) *Avtomat. i Telemekh.* **1992**, *no.* 6, 93–100; *translation in Automat. Remote Control* **53** (1992), *no.* 6, *part* 2, 865–871. 93C55

Kolokol'tsov, V. N. (*with* Dobrokhotov, S. Yu.; Maslov, V. P.) Splitting of the low energy levels of the Schrödinger equation, and the asymptotic behavior of the fundamental solution of the equation $hu_t = \frac{1}{2}h^2\Delta u - V(x)u$. (Russian. English summary) *Teoret. Mat. Fiz.* **87** (1991), *no.* 3, 323–375; *translation in Theoret. and Math. Phys.* **87** (1991), *no.* 3, 561–599. (David Gurarie) **93d:35030** 35J10 (35P15, 81Q20)

— On linear, additive, and homogeneous operators in idempotent analysis. *Idempotent analysis*, 87–101, *Adv. Soviet Math.*, 13, *Amer. Math. Soc., Providence, RI*, 1992. (Themistocles M. Rassias) **93k:47065** 47N10 (47S99, 49L20)

— The stochastic Bellman equation as a nonlinear equation in Maslov spaces. Perturbation theory. (Russian) *Dokl. Akad. Nauk* **323** (1992), *no.* 2, 223–228; *translation in Russian Acad. Sci. Dokl. Math.* **45** (1992), *no.* 2, 294–300 (1993). (From the text) **93j:49031** 49L20 (35R60, 47H15, 93C95, 93E20)

Kolomiets, A. N. Homogeneous solutions of a system of differential equations of an elastic medium. (Russian. Russian summary) *Differential equations and their applications in physics* (*Russian*), 52–57, 108, *Dnepropetrovsk. Gos. Univ., Dnepropetrovsk*, 1989. (*see* **93g:00024**) 73C02

Kolomiets, V. G. (*with* Pritula, N. N.; Tsymbal, Victor N.) A singularly perturbed hyperbolic equation with general boundary conditions. (Russian. Russian summary) *Asymptotic solutions of nonlinear equations with a small parameter* (*Russian*), 59–62, *Akad. Nauk Ukrainy, Inst. Mat., Kiev*, 1991. (Summary) **93h:35019** 35B25 (35L99)

— (*with* Pritula, N. N.; Tsymbal, Victor N.) Asymptotic solution of a problem for a singularly perturbed equation that is of transverse-oscillations-of-a-rod type. (Russian. Russian summary) *Asymptotic integration of nonlinear equations* (*Russian*), 63–66, *Akad. Nauk Ukrainy, Inst. Mat., Kiev*, 1992. (*see* **93m:00016**) 35C20 (35B25, 73D30, 73K05)

— (*with* Mel'nikov, A. I.) Integral manifolds of systems of differential equations with a random right-hand side in a Banach space. (Russian. Russian and Ukrainian summaries) *Ukraïn. Mat. Zh.* **44** (1992), *no.* 1, 12–16. (Jan I. Seidler) **93h:34096** 34F05 (34C30, 34C45, 34G20)

Kolomīets', Yu. V. Averaging evolution equations that can be perturbed by random processes with jumps. (Russian. Russian and Ukrainian summaries) *Ukraïn. Mat. Zh.* **44** (1992), *no.* 2, 197–207; *translation in Ukrainian Math. J.* **44** (1992), *no.* 2, 175–184. (Jan I. Seidler) **93g:34090** 34G10 (34F05, 35R60, 60H15)

— Averaging for partial differential equations whose coefficients are perturbed by jump Markov processes. (Ukrainian. Russian and Ukrainian summaries) *Ukraïn. Mat. Zh.* **44** (1992), *no.* 10, 1367–1375; *translation in Ukrainian Math. J.* **44** (1992), *no.* 10, 1253–1261 (1993). (Summary) **93k:35281** 35R60 (35B99, 60H15)

Kolonko, Michael Optimal compactification of a floorplan and its relation to other optimization problems—a dynamic programming approach. (English summary) *Z. Oper. Res.* **37** (1993), *no.* 1, 75–95. (Summary) **93k:90108** 90C90 (90B50, 90C39)

Kolosov, G. E. (*with* Kolmanovskiĭ, V. B.) Approximate and numerical methods of the optimal control synthesis for stochastic systems. *Modelling and inverse problems of control for distributed parameter systems* (*Laxenburg*, 1989), 63–80, *Lecture Notes in Control and Inform. Sci.*, 154, *Springer, Berlin*, 1991. (*see* **93d:93006**) 49N35 (49M27)

— (*with* Sharov, M. M.) Optimal damping of fluctuations in population size in an isolated ecological system of "predator-prey" type. (Russian. Russian summary) *Avtomat. i Telemekh.* **1992**, *no.* 6, 146–155; *translation in Automat. Remote Control* **53** (1992), *no.* 6, *part* 2, 912–920. 92D40 (90D25)

Kolotilina, L. Yu. (*with* Polman, Ben) On incomplete block factorization methods of generalized SSOR type for *H*-matrices. (English summary) *Linear Algebra Appl.* **177** (1992), 111–136. (Zuhe Shen) **93k:65028** 65F10 (15A23)

— (*with* Erëmin, A. Yu.) Factorized sparse approximate inverse preconditionings. I. Theory. (English summary) *SIAM J. Matrix Anal. Appl.* **14** (1993), *no.* 1, 45–58. (Dao Sheng Zheng) **93m:65061** 65F50 (65F35, 65Y05)

Kolountzakis, Mihail N. (*with* Kutulakos, Kiriakos N.) Fast computation of the Euclidean distance maps for binary images. (English summary) *Inform. Process. Lett.* **43** (1992), *no.* 4, 181–184. (Summary) **93g:68140** 68U05 (68Q22, 68T10)

Kolp, Otto A mapping of multi-level problems to multi-dimensional crossbar networks. (English summary) *Comm. Appl. Numer. Methods* **8** (1992), *no.* 9, 597–607. (Summary) **93e:65159** 65Y05

Kolpakov, A. G. Thin elastic plates of periodic structure with internal unilateral contacts. (Russian) *Prikl. Mekh. Tekhn. Fiz.* **1991**, *no.* 5, 136–142; *translation in J. Appl. Mech. Tech. Phys.* **32** (1991), *no.* 5, 784–790 (1992). (Ján Lovišek) **93c:73062** 73K10 (73B27, 73K20)

— Averaging in a problem of thermomechanochemistry. (Russian. Russian summary) *Differentsial'nye Uravneniya* **28** (1992), *no.* 4, 673–680, 734; *translation in Differential Equations* **28** (1992), *no.* 4, 547–555. (Summary) **93h:35028** 35B40 (73B27, 73B30, 80A50)

— Glued bodies. (Russian. Russian summary) *Differentsial'nye Uravneniya* **28** (1992), *no.* 8, 1386–1395, 1469; *translation in Differential Equations* **28** (1992), *no.* 8, 1131–1139 (1993). (Andro Mikelić) **93k:73074** 73T05 (35Q72, 73V25)

— On a problem of the thermoelasticity of nonhomogeneous plates. (Russian. Russian summary) *Prikl. Mat. Mekh.* **56** (1992), *no.* 3, 487–494; *translation in J. Appl. Math. Mech.* **56** (1992), *no.* 3, 402–409. (Tomasz Lewiński) **93k:73051** 73K10 (73B27, 73B30, 73K20)

— On the solution of a problem on convex combinations. (Russian. Russian summary) *Zh. Vychisl. Mat. i Mat. Fiz.* **32** (1992), *no.* 8, 1323–1330; *translation in Comput. Math. Math. Phys.* **32** (1992), *no.* 8, 1183–1188. (Summary) **93f:90115** 90C08

Kolpakov, A. V. (*with* Goncharskiĭ, A. V.; Stepanov, Alekseĭ Alekseevich) ★ Обратные задачи рентгеновской дифрактометрии. (Russian. Russian summary) [Inverse problems of X-ray diffractometry] *Latv. Univ., Riga*, 1992. 182 *pp.* (Publisher's description) **93m:78016** 78A45 (78A55, 82D25)

Kolpakov, N. Yu. (*with* Kolesnichenko, V. I.) The influence of a meridional electrovortical flow on the azimuthal rotation of a liquid. (Russian. Russian summary) *Prikl. Mat. Mekh.* **56** (1992), *no.* 3, 404–411; *translation in J. Appl. Math. Mech.* **56** (1992), *no.* 3, 333–339. (From the text) **93g:76114** 76W05 (76D05)

Kolpakov, R. M. Generation of some classes of rational numbers by probabilistic π-nets. (Russian. Russian summary) *Vestnik Moskov. Univ. Ser. I Mat. Mekh.* **1991**, *no.* 2, 27–30, 102; *translation in Moscow Univ. Math. Bull.* **46** (1991), *no.* 2, 27–29. (Peter Schatte) **93m:11081** 11K99

— Estimates for the complexity of the generation of rational numbers of probabilistic switching π-nets. (Russian) *Vestnik Moskov. Univ. Ser. I Mat. Mekh.* **1992**, *no.* 6, 62–65. 68Q25

Kolpakov-Miroshnichenko, I. Ya. (*with* Prokhorov, Yu. G.) Rationality of fields of invariants of some four-dimensional linear groups, and an equivariant construction connected with the Segre cubic. (Russian) *Mat. Sb.* **182** (1991), *no.* 10, 1430–1445; *translation in Math. USSR-Sb.* **74** (1993), *no.* 1, 169–183. (A. S. Tikhomirov) **93g:14018** 14D25 (14E07)

— (*with* Prokhorov, Yu. G.) Construction of the rationality of fields of invariants of some finite four-dimensional linear groups that are connected with Fano threefolds. (Russian) *Mat. Zametki* **51** (1992), *no.* 1, 114–117; *translation in Math. Notes* **51** (1992), *no.* 1-2, 74–76. (From the introduction) **93e:14057** 14L30 (14D25, 14E05, 14J45)

Kolpin, Van Shared facility games with variable utilization. (English summary) *Internat. Econom. Rev.* **34** (1993), *no.* 2, 387–400. 90A12 (90A11, 90D40)

Kolsrud, Torbjörn (*with* Albeverio, Sergio; Iwata, Koichiro) Conformally invariant random fields and processes—old and new. *Stochastic analysis and applications* (*Lisbon*,

1989), 1–10, *Progr. Probab.*, 26, *Birkhäuser Boston, Boston, MA*, 1991. (Helge Holden) **93h:81145** 81T99 (60G60, 81S20)
— (*with* Zambrini, Jean-Claude) The general mathematical framework of Euclidean quantum mechanics, an outline. *Stochastic analysis and applications* (*Lisbon*, 1989), 123–143, *Progr. Probab.*, 26, *Birkhäuser Boston, Boston, MA*, 1991. (Gennady Berman) **93c:81090** 81S20
— On a class of probabilistic integrodifferential equations. *Ideas and methods in mathematical analysis, stochastics, and applications* (*Oslo*, 1988), 168–172, *Cambridge Univ. Press, Cambridge*, 1992. (*see* **93e:00033**) 60J60
— Operator integrals and martingale integrals with general parameter. (English summary) *Ideas and methods in mathematical analysis, stochastics, and applications* (*Oslo*, 1988), 173–182, *Cambridge Univ. Press, Cambridge*, 1992. (*see* **93e:00033**) 60H05 (60G44)
— (*with* Albeverio, Sergio; Iwata, Koichiro) Random parallel transport on surfaces of finite type, and relations to homotopy. (English summary) *Probabilistic methods in mathematical physics* (*Siena*, 1991), 50–57, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93g:81002**) 58G32 (55P99, 81T13)
— (*with* Zambrini, Jean-Claude) An introduction to the semiclassical limit of Euclidean quantum mechanics. *J. Math. Phys.* **33** (1992), *no.* 4, 1301–1334. (Henryk Arodź) **93a:81095** 81S20 (60J60)
Kolster, Manfred On torsion in K_2 of fields. *J. Pure Appl. Algebra* **74** (1991), *no.* 3, 257–273. (J. Browkin) **93c:19004** 19D55 (11R70, 12G05)
— K_2 of rings of algebraic integers. *J. Number Theory* **42** (1992), *no.* 1, 103–122. (Jurgen Hurrelbrink) **93f:11089** 11R70 (19C99, 19F99)
Koltracht, I. (*with* Elsner, L.; Neumann, Michael) Convergence of sequential and asynchronous nonlinear paracontractions. *Numer. Math.* **62** (1992), *no.* 3, 305–319. (H. R. Shen) **93d:65057** 65J15 (65F10)
— (*with* Elsner, L.; Neumann, Michael; Xiao, D.) On accurate computations of the Perron root. (English summary) *SIAM J. Matrix Anal. Appl.* **14** (1993), *no.* 2, 456–467. (Summary) **93m:65057** 65F30 (15A06, 15A18)
Kolumbán, I. (*with* Kassay, G.) On the Knaster-Kuratowski-Mazurkiewicz and Ky Fan's theorem. *Seminar on Mathematical Analysis* (*Cluj-Napoca*, 1989–1990), 87–100, *Preprint*, 90-7, "*Babeş-Bolyai*" *Univ., Cluj-Napoca*, 1990. (Sehie Park) **93e:46008** 46A50 (47H10)
Kolyada, S. F. (*with* Sharkovskiĭ, A. N.) On topological dynamics of triangular maps of the plane. (English summary) *European Conference on Iteration Theory* (*Batschuns*, 1989), 177–183, *World Sci. Publishing, River Edge, NJ*, 1991. (Summary) **93f:58196** 58F20 (54H20)
— On dynamics of triangular maps of the square. (English summary) *Ergodic Theory Dynamical Systems* **12** (1992), *no.* 4, 749–768. (Remo Badii) **93m:58036** 58F03 (58F08, 58F11, 58F12)
Kolyada, V. I. Some generalizations of the Hardy-Littlewood-Paley theorem. (Russian) *Mat. Zametki* **51** (1992), *no.* 3, 24–34; *translation in Math. Notes* **51** (1992), *no.* 3-4, 235–244. (J. Németh) **93i:42021** 42C15 (42B25, 42C20)
Kolyshkin, A. A. (*with* Vaillancourt, Rémi) Exact solutions for unsteady convection-diffusion problems. (English and French summaries) *C. R. Math. Rep. Acad. Sci. Canada* **14** (1992), *no.* 4, 137–142. (Summary) **93f:35086** 35K05 (35C05, 76Rxx)
— (*with* Antimirov, M. Ya.; Vaillancourt, Rémi) Solution of direct asymmetric problems in eddy current testing by a perturbation method. (English and French summaries) *C. R. Math. Rep. Acad. Sci. Canada* **14** (1992), *no.* 5, 195–200. (Summary) **93k:78015** 78A55 (35Q60, 65P05)
Kolyshkin, I. N. (*with* Ènder, A. Ya.; Ènder, I. A.) Anisotropic solutions of the Boltzmann equation. (Russian. Russian summary) *Model. Mekh.* **4** (1990), *no.* 6, 54–64. 82C40 (76P05)
Kolyvagin, V. A. On the Mordell-Weil group and the Shafarevich-Tate group of modular elliptic curves. *Proceedings of the International Congress of Mathematicians, Vol. I, II* (*Kyoto*, 1990), 429–436, *Math. Soc. Japan, Tokyo*, 1991. (John W. Jones) **93c:11046** 11G40 (11G05, 14G10)
— (*with* Logachëv, D. Yu.) Finiteness of Ш over totally real fields. (Russian) *Izv. Akad. Nauk SSSR Ser. Mat.* **55** (1991), *no.* 4, 851–876; *translation in Math. USSR-Izv.* **39** (1992), *no.* 1, 829–853. (Jan Nekovář) **93d:11063** 11G18 (11G10, 11G40, 14G35)
— On the structure of Selmer groups. *Math. Ann.* **291** (1991), *no.* 2, 253–259. (Massimo Bertolini) **93e:11073** 11G05 (11G40)
Komachiya, M. (*with* Fukuda, Reijiro) On-shell expansion and different vacua. *Phys. Rev. D* (3) **45** (1992), *no.* 12, 4724–4727. 81T15
Komaki, Fumiyasu (*with* Itoh, Yoshiaki) A unified model for Kakutani's interval splitting and Rényi's random packing. *Adv. in Appl. Probab.* **24** (1992), *no.* 2, 502–505. (Summary) **93c:60009** 60D05
Komal, B. S. (*with* Singh, Prem Sagar) A characterization of composition operators on the space of entire sequences. (English summary) *Bull. Calcutta Math. Soc.* **82** (1990), *no.* 6, 519–526. (John N. McDonald) **93i:47030** 47B38 (30D20)
— (*with* Pathania, R. S.) Some results on multiplication operators induced by operator valued maps. (English summary) *Bull. Calcutta Math. Soc.* **83** (1991), *no.* 6, 515–518. (Barbara D. MacCluer) **93m:47034** 47B37 (47A53, 47B07)
Komar, Arthur Theories of quantum gravity. II. Not superstring theory. *General relativity and gravitation*, 1989 (*Boulder, CO*, 1989), 471–475, *Cambridge Univ. Press, Cambridge*, 1990. (*see* **93b:83002**) 83C45
Komarenko, A. N. Equations of the perturbed motion of a body, with a cavity partially filled with a fluid, that rotates about an axis. (Russian. Russian summary) *Problems in the dynamics and stability of multidimensional systems* (*Russian*), 10–17, *Akad. Nauk Ukrainy, Inst. Mat., Kiev*, 1991. (Summary) **93i:76092** 76U05 (70E99, 76C99)
Komarnitskiĭ, N. Ya. (*with* Zabavskiĭ, B. V.) On adequate rings. (Ukrainian. Russian summary) *Visnik L'viv. Derzh. Univ. Ser. Mekh.-Mat. No.* 30 (1988), 39–43, 76. 13F05
— (*with* Zabavskiĭ, B. V.) Some properties of maximal and prime ideals of a commutative Bezout domain. (Ukrainian) *Visnik L'viv. Univ. Ser. Mekh. Mat. No.* 34 (1990), 53–56. 13F07
Komaroff, Nicholas Lower bounds for the solution of the discrete algebraic Lyapunov equation. *IEEE Trans. Automat. Control* **37** (1992), *no.* 7, 1017–1018. 93B40 (93D05)
— Upper summation and product bounds for solution eigenvalues of the Lyapunov matrix equation. *IEEE Trans. Automat. Control* **37** (1992), *no.* 7, 1040–1042. (Summary) **93d:93059** 93D05 (34H05)
— (*with* Shahian, Bahram) Lower summation bounds for the discrete Riccati and Lyapunov equations. *IEEE Trans. Automat. Control* **37** (1992), *no.* 7, 1078–1080. (Petko Petkov) **93c:93027** 93B40
— Upper bounds for the solution of the discrete Riccati equation. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 9, 1370–1373. (Vladimir B. Larin) **93g:93036** 93B40 (49N10)
Komáromi, É. Probabilistic constraints in primal and dual linear programs: duality results. (English summary) *J. Optim. Theory Appl.* **75** (1992), *no.* 3, 587–602. (Riho Lepp) **93i:90075** 90C15 (49J35, 49N15, 90D05)
Komarov, A. A. Estimation of the remainder of a Taylor series for analytic functions. (Russian) *Application of functional analysis in approximation theory* (*Russian*), 73–83, *Tver. Gos. Univ., Tver'*, 1990. (*see* **93k:00021**) 30B10
Komarov, E. G. (*with* Alekseev, G. V.) A nonselfadjoint singular spectral problem for the Helmholtz operator with discontinuous coefficients. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **32** (1992), *no.* 4, 587–612; *translation in Comput. Math. Math. Phys.* **32** (1992), *no.* 4, 499–507. (Summary) **93c:35023** 35J05 (34L05, 65L15, 76Q05, 86A05)
Komarov, S. I. The HF functor in the category of abelian groups. (Russian. Russian summary) *Abelian groups and modules, No.* 7 (*Russian*), 42–63, 158, *Tomsk. Gos. Univ., Tomsk*, 1988. (K. Seitz) **93m:20084** 20K40
— Projectivity of *O-Z*-purity in the category of abelian groups. (Russian. English and Russian summaries) *Abelian groups and modules, No.* 10 (*Russian*), 46–55, 183, 189, *Tomsk. Gos. Univ., Tomsk*, 1991. (From the text) **93h:20060** 20K40
Komarov, Yu. A. (*with* Vasyukov, A. N.; Yanovich, I. A.) ★ Логико-алгебраические методы решения геометрических задач и разработка программного обеспечения САПР. (Russian) [Logic-algebraic methods for solving geometric problems and the development of software for computer-aided design systems] "*Naukova Dumka*", *Kiev*, 1991. 141 *pp. ISBN* 5-12-001272-8 (Publisher's description) **93a:68159** 68U05 (65Y25)
Komashko, O. V. Stability of a Markov chain embedded in a Markov renewal process that describes the superposition of independent renewal processes. (Russian. Russian summary) *Asymptotic methods in problems in the theory of random evolutions* (*Russian*), 71–80, *Akad. Nauk Ukrain. SSR, Inst. Mat., Kiev*, 1991. (Summary) **93j:60137** 60K15
Komatsu, Gen *see* **Complex geometry, 93g:32002**
Komatsu, Hikosaburo (*with* Kaneko, Akira; Iwasaki, Nobuhisa) List of publications of Kôsaku Yosida. *Functional analysis and related topics*, 1991 (*Kyoto*), xi–xxi, *Lecture Notes in Math.*, 1540, *Springer, Berlin*, 1993. (*see* **93m:00049**) 01A70
— *see also* **Functional analysis and related topics, 93m:00049**
Komatsu, Hiroaki (*with* Nakajima, Atsushi) Note on the isomorphism class groups of Hopf Galois extensions. *Math. J. Okayama Univ.* **33** (1991), 65–70. (E. J. Taft) **93b:16067** 16W30
— (*with* Tominaga, Hisao) Commutativity theorems for algebras and rings. *Math. J. Okayama Univ.* **33** (1991), 71–95. (Yu. N. Mal'tsev) **93f:16037** 16U80
— (*with* Nishinaka, Tsunekazu; Tominaga, Hisao) Some commutativity theorems for rings. (English summary) *Bull. Inst. Math. Acad. Sinica* **20** (1992), *no.* 3, 261–266. 16U80
Komatsu, Kazushi (*with* Kobayashi, Teiichi) Stable homotopy types of stunted quaternionic spherical space forms. *Mem. Fac. Sci. Kôchi Univ. Ser. A Math.* **12** (1991), 33–38. (Y. Furukawa (Zbl 726:55005)) **93b:57038** 57S17 (55P99, 57R40, 57R42, 57S25)
Komatsu, Kenzo On the Galois group of $x^n - x^{n-1} - x^{n-2} - \cdots - x - 1 = 0$. *Keio Sci. Tech. Rep.* **44** (1991), *no.* 1, 1–6. (Yu Wang) **93f:11078** 11R32 (12F10)
— On the Galois group of $x^p + p^l b(x+1) = 0$. *Tokyo J. Math.* **15** (1992), *no.* 2, 351–356. (Juraj Kostra) **93j:11074** 11R32 (12E10, 12F10)
Komatu, Yûsaku On mean distortion with reference to some classes of univalent functions. (English summary) *Univalent functions, fractional calculus, and their applications* (*Kôriyama*, 1988), 97–102, *Ellis Horwood Ser. Math. Appl., Horwood, Chichester*, 1989. (Summary) **93h:30009** 30C45
— On an analytic differential operator. (English summary) *Univalent functions, fractional calculus, and their applications* (*Kôriyama*, 1988), 103–112, *Ellis Horwood Ser. Math. Appl., Horwood, Chichester*, 1989. (Summary) **93h:30008** 30C45
— On analytic prolongation of a family of operators. *Mathematica* (*Cluj*) **32(55)** (1990), *no.* 2, 141–145. (H. M. Srivastava) **93e:30027** 30C45
— On distortion properties of analytic operators. *Kodai Math. J.* **15** (1992), *no.* 1, 1–10. (Shigeyoshi Owa) **93g:30014** 30C45
Komech, A. I. Linear partial differential equations with constant coefficients. (Russian. Russian summary) *Partial differential equations*, 2 (*Russian*), 127–261, 268, *Itogi Nauki i Tekhniki, Akad. Nauk SSSR, Vsesoyuz. Inst. Nauchn. i Tekhn. Inform., Moscow*, 1988. (P. P. Zabrejko (Zbl 686:35003)) **93f:35003** 35–02 (35Exx, 46Fxx)
— Stabilization of the interaction of a string with a nonlinear oscillator. (Russian. Russian summary) *Vestnik Moskov. Univ. Ser. I Mat. Mekh.* **1991,** *no.* 6, 35–41, 103; *translation in Moscow Univ. Math. Bull.* **46** (1991), *no.* 6, 34–39. (From the introduction) **93k:35255** 35Q72 (73D35, 73K12)
Komeda, Jiryo On the existence of Weierstrass points whose first nongaps are five. (English summary) *Manuscripta Math.* **76** (1992), *no.* 2, 193–211. (Summary) **93e:14039** 14H55
Kominek, Zygfryd (*with* Kuczma, Marek) Theorem of Bernstein-Doetsch in Baire spaces. *Ann. Math. Sil. No.* 5 (1991), 10–17. (Summary) **93j:26008** 26A51 (54C30)
— (*with* Gajda, Zbigniew) On separation theorems for subadditive and superadditive functionals. *Studia Math.* **100** (1991), *no.* 1, 25–38. (Summary) **93h:39003** 39B52 (22A15)
Komiya, H. A set theoretical approach to minimax theorems. (English summary) *Fixed point theory and applications* (*Halifax, NS*, 1991), 156–163, *World Sci. Publishing, River Edge, NJ*, 1992. (Carlo Bardaro) **93j:49009** 49J35 (49K35, 54H25)
Komjáth, Péter The chromatic number of some uncountable graphs. (English summary) *Sets, graphs and numbers* (*Budapest*, 1991), 439–444, *Colloq. Math. Soc. János Bolyai*, 60, *North-Holland, Amsterdam*, 1992. (Summary) **93m:03088** 03E35 (03E05, 03E50, 05C15)
— Martin's axiom and spanning trees of infinite graphs. (English summary) *J. Combin. Theory Ser. B* **56** (1992), *no.* 1, 141–144. (Carsten Thomassen) **93h:05059** 05C05 (03E50, 03E75)
— A lattice-point problem of Steinhaus. *Quart. J. Math. Oxford Ser.* (2) **43** (1992), *no.* 170, 235–241. (Arnold W. Miller) **93c:04003** 04A20
— Vector sets with no repeated differences. *Colloq. Math.* **64** (1993), *no.* 1, 129–134. (P. Erdős) **93m:05008** 05A05 (03E35, 04A20)

Komlev, U. A. (*with* Dmitriev, A. S.; Turaev, D. V.) Bifurcation phenomena in the 1 : 1 resonant horn for the forced van der Pol-Duffing equation. *Internat. J. Bifur. Chaos Appl. Sci. Engrg.* **2** (1992), *no.* 1, 93–100. (Martin Čadek) **93g:34060** 34C23 (34C15, 58F13, 70K30, 70K40, 70K50)

Komlós, János (*with* Pach, János; Woeginger, Gerhard J.) Almost tight bounds for ε-nets. *Discrete Comput. Geom.* **7** (1992), *no.* 2, 163–173. (Rade Živaljević) **93a:52013** 52B55 (52C15)

Komlósi, Sándor Quasiconvex first order approximation. (Hungarian. English and Hungarian summaries) *Alkalmaz. Mat. Lapok* **15** (1990/91), *no.* 3-4, 309–327. (Zsolt Páles) **93k:49013** 49J52 (49N15, 90C30)

Komo, John J. (*with* Liu, Shyh-Chang) Nonbinary Kasami sequences over GF(p). *IEEE Trans. Inform. Theory* **38** (1992), *no.* 4, 1409–1412. (Bernard J. M. Smeets) **93f:94013** 94A55 (94B50)

— (*with* Kim, Chulki) A new family of nonbinary sequences with large linear span. (English summary) *Finite fields, coding theory, and advances in communications and computing* (*Las Vegas, NV*, 1991), 123–130, *Lecture Notes in Pure and Appl. Math.*, 141, *Dekker, New York*, 1993. (Summary) **93j:94017** 94A55 (11B50)

Komoike, Nobuyuki (*with* Tanaka, Satoshi; Namiki, Mikio; Ohba, Ichiro; Mizutani, Masashi; Kanenaga, Masahiko) Stochastic quantization of bottomless systems based on a kerneled Langevin equation. (English summary) *Phys. Lett. B* **288** (1992), *no.* 1-2, 129–139. (Summary) **93g:81060** 81S20

Komori, Yuichi (*with* Kashima, Ryo) The word problem for free BCI-algebras is decidable. (English summary) *Math. Japon.* **37** (1992), *no.* 6, 1025–1029. (Summary) **93k:06026** 06F35 (03B25, 03D40, 03F05, 03G25)

Komornik, Vilmos On the zeros of Bessel type functions and applications to exact controllability problems. *Asymptotic Anal.* **5** (1991), *no.* 2, 115–128. (Angelo Favini) **93a:93018** 93B05 (33C10)

— Estimation d'énergie pour quelques systèmes dissipatifs semilinéaires. (English summary) [Energy estimates for some semilinear dissipative systems] *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 10, 747–751. (Angelo Favini) **93i:34117** 34G20 (34H05, 93C20)

— Stabilisation non linéaire de l'équation des ondes et d'un modèle de plaque. (English summary) [Nonlinear stabilization of the wave equation and of a plate model] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 1, 55–60. (Florin Iacob) **93f:35025** 35B37 (35L20, 73K10, 73K12, 73K50, 93C20, 93D15)

— On the exact internal controllability of a Petrowsky system. *J. Math. Pures Appl.* (9) **71** (1992), *no.* 4, 331–342. (Sergeĭ Alekseevich Ivanov) **93j:93019** 93B05 (35B37, 42C99, 93C20)

— On the vibrations of rectangular membranes. (English summary) *Differential Integral Equations* **6** (1993), *no.* 2, 319–327. (Rémi Vaillancourt) **93m:35117** 35L05 (73K10, 73K12)

Komorowski, Tomasz (*with* Goebel, Kazimierz) Retracting balls onto spheres and minimal displacement problem. (French summary) *Fixed point theory and applications* (*Marseille*, 1989), 155–172, *Pitman Res. Notes Math. Ser.*, 252, *Longman Sci. Tech., Harlow*, 1991. (Y. Benyamini) **93b:47110** 47Hxx (46B20, 54H25)

— Asymptotic periodicity of some stochastically perturbed dynamical systems. (French summary) *Ann. Inst. H. Poincaré Probab. Statist.* **28** (1992), *no.* 2, 165–178. (Esa Nummelin) **93g:60138** 60J05

Kompantseva, E. I. Rings on torsion-free abelian groups. (Russian. Russian summary) *Abelian groups and modules, No.* 7 (*Russian*), 64–80, 158, *Tomsk. Gos. Univ., Tomsk*, 1988. (From the text) **93j:20111** 20K15

Kōmura, Yukio (*with* Furuya, Kiyoko) Wave equations in nonreflexive spaces. *Functional analysis and related topics*, 1991 (*Kyoto*), 235–238, *Lecture Notes in Math.*, 1540, *Springer, Berlin*, 1993. (*see* **93m:00049**) 35L05 (35K22, 35K55, 47N20)

Komuro, Hideo (*with* Mizuno, Hirobumi) H-transformations of 3-regular, 3-connected, planar graphs. (Japanese. English summary) *Bull. Univ. Electro-Comm.* **5** (1992), *no.* 2, 191–195. 05C99

Komuro, Hiroaki The fixed point property in ordered sets of width three. *Bull. Dept. Gen. Ed. College Sci. Tech. Nihon Univ. No.* 52 (1992), 1–3. 06A06

Komuro, Motomasa Periodic bifurcation equations of continuous piecewise-linear vector fields. *Dynamical systems and related topics* (*Nagoya*, 1990), 261–288, *Adv. Ser. Dyn. Syst.*, 9, *World Sci. Publishing, River Edge, NJ*, 1991. (Vladislav S. Medvedev) **93f:58168** 58F14 (34C23, 58F22)

— Bifurcation equations of continuous piecewise-linear vector fields. *Japan J. Indust. Appl. Math.* **9** (1992), *no.* 2, 269–312. (Stephen Schecter) **93d:34070** 34C23 (34C25, 34C37, 58F14)

Kon, M. A. (*with* Tempo, Roberto) On optimality properties of algorithms in L^p. (English summary) *Optimal recovery* (*Varna*, 1989), 217–221, *Nova Sci. Publ., Commack, NY*, 1992. (*see* **93m:00043**) 65J05 (65Y20)

Kon, Tadashi (*with* Ito, Ikuo) Thermal properties of parasupersymmetric oscillator. (English summary) *Internat. J. Modern Phys. A* **7** (1992), *no.* 17, 3997–4014. (Summary) **93e:81056** 81S05 (81Q60, 81R40)

Konar, Arabinda Local structure of a Riemannian manifold that admits a type of semi-symmetric metric connection. *Math. Balkanica (N.S.)* **4** (1990), *no.* 3, 283–288 (1991). (Zbigniew Olszak) **93g:53025** 53B15 (53B20)

Konarski, Jerzy On C^+-invariant hypersurfaces in a projective space. (English summary) *Bull. Polish Acad. Sci. Math.* **39** (1991), *no.* 1-2, 101–103. (From the text) **93j:14061** 14L30

Kondakcı, S. (*with* Süral, H.; Erkip, N.) Scheduling unit-time tasks in renewable resource constrained flowshops. (English summary) *Z. Oper. Res.* **36** (1992), *no.* 6, 497–516. 90B35

Kondarattsev, S. A. (*with* Tsetsokho, V. A.) On the uniqueness of the solution of the inverse problem of electrical logging for a piecewise-constant model of a medium. (Russian. Russian summary) *Questions of well-posedness in problems of analysis* (*Russian*), 95–104, 184, *Akad. Nauk SSSR Sibirsk. Otdel., Inst. Mat., Novosibirsk*, 1989. (*see* **93e:00018**) 35R30 (86A22)

Konderak, Jerzy J. Hurwitz theorem for seminormed algebras. *Atti Sem. Mat. Fis. Univ. Modena* **39** (1991), *no.* 2, 403–411. (Aleksandr A. Mikhalev) **93b:17083** 17D05 (11E88, 15A66)

— An example of an almost Hermitian flat manifold which is not Hermitian. (English summary) *Riv. Mat. Univ. Parma* (4) **17** (1991), 315–318 (1992). (Ion Mihai) **93f:53025** 53C15

— On harmonic vector fields. (English summary) *Publ. Mat.* **36** (1992), *no.* 1, 217–228. (Yi Bing Shen) **93i:53037** 53C20 (58E20)

Kondo, Eiji (*with* Kiyota, Takanori; Sunaga, Teruo) Closed-loop expressions of minimum energy control for single-input linear digital systems. (English summary) *IEEE Trans. Automat. Control* **38** (1993), *no.* 4, 603–606. (Summary) **93m:93061** 93C57

Kondo, J. ★ Integral equations. Oxford Applied Mathematics and Computing Science Series. *The Clarendon Press, Oxford University Press, New York*; *Kodansha, Ltd., Tokyo*, 1991. xvi+440 *pp. ISBN* 0-19-859681-2; 0-19-859691-X (P. P. Zabreiko) **93f:45001** 45–01

Kondo, Kazuo Galois field theoretical approach to the dislocational and disclinational aspects of the musical lattice. (English summary) The Eringen anniversary issue. *Internat. J. Engrg. Sci.* **30** (1992), *no.* 10, 1475–1482. (J. S. Joel) **93k:00015** 00A69

Kondō, Ryōji (*with* Hara, Shinji) A unified approach to continuous/discrete time H_∞ problems via J-spectral factorizations. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, I* (*Kobe*, 1991), 247–252, *Mita, Tokyo*, 1992. (*see* **93g:93005**) 93B36

— (*with* Hara, Shinji; Kimura, T.) H_∞ control system design by a parameter space approach. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, I* (*Kobe*, 1991), 287–292, *Mita, Tokyo*, 1992. (Han Sheng Wu) **93k:93039** 93B36 (93B25, 93B52, 93D09)

— (*with* Hara, Shinji; Sugie, Toshiharu) H_∞ control problem with $j\omega$-axis zeros. *Automatica J. IFAC* **28** (1992), *no.* 1, 55–70. (Cheng Wu Yang) **93b:93033** 93B36 (93B52, 93D15)

Kondō, Shigeyuki Automorphisms of algebraic $K3$ surfaces which act trivially on Picard groups. *J. Math. Soc. Japan* **44** (1992), *no.* 1, 75–98. (Ulf Persson) **93e:14046** 14J28 (14E09)

Kondor, Imre *see* **From phase transitions to chaos, 93b:58001**

tcha-Kondor, Ouro *see* **Tcha-Kondor, Ouro**

Kondracki, Witold (*with* Kozak, Michał) A density theorem for the actions of I.L.H.-Lie groups. (Polish. English summary) *Mat. Stos.* **33** (1991), 3–9. (Janusz Grabowski) **93c:58018** 58B25 (22E65, 57S25)

Kondrashkov, A. V. (*with* Frantsuzov, S. B.) A plane problem on the strong bending of an elastic curvilinear rod. (Russian. English and Ukrainian summaries) *Prikl. Mekh.* **28** (1992), *no.* 4, 48–56; *translation in Internat. Appl. Mech.* **28** (1992), *no.* 4, 245–251. (From the text) **93f:73077** 73K50 (73G05, 73H05)

Kondrat'ev, Anatolii Semenovich Subgroups and modular representations of finite quasisimple groups. *Topics in algebra, Part* 2 (*Warsaw*, 1988), 357–364, *Banach Center Publ.*, 26, *Part* 2, *PWN, Warsaw*, 1990. (Ulrich Dempwolff) **93e:20014** 20C20 (20G40)

Kondrat'ev, B. P. Equilibrium figures of stellar systems with a needle-shaped velocity ellipsoid. Isointegral tangent curves and degeneration of models into spheroids and singular ellipsoids. *Soviet Astronom.* **36** (1992), *no.* 3, 313–321; *translated from Astronom. Zh.* **69** (1992), *no.* 3, 617–632 (*Russian*). (Summary) **93f:85001** 85A05

Kondrat'ev, D. L. (*with* Kamenev, G. K.) A method for studying nonclosed nonlinear models. (Russian. English and Russian summaries) *Mat. Model.* **4** (1992), *no.* 3, 105–118. 93A30 (90A14)

Kondrat'ev, V. A. (*with* Bagirov, L. A.) On the asymptotic behavior of solutions of differential equations in a Hilbert space. (Russian) *Mat. Sb.* **182** (1991), *no.* 4, 508–525; *translation in Math. USSR-Sb.* **72** (1992), *no.* 2, 485–501. (Russell C. Thompson) **93a:34073** 34G10 (34E05, 35D99, 35J45, 35R20)

— (*with* Egorov, Yurii Vladimirovich) On an estimate for the first eigenvalue of the Sturm-Liouville operator. (Russian. Russian summary) *Vestnik Moskov. Univ. Ser. I Mat. Mekh.* **1991**, *no.* 6, 5–11, 102; *translation in Moscow Univ. Math. Bull.* **46** (1991), *no.* 6, 4–11. (Summary) **93i:34152** 34L15 (34B24, 34L40, 47E05)

— (*with* Oleĭnik, O. A.) On asymptotic behaviour of solutions of some nonlinear elliptic equations in unbounded domains. *Partial differential equations and related subjects* (*Trento*, 1990), 163–195, *Pitman Res. Notes Math. Ser.*, 269, *Longman Sci. Tech., Harlow*, 1992. (Xiaoyun Ma) **93k:35047** 35B40 (35J65)

— (*with* Egorov, Yurii Vladimirovich) Estimates of the negative spectrum of an elliptic operator. *Spectral theory of operators* (*Novgorod*, 1989), 111–140, *Amer. Math. Soc. Transl. Ser.* 2, 150, *Amer. Math. Soc., Providence, RI*, 1992. (V. S. Rabinovich) **93b:35100** 35P15 (35J30, 47F05)

— (*with* Alkhutov, Yu. A.) Solvability of the Dirichlet problem for second-order elliptic equations in a convex domain. (Russian. Russian summary) *Differentsial'nye Uravneniya* **28** (1992), *no.* 5, 806–818, 917; *translation in Differential Equations* **28** (1992), *no.* 5, 650–662. (Summary) **93k:35074** 35J25

Kondrat'ev, Yu. G. (*with* Antonyuk, A. Val.) Dirichlet forms and corresponding operators on Riemannian manifolds. (Russian) *Methods of functional analysis in problems of mathematical physics* (*Russian*), 5–21, *Akad. Nauk Ukrain. SSR, Inst. Mat., Kiev*, 1990. (Summary) **93c:58202** 58G03 (47F05, 58G30)

— (*with* Antonyuk, A. Vikt.) Cluster expansions for Gibbs measures of quantum lattice systems at zero temperature. (Russian. Russian summary) *Applications of the methods of functional analysis in mathematical physics* (*Russian*), 14–20, *Akad. Nauk Ukrainy, Inst. Mat., Kiev*, 1991. (Summary) **93g:82014** 82B20

— (*with* Barbulyak, V. S.) Phase transition in order-disorder ferro-electrics. (Russian. Russian summary) *Applications of the methods of functional analysis in mathematical physics* (*Russian*), 21–27, *Akad. Nauk Ukrainy, Inst. Mat., Kiev*, 1991. (Summary) **93j:82074** 82D45

— (*with* Barbulyak, V. S.) Existence theorems for functional integrals that correspond to Gibbs states of quantum lattice systems. (Russian) *Akad. Nauk Ukrainy Inst. Mat. Preprint* **1991**, *no.* 33, 30 *pp.* (Summary) **93b:82010** 82B20

— (*with* Barbulyak, V. S.) The presence of a long-range order in a system of quantum anharmonic oscillators. (Russian) *Akad. Nauk Ukrainy Inst. Mat. Preprint* **1991**, *no.* 35, 18 *pp.* (Summary) **93d:82012** 82B10

— (*with* Barbulyak, V. S.) Functional integrals and quantum lattice systems. I. The existence of Gibbs states. (Russian. English summary) *Dokl. Akad. Nauk Ukrain. SSR* **1991**, *no.* 8, 31–34, 183. (Volker Warstat) **93b:82007a** 82B10 (82B21)

— (*with* Barbulyak, V. S.) Functional integrals and quantum lattice systems. II. Periodic Gibbs states. (Russian. English summary) *Dokl. Akad. Nauk Ukrain. SSR* **1991**, *no.* 9, 38–40, 176. (Volker Warstat) **93b:82007b** 82B10 (82B21)

— (*with* Barbulyak, V. S.) Functional integrals and quantum lattice systems. III. Phase transitions. (Russian. English summary) *Dokl. Akad. Nauk Ukrain. SSR* **1991**, *no.* 10, 19–21, 180. (Volker Warstat) **93b:82007c** 82B10 (82B21)

— (*with* Barbulyak, V. S.) A quasiclassical limit for the Schrödinger operator, and phase transitions in quantum statistical physics. (Russian) *Funktsional. Anal. i Prilozhen.* **26** (1992), *no.* 2, 61–64; *translation in Functional Anal. Appl.* **26** (1992), *no.* 2, 124–126. (Lech Jakóbczyk) **93g:82009** 82B10 (47N50, 47N55, 81Q20, 82B20, 82B26)

— (*with* Streit, Ludwig) A remark about a norm estimate for white noise distributions. (English and Ukrainian summaries) *Ukraïn. Mat. Zh.* **44** (1992), *no.* 7, 922–926; *reprinted in Ukrainian Math. J.* **44** (1992), *no.* 7, 832–835 (1993). (Jan Ubøe) **93m:46047** 46G12 (46E25, 60G20, 60H99)

Kondrat'eva, M. V. (*with* Levin, A. B.; Mikhalëv, A. V.; Pankrat'ev, E. V.) Computation of dimension polynomials. (English summary) *Internat. J. Algebra Comput.* **2** (1992), *no.* 2, 117–137. (Andrzej Nowicki) **93k:12012** 12H05 (12Y05)

Kondratiev, V. A. *see* **Kondrat'ev, V. A.**

Kondratiev, Yu. G. *see* **Kondrat'ev, Yu. G.**

Kondratyuk, A. A. (*with* Tarasyuk, S. I.) Comparison of Lebesgue means and Nevanlinna characteristic of subharmonic functions. (Ukrainian. Russian summary) *Mathematical investigations (Ukrainian)*, 74–80, 119–120, *Zb. Nauk. Prats' L'vIv. Mat. Tov.*, 1, *L'vIv. Mat. Tov., L'viv*, 1991. (Summary) **93j:31007** 31B05

Konev, V. V. (*with* Pergamenshchikov, S. M.) Sequential estimation of the parameters of linear unstable stochastic systems with guaranteed mean-square accuracy. (Russian. Russian summary) *Problemy Peredachi Informatsii* **28** (1992), *no.* 4, 35–48; *translation in Problems Inform. Transmission* **28** (1992), *no.* 4, 327–340 (1993). (Summary) **93j:93141** 93E10 (93E24)

Konforovich, A. G. ★ Logischen Katastrophen auf der Spur. (German) [On the track of logical catastrophes] Mathematische Sophismen und Paradoxa. [Mathematical sophisms and paradoxes] Translated from the 1983 Ukrainian original by Galina Stephan and Holger Stephan. Second edition. *Fachbuchverlag, Leipzig*, 1992. 250 *pp. ISBN* 3-343-00831-1 (Editors) **93k:00001** 00–01 (00A08, 00A35, 01A99)

Kong, De Xing The life span of classical solutions to reducible quasilinear hyperbolic systems and their applications. (Chinese. Chinese summary) *Chinese Ann. Math. Ser. A* **13** (1992), *no.* 2, 188–195. (Hong Yuan Fu) **93h:35121** 35L45

Kong, Fan Chao (*with* Zhang, Shu Guang) Some notes on properties of multivariate distribution functions. (Chinese. English summary) *Chinese Quart. J. Math.* **7** (1992), *no.* 1, 60–64. (Summary) **93c:60013** 60E05

Kong, Jin Au ★ Electromagnetic wave theory. Second edition. A Wiley-Interscience Publication. *John Wiley & Sons, Inc., New York*, 1990. xiv+704 *pp. ISBN* 0-471-52214-7 (Editors) **93c:78001** 78–01

Kong, M. C. (*with* Lee, Sin-Min; Sun, H. S. H.) Almost all graphs are Egyptian—old wine in new bottle. Proceedings of the Twenty-first Manitoba Conference on Numerical Mathematics and Computing (Winnipeg, MB, 1991). *Congr. Numer.* **87** (1992), 27–32. (Nora Hartsfield) **93h:05140** 05C78

— (*with* Cai, Yang) Generating all maximal cliques and related problems for certain perfect graphs. (English summary) Proceedings of the Twenty-third Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, FL, 1992). *Congr. Numer.* **90** (1992), 33–55. (Summary) **93j:05142** 05C85 (05C35, 68R10)

Kong, Qing Kai (*with* Erbe, Lynn H.) Oscillation results for second order neutral differential equations. *Funkcial. Ekvac.* **35** (1992), *no.* 3, 545–555. (Yiannis Sficas) **93j:34101** 34K15 (34K40)

— (*with* Erbe, Lynn H.; Ruan, Shi Gui) Kamenev type theorems for second-order matrix differential systems. *Proc. Amer. Math. Soc.* **117** (1993), *no.* 4, 957–962. (Summary) **93e:34045** 34C10 (34A30)

Kong, T. Yung (*with* Kopperman, Ralph; Meyer, Paul R.) Which spaces have metric analogs? *General topology and applications (Staten Island, NY*, 1989), 209–215, *Lecture Notes in Pure and Appl. Math.*, 134, *Dekker, New York*, 1991. (Stoyan Nedev) **93d:54043** 54E99 (54H99)

— (*with* Rosenfeld, A.) Digital topology: a comparison of the graph-based and topological approaches. *Topology and category theory in computer science (Oxford*, 1989), 273–289, *Oxford Sci. Publ., Oxford Univ. Press, New York*, 1991. (*see* **93h:68004**) 68U10 (57M99)

— (*with* Kopperman, Ralph; Meyer, Paul R.) A topological approach to digital topology. *Amer. Math. Monthly* **98** (1991), *no.* 10, 901–917. (E. H. Kronheimer) **93b:68092** 68U10 (54G99)

— *see also* **Special Issue: Digital topology**, **93g:68151**

Kong, Wen Bo (*with* Ding, Xie Ping) Approximation theorems and fixed point theorems for multivalued condensing mappings in wedges. *J. Math. Anal. Appl.* **167** (1992), *no.* 2, 468–481. (A. S. Potapov) **93d:47099** 47H09 (47H04, 47H10)

— (*with* Ding, Xie Ping) Boundary conditions for the existence of positive fixed points of multivalued k-set deflation mappings. (Chinese) *J. Math. Res. Exposition* **12** (1992), *no.* 2, 207–212. (Shulang Yang) **93h:47068** 47H10 (47H04)

Kong, Yuan Bo Combining photoelasticity and BEM for stress analysis. (English summary) *Boundary element technology, VII (Albuquerque, NM*, 1992), 543–553, *Comput. Mech., Southampton*, 1992. (*see* **93b:65002**) 73V10

Konieczna, Urszula Asymptotic normality of the vertex degree in random subgraphs of the n-cube. *Math. Nachr.* **154** (1991), 217–224. (Zbigniew Palka) **93a:05114** 05C80

— Asymptotic normality of isolated edges in random subgraphs of the n-cube. (English summary) *Fourth Czechoslovakian Symposium on Combinatorics, Graphs and Complexity (Prachatice*, 1990), 145–149, *Ann. Discrete Math.*, 51, *North-Holland, Amsterdam*, 1992. (Summary) **93j:05138** 05C80

Konieczny, Janusz On cardinalities of row spaces of Boolean matrices. *Semigroup Forum* **44** (1992), *no.* 3, 393–402. (T. S. Blyth) **93e:20098** 20M99 (05B20, 15A33, 54A10)

— Remarks on the structure of the multiplicative monoid of integers modulo m. (English summary) *Semigroup Forum* **46** (1993), *no.* 2, 266–269. (Summary) **93k:20089** 20M10

Könıg, Dieter (*with* Foley, R. D.; Klutke, Georgia-Ann) Stationary increments of accumulation processes in queues and generalized semi-Markov schemes. *J. Appl. Probab.* **28** (1991), *no.* 4, 864–872. (Masakiyo Miyazawa) **93b:60212** 60K25 (60J25)

— (*with* Schmidt, Volker) Directional distributions for multi-dimensional random point processes. (English summary) *Comm. Statist. Stochastic Models* **8** (1992), *no.* 4, 617–636. (Günter Last) **93j:60063** 60G55 (60D05)

König, F. *see* **Klein, Felix**, **93a:01065**

König, Harald ★ Eisenstein-Kohomologie von $Sl_2(\mathbf{Z}[i])$. (German) [Eisenstein cohomology of $Sl_2(\mathbf{Z}[i])$] Dissertation, Rheinische Friedrich-Wilhelms-Universität Bonn, Bonn, 1991. Bonner Mathematische Schriften [Bonn Mathematical Publications], 222. *Universität Bonn, Mathematisches Institut, Bonn*, 1991. 159 *pp.* (Matthias Flach) **93g:11055** 11F75 (11F67)

König, Heinz A simple proof of the Minkowski inequality. *General inequalities*, 6 (*Oberwolfach*, 1990), 469, *Internat. Ser. Numer. Math.*, 103, *Birkhäuser, Basel*, 1992. (*see* **93k:26001**) 26D20

— On a property of convex functions. *General inequalities*, 6 (*Oberwolfach*, 1990), 471, *Internat. Ser. Numer. Math.*, 103, *Birkhäuser, Basel*, 1992. (*see* **93k:26001**) 26A51

— A general minimax theorem based on connectedness. *Arch. Math. (Basel)* **59** (1992), *no.* 1, 55–64. (Bor-Luh Lin) **93g:49010** 49J35 (90D44)

— (*with* Wittstock, Gerd) Nonequivalent complete norms and would-be continuous linear functionals. *Exposition. Math.* **10** (1992), *no.* 3, 285–288. (James Bell Cooper) **93i:46029** 46B20

Koning, Alex J. Approximation of stochastic integrals with applications to goodness-of-fit tests. *Ann. Statist.* **20** (1992), *no.* 1, 428–454. (Georg Neuhaus) **93d:62090** 62G10 (60F15, 60H05)

— (*with* Einmahl, John H. J.) Limit theorems for a general weighted process under random censoring. (French summary) *Canad. J. Statist.* **20** (1992), *no.* 1, 77–89. (M. Csörgő) **93h:62100** 62G30 (60F17, 62G10)

Koning, Ruud H. (*with* Neudecker, Heinz; Wansbeek, Tom) Unbiased estimation of fourth-order matrix moments. *Linear Algebra Appl.* **160** (1992), 163–174. (D. S. Tracy) **93c:62097** 62H12 (15A69, 62E30)

Konishi, Katsunobu (*with* Yoshimura, Toshio) Adaptive pole-placement algorithm based on common factor elimination. (English summary) *Adaptive systems in control and signal processing*, 1989 (*Glasgow*), 107–112, *IFAC Sympos. Ser.*, 1990, *No.* 1, *Pergamon, Oxford*, 1990. (*see* **93j:93007**) 93B55

Konishi, Tetsuro (*with* Kaneko, Kunihiko) Clustered motion in symplectic coupled map systems. (English summary) *J. Phys. A* **25** (1992), *no.* 23, 6283–6296. (Helmut Rüssmann) **93k:58152** 58F13 (58F05)

Konishi, Yuji A note on actions of compact matrix quantum groups on von Neumann algebras. *Nihonkai Math. J.* **3** (1992), *no.* 1, 23–29. (Władysław Adam Majewski) **93f:46101** 46L55 (46L60)

— (*with* Nagisa, Masaru; Watatani, Yasuo) Some remarks on actions of compact matrix quantum groups on C^*-algebras. *Pacific J. Math.* **153** (1992), *no.* 1, 119–127. (Yoshikazu Katayama) **93c:46121** 46L55 (16W30, 58B30)

Konisi, Gaku (*with* Kokado, Akira; Takahasi, Wataru) Path-integral quantization of para-gauge field theory. *Kwansei Gakuin Univ. Annual Stud.* **40** (1991), 149–156. (Summary) **93a:81209** 81V05 (81S40)

— (*with* Saito, Takesi; Takahasi, Wataru) Super Schwarzian connections in Krichever-Novikov superalgebras. *Progr. Theoret. Phys.* **86** (1991), *no.* 1, 229–242. (Stanislav Z. Pakuliak) **93a:81065** 81R10 (17B81, 32C11, 81T60)

— (*with* Saito, Takesi; Takahasi, Wataru) Weak constraints in conformal field theories on higher-genus Riemann surfaces. Calculation of the Schwarzian connection and modified vertex operators. *Progr. Theoret. Phys.* **87** (1992), *no.* 3, 743–755. (A. K. Raina) **93h:81128** 81T40 (17B81)

Konkowski, D. A. (*with* Helliwell, T. M.) Singularities in colliding plane-wave spacetimes. *Proceedings of the 4th Canadian Conference on General Relativity and Relativistic Astrophysics (Winnipeg, MB*, 1991), 115–119, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93c:83089** 83C75

— (*with* Helliwell, T. M.) Stability analysis of a nonscalar curvature singularity. (English summary) *Phys. Rev. D* (3) **46** (1992), *no.* 4, 1424–1428. (Summary) **93g:83079** 83C75 (83C20)

Konno, Hiroshi (*with* Yajima, Yasutoshi) Minimizing and maximizing the product of linear fractional functions. *Recent advances in global optimization (Princeton, NJ*, 1991), 259–273, *Princeton Ser. Comput. Sci., Princeton Univ. Press, Princeton, NJ*, 1992. (Joachim Hirche) **93a:90068** 90C32 (65K10, 90C30)

— (*with* Suzuki, Ken-ichi) A fast algorithm for solving large-scale mean-variance models by compact factorization of covariance matrices. *J. Oper. Res. Soc. Japan* **35** (1992), *no.* 1, 93–104. (Summary) **93c:90014** 90A09 (65K10, 90C20)

— (*with* Kuno, Takahito; Yamamoto, Yoshitsugu) A parametric successive underestimation method for convex programming problems with an additional convex multiplicative constraint. (English summary) *J. Oper. Res. Soc. Japan* **35** (1992), *no.* 3, 290–299. (Dorel Duca) **93k:90072** 90C25 (65K05, 90C31)

— (*with* Kuno, Takahito) Linear multiplicative programming. (English summary) *Math. Programming* **56** (1992), *no.* 1, *Ser. A*, 51–64. (K. G. Murty) **93e:90051** 90C26 (90C31)

Konno, Hitoshi Bosonized operator formalism for fermions with odd spin structures and anomaly calculation. (English summary) *Internat. J. Modern Phys. A* **7** (1992), *no.* 18, 4415–4440. (Eric J. Raiten) **93j:81092** 81T40 (14H55, 81T30)

— Construction of screened multiloop operator for $su(2)_k$ Kac-Moody algebra. *Phys. Rev. D* (3) **45** (1992), *no.* 12, 4555–4568. (Raiko Zaikov) **93i:81069** 81R10 (17B67, 22E65, 81T40)

Konno, Kazuhiro Generic Torelli theorem for some hypersurfaces of the flag variety. *Math. Rep. Kyushu Univ.* **18** (1991), *no.* 1, 1–14. (Fabio Bardelli) **93c:14012** 14C34 (14D07, 14M15, 32G20)

— Even surfaces with $p_g = 7$, $q = 0$ and $K^2 = 16$. *Math. Rep. Kyushu Univ.* **18** (1991), *no.* 1, 15–41. (Marino Palleschi) **93d:14054** 14J25 (14J15)

— A note on surfaces with pencils of nonhyperelliptic curves of genus 3. *Osaka J. Math.* **28** (1991), *no.* 3, 737–745. (Jean D'Almeida) **93c:14035** 14J25

— Infinitesimal Torelli theorem for complete intersections in certain homogeneous Kähler manifolds. III. *Tôhoku Math. J.* (2) **43** (1991), *no.* 4, 557–568. (Claire Voisin) **93b:32030** 32G20 (14C34, 14F17, 32L20)

— On certain even canonical surfaces. *Tôhoku Math. J.* (2) **44** (1992), *no.* 1, 59–68. (Marco Andreatta) **93a:14029** 14J15 (14H10)

Konno, Kimiaki Soliton solutions of modified Korteweg-de Vries equation in complex t-plane. (English summary) *Nonlinear dispersive wave systems (Orlando, FL*, 1991), 405–415, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93i:35128** 35Q53 (35Q51)

— Conservation laws of soliton resonant processes in complex t-plane. (English summary) *Nonlinear evolution equations and dynamical systems (Baia Verde, 1991)*, 135–143, *World Sci. Publishing, River Edge, NJ*, 1992. (Walter Oevel) **93k:58117** 58F07 (35Q51)

Konno, Norio (*with* Gunji, Yukio) Mathematical construction of an autonomous artificial life. *Appl. Math. Comput.* **46** (1991), *no.* 1, *part I*, 33–58. (Summary) **93f:92002** 92B05

— (*with* Katori, Makoto) Upper bounds for order parameters of a class of attractive nearest-particle systems with finite ranges. *J. Phys. Soc. Japan* **61** (1992), *no.* 3, 806–811. (Krystyna Parczyk) **93g:82072** 82C31 (60J25, 82C27)

Konno, Shigeru (*with* Oshiro, Yoshimi; Nakamura, Kouji; Tomimatsu, Akira) Evaporation of a collapsing shell with scalar field production. (English summary) *Progr. Theoret. Phys.* **89** (1993), *no.* 1, 77–87. (Summary) **93k:83043** 83C55 (83C75)

Konnov, I. V. Properties of support and quasisupport vectors. (Russian) *Issled. Prikl. Mat. No.* 17 (1990), 50–57. (From the introduction) **93c:90059** 90C25 (49N15)

Kono, Akira[1] (*with* Hara, Shin-ichiro) KO-theory of Hermitian symmetric spaces. *Hokkaido Math. J.* **21** (1992), *no.* 1, 103–116. (Hideaki Ōshima) **93b:55006** 55N15 (19M05)

— (*with* Iwase, Norio; Mimura, Mamoru) Generalized Whitehead spaces with few cells. *Publ. Res. Inst. Math. Sci.* **28** (1992), *no.* 4, 615–652. (J. Aguadé) **93m:55024** 55Q45 (55P45)

— (*with* Yagita, Nobuaki) Brown-Peterson and ordinary cohomology theories of classifying spaces for compact Lie groups. *Trans. Amer. Math. Soc.* **339** (1993), *no.* 2, 781–798. (Andrew J. Baker) **93m:55006** 55N20 (55N22)

Kono, M. (*with* Horton, Claude Wendell, Jr.) Point vortex description of drift wave vortices: dynamics and transport. *Phys. Fluids B* **3** (1991), *no.* 12, 3255–3262. (Summary) **93b:76089** 76X05 (76C05)

Kono, Michio (*with* Hosoe, Shigeyuki; Zhang, Feifei) Synthesis of servo mechanism problem via H_∞ control. *Robust control (Tokyo, 1991)*, 154–161, *Lecture Notes in Control and Inform. Sci.*, 183, *Springer, Berlin*, 1992. (*see* **93f:93006**) 93B36

Kôno, Norio Recent development on random fields and their sample paths. III. Self-similar processes. *Soochow J. Math.* **17** (1991), *no.* 2, 327–361. (Editors) **93c:60071** 60G60 (60G18)

— (*with* Maejima, Makoto) Hölder continuity of sample paths of some self-similar stable processes. *Tokyo J. Math.* **14** (1991), *no.* 1, 93–100. (John P. Nolan) **93a:60062** 60G17 (60E07, 60G18)

— (*with* Hsieh, Nan Jui) Local times and related sample path properties of certain self-similar processes. *J. Math. Kyoto Univ.* **33** (1993), *no.* 1, 51–64. (Simeon M. Berman) **93m:60073** 60G17 (60G18, 60J55)

Kôno, Susumu Stable homotopy types of stunted lens spaces mod 4. *Osaka J. Math.* **29** (1992), *no.* 4, 697–717. (Donald M. Davis) **93i:55009** 55P15

Kôno, Toshitake *see* **Kohno, Toshitake**

Konolige, Kurt Ideal introspective belief. (English summary) *AAAI-92. Proceedings, Tenth National Conference on Artificial Intelligence (San Jose, CA, 1992)*, 635–641, *Amer. Assoc. Artif. Intell., Menlo Park, CA*, 1992. (Summary) **93j:68193** 68T27 (03B45, 03B60, 03B70)

— A computational theory of belief introspection. *Reflexivity*, 343–362, *North-Holland, Amsterdam*, 1992. (*see* **93g:03005**) 03A05 (68T30)

Kononenko, A. F. (*with* Gorelik, V. A.; Gorelov, M. A.) ★ Анализ конфликтных ситуаций в системах управления. (Russian) [Analysis of conflict situations in control systems] "*Radio i Svyaz*", *Moscow*, 1991. 288 *pp. ISBN* 5-256-00367-4 (Jacek B. Krawczyk) **93c:93002** 93–02 (49J52, 90D25, 90D50, 93A13)

— (*with* Krutov, B. P.; Chistyakov, Yu. E.) Dynamic hierarchical N-person games theory with coalitions. *Dynamic games in economic analysis (Espoo, 1990)*, 231–238, *Lecture Notes in Control and Inform. Sci.*, 157, *Springer, Berlin*, 1991. (*see* **93d:90003**) 90D06 (93A13)

Kononov, Yu. N. On the influence of partitions in a cylindrical cavity on the stability of the uniform rotation of a Lagrange top. (Russian. Russian summary) *Mat. Fiz. Nelinein. Mekh. No.* 17(51) (1992), 33–37. 70E99 (76B99)

Kononykhin, G. A. (*with* Savchenko, A. Ya.; Bolgrabskaya, I. A.) ★ Устойчивость движения систем связанных твердых тел. (Russian) [Stability of motion of systems of coupled rigid bodies] "*Naukova Dumka*", *Kiev*, 1991. 167 *pp. ISBN* 5-12-002221-9 (Alexander Burov) **93d:70011** 70E15 (34D20, 70E99, 70F99, 70K20, 73K12)

Konopel'chenko, B. G. Integrability of nonlinear equations for soliton's eigenfunctions. *Nonlinear world, Vol. 1 (Kiev, 1989)*, 181–195, *World Sci. Publishing, River Edge, NJ*, 1990. (*see* **93b:00012**) 58F07 (35Q58, 58F19)

— (*with* Beals, Richard) On nontrivial interactions and complete integrability of soliton equations. *J. Math. Phys.* **32** (1991), *no.* 10, 2695–2702. (Walter Oevel) **93b:58063** 58F07 (35Q58)

— The nonabelian $(1+1)$-dimensional Toda lattice as the periodic fixed point of the Laplace transform for $(2+1)$-dimensional integrable systems. *Phys. Lett. A* **156** (1991), *no.* 5, 221–222. (P. M. Santini) **93c:35150** 35Q58 (35A22, 35A30, 58F37)

— (*with* Rogers, Colin; Ramgulam, U.) Generalized $(2+1)$-dimensional Loewner systems: parametrization and structure. (English summary) *Nonlinear evolution equations and dynamical systems (Baia Verde, 1991)*, 44–52, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93h:35179** 35Q53 (58F07)

— (*with* Strampp, Walter) New reductions of the Kadomtsev-Petviashvili and two-dimensional Toda lattice hierarchies via symmetry constraints. (English summary) *J. Math. Phys.* **33** (1992), *no.* 11, 3676–3686. (Yun Bo Zeng) **93i:58073** 58F07 (35Q58)

— (*with* Strampp, Walter) Reductions of $(2+1)$-dimensional integrable systems via mixed potential-eigenfunction constraints. (English summary) *J. Phys. A* **25** (1992), *no.* 16, 4399–4411. (Summary) **93f:35224** 35Q58 (58F07)

— (*with* Dubrovskiĭ, V. G.) Coherent structures for the Ishimori equation. II. Time-dependent boundaries. *Phys. D* **55** (1992), *no.* 1-2, 1–13. (Shen Qi Zhao) **93f:35196** 35Q51 (34A55, 34L40, 35Q53)

— (*with* Schief, Wolfgang K.; Rogers, Colin) A $(2+1)$-dimensional sine-Gordon system: its auto-Bäcklund transformation. (English summary) *Phys. Lett. A* **172** (1992), *no.* 1-2, 39–48. (Summary) **93k:35233** 35Q53 (58F37)

Konopel'ko, V. K. Tabular low-density codes that correct modulus and burst error. (Russian. Russian summary) *Avtomat. i Telemekh.* **1992**, *no.* 4, 155–163; *translation in Automat. Remote Control* **53** (1992), *no.* 4, *part* 2, 607–613. (Summary) **93f:94016** 94B05 (94B35)

Konopka, Czesław Some properties of totally umbilical submanifolds of a Riemannian manifold with a symmetric and parallel tensor field. *Demonstratio Math.* **25** (1992), *no.* 3, 707–710. (Sadahiro Maeda) **93j:53026** 53B25 (53C40)

Konoplev, V. A. The aggregate form of the differential equations of coupling between a system of bodies and bodies of the external medium. (Russian) *Dokl. Akad. Nauk* **322** (1992), *no.* 6, 1048–1051; *translation in Soviet Phys. Dokl.* **37** (1992), *no.* 2, 91–92. (From the text) **93d:70013** 70E99

Konotop, V. V. (*with* Vekslerchik, V. E.) Discrete nonlinear Schrödinger equation under nonvanishing boundary conditions. (English summary) *Inverse Problems* **8** (1992), *no.* 6, 889–909. (Summary) **93j:35166** 35Q55 (34A55, 34L25, 39A12)

— (*with* Vekslerchik, V. E.) On soliton creation in the nonlinear Schrödinger models: discrete and continuous versions. *J. Phys. A* **25** (1992), *no.* 14, 4037–4042. (Summary) **93d:35153** 35Q55 (35Q51, 39A12)

— (*with* Bass, F. G.; Vekslerchik, V. E.; Puzenko, S. A.) The effect of higher-order dispersion on the dynamics of a dark soliton in the nonlinear Schrödinger equation. (Russian. English, Russian and Ukrainian summaries) *Ukraïn. Fiz. Zh.* **37** (1992), *no.* 11, 1659–1665. (Summary) **93k:35239** 35Q55 (78A60)

Konovaljuk, T. P. *see* **Konovalyuk, T. P.**

Konovalov, M. G. (*with* Sinitsin, I. A.) ★ К теории адаптивного управления. (Russian) [On the theory of adaptive control] Сообщения по Прикладной Математике. [Reports in Applied Mathematics] *Akad. Nauk SSSR, Vychisl. Tsentr, Moscow*, 1988. 60 *pp.* (Vladimir G. Sragovich) **93b:93062** 93C40

Konovalov, V. N. Approximation of functions in Sobolev spaces by algebraic polynomials. (Russian. Russian and Ukrainian summaries) *Ukraïn. Mat. Zh.* **44** (1992), *no.* 5, 613–617; *translation in Ukrainian Math. J.* **44** (1992), *no.* 5, 552–555 (1993). (A. S. Cavaretta) **93k:41011** 41A10 (41A63)

Konovalyuk, T. P. (*with* Meleshko, V. V.; Konstantinov, M. Yu.; Gurzhiĭ, A. A.) Advection of a vortex pair atmosphere in a velocity field of point vortices. (English summary) *Phys. Fluids A* **4** (1992), *no.* 12, 2779–2797. (Mikhail Zaks) **93k:76022** 76C05

paneva-Konovska, J. D. *see* **Paneva-Konovska, J. D.**

Konsowa, Mokhtar H. Some criteria for the transience of simple random walks on trees. *Egyptian Statist. J.* **35** (1991), *no.* 1, 175–190. (Summary) **93d:60112** 60J10 (90B15)

— (*with* Bendjilali, Boualem; Haroon, Ahmed H.) Conductivity of random trees and the existence of infinite conducting components-percolation model. (English summary) *Egyptian Statist. J.* **35** (1991), *no.* 2, 251–266. (Summary) **93j:60157** 60K35

— (*with* Mitro, Joanna) The type problem for random walks on trees. *J. Theoret. Probab.* **4** (1991), *no.* 3, 535–550. (Wolfgang Woess) **93a:60102** 60J15

— Effective resistance and random walks on finite graphs. (English and Arabic summaries) *Arabian J. Sci. Engrg.* **17** (1992), *no.* 2, *A*, 181–184. 05C90 (60J15, 94C15)

Konstadilaki-Savvopoulou, Ch. Almost H-continuous functions. (Italian summary) *Boll. Un. Mat. Ital. A* (7) **6** (1992), *no.* 1, 81–90. (Summary) **93f:54019** 54C08

— (*with* Janković, Dragan) R-continuous functions. *Internat. J. Math. Math. Sci.* **15** (1992), *no.* 1, 57–64. (Thomas E. Gantner) **93c:54011** 54C10 (54D10)

Konstant, D. G. (*with* Solov'ev, A. D.) Reliability estimation of a complex renewable system with an unbounded number of repair units. *J. Appl. Probab.* **28** (1991), *no.* 4, 833–842. (Philip J. Boland) **93f:60130** 60K10 (62N05)

Konstantinidis, D. G. (*with* Solov'ev, A. D.) A uniform estimate for the reliability of a complex repairable system with an unlimited number of repair units. (Russian. Russian summary) *Vestnik Moskov. Univ. Ser. I Mat. Mekh.* **1991**, *no.* 3, 21–26, 110; *translation in Moscow Univ. Math. Bull.* **46** (1991), *no.* 3, 21–24. (Summary) **93j:60132** 60K10 (62N05)

Konstantinov, A. Yu. Absolute convergence of series and Fourier transforms. (Russian) *Mathematics today '90, No.* 6 (*Russian*), 31–39, "*Vishcha Shkola*", *Kiev*, 1990. (*see* **93j:00002**) 42-01 (42A28)

— (*with* Berezanskiĭ, Yu. M.) Expansion in eigenvectors of multiparameter spectral problems. (Russian) *Funktsional. Anal. i Prilozhen.* **26** (1992), *no.* 1, 81–83; *translation in Functional Anal. Appl.* **26** (1992), *no.* 1, 65–67. (Björn Textorius) **93f:47019** 47A70 (34L10, 47E05, 47F05, 47N20)

Konstantinov, M. Yu. (*with* Meleshko, V. V.; Gurzhiĭ, A. A.; Konovalyuk, T. P.) Advection of a vortex pair atmosphere in a velocity field of point vortices. (English summary) *Phys. Fluids A* **4** (1992), *no.* 12, 2779–2797. (Mikhail Zaks) **93k:76022** 76C05

Konstantinova, E. V. (*with* Paleev, A. A.) Sensitivity of topological indices of polycyclic graphs. (Russian. Russian summary) *Vychisl. Sistemy No.* 136, *Mat. Issled. v Khim. Inform.* (1990), 38–48, 142–143. (N. Trinajstić) **93g:05044** 05C10 (92E10)

Konstantopoulos, Panagiotis (*with* Baccelli, François) Estimates of cycle times in stochastic Petri nets. *Applied stochastic analysis (New Brunswick, NJ, 1991)*, 1–20, *Lecture Notes in Control and Inform. Sci.*, 177, *Springer, Berlin*, 1992. (Peter Gerrard Taylor) **93f:68071** 68Q90 (60G10, 60G17, 60J80)

— (*with* Zazanis, Michael A.) Sensitivity analysis for stationary and ergodic queues. *Adv. in Appl. Probab.* **24** (1992), *no.* 3, 738–750. (Jian Qiang Hu) **93i:60176** 60K25

— (*with* Altman, Eitan; Liu, Zhen) Stability, monotonicity and invariant quantities in general polling systems. (English summary) *Queueing Systems Theory Appl.* **11** (1992), *no.* 1-2, 35–57. (Summary) **93f:60131** 60K25 (68M20)

Kontsevich, M. L. Intersection theory on the moduli space of curves. (Russian) *Funktsional. Anal. i Prilozhen.* **25** (1991), *no.* 2, 50–57, 96; *translation in Functional Anal. Appl.* **25** (1991), *no.* 2, 123–129. (Claude Itzykson) **93e:32026** 32G15 (14H15, 81T40)

— Intersection theory on the moduli space of curves and the matrix Airy function. *Comm. Math. Phys.* **147** (1992), *no.* 1, 1–23. (Claude Itzykson) **93e:32027** 32G15 (14H15, 58F07, 81T40)

Konvalina, John (*with* Liu, Yi-Hsin) Subsets without unit separation and products of Fibonacci numbers. *Fibonacci Quart.* **29** (1991), *no.* 2, 141–144. (David Singmaster) **93a:05009** 05A10 (05A05, 11B39, 11B65)

— (*with* Liu, Yi-Hsin) A combinatorial interpretation of the square of a Lucas number. *Fibonacci Quart.* **29** (1991), *no.* 3, 268–270. (Summary) **93b:11014** 11B39

Konyaev, Yu. A. Investigation of some classes of regular and singular boundary value problems. (Russian) *Mat. Zametki* **51** (1992), *no.* 2, 149–151; *translation in Math. Notes* **51** (1992), *no.* 1-2, 213–215. (Introduction) **93c:34047** 34B05 (34A05, 35G15)

— A method for studying multipoint boundary value problems. (Russian. Russian summary) *Sibirsk. Mat. Zh.* **33** (1992), *no.* 6, 87–93, 230; *translation in Siberian Math. J.* **33** (1992), *no.* 6, 1020–1027 (1993). (Angela Dimitrova) **93m:34025** 34B10 (34E15)

Konyagin, S. V. Every set of resolution is an Arbault set. (French summary) *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 2, 101–104. (C. McGehee) **93c:42005** 42A20 (43A46)

— Convergence of subsequences of partial cubic sums of Fourier series in the mean and almost everywhere. (Russian. Russian summary) *Mat. Zametki* **52** (1992), *no.* 3, 63–77, 158; *translation in Math. Notes* **52** (1992), *no.* 3-4, 918–930 (1993). (R. L. Cooke) **93m:42003** 42B05

— *see also* **Stechkin, S. B., 93d:01081**

Konyukh, A. V. Uniform lower exponents for solutions of linear diagonal differential systems. (Russian. Russian summary) *Vestnik Beloruss. Gos. Univ. Ser. I Fiz. Mat. Mekh.* **1992**, *no.* 1, 44–48, 78. 34D08 (34A30)

Konyukh, V. S. On the index of the center of an irreducible nilpotent linear group. (Russian. Ukrainian summary) *Ukrain. Mat. Zh.* **43** (1991), *no.* 7-8, 950–956; *translation in Ukrainian Math. J.* **43** (1991), *no.* 7-8, 887–892 (1992). (Editors) **93a:20054** 20F18 (20G15)

Konyukhova, N. B. On the limit behavior of a bounded solution of a system of first-order evolution quasilinear partial differential equations under an unbounded time increase. (Russian) *Dokl. Akad. Nauk SSSR* **319** (1991), *no.* 5, 1065–1071; *translation in Soviet Math. Dokl.* **44** (1992), *no.* 1, 281–286. (Genowefa Majcher) **93b:35007** 35B05 (35F25)

— On the existence and uniqueness of bounded solutions of systems of first-order quasilinear evolution partial differential equations. (Russian. Russian summary) *Differentsial'nye Uravneniya* **28** (1992), *no.* 3, 469–482, 549; *translation in Differential Equations* **28** (1992), *no.* 3, 399–411. (Summary) **93k:35126** 35K22 (35F30)

Konyukhova, T. A. (*with* Rotar', V. I.) Controls that are asymptotically optimal in probability and almost surely in a problem on a linear controller. (Russian. Russian summary) *Avtomat. i Telemekh.* **1992**, *no.* 6, 65–78; *translation in Automat. Remote Control* **53** (1992), *no.* 6, *part* 1, 839–850. (Summary) **93f:93141** 93E20 (49K45, 49N10)

Konyushkov, A. A. On the Parseval relation. (Russian) *Sibirsk. Mat. Zh.* **31** (1990), *no.* 5, 178–181, 216; *translation in Siberian Math. J.* **31** (1990), *no.* 5, 850–852 (1991). (D. C. Russell) **93c:42003** 42A16

Koo, Bon Ung (*with* Lee, Byung Chai) An efficient profile reduction algorithm based on the frontal ordering scheme and the graph theory. (English summary) *Comput. & Structures* **44** (1992), *no.* 6, 1339–1347. 65F50 (73V05)

Koo, Ja Kyung (*with* Bae, Sung Han) On the singular Drinfel'd modules of rank 2. *Math. Z.* **210** (1992), *no.* 2, 267–275. (Ernst-Ulrich Gekeler) **93d:11061** 11G09 (11G15, 11R58)

Koo, Ki-Shik (*with* Choi, Sung Kyu; Lee, Keon Hee) Lipschitz stability and exponential asymptotic stability in perturbed systems. *J. Korean Math. Soc.* **29** (1992), *no.* 1, 175–190. (Zhivko S. Athanassov) **93f:34081** 34D10 (34D05)

Kooi, B. W. On the mechanics of the modern working-recurve bow. (English summary) *Comput. Mech.* **8** (1991), *no.* 5, 291–304. (Summary) **93f:73083** 73K99 (73V15)

Kooij, Robert E. (*with* Wang, Xian) Limit cycles in a cubic system with a cusp. (English summary) *SIAM J. Math. Anal.* **23** (1992), *no.* 6, 1609–1622. (Carmen Chicone) **93i:34052** 34C05 (58F21)

Kooiman, A. (*with* van Leeuwen, J. M. J.) Free fermion approximation for the Ising model with further-neighbor interactions on a triangular lattice. (English summary) *J. Statist. Phys.* **69** (1992), *no.* 1-2, 247–275. (Summary) **93g:82018** 82B20

Kook, Hyung-tae (*with* Ling, Fu Hua; Schmidt, George) Universal behavior of coupled nonlinear oscillators. *Internat. J. Bifur. Chaos Appl. Sci. Engrg.* **1** (1991), *no.* 2, 363–368. (Summary) **93b:58104** 58F13 (34C10)

— (*with* Kim, Sang-Yoon) Critical behavior in coupled nonlinear systems. (English summary) *Phys. Rev. A* (3) **46** (1992), *no.* 8, R4467–R4470. (Summary) **93h:58113** 58F14

Kool, P. *see* **Mathematical and intelligent models in system simulation, 93c:93005**

Koole, Ger Optimal server assignment in the case of service times with monotone failure rates. (English summary) *Systems Control Lett.* **20** (1993), *no.* 3, 233–238. 90B22

Koolen, J. H. On subgraphs in distance-regular graphs. (English summary) *J. Algebraic Combin.* **1** (1992), *no.* 4, 353–362. (Robert Beezer) **93k:05149** 05C75 (05C35)

Kooman, R. J. ★ Convergence properties of recurrence sequences. CWI Tract, 83. *Stichting Mathematisch Centrum, Centrum voor Wiskunde en Informatica, Amsterdam*, 1991. 111 *pp. ISBN* 90-6196-401-6 (Dumitru Acu) **93e:39003** 39A10 (11B37, 30B70, 40A15)

Koomullil, G. P. (*with* Warsi, Z. U. A.) Numerical mapping of arbitrary domains using spectral methods. (English summary) *J. Comput. Phys.* **104** (1993), *no.* 1, 251–262. (Summary) **93g:76093** 76M25

Koons, Robert C. Doxic paradox: a situational solution. *Situation theory and its applications, Vol.* 2 (*Loch Rannoch*, 1990), 161–178, *CSLI Lecture Notes*, 26, *Stanford Univ., Stanford, CA*, 1991. (Charles F. Kielkopf) **93c:03020** 03B45 (03A05)

— ★ Paradoxes of belief and strategic rationality. Cambridge Studies in Probability, Induction, and Decision Theory. *Cambridge University Press, Cambridge*, 1992. xii+174 *pp. ISBN* 0-521-41269-2 (Lawrence Sklar) **93d:03029** 03B48 (90A05, 90D44)

Koop, Gary (*with* Poirier, Dale J.) Bayesian analysis of logit models using natural conjugate priors. (English summary) *J. Econometrics* **56** (1993), *no.* 3, 323–340. 62F10

alikhani-Koopaei, Aliasghar *see* **Alikhani-Koopaei, Aliasghar**

Koornwinder, T. H. (*with* Koelink, H. T.) q-special functions, a tutorial. *Deformation theory and quantum groups with applications to mathematical physics* (*Amherst, MA*, 1990), 141–142, *Contemp. Math.*, 134, *Amer. Math. Soc., Providence, RI*, 1992. (*see* **93e:17001**) 33D15 (33-01, 33D45)

— q-special functions and their occurrence in quantum groups. *Deformation theory and quantum groups with applications to mathematical physics* (*Amherst, MA*, 1990), 143–144, *Contemp. Math.*, 134, *Amer. Math. Soc., Providence, RI*, 1992. (*see* **93e:17001**) 33D45 (17B37, 33D80, 81R50)

Kootwijk, Carolien M. (*with* Baaijens, Frank P. T.) Application of the satisfying Babuška-Brezzi method to a two-dimensional diffusion problem. (English summary) *Appl. Math. Modelling* **17** (1993), *no.* 4, 184–194. 65M60

Kopachevskiĭ, N. D. (*with* Pivovarchik, V. N.) On a sufficient condition for the instability of convective motions of a fluid in an open vessel. (Russian. Russian summary) *Zh. Vychisl. Mat. i Mat. Fiz.* **33** (1993), *no.* 1, 101–118; *translation in Comput. Math. Math. Phys.* **33** (1993), *no.* 1, 89–102. (Piotr Biler) **93k:76044** 76E15 (35Q35, 76R05)

Kopanskiĭ, A. Ya. (*with* Bronshtein, I. U.) Finitely smooth normal forms of vector fields in a neighborhood of a singular point. (Russian) *Nonlinear operators in global analysis* (*Russian*), 21–33, 161, *Novoe Global. Anal., Voronezh. Gos. Univ., Voronezh*, 1991. (V. M. Zakalyukin) **93j:58120** 58F36 (34C20)

Kopariha, Kiran (*with* Thakur, S. S.) Semi preopen sets in bitopological spaces. (English summary) *Ultra Sci. Phys. Sci.* **4** (1992), *no.* 2, 172–175. 54E55

Kopczyński, Wojciech (*with* Trautman, Andrzej) ★ Spacetime and gravitation. Translated and revised from the 1984 Polish original. Translated by Jerzy Baldyga and Antoni Pol. A Wiley-Interscience Publication. *John Wiley & Sons, Ltd., Chichester; PWN—Polish Scientific Publishers, Warsaw*, 1992. vi+170 *pp. ISBN* 0-471-92186-6 (A. H. Taub) **93e:83001** 83-01

Kopeć, S. Error bounds for maximum entropy approximate solutions to Fredholm integral equations. *J. Math. Phys.* **32** (1991), *no.* 12, 3312–3314. (P. Uba) **93a:65183** 65R20 (45B05, 45L05)

Kopeika, E. (*with* Zirvite, R.; Liepiņš, A.) A balanced cloudscape with fixed points. (English, Russian and Latvian summaries) *Mathematics* (*Russian*), 177–180, *Latv. Univ. Zinat. Raksti*, 562, *Latv. Univ., Riga*, 1991. (*see* **93f:00009**) 54H25 (54C60)

Kopeikin, V. F. Optimal control of a moving object evading an encounter with searchers. *J. Comput. Systems Sci. Internat.* **30** (1992), *no.* 5, 37–43; *translated from Izv. Ross. Akad. Nauk Tekhn. Kibernet.* **1992**, *no.* 1, 42–48 (*Russian. Russian summary*). (Summary) **93g:90104** 90D26 (49K15)

Kopeiko, V. I. On an example of Cohn. (Russian) *Rings and linear groups* (*Russian*), 60–62, *Kuban. Gos. Univ., Krasnodar*, 1988. (*see* **93i:00023**) 20G30

— On the structure of the symplectic group of polynomial rings over regular rings of dimension ≤ 1. (Russian) *Uspekhi Mat. Nauk* **47** (1992), *no.* 4(286), 193–194; *translation in Russian Math. Surveys* **47** (1992), *no.* 4, 210–211. (J. S. Joel) **93m:20066** 20H25 (19B14)

Kop'ev, V. F. (*with* Chernyshev, S. A.) Small disturbances of steady vortices. *Fluid Dynamics* **26** (1991), *no.* 5, 719–729 (1992); *translated from Izv. Akad. Nauk SSSR Mekh. Zhidk. Gaza* **1991**, *no.* 5, 99–109 (*Russian*). (E. G. Broadbent) **93c:76011** 76C05

Kopeykin, V. F. *see* **Kopeĭkin, V. F.**

Kopfer, Herbert Konzepte genetischer Algorithmen und ihre Anwendung auf das Frachtoptimierungsproblem im gewerblichen Güterfernverkehr. (English and German summaries) [Concepts of genetic algorithms and their application to the problem of freight minimization in commercial road transportation] *OR Spektrum* **14** (1992), *no.* 3, 137–147. 90C08 (90C27)

Kopistira, M. P. *see* **Kopystyra, N. P.**

Kopisz, M. Principle of conservation of momentum, angular momentum and energy for a deformable continuum in an electromagnetic field. *Zastos. Mat.* **21** (1992), *no.* 3, 349–359. (Philippe Boulanger) **93i:73043** 73R05 (73B99, 78A25)

— Coupled fields in a piezoelectric body. *Zastos. Mat.* **21** (1992), *no.* 3, 361–369. (Philippe Boulanger) **93i:73044** 73R05 (73B05, 78A55)

Kopitko, B. I. Multidimensional diffusion processes with a partially reflecting screen on a hyperplane. (Ukrainian. Russian summary) *Mathematical investigations* (*Ukrainian*), 81–88, 120, *Zb. Nauk. Prats' L'vIv. Mat. Tov.*, 1, *L'vIv. Mat. Tov., L'viv*, 1991. (Summary) **93j:60114** 60J60 (35J15, 35K10, 60J35)

Kopocińska, I. (*with* Kopociński, B.) On the extreme gap in the renewal process. *Zastos. Mat.* **21** (1991), *no.* 2, 127–136. (Lajos Horváth) **93c:60131** 60K05

Kopociński, B. (*with* Kopocińska, I.) On the extreme gap in the renewal process. *Zastos. Mat.* **21** (1991), *no.* 2, 127–136. (Lajos Horváth) **93c:60131** 60K05

— The extreme gap in the multivariate Poisson process. *Zastos. Mat.* **21** (1991), *no.* 2, 137–141. (Lajos Horváth) **93b:60200** 60K05

Kopotun, K. A. Uniform estimates for coconvex approximation of functions by polynomials. (Russian) *Mat. Zametki* **51** (1992), *no.* 3, 35–46, 143; *translation in Math. Notes* **51** (1992), *no.* 3-4, 245–254. (Krzysztof Reczek) **93f:41014** 41A10 (41A17)

Kopp, Andreas Konstruktion von Translationen in schwach affinen Geometrien mit Hilfe schwach affiner Relative. [Construction of translations in weakly affine geometries with the aid of weakly affine relatives] *Results Math.* **21** (1992), *no.* 3-4, 355–367. (Giovanni Ferrero) **93d:51004** 51A15

Kopp, Larisa (*with* Dzhuraev, A. D.) On the Riemann problem for general first order elliptic systems in the plane. *Complex Variables Theory Appl.* **18** (1992), *no.* 1-2, 109–118. (H. Renelt) **93f:30048** 30G20 (35B65, 35J45)

Kopp, P. Ekkehard (*with* Elliott, Robert James) Equivalent martingale measures for bridge processes. *Stochastic Anal. Appl.* **9** (1991), *no.* 4, 429–444. (Yu. M. Kabanov) **93a:60064** 60G30 (60G55, 90A09)

Koppel, Moshe Hierarchical inductive inference methods. *Logique et Anal.* (*N.S.*) **32** (1989), *no.* 127-128, 285–295. 03B48

Koppelberg, Sabine (*with* Monk, J. Donald) Pseudo-trees and Boolean algebras. *Order* **8** (1991/92), *no.* 4, 359–374. (Leo Esakia) **93i:06006** 06E05 (54F05)

— (*with* Fuchino, Sakaé; Takahashi, Makoto[1]) On $L_{\omega\omega}$-free Boolean algebras. *Ann. Pure Appl. Logic* **55** (1992), *no.* 3, 265–284. (Bienvenido F. Nebres) **93i:03053** 03C75 (03C65, 03G05, 06E05)

Kopper, C. (*with* Keller, Georg; Salmhofer, M.) Perturbative renormalization and effective Lagrangians in Φ^4_4. *Helv. Phys. Acta* **65** (1992), *no.* 1, 32–52. (Charles Nash) **93e:81081** 81T15

Kopperman, Ralph Total boundedness and compactness for filter pairs. *Ann. Univ. Sci. Budapest. Eötvös Sect. Math.* **33** (1990), 25–30 (1991). (P. Fletcher) **93a:54025** 54E15 (54D30)

— (*with* Kong, T. Yung; Meyer, Paul R.) Which spaces have metric analogs? *General topology and applications* (*Staten Island, NY*, 1989), 209–215, *Lecture Notes in Pure and Appl. Math.*, 134, *Dekker, New York*, 1991. (Stoyan Nedev) **93d:54043** 54E99 (54H99)

— (*with* Kong, T. Yung; Meyer, Paul R.) A topological approach to digital topology. *Amer. Math. Monthly* **98** (1991), *no.* 10, 901–917. (E. H. Kronheimer) **93b:68092** 68U10 (54G99)

— *see also* **Special Issue: Digital topology, 93g:68151**

Koppinen, M. A duality theorem for crossed products of Hopf algebras. *J. Algebra* **146** (1992), *no.* 1, 153–174. (V. A. Artamonov) **93b:16068** 16W30

— Coideal subalgebras in Hopf algebras: freeness, integrals, smash products. (English summary) *Comm. Algebra* **21** (1993), *no.* 2, 427–444. (Cao Yu Chen) **93j:16029** 16W30

Kopp-Schneider, Annette Birth-death processes with piecewise constant rates. *Statist. Probab. Lett.* **13** (1992), *no.* 2, 121–127. (Summary) **93a:60132** 60J80

Kopriva, David A. (*with* Chiu, Chichia) An optimal Runge-Kutta method for steady-state solutions of hyperbolic systems. *SIAM J. Numer. Anal.* **29** (1992), *no.* 2, 425–438. (Bernard Bialecki) **93a:65139** 65N22 (65L06, 65N35)

Koptsik, V. A. Crystallography of quasicrystals: the problem of restoration of broken symmetry. *Group theoretical methods in physics* (*Moscow*, 1990), 588–601, *Lecture Notes*

in Phys., 382, *Springer, Berlin*, 1991. (Vojtěch Kopský) **93i:82077** 82D25 (82D20)

Kopylov, I. G. Some properties of a Markovian coupling. (Russian) *Vestnik Moskov. Univ. Ser. XV Vychisl. Mat. Kibernet.* **1991**, *no.* 4, 61–67; *translation in Moscow Univ. Comput. Math. Cybernet.* **1991**, *no.* 4, 58–63. (Serban Grigorescu) **93f:60102** 60J10

Kopylov, V. I. The Dirac system with a spectral parameter in the boundary condition. (Russian) *Functional analysis, No.* 27 (*Russian*), 87–98, *Ul'yanovsk. Gos. Ped. Inst., Ul'yanovsk*, 1987. (R. C. Gilbert) **93b:34104** 34L10 (34B05, 34L05, 47E05)

— An integral representation of the resolvent of a boundary value problem with a parameter in the boundary condition. (Russian) *Functional analysis, No.* 29 (*Russian*), 86–94, *Ul'yanovsk. Gos. Ped. Inst., Ul'yanovsk*, 1989. (From the text) **93j:34034** 34B24 (34L40, 47E05)

— A connection between the spectral function and the Weyl function for a boundary value problem on the semi-axis. (Russian) *Functional analysis, No.* 31 (*Russian*), 79–90, *Ul'yanovsk. Gos. Ped. Inst., Ul'yanovsk*, 1990. (Introduction) **93k:47056** 47E05 (34B20, 34B24, 34L05)

— Asymptotics of the kernel of the spectral function of a boundary value problem with a parameter in the boundary condition. (Russian) *Functional analysis, No.* 33 (*Russian*), 39–45, *Ul'yanovsk. Gos. Ped. Inst., Ul'yanovsk*, 1992. (Jan Bochenek) **93m:34139** 34L40 (34B24, 34L20)

Kopystyra, N. P. (*with* Gavrilyuk, I. P.) On the error of interpolation and mean-square approximation by algebraic polynomials. (Ukrainian. Russian and Ukrainian summaries) *Visnik Kiïv. Unïv. Mat. Mekh. No.* 32 (1990), 7–14. (Summary) **93d:41001** 41A05 (41A10)

Kopytko, B. I. Diffusion processes with generalized drift vector and diffusion matrix. *Probability theory and mathematical statistics* (*Kiev*, 1991), 169–175, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93k:60008**) 60J60

— The heat potential method in the problem of pasting together two diffusion processes. (Russian. English and Russian summaries) *Dokl. Akad. Nauk Ukrainy* **1992**, *no.* 12, 9–12, 169. (Summary) **93m:60164** 60J60 (35K10)

Korableva, N. B. (*with* Durnev, V. G.) An algorithmically undecidable problem for systems of linear Diophantine equations. (Russian) *Problems in group theory and homological algebra* (*Russian*), 93–96, *Matematika, Yaroslav. Gos. Univ., Yaroslavl'*, 1988. (*see* **93b:00020**) 11D04

Korach, Ephraim (*with* Penn, Michal) Tight integral duality gap in the Chinese postman problem. *Math. Programming* **55** (1992), *no.* 2, *Ser. A*, 183–191. (Zeng Min Song) **93h:05102** 05C35

— (*with* Tal, Ady) General vertex disjoint paths in series-parallel graphs. (English summary) *Discrete Appl. Math.* **41** (1993), *no.* 2, 147–164. (Ke Min Zhang) **93k:05172** 05C85 (05C38, 68Q25, 68R10)

Korbaš, Július The rank of vector fields on real Grassmann manifolds. (English summary) *Rend. Circ. Mat. Palermo* (2) **41** (1992), *no.* 1, 29–30. (Summary) **93f:57029** 57R25

Korbicz, Józef (*with* Zajda, Zbigniew; Solnik, Włodzimierz; Uciński, Dariusz) ★ Wybrane metody numerycznego rozwiązywania równań różniczkowych cząstkowych. (Polish) [Selected methods for the numerical solution of partial differential equations] *Wydawnictwo Wyższej Szkoły Inżynierskiej, Zielona Góra*, 1991. 208 *pp.* (Lubor Malina) **93e:65001** 65–01 (65Mxx, 65Nxx)

— (*with* Zgurovskiĭ, M. Z.) ★ Estymacja i sterowanie stochastyczne układami o parametrach rozłożonych. (Polish) [Estimation and control of stochastic systems with distributed parameters] *Państwowe Wydawnictwo Naukowe* (*PWN*), *Warsaw*, 1991. 512 *pp. ISBN* 83-01-10309-4 (From the introduction) **93f:93001** 93–02 (93C20, 93E10, 93E11, 93E20)

— (*with* Fathi, Zohreh; Ramirez, W. Fred) State estimation schemes for fault detection and diagnosis in dynamic systems. (English summary) *Internat. J. Systems Sci.* **24** (1993), *no.* 5, 985–1000. 93E10

Korchemskiĭ, G. P. The parasupersymmetric spinning particle and topological gauge fields. *Internat. J. Modern Phys. A* **7** (1992), *no.* 15, 3493–3514. (Marc Henneaux) **93g:81186** 81T60

— Matrix model perturbed by higher order curvature terms. (English summary) *Modern Phys. Lett. A* **7** (1992), *no.* 33, 3081–3100. (Summary) **93f:81135** 81T40 (81T25, 81T30)

Korchmáros, Gábor Collineation groups of $(q+t,t)$-arcs of type $(0,2,t)$ in a Desarguesian plane of order q. *Advances in finite geometries and designs* (*Chelwood Gate*, 1990), 257–264, *Oxford Sci. Publ., Oxford Univ. Press, New York*, 1991. (William Cherowitzo) **93b:51015** 51E21 (51E20)

— Old and new results on ovals in finite projective planes. *Surveys in combinatorics*, 1991 (*Guildford*, 1991), 41–72, *London Math. Soc. Lecture Note Ser.*, 166, *Cambridge Univ. Press, Cambridge*, 1991. (William Cherowitzo) **93b:51014** 51E21 (05B25)

— (*with* Biliotti, Mauro) Blocking sets which are preserved by transitive collineation groups. (English summary) *Forum Math.* **4** (1992), *no.* 6, 567–591. (Vikram Jha) **93m:51008** 51E21 (20B25, 51A35, 51A40)

— (*with* Bonisoli, Arrigo) Flocks of hyperbolic quadrics and linear groups containing homologies. *Geom. Dedicata* **42** (1992), *no.* 3, 295–309. (Laura Bader) **93g:51008** 51E20 (05B25, 20B25)

— (*with* Biliotti, Mauro) Projective planes with nonabelian simple collineation group fixing an oval. *Arch. Math.* (*Basel*) **60** (1993), *no.* 3, 300–304. (T. G. Ostrom) **93j:51005** 51E15 (20B25, 51E21)

— (*with* Cameron, Peter J.) One-factorizations of complete graphs with a doubly transitive automorphism group. (English summary) *Bull. London Math. Soc.* **25** (1993), *no.* 1, 1–6. (Brian Alspach) **93h:05087** 05C25 (05C70, 20B25)

Korczyński, Waldemar An axiomatic characterization of a class of Petri nets. *Fund. Inform.* **14** (1991), *no.* 4, 477–491. (C. Masalagiu) **93a:68111** 68Q90 (08A70)

Kordecki, Wojciech (*with* Szajowski, Krzysztof) Analysis of the structure and the reliability of the multistage technical systems. *Stochastic methods in experimental sciences* (*Szklarska Poręba*, 1989), 265–274, *World Sci. Publishing, River Edge, NJ*, 1990. (*see* **93a:60004**) 62N05 (90B25)

— Random subgraphs of the n-cycle and the n-wheel. *Discrete Math.* **93** (1991), *no.* 1, 35–53. (Lane Clark) **93f:05090** 05C80 (05C38)

— (*with* Atlas, Radosław) Reliability of series systems with additional elements joining every other nodes. (English summary) *Discuss. Math.* **11** (1991), 51–62 (1992). 90B25

Koreisha, Sergio G. (*with* Pukkila, Tarmo) Determining the order of a vector autoregression when the number of component series is large. (English summary) *J. Time Ser. Anal.* **14** (1993), *no.* 1, 47–69. 62M10

Koren, B. (*with* Hemker, P. W.) Efficient multigrid computation of steady hypersonic flows. (English summary) *Computational methods in hypersonic aerodynamics*, 203–231, *Fluid Mech. Appl.*, 9, *Kluwer Acad. Publ., Dordrecht*, 1991. (*see* **93d:76001**) 76M20 (76K05)

Koren, Israel (*with* Cederbaum, Israel; Wimer, Shmuel) Balanced block spacing for VLSI layout. (English summary) *Discrete Appl. Math.* **40** (1992), *no.* 3, 303–318. (Krzysztof Wawryn) **93m:68088** 68Q35 (68R10)

Koren, Zahava (*with* Ganz, Aura) Efficient performance analysis of asymmetric finite buffer multichannel networks. (English summary) *Comm. Statist. Stochastic Models* **8** (1992), *no.* 3, 599–616. (Summary) **93e:60182** 60K25

Korenblum, Boris A maximum principle for the Bergman space. (English summary) *Publ. Mat.* **35** (1991), *no.* 2, 479–486. (Kristian Seip) **93j:30018** 30C80 (30A10, 30H05)

— (*with* Richards, Kendall) Majorization and domination in the Bergman space. *Proc. Amer. Math. Soc.* **117** (1993), *no.* 1, 153–158. (Knut Øyma) **93c:30035** 30C80 (46E20)

— (*with* O'Neil, R.; Richards, Kendall; Zhu, Ke He) Totally monotone functions with applications to the Bergman space. *Trans. Amer. Math. Soc.* **337** (1993), *no.* 2, 795–806. (Charles Horowitz) **93h:30041** 30D15 (26A48, 30C80, 30H05)

Korenevskiĭ, D. G. On the stability of solutions of systems of linear deterministic and stochastic stationary difference equations with delay. (Russian. Russian summary) *Problems in the dynamics and stability of multidimensional systems* (*Russian*), 70–77, *Akad. Nauk Ukrainy, Inst. Mat., Kiev*, 1991. (Summary) **93h:39001** 39A10 (93D05)

— ★ Устойчивость решений детерминированных и стохастических дифференциально-разностных уравнений (алгебраические критерии). (Russian. English and Russian summaries) [Stability of solutions of deterministic and stochastic differential-difference equations (algebraic criteria)] "*Naukova Dumka*", *Kiev*, 1992. 147 *pp. ISBN* 5-12-003164-1 (Tetsushi Sasagawa) **93m:34129** 34K20 (34D05, 34K35, 34K50, 93E15)

— Equivalence of spectral and coefficient criteria for the mean-square asymptotic stability of solutions of linear stochastic differential and difference equations. (Russian. Russian summary) *Mathematical methods for studying applied problems of the dynamics of fluid-carrying bodies* (*Russian*), 47–52, *Akad. Nauk Ukrainy, Inst. Mat., Kiev*, 1992. (*see* **93m:00027**) 60H10 (34D05, 34F05, 39A11, 93D05)

— On the asymptotic stability of solutions of systems of linear deterministic and stochastic stationary difference equations with delay. (Russian) *Dokl. Akad. Nauk SSSR* **322** (1992), *no.* 2, 219–223; *translation in Soviet Math. Dokl.* **45** (1992), *no.* 1, 48–52. (Introduction) **93m:39003** 39A10 (93D05)

Korenovskiĭ, A. A. The inverse Hölder inequality, the Muckenhoupt condition, and equimeasurable permutations of functions. (Russian) *Dokl. Akad. Nauk* **323** (1992), *no.* 2, 229–232; *translation in Russian Acad. Sci. Dokl. Math.* **45** (1992), *no.* 2, 301–304 (1993). (Dumitru Acu) **93i:26014** 26D10 (42A05)

Korenskiĭ, S. V. Representations of the quantum group $SL_J(2)$. (Russian) *Uspekhi Mat. Nauk* **46** (1991), *no.* 6(282), 211–212; *translation in Russian Math. Surveys* **46** (1991), *no.* 6, 221–222. (J. S. Joel) **93b:17047** 17B37 (16W30)

Korepanov, È. R. (*with* Pugachev, V. S.; Sinitsyn, I. N.; Khatuntsev, A. P.; Shin, V. I.; Sinitsyn, V. I.) Mathematical software for the design of conditionally optimal filters and the analysis of processes in discrete stochastic systems. (Russian. Russian summary) *Avtomat. i Telemekh.* **1992**, *no.* 6, 78–85; *translation in Automat. Remote Control* **53** (1992), *no.* 6, *part* 1, 851–857. 93E11 (93–04)

— Discrete conditionally optimal filters with memory. (Russian) *Dokl. Akad. Nauk* **324** (1992), *no.* 1, 35–38; *translation in Russian Acad. Sci. Dokl. Math.* **45** (1992), *no.* 3, 528–532 (1993). (Introduction) **93h:93080** 93E11

Korepin, V. E. (*with* Essler, Fabian H. L.; Schoutens, Kareljan) Fine structure of the Bethe ansatz for the spin-$\frac{1}{2}$ Heisenberg XXX model. (English summary) *J. Phys. A* **25** (1992), *no.* 15, 4115–4126. (Ladislav Šamaj) **93i:82030** 82B23 (82B20)

— (*with* Itoyama, H.; Thacker, H. B.) Fredholm determinant representation of quantum correlation function for sine-Gordon at special value of coupling constant. (English summary) *Modern Phys. Lett. B* **6** (1992), *no.* 22, 1405–1411. (Summary) **93g:81079** 81T10

— (*with* Essler, Fabian H. L.; Schoutens, Kareljan) New eigenstates of the 1-dimensional Hubbard model. *Nuclear Phys. B* **372** (1992), *no.* 3, 559–596. (Yu Kui Zhou) **93f:82009** 82B20

— (*with* Essler, Fabian H. L.; Schoutens, Kareljan) Completeness of the SO(4) extended Bethe ansatz for the one-dimensional Hubbard model. (English summary) *Nuclear Phys. B* **384** (1992), *no.* 3, 431–458. (Yu Kui Zhou) **93k:82013** 82B23

— (*with* Its, A. R.; Izergin, A. G.; Varzugin, G. G.) Large time and distance asymptotics of field correlation function of impenetrable bosons at finite temperature. *Phys. D* **54** (1992), *no.* 4, 351–395. (Tuncay Aktosun) **93b:82046** 82C10 (81T99)

— (*with* Colomo, F.; Izergin, A. G.; Tognetti, V.) Correlators in the Heisenberg $XX0$ chain as Fredholm determinants. (English summary) *Phys. Lett. A* **169** (1992), *no.* 4, 243–247. (Summary) **93f:82020** 82B23

Koreshkov, N. A. Central elements in the algebra $U(K_m)$. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* **1991**, *no.* 5, 16–22; *translation in Soviet Math.* (*Iz. VUZ*) **35** (1991), *no.* 5, 15–20. (P. M. Cohn) **93a:16022** 16S30 (16W25)

— An invariant of the algebra W_n. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* **1991**, *no.* 10, 40–42; *translation in Soviet Math.* (*Iz. VUZ*) **35** (1991), *no.* 10, 36–38. (Paul Zusmanovich) **93m:17007** 17B35 (17B50)

Korevaar, Jacob Partial derivatives lemma related to $\mathbf{C}^n$ potential theory and applications. *Geometric function theory and applications of complex analysis to mechanics: studies in complex analysis and its applications to partial differential equations*, 2 (*Halle*, 1988), 67–84, *Pitman Res. Notes Math. Ser.*, 257, *Longman Sci. Tech., Harlow*, 1991. (J. Siciak) **93a:32022** 32F05 (32D15)

— Laudatio on the Ostrowski Prize for Louis de Branges. *Nieuw Arch. Wisk.* (4) **9** (1991), *no.* 3, 359–365. (Heinrich Begehr) **93d:01069a** 01A70

— Behavior of Cotes numbers and other constants, with an application to Chebyshev-type quadrature. (English summary) *Indag. Math.* (*N.S.*) **3** (1992), *no.* 4, 391–402. (D. C. Handscomb) **93m:41027** 41A55 (65D30)

Kõrezlioğlu, H. (*with* Üstünel, Ali Süleyman) Distributions, Girsanov and degree theorems on Wiener spaces. *White noise analysis* (*Bielefeld*, 1989), 231–244, *World Sci. Publishing, River Edge, NJ*, 1990. (Denis R. Bell) **93f:60082** 60H07 (60G20, 60G30)

— (*with* Decreusefond, L.; van Dijk, Nico M.) An error bound for infinite approximations of queueing networks with large finite stations under RSRD protocol. (English summary) *Performance Evaluation* **17** (1993), *no.* 3, 177–187. 90B22 (60K25)

— *see also* **Stochastic analysis and related topics, 93h:60004**

Korfiatis, E. (*with* Christodoulakis, T.) Quantum mechanics of the general spatially homogeneous geometry coupled to a scalar field. *J. Math. Phys.* **33** (1992), *no.* 8, 2863–2876. (Annalisa Marzuoli) **93i:83046** 83C45 (81T20)

Koriyama, Akira (*with* Asada, Yura) M_1-set of cubic complex polynomials. *Proc. Fac. Sci. Tokai Univ.* **26** (1991), 15–20. (Summary) **93i:30022** 30D05 (58F23)

Korkhin, A. S. Estimation of variable regression parameters as a two-criteria problem. (Russian. English and Ukrainian summaries) *Kibernetika* (*Kiev*) **1991,** *no.* 3, 67–73, 134; *translation in Cybernetics* **27** (1991), *no.* 3, 397–407 (1992). (Summary) **93c:62117** 62J05

Korkina, E. Classification of A-graded algebras with 3 generators. *Indag. Math.* (*N.S.*) **3** (1992), *no.* 1, 27–40. (J. S. Joel) **93c:13013** 13E15 (13P10, 58C27)

Korkina, L. F. (*with* Rekant, M. A.) Fractional powers of a class of operators. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* **1991,** *no.* 9, 81–83; *translation in Soviet Math.* (*Iz. VUZ*) **35** (1991), *no.* 9, 79–81. (From the text) **93f:47016** 47A60 (47D03)

Korkina, M. P. (*with* Orlyanskiĭ, O. Yu.) A method for generating static spherically symmetric solutions of the equations of the general theory of relativity. (Russian. English and Ukrainian summaries) *Ukrain. Fiz. Zh.* **36** (1991), *no.* 8, 1127–1131. (Jan Novotný) **93b:83015** 83C20

— (*with* Buts, S. V.) Penrose diagrams for Schwarzschild-Friedmann models in Kruskal coordinates. (Russian. Russian summary) *Izv. Vyssh. Uchebn. Zaved. Fiz.* **35** (1992), *no.* 7, 87–91; *translation in Russian Phys. J.* **35** (1992), *no.* 7, 658–661 (1993). (Piret Kuusk) **93k:83012** 83C15 (83C57)

Korkuna, M. D. (*with* Kuzik, A. M.; Chulik, Ĭ. Ĭ.) Application of the method of summary approximation for the solution of a nonlinear problem of heat conduction. (Ukrainian) *Visnik L'vîv. Derzh. Unîv. Ser. Mekh.-Mat. No.* 31 (1989), 8–11. 65M99

— (*with* Kuzik, A. M.; Chulik, Ĭ. Ĭ.) Investigation of the convergence rate of the summary approximation method in the class $W_2^{1,0}(Q_T)$. (Ukrainian) *Visnik L'vîv. Derzh. Unîv. Ser. Mekh.-Mat. No.* 33 (1990), 37–39. 65M99

Korkuna, O. P. (*with* Gusak, D. V.) Distribution of the maximum of oscillating semicontinuous processes with independent increments. (Russian. Russian summary) *Asymptotic methods in problems in the theory of random evolutions* (*Russian*), 19–25, *Akad. Nauk Ukrain. SSR, Inst. Mat., Kiev*, 1991. (Summary) **93j:60106** 60J30

Korman, Philip (*with* Barbu, Viorel) Approximating optimal controls for elliptic obstacle problem by monotone iteration schemes. *Numer. Funct. Anal. Optim.* **12** (1991), *no.* 5-6, 429–442 (1992). (Shuzi Zhou) **93e:65090** 65K10 (35J85, 49K20, 65N99, 73K50)

— (*with* Choudury, Gilbert) On computation of solutions of fully nonlinear elliptic problems. (English summary) *J. Comput. Appl. Math.* **41** (1992), *no.* 3, 301–311. (Bernd Heinrich) **93j:65166** 65N06 (65N22)

— Some new results on the periodic competition model. *J. Math. Anal. Appl.* **171** (1992), *no.* 1, 131–138. (H. I. Freedman) **93j:92033** 92D40 (34C25)

— On periodic solutions for singular perturbation problems. *Proc. Roy. Soc. Edinburgh Sect. A* **120** (1992), *no.* 1-2, 143–152. (Reza Malek-Madani) **93b:35010** 35B25 (35B10, 35J60)

Kormos, János (*with* Piterbarg, V. I.) A nonstationarity criterion for a Gaussian autoregressive time series under a close alternative. (Russian) *Problemy Peredachi Informatsii* **27** (1991), *no.* 4, 70–75; *translation in Problems Inform. Transmission* **27** (1991), *no.* 4, 334–338 (1992). (N. Leonenko) **93e:62234** 62M10 (62F03, 62M02)

Kornadt, O. (*with* Linz, S. J.; Lücke, M.) Parametric perturbations of a pitchfork bifurcation—the Ricker map. *From phase transitions to chaos*, 372–386, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93c:58189** 58F30 (58F14)

Korneev, V. G. (*with* Veber, B.) Preconditioner of a finite element matrix for a fourth-order elliptic equation. (Russian. Russian summary) *Zh. Vychisl. Mat. i Mat. Fiz.* **33** (1993), *no.* 3, 364–379; *translation in Comput. Math. Math. Phys.* **33** (1993), *no.* 3, 329–341. (Summary) **93m:65160** 65N30

Korneichuk, N. P. Encoding and recovery of operator values. *J. Complexity* **8** (1992), *no.* 1, 79–91. (Yuly Makovoz) **93d:41022** 41A46 (41A05, 65D99)

— *see also* **Optimization of approximation methods, 93m:41001**

Kőrner, János (*with* Simonyi, Gábor; Tuza, Zsolt) Perfect couples of graphs. (English summary) *Combinatorica* **12** (1992), *no.* 2, 179–192. (Theodore C. Enns) **93i:05107** 05C75

— (*with* Gargano, Luisa; Vaccaro, Ugo) Search problems for two irregular coins with incomplete feedback: the underweight model. *Discrete Appl. Math.* **36** (1992), *no.* 2, 191–197. (Summary) **93b:90036** 90B40 (05A99, 90B90)

— (*with* Gargano, Luisa; Vaccaro, Ugo) Qualitative independence and Sperner problems for directed graphs. (English summary) *J. Combin. Theory Ser. A* **61** (1992), *no.* 2, 173–192. (Konrad Engel) **93h:05165** 05D05 (05A18, 05C20)

Kőrner, P. F. An efficient method for obtaining sharp bounds for nonlinear Boolean programming problems. (French summary) *RAIRO Rech. Opér.* **26** (1992), *no.* 1, 113–120. (Summary) **93a:90044** 90C09

— A note on optimality conditions for dual problems to the traveling salesman problem. (English summary) *Zastos. Mat.* **21** (1993), *no.* 4, 571–573. (Summary) **93j:90065** 90C09 (49N15, 90C27)

Kőrner, Thomas W. Sets of uniqueness. *L'émergence de l'analyse harmonique abstraite* (1930–1950) (*Paris*, 1991), 51–63, *Cahiers Sém. Hist. Math. Sér.* 2, 2, *Univ. Paris VI, Paris*, 1992. (*see* **93h:01032**) 01A60 (42A63, 43A46)

Kornev, V. M. An analogue of the d'Alembert formula for equations of the vibrations of nonhomogeneous rods and strings. (Russian. Russian summary) *Dinamika Sploshn. Sredy No.* 99 (1990), 34–40, 118. 35L05 (35C15, 73D30, 73K12)

— (*with* Mul'kibaev, A. O.) Asymptotic analysis of problems on free oscillations of rectangular transversally isotropic and three-layered plates. (Russian) *Prikl. Mekh. Tekhn. Fiz.* **1992,** *no.* 4, 110–124; *translation in J. Appl. Mech. Tech. Phys.* **33** (1992), *no.* 4, 576–588 (1993). (L. P. Lebedev) **93j:73047** 73K10 (35Q72, 73B40, 73D30, 73K12)

Kornhuber, Ralf (*with* Roitzsch, Rainer) Self-adaptive finite-element simulation of bipolar, strongly reverse-biased pn-junctions. (English summary) *Comm. Numer. Methods Engrg.* **9** (1993), *no.* 3, 243–250. 65N30

Kornienko, V. S. On weakly injective polygons over distributive lattices. (Russian. Russian summary) *Abelian groups and modules, No.* 8 (*Russian*), 80–89, 173, *Tomsk. Gos. Univ., Tomsk*, 1989. (Summary) **93k:06019** 06D05

— Perfect distributive lattices. (Russian) *Algebraic systems* (*Russian*), 45–48, *Volgograd. Gos. Ped. Inst., Volgograd*, 1989. (*see* **93m:00015**) 06D10

Kornoushenko, E. K. Monitoring of logic-dynamic systems based on sampled performance data. *J. Comput. Systems Sci. Internat.* **30** (1992), *no.* 6, 107–117; *translated from Izv. Ross. Akad. Nauk Tekhn. Kibernet.* **1992,** *no.* 1, 171–182 (*Russian. Russian summary*). 93A30 (93B17)

— Reconstruction of a scalar signal at the input of a discrete linear system for an admissible specification of its parameters. (Russian. Russian summary) *Avtomat. i Telemekh.* **1993,** *no.* 1, 37–44; *translation in Automat. Remote Control* **54** (1993), *no.* 1, *part* 1, 31–37. 93E12 (93B30, 93C55)

Kőrnyei, I. (*with* Kátai, Imre) On number systems in algebraic number fields. *Publ. Math. Debrecen* **41** (1992), *no.* 3-4, 289–294. (D. Boyd) **93m:11107** 11R04 (52C22)

Korobeĭnik, Yu. F. (*with* Melikhov, S. N.) Representation of a conjugate space by means of the generalized Fourier-Borel transform. Applications. (Russian. Russian summary) *Complex analysis and mathematical physics* (*Russian*) (*Divnogorsk*, 1987), 62–73, 158, *Akad. Nauk SSSR Sibirsk. Otdel., Inst. Fiz., Krasnoyarsk*, 1988. (*see* **93b:32001**) 46E10 (30H05)

— Description of the general form of nontrivial expansions of zero by exponentials. Applications. (Russian) *Izv. Akad. Nauk SSSR Ser. Mat.* **55** (1991), *no.* 5, 1049–1069; *translation in Math. USSR-Izv.* **39** (1992), *no.* 2, 1013–1032. (Fritz Haslinger) **93e:46031** 46E10 (30H05, 47B38)

— Absolutely representing systems and weakly sufficient sets. (Russian) *Izv. Severo-Kavkaz. Nauchn. Tsentra Vyssh. Shkoly Estestv. Nauk.* **1991,** *no.* 3, 4–8, 143. (Summary) **93b:46009** 46A13 (46A35)

— On a right inverse operator for the convolution operator. (Russian. Ukrainian summary) *Ukrain. Mat. Zh.* **43** (1991), *no.* 9, 1167–1176; *translation in Ukrainian Math. J.* **43** (1991), *no.* 9, 1094–1101 (1992). (Valentin Napalkov) **93b:47063** 47B38 (30H05, 47B35, 47G10)

— Maximal and γ-sufficient sets. Applications to entire functions. II. *J. Soviet Math.* **59** (1992), *no.* 1, 599–606. (Mikhail L. Sodin) **93c:30043** 30D15 (46J15)

— (*with* Kadets, V. M.) Representing and absolutely representing systems. *Studia Math.* **102** (1992), *no.* 3, 217–223. (Plamen Dzhakov) **93f:46004** 46A35

— *see also* **Epifanov, O. V. et al.**

Korobitsyn, V. A. Numerical modeling of axisymmetric potential flows of an incompressible fluid. (Russian. English summary) *Mat. Model.* **3** (1991), *no.* 10, 42–49. (Summary) **93a:76072** 76M20 (76B10)

— Completely conservative axisymmetric difference schemes in curvilinear orthogonal coordinate systems. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **32** (1992), *no.* 5, 810–815; *translation in Comput. Math. Math. Phys.* **32** (1992), *no.* 5, 711–717. (Summary) **93b:65128** 65M06 (76M20)

Korobkin, A. A. Motion of a body in anisotropic fluid. (English, Russian and Polish summaries) *Arch. Mech.* (*Arch. Mech. Stos.*) **42** (1990), *no.* 6, 627–638 (1991). (Summary) **93f:76098** 76V05

— (*with* Sturova, I. V.) Three-dimensional Cauchy-Poisson problem for a basin with a smoothly changing bottom. (Russian. Russian summary) *Dinamika Sploshn. Sredy No.* 97 (1990), 37–50, 212. (Summary) **93d:35118** 35Q30 (76B15)

— Propagation of internal waves in an exponentially stratified fluid over a shelf. (Russian) *Prikl. Mekh. Tekhn. Fiz.* **1992,** *no.* 2, 32–38; *translation in J. Appl. Mech. Tech. Phys.* **33** (1992), *no.* 2, 171–176. (Vladan D. Djordjević) **93i:76097** 76V05 (76C10)

— Acoustic approximation in the problem of the immersion of a blunt contour in an ideal fluid. (Russian) *Prikl. Mekh. Tekhn. Fiz.* **1992,** *no.* 4, 48–54; *translation in J. Appl. Mech. Tech. Phys.* **33** (1992), *no.* 4, 520–525 (1993). (From the text) **93j:76049** 76N10 (76B10)

Korobov, N. M. ★ Exponential sums and their applications. Translated from the 1989 Russian original by Yu. N. Shakhov. Mathematics and its Applications (Soviet Series), 80. *Kluwer Academic Publishers Group, Dordrecht*, 1992. xvi+209 *pp. ISBN* 0-7923-1647-9 (Editors) **93a:11068** 11Lxx (65D32)

Korobova, E. V. (*with* Bessonov, G. A.) Solution of a problem on the synthesis of a positional control for some classes of nonlinear systems. (Russian) *Vestnik Khar'kov. Univ. No.* 361, *Prikl. Mat. Mekh.* (1991), 27–33. (Summary) **93g:93011** 93B05 (49N35, 93B51)

— (*with* Sklyar, G. M.) Constructive method for mapping nonlinear systems onto linear systems. *J. Soviet Math.* **59** (1992), *no.* 1, 631–635. (Summary) **93d:34015** 34A34 (34A25, 34H05, 93B18)

Korogodskiĭ, L. I. (*with* Vaksman, L. L.) Quantum G-spaces and Heisenberg algebra. (English summary) *Quantum groups* (*Leningrad*, 1990), 56–66, *Lecture Notes in Math.*, 1510, *Springer, Berlin*, 1992. (Jörg Feldvoss) **93k:17031** 17B37 (16W30)

Korol', A. M. Discrete decomposition of von Neumann algebras of type III. (Russian) *Funktsional. Anal. i Prilozhen.* **25** (1991), *no.* 2, 60–62; *translation in Functional Anal. Appl.* **25** (1991), *no.* 2, 131–132. (A. I. Danilenko) **93b:46118** 46L10 (46L35, 46L45)

Korolev, L. N. *see* **Computer systems and problems in decision making, 93g:90002**

Korolev, V. I. (*with* Glebskaya, O. Yu.; Rotkov, L. Yu.; Motova, M. I.) Damping of the frequency of oscillations by an external sinusoidal force in a three-frequency generator. (Russian) *Dinamika Sistem* **1990,** *Dinam. Stokh. Bifur.*, 74–83. (Summary) **93a:34043** 34C15

Korolev, V. Yu. (*with* Kruglov, V. M.) Convergence of moments of randomly indexed random sequences. *Probability theory and mathematical statistics, Vol. II* (*Vilnius*, 1989), 10–21, "*Mokslas*", *Vilnius*, 1990. (Zdzisław Rychlik) **93c:60048** 60F25 (60F05)

— The asymptotics of randomly indexed random sequences: independent indices. Stability problems for stochastic models. *J. Soviet Math.* **59** (1992), *no.* 4, 926–938. (Eugeniusz Rychlik) **93g:60049** 60F05

— Probabilistic-statistical methods for predicting the reliability of complex software. (Russian. Russian summary) *Vestnik Moskov. Univ. Ser. XV Vychisl. Mat. Kibernet.* **1992,** *no.* 3, 3–21, 64; *translation in Moscow Univ. Comput. Math. Cybernet.* **47** (1992), *no.* 3, 4–18. (Summary) **93k:68013** 68M15 (68N05)

Koroleva, N. I. (*with* Kolmanovskiĭ, V. B.) Control of a predator-prey system with intraspecies competition. (Russian) *Prikl. Mat. Mekh.* **55** (1991), *no.* 5, 725–731; *translation in J. Appl. Math. Mech.* **55** (1991), *no.* 5, 588–595 (1992). (Summary) **93b:92012** 92D25 (34H05, 92D40, 93C95)

— (*with* Buyvolova, A. G.; Kolmanovskiĭ, V. B.) The time optimal control of predator-prey system with intraspecific struggle. (English summary) *Differential equations* (*Plovdiv*, 1991), 59–70, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93i:49048** 49N55 (34C99, 34H05, 92D25)

Korolyuk, D. V. (*with* Accardi, Luigi) Quantum Markov chains: the recurrence problem. *Quantum probability & related topics*, 63–73, *QP-PQ, VI, World Sci. Publishing, River Edge, NJ*, 1991. (Kalyanapuram R. Parthasarathy) **93h:81068** 81S25 (46L50, 60J10, 82B10)

Korolyuk, V. S. (*with* Borovskikh, Yu. V.) Weak convergence of distributions of U-H-statistics to stable laws. (Russian) *Teor. Veroyatnost. i Primenen.* **36** (1991), *no.* 3, 577–580; *translation in Theory Probab. Appl.* **36** (1991), *no.* 3, 596–600 (1992). (De Li Li) **93a:60013** 60B12 (60F05, 62G05)

— Stability of an autonomous dynamical system with fast Markov switchings. (Russian. Ukrainian summary) *Ukrain. Mat. Zh.* **43** (1991), *no.* 9, 1176–1181; *translation in Ukrainian Math. J.* **43** (1991), *no.* 9, 1101–1105 (1992). (From the text) **93i:34103** 34F05 (34D10, 34H05, 93D05)

— (*with* Borovskikh, Yu. V.) Generating function of permanents of projection matrices. (Russian. English and Russian summaries) *Dokl. Akad. Nauk Ukrainy* **1992,** *no.* 7, 30–35, 178. (Jorma Kaarlo Merikoski) **93j:15008** 15A15

— *see also* **Asymptotic methods in problems in the theory of random evolutions, 93e:60002**; **Probability theory and mathematical statistics, 93k:60008** *and* **Random evolutions: theoretical and applied problems, 93m:60009**

Koronacki, J. (*with* Feluch, W.) A note on modified cross-validation in density estimation. *Comput. Statist. Data Anal.* **13** (1992), *no.* 2, 143–151. (Summary) **93c:62067** 62G05

Korośki, Jan The three parabolic problem for the time spatial three-dimensional cylinder. (Polish summary) *Opuscula Math. No.* 6 (1990), 77–103. (From the introduction) **93e:35051** 35K30 (35K35)

— Uniqueness of the biparabolic problem for the strip with boundary conditions of Lauricella type. (Polish summary) *Opuscula Math. No.* 6 (1990), 105–110. (From the introduction) **93e:35052** 35K30 (35K35)

— The three-parabolic problem for the strip with boundary conditions of Lauricella type. (Polish summary) *Opuscula Math.* **1991,** *no.* 10, 77–95. (From the introduction) **93e:35054** 35K35

Korostelëv, A. P. (*with* Belitser, E. N.) Pseudovalues and minimax filtering algorithms for the nonparametric median. *Topics in nonparametric estimation*, 115–124, *Adv. Soviet Math.*, 12, *Amer. Math. Soc., Providence, RI*, 1992. (Sidney J. Yakowitz) **93k:60102** 60G35 (62G05, 62M20)

— (*with* Leonov, S. L.) Action functional for diffusions in discontinuous media. (English summary) *Probab. Theory Related Fields* **94** (1993), *no.* 3, 317–333. (Tzong-Yow Lee) **93j:60030** 60F10

— (*with* Tsybakov, A. B.) Estimating the support of a density and functionals of it. (Russian. Russian summary) *Problemy Peredachi Informatsii* **29** (1993), *no.* 1, 3–18; *translation in Problems Inform. Transmission* **29** (1993), *no.* 1, 1–15. (Summary) **93m:62078** 62G05 (68U05)

Korotaev, I. A. (*with* Spivak, L. R.) Queueing systems in a semi-Markov random environment. (Russian. Russian summary) *Avtomat. i Telemekh.* **1992,** *no.* 7, 86–92; *translation in Automat. Remote Control* **53** (1992), *no.* 7, *part* 1, 1028–1033. (Summary) **93h:90042** 90B22 (60K25)

Korotkiĭ, A. I. (*with* Osipov, Yu. S.) Dynamic modelling of parameters in hyperbolic systems. *Soviet J. Comput. Systems Sci.* **30** (1992), *no.* 3, 13–22; *translated from Izv. Akad. Nauk SSSR Tekhn. Kibernet.* **1991,** *no.* 2, 154–164 (*Russian*). (Peter Knabner) **93g:65118** 65M30 (35R30)

Korotkiĭ, V. A. (*with* Obukhov, Yu. N.) Rotating and expanding cosmology in ECSK-theory. (English summary) *Astrophys. Space Sci.* **198** (1992), *no.* 1, 1–12. (Ilya Shapiro) **93m:83069** 83D05 (83F05)

Korotkin, D. A. (*with* Reznik, V. A.) Bianchi surfaces in $\mathbf{R}^3$ and deformations of hyperelliptic curves. (Russian. Russian summary) *Mat. Zametki* **52** (1992), *no.* 3, 78–88, 158; *translation in Math. Notes* **52** (1992), *no.* 3-4, 930–937 (1993). (Reiko Miyaoka) **93k:53003** 53A05 (14K25, 58F19)

Korotkiy, A. I. *see* **Korotkiĭ, A. I.**

Korotkov, V. B. Properties of integral and partial integral operators. (Russian) *Sibirsk. Mat. Zh.* **33** (1992), *no.* 1, 201–204, 222; *translation in Siberian Math. J.* **33** (1992), *no.* 1, 166–168. (Vitali V. Shevchik) **93e:47038** 47B38 (45P05, 47G10)

Korotyaev, E. L. Some properties of the quasimomentum of the one-dimensional Hill operator. (Russian) *Zap. Nauchn. Sem. Leningrad. Otdel. Mat. Inst. Steklov.* (*LOMI*) **195** (1991), *Mat. Vopr. Teor. Rasprostr. Volн.* 21, 48–57, 180; *translation in J. Soviet Math.* **62** (1992), *no.* 6, 3081–3087. (From the text) **93c:34163** 34L40 (81Q10)

Korovin, Alexander V. Continuous actions of pseudocompact groups and axioms of topological group. (English summary) *Comment. Math. Univ. Carolin.* **33** (1992), *no.* 2, 335–343. (Summary) **93h:54024** 54H11 (22B05, 54C35)

Korovin, S. K. (*with* Emel'yanov, S. V.; Zhivoglyadov, P. V.) A method for stabilizing discrete objects with compact uncertainty. (Russian) *Dokl. Akad. Nauk SSSR* **319** (1991), *no.* 1, 91–97; *translation in Soviet Phys. Dokl.* **36** (1991), *no.* 7, 494–497 (1992). (P. Seibert) **93c:93044** 93D15 (93C55, 93D21)

— (*with* Bobylëv, N. A.; Burman, Yu. M.) Error estimation for the harmonic balance method. (Russian. Russian summary) *Avtomat. i Telemekh.* **1992,** *no.* 6, 3–12; *translation in Automat. Remote Control* **53** (1992), *no.* 6, *part* 1, 785–793. (Introduction) **93f:34068** 34C25 (34A45, 34H05, 93C05)

Korovin, S. V. (*with* Denisov, A. M.) A Volterra-type integral equation of the first kind. (Russian. Russian summary) *Vestnik Moskov. Univ. Ser. XV Vychisl. Mat. Kibernet.* **1992,** *no.* 3, 22–28, 64; *translation in Moscow Univ. Comput. Math. Cybernet.* **47** (1992), *no.* 3, 19–24. (From the introduction) **93j:45001** 45D05

Korovina, M. V. (*with* Sternin, B. Yu.; Shatalov, V. E.) Asymptotic expansions "in the large" of solutions of the complex Cauchy problem with singular initial data. (Russian) *Dokl. Akad. Nauk SSSR* **321** (1991), *no.* 2, 250–253; *translation in Soviet Math. Dokl.* **44** (1992), *no.* 3, 674–677. (Josef Diblík) **93b:35022** 35C20 (35G10)

Korpela, Seppo A. (*with* Babu, V.) On the direct solution of Poisson's equation on a nonuniform grid. (English summary) *J. Comput. Phys.* **104** (1993), *no.* 1, 93–98. 65N99 (65Y20)

Korsch, H. J. (*with* Hensel, M.) Dissipative quantum dynamics: solution of the generalized von Neumann equation for the damped harmonic oscillator. *J. Phys. A* **25** (1992), *no.* 7, 2043–2064. (Brian DeFacio) **93g:81032** 81Q99 (81Q50, 81S99, 82C10)

— (*with* Ernesti, A.) Factorization relations and Wigner's rotation matrices. *J. Phys. A* **25** (1992), *no.* 13, L817–L821. (Summary) **93f:81163** 81V55 (81R05, 81U99)

Korsh, James F. Counting and randomly generating binary trees. *Inform. Process. Lett.* **45** (1993), *no.* 6, 291–294. 68R10

Korshiya, T. K. (*with* Lobzhanidze, G. B.) Decomposition approaches to the numerical solution of nonlocal boundary value problems. (Russian. English and Georgian summaries) *Tbiliss. Gos. Univ. Inst. Prikl. Mat. Trudy* **40** (1990), 150–181, 248. (J. B. Butler, Jr.) **93b:65104** 65L10 (65L60, 65N12)

Korshunov, A. D. Minimal tests for binary rectangular and cylindrical tables with distributed blocks of units. (Russian) *Metody Diskret. Analiz. No.* 50 (1990), 26–60, 85–86. (Summary) **93e:94022** 94C12 (94C10)

Korshunov, D. A. (*with* Borovkov, A. A.; Fayolle, G.) Transient phenomena for Markov chains and applications. *Adv. in Appl. Probab.* **24** (1992), *no.* 2, 322–342. (Stig I. Rosenlund) **93f:60100** 60J10

Korst, Jan ★ Periodic multiprocessor scheduling. Dissertation, Technische Universiteit Eindhoven, Eindhoven, 1992. *Technische Universiteit Eindhoven, Eindhoven*, 1992. x+156 *pp.* 90B35 (68M20, 68Q25)

Korsun, L. D. (*with* Sisakyan, A. N.; Solovtsov, I. L.) Variational perturbation theory. The φ^{2k}-oscillator. (Russian. English summary) *Teoret. Mat. Fiz.* **90** (1992), *no.* 1, 37–54; *translation in Theoret. and Math. Phys.* **90** (1992), *no.* 1, 22–34. (Summary) **93a:81040** 81Q15

Korsunskiĭ, S. V. (*with* Selezov, I. T.) Nonlinear evolution equations and solitons in the theory of magnetohydrodynamic surface waves. *Nonlinear world, Vol.* 1 (*Kiev*, 1989), 353–362, *World Sci. Publishing, River Edge, NJ*, 1990. (*see* **93b:00012**) 76W05

Kortanek, K. O. (*with* Huang, Si Ming) A note of a potential reduction algorithm for LP with simultaneous primal-dual updating. *Oper. Res. Lett.* **10** (1991), *no.* 9, 501–507. (K. Zimmermann) **93a:90036** 90C05

Korte, Bernhard (*with* Lovász, László; Schrader, Rainer) ★ Greedoids. Algorithms and Combinatorics, 4. *Springer-Verlag, Berlin*, 1991. viii+211 *pp. ISBN* 3-540-18190-3 (Ulrich Faigle) **93f:90003** 90-02 (05B35, 90C10, 90C27)

Korté, Herbert (*with* Coleman, Robert Alan) On attempts to rescue the conventionality thesis of distant simultaneity in STR. (English summary) *Found. Phys. Lett.* **5** (1992), *no.* 6, 535–571. (Lawrence Sklar) **93k:83002** 83A05

Korthals-Altes, Chris P. (*with* Daniel,David; González-Arroyo, Antonio) Small volume physics with twisted boundary conditions. Lattice 90 (Tallahassee, FL, 1990). *Nuclear Phys. B Proc. Suppl.* **20** (1991), 16–19. (Summary) **93c:81119** 81T13

Kortram, R. A. A note on univalent functions with negative coefficients. *New trends in geometric function theory and applications* (*Madras*, 1990), 42–45, *World Sci. Publishing, River Edge, NJ*, 1991. (Herb Silverman) **93g:30015** 30C45

Korukonda, A. Rao (*with* Dave, Dinesh S.; Fitzpatrick, Kathy E.) Implementing optimization methods in network crashing: an illustration. (English summary) *Optimization, Vol.* 1, 2 (*Singapore*, 1992), 275–283, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93d:90005**) 90C90

de Korvin, A. (*with* Kleyle, R.) Selecting a set of simultaneous courses of action when imprecision is involved. (English summary) *Math. Comput. Modelling* **16** (1992), *no.* 11, 157–162. 90A05 (04A72)

— (*with* Espino, V.; Kleyle, R.) Using multiple sources of information to recognize and classify objects. (English summary) *Stochastic Anal. Appl.* **10** (1992), *no.* 5, 573–589. 68T10 (04A72)

Korwar, R. M. A characterization of the family of distributions with a linear mean residual life function. (English summary) *Sankhyā Ser. B* **54** (1992), *no.* 2, 257–260. (Summary) **93m:62035** 62E10 (62N05)

Korytova, M. A. (*with* Rumyantsev, A. N.) Some algorithms for the constructive investigation of linear boundary value problems with inequalities. (Russian. Russian summary) *Boundary value problems* (*Russian*), 49–57, *Perm. Politekh. Inst., Permʹ*, 1991. (*see* **93m:00017**) 65K05 (65F30, 65L05)

Koryukin, A. N. On a dual centralizer in prime rings. (Russian) *Sibirsk. Mat. Zh.* **32** (1991), *no.* 6, 81–86, 204; *translation in Siberian Math. J.* **32** (1991), *no.* 6, 965–970 (1992). (John Dauns) **93b:16027** 16L60 (16S34, 16W20)

Korzeniowski, Andrzej (*with* Hawkins, D. L.) On simulating Wiener integrals and their expectations. (English summary) *Probab. Engrg. Inform. Sci.* **5** (1991), *no.* 1, 101–112. (Summary) **93f:60122** 60J65 (65D30)

— Quantum mechanical simulation of the hydrogen molecule. *Comput. Math. Appl.* **24** (1992), *no.* 4, 99–102. (Summary) **93a:81034** 81Q05 (65P05, 81–04, 81S40)

— Probabilistic viscosity algorithm for the scalar conservation law. *Numer. Methods Partial Differential Equations* **8** (1992), *no.* 3, 277–290. (Benoit Perthame) **93b:65153** 65M99 (35K55)

Korzhik, V. P. Combinatorial description of 2-cell embeddings of graphs and the theory of flow graphs. (Russian. Russian summary) *Metody Diskret. Analiz. No.* 51 (1991), 37–60, 113. (Jozef Širáň) **93h:05063** 05C10

Korzyuk, V. I. (*with* Dainyak, V. V.) On a weak solution of a Dirichlet-type problem for a third-order linear differential equation. (Russian. Russian summary) *Differentsialʹnye Uravneniya* **28** (1992), *no.* 6, 1056–1066, 1103; *translation in Differential Equations* **28** (1992), *no.* 6, 857–867. (Summary) **93j:35047** 35G05 (35D05)

Kosaki, Hideki On some trace inequalities. *Miniconference on probability and analysis* (*Sydney*, 1991), 129–134, *Proc. Centre Math. Appl. Austral. Nat. Univ.*, 29, *Austral. Nat. Univ., Canberra*, 1992. (Fuad Kittaneh) **93j:47027** 47A63 (47B15)

— (*with* Longo, Roberto) A remark on the minimal index of subfactors. *J. Funct. Anal.* **107** (1992), *no.* 2, 458–470. (Fumio Hiai) **93i:46108** 46L37

— A remark on Sakai's quadratic Radon-Nikodým theorem. *Proc. Amer. Math. Soc.* **116** (1992), *no.* 3, 783–786. (Fumio Hiai) **93a:46116** 46L10 (46L30, 46L50)

— Unitarily invariant norms under which the map $A \to |A|$ is Lipschitz continuous. *Publ. Res. Inst. Math. Sci.* **28** (1992), *no.* 2, 299–313. (Victor Kaftal) **93d:47043** 47B10 (47A30)

Kosaraju, S. Rao (*with* Atallah, Mikhail J.) An efficient parallel algorithm for the row minima of a totally monotone matrix. (English summary) *J. Algorithms* **13** (1992), *no.* 3, 394–413. (Summary) **93d:65119** 65Y05 (65F30)

Kosarchin, V. M. (*with* Kvīt, I. D.) A random process as a convolution or an amplification. (Ukrainian. Russian summary) *Vīsnik Lʹvīv. Derzh. Unīv. Ser. Mekh.-Mat. No.* 30 (1988), 55–58, 78. 60E10 (60G99)

Kosareva, L. M. Images of the Universe in 16th–18th century European culture. (Russian) *Istor.-Astronom. Issled. No.* 22 (1990), 74–109. (Peeter Müürsepp) **93a:01012** 01A40 (01A45, 01A50, 85–03)

Kosarew, Siegmund Maximal modular subspace in semi-universal deformation of holomorphic mapping germs. Analyse complexe (Bucharest, 1989). *Rev. Roumaine Math. Pures Appl.* **36** (1991), *no.* 5-6, 231–252. (Vasile Brînzănescu) **93d:32027** 32G05 (32S30)

Koschany, Arthur (*with* Kuffer, Josef; Obermair, Gustav M.) Chaos in wave mechanics with a logarithmic nonlinearity. *Phys. Lett. A* **167** (1992), *no.* 2, 109–113. (Summary) **93h:81033** 81Q50

Koschnick, Klaus-Uwe A new upper bound for the football pool problem for nine matches. (English summary) *J. Combin. Theory Ser. A* **62** (1993), *no.* 1, 162–167. (Summary) **93j:05159** 05D05

Koschorke, Ulrich Geometric link homotopy invariants. (English summary) *Knots* 90 (*Osaka*, 1990), 117–124, *de Gruyter, Berlin*, 1992. (Lawrence J. Smolinsky) **93h:57040** 57Q45

— Belts and κ-invariants of link maps in spheres. (English summary) *Manuscripta Math.* **76** (1992), *no.* 3-4, 241–249. (Paul A. Kirk) **93i:57030** 57Q45

Kosecki, Roman The unit condition and global existence for a class of nonlinear Klein-Gordon equations. (English summary) *J. Differential Equations* **100** (1992), *no.* 2, 257–268. (Thierry Cazenave) **93k:35178** 35L70 (35B65, 35Q53)

— (*with* Coghlan, Leslie; Itokawa, Yoe) On the solutions to certain Laplace inequalities with applications to geometry of submanifolds. *J. Geom. Anal.* **2** (1992), *no.* 3, 195–211. (Johan Tysk) **93d:58186** 58G30 (53C42, 58G25)

Kosel, U. (*with* Röhlig, K.-J.) Bifurkationsprobleme bei Kanalströmungen zäher Flüssigkeiten. [Bifurcation problems in channel flows of viscous fluids] Bericht über die Wissenschaftliche Jahrestagung der GAMM (Kraków, 1991). *Z. Angew. Math. Mech.* **72** (1992), *no.* 6, T428–T436. (B. V. Loginov) **93i:76037** 76E15 (58E09)

Koshelev, Yu. G. On properties of the multiplication of varieties of semigroups. (Russian) *Semigroups and their homomorphisms* (*Russian*), 27–33, *Ross. Gos. Ped. Univ., Leningrad*, 1991. (From the introduction) **93e:20076** 20M07

— On a multiplication of semigroup varieties. *Semigroup Forum* **45** (1992), *no.* 1, 1–8. (P. M. Higgins) **93d:20104** 20M07

Koshi, Shozo (*with* Takesaki, Masamichi) An open mapping theorem on homogeneous spaces. *J. Austral. Math. Soc. Ser. A* **53** (1992), *no.* 1, 51–54. (V. Pták) **93f:46003** 46A30 (54C10)

Koshigoe, Hideyuki (*with* Kawarada, Hideo; Sasamoto, Akira) The behavior of free surface appearing in the flow through the porous media. *Adv. Math. Sci. Appl.* **1** (1992), *no.* 1, 157–174. (Summary) **93b:76084** 76S05

— (*with* Kawarada, Hideo) The behavior of free surfaces appearing in flow problems. *Free boundary problems in fluid flow with applications* (*Montreal, PQ*, 1990), 161–165, *Pitman Res. Notes Math. Ser.*, 282, *Longman Sci. Tech., Harlow*, 1993. (*see* **93k:00036**) 35R35 (76B99)

Koshikawa, Hiroaki Weakly complex manifolds with semi-free S^1-action whose fixed point set has complex codimension 2. *Hokkaido Math. J.* **21** (1992), *no.* 1, 187–194. (From the introduction) **93i:57043** 57R77 (57R20, 57S15)

Koshitani, Shigeo The principal block ideals of group algebras of finite groups over a field of characteristic 3. *Proceedings of the Sixth International Conference on Representations of Algebras* (*Ottawa, ON*, 1992), 11 *pp., Carleton-Ottawa Math. Lecture Note Ser.*, 14, *Carleton Univ., Ottawa, ON*, 1992. (J. L. Alperin) **93k:20021** 20C20

Koshkin, M. A. (*with* Lozhkin, S. A.) On the complexity of realization of certain systems of Boolean functions by switching and generalized switching circuits. (Russian) *Mathematical problems in cybernetics, No.* 3 (*Russian*), 257–285, "*Nauka*", *Moscow*, 1991. (From the introduction) **93e:94020** 94C10 (03G05, 06E30)

Koshkin, V. L. (*with* Gulyaev, V. I.; Druzhinina, A. L.) A universal sequence of period-doubling bifurcations for a conservative oscillator with power nonlinearities. (Russian) *Mat. Fiz. Nelinein. Mekh. No.* 15(49) (1991), 49–54. (Ji Bin Li) **93a:58121** 58F13 (34C23, 58F14, 70K50)

Koshkin, Yurij (*with* Antamoshkin, A. N.) The cutting off algorithms for pseudo-Boolean optimization. (English, Russian and Lithuanian summaries) *Informatica* **2** (1991), *no.* 4, 539–551, 598, 607. (Jürgen Köhler) **93j:90063** 90C09 (06E30)

Koshlyakov, V. N. (*with* Novitskiĭ, V. V.; Onishchenko, S. M.) Analytic synthesis of controllable gyroscopic and navigational systems. (Russian. Russian summary) *Filtering and control in mechanical systems* (*Russian*), 35–49, *Akad. Nauk Ukrain. SSR, Inst. Mat., Kiev*, 1991. (*see* **93f:00007**) 93B50 (70Q05)

— Generalized Euler equations in Rodrigues-Hamilton parameters. (Russian. Russian summary) *Stability and control in mechanical systems* (*Russian*), 21–26, *Akad. Nauk Ukrainy, Inst. Mat., Kiev*, 1992. (*see* **93m:00038**) 70E15

— *see also* **Filtering and control in mechanical systems, 93f:00007**; **Stability and control in mechanical systems, 93m:00038** *and* **Birthday: Koshlyakov, V. N.**

Koshmanenko, Y. D. A contribution to the theory of rank-one singular perturbations of selfadjoint operators. (Russian and Ukrainian summaries) *Ukrain. Mat. Zh.* **43** (1991), *no.* 11, 1559–1566; *reprinted in Ukrainian Math. J.* **43** (1991), *no.* 11, 1450–1457 (1992). (Horst Behncke) **93b:47020** 47A55 (47B25)

Koshovets, I. A. A unitary analogue of the Anderson model. Pure point spectrum. (Russian. English summary) *Teoret. Mat. Fiz.* **89** (1991), *no.* 3, 337–365; *translation in Theoret. and Math. Phys.* **89** (1991), *no.* 3, 1249–1270 (1992). (Eugen Belokolos) **93a:82031** 82B44 (47N55)

— Properties of the limit distribution of states for a family of unitary operators that is connected with a quantum rotator. (Russian) *Uspekhi Mat. Nauk* **46** (1991), *no.* 6(282), 213–214; *translation in Russian Math. Surveys* **46** (1991), *no.* 6, 223–224. (Nicolae Angelescu) **93g:47090** 47N50 (47N55, 60H25, 82B44)

Koshti, Sucheta Massless Einstein-Klein-Gordon theory in the spin connection formulation. (English summary) *Classical Quantum Gravity* **9** (1992), *no.* 8, 1937–1941. (Ingemar Bengtsson) **93i:83008** 83C05 (83C60)

Kosiński, P. (*with* Giler, S.; Maślanka, P.) Remarks on differential calculi on Manin's plane. *Modern Phys. Lett. A* **6** (1991), *no.* 35, 3251–3254. (From the text) **93j:58010** 58B30 (17B37)

— (*with* Gonera, C.) Gauge symmetries in three dimensions. *Phys. Lett. B* **268** (1991), *no.* 1, 81–85. (André Burnel) **93a:81117** 81T10 (81R20)

— (*with* Brihaye, Yves; Maślanka, P.; Giler, S.) Real representations of Clifford algebras. *J. Math. Phys.* **33** (1992), *no.* 5, 1579–1581. (Pierre Anglès) **93g:15017** 15A66

— (*with* Giller, S.; Majewski, Michał; Maślanka, P.; Kunz, Jutta) More about the q-deformed Poincaré algebra. (English summary) *Phys. Lett. B* **286** (1992), *no.* 1-2, 57–62. (A. U. Klimyk) **93e:81049** 81R50 (17B37)

Kosiński, Witold (*with* Dell'isola, Francesco) The interface between phases as a layer. II. A H-order model for two-dimensional nonmaterial continua. (English summary) *Waves and stability in continuous media* (*Sorrento*, 1989), 108–113, *Ser. Adv. Math. Appl. Sci.*, 4, *World Sci. Publishing, River Edge, NJ*, 1991. (*see* **93g:00030**) 80A22 (73B30)

— (*with* Cimmelli, Vito Antonio) Evolution hyperbolic equations for heat conduction. *Thermodynamics and kinetic theory* (*Mądralin*, 1990), 11–22, *Ser. Adv. Math. Appl. Sci.*, 12, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93d:73007** 73B30 (80A20)

— (*with* Dell'isola, Francesco) The curved interface with variable thickness. *Thermodynamics and kinetic theory* (*Mądralin*, 1990), 58–71, *Ser. Adv. Math. Appl. Sci.*, 12, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93d:82060** 82C24 (73B30, 80A22)

— (*with* Frischmuth, K.; Lekszycki, T.) Free vibrations of finite-memory material beams. (English summary) *Internat. J. Engrg. Sci.* **31** (1993), *no.* 3, 385–395. (Summary) **93m:73022** 73K12 (73F15, 73K05)

— (*with* Saxton, K.) The effect on finite time breakdown due to modified Fourier laws. (English summary) *Quart. Appl. Math.* **51** (1993), *no.* 1, 55–68. (Summary) **93m:35118** 35L05 (73B30)

— *see also* **Thermodynamics and kinetic theory, 93a:82002**

Koskela, Mauri On norms of nonnegative matrix operators in l^p spaces. I. *Acta Univ. Oulu. Ser. A Sci. Rerum Natur.* **1991,** *no.* 208, 28 *pp.* (Richard M. Crownover) **93g:47035** 47B37 (47A30)

Koskela, Pekka (*with* Hanson, Bruce) Higher integrability and the boundary dimension. *Ann. Acad. Sci. Fenn. Ser. A I Math.* **16** (1991), *no.* 2, 323–331. (David A. Herron) **93c:30030** 30C65

Koski, Timo Nonlinear autoregression in the theory of signal compression. *Ann. Acad. Sci. Fenn. Ser. A I Math.* **17** (1992), *no.* 1, 51–64. (L. L. Campbell) **93b:94009** 94A14 (60J05)

— (*with* Persson, Lars-Erik) Some properties of generalized exponential entropies with applications to data compression. *Inform. Sci.* **62** (1992), *no.* 1-2, 103–132. (Viktor A. Obuljen) **93d:94008** 94A17 (94A29)

Kosko, Bart Fuzzy associative memory systems. *Fuzzy expert systems*, 135–162, *CRC, Boca Raton, FL*, 1992. (*see* **93g:68133**) 68T35 (03B52)

Kosler, Karl A. Module extensions and the second layer condition. *Comm. Algebra* **20** (1992), *no.* 1, 69–91. (Robert Wisbauer) **93b:16042** 16P50 (16N60, 16S90)

Kośliński, A. (*with* Głazek, Kazimierz) On the Płonka decomposition of graphs and related algebras. Universal algebra, quasigroups and related systems (Jadwisin, 1989). *Demonstratio Math.* **24** (1991), *no.* 1-2, 207–233. (Samuel Stueckle) **93f:05066** 05C70 (05C30, 08A05)

Kosloff, Dan (*with* Tal-Ezer, Hillel) A modified Chebyshev pseudospectral method with an $O(N^{-1})$ time step restriction. (English summary) *J. Comput. Phys.* **104** (1993), *no.* 2, 457–469. (Summary) **93k:65080** 65M70

Kosloff, Ronnie (*with* Tal-Ezer, Hillel; Cerjan, Charles) Low-order polynomial approximation of propagators for the time-dependent Schrödinger equation. *J. Comput. Phys.* **100** (1992), *no.* 1, 179–187. (Summary) **93b:81005** 81–08 (81Q05)

— (*with* Berman, Michael; Tal-Ezer, Hillel) Solution of the time-dependent Liouville-von Neumann equation: dissipative evolution. *J. Phys. A* **25** (1992), *no.* 5, 1283–1307. (Robert Alicki) **93d:82054** 82C10

Koslow, Arnold ★ A structuralist theory of logic. *Cambridge University Press, Cambridge*, 1992. xii+418 *pp. ISBN* 0-521-41267-6 (Peter M. Simons) **93i:03003** 03–02 (03A05, 03B45, 03B60)

Koslowski, Jürgen (*with* Castellini, Gabriele; Strecker, George E.) Hereditary and modal closure operators. (English summary) *Category theory* 1991 (*Montreal, PQ*, 1991), 111–132, *CMS Conf. Proc.*, 13, *Amer. Math. Soc., Providence, RI*, 1992. (Ana Pasztor) **93k:18005** 18A32 (06A15, 18B30, 54B30)

— (*with* Castellini, Gabriele; Strecker, George E.) A factorization of Pumplün-Röhrl connection. Proceedings of the Symposium on General Topology and Applications (Oxford, 1989). *Topology Appl.* **44** (1992), *no.* 1-3, 69–76. (Walter Tholen) **93f:18007** 18A99 (06A15, 18A32)

Kosmann-Schwarzbach, Y. From "quantum groups" to "quasi-quantum groups". *Symmetries in science, V* (*Lochau*, 1990), 369–393, *Plenum, New York*, 1991. (E. J. Taft) **93b:16069** 16W30 (17B37)

Kosmodem'yanskiĭ, A. A., Jr. Letter to the editors: "The behavior of solutions of the equation $\Delta u = -1$ in convex domains" [Dokl. Akad. Nauk SSSR **304** (1989), no. 3, 546–548; MR 90m:35048]. (Russian) *Dokl. Akad. Nauk SSSR* **319** (1991), *no.* 6, 1288. (From the text) **93a:35032** 35J05 (35B05)

Kosolapov, V. N. An almost linear method for solving the one-dimensional two-phase Stefan problem. (Russian. Russian summary) *Dinamika Sploshn. Sredy No.* 96 (1990), 59–66, 154. 65N99 (35R35)

Kosower, David A. (*with* Bern, Zvi) The computation of loop amplitudes in gauge theories. *Nuclear Phys. B* **379** (1992), *no.* 3, 451–561. (Silvio Paolo Sorella) **93k:81165** 81T30

Kospanova, R. K. (*with* Akishev, G. A.) Some embedding theorems in symmetric spaces. (Russian. English, Russian and Kazakh summaries) *Izv. Akad. Nauk Kazakh. SSR Ser. Fiz.-Mat.* **1991,** *no.* 5, 7–11. (J. Musielak) **93i:46049** 46E30 (41A50, 46E35)

Kossak, Roman (*with* Kaye, Richard William; Kotlarski, Henryk) Automorphisms of recursively saturated models of arithmetic. *Ann. Pure Appl. Logic* **55** (1991), *no.* 1, 67–99. (Ali Enayat) **93c:03047** 03C62 (20B27)

Kossen, L. (*with* Weijland, W. P.) Correctness proofs for systolic algorithms: palindromes and sorting. *Applications of process algebra*, 89–125, *Cambridge Tracts Theoret. Comput. Sci.*, 17, *Cambridge Univ. Press, Cambridge*, 1990. (*see* **93g:68090**) 68Q60 (68P10, 68Q10)

Kossowski, Marek Prescribing invariants of Lagrangian surfaces. *Topology* **31** (1992), *no.* 2, 337–347. (Nikolai K. Smolentsev) **93e:58064** 58F05 (57R20, 57R42, 58G15)

— Local existence and stability of multivalued solutions to determined analytic first-order systems on the plane. *Duke Math. J.* **69** (1993), *no.* 3, 635–661. (I. S. Krasil'shchik) **93m:35008** 35A07 (35D05, 58C27)

— The total split curvatures of knotted space-like 2-spheres in Minkowski 4-space. *Proc. Amer. Math. Soc.* **117** (1993), *no.* 3, 813–818. (Alfonso Romero) **93d:53085** 53C50 (53C42, 57Q45)

— The Lagrangian Gauss image of a surface in Euclidean 3-space. *Trans. Amer. Math. Soc.* **335** (1993), *no.* 2, 791–803. (I. G. Nikolaev) **93d:53077** 53C42 (57R20, 57R42)

Kosta, Shiv Prasad *see* **Jain, L. C.**

Kostadinov, S. I. (*with* Bainov, Drumi Dimitrov; Zabreiko, P. P.) Stability of the exponential dichotomy of linear impulsive differential equations. (English summary) *Riv. Mat. Univ. Parma* (4) **17** (1991), 271–277 (1992). (O. S. Chernikova) **93h:34021** 34A37 (34A30, 34D10, 34G10)

— (*with* Bainov, Drumi Dimitrov; Zabreiko, P. P.) Necessary and sufficient conditions for existence of exponential dichotomy of impulsive equations. (English summary) *Internat. J. Theoret. Phys.* **31** (1992), *no.* 8, 1521–1526. (Introduction) **93e:34022** 34A37 (34A30, 34D99)

Kostant, Bertram (*with* Kumar, Shrawan) A geometric realization of minimal $\mathfrak{k}$-type of Harish-Chandra modules for complex S.S. groups. *Kazhdan-Lusztig theory and related topics (Chicago, IL, 1989)*, 249–264, *Contemp. Math.*, 139, *Amer. Math. Soc., Providence, RI*, 1992. (William M. McGovern) **93k:22013** 22E47 (22E46)

Kostelecký, V. Alan (*with* Samuel, Stuart) Gravity and Lorentz breakdown in higher-dimensional theories and strings. *Differential geometric methods in theoretical physics (Davis, CA, 1988)*, 715–726, *NATO Adv. Sci. Inst. Ser. B Phys.*, **245**, *Plenum, New York*, 1990. (*see* **93a:00022**) 81R40 (81T30, 81V17)

Kostelich, Eric J. (*with* You, Zhiping; Yorke, James A.) Calculating stable and unstable manifolds. *Internat. J. Bifur. Chaos Appl. Sci. Engrg.* **1** (1991), *no.* 3, 605–623. (Summary) **93h:58108a** 58F13 (58–04)

— (*with* You, Zhiping; Yorke, James A.) Erratum: "Calculating stable and unstable manifolds". *Internat. J. Bifur. Chaos Appl. Sci. Engrg.* **2** (1992), *no.* 1, 215. (Summary) **93h:58108b** 58F13 (58–04)

— Problems in estimating dynamics from data. (English summary) Interpretation of time series from nonlinear systems (Warwick, 1991). *Phys. D* **58** (1992), *no.* 1-4, 138–152. (Hans-Peter Herzel) **93i:58140** 58F40 (58F13, 76F20)

— (*with* Armbruster, Dieter; Heiland, Randy; Nicolaenko, Basil) Phase-space analysis of bursting behavior in Kolmogorov flow. (English summary) Interpretation of time series from nonlinear systems (Warwick, 1991). *Phys. D* **58** (1992), *no.* 1-4, 392–401. (Summary) **93i:76046** 76F99 (76D05, 76M99)

Kostenko, V. G. (*with* Gubal', L. O.) Approximate solution of a mixed problem for a two-dimensional parabolic system of equations. (Ukrainian. Russian summary) *Visnik L'viv. Derzh. Univ. Ser. Mekh.-Mat. No.* 30 (1988), 8–13, 72. 65M99

— (*with* Manyak, O. M.; Okotrub, L. P.; Paterko, O. R.) Asymptotic properties of the solutions of an ordinary third-order linear differential equation. (Ukrainian) *Visnik L'viv. Derzh. Univ. Ser. Mekh.-Mat. No.* 32 (1989), 13–17. 34E99

— Investigation of a mixed problem of heat conduction for the determination of the heat emission coefficient. (Ukrainian) *Visnik L'viv. Derzh. Univ. Ser. Mekh.-Mat. No.* 32 (1989), 17–22. 35K05

— On an inverse problem for a system of equations of parabolic type. (Ukrainian) *Visnik L'viv. Univ. Ser. Mekh. Mat. No.* 34 (1990), 15–18. 35R30 (35K40)

— An inverse problem for determining the coefficients in the boundary condition of the third kind for a system of heat and moisture exchange equations. (Ukrainian. Russian summary) *Mathematical investigations (Ukrainian)*, 89–97, 120–121, *Zb. Nauk. Prats' L'viv. Mat. Tov.*, 1, *L'viv. Mat. Tov., L'viv*, 1991. (Summary) **93h:35211** 35R30 (35K20)

— (*with* Gubal', L. O.; Gera, B. V.) Determination of the heat emission coefficient in an inverse problem for the heat equation. (Ukrainian) *Mat. Metody i Fiz.-Mekh. Polya No.* 33 (1991), 9–13; *translation in J. Soviet Math.* **65** (1993), *no.* 5, 1814–1817. (S. T. Tikhonchuk) **93d:35176** 35R30 (35K05, 80A23)

— An inverse problem for a simplified system of heat and moisture transfer equations. (Russian. Russian summary) *Mat. Metody i Fiz.-Mekh. Polya No.* 34 (1991), 47–50. (Summary) **93h:35212** 35R30 (35K50, 76R99, 80A20)

Koster, David (*with* Killgrove, Ray; Sternfeld, Robert; Gordon, Carl E.; Tamez, Rodolfo; Wilkens, John) Local motions in sets of MOLS. Proceedings of the Twenty-second Southeastern Conference on Combinatorics, Graph Theory, and Computing (Baton Rouge, LA, 1991). *Congr. Numer.* **83** (1991), 97–113. (J. Dénes) **93c:05029** 05B15

Kosters, Walter A. (*with* de Graaf, Jeannette M.) Expected heights in heaps. (English summary) *BIT* **32** (1992), *no.* 4, 570–579. (Summary) **93g:68020** 68P10

Kostikov, A. A. The thermodiffusion Stefan problem in the presence of convection. (Russian. Russian and Ukrainian summaries) *Ukraïn. Mat. Zh.* **44** (1992), *no.* 2, 269–274; *translation in Ukrainian Math. J.* **44** (1992), *no.* 2, 236–240. (Krystyna Twardowska) **93j:35196** 35R35 (76D05, 80A22)

Kostin, A. B. (*with* Prilepko, A. I.) Some inverse problems for parabolic equations with final and integral observation. (Russian. Russian summary) *Mat. Sb.* **183** (1992), *no.* 4, 49–68; *translation in Russian Acad. Sci. Sb. Math.* **75** (1993), *no.* 2, 473–490. (Summary) **93k:35273** 35R30 (35K60)

— (*with* Prilepko, A. I.) Inverse problems of determining the coefficient in a parabolic equation. I. (Russian. Russian summary) *Sibirsk. Mat. Zh.* **33** (1992), *no.* 3, 146–155, 220; *translation in Siberian Math. J.* **33** (1992), *no.* 3, 489–496 (1993). (Sybille Handrock-Meyer) **93h:35213** 35R30 (35K20)

— (*with* Prilepko, A. I.) An estimate for the spectral radius of an operator and the solvability of inverse problems for evolution equations. (Russian. Russian summary) *Mat. Zametki* **53** (1993), *no.* 1, 89–94, 156. (Summary) **93m:47074** 47N20 (34A55, 34G10, 47D06)

Kostin, G. V. Modeling the controlled motions of an electromechanical manipulation robot with elastic links. *J. Comput. Systems Sci. Internat.* **30** (1992), *no.* 5, 146–152; *translated from Izv. Akad. Nauk SSSR Tekhn. Kibernet.* **1991**, *no.* 4, 182–188 (*Russian. Russian summary*). 93C85

— (*with* Akulenko, L. D.) The perturbation method in problems of the dynamics of nonuniform elastic rods. (Russian. Russian summary) *Prikl. Mat. Mekh.* **56** (1992), *no.* 3, 452–464; *translation in J. Appl. Math. Mech.* **56** (1992), *no.* 3, 372–382. (Vadim Komkov) **93j:73051** 73K12 (35Q72, 73D30, 73K05)

Kostin, I. N. A method for the approximation of attractors. (Russian. English summary) *Zap. Nauchn. Sem. Leningrad. Otdel. Mat. Inst. Steklov. (LOMI)* **188** (1991), *Kraev. Zadachi Mat. Fiz. i Smezh. Voprosy Teor. Funktsit.* 22, 87–104, 187. (Ladislav Andrey) **93e:58120a** 58F12 (34C35, 34D45, 35Q30, 47H20, 54H20, 58F39)

— A note on my paper: "A method for the approximation of attractors". (Russian) *Zap. Nauchn. Sem. Leningrad. Otdel. Mat. Inst. Steklov. (LOMI)* **196** (1991), *Modul. Funktsii Kvadrat. Formy.* 2, 99–100, 174. (Ladislav Andrey) **93e:58120b** 58F12 (34C35, 34D45, 35Q30, 47H20, 54H20, 58F39)

— Approximation of attractors of evolution equations by means of attractors of finite systems. (Russian. English summary) *Zap. Nauchn. Sem. S.-Peterburg. Otdel. Mat. Inst. Steklov. (POMI)* **197** (1992), *Kraev. Zadachi Mat. Fiz. Smezh. Voprosy Teor. Funktsii.* 23, 71–86, 180. (Summary) **93c:58123** 58F12

— Numerical construction of an attractor of the Navier-Stokes systems. (Russian. English and Russian summaries) *Zap. Nauchn. Sem. S.-Peterburg. Otdel. Mat. Inst. Steklov. (POMI)* **200** (1992), *Kraev. Zadachi Mat. Fiz. Smezh. Voprosy Teor. Funktsii.* 24, 91–97, 188–189. (Introduction) **93g:65128** 65M99 (35Q30, 76D05)

Kostin, M. D. Schrödinger-Fuerth quantum diffusion theory: generalized complex diffusion equation. *J. Math. Phys.* **33** (1992), *no.* 1, 111–113. (Kalyanapuram R. Parthasarathy) **93h:81037** 81P99 (35Q40)

— Cellular automata for quantum systems. (English summary) *J. Phys. A* **26** (1993), *no.* 5, L209–L215. (Summary) **93k:82063** 82C80 (68Q80)

Kostin, V. A. On the Cauchy problem for ordinary differential equations in Banach spaces. (Russian) *Partial differential equations (Russian)*, 93–116, 143, *Akad. Nauk SSSR Sibirsk. Otdel., Inst. Mat., Novosibirsk*, 1989. (H. O. Fattorini) **93c:34129** 34G10 (34A12, 47D06, 47D09)

— Exactly uniformly correct solvability of the Cauchy problem. (Russian) *Dokl. Akad. Nauk SSSR* **319** (1991), *no.* 1, 38–41; *translation in Soviet Math. Dokl.* **44** (1992), *no.* 1, 32–35. (Zi Qian Wu) **93c:35018** 35E15

— The Cauchy problem for an abstract differential equation with fractional derivatives. (Russian) *Dokl. Akad. Nauk* **326** (1992), *no.* 4, 597–600. (Alberto Venni) **93m:34087** 34G10 (34A12, 45J05, 47N20)

Kostin, V. I. On the problem of symmetrization of hyperbolic equations. *Partial differential equations, Part* 1, 2 (*Warsaw*, 1990), 257–269, *Banach Center Publ.*, 27, *Part* 1, 2, *Polish Acad. Sci., Warsaw*, 1992. (Hidetoshi Tahara) **93m:35122** 35L25 (35A25, 35L40)

Kostina, E. A. (*with* Gabasov, R. F.; Kirillova, F. M.) Global maximization of special classes of convex functions on a convex polyhedral set. (Russian. Russian summary) *Zh. Vychisl. Mat. i Mat. Fiz.* **32** (1992), *no.* 8, 1313–1320; *translation in Comput. Math. Math. Phys.* **32** (1992), *no.* 8, 1171–1177. (From the text) **93h:90069** 90C20 (90C08)

Kostitsyn, V. N. Linear methods for representations of spatial figures in an affine plane. (Russian) *Geometry of embedded manifolds (Russian)*, 34–42, "*Prometeĭ*", *Moscow*, 1989. (*see* **93g:53003**) 51N10

— On k-secants of an algebraic line of $(n+1)$st order in an n-dimensional projective space that have tangents with it. (Russian) *Geometry of embedded manifolds (Russian)*, 43–45, "*Prometeĭ*", *Moscow*, 1989. (*see* **93g:53003**) 51N35

Kostlan, Eric On the spectra of Gaussian matrices. Directions in matrix theory (Auburn, AL, 1990). *Linear Algebra Appl.* **162/164** (1992), 385–388. (N. Giri) **93c:62090** 62H10

Kostochka, A. V. (*with* Sapozhenko, A. A.; Weber, Karl F. E.) On random cubical graphs. (English summary) *Fourth Czechoslovakian Symposium on Combinatorics, Graphs and Complexity (Prachatice*, 1990), 155–160, *Ann. Discrete Math.*, 51, *North-Holland, Amsterdam*, 1992. (Summary) **93j:05139** 05C80

— List edge chromatic number of graphs with large girth. Special volume to mark the centennial of Julius Petersen's "Die Theorie der regulären Graphs", Part II. *Discrete Math.* **101** (1992), *no.* 1-3, 189–201. (Adrian Riskin) **93e:05033** 05C15

— (*with* Erdős, Paul; Fon-Der-Flaass, D. G.; Tuza, Zsolt) Small transversals in uniform hypergraphs. Siberian Advances in Mathematics. *Siberian Adv. Math.* **2** (1992), *no.* 1, 82–88. (Daniel Turzík) **93b:05076** 05C35 (05C65)

Kostogryzov, A. I. Investigation of the efficiency of a combination of different disciplines of priority servicing of calls in computer systems. (Russian. English and Ukrainian summaries) *Kibernet. Sistem. Anal.* **1992**, *no.* 1, 128–138, 190; *translation in Cybernet. Systems Anal.* **28** (1992), *no.* 1, 110–119. 90B35

Kostornoi, S. D. (*with* Kalashnikov, V. V.) A numerical method for solving a problem on the flow of an ideal fluid around arbitrarily distributed bodies. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **32** (1992), *no.* 6, 967–975; *translation in Comput. Math. Math. Phys.* **32** (1992), *no.* 6, 837–844. (Summary) **93d:76049** 76M25 (65P05, 76B10)

Kostousova, E. K. On observability for the one-dimensional heat equation. (Russian. Russian summary) *Differentsial'nye Uravneniya* **28** (1992), *no.* 3, 543–545, 552. (Summary) **93h:35084** 35K05 (35K45, 93B07)

Kostov, Ivan K. Strings with discrete target space. *Nuclear Phys. B* **376** (1992), *no.* 3, 539–598. (Andrew R. Kavalov) **93i:81190** 81T30

— (*with* Staudacher, Matthias) Multicritical phases of the O(n) model on a random lattice. (English summary) *Nuclear Phys. B* **384** (1992), *no.* 3, 459–483. (David Sénéchal) **93k:81179** 81T30 (82B20, 82B27)

— (*with* Kazakov, Vladimir Aleksandrovich[1]) Loop gas model for open strings. (English summary) *Nuclear Phys. B* **386** (1992), *no.* 3, 520–557. (David Sénéchal) **93m:81118** 81T30

— Gauge invariant matrix model for the $\hat{A}$-$\hat{D}$-$\hat{E}$ closed strings. (English summary) *Phys. Lett. B* **297** (1992), *no.* 1-2, 74–81. (A. Hamid Bougourzi) **93k:81163** 81T27 (81T30, 81T40)

— (*with* Godrèche, C.; Yekutieli, I.) Topological correlations in cellular structures and planar graph theory. (English summary) *Phys. Rev. Lett.* **69** (1992), *no.* 18, 2674–2677. 92C15 (05C90)

Kostova, Tanya Numerical solutions of some hyperbolic differential-integral equations. *Proceedings of the Second International Symposium on Numerical Analysis (Prague*, 1987), 210–214, *Teubner-Texte Math.*, 107, *Teubner, Leipzig*, 1988. (*see* **93b:65007**) 65R20

— (*with* Milner, Fabio A.) Some examples of nonstationary populations of constant size. (English summary) *Differential equations models in biology, epidemiology and ecology (Claremont, CA*, 1990), 219–234, *Lecture Notes in Biomath.*, 92, *Springer, Berlin*, 1991. (Summary) **93h:92028** 92D25 (92D40)

Kostova, V. A. An exact estimate for approximation of a class of convex functions by Baskakov operators in L_1. (English summary) *Serdica* **17** (1991), *no.* 4, 248–254. (Catalin Badea) **93j:41015** 41A35 (41A36)

Kostova, Z. T. (*with* Tomov, V. T.) ★ REDUCE package for analytical integration of some classes of linear differential equations. With a Russian summary. Сообщения Объединенного Института Ядерных Исследований. Дубна [Communications of the Joint Institute for Nuclear Research. Dubna], E5-92-46. *Joint Inst. Nuclear Res., Dubna*, 1992. 17 *pp.* (Summary) **93b:34002** 34–04 (34A30)

Kostra, Juraj (*with* Jakubec, Stanislav) A note on normal bases of ideals. (English summary) *Math. Slovaca* **42** (1992), *no.* 5, 677–684. (Jean Cougnard) **93m:11116** 11R33 (11R04)

Kostreva, Michael M. (*with* Ebiefung, Aniekan A.) Global solvability of generalized linear complementarity problems and a related class of polynomial complementarity problems. *Recent advances in global optimization* (*Princeton, NJ*, 1991), 102–124, *Princeton Ser. Comput. Sci., Princeton Univ. Press, Princeton, NJ*, 1992. (Vera V. Kovačević-Vujčić) **93a:90070** 90C33 (65K05, 90C60)

— (*with* Więcek, Małgorzata M.) Time dependency in multiple objective dynamic programming. *J. Math. Anal. Appl.* **173** (1993), *no.* 1, 289–307. (Knut Richter) **93m:90069** 90C29 (90C35)

Kostrikin, Aleksei Ivanovich (*with* Phạm Hữ'u Tiệp) Classification of irreducible orthogonal decompositions of simple Lie algebras of type A_n. (Russian) *Algebra i Analiz* **3** (1991), *no.* 3, 86–109; *translation in St. Petersburg Math. J.* **3** (1992), *no.* 3, 571–593. (Yuliy Billig) **93b:17031** 17B20 (20D05)

— (*with* Glukhov, M. M.) On the centenary of the birth of O. Yu. Shmidt. (Russian) *Diskret. Mat.* **4** (1992), *no.* 2, 158–159. 01A70

— Otto Yul'evich Shmidt (on the centenary of this birth). (Russian) *Vestnik Moskov. Univ. Ser. I Mat. Mekh.* **1992,** *no.* 3, 90–92. 01A70

— *see also* **Proceedings: Conference on Algebra, 93b:00029; 93b:00030** *and* **93b:00031**

Kostro, Ludwik An outline of the history of Einstein's relativistic ether concept. (French summary) *Studies in the history of general relativity* (*Luminy*, 1988), 260–280, 463, *Einstein Stud.*, 3, *Birkhäuser Boston, Boston, MA*, 1992. (Introduction) **93d:01042** 01A60 (83–03)

Kostrykin, V. V. (*with* Kvitsinskiĭ, A. A.) Semiclassical quantization for Coulomb systems on a hypersphere. *J. Math. Phys.* **32** (1991), *no.* 10, 2776–2782. (Nicolae Angelescu) **93b:81301** 81U10 (81Q20)

— (*with* Kvitsinskiĭ, A. A.) Quantum three-body scattering problem in the adiabatic hyperspherical representation. *J. Math. Phys.* **32** (1991), *no.* 10, 2802–2812. (Nicolae Angelescu) **93b:81300** 81U10

Kostyrko, Pavel On locally symmetric and locally Jensen functions. *Real Anal. Exchange* **17** (1991/92), *no.* 1, 405–408. (Elżbieta Wagner) **93b:26016** 26A99

— There is no strongly locally antisymmetric set. *Real Anal. Exchange* **17** (1991/92), *no.* 1, 423–425. (Elżbieta Wagner) **93b:26017** 26A99

— Approximate symmetric derivatives are uniformly closed. *Real Anal. Exchange* **17** (1991/92), *no.* 2, 652–656. (Cheng-Ming Lee) **93h:26006** 26A24

Kostyuchenko, A. G. (*with* Boĭmatov, K. Kh.) On a trace formula for polynomial operator pencils and its applications. (Russian) *Funktsional. Anal. i Prilozhen.* **25** (1991), *no.* 4, 90–92; *translation in Functional Anal. Appl.* **25** (1991), *no.* 4, 306–308 (1992). (Branko Najman) **93e:47019** 47A56 (35P20, 47A10, 47F05, 47N20)

Kostyukova, O. I. (*with* Gabasov, R. F.; Kirillova, F. M.) Construction of optimal estimators for linear dynamical systems. (Russian. Russian summary) *Vestnik Beloruss. Gos. Univ. Ser. I Fiz. Mat. Mekh.* **1992,** *no.* 2, 45–49, 80. (Ognyan Kounchev) **93k:93020** 93B07 (93B30, 93C05)

Kosuda, Masashi (*with* Murakami, Jun) The centralizer algebras of mixed tensor representations of $U_q(\mathfrak{gl}_n)$ and the HOMFLY polynomial of links. *Proc. Japan Acad. Ser. A Math. Sci.* **68** (1992), *no.* 6, 148–151. (J. S. Birman) **93g:57011** 57M25 (17B37)

Kosut, Robert L. (*with* Lau, Ming K.; Boyd, Stephen P.) Set-membership identification of systems with parametric and nonparametric uncertainty. *IEEE Trans. Automat. Control* **37** (1992), *no.* 7, 929–941. (Rudolf Kulhavý) **93f:93042** 93B30 (93B36)

Kosyak, A. V. Criteria for irreducibility and equivalence of regular Gaussian representations of groups of finite upper-triangular matrices of infinite order. Selected translations. *Selecta Math. Soviet.* **11** (1992), *no.* 3, 241–291. (Jean Marion) **93i:22024** 22E65 (17B65, 28C10)

Kosygin, D. V. Multidimensional KAM theory from the renormalization group viewpoint. Translated from the Russian by V. E. Nazaĭkinskiĭ. *Dynamical systems and statistical mechanics* (*Moscow*, 1991), 99–129, *Adv. Soviet Math.*, 3, *Amer. Math. Soc., Providence, RI*, 1991. (Dieter H. Mayer) **93c:58183** 58F27 (58F05, 58F30, 70H05, 82C28)

Kosygin, D. V. (*with* Sinaĭ, Ya. G.) On the number of lattice points inside a random domain. *From phase transitions to chaos*, 547–566, *World Sci. Publishing, River Edge, NJ*, 1992. (Martin Henk) **93g:11102** 11P21 (52C05, 60D05)

Kosyk, Andrzej Prospective Kolmogorov differential equations for discrete processes and their applications. *Demonstratio Math.* **25** (1992), *no.* 1-2, 25–34. (O. A. Voina) **93j:60104** 60J27

Koszela, Bogdan The contribution of Józef Marcinkiewicz, Stefan Mazurkiewicz and Hugo Steinhaus in developing Polish mathematics. A biographical sketch. (Polish) *Mathematics at the turn of the twentieth century* (*Polish*) (*Jaworze*, 1988), 104–110, *Prace Nauk. Uniw. Śląsk. Katowic.*, 1253, *Univ. Śląski, Katowice*, 1992. (P. Szeptycki) **93k:01069** 01A70 (01A72)

Koszmider, Piotr On the complete invariance property in some uncountable products. *Canad. Math. Bull.* **35** (1992), *no.* 2, 221–229. (L. E. Ward, Jr.) **93g:54057** 54H25 (47H10)

Kot, Mark Discrete-time travelling waves: ecological examples. *J. Math. Biol.* **30** (1992), *no.* 4, 413–436. (Qi Xiao Ye) **93f:92022** 92D25 (39A10, 45G10)

— (*with* Neubert, Michael G.) The subcritical collapse of predator populations in discrete-time predator-prey models. *Math. Biosci.* **110** (1992), *no.* 1, 45–66. (Summary) **93b:92015** 92D25 (34C23, 58F14, 58F40)

Kotani, Ken (*with* Masuda, Sumio; Kashiwabara, Toshinobu) An algorithm for embedding a biconnected planar graph to maximize the total sum of vertex- and edge-weights on the exterior window. (English summary) *Electron. Comm. Japan Part III Fund. Electron. Sci.* **75** (1992), *no.* 5, 1–14. (Summary) **93i:68143** 68R10 (05C10, 05C85, 68Q35)

Kotani, M. (*with* Ejiri, N.) Minimal surfaces in $S^{2m}(1)$ with extra eigenfunctions. *Quart. J. Math. Oxford Ser.* (2) **43** (1992), *no.* 172, 421–440. (João Lucas Marques Barbosa) **93k:53061** 53C42 (58E20)

Kotani, Shinichi Random Schrödinger operators. *Proceedings of the International Congress of Mathematicians, Vol. I, II* (*Kyoto*, 1990), 1071–1074, *Math. Soc. Japan, Tokyo*, 1991. (Eugen Belokolos) **93d:82048** 82B44 (34L40, 35J10, 47E05, 47N55, 81Q10, 82-02)

— One-dimensional Schrödinger operators with stationary deterministic potentials. *Probability theory* (*Singapore*, 1989), 105–108, *de Gruyter, Berlin*, 1992. (*see* **93e:60005**) 34L40 (34F05, 47N50)

Kotarbiński, Tadeusz ★ Dzieła wszystkie. (Polish) [Collected works] Wykłady z dziejów logiki. [Lectures in the history of logic] With a preface by Wojciech Gasparski. Second edition. Edited and with a note by Danuta Miller. With a preface by Marian Przełęcki. *Zakład Narodowy im. Ossolińskich—Wydawnictwo Polskiej Akademii Nauk* (*Ossolineum*), *Wrocław*, 1990. 239 *pp. ISBN* 83-04-03455-7 (Roman Murawski) **93e:01034** 01A75 (03–03)

Kotecký, Roman (*with* Dobrushin, R. L.; Shlosman, S. B.) ★ Wulff construction. (English. English summary) A global shape from local interaction. Translated from the Russian by the authors. Translations of Mathematical Monographs, 104. *American Mathematical Society, Providence, RI*, 1992. x+204 *pp. ISBN* 0-8218-4563-2 (Joël De Coninck) **93k:82002** 82B05 (82–02, 82B20)

— (*with* Olivieri, E.) Stochastic models for nucleation and crystal growth. (English summary) *Probabilistic methods in mathematical physics* (*Siena*, 1991), 264–275, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93h:82067** 82C44

— (*with* De Coninck, Joël; Laanait, Lahoussine; Ruiz, Jean) SOS approximants for Potts crystal shapes. (English summary) *Phys. A* **189** (1992), *no.* 3-4, 616–634. (David Sénéchal) **93m:82011** 82B24 (82B20)

— *see also* **Malyshev, V. A., 93i:82003**

Kotelenez, Peter Low and high density reaction-diffusion models. (English summary) *Stochastic systems and optimization* (*Warsaw*, 1988), 185–190, *Lecture Notes in Control and Inform. Sci.*, 136, *Springer, Berlin*, 1989. (Summary) **93e:60112** 60H10 (34F05)

— A comparison theorem for a class of stochastic partial differential equations. (English summary) *Random partial differential equations* (*Oberwolfach*, 1989), 133–137, *Internat. Ser. Numer. Math.*, 102, *Birkhäuser, Basel*, 1991. (Daniel Ocone) **93h:60092** 60H15

— (*with* Mann, J. Adin, Jr.) Random vortex models and stochastic partial differential equations. (English summary) *Stochastic partial differential equations and their applications* (*Charlotte, NC*, 1991), 144–152, *Lecture Notes in Control and Inform. Sci.*, 176, *Springer, Berlin*, 1992. (Ana Bela Cruzeiro) **93g:35112** 35Q30 (35R60, 60H15, 76C05, 76M35)

— Fluctuations in a nonlinear reaction-diffusion model. (English summary) *Ann. Appl. Probab.* **2** (1992), *no.* 3, 669–694. (Mu Fa Chen) **93i:60185** 60K35

— Comparison methods for a class of function valued stochastic partial differential equations. *Probab. Theory Related Fields* **93** (1992), *no.* 1, 1–19. (Ralf Manthey) **93i:60116** 60H15 (35R15, 35R60)

— *see also* **Random partial differential equations, 93e:60007**

Kotel'nikov, A. P. *see* **Bogolyubov, Alekseĭ Nikolaevich, 93c:01024**

Kotel'nikov, G. A. Inversion of the sign of the speed of light—a new transformation of discrete symmetry in electrodynamics. (Russian. Russian summary) *Izv. Vyssh. Uchebn. Zaved. Fiz.* **35** (1992), *no.* 12, 69–72; *translation in Russian Phys. J.* **35** (1992), *no.* 12, 1153–1155 (1993). (Summary) **93m:78005** 78A25

Koterov, V. N. (*with* Krasnovskiĭ, A. G.) A spectral-difference method for computing acoustic perturbations induced by a local heat source in a moving medium. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **32** (1992), *no.* 4, 663–669; *translation in Comput. Math. Math. Phys.* **32** (1992), *no.* 4, 573–579. (Summary) **93d:65089** 65M70 (76M20, 76Q05)

Kothari, S. C. (*with* Lee, Kesig; Shin, Dongwan) Probabilistic information capacity of Hopfield associative memory. *Complex Systems* **6** (1992), *no.* 1, 31–46. (Zhao Zhi Zhang) **93h:92007** 92B20

Kothe, D. B. (*with* Brackbill, J. U.; Zemach, C.) A continuum method for modeling surface tension. *J. Comput. Phys.* **100** (1992), *no.* 2, 335–354. (Summary) **93c:76008** 76B45 (76M25)

Köthe, Gottfried *see* **Weidmann, J., 93k:01080a; Tillmann, Heinz Günther, 93k:01080b** *and* **Dedicated to the memory of Professor Gottfried Köthe**

Kotikov, A. V. Differential equations method: the calculation of vertex-type Feynman diagrams. *Phys. Lett. B* **259** (1991), *no.* 3, 314–322. (Summary) **93a:81139** 81T18

— A new method of calculating massive Feynman diagrams; vertex-type functions. *Internat. J. Modern Phys. A* **7** (1992), *no.* 9, 1977–1991. (E. Wieczorek) **93k:81180** 81T30 (81Q30)

— Calculation of massive Feynman diagrams. (Russian. English, Russian and Ukrainian summaries) *Ukrain. Fiz. Zh.* **37** (1992), *no.* 2, 303–313. (Summary) **93g:81107** 81T18 (81Q30)

Kotkin, G. G. (*with* Voloshinov, V. V.) ★ Параметрические свойства обратных задач оптимизации. (Russian. Russian summary) [Parametric properties of inverse problems of optimization] Сообщения по Прикладной Математике. [Reports in Applied Mathematics] *Akad. Nauk SSSR, Vychisl. Tsentr, Moscow*, 1990. 46 *pp.* (D. Klatte) **93f:90166** 90C31 (49K27, 90C05, 90C30, 90C48)

Kotlarski, Henryk (*with* Kaye, Richard William; Kossak, Roman) Automorphisms of recursively saturated models of arithmetic. *Ann. Pure Appl. Logic* **55** (1991), *no.* 1, 67–99. (Ali Enayat) **93c:03047** 03C62 (20B27)

— Full satisfaction classes: a survey. *Notre Dame J. Formal Logic* **32** (1991), *no.* 4, 573–579 (1992). (Constantine Dimitracopoulos) **93b:03120** 03H15 (03C62, 03F30)

— *see also* **Quantifiers, 93k:03002**

Kotliar, Gabriel (*with* Georges, Antoine; Si, Qimiao) Strongly correlated systems in infinite dimensions and their zero-dimensional counterparts. *Internat. J. Modern Phys. B* **6** (1992), *no.* 5-6, 705–730. (Summary) **93f:82062** 82D40

Kotlyar, V. V. (*with* Nikolsky, I. V.; Soifer, V. A.) Digital-optical methods of microparticle ensemble analysis by its spatial spectrum. *J. Modern Opt.* **39** (1992), *no.* 5, 1123–1136. (Summary) **93b:78005** 78A45 (78A55)

Kotlyar, V. Yu. Some properties of multidimensional renewal processes. (Russian. English and Ukrainian summaries) *Kibernet. Sistem. Anal.* **1992,** *no.* 1, 99–106, 189; *translation in Cybernet. Systems Anal.* **28** (1992), *no.* 1, 84–90. (Summary) **93j:60127** 60K05

— On a class of "aging" distributions. (Russian. English and Ukrainian summaries) *Kibernet. Sistem. Anal.* **1992,** *no.* 2, 12–23, 188; *translation in Cybernet. Systems Anal.* **28** (1992), *no.* 2, 170–179. (Summary) **93i:62087** 62N05

— (*with* Khomenko, L. P.) Classes of "ageing" distributions. (Russian. English and Ukrainian summaries) *Kibernet. Sistem. Anal.* **1992,** *no.* 3, 92–113, 189; *translation in Cybernet. Systems Anal.* **28** (1992), *no.* 3, 403–421 (1993). 62N05

Kotlyarov, V. P. (*with* Anders, I. A.) An inverse scattering problem for the operator $\partial_x^2 + 2u\partial_x$. (Russian) *Operator theory, subharmonic functions* (*Russian*), 3–12, "*Naukova Dumka*", *Kiev*, 1991. (Summary) **93d:34137** 34L25 (34A55, 35P25, 35R30)

Kotoul, Michal (*with* Hřebíček, Jiří; Polcar, Pavel) Numerical analysis of dynamical postcritical behaviour of solids. *Proceedings of the Second International Symposium on Numerical Analysis* (*Prague*, 1987), 175–182, *Teubner-Texte Math.*, 107, *Teubner, Leipzig*, 1988. (*see* **93b:65007**) 73M25 (73V20)

Kotov, V. E. (*with* Sabel'fel'd, V. K.) ★ Теория схем программ. (Russian) [Theory of program schemes] "*Nauka*", *Moscow*, 1991. 248 *pp. ISBN* 5-02-013974-2 (Toader Jucan) **93f:68001** 68-01 (68N05)

— *see also* **Images of programming, 93i:68008**

Kotschenreuther, M. (*with* Morrison, P. J.) The free energy principle, negative energy modes, and stability. *Nonlinear world, Vol. 2* (*Kiev*, 1989), 910–932, *World Sci. Publishing, River Edge, NJ*, 1990. (*see* **93b:00013**) 58F40 (58F10, 76E25, 76X05)

Kotschick, Dieter The topology of algebraic surfaces with irregularity and geometric genus zero. *Geometry of low-dimensional manifolds*, 1 (*Durham*, 1989), 55–62, *London Math. Soc. Lecture Note Ser.*, 150, *Cambridge Univ. Press, Cambridge*, 1990. (I. Dolgachev) **93g:14045** 14J29 (57R55)

— Moduli of vector bundles with odd c_1 on surfaces with $q = p_g = 0$. *Amer. J. Math.* **114** (1992), *no.* 2, 297–313. (I. Dolgachev) **93d:14059** 14J60 (14D20, 14J29, 57R55)

— All fundamental groups are almost complex. *Bull. London Math. Soc.* **24** (1992), *no.* 4, 377–378. (Ronald J. Stern) **93f:57026** 57R15 (53C15, 57M05)

— All fundamental groups are almost contact. *Bull. London Math. Soc.* **24** (1992), *no.* 5, 493–494. (William Goldman) **93f:57027** 57R15 (57M05)

— Orientation-reversing homeomorphisms in surface geography. *Math. Ann.* **292** (1992), *no.* 2, 375–381. (Ulf Persson) **93f:14019** 14J29 (57R50, 57R55)

— (*with* King, A. D.) The deformation theory of anti-self-dual conformal structures. *Math. Ann.* **294** (1992), *no.* 4, 591–609. (Antony Maciocia) **93j:58021** 58D27 (32G13, 53A30, 53C25, 58G05)

— Remarks on geometric structures on compact complex surfaces. *Topology* **31** (1992), *no.* 2, 317–321. (Ian Hambleton) **93g:32038** 32J15 (57R20)

— *see also* **Floer, Andreas, 93e:57054**

Kot·siolis, A. A. *see* **Cotsiolis, Athanase**

Kotta, Ülle Model matching of nonlinear single-input single-output discrete-time systems: formal and local solutions. (Russian and Estonian summaries) *Eesti NSV Tead. Akad. Toimetised Füüs.-Mat.* **40** (1991), *no.* 2, 89–98. (Summary) **93a:93049** 93B51 (93C55)

— Dynamic disturbance decoupling for discrete time nonlinear systems: the nonsquare and noninvertible case. (Russian and Estonian summaries) *Eesti Tead. Akad. Toimetised Füüs. Mat.* **41** (1992), *no.* 1, 14–22, 74. (Engin Yaz) **93a:93072** 93C55 (93B17, 93C10)

— Model matching of nonlinear discrete time systems via dynamic state feedback. (English, Russian and Estonian summaries) *Eesti Tead. Akad. Toimetised Füüs. Mat.* **41** (1992), *no.* 2, 109–117, 174. (Claude H. Moog) **93h:93029** 93B50 (93B52, 93C10, 93C55)

Kottwitz, Robert E. (*with* Rapoport, Michael) Contribution of the points at the boundary. *The zeta functions of Picard modular surfaces*, 111–150, *Univ. Montréal, Montreal, PQ*, 1992. (Stephen Gelbart) **93e:11070a** 11F75 (11G25, 14G35)

— Calculation of some orbital integrals. *The zeta functions of Picard modular surfaces*, 349–362, *Univ. Montréal, Montreal, PQ*, 1992. (David Joyner) **93c:22030** 22E50 (22E35)

— On the λ-adic representations associated to some simple Shimura varieties. *Invent. Math.* **108** (1992), *no.* 3, 653–665. (Min Ho Lee) **93f:11046** 11G18 (11F70, 11F85, 14G35, 22E55)

— Points on some Shimura varieties over finite fields. *J. Amer. Math. Soc.* **5** (1992), *no.* 2, 373–444. (Min Ho Lee) **93a:11053** 11G18 (11G25, 14G10, 14G35)

Kotulski, Zbigniew Equations for the characteristic functional and moments of the complex stochastic evolutions—motivation and results. *Stochastic systems and optimization* (*Warsaw*, 1988), 191–200, *Lecture Notes in Control and Inform. Sci.*, 136, *Springer, Berlin*, 1989. (*see* **93d:93009**) 60H10 (34F05)

Kotychenko, L. N. (*with* Tsvelodub, O. Yu.; Trifonov, Yu. Ya.) Solution wave structures of model evolutional equation for active dissipative medium. (English summary) *Nonlinear dynamics of structures* (*Vladimir Maiakovskiĭ*, 1990), 313–326, *World Sci. Publishing, River Edge, NJ*, 1991. (Summary) **93h:76022** 76D33 (76E99)

— (*with* Tsvelodub, O. Yu.) Spatial wave regimes on a surface of thin viscous liquid film. (English summary) *Phys. D* **63** (1993), *no.* 3-4, 361–377. (Summary) **93m:76029** 76D33 (76E30)

Kotyurgina, A. S. (*with* Dobrovol'skiĭ, S. M.; Romanovskiĭ, R. K.) Stability of solutions of linear systems with an almost periodic matrix. (Russian. Russian summary) *Mat. Zametki* **52** (1992), *no.* 6, 10–14, 157; *translation in Math. Notes* **52** (1992), *no.* 5-6, 1178–1181 (1993). (Summary) **93k:34109** 34D20 (34A30, 34H05)

Kotz, Samuel (*with* Wang, Qiwen; Hung, Ken) Interrelations among various definitions of bivariate positive dependence. (English summary) *Topics in statistical dependence* (*Somerset, PA*, 1987), 333–349, *IMS Lecture Notes Monograph Ser.*, 16, *Inst. Math. Statist., Hayward, CA*, 1990. (Summary) **93g:62071** 62H05 (62N05)

— (*with* Kuritsyn, Yu. G.) A linear model with a pseudoisotropic distribution of errors. (English summary) *L_1-statistical analysis and related methods* (*Neuchâtel*, 1992), 63–67, *North-Holland, Amsterdam*, 1992. (*see* **93k:62005**) 62J05

— (*with* Fang, Kai Tai; Ng, Kai W.) On the L_1-norm distributions. (English summary) *L_1-statistical analysis and related methods* (*Neuchâtel*, 1992), 401–413, *North-Holland, Amsterdam*, 1992. (*see* **93k:62005**) 62H05 (60E05)

— (*with* Johnson, Norman Lloyd^2) Some (more or less) naturally occurring mixtures. *Math. Sci.* **17** (1992), *no.* 1, 42–48. 62E99 (62N10)

— (*with* Johnson, Norman Lloyd^2) Some further (more or less) naturally occurring mixture distributions. (English summary) *Math. Sci.* **17** (1992), *no.* 2, 95–100. (Summary) **93h:62024** 62E15

— *see also* **Advances in probability distributions with given marginals, 93k:60004**

Kotzé, Wesley Lattice morphisms, sobriety, and Urysohn lemmas. *Applications of category theory to fuzzy subsets* (*Linz*, 1989), 257–274, *Theory Decis. Lib. Ser. B Math. Statist. Methods*, 14, *Kluwer Acad. Publ., Dordrecht*, 1992. (Robert Lowen) **93b:54008** 54A40 (04A72, 06D10)

— (*with* Kubiák, Tomasz) Fuzzy topologies of Scott continuous functions and their relation to the hypergraph functor. (English summary) *Quaestiones Math.* **15** (1992), *no.* 2, 175–187. (Summary) **93k:54019** 54A40 (04A72, 06B35)

Kotzig, Anton (*with* Abrham, Jaromír) Extensions of graceful valuations of 2-regular graphs consisting of 4-gons. *Ars Combin.* **32** (1991), 257–262. (Indrakanty H. Nagaraja Rao) **93f:05077** 05C78

— *see also* **Abrham, Jaromír et al., 93e:01015** *and* **93h:01033**

Kou, Huai Zhong (*with* Fisher, Brian) On compositions of distributions. (English summary) *Publ. Math. Debrecen* **40** (1992), *no.* 3-4, 279–290. (Bl. P. Damyanov) **93i:46069** 46F10

Kou, Ji Song (*with* Qi, Shu Yi; Wang, Yi Zhi; Wang, Zhong Sheng) An algorithm for rational curve fitting with control accuracy. (Chinese. English and Chinese summaries) *J. Tianjin Univ.* **1992**, *no.* 3, 102–107. 65D10 (65D17)

Kou, Shu Shun Some remarks on the linear complementarity problem and convex quadratic programming. (Chinese. English and Chinese summaries) *J. Tianjin Univ.* **1992**, *no.* 2, 111–117. 90C33 (90C25)

Koua, Konin Similarité entre certains quotients de A^+ et des quotients d'algèbres uniformes. (English summary) [Similarity between some quotients of A^+ and quotients of uniform algebras] *Canad. Math. Bull.* **34** (1991), *no.* 4, 485–491. (Sandy Grabiner) **93c:46101** 46J40 (46J15)

— Similarité entre l'algèbre de Volterra et un quotient d'algèbre uniforme. (English summary) [Similarity between the Volterra algebra and a uniform-algebra quotient] *Proc. Edinburgh Math. Soc.* (2) **34** (1991), *no.* 3, 383–391. (Sandy Grabiner) **93c:46100** 46J40 (46J15)

Kouachi, S. (*with* Kirane, M.) Asymptotic behaviour for a system describing epidemics with migration and spatial spread of infection. (English summary) *Dynamic Systems Appl.* **2** (1993), *no.* 1, 121–130. (Summary) **93j:92018** 92C60 (34G20, 35K57, 92D30)

Kouba, Omran Espaces H^1-projectifs. [H^1-projective spaces] *Séminaire d'Initiation à l'Analyse, Exp. No.* 13, 8 *pp., Publ. Math. Univ. Pierre et Marie Curie*, 95, *Univ. Paris VI, Paris*, 199?. (James Bell Cooper) **93k:46026** 46E40 (46M05)

Koubek, A. (*with* Martins, Márcio José; Mussardo, Giuseppe) Scattering matrices for $\varphi_{1,2}$ perturbed conformal minimal models in absence of kink states. *Nuclear Phys. B* **368** (1992), *no.* 3, 591–610. (Filippo Colomo) **93a:81175** 81T40 (81U20)

— Interpretation of IRF models as scattering amplitudes of perturbed conformal field theories. *Phys. Lett. B* **283** (1992), *no.* 3-4, 231–236. (Summary) **93d:82035** 82B23 (81T27)

Koubek, Václav (*with* Sichler, J.) On Priestley duals of products. (French summary) *Cahiers Topologie Géom. Différentielle Catégoriques* **32** (1991), *no.* 3, 243–256. (Summary) **93b:06024** 06D05 (06D15, 18B99)

— (*with* Sichler, J.; Trnková, Věra) Algebraic functor slices. *J. Pure Appl. Algebra* **78** (1992), *no.* 3, 275–290. (Kimmo I. Rosenthal) **93e:18006** 18B15 (18C15)

— (*with* Janiga, Ladislav) Minimum cut in directed planar networks. *Kybernetika* (*Prague*) **28** (1992), *no.* 1, 37–49. (Summary) **93b:90103** 90C35 (05C85, 90B10)

Koudsi, Élie (*with* Diers, Yves) Algèbres de Boole non commutatives. (English summary) [Noncommutative Boolean algebras] *Ann. Sci. Math. Québec* **16** (1992), *no.* 1, 1–24. (Peter Johnstone) **93h:08003** 08A05 (06E99, 16B50, 18F20)

Koufogiorgos, Themis (*with* Blair, David E.) Ruled surfaces with vanishing second Gaussian curvature. *Monatsh. Math.* **113** (1992), *no.* 3, 177–181. (Xue Shan Zhang) **93c:53001** 53A05 (53A10)

— Contact metric manifolds. (English summary) *Ann. Global Anal. Geom.* **11** (1993), *no.* 1, 25–34. (Zbigniew Olszak) **93m:53041** 53C25 (53C15)

— (*with* Baikoussis, Christos) On a type of contact manifolds. *J. Geom.* **46** (1993), *no.* 1-2, 1–9. (Zbigniew Olszak) **93m:53038** 53C25 (53C15)

Kouh, Jen-Shiang *see* **Kuo, Chèn Hsiang**

Koukiou, F. Rigorous bounds for the free energy of the short-range Ising spin glass model. *Europhys. Lett.* **17** (1992), *no.* 8, 669–671. (Volker Warstat) **93b:82003** 82B05 (82B20, 82B44)

Koukkunen, Kalevi From "quantity science" to mathematics. (Finnish. English summary) *Arkhimedes* **44** (1992), *no.* 4, 295–305. (Summary) **93m:01035** 01A55

Koukouvinos, Christos (*with* Seberry, Jennifer) Addendum to: "Further results on base sequences, disjoint complementary sequences, OD(4t; t, t, t, t) and the excess of Hadamard matrices" [Ars Combin. **30** (1990), 241–255; MR 91m:05037] by Koukouvinos, S. Kounias and Seberry. Proceedings of the Twenty-second Southeastern Conference on Combinatorics, Graph Theory, and Computing (Baton Rouge, LA, 1991). *Congr. Numer.* **82** (1991), 97–103. (Summary) **93a:05036** 05B20

— (*with* Seberry, Jennifer) Hadamard matrices of order $\equiv 8$ (mod 16) with maximal excess. *Discrete Math.* **92** (1991), *no.* 1-3, 173–176. (Rudolf Mathon) **93b:05024** 05B20

— (*with* Kounias, Stratis; Sotirakoglou, K.) On Golay sequences. *Discrete Math.* **92** (1991), *no.* 1-3, 177–185. (Jennifer Seberry) **93e:05006** 05A99 (94B15)

— (*with* Seberry, Jennifer) Constructing Hadamard matrices from orthogonal designs. (English summary) *Australas. J. Combin.* **6** (1992), 267–278. (Michio Ozeki) **93m:05040** 05B20 (05B30)

Koul, C. L. (*with* Kant, Shashi) On finite summation formulae. II. *Ganita* **42** (1991), *no.* 1-2, 103–112 (1992). (From the introduction) **93k:33007** 33C60

— (*with* Kant, Shashi) On fractional integral operators. *J. Indian Math. Soc.* (*N.S.*) **56** (1991), *no.* 1-4, 97–107. (Ram Kishore Saxena) **93c:33007** 33C50 (33C60)

— (*with* Kant, Shashi) On functional relations. *Proc. Nat. Acad. Sci. India Sect. A* **61** (1991), *no.* 2, 229–235. (Jean Lavoine) **93e:26005** 26A33 (33C99)

— (*with* Kant, Shashi) On functional relations. II. (English summary) *Indian J. Pure Appl. Math.* **23** (1992), *no.* 10, 739–742. (Jean Lavoine) **93g:33006** 33C20 (26A33)

Koul, Hira L. A weak convergence result useful in robust autoregression. *J. Statist. Plann. Inference* **29** (1991), *no.* 3, 291–308. (J. G. de Gooijer) **93d:60056** 60F17 (62M10)

— M-estimators in linear models with long range dependent errors. *Statist. Probab. Lett.* **14** (1992), *no.* 2, 153–164. (Summary) **93f:62124** 62M10 (62F35, 62J05)

Koulamas, C. P. A bi-criterion algorithm for minimizing machine interference and reducing job waiting time. (English summary) *Internat. J. Systems Sci.* **23** (1992), *no.* 7, 1229–1235. 90B35

Koulibaly, Akry (*with* Ouattara, Moussa) Structure et théorie de Frattini d'une algèbre de Bernstein. (English summary) [Structure and Frattini theory of a Bernstein algebra] *Algebras Groups Geom.* **8** (1991), *no.* 2, 145–158. (Santos González) **93c:17061** 17D92

— (*with* Touré, Saliou; Traoré, Kalifa) Sur la cohomologie des algèbres de Mal'cev. II. (English summary) [On the cohomology of Mal'tsev algebras. II] *Algebras Groups Geom.* **9** (1992), *no.* 1, 15–27. (Summary) **93j:17065** 17D99

Koumandos, Stamatis A class of equivalent measures. (English summary) *Probabilistic and stochastic methods in analysis, with applications* (*Il Ciocco*, 1991), 605–613, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 372, *Kluwer Acad. Publ., Dordrecht*, 1992. (Summary) **93g:60071** 60F99 (42A55, 60G30)

Koumboulis, F. N. (*with* Paraskevopoulos, P. N.) Observers for singular systems. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 8, *part I*, 1211–1215. 93B07

— (*with* Paraskevopoulos, P. N.) A new approach to the decoupling problem of linear time-invariant systems. *J. Franklin Inst.* **329** (1992), *no.* 2, 347–369. (Claude H. Moog) **93b:93045** 93B50 (93C05, 93C10)
— (*with* Paraskevopoulos, P. N.; Tzierakis, K. G.; Panagiotakis, G. E.) Observer design for generalized state space systems with unknown inputs. *Systems Control Lett.* **18** (1992), *no.* 4, 309–321. (Boris G. Zaslavskii) **93a:93050** 93B51
— (*with* Paraskevopoulos, P. N.) On the generic controllability of continuous generalized state-space systems. (English summary) *Automatica J. IFAC* **29** (1993), *no.* 2, 527–530. (M. Krastanov) **93m:93013** 93B05
Kounadis, A. N. An efficient and simple approximate technique for solving nonlinear initial and boundary value problems. (English summary) *Comput. Mech.* **9** (1992), *no.* 3, 221–231. (Summary) **93e:65098** 65L05 (34A45, 65L10)
— On the paradox of the destabilizing effect of damping in nonconservative systems. (English summary) *Internat. J. Non-Linear Mech.* **27** (1992), *no.* 4, 597–609. (P. Hagedorn) **93g:70022** 70K20 (34D99)
— (*with* Simitses, G. J.) Local (classical) and global bifurcations in nonlinear, nongradient autonomous dissipative structural systems. (English summary) *J. Sound Vibration* **160** (1993), *no.* 3, 417–432. (Summary) **93m:73024** 73K12 (70K20, 70K99, 73H10)
— (*with* Mahrenholtz, O.) On the relation of static to dynamic bifurcation in nonlinear autonomous dissipative or nondissipative structural systems. (English and German summaries) *Z. Angew. Math. Mech.* **73** (1993), *no.* 3, 131–140. (Summary) **93m:73025** 73K12 (34C23, 70K20, 73H10)
Kounalis, Emmanuel Testing for the ground (co-)reducibility property in term-rewriting systems. (English summary) Fifteenth Colloquium on Trees in Algebra and Programming (CAAP '90) (Copenhagen, 1990). *Theoret. Comput. Sci.* **106** (1992), *no.* 1, 87–117. (Summary) **93j:68094** 68Q42
Kounchev, Ognyan Iv. Definition and basic properties of polysplines. *C. R. Acad. Bulgare Sci.* **44** (1991), *no.* 7, 9–11. (Yu Yu Feng) **93a:41016** 41A15 (41A63, 65D07)
— Harmonicity modulus and applications to the approximation by polyharmonic functions. *Approximation by solutions of partial differential equations* (*Hanstholm*, 1991), 111–125, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 365, *Kluwer Acad. Publ., Dordrecht*, 1992. (V. Totik) **93h:41019** 41A30
— On the approximation through polyharmonic operators. *Approximation theory* (*Memphis, TN*, 1991), 377–384, *Lecture Notes in Pure and Appl. Math.*, 138, *Dekker, New York*, 1992. (*see* **93b:41001**) 41A35
Kounias, Stratis (*with* Koukouvinos, Christos; Sotirakoglou, K.) On Golay sequences. *Discrete Math.* **92** (1991), *no.* 1-3, 177–185. (Jennifer Seberry) **93e:05006** 05A99 (94B15)
— *see also* **Koukouvinos, Christos, 93a:05036**
Kounnas, Costas (*with* Lüst, Dieter) Cosmological string backgrounds from gauged WZW models. (English summary) *Phys. Lett. B* **289** (1992), *no.* 1-2, 56–60. (Summary) **93g:83094** 83E30 (81T40, 83F05)
Kouno, Masaharu (*with* Ikeda, Hiroshi[1]) Like a flow-spine. *Kobe J. Math.* **8** (1991), *no.* 1, 93–100. (Sergej V. Matveev) **93a:57004** 57M20 (57N10)
— (*with* Shibuya, Tetsuo) Link types in solid tori. *Kobe J. Math.* **8** (1991), *no.* 2, 197–205. (Wolfgang H. Heil) **93c:57006** 57M25
— (*with* Motegi, Kimihiko; Shibuya, Tetsuo) Twisting and knot types. *J. Math. Soc. Japan* **44** (1992), *no.* 2, 199–216. (Chichen M. Tsau) **93e:57011** 57M25
Kouri, Donald J. (*with* Sharafeddin, Omar A.; Bowen, H. Ferrel; Hoffman, David K.) Numerical evaluation of spherical Bessel transforms via fast Fourier transforms. *J. Comput. Phys.* **100** (1992), *no.* 2, 294–296. (From the introduction) **93c:65028** 65D20 (33C55, 44A15, 65T20)
Kouris, C. B. (*with* Kokologiannaki, C. G.; Siafarikas, P. D.) On the complex zeros of $H_\mu(z)$, $J'_\mu(z)$, $J''_\mu(z)$ for real or complex order. *J. Comput. Appl. Math.* **40** (1992), *no.* 3, 337–344. (Summary) **93g:33004** 33C10
Kouris, D. (*with* Tsuchida, E.) An analytical solution for the fiber indentation problem. *European J. Mech. A Solids* **11** (1992), *no.* 3, 323–334. (Summary) **93d:73020** 73C02 (73B27)
Kourouklis, Stavros Bahadur efficiency of likelihood ratio and related tests in nonregular models. *Austral. J. Statist.* **33** (1991), *no.* 3, 291–298. (Mir Maswood Ali) **93e:62074** 62F10 (62F12)
— (*with* Kallenberg, Wilbert C. M.) Hodges-Lehmann optimality of tests. *Statist. Probab. Lett.* **14** (1992), *no.* 1, 31–38. (Hartmut Milbrodt) **93g:62066** 62G20 (62F05)
Koutková, Helena On estimable and locally estimable functions in the nonlinear regression model. *Kybernetika* (*Prague*) **28** (1992), *no.* 2, 120–128. (Andrej Pázman) **93m:62143** 62J02 (62F10)
Koutny, Maciej (*with* Janicki, Ryszard) Invariant semantics of nets with inhibitor arcs. *CONCUR '91* (*Amsterdam*, 1991), 317–331, *Lecture Notes in Comput. Sci.*, 527, *Springer, Berlin*, 1991. (Summary) **93a:68080** 68Q55 (06A06)
— Axiom system induced by CTL* logic. *Fund. Inform.* **14** (1991), *no.* 2, 235–253. (G. Mirkowska) **93b:68047** 68Q60 (03B45, 03B70)
— (*with* Best, Eike) Petri net semantics of priority systems. Second Workshop on Concurrency and Compositionality (San Miniato, 1990). *Theoret. Comput. Sci.* **96** (1992), *no.* 1, 175–215. (Ferucio Laurentiu Tiplea) **93e:68019** 68Q10 (68Q55, 68Q90)
Koutras, Andreas Killing tensors from conformal Killing vectors. *Classical Quantum Gravity* **9** (1992), *no.* 6, 1573–1580. (Geoffrey Prince) **93h:83015** 83C20 (53C80)
— A spacetime for which the Karlhede invariant classification requires the fourth covariant derivative of the Riemann tensor. (English summary) *Classical Quantum Gravity* **9** (1992), *no.* 10, L143–L145. (Garry Ludwig) **93g:83081** 83C99 (53C80)
Koutras, Markos V. (*with* Papastavridis, Stavros G.) Consecutive k-out-of-n systems with maintenance. (English summary) *Ann. Inst. Statist. Math.* **44** (1992), *no.* 4, 605–612. (Laurence A. Baxter) **93k:62207** 62N05 (60K10)
el Koutri, Abdelkader *see* **El Koutri, Abdelkader**
Koutrouvelis, Ioannis A. (*with* Meintanis, Simos) Inference procedures based on the polar coordinates of the empirical characteristic function. (Italian summary) *Statistica* (*Bologna*) **51** (1991), *no.* 2, 165–172. (Thomas W. Epps) **93h:62095** 62G10 (62F10)
Koutsougeras, Leonidas C. (*with* Yannelis, Nicholas C.) Incentive compatibility and information superiority of the core of an economy with differential information. (English summary) *Econom. Theory* **3** (1993), *no.* 2, 195–216. 90A15
Koutsoupias, Elias (*with* Papadimitriou, Christos H.) On the greedy algorithm for satisfiability. (English summary) *Inform. Process. Lett.* **43** (1992), *no.* 1, 53–55. (Summary) **93i:68087** 68Q25
— (*with* Papadimitriou, Christos H.; Sideri, Martha) On the optimal bisection of a polygon. (English summary) *ORSA J. Comput.* **4** (1992), *no.* 4, 435–438. 90C27
Kouvaritakis, B. (*with* Crews, M.) An evaluation of super-optimality as a control tool: a relative stability perspective. (English summary) *Internat. J. Control* **57** (1993), *no.* 4, 767–776. (Summary) **93j:93101** 93D09 (93B36)
Kouvatsos, Demetres D. (*with* Tomaras, Panagiotis J.) Multilevel aggregation of central server models: a minimum relative entropy approach. *Internat. J. Systems Sci.* **23** (1992), *no.* 5, 713–739. (Summary) **93b:90029** 90B22 (60K25)
Kouvelis, Panagiotis (*with* Carlson, Robert C.) Total unimodularity applications in bi-objective discrete optimization. *Oper. Res. Lett.* **11** (1992), *no.* 1, 61–65. (Summary) **93b:90051** 90C10 (90C27, 90C29)
Kouvidakis, Alexis Divisors on symmetric products of curves. *Trans. Amer. Math. Soc.* **337** (1993), *no.* 1, 117–128. (Montserrat Teixidor i Bigas) **93g:14034** 14H40 (14C20, 14H35)
Kouwenhoven, Frank M. Schur and Weyl functors. II. *Comm. Algebra* **18** (1990), *no.* 9, 2885–2941. (Jie Du) **93d:20083** 20G05 (05E10)
— Schur and Weyl functors. *Adv. Math.* **90** (1991), *no.* 1, 77–113. (Jie Du) **93c:20072** 20G05 (05E10)
Kovačević, Branko (*with* Filipović, V. Ž.) Direct adaptive control with the robust least squares method. (English summary) *Adaptive systems in control and signal processing*, 1989 (*Glasgow*), 455–459, *IFAC Sympos. Ser.*, 1990, *No.* 1, *Pergamon, Oxford*, 1990. (*see* **93j:93007**) 93E24
— (*with* Djurovic, Željko; Glavaški, Sonja) On robust Kalman filtering. (English summary) *Internat. J. Control* **56** (1992), *no.* 3, 547–562. (Summary) **93f:93128** 93E11 (93B35)
Kovačević, Jelena (*with* Vetterli, Martin) Nonseparable multidimensional perfect reconstruction filter banks and wavelet bases for $\mathscr{R}^n$. *IEEE Trans. Inform. Theory* **38** (1992), *no.* 2, *part* 2, 533–555. (Summary) **93b:94002** 94A11 (42C15, 94A12)
Kovačević, Milan A. (*with* Milovanović, Igor Ž.; Toader, Gh.) Properties of bounded convex sequences. *Anal. Numér. Théor. Approx.* **19** (1990), *no.* 1, 53–58. (John A. Fridy and M. K. Khan) **93e:40001** 40A05
Kovačević-Vujčić, Vera V. Improving the rate of convergence of interior point methods for linear programming. Interior point methods for linear programming: theory and practice (Scheveningen, 1990). *Math. Programming* **52** (1991), *no.* 3, *Ser. B*, 467–479 (1992). (F. Pickel) **93e:90035** 90C05
Kovachev, V. Khr. (*with* Baĭnov, Drumi Dimitrov; Stamova, Ivanka) Estimates of the solutions of impulsive quasilinear functional-differential equations. (English and French summaries) *Ann. Fac. Sci. Toulouse Math.* (5) **12** (1991), *no.* 2, 149–161. (Alexander V. Anokhin) **93j:34092** 34K05 (26D10, 34A37, 34A40)
— Global existence of small amplitude solutions of nonlinear hyperbolic equations via weighted estimates of Sobolev norms associated with a Lie group. (English summary) *Differential equations* (*Plovdiv*, 1991), 71–84, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93h:35123** 35L60 (35Q40)
— *see also* **Baĭnov, Drumi Dimitrov**, **93g:26027** *and* **Differential equations, 93g:34002**
Kovacheva, Ralitza Krumova Die Einheitswurzeln und die Zerlegung der Funktionen in Interpolationsreihen. [The roots of unity and the decomposition of functions into interpolation series] *Pliska Stud. Math. Bulgar.* **10** (1989), 3–10. (Summary) **93a:30045** 30E05 (11J99)
— (*with* Lawrynowicz, Julian) Quasi-regular extension and approximation of dualities generated by the generalized Hurwitz problem. *Geometric function theory and applications of complex analysis to mechanics: studies in complex analysis and its applications to partial differential equations*, 2 (*Halle*, 1988), 100–117, *Pitman Res. Notes Math. Ser.*, 257, *Longman Sci. Tech., Harlow*, 1991. (John Ryan) **93b:30045** 30G35 (81R25)
Kovachik, O. *see* **Kováčik, Ondrej**
Kovačič, Gregor (*with* Holm, Darryl D.) Homoclinic chaos in a laser-matter system. *Phys. D* **56** (1992), *no.* 2-3, 270–300. (Gennady Berman) **93c:78013** 78A60 (58F13, 70K50, 81V70)
— (*with* Wiggins, Stephen) Orbits homoclinic to resonances, with an application to chaos in a model of the forced and damped sine-Gordon equation. *Phys. D* **57** (1992), *no.* 1-2, 185–225. (Yi Yuan Chen) **93f:58153** 58F13 (34C37, 35Q53, 58F14)
— Hamiltonian dynamics of orbits homoclinic to a resonance band. *Phys. Lett. A* **167** (1992), *no.* 2, 137–142. (Jens Gamst) **93k:34100** 34C37 (34C29, 58F30, 70H05)
— Dissipative dynamics of orbits homoclinic to a resonance band. *Phys. Lett. A* **167** (1992), *no.* 2, 143–150. (Jens Gamst) **93k:34101** 34C37 (34C29, 58F30, 70H05)
Kováčik, Ondrej Fourier-Haar double series. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* **1991**, *no.* 11, 36–38 (1992); *translation in Soviet Math.* (*Iz. VUZ*) **35** (1991), *no.* 11, 36–38. (F. Móricz) **93g:42021** 42C10
Kovács, A. Über die Methode des Grenzelements in komplexen Variablen für nichtholomorphe Funktionen. (Romanian summary) [On the method of the limit element in complex variables for nonholomorphic functions] *Inst. Politehn. "Traian Vuia" Timişoara Lucrăr. Sem. Mat. Fiz.* **1988,** *November*, 39–44. 65N38
— Über ein modifiziertes Dirichlet Problem das in der Gashydrodynamik Verwendung findet. (Romanian summary) [On a modified Dirichlet problem used in gas hydrodynamics] *Inst. Politehn. "Traian Vuia" Timişoara Lucrăr. Sem. Mat. Fiz.* **1989,** *May-November*, 40–46. 76N15
Kovács, B. Number systems. *Computational number theory* (*Debrecen*, 1989), 21–25, *de Gruyter, Berlin*, 1991. (David Lee Hilliker) **93b:13038** 13G05
— Representation of complex numbers in number systems. *Acta Math. Hungar.* **58** (1991), *no.* 1-2, 113–120. (A. Pethő) **93c:11090** 11R04 (11A63)
— (*with* Maksa, Gy.) Interval-filling sequences of order N and a representation of real numbers in canonical number systems. *Publ. Math. Debrecen* **39** (1991), *no.* 3-4, 305–313. (Kenji Nagasaka) **93h:11012** 11A67
— (*with* Dömösi, P.) Simulation on finite networks of automata. *Words, languages and combinatorics* (*Kyoto*, 1990), 131–138, *World Sci. Publishing, River Edge, NJ*, 1992. (A. D. Korshunov) **93e:68076** 68Q68 (68M10, 68R10)
Kovács, Katalin On additive functions satisfying some congruence properties. *Period. Math. Hungar.* **23** (1991), *no.* 3, 227–231. (Armel Mercier) **93b:11007** 11A25 (11A07)
— On total additive solution of some equations. *Acta Math. Hungar.* **59** (1992), *no.* 1-2, 33–38. (Armel Mercier) **93c:11084** 11N99
— Complex-valued multiplicative functions with monotonicity properties. *Acta Math. Hungar.* **59** (1992), *no.* 3-4, 401–403. (Armel Mercier) **93h:11005** 11A25

— On the characterization of additive functions on rare sets. *Publ. Math. Debrecen* **40** (1992), *no.* 1-2, 137–141. (Antal Balog) **93b:11008** 11A25 (11N64)

— About some positive solutions of the Diophantine equation $\sum_{1<i<j<n} a_i a_j = m$. *Publ. Math. Debrecen* **40** (1992), *no.* 3-4, 207–210. (From the text) **93g:11027** 11D72

Kovács, L. G. Semigroup algebras of the full matrix semigroup over a finite field. *Proc. Amer. Math. Soc.* **116** (1992), *no.* 4, 911–919. (Mohan S. Putcha) **93b:16051** 16S36 (20M25)

Kovács, Margit Linear programming with centered fuzzy numbers. Third IFSA-EC and EURO-WGFS Workshop on Fuzzy Sets (Visegrád, 1990). *Ann. Univ. Sci. Budapest. Sect. Comput.* **12** (1991), 159–165. (Zheng-Shu Huang) **93b:90111** 90C70 (04A72, 90C05)

— A concept of optimality for fuzzified linear programming based on penalty function. (English summary) *Fuzzy approach to reasoning and decision-making* (*Bechyně*, 1990), 133–139, *Theory Decis. Lib. Ser. D Syst. Theory Knowledge Engrg. Probl. Solving*, 8, *Kluwer Acad. Publ., Dordrecht*, 1992. (Summary) **93m:90105** 90C70 (04A72)

— (*with* Herrera, F.; Verdegay, J. L.) Optimality for fuzzified mathematical programming problems: a parametric approach. (English summary) *Fuzzy Sets and Systems* **54** (1993), *no.* 3, 279–285. 90C70 (04A72)

Kovács, S. J. Small saturated sets in finite projective planes. (English and Italian summaries) *Rend. Mat. Appl.* (7) **12** (1992), *no.* 1, 157–164. (Tamás Szőnyi) **93m:51009** 51E21 (05B25)

Kovács, Tibor Inducibility of the n-factor composition of frontier-to-root tree transformation. Mathematische Wissenschaften gestern und heute. 300 Jahre Mathematische Gesellschaft in Hamburg, Teil 4 (Hamburg, 1990). *Mitt. Math. Ges. Hamburg* **12** (1991), *no.* 4, 1195–1206 (1992). (P. Dömösi) **93e:68081** 68Q70

Kovács, Z. Pseudoconnections on an almost complex manifold. *Differential geometry and its applications* (*Eger*, 1989), 447–456, *Colloq. Math. Soc. János Bolyai*, 56, *North-Holland, Amsterdam*, 1992. (Andrzej Bucki) **93m:53025** 53C05 (53C15)

— (*with* Tamássy, L.) Yano-Ledger connection and induced connection on vector bundles. *Acta Math. Hungar.* **59** (1992), *no.* 3-4, 405–421. (O. Kowalski) **93g:53038** 53C05 (53B40)

Koval′, F. F. (*with* Il′in, V. P.) Solution of boundary value problems by the method of operator continuation and decomposition for orthogonal functions. (Russian. English summary) *Dokl. Akad. Nauk Ukrain. SSR* **1991**, *no.* 10, 22–25, 180. 65J10 (65L10)

Koval′, V. A. Laws of large numbers and the iterated logarithm for solutions of stochastic difference equations in a Banach space. (Russian. Russian summary) *Stochastic equations and boundary theorems* (*Russian*), 79–90, *Akad. Nauk Ukrainy, Inst. Mat., Kiev*, 1991. (Summary) **93k:60162** 60H99 (60B12)

— Asymptotic behavior of solutions of stochastic recurrence equations under weakly dependent Gaussian Markov disturbances. (Russian) *Teor. Veroyatnost. i Mat. Statist. No.* 45 (1991), 39–44; *translation in Theory Probab. Math. Statist. No.* 45 (1992), 35–39. (Summary) **93e:60131** 60H99 (39A99)

Koval′chik, I. M. Calculation of some path integrals in a space of continuous functions defined on a compact set. (Russian. Russian summary) *Mat. Metody i Fiz.-Mekh. Polya No.* 34 (1991), 35–39. (V. A. Romanov) **93j:46047** 46G12 (28C20, 47N99)

— Solvability of linear equations in a function space. (Russian. English summary) *Vestst Akad. Navuk BSSR Ser. Fiz.-Mat. Navuk* **1991**, *no.* 5, 20–25, 123. (From the text) **93e:47096** 47N20 (34G99, 35R15, 46G05)

Koval′chuk, B. V. (*with* Lopushans′ka, G. P.) The Green function method in stationary and nonstationary problems of nonlinear heat conduction. (Russian. Russian summary) *Mat. Metody i Fiz.-Mekh. Polya No.* 34 (1991), 42–47. (Summary) **93h:35085** 35K20 (35J25, 80A20)

Koval′chuk, É. O. Groups of growth-bounded permutations. (Russian) *Problems in group theory and homological algebra* (*Russian*), 18–28, *Matematika, Yaroslav. Gos. Univ., Yaroslavl′*, 1988. (*see* **93b:00020**) 20B35

Koval′chuk, L. V. Some properties of matrix-valued martingales. (Russian. Russian summary) *Stochastic equations and boundary theorems* (*Russian*), 91–102, *Akad. Nauk Ukrainy, Inst. Mat., Kiev*, 1991. (Summary) **93k:60115** 60G44 (60H05)

Kovalcik, J. (*with* Hulkó, G.; Sapák, L.; Navračič, I.; Janíková, D.) Methods of identification of lumped input and distributed output systems. (English summary) *Identification and system parameter estimation* 1991, *Vol.* 1,2 (*Budapest*, 1991), 1161–1166, *IFAC Sympos. Ser.*, 3, *Pergamon, Oxford*, 1992. (*see* **93h:93009**) 93B30 (93C20)

Kovalenko, B. B. A density theorem for inverse semirings. (Russian) *Theory of semigroups and its applications, No.* 10 (*Russian*), 71–81, *Saratov. Gos. Univ., Saratov*, 1991. (B. Pondělíček) **93g:16059** 16Y60

Kovalenko, I. N. (*with* Nakonechnyĭ, A. N.) An approach to the tabulation of the distribution functions of additive functionals of Wiener process. (Russian summary) *Dokl. Akad. Nauk Ukrainy* **1992**, *no.* 6, 30–33, 171. 60J65 (65D20)

Kovalenko, L. G. (*with* Kryakin, Yu. V.) Whitney constants in the classes L^p, $1 \le p < \infty$. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* **1992**, *no.* 1, 69–77. (Ting Fu Wang) **93m:46028** 46E30 (41A44, 41A63)

Kovalenko, M. D. Bi-orthogonal expansions in the first fundamental problem in elasticity theory. (Russian) *Prikl. Mat. Mekh.* **55** (1991), *no.* 6, 956–963; *translation in J. Appl. Math. Mech.* **55** (1991), *no.* 6, 836–843 (1992). (Summary) **93a:73017** 73C02 (35C10, 73V35)

Kovalenko, N. S. (*with* Ovseets, M. I.; Yaznevich, M. I.) Vector algorithms for finding distances in graphs and their realization on a vector-pipeline computer. (Russian. English summary) *Programmirovanie* **1992**, *no.* 1, 65–71. 68R10

Kovalenko, N. V. (*with* Shepelenko, O. V.) The effect of arbitrary rigidity in a hinge on the stabilization of a resting Lagrange gyroscope by a second rotating gyroscope. (Russian. Russian summary) *Mekh. Tverd. Tela No.* 24 (1992), 81–84. 70E15 (70K20)

Kovalev, A. M. (*with* Issa, Salem Abdalla) Stabilization of the uniform motions of a rigid body about the principal axis. (Russian. Russian and Ukrainian summaries) *Prikl. Mekh.* **28** (1992), *no.* 9, 73–79; *translation in Internat. Appl. Mech.* **28** (1992), *no.* 9, 607–613 (1993). 70E15 (70K20)

— (*with* Shcherbak, V. F.) Conditions for the unique solvability of inverse problems for controlled dynamical systems. (Russian. Russian and Ukrainian summaries) *Ukraïn. Mat. Zh.* **44** (1992), *no.* 10, 1359–1366; *translation in Ukrainian Math. J.* **44** (1992), *no.* 10, 1245–1252 (1993). (Summary) **93i:93035** 93B30 (34H05, 93B05)

Kovalëv, M. M. (*with* Moshchenskiĭ, A. V.) Oracle complexity of the maximization of a submodular function. (Russian. English and Russian summaries) *Dokl. Akad. Nauk Belarusi* **36** (1992), *no.* 2, 111–114, 189. 68Q25

— (*with* Zaporozhets, A. A.) The polytope of alternating successions. (Russian. English and Russian summaries) *Dokl. Akad. Nauk Belarusi* **36** (1992), *no.* 9-10, 786–789, 859. (Daniel Turzík) **93k:90057** 90C10 (52B12, 90C27)

— (*with* Vorob′ev, M. A.) The Dantzig-Wolfe decomposition method for problems with polymatroid constraints. (Russian. English and Russian summaries) *Vestst Akad. Navuk Belarust Ser. Fiz. Mat. Navuk* **1992**, *no.* 5-6, 37–39, 125. 90C27

Kovalëv, M. Yu. Minimization of the weighted sum of delayed customers when one server is employed. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **31** (1991), *no.* 11, 1731–1739; *translation in Comput. Math. Math. Phys.* **31** (1991), *no.* 11, 92–98 (1992). (Knut Richter) **93c:90062** 90C27 (90B22)

Kovalev, V. A. Periodic solution of a nonautonomous system of differential equations with a parameter. (Russian) *Differential equations* (*qualitative theory*) (*Russian*), 57–66, *Ryazan. Gos. Ped. Inst., Ryazan′*, 1990. (Summary) **93c:34095** 34C25

Kovalevskaya, È. I. (*with* Bernik, V. I.) Two-dimensional extremal surfaces with simultaneously extremal partial derivatives. (Russian) *Mat. Zametki* **50** (1991), *no.* 2, 14–19, 160; *translation in Math. Notes* **50** (1991), *no.* 1-2, 779–783 (1992). (Summary) **93f:11055** 11J83

— Diophantine approximations on manifolds in $\mathbf{C}^2$. (Russian. English summary) *Vestst Akad. Navuk BSSR Ser. Fiz.-Mat. Navuk* **1991**, *no.* 5, 11–16, 123. (John H. Loxton) **93g:11079** 11J83

Kovalevskaya, S. V. *see* **Bölling, Reinhard**, **93f:01011**

Kovalevskiĭ, A. A. Γ-convergence of integral functionals connected with the variational Dirichlet problem in variable domains. (Russian. English and Russian summaries) *Dokl. Akad. Nauk Ukrainy* **1992**, *no.* 12, 5–9, 169. (Summary) **93k:46029** 46E99 (49J45)

— Convergence of solutions of variational inequalities with two-sided obstacles in punctured domains. (Russian. Russian and Ukrainian summaries) *Ukraïn. Mat. Zh.* **44** (1992), *no.* 2, 191–197; *translation in Ukrainian Math. J.* **44** (1992), *no.* 2, 170–175. (Sergei Pavlovich Ohezin) **93h:49020** 49J40 (35J85, 49J45)

Kovalyov, Mikhail Remarks on the theory of automorphic functions. *Chinese J. Math.* **20** (1992), *no.* 2, 137–152. (Jonathan Huntley) **93h:11051** 11F72 (58G25)

Kovanic, Pavel Smart matrices. (English summary) *Mutual impact of computing power and control theory* (*Prague*, 1992), 91–95, *Czech. Acad. Sci., Prague*, 1992. (*see* **93f:93005**) 90C08 (90C90)

— (*with* Böhm, Josef) Robust PID control. (English summary) *Mutual impact of computing power and control theory* (*Prague*, 1992), 235–240, *Czech. Acad. Sci., Prague*, 1992. (*see* **93f:93005**) 93B36

Kovari, Louis D. (*with* Chukwu, E. N.; Underwood, Robert G.) Global constrained null-controllability of nonlinear neutral systems. *Appl. Math. Comput.* **49** (1992), *no.* 1, 95–110. (Jerzy Klamka) **93b:93014** 93B05 (34K35, 34K40, 93C10)

Kovářík, Z. V. (*with* Gaur, A. K.) Norms on unitizations of Banach algebras. *Proc. Amer. Math. Soc.* **117** (1993), *no.* 1, 111–113. (T. W. Palmer) **93c:46082** 46H05

Kováts, Antal (*with* Móri, Tamás F.) Ageing properties of certain dependent geometric sums. *J. Appl. Probab.* **29** (1992), *no.* 3, 655–666. (Yadavalli V. S. Sarma) **93j:60133** 60K10

Kovenock, Dan (*with* Baye, Michael R.; de Vries, Casper G.) It takes two to tango: equilibria in a model of sales. (English summary) *Games Econom. Behav.* **4** (1992), *no.* 4, 493–510. (Summary) **93g:90014** 90A11 (90A14, 90D40)

Kovenya, V. M. (*with* Kuznetsov, B. G.; Fomin, Vasiliĭ Mikhaĭlovich; Sleptsov, A. G.) Nikolaĭ Nikolaevich Yanenko (1921–1984). (Russian) *Model. Mekh.* **5** (1991), *no.* 2, 3–6. 01A70

Kövesi-Domokos, S. *see* **Nonperturbative methods in low-dimensional quantum field theories**, **93f:81005**

Kovtun, I. I. Determination of the moments of differential equations with random coefficients. (Russian. Russian summary) *Boundary value problems for operator-differential equations* (*Russian*), 36–40, *Akad. Nauk Ukrainy, Inst. Mat., Kiev*, 1991. (From the text) **93f:34091** 34F05 (34G10, 60H10)

Kovtun, V. E. (*with* Barashenkov, I. V.; Getmanov, B. S.) The unified approach to integrable relativistic equations: soliton solutions over nonvanishing backgrounds. *Nonlinear fields: classical, random, semiclassical* (*Karpacz*, 1991), 617–654, *World Sci. Publishing, River Edge, NJ*, 1991. (Summary) **93i:58067** 58F07 (81T10)

zubik-Kowal, Barbara *see* **Zubik-Kowal, Barbara**

Kowalczyk, Adam On rough models of history records. *Approximation, optimization and computing*, 393–397, *North-Holland, Amsterdam*, 1990. (*see* **93a:41001**) 68T05 (94A15)

Kowalczyk, T. (*with* Bromek, T.) A decision approach to ordering stochastic dependence. (English summary) *Topics in statistical dependence* (*Somerset, PA*, 1987), 103–109, *IMS Lecture Notes Monograph Ser.*, 16, *Inst. Math. Statist., Hayward, CA*, 1990. (Summary) **93i:62051** 62H20 (62C99)

łędzewicz-Kowalewska, U. *see* **Łędzewicz-Kowalewska, U.**

Kowalewski, Adam (*with* Duda, Jan) On some optimal control problem for a parabolic system with boundary condition involving a time-varying lag. (English summary) *IMA J. Math. Control Inform.* **9** (1992), *no.* 2, 131–146. (Summary) **93h:49034** 49K20 (35K10)

Kowalska, Anna A new class of libraries. (English summary) *J. Theoret. Probab.* **5** (1992), *no.* 3, 431–445. (Walter J. Hendricks) **93i:60128** 60J10 (68P05)

Kowalski, Aleksander (*with* Szynal, Dominik) On general ARMA models and regularity conditions. (English summary) *Stochastic systems and optimization* (*Warsaw*, 1988), 112–124, *Lecture Notes in Control and Inform. Sci.*, 136, *Springer, Berlin*, 1989. (*see* **93d:93009**) 60G12 (60G10, 62M10)

— (*with* Szynal, Dominik) On prediction in time-dependent L^1-ARMA models. *Stochastic methods in experimental sciences* (*Szklarska Poręba*, 1989), 275–286, *World Sci. Publishing, River Edge, NJ*, 1990. (Summary) **93b:60084** 60G25 (62M20)

Kowalski, Krzysztof (*with* Steeb, Willi-Hans) Symmetries and first integrals for nonlinear dynamical systems: Hilbert space approach. I. Ordinary differential equations. *Progr. Theoret. Phys.* **85** (1991), *no.* 4, 713–722. (L. M. Berkovich) **93f:34100** 34G20 (34A34, 34C35, 47N20, 58F35, 81S05)

— (*with* Steeb, Willi-Hans) Symmetries and first integrals for nonlinear dynamical systems: Hilbert space approach. II. Partial differential equations. *Progr. Theoret. Phys.* **85** (1991), *no.* 5, 975–983. (L. M. Berkovich) **93f:34101** 34G20 (34C35, 35K55, 35Q53, 47N20, 58F35, 81R10)

— Linearization transformations for nonlinear dynamical systems: Hilbert space approach. *Phys. A* **180** (1992), *no.* 1-2, 156–170. (L. M. Berkovich) **93f:34102** 34G20 (34C35,

35Q53, 47N20)

Kowalski, Oldřich (*with* Tricerri, Franco) A canonical connection for locally homogeneous Riemannian manifolds. *Global differential geometry and global analysis* (*Berlin*, 1990), 97–103, *Lecture Notes in Math.*, 1481, *Springer, Berlin*, 1991. (Philippos J. Xenos) **93g:53070** 53C30 (53C05)

— (*with* Tricerri, Franco; Vanhecke, Lieven) Curvature homogeneous spaces with a solvable Lie group as homogeneous model. *J. Math. Soc. Japan* **44** (1992), *no.* 3, 461–484. (Philippos J. Xenos) **93f:53041** 53C30

— *see also* **Halmos, Paul Richard, 93c:01026a** *and* **93c:01026b**

Kowalski, Zbigniew S. A characterization of periods in equicontinuous topological dynamical systems. (English summary) *Bull. Polish Acad. Sci. Math.* **38** (1990), *no.* 1-12, 121–124. (Helmut Ludescher) **93j:54032** 54H20

— On mixing generalized skew products. *Ergodic theory and related topics, III* (*Güstrow*, 1990), 128–130, *Lecture Notes in Math.*, 1514, *Springer, Berlin*, 1992. (*see* **93c:28002**) 28D10

Kowalsky, Hans-Joachim Filterabbildungen. [Mappings of filters] *Abh. Braunschweig. Wiss. Ges.* **42** (1990/91), 7–26. (Peter Vojtáš) **93d:54001** 54-01 (04-01, 06-01, 26-01)

Kowarz, Marek W. (*with* Wolf, Emil) Conservation laws for partially coherent free fields. (English summary) *J. Opt. Soc. Amer. A* **10** (1993), *no.* 1, 88–94. (Summary) **93j:78020** 78A60 (78A10)

Kowatschewa, Ralitza K. *see* **Kovacheva, Ralitza Krumova**

Kowslowski, Michael *see* **Kozlowski, Michael**

Kox, A. J. Hendrik Antoon Lorentz, the ether, and the general theory of relativity. *Einstein and the history of general relativity* (*North Andover, MA*, 1986), 201–212, *Einstein Stud.*, 1, *Birkhäuser Boston, Boston, MA*, 1989. (Introduction) **93h:01030** 01A60 (01A70, 83-03)

— General relativity in the Netherlands, 1915–1920. (French summary) *Studies in the history of general relativity* (*Luminy*, 1988), 39–56, 463, *Einstein Stud.*, 3, *Birkhäuser Boston, Boston, MA*, 1992. (Introduction) **93d:01043** 01A60 (83-03)

— *see also* **Studies in the history of general relativity, 93a:01001**

Koya, Tatsuhito (*with* Mura, Toshio) ★ Variational methods in mechanics. *The Clarendon Press, Oxford University Press, New York*, 1992. xii+244 *pp. ISBN* 0-19-506830-0 (J. N. Flavin) **93j:73001** 73-01 (49Rxx, 73K20, 73V25)

Koyama, Akira On ANSSRs and their unions. (English summary) *Bull. Polish Acad. Sci. Math.* **38** (1990), *no.* 1-12, 7–14. (Fulga Pop) **93k:54045** 54C56 (54C55)

Koyama, Kenji (*with* Tsukada, Yasuyuki) A knowledge transfer model: from zero-knowledge toward full-knowledge. (English summary) *Algorithmic learning theory, II* (*Tokyo*, 1991), 187–195, *Ohm, Tokyo*, 1992. (*see* **93j:68003**) 68T05

Koyama, Shin-ya Determinant expression of Selberg zeta functions. III. *Proc. Amer. Math. Soc.* **113** (1991), *no.* 2, 303–311. (Jonathan Huntley) **93h:11052** 11F72

— Selberg zeta functions and Ruelle operators for function fields. *Proc. Japan Acad. Ser. A Math. Sci.* **67** (1991), *no.* 8, 255–259. (David Joyner) **93a:11099** 11R58 (11M41)

— Determinant expression of Selberg zeta functions. II. *Trans. Amer. Math. Soc.* **329** (1992), *no.* 2, 755–772. (Summary) **93g:11053** 11F72

Koyanagi, Junji (*with* Katoh, Naoki; Ohnishi, Masamitsu; Ibaraki, Toshihide) Optimal strategies for some team games. *Discrete Appl. Math.* **35** (1992), *no.* 3, 275–291. (Xiao Jun Zeng) **93c:90114** 90D15 (90D40, 90D46, 93E05)

Koyfogiorgos, Themis Some theorems on Codazzi tensors. *An. Ştiinţ. Univ. "Al. I. Cuza" Iaşi Secţ. I a Mat. (N.S.)* **36** (1990), *no.* 3, 277–288. (Thomas Hasanis) **93c:53044** 53C40 (53C20, 53C42)

Koymans, C. P. J. (*with* Mulder, J. C.) A modular approach to protocol verification using process algebra. *Applications of process algebra*, 261–306, *Cambridge Tracts Theoret. Comput. Sci.*, 17, *Cambridge Univ. Press, Cambridge*, 1990. (*see* **93g:68090**) 68Q60 (68Q10)

Kozachenko, L. F. (*with* Kozachenko, Yu. V.) On the accuracy of modeling stationary Gaussian random processes in $L^2(0,T)$. (Russian) *Vychisl. Prikl. Mat. (Kiev) No.* 75 (1991), 108–115. (Summary) **93c:60052** 60G15 (65U05)

Kozachenko, Yu. V. (*with* Besklinskaya, E. P.) On the convergence of sums of Baxter type in Orlicz spaces. (Ukrainian. Russian and Ukrainian summaries) *Visnik Kiïv. Univ. Mat. Mekh. No.* 32 (1990), 3–7. 60F05 (46E30)

— (*with* Besklinskaya, E. P.) On the rate of convergence for sub-Gaussian random vectors of strict type in Lévy-Baxter-type theorems. (Russian) *Issled. Operatsii i ASU No.* 37 (1991), 32–37. 60F05 (60G15)

— (*with* Stadnik, A. I.) Convergence of some functionals of Gaussian vectors in Orlicz spaces. (Russian) *Teor. Veroyatnost. i Mat. Statist. No.* 44 (1991), 80–87; *translation in Theory Probab. Math. Statist. No.* 44 (1992), 77–83. (Summary) **93d:60034** 60F05 (60G15, 62M15)

— (*with* Stadnik, A. I.) Pre-Gaussian processes and convergence in $C(T)$ of estimates for covariance functions. (Russian) *Teor. Veroyatnost. i Mat. Statist. No.* 45 (1991), 54–62; *translation in Theory Probab. Math. Statist. No.* 45 (1992), 51–57. (Summary) **93d:60065** 60G15 (62M15)

— (*with* Kozachenko, L. F.) On the accuracy of modeling stationary Gaussian random processes in $L^2(0,T)$. (Russian) *Vychisl. Prikl. Mat. (Kiev) No.* 75 (1991), 108–115. (Summary) **93c:60052** 60G15 (65U05)

— (*with* Buldygin, V. V.) Exponential estimates for the distribution of the supremum of a class of random processes. (Russian. English and Russian summaries) *Dokl. Akad. Nauk Ukrainy* **1992,** *no.* 2, 31–34, 169. (Summary) **93g:60079** 60G17 (60G15)

— (*with* Vovk, L. B.) On the rate of convergence in Lévy-Baxter theorems for some classes of random processes. (Ukrainian. Russian and Ukrainian summaries) *Teor. Imovir. ta Mat. Statist. No.* 46 (1992), 25–36. (Summary) **93k:60097** 60G17

— (*with* Zaĭtsev, I. I.) Distributions of errors in measurements by the impulse method. (Russian) *Vychisl. Prikl. Mat. (Kiev) No.* 73 (1992), 66–70. 60G17 (60G15)

Kozak, Jernej (*with* Lokar, Matija) On piecewise quadratic G^2 approximation and interpolation. *Mathematical methods in computer aided geometric design, II* (*Biri*, 1991), 359–366, *Academic Press, Boston, MA*, 1992. (*see* **93d:65022**) 65D05 (65D17)

Kozak, Michał (*with* Kondracki, Witold) A density theorem for the actions of I.L.H.-Lie groups. (Polish. English summary) *Mat. Stos.* **33** (1991), 3–9. (Janusz Grabowski) **93c:58018** 58B25 (22E65, 57S25)

Kozak, Monika An abstract nonlinear temporally inhomogeneous equation. *Demonstratio Math.* **23** (1990), *no.* 4, 993–1003. (A. S. Vatsala) **93f:34103** 34G20 (34A12)

Kozák, Petr Discrete events and general systems theory. (English summary) *Internat. J. Systems Sci.* **23** (1992), *no.* 9, 1403–1422. (Bao Sheng Hu) **93i:93088** 93C85 (93A05, 93A30)

— On feedback controllers. (English summary) *Internat. J. Systems Sci.* **23** (1992), *no.* 9, 1423–1431. (Bao Sheng Hu) **93i:93089** 93C85 (93A05, 93B52)

Kōzaki, Masanori (*with* Sumi, Hidekichi) On the asymptotic comparison of geometric mean value operators on Riemannian manifolds. *Mem. Kurume College Tech.* **7** (1991), *no.* 1, 23–33. (O. Kowalski) **93a:58174** 58G30 (53C25)

— On mean value theorems for small geodesic spheres in Riemannian manifolds. *Czechoslovak Math. J.* **42(117)** (1992), *no.* 3, 519–547. (Lieven Vanhecke) **93g:53065** 53C25 (60D05)

Kozakiewicz, Jan M. (*with* Mika, Janusz R.) Stiff systems of second-order ordinary differential equations. (English summary) *Computational and applied mathematics, II* (*Dublin*, 1991), 93–98, *North-Holland, Amsterdam*, 1992. (Summary) **93j:65106** 65L05 (34A65)

— (*with* Mika, Janusz R.) First-order asymptotic expansion method for singularly perturbed systems of second-order ordinary differential equations. (English summary) *Comput. Math. Appl.* **25** (1993), *no.* 3, 3–11. (Yu Cheng Su) **93m:65095** 65L05 (34E15)

Kozameh, Carlos N. (*with* Newman, Ezra T.; Iyer, Savitri V.) Nonlocal equations for general relativity. *J. Geom. Phys.* **8** (1992), *no.* 1-4, 195–209. (Garry Ludwig) **93e:83029** 83C30 (83C05)

Kozarovitskiĭ, E. L. Some conditions for the stability of Markov chains. (Russian) *Teor. Veroyatnost. i Mat. Statist. No.* 44 (1991), 67–72; *translation in Theory Probab. Math. Statist. No.* 44 (1992), 65–68. (Gh. Oprişan) **93g:60142** 60J10

Kozdęba, Anna (*with* Stankiewicz, Jan) Generalized majorization and subordination for special classes of functions. (Russian and Polish summaries) *Zeszyty Nauk. Politech. Rzeszowskiej Mat. Fiz. No.* 12 (1991), 83–89. (G. Lakshma Reddy) **93f:30012** 30C45 (30C80)

Kozel, K. (*with* Vavřincová, M.) Finite volume solution of the Euler equations. *Proceedings of the Second International Symposium on Numerical Analysis* (*Prague*, 1987), 215–220, *Teubner-Texte Math.*, 107, *Teubner, Leipzig*, 1988. (*see* **93b:65007**) 76M20 (65M06)

Kozel, P. T. The structure of elements of the orthogonal group of even degree over an algebraically closed field of characteristic 2. (Russian) *Vestnik Belorussk. Gos. Univ. Ser. I Fiz. Mat. Mekh.* **1991,** *no.* 3, 68–69, 78. (Summary) **93k:11029** 11E57 (20G25)

Kozenko, A. V. Periodization of the history of astrophysics. (Russian) *Voprosy Istor. Estestvoznan. i Tekhn.* **1993,** *no.* 1, 100–104. 01A99

Kozera, Ryszard (*with* Brooks, Michael J.; Chojnacki, Wojciech) Circularly symmetric eikonal equations and nonuniqueness in computer vision. *J. Math. Anal. Appl.* **165** (1992), *no.* 1, 192–215. (Benno Fuchssteiner) **93f:35225** 35Q60 (35F20, 78A55)

— (*with* Brooks, Michael J.; Chojnacki, Wojciech) Shading without shape. *Quart. Appl. Math.* **50** (1992), *no.* 1, 27–38. (Menachem Dishon) **93b:68091** 68U10 (35F10, 78A05)

Kozerovskiĭ, M. G. (*with* Chumakov, S. M.) Exactly solvable Dicke models and radiation capture. (Russian. Russian summary) *Trudy Fiz. Inst. Lebedev.* **191** (1989), 150–170, 247. (K. Wódkiewicz) **93e:81155** 81V80

Kozhanov, A. I. Quasilinear hyperbolic and pseudohyperbolic equations that describe the motion of electrons in superconductors. (Russian) *Boundary value problems for nonclassical equations in mathematical physics* (*Russian*) (*Novosibirsk*, 1989), 37–47, *Akad. Nauk SSSR Sibirsk. Otdel., Inst. Mat., Novosibirsk*, 1989. (*see* **93d:35001**) 35Q60

— Estimates for solutions and existence theorems for fourth-order elliptic equations with a composite operator in the principal part. (Russian) *Embedding theorems and their applications to problems in mathematical physics* (*Russian*), 113–126, 141, *Akad. Nauk SSSR Sibirsk. Otdel., Inst. Mat., Novosibirsk*, 1989. (Summary) **93a:35039** 35J30 (35B45)

— Positivity of solutions of nonlinear pseudoparabolic equations. (Russian) *Partial differential equations* (*Russian*), 79–92, 142–143, *Akad. Nauk SSSR Sibirsk. Otdel., Inst. Mat., Novosibirsk*, 1989. (Summary) **93a:35095** 35K70 (34G20, 35B05, 35B50)

— Some third-order equations in infinite domains. (Russian) *Nonclassical equations and equations of mixed type* (*Russian*), 122–129, *Akad. Nauk SSSR Sibirsk. Otdel., Inst. Mat., Novosibirsk*, 1990. (*see* **93b:35002**) 35G05

— Solution properties for a class of pseudoparabolic equations. (Russian) *Dokl. Akad. Nauk* **326** (1992), *no.* 5, 781–786. (Georgii A. Sviridyuk) **93m:35114** 35K70 (35B05, 35B45, 35Q75)

Kozhevnikova, G. P. (*with* Vinokur, A. B.) Analysis of the computational complexity of algorithms by a method of recognizing their classification properties. (Russian. English and Ukrainian summaries) *Kibernet. Sistem. Anal.* **1991,** *no.* 6, 53–69, 188; *translation in Cybernet. Systems Anal.* **27** (1991), *no.* 6, 840–852 (1992). 68Q25

Kozhukharʹ, P. A. On the point spectrum of the perturbed Wiener-Hopf integral operator. (Russian) *Mat. Zametki* **51** (1992), *no.* 1, 102–113; *translation in Math. Notes* **51** (1992), *no.* 1-2, 66–73. (A. Böttcher) **93d:47054** 47B35 (45E10, 45H05, 47A10, 47A55, 47G10)

Kozhukhovskiĭ, A. D. (*with* Gnativ, L. A.; Litvin, A. I.) Organizing vector calculations of orthogonal Walsh transformations. *Soviet J. Automat. Inform. Sci.* **24** (1991), *no.* 4, 86–90 (1992); *translated from Avtomatika* **1991,** *no.* 4, 87–91, 96 (*Russian. English, Russian and Ukrainian summaries*). 93C55

— (*with* Litvin, A. I.) Expansion of functions in Fourier-Chebyshev series in biased Chebyshev polynomials of the first kind. (Russian) *Vychisl. Prikl. Mat. (Kiev) No.* 73 (1992), 25–27. 42C10

Kozics, Sándor Definition of abstract data types in different programming languages. (Hungarian. English and Hungarian summaries) *Alkalmaz. Mat. Lapok* **15** (1990/91), *no.* 3-4, 267–287. 68Q65

Kozik, Benjamin *see* **Landau, L. D., 93b:00001d**

Kozin, A. B. (*with* Kozina, G. A.; Papkovskaya, O. B.) The bending of a rectangular membrane with a cross-shaped inclusion. (Russian. Russian summary) *Boundary value problems* (*Russian*), 129–132, *Perm. Politekh. Inst., Permʹ*, 1989. (*see* **93k:00022**) 73K10

Kozin, F. *see* **Systems and control, 93f:93007**

Kozina, G. A. (*with* Papkovskaya, O. B.; Kozin, A. B.) The bending of a rectangular membrane with a cross-shaped inclusion. (Russian. Russian summary) *Boundary value problems* (*Russian*), 129–132, *Perm. Politekh. Inst., Permʹ*, 1989. (*see* **93k:00022**) 73K10

Koziol, James A. *see* **Handbook: Percentage points of the inverse Gaussian distribution, 93e:62264**

Koziol, Krzysztof Constructing quasi-Pythagorean fields. *Beiträge Algebra Geom. No.* 33 (1992), 47–53. (Thomas C. Craven) **93e:11050** 11E25 (12D15)

Kozirs'kii, V. G. *see* **Kozyrskii, V. G.**

Kozitskii, Yu. V. Hierarchical model of a vector ferromagnet. Self-similar block-spin distributions and the Lee-Yang theorem. *Rep. Math. Phys.* **26** (1988), *no.* 3, 429–445. (Flora Koukiou) **93b:82004** 82B05 (82B28)

Kozlov, A. A. (*with* Zhokhov, N. L.; Pyt'ev, Yu. P.) Limit capabilities of second-order parametric measurement transformers with lumped parameters. (Russian. English summary) *Mat. Model.* **3** (1991), *no.* 7, 57–70. (Summary) **93e:47101** 47N99 (00A69, 65K99, 83–05)

Kozlov, R. I. Analysis of stability under perturbations by the method of Lyapunov functions. *The Lyapunov functions method and applications*, 123–134, *IMACS Ann. Comput. Appl. Math.*, 8, *Baltzer, Basel*, 1990. (A. S. Vatsala) **93e:34072** 34D20 (34D10)

Kozlov, S. D. Frattini extensions of the projective special linear group. (Russian) *Sibirsk. Mat. Zh.* **32** (1991), *no.* 2, 88–93, 212; *translation in Siberian Math. J.* **32** (1991), *no.* 2, 252–256. (Jorge Soto-Andrade) **93g:20041** 20D25 (20E22)

Kozlov, S. M. (*with* Pyatnitskiĭ, A. L.) Homogenization and vanishing viscosity. *Probability theory and mathematical statistics, Vol. II* (*Vilnius*, 1989), 330–339, "*Mokslas*", *Vilnius*, 1990. (Summary) **93a:35017** 35B27 (35R60, 60J60)

— (*with* Pitman, James W.; Yor, Marc) Brownian interpretations of an elliptic integral. *Seminar on Stochastic Processes*, 1991 (*Los Angeles, CA*, 1991), 83–95, *Progr. Probab.*, 29, *Birkhäuser Boston, Boston, MA*, 1992. (Paul McGill) **93f:60123** 60J65 (33E99, 60H05, 60J55)

— (*with* Berlyand, L. V.) Asymptotics of the homogenized moduli for the elastic chess-board composite. *Arch. Rational Mech. Anal.* **118** (1992), *no.* 2, 95–112. (E. Acerbi) **93h:73003** 73B27 (35B27, 49N20, 73K20, 73V25)

— (*with* Bensoussan, Alain) Diffusion effective dans un flux périodique. (English and French summaries) [Effective diffusion in a periodic flow] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 7, 765–768. (Summary) **93i:35109** 35Q35 (73B27, 76B15, 76R50)

— (*with* Malozëmov, L. A.) Hierarchical lattice constructions. (Russian) *Mat. Zametki* **51** (1992), *no.* 2, 53–58, 157; *translation in Math. Notes* **51** (1992), *no.* 1-2, 143–146. (Summary) **93d:82020** 82B20

— On the domain of change of added mass, polarization and effective characteristics of composites. (Russian) *Prikl. Mat. Mekh.* **56** (1992), *no.* 1, 118–123; *translation in J. Appl. Math. Mech.* **56** (1992), *no.* 1, 102–107. (Ekaterina Guibianskaya) **93f:73010** 73B27 (73K20, 76B40)

Kozlov, V. *see* **Kozlov, Vladimir Arkad'evich**

Kozlov, V. A. *see* **Kozlov, Vladimir Arkad'evich**

Kozlov, V. F. Construction of the stationary states of vortex patches by the method of perturbations. *Izv. Acad. Sci. USSR Atmospher. Ocean. Phys.* **27** (1991), *no.* 2, 77–86 (1992); *translated from Izv. Akad. Nauk SSSR Ser. Fiz. Atmosfer. i Okeana* **27** (1991), *no.* 2 (*Russian*). (Summary) **93a:76021** 76C15 (76C05, 76U05, 86A05)

Kozlov, V. P. *see* **Kozlov, Viktor Pavlovich**

Kozlov, Valerii V. Vortex theory of a top. (Russian) *Vestnik Moskov. Univ. Ser. I Mat. Mekh.* **1990**, *no.* 4, 56–62, 105. (Summary) **93d:58055** 58F05 (70E15, 70H05, 76C05)

— (*with* Treshchëv, D. V.) ★ Billiards. A genetic introduction to the dynamics of systems with impacts. Translated from the Russian by J. R. Schulenberger. Translations of Mathematical Monographs, 89. *American Mathematical Society, Providence, RI*, 1991. viii+171 *pp. ISBN* 0-8218-4550-0 (Donal Hurley) **93k:58094a** 58F05 (34C35, 58F11, 58F17, 70D99, 70F35, 70H05)

— (*with* Treshchëv, D. V.) ★ Биллиарды. (Russian) [Billiards] Генетическое введение в динамику систем с ударами. [A genetic introduction to the dynamics of systems with impacts] *Moskov. Gos. Univ., Moscow*, 1991. 168 *pp. ISBN* 5-211-01566-5 (Donal Hurley) **93k:58094b** 58F05 (34C35, 58F11, 58F17, 70D99, 70H05, 70H35)

— (*with* Harin, Alexander O.) Kepler's problem in constant curvature spaces. (English summary) *Celestial Mech. Dynam. Astronom.* **54** (1992), *no.* 4, 393–399. (Bruno Cordani) **93i:70010** 70F05

— Tensor invariants of quasihomogeneous systems of differential equations, and the asymptotic Kovalevskaya-Lyapunov method. (Russian) *Mat. Zametki* **51** (1992), *no.* 2, 46–52, 157; *translation in Math. Notes* **51** (1992), *no.* 1-2, 138–142. (Maria Clara Nucci) **93k:58199** 58F35 (34A26, 34A34, 70H05)

— On the realization of constraints in dynamics. (Russian. Russian summary) *Prikl. Mat. Mekh.* **56** (1992), *no.* 4, 692–698; *translation in J. Appl. Math. Mech.* **56** (1992), *no.* 4, 594–600. (Galina G. Okuneva) **93m:70015** 70F20 (70A05)

Kozlov, Viktor Pavlovich (*with* Sedunov, E. V.) Optimization of multiplex measurement systems taking into account statistical fluctuations in the signal. (Russian. English and Ukrainian summaries) *Kibernet. Sistem. Anal.* **1992**, *no.* 6, 28–39, 184. 62K05

Kozlov, Vladimir Arkad'evich Asymptotics of the spectrum of operator pencils generated by elliptic boundary value problems in an angle. (Russian. Russian summary) *Some applications of functional analysis to problems of mathematical physics* (*Russian*), 82–96, 144, *Akad. Nauk SSSR Sibirsk. Otdel., Inst. Mat., Novosibirsk*, 1988. (Summary) **93f:47056** 47F05 (35Jxx, 35P20, 47A56, 47E05, 47N20)

— (*with* Maz'ya, V. G.) Solvability and asymptotic behaviour of solutions of ordinary differential equations with variable operator coefficients. *Journées "Équations aux Dérivées Partielles"* (*Saint-Jean-de-Monts*, 1992), *Exp. No. V*, 12 *pp.*, *École Polytech., Palaiseau*, 1992. (Alan V. Lair) **93k:34138** 34G10 (47A50, 47N20)

— Spectral properties of the operator pencils, associated with elliptic boundary problems in a cone. *Symposium "Analysis on Manifolds with Singularities"* (*Breitenbrunn*, 1990), 79–84, *Teubner-Texte Math.*, 131, *Teubner, Stuttgart*, 1992. (*see* **93k:35004**) 47F05 (35J40, 35P05, 47A56)

— (*with* Maz'ya, V. G.; Schwab, Christoph) On singularities of solutions of the displacement problem of linear elasticity near the vertex of a cone. *Arch. Rational Mech. Anal.* **119** (1992), *no.* 3, 197–227. (B. Kellogg) **93g:73032** 73C02 (35J55)

Kozlovskaya, E. G. On the reliability of complex interpretation of geophysical fields. (Russian. English and Russian summaries) *Dokl. Akad. Nauk Belarusi* **36** (1992), *no.* 5, 470–472, 480. (Summary) **93k:86014** 86A22

Kozlovskaya, I. S. (*with* Erofeenko, V. T.) Integral equations in problems of screening electromagnetic fields for cylindrical bodies. (Russian. Russian summary) *Differentsial'nye Uravneniya* **28** (1992), *no.* 2, 242–247, 365; *translation in Differential Equations* **28** (1992), *no.* 2, 209–213. (Introduction) **93g:45007** 45G10 (35Q60, 78A55)

Kozlovskii, O. S. Resonance zone boundaries for families of circle diffeomorphisms. *Phys. D* **54** (1991), *no.* 1-2, 1–4. (Helmut Rüssmann) **93g:58107** 58F14

Kozlovskiĭ, V. A. Local failures of an automaton and their detection. (Russian) *Mathematical problems in cybernetics, No.* 3 (*Russian*), 167–186, "*Nauka*", *Moscow*, 1991. (A. Ádám) **93a:68102** 68Q70

Kozlovsky, O. S. *see* **Kozlovskiĭ, O. S.**

Kozłowski, Krzysztof New computational algorithms for a discrete Kalman filter in robot dynamics. (English, Russian and Polish summaries) *Engrg. Trans.* **39** (1991), *no.* 3-4, 325–349 (1992). 93E11 (70B15, 70Q05, 93B40)

— Identification of model parameters of robotic manipulators. (English and Polish summaries) *Systems Sci.* **18** (1992), *no.* 1-2, 165–187 (1993). 93C85

Kozlowski, Michael Some improper affine spheres in A_3. *Global differential geometry and global analysis* (*Berlin*, 1990), 104–107, *Lecture Notes in Math.*, 1481, *Springer, Berlin*, 1991. (Vladislav Goldberg) **93g:53015** 53A15 (35C99)

— Nontrivial solutions of the Monge-Ampère equation. *Hadronic J. Suppl.* **6** (1991), *no.* 3, 267–270. 53A15

— Nontrivial solution of the Monge-Ampère equation. *Hadronic J. Suppl.* **6** (1991), *no.* 3, 345–348. 53A15

— Conormals and improper affine spheres. *Simon Stevin* **65** (1991), *no.* 3-4, 193–197. (Vladislav Goldberg) **93b:53013** 53A15

Kozłowski, Wojciech M. (*with* Kilmer, Shelby J.) On some properties of sets of best approximants in Musielak-Orlicz spaces. *Comment. Math. Prace Mat.* **31** (1991), 59–71. (L. G. Labsker) **93b:41038** 41A65 (41A30, 41A50, 46E30)

— (*with* Kilmer, Shelby J.; Lewicki, Grzegorz) Sigma order continuity and best approximation in L_p-spaces. *Comment. Math. Univ. Carolin.* **32** (1991), *no.* 2, 241–250. (Khalil Ahmad) **93a:41065** 41A65 (41A50, 46E30)

Koz'ma, D. V. (*with* Shubè, A. S.) Center conditions of a cubic system with four integral lines. (Russian. English, Russian and Moldavian summaries) *Izv. Akad. Nauk Respub. Moldova Mat.* **1992**, *no.* 3, 62–67, 95. (Summary) **93m:34039** 34C05

Kozma, Gady (*with* Lev, Arieh) Bases and decomposition numbers of finite groups. *Arch. Math.* (*Basel*) **58** (1992), *no.* 5, 417–424. (Michael E. Mays) **93a:20035** 20D60

Kozma, László[2] (*with* Rácz, É.) A temporal logic specification of a transaction management system. Automata, languages and programming systems (Salgótarján, 1990). *Pure Math. Appl. Ser. A* **1** (1991), *no.* 3-4, 369–374. (Summary) **93h:03035** 03B70 (68T27)

Kozono, Hideo (*with* Sohr, Hermann) On a new class of generalized solutions for the Stokes equations in exterior domains. *Ann. Scuola Norm. Sup. Pisa Cl. Sci.* (4) **19** (1992), *no.* 2, 155–181. (M. Biroli) **93m:35144** 35Q30 (35D05, 76D07)

— (*with* Ogawa, Takayoshi) Some L^p estimate for the exterior Stokes flow and an application to the nonstationary Navier-Stokes equations. (English summary) *Indiana Univ. Math. J.* **41** (1992), *no.* 3, 789–808. (Michael Wiegner) **93m:35145** 35Q30 (35B40)

— (*with* Sohr, Hermann) Density properties for solenoidal vector fields, with applications to the Navier-Stokes equations in exterior domains. *J. Math. Soc. Japan* **44** (1992), *no.* 2, 307–330. (Long An Ying) **93b:35112** 35Q30 (46E35, 76D05)

Kozorez, V. V. (*with* Krashanitsa, Yu. A.; Rashkovan, V. M.) ★ Законы сохранения и граничные задачи управления в магнитном поле. (Russian. Russian summary) [Conservation laws and boundary control problems in a magnetic field] Препринт [Preprint], 92-3. *Akad. Nauk Ukrainy, Inst. Kibernet., Kiev*, 1992. 23 *pp.* (Yuri Kivshar) **93m:76074** 76W05 (78A99)

Kozyakin, V. S. (*with* Pokrovskii, A. V.) The role of controllability-type properties in the study of the stability of desynchronized dynamical systems. (Russian) *Dokl. Akad. Nauk* **324** (1992), *no.* 1, 60–64; *translation in Soviet Phys. Dokl.* **37** (1992), *no.* 5, 213–215. (From the introduction) **93i:93018** 93B05 (93C05)

Kozyrskiĭ, V. G. (*with* Gonchar, N. S.) One-parameter group of symmetries of incommensurate structures of the anisotropic Ising model. (Ukrainian. English, Russian and Ukrainian summaries) *Ukrain. Fiz. Zh.* **36** (1991), *no.* 12, 1857–1864. (Summary) **93g:82016** 82B20 (82B26)

— (*with* Gonchar, N. S.) Hidden symmetry and small branchings in anisotropic lattice models. (Ukrainian. Russian summary) *Ukrain. Mat. Zh.* **43** (1991), *no.* 11, 1509–1516; *translation in Ukrainian Math. J.* **43** (1991), *no.* 11, 1401–1408 (1992). (Summary) **93a:82012** 82B20 (82B26)

Kra, I. (*with* Farkas, Hershel M.) ★ Riemann surfaces. Second edition. Graduate Texts in Mathematics, 71. *Springer-Verlag, New York*, 1992. xvi+363 *pp. ISBN* 0-387-97703-1 (Editors) **93a:30047** 30Fxx (14–01, 14H55)

Kraaijevanger, J. F. B. M. Maximum norm contractivity of discretization schemes for the heat equation. *Appl. Numer. Math.* **9** (1992), *no.* 6, 475–492. (G. W. Hedstrom) **93a:65122** 65M12 (65M06)

Krabs, W. ★ On moment theory and controllability of one-dimensional vibrating systems and heating processes. Lecture Notes in Control and Information Sciences, 173. *Springer-Verlag, Berlin*, 1992. viii+174 *pp. ISBN* 3-540-55102-6 (Vilmos Komornik) **93f:93002** 93–02 (42A70, 44A60, 47N70, 73K05, 73K12, 73K50, 93B05)

— Controllability of a rotating beam. *Analysis and optimization of systems: state and frequency domain approaches for infinite-dimensional systems* (*Sophia-Antipolis*, 1992), 447–458, *Lecture Notes in Control and Inform. Sci.*, 185, *Springer, Berlin*, 1993. (*see* **93i:93005**) 93B05 (73K05, 73K50, 93C20)

— *see also* **Optimal control of partial differential equations, 93b:49002**

Krachkovskiĭ, A. P. (*with* Emelichev, V. A.; Kravtsov, M. K.) Multi-index planar transportation polytopes with a maximum number of vertices. (Russian) *Diskret. Mat.* **4** (1992), *no.* 1, 3–18; *translation in Discrete Math. Appl.* **2** (1992), *no.* 6, 571–586. (Summary) **93j:90059** 90C06 (52B12)

Kracht, Marcus A solution to a problem of Urquhart. *J. Philos. Logic* **20** (1991), *no.* 3, 285–286. (Lilija A. Chagrova) **93e:03028** 03B45

— (*with* Wolter, Frank) Properties of independently axiomatizable bimodal logics. *J. Symbolic Logic* **56** (1991), *no.* 4, 1469–1485. (Wojciech Dzik) **93c:03021** 03B45

— Even more about the lattice of tense logics. *Arch. Math. Logic* **31** (1992), *no.* 4, 243–257. (Stanisław J. Surma) **93c:03022** 03B45

Kraenkel, R. A. (*with* Manna, M. A.; Kurcbart, S. M.; Pereira, J. G.) Some nonlinear evolution equations in the Bénard problem. (English summary) *Nonlinear evolution equations and dynamical systems* (*Baia Verde*, 1991), 71–79, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93h:76029** 76E15 (35Q53, 58F40, 76E30)

Krafft, Fritz *see* **Krayer, Albert, 93b:01019**

Krafft, Olaf (*with* Schaefer, Martin) *D*-optimal designs for a multivariate regression model. (English summary) *J. Multivariate Anal.* **42** (1992), *no.* 1, 130–140. (Ivar Petersen)

93j:62190 62K05

Kraft, Hanspeter Algebraic automorphisms of affine space. *Proceedings of the Hyderabad Conference on Algebraic Groups (Hyderabad, 1989)*, 251–274, *Manoj Prakashan, Madras*, 1991. (V. L. Popov) **93g:14053** 14L30 (14M17, 14M20)

Kragh, Helge (*with* Reeves, Shawn) The quantum pioneers: a bibliometric study. (English summary) *Physis Riv. Internaz. Storia Sci. (N.S.)* **28** (1991), *no.* 3, 905–921 (1992). 01A60

— Relativistic collisions: the work of Christian Møller in the early 1930s. *Arch. Hist. Exact Sci.* **43** (1992), *no.* 4, 299–328. (H. Treder) **93c:01027** 01A60 (81–03)

Kragl, Hans Cases of structural equality between the scalar wave equations of optics and the quantum-mechanical Schrödinger equation. *J. Opt. Soc. Amer. A* **9** (1992), *no.* 6, 964–973. (Summary) **93c:35136** 35Q40 (78A05, 81Q05)

Kraichnan, Robert H. (*with* Gotoh, Toshiyuki) Statistics of decaying Burgers turbulence. (English summary) *Phys. Fluids A* **5** (1993), *no.* 2, 445–457. (Summary) **93k:76060** 76F05 (76M35)

Krajewski, Stanisław Note on grammatical translations of logical calculi. *Arch. Math. Logic* **31** (1992), *no.* 4, 259–262. (Summary) **93b:03023** 03B45 (03B20)

Krajewski, Wiesław A note on the dynamic risk sensitive Nash games. *Dynamic games in economic analysis (Espoo, 1990)*, 260–268, *Lecture Notes in Control and Inform. Sci.*, 157, *Springer, Berlin*, 1991. (*see* **93d:90003**) 90D10 (90D25)

— (*with* Lepschy, A.; Mian, G. A.; Viaro, Umberto) Optimality conditions in multivariable L_2 model reduction. (English summary) *J. Franklin Inst.* **330** (1993), *no.* 3, 431–439. 93B50

Krajíček, Jan Fragments of bounded arithmetic and bounded query classes. *Trans. Amer. Math. Soc.* **338** (1993), *no.* 2, 587–598. (Peter Clote) **93j:03027** 03F30 (03D15, 03F05, 03F50, 68Q15)

Krajka, Andrzej (*with* Rychlik, Z.) The order of approximation in the invariance principle for H-valued random sums. (English summary) *Sankhyā Ser. A* **51** (1989), *no.* 3, 295–308. (Summary) **93c:60044** 60F17 (60F10)

— (*with* Szynal, Dominik) Nonparametric functional characteristics of dependence. (English and French summaries) *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 10, 1107–1112. (Summary) **93j:62161** 62H20 (62G99)

Krak, Yu. V. (*with* Semenyuk, Yu. V.) An algorithm for minimizing the complexity of equations of the dynamics of a manipulator. (Russian. Russian summary) *Vestnik Kiev. Univ. Model. Optim. Slozhn. Sist. No.* 9 (1990), 49–53. 93C85 (70B15, 70Q05)

— An approach to the analytic construction of equations of motion of robotic manipulators. (Russian) *Vychisl. Prikl. Mat. (Kiev) No.* 72 (1990), 82–88 (1991). 70B15

Král, Josef Extension results of the Radó type. Analyse complexe (Bucharest, 1989). *Rev. Roumaine Math. Pures Appl.* **36** (1991), *no.* 1-2, 71–76. (W. P. Ziemer) **93a:26010** 26B20 (58A10)

Kraljević, H. *see* **Functional analysis, 93m:60008**

Krall, Allan M. Regular left definite boundary value problems of even order. *Quaestiones Math.* **15** (1992), *no.* 1, 105–118. (Anton Zettl) **93a:34024** 34B05 (34L05, 47E05)

— (*with* Everitt, W. N.; Littlejohn, L. L.) The Legendre type operator in a left definite Hilbert space. (English summary) *Quaestiones Math.* **15** (1992), *no.* 4, 467–475. (Summary) **93j:34122** 34L40 (34B05, 34B30, 34L10)

— (*with* Everitt, W. N.; Littlejohn, L. L.; Onyango-Otieno, V. P.) Differential operators and the Laguerre type polynomials. *SIAM J. Math. Anal.* **23** (1992), *no.* 3, 722–736. (N. Hayek Calil) **93e:33002** 33C45 (34B99, 34L05, 34L10, 47E05)

Kramarz, Francis (*with* Ponssard, Jean-Pierre) Standards of behavior and time generate tacit cooperation in a hierarchical relationship. (English and French summaries) Organizations and games (Marseille, 1990). *Ann. Économ. Statist.* **1992,** *no.* 25-26, 251–263. (Summary) **93f:90193** 90D12 (90A11)

Kramer, Earl S. (*with* Magliveras, Spyros S.; Tran Van Trung) Possible automorphism groups for an $S(3, 5, 26)$. (English summary) *J. Combin. Math. Combin. Comput.* **12** (1992), 119–127. (Summary) **93h:05037** 05B30

— (*with* Kreher, Donald L.; de Caen, D.; Hobart, S. A.; Radziszowski, Stanisław P.) The parameters 4-(12, 6, 6) and related t-designs. (English summary) *Australas. J. Combin.* **7** (1993), 3–20. (Summary) **93k:05020** 05B05

— (*with* Magliveras, Spyros S.; O'Brien, E. A.) Some new large sets of t-designs. (English summary) *Australas. J. Combin.* **7** (1993), 189–193. (Summary) **93k:05019** 05B05

Kramer, Glenn A. ★ Solving geometric constraint systems. A case study in kinematics. MIT Press Series in Artificial Intelligence. *MIT Press, Cambridge, MA*, 1992. xxii+277 *pp. ISBN* 0-262-11164-0 (S. G. Tzafestas) **93h:70001** 70B15 (68Q40, 70–08)

— A geometric constraint engine. (English summary) *Artificial Intelligence* **58** (1992), *no.* 1-3, 327–360. (Summary) **93i:68178** 68U05 (68Q40, 68T20)

Krämer, K. F. (*with* Denker, M.) Upper and lower class results for subsequences of the Champernowne number. (English summary) *Ergodic theory and related topics, III (Güstrow, 1990)*, 83–89, *Lecture Notes in Math.*, 1514, *Springer, Berlin*, 1992. (Summary) **93g:11085** 11K16 (11A63, 28D99)

Kramer, Lorenz (*with* Pesch, W.; Decker, W.; Feng, Q.; Kaiser, M.; Weber, A.) Weakly nonlinear analysis of pattern formation in nematic liquid crystals. *Nematics (Orsay, 1990)*, 291–301, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 332, *Kluwer Acad. Publ., Dordrecht*, 1991. (*see* **93d:58007**) 76A15

— (*with* Silber, Mary; Riecke, Hermann) Symmetry-breaking Hopf bifurcation in anisotropic systems. (English summary) New trends in nonlinear dynamics: nonvariational aspects (Estella, 1991). *Phys. D* **61** (1992), *no.* 1-4, 260–278. (Summary) **93j:58098** 58F14 (58E09, 76A15, 76E15, 76E25)

Kramer, Martina Elijda ★ Aspects of solving nonlinear boundary value problems numerically. With a Dutch summary. Dissertation, Technische Universiteit Eindhoven, Eindhoven, 1992. *Technische Universiteit Eindhoven, Eindhoven*, 1992. iv+150 *pp.* (Martin Hermann) **93c:65096** 65L10 (34A50, 34B15, 65–02)

Kramer, Peter (*with* Papadopolos, Z.; Zeidler, D.) Symmetries of icosahedral quasicrystals. *Symmetries in science, V (Lochau, 1990)*, 395–427, *Plenum, New York*, 1991. (Vojtěch Kopský) **93b:82081** 82D25 (20H15, 52C22, 82D20)

— (*with* Baake, M.; Joseph, D.) Periodic clustering in the spectrum of quasiperiodic Kronig-Penney models. (English summary) *Phys. Lett. A* **168** (1992), *no.* 3, 199–208. (Summary) **93e:81151** 81V70 (81Q50)

Kramer, Richard L. Relativized relation algebras. *Algebraic logic (Budapest, 1988)*, 293–349, *Colloq. Math. Soc. János Bolyai*, 54, *North-Holland, Amsterdam*, 1991. (D. Monk) **93c:03081** 03G15

Kramer, Tim (*with* Box, George) Statistical process monitoring and feedback adjustment—a discussion. (English summary) With discussion and a reply by the authors. *Technometrics* **34** (1992), *no.* 3, 251–285. (Summary) **93e:62253** 62N10

Krämer, W. *see* **Krämer, Walter Stephan**

Krämer, Walter (*with* Ploberger, Werner) The CUSUM test with OLS residuals. *Econometrica* **60** (1992), *no.* 2, 271–285. (Summary) **93a:62098** 62J05 (62P20)

Krämer, Walter Stephan Evaluation of polynomials in several variables with high accuracy. (English summary) *Computer arithmetic, scientific computation and mathematical modelling (Albena, 1990)*, 239–249, *IMACS Ann. Comput. Appl. Math.*, 12, *Baltzer, Basel*, 1991. (Summary) **93h:65020** 65D15 (65G10, 65Y99)

— Computation of interval bounds for elliptic integrals. (English summary) *Computer arithmetic and enclosure methods (Oldenburg, 1991)*, 289–298, *North-Holland, Amsterdam*, 1992. (*see* **93i:65006**) 65D20 (65G10)

Kramer Johnson, Kelly (*with* Sandberg, Irwin W.) Steady-state errors in nonlinear control systems. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 12, 1985–1989. (Vũ Ngọc Phát) **93k:93055** 93C10 (93C60, 93E10)

— (*with* Sandberg, Irwin W.) On steady-state errors in nonlinear control systems. (English summary) *Systems Control Lett.* **18** (1992), *no.* 5, 391–395. 93C10 (93B52)

Kramkov, D. O. On a class of filtered spaces arising in filtered statistical problems. (Russian) *Uspekhi Mat. Nauk* **47** (1992), *no.* 2(284), 197–198; *translation in Russian Math. Surveys* **47** (1992), *no.* 2, 224–225. 60G44 (60G07, 62B15, 62F99)

Krámli, A. (*with* Simányi, Nándor; Szász, Domokos) The K-property of four billiard balls. *Comm. Math. Phys.* **144** (1992), *no.* 1, 107–148. (Valery Covachev) **93a:58107** 58F11 (58F05, 70H05)

Kramosil, Ivan The most simple systolic architectures for parallel probabilistic searching algorithms. (English summary) *Mutual impact of computing power and control theory (Prague, 1992)*, 57–63, *Czech. Acad. Sci., Prague*, 1992. (*see* **93f:93005**) 68M07

Kranakis, Evangelos (*with* Pocchiola, Michel) A brief survey of art gallery problems in integer lattice systems. *CWI Quarterly* **4** (1991), *no.* 4, 269–282. (Nikolaj M. Korneenko) **93f:52022** 52C07 (52B55, 68U05)

— (*with* Vitányi, Paul M. B.) A note on weighted distributed match-making. *Math. Systems Theory* **25** (1992), *no.* 2, 123–140. (L. A. Grinshpan) **93f:68010** 68M10 (60K25, 90C35)

Kranenburg, C. On the evolution of roll waves. (English summary) *J. Fluid Mech.* **245** (1992), 249–261. (Summary) **93i:76011** 76B15 (76E10)

Krantsberg, A. S. A generalization of the Bessel inequality. (Russian) *Mat. Zametki* **51** (1992), *no.* 5, 149–150; *translation in Math. Notes* **51** (1992), *no.* 5-6, 527–528. 42C10

Krantz, Steven G. (*with* Parks, Harold R.) On the vector sum of two convex sets in space. *Canad. J. Math.* **43** (1991), *no.* 2, 347–355. (Klaus Steffen) **93a:52002** 52A20

— (*with* Chang, Der-Chen E.) Holomorphic Lipschitz functions and application to the $\overline{\partial}$-problem. *Colloq. Math.* **62** (1991), *no.* 2, 227–256. (Jeffery D. McNeal) **93c:32034** 32H15 (32A40, 32F20)

— ★ Function theory of several complex variables. Second edition. The Wadsworth & Brooks/Cole Mathematics Series. *Wadsworth & Brooks/Cole Advanced Books & Software, Pacific Grove, CA*, 1992. xvi+557 *pp. ISBN* 0-534-17088-9 (Editors) **93c:32001** 32–01 (31–01, 32–02, 35N15)

— (*with* Parks, Harold R.) ★ A primer of real analytic functions. Basler Lehrbücher [Basel Textbooks], 4. *Birkhäuser Verlag, Basel*, 1992. x+184 *pp. ISBN* 3-7643-2768-5 (J. Albrycht) **93j:26013** 26E05 (26E10, 32B20)

— (*with* Chang, Der-Chen E.; Stein, Elias M.) Hardy spaces and elliptic boundary value problems. *The Madison Symposium on Complex Analysis (Madison, WI, 1991)*, 119–131, *Contemp. Math.*, 137, *Amer. Math. Soc., Providence, RI*, 1992. (*see* **93e:32001**) 42B30 (35J25)

— (*with* Blank, Brian E.; Fan, Da Shan; Klein, David; Ma, Dao Wei; Pang, Myung-Yull) The Kobayashi metric of a complex ellipsoid in $\mathbf{C}^2$. (English summary) *Experiment. Math.* **1** (1992), *no.* 1, 47–55. (Ian Graham) **93h:32032** 32H15

— (*with* Kodama, Akio; Ma, Dao Wei) A characterization of generalized complex ellipsoids in $\mathbf{C}^n$ and related results. *Indiana Univ. Math. J.* **41** (1992), *no.* 1, 173–195. (Ian Graham) **93d:32033** 32H02

— The boundary behavior of the Kobayashi metric. *Rocky Mountain J. Math.* **22** (1992), *no.* 1, 227–233. (Ian Graham) **93e:32032** 32H15

— (*with* Salinas, Norberto) Proper holomorphic mappings and the Cowen-Douglas class. *Proc. Amer. Math. Soc.* **117** (1993), *no.* 1, 99–105. (Mihai Putinar) **93c:47031** 47B35 (32H35, 47A13, 47B38)

Krapež, A. (*with* Taylor, Mark Adrian) Quasigroups satisfying balanced but not Belousov equations are group isotopes. *Aequationes Math.* **42** (1991), *no.* 1, 37–46. (Summary) **93c:20115** 20N05 (39B52)

Krapivina, A. A. A method for solving real linear homogeneous second-order differential equations on an infinite interval. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **32** (1992), *no.* 6, 980–987; *translation in Comput. Math. Math. Phys.* **32** (1992), *no.* 6, 849–855. (Summary) **93d:34020** 34A46 (34A30, 65L99)

Krapivskiĭ, P. L. (*with* Brutyan, M. A.) Investigation of the stability of periodic flows of a viscous fluid. (Russian) *Prikl. Mat. Mekh.* **55** (1991), *no.* 6, 928–933; *translation in J. Appl. Math. Mech.* **55** (1991), *no.* 6, 805–811 (1992). (From the text) **93a:76040** 76E05 (76D05)

— (*with* Brutyan, M. A.) Analytical determination of critical Reynolds numbers for periodic viscous gas flows. (English summary) *European J. Mech. B Fluids* **11** (1992), *no.* 5, 587–598. (A. Pozzi) **93j:76030** 76E05 (76N15)

— (*with* Brutyan, M. A.) Bernoulli theorem generalized to rheologically complex viscous fluid flow. (English summary) *J. Engrg. Phys. Thermophys.* **63** (1992), *no.* 2, 826–828 (1993). 76A05

— Kinetics of a monomer-monomer model of heterogeneous catalysis. (English summary) *J. Phys. A* **25** (1992), *no.* 22, 5831–5839. (Summary) **93j:82049** 82C24 (82C20)

— Kinetics of random sequential parking on a line. (English summary) *J. Statist. Phys.* **69** (1992), *no.* 1-2, 135–150. (Summary) **93h:82063** 82C41

— (*with* Brutyan, M. A.) Intrinsic properties of some rheological models of a viscoelastic fluid. (Russian. Russian summary) *Prikl. Mat. Mekh.* **56** (1992), *no.* 2, 347–351; *translation in J. Appl. Math. Mech.* **56** (1992), *no.* 2, 298–302. (From the text) **93g:76008** 76A10 (35Q35, 73F15)

— (*with* Brutyan, M. A.) Unidirectional flows of viscoelastic fluids and their gasdynamic counterparts. (English summary) *Z. Angew. Math. Phys.* **43** (1992), *no.* 4, 715–725.

(Summary) **93e:76005** 76A10 (73F15, 76N15)
— (*with* Brutyan, M. A.) Exact solution of Navier-Stokes equations describing the evolution of a vortex structure in a generalized shear flow. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **32** (1992), *no.* 2, 326–329; *translation in Comput. Math. Math. Phys.* **32** (1992), *no.* 2, 270–272. (Lech Slawik) **93f:76022** 76D05

Krashanitsa, Yu. A. (*with* Kozorez, V. V.; Rashkovan, V. M.) ★ Законы сохранения и граничные задачи управления в магнитном поле. (Russian. Russian summary) [Conservation laws and boundary control problems in a magnetic field] Препринт [Preprint], 92-3. *Akad. Nauk Ukrainy, Inst. Kibernet., Kiev*, 1992. 23 *pp.* (Yuri Kivshar) **93m:76074** 76W05 (78A99)

Krasheninnikov, V. R. (*with* Vasil'ev, K. K.) ★ Методы фильтрации многомерных случайных полей. (Russian. Russian summary) [Methods for filtering multidimensional random fields] *Saratov. Gos. Univ., Saratov*, 1990. 127 *pp. ISBN* 5-292-00283-6 (From the preface) **93h:93004** 93–02 (60G35, 93E11)

Krasichkov-Ternovskiĭ, I. F. Spectral synthesis in the complex domain for a differential operator with constant coefficients. I. The duality theorem. (Russian) *Mat. Sb.* **182** (1991), *no.* 11, 1559–1587; *translation in Math. USSR-Sb.* **74** (1993), *no.* 2, 309–335. (Fritz Haslinger) **93e:47039** 47B38 (30H05, 34L99, 35E20, 35P05, 47E05)
— Spectral synthesis in the complex domain for a differential operator with constant coefficients. II. The module method. (Russian) *Mat. Sb.* **183** (1992), *no.* 1, 3–19; *translation in Russian Acad. Sci. Sb. Math.* **75** (1993), *no.* 1, 1–15. (Fritz Haslinger) **93e:47040** 47B38 (30H05, 34L99, 35E20, 35P05, 47E05)
— Spectral synthesis in the complex domain for a differential operator with constant coefficients. III. Ample submodules. (Russian. Russian summary) *Mat. Sb.* **183** (1992), *no.* 6, 55–86. (Fritz Haslinger) **93j:47047** 47B38 (30H05, 34L99, 35E20, 35P05, 47E05)
— Spectral synthesis in the complex domain for a differential operator with constant coefficients. IV. Synthesis. (Russian. Russian summary) *Mat. Sb.* **183** (1992), *no.* 8, 23–46. (Fritz Haslinger) **93j:47048** 47B38 (30H05, 34L99, 35E20, 35P05, 47E05)

Krasikov, I. (*with* Roditty, Y.) Switching reconstruction and Diophantine equations. *J. Combin. Theory Ser. B* **54** (1992), *no.* 2, 189–195. (B. Manvel) **93e:05072** 05C60 (11D99)
— (*with* Alon, Noga; Caro, Yair) Bisection of trees and sequences. (English summary) Combinatorics and algorithms (Jerusalem, 1988). *Discrete Math.* **114** (1993), *no.* 1-3, 3–7. (Summary) **93m:05054** 05C05 (05C70)

Krasil'nikov, A. N. On the identities of representations of groups by triangular matrices over a commutative ring. *Proceedings of the International Conference on Algebra, Part* 1 (*Novosibirsk*, 1989), 217–225, *Contemp. Math.*, 131, *Part* 1, *Amer. Math. Soc., Providence, RI*, 1992. (Zong Zhu Lin) **93f:20035** 20E10 (08A02, 16R10, 20E05)
— Identities of Lie algebras with nilpotent commutant over a field of finite characteristic. (Russian) *Mat. Zametki* **51** (1992), *no.* 3, 47–52, 143; *translation in Math. Notes* **51** (1992), *no.* 3-4, 255–258. (From the text) **93d:17007** 17B01

Krasil'nikov, P. S. On the structure of some function spaces and their connection with the direct Lyapunov method. (Russian) *Analytic and numerical methods for studying mechanical systems* (*Russian*), 12–17, *Moskov. Aviatsion. Inst., Moscow*, 1989. (From the text) **93g:35024** 35F20 (34D20)
— (*with* Thái, V. N.) Reversible systems. Stability at resonance 1:1. (Russian. Russian summary) *Prikl. Mat. Mekh.* **56** (1992), *no.* 4, 570–579; *translation in J. Appl. Math. Mech.* **56** (1992), *no.* 4, 475–484. (A. Ya. Savchenko) **93m:34068** 34D20 (34D05, 70K20)

Krasiński, Andrzej A note on the uniqueness of the Wyman solution. (English summary) *Rep. Math. Phys.* **29** (1991), *no.* 3, 337–339. (Summary) **93g:83020** 83C15
— The program ORTOCARTAN for algebraic calculations in relativity. (English summary) *Gen. Relativity Gravitation* **25** (1993), *no.* 2, 165–177. (Summary) **93m:83001** 83–04

Krasiński, Tadeusz (*with* Chądzyński, Jacek; Miodek, Andrzej) On radical complete intersections. (English summary) *Bull. Polish Acad. Sci. Math.* **38** (1990), *no.* 1-12, 193–198. (Introduction) **93g:32007** 32B05
— (*with* Chądzyński, Jacek) Sur l'exposant de Lojasiewicz à l'infini pour les applications polynomiales de $\mathbf{C}^2$ dans $\mathbf{C}^2$ et les composantes des automorphismes polynomiaux de $\mathbf{C}^2$. (English and French summaries) [On the Lojasiewicz exponent at infinity for polynomial mappings from $\mathbf{C}^2$ to $\mathbf{C}^2$ and components of polynomial automorphisms of $\mathbf{C}^2$] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 13, 1399–1402. (Summary) **93h:14010** 14E07

Krasnikov, N. V. (*with* Kyatkin, A. B.) Three-dimensional four-fermion (vector) ⊗ (vector) model is renormalizable and ultraviolet finite. *Quantum gravity* (*Moscow*, 1990), 188–194, *World Sci. Publishing, River Edge, NJ*, 1991. (*see* **93b:83004**) 81T15

Krasnopol'skaya, T. S. (*with* Shvets, A. Yu.) Properties of chaotic oscillations of a fluid in cylindrical tanks. (Russian. English and Ukrainian summaries) *Prikl. Mekh.* **28** (1992), *no.* 6, 52–61; *translation in Internat. Appl. Mech.* **28** (1992), *no.* 6, 386–394. (Summary) **93f:76010** 76B15 (34C15, 58F13, 73K70, 76F20)
— (*with* Shvets, A. Yu.) Chaotic oscillations of a spherical pendulum as the effect of the interaction with an energy source. (Russian. English and Ukrainian summaries) *Prikl. Mekh.* **28** (1992), *no.* 10, 61–68; *translation in Internat. Appl. Mech.* **28** (1992), *no.* 10, 669–674 (1993). (Summary) **93i:70025** 70K50 (58F13, 70K40)

Krasnosel'skiĭ, A. M. (*with* Krasnosel'skiĭ, M. A.; Mawhin, Jean) On some conditions for existence of forced periodic oscillations. (English summary) *Differential Integral Equations* **5** (1992), *no.* 6, 1267–1273. (Maria Patrizia Pera) **93h:34062** 34C25 (34B15, 47N20)
— On bifurcation points of equations with Landesman-Lazer type nonlinearities. *Nonlinear Anal.* **18** (1992), *no.* 12, 1187–1199. (Maria J. Esteban) **93g:47079** 47H15 (34A47, 34B15, 35B32, 47N20, 58E07, 58G28)

Krasnosel'skiĭ, M. A. (*with* Pokrovskiĭ, A. V.; Fomenko, I. V.) Self-induced oscillations in systems with hysteresis. (Russian) *Conference on Differential Equations and Applications* (*Ruse*, 1989), 2–11, *Tech. Univ., Ruse*, 1991. (*see* **93f:34004**) 34C15 (47H30)
— (*with* Pokrovskiĭ, A. V.) Operators of a problem on forced oscillations in systems with hysteresis. (Russian) *Dokl. Akad. Nauk SSSR* **319** (1991), *no.* 4, 819–822; *translation in Soviet Math. Dokl.* **44** (1992), *no.* 1, 228–232. (Pavel Krejčí) **93d:47140** 47N20 (34K15, 47H30)
— (*with* Krasnosel'skiĭ, A. M.; Mawhin, Jean) On some conditions for existence of forced periodic oscillations. (English summary) *Differential Integral Equations* **5** (1992), *no.* 6, 1267–1273. (Maria Patrizia Pera) **93h:34062** 34C25 (34B15, 47N20)
— (*with* Gorin, E. A.; Kuznetsov, N. A.) Theorems on equiconvergence for nonparametric identification algorithms. (Russian) *Dokl. Akad. Nauk* **326** (1992), *no.* 2, 237–240; *translation in Soviet Phys. Dokl.* **37** (1992), *no.* 9, 448–449 (1993). (Rudolf Kulhavý) **93k:93031** 93B30
— (*with* Chernorutskiĭ, V. V.) Hysteresis systems with variable characteristics. *Nonlinear Anal.* **18** (1992), *no.* 6, 543–557. (Martin Brokate) **93c:47091** 47N99 (47H30, 49K20, 73E05)

Krasnoshchekov, P. S. *see* **Computer systems and problems in decision making, 93g:90002**

Krasnov, M. (*with* Kiselëv, A. I.; Makarenko, G. I.) ★ Problemas de ecuaciones diferenciales ordinarias. (Spanish. Spanish summary) [Problems in ordinary differential equations] Translated from the second Russian edition by Emiliano Aparicio Bernardo. "*Mir*", *Moscow*, 1988. 255 *pp. ISBN* 5-03-000149-2 (Editors) **93i:34001** 34–01

Krasnov, V. A. Homology classes defined by real points of a real algebraic variety. (Russian) *Izv. Akad. Nauk SSSR Ser. Mat.* **55** (1991), *no.* 2, 282–302; *translation in Math. USSR-Izv.* **38** (1992), *no.* 2, 277–297. (V. M. Kharlamov) **93b:14088** 14P25 (14F45, 57R91)
— Characteristic classes of vector bundles on a real algebraic variety. (Russian) *Izv. Akad. Nauk SSSR Ser. Mat.* **55** (1991), *no.* 4, 716–746; *translation in Math. USSR-Izv.* **39** (1992), *no.* 1, 703–730. (Summary) **93b:14084** 14P05 (57R20)

Krasnovskiĭ, A. G. (*with* Koterov, V. N.) A spectral-difference method for computing acoustic perturbations induced by a local heat source in a moving medium. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **32** (1992), *no.* 4, 663–669; *translation in Comput. Math. Math. Phys.* **32** (1992), *no.* 4, 573–579. (Summary) **93d:65089** 65M70 (76M20, 76Q05)

Krasny, Robert Computing vortex sheet motion. *Proceedings of the International Congress of Mathematicians, Vol. I, II* (*Kyoto*, 1990), 1573–1583, *Math. Soc. Japan, Tokyo*, 1991. (Introduction) **93c:76012** 76C05 (65P05, 76M25)

Krasov, A. I. (*with* Botkin, N. D.; Zhukov, S. P.) A combined method for the control of the landing of an aircraft. (Russian. Russian summary) *Control in dynamical systems* (*Russian*), 18–30, 124, *Akad. Nauk SSSR Ural. Otdel., Sverdlovsk*, 1990. (*see* **93f:93004**) 93C95 (70Q05)

Krasovskiĭ, A. A. Problems of qualitative and analytical optimal control theory. *J. Comput. Systems Sci. Internat.* **31** (1993), *no.* 1, 10–15; *translated from Izv. Akad. Nauk SSSR Tekhn. Kibernet.* **1991,** *no.* 6, 3–9 (*Russian. Russian summary*). 49N35 (93B50)
— Nonclassical efficiency functionals and the problems of optimal control theory (a survey). *J. Comput. Systems Sci. Internat.* **30** (1992), *no.* 5, 1–36; *translated from Izv. Ross. Akad. Nauk Tekhn. Kibernet.* **1992,** *no.* 1, 3–41 (*Russian. Russian summary*). (Ivan Ginchev) **93k:49001** 49–02 (49K15, 49N55)

Krasovskiĭ, A. N. A differential game for a positional functional depending on phase coordinates and control actions. (Russian) *Dokl. Akad. Nauk* **322** (1992), *no.* 5, 839–842; *translation in Soviet Math. Dokl.* **45** (1992), *no.* 1, 180–183. (Jacek B. Krawczyk) **93d:90078** 90D25
— Mixed-strategy control for the minimax of an integral functional. (Russian. Russian summary) *Prikl. Mat. Mekh.* **56** (1992), *no.* 2, 192–201; *translation in J. Appl. Math. Mech.* **56** (1992), *no.* 2, 167–175. (O. Hájek) **93h:90120** 90D25 (49K15, 49N35, 93B52)

Krasovskiy, A. A. *see* **Krasovskiĭ, A. A.**

Krassowska, Dorota (*with* Śliwa, Wiesław) When $(E, \sigma(E, E'))$ is a DF-space? *Comment. Math. Univ. Carolin.* **33** (1992), *no.* 1, 43–44. (Summary) **93f:46001** 46A03 (46A04)

Krastanov, M. I. A necessary condition for small time local controllability. *C. R. Acad. Bulgare Sci.* **44** (1991), *no.* 9, 9–12. (Gianna Stefani) **93b:93018** 93B05 (93B29, 93C10)
— (*with* Ribarska, N. K.; Tsachev, Tsvetomir J.) On the general mountain pass principle of Ghoussoub-Preiss. *Math. Balkanica (N.S.)* **5** (1991), *no.* 4, 350–358 (1992). (Michel Willem) **93f:58032** 58E05 (47H99, 49J27, 49J45, 49K27)

Krasucki, Paul (*with* Parikh, Rohit) Levels of knowledge in distributed systems. *Sādhanā* **17** (1992), *no.* 1, 167–191. (Evangelos Kranakis) **93g:68040** 68Q10 (68T30)

Krasulina, T. P. Convergence from below of a modified Robbins-Monro process. (Russian. English summary) *Vestnik Leningrad. Univ. Mat. Mekh. Astronom.* **1991,** *vyp.* 2, 31–34, 124; *translation in Vestnik Leningrad Univ. Math.* **24** (1991), *no.* 2, 35–38. (Marek Męczarski) **93e:62210** 62L20
— On the convergence from below of a modified Robbins-Monro process. (Russian. Russian summary) *Avtomat. i Telemekh.* **1992,** *no.* 4, 73–76; *translation in Automat. Remote Control* **53** (1992), *no.* 4, *part* 1, 535–539. 62L20

Kratochvíl, Jan Perfect codes in general graphs. (Russian summary) *Rozpravy Československé Akad. Věd Řada Mat. Přírod. Věd* **1991,** *no.* 7, 126 *pp.* (Chris Rodger) **93f:94024** 94B25 (05C75)
— (*with* Nešetřil, Jaroslav; Zýka, Ondřej) On the computational complexity of Seidel's switching. (English summary) *Fourth Czechoslovakian Symposium on Combinatorics, Graphs and Complexity* (*Prachatice*, 1990), 161–166, *Ann. Discrete Math.*, 51, *North-Holland, Amsterdam*, 1992. (Summary) **93j:05156** 05C99 (68Q25, 68R10)
— (*with* Poljak, Svatopluk) Compatible 2-factors. *Discrete Appl. Math.* **36** (1992), *no.* 3, 253–266. (H. Joseph Straight) **93i:05100** 05C70 (68Q25)
— (*with* Janson, Svante) Thresholds for classes of intersection graphs. (English summary) Topological, algebraical and combinatorial structures. Frolík's memorial volume. *Discrete Math.* **108** (1992), *no.* 1-3, 307–326. (Theodore C. Enns) **93h:05143** 05C80 (05C75)
— (*with* Fellows, Michael R.; Middendorf, Matthias; Pfeiffer, Frank) Induced minors and related problems. (English summary) *Graph structure theory* (*Seattle, WA*, 1991), 179–182, *Contemp. Math.*, 147, *Amer. Math. Soc., Providence, RI*, 1993. (*see* **93m:05004**) 05C85 (68Q25, 68R10)

Kratsch, Dieter (*with* Damaschke, Peter; Deogun, Jitender S.; Steiner, George) Finding Hamiltonian paths in cocomparability graphs using the bump number algorithm. *Order* **8** (1991/92), *no.* 4, 383–391. (Martin Sonntag) **93g:05093** 05C45
— (*with* Bodlaender, Hans L.) The complexity of coloring games on perfect graphs. (English summary) *Theoret. Comput. Sci.* **106** (1992), *no.* 2, 309–326. (Summary) **93h:90126** 90D43 (05C15, 68Q25, 90D05)

Krattenthaler, C. (*with* Mohanty, S. G.) On lattice path counting by major and descents. (English summary) *Séminaire Lotharingien de Combinatoire* (*Salzburg*, 1990), 113–116, *Publ. Inst. Rech. Math. Av.*, 462, *Univ. Louis Pasteur, Strasbourg*, 1991. (*see* **93f:00018**) 05A15
— (*with* Guy, Richard K.; Sagan, Bruce E.) Lattice paths, reflections, & dimension-changing bijections. (English summary) *Ars Combin.* **34** (1992), 3–15. (Summary) **93i:05008** 05A15

Kratz, Marie-France Approximation poissonnienne relative du processus empirique. (English and French summaries) [Relative Poisson approximation of the empirical

process] *C. R. Acad. Sci. Paris Sér. I Math.* **316** (1993), *no.* 11, 1221–1224. 60F05

Kratz, Werner On a certain asymptotic behaviour of time-invariant Riccati matrix differential equations. *SIAM J. Control Optim.* **31** (1993), *no.* 1, 70–85. (Jaromír Kuben) **93j:93066** 93C05 (34H05, 49J15, 49K15)

Krätzel, Ekkehard Estimates in the general divisor problem. *Abh. Math. Sem. Univ. Hamburg* **62** (1992), 191–206. (James Lee Hafner) **93j:11060** 11N37

— (*with* Nowak, Werner Georg) Lattice points in large convex bodies. II. *Acta Arith.* **62** (1992), *no.* 3, 285–295. (Hartmut Menzer) **93m:11102** 11P21 (11L03)

— Theorie der Gitterpunkte. [Theory of lattice points] *Elem. Math.* **47** (1992), *no.* 1, 6–18. (Wolfgang Müller) **93b:11130** 11P21 (11–01)

Krätzig, W. B. (*with* Li, L. Y.; Nawrotzki, P.) Stability conditions for nonconservative dynamical systems. (English summary) *Comput. Mech.* **8** (1991), *no.* 3, 145–151. (Summary) **93f:73066** 73K12 (73H10)

Krauklis, L. A. (*with* Krauklis, P. V.; Goloshubin, G. M.) A low-velocity wave in a layer of a fluid that models an oilfield stratum. (Russian. English and Russian summaries) *Zap. Nauchn. Sem. S.-Peterburg. Otdel. Mat. Inst. Steklov. (POMI)* **203** (1992), *Mat. Voprosy Teor. Rasprostr. Voln.* 22, 101–112, 175. (Summary) **93g:73099** 73N20 (73D15, 73K70, 76D33, 86A99)

Krauklis, P. V. (*with* Goloshubin, G. M.; Krauklis, L. A.) A low-velocity wave in a layer of a fluid that models an oilfield stratum. (Russian. English and Russian summaries) *Zap. Nauchn. Sem. S.-Peterburg. Otdel. Mat. Inst. Steklov. (POMI)* **203** (1992), *Mat. Voprosy Teor. Rasprostr. Voln.* 22, 101–112, 175. (Summary) **93g:73099** 73N20 (73D15, 73K70, 76D33, 86A99)

Kraus, Alain (*with* Oesterlé, Joseph) Sur une question de B. Mazur. [On a question of B. Mazur] *Math. Ann.* **293** (1992), *no.* 2, 259–275. (Philippe Satgé) **93e:11074** 11G05 (11F80)

Kraus, Elisabeth (*with* Sibold, Klaus) Conformal transformation properties of the energy-momentum tensor in four dimensions. *Nuclear Phys. B* **372** (1992), *no.* 1-2, 113–144. (Marcos D. Maia) **93c:81231** 81T50 (81T40)

Kraus, Frantisek J. (*with* Mansour, Mohamed; Jury, Eliahu I.) Robust Schur stability of interval polynomials. *IEEE Trans. Automat. Control* **37** (1992), *no.* 1, 141–143. (Andrzej Świerniak) **93a:93083** 93D09 (93C55)

— (*with* Barmish, B. Ross; Hollot, Christopher V.; Tempo, Roberto) Extreme point results for robust stabilization of interval plants with first order compensators. *IEEE Trans. Automat. Control* **37** (1992), *no.* 6, 707–714. (Arno Linnemann) **93d:93062** 93D09 (93D21)

— (*with* Mansour, Mohamed; Truöl, W.; Anderson, Brian D. O.) Robust stability of control systems: extreme point results for the stability of edges. *Internat. J. Control* **55** (1992), *no.* 5, 1039–1049. (Hong Zhang) **93a:93084** 93D09

— *see also* **Yen, K. K., 93k:93092**

Kraus, Sarit (*with* Wilkenfeld, Jonathan) The function of time in cooperative negotiations. (English summary) *AAAI-91. Proceedings, Ninth National Conference on Artificial Intelligence, Vol.* 1, 2, 179–184, *AAAI Press, Menlo Park, CA*, 1991. (*see* **93i:68011**) 68T01

Krause, Décio The "dialectization" of traditional identity theory. (Portuguese. English summary) *Bol. Soc. Paran. Mat.* (2) **11** (1990), *no.* 2, 159–175 (1992). (Summary) **93f:03001** 03A05 (00A30, 03B60)

— On a quasi-set theory. (English summary) *Notre Dame J. Formal Logic* **33** (1992), *no.* 3, 402–411. (Summary) **93f:03033** 03E70

— (*with* Abe, Jair Minoro) The work of N. C. A. de Costa in logic. (Portuguese. English summary) Theory, history and foundations of the formal sciences (Spanish). *Theoria (San Sebastián)* (2) **7** (1992), *no.* 16-18, *A*, 347–386. (Marcel Guillaume) **93k:01070** 01A70 (01A60, 03–03, 03B53)

— *see also* **da Costa, Newton C. A., 93g:03023**

Krause, Egon The solution to the problem of vortex breakdown. (English summary) *Twelfth International Conference on Numerical Methods in Fluid Dynamics (Oxford*, 1990), 35–50, *Lecture Notes in Phys.*, 371, *Springer, Berlin*, 1990. (Summary) **93e:76054** 76M20 (76D05)

Krause, Günter Prime factor series of modules over a Noetherian algebra. (English summary) *Abelian groups and noncommutative rings*, 215–229, *Contemp. Math.*, 130, *Amer. Math. Soc., Providence, RI*, 1992. (Søren Jøndrup) **93g:16032** 16P40 (16P90)

Krause, Henning A note on infinite string modules. *Proceedings of the Sixth International Conference on Representations of Algebras (Ottawa, ON*, 1992), 4 *pp., Carleton-Ottawa Math. Lecture Note Ser.*, 14, *Carleton Univ., Ottawa, ON*, 1992. (Summary) **93k:16027** 16G99

— Endomorphisms of words in a quiver. *Séminaire Lotharingien de Combinatoire (Thurnau*, 1991), 49–53, *Publ. Inst. Rech. Math. Av.*, 476, *Univ. Louis Pasteur, Strasbourg*, 1992. (Hugo S. Sun) **93m:05083** 05C20 (05C25, 05E99)

Krause, J. *see* **Krause, Jorge**

Krause, James M. (*with* Khargonekar, Pramod P.; Stein, Gunter) Robust adaptive control: stability and asymptotic performance. *IEEE Trans. Automat. Control* **37** (1992), *no.* 3, 316–331. (Edward Jezierski) **93b:93043** 93B50 (93C40, 93D21)

— (*with* Khargonekar, Pramod P.) A comparison of classical stochastic estimation and deterministic robust estimation. *IEEE Trans. Automat. Control* **37** (1992), *no.* 7, 994–1000. (Summary) **93d:93080** 93E10 (93B30, 93B36, 93E12)

Krause, Jorge (*with* Aguirre, Manuel; Friedli, C.) SL(3, **R**) as the group of symmetry transformations for all one-dimensional linear systems. III. Equivalent Lagrangian formalisms. *J. Math. Phys.* **33** (1992), *no.* 5, 1571–1578. (M. I. Monastyrskiĭ) **93g:58128** 58F35 (34A26, 70H33, 70J05)

— Some remarks on the generalized Noether theory of point symmetry transformations of the Lagrangian. *J. Phys. A* **25** (1992), *no.* 4, 991–1007. (Geoffrey Prince) **93f:70017** 70H33 (58F05)

Krause, Matthias (*with* Waack, Stephan) Variation ranks of communication matrices and lower bounds for depth two circuits having symmetric gates with unbounded fan-in. (English summary) 32*nd Annual Symposium on Foundations of Computer Science (San Juan, PR*, 1991), 777–782, *IEEE Comput. Soc. Press, Los Alamitos, CA*, 1991. (Summary) **93k:68031** 68Q10 (68Q15)

— (*with* Meinel, Christoph; Waack, Stephan) Separating complexity classes related to certain input oblivious logarithmic space-bounded Turing machines. (French summary) *RAIRO Inform. Théor. Appl.* **26** (1992), *no.* 4, 345–362. (William Gasarch) **93e:68022** 68Q15 (03D15)

— Separating ⊕L from L, NL, co-NL, and AL = P for oblivious Turing machines of linear access. (English and French summaries) *RAIRO Inform. Théor. Appl.* **26** (1992), *no.* 6, 507–522. (Summary) **93k:68034** 68Q15 (68Q05)

Krause, Ulrich (*with* Zahlten, Cornelia) Arithmetic in Krull monoids and the cross number of divisor class groups. Mathematische Wissenschaften gestern und heute. 300 Jahre Mathematische Gesellschaft in Hamburg, Teil 3 (Hamburg, 1990). *Mitt. Math. Ges. Hamburg* **12** (1991), *no.* 3, 681–696. (Franz Halter-Koch) **93b:11142** 11R27 (20K01, 20M14)

— Über positive diskrete dynamische Systeme. [On positive discrete dynamical systems] *Rostock. Math. Kolloq. No.* **44** (1991), 29–38. (John W. Lee) **93i:47081** 47H07 (39A10)

— Cones in numerical modules. *Arch. Math. (Basel)* **58** (1992), *no.* 1, 70–80. (Introduction) **93g:52002** 52A01 (46A22, 46N10)

— (*with* Ranft, Peter) A limit set trichotomy for monotone nonlinear dynamical systems. *Nonlinear Anal.* **19** (1992), *no.* 4, 375–392. (Hal Leslie Smith) **93i:58081** 58F08 (34C25, 34C35, 58F03)

Krause, W. An algorithm for the general resource constrained scheduling problem by using of cutting planes. (English summary) *System modelling and optimization (Zurich*, 1991), 175–184, *Lecture Notes in Control and Inform. Sci.*, 180, *Springer, Berlin*, 1992. (*see* **93e:90003**) 90C35

Kräuter, Arnold R. *see* **Seminar: Combinatorics, 93f:00018**

Krauth, Joachim Confidence intervals for discrete distributions based on a single observation. *Comm. Statist. Theory Methods* **21** (1992), *no.* 4, 1103–1114. 62F25

Kravchenko, A. B. (*with* Simaranov, S. Yu.) Optimization of multi-channel triangulation in airborne target tracking systems. *Soviet J. Comput. Systems Sci.* **30** (1992), *no.* 4, 115–124; *translated from Izv. Akad. Nauk SSSR Tekhn. Kibernet.* **1991,** *no.* 4, 122–131 (*Russian. Russian summary*). 93C95 (49N55)

Kravchenko, O. S. (*with* Khesin, B. A.) A central extension of the algebra of pseudodifferential symbols. (Russian) *Funktsional. Anal. i Prilozhen.* **25** (1991), *no.* 2, 83–85; *translation in Functional Anal. Appl.* **25** (1991), *no.* 2, 152–154. (J. S. Joel) **93b:58147** 58G15 (17B66)

Kravchenko, S. N. (*with* Nazarenko, A. I.) Recurrent method of constructing autoregression equations for vector processes. *J. Comput. Systems Sci. Internat.* **30** (1992), *no.* 6, 60–66; *translated from Izv. Ross. Akad. Nauk Tekhn. Kibernet.* **1992,** *no.* 1, 122–129 (*Russian. Russian summary*). (Summary) **93h:93076** 93E10

Kravchenko, V. F. (*with* Gorshkov, A. S.; Rvachëv, V. A.; Rvachëv, V. L.) On a number-theoretic method for the fast Fourier transform in the Fermat ring. (Russian) *Dokl. Akad. Nauk SSSR* **320** (1991), *no.* 2, 303–306; *translation in Soviet Phys. Dokl.* **36** (1991), *no.* 9, 616–618 (1992). (Vítězslav Veselý) **93g:65171** 65T20 (94A12)

— (*with* Volosyuk, V. K.; Fal'kovich, S. E.) Optimization of estimates for spatially distributed parameters of electrodynamic models of surfaces in inverse interpretation problems of active remote sounding. (Russian) *Dokl. Akad. Nauk SSSR* **322** (1992), *no.* 2, 277–280; *translation in Soviet Phys. Dokl.* **37** (1992), *no.* 1, 23–24. (Introduction) **93e:78002** 78A40 (78A45)

— (*with* Afanas'ev, V. A.; Rvachëv, V. A.; Rvachëv, V. L.) Optimal finite windows for the reconstruction of images. (Russian) *Dokl. Akad. Nauk SSSR* **322** (1992), *no.* 3, 498–500; *translation in Soviet Phys. Dokl.* **37** (1992), *no.* 1, 29–30. (From the text) **93b:78016** 78A99 (65P05)

Kravchenko, V. G. (*with* Drekova, G. V.) On the theory of the normalization of the Riemann problem. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* **1991,** *no.* 9, 20–28; *translation in Soviet Math. (Iz. VUZ)* **35** (1991), *no.* 9, 19–27. (N. K. Karapetyants) **93h:47082** 47N20 (30E25, 45P05, 47A50, 47G10)

Kravchuk, A. Yu. (*with* Leonov, G. A.; Ponomarenko, D. V.) Criteria for strong orbital stability of trajectories of dynamical systems. I. (Russian. Russian summary) *Differentsial'nye Uravneniya* **28** (1992), *no.* 9, 1507–1520, 1652; *translation in Differential Equations* **28** (1992), *no.* 9, 1230–1241 (1993). (A. Halanay) **93k:34110** 34D20

Kravchuk, M. F. Mathematical sciences in the Ukraine (1918–1928). (Ukrainian) With comments by P. K. Khobzei. *Ocherki Istor. Estestvoznan. Tekhn. No.* 40 (1991), 60–64. (Eugeni P. Gomozov) **93g:01047** 01A60 (01A74)

Kravchuk, N. V. Approximation problems in quantum statistics. (Russian. Russian summary) *Methods of mathematical physics in infinite systems (Russian)*, 67–83, *Akad. Nauk Ukrainy, Inst. Mat., Kiev*, 1991. (Lech Jakóbczyk) **93k:82005** 82B10 (46L60, 46N55)

— Canonical variables in quantum statistics and structures associated with them. (Ukrainian. Russian and Ukrainian summaries) *Akad. Nauk Ukrainy Inst. Mat. Preprint* **1991,** *no.* 31, 68 *pp.* (Summary) **93g:81055** 81S05

Kravčuk, M. P. *see* **Kravchuk, M. F.**

Kravets, T. F. (*with* Ivanov, G. G.) On the number of periodic and almost periodic solutions of first-order ordinary differential equations. (Russian. English summary) *Vestnik Leningrad. Univ. Mat. Mekh. Astronom.* **1991,** *vyp.* 2, 28–31, 124; *translation in Vestnik Leningrad Univ. Math.* **24** (1991), *no.* 2, 31–34. (P. Talpalaru) **93d:34078** 34C25 (34C27)

Kravets, V. I. (*with* Yurchik, A. I.) A problem on the control of functional-differential equations of neutral type. (Russian. Russian summary) *Asymptotic solutions of nonlinear equations with a small parameter (Russian)*, 63–66, *Akad. Nauk Ukrainy, Inst. Mat., Kiev*, 1991. (From the text) **93g:34110** 34K15 (34K10, 34K40)

Kravtsov, M. K. (*with* Emelichev, V. A.; Krachkovskiĭ, A. P.) Multi-index planar transportation polytopes with a maximum number of vertices. (Russian) *Diskret. Mat.* **4** (1992), *no.* 1, 3–18; *translation in Discrete Math. Appl.* **2** (1992), *no.* 6, 571–586. (Summary) **93j:90059** 90C06 (52B12)

— A proof of the Hirsch conjecture for a class of transportation polytopes. (Russian. Russian summary) *Diskret. Mat.* **4** (1992), *no.* 2, 23–31. (Summary) **93f:90173** 90C35

Kravtsov, O. V. Lagrangian invariants in the equilibrium conditions of an ideal rotating fluid. *Astrophys. Space Sci.* **180** (1991), *no.* 1, 19–37. (Ram Babu Mishra) **93f:76097** 76U05 (76W05, 76Y05, 85A30)

Kravtsov, P. A. Existence and uniqueness of the solution of the Cauchy problem for an implicit system of differential equations. (Russian) *Differential equations (qualitative theory) (Russian)*, 67–70, *Ryazan. Gos. Ped. Inst., Ryazan'*, 1990. (Summary) **93e:34008** 34A09 (34A12)

— The Cauchy problem and implicit equations. (Russian) *Partial differential equations (Russian)*, 8–12, *Leningrad. Gos. Ped. Inst., Leningrad*, 1990. (Vladimir B. Bajić)

93a:34006 34A09 (34A12, 34A34)

Kravtsov, V. V. (*with* Grigorovich, V. G.) The problem of the radiation of acoustic waves from a surface through a nonhomogeneous layer. (Russian. Russian summary) *Zh. Vychisl. Mat. i Mat. Fiz.* **32** (1992), *no.* 10, 1667–1670; *translation in Comput. Math. Math. Phys.* **32** (1992), *no.* 10, 1497–1500 (1993). (Summary) **93i:76080** 76Q05 (76M25)

Kravtsova, L. V. (*with* Plotkin, Ya. D.; Smyshlyaeva, L. G.) On the theory of optimization with respect to a probability criterion and its use in calculating the output percentage of nondefective semiconductor devices. (Russian) *Partial differential equations* (*Russian*), 70–79, "*Obrazovanie*", *St. Petersburg*, 1992. (*see* **93m:00035**) 90C15 (78A55, 90C90)

Kravvaritis, Dimitrios An existence theorem for strongly nonlinear equations. *Constantin Carathéodory: an international tribute, Vol. I, II*, 629–635, *World Sci. Publishing, Teaneck, NJ*, 1991. (Frank Benkert) **93c:35037** 35J60 (35J30, 47H05)

— (*with* Papageorgiou, Nikolaos S.) Optimal control of a class of nonlinear evolution equations. (English summary) *Internat. J. Systems Sci.* **23** (1992), *no.* 8, 1245–1259. (Summary) **93d:49008** 49J27 (34G20, 34H05, 49K27)

— (*with* Pantelides, George; Papageorgiou, Nikolaos S.) Existence of support prices for a discrete time growth model with uncertainty. (English summary) *Appl. Math. Comput.* **53** (1993), *no.* 1, 27–43. (Summary) **93h:90022** 90A16 (49K27, 90A12)

Krawcewicz, W. (*with* Erbe, Lynn H.) Nonlinear boundary value problems for differential inclusions $y'' \in F(t, y, y')$. *Ann. Polon. Math.* **54** (1991), *no.* 3, 195–226. (Summary) **93e:34024** 34A60 (34B15)

— (*with* Erbe, Lynn H.; Chen, Shao Zhu) Some existence results for solutions of differential inclusions with retardations. *Ann. Polon. Math.* **54** (1991), *no.* 3, 227–239. (Summary) **93e:34025** 34A60 (34B15, 34K10)

— (*with* Erbe, Lynn H.; Gęba, K.; Wu, Jian Hong) S^1-degree and global Hopf bifurcation theory of functional-differential equations. *J. Differential Equations* **98** (1992), *no.* 2, 277–298. (From the summary) **93f:58034** 58E07 (34K15, 47H15, 47N20, 58F14, 58F32)

— (*with* Erbe, Lynn H.; Guo, Da Jun) Some fixed point theorems for multivalued maps and applications. *Results Math.* **21** (1992), *no.* 1-2, 42–64. (Juan A. Gatica) **93h:47067** 47H10 (34A60, 34B15, 47H04, 47N20)

— (*with* Erbe, Lynn H.) Existence of solutions to boundary value problems for impulsive second order differential inclusions. (English summary) *Rocky Mountain J. Math.* **22** (1992), *no.* 2, 519–539. (Florin Iacob) **93i:34024** 34A60 (34A37, 34B15)

— (*with* Erbe, Lynn H.; Wu, Jian Hong) A composite coincidence degree with applications to boundary value problems of neutral equations. *Trans. Amer. Math. Soc.* **335** (1993), *no.* 2, 459–478. (V. V. Obukhovskiĭ) **93e:47085** 47H11 (34K10, 34K40, 47H15, 47N20)

Krawczyk, Hugo How to predict congruential generators. (English summary) *J. Algorithms* **13** (1992), *no.* 4, 527–545. (Editors) **93g:65013** 65C10 (94A60)

— (*with* Goldreich, Oded) Sparse pseudorandom distributions. *Random Structures Algorithms* **3** (1992), *no.* 2, 163–174. (Gheorghe Barbu) **93b:68029** 68Q20 (60E99, 94A60)

Krawczyk, Jacek B. Properties of repetitive control of partially observed processes. (English summary) *Comput. Math. Appl.* **24** (1992), *no.* 8-9, 111–124. 93E05 (93E20)

Krawitz, Robert L. (*with* Johnsson, S. Lennart; Jacquemin, Michel) Communication efficient multi-processor FFT. (English summary) *J. Comput. Phys.* **102** (1992), *no.* 2, 381–397. (Summary) **93h:65176** 65T20

Krayer, Albert ★ Mathematik im Studienplan der Jesuiten. (German) [Mathematics in the curriculum of the Jesuits] Die Vorlesung von Otto Cattenius an der Universität Mainz (1610/11). [The lecture course of Otto Cattenius at the University of Mainz (1610/11)] With an afterword by Fritz Krafft. Beiträge zur Geschichte der Universität Mainz [Contributions to the History of the University of Mainz], 15. *Franz Steiner Verlag Wiesbaden GmbH, Stuttgart*, 1991. x+434 *pp. ISBN* 3-515-05874-5 (Eberhard Knobloch) **93b:01019** 01A45 (01A74)

Krbec, Miroslav (*with* Kokilashvili, V. M.) ★ Weighted inequalities in Lorentz and Orlicz spaces. *World Scientific Publishing Co., Inc., River Edge, NJ*, 1991. xii+233 *pp. ISBN* 981-02-0612-7 (Vladimir D. Stepanov) **93g:42013** 42B25 (26D10, 42B10, 46E30, 47B38, 47G10)

— (*with* Pick, Luboš) On imbeddings between weighted Orlicz spaces. (German and Russian summaries) *Z. Anal. Anwendungen* **10** (1991), *no.* 1, 107–117. (Abdelmoujib Benkirane) **93c:46039** 46E35 (46E30)

— (*with* Opic, Bohumír; Pick, Luboš) Imbedding theorems for weighted Orlicz-Sobolev spaces. *J. London Math. Soc.* (2) **46** (1992), *no.* 3, 543–556. (Georgi E. Karadzhov) **93k:46021** 46E35

Krebs, William B. Hitting time bounds for Brownian motion on a fractal. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 1, 223–232. (Summary) **93k:60202** 60J60

Krechetov, L. I. Equilibrium in transboundary pollution reduction. *System modelling and optimization* (*Zurich*, 1991), 716–724, *Lecture Notes in Control and Inform. Sci.*, 180, *Springer, Berlin*, 1992. (*see* **93e:90003**) 90A30

Krèchunash, I. T. *see* **Crăciunaș, P. T.**

Krèchunash, P. T. *see* **Crăciunaș, P. T.**

Kreck, Matthias On the homeomorphism classification of smooth knotted surfaces in the 4-sphere. *Geometry of low-dimensional manifolds*, 1 (*Durham*, 1989), 63–72, *London Math. Soc. Lecture Note Ser.*, 150, *Cambridge Univ. Press, Cambridge*, 1990. (A. Marin) **93k:57042** 57N13 (19J25, 57Q45, 57R40, 57R67)

Kredler, Christian (*with* Zillober, Christian; Johannes, Frank; Sigl, Georg) An application of preconditioned conjugate gradients to relative placement in chip design. (English summary) *Internat. J. Numer. Methods Engrg.* **36** (1993), *no.* 2, 255–271. 90C90 (68Q35)

Krée, Paul (*with* Carlen, Eric A.) On sharp L^p estimates for iterated stochastic integrals and some related topics. *White noise analysis* (*Bielefeld*, 1989), 43–48, *World Sci. Publishing, River Edge, NJ*, 1990. (Summary) **93b:60111** 60H05

Kregzhde, A. V. A numerical method for calculating the eigenvalues of a tridiagonal symmetric matrix. (Russian. Russian summary) *Differentsial'nye Uravneniya* **28** (1992), *no.* 2, 339–346, 367; *translation in Differential Equations* **28** (1992), *no.* 2, 289–294. (Summary) **93f:65036** 65F15 (65L15)

Krehbiel, Timothy C. (*with* Anderson, Donald A.) Optimal fractional factorial designs for estimating interactions of one factor with all others: 3^m series. *Comm. Statist. Theory Methods* **20** (1991), *no.* 3, 1055–1072. (Summary) **93e:62199** 62K15 (62K05)

Kreher, Donald L. (*with* Frenz, Timothy C.) An algorithm for enumerating distinct cyclic Steiner systems. *J. Combin. Math. Combin. Comput.* **11** (1992), 23–32. (Summary) **93a:05040** 05B30 (15A24)

— (*with* de Caen, D.) The 3-hypergraphical Steiner quadruple systems of order twenty. (English summary) *Graphs, matrices, and designs*, 85–92, *Lecture Notes in Pure and Appl. Math.*, 139, *Dekker, New York*, 1993. (Charles J. Colbourn) **93m:05043** 05B30

— (*with* de Caen, D.; Hobart, S. A.; Kramer, Earl S.; Radziszowski, Stanisław P.) The parameters 4-(12, 6, 6) and related t-designs. (English summary) *Australas. J. Combin.* **7** (1993), 3–20. (Summary) **93k:05020** 05B05

— (*with* Billington, Elizabeth J.) Yet another characterization of the Petersen graph. *Bull. Inst. Combin. Appl.* **7** (1993), 73–77. 05C75

Kreider, K. (*with* Karlsson, Anders; Kristensson, Gerhard) Wave splitting and imbedding equations for a spherically symmetric dispersive medium. (English summary) *Invariant imbedding and inverse problems* (*Albuquerque, NM*, 1990), 103–113, *SIAM, Philadelphia, PA*, 1992. (*see* **93e:00023**) 78A45

Kreinin, A. Ya. (*with* Daley, D. J.; Trengove, C. D.) Inequalities concerning the waiting-time in single-server queues: a survey. (English summary) *Queueing and related models*, 177–223, *Oxford Statist. Sci. Ser.*, 9, *Oxford Univ. Press, New York*, 1992. (Summary) **93k:60224** 60K25 (60E15)

— (*with* Boguslavskiĭ, L. B.; Coffman, Edward G., Jr.; Gilbert, Edgar N.) Scheduling checks and saves. (English summary) *ORSA J. Comput.* **4** (1992), *no.* 1, 60–69. 90B22

— (*with* Karpelevich, F. I.) Joint distributions in Poissonian tandem queues. (English summary) *Queueing Systems Theory Appl.* **12** (1992), *no.* 3-4, 273–286. (Summary) **93h:60153** 60K25

Kreinovich, V. Ya. (*with* Bernat, Andrew; Villa, Elsa; Mariscal, Yvonne) Parallel computers. Estimate errors caused by imprecise data. (English and Russian summaries) *Interval Comput./Interval. Vychisl.* **1991**, *no.* 2, 31–46. (Summary) **93e:65160** 65Y05 (65G10)

— (*with* Quintana, Chris) How does new evidence change our estimates of probabilities? Carnap's formula revisited. *Cybernet. Systems* **23** (1992), *no.* 2, 143–168. (Summary) **93c:60002** 60A05 (62A99)

— (*with* Quintana, Chris; Fuentes, Olac) Genetic algorithms: what fitness scaling is optimal? (English summary) *Cybernet. Systems* **24** (1993), *no.* 1, 9–26. (Chae Y. Lee) **93m:90063** 90C27

Kreisel, G. On the idea(l) of logical closure. *Ann. Pure Appl. Logic* **56** (1992), *no.* 1-3, 19–41. (E. Mendelson) **93c:03007** 03A05 (00A30, 01A60)

Kreiss, Heinz-Otto Problems with different time scales. *Acta numerica*, 1992, 101–139, *Cambridge Univ. Press, Cambridge*, 1992. (G. W. Hedstrom) **93e:65111** 65Mxx (34E05, 65Lxx)

— (*with* Scherer, Godela) Method of lines for hyperbolic differential equations. *SIAM J. Numer. Anal.* **29** (1992), *no.* 3, 640–646. (Summary) **93a:65124** 65M20 (65M12)

Kreiss, Jens-Peter (*with* Franke, Jürgen) Bootstrapping stationary autoregressive moving-average models. *J. Time Ser. Anal.* **13** (1992), *no.* 4, 297–317. (Zuzana Prášková) **93h:62162** 62M10 (62E20, 62G09)

Kreisselmeier, Gerhard (*with* Rietze-Augst, Gudrun) On dynamic output feedback compensator design using the Riccati equation. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 8, *part I*, 1205–1208. 93B52

Kreith, Kurt Initial value parameters corresponding to positive Green's functions. (English summary) *Arch. Math.* (*Brno*) **27B** (1991), 161–166. (Summary) **93h:34046** 34C10 (34B27)

Kreknin, V. A. (*with* Spivakovskiĭ, A. V.; Malik, V. F.) An analogue of the Frattini subgroup. (Russian. Ukrainian summary) *Ukrain. Mat. Zh.* **43** (1991), *no.* 5, 607–611; *translation in Ukrainian Math. J.* **43** (1991), *no.* 5, 562–565 (1992). (Summary) **93c:20043** 20D25

— (*with* Mel'nik, I. I.; Spivakovskiĭ, A. V.) Finite 2-groups with a supercomplemented cyclic subgroup. (Russian. Ukrainian summary) *Ukrain. Mat. Zh.* **43** (1991), *no.* 7-8, 956–963; *translation in Ukrainian Math. J.* **43** (1991), *no.* 7-8, 893–898 (1992). (U. Schoenwaelder) **93d:20046** 20D40 (20D15)

— (*with* Malik, V. F.) Finite p-groups with complemented maximal cyclic subgroups. (Russian. Russian and Ukrainian summaries) *Ukrain. Mat. Zh.* **44** (1992), *no.* 6, 780–785; *translation in Ukrainian Math. J.* **44** (1992), *no.* 6, 703–709 (1993). (Czesław Bagiński) **93m:20025** 20D15

Kremer, Erhard An elementary upper bound for the loading of a stoploss cover. *Scand. Actuar. J.* **1990**, *no.* 3-4, 105–108. (Summary) **93b:62136** 62P05

Kremer, G. M. (*with* Müller, Ingo) Radiation thermodynamics. *J. Math. Phys.* **33** (1992), *no.* 6, 2265–2268. (Summary) **93b:80002** 80A10 (85A25)

Kremer, Michael Set-theoretic realism and arithmetic. *Philos. Stud.* **64** (1991), *no.* 3, 253–271. (L. D. Kugler) **93b:03006** 03A05 (00A30)

Krempa, Jan (*with* Macedońska, Olga) On identities of cancellative semigroups. *Proceedings of the International Conference on Algebra, Part* 3 (*Novosibirsk*, 1989), 125–133, *Contemp. Math.*, 131, *Part* 3, *Amer. Math. Soc., Providence, RI*, 1992. (Pascal Weil) **93g:20108** 20M07 (20E10)

— *see also* **Topics in algebra, 93a:00023** *and* **93b:00037**

Krendelev, S. F. New classes of elliptic operators and elliptic complexes. Their properties. (Russian) *Partial differential equations* (*Russian*), 117–124, 143, *Akad. Nauk SSSR Sibirsk. Otdel., Inst. Mat., Novosibirsk*, 1989. (Summary) **93a:35062** 35J99 (58G03, 58G05)

Krener, Arthur J. The construction of optimal linear and nonlinear regulators. *Systems, models and feedback: theory and applications* (*Capri*, 1992), 301–322, *Progr. Systems Control Theory*, 12, *Birkhäuser Boston, Boston, MA*, 1992. (From the introduction) **93c:93028** 93B50 (93B27, 93D15)

— (*with* Kang, Wei) Extended quadratic controller normal form and dynamic state feedback linearization of nonlinear systems. (English summary) *SIAM J. Control Optim.* **30** (1992), *no.* 6, 1319–1337. (Ülle Kotta) **93k:93054** 93C10 (93B17, 93B18, 93B52, 93C15)

Krengel, Ulrich (*with* Hill, Theodore P.) On the construction of generalized measure preserving transformations with given marginals. (English summary) *Ergodic theory and related topics, III* (*Güstrow*, 1990), 114–123, *Lecture Notes in Math.*, 1514, *Springer, Berlin*, 1992. (R. E. Bradley) **93j:28024** 28D05 (47A35, 60G10)

— (*with* Hill, Theodore P.) A prophet inequality related to the secretary problem. *Strategies for sequential search and selection in real time* (*Amherst, MA*, 1990), 209–215, *Contemp. Math.*, 125, *Amer. Math. Soc., Providence, RI*, 1992. (Douglas P. Kennedy) **93b:60089** 60G40

— *see also* **Ergodic theory and related topics, 93c:28002**

Krentel, Mark W. Generalizations of Opt P to the polynomial hierarchy. *Theoret. Comput. Sci.* **97** (1992), *no.* 2, 183–198. (Lane Hemaspaandra) **93i:68073** 68Q15 (03D15)

Kreowski, Hans-Jörg (*with* Ehrig, Hartmut; Habel, Annegret; Parisi-Presicce, Francesco) Parallelism and concurrency in high-level replacement systems. *Math. Structures Comput. Sci.* **1** (1991), *no.* 3, 361–404. (K. G. Subramanian) **93e:68047** 68Q42

— (*with* Habel, Annegret; Vogler, Walter) Decidable boundedness problems for sets of graphs generated by hyperedge-replacement. 1989 International Joint Conference on Theory and Practice of Software Development (TAPSOFT '89) (Barcelona, 1989). *Theoret. Comput. Sci.* **89** (1991), *no.* 1, 33–62. (K. G. Subramanian) **93a:68116** 68R10 (03B35, 05C99)

Krepkiĭ, V. M. On the existence and uniqueness of the solution of an integral equation with delay in a scale of Banach spaces. (Russian. Russian summary) *Dinamika Sploshn. Sredy No.* 95 (1990), 79–85, 163. (Summary) **93d:45012** 45N05 (34K30, 47G20, 47N20)

Kreps, David (*with* Hindy, Ayman; Huang, Chi-fu) On intertemporal preferences in continuous time: the case of certainty. (English summary) *J. Math. Econom.* **21** (1992), *no.* 5, 401–440. (Hiroaki Osana) **93i:90012** 90A06 (90A10)

mayer-Kress, Gottfried *see* **Mayer-Kress, Gottfried**

Kress, Michael E. (*with* Blank, Albert A.) Connections between adiabatic and low-resistivity magnetohydrodynamics. (English summary) *Phys. Fluids B* **4** (1992), *no.* 10, 3189–3198. (Summary) **93f:76100** 76W05 (82D99)

Kress, Moshe (*with* Cook, Wade D.) ★ Ordinal information and preference structures. Decision models and applications. *Prentice Hall, Inc., Englewood Cliffs, NJ*, 1992. xii+292 *pp. ISBN* 0-13-630120-7 (Reinhard Suck) **93j:90009** 90A06 (62J15, 90A07, 92G05, 92J45)

Kress, Rainer (*with* Zinn, Axel) Three-dimensional reconstructions in inverse obstacle scattering. *Mathematical methods in tomography* (*Oberwolfach*, 1990), 112–125, *Lecture Notes in Math.*, 1497, *Springer, Berlin*, 1991. (Philip Huddleston) **93g:78021** 78A45 (76Q05, 92C55)

— (*with* Colton, David) ★ Inverse acoustic and electromagnetic scattering theory. Applied Mathematical Sciences, 93. *Springer-Verlag, Berlin*, 1992. x+305 *pp. ISBN* 3-540-55518-8 (Volker Vogelsang) **93j:35124** 35P25 (35J99, 35Q60, 35R30, 76Q05, 78A45)

— (*with* Zinn, Axel) On the numerical solution of the three-dimensional inverse obstacle scattering problem. (English summary) *J. Comput. Appl. Math.* **42** (1992), *no.* 1, 49–61. (Summary) **93f:65052** 65K10 (35R30, 76Q05)

— *see also* **Direct and inverse boundary value problems, 93k:00034**

Kreussler, Bernd (*with* Kurke, Herbert) Twistor spaces over the connected sum of 3 projective planes. *Compositio Math.* **82** (1992), *no.* 1, 25–55. (Nicholas Buchdahl) **93d:32049** 32L25 (14J30, 53C25)

Kreutz-Delgado, Kenneth (*with* Wen, John T.) Motion and force control of multiple robotic manipulators. *Automatica J. IFAC* **28** (1992), *no.* 4, 729–743. 93C85

Kreuzer, Alexander Fundamental theorem of projective Hjelmslev spaces. Mathematische Wissenschaften gestern und heute. 300 Jahre Mathematische Gesellschaft in Hamburg, Teil 3 (Hamburg, 1990). *Mitt. Math. Ges. Hamburg* **12** (1991), *no.* 3, 809–817. (Günter Törner) **93b:51007** 51C05

— Free modules over Hjelmslev rings in which not every maximal linearly independent subset is a basis. (English summary) *J. Geom.* **45** (1992), *no.* 1-2, 105–113. (Günter Törner) **93i:51007** 51C05 (16D40)

Kreuzer, E. J. (*with* Kleczka, M.; Schiehlen, W.) Local and global stability of a piecewise linear oscillator. *Philos. Trans. Roy. Soc. London Ser. A* **338** (1992), *no.* 1651, 533–546. (Martin Kummer) **93i:58107** 58F13 (34C15, 70K50)

— Symbolverarbeitung in der Mechanik—zwei Beispiele. (English, German and Russian summaries) [Symbol manipulation in mechanics—two examples] *Z. Angew. Math. Mech.* **72** (1992), *no.* 11, 527–537. (Summary) **93g:70001** 70–04 (70–08, 70B15, 70E99)

Kreuzer, M. *see* **Kreuzer, Maximilian**

Kreuzer, Martin An introduction to a theorem of Strano. *The Curves Seminar at Queen's, Vol. VIII* (*Kingston, ON*, 1990/1991), *Exp.* C, 23 *pp., Queen's Papers in Pure and Appl. Math.*, 88, *Queen's Univ., Kingston, ON*, 1991. (Giorgio Bolondi) **93d:14074** 14M10 (14H45, 14H50)

— (*with* Geramita, Anthony V.; Robbiano, Lorenzo) Cayley-Bacharach schemes and their canonical modules. *Trans. Amer. Math. Soc.* **339** (1993), *no.* 1, 163–189. (Luca Chiantini) **93k:14065** 14M05 (13D40)

Kreuzer, Maximilian (*with* Skarke, Harald) On the classification of quasihomogeneous functions. (English summary) *Comm. Math. Phys.* **150** (1992), *no.* 1, 137–147. (Anatoly Libgober) **93k:32075** 32S05 (14B05, 32S10, 81T40)

— (*with* Schimmrigk, Rolf; Skarke, Harald) Abelian Landau-Ginzburg orbifolds and mirror symmetry. *Nuclear Phys. B* **372** (1992), *no.* 1-2, 61–86. (Tristan Hübsch) **93d:81163** 81T40 (14J30, 32G20, 32J81, 32S25)

van Kreveld, Marc (*with* Overmars, Mark H.; Agarwal, Pankaj K.) Intersection queries in sets of disks. *BIT* **32** (1992), *no.* 2, 268–279. (Ricardo Baeza-Yates) **93f:68096** 68U05 (68P05)

— (*with* de Berg, Mark T.; Nilsson, Bengt J.; Overmars, Mark H.) Shortest path queries in rectilinear worlds. (English summary) *Internat. J. Comput. Geom. Appl.* **2** (1992), *no.* 3, 287–309. (Summary) **93j:68208** 68U05 (68P05, 68Q25)

Krewald, S. (*with* Nakayama, K.) A new interpretation of dimensional regularization. *Ann. Physics* **216** (1992), *no.* 2, 201–225. (Summary) **93b:81145** 81T10 (81V25)

Kreweras, Germain Sur les polynômes de Catalan multiples. [On multiple Catalan polynomials] *Séminaire Lotharingien de Combinatoire* (*Salzburg*, 1990), 117–118, *Publ. Inst. Rech. Math. Av.*, 462, *Univ. Louis Pasteur, Strasbourg*, 1991. (*see* **93f:00018**) 05A10

— A colouring problem for arrays. With remarks by I. P. Goulden. *Bull. Inst. Combin. Appl.* **6** (1992), 20–21, 64. 05B15

— Dénombrement des cycles hamiltoniens dans un rectangle quadrillé. (English summary) [Enumeration of Hamiltonian cycles in a rectangle made of squares] *European J. Combin.* **13** (1992), *no.* 6, 473–476. (E. Keith Lloyd) **93k:05012** 05A15 (05C45)

Krewski, Daniel (*with* Smythe, Robert T.; Fung, Karen Yuen; Burnett, Richard) Conditional and unconditional tests with historical controls. (French summary) *Canad. J. Statist.* **19** (1991), *no.* 4, 407–423. (István Ratkó) **93g:62034** 62F03 (62P10)

— (*with* Prentice, Ross L.; Smythe, Robert T.; Mason, Mark) On the use of historical control data to estimate dose response trends in quantal bioassay. (French summary) *Biometrics* **48** (1992), *no.* 2, 459–478. 62P10

Kreyszig, Erwin Class *P* operators, the minimal surface equation and the Weierstrass representation. (English summary) *Partial differential equations with complex analysis*, 1-13, *Pitman Res. Notes Math. Ser.*, 262, *Longman Sci. Tech., Harlow*, 1992. (Kichoon Yang) **93i:53007** 53A10 (35C15, 35J60)

— ★ Advanced engineering mathematics. Seventh edition. *John Wiley & Sons, Inc., New York*, 1993. xviii+1402 *pp. ISBN* 0-471-55380-8 00A06 (00–01)

Krianev, A. V. *see* **Kryanev, A. V.**

Krichagina, E. V. (*with* Taksar, Michael I.) Asymptotically optimal policies for controlled queues in heavy traffic. (English summary) *Stochastic theory and adaptive control* (*Lawrence, KS*, 1991), 256–269, *Lecture Notes in Control and Inform. Sci.*, 184, *Springer, Berlin*, 1992. (*see* **93g:93007**) 90B22

— (*with* Taksar, Michael I.) Diffusion approximation for $GI/G/1$ controlled queues. (English summary) *Queueing Systems Theory Appl.* **12** (1992), *no.* 3-4, 333–367. (Summary) **93h:60154** 60K25 (90B22)

Krichever, I. *see* **Krichever, Ios. M.**

Krichever, I. M. *see* **Krichever, Ios. M.**

Krichever, Igor The periodic problems for two-dimensional integrable systems. *Proceedings of the International Congress of Mathematicians, Vol. I, II* (*Kyoto*, 1990), 1353–1362, *Math. Soc. Japan, Tokyo*, 1991. (Chris Athorne) **93f:58101** 58F07 (35B10, 35Q58)

Krichever, Ios. M. (*with* Novikov, S. P.) Riemann surfaces, operator fields, strings. Analogues of the Fourier-Laurent bases. *Physics and mathematics of strings*, 356–388, *World Sci. Publishing, Teaneck, NJ*, 1990. (Introduction) **93d:17033** 17B68 (17B81, 32G81, 81T30)

— The dispersionless Lax equations and topological minimal models. *Comm. Math. Phys.* **143** (1992), *no.* 2, 415–429. (Nikolai A. Kostov) **93a:58083** 58F07 (35Q55, 81T40)

Krichevets, Yu. M. A model of a crystal with defects on the basis of the theory of fiber bundles. (Russian. Russian summary) *Kibernet. i Vychisl. Tekhn. No.* 91 (1991), 69–74. 73S10 (73B99)

Krichevskiĭ, R. E. Occam's razor and partial Boolean functions. (Russian) *Optimizatsiya No.* 48(65) (1990), 88–95. 03G05 (06E30)

Krick, Teresa (*with* Slisenko, A. O.; Solernó, P.; Heintz, Joos) A search for the shortest path around semi-algebraic obstacles in the plane. (Russian. English summary) *Zap. Nauchn. Sem. Leningrad. Otdel. Mat. Inst. Steklov.* (*LOMI*) **192** (1991), *Teor. Slozhn. Vychisl.* 5, 163–173, 176. (M. M. Syslo) **93b:68088** 68U05 (05C38, 05C85, 90C35)

Krieg, Aloys A Dirichlet series for modular forms of degree *n*. *Acta Arith.* **59** (1991), *no.* 3, 243–259. (Nils-Peter Skoruppa) **93c:11032** 11F55 (11F66, 11M41)

— The Maaß spaces on the Hermitian half-space of degree 2. *Math. Ann.* **289** (1991), *no.* 4, 663–681. (Introduction) **93d:11051** 11F55 (11F30)

— (*with* Eie, Minking) The Maass space on the half-plane of Cayley numbers of degree two. *Math. Z.* **210** (1992), *no.* 1, 113–128. (K.-B. Gundlach) **93e:11063** 11F55 (11F66)

— (*with* Petersson, Holger P.) Max Koecher zum Gedächtnis. [Max Koecher in memoriam] *Jahresber. Deutsch. Math.-Verein.* **95** (1993), *no.* 1, 1–27. (Doru Ştefănescu) **93m:01073** 01A70 (17–03)

Kriegel, Klaus (*with* Hoffmann, Frank; Kaufmann, Michael) The art gallery theorem for polygons with holes. (English summary) *32nd Annual Symposium on Foundations of Computer Science* (*San Juan, PR*, 1991), 39–48, *IEEE Comput. Soc. Press, Los Alamitos, CA*, 1991. (Summary) **93i:68175** 68U05

Krieger, Abba M. (*with* Benjamini, Yoav) Market share paradox and heterogeneous chains. (English summary) *Ann. Appl. Probab.* **2** (1992), *no.* 4, 1019–1023. (From the introduction) **93m:60143** 60J10 (62M05)

— (*with* Green, Paul E.) Generalized measures of association for ranked data with an application to prediction accuracy. (English summary) *J. Classification* **10** (1993), *no.* 1, 93–114. 62H20 (62G99)

Kriegl, Andreas (*with* Michor, Peter W.) More smoothly real compact spaces. *Proc. Amer. Math. Soc.* **117** (1993), *no.* 2, 467–471. (L. D. Nel) **93d:46044** 46E25 (46M40, 54D60)

Kriegsmann, Gregory A. Asymptotic/numerical hybrid methods: an example from acoustic scattering theory. (English summary) *Proceedings of the XII Congress on Differential Equations and Applications/II Congress on Applied Mathematics* (*Spanish*) (*Oviedo*, 1991), 41–48, *Univ. Oviedo, Oviedo*, 1991. (*see* **93j:00009**) 76Q05 (65P05)

— (*with* Kath, W. L.; Minzoni, Antonmaría; Reiss, E. L.) Energy leakage and reflection in slowly varying waveguides. (English summary) *J. Acoust. Soc. Amer.* **93** (1993), *no.* 1, 182–187. (Summary) **93i:76082** 76Q05

Kriele, Marcus (*with* Newman, Richard P. A. C.) Differentiability considerations at the onset of causality violation. *Classical Quantum Gravity* **9** (1992), *no.* 5, 1329–1334. (Laszlo B. Szabados) **93e:83050** 83C75

— On $(1 + 1)$-gravity. (English summary) *Classical Quantum Gravity* **9** (1992), *no.* 8, 1863–1871. (Summary) **93f:81136** 81T40

Kriete, Thomas L., III (*with* MacCluer, Barbara D.) Composition operators on large weighted Bergman spaces. (English summary) *Indiana Univ. Math. J.* **41** (1992), *no.* 3, 755–788. (Ke He Zhu) **93i:47031** 47B38 (46E20, 47B10)

Krijgsman, A. J. (*with* Butler, H.) Model reference adaptive control of coupled systems. (English summary) *Mathematics of the analysis and design of process control* (*Dublin*, 1991/*Lille*, 1991), 423–433, *North-Holland, Amsterdam*, 1992. (*see* **93g:93004**) 93C40

Krik, T. *see* **Krick, Teresa**

Krikelis, N. J. (*with* Georgiou, Christos G.) Constrained regulation design of linear discrete-time descriptor systems. (English summary) *Control Theory Adv. Tech.* **8** (1992), *no.* 2, 257–268. 93B50 (93C55)

— (*with* Kiriakidis, K. I.) Optimal feedback control of nonlinear systems. (English summary) *Internat. J. Systems Sci.* **23** (1992), *no.* 12, 2141–2153. (From the introduction) **93k:93049** 93B52 (49N35, 93C10, 93D15)

Krikovlyuk, A. P. (*with* Krivol, S. F.; Moroz-Podvorchan, I. G.; Mushka, F. I.; Pik, E. M.) On a pursuit-evasion problem. (Russian. English and Ukrainian summaries) *Kibernet. Sistem. Anal.* **1992**, *no.* 3, 138–144, 190; *translation in Cybernet. Systems Anal.* **28** (1992), *no.* 3, 445–450 (1993). (Dimitrii Serkov) **93i:90126** 90D26

Kriksin, Yu. A. Dynamical systems with external action. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **32** (1992), *no.* 3, 417–433; *translation in Comput. Math. Math. Phys.* **32** (1992), *no.* 3, 353–369. (Bogdan Przeradzki) **93c:34133** 34G20 (34C35, 34D40, 70D05)

Kril', S. I. First integrals of the equations of suspension dynamics. (Russian. Russian summary) *Gidromekh.* (*Kiev*) *No.* 65 (1992), 46–50. (Summary) **93i:76091** 76T05 (76A99)

Krinik, Alan Taylor series solution of the $M/M/1$ queueing system. (English summary) *J. Comput. Appl. Math.* **44** (1992), *no.* 3, 371–380. (Summary) **93h:60155** 60K25
Krinskiĭ, V. I. *see* **Waves and patterns in chemical and biological media, 93d:92002**
Krisch, Jean P. (*with* Smalley, Larry L.) Minimal coupling of electromagnetic field in Riemann-Cartan spacetime for perfect fluids. *Internat. J. Theoret. Phys.* **31** (1992), *no.* 7, 1253–1265. (Summary) **93f:83074** 83D05 (76Y05, 78A99)
gopala Krishna, J. *see* **Gopala Krishna, J.**
Krishna, J. Gopala *see* **Gopala Krishna, J.**
Krishna, Lala (*with* Padovan, Joe; Guo, Y. H.) Partitioned multiply scaled pseudo conjugate gradient schemes. (English summary) *Comput. Mech.* **8** (1991), *no.* 3, 205–220. (Summary) **93e:65055** 65F10 (65F35)
— (*with* Padovan, Joe; Sansgiri, Sanjiv M.) Multiply gauged, mixed, progressively direct gradient based iterative solvers. (English summary) *Comput. Mech.* **11** (1993), *no.* 2-3, 163–188. (Summary) **93m:73037** 73V05 (73V15)
Krishna, S. V. (*with* Vasundhara Devi, J.; Satyavani, K.) Boundedness and dichotomies for impulse equations. *J. Math. Anal. Appl.* **158** (1991), *no.* 2, 352–375. (O. S. Chernikova) **93c:34030** 34A37 (34A12)
— (*with* Sarma, K. K. M.) Fuzzy continuity of linear maps on vector spaces. *Fuzzy Sets and Systems* **45** (1992), *no.* 3, 341–354. (Ming Ma) **93c:46140** 46S40 (04A72, 47S40)
Krishna, Vijay (*with* Benoit, Jean-Pierre) Renegotiation in finitely repeated games. (English summary) *Econometrica* **61** (1993), *no.* 2, 303–323. (Sylvain Sorin) **93m:90112** 90D10 (90D20)
Krishnaiah, P. R. (*with* Bai, Zhi Dong; Zhao, Lin Cheng) Variable selection in logistic regression. (Chinese summary) *J. China Univ. Sci. Tech.* **21** (1991), *no.* 2, 137–145. (Thomas J. Santner) **93c:62106** 62H17 (62J05)
— (*with* Bai, Zhi Dong; Chen, Xi Ru; Wu, Yue Hua; Zhao, Lin Cheng) Strong consistency of maximum likelihood parameter estimation of superimposed exponential signals in noise. *Teor. Veroyatnost. i Primenen.* **36** (1991), *no.* 2, 392–397; *reprinted in Theory Probab. Appl.* **36** (1991), *no.* 2, 349–355 (1992). (A. Ya. Dorogovtsev) **93b:62042** 62F12
rama Krishnaiah, Y. S. *see* **Rama Krishnaiah, Y. S.**
Krishna Kumar, B. *see* **Kumar, B. Krishna**
Krishnamoorthy, A. (*with* Lakshmy, B.) A continuous review inventory system with bulk demand and Markov dependent replenishment quantities. (English summary) *Calcutta Statist. Assoc. Bull.* **41** (1991), *no.* 161-164, 127–136. (Summary) **93f:90054** 90B05
— (*with* Varughese, Rajan) On a finite capacity bulk service queueing problem. *Internat. J. Inform. Management Sci.* **3** (1992), *no.* 1, 131–147. (Summary) **93f:60143** 60K25 (90B22)
— (*with* Narasimhulu, Y. C.; Iqbal Basha, R.) On perishable inventory with Markov chain demand quantities. (English summary) *Internat. J. Inform. Management Sci.* **3** (1992), *no.* 2, 29–37. 90B05
Krishnamoorthy, C. (*with* Carlstein, E.) Boundary estimation. *J. Amer. Statist. Assoc.* **87** (1992), *no.* 418, 430–438. (Summary) **93c:62064** 62G05
Krishnamoorthy, K. Estimation of a common multivariate normal mean vector. *Ann. Inst. Statist. Math.* **43** (1991), *no.* 4, 761–771. (Margaret P. Gessaman) **93c:62098** 62H12
— Estimation of normal covariance and precision matrices with incomplete data. *Comm. Statist. Theory Methods* **20** (1991), *no.* 3, 757–770. (N. Giri) **93b:62015** 62C20 (62C15, 62H12)
— On a shrinkage estimator of a normal common mean vector. *J. Multivariate Anal.* **40** (1992), *no.* 1, 109–114. (A. L. Rukhin) **93a:62028** 62F10 (62H12)
Krishnamurthy, D. (*with* Patil, H. P.) Maximal planarity in power graphs. (English summary) *J. Math. Phys. Sci.* **26** (1992), *no.* 3, 328–333. (Summary) **93k:05152** 05C75 (05C10)
Krishnamurthy, Ramesh A linear stability analysis of a mixed convection plume from a line source: higher order effects. (French summary) *Z. Angew. Math. Phys.* **43** (1992), *no.* 2, 385–396. (Summary) **93d:76026** 76E15 (76R05, 76R10, 80A20)
Krishnamurthy, Sridhar (*with* Greenberg, Ronald; Ja'Ja', Joseph) On the difficulty of Manhattan channel routing. (English summary) *Inform. Process. Lett.* **44** (1992), *no.* 5, 281–284. (Summary) **93k:68049** 68Q35 (68Q25)
Krishnamurti, Ramesh (*with* Kohli, Rajeev) A total-value greedy heuristic for the integer knapsack problem. (English summary) *Oper. Res. Lett.* **12** (1992), *no.* 2, 65–71. (Regina Hildenbrandt) **93k:90055** 90C10 (90A99, 90C27)
Krishnan, E. V. Exact solutions of reaction-diffusion equation. *J. Phys. Soc. Japan* **62** (1993), *no.* 3, 1076–1077. 35C05 (35K57, 92D25)
Krishnan, Hariharan (*with* McClamroch, N. Harris) Nonstandard singularly perturbed control systems and differential-algebraic equations. *Internat. J. Control* **55** (1992), *no.* 5, 1239–1253. (Zoran Gajic) **93f:93086** 93C73 (34A09, 70B15, 70Q05, 93B52)
— (*with* McClamroch, N. Harris) Computation of state realizations for control systems described by a class of linear differential-algebraic equations. *Internat. J. Control* **55** (1992), *no.* 6, 1425–1441. (Summary) **93k:93025** 93B15 (90C30)
Krishnaprasad, P. S. (*with* Bloch, Anthony M.; Marsden, Jerrold Eldon; Sánchez de Alvarez, G.) Stabilization of rigid body dynamics by internal and external torques. *Automatica J. IFAC* **28** (1992), *no.* 4, 745–756. 93D15 (70Q05)
— (*with* Wang, Li Sheng; Maddocks, John H.) Steady rigid-body motions in a central gravitational field. (English summary) *J. Astronaut. Sci.* **40** (1992), *no.* 4, 449–478. (Summary) **93i:70009** 70E99 (70F05, 70H05, 70M20)
Krishna Rao, J. V. S. (*with* Parihar, K. S.) The axially symmetric problem of a penny-shaped crack under general surface loadings. (English summary) *Internat. J. Engrg. Sci.* **31** (1993), *no.* 6, 953–966. (Summary) **93m:73034** 73M25
Krishnasamy, G. (*with* Rizzo, F. J.; Rudolphi, T. J.) Continuity requirements for density functions in the boundary integral equation method. (English summary) *Comput. Mech.* **9** (1992), *no.* 4, 267–284. (D. G. Natroshvili) **93k:73089** 73V99 (65N38, 73V10, 76M15)
— (*with* Guiggiani, M.; Rudolphi, T. J.; Rizzo, F. J.) A general algorithm for the numerical solution of hypersingular boundary integral equations. (English summary) *Trans. ASME J. Appl. Mech.* **59** (1992), *no.* 3, 604–614. (Summary) **93f:73109** 73V10
Kristensson, Gerhard (*with* Krueger, Robert John) Time domain inversion techniques for electromagnetic scattering problems. (English summary) *Invariant imbedding and inverse problems* (*Albuquerque, NM*, 1990), 1–29, *SIAM, Philadelphia, PA*, 1992. (Summary) **93g:78022** 78A45 (78–08)
— (*with* Karlsson, Anders; Otterheim, Henrik) Transient wave propagation in gyrotropic media. (English summary) *Invariant imbedding and inverse problems* (*Albuquerque, NM*, 1990), 77–89, *SIAM, Philadelphia, PA*, 1992. (*see* **93e:00023**) 78A40 (76X05)
— (*with* Karlsson, Anders; Kreider, K.) Wave splitting and imbedding equations for a spherically symmetric dispersive medium. (English summary) *Invariant imbedding and inverse problems* (*Albuquerque, NM*, 1990), 103–113, *SIAM, Philadelphia, PA*, 1992. (*see* **93e:00023**) 78A45
— (*with* Rikte, Sten) Transient wave propagation in reciprocal bi-isotropic media at oblique incidence. (English summary) *J. Math. Phys.* **34** (1993), *no.* 4, 1339–1359. (Summary) **93k:35251** 35Q60
— *see also* **Invariant imbedding and inverse problems, 93e:00023**
Kristev, G. A. (*with* Todorov, Pavel G.) Some cases of the reduction and generalization of the Abel differential equation of the second kind. (Russian. Russian summary) *Differentsial'nye Uravneniya* **28** (1992), *no.* 12, 2178–2179, 2207. (Summary) **93m:34001** 34A05
Kristjansen, C. F. (*with* Ambjørn, Jan; Makeenko, Yu. M.) Higher genus correlators for the complex matrix model. (English summary) *Modern Phys. Lett. A* **7** (1992), *no.* 34, 3187–3202. 81T40
Krisztin, T. (*with* Hatvani, L.) On the existence of periodic solutions for linear inhomogeneous and quasilinear functional-differential equations. *J. Differential Equations* **97** (1992), *no.* 1, 1–15. (Harlan W. Stech) **93c:34139** 34K10 (34C25, 92D25)
— (*with* Mathsen, R. M.; Xu, Yuan Tong) Counterexamples to a conjecture for neutral equations. (English summary) *Canad. Math. Bull.* **36** (1993), *no.* 1, 74–77. (Anatolii Fedorovich Ivanov) **93m:34115** 34K15 (34K40)
Krithivasan, Kamala (*with* Datta, Amitava; Srikant, R.; Ramkumar, G. D. S.) Fast parallel algorithms for the maximum empty rectangle problem. *Sādhanā* **17** (1992), *no.* 1, 221–236. 68U05 (68Q22, 68Q25)
Kritskov, L. V. Representation and estimates of root functions of singular differential operators on an interval. I. (Russian. Russian summary) *Differentsial'nye Uravneniya* **28** (1992), *no.* 8, 1291–1302, 1467; *translation in Differential Equations* **28** (1992), *no.* 8, 1035–1045 (1993). (From the text) **93k:34183** 34L99 (34B05, 34L10, 34L20, 47E05)
Křivan, Vlastimil (*with* Vrkoč, Ivo) Continuous and Lipschitzian selections from a measurable set-valued map. *J. Math. Anal. Appl.* **166** (1992), *no.* 2, 582–590. (Guang Ya Chen) **93d:49015** 49J45 (28B20, 34A60, 93B03)
Křivánek, Mirko Algorithmic and geometric aspects of cluster analysis. *Rozpravy Československé Akad. Věd Řada Mat. Přírod. Věd* **1991**, *Algorithm. Geom. Aspects. Cluster Anal.*, vi+152 *pp.* (Guna Seetharaman) **93e:65022** 65D15 (62H30, 65–02, 65Y20, 68Q25, 68T20, 68U10)
Krive, I. V. (*with* Malomed, B. A.; Rozhavskiĭ, A. S.) Tunnelling in "massless" quantum mechanics. *J. Phys. A* **25** (1992), *no.* 8, L439–L442. (Summary) **93b:81146** 81T10 (81Q99)
Krivine, Jean-Louis ★ Lambda-calcul. (French) [Lambda calculus] Types et modèles. [Types and models] Études et Recherches en Informatique. [Studies and Research in Computer Science] *Masson, Paris*, 1990. viii+176 *pp. ISBN* 2-225-82091-0 (Mariangiola Dezani-Ciancaglini) **93i:03019** 03B40 (03–02, 03B15, 03B70, 68Q55)
— Lambda-calcul, évaluation paresseuse et mise en mémoire. (English summary) [Lambda calculus, lazy evaluation and storage] *RAIRO Inform. Théor. Appl.* **25** (1991), *no.* 1, 67–84. (M. Coppo) **93a:68084** 68Q55 (03B40)
Krivoi, S. F. (*with* Krikovlyuk, A. P.; Moroz-Podvorchan, I. G.; Mushka, F. I.; Pik, E. M.) On a pursuit-evasion problem. (Russian. English and Ukrainian summaries) *Kibernet. Sistem. Anal.* **1992**, *no.* 3, 138–144, 190; *translation in Cybernet. Systems Anal.* **28** (1992), *no.* 3, 445–450 (1993). (Dimitrii Serkov) **93i:90126** 90D26
Krivonos, I. Yu. (*with* Pokotilo, V. G.) ★ Построение оптимальных динамических наблюдателей. (Russian) [Construction of optimal dynamic observers] Препринт [Preprint], 91-13. *Akad. Nauk Ukrain. SSR, Inst. Kibernet., Kiev*, 1991. 32 *pp.* (L. Stettner) **93d:49023** 49K15 (49K35, 49R05, 93B07, 93C40)
Krivonos, S. O. (*with* Bellucci, Stefano; Ivanov, Evgeniĭ Alekseevich[2]) $N = 2$ chiral bosons in superspace. (English summary) *Ann. Physics* **217** (1992), *no.* 2, 194–221. (W. Cox) **93i:81262** 81T50
— (*with* Ivanov, Evgeniĭ Alekseevich[2]; Leviant, V. M.) $N = 3$ and $N = 4$ superconformal WZNW sigma models in superspace. II. The $N = 4$ case. *Internat. J. Modern Phys. A* **7** (1992), *no.* 2, 287–316. (Sergey Merkulov) **93c:81209** 81T40 (17B81, 81R10)
— (*with* Ivanov, Evgeniĭ Alekseevich[2]; Pichugin, A.) Nonlinear realizations of W_3 symmetry. *Phys. Lett. B* **284** (1992), *no.* 3-4, 260–267. (Stanislav Z. Pakuliak) **93e:81115** 81T40 (17B68, 17B81, 81R10)
— (*with* Ivanov, Evgeniĭ Alekseevich[2]) Superfield realizations of $N = 2$ super-W_3. (English summary) *Phys. Lett. B* **291** (1992), *no.* 1-2, 63–70. (Summary) **93e:81040** 81R10 (17B68, 81T60)
— (*with* Bellucci, Stefano; Ivanov, Evgeniĭ Alekseevich[2]) Towards an integrable $N = 3$ super KdV equation. (English summary) *Phys. Lett. A* **173** (1993), *no.* 2, 143–147. (Summary) **93j:58059** 58F07 (17B65, 35Q53)
Krivonozhko, V. E. Equivalence of solution trajectories in methods of decomposition and block factorization. *Soviet J. Comput. Systems Sci.* **30** (1992), *no.* 4, 144–161; *translated from Izv. Akad. Nauk SSSR Tekhn. Kibernet.* **1991**, *no.* 4, 196–214 (*Russian. Russian summary*). (Stephan Dempe) **93g:90051** 90C06 (90C08)
— Decomposition methods using compound proposals for large-scale optimization. *System modelling and optimization* (*Zurich*, 1991), 231–240, *Lecture Notes in Control and Inform. Sci.*, 180, *Springer, Berlin*, 1992. (*see* **93e:90003**) 90C30
Krivosheev, A. S. On the uniqueness of supports of analytic functionals. (Russian) *Izv. Akad. Nauk SSSR Ser. Mat.* **55** (1991), *no.* 6, 1171–1193; *translation in Math. USSR-Izv.* **39** (1992), *no.* 3, 1129–1149. (Valentin Napalkov) **93b:46081** 46F15 (32A45)
Krivosheev, O. V. An approach to the solution of pattern recognition problems based on a set of features of various types. (Russian. Russian summary) *Random evolutions: theoretical and applied problems* (*Russian*), 54–56, *Akad. Nauk Ukrainy, Inst. Mat., Kiev*, 1992. (*see* **93m:60009**) 68T10
Krivosheya, S. A. A generalization of a problem of A. A. Vitt. (Ukrainian. Russian and Ukrainian summaries) *Visnik Kiïv. Univ. Mat. Mekh. No.* 32 (1990), 62–67. (Summary) **93d:35091** 35L05 (35C20, 78A55)
Krivskiĭ, I. Yu. (*with* Simulik, V. M.) Tensors of the third rank for an electromagnetic field and series of conservation quantities. (Russian. English and Ukrainian summaries) *Ukrain. Fiz. Zh.* **36** (1991), *no.* 11, 1607–1613. (Summary) **93h:78004** 78A25

— (*with* Simulik, V. M.) The Dirac equation and representations of spin 1, a connection with symmetries of the Maxwell equations. (Russian. English and Russian summaries) *Teoret. Mat. Fiz.* **90** (1992), *no.* 3, 388–406; *translation in Theoret. and Math. Phys.* **90** (1992), *no.* 3, 265–276. (Piotr Kosiński) **93i:81078** 81R20 (81R05, 81R20)

Křž, Igor (*with* Sgall, Jiří) Well-quasiordering depends on the labels. *Acta Sci. Math. (Szeged)* **55** (1991), *no.* 1-2, 59–65. (E. C. Milner) **93b:06013** 06A99

— (*with* Thomas, Robin) Analyzing Nash-Williams' partition theorem by means of ordinal types. Directions in infinite graph theory and combinatorics (Cambridge, 1989). *Discrete Math.* **95** (1991), *no.* 1-3, 135–167. (N. Hindman) **93b:03100** 03F20 (05D10)

— (*with* Nešetřil, Jaroslav) Chromatic number of Hasse diagrams, eyebrows and dimension. *Order* **8** (1991), *no.* 1, 41–48. (Michael O. Albertson) **93a:05062** 05C15 (06A07)

— The infinite loop spaces of Thom spectra. *J. Pure Appl. Algebra* **81** (1992), *no.* 1, 49–61. (R. M. Vogt) **93j:55015** 55P47 (55P42)

lin-Kriz, Yu *see* **Lin-Kriz, Yu**

Křížek, Michal (*with* Neittaanmäki, Pekka) On $O(h^4)$-superconvergence of piecewise bilinear FE-approximations. *Proceedings of the Second International Symposium on Numerical Analysis (Prague, 1987)*, 250–255, *Teubner-Texte Math.*, 107, *Teubner, Leipzig*, 1988. (*see* **93b:65007**) 65N30 (65N12)

— (*with* Hlaváček, Ivan) Weight minimization of elastic bodies weakly supporting tension. I. Domains with one curved side. (Czech summary) *Appl. Math.* **37** (1992), *no.* 3, 201–240. (Pekka Neittaanmäki) **93c:73029** 73C99 (49Q10, 65K10, 65N30, 73K40, 73V20)

— (*with* Neittaanmäki, Pekka; Vondrák, Miroslav) A nontraditional approach for solving the Neumann problem by the finite element method. (English and Portuguese summaries) *Mat. Apl. Comput.* **11** (1992), *no.* 1, 31–40. (Weimin Han) **93j:65182** 65N30

Krizskii, V. N. (*with* Ivanov, Valentin Timofeevich) Methods for solving some elliptic boundary value problems of mathematical physics and their application to geophysics. (Russian) *Numerical methods for solving boundary value problems (Russian)*, 59–66, *Akad. Nauk SSSR Ural. Otdel., Bashkir. Nauchn. Tsentr, Ufa*, 1989. (*see* **93m:00033**) 86A60

Krjažovskih, G. *see* **Kryazhovskikh, G. V.**

Krnić, I. (*with* Jaćimović, M.; Potapov, M. M.) Lagrange multipliers method and quadratic programming in Hilbert space. (Serbo-Croatian summary) *Mat. Vesnik* **42** (1990), *no.* 3-4, 197–205. (Summary) **93b:90060** 90C20 (49M30, 90C48)

Krob, Daniel (*with* Duchamp, Gérard) Computing with P.B.W. in enveloping algebras. *Algebraic computing in control (Paris, 1991)*, 223–240, *Lecture Notes in Control and Inform. Sci.*, 165, *Springer, Berlin*, 1991. (E. S. Lee) **93b:17038** 17B35 (16W30, 16W80, 17B01)

— Expressions rationnelles sur un anneau. [Rational expressions over a ring] *Topics in invariant theory (Paris, 1989/1990)*, 215–243, *Lecture Notes in Math.*, 1478, *Springer, Berlin*, 1991. (N. I. Osetinski (Zbl 739:03024)) **93j:68088** 68Q40 (03C60, 13L05)

— Matrix versions of aperiodic K-rational identities. (French summary) *RAIRO Inform. Théor. Appl.* **25** (1991), *no.* 5, 423–444. (K. G. Subramanian) **93f:68060** 68Q45

— Complete systems of $\mathscr{R}$-rational identities. *Theoret. Comput. Sci.* **89** (1991), *no.* 2, 207–343. (Heinrich Seidel) **93e:68054** 68Q45 (03D05, 20M35)

— (*with* Duchamp, Gérard) The free partially commutative Lie algebra: bases and ranks. (English summary) *Adv. Math.* **95** (1992), *no.* 1, 92–126. (Alexander V. Il'tyakov) **93j:17009** 17B01

— Differentiation of K-rational expressions. *Internat. J. Algebra Comput.* **2** (1992), *no.* 1, 57–87. (B. Zelinka) **93e:68055** 68Q45

— Models of a K-rational identity system. (English summary) *J. Comput. System Sci.* **45** (1992), *no.* 3, 396–434. (Danièle Beauquier) **93m:68101** 68Q45

— (*with* Duchamp, Gérard) The lower central series of the free partially commutative group. (English summary) *Semigroup Forum* **45** (1992), *no.* 3, 385–394. (Summary) **93e:20047** 20F14

— (*with* Duchamp, Gérard) On the partially commutative shuffle product. *Theoret. Comput. Sci.* **96** (1992), *no.* 2, 405–410. (Norbert Blum) **93g:68060** 68Q40 (68Q45, 68Q65)

— *see also* **Workshop: Algebraic and Computer-theoretic Aspects of Formal Power Series, 93a:68010**

Kroese, Dirk P. (*with* Schmidt, Volker) A continuous polling system with general service times. (English summary) *Ann. Appl. Probab.* **2** (1992), *no.* 4, 906–927. (Ralph L. Disney) **93j:60143** 60K25 (90B22)

— The difference of two renewal processes. Level crossing and the infimum. *Comm. Statist. Stochastic Models* **8** (1992), *no.* 2, 221–243. (Summary) **93c:60149** 60K25

— (*with* Kallenberg, Wilbert C. M.) Second-order asymptotics in level crossing for differences of renewal processes. *Stochastic Process. Appl.* **40** (1992), *no.* 2, 309–323. (M. B. Woodroofe) **93k:60217** 60K05 (60F05, 62N05)

Krogdahl, Stein (*with* Beck, István) An inequality on paths in a grid. (English summary) *J. Combin. Theory Ser. A* **61** (1992), *no.* 2, 295–301. (Summary) **93g:05009** 05A15

Kröger, Fred (*with* Merz, Stephan) Temporal logic and recursion. *Fund. Inform.* **14** (1991), *no.* 2, 261–281. (G. Mirkowska) **93b:68048** 68Q60 (03B45, 03B70)

Kröger, Helmut (*with* Bérubé, D.; Lafrance, R.; Marleau, L.) Axial anomaly on a momentum lattice. *Phys. Rev. D* (3) **45** (1992), *no.* 4, 1332–1341. (Kornél Szlachányi) **93a:81141** 81T25 (81T50)

Kröger, P. Upper bounds for the Neumann eigenvalues on a bounded domain in Euclidean space. *J. Funct. Anal.* **106** (1992), *no.* 2, 353–357. (Summary) **93d:47091** 47F05 (35J05, 35P15)

Krogh, Bruce H. (*with* Graettinger, Timothy J.) On the computation of reference signal constraints for guaranteed tracking performance. (English summary) *Automatica J. IFAC* **28** (1992), *no.* 6, 1125–1141. (M. Krastanov) **93j:93051** 93B40 (93B51)

— (*with* Holloway, Lawrence E.) On closed-loop liveness of discrete-event systems under maximally permissive control. *IEEE Trans. Automat. Control* **37** (1992), *no.* 5, 692–697. (Summary) **93e:68087** 68Q90 (93C85)

høegh-Krohn, Raphael *see* **Høegh-Krohn, Raphael**

Krok, Anna (*with* Mazur, Tomasz) Spectral properties of canonical isometry in weighted Bergman space. *Function spaces (Poznań, 1989)*, 105–111, *Teubner-Texte Math.*, 120, *Teubner, Stuttgart*, 1991. (Emil Straube) **93d:46043** 46E20 (32A37, 32M05, 47B38)

— Positive definite and Bergman functions. *Classical analysis (Kazimierz Dolny, 1991)*, 100–113, *World Sci. Publishing, River Edge, NJ*, 1992. (Gong Ning Chen) **93f:46034** 46E20 (42A82)

Krokhin, O. N. (*with* Tsybenko, S. P.) The structure of plane nonlinear waves in conservative systems of plasma electrodynamics and hydrodynamics. (Russian. Russian summary) *Trudy Fiz. Inst. Lebedev.* **219** (1992), 151–186, 215–216. (Summary) **93k:76128** 76X05 (76W05, 78A25, 82D10)

Krokos, Alexandros (*with* Nikolos, Dimitris) Theory and design of t-error correcting, k-error detecting and d-unidirectional error detecting codes with $d > k > t$. *IEEE Trans. Comput.* **41** (1992), *no.* 4, 411–419. (Summary) **93b:94031** 94B60

Królak, Andrzej (*with* Beem, John K.) Censorship, null geodesics and strong visibility. (English summary) *Mathematical aspects of classical field theory (Seattle, WA, 1991)*, 125–128, *Contemp. Math.*, 132, *Amer. Math. Soc., Providence, RI*, 1992. (*see* **93d:58006**) 83C75 (53C50, 53C80)

— (*with* Beem, John K.) Cosmic censorship and pseudoconvexity. *J. Math. Phys.* **33** (1992), *no.* 6, 2249–2253. (Laszlo B. Szabados) **93e:83047** 83C75

— (*with* Rudnicki, Wieslaw) Singularities, trapped sets, and cosmic censorship in asymptotically flat space-times. (English summary) *Internat. J. Theoret. Phys.* **32** (1993), *no.* 1, 137–142. (Robert J. Low) **93i:83069** 83C75

Królikowski, Wiesław Anisotropic complex structure on the pseudo-Euclidean Hurwitz pairs. Proceedings of the Tenth Conference on Analytic Functions (Szczyrk, 1990). *Ann. Polon. Math.* **55** (1991), 225–240. (Dominique Lambert) **93d:15040** 15A66 (15A63, 81S99)

Kroll, Hans-Joachim Unterräume von Kettengeometrien. (English summary) [Subspaces of chain geometries] *Proceedings of the 3rd Congress of Geometry (Thessaloniki, 1991)*, 245–247, *Aristotle Univ. Thessaloniki, Thessaloniki*, 1992. (Summary) **93g:51005** 51B05

— Zur Darstellung der Unterräume von Kettengeometrien. (English summary) [On the representation of subspaces of chain geometries] *Geom. Dedicata* **43** (1992), *no.* 1, 59–64. (H. Salzmann) **93h:51006** 51B05

Kronecker, Leopold *see* **Edwards, Harold M., 93m:01032**

Krõner, Dietmar About splitting and nonsplitting schemes for conservation laws in 2-D. *Proceedings of the Eighth GAMM-Conference on Numerical Methods in Fluid Mechanics (Delft, 1989)*, 262–272, *Notes Numer. Fluid Mech.*, 29, *Vieweg, Braunschweig*, 1990. (*see* **93b:76002**) 65M50 (65M12, 76M20, 76M25, 76N15)

Kronfeld, Andreas S. SU(N) gauge theories with C-periodic boundary conditions. Lattice 90 (Tallahassee, FL, 1990). *Nuclear Phys. B Proc. Suppl.* **20** (1991), 20–23. (Summary) **93c:81129** 81T13

Kronheimer, E. H. A note on alternative digital topologies. (English summary) Special issue on digital topology. *Topology Appl.* **46** (1992), *no.* 3, 269–277. (Henk J. A. M. Heijmans) **93m:68170** 68U05 (54F05)

Kronheimer, Peter B. Embedded surfaces in 4-manifolds. *Proceedings of the International Congress of Mathematicians, Vol. I, II (Kyoto, 1990)*, 529–539, *Math. Soc. Japan, Tokyo*, 1991. (Ronald J. Stern) **93d:57066** 57R95 (14J29, 57N13, 57R50, 57R57)

— Instanton invariants and flat connections on the Kummer surface. *Duke Math. J.* **64** (1991), *no.* 2, 229–241. (Ronald J. Stern) **93b:57034** 57R57 (14J28, 53C07, 57N10, 57R20)

Kronmal, Richard A. (*with* Langholz, Bryan) Tests of distributional hypotheses with nuisance parameters using Fourier series methods. *J. Amer. Statist. Assoc.* **86** (1991), *no.* 416, 1077–1084. (Ryszard Zieliński) **93b:62073** 62G10 (62G05, 62G20)

Kronz, Frederick M. The projection postulate and the time-energy uncertainty relation. *Philos. Sci.* **59** (1992), *no.* 1, 1–15. (S. Gudder) **93b:81014** 81P05 (81P15)

— Carnap and Achinstein on evidence. (English summary) *Philos. Stud.* **67** (1992), *no.* 2, 151–167. 03B48

Kroó, András (*with* Schmidt, Darrell) A Haar-type theory of best uniform approximation with constraints. *Acta Math. Hungar.* **58** (1991), *no.* 3-4, 351–374. (Martin Bartelt) **93c:41029** 41A29 (41A50, 41A52)

— (*with* Swetits, J. J.) On density of interpolation points, a Kadec-type theorem, and Saff's principle of contamination in L_p-approximation. *Constr. Approx.* **8** (1992), *no.* 1, 87–103. (Joseph M. Lambert) **93b:41039** 41A65

— (*with* Schmidt, Darrell; Sommer, Manfred) On A-spaces and their relation to the Hobby-Rice theorem. *J. Approx. Theory* **68** (1992), *no.* 2, 136–154. (Z. Ditzian) **93a:41048** 41A50

— (*with* Swetits, J. J.) On uniqueness of best L_1-approximation in Sobolev spaces. *Numer. Funct. Anal. Optim.* **13** (1992), *no.* 1-2, 29–41. (Ying Guang Shi) **93c:41046** 41A52

ten Kroode, A. P. E. (*with* Bergvelt, Maarten) ★ Proceedings Seminar 1986–1987. Lectures on Kac-Moody algebras. Edited and with a preface by E. A. de Kerf and H. G. J. Pijls. CWI Syllabi, 30. *Stichting Mathematisch Centrum, Centrum voor Wiskunde en Informatica, Amsterdam*, 1992. vi+97 *pp. ISBN* 90-6196-408-3 (Nicolás Andruskiewitsch) **93b:17057** 17B67

ten Kroode, Fons (*with* van de Leur, Johan) Bosonic and fermionic realizations of the affine algebra $\widehat{\mathfrak{so}}_{2n}$. (English summary) *Comm. Algebra* **20** (1992), *no.* 11, 3119–3162. (Chong Ying Dong) **93j:17050** 17B67 (22E65)

Kroon, Frederick W. Cutting the Gödelian knot. *Logique et Anal. (N.S.)* **31** (1988), *no.* 123-124, 235–250. 03A05 (03B45, 03F30, 03F40)

— Rationality and epistemic paradox. (English summary) *Synthese* **94** (1993), *no.* 3, 377–408. 03B45

Kroonenberg, Pieter M. In memoriam Albert Verbeek (1946–1990). (English summary) *Statist. Neerlandica* **46** (1992), *no.* 2-3, 96–105. (Summary) **93g:01071** 01A70

— *see also* **Leurgans, Sue, 93e:62164**

Krop, Leonid On comparison of M-, G-, and S-representations. *J. Algebra* **146** (1992), *no.* 2, 497–513. (Stephen R. Doty) **93e:20064** 20G40 (20C33, 20M30)

Kropatsch, Walter G. *see* **Theoretical foundations of computer vision, 93j:68009**

Kropholler, P. H. (*with* Chiswell, I. M.) Soluble right orderable groups are locally indicable. (English summary) *Canad. Math. Bull.* **36** (1993), *no.* 1, 22–29. (Summary) **93j:20088** 20F60 (20F16)

Krori, K. D. (*with* Purkayastha, Anuradha Das) Two models in quantum cosmology. (French summary) *Canad. J. Phys.* **70** (1992), *no.* 4, 230–237. 83F05 (83C45)

— (*with* Chaudhury, Tarakeswar; Borgohain, P.; Das, Kanika; Mahanta, Chandra Rekha) Charged solutions in higher dimensions. (English and French summaries) *Canad. J. Phys.* **70** (1992), *no.* 9, 752–759. (Summary) **93j:83071** 83E15 (83C22)

— (*with* Goswami, D.) A multipolar stationary object embedded in a gravitational field. *J. Math. Phys.* **33** (1992), *no.* 5, 1780–1781. (G. P. Pokhariyal) **93d:83042** 83C55

— (*with* Borgohain, P.; Das, Dipali) Quantum effects near a charged black hole singularity. *Modern Phys. Lett. A* **7** (1992), *no.* 23, 2051–2057. (Summary) **93c:83075** 83C57 (83C47)

— (*with* Borgohain, P.; Das, Dipali) Quantum effects near the black hole singularity in Kruskal space-time. (English summary) *Modern Phys. Lett. A* **7** (1992), *no.* 24, 2153–2157. (Vladimir Soloviev) **93g:83065** 83C57 (83C47, 83C75)

— (*with* Goswami, D.) A multipolar stationary object attached to a cosmic string in a background gravitational field. (English summary) *Gen. Relativity Gravitation* **25** (1993), *no.* 2, 117–122. 83F05

green-Krótki, Jan *see* **Green-Krótki, Jan**

Krotov, V. F. Observation of linear systems and the principles of quantum mechanics. (Russian. Russian summary) *Applied problems in optimal control: models, methods and algorithms (Russian)*, 5–9, 73, *Inst. Problem Upravlen., Moscow*, 1990. (*see* **93m:93004**) 93B07 (81P99)

— *see also* **Applied problems in optimal control: models, methods and algorithms, 93m:93004**

Krotova, È. N. Algorithms for the numerical solution of equations of dynamic models of developing systems. (Russian. Russian summary) *Kibernet. i Vychisl. Tekhn. No.* 93 (1992), 68–72. 93B40 (93A30)

Krueger, Robert John (*with* Kristensson, Gerhard) Time domain inversion techniques for electromagnetic scattering problems. (English summary) *Invariant imbedding and inverse problems (Albuquerque, NM*, 1990), 1–29, *SIAM, Philadelphia, PA*, 1992. (Summary) **93g:78022** 78A45 (78–08)

— *see also* **Corones, James P., 93m:01066**

Krug, Joachim (*with* Schwägerl, Michael) Subdiffusive transport in stochastic webs. *Phys. D* **52** (1991), *no.* 2-3, 143–156. (Jaroslav Stark) **93a:58124** 58F13 (58F05, 58F27, 70H05, 70K50)

Krug, T. (*with* Martin, Richard John) Information loss on the mean for spatial processes when some values are missing. *Comm. Statist. Theory Methods* **20** (1991), *no.* 7, 2169–2194. (David J. Strauss) **93c:62154** 62M30

Krüger, B. Kombinatorische Beweise eines Satzes von Birman und Hilden und eines Satzes von Magnus mit der Theorie der automorphen Mengen und der zugehörigen Zopfgruppenoperationen. (English summary) [Combinatorial proofs of a theorem of Birman and Hilden and a theorem of Magnus using the theory of automorphic sets and the corresponding braid group operations] *Abh. Math. Sem. Univ. Hamburg* **62** (1992), 11–27. (J. Wiegold) **93m:20051** 20F36 (20D45, 20F29)

Krüger, J. Condition for a bivariate normal probability distribution in phase space to be a quantum state. (English summary) *Phys. Rev. A* (3) **46** (1992), *no.* 9, 5385–5388. (Summary) **93i:81116** 81S30

Krüger, J. J. (*with* Shaw, I. S.) New fuzzy learning model with recursive estimation for dynamic systems. (English summary) *Fuzzy Sets and Systems* **48** (1992), *no.* 2, 217–229. 93E35 (04A72)

Krüger, Tyll (*with* Blanchard, Philippe) Isomorphism between epidemic dynamical processes on random graphs with rational transmission probability $\gamma < 1$ and transmission probability one. *Stochastic processes, physics and geometry (Ascona and Locarno*, 1988), 150–159, *World Sci. Publishing, Teaneck, NJ*, 1990. (Graham Brightwell) **93a:92014** 92D30 (00A69, 05C80, 60G99)

— (*with* Blanchard, Philippe) Critical parameters and threshold properties for epidemic dynamical systems on random graphs. *Probabilistic methods in mathematical physics (Siena*, 1991), 95–107, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93g:81002**) 92C60 (82C20, 92D30)

— (*with* Troubetzkoy, Serge) Markov partitions and shadowing for non-uniformly hyperbolic systems with singularities. (English summary) *Ergodic Theory Dynamical Systems* **12** (1992), *no.* 3, 487–508. (Volker Warstat) **93h:58116** 58F15 (58F11)

Kruglikova, O. P. Generalized resolvents and spectral functions of an integro-differential operator. (Russian) *Functional analysis, No.* 33 (*Russian*), 46–49, *Ul'yanovsk. Gos. Ped. Inst., Ul'yanovsk*, 1992. (*see* **93g:47002**) 47G20 (47A10, 47N20)

Krugljak, N. Ya. *see* **Kruglyak, N. Ya.**

Kruglov, V. E. On algebraic functions divisible by a given divisor. (Russian) *Dokl. Akad. Nauk SSSR* **321** (1991), *no.* 1, 11–13; *translation in Soviet Math. Dokl.* **44** (1992), *no.* 3, 647–649. (J. S. Joel) **93a:14026** 14H55 (30F10)

Kruglov, V. I. (*with* Logvin, Yu. A.; Volkov, V. M.) The theory of spiral laser beams in nonlinear media. (English summary) *J. Modern Opt.* **39** (1992), *no.* 11, 2277–2291. (Summary) **93j:78021** 78A60

Kruglov, V. M. (*with* Korolev, V. Yu.) Convergence of moments of randomly indexed random sequences. *Probability theory and mathematical statistics, Vol. II (Vilnius*, 1989), 10–21, "*Mokslas*", *Vilnius*, 1990. (Zdzisław Rychlik) **93c:60048** 60F25 (60F05)

Kruglov, V. V. Averaged transients in a digital control system under an asynchronous computer operating mode. (Russian. Russian summary) *Avtomat. i Telemekh.* **1992**, *no.* 3, 101–107; *translation in Automat. Remote Control* **53** (1992), *no.* 3, *part* 2, 409–415. 93C85

Kruglyak, N. Ya. (*with* Brudnyi, Yu. A.) ★ Interpolation functors and interpolation spaces. Vol. I. Translated from the Russian by Natalie Wadhwa. With a preface by Jaak Peetre. North-Holland Mathematical Library, 47. *North-Holland Publishing Co., Amsterdam*, 1991. xvi+718 *pp. ISBN* 0-444-88001-1 (E. Gerlach) **93b:46141** 46M35 (46–02, 47–02)

— (*with* Mastyło, Mieczysław) Correct interpolation functors of orbits. *J. Funct. Anal.* **102** (1991), *no.* 2, 401–413. (Naum Zobin) **93f:46110** 46M35 (46M15)

Krumpholz, Michael (*with* Russer, Peter) The Hilbert space formulation of the TLM method. (English summary) *Internat. J. Numer. Modelling* **6** (1993), *no.* 1, 29–45. 65P05 (78–08)

el-Krunz, Sadi M. *see* **El-Krunz, Sadi M.**

Krupa, Andrzej On various generalizations of the notion of an $\mathfrak{F}$-power to the case of unbounded operators. (English summary) *Bull. Polish Acad. Sci. Math.* **38** (1990), *no.* 1-12, 159–166. (Ioana Cioranescu) **93j:47024** 47A60 (46B08, 46M07, 47D03)

Krupa, Martin (*with* Aronson, D. G.; Golubitsky, Martin) Coupled arrays of Josephson junctions and bifurcation of maps with S_N symmetry. *Nonlinearity* **4** (1991), *no.* 3, 861–902. (Michael J. Field) **93d:58107a** 58F14 (34C23, 34C25, 58F22)

— (*with* Roberts, Mark) Symmetry breaking and symmetry locking in equivariant circle maps. (English summary) *Phys. D* **57** (1992), *no.* 3-4, 417–435. (Ji Bin Li) **93g:58108** 58F14

Krupa, V. G. (*with* Ivanov, M. Ya.) Calculation of the three-dimensional interaction between a shock wave and a boundary layer on a cylinder. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **32** (1992), *no.* 4, 623–634; *translation in Comput. Math. Math. Phys.* **32** (1992), *no.* 4, 531–541. (Summary) **93d:76037** 76L05 (76M20, 76N15)

Krupetskiĭ, S. L. Intermediate subgroups of a real isotropic orthogonal group. (Russian) *Rings and linear groups (Russian)*, 54–59, *Kuban. Gos. Univ., Krasnodar*, 1988. (*see* **93i:00023**) 20G20

Krupička, Miloš (*with* Kučera, Vladimír; Ježek, Jan) Numerical analysis of Diophantine equations. (English summary) *Advanced methods in adaptive control for industrial applications (Praha*, 1990), 128–136, *Lecture Notes in Control and Inform. Sci.*, 158, *Springer, Berlin*, 1991. (Summary) **93e:65077** 65H05 (11Y50)

Krupnik, Ilya Defect basis property of the eigenvectors of a selfadjoint operator-valued function and formula for defect. (English summary) *Integral Equations Operator Theory* **16** (1993), *no.* 1, 131–144. (I. Spitkovsky) **93j:47019** 47A56 (47A70)

Krupnik, Mark Changing the spectrum of an operator by perturbation. Sixth Haifa Conference on Matrix Theory (Haifa, 1990). *Linear Algebra Appl.* **167** (1992), 113–118. (Summary) **93d:47026** 47A55 (15A18, 47A10)

Krupnik, N. Ya. (*with* Gohberg, Israel) ★ One-dimensional linear singular integral equations. I. Introduction. Translated from the 1979 German translation by Bernd Luderer and Steffen Roch and revised by the authors. Operator Theory: Advances and Applications, 53. *Birkhäuser Verlag, Basel*, 1992. 266 *pp. ISBN* 3-7643-2584-4 (A. Böttcher) **93c:47061** 47G10 (45E10, 47A53, 47B35, 47N20)

— (*with* Gohberg, Israel) ★ One-dimensional linear singular integral equations. Vol. II. General theory and applications. Translated from the 1979 German translation by S. Roch and revised by the authors. Operator Theory: Advances and Applications, 54. *Birkhäuser Verlag, Basel*, 1992. 232 *pp. ISBN* 3-7643-2796-0 (A. Böttcher) **93k:47059** 47G10 (45E10, 47A50, 47A53, 47B35, 47N20)

— Minimal number of idempotent generators of matrix algebras over arbitrary field. (English summary) *Comm. Algebra* **20** (1992), *no.* 11, 3251–3257. (E. Formanek) **93h:16058** 16S50

Krüppel, Manfred (*with* Górnicki, Jarosław) Fixed point theorems for mappings with Lipschitzian iterates. *Nonlinear Anal.* **19** (1992), *no.* 4, 353–363. (Paolo M. Soardi) **93i:47086** 47H10 (47H09)

Krupski, Paweł (*with* Duda, Edwin) A characterization of finitely junctioned continua. *Proc. Amer. Math. Soc.* **116** (1992), *no.* 3, 839–841. (James T. Rogers, Jr.) **93a:54031** 54F15

Kruse, Kai-Olaf (*with* Rein, Gerhard) A stability result for the relativistic Vlasov-Maxwell system. (English summary) *Arch. Rational Mech. Anal.* **121** (1992), *no.* 2, 187–203. (R. Glassey) **93j:82070** 82D10 (35Q99, 45K05, 76X05, 82C70)

Kruse, Rudolf (*with* Meyer, Klaus Dieter) Confidence intervals for the parameters of a linguistic random variable. *Combining fuzzy imprecision with probabilistic uncertainty in decision making*, 113–123, *Lecture Notes in Econom. and Math. Systems*, 310, *Springer, Berlin*, 1988. (*see* **93c:90002**) 04A72 (62F25)

— (*with* Klawonn, F.) Equality relations as a basis for fuzzy control. (English summary) *Fuzzy Sets and Systems* **54** (1993), *no.* 2, 147–156. 93C42 (04A72)

Kruseman Aretz, Frans E. J. (*with* Leermakers, René; Augusteijn, Lex) A functional LR parser. (English summary) *Theoret. Comput. Sci.* **104** (1992), *no.* 2, 313–323. (Summary) **93i:68115** 68Q52

Krushev, Nedyalko I. Nondifferentiable design optimization involving the eigenvalues of control system matrices. (English summary) *System modelling and optimization (Zurich*, 1991), 374–383, *Lecture Notes in Control and Inform. Sci.*, 180, *Springer, Berlin*, 1992. (*see* **93e:90003**) 49J52 (49Q10)

Krushkal', S. L. New developments in the theory of quasi-conformal mappings. *Geometric function theory and applications of complex analysis to mechanics: studies in complex analysis and its applications to partial differential equations*, 2 (*Halle*, 1988), 3–26, *Pitman Res. Notes Math. Ser.*, 257, *Longman Sci. Tech., Harlow*, 1991. (K. Strebel) **93e:30086** 30F30 (30C62, 30C75, 30F45)

— Approximation of holomorphic functions and of Teichmüller spaces. Proceedings of the Colloquium on Complex Analysis and the Sixth Romanian-Finnish Seminar. *Rev. Roumaine Math. Pures Appl.* **36** (1991), *no.* 9-10, 537–542. (From the text) **93g:30066** 30F60 (32G15)

— New methods and trends in geometric function theory. *Algebra and analysis (Tomsk*, 1989), 81–89, *Amer. Math. Soc. Transl. Ser.* 2, 151, *Amer. Math. Soc., Providence, RI*, 1992. (D. Gaier) **93j:30016** 30C62 (32G15)

Kruskal, Clyde P. (*with* Snir, Marc) Cost-performance tradeoffs for interconnection networks. (English summary) *Discrete Appl. Math.* **37/38** (1992), 359–385. (Qiao Li) **93j:68015** 68M10 (68M20)

Kruskal, Martin D. (*with* Hu, Ji Shan) Reflection coefficient beyond all orders for singular problems. (English summary) *Asymptotics beyond all orders (La Jolla, CA*, 1991), 247–253, *NATO Adv. Sci. Inst. Ser. B Phys.*, 284, *Plenum, New York*, 1991. (*see* **93i:00016**) 34L25 (34E20)

— (*with* Hu, Ji Shan) Reflection coefficient beyond all orders for singular problems. I. Separated critical points on the nearest critical level line. *J. Math. Phys.* **32** (1991), *no.* 9, 2400–2405. (Summary) **93a:34095a** 34L25 (34E15, 34L40)

— (*with* Hu, Ji Shan) Reflection coefficient beyond all orders for singular problems. II. Closed-spaced critical points on the nearest critical level line. *J. Math. Phys.* **32** (1991), *no.* 10, 2676–2678. (Summary) **93a:34095b** 34L25 (34E15, 34L40)

— (*with* Segur, Harvey) Asymptotics beyond all orders in a model of crystal growth. *Stud. Appl. Math.* **85** (1991), *no.* 2, 129–181. (Mark S. Ramm) **93a:82058** 82D25 (34E15)

— (*with* Joshi, Nalini) A direct proof that solutions of the first Painlevé equation have no movable singularities except poles. (English summary) *Nonlinear evolution equations and dynamical systems (Baia Verde*, 1991), 310–317, *World Sci. Publishing, River Edge, NJ*, 1992. (F. Oliveri) **93k:34010** 34A20 (30D05, 34A12)

— (*with* Hu, Ji Shan) Reflection coefficient problems for weakly nonlinear wave equations. (English summary) *SIAM J. Appl. Math.* **52** (1992), *no.* 6, 1584–1596. (Peter N. Zhevandrov) **93i:34099** 34E20 (34L25, 81Q20)

— (*with* Joshi, Nalini) The Painlevé connection problem: an asymptotic approach. I. *Stud. Appl. Math.* **86** (1992), *no.* 4, 315–376. (I. P. Martynov) **93c:34013** 34A20 (34A25, 34A34, 34E05)

Krüskemper, Martin The quadratic form transfer and valuations. *Manuscripta Math.* **77** (1992), *no.* 1, 47–61. (David W. Lewis) **93i:11042** 11E12 (11E81)

Krussel, John W. (*with* Guichard, David R.) Pair labelings of graphs. *SIAM J. Discrete Math.* **5** (1992), *no.* 1, 144–149. (J. R. Griggs) **93d:05052** 05C15 (05C35, 05C78)

Krutikov, V. S. On the solution of the inverse problem for the wave equation with nonlinear conditions in domains with moving boundaries. (Russian) *Prikl. Mat. Mekh.* **55** (1991), *no.* 6, 1058–1062; *translation in J. Appl. Math. Mech.* **55** (1991), *no.* 6, 948–953 (1992). (Plamen D. Stefanov) **93a:35098** 35L05 (35A30, 35R30, 35R35)

Krut'ko, P. D. Adaptive algorithms for the control of rotational motions and spatial orientation of a rigid body. (Russian) *Dokl. Akad. Nauk* **324** (1992), *no.* 2, 277–281; *translation in Soviet Phys. Dokl.* **37** (1992), *no.* 5, 219–221. (From the text) **93i:70029** 70Q05 (70E15, 93C85)

— Algorithms for the control of the motion of dynamical systems with minimal information. (Russian) *Dokl. Akad. Nauk* **325** (1992), *no.* 2, 242–246; *translation in Soviet Phys. Dokl.* **37** (1992), *no.* 7, 319–321. (Introduction) **93i:93053** 93B40 (93C05)

— Asymptotic properties of control systems that are optimal with respect to quadratic functionals. (Russian) *Dokl. Akad. Nauk* **326** (1992), *no.* 2, 241–245; *translation in Soviet Phys. Dokl.* **37** (1992), *no.* 9, 450–451 (1993). (From the introduction) **93j:49037** 49N10 (93D15)

Krutov, B. P. (*with* Kononenko, A. F.; Chistyakov, Yu. E.) Dynamic hierarchical N-person games theory with coalitions. *Dynamic games in economic analysis* (*Espoo*, 1990), 231–238, *Lecture Notes in Control and Inform. Sci.*, 157, *Springer, Berlin*, 1991. (*see* **93d:90003**) 90D06 (93A13)

Kruzhilin, N. G. Two-dimensional spheres on the boundaries of pseudoconvex domains in $\mathbf{C}^2$. (Russian) *Izv. Akad. Nauk SSSR Ser. Mat.* **55** (1991), *no.* 6, 1194–1237; *translation in Math. USSR-Izv.* **39** (1992), *no.* 3, 1151–1187. (Harold P. Boas) **93e:32017** 32D10 (32E20, 32F25)

Kruzhkov, S. N. Conservation laws with the infinite domain of dependence on initial data. *Differential equations and control theory* (*Iaşi*, 1990), 149–162, *Pitman Res. Notes Math. Ser.*, 250, *Longman Sci. Tech., Harlow*, 1991. (Pierre A. Vuillermot) **93a:35104** 35L65 (35B30, 35D05)

Kryachko, E. S. (*with* Ludeña, Eduardo V.; Koga, Toshikatsu) Formulation of N- and v-representable density functional theory. III. Excited states. (English summary) *J. Math. Chem.* **11** (1992), *no.* 4, 325–339. (A. O. Barut) **93m:81164** 81V45

Kryachok, N. N. An algorithm for the sequential analysis of variants for a linear multicriterial problem of large dimension. (Russian. Russian summary) *Vestnik Kiev. Univ. Model. Optim. Slozhn. Sist. No.* 9 (1990), 92–94. 90C29 (90C05)

Kryakin, Yu. V. On the theorem of H. Whitney in spaces L^p, $1 \le p \le \infty$. *Math. Balkanica (N.S.)* **4** (1990), *no.* 3, 258–271 (1991). (Martin E. Price) **93i:41002** 41A10

— (*with* Kovalenko, L. G.) Whitney constants in the classes L^p, $1 \le p < \infty$. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* **1992**, *no.* 1, 69–77. (Ting Fu Wang) **93m:46028** 46E30 (41A44, 41A63)

Kryanev, A. V. (*with* Arsenin, V. Ya.) Generalized maximum likelihood method and its application for solving ill-posed problems. (English summary) *Ill-posed problems in natural sciences* (*Moscow*, 1991), 3–12, *VSP, Utrecht*, 1992. (*see* **93m:00041**) 65C99 (65U05)

Kryazhimskiĭ, A. V. The problem of optimization of the ensured result: unimprovability of full-memory strategies. *Constantin Carathéodory: an international tribute, Vol. I, II*, 636–675, *World Sci. Publishing, Teaneck, NJ*, 1991. (Anatoly I. Astrovskiĭ) **93a:93076** 93C73 (49K40, 90D25)

— Dynamical regularizibility of inverse problems for control systems. *System modelling and optimization* (*Zurich*, 1991), 384–393, *Lecture Notes in Control and Inform. Sci.*, 180, *Springer, Berlin*, 1992. (*see* **93e:90003**) 49N50 (93B11)

— Order optimal real-time observers for completely observable control systems. *Appl. Math. Comput. Sci.* **2** (1992), *no.* 1, 149–154. (Summary) **93b:93020** 93B07 (93C15)

Kryazhovskikh, G. V. (*with* Kukin, G. P.) Algorithmic properties of free rings. (Russian) *Sibirsk. Mat. Zh.* **32** (1991), *no.* 6, 87–99, 204; *translation in Siberian Math. J.* **32** (1991), *no.* 6, 971–981 (1992). (A. A. Iskander) **93e:03016** 03B25 (03C60, 16S15)

— (*with* Kukin, G. P.) Algorithmic properties of free rings. *Proceedings of the International Conference on Algebra, Part 2* (*Novosibirsk*, 1989), 701–704, *Contemp. Math.*, 131, *Part 2, Amer. Math. Soc., Providence, RI*, 1992. (Sergei V. Rychkov) **93e:16004** 16D40 (03C60)

Krygin, A. V. (*with* Sukochev, F. A.; Chilin, V. I.) Uniform convexity and local uniform convexity of symmetric spaces of measurable operators. (Russian) *Dokl. Akad. Nauk SSSR* **317** (1991), *no.* 3, 555–558; *translation in Soviet Math. Dokl.* **43** (1991), *no.* 2, 445–448. (Alexander Isaakovich Shtern) **93b:46123** 46L50 (46E30, 47D40)

— (*with* Chilin, V. I.; Sukochev, F. A.) Extreme points of convex fully symmetric sets of measurable operators. *Integral Equations Operator Theory* **15** (1992), *no.* 2, 186–226. (Subhash J. Bhatt) **93g:46065** 46L50 (46L10, 47D40)

— (*with* Chilin, V. I.; Sukochev, F. A.) Local uniform and uniform convexity of noncommutative symmetric spaces of measurable operators. *Math. Proc. Cambridge Philos. Soc.* **111** (1992), *no.* 2, 355–368. (Alexander Isaakovich Shtern) **93b:46124** 46L50 (46E30, 47D40)

Krylov, N. V. On explicit formulas for solutions of evolutionary SPDEs (a kind of introduction to the theory). (English summary) *Stochastic partial differential equations and their applications* (*Charlotte, NC*, 1991), 153–164, *Lecture Notes in Control and Inform. Sci.*, 176, *Springer, Berlin*, 1992. (*see* **93b:60006**) 60H15 (35C05, 35R60)

— On one-point weak uniqueness for elliptic equations. *Comm. Partial Differential Equations* **17** (1992), *no.* 11-12, 1759–1784. (Kazuaki Taira) **93m:35057** 35J25 (35D05, 60J35)

— On the first quasiderivatives of solutions of Itô stochastic equations. (Russian. Russian summary) *Izv. Ross. Akad. Nauk Ser. Mat.* **56** (1992), *no.* 2, 398–426; *translation in Russian Acad. Sci. Izv. Math.* **40** (1993), *no.* 2, 377–403. (Ya. I. Bilopol's'ka) **93m:60119** 60H10 (60H30)

Krylov, P. A. Torsion-free abelian groups as flat modules over their endomorphism rings. (Russian. Russian summary) *Abelian groups and modules, No.* 8 (*Russian*), 90–96, 173–174, *Tomsk. Gos. Univ., Tomsk*, 1989. (Summary) **93k:16002** 16D40 (20K15)

— Completely transitive torsion-free abelian groups. (Russian) *Algebra i Logika* **29** (1990), *no.* 5, 549–560, 626; *translation in Algebra and Logic* **29** (1990), *no.* 5, 362–370 (1991). (L. Bican) **93a:20084** 20K20

Krylov, V. I. *see* **Burakov, V. S. et al., 93m:01064**

Krylova, T. V. Approximate solution of continuous-discrete boundary value problems. (Russian. Russian summary) *Model. Mekh.* **5** (1991), *no.* 5, 53–60. (Summary) **93i:65114** 65N35

Krymov, V. A. (*with* Dolzhanskiĭ, F. V.; Manin, D. Yu.) Quasi two-dimensional coherent structures. (English summary) *Nonlinear dynamics of structures* (*Vladimir Maiakovskiĭ*, 1990), 1–20, *World Sci. Publishing, River Edge, NJ*, 1991. (*see* **93g:76004**) 76F20 (76E99)

Krymskikh, D. A. (*with* Blokhin, A. M.) Symmetrization of equations of magnetohydrodynamics with anisotropic pressure. (Russian. Russian summary) *Boundary value problems for partial differential equations* (*Russian*), 3–19, 138, *Akad. Nauk SSSR Sibirsk. Otdel., Inst. Mat., Novosibirsk*, 1990. (*see* **93d:35002**) 35Q99 (76W05)

Krynicki, Michał (*with* Tuschik, Hans-Peter) An axiomatization of the logic with the rough quantifier. *J. Symbolic Logic* **56** (1991), *no.* 2, 608–617. (G. Mirkowska) **93b:03062** 03C80

— (*with* Herre, Heinrich; Pinus, A. G.; Väänänen, Jouko) The Härtig quantifier: a survey. *J. Symbolic Logic* **56** (1991), *no.* 4, 1153–1183. (Bernd Dahn) **93c:03051** 03C80 (03–02, 03B25)

— *see also* **Quantifiers, 93k:03002**

Krysicki, W. On the modes of a mixture of two Laplace distributions. (Polish. Polish summary) *Mat. Stos.* **35** (1992), 131–134. 62E15

Krysov, Yu. A. Making and coordinating decisions in certain procedures of parametric analysis in optimization problems. *Soviet J. Comput. Systems Sci.* **29** (1991), *no.* 4, 142–155; *translated from Izv. Akad. Nauk SSSR Tekhn. Kibernet.* **1990**, *no.* 6, 43–57 (*Russian*). (Krzysztof Malinowski) **93b:90093** 90C31 (90–04, 90A05, 93A14)

Kryszewski, Wojciech (*with* Conti, Giuseppe; Zecca, Pietro) On the solvability of systems of nonconvex inclusions in Banach spaces. *Ann. Mat. Pura Appl.* (4) **160** (1991), 371–408 (1992). (Introduction) **93m:34020** 34A60 (34G20, 47H04, 47H15, 47N20)

— (*with* Górniewicz, Lech; Granas, Andrzej) On the homotopy method in the fixed point index theory of multi-valued mappings of compact absolute neighborhood retracts. *J. Math. Anal. Appl.* **161** (1991), *no.* 2, 457–473. (M. van de Vel) **93e:55005** 55M20 (47H10, 54C60, 54H25)

— (*with* Górniewicz, Lech) Topological degree theory for acyclic mappings related to the bifurcation problem. (Italian summary) *Boll. Un. Mat. Ital. B* (7) **6** (1992), *no.* 3, 579–595. (Christian Fenske) **93k:58030** 58C30 (47H11, 58E07)

Kryukov, V. I. *see* **Neural networks—theory and architecture, 93h:92002; Neurocomputers and attention, 93j:92001a** *and* **93j:92001b**

Kryukovskiĭ, A. S. (*with* Rastyagaev, D. V.) Classification of unimodal and bimodal corner singularities. (Russian) *Funktsional. Anal. i Prilozhen.* **26** (1992), *no.* 3, 77–79; *translation in Functional Anal. Appl.* **26** (1992), *no.* 3, 213–215. (J. S. Joel) **93k:58024** 58C27 (32S05)

ewert-Krzemieniewski, Stanisław *see* **Ewert-Krzemieniewski, Stanisław**

Krzykowski, Grzegorz The equivalence of the point and L_1 consistency of the spline density estimators. *Stochastic methods in experimental sciences* (*Szklarska Poręba*, 1989), 287–292, *World Sci. Publishing, River Edge, NJ*, 1990. (Summary) **93b:62063** 62G05

Krzyż, J. G. Generalized Neumann-Poincaré operator and chord-arc curves. (Polish summary) *Ann. Univ. Mariae Curie-Sklodowska Sect. A* **43** (1989), 69–78 (1991). (Christopher Bishop) **93c:30012** 30C35 (30C62, 30E20, 47G10)

Krzyżak, Adam On exponential bounds on the Bayes risk of the nonparametric classification rules. *Nonparametric functional estimation and related topics* (*Spetses*, 1990), 347–360, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 335, *Kluwer Acad. Publ., Dordrecht*, 1991. (Summary) **93a:62061** 62G05 (62H30)

— Global convergence of the recursive kernel regression estimates with applications in classification and nonlinear system estimation. *IEEE Trans. Inform. Theory* **38** (1992), *no.* 4, 1323–1338. (Summary) **93d:62071** 62G05

— (*with* Partyka, Marian A.) On identification of block orientated systems by nonparametric techniques. (English summary) *Internat. J. Systems Sci.* **24** (1993), *no.* 6, 1049–1066. 93E12

— Identification of nonlinear block-oriented systems by the recursive kernel estimate. (English summary) *J. Franklin Inst.* **330** (1993), *no.* 3, 605–627. (Summary) **93m:93029** 93B30

Krzyżewski, Karol On 4-lacunary sequences generated by ergodic toral endomorphisms. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 2, 469–478. (Karl Petersen) **93g:28017** 28D05

Kschischang, Frank R. (*with* Pasupathy, Subbarayan) Some ternary and quaternary codes and associated sphere packings. *IEEE Trans. Inform. Theory* **38** (1992), *no.* 2, *part* 1, 227–246. (Summary) **93a:94029** 94B05 (52C17, 94B27)

Kshevetskiĭ, S. P. Invariants of acoustic and internal gravity waves in a nonisothermic atmosphere. (Russian. Russian summary) *Gidromekh. (Kiev) No.* 65 (1992), 29–38. (Summary) **93k:76026** 76C15 (76Q05, 86A10)

Kshirsagar, Anant M. (*with* Weissfeld, L. A.) A modified growth curve model and its application to clinical studies. (English summary) *Austral. J. Statist.* **34** (1992), *no.* 2, 161–168. (Summary) **93g:62076** 62H12 (62H15, 62P05)

Ktitarev, D. V. (*with* Egikyan, R. S.) The Feynman formula in phase space for systems of pseudodifferential equations with analytic symbols. (Russian. Russian summary) *Mat. Zametki* **51** (1992), *no.* 5, 44–50, 157; *translation in Math. Notes* **51** (1992), *no.* 5-6, 453–457. (J. S. Joel) **93g:35154** 35S10 (35R20, 58D25, 58D30, 81Q05, 81S40)

Ktorides, C. N. (*with* Papaloucas, L. C.) A geometric realization of van Hove's quantization prescription. *Rep. Math. Phys.* **30** (1991), *no.* 1, 1–8 (1992). (Alexander D. Popov) **93g:81057** 81S10 (58F06, 81S30)

— (*with* Karanikas, A. I.) Field theoretical origin of excitation path integrals. *Phys. Lett. B* **275** (1992), *no.* 3-4, 403–409. (From the text) **93a:81102** 81S40 (81T99)

Ku, Hsū Tung (*with* Ku, Mei Chin) Eigenvalue estimates and the generalized Pólya conjecture. *Bull. Inst. Math. Acad. Sinica* **19** (1991), *no.* 4, 289–295. (Günter Berger) **93b:35101** 35P15 (35J30)

Ku, Hwar-Ching (*with* Taylor, Thomas D.; Hirsh, Richard S.) Pseudospectral matrix element methods for flow in complex geometry. (English summary) *Spectral and high order methods for partial differential equations* (*Como*, 1989), 381–388, *North-Holland, Amsterdam*, 1990. (*see* **93d:65005**) 65N35 (65N55, 76D05, 76M25)

— A submerged body moving in a stratified medium via domain decomposition technique. (English summary) *Fifth International Symposium on Domain Decomposition Methods for Partial Differential Equations* (*Norfolk, VA*, 1991), 498–505, *SIAM, Philadelphia, PA*, 1992. (*see* **93g:65009**) 76M25 (65M55, 76V05)

Ku, Mei Chin (*with* Ku, Hsū Tung) Eigenvalue estimates and the generalized Pólya conjecture. *Bull. Inst. Math. Acad. Sinica* **19** (1991), *no.* 4, 289–295. (Günter Berger) **93b:35101** 35P15 (35J30)

Ku, Takang (*with* Kuo, C.-C. Jay) On the spectrum of a family of preconditioned block Toeplitz matrices. *SIAM J. Sci. Statist. Comput.* **13** (1992), *no.* 4, 948–966. (Summary)

93b:65064 65F15 (65F10)

— (*with* Kuo, C.-C. Jay) A minimum-phase *LU* factorization preconditioner for Toeplitz matrices. (English summary) *SIAM J. Sci. Statist. Comput.* **13** (1992), *no.* 6, 1470–1487. (James Weldon Demmel) **93h:65043** 65F10

— (*with* Kuo, C.-C. Jay) Spectral properties of preconditioned rational Toeplitz matrices. (English summary) *SIAM J. Matrix Anal. Appl.* **14** (1993), *no.* 1, 146–165. (Guo Liang Chen) **93m:65047** 65F15 (65F35)

Ku, Tung-Hsin *see* **Gu, Tong Xin**

Kuan, Li Chen (*with* Fisher, Brian) On defining a noncommutative product of distributions in m variables. *J. Natur. Sci. Math.* **31** (1991), *no.* 2, 95–102. (Bl. P. Damyanov) **93a:46073** 46F10 (44A35, 46F12)

— (*with* Fisher, Brian) A noncommutative neutrix product of distributions on $\mathbf{R}^m$. (Serbo-Croatian summary) *Zb. Rad. Prirod.-Mat. Fak. Ser. Mat.* **21** (1991), *no.* 1, 135–146. (Bl. P. Damyanov) **93b:46070** 46F10

Kuang, Ji Chang On H^p boundedness of singular integral operators. (Chinese summary) *Acta Sci. Natur. Univ. Norm. Hunan.* **15** (1992), *no.* 2, 106–109. (C. Carton-Lebrun) **93h:42017** 42B20 (42B30)

Kuang, Jiao Xun (*with* Lu, Lian Hua) On the conditions for the existence and uniqueness of solution to the nonlinear equations in multiderivative block methods. (Chinese summary) *Shanghai Shifan Daxue Xuebao Ziran Kexue Ban* **20** (1991), *no.* 3, 1–6. (Xin Yuan Wu) **93c:65087** 65L05 (34A45, 47H15)

Kuang, Le Man $N = 2$ superconformal algebra on higher-genus Riemann surfaces. *J. Phys. A* **25** (1992), *no.* 10, 2911–2918. (A. K. Raina) **93i:81238** 81T40 (17B81, 81R10)

— The q-supercoherent states of the q-deformed su(2) superalgebra. (English summary) *J. Phys. A* **25** (1992), *no.* 18, 4827–4833. (A. M. Gavrilik) **93j:81046** 81R50 (17B37, 81R30)

— (*with* Wang, Fa Bo) Even and odd q-coherent state representations of the quantum Heisenberg-Weyl algebra. (English summary) *Phys. Lett. A* **169** (1992), *no.* 4, 225–228. (Chang Pu Sun) **93h:81062** 81R50 (17B35, 17B37, 81R30)

— (*with* Wang, Fa Bo) Even and odd q-coherent states and their optical statistics properties. (English summary) *J. Phys. A* **26** (1993), *no.* 2, 293–300. (Chang Pu Sun) **93m:81067** 81R50 (17B37, 81R30, 81S05, 81V80)

Kuang, Yang Boundedness of solutions in neutral delay predator-prey and competition systems. (English summary) *Differential equations models in biology, epidemiology and ecology* (*Claremont, CA*, 1990), 210–218, *Lecture Notes in Biomath.*, 92, *Springer, Berlin*, 1991. (Summary) **93h:92036** 92D40 (34K15, 34K40)

— (*with* Smith, Hal L.) Periodic solutions of differential delay equations with threshold-type delays. *Oscillation and dynamics in delay equations* (*San Francisco, CA*, 1991), 153–176, *Contemp. Math.*, 129, *Amer. Math. Soc., Providence, RI*, 1992. (Jacques Bélair) **93j:34106** 34K15 (92D25)

— (*with* Haddock, J. R.) Asymptotic theory for a class of nonautonomous delay differential equations. *J. Math. Anal. Appl.* **168** (1992), *no.* 1, 147–162. (L. A. V. Carvalho) **93f:34131** 34K20 (34K25)

— Global attractivity and periodic solutions in delay-differential equations related to models in physiology and population biology. *Japan J. Indust. Appl. Math.* **9** (1992), *no.* 2, 205–238. (Jacques Bélair) **93j:34103** 34K15 (92D25)

— (*with* Smith, Hal L.) Convergence in Lotka-Volterra type diffusive delay systems without dominating instantaneous negative feedbacks. (English summary) *J. Austral. Math. Soc. Ser. B* **34** (1993), *no.* 4, 471–494. (Summary) **93k:35266** 35R10 (34K30, 35B40, 35K55, 92D25)

— (*with* Smith, Hal L.) Convergence in Lotka-Volterra-type delay systems without instantaneous feedbacks. (English summary) *Proc. Roy. Soc. Edinburgh Sect. A* **123** (1993), *no.* 1, 45–58. (Anthony Leung) **93m:34130** 34K20 (45J05, 92D40)

Kuang, Zheng (*with* Han, Bo; Liu, Jia Qi) A modified algorithm for the PST method. (English summary) *Mathematical and intelligent models in system simulation, I, II* (*Brussels*, 1990), 17–19, *IMACS Ann. Comput. Appl. Math.*, 10, 11, *Baltzer, Basel*, 1991. (*see* **93c:93005**) 65N99 (35R30)

Kuang, Zhi Quan (*with* Liang, Can Bin) On the Rácz and Szabados constructions of the c-boundary. (English summary) *Phys. Rev. D* (3) **46** (1992), *no.* 10, 4253–4256. (Robert J. Low) **93i:83070** 83C75

Kuba, Gerald (*with* Nowak, Werner Georg) On representations of positive integers as a sum of two polynomials. *Arch. Math.* (*Basel*) **58** (1992), *no.* 2, 147–156. (Wolfgang Müller) **93b:11131** 11P21 (11P55)

Kubáček, Lubomír Equivalent algorithms for estimation in linear model with condition. *Math. Slovaca* **41** (1991), *no.* 4, 401–421. (H. K. Hsieh) **93c:62118** 62J05 (62F10)

— Estimation of the first and second order parameters in regression models with special structure. *J. Statist. Plann. Inference* **30** (1992), *no.* 2, 195–211. (D. S. Tracy) **93d:62123** 62J05 (62H12)

Kubáček, Zbyněk (*with* Šeda, Valter) On the connectedness of the set of fixed points of a compact operator in the Fréchet space $C^m(\langle b, \infty), \mathbf{R}^n)$. *Czechoslovak Math. J.* **42(117)** (1992), *no.* 4, 577–588. (A. I. Perov) **93i:47092** 47H10 (34K05, 47N20)

Kubáčková, Ludmila The locally best estimators of the first and second order parameters in epoch regression models. *Appl. Math.* **37** (1992), *no.* 1, 1–12. (Júlia Volaufová) **93f:62097** 62J10 (62J05)

Kubale, Marek Some results concerning the complexity of restricted colorings of graphs. *Discrete Appl. Math.* **36** (1992), *no.* 1, 35–46. (Gary MacGillivray) **93d:05053** 05C15 (05C85, 68Q25, 68R10)

Kubarski, Jan A criterion for the minimal closedness of the Lie subalgebra corresponding to a connected nonclosed Lie subgroup. *Rev. Mat. Univ. Complut. Madrid* **4** (1991), *no.* 2-3, 159–176. (K. C. H. Mackenzie) **93c:22011** 22E15 (17B66, 22E60, 53C12)

Kubaszewski, Władysław Periodic solutions of the parabolic limit problem for the half-space. (Polish summary) *Opuscula Math.* **1991**, *no.* 10, 97–102. (From the introduction) **93e:35046** 35K20 (35B10)

Kubát, Josef (*with* Brostow, Witold; Cook, Robert) Molecular dynamics and Monte Carlo simulations of polymeric materials: chain relaxation dynamics. *Integral methods in science and engineering—90* (*Arlington, TX*, 1990), 22–34, *Ser. Comput. Phys. Process. Mech. Thermal Sci., Hemisphere, New York*, 1991. (*see* **93f:00014**) 65C05

Kuber, M. M. (*with* Dharmadhikari, A. D.) The association in time of a binary semi-Markov process. (English summary) *Statist. Probab. Lett.* **14** (1992), *no.* 5, 343–348. (M. Arató) **93j:60136** 60K15 (62H20)

Kubiaczyk, Ireneusz (*with* Dawidowski, Marian; Kisielewicz, Michał) Existence theorem for hyperbolic differential inclusion with Carathéodory right hand side. *Discuss. Math.* **10** (1990), 69–75 (1991). (Summary) **93a:35161** 35R70 (35L70)

— Classical solutions of differential inclusions on closed sets. (English summary) Third International Seminar on Ordinary Differential Equations (Poznań, 1990). *Fasc. Math. No.* 23 (1991), 77–80 (1992). (G. Anichini) **93f:34028** 34A60 (34A12, 49K24)

— (*with* Dawidowski, Marian) On bounded solutions of hyperbolic differential inclusion in Banach spaces. *Demonstratio Math.* **25** (1992), *no.* 1-2, 153–159. (Sadakazu Aizawa) **93i:35160** 35R70 (35L70, 35R20, 47N20)

Kubiák, Tomasz The topological modification of the L-fuzzy unit interval. *Applications of category theory to fuzzy subsets* (*Linz*, 1989), 275–305, *Theory Decis. Lib. Ser. B Math. Statist. Methods*, 14, *Kluwer Acad. Publ., Dordrecht*, 1992. (Siegfried Gottwald) **93f:54007** 54A40 (04A72)

— (*with* Kotzé, Wesley) Fuzzy topologies of Scott continuous functions and their relation to the hypergraph functor. (English summary) *Quaestiones Math.* **15** (1992), *no.* 2, 175–187. (Summary) **93k:54019** 54A40 (04A72, 06B35)

Kubicka, Ewa (*with* Kubicki, Grzegorz; McMorris, F. R.) On agreement subtrees of two binary trees. (English summary) Proceedings of the Twenty-third Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, FL, 1992). *Congr. Numer.* **88** (1992), 217–224. (Summary) **93j:05041** 05C05

Kubicki, Grzegorz (*with* Kubicka, Ewa; McMorris, F. R.) On agreement subtrees of two binary trees. (English summary) Proceedings of the Twenty-third Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, FL, 1992). *Congr. Numer.* **88** (1992), 217–224. (Summary) **93j:05041** 05C05

Kubilius, J. *see* **New trends in probability and statistics, 93g:11005**

Kubilius, K. On the rate of convergence of the distributions of semimartingales to the distribution of stable process. *Probability theory and mathematical statistics, Vol. II* (*Vilnius*, 1989), 22–34, "*Mokslas*", *Vilnius*, 1990. (From the text) **93c:60024** 60F05 (60J30)

— On the rate of convergence in the multidimensional CLT for martingales. (Russian and Lithuanian summaries) *Litovsk. Mat. Sb.* **31** (1991), *no.* 4, 633–645; *reprinted in Lithuanian Math. J.* **31** (1991), *no.* 4, 439–448 (1992). (Adhir K. Basu) **93g:60050** 60F05 (60G42, 60G44)

Kublanovskaya, V. N. (*with* Belyĭ, V. A.) Solution of spectral problems for polynomial matrix pencils. *Proceedings of the Second International Symposium on Numerical Analysis* (*Prague*, 1987), 221–227, *Teubner-Texte Math.*, 107, *Teubner, Leipzig*, 1988. (*see* **93b:65007**) 65F15

— The contribution of V. N. Faddeeva and D. K. Faddeev in the development of computational methods in linear algebra. (Russian) *Algebra i Analiz* **2** (1990), *no.* 6, 34–39; *translation in Leningrad Math. J.* **2** (1991), *no.* 6, 1187–1191. (G. Maess) **93a:01057c** 01A70 (65–03)

— "Rank division" algorithms and their applications. (English summary) *J. Numer. Linear Algebra Appl.* **1** (1992), *no.* 2, 199–213. (Lars Eldén) **93g:65056** 65F30

Kubo, Fujio An identity on symmetric algebras of Lie algebras. *Nonassociative algebras and related topics* (*Hiroshima*, 1990), 129–137, *World Sci. Publishing, River Edge, NJ*, 1991. (Joseph C. Ferrar) **93b:17015** 17B05 (17B40)

Kubo, Fumio (*with* Fujii, Junichi; Fujii, Masatoshi; Izumino, Saichi; Nakamoto, Ritsuo) Strang's inequality. *Math. Japon.* **37** (1992), *no.* 3, 479–486. (Frank Hansen) **93h:47020** 47A63 (47A10, 47B15)

— (*with* Fujii, Masatoshi) Buzano's inequality and bounds for roots of algebraic equations. *Proc. Amer. Math. Soc.* **117** (1993), *no.* 2, 359–361. (From the text) **93d:47014** 47A30 (15A63, 26D99, 47A99)

Kubo, Izumi (*with* Ito, Yoshifusa; Takenaka, Shigeo) Calculus on Gaussian white noise and Kuo's Fourier transform. *White noise analysis* (*Bielefeld*, 1989), 180–207, *World Sci. Publishing, River Edge, NJ*, 1990. (Yuh-Jia Lee) **93m:46043** 46F25 (46G12, 60G20, 60H99)

Kubo, J. (*with* Fujiwara, Takanori; Igarashi, Yuji) Anomaly in the Schrödinger representation of QFT. (English summary) *Nuclear Phys. B* **387** (1992), *no.* 2, 447–463. (Silvio Paolo Sorella) **93m:81142** 81T50 (81T70)

Kubo, Kenn (*with* Takada, Satoshi) Nonlocal unitary transformations on $S = 1$ antiferromagnetic spin chains. *J. Phys. Soc. Japan* **60** (1991), *no.* 12, 4026–4028. (Summary) **93c:82012** 82B20

Kubo, Masahiro (*with* Langlais, Michel) Periodic solutions for nonlinear population dynamics models with periodic supply. *Progress in partial differential equations: calculus of variations, applications* (*Pont-à-Mousson*, 1991), 214–220, *Pitman Res. Notes Math. Ser.*, 267, *Longman Sci. Tech., Harlow*, 1992. (G. F. Webb) **93m:92023** 92D40 (35B10, 35Q80, 92D25)

Kubo, Mikio (*with* Kasugai, Hiroshi) The precedence constrained traveling salesman problem. *J. Oper. Res. Soc. Japan* **34** (1991), *no.* 2, 152–172. (Summary) **93a:90045** 90C10 (90C27)

— (*with* Kasugai, Hiroshi) On the core of the network design game. (English summary) *J. Oper. Res. Soc. Japan* **35** (1992), *no.* 3, 250–255. (Summary) **93h:90125** 90D35 (90B10, 90C27, 90D12)

— (*with* Kasugai, Hiroshi) The probabilistic network design problem. (English summary) *J. Oper. Res. Soc. Japan* **35** (1992), *no.* 3, 256–272. (Summary) **93h:90036** 90B15

— (*with* Kasugai, Hiroshi) On symmetric subtour problems. (English summary) *Japan J. Indust. Appl. Math.* **9** (1992), *no.* 3, 383–396. (P. F. Körner) **93j:90082** 90C27 (90C10, 90C11)

Kubo, Reijiro Gauss law commutators in anomalous gauge theories from a geometrical point of view. (English summary) *Phys. Rev. D* (3) **47** (1993), *no.* 6, 2591–2597. (Summary) **93k:81230** 81T50 (81T13, 81T70)

Kubokawa, Tatsuya (*with* Robert, Christian P.; Saleh, A. K. Md. Ehsanes) Robust estimation of common regression coefficients under spherical symmetry. *Ann. Inst. Statist. Math.* **43** (1991), *no.* 4, 677–688. (P. Laurie Davies) **93e:62096** 62F35 (62J05)

— Equivariant estimation under the Pitman closeness criterion. Pitman's measure of closeness. *Comm. Statist. Theory Methods* **20** (1991), *no.* 11, 3499–3523. (Wolfgang Wertz) **93e:62075** 62F10 (62A05, 62F15)

— (*with* Saleh, A. K. Md. Ehsanes; Morita, K.) Improving on MLE of coefficient matrix in a growth curve model. *J. Statist. Plann. Inference* **31** (1992), *no.* 2, 169–177. (Yasunori Fujikoshi) **93m:62125** 62H12

Kubota, Hajime (*with* Tsubokawa, Hiroshi; Tsujii, Shigeo) Recursive least-square algorithm with UD factorization by fixed-point arithmetic. *Electron. Comm. Japan Part III Fund. Electron. Sci.* **75** (1992), *no.* 1, 42–52. 68M07

Kubota, Koichi (*with* Iri, Masao) Estimates of rounding errors with fast automatic differentiation and interval analysis. *J. Inform. Process.* **14** (1991), *no.* 4, 508–515. 65D15 (65G10)

Kubota, Tomio Automorphic forms and infinite matrices. *Nagoya Math. J.* **127** (1992), 61–82. (Marie-France Vignéras) **93g:11038** 11F12 (11F30)

Kubota, Yôto A descriptive theory of the Lebesgue integral. (English summary) *Math. Japon.* **37** (1992), *no.* 5, 919–926. (Ralph Henstock) **93j:28005** 28A25 (26A42)

Kubyshin, Yu. A. (*with* Isham, Chris J.; Renteln, P.) Quantum metric topology. *Quantum gravity (Moscow, 1990)*, 60–81, *World Sci. Publishing, River Edge, NJ*, 1991. (Charles G. Torre) **93i:83049** 83C45 (54A10, 58Z05)

— Higgs potentials from multidimensional Yang-Mills theories. *J. Math. Phys.* **32** (1991), *no.* 8, 2200–2209. (Peter Basarab-Horwath) **93b:81160** 81T13 (53C80)

— (*with* Bertolami, O.; Mourão, J. M.) Stability of compactification in Einstein-Yang-Mills theories after inflation. *Phys. Rev. D* (3) **45** (1992), *no.* 10, 3405–3414. (Summary) **93b:83060** 83E15

Kubyshkin, E. P. Optimal control of the rotation of a solid body with a flexible rod. (Russian. Russian summary) *Prikl. Mat. Mekh.* **56** (1992), *no.* 2, 240–249; *translation in J. Appl. Math. Mech.* **56** (1992), *no.* 2, 205–214. (Isaac V. Shragin) **93i:70030** 70Q05 (49N55, 70E15, 73F15, 73K12, 73K50, 81T40)

Kuc, Tae-Yong (*with* Lee, Jin S.; Nam, Kwanghee) An iterative learning control theory for a class of nonlinear dynamic systems. (English summary) *Automatica J. IFAC* **28** (1992), *no.* 6, 1215–1221. (Summary) **93i:93135** 93E35 (93C10)

Kucera, Jan (*with* McKennon, Kelly) Preservation of fast completeness under inductive limits. *Czechoslovak Math. J.* **42(117)** (1992), *no.* 1, 15–18. (Jing Hui Qiu) **93a:46006** 46A13 (46A03)

Kučera, L. (*with* Calkin, Neil J.; Frieze, A. M.) On the expected performance of a parallel algorithm for finding maximal independent subsets of a random graph. *Random Structures Algorithms* **3** (1992), *no.* 2, 215–221. (Summary) **93d:68027** 68Q22 (05C80, 05C85, 68R10)

Kučera, Milan (*with* Bosák, Miroslav) Bifurcation of periodic solutions to differential inequalities in $\mathbf{R}^3$. *Czechoslovak Math. J.* **42(117)** (1992), *no.* 2, 339–363. (Marco Degiovanni) **93b:34023** 34A47 (34A60, 34C25, 47H15)

Kučera, Radan On bases of odd and even universal ordinary distributions. *J. Number Theory* **40** (1992), *no.* 3, 264–283. (Juraj Kostra) **93b:11148** 11R29 (11R18, 11R27)

— On bases of the Stickelberger ideal and of the group of circular units of a cyclotomic field. *J. Number Theory* **40** (1992), *no.* 3, 284–316. (Juraj Kostra) **93b:11149** 11R29 (11R18, 11R27)

— (*with* Szymiczek, Kazimierz) Witt equivalence of cyclotomic fields. (English summary) *Math. Slovaca* **42** (1992), *no.* 5, 663–676. (Craig Cordes) **93k:11033** 11E81 (11R18)

Kucera, T. G. (*with* Prest, Mike) Imaginary modules. *J. Symbolic Logic* **57** (1992), *no.* 2, 698–723. (Fuxing Shen) **93h:03044** 03C45 (03C60, 16D80)

— (*with* Prest, Mike) Four concepts from "geometrical" stability theory in modules. *J. Symbolic Logic* **57** (1992), *no.* 2, 724–740. (Fuxing Shen) **93h:03045** 03C45 (03C60, 16D80)

Kučera, Vladimír ★ Analysis and design of discrete linear control systems. Prentice Hall International Series in Systems and Control Engineering. *Prentice Hall International, Englewood Cliffs, NJ*, 1991. viii+472 *pp. ISBN* 0-13-033085-X (Andrzej W. Olbrot) **93j:93002** 93–01 (93–02, 93B51, 93C05, 93C55)

— (*with* Ježek, Jan; Krupička, Miloš) Numerical analysis of Diophantine equations. (English summary) *Advanced methods in adaptive control for industrial applications (Praha, 1990)*, 128–136, *Lecture Notes in Control and Inform. Sci.*, 158, *Springer, Berlin*, 1991. (Summary) **93e:65077** 65H05 (11Y50)

— (*with* Hunt, K. J.) The standard $\mathcal{H}_2$-optimal control problem: a polynomial solution. *Internat. J. Control* **56** (1992), *no.* 1, 245–251. (D. H. Chyung) **93g:93031** 93B36

— (*with* Zagalak, Petr) Fundamental theorem of proportional state feedback for descriptor systems. *Kybernetika (Prague)* **28** (1992), *no.* 2, 81–89. (Summary) **93k:93051** 93B52 (93C30)

Kuchař, Karel V. Time and interpretations of quantum gravity. *Proceedings of the 4th Canadian Conference on General Relativity and Relativistic Astrophysics (Winnipeg, MB, 1991)*, 211–314, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93m:83033** 83C45 (83–02)

— (*with* Stone, C. L.) Representation of spacetime diffeomorphisms in canonical geometrodynamics under harmonic coordinate conditions. *Classical Quantum Gravity* **9** (1992), *no.* 3, 757–776. (Agostino Prástaro) **93b:83059** 83E05

— (*with* Hájíček, Petr; Kay, Bernard S.) Quantum collapse of a self-gravitating shell: equivalence to Coulomb scattering. (English summary) *Phys. Rev. D* (3) **46** (1992), *no.* 12, 5439–5448. (Summary) **93j:83039** 83C45 (81V17)

Kucharski, St. (*with* Lewiński, Tomasz) A model with length scales for composites with periodic structure. Steady state heat conduction problem. I. Formulation. (English summary) *Comput. Mech.* **9** (1992), *no.* 4, 249–265. (Serguei M. Kozlov) **93g:73010** 73B27 (73B30, 73K20, 80A20)

Kucharz, Wojciech Simultaneous diagonalization of an algebraic family of matrices. *Linear Algebra Appl.* **157** (1991), 49–53. (Summary) **93c:15017** 15A33 (14A10)

— Newton polygons and topological determinacy of analytic germs. *Period. Math. Hungar.* **22** (1991), *no.* 2, 129–132. (Jean-Jacques Gervais) **93c:58033** 58C27 (32S05)

— Divisors on varieties over a real closed field. (English summary) *Canad. Math. Bull.* **35** (1992), *no.* 4, 503–509. (Jesús M. Ruiz) **93j:14009** 14C20 (14P05, 14P10)

— (*with* Buchner, M.) Algebraic, rational, and homological equivalence of real cycles. *Manuscripta Math.* **77** (1992), *no.* 1, 105–111. (Thomas C. Craven) **93g:14008** 14C10 (14P25)

— (*with* Bochnak, J.) Complex cycles on real algebraic models of a smooth manifold. *Proc. Amer. Math. Soc.* **114** (1992), *no.* 4, 1097–1104. (Henry C. King) **93g:57032** 57R19 (14C22, 14C25, 14P25)

— (*with* Bochnak, J.) Algebraic cycles and approximation theorems in real algebraic geometry. *Trans. Amer. Math. Soc.* **337** (1993), *no.* 1, 463–472. (Henry C. King) **93g:57033** 57R19 (14C25, 14P25)

Kucher, N. A. The weak approximation method for multidimensional equations of gas dynamics. (Russian. Russian summary) *Dinamika Sploshn. Sredy No.* 97 (1990), 51–62, 213. (From the text) **93d:76057** 76N15 (35Q99, 76M20)

Kucherov, A. B. (*with* Makarov, M. M.) An approximate factorization method for solving discrete elliptic problems on stretched domains. *J. Numer. Linear Algebra Appl.* **1** (1992), *no.* 1, 1–26. (Summary) **93d:65092** 65N06 (65F10)

Kucheryavii, V. I. Mass effects in quantum corrections to canonical Ward identities. *Nonlinear world, Vol. 2 (Kiev, 1989)*, 1454–1465, *World Sci. Publishing, River Edge, NJ*, 1990. (*see* **93b:00013**) 81T50

— The Bogolyubov-Parasyuk *R*-operation in quantum field theory (a survey). (Ukrainian. English, Russian and Ukrainian summaries) *Ukrain. Fiz. Zh.* **36** (1991), *no.* 12, 1769–1785. (Summary) **93g:81103** 81T15 (81–02, 81V10)

— Symmetries and anomalies of quantum field theory in the Bogolyubov-Parasyuk renormalization scheme. (Ukrainian. Russian summary) *Ukrain. Mat. Zh.* **43** (1991), *no.* 11, 1445–1456; *translation in Ukrainian Math. J.* **43** (1991), *no.* 11, 1339–1350 (1992). (Summary) **93c:81139** 81T15 (81T50)

— Ward identities of triangular spinor diagrams in the Bogolyubov-Parasyuk renormalization scheme and in dimensional regularization. (Ukrainian. English, Russian and Ukrainian summaries) *Ukraïn. Fïz. Zh.* **37** (1992), *no.* 1, 140–146. (Summary) **93h:81093** 81T15

muci-Küchler, K. H. *see* **Muci-Küchler, K. H.**

Küchler, Uwe (*with* Neumann, Kirsten) An extension of Kreĭn's inverse spectral theorem to strings with nonreflecting left boundaries. (English summary) *Séminaire de Probabilités, XXV*, 354–373, *Lecture Notes in Math.*, 1485, *Springer, Berlin*, 1991. (Introduction) **93j:34118** 34L05 (34A55, 34L40, 60J35)

Kuchment, Peter On positivity problems for the Radon transform and some related transforms. (English summary) *Geometric analysis (Philadelphia, PA, 1991)*, 87–95, *Contemp. Math.*, 140, *Amer. Math. Soc., Providence, RI*, 1992. (Fritz Keinert) **93k:44002** 44A12 (92C55)

Kuchta, Milan Shadowing property of continuous maps with zero topological entropy. *Proc. Amer. Math. Soc.* **119** (1993), *no.* 2, 641–648. (Paweł Góra) **93k:58127** 58F08 (54H20)

Kucia, Anna (*with* Nowak, Andrzej S.) On Filippov type theorems and measurability of inverses of random operators. (English summary) *Bull. Polish Acad. Sci. Math.* **38** (1990), *no.* 1-12, 151–158. (Shi Sheng Zhang) **93i:47110** 47H40 (47A05, 47B80, 47H04, 60H25)

Kuck, Conrad ★ Categories generalize linear algebra to a logic, which is the foundation of mathematics. (English. English summary) *Bonifatius GmbH, Paderborn*, 1992. 111 *pp. ISBN* 3-87088-759-1 (Andreas Blass) **93m:18005** 18A99 (00A30, 03B52, 18B99)

Kuczma, M. *see* **Kuczma, Marek**

Kuczma, M. S. (*with* Demkowicz, Leszek) An adaptive algorithm for unilateral viscoelastic contact problems for beams and plates. (English summary) Reliability in computational mechanics (Kraków, 1991). *Comput. Methods Appl. Mech. Engrg.* **101** (1992), *no.* 1-3, 183–196. (Summary) **93h:73033** 73T05 (73F15, 73K05, 73K10, 73V25)

Kuczma, Marcin E. Symmetric means versus power means. *Nieuw Arch. Wisk.* (4) **10** (1992), *no.* 1-2, 27–31. (L. Losonczi) **93k:26008** 26D15 (26D07)

Kuczma, Marek (*with* Kominek, Zygfryd) Theorem of Bernstein-Doetsch in Baire spaces. *Ann. Math. Sil. No.* 5 (1991), 10–17. (Summary) **93j:26008** 26A51 (54C30)

— A note on the core topology. *Ann. Math. Sil. No.* 5 (1991), 28–36. (Paul R. Meyer) **93a:54038** 54H99 (54E52)

— (*with* Faber, Vance; Mycielski, Jan) Some models of plane geometries and a functional equation. *Colloq. Math.* **62** (1991), *no.* 2, 279–281. (Wen Rong Li) **93b:39005** 39B22 (51N20)

— On a Stamate-type functional equation. *Publ. Math. Debrecen* **39** (1991), *no.* 3-4, 325–338. (J. Aczél) **93c:39005** 39B52 (26A24)

— *see also* **Ger, Roman, 93c:01038** *and* **Selected topics in functional equations and iteration theory, 93m:39001**

Kuczmaszewska, Anna (*with* Szynal, Dominik) On complete convergence for partial sums of independent identically distributed random variables. *Probab. Math. Statist.* **11** (1990), *no.* 2, 223–235 (1991). (Zhi-Dong Bai) **93b:60057** 60F10 (60G50)

Kuczumow, Tadeusz (*with* Reich, Simeon; Schmidt, Malgorzata) A fixed point property of l_1-product spaces. *Proc. Amer. Math. Soc.* **119** (1993), *no.* 2, 457–463. (S. P. Singh) **93k:47061** 47H10 (46B20)

Kuczyński, Jacek (*with* Woźniakowski, Henryk) Estimating the largest eigenvalue by the power and Lanczos algorithms with a random start. (English summary) *SIAM J. Matrix Anal. Appl.* **13** (1992), *no.* 4, 1094–1122. (Heike Faßbender) **93g:65052** 65F15

Kudaev, M. B. Nonoscillation and monotonicity of solutions of a differential equation. (Russian) *Dokl. Akad. Nauk SSSR* **320** (1991), *no.* 4, 789–791; *translation in Soviet Math. Dokl.* **44** (1992), *no.* 2, 529–531. (I. Kiguradze) **93f:34055** 34C10

Kudaeva, F. Kh. (*with* Berezovskiĭ, A. A.) Canonical form of problems with free boundaries in problems of hypothermia and cryodestruction of biological tissue. (Russian. Russian summary) *Asymptotic integration of nonlinear equations (Russian)*, 23–31, *Akad. Nauk Ukrainy, Inst. Mat., Kiev*, 1992. (*see* **93m:00016**) 35R35 (92C50)

Kudaibergenov, K. Zh. On homogeneous models of totally transcendental nonmultidimensional theories. *Algebra and Logic* **30** (1991), *no.* 1, 32–50 (1992). (From the introduction) **93k:03034** 03C45

Kudaka, Shoju (*with* Kakazu, Kiyotaka) The Wigner-Araki-Yanase theorem and its extension in quantum measurement with generalized coherent states. *Progr. Theoret. Phys.* **87** (1992), *no.* 1, 61–76. (Summary) **93a:81026** 81P15 (81R30)

— (*with* Kakazu, Kiyotaka; Pascazio, Saverio) Extension of the Wigner-Araki-Yanase theorem in Ozawa's formulation. (English summary) *Phys. Lett. A* **173** (1993), *no.* 2, 92–96. (S. Gudder) **93k:81024** 81P15 (81Q10)

Kudashev, V. R. (*with* Kuntsevich, A. D.; Spivak, S. I.; Gorskiĭ, V. G.) Group analysis of the identifiability of parameters of mathematical models of nonstationary chemical kinetics. (Russian) *Dokl. Akad. Nauk* **326** (1992), *no.* 4, 658–661. (From the text) **93h:93083** 93E12 (34A55, 34H05, 92E20, 93C95)

— Integration of the Whitham-KdV equations. *Phys. Lett. A* **166** (1992), *no.* 3-4, 213–214. (Summary) **93d:35145** 35Q53 (35C15)

— Scale-invariant solutions of the Whitham equations. (English summary) *Phys. Lett. A* **171** (1992), *no.* 5-6, 335–337. (Summary) **93k:35234** 35Q53 (76B15, 76B25)

pytel-Kudela, Marzenna *see* **Pytel-Kudela, Marzenna**

Kudin, V. I. A relaxation scheme for solving a linear programming problem on the basis of the simplex-method and sequential analysis. (Russian. Russian summary) *Vestnik Kiev. Univ. Model. Optim. Slozhn. Sist. No.* 9 (1990), 84–87. 90C05

Kudla, Stephen S. (*with* Harris, Michael) The central critical value of a triple product *L*-function. *Ann. of Math.* (2) **133** (1991), *no.* 3, 605–672. (Dipendra Prasad) **93a:11043** 11F67 (11F27, 11F41, 11F70, 22E55)

— (*with* Gross, Benedict H.) Heights and the central critical values of triple product *L*-functions. *Compositio Math.* **81** (1992), *no.* 2, 143–209. (Alexey A. Panchishkin) **93g:11047** 11F66 (11F67, 11G40, 19F27)

— (*with* Harris, Michael) Arithmetic automorphic forms for the nonholomorphic discrete series of GSp(2). *Duke Math. J.* **66** (1992), *no.* 1, 59–121. (Stephen Gelbart) **93e:22023** 22E45 (11F70, 22E47)

— (*with* Rallis, Stephen; Soudry, David) On the degree 5 *L*-function for Sp(2). *Invent. Math.* **107** (1992), *no.* 3, 483–541. (Stephen Gelbart) **93b:11061** 11F70 (22E55)

— *see also* **Representation theory of groups and algebras, 93k:00028**

Kudlaev, È. M. Classification of decomposable statistics. (Russian) *Probabilistic processes and their applications (Russian)*, 100–111, *Moskov. Inst. Élektron. Mashinostroeniya, Moscow*, 1989. (*see* **93b:60003**) 60C05 (60F05, 62E20)

Kudo, Aichi On *p*-adic Dedekind sums. II. *Mem. Fac. Sci. Kyushu Univ. Ser. A* **45** (1991), *no.* 2, 245–284. (From the introduction) **93g:11120** 11S80 (11F20)

Kudô, Akio (*with* Yanagi, Kikuo; Park, Yong-Beom) "Pool-the-maximum-violators" algorithm. (English summary) *J. Korean Statist. Soc.* **21** (1992), *no.* 2, 201–207. (Summary) **93j:65094** 65J99

Kudrewicz, Jacek ★ Dynamika pętli fazowej. (Polish) [Dynamics of phase-locked loops] Układy i Systemy Elektroniczne. [Electronic Circuits and Networks] *Wydawnictwa Naukowo-Techniczne (WNT), Warsaw*, 1992. 248 *pp. ISBN* 83-204-1300-1 (Summary) **93c:34082** 34C15 (34C23, 34C25, 34D99, 58F13, 93B25, 93D05, 94C05)

Kudrik, P. I. Infinitesimal bendings of a piece of surface of revolution. (Ukrainian. Russian and Ukrainian summaries) *Visnik Kiïv. Univ. Mat. Mekh. No.* 32 (1990), 67–70. (Summary) **93e:53003** 53A05 (53C45, 73K15)

Kudryashëva, Zh. N. (*with* Sidnin, A. I.; Salina, T. I.) Solution of a problem in a class of stiff systems. (Russian) *Numerical methods for solving boundary value problems (Russian)*, 67–74, *Akad. Nauk SSSR Ural. Otdel., Bashkir. Nauchn. Tsentr, Ufa*, 1989. (*see* **93m:00033**) 34A65

Kudryashov, B. D. (*with* Bocharova, I. E.) Construction of a discrete mapping model for channels with fading. (Russian. Russian summary) *Problemy Peredachi Informatsii* **29** (1993), *no.* 1, 58–67; *translation in Problems Inform. Transmission* **29** (1993), *no.* 1, 50–57. (Summary) **93m:94016** 94A40

Kudryashov, N. A. The method of Painlevé expansions for nonintegrable nonlinear equations. (Russian. English summary) *Mat. Model.* 2 (1990), *no.* 12, 102–115. (Igor V. Barashenkov) **93f:35030** 35C10 (35K57, 35Qxx)

— Partial differential equations with solutions having movable first-order singularities. (English summary) *Phys. Lett. A* **169** (1992), *no.* 4, 237–242. (Summary) **93f:35011** 35A20

— (*with* Alekseev, A. A.) Approximating pseudopotentials for evolution equations that contain a small parameter. (Russian. English and Russian summaries) *Teoret. Mat. Fiz.* **91** (1992), *no.* 3, 355–362; *translation in Theoret. and Math. Phys.* **91** (1992), *no.* 3, 575–580. (Summary) **93g:35117** 35Q40 (58D25)

Kudryavtsev, D. L. On the single-valuedness of solutions of a second-order linear differential equation with regular singular points. (Russian. Russian summary) *Differentsial'nye Uravneniya* **28** (1992), *no.* 9, 1529–1536, 1652; *translation in Differential Equations* **28** (1992), *no.* 9, 1251–1258 (1993). (Summary) **93k:34011** 34A20

Kudryavtsev, G. Yu. Asymptotic estimates for the number of oriented finite labyrinths. (Russian) *Constructions in algebra and logic (Russian)*, 53–59, *Tver. Gos. Univ., Tver'*, 1990. (*see* **93m:00021**) 05A16

— Distinguishability of vertices of automaton labyrinths by finite automata. (Russian) *Diskret. Mat.* 3 (1991), *no.* 4, 143–152. (Summary) **93j:68145** 68Q70

— On the solution time for labyrinth problems by finite automata. (Russian) *Dokl. Akad. Nauk* **326** (1992), *no.* 4, 601–604. (From the text) **93i:68135** 68Q70 (05C85)

Kudryavtsev, L. D. (*with* Nikol'skiĭ, S. M.) Spaces of differentiable functions of several variables and embedding theorems. (Russian. Russian summary) *Current problems in mathematics. Fundamental directions, Vol.* 26 *(Russian)*, 5–157, 237, *Itogi Nauki i Tekhniki, Akad. Nauk SSSR, Vsesoyuz. Inst. Nauchn. i Tekhn. Inform., Moscow*, 1988. (*see* **93d:46058a**) 46E35

— (*with* Nikol'skiĭ, S. M.) Spaces of differentiable functions of several variables and imbedding theorems. *Analysis, III*, 1–140, *Encyclopaedia Math. Sci.*, 26, *Springer, Berlin*, 1991. (*see* **93d:46058b**) 46E35

— Boundary value problems for ordinary differential equations with data at infinity. (Russian) *Dokl. Akad. Nauk SSSR* **320** (1991), *no.* 4, 792–798; *translation in Soviet Math. Dokl.* **44** (1992), *no.* 2, 532–538. (Š. Schwabik) **93b:34044** 34C11 (34A34, 34B99)

— Existence and uniqueness of solutions of ordinary differential equations with initial data at infinity. (Russian) *Dokl. Akad. Nauk SSSR* **320** (1991), *no.* 4, 799–803; *translation in Soviet Math. Dokl.* **44** (1992), *no.* 2, 539–543. (Š. Schwabik) **93b:34045** 34C11 (34A34)

— On stabilization boundary value problems. (Russian) *Dokl. Akad. Nauk SSSR* **322** (1992), *no.* 2, 224–227; *translation in Soviet Math. Dokl.* **45** (1992), *no.* 1, 53–57. (Alexei I. Filinkov) **93e:34016** 34A30 (34B05, 34B27)

— (*with* Vladimirov, V. S.; Mitropol'skiĭ, Yu. A.; Nikol'skiĭ, S. M.; Khvedelidze, B. V.) Georgii Semenovich Litvinchuk (on the occasion of his sixtieth birthday). (Russian) *Uspekhi Mat. Nauk* **47** (1992), *no.* 1(283), 221–223; *translation in Russian Math. Surveys* **47** (1992), *no.* 1, 271–274. (Editors) **93e:01028** 01A70

— *see also* **Some questions of mathematics in problems of physics and mechanics, 93m:00036**

Kudryavtsev, S. N. Some problems of approximation theory for a class of functions of finite smoothness. (Russian) *Mat. Sb.* **183** (1992), *no.* 2, 3–20; *translation in Russian Acad. Sci. Sb. Math.* **75** (1993), *no.* 1, 145–164. (K. G. Ivanov) **93k:41023** 41A46 (41A63)

— Approximate calculation of Fourier coefficients of the function $1/f$ from the Fourier coefficients of function f. (Russian. Russian summary) *Zh. Vychisl. Mat. i Mat. Fiz.* **33** (1993), *no.* 2, 306–309; *translation in Comput. Math. Math. Phys.* **33** (1993), *no.* 2, 271–274. (Summary) **93m:65186** 65T10 (42A16)

Kudryavtsev, V. A. The problem of pre-design structuring of technical systems. *J. Comput. Systems Sci. Internat.* **30** (1992), *no.* 5, 109–113; *translated from Izv. Akad. Nauk SSSR Tekhn. Kibernet.* **1991**, *no.* 3, 142–147 (*Russian. Russian summary*). 94C15

Kud'yavin, V. S. (*with* Gol'dberg, A. L.) Mean coefficients of quasiconformality of a pair of domains. (Russian. Ukrainian summary) *Ukrain. Mat. Zh.* **43** (1991), *no.* 12, 1709–1712; *translation in Ukrainian Math. J.* **43** (1991), *no.* 12, 1594–1597 (1992). (Olli Martio) **93i:30018** 30C65 (30C70)

— (*with* Goncharov, A. M.) Generation of nonlinear internal waves under mixed region collapse in a stratified fluid. (Russian. Russian summary) *Complex analysis and potential theory (Russian)*, 27–33, *Akad. Nauk Ukrainy, Inst. Mat., Kiev*, 1992. (*see* **93m:00019**) 76F10 (76V05)

— Geometric properties of spatial homeomorphisms with bounded integral characteristics. (Russian. English summary) *Dokl. Akad. Nauk Ukrainy* **1992**, *no.* 4, 18–20, 165. (Summary) **93c:30028** 30C62

— Quasiconformal mappings and α-moduli of families of curves. (Russian. English and Russian summaries) *Dokl. Akad. Nauk Ukrainy* **1992**, *no.* 7, 11–13, 177. (Summary) **93g:30030** 30C65

Kueker, D. W. (*with* Laskowski, Michael Chris) On generic structures. *Notre Dame J. Formal Logic* **33** (1992), *no.* 2, 175–183. (Elisabeth Bouscaren) **93k:03032** 03C15 (03C35, 03C50)

Kuelbs, James (*with* Li, Wenbo V.) Metric entropy and the small ball problem for Gaussian measures. (English and French summaries) *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 7, 845–850. (Summary) **93g:60007** 60B11 (46G12, 60G15)

Kuffer, Josef (*with* Koschany, Arthur; Obermair, Gustav M.) Chaos in wave mechanics with a logarithmic nonlinearity. *Phys. Lett. A* **167** (1992), *no.* 2, 109–113. (Summary) **93h:81033** 81Q50

Kuga, Michio ★ Galois' dream: group theory and differential equations. Translated from the 1968 Japanese original by Susan Addington and Motohico Mulase. *Birkhäuser Boston, Inc., Boston, MA*, 1993. x+150 *pp. ISBN* 0-8176-3688-9 (Andrei Bolibrukh) **93k:34012** 34A20 (14H30, 34–01, 58H99)

Kugler, L. D. (*with* Althoen, S. C.; Hansen, K. D.) Rotational scaled quaternion division algebras. *J. Algebra* **146** (1992), *no.* 1, 124–143. (P. M. Cohn) **93e:16025** 16K20

Kugo, Taichiro Covariantized light-cone string field theory. *Quantum mechanics of fundamental systems*, 2 (*Santiago*, 1987), 167–187, *Ser. Cent. Estud. Cient. Santiago, Plenum, New York*, 1989. (*see* **93e:81005**) 81T70 (81T30)

— (*with* Zwiebach, Barton) Target space duality as a symmetry of string field theory. *Progr. Theoret. Phys.* **87** (1992), *no.* 4, 801–859. (Hitoshi Nishino) **93i:81191** 81T30 (81T40, 83E30)

Kugusheva, E. K. (*with* Denisov, G. G.; Novikov, V. V.) A problem on the dynamics of viscoelastic systems with moving boundaries. (Russian) *Dinamika Sistem* **1990**, *Dinam. Stokh. Bifur.*, 101–110. (Summary) **93c:73043** 73F15 (34B99, 73K05)

Kuharetz, Boris (*with* Cohen, Jeffrey M.) Energy level degeneracy. (English summary) *J. Math. Phys.* **34** (1993), *no.* 1, 12–22. (A. Ventura) **93k:81037** 81Q05

Kuhlmann, Franz-Viktor (*with* Basarab, Şerban A.) An isomorphism theorem for Henselian algebraic extensions of valued fields. (English summary) *Manuscripta Math.* **77** (1992), *no.* 2-3, 113–126. (Luc Bélair) **93k:12017** 12J25 (12F05, 12J12, 12L12)

Kuhn, Bernhard (*with* Klass, Reinhold) Fillet and surface intersections defined by rolling balls. (English summary) *Comput. Aided Geom. Design* **9** (1992), *no.* 3, 185–193. 65D17

Kuhn, Günther (*with* Białecki, Ryszard; Dallner, Rudolf) New application of hypersingular equations in the boundary element method. (English summary) *Comput. Methods Appl. Mech. Engrg.* **103** (1993), *no.* 3, 399–416. (Summary) **93m:73038** 73V10

— (*with* Białecki, Ryszard) Boundary element solution of heat conduction problems in multizone bodies of nonlinear material. (English summary) *Internat. J. Numer. Methods Engrg.* **36** (1993), *no.* 5, 799–809. (Summary) **93k:80002** 80–08 (80A20)

Kuhn, Klaus G. (*with* Greiner, Günther) Linear and semilinear boundary conditions: the analytic case. *Semigroup theory and evolution equations (Delft*, 1989), 193–211, *Lecture Notes in Pure and Appl. Math.*, 135, *Dekker, New York*, 1991. (V. Lakshmikantham) **93d:34108** 34G20 (34A12, 34B15, 47H15, 47N20)

Kuhn, M. Gabriella Random walks on free products. (French summary) *Ann. Inst. Fourier (Grenoble)* **41** (1991), *no.* 2, 467–491. (Donald I. Cartwright) **93a:43008** 43A65 (60B15)

Kuhn, Nicholas J. (*with* Hopkins, Michael J.; Ravenel, Douglas C.) Morava *K*-theories of classifying spaces and generalized characters for finite groups. *Algebraic topology (San Feliu de Guíxols*, 1990), 186–209, *Lecture Notes in Math.*, 1509, *Springer, Berlin*, 1992. (Nobuaki Yagita) **93k:55008** 55N22 (55N15, 55R35)

Kühn, Reimer (*with* Bös, S.) Statistical mechanics for neural networks with continuous-time dynamics. (English summary) *J. Phys. A* **26** (1993), *no.* 4, 831–857. 82C32 (92B20)

Kuhn, Steven T. (*with* Vogt, Andrew) Numbers without ones. *Fibonacci Quart.* **30** (1992), *no.* 1, 48–53. (H. L. Abbott) **93a:11009** 11A63

Kühn, Thomas (*with* Cobos, Fernando) Some remarks on a limit class of approximation ideals. *Progress in functional analysis (Peñíscola*, 1990), 393–403, *North-Holland Math. Stud.*, 170, *North-Holland, Amsterdam*, 1992. (N. Tiţa) **93g:47057** 47D50 (47B06, 47B10)

— (*with* Cobos, Fernando; Schonbek, Tomas) One-sided compactness results for Aronszajn-Gagliardo functors. *J. Funct. Anal.* **106** (1992), *no.* 2, 274–313. (N. Ya. Kruglyak) **93c:46135** 46M35 (47B07)

Kuhn, Thomas S. *see* **World changes, 93m:01003**

Kühn, W. (*with* Adams, Ernst Wilhelm; Ames, William F.; Rufeger, W.; Spreuer, H.) Computational chaos may be due to a single local error. (English summary) *J. Comput. Phys.* **104** (1993), *no.* 1, 241–250. (Summary) **93i:65067** 65L05 (58F13)

Kühnau, Reiner Möglichst konforme Jordankurven durch vier Punkte. [Extremal conformal Jordan curves through four points] Analyse complexe (Bucharest, 1989). *Rev. Roumaine Math. Pures Appl.* **36** (1991), *no.* 7-8, 383–393. (E. Złotkiewicz) **93d:30025** 30C62 (30C75)

— Interpolation by extremal quasiconformal Jordan curves. (Russian) *Sibirsk. Mat. Zh.* **32** (1991), *no.* 2, 94–103, 212; *translation in Siberian Math. J.* **32** (1991), *no.* 2, 257–264. (J. Lawrynowicz) **93h:30034** 30C70 (30C62)

— Einige neuere Entwicklungen bei quasikonformen Abbildungen. [Some recent developments in quasiconformal mappings] *Jahresber. Deutsch. Math.-Verein.* **94** (1992), *no.* 4, 141–169. (J. G. Krzyż) **93m:30028** 30C62

— Zum konformen Radius bei nullwinkligen Kreisbogendreiecken. [On the conformal radius in zero-angled triangles of circular arcs] *Mitt. Math. Sem. Giessen No.* 211 (1992), 19–24. (K. Strebel) **93k:30011** 30C20

— Zum konformen Modul eines Vierecks. [On the conformal module of a quadrilateral] *Mitt. Math. Sem. Giessen No.* 211 (1992), 61–67. (Kent Pearce) **93m:30010** 30C35 (30E10)
— *see also* **Maskus, Renate, 93e:30049**
Kühne, Regina (*with* Löwen, R.) Topological projective spaces. *Abh. Math. Sem. Univ. Hamburg* **62** (1992), 1–9. (H. Salzmann) **93g:51013** 51H05
Kühnel, Adolf *see* **Berestetskiĭ, V. B. et al., 93b:00001a** *and* **Landau, L. D., 93b:00001c**
Kühnel, Wolfgang On the inner curvature of the second fundamental form. (English summary) *Proceedings of the 3rd Congress of Geometry (Thessaloniki, 1991)*, 248–253, *Aristotle Univ. Thessaloniki, Thessaloniki*, 1992. (Udo Simon) **93g:53005** 53A05 (53A10)
— Tightness, torsion, and tubes. (English summary) *Ann. Global Anal. Geom.* **10** (1992), *no.* 3, 227–236. (Steven G. Buyske) **93j:53076** 53C42 (52B70)
Kuhnert, Frieder Über die Sensibilität von Eigenwerten und Eigenvektoren. (English and Russian summaries) [On the sensitivity of eigenvalues and eigenvectors] *Z. Angew. Math. Mech.* **71** (1991), *no.* 7-8, 233–239. (E. G. D'yakonov) **93a:65052** 65F15 (15A18)
— Zur numerischen Berechnung benachbarter Matrizeneigenwerte bei Rang-1-Störung. (English summary) [On the numerical calculation of nearby matrix eigenvalues with rank-one perturbation] *Wiss. Z. Tech. Univ. Chemnitz* **34** (1992), *no.* 1, 89–94. (Heike Faßbender) **93b:65065** 65F15
Kuĭbida, V. S. (*with* Prikarpat-skiĭ, A. K.) Parametric integrability in the sense of Lax of nonlinear dynamical systems and the problem of splitting multisoliton separatrix manifolds. (Russian. Russian and Ukrainian summaries) *Ukraïn. Mat. Zh.* **44** (1992), *no.* 3, 365–379; *translation in Ukrainian Math. J.* **44** (1992), *no.* 3, 318–330. (Meng Ru Li) **93m:58105** 58F39 (34C99, 34G20, 35Q51, 58F07)
— (*with* Pritula, N. N.) Structure of integrated supersymmetric nonlinear dynamical systems on reduced invariant submanifolds. (Ukrainian. Russian and Ukrainian summaries) *Ukraïn. Mat. Zh.* **44** (1992), *no.* 9, 1292–1295. (Summary) **93k:58121** 58F07 (58C50)
Kuijper, A. B. The state space method for integro-differential equations of Wiener-Hopf type with rational matrix symbols. (English summary) *Continuous and discrete Fourier transforms, extension problems and Wiener-Hopf equations*, 142–188, *Oper. Theory Adv. Appl.*, 58, *Birkhäuser, Basel*, 1992. (A. Böttcher) **93g:47067** 47G20 (34A30, 45E10, 47B35, 47N20, 93C22)
Kuijper, M. (*with* Schumacher, J. M.) Minimality of descriptor representations under external equivalence. *Automatica J. IFAC* **27** (1991), *no.* 6, 985–995. (Li Yi Dai) **93f:93030** 93B15 (93B20, 93C05)
— (*with* Schumacher, J. M.) State space formulas for transfer poles at infinity. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, I (Kobe*, 1991), 185–190, *Mita, Tokyo*, 1992. (Yen Ping Shih) **93m:93046** 93C05 (93B55)
— Descriptor representations without direct feedthrough term. *Automatica J. IFAC* **28** (1992), *no.* 3, 633–637. (Summary) **93a:93059** 93C05 (03B15)
Kuiken, H. K. Mathematical modelling of industrial processes. *Mathematical modelling of industrial processes (Bari*, 1990), 1–63, *Lecture Notes in Math.*, 1521, *Springer, Berlin*, 1992. (J. F. Heyda) **93h:00016** 00A71 (00A69)
— *see also* **Problems in applied, industrial and engineering mathematics, 93d:00042**
Kuip, C. A. C. (*with* Bisschop, J. J.) Hierarchical sets in mathematical programming modeling languages. (English summary) *Comput. Optim. Appl.* **1** (1993), *no.* 4, 415–438. 68Q45 (68U20, 90C30)
Kuiper, C. R. (*with* Zwart, H. J.) Solutions of the ARE in terms of the Hamiltonian for Riesz-spectral systems. (English summary) *Analysis and optimization of systems: state and frequency domain approaches for infinite-dimensional systems (Sophia-Antipolis*, 1992), 314–325, *Lecture Notes in Control and Inform. Sci.*, 185, *Springer, Berlin*, 1993. (Summary) **93m:93051** 93C25 (47N70)
— (*with* Bontsema, Jan; Curtain, Ruth F.; Osinga, H. M.) Comparison of robustly stabilizing controllers for a flexible beam model with additive, multiplicative and stable factor perturbations. (English summary) *Analysis and optimization of systems: state and frequency domain approaches for infinite-dimensional systems (Sophia-Antipolis*, 1992), 388–400, *Lecture Notes in Control and Inform. Sci.*, 185, *Springer, Berlin*, 1993. (*see* **93i:93005**) 93D15 (73K05, 73K50, 93C20)
Kuipers, Theo A. F. Naive and refined truth approximation. (English summary) *Synthese* **93** (1992), *no.* 3, 299–341. (Summary) **93i:03014** 03B30 (03A05)
Kuisch, Eric B. Modular idempotent integers. *Nieuw Arch. Wisk.* (4) **9** (1991), *no.* 1, 107–110. (H. L. Abbott) **93a:11003** 11A07 (11A63)
— (*with* van der Waall, Robert W.) Homogeneous character induction. *J. Algebra* **149** (1992), *no.* 2, 454–471. (Roderick Gow) **93f:20012** 20C15
Kuk, Anthony Y. C. A semiparametric mixture model for the analysis of competing risks data. (English summary) *Austral. J. Statist.* **34** (1992), *no.* 2, 169–180. (Summary) **93i:62032** 62G05 (62N05)
— (*with* Mak, Tak K.) A new method for estimating finite-population quantiles using auxiliary information. (English and French summaries) *Canad. J. Statist.* **21** (1993), *no.* 1, 29–38. 62D05 (62G30)
Kukavica, Igor An upper bound for the winding number for solutions of the Ginzburg-Landau equation. (English summary) *Indiana Univ. Math. J.* **41** (1992), *no.* 3, 825–836. (Bo Ling Guo) **93k:35244** 35Q55
— On the behavior of the solutions of the Kuramoto-Sivashinsky equation for negative time. *J. Math. Anal. Appl.* **166** (1992), *no.* 2, 601–606. (Nicolae H. Pavel) **93e:35087** 35Q35 (35B05, 47H20, 47N20)
— On the number of determining nodes for the Ginzburg-Landau equation. (English summary) *Nonlinearity* **5** (1992), *no.* 5, 997–1006. (Summary) **93h:35108** 35K60 (35B99, 35Q55)
Kukhta, K. Ya. The solution of a nonlinear nonstationary continuous-discrete boundary problem in control theory. *Soviet J. Automat. Inform. Sci.* **23** (1990), *no.* 6, 75–80 (1992); *translated from Avtomatika* **1990,** *no.* 6, 78–83, 95 (*Russian. English summary*). (Summary) **93b:93056** 93C20
— Some qualitative properties of a controllable continuous-discrete dynamical system. (Russian. Russian summary) *Kibernet. i Vychisl. Tekhn. No.* 91 (1991), 48–53. (Summary) **93d:93047** 93C20 (93C95)
Kukhtin, V. V. (*with* Gergel', V. P.; Grishagin, V. A.; Rogatneva, E. A.; Strongin, R. G.; Vysotskaya, I. N.) ★ A software system for multiextremal optimization. (English. English and Russian summaries) Сообщения Объединенного Института Ядерных Исследований. Дубна [Communications of the Joint Institute for Nuclear Research. Dubna], E11-92-252. *Joint Inst. Nuclear Res., Dubna*, 1992. 19 *pp.* (Rumena Kaltinska) **93i:90005** 90–04 (65K10, 90C29, 90C30)
— (*with* Gergel', V. P.; Grishagin, V. A.; Rogatneva, E. A.; Strongin, R. G.; Vysotskaya, I. N.) ★ Complicated problem solution techniques in optimal parameter searching. (English. English and Russian summaries) Сообщения Объединенного Института Ядерных Исследований. Дубна [Communications of the Joint Institute for Nuclear Research. Dubna], E11-92-218. *Joint Inst. Nuclear Res., Dubna*, 1992. 21 *pp.* 90C29 (90A05)
Kukin, G. P. (*with* Kryazhovskikh, G. V.) Algorithmic properties of free rings. (Russian) *Sibirsk. Mat. Zh.* **32** (1991), *no.* 6, 87–99, 204; *translation in Siberian Math. J.* **32** (1991), *no.* 6, 971–981 (1992). (A. A. Iskander) **93e:03016** 03B25 (03C60, 16S15)
— (*with* Kryazhovskikh, G. V.) Algorithmic properties of free rings. *Proceedings of the International Conference on Algebra, Part* 2 (*Novosibirsk*, 1989), 701–704, *Contemp. Math.*, 131, *Part* 2, *Amer. Math. Soc., Providence, RI*, 1992. (Sergei V. Rychkov) **93e:16004** 16D40 (03C60)
Kukla, Rebecca Cognitive models and representation. (English summary) *British J. Philos. Sci.* **43** (1992), *no.* 2, 219–232. 68T01
Kuklin, V. M. (*with* Chernousenko, V. M.; Panchenko, I. P.) Structures in nonequilibrium media. (Russian) *Integrability and kinetic equations for solitons (Russian*), 333–416, "*Naukova Dumka*", *Kiev*, 1990. (A. D. Khon'kin) **93g:82061** 82C10 (35Q99, 76C05, 76X05, 82D10)
— (*with* Chernousenko, V. M.; Panchenko, I. P.; Vorob'yov, V. M.) Space dissipative structures. *Nonlinear world, Vol.* 2 (*Kiev*, 1989), 776–803, *World Sci. Publishing, River Edge, NJ*, 1990. (*see* **93h:00013**) 35P05 (76B15)
Kuklinski, Lisa (*with* Bergstrand, Deborah; Hodges, Ken; Jennings, George; Wiener, Janet; Harary, Frank) Product graphs are sum graphs. (English summary) *Math. Mag.* **65** (1992), *no.* 4, 262–264. (Summary) **93g:05117** 05C75
Kuksin, S. B. (*with* Bikbaev, R. F.) A periodic boundary value problem for the sine-Gordon equation, its small Hamiltonian perturbations, and KAM-deformations of finite-gap tori. (Russian. Russian summary) *Algebra i Analiz* **4** (1992), *no.* 3, 42–78; *translation in St. Petersburg Math. J.* **4** (1993), *no.* 3, 439–468. (Vladimir Mikhalev) **93k:35229** 35Q53 (58F07, 58F27)
Kuku, I. V. On the cardinality of parametric bases in chain logics. (Russian) *Mat. Zametki* **50** (1991), *no.* 3, 68–75, 157; *translation in Math. Notes* **50** (1991), *no.* 3-4, 928–932 (1992). (Summary) **93b:03041** 03B55
— (*with* Ratsa, M. F.) Parametric completeness in the logic of the simplest pseudo-Boolean algebra with incomparable elements. (Russian. English, Russian and Moldavian summaries) *Izv. Akad. Nauk Respub. Moldova Mat.* **1992,** *no.* 1, 46–51, 91. 94C10
Kukushkin, N. S. On existence of stable and efficient outcomes in games with public and private objectives. *Internat. J. Game Theory* **20** (1992), *no.* 3, 295–303. (Summary) **93f:90210** 90D35 (90A14, 90D40)
— (*with* Men'shikova, O. R.; Men'shikov, I. S.) Ol'ga Nikolaevna Bondareva (obituary). (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **32** (1992), *no.* 6, 989–990. (Editors) **93d:01075b** 01A70
Kula, Mieczysław ★ Finitely generated Witt rings. With Polish and Russian summaries. Prace Naukowe Uniwersytetu Śląskiego w Katowicach [Scientific Publications of the University of Silesia], 1207. *Uniwersytet Śląski, Katowice*, 1991. 52 *pp. ISBN* 83-226-0373-8 (Murray Marshall) **93b:11049** 11E81 (11E04, 11E08)
Kulagin, N. E. (*with* Alfimov, G. L.) On the existence of radially asymmetric solutions of quasilinear equations of elliptic type. (Russian. English summary) *Mat. Model.* **2** (1990), *no.* 10, 67–79 (1991). (Russell C. Thompson) **93g:35038** 35J60 (35P30, 35Q99, 65P05)
— (*with* Alfimov, G. L.; Eleonskiĭ, V. M.) Dynamical systems in the theory of solitons in the presence of nonlocal interactions. (English summary) *Chaos* **2** (1992), *no.* 4, 565–570. (Summary) **93k:35225** 35Q51
— (*with* Dubov, S. Yu.; Eleonskiĭ, V. M.) Equidistant spectra of anharmonic oscillators. *Soviet Phys. JETP* **75** (1992), *no.* 3, 446–451; *translated from Zh. Èksper. Teoret. Fiz.* **102** (1992), *no.* 3, 814–825 (*Russian*). (Summary) **93h:81022** 81Q05 (34L40, 35J10)
Kulagin, O. A. (*with* Alekseev, A. O.; Alekseev, O. G.) An experimental estimate for the efficiency of an algorithm for solving the minimax traveling salesman problem. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **33** (1993), *no.* 3, 476–478; *translation in Comput. Math. Math. Phys.* **33** (1993), *no.* 3, 441–442. 90C27 (90–08)
Kulagin, V. A. Algebraic independence of values of a subclass of entire functions. (Russian. Russian summary) *Mat. Zametki* **51** (1992), *no.* 6, 46–51, 157; *translation in Math. Notes* **51** (1992), *no.* 5-6, 561–565. (Summary) **93h:11083** 11J91 (30D20)
Kulasekera, K. B. (*with* Tonkyn, David W.) A new discrete distribution, with applications to survival, dispersal and dispersion. *Comm. Statist. Simulation Comput.* **21** (1992), *no.* 2, 499–518. 62E15
— (*with* Alam, Khursheed) Truncation error in the expansion of the distribution of a quadratic form. (English summary) *Sankhya Ser. B* **54** (1992), *no.* 1, 13–23. (Summary) **93k:62033** 62F03 (60E15, 62F10, 62H10)
Kulatunga, D. D. Sarath (*with* Sasabuchi, Syoichi; Inutsuka, Makoto) An algorithm for computing multivariate isotonic regression. *Hiroshima Math. J.* **22** (1992), *no.* 3, 551–560. (Harshinder Singh) **93m:62059** 62F30 (62J05)
Kul'chitskiĭ, O. Yu. (*with* Vishnevskiĭ, B. L.) Sufficient conditions for stability of discrete systems with tunable dynamics. (Russian. Russian summary) *Kibernet. i Vychisl. Tekhn. No.* 89 (1991), 3–9. (Summary) **93d:93061** 93D05 (93C55)
— (*with* Mozgovoĭ, A. È.) An estimate for the rate of convergence of recurrent robust identification algorithms. (Russian. Russian summary) *Kibernet. i Vychisl. Tekhn. No.* 89 (1991), 36–39. 93B40 (93B30)
Kulesza, John S. (*with* Lim, Teck-Cheong) Some examples concerning fixed points of nonexpansive mappings in metric spaces. (English summary) *Fixed point theory and applications (Halifax, NS*, 1991), 164–168, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93k:54078** 54H25
Kulev, G. K. Uniform asymptotic stability in impulsive perturbed systems of differential equations. (English summary) Asymptotic methods in analysis and combinatorics. *J. Comput. Appl. Math.* **41** (1992), *no.* 1-2, 49–55. (Summary) **93d:34088** 34D05 (34A37, 34D10)
Kulhavý, Rudolf (*with* Kliokys, E.) Bayesian filtering for discrete-time systems with random structure. (English summary) *Adaptive systems in control and signal processing*, 1989

(*Glasgow*), 483–487, *IFAC Sympos. Ser.*, 1990, *No.* 1, *Pergamon, Oxford*, 1990. (*see* **93j:93007**) 93E11 (93C55)

— On design of approximate finite-dimensional estimators: the Bayesian view. (English summary) *Mutual impact of computing power and control theory* (*Prague*, 1992), 13–24, *Czech. Acad. Sci., Prague*, 1992. (Summary) **93i:93119** 93E10 (62A15, 93E11)

— Recursive nonlinear estimation: geometry of a space of posterior densities. *Automatica J. IFAC* **28** (1992), *no.* 2, 313–323. (Allen Tannenbaum) **93c:93047** 93E10 (93B27)

Kuliev, È. A. On infinite nontangential limits of harmonic functions. (Russian) *Mat. Zametki* **50** (1991), *no.* 3, 76–80, 158; *translation in Math. Notes* **50** (1991), *no.* 3-4, 932–935 (1992). (Summary) **93c:31012** 31B25

Kulik, V. L. (*with* Pyatetskaya, E. V.) Continuity of invariant tori of linear extensions of dynamical systems that do not possess Green functions. (Russian. Russian summary) *Nonlinear problems in the theory of differential equations* (*Russian*), 23–30, *Akad. Nauk Ukrain. SSR, Inst. Mat., Kiev*, 1991. (*see* **93f:34006**) 34C30

— (*with* Mitropol'skiĭ, Yu. A.) Invariant manifolds of autonomous differential equations, and sign-variable Lyapunov functions. (Russian. Russian summary) *Differentsial'nye Uravneniya* **28** (1992), *no.* 3, 398–405, 547; *translation in Differential Equations* **28** (1992), *no.* 3, 331–337. (Josef Diblík) **93i:34083** 34C30

— (*with* Samoĭlenko, A. M.) On the existence of sign-variable Lyapunov functions for linear systems of differential equations. (Russian. Russian and Ukrainian summaries) *Ukraïn. Mat. Zh.* **44** (1992), *no.* 1, 100–106; *translation in Ukrainian Math. J.* **44** (1992), *no.* 1, 90–95. (Ivan N. Grod) **93k:34112** 34D20 (34A30)

Kulikov, A. I. Optimal control of ship separation accounting for their dynamic capabilities. *J. Comput. Systems Sci. Internat.* **30** (1992), *no.* 5, 44–50; *translated from Izv. Ross. Akad. Nauk Tekhn. Kibernet.* **1992**, *no.* 1, 49–56 (*Russian. Russian summary*). (Summary) **93f:93092** 93C95

Kulikov, A. N. Inertial manifolds of nonlinear autonomous differential equations in a Hilbert space. (Russian. English summary) *Akad. Nauk SSSR Inst. Prikl. Mat. Preprint* **1991**, *no.* 85, 22 *pp.* (Summary) **93b:34075** 34G20 (34D45, 35K55, 35R20, 58F39)

— Nonlinear flutter panel: the risk of hard excitation of vibrations. (Russian. Russian summary) *Differentsial'nye Uravneniya* **28** (1992), *no.* 6, 1080–1082, 1104. (From the text) **93k:34092** 34C25 (73K70)

Kulikov, G. Yu. A method for the numerical solution of the autonomous Cauchy problem with an algebraic restriction on the phase variables. (Russian. Russian summary) *Vestnik Moskov. Univ. Ser. I Mat. Mekh.* **1992**, *no.* 1, 14–19, 111; *translation in Moscow Univ. Math. Bull.* **47** (1992), *no.* 1, 14–18. (Summary) **93m:65092** 65L05

Kulikov, N. A. Simple lattices of congruences of finite graphs. (Russian) *Algebra i Logika* **29** (1990), *no.* 1, 3–14, 129; *translation in Algebra and Logic* **29** (1990), *no.* 1, 1–10 (1991). (Jarmila Hedlíková) **93e:05082** 05C75 (06A12, 06B99, 08A30)

Kulikov, S. I. (*with* Nesterenko, A. I.; Nesterenko, N. G.) Solution of the two-dimensional Stefan problem in a multiply connected domain. (Russian. Russian summary) *Zh. Vychisl. Mat. i Mat. Fiz.* **33** (1993), *no.* 3, 404–416; *translation in Comput. Math. Math. Phys.* **33** (1993), *no.* 3, 365–375. (Summary) **93m:65123** 65M06 (80–08, 80A22)

Kulikov, Vik. S. On the fundamental group of the complement of a hypersurface in $\mathbf{C}^n$. *Algebraic geometry* (*Chicago, IL*, 1989), 122–130, *Lecture Notes in Math.*, 1479, *Springer, Berlin*, 1991. (Toshizumi Fukui) **93k:14030** 14F35

— Fundamental group of the complement of a hypersurface in $\mathbf{C}^n$. (Russian) *Izv. Akad. Nauk SSSR Ser. Mat.* **55** (1991), *no.* 2, 407–428; *translation in Math. USSR-Izv.* **38** (1992), *no.* 2, 399–418. (Anatoly Libgober) **93e:14032** 14H30

— On the structure of the fundamental group of the complement to algebraic curves in $\mathbf{C}^2$. (Russian. Russian summary) *Izv. Ross. Akad. Nauk Ser. Mat.* **56** (1992), *no.* 2, 469–480; *translation in Russian Acad. Sci. Izv. Math.* **40** (1993), *no.* 2, 443–454. (N. V. Ivanov) **93g:14024** 14E20 (14H20)

Kulikovskiĭ, A. G. (*with* Egorushkin, S. A.) Stability of solutions of some boundary value problems for hyperbolic equations. (Russian) *Prikl. Mat. Mekh.* **56** (1992), *no.* 1, 40–51; *translation in J. Appl. Math. Mech.* **56** (1992), *no.* 1, 36–45. (From the text) **93g:35089** 35L45 (35B35, 76L05, 76W05)

Kulinich, G. L. (*with* Mynbaeva, M. U.) Spatial averaging in parabolic equations. (Russian. Russian and Ukrainian summaries) *Ukraïn. Mat. Zh.* **44** (1992), *no.* 4, 561–564; *translation in Ukrainian Math. J.* **44** (1992), *no.* 4, 501–504. (Summary) **93g:35057** 35K10 (60H15)

Kulisch, Ulrich *see* **Scientific computing with automatic result verification, 93f:65009; Yearbook: Surveys on mathematics, 93j:00006** *and* **Computational and applied mathematics, 93j:00007**

Kulish, P. P. (*with* Chaichian, M.) Quantum superalgebras, q-oscillators and applications. *Nonperturbative methods in low-dimensional quantum field theories* (*Debrecen*, 1990), 213–236, *World Sci. Publishing, River Edge, NJ*, 1991. (Michael Schlieker) **93k:81091** 81R50 (17B37, 17B81, 81S05)

— (*with* Sklyanin, E. K.) Algebraic structures related to reflection equations. (English summary) *J. Phys. A* **25** (1992), *no.* 22, 5963–5975. (Roland Berger) **93k:17032** 17B37 (81R50, 82B23)

— (*with* Hikami, Kazuhiro; Wadati, Miki) Construction of integrable spin systems with long-range interactions. (English summary) *J. Phys. Soc. Japan* **61** (1992), *no.* 9, 3071–3076. (Ladislav Šamaj) **93k:82017** 82B23

— (*with* Damaskinskiĭ, E. V.) Hermite q-polynomials and q-oscillators. (Russian. English summary) *Zap. Nauchn. Sem. S.-Peterburg. Otdel. Mat. Inst. Steklov.* (*POMI*) **199** (1992), *Voprosy Kvant. Teor. Polya Statist. Fiz.* 11, 81–90, 185–186. (A. U. Klimyk) **93h:81057** 81R50

— *see also* **Quantum groups, 93d:00038**

Kulisiewicz, M. (*with* Piesiak, St.) A modelling procedure of the simple mechanical dynamic systems with using a nonlinear model. (English summary) *Computational systems analysis* 1992 (*Berlin*, 1992), 501–505, *Elsevier, Amsterdam*, 1992. (*see* **93e:00021**) 93A30 (93B30)

Kulkarni, H. V. (*with* Prasad, M. S.) A class of absolutely continuous bivariate life-time distributions. (English summary) *Proceedings of the Symposium on Distribution Theory* (*Kochi*, 1991), 31–36, *Publication*, 22, *Centre Math. Sci., Trivandrum*, 1991. (Summary) **93h:62025** 62E15 (62N05)

Kulkarni, K. H. (*with* Sprague, Alan P.) Optimal parallel algorithms for finding cut vertices and bridges of interval graphs. *Inform. Process. Lett.* **42** (1992), *no.* 4, 229–234. (Summary) **93c:68038** 68Q22 (68Q25, 68R10)

Kulkarni, P. M. Robust estimation and hypothesis tests for first-order threshold autoregressive models. (English summary) *Austral. J. Statist.* **34** (1992), *no.* 1, 99–104. (Summary) **93g:62116** 62M10

— Estimation of parameters of a two-dimensional spatial autoregressive model with regression. (English summary) *Statist. Probab. Lett.* **15** (1992), *no.* 2, 157–162. (Summary) **93m:62206** 62M30 (62M10)

Kulkarni, Ravi S. Isolated points in the branch locus of the moduli space of compact Riemann surfaces. *Ann. Acad. Sci. Fenn. Ser. A I Math.* **16** (1991), *no.* 1, 71–81. (David Singerman) **93a:30048** 30F10 (14H10, 14H55, 20H10)

— Infinite families of surface symmetries. (English summary) *Israel J. Math.* **76** (1991), *no.* 3, 337–343. (Marston Conder) **93f:57017** 57M60 (20F38)

— (*with* Conder, Marston D. E.) Infinite families of automorphism groups of Riemann surfaces. *Discrete groups and geometry* (*Birmingham*, 1991), 47–56, *London Math. Soc. Lecture Note Ser.*, 173, *Cambridge Univ. Press, Cambridge*, 1992. (Gabino González Díez) **93k:30073** 30F35

— (*with* Dray, Tevian; Manogue, Corinne A.) Scalar field quantization in stationary, nonstatic spacetimes. (English summary) *Gen. Relativity Gravitation* **24** (1992), *no.* 12, 1255–1266. (Ilya Shapiro) **93j:83046** 83C47 (81T20, 81V17)

Kulkarni, Ravindra D. d'Alembert's functional equation on abelian topological groups. *J. Indian Math. Soc.* (*N.S.*) **56** (1991), *no.* 1-4, 35–42. (Olusola Akinyele) **93d:39017** 39B52

Kulkarni, Rekha (*with* Laurent, Pierre-Jean; Mazure, Marie-Laurence) Nonaffine blossoms and subdivision for Q-splines. *Mathematical methods in computer aided geometric design, II* (*Biri*, 1991), 367–380, *Academic Press, Boston, MA*, 1992. (*see* **93d:65022**) 65D07 (65D17)

Kulkarni, S. H. (*with* Limaye, B. V.) ★ Real function algebras. Monographs and Textbooks in Pure and Applied Mathematics, 168. *Marcel Dekker, Inc., New York*, 1992. viii+186 *pp. ISBN* 0-8247-8653-X (S. J. Sidney) **93m:46059** 46J10 (46–02)

Kulkarni, Shripad Rajaram (*with* Naik, U. H.) Integral operators of some univalent functions. *J. Indian Acad. Math.* **14** (1992), *no.* 1, 39–52. (From the text) **93e:30028** 30C45

Kulkarni, V. G. (*with* Choi, Bong Dae) Feedback retrial queueing systems. (English summary) *Queueing and related models*, 93–105, *Oxford Statist. Sci. Ser.*, 9, *Oxford Univ. Press, New York*, 1992. (Summary) **93m:60179** 60K25

Kulldorff, Martin Optimal control of favorable games with a time limit. (English summary) *SIAM J. Control Optim.* **31** (1993), *no.* 1, 52–69. (Robert Kertz) **93m:60149** 60J15 (49N55, 90D60)

Kulli, V. R. (*with* Patwari, D. K.) On the total edge domination number of a graph. (English summary) *Proceedings of the Symposium on Graph Theory and Combinatorics* (*Cochin*, 1991), 75–81, *Publication*, 21, *Centre Math. Sci., Trivandrum*, 1991. (Summary) **93m:05099** 05C35

— (*with* Sigarkanti, S. C.) Inverse domination in graphs. (English summary) *Nat. Acad. Sci. Lett.* **14** (1991), *no.* 12, 473–475. (Summary) **93e:05047** 05C35

— (*with* Sigarkanti, S. C.) Further results on the neighbourhood number of a graph. (English summary) *Indian J. Pure Appl. Math.* **23** (1992), *no.* 8, 575–577. (E. Olaru) **93i:05079** 05C35

— *see also* **Advances in graph theory, 93m:05003**

Kul'man, N. K. Asymptotically optimal linear filtering of a Gaussian process in a channel with delay. (Russian) *Probabilistic processes and their applications* (*Russian*), 46–50, *Moskov. Inst. Élektron. Mashinostroeniya, Moscow*, 1989. (*see* **93b:60003**) 60G35 (94A40)

Kul'muradov, M. Ė. (*with* Abutaliev, F. B.) Modeling processes, taking place in the atmosphere, by means of a multicomponent spectral barotropic model. (Russian. Russian summary) *Voprosy Vychisl. i Prikl. Mat.* (*Tashkent*) *No.* 87 (1989), 4–10, 162. 86A10 (76C99)

Kulperger, R. J. (*with* Ahmed, S. E.) A bootstrap theorem for a preliminary test estimator. *Comm. Statist. Theory Methods* **21** (1992), *no.* 7, 2071–2082. (Gutti J. Babu) **93g:62067** 62G20 (62G05, 62G09, 62G10)

Külshammer, Burkhard Adams operations on character restrictions. *Arch. Math.* (*Basel*) **58** (1992), *no.* 6, 521–524. (P. Donovan) **93d:20013** 20C11

— Offene Probleme in der Darstellungstheorie endlicher Gruppen. [Open problems in the representation theory of finite groups] *Jahresber. Deutsch. Math.-Verein.* **94** (1992), *no.* 2, 98–104. (Wolfgang Knapp) **93d:20023** 20C20 (20C15)

Kulshreshta, Usha *see* **Corichi, Alejandro, 93j:81049**

Kulshreshtha, D. S. (*with* Müller-Kirsten, H. J. W.) Faddeev-Jackiw quantization of self-dual fields. *Phys. Rev. D* (3) **45** (1992), *no.* 2, R393–R397. (From the introduction) **93a:81198** 81T70

Külske, Christof (*with* Bovier, Anton) Stability of hierarchical interfaces in a random field model. (English summary) *J. Statist. Phys.* **69** (1992), *no.* 1-2, 79–110. (Flora Koukiou) **93h:82022** 82B24 (82B28, 82B44)

Kultyshev, S. Yu. Identification of functional systems. (Russian. Russian summary) *Boundary value problems* (*Russian*), 57–62, *Perm. Politekh. Inst., Perm'*, 1991. (*see* **93m:00017**) 93B30

Kulyev, D. T. (*with* Makarov, Vladimir Leonidovich; Arazmyradov, T.) Solution of a nonlocal boundary value problem in classes of generalized functions. (Russian. English summary) *Izv. Akad. Nauk Turkm. Ser. Fiz.-Mat. Tekhn. Khim. Geol. Nauk* **1992**, *no.* 2, 3–8. (From the summary) **93a:35089** 35K60 (35D05)

Kum, Sangho A generalization of Simons' results on best approximations. *J. Korean Math. Soc.* **29** (1992), *no.* 1, 43–54. (S. Simons) **93e:46012** 46A99 (41A65, 46N10, 47H10)

Ku-Mahamud, Ku Ruhana (*with* Othman, Abu Talib; Selamat, M. H.) Analytical analysis of decentralized controlled general data communication networks. (English summary) *Computational statistics, Vol.* 2 (*Neuchâtel*, 1992), 317–322, *Physica, Heidelberg*, 1992. (*see* **93k:62003**) 90B12

— (*with* Othman, Abu Talib) Model reduction of general queueing networks. (English summary) *Internat. J. Systems Sci.* **24** (1993), *no.* 1, 183–192. 90B22

Kumamaru, K. (*with* Zhao, Zhen-Yu; Sagara, Setsuo) On-line identification of time delay and system parameters of continuous systems based on discrete-time measurements. (English summary) *Identification and system parameter estimation* 1991, *Vol.* 1,2 (*Budapest*, 1991), 721–726, *IFAC Sympos. Ser.*, 3, *Pergamon, Oxford*, 1992. (*see* **93h:93009**) 93B30

Kumar, A. *see* **Kumar, Ajay²**

Kumar, Ajay[1] (*with* Echterhoff, Siegfried; Kaniuth, Eberhard) A qualitative uncertainty principle for certain locally compact groups. *Forum Math.* **3** (1991), *no.* 4, 355–369. (Michael Cowling) **93a:43005** 43A30 (43A32)

Kumar, Ajay[2] *see* **Instability, transition, and turbulence, 93j:76004**

Kumar, Alok[2] (*with* Maharana, Jnanadeva) Four matrix model in KdV approach. (English summary) *Matrix models, random surfaces and 2-D gravity* (*Madras*, 1990), 49–55, *IMS Rep.*, 113, *Inst. Math. Sci., Madras*, 199?. (*see* **93h:81001**) 81T40 (58F07)

— (*with* Maharana, Jnanadeva; Sengupta, Gautam) Krichever-Novikov formulation of topological conformal field theory. *Lett. Math. Phys.* **23** (1991), *no.* 4, 271–277. (D. V. Yur'ev) **93e:81117** 81T40 (17B81, 81T60)

— (*with* Ali, Abbas; Maharana, Jnanadeva; Sengupta, Gautam) Algebraic structure of topological superconformal field theory on Riemann surfaces. (English summary) *Comm. Math. Phys.* **148** (1992), *no.* 1, 117–137. (Stanislav Z. Pakuliak) **93f:81123** 81T40 (17B81, 81R10, 81T60, 81T70)

— (*with* Maharana, Jnanadeva) Tetracritical Ising model coupled to the two-dimensional gravity. (English summary) *Internat. J. Modern Phys. A* **7** (1992), *no.* 19, 4487–4499. (W. Cox) **93i:81239** 81T40 (81T27)

— (*with* Kar, Supriya K.; Khastgir, S. Pratik) An algorithm to generate classical solutions of string effective action. *Modern Phys. Lett. A* **7** (1992), *no.* 17, 1545–1551. (Summary) **93b:81219** 81T30

— (*with* Maharana, Jnanadeva) Topological field theory from $N = 3$ superconformal theory. *Nuclear Phys. B* **373** (1992), *no.* 1, 281–291. (Bo-Wei Xu) **93c:81212** 81T40 (17B81, 81T13)

— (*with* Kar, Supriya K.) Target space structure of a chiral gauged Wess-Zumino-Witten model. (English summary) *Phys. Lett. B* **291** (1992), *no.* 3, 246–250. 81T13

— Gauged string actions and $O(\tilde{d}, \tilde{d})$ transformation. (English summary) *Phys. Lett. B* **293** (1992), *no.* 1-2, 49–55. (Alexander A. Zheltukhin) **93m:81119** 81T30

Kumar, Anurag Task allocation in multiserver systems—a survey of results. (English summary) *Sadhana* **15** (1990), *no.* 4-5, 381–395. 90B22

— On the average idle time and average queue length estimates in an $M/M/1$ queue. (English summary) *Oper. Res. Lett.* **12** (1992), *no.* 3, 153–157. (Summary) **93f:90074** 90B22 (60K25)

Kumar, Arun (*with* Govil, L. K.) Interpolation by natural cubic spline. *Internat. J. Math. Math. Sci.* **15** (1992), *no.* 2, 229–234. (Summary) **93a:41017** 41A15

— (*with* Govil, L. K.) On deficient cubic spline interpolants. *J. Approx. Theory* **68** (1992), *no.* 2, 175–182. (Crăciun Iancu) **93a:41018** 41A15

Kumar, Arvind (*with* Srivastava, G. S.) On the space of a class of analytic functions having slow rate of growth. *Soochow J. Math.* **17** (1991), *no.* 1, 151–163. (G. P. Kapoor) **93c:30044** 30D15 (30H05)

Kumar, Ashok (*with* Gupta, Sat N.) Time domain estimation in fractionally differenced noise processes. (English summary) *J. Combin. Inform. System Sci.* **16** (1991), *no.* 4, 281–285. (Summary) **93f:62123** 62M10

Kumar, Ashok Quasinormal operators. (English summary) *Bull. Calcutta Math. Soc.* **84** (1992), *no.* 1, 37–38. (Summary) **93j:47035** 47B20 (47B07)

Kumar, B. Krishna (*with* Parthasarathy, P. R.) A birth and death process with logistic mean population. *Comm. Statist. Theory Methods* **20** (1991), *no.* 2, 621–629. (Summary) **93d:60141** 60J80

— (*with* Parthasarathy, P. R.) Number of deaths in semi-Markov compartmental system with branching particles. (English summary) *Math. Comput. Modelling* **16** (1992), *no.* 12, 29–36. (Summary) **93h:60143** 60K15

Kumar, C. Nagraj (*with* Chitra, R.; Sen, Diptiman) Supersymmetry in the two-anyon problem. *Modern Phys. Lett. A* **7** (1992), *no.* 10, 855–863. (Summary) **93a:81189** 81T60 (81Q60)

Kumar, Deepak (*with* Srivastava, G. S.; Kasana, H. S.) Approximation of entire harmonic functions in $\mathbf{R}^3$ having index-pair (p, q). *Anal. Numér. Théor. Approx.* **20** (1991), *no.* 1-2, 47–57. (O. P. Juneja) **93k:31004** 31B05 (30E10)

Kumar, Devendra A class of systems with nearly zero distributed simulation overhead. (English summary) *Inform. Sci.* **66** (1992), *no.* 1-2, 23–41. (Summary) **93d:68009** 68M20

— Efficient distributed simulation of acyclic systems. (English summary) *Inform. Sci.* **66** (1992), *no.* 1-2, 167–190. 68M20

Kumar, Ganesh Quadratic Euclidean domains. (English summary) *Math. Ed.* (*Siwan*) **26** (1992), *no.* 3, 180–185. (W. Narkiewicz) **93m:11109** 11R11 (13F07)

Kumar, Hemant[2] (*with* Singh Chandel, R. C.; Agrawal, Ram Das) Fourier series involving the multivariable H-function of Srivastava and Panda. *Indian J. Pure Appl. Math.* **23** (1992), *no.* 5, 343–357. (Summary) **93j:33006** 33C60 (42C10)

— (*with* Singh Chandel, R. C.; Agrawal, Ram Das) An integral involving sine functions, exponential functions, the Kampé de Fériet function and the multivariable H-function of Srivastava and Panda, and its application in a potential problem on a circular disk. *Pure Appl. Math. Sci.* **35** (1992), *no.* 1-2, 59–69. (Summary) **93f:33016** 33C80 (33C90)

Kumar, M. Kishore (*with* Kumar, P. Sreenivasa; Basu, Arup) A parallel algorithm for elimination tree computation and symbolic factorization. (English summary) *Parallel Comput.* **18** (1992), *no.* 8, 849–856. (Summary) **93g:65177** 65Y05 (65F50)

mohan Kumar, N. *see* **Mohan Kumar, N.**

Kumar, Narinder (*with* Gill, Amar Nath; Mehta, Gobind P.) A class of selection procedures for scale parameters. (English summary) *J. Indian Statist. Assoc.* **30** (1992), *no.* 2, 75–88. (Summary) **93j:62055** 62F07

Kumar, P. R. *see* **Kumar, Panganamala Ramana**

Kumar, P. Ramesh Biorder relations in languages. (English summary) *Proceedings of the Symposium on Graph Theory and Combinatorics* (*Cochin*, 1991), 99–104, *Publication*, 21, *Centre Math. Sci., Trivandrum*, 1991. (Summary) **93k:20099** 20M35 (68Q45)

Kumar, P. Sreenivasa (*with* Veeraraghavulu, N. Ch.; Veni Madhavan, C. E.) A linear-time algorithm for isomorphism of a subclass of chordal graphs. (English summary) *National Seminar on Theoretical Computer Science* (*Madras*, 1991), 159–168, *IMS Rep.*, 115, *Inst. Math. Sci., Madras*, 199?. (Summary) **93d:05146** 05C85 (68Q20, 68R10)

— (*with* Veeraraghavulu, N. Ch.; Veni Madhavan, C. E.) A linear-time algorithm for isomorphism of a subclass of chordal graphs. *Inform. Process. Lett.* **44** (1992), *no.* 1, 45–49. 68R10

— (*with* Kumar, M. Kishore; Basu, Arup) A parallel algorithm for elimination tree computation and symbolic factorization. (English summary) *Parallel Comput.* **18** (1992), *no.* 8, 849–856. (Summary) **93g:65177** 65Y05 (65F50)

Kumar, P. Vijay (*with* Patapoutian, Ara) The (d, k) subcode of a linear block code. *IEEE Trans. Inform. Theory* **38** (1992), *no.* 4, 1375–1382. 94B65

— (*with* Wei, Victor K.) Minimum distance of logarithmic and fractional partial m-sequences. (English summary) *IEEE Trans. Inform. Theory* **38** (1992), *no.* 5, 1474–1482. (Summary) **93f:94002** 94A05 (94A55, 94B20)

Kumar, Panganamala Ramana (*with* Ren, Wei) Recent results on least squares-based adaptive control of linear stochastic systems in white noise. (English summary) *Sadhana* **15** (1990), *no.* 4-5, 397–404. (Summary) **93f:93151** 93E35 (93E15)

— (*with* Naik, Sanjeev M.; Ydstie, B. Erik) Robust continuous-time adaptive control by parameter projection. (English summary) *Foundations of adaptive control* (*Urbana, IL*, 1990), 153–199, *Lecture Notes in Control and Inform. Sci.*, 160, *Springer, Berlin*, 1991. (Zong Ji Chen) **93i:93076** 93C40 (93C60, 93D09, 93D21)

— (*with* Ren, Wei) Stochastic adaptive system theory: recent advances and a reappraisal. (English summary) *Foundations of adaptive control* (*Urbana, IL*, 1990), 269–307, *Lecture Notes in Control and Inform. Sci.*, 160, *Springer, Berlin*, 1991. (*see* **93c:93004**) 93E35

— (*with* Naik, Sanjeev M.) Extended least squares based adaptive control: robustness analysis. (English summary) *Stochastic theory and adaptive control* (*Lawrence, KS*, 1991), 346–360, *Lecture Notes in Control and Inform. Sci.*, 184, *Springer, Berlin*, 1992. (Leopoldo Jetto) **93m:93101** 93E35 (93C40, 93C73, 93D09, 93E24)

— (*with* Ren, Wei) The convergence of self-tuning feedback control for linear stochastic systems. (English summary) *Stochastic theory and adaptive control* (*Lawrence, KS*, 1991), 383–397, *Lecture Notes in Control and Inform. Sci.*, 184, *Springer, Berlin*, 1992. (*see* **93g:93007**) 93B52 (93E03)

— (*with* Naik, Sanjeev M.; Ydstie, B. Erik) Robust continuous-time adaptive control by parameter projection. *IEEE Trans. Automat. Control* **37** (1992), *no.* 2, 182–197. (Kathryn E. Lenz) **93b:93032** 93B35 (93C40, 93D21)

— (*with* Ren, Wei) Stochastic parallel model adaptation: theory and applications to active noise canceling, feedforward control, IIR filtering, and identification. *IEEE Trans. Automat. Control* **37** (1992), *no.* 5, 566–578. (Summary) **93d:93094** 93E35 (93B52, 93E11)

— Re-entrant lines. (English summary) *Queueing Systems Theory Appl.* **13** (1993), *no.* 1-3, 87–110. 90B35 (90B22)

sampath Kumar, R. *see* **Sampath Kumar, R.**

Kumar, Rajeev (*with* Taneja, Gulshan; Rizwan, S. M.) Profit analysis of a system with perfect repair at partial failure and priority for repair to complete failed unit. *Pure Appl. Math. Sci.* **35** (1992), *no.* 1-2, 131–141. 60K25

Kumar, Rajendra (*with* Saxena, Ram Kishore) Certain q-polynomial expansions for functions of several variables. (English summary) *Progr. Math.* (*Varanasi*) **24** (1990), *no.* 1-2, 107–114. (Summary) **93m:33016** 33D45

— (*with* Saxena, Ram Kishore) Integral representations of multiple basic hypergeometric functions. *Jñanabha* **21** (1991), 37–46. (Summary) **93c:33015** 33D15

Kumar, Rajesh Fuzzy primary ideals: some ring-theoretic analogues. (English summary) *Bull. Calcutta Math. Soc.* **84** (1992), *no.* 4, 301–308. (Summary) **93k:13010** 13A99 (04A72)

— Fuzzy prime spectrum of a ring. *Fuzzy Sets and Systems* **46** (1992), *no.* 1, 147–154. (Jean-Luc Chabert) **93d:13009** 13A99 (04A72)

— Certain fuzzy ideals of rings redefined. *Fuzzy Sets and Systems* **46** (1992), *no.* 2, 251–260. (Summary) **93d:13010** 13A99 (04A72)

— Fuzzy cosets and some fuzzy radicals. *Fuzzy Sets and Systems* **46** (1992), *no.* 2, 261–265. (Summary) **93d:13011** 13A99 (04A72)

— Fuzzy Sylow subgroups. *Fuzzy Sets and Systems* **46** (1992), *no.* 2, 267–271. (Summary) **93c:20119** 20N25 (20D20)

— Fuzzy subgroups, fuzzy ideals, and fuzzy cosets: some properties. (English summary) *Fuzzy Sets and Systems* **48** (1992), *no.* 2, 267–274. (Summary) **93e:20106** 20N25 (04A72)

— Fuzzy characteristic subgroups of a group. (English summary) *Fuzzy Sets and Systems* **48** (1992), *no.* 3, 397–398. 20N25 (04A72)

— (*with* Dixit, V. N.; Ajmal, Naseem) On fuzzy rings. (English summary) *Fuzzy Sets and Systems* **49** (1992), *no.* 2, 205–213. (T. M. G. Ahsanullah) **93j:13008** 13A99 (04A72)

— On fuzzy irreducible ideals and homomorphisms. (English summary) *Fuzzy Sets and Systems* **50** (1992), *no.* 3, 355–356. 16D99 (04A72)

— Fuzzy nil radicals and fuzzy semiprimary ideals of rings. (English summary) *Fuzzy Sets and Systems* **51** (1992), *no.* 3, 345–350. (Summary) **93g:13005** 13A99 (04A72)

— Fuzzy ideals and fuzzy semiprime ideals: some ring theoretic analogues. (English summary) *Inform. Sci.* **66** (1992), *no.* 1-2, 43–52. (Summary) **93e:16018** 16D99 (04A72)

— (*with* Kohli, J. K.) On fuzzy inner product spaces and fuzzy co-inner product spaces. (English summary) *Fuzzy Sets and Systems* **53** (1993), *no.* 2, 227–232. (Summary) **93m:46096** 46S40 (04A72, 46C99)

— On the fuzzy radical of a fuzzy ideal. (English summary) *Fuzzy Sets and Systems* **53** (1993), *no.* 2, 233–235. 13A99 (04A72)

— On the dimension of a fuzzy subspace. (English summary) *Fuzzy Sets and Systems* **54** (1993), *no.* 2, 229–234. (Summary) **93m:15050** 15A99 (04A72)

Kumar, Rajesh (*with* Mittal, Madan Lal; Prasad, Govind) On the $\|T\| \cdot C_1$ summability of a sequence of Fourier coefficients. *Tamkang J. Math.* **22** (1991), *no.* 1, 25–29. (H. P. Dikshit) **93a:42003** 42A24 (40C05)

Kumar, Rajesh (*with* Dayal, Shambhu) Estimation of weighted mean of finite populations. (English and Hindi summaries) *J. Indian Soc. Agricultural Statist.* **44** (1992), *no.* 2, 95–105, i. 62D05

Kumar, Ratnesh (*with* Garg, Vijay Kumar; Marcus, Steven I.) On supervisory control of sequential behaviors. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 12, 1978–1985. (Summary) **93j:93076** 93C30 (93A30, 93B05)

— (*with* Garg, Vijay Kumar; Marcus, Steven I.) Stable behavior and stabilizing supervisor for discrete event dynamical systems. (English summary) *Mathematical theory of control* (*Bombay*, 1990), 185–203, *Lecture Notes in Pure and Appl. Math.*, 142, *Dekker, New York*, 1993. (*see* **93g:93003**) 93C83

Kumar, Romesh (*with* Sharma, Som Datt) Substitution operators on Hardy-Orlicz spaces. *Proc. Nat. Acad. Sci. India Sect. A* **61** (1991), *no.* 4, 535–541. (John N. McDonald) **93h:47042** 47B38 (30D55, 46E15)

sampath Kumar, S. *see* **Sampath Kumar, S.**

Kumar, Sampath A survey of some recent results in the theory of harmonic univalent functions. *New trends in geometric function theory and applications* (*Madras*, 1990), 109–115, *World Sci. Publishing, River Edge, NJ*, 1991. (Abdallah Lyzzaik) **93g:30035** 30C99

— (*with* Padmanabhan, K. S.) On a class of subordination chains of univalent function. *J. Math. Phys. Sci.* **25** (1991), *no.* 4, 361–368. (J. G. Krzyż) **93e:30035** 30C45 (30C75)

— (*with* Shenoy, B. G.) On some counterexamples for a conjecture in geometry of polynomials. (Russian and Polish summaries) *Zeszyty Nauk. Politech. Rzeszowskiej Mat. Fiz. No.* 12 (1991), 47–51. (George L. Csordas) **93c:30007** 30C10 (30C15)

— (*with* Shenoy, B. G.) On the Ilyeff-Sendov conjecture for polynomials with at most five zeros. (English summary) *J. Math. Anal. Appl.* **171** (1992), *no.* 2, 595–600. (Johnny E. Brown) **93m:30007** 30C15 (30C10)

Kumar, Santosh[2] (*with* Tiwari, Ram C.; Tyagi, Ravinder K.; Bhattacharya, Samir Kumar) Pretest estimation for some discrete distributions. *Comm. Statist. Simulation Comput.* **21** (1992), *no.* 2, 405–421. 62F10

Kumar, Satish (*with* Satsangi, Prem S.) System dynamics simulation of Hopfield neural networks. (English summary) *Internat. J. Systems Sci.* **23** (1992), *no.* 9, 1517–1525. 92B20 (82C32)

Kumar, Shrawan (*with* Kostant, Bertram) A geometric realization of minimal $\mathfrak{k}$-type of Harish-Chandra modules for complex S.S. groups. *Kazhdan-Lusztig theory and related topics* (*Chicago, IL*, 1989), 249–264, *Contemp. Math.*, 139, *Amer. Math. Soc., Providence, RI*, 1992. (William M. McGovern) **93k:22013** 22E47 (22E46)

Kumar, Somesh (*with* Sharma, Divakar) Estimating the common mean of a bivariate normal population. (English summary) *Austral. J. Statist.* **34** (1992), *no.* 1, 39–46. (Summary) **93f:62080** 62H12 (62C15)

— (*with* Sharma, Divakar) An inadmissibility result for affine equivariant estimators. *Statist. Decisions* **10** (1992), *no.* 1-2, 87–97. (N. Giri) **93g:62013** 62C15 (62A05)

Kumar, Uma (*with* Kapur, J. N.; Kapur, Sanjay) Birth and death processes with multiple births and deaths and with immigrations and emigrations. (English summary) *Bull. Math. Assoc. India* **23** (1991), *no.* 1-4, 1–22. 60J80

prasanna Kumar, V. K. *see* **Prasanna Kumar, V. K.**

Kumar, Vijayendra (*with* Ranganathan, Sucharita; Singh, Shyam Lal) Fixed points of mappings with contractive iterate on 2-metric spaces. (Hindi. English summary) *Vijnana Parishad Anusandhan Patrika* **34** (1991), *no.* 4, 237–246. 54H25

Kumaran, V. (*with* Merkin, J. H.) A note on the free convection boundary layer on a vertical surface with prescribed heat flux at small Prandtl number. *Internat. J. Math. Math. Sci.* **15** (1992), *no.* 3, 605–608. (Summary) **93c:76074** 76R10 (76N20)

Kumaravel, A. (*with* Natarajan, Ponnamal) Construction of a finite state automation escaping from a dynamic labyrinth. (English summary) *Proc. Math. Soc.* **7** (1991), 113–119 (1992). 70B15 (93C85)

Kumari, M. Krishna (*with* Shanta, P.; Chaturvedi, S.; Srinivasan, V.) On q-deformed para oscillators and para-q oscillators. (English summary) *Modern Phys. Lett. A* **7** (1992), *no.* 28, 2593–2600. (Summary) **93e:81051** 81R50 (81R30, 81S05)

prasanna Kumari, M. R. *see* **Prasanna Kumari, M. R.**

Kumari, Suresh (*with* Ram, Babu) Convergence factors of Fourier series of summable functions. *Indian J. Math.* **33** (1991), *no.* 2, 171–178. (S. M. Mazhar) **93f:42019** 42A45 (42A20, 42A50)

Kumazawa, Itsuo (*with* Ogawa, Hidemitsu) Radon transform and analog coding. *Mathematical methods in tomography* (*Oberwolfach*, 1990), 229–241, *Lecture Notes in Math.*, 1497, *Springer, Berlin*, 1991. (Introduction) **93h:44003** 44A12 (92C55)

Kume, Yasufumi (*with* Inuiguchi, Masahiro) Dominance relations as bases for constructing solution concepts in linear programming with multiple interval objective functions. (English summary) *Bull. Univ. Osaka Prefect. Ser. A* **40** (1991), *no.* 2, 275–292. (Ignacy Kaliszewski) **93j:90088** 90C29 (90A05, 90C08)

— (*with* Inuiguchi, Masahiro) Efficient solutions versus nondominated solutions in linear programming with multiple interval objective functions. (English summary) *Bull. Univ. Osaka Prefect. Ser. A* **40** (1991), *no.* 2, 293–298. (Summary) **93i:90083** 90C29 (90C08)

— (*with* Inuiguchi, Masahiro) Fuzzy reasoning based on uncertainty generation rules using necessity measures. (English summary) *Japanese J. Fuzzy Theory Systems* **4** (1992), *no.* 3, 329–344. (Summary) **93m:03041** 03B52

Kumganbaev, M. Sh. (*with* Voinov, V. G.) A derivation of the probability density function for a modified Greenwood's statistic and testing the uniformity. (English summary) *Sankhyā Ser. A* **52** (1990), *no.* 1, 91–102. 62G10

Kumjian, Alexander (*with* Blackadar, Bruce; Rørdam, Mikael) Approximately central matrix units and the structure of noncommutative tori. (English summary) *K-Theory* **6** (1992), *no.* 3, 267–284. (Chi Wai Leung) **93i:46129** 46L87 (46L05)

— (*with* Blackadar, Bruce; Bratteli, Ola; Elliott, George A.) Reduction of real rank in inductive limits of C^*-algebras. *Math. Ann.* **292** (1992), *no.* 1, 111–126. (Cornel Pasnicu) **93a:46112** 46L05

Kumlin, Peter Analyticity of the scattering operator for the nonlinear Klein-Gordon equation with cubic nonlinearity. *Comm. Math. Phys.* **144** (1992), *no.* 2, 257–278. (T. C. Mohan) **93a:81114** 81T08 (81U20)

— (*with* Asadzadeh, Mohammad; Larsson, Stig) The discrete ordinates method for the neutron transport equation in an infinite cylindrical domain. (English summary) *Math. Models Methods Appl. Sci.* **2** (1992), *no.* 3, 317–338. (Edward W. Larsen) **93i:82064** 82C70 (65R20, 82–04)

Kummer, Bernd Lipschitz functions in a finite-dimensional space: inverse and implicit functions, critical points in optimization problems, and Newton-type methods for solving Lipschitz equations (a survey). (Russian) *Optimization: models, methods, solutions* (*Russian*) (*Irkutsk*, 1989), 133–141, "*Nauka*" *Sibirsk. Otdel., Novosibirsk*, 1992. (*see* **93k:90002**) 90C30 (49J52, 90–02)

— On stability and Newton-type methods for Lipschitzian equations with applications to optimization problems. *System modelling and optimization* (*Zurich*, 1991), 3–16, *Lecture Notes in Control and Inform. Sci.*, 180, *Springer, Berlin*, 1992. (Aharon Ben-Tal) **93h:90096** 90C31 (49K40)

Kummer, H. (*with* McLean, R. G.) Fuzzy ideals in semigroups. *Fuzzy Sets and Systems* **48** (1992), *no.* 1, 137–140. (Summary) **93d:20123** 20M99 (04A72)

Kummer, Martin Walter Diagonals and semihyperhypersimple sets. *J. Symbolic Logic* **56** (1991), *no.* 3, 1068–1074. (John P. Helm) **93b:03071** 03D25

Kummer, Wolfgang (*with* Grosse, Harald; Prešnajder, Peter; Schwarz, Dominik J.) Novel symmetry of non-Einsteinian gravity in two dimensions. (English summary) *J. Math. Phys.* **33** (1992), *no.* 11, 3892–3900. (Yu. N. Obukhov) **93k:81204** 81T40 (81R05)

— (*with* Schwarz, Dominik J.) Renormalization of R^2 gravity with dynamical torsion in $d = 2$. (English summary) *Nuclear Phys. B* **382** (1992), *no.* 1, 171–186. (Summary) **93f:81137** 81T40

— (*with* Schwarz, Dominik J.) General analytic solution of R^2 gravity with dynamical torsion in two dimensions. *Phys. Rev. D* (3) **45** (1992), *no.* 10, 3628–3635. (Summary) **93b:83055** 83D05

Kümmerer, Burkhard (*with* Speicher, Roland) Stochastic integration on the Cuntz algebra O_∞. *J. Funct. Anal.* **103** (1992), *no.* 2, 372–408. (Kalyanapuram R. Parthasarathy) **93d:46109** 46L50 (60H05, 81S25)

Kumon, Masayuki Identification of non-minimum phase transfer function using higher-order spectrum. (English summary) *Ann. Inst. Statist. Math.* **44** (1992), *no.* 2, 239–260. (Claudia Klüppelberg) **93h:62173** 62M15

łuczak-Kumorek, E. *see* **Łuczak-Kumorek, E.**

Kumpera, A. Les symétries généralisées et le complexe d'Euler-Lagrange. [Generalized symmetries and the Euler-Lagrange complex] *J. Fac. Sci. Univ. Tokyo Sect. IA Math.* **38** (1991), *no.* 3, 589–622. (Akira Asada) **93e:58172** 58G05 (35A30, 58E99, 58F05, 58H05)

Kumpulainen, Martti (*with* Carl, Siegfried; Heikkilä, Seppo) On a generalized iteration method with applications to fixed point theorems and elliptic systems involving discontinuities. *Nonlinear Anal.* **20** (1993), *no.* 2, 157–167. (Pavel Drábek) **93k:35083** 35J55 (47H10, 47N20)

Kunakova, E. Yu. (*with* Dubrovskiĭ, V. V.) A formula for the first regularized trace of a power of the Laplace operator on a triangle. (Russian. Russian summary) *Differentsial'nye Uravneniya* **28** (1992), *no.* 7, 1274–1276, 1288. 35J05 (35P05, 47F05)

Kuncheva, Ludmila Ilieva Fuzzy rough sets: application to feature selection. (English summary) *Fuzzy Sets and Systems* **51** (1992), *no.* 2, 147–153. (From the summary) **93h:04003** 04A72 (68T10)

Kunde, Manfred Concentrated regular data streams on grids: sorting and routing near to the bisection bound. (English summary) 32*nd Annual Symposium on Foundations of Computer Science* (*San Juan, PR*, 1991), 141–150, *IEEE Comput. Soc. Press, Los Alamitos, CA*, 1991. (*see* **93d:68005**) 68P10 (68Q25)

— Packet routing on grids of processors. (English summary) *Algorithmica* **9** (1993), *no.* 1, 32–46. (Summary) **93j:68016** 68M10 (68Q25)

Kundrík, Anton Some results of Nordhaus-Gaddum type for hereditary properties. *Discuss. Math.* **10** (1990), 7–12 (1991). (V. R. Kulli) **93e:05048** 05C35

Kundu, A. (*with* Basu Mallick, B.) Single q-oscillator mode realization of quantum group through canonical bosonizations of $SU(2)_q$ and q-oscillators. *Modern Phys. Lett. A* **6** (1991), *no.* 8, 701–705. (Summary) **93h:81053** 81R50 (17B37)

— (*with* Basu Mallick, B.) Quantum group structures in action: generation of quantum integrable models. (English summary) *Nonlinear evolution equations and dynamical systems* (*Baia Verde*, 1991), 357–365, *World Sci. Publishing, River Edge, NJ*, 1992. (Michael Ringe) **93j:58063** 58F07 (17B37, 81R50)

— (*with* Basu Mallick, B.) Spectral parameter-dependent approach to quantized algebra, its multiparameter deformations and their q-oscillator realizations. (English summary) *J. Phys. A* **25** (1992), *no.* 15, 4147–4156. (Boris Moiseevich Zupnik) **93h:81054** 81R50 (17B37, 82B23)

— (*with* Basu Mallick, B.) Solutions of the nonadditive YBE by spectral parameter factorization and re-Yang-Baxterization. (English summary) *J. Phys. A* **25** (1992), *no.* 23, 6307–6316. (H. N. V. Temperley) **93j:82022** 82B23 (17B37)

— (*with* Basu Mallick, B.) Construction of integrable quantum lattice models through Sklyanin-like algebras. *Modern Phys. Lett. A* **7** (1992), *no.* 1, 61–69. (Summary) **93i:82033** 82B23 (81R50, 81T25)

— (*with* Basu Mallick, B.) Hidden quantum group structure in a relativistic quantum integrable model. (English summary) *Phys. Lett. B* **287** (1992), *no.* 1-3, 149–153. (Summary) **93f:81052** 81R50 (58F07, 81S05)

Kundu, Debasis Asymptotic properties of the complex valued nonlinear regression model. *Comm. Statist. Theory Methods* **20** (1991), *no.* 12, 3793–3803. (Robert M. Hoekstra) **93e:62111** 62G05 (62G20, 62J02)

Kundu, Prasun K. (*with* Price, Richard H.; Pullin, Jorge) Escape of gravitational radiation from the field of massive bodies. (English summary) *Phys. Rev. Lett.* **70** (1993), *no.* 11, 1572–1575. (Summary) **93m:83023** 83C30 (83C35, 83C57)

Kundu, Snehamay Basis sets for synthesis of switching functions. *IEEE Trans. Comput.* **41** (1992), *no.* 4, 489–493. (Summary) **93a:94044** 94C10

Kundu, Sukhamay A new variant of the A^*-algorithm which closes a node at most once. *Ann. Math. Artificial Intelligence* **4** (1991), *no.* 1-2, 157–176. (Summary) **93a:68119** 68R10 (05C85, 68Q20)

Kunert, J. (*with* Jones, Byron; Wynn, Henry P.) Information matrices for mixed effects models with applications to the optimality of repeated measurements designs. (English summary) *J. Statist. Plann. Inference* **33** (1992), *no.* 2, 261–274. (Girdhar G. Agarwal) **93m:62172** 62K05 (62K10)

Kung, Chung Chun (*with* Lee, Chin Cheng) Optimal tracking and rejection of persistent bounded signals for MIMO continuous systems. (English summary) *Optimal Control Appl. Methods* **13** (1992), *no.* 3, 193–210. (Daoyi Xu) **93k:93050** 93B52 (49K35)

K'ung, Fan Chû (*with* Tsai, Jason S. H.; Chen, Ming Shyan) Optimal design and optimal digital redesign for continuous-time input time-delay systems. (English summary) *Control Theory Adv. Tech.* **8** (1992), *no.* 2, 315–340. (Summary) **93g:93039** 93B50 (49K25, 93C60, 93C62)

— (*with* Chen, Ming Shyan; Tsai, Jason S. H.) Optimal servodesign of the SISO estimator-based control system. (English summary) *J. Franklin Inst.* **329** (1992), *no.* 5, 829–841. 93B52

— (*with* Lee, Chien-Hua; Li, Tzuu Hseng S.) D-stability analysis for discrete systems with a time delay. (English summary) *Systems Control Lett.* **19** (1992), *no.* 3, 213–219. (Summary) **93e:93046** 93D05 (93B55, 93C55)

Kung, H. T. (*with* Wu, I Chen) Communication complexity for parallel divide-and-conquer. (English summary) 32*nd Annual Symposium on Foundations of Computer Science* (*San Juan, PR*, 1991), 151–162, *IEEE Comput. Soc. Press, Los Alamitos, CA*, 1991. (Summary) **93e:68010** 68M20 (68Q22)

Kung, Joseph P. S. (*with* Gragg, Karen M.) Consistent dually semimodular lattices. *J. Combin. Theory Ser. A* **60** (1992), *no.* 2, 246–263. (Manfred Stern) **93e:06008** 06C10 (20E15)

Kung, S. Y. (*with* Diamantaras, K.; Mao, W. D.; Taur, J. S.) Generalized perceptron networks with nonlinear discriminant functions. *Neural networks* (*New Brunswick, NJ*, 1990), 245–279, *Academic Press, Boston, MA*, 1991. (J. Leo van Hemmen) **93d:92005** 92B20 (92J30)

Kung, Sidney H. Another elementary proof of Heron's formula. *Math. Mag.* **65** (1992), *no.* 5, 337–338. (H. W. Guggenheimer) **93m:51020** 51M04

Kuniba, Atsuo (*with* Nakanishi, Tomoki) Fusion RSOS models and rational coset models. (English summary) *Quantum groups* (*Leningrad*, 1990), 303–311, *Lecture Notes in Math.*, 1510, *Springer, Berlin*, 1992. (Peter J. Forrester) **93i:82034** 82B23 (17B81, 81R50)

Kunick, Albrecht ★ Differentialrechnung einer und mehrerer Variabler. (German) [Differential calculus in one and several variables] Mit Übungsaufgaben und ausführlichen Lösungen. [With exercises and detailed solutions] *Bibliographisches Institut, Mannheim*, 1991. vi+245 *pp. ISBN* 3-411-14911-6 26–01 (00A07)

Kunicki, Catherine M. (*with* Hill, Richard D.) Normal-preserving linear transformations. *Linear Algebra Appl.* **170** (1992), 107–115. (Seymour Kass) **93j:15004** 15A04

Kunii, Tosiyasu L. (*with* Ikeda, Tetsuya; Shinagawa, Yoshihisa; Ueda, Minoru) A geographical database system based on the homotopy model. (English summary) *Modern geometric computing for visualization* (*Tokyo*, 1992), 193–206, *Springer, Tokyo*, 1992. (*see* **93f:68006**) 92H20

— *see also* **Modern geometric computing for visualization, 93f:68006**

Kunik, Matthias A numerical method for some initial value problems of one scalar hyperbolic conservation law. (English summary) *Math. Methods Appl. Sci.* **15** (1992), *no.* 7, 495–509. (Long Wei Lin) **93h:35125** 35L65 (65M99)

Kunin, I. A. (*with* Hussain, Fazle; Zhou, Xiaoliang) Stability of the 4-vortex system. *Internat. J. Engrg. Sci.* **30** (1992), *no.* 9, 1233–1236. (Radyadour Kh. Zeytounian) **93g:76031** 76C05 (58F13, 76E10, 76E30)

Kunisch, K. (*with* Geymayer, G.) Convergence rates for regularized nonlinear ill-posed problems. (English summary) *Modelling and inverse problems of control for distributed parameter systems* (*Laxenburg*, 1989), 81–92, *Lecture Notes in Control and Inform. Sci.*, 154, *Springer, Berlin*, 1991. (*see* **93d:93006**) 65J15 (49N45, 93C20)

— (*with* White, Luther W.) Stability and identifiability of parameters in Galerkin approximation of distributed systems under multiple inputs. (English summary) *Optimal Control Appl. Methods* **12** (1991), *no.* 1, 63–71. (Fredi Tröltzsch) **93i:93036** 93B30 (34A55, 49N50, 93C20, 93D05)

— (*with* Ito, Kazufumi) Sensitivity analysis of solutions to optimization problems in Hilbert spaces with applications to optimal control and estimation. (English summary) *J. Differential Equations* **99** (1992), *no.* 1, 1–40. (Walter Alt) **93e:49039** 49K40 (49K27, 90C31)

— (*with* Sachs, Ekkehard) Reduced SQP methods for parameter identification problems. (English summary) *SIAM J. Numer. Anal.* **29** (1992), *no.* 6, 1793–1820. (C. Ilioi) **93k:65046** 65J05 (65K05)

— (*with* Ito, Kazufumi) On the choice of the regularization parameter in nonlinear inverse problems. *SIAM J. Optim.* **2** (1992), *no.* 3, 376–404. (Arkadii Kryazhimskii) **93h:65086** 65J20 (35R30, 49K20, 49N60)

Kunita, Hiroshi Central limit theorems on random measures and stochastic difference equations. *Gaussian random fields* (*Nagoya*, 1990), 28–42, *Ser. Probab. Statist.*, 1, *World Sci. Publishing, River Edge, NJ*, 1991. (Jia Gang Wang) **93h:60055** 60F17 (60G57, 60H99)

— Limits on random measures and stochastic difference equations related to mixing array of random variables. *Stochastic analysis* (*Durham*, 1990), 229–254, *London Math. Soc. Lecture Note Ser.*, 167, *Cambridge Univ. Press, Cambridge*, 1991. (Yu. M. Kabanov) **93f:60039** 60F17 (60G44, 60G57)

— (*with* Fujiwara, Tsukasa) Limit theorems for stochastic difference-differential equations. *Nagoya Math. J.* **127** (1992), 83–116. (Leszek Słomiński) **93m:60132** 60H20 (60F17, 60H10)

Kunitomo, Naoto (*with* Anderson, T. W.) Asymptotic distributions of regression and autoregression coefficients with martingale difference disturbances. *J. Multivariate Anal.* **40** (1992), *no.* 2, 221–243. (B. L. S. Prakasa Rao) **93e:62227** 62M10

Kunitsyn, A. L. (*with* Bimenov, D. A.) Stability of a second-order nonlinear quasi-autonomous system. (Russian) *Problems in the mechanics of controllable motion* (*Russian*), 65–72, *Perm. Gos. Univ., Perm'*, 1990. (From the text) **93a:34059** 34D05

— (*with* Matveev, M. V.) On the stability of a class of reversible systems. (Russian) *Prikl. Mat. Mekh.* **55** (1991), *no.* 6, 904–911; *translation in J. Appl. Math. Mech.* **55** (1991), *no.* 6, 780–788 (1992). (From the text) **93b:34064** 34D20 (70K20, 70M20)

— (*with* Turyakbaev, A. A.) Stability of Hamiltonian systems under fourth-order multiple resonance. (Russian) *Prikl. Mat. Mekh.* **56** (1992), *no.* 4, 672–675; *translation in J. Appl. Math. Mech.* **56** (1992), *no.* 4, 572–576. (J. S. Joel) **93j:70008** 70K20 (34C15, 70H05)

Kunitzsch, Paul Letters in geometrical diagrams. Greek-Arabic-Latin. (Arabic summary) *Z. Gesch. Arab.-Islam. Wiss.* **7** (1991/92), 1–20, *Arabic paging* 7. 01A30 (01A20, 01A35)

Kunkle, Thomas Lagrange interpolation on a lattice: bounding derivatives by divided differences. (English summary) *J. Approx. Theory* **71** (1992), *no.* 1, 94–103. (Weiyi Su) **93h:41003** 41A05

Künne, Wolfgang Hybrid proper names. *Mind* **101** (1992), *no.* 404, 721–731. 03A05 (01A55, 01A60, 03–03, 03B65)

Künnemann, Klaus ★ Chow-Motive von abelschen Schemata und die Fouriertransformation. (German) [Chow motives of abelian schemes and the Fourier transform] Schriftenreihe des Mathematischen Instituts und des Graduiertenkollegs der Universität Münster, 3. Serie [Series of the Mathematical Institute and the Graduate Lectures of the University of Münster, 3rd Series], 6. *Universität Münster, Mathematisches Institut, Münster*, 1992. vi+53 *pp.* (Luca Barbieri Viale) **93j:14056** 14K05 (14A20, 14C15)

Kuno, Takahito (*with* Konno, Hiroshi; Yamamoto, Yoshitsugu) A parametric successive underestimation method for convex programming problems with an additional convex multiplicative constraint. (English summary) *J. Oper. Res. Soc. Japan* **35** (1992), *no.* 3, 290–299. (Dorel Duca) **93k:90072** 90C25 (65K05, 90C31)

— (*with* Konno, Hiroshi) Linear multiplicative programming. (English summary) *Math. Programming* **56** (1992), *no.* 1, *Ser. A*, 51–64. (K. G. Murty) **93e:90051** 90C26 (90C31)

Kunoth, Angela (*with* Dahmen, Wolfgang) Multilevel preconditioning. (English summary) *Numer. Math.* **63** (1992), *no.* 3, 315–344. (Guo Liang Chen) **93j:65065** 65F35 (41A17, 41A63, 65N30)

Künsch, Hans R. (*with* Guyon, Xavier) Asymptotic comparison of estimators in the Ising model. *Stochastic models, statistical methods, and algorithms in image analysis* (*Rome*, 1990), 177–198, *Lecture Notes in Statist.*, 74, *Springer, Berlin*, 1992. (*see* **93e:62005**) 62M40 (60K35, 82B05, 82B20)

Kunstatter, G. On the inequivalence between Dirac and reduced phase space quantization. *Proceedings of the 4th Canadian Conference on General Relativity and Relativistic Astrophysics* (*Winnipeg, MB*, 1991), 171–176, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93d:81098** 81S30

— Dirac versus reduced quantization: a geometrical approach. *Classical Quantum Gravity* **9** (1992), *no.* 6, 1469–1485. (Marc Henneaux) **93d:81100** 81S99 (81S40)

— (*with* Epp, R. J.; Toms, David J.) Path-integral quantization of scalar QED. (English summary) *Phys. Rev. D* (3) **47** (1993), *no.* 6, 2474–2482. (Summary) **93k:81258** 81V10 (81S40)

— (*with* Gegenberg, J.) Quantum theory of black holes. (English summary) *Phys. Rev. D* (3) **47** (1993), *no.* 10, R4192–R4195. (Summary) **93m:83029** 83C45 (83C57)

— *see also* **Proceedings: Conference on General Relativity and Relativistic Astrophysics, 93h:83003**

Kunte, Sudhakar Jeffreys-Lindley paradox and a related problem. (English summary) *Bayesian analysis in statistics and econometrics* (*Bangalore*, 1988), 249–255, *Lecture Notes in Statist.*, 75, *Springer, New York*, 1992. (Summary) **93j:62080** 62F15 (62A15)

— (*with* Rattihalli, R. N.) Uniform random variables: do they exist in the subjective sense? (English summary) *Calcutta Statist. Assoc. Bull.* **42** (1992), *no.* 165-166, 125–128. (Summary) **93k:62027** 62E10

Kuntsevich, A. D. (*with* Kudashev, V. R.; Spivak, S. I.; Gorskiĭ, V. G.) Group analysis of the identifiability of parameters of mathematical models of nonstationary chemical kinetics. (Russian) *Dokl. Akad. Nauk* **326** (1992), *no.* 4, 658–661. (From the text) **93h:93083** 93E12 (34A55, 34H05, 92E20, 93C95)

Kuntsevich, A. V. (*with* Kuntsevich, V. M.) Asymptotic stability of a class of difference inclusions and robust stability of variable-parameter discrete systems. *J. Automat. Inform. Sci.* **24** (1991), *no.* 6, 1–7 (1993); *translated from Avtomatika* **1991**, *no.* 6, 3–10, 96 (*Russian. English, Russian and Ukrainian summaries*). (Summary) **93m:93072** 93D09 (34A60, 34D05, 93B55)

Kuntsevich, V. M. (*with* Platova, E. L.) Robust stability of continuous and discrete systems with parametrically-specified estimates of their coefficients. *Soviet J. Automat. Inform. Sci.* **24** (1991), *no.* 2, 1–10 (1992); *translated from Avtomatika* **1991**, *no.* 2, 3–12, 95 (*Russian. English summary*). (Kang-Zhi Liu) **93d:93064** 93D09

— (*with* Kuntsevich, A. V.) Asymptotic stability of a class of difference inclusions and robust stability of variable-parameter discrete systems. *J. Automat. Inform. Sci.* **24** (1991), *no.* 6, 1–7 (1993); *translated from Avtomatika* **1991**, *no.* 6, 3–10, 96 (*Russian. English, Russian and Ukrainian summaries*). (Summary) **93m:93072** 93D09 (34A60, 34D05, 93B55)

— Reconstruction of the state vector of linear discrete systems from measurements of scalar output. (Russian. Russian summary) *Kibernet. i Vychisl. Tekhn. No.* 89 (1991), 1–3. 93B30 (93C55)

— (*with* Lychak, M.) ★ Guaranteed estimates, adaptation and robustness in control systems. Lecture Notes in Control and Information Sciences, 169. *Springer-Verlag, Berlin*, 1992. iv+209 *pp. ISBN* 3-540-54925-0 (Kimio Kanai) **93b:93004** 93–02 (93B36, 93B40, 93C40, 93D09)

— Synthesis of optimal robust control of linear objects under bounded perturbations. (Russian. Russian summary) *Avtomat. i Telemekh.* **1992**, *no.* 7, 178–182; *translation in Automat. Remote Control* **53** (1992), *no.* 7, *part* 2, 1110–1114. (Wei Bing Gao) **93i:49046** 49N35 (49K24, 93B36, 93B51, 93D09)

Kunyansky, Leonid A. Generalized and attenuated Radon transforms: restorative approach to the numerical inversion. (English summary) *Inverse Problems* **8** (1992), *no.* 5, 809–819. (Fritz Keinert) **93k:65103** 65R10 (44A12)

Kunyavskiĭ, B. È. Sphere packings centered at S-units of algebraic tori. *Coding theory and algebraic geometry* (*Luminy*, 1991), 108–121, *Lecture Notes in Math.*, 1518, *Springer, Berlin*, 1992. (Simon N. Litsyn) **93i:11077** 11H31 (11T71, 52C07)

— (*with* Skorobogatov, A. N.) Weak approximation in algebraic groups and homogeneous spaces. *Proceedings of the International Conference on Algebra, Part* 3 (*Novosibirsk*, 1989), 447–451, *Contemp. Math.*, 131, *Part* 3, *Amer. Math. Soc., Providence, RI*, 1992. (Romuald Dabrowski) **93m:20062** 20G30 (11E72)

Kunz, Ernst ★ Ebene algebraische Kurven. (German) [Plane algebraic curves] Der Regensburger Trichter [The Regensburg Funnel], 23. *Universität Regensburg, Fakultät für Mathematik, Regensburg*, 1991. vii+268 *pp. ISBN* 3-88246-167-5 (G. Martens) **93g:14001** 14–01 (14H45)

Kunz, Hervé (*with* Joye, Alain; Pfister, Charles-Edouard) Exponential decay and geometric aspect of transition probabilities in the adiabatic limit. *Ann. Physics* **208** (1991), *no.* 2, 299–332. (Brian DeFacio) **93a:81058** 81Q99

— (*with* Zumbach, G.) Phase transition in a nematic n-vector model: the large-n limit. (English summary) *J. Phys. A* **25** (1992), *no.* 22, 6155–6162. (Yurii Raikher) **93m:82012** 82B26 (82B05, 82B44, 82D30)

Kunz, Jutta (*with* Brihaye, Yves) Periodic solutions in spontaneously broken theories. *J. Math. Phys.* **33** (1992), *no.* 8, 2898–2902. (Summary) **93c:81070** 81R20 (81T99)

— (*with* Giller, S.; Kosiński, P.; Majewski, Michał; Maślanka, P.) More about the q-deformed Poincaré algebra. (English summary) *Phys. Lett. B* **286** (1992), *no.* 1-2, 57–62. (A. U. Klimyk) **93e:81049** 81R50 (17B37)

Kunz, Milan A Möbius inversion of the Ulam subgraphs conjecture. *J. Math. Chem.* **9** (1992), *no.* 4, 297–305. (Joan Hutchinson) **93g:05103** 05C60 (92E10)

— On topological and geometrical distance matrices. (English summary) *J. Math. Chem.* **13** (1993), *no.* 2, 145–151. 05C12

Kunze, Michael Semidirect decompositions of semigroups, transformation semigroups, and automata. *Words, languages and combinatorics* (*Kyoto*, 1990), 309–325, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93a:20105** 20M20 (20M10)

Künzi, Hans-Peter A. Totally bounded quiet quasi-uniformities. *Topology Proc.* **15** (1990), 113–115. (G. C. L. Brümmer) **93h:54021** 54E15 (54E05)

— Complete quasi-pseudo-metric spaces. *Acta Math. Hungar.* **59** (1992), *no.* 1-2, 121–146. (Ivan L. Reilly) **93m:54051** 54E50 (54E15)

— Functorial admissible quasi-uniformities on topological spaces. *Topology Appl.* **43** (1992), *no.* 1, 27–36. (G. C. L. Brümmer) **93g:54041** 54E15 (18B30, 54B30, 54D20)

Künzi, Urs-Martin Multiply pseudo-p-adically closed fields. *Proceedings of the International Conference on Algebra, Part* 2 (*Novosibirsk*, 1989), 463–468, *Contemp. Math.*, 131, *Part* 2, *Amer. Math. Soc., Providence, RI*, 1992. (N. Sankaran) **93g:12008** 12J12 (12L05)

Künzle, H. P. More colored black holes. *Proceedings of the 4th Canadian Conference on General Relativity and Relativistic Astrophysics* (*Winnipeg, MB*, 1991), 76–80, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93c:83076** 83C57 (81T20)

— (*with* Masood-ul-Alam, A. K. M.) Pure Yang-Mills fields on asymptotically flat curved $\mathbf{R}^3$. (English summary) *Classical Quantum Gravity* **10** (1993), *no.* 4, 801–804. (Alan D. Rendall) **93m:53027** 53C07 (81T13, 81T20, 83C20)

Künzle, Martin (*with* Keller, Gerhard) Transfer operators for coupled map lattices. (English summary) *Ergodic Theory Dynamical Systems* **12** (1992), *no.* 2, 297–318. (Paweł Góra) **93h:58085** 58F11 (58F19)

— (*with* Keller, Gerhard; Nowicki, Tomasz) Some phase transitions in coupled map lattices. (English summary) *Phys. D* **59** (1992), *no.* 1-3, 39–51. (M. L. Blank) **93j:58074** 58F11 (28D10, 58F03)

Kuo, C.-C. Jay (*with* Ku, Takang) On the spectrum of a family of preconditioned block Toeplitz matrices. *SIAM J. Sci. Statist. Comput.* **13** (1992), *no.* 4, 948–966. (Summary) **93b:65064** 65F15 (65F10)

— (*with* Ku, Takang) A minimum-phase LU factorization preconditioner for Toeplitz matrices. (English summary) *SIAM J. Sci. Statist. Comput.* **13** (1992), *no.* 6, 1470–1487. (James Weldon Demmel) **93h:65043** 65F10

— (*with* Ku, Takang) Spectral properties of preconditioned rational Toeplitz matrices. (English summary) *SIAM J. Matrix Anal. Appl.* **14** (1993), *no.* 1, 146–165. (Guo Liang Chen) **93m:65047** 65F15 (65F35)

Kuo, C.-M. (*with* Suo, Z.; Barnett, D. M.; Willis, J. R.) Fracture mechanics for piezoelectric ceramics. *J. Mech. Phys. Solids* **40** (1992), *no.* 4, 739–765. (Summary) **93c:73085** 73M25 (73R05)

Kuo, Chên Hsiang Surface design using rational cubic splines and cross-sectional design techniques. (English and Chinese summaries) *J. Chinese Inst. Engrs.* **15** (1992), *no.* 4, 449–457. (Summary) **93e:65028** 65D17

Kuo, Chung Shêng Forward self-similar solutions of a semilinear heat equation. (English summary) *Bull. Inst. Math. Acad. Sinica* **20** (1992), *no.* 2, 119–128. (Yun Mei Chen) **93i:35074** 35K55 (34A12, 35B45)

— The critical length for a quenching problem. *Nonlinear Anal.* **18** (1992), *no.* 6, 507–516. (Takashi Narazaki) **93c:35079** 35K60

— (*with* Yao, Jen Chih) The variational inequalities. (English summary) *Comput. Math. Appl.* **25** (1993), *no.* 3, 99–105. (George Isac) **93k:49007** 49J40 (47H19)

Kuo, H.-H. *see* **Kuo, Hui-Hsiung**

Kuo, Hui Fang Fibonacci words. *Fibonacci Quart.* **30** (1992), *no.* 1, 68–76. (A. N. Philippou) **93d:05016** 05A99 (11B99)

Kuo, Hui-Hsiung (*with* Potthoff, Jürgen) Anticipating stochastic differential equations. *Probability theory and mathematical statistics, Vol. II* (*Vilnius*, 1989), 35–46, "*Mokslas*", *Vilnius*, 1990. (Marta Sanz Solé) **93d:60103** 60H10

— (*with* Potthoff, Jürgen) Anticipating stochastic integrals and stochastic differential equations. *White noise analysis* (*Bielefeld*, 1989), 256–273, *World Sci. Publishing, River Edge, NJ*, 1990. (Daniel Ocone) **93f:60079** 60H05 (60H10)

— (*with* Hida, Takeyuki) Semigroups associated with generalized Brownian functionals. *Semigroup Forum* **45** (1992), *no.* 2, 261–263. (From the text) **93i:60080** 60G20 (46N30, 60H99, 60J65)

— Lectures on white noise analysis. *Soochow J. Math.* **18** (1992), *no.* 3, 229–300. (Jan Ubøe) **93k:60099** 60G20 (46F25, 46G12, 60H25, 60J30)

— (*with* Hida, Takeyuki; Obata, Nobuaki) Transformations for white noise functionals. (English summary) *J. Funct. Anal.* **111** (1993), *no.* 2, 259–277. (Mylan Redfern) **93m:46042** 46F25 (46G12, 60H99)

Kuo, Hung Ju (*with* Trudinger, Neil S.) Discrete methods for fully nonlinear elliptic equations. *SIAM J. Numer. Anal.* **29** (1992), *no.* 1, 123–135. (Vladimír Janovský) **93e:65129** 65N12 (35J25, 65N22)

Kuo, Kung Hwang (*with* Wu, Pei Yuan) Products of orthogonal projections. *Functional analysis & related topics* (*Sapporo*, 1990), 127–137, *World Sci. Publishing, River Edge, NJ*, 1991. (Thomas Hoover) **93b:47003** 47A05 (47B15)

Kuo, Lynn (*with* Dey, Dipak K.) A new empirical Bayes estimator with type II censored data. *Comput. Statist. Data Anal.* **12** (1991), *no.* 3, 271–279. (Françoise Garcia-Brouaye) **93b:62011** 62C12

— (*with* Mukhopadhyay, Nitis; Solanky, Tumulesh K. S.) Improved sequential and accelerated sequential procedures for estimating the scale parameter in a uniform distribution. *Sequential Anal.* **10** (1991), *no.* 3-4, 235–246. (Rasul A. Khan) **93f:62117** 62L12

— (*with* Smith, Adrian F. M.) Bayesian computations in survival models via the Gibbs sampler. (English summary) With discussion by Steven MacEachern and Mike West and a rejoinder by the authors. *Survival analysis: state of the art* (*Columbus, OH*, 1991), 11–24, *NATO Adv. Sci. Inst. Ser. E Appl. Sci.*, 211, *Kluwer Acad. Publ., Dordrecht*, 1992. (*see* **93b:62005**) 62N05 (62F15, 62P10)

Kuo, Tê Shêng (*with* Fêng, I Kang; Ts'ai, Shu Ch'uan) Robust observer design for nonlinear uncertain systems with LQ regulators. (English summary) *Internat. J. Systems Sci.* **23** (1992), *no.* 11, 1937–1952. 93B51 (93E03)

— (*with* Wu, Chin Fu; Heh, Jia Sheng; Fêng, I Kang) Optimal pi-coefficients of second-order systems. *J. Chinese Inst. Engrs.* **15** (1992), *no.* 2, 179–187. (Summary) **93e:93055** 93D21 (93C55, 93D09)

Kuo, Thomas T. S. (*with* Osnes, Eivind) ★ Folded-diagram theory of the effective interaction in nuclei, atoms and molecules. Lecture Notes in Physics, 364. *Springer-Verlag, Berlin*, 1990. vi+175 *pp. ISBN* 3-540-53023-1 (Atsushi Kuriyama) **93e:81152** 81V70 (81-02, 81V35)

Kuokkanen, Martti A generalization of the role expectation conflict theory with a methodological analysis. (English summary) *J. Math. Sociol.* **17** (1992), *no.* 2-3, 217–226. 92H30 (92J99)

Kuper, G. M. (*with* McAloon, K. W.; Palem, K. V.; Perry, K. J.) A note on the parallel complexity of anti-unification. (English summary) *J. Automat. Reason.* **9** (1992), *no.* 3, 381–389. (Summary) **93m:68081** 68Q25 (03B35, 03D15, 68T15)

Kuper, Jan An application of non-well-founded sets to the foundations of geometry. *Z. Math. Logik Grundlag. Math.* **37** (1991), *no.* 3, 257–264. (A. Lévy) **93e:03017** 03B30 (03E35, 03E70, 51A05)

Kuperberg, Greg A low-technology estimate in convex geometry. *Internat. Math. Res. Notices* **1992**, *no.* 9, 181–183. (Keith Ball) **93h:52010** 52A38

Kuperin, Yu. A. (*with* Mel'nikov, Yu. B.[1]) Quantum scattering in gauge fields of adiabatic representations. (Russian) *Mat. Sb.* **182** (1991), *no.* 2, 236–282; *translation in Math. USSR-Sb.* **72** (1992), *no.* 1, 221–265. (Gheorghe Nenciu) **93c:81030** 81Q05 (47N50, 81U99)

— (*with* Mel'nikov, Yu. B.[1]; Merkur'ev, S. P.) Quantum scattering for effective nonabelian interactions. (Russian) *Trudy Mat. Inst. Steklov.* **200** (1991), 205–212; *translation in Proc. Steklov Inst. Math.* **1993**, *no.* 2, 227–235. (V. S. Ol'khovskiĭ) **93f:47091** 47N50 (81U99)

— (*with* Merkur'ev, S. P.) Selfadjoint extensions and scattering theory for several-body systems. *Spectral theory of operators* (*Novgorod*, 1989), 141–176, *Amer. Math. Soc. Transl. Ser.* 2, 150, *Amer. Math. Soc., Providence, RI*, 1992. (H. Baumgärtel) **93e:47013** 47A40 (35P25, 47F05, 47N50, 81-02, 81U10)

— (*with* Mel'nikov, Yu. B.[1]) Two-body resonance scattering and annihilation of composite charged particles. *J. Math. Phys.* **33** (1992), *no.* 8, 2795–2807. (Summary) **93d:81184** 81U05 (81V10)

Kupershmidt, Boris A. GL_2-orbit of the Korteweg-de Vries equation. *Phys. Lett. A* **156** (1991), *no.* 1-2, 53–60. (Hugo H. Torriani) **93a:58092** 58F07 (35Q53, 58F37)

— Hydrodynamical reductions of the lattice KP hierarchy. *J. Phys. A* **25** (1992), *no.* 11, L673–L677. (Walter Oevel) **93f:58102** 58F07 (35Q53)

— The quantum group $T_h\mathrm{GL}(n)$. (English summary) *J. Phys. A* **25** (1992), *no.* 15, L911–L914. (A. U. Klimyk) **93h:17034** 17B37 (81R50)

— Trace formulae for the quantum group $\mathrm{GL}_q(2)$. (English summary) *J. Phys. A* **25** (1992), *no.* 15, L915–L919. (A. U. Klimyk) **93h:17035** 17B37 (81R50)

— The quantum group $\mathrm{GL}_h(2)$. (English summary) *J. Phys. A* **25** (1992), *no.* 22, L1239–L1244. (Roland Berger) **93k:16056** 16S80 (16W30, 17B37, 81R50)

— (*with* Gibbons, John) Time discretizations of lattice integrable systems. *Phys. Lett. A* **165** (1992), *no.* 2, 105–110. (Mehmet Can) **93d:58071** 58F07 (35Q58, 39A12, 58G37)

Kupfer, F.-S. (*with* Sachs, Ekkehard) A prospective look at SQP methods for semilinear parabolic control problems. *Optimal control of partial differential equations* (*Irsee*, 1990), 143–157, *Lecture Notes in Control and Inform. Sci.*, 149, *Springer, Berlin*, 1991. (*see* **93b:49002**) 49M37 (90C30)

— (*with* Sachs, Ekkehard) Numerical solution of a nonlinear parabolic control problem by a reduced SQP method. (English summary) *Comput. Optim. Appl.* **1** (1992), *no.* 1, 113–135. (Walter Alt) **93h:49052** 49M37 (49K20, 65K10, 65P05)

Kupiainen, Antti Renormalization group and random systems. *Proceedings of the International Congress of Mathematicians, Vol. I, II* (*Kyoto*, 1990), 1363–1371, *Math. Soc. Japan, Tokyo*, 1991. (Tony C. Dorlas) **93k:82034** 82B44 (82B28)

— (*with* Bricmont, J.) Random walks in asymmetric random environments. *Comm. Math. Phys.* **142** (1991), *no.* 2, 345–420. (Pablo A. Ferrari) **93d:82045** 82B41 (60J15, 60K35)

Kupitz, Yaakov S. On a generalization of the Gallai-Sylvester theorem. *Discrete Comput. Geom.* **7** (1992), *no.* 1, 87–103. (L. M. Kelly) **93b:52005** 52A37

Kupka, Ivan A. K. On feedback equivalence. *Differential geometry, global analysis, and topology* (*Halifax, NS*, 1990), 105–117, *CMS Conf. Proc.*, 12, *Amer. Math. Soc., Providence, RI*, 1991. (Kevin A. Grasse) **93b:93031** 93B29 (58A15, 93B52)

— Asymptotic state estimation using observers in dynamical and control systems. *Chaotic dynamics* (*Patras*, 1991), 21–31, *NATO Adv. Sci. Inst. Ser. B Phys.*, 298, *Plenum, New York*, 1992. (*see* **93i:58004**) 93B29 (93B07)

— (*with* Dravecký, Jozef; Pakanec, Miroslav) On projection measurability of functions and multifunctions. (English summary) *Math. Slovaca* **42** (1992), *no.* 3, 275–278. (Summary) **93h:28002** 28A20 (28B20, 54C60)

— (*with* Bonnard, Bernard) Théorie des singularités de l'application entrée/sortie et optimalité des trajectoires singulières dans le problème du temps minimal. (English and French summaries) [Theory of the singularities of the input/output mapping and optimality of singular trajectories in the minimal-time problem] *Forum Math.* **5** (1993), *no.* 2, 111–159. (David L. Elliott) **93m:49009** 49K15 (93B27, 93C10)

Kuplinsky, Julio (*with* Hansen, Pierre) The smallest hard-to-color graph. *Discrete Math.* **96** (1991), *no.* 3, 199–212. (D. de Werra) **93a:05061** 05C15 (05C85)

— (*with* Hansen, Pierre; Hertz, Alain) Bounded vertex colorings of graphs. (English summary) Graph theory and combinatorics (Marseille-Luminy, 1990). *Discrete Math.* **111** (1993), *no.* 1-3, 305–312. (Summary) **93j:05057** 05C15 (68Q25, 68R10)

Küpper, Tassilo (*with* Garus, Rainer) Computation of the smallest positive eigenvalue of a quadratic λ-matrix. *Proceedings of the Second International Symposium on Numerical Analysis* (*Prague*, 1987), 139–149, *Teubner-Texte Math.*, 107, *Teubner, Leipzig*, 1988. (*see* **93b:65007**) 65F15

— (*with* Stuart, Charles A.) Bifurcation at boundary points of the continuous spectrum. *Nonlinear diffusion equations and their equilibrium states*, 3 (*Gregynog*, 1989), 287–297, *Progr. Nonlinear Differential Equations Appl.*, 7, *Birkhäuser Boston, Boston, MA*, 1992. (Moulay Lhassan Hbid) **93d:34036** 34B15 (34A47, 47H15, 47N20)

— (*with* Heinz, H.-P.; Stuart, Charles A.) Existence and bifurcation of solutions for nonlinear perturbations of the periodic Schrödinger equation. (English summary) *J. Differential Equations* **100** (1992), *no.* 2, 341–354. (Hideo Yamagata) **93k:35029** 35B32 (35J10, 35Q55, 47H12)

— (*with* Stuart, Charles A.) Necessary and sufficient conditions for gap-bifurcation. *Nonlinear Anal.* **18** (1992), *no.* 9, 893–903. (Pavel Drábek) **93c:47075** 47H15 (58E07)

Kupriyanova, L. V. Finding algebraic interval solutions of quadratic interval equations. (Russian) *Differential equations and function theory, No.* 8 (*Russian*), 61–72, *Saratov. Gos. Univ., Saratov*, 1989. (*see* **93b:00016**) 65G10

Kupsch, J. A probabilistic formulation of bosonic and fermionic integration. *Rev. Math. Phys.* **2** (1990), *no.* 4, 457–477. (From the introduction) **93a:81100** 81S25 (46G12, 46N50, 81T05)

Kuptsov, A. I. (*with* Lesokhin, M. M.) Nontriviality of bilinear mappings of divisible semigroups. (Russian) *Semigroups and their homomorphisms* (*Russian*), 34–38, *Ross.*

Gos. Ped. Univ., Leningrad, 1991. (Summary) **93e:20085** 20M15

Kuptsov, N. P. *see* **Differential equations and function theory, 93b:00016** *and* **93m:00022**

Kurak, V. W-algebras and level-group duality. *Phys. Lett. B* **281** (1992), *no.* 3-4, 254–258. (Robert E. C. Perret) **93j:17053** 17B68 (17B81, 81R10)

Kuran, Ü. (*with* Armitage, D. H.) Lacunary Poisson functions and axial harmonic polynomials. *J. London Math. Soc.* (2) **44** (1991), *no.* 3, 476–490. (A. I. Kheifits) **93b:31004** 31B05

— (*with* Armitage, D. H.) The convergence of the Pizzetti series in potential theory. *J. Math. Anal. Appl.* **171** (1992), *no.* 2, 516–531. (Neil A. Watson) **93k:31002** 31B05

Kurano, Kazuhiko Relations on Pfaffians. I. Plethysm formulas. *J. Math. Kyoto Univ.* **31** (1991), *no.* 3, 713–731. (Tadeusz Józefiak) **93b:14076** 14M12 (13D02)

— Relations on Pfaffians. II. A counterexample. *J. Math. Kyoto Univ.* **31** (1991), *no.* 3, 733–742. (Tadeusz Józefiak) **93b:14077** 14M12 (13D02)

— (*with* Hashimoto, Mitsuyasu) Resolutions of determinantal ideals: n-minors of $(n+2)$-square matrices. *Adv. Math.* **94** (1992), *no.* 1, 1–66. (José F. Andrade) **93f:13008** 13C40 (13D25, 14M12, 20G05)

— Noether normalizations for local rings of algebraic varieties. *Proc. Amer. Math. Soc.* **116** (1992), *no.* 4, 905–910. (Gary P. Kennedy) **93b:13008** 13B22 (13H05, 14H20)

Kurano, Masami (*with* Yasuda, Masami; Nakagami, Junichi; Yoshida, Yuji) A limit theorem in some dynamic fuzzy systems. (English summary) *Fuzzy Sets and Systems* **51** (1992), *no.* 1, 83–88. (Summary) **93g:93052** 93C42 (04A72)

Kuraoka, Takashi (*with* Kuroki, Nobuaki) On fuzzy quotient rings induced by fuzzy ideals. *Fuzzy Sets and Systems* **47** (1992), *no.* 3, 381–386. (Summary) **93f:16009** 16D99 (04A72)

Kurasov, P. B. Zero-range potentials with internal structures and the inverse scattering problem. (English summary) *Lett. Math. Phys.* **25** (1992), *no.* 4, 287–297. (Tuncay Aktosun) **93j:81108** 81U40 (34A55, 34L25, 34L40, 35Q40, 47E05, 81U05)

Kurata, Masahiro Families of locally invariant manifolds for measure-preserving diffeomorphisms. *Dynamical systems and related topics* (*Nagoya*, 1990), 304–306, *Adv. Ser. Dyn. Syst.*, 9, *World Sci. Publishing, River Edge, NJ*, 1991. (Viviane Baladi) **93h:58086** 58F11 (58F15)

Kurata, Yoshiki (*with* Tsuboi, Shigeyuki) Linearly compact dual-bimodules. *Math. J. Okayama Univ.* **33** (1991), 149–154. (Mary H. Wright) **93b:16012** 16D90 (16D80)

— Note on dual-bimodules. *Proceedings of the First China-Japan International Symposium on Ring Theory* (*Guilin*, 1991), 89–91, *Okayama Univ., Okayama*, 1992. (*see* **93k:16001**) 16D20

— (*with* Hashimoto, K.) On dual-bimodules. *Tsukuba J. Math.* **16** (1992), *no.* 1, 85–105. (J. L. García Hernández) **93i:16004** 16D20 (16D90)

Kuratsuji, Hiroshi Canonical phases and quantum connection. (English summary) *Internat. J. Modern Phys. A* **7** (1992), *no.* 19, 4595–4617. 81S40 (58D30)

— (*with* Takada, Ken-Ichi; Kataoka, Hidemi) A dynamics of monopole in gauge space and quantization of dyon charge. (English summary) *Modern Phys. Lett. A* **7** (1992), *no.* 24, 2165–2171. (Summary) **93f:81092** 81T13

— (*with* Iida, Shinji) Quantum algebra near $q = 1$ and a deformed symplectic structure. (English summary) *Phys. Rev. Lett.* **69** (1992), *no.* 13, 1833–1836. (Summary) **93f:81053** 81R50

Kurbakovskiĭ, V. Yu. A numerical method for solving an inverse probability problem. (Russian) *Analysis and design of dynamical systems under conditions of uncertainty* (*Russian*), 11–18, *Moskov. Aviatsion. Inst., Moscow*, 1990. (*see* **93g:00022**) 90C15

Kurbanov, I. O. Smoothness of generalized solutions of nonlinear boundary value problems in electromagnetoelasticity with memory. (Russian. Russian summary) *Asymptotic solutions of nonlinear equations with a small parameter* (*Russian*), 71–78, *Akad. Nauk Ukrainy, Inst. Mat., Kiev*, 1991. (Summary) **93g:73102** 73R05 (35Q72, 73C99, 78A25)

— Solvability of nonlinear boundary value problems of electrodynamics with general constitutive equations. (Russian. Russian summary) *Nonlinear problems in the theory of differential equations* (*Russian*), 31–40, *Akad. Nauk Ukrain. SSR, Inst. Mat., Kiev*, 1991. (Summary) **93m:78006** 78A25

— Solvability of nonlinear boundary value problems of electromagnetoelasticity with general constitutive equations. (Russian) *Akad. Nauk Ukrain. SSR Inst. Mat. Preprint* **1991**, *no.* 11, 39 *pp.* (Summary) **93d:73064** 73R05 (35Q60, 78A25)

— Solvability of nonlinear boundary value problems of electromagnetoelasticity with memory. (Russian. Tajiki summary) *Dokl. Akad. Nauk Tadzhik. SSR* **34** (1991), *no.* 7, 407–411 (1992). (From the text) **93f:73088** 73R05 (35Q72, 73F15, 78A99)

— Electromagnetoelastic waves in a half-space with general defining equations. (Russian. Russian summary) *Mat. Fiz. Nelineĭn. Mekh. No.* 17(51) (1992), 69–75. 73R05 (73D99, 78A25)

— On the smoothness of generalized solutions of boundary value problems of electrodynamics with general constitutive equations. (Russian. Russian and Ukrainian summaries) *Ukraïn. Mat. Zh.* **44** (1992), *no.* 5, 618–630; *translation in Ukrainian Math. J.* **44** (1992), *no.* 5, 556–567 (1993). (Summary) **93h:35202** 35Q60 (35A05)

Kurbanov, V. M. On the basis property and equiconvergence with a trigonometric series of spectral expansions of a $2n$-order differential operator. (Russian. Russian summary) *Differentsial'nye Uravneniya* **28** (1992), *no.* 7, 1279–1280, 1288. (Summary) **93i:34151** 34L10 (47E05)

Kurbanshoev, S. Z. On the behavior of integral curves on holomorphic integral manifolds. (Russian) *Dokl. Akad. Nauk SSSR* **315** (1990), *no.* 2, 287–291; *translation in Soviet Math. Dokl.* **42** (1991), *no.* 3, 761–764. (P. Talpalaru) **93e:34066** 34C30 (34A34, 34C45, 34D05, 34G20)

— On the behavior of integral curves in a neighborhood of optimal integral manifolds. (Russian. Russian and Ukrainian summaries) *Ukraïn. Mat. Zh.* **44** (1992), *no.* 8, 1049–1060; *translation in Ukrainian Math. J.* **44** (1992), *no.* 8, 949–959 (1993). (Zhivko S. Athanassov) **93i:34085** 34C45 (34H05)

Kurbatov, A. M. (*with* Ermilov, A. N.; Kabanovich, V. I.; Racotoaridzauna, S.) Almeida-Thouless inequality for the quenched Ising models with arbitrary distributions of coupling constants. *Phys. A* **182** (1992), *no.* 1-2, 190–196. (Krystyna Parczyk) **93a:82009** 82B20 (82B26, 82B27)

— (*with* Kabanovich, V. I.) Computation of a lattice function. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **32** (1992), *no.* 4, 645–651; *translation in Comput. Math. Math. Phys.* **32** (1992), *no.* 4, 553–559. (M. I. Israilov) **93i:65036** 65D30 (65U05)

— (*with* Kabanovich, V. I.) On the calculation of a family of triple integrals. (Russian. Russian summary) *Zh. Vychisl. Mat. i Mat. Fiz.* **32** (1992), *no.* 10, 1658–1660; *translation in Comput. Math. Math. Phys.* **32** (1992), *no.* 10, 1487–1489 (1993). (Summary) **93i:65035** 65D30

Kurbonov, K. Yu. (*with* Ashurov, S. B.) Classical solution of reinforced-regular boundary value problems for a second-order operator-differential equation. (Russian. Tajiki summary) *Dokl. Akad. Nauk Tadzhik. SSR* **34** (1991), *no.* 2, 72–77. (Irena Rachůnková) **93a:34072** 34G10 (34B05)

Kurbyko, I. F. Well-posed boundary value problems for a system of equations with infinite-dimensional pseudodifferential operators. (Russian. Russian summary) *Differentsial'nye Uravneniya* **27** (1991), *no.* 11, 1892–1901, 2021; *translation in Differential Equations* **27** (1991), *no.* 11, 1336–1344 (1992). (A. V. Uglanov) **93m:35180** 35R15 (35S10, 47G30, 47N20)

Kurc, W. (*with* Grząślewicz, Ryszard; Hudzik, Henryk) Extreme and exposed points in Orlicz spaces. (English summary) *Canad. J. Math.* **44** (1992), *no.* 3, 505–515. (Ting Fu Wang) **93h:46033** 46E30 (46B25)

— Strictly and uniformly monotone Musielak-Orlicz spaces and applications to best approximation. *J. Approx. Theory* **69** (1992), *no.* 2, 173–187. (Mikhail Ostrovskii) **93g:46028** 46E30 (41A65, 46B40)

Kurcbart, S. M. (*with* Manna, M. A.; Kraenkel, R. A.; Pereira, J. G.) Some nonlinear evolution equations in the Bénard problem. (English summary) *Nonlinear evolution equations and dynamical systems* (*Baia Verde*, 1991), 71–79, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93h:76029** 76E15 (35Q53, 58F40, 76E30)

Kurchanov, P. F. (*with* Filimonov, A. M.; Myshkis, A. D.) Some unexpected results in the classical problem of vibrations of the string with n beads when n is large. (French summary) *C. R. Acad. Sci. Paris Sér. I Math.* **313** (1991), *no.* 13, 961–965. (Summary) **93a:73026** 73D30 (35L05, 70K99, 73K05, 73K12)

— (*with* Grigorchuk, R. I.) On the width of elements in free groups. (Russian. Ukrainian summary) *Ukrain. Mat. Zh.* **43** (1991), *no.* 7-8, 911–918; *translation in Ukrainian Math. J.* **43** (1991), *no.* 7-8, 850–856 (1992). (J. Wiegold) **93a:20049** 20F10 (20E05)

— (*with* Grigorchuk, R. I.; Zieschang, H.) Equivalence of homomorphisms of surface groups to free groups and some properties of 3-dimensional handlebodies. *Proceedings of the International Conference on Algebra, Part* 1 (*Novosibirsk*, 1989), 521–530, *Contemp. Math.*, 131, *Part* 1, *Amer. Math. Soc., Providence, RI*, 1992. (Athanase Papadopoulos) **93h:20040** 20F34 (20E05, 57M05)

Kurchatov, V. A. Optimization with respect to accuracy of calculations of some sets of numerical methods based on linearization. (Russian. Russian summary) *Differentsial'nye Uravneniya* **27** (1991), *no.* 11, 1959–1963, 2022; *translation in Differential Equations* **27** (1991), *no.* 11, 1399–1403 (1992). (V. V. Vasin) **93m:65079** 65J15 (47H17)

Kurdachenko, L. A. (*with* Zaĭtsev, D. I.) Groups with the maximal condition for nonabelian subgroups. (Russian. Ukrainian summary) *Ukrain. Mat. Zh.* **43** (1991), *no.* 7-8, 925–930; *translation in Ukrainian Math. J.* **43** (1991), *no.* 7-8, 863–868 (1992). (M. J. Tomkinson) **93a:20051** 20F16

— (*with* Kuzennyĭ, N. F.; Semko, N. N.) Groups with a dense system of infinite almost normal subgroups. (Russian. Ukrainian summary) *Ukrain. Mat. Zh.* **43** (1991), *no.* 7-8, 969–973; *translation in Ukrainian Math. J.* **43** (1991), *no.* 7-8, 904–908 (1992). (M. J. Tomkinson) **93c:20055** 20E34 (20F24)

— On some classes of periodic FC-groups. *Proceedings of the International Conference on Algebra, Part* 1 (*Novosibirsk*, 1989), 499–509, *Contemp. Math.*, 131, *Part* 1, *Amer. Math. Soc., Providence, RI*, 1992. (M. J. Tomkinson) **93g:20067** 20F24

— (*with* Kazarin, L. S.) Conditions for finiteness and factorization in infinite groups. (Russian. Russian summary) *Uspekhi Mat. Nauk* **47** (1992), *no.* 3(285), 75–114, 207; *translation in Russian Math. Surveys* **47** (1992), *no.* 3, 81–126. (Gheorghe Ivan) **93i:20041** 20F22 (20F16)

Kurdikov, A. B. (*with* Filippov, A. T.; Isaev, A. P.) Para-Grassmann analysis and quantum groups. *Modern Phys. Lett. A* **7** (1992), *no.* 23, 2129–2141. (Arne Schirrmacher) **93m:81059** 81R50 (15A75, 17B37)

Kurdyka, Krzysztof (*with* Coste, Michel) On the link of a stratum in a real algebraic set. *Topology* **31** (1992), *no.* 2, 323–336. (Henry C. King) **93d:14088** 14P25 (58A35)

Kurdyumov, S. P. (*with* Tel'kovskaya, O. V.) The structure of a linearized approximation for eigenfunctions of an LS-regime in multicomponent media. (Russian) *Mat. Model.* **3** (1991), *no.* 10, 23–30. (N. L. Vulchanov) **93b:65163** 65N25 (80–08, 80A20)

Kurek, Andrzej Arboricity and star arboricity of graphs. (English summary) *Fourth Czechoslovakian Symposium on Combinatorics, Graphs and Complexity* (*Prachatice*, 1990), 171–173, *Ann. Discrete Math.*, 51, *North-Holland, Amsterdam*, 1992. (Summary) **93j:05117** 05C70 (05C05)

Kurek, Jan On the first order natural operators transforming 1-forms on manifold to the tangent bundle. *Ann. Univ. Mariae Curie-Skłodowska Sect. A* **43** (1989), 79–83 (1991). (Marco Modugno) **93e:58003** 58A10

— On the natural operators of Bianchi type. (English summary) *Arch. Math.* (*Brno*) **27A** (1991), 25–29. (I. Kolář) **93i:53023** 53C05 (58A20)

Kurek, Jerzy E. On singular linear systems. (English summary) *Mathematical and intelligent models in system simulation, I, II* (*Brussels*, 1990), 131–134, *IMACS Ann. Comput. Appl. Math.*, 10, 11, *Baltzer, Basel*, 1991. (*see* **93c:93005**) 93C05

— (*with* Zaremba, Marek B.) Iterative learning control synthesis based on 2-D system theory. (English summary) *IEEE Trans. Automat. Control* **38** (1993), *no.* 1, 121–125. 93B52 (93C55)

Kurepa, S. *see* **Functional analysis, 93m:60008**

Kur'erov, Yu. N. On an estimate for the length of a random deduction search tree in multimessage calculi of general type. (Russian. English and Ukrainian summaries) *Kibernetika* (*Kiev*) **1991**, *no.* 3, 112–115, 136; *translation in Cybernetics* **27** (1991), *no.* 3, 462–466 (1992). (Juraj Hromkovič) **93h:68125** 68T20 (68Q25, 68R10)

— Logical formalisms for the representation of knowledge. (Russian. English and Ukrainian summaries) *Kibernet. Sistem. Anal.* **1992**, *no.* 2, 60–69, 189; *translation in Cybernet. Systems Anal.* **28** (1992), *no.* 2, 211–218. (From the text) **93k:68094** 68T30 (68Q50)

Kurfess, Franz ★ Parallelism in logic. (English. English summary) Its potential for performance and program development. Artificial Intelligence. *Friedr. Vieweg & Sohn, Braunschweig*, 1991. xii+299 *pp. ISBN* 3-528-05163-9 (From the summary) **93d:68018** 68Q10 (68–02, 68N17)

Kurfess, Thomas R. (*with* Nagurka, Mark L.) Foundations of classical control theory with reference to eigenvalue geometry. (English summary) *J. Franklin Inst.* **330** (1993), *no.* 2, 213–227. (Summary) **93k:93004** 93–02 (93B51)

Kurganskii, M. V. The atmospheric vortex charge. *Izv. Acad. Sci. USSR Atmospher. Ocean. Phys.* **27** (1991), *no.* 7, 510–516 (1992); *translated from Izv. Akad. Nauk SSSR Ser. Fiz. Atmosfer. i Okeana* **27** (1991), *no.* 7 (*Russian*). (Summary) **93c:86003** 86A10 (76C15)

Kuribayashi, Akikazu (*with* Ohmori, Shoji) The character theory of groups and automorphism groups of Riemann surfaces. I. (Japanese. English summary) *Bull. Fac. Sci. Engrg. Chuo Univ. Ser. I Math.* **34** (1991), 45–71. (Takao Kato) **93j:14036** 14H55 (20C15, 30F10)

— Generalized Teichmüller spaces and their applications. Proceedings of the Colloquium on Complex Analysis and the Sixth Romanian-Finnish Seminar. *Rev. Roumaine Math. Pures Appl.* **36** (1991), *no.* 9-10, 543–550. (È. Yakubov) **93h:30065** 30F60

Kuribayashi, Katsuhiko The extension problem and the mod 2 cohomology of the space of loops on Spin(N). *Proc. Roy. Soc. Edinburgh Sect. A* **121** (1992), *no.* 1-2, 91–99. (Jin Kun Lin) **93f:55021** 55S10 (55T20)

Kurien, T. V. (*with* Sethuraman, Jayaram) Singularities in Gaussian random fields. (English summary) *J. Theoret. Probab.* **6** (1993), *no.* 1, 89–99. (Ross P. Kindermann) **93k:60124** 60G60 (60K35)

Kurihara, Fumika Pre-special unit groups and ideal classes of $\mathbf{Q}(\zeta_p)^+$. *Proc. Japan Acad. Ser. A Math. Sci.* **68** (1992), *no.* 4, 91–93. (Jonathan W. Sands) **93c:11094** 11R18 (11R27, 11R29)

Kurihara, Masahito (*with* Ohuchi, Azuma) Modularity of simple termination of term rewriting systems with shared constructors. (English summary) *Theoret. Comput. Sci.* **103** (1992), *no.* 2, 273–282. (Summary) **93i:68104** 68Q42

Kurihara, Masato Some remarks on conjectures about cyclotomic fields and K-groups of $\mathbf{Z}$. *Compositio Math.* **81** (1992), *no.* 2, 223–236. (Jurgen Hurrelbrink) **93a:11091** 11R18 (11R29, 11R34, 11R70, 19D50)

Kurihara, Masazumi (*with* Mizuno, Hirobumi) Fast algorithm for finding an error locator function for algebraic-geometric codes from elliptic and hyperelliptic curves: $O(n^2)$. (Japanese. English summary) *Bull. Univ. Electro-Comm.* **5** (1992), *no.* 1, 1–11. (Summary) **93i:94021** 94B27 (11T71, 14G15)

Kuriki, Satoshi (*with* Hirotsu, Chihiro; Hayter, Anthony J.) Multiple comparison procedures based on the maximal component of the cumulative chi-squared statistic. (English summary) *Biometrika* **79** (1992), *no.* 2, 381–392. (Thomas J. Santner) **93i:62063** 62J15

Kuriki, Shinji System of equations related to the existence conditions for arrays. (English summary) *Discrete Math.* **110** (1992), *no.* 1-3, 155–164. (William I. Notz) **93j:05020** 05B15 (05B30)

Kurilić, Miloš S. Disconnectedness of the reduced ideal-product. (English summary) *Indian J. Pure Appl. Math.* **23** (1992), *no.* 9, 619–624. (Douglas E. Cameron) **93m:54020** 54B10 (54B15, 54D10, 54F99)

Kurina, G. A. Complete controllability of singularly perturbed systems with slow and fast modes. (Russian) *Mat. Zametki* **52** (1992), *no.* 4, 56–61; *translation in Math. Notes* **52** (1992), *no.* 3-4, 1029–1033 (1993). (T. R. Gichev) **93m:93014** 93B05 (34E15, 34H05, 93C70)

— On the splitting of a two-point boundary value problem that arises in optimal control theory. (Russian. Russian and Ukrainian summaries) *Ukraïn. Mat. Zh.* **44** (1992), *no.* 5, 704–709; *translation in Ukrainian Math. J.* **44** (1992), *no.* 5, 637–642 (1993). (Summary) **93f:34033** 34B05 (34E15, 34G10, 34H05, 49K40)

Kurinnii, G. Ch. Unars with a decomposable congruence lattice. (Russian) *Algebraic systems* (*Russian*), 129–132, *Volgograd. Gos. Ped. Inst., Volgograd*, 1989. (*see* **93m:00015**) 08A60 (08A30)

— On the S-pasted sum of lattices. (Russian) *Algebra i Logika* **29** (1990), *no.* 4, 452–463, 504; *translation in Algebra and Logic* **29** (1990), *no.* 4, 301–309 (1991). (Christian Herrmann) **93e:06002** 06B05 (08A30)

Kuritsyn, Yu. G. (*with* Petunin, Yu. I.; Mamunya, L. A.; Min'ko, A. A.; Yakut, L. I.) Confidence intervals that contain the main distributed mass of values of a general population. I. (Russian) *Teor. Veroyatnost. i Mat. Statist. No.* 44 (1991), 115–118; *translation in Theory Probab. Math. Statist. No.* 44 (1992), 113–116. (S. G. Maloshevskii) **93h:62060** 62F25 (60E15)

— (*with* Kotz, Samuel) A linear model with a pseudoisotropic distribution of errors. (English summary) *L_1-statistical analysis and related methods* (*Neuchâtel*, 1992), 63–67, *North-Holland, Amsterdam*, 1992. (*see* **93k:62005**) 62J05

Kuriyagawa, Akira (*with* Fukuhara, Nobuhiko; Higaki, Nobuo) Mode-matching analysis of electromagnetic waves scattered by a rotating dielectric cylinder. (Japanese. English summary) *Rep. Fac. Engrg. Oita Univ. No.* 24 (1991), 27–35. (Summary) **93f:78012** 78A45 (78–08)

— Integral equation approach to the scattering of electromagnetic waves from a rotating perfectly conducting cylinder. I. (Japanese. English summary) *Rep. Fac. Engrg. Oita Univ. No.* 24 (1991), 43–48. (Summary) **93f:78013** 78A45

Kuriyama, Atsushi (*with* Yamamura, Masatoshi; da Providência, João) On the canonical equivalence of classical boson expansions for mixed states. (English summary) *Progr. Theoret. Phys.* **87** (1992), *no.* 6, 1377–1386. (Summary) **93k:81263** 81V35

— (*with* Yamamura, Masatoshi) Minimal uncertainty in quantal system obeying the su(2)-algebra. (English summary) *Progr. Theoret. Phys.* **88** (1992), *no.* 4, 711–718. (Summary) **93i:81057** 81R05 (81P15)

Kuriyama, Sennosuke (*with* Nose, Toyokazu; Shiihara, Masatsugu; Inoue, Manabu) Studies of inventory and sales plannings for perishable commodities with respect to the properties of procurement leadtime. (Japanese. English summary) *Mem. Osaka Inst. Tech. Ser. A* **37** (1992), *no.* 1, 7–19. 90B05

Kurkalova, L. A. An iterative method for solving a generalized eigenvalue problem. (Russian. Tajiki summary) *Dokl. Akad. Nauk Tadzhik. SSR* **33** (1990), *no.* 12, 795–798 (1991). (A. B. Bakushinskiĭ) **93c:47013** 47A50 (47B65, 65J10)

— On an extension of a class of indecomposable operators. (Russian. Tajiki summary) *Dokl. Akad. Nauk Tadzhik. SSR* **34** (1991), *no.* 3, 151–154. (Z. Lipecki) **93g:47046** 47B65 (47A75)

Kurke, Herbert (*with* Kreussler, Bernd) Twistor spaces over the connected sum of 3 projective planes. *Compositio Math.* **82** (1992), *no.* 1, 25–55. (Nicholas Buchdahl) **93d:32049** 32L25 (14J30, 53C25)

Kurki-Suonio, Reino Operational specification with joint actions: serializable databases. (English summary) *Distrib. Comput.* **6** (1992), *no.* 1, 19–37. (Summary) **93g:68086** 68Q60 (68P15)

Kurnosenko, N. M. A criterion for π-supersolvability for finite groups. (Russian. Russian summary) *Mat. Zametki* **52** (1992), *no.* 1, 57–61, 156; *translation in Math. Notes* **52** (1992), *no.* 1-2, 673–676 (1993). (Summary) **93g:20063** 20F16

Kurochka, M. A. Application of the chain metric in the solution of the group choice problem. (Russian. English and Ukrainian summaries) *Kibernet. Sistem. Anal.* **1992**, *no.* 1, 85–92, 189; *translation in Cybernet. Systems Anal.* **28** (1992), *no.* 1, 71–77. 90A05

Kurochkin, G. F. (*with* Bin'ko, I. F.; Nevinitsyn, È. L.; Reztsov, V. F.; Shevchuk, V. I.) Peculiarities of the propagation of electromagnetic waves in inhomogeneous media with nonideal conductivity. (Russian. English and Russian summaries) *Dokl. Akad. Nauk Ukrainy* **1992**, *no.* 1, 65–69, 178. 78A40

Kurochkin, S. V. Discreteness of the spectrum of a linear two-point boundary value problem with conditions for boundedness of the solution at singular points. (Russian. Russian summary) *Zh. Vychisl. Mat. i Mat. Fiz.* **32** (1992), *no.* 12, 1995–2000; *translation in Comput. Math. Math. Phys.* **32** (1992), *no.* 12, 1821–1826 (1993). (Summary) **93j:34026** 34B05 (34L05)

Kuroda, Koji (*with* Tanemura, Hideki) Limit theorem and large deviation principle for the Voronoĭ tessellation generated by a Gibbs point process. *Adv. in Appl. Probab.* **24** (1992), *no.* 1, 45–70. (Christian Maes) **93c:60161** 60K35 (60F05, 60F10, 82B21)

Kuroe, Yasuaki (*with* Nishimura, Tsuyoshi; Mori, Takehiro; Kokame, Hideki) On application of Popov's theorem for Lur'e systems with interval plants. (Japanese. English summary) *Trans. Inst. Systems Control Inform. Engrg.* **6** (1993), *no.* 4, 165–170. 93D09 (93D10)

Kurokawa, N. *see* **Zeta functions in geometry, 93i:11100**

Kurokawa, Takahide Beppo Levi spaces and Riesz potential spaces. *Potential theory* (*Nagoya*, 1990), 229–234, *de Gruyter, Berlin*, 1992. (S. G. Samko) **93i:46061** 46E35 (31C45)

Kuroki, Nobuaki (*with* Kuraoka, Takashi) On fuzzy quotient rings induced by fuzzy ideals. *Fuzzy Sets and Systems* **47** (1992), *no.* 3, 381–386. (Summary) **93f:16009** 16D99 (04A72)

— Fuzzy generalized bi-ideals in semigroups. (English summary) *Inform. Sci.* **66** (1992), *no.* 3, 235–243. (Summary) **93h:20074** 20M99 (04A72)

Kurokiba, M. (*with* Ebihara, Yukiyoshi; Hoshino, Hiroki) On exact solutions of Kirchhoff quasilinear hyperbolic equation with absorbing term. *Fukuoka Univ. Sci. Rep.* **22** (1992), *no.* 1, 14–15. (From the introduction) **93h:35089** 35L70 (35C05)

Kuropatenko, V. F. (*with* Glushak, B. L.; Novikov, S. A.) ★ Исследование прочности материалов при динамических нагрузках. (Russian. Russian summary) [Research on the strength of materials under dynamic loads] "*Nauka*" *Sibirsk. Otdel., Novosibirsk*, 1992. 295 *pp. ISBN* 5-02-029691-0 (Publisher's description) **93g:73054** 73D99 (73D05, 73M25)

Kurose, Takashi On the Minkowski problem in affine geometry. *Affine differential geometry* (*Oberwolfach*, 1991), 643–649, *Tech. Univ. Berlin, Berlin*, 1991. (*see* **93g:53001**) 53A15 (53C42)

Kurotschka, Viktor (*with* Müller, Christine H.) Optimum robust estimation of linear aspects in conditionally contaminated linear models. *Ann. Statist.* **20** (1992), *no.* 1, 331–350. (Summary) **93k:62071** 62F35 (62G05, 62J05)

Kurpita, Bohdan I. (*with* Murasugi, Kunio) On a hierarchal Jones invariant. *Knots* 90 (*Osaka*, 1990), 489–542, *de Gruyter, Berlin*, 1992. (Louis H. Kauffman) **93i:57007** 57M25

Kürschák, József *see* **Strommer, Julius, 93f:01026a** *and* **Schmidt, Tamás, 93f:01026b**

Kurskiĭ, È. A. (*with* Zheleznov, V. S.; Ivanov, M. N.; Maslov, E. P.) On an evasion problem in a space. (Russian. Russian summary) *Avtomat. i Telemekh.* **1992**, *no.* 5, 11–22; *translation in Automat. Remote Control* **53** (1992), *no.* 5, *part* 1, 627–638. (O. A. Malafeyev) **93g:90106** 90D26 (90B40)

Kürsten, Klaus-Detlef On topological linear spaces of operators with a unitary domain of definition. (German summary) *Wiss. Z. Karl-Marx-Univ. Leipzig Math.-Natur. Reihe* **39** (1990), *no.* 6, 623–655. (J.-P. Antoine) **93d:47085** 47D40 (46Kxx, 47D15)

Kurt, Veli (*with* Simsek, Yılmaz) On the Hermitian matrix inequalities. (English summary) *Pure Appl. Math. Sci.* **36** (1992), *no.* 1-2, 29–32. (F. Szidarovszky) **93j:15016** 15A45 (15A57)

Kurta, V. V. Some qualitative properties of solutions of an equation of mean curvature type. (Russian) *Dokl. Akad. Nauk SSSR* **320** (1991), *no.* 4, 804–807; *translation in Soviet Math. Dokl.* **44** (1992), *no.* 2, 544–547. (Peter R. Popivanov) **93a:35012** 35B05 (35J65, 58E12)

— On the behavior of solutions of some classes of second-order quasilinear elliptic equations in unbounded domains. (Russian. English summary) *Dokl. Akad. Nauk Ukrainy* **1991**, *no.* 11, 12–15, 172. (Summary) **93a:35046** 35J60

— Qualitative properties of solutions of some classes of second-order quasilinear elliptic equations. (Russian. Russian summary) *Differentsial'nye Uravneniya* **28** (1992), *no.* 5, 867–873, 919; *translation in Differential Equations* **28** (1992), *no.* 5, 707–712. (Summary) **93j:35037** 35B45 (35J60)

— Phragmén-Lindelöf theorems for semilinear equations. (Russian) *Dokl. Akad. Nauk SSSR* **322** (1992), *no.* 1, 38–40; *translation in Soviet Math. Dokl.* **45** (1992), *no.* 1, 31–33. (V. R. Friedländer) **93c:35022** 35G20

— Phragmén-Lindelöf theorems for second-order semilinear equations with nonnegative characteristic form. (Russian. Russian summary) *Mat. Zametki* **52** (1992), *no.* 1, 62–66, 156; *translation in Math. Notes* **52** (1992), *no.* 1-2, 676–680 (1993). (Summary) **93h:35015** 35B05 (35J15)

— Behavior of solutions of second-order quasilinear elliptic equations in unbounded domains. (Russian. Russian and Ukrainian summaries) *Ukraïn. Mat. Zh.* **44** (1992), *no.* 2, 279–283; *translation in Ukrainian Math. J.* **44** (1992), *no.* 2, 245–248. (Summary) **93f:35066** 35J60 (35B05)

— Phragmén-Lindelöf theorems for second-order quasilinear elliptic equations. (Russian. Russian and Ukrainian summaries) *Ukraïn. Mat. Zh.* **44** (1992), *no.* 10, 1376–1381; *translation in Ukrainian Math. J.* **44** (1992), *no.* 10, 1262–1268 (1993). (Summary) **93j:35021** 35B05 (35J60)

— Phragmén-Lindelöf theorems for elliptic equations. (Russian) *Uspekhi Mat. Nauk* **47** (1992), *no.* 3(285), 165–166; *translation in Russian Math. Surveys* **47** (1992), *no.* 3, 180–181. (From the introduction) **93j:35030** 35B30 (35J99)

Kürten, Karl E. (*with* Klingen, Norbert) Hadamard design and artificial neural nets. (English summary) *J. Statist. Phys.* **71** (1993), *no.* 1-2, 327–339. (Summary) **93m:92005** 92B20 (05B20)

Kurtik, G. E. Astronomy in Ancient Egypt. (Russian) *Istor.-Astronom. Issled. No.* 22 (1990), 207–256. (B. Rosenfeld) **93b:01004** 01A16

Kurtz, Douglas S. Pointwise convergence of multiplier operators. *Colloq. Math.* **60/61** (1990), *no.* 1, 301–304. (Satoru Igari) **93b:42026** 42B15 (42B25)

Kurtz, Thomas G. (*with* Protter, Philip) Characterizing the weak convergence of stochastic integrals. *Stochastic analysis* (*Durham*, 1990), 255–259, *London Math. Soc. Lecture Note Ser.*, 167, *Cambridge Univ. Press, Cambridge*, 1991. (Leszek Słomiński) **93e:60104** 60H05 (60B10, 60F17)

— (*with* Donnelly, Peter; Tavaré, Simon) On the functional central limit theorem for the Ewens sampling formula. *Ann. Appl. Probab.* **1** (1991), *no.* 4, 539–545. (M. P. Quine) **93e:60064** 60F17 (92D10)

— Averaging for martingale problems and stochastic approximation. *Applied stochastic analysis* (*New Brunswick, NJ*, 1991), 186–209, *Lecture Notes in Control and Inform. Sci.*, 177, *Springer, Berlin*, 1992. (R. Sh. Liptser) **93b:60070** 60G42 (60B10, 60G57, 62L20)

— (*with* Ethier, S. N.) On the stationary distribution of the neutral diffusion model in population genetics. *Ann. Appl. Probab.* **2** (1992), *no.* 1, 24–35. (S. Tavaré) **93j:60107** 60J35 (60J70, 92D10)

Kuruklis, S. A. (*with* Jaroma, J. H.; Ladas, G.) Oscillations and stability of a discrete delay logistic model. (Russian and Ukrainian summaries) *Ukrain. Mat. Zh.* **43** (1991), *no.* 6, 734–744; *reprinted in Ukrainian Math. J.* **43** (1991), *no.* 6, 684–694 (1992). (I. P. Stavroulakis) **93a:39004** 39A10 (34K15, 34K20, 39A11, 92D25)

— (*with* Ladas, G.) Oscillations and global attractivity in a discrete delay logistic model. *Quart. Appl. Math.* **50** (1992), *no.* 2, 227–233. (Summary) **93b:92013** 92D25 (34K15, 92B05)

Kuruoğlu, Nuri (*with* Çalışkan, Mustafa) On the pair of konoidal axoids. (English summary) *Pure Appl. Math. Sci.* **36** (1992), *no.* 1-2, 7–13. (Thomas Hasanis) **93j:53003** 53A07 (53A25)

Kurusa, Á. Translation invariant Radon transforms. *Math. Balkanica* (*N.S.*) **5** (1991), *no.* 1, 40–46. (Summary) **93f:44002** 44A12

— The invertibility of the Radon transform on abstract rotational manifolds of real type. *Math. Scand.* **70** (1992), *no.* 1, 112–126. (Eric Todd Quinto) **93g:44009** 44A12

Kur'yan, V. E. Quantum field theory in space with discrete geometry. *Quantum gravity* (*Moscow*, 1990), 195–201, *World Sci. Publishing, River Edge, NJ*, 1991. (Vladimir Soloviev) **93g:83052** 83C45 (81T99)

Kurylëv, Ya. V. Admissible groups of transformations that preserve the boundary spectral data in multidimensional inverse problems. (Russian) *Dokl. Akad. Nauk* **327** (1992), *no.* 3, 322–325; *translation in Soviet Phys. Dokl.* **37** (1992), *no.* 11, 544–545 (1993). (V. M. Isakov) **93m:35183** 35R30 (58G20, 58G30)

— Regularized inner products of distorted plane waves and near-forward inverse scattering. (English summary) *Math. Methods Appl. Sci.* **15** (1992), *no.* 6, 411–419. (Plamen D. Stefanov) **93i:35155** 35R30 (35L05, 35P25)

— On the Holmgren-John uniqueness theorem for the wave equation with piecewise analytic coefficients. (Russian. English and Russian summaries) *Zap. Nauchn. Sem. S.-Peterburg. Otdel. Mat. Inst. Steklov.* (*POMI*) **203** (1992), *Mat. Voprosy Teor. Rasprostr. Voln.* 22, 113–136, 165, 175–176. (R. Schimming) **93j:35107** 35L15 (35A10, 58G17)

Kurylowicz, A. (*with* Jaworska, I.) Modelling uncertainty estimation to maintain control systems stability. (English summary) *Identification and system parameter estimation* 1991, *Vol.* 1,2 (*Budapest*, 1991), 829–833, *IFAC Sympos. Ser.*, 3, *Pergamon, Oxford*, 1992. (*see* **93h:93009**) 93D09

Kurzepa, P. S. (*with* Jaroszewicz, T.) Polyakov spin factors and Laplacians on homogeneous spaces. *Ann. Physics* **213** (1992), *no.* 1, 135–165. (J. Alfredo Jiménez) **93b:58152** 58G25 (58D30, 81S40)

— (*with* Jaroszewicz, T.) Geometry of spacetime propagation of spinning particles. *Ann. Physics* **216** (1992), *no.* 2, 226–267. (W. Cox) **93i:81126** 81T10 (81T18)

Kurzhanskiĭ, A. B. (*with* Filippova, T. F.) On the set-valued calculus in problems of viability and control for dynamic processes: the evolution equation. *Analyse non linéaire* (*Perpignan*, 1987), 339–363, *Univ. Montréal, Montreal, PQ*, 1989. (*see* **93h:49003**) 93B03 (34A60, 34H05, 49K15)

— (*with* Khapalov, A. Yu.) The state estimation problem for parabolic systems. *Estimation and control of distributed parameter systems* (*Vorau*, 1990), 219–246, *Internat. Ser. Numer. Math.*, 100, *Birkhäuser, Basel*, 1991. (Fumio Kojima) **93b:93057** 93C20 (35K40, 93B07)

— (*with* Sivergina, I. F.) On inverse problems for evolutionary systems: guaranteed estimates and regularized solutions. *Modelling and inverse problems of control for distributed parameter systems* (*Laxenburg*, 1989), 93–101, *Lecture Notes in Control and Inform. Sci.*, 154, *Springer, Berlin*, 1991. (*see* **93d:93006**) 49N25

— (*with* Filippova, T. F.) The method of singular perturbations for differential inclusions. (Russian) *Dokl. Akad. Nauk SSSR* **321** (1991), *no.* 3, 454–459; *translation in Soviet Math. Dokl.* **44** (1992), *no.* 3, 705–710. (Ĭordan I. Slavov) **93a:34022** 34A60 (34E15, 49K24, 93C41)

— (*with* Vályi, I.) Ellipsoidal techniques for dynamic systems: the problem of control synthesis. *Dynamics Control* **1** (1991), *no.* 4, 357–378. (Nikolai N. Sal'nikov) **93a:93012** 93B03 (34H05, 93B50, 93C10)

— (*with* Vályi, I.) Guaranteed state estimation for dynamic systems: beyond the overviews. (English summary) *Identification and system parameter estimation* 1991, *Vol.* 1,2 (*Budapest*, 1991), 255–259, *IFAC Sympos. Ser.*, 3, *Pergamon, Oxford*, 1992. (*see* **93h:93009**) 93B03 (93B30)

— (*with* Filippova, T. F.) Perturbation techniques for viability and control. (English summary) *System modelling and optimization* (*Zurich*, 1991), 394–403, *Lecture Notes in Control and Inform. Sci.*, 180, *Springer, Berlin*, 1992. (*see* **93e:90003**) 49J24 (93B03)

— *see also* **Modelling and inverse problems of control for distributed parameter systems, 93d:93006**

Kurzhanskiĭ, M. A. A finite-dimensional approximation of an observation and control problem for a hyperbolic system. (Russian. Russian summary) *Vestnik Moskov. Univ. Ser. XV Vychisl. Mat. Kibernet.* **1992,** *no.* 3, 28–33, 64; *translation in Moscow Univ. Comput. Math. Cybernet.* **47** (1992), *no.* 3, 25–29. (Summary) **93m:93049** 93C20 (35L05, 93B07)

Kurzweil, Jaroslav (*with* Schwabik, Štefan) Ordinary differential equations the solution of which are ACG$_\delta$-functions. (English summary) *Arch. Math.* (*Brno*) **26** (1990), *no.* 2-3, 129–136. (B. B. Pakholok) **93i:34008** 34A12 (26A39, 26A46, 34A99)

— (*with* Jarník, Jiří) Equi-integrability and controlled convergence of Perron-type integrable functions. *Real Anal. Exchange* **17** (1991/92), *no.* 1, 110–139. (Ralph Henstock) **93d:26006** 26A39 (26A42)

— (*with* Jarník, Jiří) Equivalent definitions of regular generalized Perron integral. *Czechoslovak Math. J.* **42(117)** (1992), *no.* 2, 365–378. (Ralph Henstock) **93m:26017** 26A39 (26B20)

— (*with* Jarník, Jiří) Differentiability and integrability in n dimensions with respect to α-regular intervals. *Results Math.* **21** (1992), *no.* 1-2, 138–151. (F. Miroslaw Filipczak) **93e:26007** 26B05 (26A39, 26B15, 28A15)

Kusaba, Toshio Les travaux de Kolyvagin sur les courbes de Weil. [The works of Kolyvagin on Weil curves] *Sci. Papers College Arts Sci. Univ. Tokyo* **42** (1992), *no.* 1, 1–32. (Massimo Bertolini) **93h:11067** 11G40 (11G05)

Kusak, Eugeniusz (*with* Leończuk, Wojciech) An algebraical characterization of finite-dimension symplectic spaces. *Zeszyty Nauk. Geom.* **19** (1991), 47–53. (F. De Clerck) **93d:51008** 51A50 (51A25)

Kusama, Tokitake On some class properties of statistical experiments under weak Blackwell equivalence. *Tokyo J. Math.* **14** (1991), *no.* 2, 419–424. (Dieter Mussmann) **93a:62008** 62B15 (62B05)

Kusano, Takaŝi (*with* Elbert, Árpád) Oscillation and nonoscillation theorems for a class of second order quasilinear differential equations. *Acta Math. Hungar.* **56** (1990), *no.* 3-4, 325–336. (From the introduction) **93b:34039** 34C10

— (*with* Jaroš, Jaroslav) Existence of oscillatory solutions for functional-differential equations of neutral type. *Acta Math. Univ. Comenian.* (*N.S.*) **60** (1991), *no.* 2, 185–194. (Anatolii Fedorovich Ivanov) **93c:34145** 34K15 (34K40)

— (*with* Ivanov, Anatolii Fiodorovich) Oscillation of solutions of second order nonlinear functional-differential equations of neutral type. (Russian and Ukrainian summaries) *Ukrain. Mat. Zh.* **43** (1991), *no.* 12, 1671–1683; *reprinted in Ukrainian Math. J.* **43** (1991), *no.* 12, 1556–1568 (1992). (Yiannis Sficas) **93e:34095** 34K15 (34C10, 34K25, 34K40)

— (*with* Jaroš, Jaroslav; Kitamura, Yuichi) On a class of functional-differential equations of neutral type. (English summary) *Recent trends in differential equations*, 317–333, *World Sci. Ser. Appl. Anal.*, 1, *World Sci. Publishing, River Edge, NJ*, 1992. (I. P. Stavroulakis) **93h:34126** 34K15 (34K40)

— (*with* Oharu, Shinnosuke) Semilinear evolution equations with singularities in ordered Banach spaces. (English summary) *Differential Integral Equations* **5** (1992), *no.* 6, 1383–1405. (Seppo Heikkilä) **93h:34110** 34G20 (35L70, 47H07, 47H15, 47N20)

— (*with* Elbert, Árpád) On differential equation $y'' + p(t)|y'|\operatorname{sgn} y + q(t)y = 0$. *Hiroshima Math. J.* **22** (1992), *no.* 1, 203–218. (James M. D'Archangelo) **93g:34045** 34C10

— (*with* Kitamura, Yuichi) Asymptotic analysis of solutions of systems of neutral functional-differential equations. (English summary) Asymptotic methods in analysis and combinatorics. *J. Comput. Appl. Math.* **41** (1992), *no.* 1-2, 23–33. (Harlan W. Stech) **93f:34123** 34K15 (34K25, 34K40)

— (*with* Swanson, Charles A.) A general method for quasilinear elliptic problems in $\mathbf{R}^N$. *J. Math. Anal. Appl.* **167** (1992), *no.* 2, 414–428. (Jesús Hernández) **93f:35067** 35J60 (35B05, 35B40, 35B50)

Kuščer, I. (*with* McCormick, N. J.) Some analytical results for radiative transfer in thick atmospheres. *Transport Theory Statist. Phys.* **20** (1991), *no.* 5-6, 351–381. (Summary) **93f:85002** 85A25

Kushary, Debashis (*with* Cohen, Arthur) Estimation of ordered Poisson parameters. (English summary) *Sankhyā Ser. A* **53** (1991), *no.* 3, 334–356. (Khursheed Alam) **93j:62066** 62F10 (62C15)

— (*with* Carpenter, Mark; Pal, Nabendu) Estimation of the smaller and larger of two exponential location parameters. *Comm. Statist. Theory Methods* **21** (1992), *no.* 4, 883–895. (A. C. Cohen) **93h:62041** 62F10 (62F07)

— (*with* Pal, Nabendu) On order restricted location parameters of two exponential distributions. *Statist. Decisions* **10** (1992), *no.* 1-2, 133–152. (Kurt Hoffmann) **93g:62044** 62F11

Kushch, I. A. (*with* Daniev, Yu. F.) Estimates for the probability of a random process staying in a band. (Russian. Russian and Ukrainian summaries) *Ukraïn. Mat. Zh.* **44** (1992), *no.* 4, 556–560; *translation in Ukrainian Math. J.* **44** (1992), *no.* 4, 496–500. 60G17

Kushch, V. I. (*with* Golovchan, V. T.) Elastic equilibrium and effective moduli of a crosswise-reinforced fibrous composite. (Russian. English and Ukrainian summaries) *Prikl. Mekh.* **28** (1992), *no.* 1, 47–56; *translation in Internat. Appl. Mech.* **28** (1992), *no.* 1, 40–48. 73K20

Kushilevitz, Eyal Privacy and communication complexity. *SIAM J. Discrete Math.* **5** (1992), *no.* 2, 273–284. (Jozef Vyskoč) **93b:94001** 94A05

— (*with* Chor, Benny) A communication-privacy tradeoff for modular addition. (English summary) *Inform. Process. Lett.* **45** (1993), *no.* 4, 205–210. (Summary) **93m:68070** 68Q25 (68M10, 94A60)

Kushkulei, A. Kh. (*with* Al'shanskiĭ, L. A.) Identities of the natural representation of the infinitely based semigroup. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 3, 931–937. (N. R. Reilly) **93i:20071** 20M07 (08B05)

Kushlik, O. I. An optimal control problem for equations with delay. (Ukrainian. Russian and Ukrainian summaries) *Visnik Kiïv. Univ. Mat. Mekh. No.* 32 (1990), 70–74. 49K25

— On an optimal control problem with phase constraints for a linear system of equations with delay. (Russian. Ukrainian summary) *Ukrain. Mat. Zh.* **43** (1991), *no.* 12, 1647–1652; *translation in Ukrainian Math. J.* **43** (1991), *no.* 12, 1533–1538 (1992). (Summary) **93c:49017** 49K25 (49J25)

shabanov-Kushnarenko, S. Yu. *see* **Shabanov-Kushnarenko, S. Yu.**

Kushner, A. G. Local bifurcation of birth of a limit cycle encircling a node. (Russian) *Differential equations (qualitative theory)* (*Russian*), 70–76, *Ryazan. Gos. Ped. Inst., Ryazan'*, 1990. (Summary) **93c:34087** 34C23 (34C05, 34C25)

— Birth of a limit cycle from a linear center in the plane. (Russian) *Differential equations (qualitative theory)* (*Russian*), 77–88, *Ryazan. Gos. Ped. Inst., Ryazan'*, 1990. (Summary) **93c:34088** 34C23 (34C05, 34C25, 58F21)

Kushner, B. A. A. A. Markov and Errett Bishop. (Russian) *Voprosy Istor. Estestvoznan. i Tekhn.* **1992,** *no.* 1, 70–81. (E. Mendelson) **93c:01045** 01A70 (03–03, 03F65)

— The constructive mathematics of A. A. Markov: some reflections. (Russian. English summary) *Modern Logic* **3** (1993), *no.* 2, 119–144. (A. Kučera) **93m:01046** 01A60 (01A70, 03F50, 03F60, 26E40)

Kushner, Harold J. Estimates of derivatives of cost functions with respect to control parameters in high-dimensional stochastic systems. (English summary) *Systems and control*, 209–213, *Mita, Tokyo*, 1991. (Summary) **93h:93086** 93E20 (49J52, 49K45, 49M30)

— (*with* Yang, Jichuan) A Monte Carlo method for sensitivity analysis and parametric optimization of nonlinear stochastic systems. *SIAM J. Control Optim.* **29** (1991), *no.* 5, 1216–1249. (Anatolii B. Juditsky) **93d:93093** 93E25 (60H10, 62E25, 93E10)

— (*with* Martins, Luiz F.) A numerical method for stochastic singular control problems with nonadditive controls. *Applied stochastic analysis* (*New Brunswick, NJ*, 1991), 176–185, *Lecture Notes in Control and Inform. Sci.*, 177, *Springer, Berlin*, 1992. (Guy Jumarie) **93e:93068** 93E20 (49M05, 60J10, 65U05)

— (*with* Vázquez-Abad, Felisa J.) Estimation of the derivative of a stationary measure with respect to a control parameter. *J. Appl. Probab.* **29** (1992), *no.* 2, 343–352. (Shin'ichi Aihara) **93d:93092** 93E25 (62F99)

— (*with* Yang, Jichuan) A Monte Carlo method for sensitivity analysis and parametric optimization of nonlinear stochastic systems: the ergodic case. *SIAM J. Control Optim.* **30** (1992), *no.* 2, 440–464. (Alexander Shapiro) **93a:90049** 90C15 (62E25, 65C05, 90C31, 93E10)

Kushnir, A. O. A limit theorem for the time of ε-convergence of two independent renewal processes. (Russian) *Teor. Veroyatnost. i Mat. Statist. No.* 45 (1991), 69–74; *translation in Theory Probab. Math. Statist. No.* 45 (1992), 67–70. (De Li Li) **93h:60139** 60K05 (60F05)

Kushnir, V. I. Investigation of the solvability of a generalizing equation of the filtration of a nonhomogeneous fluid. (Russian) *Vychisl. Prikl. Mat. (Kiev) No.* 71 (1990), 77–84. (Summary) **93b:35119** 35Q35 (76S05)

Kusiak, Andrew (*with* Cheng, Chun Hung; Boe, Warren J.) A branch-and-bound algorithm for solving the machine allocation problem. *Control and dynamic systems, Vol.* 47, 399–419, *Academic Press, San Diego, CA*, 1991. (Jacek Błażewicz) **93d:90029** 90B80 (90C27)

Kuske, R. Wave localization in a one-dimensional random medium. (English summary) *Random Comput. Dynamics* **1** (1992/93), *no.* 2, 147–195. (Summary) **93g:78015** 78A40 (73B35)

Kusner, Rob A maximum principle at infinity and the topology of complete embedded surfaces with constant mean curvature. *Global differential geometry and global analysis* (*Berlin*, 1990), 108–114, *Lecture Notes in Math.*, 1481, *Springer, Berlin*, 1991. (Ivan Sterling) **93e:53071** 53C42

— The number of faces in a minimal foam. (English summary) *Proc. Roy. Soc. London Ser. A* **439** (1992), *no.* 1907, 683–686. (S. Walter Wei) **93j:53008** 53A10

Kusnezov, Dimitri (*with* Bulgac, Aurel) Canonical ensembles from chaos. II. Constrained dynamical systems. *Ann. Physics* **214** (1992), *no.* 1, 180–218. (Dieter H. Mayer) **93d:82051** 82C05 (17B81, 58F11, 58F13)

— Diffusive aspects of global demons. *Phys. Lett. A* **166** (1992), *no.* 5-6, 315–320. (K. Kumar) **93j:82047** 82C21 (82C31)

Kusraev, A. G. (*with* Malyugin, S. A.) ★ Некоторые вопросы теории векторных мер. (Russian. Russian summary) [Some problems in the theory of vector measures] *Akad. Nauk SSSR Sibirsk. Otdel., Inst. Mat., Novosibirsk*, 1988. 182 *pp.* (Przemo Kranz) **93i:46075** 46G10 (03E40, 28B05, 47A99, 47B60)

— (*with* Kutateladze, S. S.) An introduction to the Boolean-valued theory of vector lattices. (Russian) *Optimizatsiya No.* 48(65) (1990), 96–123. (Yu. A. Abramovich) **93j:46011** 46A40 (03E40, 06F30, 46S20, 46S99)

— On a functional realization of AW^*-algebras of type I. (Russian) *Sibirsk. Mat. Zh.* **32** (1991), *no.* 3, 78–88; *translation in Siberian Math. J.* **32** (1991), *no.* 3, 416–424 (1992). (Sh. A. Ayupov) **93c:46114** 46L37 (03E40)

— (*with* Kutateladze, S. S.) Nonstandard methods in geometric functional analysis. *Algebra and analysis* (*Tomsk*, 1989), 91–105, *Amer. Math. Soc. Transl. Ser.* 2, 151, *Amer. Math. Soc., Providence, RI*, 1992. (Summary) **93i:46142** 46S20 (03H05)

— (*with* Kutateladze, S. S.) Nonstandard methods for Kantorovich spaces. (English summary) Siberian Advances in Mathematics. *Siberian Adv. Math.* **2** (1992), *no.* 2, 114–152. (W. A. J. Luxemburg) **93g:46007** 46A40 (03E70, 03H05, 46S20)

Kussul', N. N. Estimation of the phase state of linear dynamic objects using families of ellipsoidal sets. *Soviet J. Automat. Inform. Sci.* **24** (1991), *no.* 2, 58–62 (1992); *translated from Avtomatika* **1991**, *no.* 2, 60–65, 96 (*Russian. English summary*). (Summary) **93b:93066** 93C42 (93B03, 93B40)

— (*with* Bakan, G. M.) Nonstochastic identification of parameters of a linear static object under unknown noise intensity. (Russian. Russian summary) *Kibernet. i Vychisl. Tekhn. No.* 93 (1992), 6–10. (Summary) **93k:93113** 93E12 (65C20, 93B30)

— Solution of a difference system of linear equations and inequalities using fuzzy ellipsoidal estimates. (Russian. Russian summary) *Kibernet. i Vychisl. Tekhn. No.* 93 (1992), 15–24. 65K99 (65F99)

Küster, Gerhard On the Hurwitz product of formal power series and automata. *Theoret. Comput. Sci.* **83** (1991), *no.* 2, *Algorithms Automat. Complexity Games*, 261–273. (P. Dömösi) **93b:68056** 68Q70 (68Q45)

Kustin, Andrew R. (*with* Miller, Matthew; Ulrich, Bernd) Generating a residual intersection. *J. Algebra* **146** (1992), *no.* 2, 335–384. (Jürgen Herzog) **93b:13012** 13C05 (13C13, 13H10)

— (*with* Ulrich, Bernd) If the socle fits. *J. Algebra* **147** (1992), *no.* 1, 63–80. (Aron Simis) **93e:13017** 13C40 (13H10)

— Classification of the Tor-algebras of codimension four almost complete intersections. *Trans. Amer. Math. Soc.* **339** (1993), *no.* 1, 61–85. (Luchezar L. Avramov) **93k:13022** 13D03 (13C05, 13C40)

Kusuda, Masaharu Characterizations of certain classes of hereditary C^*-subalgebras. *Proc. Amer. Math. Soc.* **116** (1992), *no.* 4, 999–1005. (John Quigg) **93b:46128** 46L55

— Polar decompositions of bounded linear functionals on operator subalgebras. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 3, 839–843. (Jun Tomiyama) **93i:46104** 46L10

Kusumoto, Sho-Ichiro Nice demand and concavifiable smooth preferences—determinates of a utility function. (English summary) *J. Math. Econom.* **21** (1992), *no.* 6, 563–576. (Summary) **93k:90020** 90A10

Kusunoki, Yukio (*with* Maitani, Fumio) Canonical functions on open Riemann surfaces. *Complex Variables Theory Appl.* **18** (1992), *no.* 3-4, 267–281. (G. G. Weill) **93k:30070** 30F30 (30C25, 30F25)

Kusuoka, Shigeo de Rham cohomology of Wiener-Riemannian manifolds. *Proceedings of the International Congress of Mathematicians, Vol. I, II* (*Kyoto*, 1990), 1075–1082, *Math. Soc. Japan, Tokyo*, 1991. (Hélène Airault) **93e:58198** 58G32 (60H07)

— Analysis on Wiener spaces. I. Nonlinear maps. *J. Funct. Anal.* **98** (1991), *no.* 1, 122–168. (Hélène Airault) **93a:58176** 58G32 (46G12, 60H07)

— (*with* Stroock, Daniel W.) Precise asymptotics of certain Wiener functionals. *J. Funct. Anal.* **99** (1991), *no.* 1, 1–74. (Dominique Lépingle) **93a:60085** 60H07 (46G12, 60F10)

— Høegh-Krohn's model of quantum fields and the absolute continuity of measures. *Ideas and methods in quantum and statistical physics* (*Oslo*, 1988), 405–424, *Cambridge Univ. Press, Cambridge*, 1992. (Claus Montonen) **93m:81097** 81T08 (28C20)

— Analysis on Wiener spaces. II. Differential forms. *J. Funct. Anal.* **103** (1992), *no.* 2, 229–274. (Hélène Airault) **93c:58230** 58G32 (46Gxx, 47N99, 60H07)

— (*with* Hattori, Tetsuya) The exponent for the mean square displacement of self-avoiding random walk on the Sierpiński gasket. (English summary) *Probab. Theory Related Fields* **93** (1992), *no.* 3, 273–284. (Davar Khoshnevisan) **93m:60199** 60K35 (60J15, 82B41)

Kutasov, David (*with* Seiberg, Nathan) Number of degrees of freedom, density of states and tachyons in string theory and CFT. *Nuclear Phys. B* **358** (1991), *no.* 3, 600–618. (Summary) **93b:81256** 81T40

— (*with* Baram, Asher) Random sequential adsorption on a quasi-one-dimensional lattice: an exact solution. *J. Phys. A* **25** (1992), *no.* 8, L493–L498. (Summary) **93a:82051** 82C41

— Irreversibility of the renormalization group flow in two-dimensional quantum gravity. (English summary) *Modern Phys. Lett. A* **7** (1992), *no.* 31, 2943–2955. (Summary) **93e:81118** 81T40 (81T18, 81T30)

— (*with* Di Francesco, Ph.) World-sheet and space-time physics in two-dimensional (super)string theory. *Nuclear Phys. B* **375** (1992), *no.* 1, 119–170. (Mark D. Roberts) **93b:81209** 81T30 (81T40)

— (*with* Bershadskiĭ, M. A.) Scattering of open and closed strings in 1 + 1 dimensions. (English summary) *Nuclear Phys. B* **382** (1992), *no.* 2, 213–228. (Helmut Rumpf) **93k:81166** 81T30 (81T27, 81T40)

— (*with* Martinec, Emil J.; Seiberg, Nathan) Ground rings and their modules in 2D gravity with $c \leq 1$ matter. *Phys. Lett. B* **276** (1992), *no.* 4, 437–444. (Bani Mitra Södermark) **93e:81119** 81T40 (81R10, 81T20)

Kutateladze, S. S. (*with* Reshetnyak, Yu. G.; Akilov, G. P.) In memoriam of Professor Akilov. (Russian) *Optimizatsiya No.* 48(65) (1990), 5–6. (Editors) **93g:01080a** 01A70

— (*with* Kusraev, A. G.) An introduction to the Boolean-valued theory of vector lattices. (Russian) *Optimizatsiya No.* 48(65) (1990), 96–123. (Yu. A. Abramovich) **93j:46011** 46A40 (03E40, 06F30, 46S20, 46S99)

— (*with* Kusraev, A. G.) Nonstandard methods in geometric functional analysis. *Algebra and analysis* (*Tomsk*, 1989), 91–105, *Amer. Math. Soc. Transl. Ser.* 2, 151, *Amer. Math. Soc., Providence, RI*, 1992. (Summary) **93i:46142** 46S20 (03H05)

— (*with* Kusraev, A. G.) Nonstandard methods for Kantorovich spaces. (English summary) Siberian Advances in Mathematics. *Siberian Adv. Math.* **2** (1992), *no.* 2, 114–152. (W. A. J. Luxemburg) **93g:46007** 46A40 (03E70, 03H05, 46S20)

Kutcherov, Andrew B. *see* **Kucherov, A. B.**

Kutev, N. D. (*with* Ramadanov, I. P.) An eigenvalue problem for the complex Monge-Ampère operator in pseudoconvex domains. (French summary) *Ann. Inst. H. Poincaré Anal. Non Linéaire* **7** (1990), *no.* 5, 493–503. (Introduction) **93h:32022** 32F07 (35J65)

— Nonexistence of classical solutions of the Dirichlet problem for fully nonlinear elliptic equations. (English summary) *Arch. Math.* (*Brno*) **27A** (1991), 31–42. (Summary) **93h:35067** 35J60 (35A05)

— Global solvability and boundary gradient blow up for one-dimensional parabolic equations. *Progress in partial differential equations: elliptic and parabolic problems* (*Pont-à-Mousson*, 1991), 176–181, *Pitman Res. Notes Math. Ser.*, 266, *Longman Sci. Tech., Harlow*, 1992. (*see* **93f:35007**) 35K55 (35B05, 35B40)

— (*with* Lions, Pierre-Louis) Nonlinear second-order elliptic equations with jump discontinuous coefficients. I. Quasilinear equations. (English summary) *Differential Integral Equations* **5** (1992), *no.* 6, 1201–1217. (Yoshihito Tomita) **93h:35072** 35J65 (35R05)

Kutniv, M. V. (*with* Belov, Yu. A.; Gordinskiĭ, L. D.) Numerical modeling of proton transfer in systems with a hydrogen bond. (Russian. English and Russian summaries) *Dokl. Akad. Nauk Ukrainy* **1992**, *no.* 10, 19–23, 169. (Summary) **93h:81151** 81V55 (81–08)

Kutovoĭ, V. A. On an optimal boundary condition of the scattering problem for the Laplace equation in a half-plane. (Russian. Russian summary) *Boundary value problems for operator-differential equations* (*Russian*), 41–46, *Akad. Nauk Ukrainy, Inst. Mat., Kiev*, 1991. (Summary) **93h:35049** 35J05 (35B25)

— On the initial data of the Cauchy problem for an operator Sturm-Liouville equation. (Russian. Russian summary) *Boundary value problems for operator-differential equations* (*Russian*), 46–49, *Akad. Nauk Ukrainy, Inst. Mat., Kiev*, 1991. (Summary) **93g:34091** 34G10 (34A12)

Kutoyants, Yu. A. (*with* Liese, Friedrich) On minimum distance estimation for spatial Poisson processes. *Ann. Acad. Sci. Fenn. Ser. A I Math.* **17** (1992), *no.* 1, 65–71. (Jan Grandell) **93j:62214** 62M09 (60G55)

— (*with* Mourid, Tahar; Bosq, Denis) Estimation paramétrique d'un processus de diffusion avec retards. (English summary) [Parametric estimation of a diffusion process with delay] *Ann. Inst. H. Poincaré Probab. Statist.* **28** (1992), *no.* 1, 95–106. (Summary) **93k:62173** 62M05 (60J60)

— (*with* Mourid, Tahar) Estimation dans un modèle autorégressif avec retards. (English and French summaries) [Estimation for an autoregressive model with delay] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 4, 455–458. 62M10 (62M05)

Kutrunov, V. N. A polynomial of best uniform approximation in an iterative method for solving systems of linear algebraic equations. (Russian) *Sibirsk. Mat. Zh.* **33** (1992), *no.* 1, 62–68, 219; *translation in Siberian Math. J.* **33** (1992), *no.* 1, 48–53. (Summary) **93b:65057** 65F10 (41A10)

Kutsenko, N. T. (*with* Zefirov, V. N.; Podol'skiĭ, E. N.) Approximation of a measurable function by a quasipolynomial of special form in real time. (Russian) *Vestnik Khar'kov. Univ. No.* 361, *Prikl. Mat. Mekh.* (1991), 67–71. 65D15

Kütting, Herbert (*with* Padberg, Friedhelm) ★ Lineare Algebra. (German) [Linear algebra] Eine elementare Einführung. [An elementary introduction] B.I.-Hochschultaschenbücher

[B.I. University Paperbacks], 649. *Bibliographisches Institut, Mannheim*, 1991. 299 *pp. ISBN* 3-411-76491-0 (Editors) **93d:15001** 15-01

— ★ Elementare Analysis. Band 1. (German) [Elementary analysis. Vol. 1] Reelle Zahlen, reelle Zahlenfolgen und unendliche Reihen. [Real numbers, real number sequences and infinite series] B.I.-Hochschultaschenbücher [B.I. University Paperbacks], 653. *Bibliographisches Institut, Mannheim*, 1992. 207 *pp. ISBN* 3-411-76531-3 26-01

— ★ Elementare Analysis. Band 2. (German) [Elementary analysis. Vol. 2] Stetigkeit, Differentiation und Integration reeller Funktionen. [Continuity, differentiation and integration of real functions] B.I.-Hochschultaschenbücher [B.I. University Paperbacks], 654. *Bibliographisches Institut, Mannheim*, 1992. 255 *pp. ISBN* 3-411-76541-0 26-01

Kuttner, B. (*with* Das, Gokulananda; Nanda, Sudarsan) On absolute almost convergence. *J. Math. Anal. Appl.* **161** (1991), *no.* 1, 50–56. (M. S. Rangachari) **93g:40010** 40H05 (46A45)

Kutukova, L. T. Polynomial-type perturbations of least degree that generate closed trajectories in systems that are close to conservative systems of non-Hamiltonian type. (Russian) *Dynamical systems* (*Russian*), 29–34, *Yakutsk. Gos. Univ., Yakutsk*, 1989. (*see* **93b:34004**) 34C05 (34A99)

— *see also* **Dynamical systems, 93b:34004**

Kutulakos, Kiriakos N. (*with* Kolountzakis, Mihail N.) Fast computation of the Euclidean distance maps for binary images. (English summary) *Inform. Process. Lett.* **43** (1992), *no.* 4, 181–184. (Summary) **93g:68140** 68U05 (68Q22, 68T10)

golenishcheva-Kutuzova, M. *see* **Golenishcheva-Kutuzova, M.**

Kutyłowski, Mirosław Multihead one-way finite automata. *Theoret. Comput. Sci.* **85** (1991), *no.* 1, *Algorithms Automat. Complexity Games*, 135–153. (Howard Straubing) **93a:68103** 68Q70 (68Q45)

Kutysh, I. I. Application of the Fourier method to the solution of Euler and Navier-Stokes equations. (Russian) *Qualitative methods in the theory of differential equations and their applications* (*Russian*), 62–74, *Moskov. Aviatsion. Inst., Moscow*, 1991. (*see* **93j:00004**) 35C10 (35Q30, 76D05, 76M25)

Kutzarova, D. N. (*with* Rolewicz, S.) On drop property for convex sets. *Arch. Math.* (*Basel*) **56** (1991), *no.* 5, 501–511. (From the introduction) **93a:46028** 46B20

— k-β and k-nearly uniformly convex Banach spaces. *J. Math. Anal. Appl.* **162** (1991), *no.* 2, 322–338. (Yves Raynaud) **93b:46018** 46B04 (46B03, 46B20)

— (*with* Papini, Pier Luigi) On a characterization of property (β) and LUR. (Italian summary) *Boll. Un. Mat. Ital. A* (7) **6** (1992), *no.* 2, 209–214. (S. Rolewicz) **93b:46016** 46B20

Kutzko, Philip C. (*with* Bushnell, Colin J.) The admissible dual of GL_N via restriction to compact open subgroups. *Harmonic analysis on reductive groups* (*Brunswick, ME*, 1989), 89–99, *Progr. Math.*, 101, *Birkhäuser Boston, Boston, MA*, 1991. (David Joyner) **93h:22028** 22E50 (22-02)

Kutzschebauch, Frank (*with* Heinzner, Peter) Le principe d'Oka équivariant. (English and French summaries) [The equivariant Oka principle] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 12, 1265–1267. (B. Gilligan) **93k:32071** 32M05 (32E10)

Kuusk, P. The Brink-Schwarz superparticle and octonions. (Russian summary) Quasi-groups and nonassociative algebras in physics (Russian) (Tartu, 1989). *Eesti NSV Tead. Akad. Füüs. Inst. Uurim. No.* 66 (1990), 161–169. (Summary) **93a:81154** 81T30 (81R25)

Kuvshinov, V. I. (*with* Berezin, A. V.; Fedorov, F. I.) Vector parametrizations of groups of space-time symmetry and the Poincaré supergroup. (Russian) *Current group analysis* (*Russian*) (*Baku*, 1988), 41–47, "*Élm*", *Baku*, 1989. (*see* **93d:58002**) 81R05 (22E70)

— (*with* Nguen V'en Tkho) Nonlinear chiral field Lagrangians in the vector parametrization of unitary groups. *Soviet J. Nuclear Phys.* **55** (1992), *no.* 8, 1250–1255; *translated from Yadernaya Fiz.* **55** (1992), *no.* 8, 2253–2262 (*Russian*). (Summary) **93e:81075** 81T13 (22E70, 81R05)

Kuwae, Kazuhiro (*with* Nakao, Shintaro) Time changes in Dirichlet space theory. *Osaka J. Math.* **28** (1991), *no.* 4, 847–865. (Yoichi Ôshima) **93e:60158** 60J45 (31C25, 60J40)

— A characterization of the closable parts of pre-Dirichlet forms by hitting distributions. *Osaka J. Math.* **29** (1992), *no.* 4, 771–788. (Niels Jacob) **93k:60195** 60J45 (31C25)

Kuwamura, M. (*with* Ei, Shin-Ichiro; Mimura, Masayasu) Very slow dynamics for some reaction-diffusion systems of the activator-inhibitor type. *Japan J. Indust. Appl. Math.* **9** (1992), *no.* 1, 35–77. (Mario Primicerio) **93f:35113** 35K57 (35B25, 35R35, 92D25)

Kuwana, Yoichi (*with* Kariya, Takeaki) LBI tests for multivariate normality in exponential power distributions. *J. Multivariate Anal.* **39** (1991), *no.* 1, 117–134. (N. Giri) **93a:62087** 62H15

Kuwata, Masato Ramified primes in the field of definition for the Mordell-Weil group of an elliptic surface. *Proc. Amer. Math. Soc.* **116** (1992), *no.* 4, 955–959. (Joseph H. Silverman) **93b:11081** 11G35 (14D10, 14G05, 14J27)

Kuyk, Willem Is there a physics (or mathematics) of mind? (proposing uncertainty relations for the mind/brain). Book review of *The emperor's new mind* [Oxford Univ. Press, New York, 1989; MR 91c:00010] by R. Penrose. *Nieuw Arch. Wisk.* (4) **9** (1991), *no.* 1, 73–86. (Lawrence Sklar) **93a:00006** 00A30 (00A69)

Kuzbekov, T. T. Representation of a solution of a convolution equation in the form of a series. (Russian) *Mat. Zametki* **49** (1991), *no.* 3, 46–51, 159; *translation in Math. Notes* **49** (1991), *no.* 3-4, 259–262. (A. A. Borichev) **93a:30054** 30H05

— (*with* Napalkov, V. V.) Generators in some rings of analytic functions. (Russian) *Dokl. Akad. Nauk* **325** (1992), *no.* 5, 919–922; *translation in Russian Acad. Sci. Dokl. Math.* **46** (1993), *no.* 1, 131–134. (From the text) **93k:32023** 32E25 (46J15)

Kuzenko, S. M. (*with* Solov'ev, O. A.) Equations for two-point correlators on compact Riemann surfaces. (Russian. English summary) *Teoret. Mat. Fiz.* **88** (1991), *no.* 3, 323–332; *translation in Theoret. and Math. Phys.* **88** (1991), *no.* 3, 901–908 (1992). (Eric J. Raiten) **93c:81213** 81T40 (81T20)

Kuzennyĭ, N. F. (*with* Levishchenko, S. S.) Finite Shmidt groups and their generalizations. (Russian. Ukrainian summary) *Ukrain. Mat. Zh.* **43** (1991), *no.* 7-8, 963–968; *translation in Ukrainian Math. J.* **43** (1991), *no.* 7-8, 898–904 (1992). (V. A. Belonogov) **93a:20031** 20D25

— (*with* Kurdachenko, L. A.; Semko, N. N.) Groups with a dense system of infinite almost normal subgroups. (Russian. Ukrainian summary) *Ukrain. Mat. Zh.* **43** (1991), *no.* 7-8, 969–973; *translation in Ukrainian Math. J.* **43** (1991), *no.* 7-8, 904–908 (1992). (M. J. Tomkinson) **93c:20055** 20E34 (20F24)

— (*with* Subbotin, I. Ya.) On groups with fan subgroups. *Proceedings of the International Conference on Algebra, Part* 1 (*Novosibirsk*, 1989), 383–388, *Contemp. Math.*, 131, *Part* 1, *Amer. Math. Soc., Providence, RI*, 1992. (Martyn R. Dixon) **93m:20033** 20E07 (20E15, 20E25)

Kuzhel', S. A. Regular extensions of Hermitian operators. (Russian) *Functional analysis, No.* 31 (*Russian*), 91–100, *Ul'yanovsk. Gos. Ped. Inst., Ul'yanovsk*, 1990. (Yu. M. Arlinskiĭ) **93k:47038** 47B25 (47A20)

Kuzicheva, Z. A. Nikolai Ivanovich Styazhkin (a brief sketch of his life and scientific work). (Russian. English summary) *Modern Logic* **2** (1991), *no.* 2, 153–169. (E. Mendelson) **93a:01053a** 01A70 (03-03)

— *see also* **Bibliography: Styazhkin, N. I., 93a:01053b**

Kuzik, A. D. On the boundedness of the l-index for the complete solution of a linear differential equation. (Ukrainian) *Visnik L'viv. Univ. Ser. Mekh. Mat. No.* 34 (1990), 46–47. 34A20

Kuzik, A. M. (*with* Chulik, I. I.) Construction and investigation of locally one-dimensional difference schemes in a class of generalized functions. (Ukrainian. Russian summary) *Visnik L'viv. Derzh. Univ. Ser. Mekh.-Mat. No.* 29 (1988), 23–29, 63. 65M06

— (*with* Korkuna, M. D.; Chulik, I. I.) Application of the method of summary approximation for the solution of a nonlinear problem of heat conduction. (Ukrainian) *Visnik L'viv. Derzh. Univ. Ser. Mekh.-Mat. No.* 31 (1989), 8–11. 65M99

— (*with* Korkuna, M. D.; Chulik, I. I.) Investigation of the convergence rate of the summary approximation method in the class $W_2^{1,0}(Q_T)$. (Ukrainian) *Visnik L'viv. Derzh. Univ. Ser. Mekh.-Mat. No.* 33 (1990), 37–39. 65M99

Kuzin, I. A. Multiple solvability of some elliptic problems with a critical nonlinearity exponent. (Russian. Russian summary) *Mat. Zametki* **52** (1992), *no.* 1, 51–56, 155; *translation in Math. Notes* **52** (1992), *no.* 1-2, 668–672 (1993). (Summary) **93g:35042** 35J60

Kuzin, V. I. *see* **Current problems in computational and applied mathematics, 93m:00012**

Kuzin, V. S. Analytical solution of the probabilities of an optimization problem when there are rigid constraints. *Soviet J. Comput. Systems Sci.* **30** (1992), *no.* 4, 125–130; *translated from Izv. Akad. Nauk SSSR Tekhn. Kibernet.* **1991,** *no.* 4, 132–136 (*Russian. Russian summary*). (Summary) **93d:90046** 90C15 (93E03, 93E20, 94A05)

Kuzmanović, D. (*with* Vukobrat, M.) Conservation laws in nonlocal elasticity. *Acta Mech.* **92** (1992), *no.* 1-4, 1–8. (E. S. Şuhubi) **93d:73005** 73B18 (73M25)

Kuzmanovich, J. (*with* Kirkman, E.; Small, L.) Finitistic dimensions of Noetherian rings. *J. Algebra* **147** (1992), *no.* 2, 350–364. (C. R. Hajarnavis) **93h:16008** 16E10 (16P40)

Kuz'min, A. B. Properties of the characteristics of point estimates of random signals. *J. Comput. Systems Sci. Internat.* **31** (1993), *no.* 1, 115–125; *translated from Izv. Akad. Nauk SSSR Tekhn. Kibernet.* **1991,** *no.* 6, 111–121 (*Russian. Russian summary*). 94A05

Kuz'min, A. G. ★ Nonclassical equations of mixed type and their applications in gas dynamics. Translated and revised from the Russian by the author. International Series of Numerical Mathematics, 109. *Birkhäuser Verlag, Basel*, 1992. x+288 *pp. ISBN* 3-7643-2573-9 (Editors) **93h:35137** 35M10 (35Q35, 76H05, 76N15)

— Conditions for the stability of a transonic stagnation flow in a channel. (Russian. Russian summary) *Zh. Vychisl. Mat. i Mat. Fiz.* **32** (1992), *no.* 10, 1628–1640; *translation in Comput. Math. Math. Phys.* **32** (1992), *no.* 10, 1461–1470 (1993). (Summary) **93k:76070** 76H05 (76E99)

Kuz'min, A. S. (*with* Nechaev, A. A.) Construction of noise-stable codes using linear recurrent sequences over Galois rings. (Russian) *Uspekhi Mat. Nauk* **47** (1992), *no.* 5(287), 183–184; *translation in Russian Math. Surveys* **47** (1992), *no.* 5, 189–190. (Vladimir D. Tonchev) **93m:51010** 51E22 (94B05, 94B15)

Kuz'min, E. N. Irreducible polynomials over a finite field and an analogue of Gauss sums over a field of characteristic 2. (Russian) *Sibirsk. Mat. Zh.* **32** (1991), *no.* 6, 100–108, 205; *translation in Siberian Math. J.* **32** (1991), *no.* 6, 982–989 (1992). (N. L. Manev) **93f:11094** 11T06 (12E05)

Kuz'min, V. A. (*with* Berezin, V. A.; Tkachev, I. I.) O(3)-invariant tunneling at false vacuum decay in general relativity. *Quantum gravity* (*Moscow*, 1990), 574–599, *World Sci. Publishing, River Edge, NJ*, 1991. (*see* **93b:83004**) 83C45 (83F05)

— (*with* Berezin, V. A.; Tkachev, I. I.) O(3)-invariant tunnelling at false vacuum decay in general relativity. The birth and early evolution of our Universe (Gräftåvallen, 1990). *Phys. Scripta* **1991,** *Vol.* T36, 269–275. (Summary) **93a:83038** 83F05 (83C57)

Kuz'min, Yu. V. (*with* Gupta, Narain) On varietal quotients defined by ideals generated by Fox derivatives. *J. Pure Appl. Algebra* **78** (1992), *no.* 2, 165–172. (Summary) **93b:20051** 20E10 (20F10)

Kuz'mina, A. L. Sign-constant polynomials that deviate least from zero in $C(E_m)$. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* **1991,** *no.* 7, 40–42; *translation in Soviet Math. (Iz. VUZ)* **35** (1991), *no.* 7, 35–37. (Krzysztof Reczek) **93b:41011** 41A10 (41A44)

Kuz'mina, T. M. Generalized semilattices and m-degrees of index sets. II. *Algebra and Logic* **30** (1991), *no.* 2, 110–119 (1992). (Marat M. Arslanov) **93e:03057** 03D25 (06A12)

— Generalized semilattices and m-degrees of index sets. II [MR 93e:03057]. (Russian. Russian summary) The English translation has been reviewed. *Algebra i Logika* **30** (1991), *no.* 2, 168–180, 254–255. 03D25 (06A12)

Kuz'minov, V. I. (*with* Gol'dshteĭn, V. M.; Shvedov, I. A.) On the Künneth formula for the L_p-cohomology of warped products. (Russian) *Sibirsk. Mat. Zh.* **32** (1991), *no.* 5, 29–42, 207; *translation in Siberian Math. J.* **32** (1991), *no.* 5, 749–760 (1992). (Józef Dodziuk) **93c:58003** 58A12

— (*with* Gol'dshteĭn, V. M.; Shvedov, I. A.) On Cheeger's theorem: extensions to L_p-cohomology of warped cylinders. Siberian Advances in Mathematics. *Siberian Adv. Math.* **2** (1992), *no.* 1, 114–122. (Józef Dodziuk) **93c:58004** 58A12

— (*with* Gol'dshteĭn, V. M.; Shvedov, I. A.) Approximation of exact and closed differential forms by finite ones. (Russian) *Sibirsk. Mat. Zh.* **33** (1992), *no.* 2, 49–65, 219; *translation in Siberian Math. J.* **33** (1992), *no.* 2, 219–233. (Jürgen Eichhorn) **93j:58002** 58A10 (58A12)

Kuz'minykh, A. V. On the reconstructibility of convex polyhedra. (Russian. Russian summary) *Questions of well-posedness in problems of analysis* (*Russian*), 105–113, 184–185, *Akad. Nauk SSSR Sibirsk. Otdel., Inst. Mat., Novosibirsk*, 1989. (*see* **93e:00018**) 52B11

Kuznetsov, A. O. (*with* Azizova, A. A.; Loginov, B. V.) The method of group transformations in computations of the bending forms of rods. (Russian) *Boundary value problems for differential equations of mixed types* (*Russian*), 43–49, 202, "*Fan*", *Tashkent*, 1991. (From the text) **93c:73057** 73K05 (34B15, 65L06, 65L10)

— (*with* Loginov, B. V.) Construction of the asymptotics of small solutions with an irregular hexagonal periodicity lattice for a problem on capillary-gravity waves over an even

bottom. (Russian) *Mathematical analysis (Russian)*, 40–49, *Ross. Gos. Ped. Univ., Leningrad*, 1991. (From the text) **93i:76012** 76B15 (35Q35, 76B45)

Kuznetsov, A. P. (*with* Kuznetsov, S. P.; Sataev, I. R.) The effect of a fractal signal on a Feigenbaum system, and bifurcation in the renormalization group equation. (Russian. English summary) *Izv. Vyssh. Uchebn. Zaved. Radiofiz.* **34** (1991), *no.* 6, 661–670; *translation in Radiophys. and Quantum Electronics* **34** (1991), *no.* 6, 556–563 (1992). (Summary) **93b:58103** 58F13 (58F08)

Kuznetsov, A. Yu. (*with* Voevodin, V. V.; Tyrtyshnikov, E. E.) A tribute to goodness, intelligence and talent. (Russian) *Algebra i Analiz* **2** (1990), *no.* 6, 10–33; *translation in Leningrad Math. J.* **2** (1991), *no.* 6, 1165–1186. (G. Maess) **93a:01057b** 01A70

Kuznetsov, B. G. (*with* Kovenya, V. M.; Fomin, Vasilii Mikhailovich; Sleptsov, A. G.) Nikolaĭ Nikolaevich Yanenko (1921–1984). (Russian) *Model. Mekh.* **5** (1991), *no.* 2, 3–6. 01A70

Kuznetsov, Dmitriĭ Yur'evich Multiple structures on smooth surfaces in $\mathbf{P}^4$. (Russian) *Problems in group theory and homological algebra (Russian)*, 79–88, *Matematika, Yaroslav. Gos. Univ., Yaroslavl'*, 1988. (*see* **93b:00020**) 14J25

Kuznetsov, E. A. *see* **Kuznetsov, Evgeniĭ Alekseevich**

Kuznetsov, E. B. Application of catastrophe theory to the study of the cracking process of mechanical systems. (Russian) *Analytic and numerical methods for studying mechanical systems (Russian)*, 17–20, *Moskov. Aviatsion. Inst., Moscow*, 1989. (*see* **93e:00015**) 58C28 (73M25)

— An algorithm for the integration of differential equations. (Russian) *Qualitative methods in the theory of differential equations and their applications (Russian)*, 58–62, *Moskov. Aviatsion. Inst., Moscow*, 1991. (*see* **93j:00004**) 65L05

Kuznetsov, Evgeniĭ Alekseevich (*with* Blaha, R.; Laedke, E. W.; Spatschek, K. H.) Collapsing solutions in Schrödinger- and KdV-systems. *Nonlinear world, Vol. 1 (Kiev*, 1989), 10–24, *World Sci. Publishing, River Edge, NJ*, 1990. (*see* **93b:00012**) 35Q53 (35Q55)

Kuznetsov, I. B. (*with* Kuznetsov, S. B.; Shkol'nik, K. M.) The domain decomposition method for the parallelization of a sequential upper relaxation algorithm. (Russian) *Numerical methods and mathematical modeling (Russian)*, 95–104, *Akad. Nauk SSSR Sibirsk. Otdel., Vychisl. Tsentr, Novosibirsk*, 1990. (*see* **93i:65007**) 65N55

Kuznetsov, K. V. (*with* Vyazgin, V. A.) Control in multicriterial choice algorithms. (Russian. Russian summary) *Vestnik Moskov. Univ. Ser. XV Vychisl. Mat. Kibernet.* **1992,** *no.* 2, 55–61, 74; *translation in Moscow Univ. Comput. Math. Cybernet.* **47** (1992), *no.* 2, 52–57. (Fouad T. Aleskerov) **93h:90082** 90C29 (93B40)

Kuznetsov, M. I. An embedding theorem for transitive filtered Lie algebras of characteristic p. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* **1991,** *no.* 10, 43–45; *translation in Soviet Math. (Iz. VUZ)* **35** (1991), *no.* 10, 39–41. (From the text) **93g:17036** 17B50

— Differential operators in the classification of simple Lie modular algebras. (Russian) *Uspekhi Mat. Nauk* **47** (1992), *no.* 4(286), 195–196; *translation in Russian Math. Surveys* **47** (1992), *no.* 4, 212–213. 17B50

Kuznetsov, N. A. (*with* Gorin, E. A.; Krasnosel'skiĭ, M. A.) Theorems on equiconvergence for nonparametric identification algorithms. (Russian) *Dokl. Akad. Nauk* **326** (1992), *no.* 2, 237–240; *translation in Soviet Phys. Dokl.* **37** (1992), *no.* 9, 448–449 (1993). (Rudolf Kulhavý) **93k:93031** 93B30

Kuznetsov, N. G. (*with* Vasil'ev, A. N.) Some extremal problems that arise in acoustics. (Russian) *Boundary value problems for nonclassical equations in mathematical physics (Russian) (Novosibirsk*, 1989), 94–98, *Akad. Nauk SSSR Sibirsk. Otdel., Inst. Mat., Novosibirsk*, 1989. (*see* **93d:35001**) 76Q05 (76M30)

— Integral equations for a problem on steady waves induced by a floating body. (Russian) *Mat. Zametki* **50** (1991), *no.* 4, 75–83, 159; *translation in Math. Notes* **50** (1991), *no.* 3-4, 1036–1042 (1992). (Summary) **93c:76006** 76B20 (35Q30, 45K05, 76B15)

— The source method for the plane Neumann-Kelvin problem and free oscillations of a fluid in a channel. (Russian. Russian summary) *Differentsial'nye Uravneniya* **28** (1992), *no.* 8, 1395–1401, 1470; *translation in Differential Equations* **28** (1992), *no.* 8, 1140–1146 (1993). (From the summary) **93j:76016** 76B15 (35Q35)

— A lower bound on the sloshing frequencies of two-dimensional oscillations of a fluid in a channel. (Russian. Russian summary) *Prikl. Mat. Mekh.* **56** (1992), *no.* 2, 342–346; *translation in J. Appl. Math. Mech.* **56** (1992), *no.* 2, 293–297. (From the text) **93g:76019** 76B10 (35Q35, 76B15)

Kuznetsov, O. P. Holographic models of information processing in neural networks. (Russian) *Dokl. Akad. Nauk* **324** (1992), *no.* 3, 537–540; *translation in Soviet Phys. Dokl.* **37** (1992), *no.* 5, 221–223. 92B20 (68T05)

Kuznetsov, S. *see* **Kuznetsov, S. E.**

Kuznetsov, S. B. (*with* Kuznetsov, I. B.; Shkol'nik, K. M.) The domain decomposition method for the parallelization of a sequential upper relaxation algorithm. (Russian) *Numerical methods and mathematical modeling (Russian)*, 95–104, *Akad. Nauk SSSR Sibirsk. Otdel., Vychisl. Tsentr, Novosibirsk*, 1990. (*see* **93i:65007**) 65N55

Kuznetsov, S. E. *see* **Nigmatullin, R. G., 93e:94021**

Kuznetsov, S. P. (*with* Kuznetsov, A. P.; Sataev, I. R.) The effect of a fractal signal on a Feigenbaum system, and bifurcation in the renormalization group equation. (Russian. English summary) *Izv. Vyssh. Uchebn. Zaved. Radiofiz.* **34** (1991), *no.* 6, 661–670; *translation in Radiophys. and Quantum Electronics* **34** (1991), *no.* 6, 556–563 (1992). (Summary) **93b:58103** 58F13 (58F08)

— Tricriticality in two-dimensional maps. (English summary) *Phys. Lett. A* **169** (1992), *no.* 6, 438–444. (Summary) **93f:58154** 58F13

Kuznetsov, Sergei Vladimirovich Fundamental solutions of the statics of anisotropic elastic media in the case of two independent variables. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* **1991,** *no.* 8, 32–34; *translation in Soviet Math. (Iz. VUZ)* **35** (1991), *no.* 8, 29–31. (From the text) **93f:73024** 73C02 (73B40)

— Construction of the Green and Neumann tensor in the theory of elasticity of an anisotropic body. (Russian. English summary) *Prikl. Mekh.* **27** (1991), *no.* 7, 58–62, 132; *translation in Soviet Appl. Mech.* **27** (1991), *no.* 7, 676–679 (1992). (V. T. Golovchan) **93c:73014** 73B40 (73C99)

— On the continuity of operators of metric projection. (Russian. Russian and Ukrainian summaries) *Ukraïn. Mat. Zh.* **44** (1992), *no.* 8, 1141–1144; *translation in Ukrainian Math. J.* **44** (1992), *no.* 8, 1044–1047 (1993). (Nikolay V. Zhivkov) **93j:41020** 41A65 (46E27, 46E30)

Kuznetsov, V. A. *see* **Kuznetsov, Vladimir Alfeevich**

Kuznetsov, V. B. On the equivalence of two families of quantum integrable systems. (Russian. English summary) *Zap. Nauchn. Sem. S.-Peterburg. Otdel. Mat. Inst. Steklov. (POMI)* **199** (1992), *Voprosy Kvant. Teor. Polya Statist. Fiz.* 11, 114–131, 186. (N. N. Ganikhodzhaev) **93i:82009** 82B10

Kuznetsov, V. I. (*with* Burgin, M. S.) The structure and development of mathematical theories. (Russian summary) *Modern Logic* **2** (1991), *no.* 1, 3–28. (Philip J. Scott) **93j:03008** 03A05 (00A30, 04–03, 18A15, 18C10)

— (*with* Burgin, M. S.) ★ Мир теорий и могущество разума. (Russian. Russian summary) [The world of theories and the power of reason] *"Ukraïna"*, *Kiev*, 1992. 232 *pp. ISBN* 5-319-00719-1 (Publisher's description) **93f:00004** 00A30

— (*with* Burgin, M. S.) Fuzzy sets as named sets. *Fuzzy Sets and Systems* **46** (1992), *no.* 2, 189–192. (Summary) **93b:03092** 03E72 (04A72)

Kuznetsov, V. K. ★ Исследование механизмов экономического роста. (Russian. Russian summary) [Research on the mechanisms for economic growth] Препринт [Preprint], 91-58. *Akad. Nauk Ukrainy, Inst. Kibernet., Kiev*, 1991. 21 *pp.* 90A16

Kuznetsov, V. N. *see* **Kuznetsov, Valentin Nikolaevich**

Kuznetsov, V. P. ★ Интервальные статистические модели. (Russian. Russian summary) [Interval statistical models] *"Radio i Svyaz"*, *Moscow*, 1991. 352 *pp. ISBN* 5-256-00726-2 (Publisher's description) **93j:62001** 62–01

Kuznetsov, V. V. A method for the parametrization of boundary conditions in shooting algorithms for the numerical solution of nonlinear boundary value problems. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **32** (1992), *no.* 1, 30–39; *translation in Comput. Math. Math. Phys.* **32** (1992), *no.* 1, 25–33. (Summary) **93b:65105** 65L10 (34A50, 34B15)

Kuznetsov, Valentin Nikolaevich On the problem of describing Dirichlet series that define entire functions. (Russian) *Differential equations and function theory, No.* 9 (*Russian*), 23–29, *Saratov. Gos. Univ., Saratov*, 1991. (*see* **93m:00022**) 30B50

Kuznetsov, Vladimir *see* **Kuznetsov, V. I.**

Kuznetsov, Vladimir Alfeevich The forcing method from the point of view of a formal system G^+ of Gentzen type. (Russian) *Akad. Nauk Ukrain. SSR Inst. Mat. Preprint* **1991,** *no.* 19, 59 *pp.* (Summary) **93a:03056** 03E40 (03F03)

— Some problems in set theory from the standpoint of a formal system G^+ of Gentzen type. (Russian. Russian summary) *Akad. Nauk Ukrainy Inst. Mat. Preprint* **1992,** *no.* 21, 51 *pp.* (Summary) **93m:03084** 03E30 (03F99)

Kuznetsov, Yu. A. Some nonlinear mathematical problems in particle transport theory. (Russian) *Applied problems in the theory of oscillations (Russian)*, 132–142, *Gor'kov. Gos. Univ., Gorki*, 1990. (Nina B. Maslova) **93e:82044** 82C70 (47N55, 82D75)

Kuznetsov, Yu. I. ★ О проблеме моментов на конечном множестве точек. (Russian. English summary) [The moment problem on a finite set of points] Препринт [Preprint], 941. *Akad. Nauk SSSR Sibirsk. Otdel., Vychisl. Tsentr, Novosibirsk*, 1991. 17 *pp.* (Summary) **93d:44012** 44A60 (39A12)

— (*with* Pinkina, N. A.) On the solution of three-point systems of linear equations with constant and piecewise-constant coefficients. (Russian. Russian summary) *Model. Mekh.* **5** (1991), *no.* 1, 48–58. (Summary) **93j:65060** 65F30

Kuznetsov, Yuri *see* **Kuznetsov, Yurii Alekseevich**

Kuznetsov, Yurii Aleksandrovich (*with* Muratori, Simona; Rinaldi, Sergio) Bifurcations and chaos in a periodic predator-prey model. *Internat. J. Bifur. Chaos Appl. Sci. Engrg.* **2** (1992), *no.* 1, 117–128. (N. Chafee) **93e:34051** 34C23 (34C15, 34C25, 92D25)

— (*with* Khibnik, A. I.; Levitin, V. V.; Nikolaev, Eugene V.) Continuation techniques and interactive software for bifurcation analysis of ODEs and iterated maps. (English summary) Homoclinic chaos (Brussels, 1991). *Phys. D* **62** (1993), *no.* 1-4, 360–371. (Summary) **93k:58169** 58F14 (34–04, 34A50, 34C23, 65L99)

Kuznetsov, Yurii Alekseevich (*with* Bespalov, A. N.; Pironneau, Olivier; Vallet, Marie-Gabrielle) Fictitious domains with separable preconditioners versus unstructured adapted meshes. (English summary) *Impact Comput. Sci. Engrg.* **4** (1992), *no.* 3, 217–249. (Summary) **93h:65147** 65N50 (65Y20, 76M25)

— A new parallel algebraic preconditioner. (English summary) *J. Numer. Linear Algebra Appl.* **1** (1992), *no.* 2, 215–225. (Summary) **93g:65059** 65F35 (65Y05)

Kuznetsova, N. A. Global asymptotic behavior on the half-axis of solutions of second-order degenerate differential equations. (Russian) *Boundary value problems for nonclassical equations in mathematical physics (Russian) (Novosibirsk*, 1989), 125–128, *Akad. Nauk SSSR Sibirsk. Otdel., Inst. Mat., Novosibirsk*, 1989. (*see* **93d:35001**) 34C11 (34E99)

Kuznetsova, O. M. Prediction problems for an isotropic random field on a Hilbert space. (Russian) *Teor. Veroyatnost. i Mat. Statist. No.* 45 (1991), 62–69; *translation in Theory Probab. Math. Statist. No.* 45 (1992), 59–65. (Lutz Peter Klotz) **93f:60054** 60G25 (60G10, 60G60)

— Isotropic random fields on systems of spheres. *Probability theory and mathematical statistics (Kiev*, 1991), 188–192, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93k:60008**) 60G60

— On the problem of filtering an isotropic random field in a Hilbert space. (Ukrainian. Russian and Ukrainian summaries) *Teor. Ĭmovir. ta Mat. Statist. No.* 46 (1992), 60–63. (Summary) **93k:60105** 60G35 (60G60)

— On the extension of positive-definite functions on a ball in an infinite-dimensional sphere. (Russian. Russian and Ukrainian summaries) *Ukraïn. Mat. Zh.* **44** (1992), *no.* 4, 489–497; *translation in Ukrainian Math. J.* **44** (1992), *no.* 4, 430–437. (Aleksandr Koldobsky) **93f:43005** 43A35 (46G99, 60E10)

Kuznetsova, T. A. An approach to obtaining direct and inverse approximation theorems over given subspaces. (Russian) *Differential equations and function theory, No.* 8 (*Russian*), 52–61, *Saratov. Gos. Univ., Saratov*, 1989. (*see* **93b:00016**) 41A35 (41A27)

Kuznetsova, V. A. (*with* Medvedeva, L. B.) Projection of the space $\mathbf{P}^3$ onto a line. (Russian) *Problems in group theory and homological algebra (Russian)*, 110–114, *Matematika, Yaroslav. Gos. Univ., Yaroslavl'*, 1988. (*see* **93b:00020**) 51N35

— (*with* Medvedeva, L. B.) Basic axonometry theorems in a projective space with a distinguished hyperplane. (Russian) *Problems in group theory and homological algebra (Russian)*, 80–83, *Matematika, Yaroslav. Gos. Univ., Yaroslavl'*, 1990. (Jerzy Kaczmarek (Zbl 735:51017)) **93j:51020** 51N15

Kuznichenko, V. M. Representation of functions from certain nonquasianalytic classes by generalized Taylor series. (Russian. English summary) *Dokl. Akad. Nauk Ukrainy* **1991,** *no.* 11, 9–12, 172. (Summary) **93c:26024** 26E10 (26A99, 65D99)

Kuzovatov, I. A. A case of the existence of a global solution to Euler equations. (Russian. Russian summary) *Dinamika Sploshn. Sredy No.* 95 (1990), 86–93, 163. (Summary)

93d:35119 35Q30 (76C05)

Kuzyk, A. D. (*with* Sheremeta, M. N.) On the logarithmic derivative and zeros of an entire function of bounded *l*-index. (Russian) *Sibirsk. Mat. Zh.* **33** (1992), *no.* 2, 142–150, 221; *translation in Siberian Math. J.* **33** (1992), *no.* 2, 304–312. (Mikhail L. Sodin) **93h:30042** 30D15

Kuzyurin, N. N. A parallel algorithm of complexity $O(\log^2 n)$ for a problem on balancing sets. (Russian) *Diskret. Mat.* **3** (1991), *no.* 4, 153–158; *translation in Discrete Math. Appl.* **2** (1992), *no.* 5, 483–488. (Václav Koubek) **93d:68028** 68Q22 (68Q25)

Kuzyutin, D. V. (*with* Seisov, Yu. B.) A method for discovering indeterminacy in a class of discontinuous functions. (Russian. English summary) *Izv. Akad. Nauk Turkm. Ser. Fiz.-Mat. Tekhn. Khim. Geol. Nauk* **1992,** *no.* 2, 79–81. (From the introduction) **93b:26007** 26A24 (26A03, 49J52)

Kvachko, V. Yu. Construction of grids for solving three-dimensional parabolic Navier-Stokes equations. (Russian) *Proceedings of the XXVIII All-Union Scientific Student Conference "The Student and Scientific-Technological Progress"* (*Russian*) (*Novosibirsk*, 1990), 18–28, *Novosibirsk. Gos. Univ., Novosibirsk*, 1990. (*see* **93f:00017**) 65P05 (76D05, 76M25)

Kvale, Mark (*with* Biham, Ofer) Unstable periodic orbits in the stadium billiard. (English summary) *Phys. Rev. A* (3) **46** (1992), *no.* 10, 6334–6339. (András Krámli) **93k:58145** 58F13 (81Q50)

Kvart, Igal Counterfactuals. *Erkenntnis* **36** (1992), *no.* 2, 139–179. (Summary) **93b:03042** 03B65 (03B45)

Kvasnička, V. (*with* Pospíchal, J.) An improved method of constructive enumeration of graphs. *J. Math. Chem.* **9** (1992), *no.* 2, 181–196. (Summary) **93a:92018** 92E10 (05C30)

— (*with* Pospíchal, J.) An existence theorem for molecular graphs determined by a sequence of valence states. (English summary) *J. Math. Chem.* **11** (1992), *no.* 4, 353–364. 92E10

Kvasov, B. I. (*with* Yatsenko, S. A.) On the choice of parametrization for cubic splines. (Russian. Russian summary) *Model. Mekh.* **5** (1991), *no.* 5, 118–135. (Petru P. Blaga) **93m:41017** 41A15 (65D07)

Kvasova, N. A. Asymptotics of eigenvalues for a class of nonuniformly elliptic operators. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* **1991,** *no.* 11, 94–96 (1992); *translation in Soviet Math. (Iz. VUZ)* **35** (1991), *no.* 11, 95–97. (Georgi E. Karadzhov) **93f:35167** 35P20 (47F05)

Kvasyuk, A. F. On an estimate for the solutions and right-hand sides of the Helmholtz equation. (Russian. Russian summary) *Vestnik Kiev. Univ. Model. Optim. Slozhn. Sist. No.* 9 (1990), 6–11. (Summary) **93d:35027** 35J05 (35B45)

Kvedaras, Bronius Boundary value problems for a strongly degenerate elliptic equation. (Russian. English, Russian and Lithuanian summaries) *Differentsial'nye Uravneniya i Primenen. No.* 47 (1991), 28–32. (Hans Gerd Leopold) **93h:35075** 35J70

Kvít, Ĭ. D. (*with* Kosarchin, V. M.) A random process as a convolution or an amplification. (Ukrainian. Russian summary) *Visnik L'viv. Derzh. Univ. Ser. Mekh.-Mat. No.* 30 (1988), 55–58, 78. 60E10 (60G99)

Kvitko, A. N. Construction of piecewise-continuous controls for the solution of a boundary value problem for systems of ordinary differential equations. (Russian. English and Russian summaries) *Vestnik Leningrad. Univ. Mat. Mekh. Astronom.* **1991,** *vyp.* 3, 37–40, 132; *translation in Vestnik Leningrad Univ. Math.* **24** (1991), *no.* 3, 34–37. 49M25 (34H05, 93B52)

Kvitsinskiĭ, A. A. (*with* Kostrykin, V. V.) Semiclassical quantization for Coulomb systems on a hypersphere. *J. Math. Phys.* **32** (1991), *no.* 10, 2776–2782. (Nicolae Angelescu) **93b:81301** 81U10 (81Q20)

— (*with* Kostrykin, V. V.) Quantum three-body scattering problem in the adiabatic hyperspherical representation. *J. Math. Phys.* **32** (1991), *no.* 10, 2802–2812. (Nicolae Angelescu) **93b:81300** 81U10

— (*with* Hu, C.-Y.) Solution of three-dimensional Faddeev equations for three-body Coulomb bound states. *Few-Body Systems* **12** (1992), *no.* 1, 7–19. (Summary) **93c:81259** 81U10 (65P05, 81-04, 81V55)

Kvyadaras, Bronyus *see* **Kvedaras, Bronius**

Kwak, Hyochul (*with* Kim, Yangkon) A note on Lie algebras $L(K)$ and $L_v(K)$. (English summary) *Collection of papers dedicated to Prof. Jong Geun Park on his sixtieth birthday* (*Korean*), 157–165, *Jeonbug, Seoul*, 1989. (Hartmut Schlosser) **93f:17018** 17B20 (17B10)

Kwak, Jin Ho (*with* Lee, Jaeun) Isomorphism classes of cycle permutation graphs. (English summary) *Discrete Math.* **105** (1992), *no.* 1-3, 131–142. (Richard D. Ringeisen) **93k:05120** 05C60 (05C25, 05C38)

— (*with* Lee, Jaeun) Counting some finite-fold coverings of a graph. (English summary) *Graphs Combin.* **8** (1992), *no.* 3, 277–285. (Lyuben R. Mutafchiev) **93k:05131** 05C70 (05C30)

— (*with* Lee, Jaeun) Retracts in equiconnected spaces. (English summary) *Internat. J. Math. Math. Sci.* **16** (1993), *no.* 1, 199–200. (Summary) **93k:54037** 54C15

Kwak, Minkyu (*with* Rim, Joong Kyu) Inertial manifold for finite element approximation of reaction diffusion equation. *Honam Math. J.* **14** (1992), *no.* 1, 67–84. (Gert Lube) **93j:65148** 65M60

— Finite-dimensional description of convective reaction-diffusion equations. (English summary) *J. Dynamics Differential Equations* **4** (1992), *no.* 3, 515–543. (Hong Ming Yin) **93h:35100** 35K57 (34G20, 47N20, 58F39)

Kwakernaak, Huibert The polynomial approach to $\mathscr{H}_\infty$-optimal regulation. (English summary) *H_∞-control theory* (*Como*, 1990), 141–221, *Lecture Notes in Math.*, 1496, *Springer, Berlin*, 1991. (Patrizio Colaneri) **93i:93046** 93B36 (47N70, 93-02)

— Solution of the standard H_∞ optimal control problem by two polynomial J-spectral factorizations. *Mathematical theory of control* (*Bombay*, 1990), 205–208, *Lecture Notes in Pure and Appl. Math.*, 142, *Dekker, New York*, 1993. (*see* **93g:93003**) 93B36

Kwankam, S. Yunkap (*with* Onana, Awono; Joseph, Mvogo Ngono) Solution of the two-dimensional neutron transport equation by a hierarchical finite element method. (English summary) *Internat. J. Numer. Methods Heat Fluid Flow* **3** (1993), *no.* 1, 35–47. 82-08 (82C70)

Kwapisz, Jarosław Every convex polygon with rational vertices is a rotation set. (English summary) *Ergodic Theory Dynamical Systems* **12** (1992), *no.* 2, 333–339. (M. L. Blank) **93g:58082** 58F11 (28D20)

Kwapisz, Marian Remarks on the existence and uniqueness of solutions of Volterra functional equations in L^p spaces. *J. Integral Equations Appl.* **3** (1991), *no.* 3, 383–397. (A. Corduneanu) **93a:47074** 47N20 (39B52, 45D05, 46E30, 47H30)

— On the error estimate of approximate solutions of the discrete Volterra equations of kth order. *Z. Angew. Math. Mech.* **71** (1991), *no.* 7-8, 293–295. (L. Berg) **93c:65078** 65J15 (39A12, 65Q05)

— On l^p solutions of discrete Volterra equations. *Aequationes Math.* **43** (1992), *no.* 2-3, 191–197. (Summary) **93d:39009** 39A12 (47H15, 47N20)

— On solving systems of differential algebraic equations. (English summary) *Appl. Math.* **37** (1992), *no.* 4, 257–264. (Michael Hanke) **93j:65104** 65L05 (34A09, 34A45)

— Weighted norms and existence and uniqueness of L^p solutions for integral equations in several variables. *J. Differential Equations* **97** (1992), *no.* 2, 246–262. (Gustaf Gripenberg) **93e:45006** 45N05

— Some remarks on an integral equation arising in applications of numerical-analytic method of solving of boundary value problems. (English, Russian and Ukrainian summaries) *Ukraïn. Mat. Zh.* **44** (1992), *no.* 1, 128–132; *reprinted in Ukrainian Math. J.* **44** (1992), *no.* 1, 115–119. (Summary) **93g:65167** 65R20 (45L05, 65L99)

Kwasik, Sławomir (*with* Schultz, Reinhard) Icosahedral group actions on $\mathbf{R}^3$. *Invent. Math.* **108** (1992), *no.* 2, 385–402. (Allan Edmonds) **93b:57040** 57S25 (57S17)

— (*with* Schultz, Reinhard) Vanishing of Whitehead torsion in dimension four. *Topology* **31** (1992), *no.* 4, 735–756. (A. A. Ranicki) **93j:57013** 57Q10 (19J10, 57R80)

Kwaśnik, Maria The index of the primitivity of the exclusive disjunction of two undirected graphs. I. (Russian and Polish summaries) *Zeszyty Nauk. Politech. Rzeszowskiej Mat. Fiz. No.* 12 (1991), 125–136. (Summary) **93d:05079** 05C35 (05C38)

Kwek, Keng Huat (*with* Zhao, Xiao Hua; Li, Ji Bin; Huang, Ke Lei) Chaotic and resonant streamlines in the ABC flow. (English summary) *SIAM J. Appl. Math.* **53** (1993), *no.* 1, 71–77. (Summary) **93j:76039** 76F20 (58F13, 76C05, 76E99)

Kwembe, Tor A. (*with* Calderón, Calixto P.) Diverse ideas in modeling tumor growth. (English and Spanish summaries) *Acta Cient. Venezolana* **43** (1992), *no.* 2, 64–75. (Summary) **93h:92019** 92C50

Kwiatkowska, Marta Z. On topological characterization of behavioural properties. *Topology and category theory in computer science* (*Oxford*, 1989), 153–177, *Oxford Sci. Publ., Oxford Univ. Press, New York*, 1991. (*see* **93h:68004**) 68Q10 (54H99, 68Q55)

— *see also* **Workshop: Semantics for Concurrency, 93b:68007**

Kwiatkowski, Jan (*with* Ferenczi, Sébastien) Rank and spectral multiplicity. *Studia Math.* **102** (1992), *no.* 2, 121–144. (Wojciech Bartoszek) **93g:28013** 28D05 (47A35)

— (*with* Goodson, G. R.; Lemańczyk, Mariusz; Liardet, Pierre) On the multiplicity function of ergodic group extensions of rotations. *Studia Math.* **102** (1992), *no.* 2, 157–174. (Vadim A. Kaĭmanovich) **93f:28015** 28D20

Kwiatkowski, M. (*with* Frelek, B.) PD controllers for nonlinear systems. (English summary) *Mathematics of the analysis and design of process control* (*Dublin*, 1991/*Lille*, 1991), 41–52, *North-Holland, Amsterdam*, 1992. (*see* **93g:93004**) 93B52 (93C10)

Kwiecińska, Grażyna (*with* Czarnowska, Joanna) On the Darboux property of multivalued functions. *Demonstratio Math.* **25** (1992), *no.* 1-2, 193–199. (Gerald Beer) **93f:26016** 26E25 (26A21, 54C60)

Kwieciński, A. (*with* Szekli, R.) Compensator conditions for stochastic ordering of point processes. *J. Appl. Probab.* **28** (1991), *no.* 4, 751–761. (Summary) **93f:60063** 60G55 (60K15)

Kwieciński, Michał Extending finite mappings to affine spaces. *J. Pure Appl. Algebra* **76** (1991), *no.* 2, 151–153. (Zbigniew Jelonek) **93c:14003** 14A25 (14E10)

— Formule du produit pour les classes caractéristiques de Chern-Schwartz-MacPherson et homologie d'intersection. (English summary) [Product formula for Chern-Schwartz-MacPherson characteristic classes and intersection homology] *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 8, 625–628. (Summary) **93b:55008** 55N33 (14F32, 57R20)

— (*with* van den Essen, Arno) On the reconstruction of polynomial automorphisms from their face polynomials. *J. Pure Appl. Algebra* **80** (1992), *no.* 3, 327–336. (Ludwik M. Drużkowski) **93j:14015** 14E09

— Automorphisms from face polynomials via two Gröbner bases. (English summary) *J. Pure Appl. Algebra* **82** (1992), *no.* 1, 65–70. (Joachim Apel) **93h:14011** 14E07 (13P10)

— A note on continuity of fixed points. *Univ. Iagel. Acta Math. No.* 29 (1992), 19–24. (Introduction) **93f:47072** 47H10 (47H09, 54H25)

Kwiesielewicz, M. (*with* Cipkowski, W.; Stolc, L.) Multilevel-multihorizon control of production system in uncertain conditions. (Polish summary) *Systems Sci.* **17** (1991), *no.* 2, 79–92 (1992). (Summary) **93c:93010** 93A13 (93C95)

Kwock, V. (*with* Dinh, Q. V.; Glowinski, Roland; He, Jiwen; Pan, T. W.; Périaux, Jacques) Lagrange multiplier approach to fictitious domain methods: application to fluid dynamics and electromagnetics. (English summary) *Fifth International Symposium on Domain Decomposition Methods for Partial Differential Equations* (*Norfolk, VA*, 1991), 151–194, *SIAM, Philadelphia, PA*, 1992. (Summary) **93h:65136** 65N30 (65N50, 76M25, 78–08)

Kwok, Wing Man Character tables of association schemes of affine type. *European J. Combin.* **13** (1992), *no.* 3, 167–185. (Josep Rifà) **93h:05177** 05E30

Kwok, Yue-Kuen Analysis of computer-extended perturbation series. (English summary) *Proceedings of International Conference on Scientific Computation* (*Hangzhou*, 1991), 56–65, *Ser. Appl. Math.*, 1, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93h:35018** 35B20 (41A21, 65B05, 76M25)

Kwon, E. G. One radius theorem for the eigenfunctions of the invariant Laplacian. *Proc. Amer. Math. Soc.* **116** (1992), *no.* 1, 27–34. (Sergey Ivashkovich) **93c:35115** 35P05 (35J05)

Kwon, Jung-Hwan (*with* Sohn, Won-Ho) Locally product indefinite Kaehlerian metrics with vanishing conformal curvature tensor field. *Bull. Korean Math. Soc.* **29** (1992), *no.* 1, 25–29. (Cornelia-Livia Bejan) **93d:53087** 53C55 (53C50)

— (*with* Pak, Jin Suk; Cho, Kwan-Ho) Transverse conformal mappings of complete foliated Riemannian manifolds with harmonic foliation. (English summary) *Math. J. Toyama Univ.* **15** (1992), 43–58. (James J. Hebda) **93j:53039** 53C12 (53A30)

Kwon, Kil H. (*with* Song, Byeong C.) Local integrability of CR-hypersurfaces. *Bull. Austral. Math. Soc.* **44** (1991), *no.* 3, 375–380. (H. Jacobowitz) **93e:32013** 32C16 (32F40)

— (*with* Kim, Sung S.; Han, Sung S.) Orthogonalizing weights of Tchebychev sets of polynomials. *Bull. London Math. Soc.* **24** (1992), *no.* 4, 361–367. (Hans-Jürgen Glaeske) **93g:33007** 33C45 (42C05)

Kwon, Kyung Hee (*with* Zheng, Si-Qing; Chen, Jianhua) Finding a shortest path in twisted hypercubes. Proceedings of the Twenty-second Southeastern Conference on Combinatorics, Graph Theory, and Computing (Baton Rouge, LA, 1991). *Congr. Numer.* **83** (1991), 75–90. (From the introduction) **93h:05104** 05C35 (05C38, 05C85)

— (*with* Zheng, Si-Qing; Latifi, Shahram) Average distance of data communication in twisted hypercubes. *Finite fields, coding theory, and advances in communications and computing* (*Las Vegas, NV*, 1991), 329–340, *Lecture Notes in Pure and Appl. Math.*, 141, *Dekker, New York*, 1993. (From the introduction) **93m:68015** 68M10

Kwon, Ohjong (*with* Kim, Yong Duk; Lee, Chahn) Berry's phase in a moving boundary problem. (English summary) *J. Phys. A* **25** (1992), *no.* 22, 6113–6121. (Piotr Kosiński) **93j:81015** 81Q05 (81S99)

— (*with* Kim, Jae Kwan; Lee, Chahn) Berry phase memorizes the motion of a boundary. *Phys. Rev. A* (3) **45** (1992), *no.* 9, 6884–6886. (Shinichi Tajima) **93i:81032** 81Q15

Kwon, Ohsang (*with* Cho, Nak Eun; Owa, Shigeyoshi) Notes on the Ruscheweyh derivatives. *Bull. Calcutta Math. Soc.* **83** (1991), *no.* 1, 35–39. (Summary) **93f:30008** 30C45

— (*with* Cho, Nak Eun) Meromorphic univalent functions with positive and fixed second coefficients. *Math. Japon.* **37** (1992), *no.* 2, 301–306. (K. S. Padmanabhan) **93e:30022** 30C45

Kwon, S.-H. (*with* Bachoc, C.) Sur les extensions de groupe de Galois $\widetilde{A}_4$. [On extensions of Galois group $\widetilde{A}_4$] *Acta Arith.* **62** (1992), *no.* 1, 1–10. (Jaime-Luis Garcia-Roig) **93i:12006** 12F12 (11R32)

Kwon, Wook Hyun (*with* Choi, Hanhong; Byun, Dae Gyu; Noh, Seonbong) Recursive solution of generalized predictive control and its equivalence to receding horizon tracking control. (English summary) *Automatica J. IFAC* **28** (1992), *no.* 6, 1235–1238. (Summary) **93i:93056** 93B51 (93B40, 93D05)

Kwon, Yong Rae (*with* Cha, Shin; Chung, In Sang) Complexity measures for concurrent programs based on information-theoretic metrics. (English summary) *Inform. Process. Lett.* **46** (1993), *no.* 1, 43–50. 68Q30 (68Q10)

Kwon, Youngmee Uniqueness for the martingale problem with discontinuous coefficient. *Bull. Korean Math. Soc.* **29** (1992), *no.* 1, 145–151. (J. A. Van Casteren) **93k:60182** 60J25 (35R05, 60G44, 60H20)

— The submartingale problem for Brownian motion in a cone with nonconstant oblique reflection. *Probab. Theory Related Fields* **92** (1992), *no.* 3, 351–391. (L. C. G. Rogers) **93g:60174** 60J65 (35J05, 35K05)

Kwong, Man Kam (*with* Kaper, Hans G.) Ground states of semi-linear diffusion equations. *Differential equations with applications in biology, physics, and engineering* (*Leibnitz*, 1989), 219–226, *Lecture Notes in Pure and Appl. Math.*, 133, *Dekker, New York*, 1991. (*see* **93a:00021**) 35K55 (35B05)

— Uniqueness results for Emden-Fowler boundary value problems. *Nonlinear Anal.* **16** (1991), *no.* 5, 435–454. (R. Shivaji) **93f:34042** 34B15

— (*with* Kaper, Hans G.) A free boundary problem arising in plasma physics. *Nonlinear diffusion equations and their equilibrium states*, 3 (*Gregynog*, 1989), 265–273, *Progr. Nonlinear Differential Equations Appl.*, 7, *Birkhäuser Boston, Boston, MA*, 1992. (Summary) **93c:34024** 34A34 (76X05)

— A comparison result and elliptic equations involving subcritical exponents. *Nonlinear diffusion equations and their equilibrium states*, 3 (*Gregynog*, 1989), 299–318, *Progr. Nonlinear Differential Equations Appl.*, 7, *Birkhäuser Boston, Boston, MA*, 1992. (Josef Diblík) **93f:34043** 34B15 (34C11, 35J25)

— A Dirichlet problem with infinite multiplicity. (English summary) *Recent trends in differential equations*, 393–402, *World Sci. Ser. Appl. Anal.*, 1, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93i:34038** 34B15 (35J65)

— (*with* McLeod, J. Bryce; Peletier, L. A.; Troy, William C.) On ground state solutions of $-\Delta u = u^p - u^q$. *J. Differential Equations* **95** (1992), *no.* 2, 218–239. (Norman Dancer) **93d:35045** 35J60 (34B15)

— On the unboundedness of the number of solutions of a Dirichlet problem. *Nonlinear Anal.* **18** (1992), *no.* 10, 993–1001. (Eric Benoit) **93f:34044** 34B15

— (*with* Kaper, Hans G.) On two conjectures concerning the multiplicity of solutions of a Dirichlet problem. *SIAM J. Math. Anal.* **23** (1992), *no.* 3, 571–578. (Jesús Hernández) **93c:34055** 34B15 (34A47, 34C10, 35J25, 73K12)

— Domain decomposition: a blowup problem and the Ginzburg-Landau equations. (English summary) *Asymptotic and numerical methods for partial differential equations with critical parameters* (*Beaune*, 1992), 107–122, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 384, *Kluwer Acad. Publ., Dordrecht*, 1993. (*see* **93m:65006**) 65M55 (35Q99)

— Sweeping algorithms for inverting the discrete Ginzburg-Landau operator. (English summary) *Appl. Math. Comput.* **53** (1993), *no.* 2-3, 129–150. (Summary) **93h:65158** 65P05

Kwong, Y. *see* **Kwong, Ying C.**

Kwong, Y. H. Harris Enumeration of Hamiltonian cycles in $P_4 \times P_n$ and $P_5 \times P_n$. (English summary) *Ars Combin.* **33** (1992), 87–96. (Summary) **93d:05064** 05C30 (05C45)

Kwong, Ying C. (*with* DiBenedetto, E.; Vespri, Vincenzo) Local space-analyticity of solutions of certain singular parabolic equations. *Indiana Univ. Math. J.* **40** (1991), *no.* 2, 741–765. (R. Schumann) **93b:35014** 35B65 (35B50, 35K55)

nguyễn xuân Kỳ *see* **Nguyễn Xuân Kỳ**

Ky, N. X. *see* **Nguyễn Xuân Kỳ**

Ky, Nguyen Anh (*with* Palev, Tchavdar D.; Stoilova, Nedjalka I.) Transformations of some induced osp(3/2) modules in an so(3) ⊕ sp(2) basis. *J. Math. Phys.* **33** (1992), *no.* 5, 1841–1863. (Joris Van der Jeugt) **93b:17010** 17A70 (81R05)

phạm Kỳ Anh *see* **Phạm Kỳ Anh**

Kyatkin, A. B. (*with* Krasnikov, N. V.) Three-dimensional four-fermion (vector) ⊗ (vector) model is renormalizable and ultraviolet finite. *Quantum gravity* (*Moscow*, 1990), 188–194, *World Sci. Publishing, River Edge, NJ*, 1991. (*see* **93b:83004**) 81T15

Kyburg, Henry E., Jr. (*with* Lemmer, John F.) Conditions for the existence of belief functions corresponding to intervals of belief. (English summary) *AAAI-91. Proceedings, Ninth National Conference on Artificial Intelligence, Vol.* 1, 2, 488–493, *AAAI Press, Menlo Park, CA*, 1991. (*see* **93i:68011**) 68T30

— Getting fancy with probability. *Synthese* **90** (1992), *no.* 2, 189–203. (Maria-Teresa Lamata) **93a:03021** 03B48 (60A99, 68T30)

Kydd, R. R. (*with* Wright, J. J.) The electroencephalogram and cortical neural networks. (English summary) *Network* **3** (1992), *no.* 3, 341–362. 92C20 (92B20)

Kye, Seung-Hyeok (*with* Cho, Sung Je; Lee, Sa Ge) Generalized Choi maps in three-dimensional matrix algebra. *Linear Algebra Appl.* **171** (1992), 213–224. (John Phillips) **93g:46053** 46L05 (15A30)

fam ngok an' Kyong *see* **Fam Ngok An' Kyong**

Kyparisis, Jerzy (*with* Ip, Chi Ming) Solution behavior for parametric implicit complementarity problems. (English summary) *Math. Programming* **56** (1992), *no.* 1, *Ser. A*, 65–70. (R. N. Kaul) **93g:90076** 90C33 (90C31)

— (*with* Ip, Chi Ming) Local convergence of quasi-Newton methods for *B*-differentiable equations. (English summary) *Math. Programming* **56** (1992), *no.* 1, *Ser. A*, 71–89. (Summary) **93c:65072** 65H10 (90C30)

Kyriakopoulos, K. J. (*with* Saridis, G. N.) An integrated collision prediction and avoidance scheme for mobile robots in nonstationary environments. (English summary) *Automatica J. IFAC* **29** (1993), *no.* 2, 309–322. 93C85 (93C95)

Kyriakoussis, A. G. On extended generalized Stirling pairs. *Fibonacci Quart.* **31** (1993), *no.* 1, 44–52. (F. T. Howard) **93m:11018** 11B73 (11B83)

Kytmanov, A. M. Solvability of the $\overline{\partial}$ Neumann problem for functions. (Russian. Russian summary) *Complex analysis and mathematical physics* (*Russian*) (*Divnogorsk*, 1987), 74–79, 158, *Akad. Nauk SSSR Sibirsk. Otdel., Inst. Fiz., Krasnoyarsk*, 1988. (*see* **93b:32001**) 32F20

— (*with* Aizenberg, L. A.) Holomorphic continuation of functions from a part of the domain boundary. (Russian) *Dokl. Akad. Nauk SSSR* **321** (1991), *no.* 6, 1129–1132; *translation in Soviet Math. Dokl.* **44** (1992), *no.* 3, 839–842. (J. Siciak) **93a:32016** 32D15

— On the number of real roots of systems of equations. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* **1991**, *no.* 6, 20–23; *translation in Soviet Math.* (*Iz. VUZ*) **35** (1991), *no.* 6, 19–22. (V. Totik) **93b:12002** 12D10

— (*with* Aizenberg, L. A.) On the possibility of holomorphic continuation of functions, defined on a connected part of the domain boundary, into the domain. (Russian) *Mat. Sb.* **182** (1991), *no.* 4, 490–507; *translation in Math. USSR-Sb.* **72** (1992), *no.* 2, 467–483. (Introduction) **93d:32016** 32D15 (30B40, 32A25)

— (*with* Nikitina, T. N.) Holomorphic extension of CR functions with singularities on a generic manifold. (Russian. Russian summary) *Izv. Ross. Akad. Nauk Ser. Mat.* **56** (1992), *no.* 3, 673–686; *translation in Russian Acad. Sci. Izv. Math.* **40** (1993), *no.* 3, 623–635. (Harold P. Boas) **93j:32019** 32D15 (32A25, 32D20)

— (*with* Aizenberg, L. A.) On the possibility of holomorphic continuation of functions, defined on a connected part of the boundary of the domain, into the domain. II. (Russian. Russian summary) *Mat. Sb.* **184** (1993), *no.* 1, 3–14. (Summary) **93k:32017** 32D15 (30B40, 32A25)

nguyen Ky Toan *see* **Nguyen Ky Toan**

Kytömaa, H. K. (*with* Schmid, Peter J.) On the collision of rigid spheres in a weakly compressible fluid. (English summary) *Phys. Fluids A* **4** (1992), *no.* 12, 2683–2689. (Summary) **93h:76006** 76A99 (73B99, 76D08, 76N99, 76T05)

Kyuldjiev, Assen V. On the "gauge inequivalence" and symmetry breaking in constrained systems. (English summary) *Phys. Lett. B* **293** (1992), *no.* 3-4, 375–377. (Paulo R. Rodrigues) **93h:58056** 58F05 (53C80, 70G50)

Kyunau, R. *see* **Kühnau, Reiner**

Kyuno, Shoji ★ Gamma rings. Hadronic Press Monographs in Mathematics. *Hadronic Press, Inc., Palm Harbor, FL*, 1991. viii+113 *pp. ISBN* 0-911767-49-5 (Yuan Chun Guo) **93j:16036** 16Y99 (16W99)

— (*with* Veldsman, Stefan) Morita near-rings. (English summary) *Quaestiones Math.* **15** (1992), *no.* 4, 431–449. (Summary) **93h:16075** 16Y30

Kyurkchan, A. G. On the exact value of the radius of convergence of the Wilcox series. (Russian) *Dokl. Akad. Nauk SSSR* **319** (1991), *no.* 4, 854–857; *translation in Soviet Phys. Dokl.* **36** (1991), *no.* 8, 567–569 (1992). (Sergej M. Zverev) **93h:78001** 78A05 (78A45)

— Obtaining solutions of equations of mathematical physics by reducing them to ordinary differential equations with operator coefficients. (Russian) *Dokl. Akad. Nauk* **322** (1992), *no.* 4, 686–691; *translation in Soviet Phys. Dokl.* **37** (1992), *no.* 2, 70–72. (Stepan A. Terziyan) **93e:35008** 35A25 (35Q40)

Kyurkchiev, Nikolai V. (*with* Ivanov, Radostin) On Lyapunov function method for solving nonlinear systems of equations. *C. R. Acad. Bulgare Sci.* **44** (1991), *no.* 7, 17–20. (George Karakostas) **93a:34017** 34A34 (34D45)

— A note on a method for localization of the roots of algebraic equations. *C. R. Acad. Bulgare Sci.* **44** (1991), *no.* 9, 5–7. (Miodrag Petković) **93e:65078** 65H05 (26C10)

— Über die Konvergenzordnungen einiger Klassen von Iterationsverfahren. [On the order of convergence of some classes of iteration methods] *Serdica* **17** (1991), *no.* 2-3, 139–143 (1992). (Gerd Pönisch) **93b:65075** 65H05 (65F30, 65G10)

— Note on the estimation of the order of convergence of some iterative methods. (English summary) *BIT* **32** (1992), *no.* 3, 525–528. (De Ren Wang) **93g:65062** 65H05

— (*with* Andreev, Andrei St.) On the generalization of the Alefeld-Herzberger's method. (German summary) *Computing* **47** (1992), *no.* 3-4, 355–360. (Summary) **93a:65064** 65H05 (65G10)

Kzaz, M. Convergence acceleration of some Gaussian quadrature formulas for analytic functions. (English summary) *Appl. Numer. Math.* **10** (1992), *no.* 6, 481–496. (J. Kofroň) **93j:65004** 65B10 (65D32)

-L-

La, HoSeong Symmetries of the 4D self-dual Yang-Mills equation and reduction to the 2D KdV equation. *Ann. Physics* **215** (1992), *no.* 1, 81–95. (R. S. Ward) **93a:58179** 58G37 (58F07, 58F37, 81T13, 81T40)

— Geometric Liouville gravity. *Modern Phys. Lett. A* **7** (1992), *no.* 21, 1887–1893. (Piret Kuusk) **93g:81158** 81T40 (58D05, 76A99, 81R10)

— Sine-Gordon solitons as heterotic fivebranes. (English summary) *Phys. Lett. B* **288** (1992), *no.* 3-4, 286–290. (Summary) **93f:81113** 81T30 (83E30)

— (*with* Khuri, Ramzi R.) Orbits of a string around a five-brane. *Phys. Rev. Lett.* **68** (1992), *no.* 23, 3391–3393. (Summary) **93a:83037** 83E30 (81T30)

— (*with* Khuri, Ramzi R.) String motion in five-brane geometry. (English summary) *Phys. Rev. D* (3) **47** (1993), *no.* 2, 570–577. (Summary) **93j:83075** 83E30 (81T30)

Laaksonen, Merja (*with* Pohjolainen, Seppo) On the optimal minimax tuning of controllers for distributed parameter systems. (English summary) *Analysis and optimization*

of systems: state and frequency domain approaches for infinite-dimensional systems (*Sophia-Antipolis*, 1992), 636–648, *Lecture Notes in Control and Inform. Sci.*, 185, *Springer, Berlin*, 1993. (*see* **93i:93005**) 93B52 (93C20)

Laamri, El Haj Étude de l'existence de solutions globales d'un système de réaction-diffusion parabolique fortement non linéaire. (English and French summaries) [Study of the existence of global solutions of a strongly nonlinear parabolic reaction-diffusion system] *Ann. Fac. Sci. Toulouse Math.* (5) **12** (1991), *no.* 3, 373–390. (Jesús Hernández) **93k:35147** 35K65 (35K57, 35K60)

van der Laan, Paul Subset selection of an almost best treatment. (English summary) *Biometrical J.* **34** (1992), *no.* 6, 647–656. 62F07

— On subset selection from logistic populations. (English summary) *Statist. Neerlandica* **46** (1992), *no.* 2-3, 153–163. (Summary) **93e:62064** 62F07

Laanait, Lahoussine (*with* Messager, Alain; Miracle-Solé, Salvador; Ruiz, Jean; Shlosman, S. B.) Interfaces in the Potts model. I. Pirogov-Sinai theory of the Fortuin-Kasteleyn representation. *Comm. Math. Phys.* **140** (1991), *no.* 1, 81–91. (Klaus Ziegler) **93d:82021a** 82B20

— (*with* De Coninck, Joël; Kotecký, Roman; Ruiz, Jean) SOS approximants for Potts crystal shapes. (English summary) *Phys. A* **189** (1992), *no.* 3-4, 616–634. (David Sénéchal) **93m:82011** 82B24 (82B20)

van Laarhoven, Peter J. M. (*with* Aarts, Emile H. L.) Local search in coding theory. (English summary) A collection of contributions in honour of Jack van Lint. *Discrete Math.* **106/107** (1992), 11–18. (John Karlof) **93h:94036** 94B99

Labahn, George (*with* Cabay, Stan; Beckermann, Bernhard) On the theory and computation of nonperfect Padé-Hermite approximants. *J. Comput. Appl. Math.* **39** (1992), *no.* 3, 295–313. (Summary) **93c:65020** 65D15 (41A21)

— (*with* Shalom, Tamir) Inversion of Toeplitz matrices with only two standard equations. (English summary) *Linear Algebra Appl.* **175** (1992), 143–158. (M. Tismenetsky) **93h:15015** 15A57 (15A09, 47B35)

— Inversion components of block Hankel-like matrices. (English summary) *Linear Algebra Appl.* **177** (1992), 7–48. (George D. Poole) **93j:65045** 65F05 (15A09, 65Y20)

— (*with* Cabay, Stan) A superfast algorithm for multidimensional Padé systems. *Numer. Algorithms* **2** (1992), *no.* 2, 201–224. (Summary) **93c:65019** 65D15 (41A21, 65Y20)

— (*with* Beckermann, Bernhard) A uniform approach for Hermite Padé and simultaneous Padé approximants and their matrix-type generalizations. (English summary) Extrapolation and rational approximation (Puerto de la Cruz, 1992). *Numer. Algorithms* **3** (1992), *no.* 1-4, 45–54. (Summary) **93i:65026** 65D15 (41A21)

Labarca, R. (*with* Pacífico, M. J.) Dynamics of expanding maps of the interval. *Dynamical systems and related topics* (*Nagoya*, 1990), 307–315, *Adv. Ser. Dyn. Syst.*, 9, *World Sci. Publishing, River Edge, NJ*, 1991. (Frederick R. Marotto) **93f:58064** 58F03 (26A18, 58F10)

— (*with* Ceballos, J. C.) A note on modulus of stability for cycles of the complex type. *Phys. D* **55** (1992), *no.* 1-2, 37–44. (F. Visentin) **93e:58138** 58F14 (57R25)

— *see also* **Dynamical systems, 93k:58074**

Labastida, J. M. F. (*with* Alvarez-Gaumé, Luis; Ramallo, A. V.) Remarks on topological Chern-Simons theory. Recent advances in field theory (Annecy-le-Vieux, 1990). *Nuclear Phys. B Proc. Suppl.* **18B** (1990), 1–9 (1991). (From the introduction) **93a:58030** 58D27 (32G81, 81T13, 81T40)

— (*with* Llatas, P. M.) Topological matter in two dimensions. *Nuclear Phys. B* **379** (1992), *no.* 1-2, 220–258. (Hong Lu) **93h:81129** 81T40

— (*with* Isidro, José-M.; Ramallo, A. V.) Coset constructions in Chern-Simons gauge theory. *Phys. Lett. B* **282** (1992), *no.* 1-2, 63–72. (Summary) **93d:81159** 81T40 (81R10)

Labbé, Martine (*with* Hakimi, S. Louis; Schmeichel, Edward) The Voronoi partition of a network and its implications in location theory. (English summary) *ORSA J. Comput.* **4** (1992), *no.* 4, 412–417. 90C35

Labeev, V. (*with* Yanson, V. A.) Compact approximation of linear operators with small random perturbations. (Russian. English and Russian summaries) *Mathematics* (*Russian*), 43–52, *Latv. Univ. Zināt. Raksti*, 562, *Latv. Univ., Riga*, 1991. (Summary) **93g:47049** 47B80 (34F05, 47A58, 65J99)

Labelle, Gilbert (*with* Décoste, Hélène; Leroux, Pierre) The functorial composition of species, a forgotten operation. *Discrete Math.* **99** (1992), *no.* 1-3, 31–48. (Wenchang Chu) **93c:05006** 05A15 (05E99, 18D35)

— On asymmetric structures. *Discrete Math.* **99** (1992), *no.* 1-3, 141–164. (Sergey V. Fomin) **93c:05007** 05A15 (05E99)

— Counting asymmetric enriched trees. (English summary) *J. Symbolic Comput.* **14** (1992), *no.* 2-3, 211–242. (C. C. Rousseau) **93m:05011** 05A15 (05C30)

Laberge, Guy (*with* Cassidy, Charles) Nilpotent groups acting on abelian groups. (English summary) *Proc. Amer. Math. Soc.* **119** (1993), *no.* 3, 697–700. (Ma. Jesús Iranzo) **93m:20007** 20C07

LaBerge, Timothy J. There are many Ostaszewski spaces. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 3, 987–993. (Hao Xuan Zhou) **93i:54002** 54A35 (54B10, 54G15)

Labesse, J.-P. Pseudo-coefficients très cuspidaux et K-théorie. [Highly cuspidal pseudocoefficients and K-theory] *Math. Ann.* **291** (1991), *no.* 4, 607–616. (Jeffrey Fox) **93b:22026** 22E46 (19K99, 22E41)

Labhalla, Salah (*with* Lombardi, Henri) Real numbers, continued fractions and complexity classes. (French summary) *Ann. Pure Appl. Logic* **50** (1990), *no.* 1, 1–28. (Robert E. Byerly) **93a:03070** 03F60 (03D15)

Laborde, J.-M. (*with* Havel, Ivan) On distance monotone graphs. *Combinatorics* (*Eger*, 1987), 557–561, *Colloq. Math. Soc. János Bolyai*, 52, *North-Holland, Amsterdam*, 1988. (*see* **93m:05002**) 05C75 (05C50)

Laborde, Patrick Numerical solution of free boundary problems in solids mechanics. (English summary) *Optimization, optimal control and partial differential equations* (*Iaşi*, 1992), 339–347, *Internat. Ser. Numer. Math.*, 107, *Birkhäuser, Basel*, 1992. (*see* **93m:00044**) 73V05 (65P05, 73V25)

— (*with* Michrafy, Abderrahim) Algorithme à "rigidité tangente" pour des problèmes d'endommagement. (English and French summaries) ["Tangent stiffness" algorithm for some damage problems] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 4, 485–489. (Summary) **93g:73114** 73V20 (73E05, 73K20, 73M25)

Lábos, E. (*with* Holden, Arun V.; Zhang, Henggui) The behaviour of the Lyapunov exponent of a map simulating neural activity. (English summary) *Phys. Lett. A* **173** (1993), *no.* 4-5, 399–406. (Summary) **93i:92010** 92C20 (58F40)

de La Bourdonnaye, Armel Décomposition de $H_{\mathrm{div}}^{-1/2}(\Gamma)$ et nature de l'opérateur de Steklov-Poincaré du problème extérieur de l'électromagnétisme. (English and French summaries) [Decomposition of $H_{\mathrm{div}}^{-1/2}(\Gamma)$ and nature of the Steklov-Poincaré operator of the exterior problem of electromagnetism] *C. R. Acad. Sci. Paris Sér. I Math.* **316** (1993), *no.* 4, 369–372. (Summary) **93k:78004** 78A25 (35Q60)

Laboure, Marie-José (*with* Hivert, Marc; Jourlin, Michel) Détection des zones de forte courbure sur la frontière d'un convexe du plan euclidien. [Detection of regions of strong curvature on the boundary of a convex domain in the Euclidean plane] *Publications du Département de Mathématiques. Nouvelle Série. A, Vol.* 1, 67–94, *Publ. Dép. Math. Nouvelle Sér. A*, 89-1, *Univ. Claude-Bernard, Lyon*, 1989. (Introduction) **93d:52002** 52A10

Labouriau, Rodrigo S. (*with* Jørgensen, Bent) ★ Famílias exponenciais e inferência teórica. (Portuguese) [Exponential families and theoretical inference] With the collaboration of José Raúl Martínez. Monografias de Matemática [Mathematical Monographs], 52. *Instituto de Matemática Pura e Aplicada, Rio de Janeiro*, 1992. viii+264 *pp. ISBN* 85-7028-010-6 (Luis Firinguetti) **93m:62011** 62A10 (62B05, 62B10, 62F10)

Labourie, François Immersions isométriques elliptiques et courbes pseudo-holomorphes. [Elliptic isometric immersions and pseudoholomorphic curves] *Geometry and topology of submanifolds* (*Marseille*, 1987), 131–140, *World Sci. Publishing, Teaneck, NJ*, 1989. (From the text) **93g:53088** 53C42 (58E12)

— (*with* Foulon, Patrick) Sur les variétés compactes asymptotiquement harmoniques. [On asymptotically harmonic compact manifolds] *Invent. Math.* **109** (1992), *no.* 1, 97–111. (Steven E. Hurder) **93g:58114** 58F17 (53C35)

— (*with* Benoist, Yves; Foulon, Patrick) Flots d'Anosov à distributions stable et instable différentiables. (English summary) [Anosov flows with stable and unstable differentiable distributions] *J. Amer. Math. Soc.* **5** (1992), *no.* 1, 33–74. (Nicolai T. A. Haydn) **93b:58112** 58F17 (58F15)

— Métriques prescrites sur le bord des variétés hyperboliques de dimension 3. [Metrics prescribed on the boundary of 3-dimensional hyperbolic manifolds] *J. Differential Geom.* **35** (1992), *no.* 3, 609–626. (Viktor Schroeder) **93d:53040** 53C20 (53C21, 57M50)

— Surfaces convexes dans l'espace hyperbolique et $\mathbf{CP}^1$-structures. [Convex surfaces in hyperbolic space and $\mathbf{CP}^1$-structures] *J. London Math. Soc.* (2) **45** (1992), *no.* 3, 549–565. (Viktor Schroeder) **93i:53062** 53C45 (52A55, 53A30)

Labra, Alicia (*with* Mallol, Cristian; Micali, Artibano; Varro, Richard) Sur les algèbres de Bernstein. V. Les algèbres de Bernstein Jordan faibles. (English and French summaries) [On Bernstein algebras. V. Weak Jordan Bernstein algebras] *Proc. Edinburgh Math. Soc.* (2) **35** (1992), *no.* 3, 359–373. (P. Holgate) **93i:17031** 17D92

ramírez-Labrador, J. *see* **Ramírez-Labrador, J.**

Labropulu, F. (*with* Chandna, O. P.) Riabouchinsky flows in magnetohydrodynamics. *Quart. Appl. Math.* **50** (1992), *no.* 2, 273–289. (R. R. Gold) **93i:76099** 76W05

Labrousse, J.-Ph. (*with* Mbekhta, Mostafa) Les opérateurs points de continuité pour la conorme et l'inverse de Moore-Penrose. [Point-of-continuity operators for the conorm and the Moore-Penrose inverse] *Houston J. Math.* **18** (1992), *no.* 1, 7–23. (Introduction) **93g:47004** 47A05 (47D99)

Labun, Donna (*with* Pettitt, Brian A.; Danchura, Werner) Spherical Bessel transforms. (English summary) *J. Comput. Phys.* **105** (1993), *no.* 1, 178–181. (Summary) **93m:44006** 44A15 (33C10, 65D20)

Labuschagne, L. E. The perturbation of relatively open operators with reduced index. *Math. Proc. Cambridge Philos. Soc.* **112** (1992), *no.* 2, 385–402. (Reinhard Mennicken) **93m:47011** 47A53 (47A05, 47A55)

— (*with* Cross, R. W.) Characterisations of operators of lower semi-Fredholm type in normed linear spaces. (English summary) *Quaestiones Math.* **15** (1992), *no.* 2, 151–173. (Manuel González) **93i:47014** 47A53 (47A55)

Labutin, S. A. Solution of the Stefan problem on a ray in a neighborhood of a stationary solution. (Russian. Russian summary) *Differentsial'nye Uravneniya* **28** (1992), *no.* 4, 680–687, 734; *translation in Differential Equations* **28** (1992), *no.* 4, 556–562. (Summary) **93g:35148** 35R35 (80A22)

La Camera, M. (*with* Agnese, A. G.) Gravitational field of a gauge monopole. (English summary) *Modern Phys. Lett. A* **7** (1992), *no.* 32, 2965–2967. 81T13 (81V17)

Lacampagne, C. B. (*with* Eggleton, R. B.; Selfridge, J. L.) Euclidean quadratic fields. *Amer. Math. Monthly* **99** (1992), *no.* 9, 829–837. (W. Narkiewicz) **93i:11118** 11R11 (11R29, 13F07)

— (*with* Erdős, Paul; Selfridge, J. L.) Estimates of the least prime factor of a binomial coefficient. (English summary) *Math. Comp.* **61** (1993), *no.* 203, 215–224. (Adolf Hildebrand) **93k:11013** 11B65 (11N37)

lópez Lacasta, Carlos *see* **López Lacasta, Carlos**

Lacaze, Bernard L'interpolation des suites de variables aléatoires et la stationnarité. (English and French summaries) [Interpolation of random sequences and stationarity] *Traitement Signal* **9** (1992), *no.* 3, 251–256. 60G35

Lacaze, Jacqueline Parties reconnaissables de monoïdes définis par générateurs et relations. (English and French summaries) [Recognizable subsets of monoids defined by generators and relations] *RAIRO Inform. Théor. Appl.* **26** (1992), *no.* 6, 541–552. (Jorge Almeida) **93k:20084** 20M05 (20M35, 68R15)

Lacey, A. A. Ignition and extinction of a reaction in the presence of increasing external temperature: general results and slow temperature rise. *Proc. Roy. Soc. London Ser. A* **438** (1992), *no.* 1902, 145–152. (Summary) **93c:80015** 80A32

— (*with* Vázquez, Juan Luis) Interaction of gas fronts. (English summary) *Quart. Appl. Math.* **50** (1992), *no.* 3, 469–478. (Alexandre Fedorov) **93i:76051** 76L05 (76N15)

Lacey, Michael On almost sure noncentral limit theorems. *J. Theoret. Probab.* **4** (1991), *no.* 4, 767–781. (Peter Schatte) **93j:60037** 60F15 (60G15)

Lachal, Aimé Sur les excursions de l'intégrale du mouvement brownien. (English summary) [Excursions of the integrated Brownian motion] *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 13, 1053–1056. (Summary) **93c:60123** 60J65

Lachand-Robert, Thomas Bifurcation et rupture de symétrie pour un problème elliptique sur-linéaire dans un cylindre. (English summary) [Bifurcation and symmetry breaking in a nonlinear elliptic equation in a cylinder] *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 13, 1009–1014. (J. López Gómez) **93j:35077** 35J65 (35B32)

Lachaud, Gilles Artin-Schreier curves, exponential sums, and the Carlitz-Uchiyama bound for geometric codes. *J. Number Theory* **39** (1991), *no.* 1, 18–40. (A. T. Vasquez) **93c:11108** 11T23 (11G20, 11L03, 11T71, 14G15, 94B27)

— Artin-Schreier curves, exponential sums, and coding theory. Discrete mathematics and applications to computer science (Marseille, 1989). *Theoret. Comput. Sci.* **94** (1992), *no.* 2, 295–310. (Simon N. Litsyn) **93a:94032** 94B27 (11L05, 11T71, 94–02)

Lachlan, Alistair H. (*with* Cooper, S. Barry; Harrington, Leo; Lempp, Steffen; Soare, Robert I.) The d.r.e. degrees are not dense. *Ann. Pure Appl. Logic* **55** (1991), *no.* 2, 125–151. (Xi Zhong Zheng) **93a:03045** 03D30

— (*with* Shore, Richard A.) The n-rea enumeration degrees are dense. *Arch. Math. Logic* **31** (1992), *no.* 4, 277–285. (Decheng Ding) **93b:03073** 03D30

— $\aleph_0$-categorical tree-decomposable structures. *J. Symbolic Logic* **57** (1992), *no.* 2, 501–514. (O. V. Belegradek) **93g:03029** 03C45 (03C15, 03C35, 20B27)

— Obituary: Alan Mekler. *Order* **9** (1992), *no.* 2, 99–101. (Editors) **93m:01074** 01A70

Lachout, Petr Linear rescaling of the stochastic process. (English summary) *Comment. Math. Univ. Carolin.* **33** (1992), *no.* 2, 277–289. (V. K. Rohatgi) **93m:60102** 60G99 (60F05, 60G10, 62E10)

— On asymptotic behaviour of empirical processes. (English summary) *Kybernetika (Prague)* **28** (1992), *no.* 4, 292–308. (Lajos Horváth) **93i:60067** 60F17

Lachowicz, Mirosław On the asymptotic behaviour of solutions of nonlinear kinetic equations. *Ann. Mat. Pura Appl.* (4) **160** (1991), 41–62 (1992). (Andro Mikelić) **93e:35113** 35Q99 (35B40, 76P05, 82C40)

— On the Cauchy problem for the Enskog equation with external field. (Italian. English summary) *Boll. Un. Mat. Ital. B* (7) **5** (1991), *no.* 1, 177–188. (Giuseppe Toscani) **93b:76075** 76P05 (35A05, 35Q99)

— Stochastic systems modelling the hydrodynamic equations. *Thermodynamics and kinetic theory (Mądralin, 1990)*, 72–78, *Ser. Adv. Math. Appl. Sci.*, 12, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93a:82002**) 82C22 (76A02, 76N10)

Laciana, Carlos E. Inflation in R^2 cosmology with massless conformal scalar field and adiabatic regularization. (English summary) *Gen. Relativity Gravitation* **25** (1993), *no.* 3, 245–256. (Summary) **93k:83072** 83F05 (83D05)

Lack, Stephen (*with* Carboni, Aurelio; Walters, R. F. C.) Introduction to extensive and distributive categories. (English summary) *J. Pure Appl. Algebra* **84** (1993), *no.* 2, 145–158. (R. H. Street) **93k:18004** 18A30

Lacker, Jeffrey M. (*with* Weinberg, John A.) A coalition proof equilibrium for a private information credit economy. (English summary) *Econom. Theory* **3** (1993), *no.* 2, 279–296. 90A53

Lacki, Jan Soliton equations, minimal Kazama-Suzuki models and 2-dimensional gravity. (English summary) *Internat. J. Modern Phys. A* **7** (1992), *no.* 20, 4871–4883. (Anni Koubek) **93i:81240** 81T40 (17B81, 58F07)

Lacomba, Ernesto A. (*with* Cendra, H.; Verdiell, Adriana) A new proof of Frobenius theorem and applications. (English summary) *Proceedings of the First "Dr. Antonio A. R. Monteiro" Congress on Mathematics (Spanish) (Bahía Blanca, 1991)*, 51–80, *Univ. Nac. del Sur, Bahía Blanca*, 1991. (Wing-Sum Cheung) **93j:58005** 58A30

— (*with* Simó, Carles) Regularization of simultaneous binary collisions in the n-body problem. *J. Differential Equations* **98** (1992), *no.* 2, 241–259. (Donald G. Saari) **93g:70014** 70F10 (70F15, 70F35)

— (*with* Llibre, Jaume) Integrals, invariant manifolds, and degeneracy for central force problems in $\mathbf{R}^n$. *J. Math. Phys.* **33** (1992), *no.* 6, 2138–2147. (Galina G. Okuneva) **93d:70016** 70F05 (58F05, 58F07, 70H05)

— (*with* Cantrijn, F.; de León, Manuel) Gradient vector fields on cosymplectic manifolds. *J. Phys. A* **25** (1992), *no.* 1, 175–188. (José F. Cariñena) **93e:58057** 58F05 (70H05)

Lacourly, N. (*with* González, Jaime) A family of Hamilton type methods for congressional apportionments. (French summary) *RAIRO Rech. Opér.* **26** (1992), *no.* 1, 31–40. (Summary) **93a:90014** 90A28

Lacroix, Jean Algorithmes pour la résolution de l'équation de conservation. [Algorithms for the solution of the conservation equation] *Probabilités numériques*, 73–83, *Collect. Didact.*, 10, *INRIA, Rocquencourt*, 1992. (*see* **93k:65002**) 65C05 (65P05)

Lacroix, Marie-Thérèse Une méthode intégrale de frontière. Application au laplacien et à l'élasticité. (English summary) [An integral boundary value method applied to the Laplacian and to elasticity] *Rev. Mat. Univ. Complut. Madrid* **4** (1991), *no.* 2-3, 265–278. (Norbert Ortner) **93g:35028** 35J05 (35J50, 35J55, 73C35)

Lacroix, Y. (*with* Blanchard, F.) Zero entropy factors of topological flows. *Proc. Amer. Math. Soc.* **119** (1993), *no.* 3, 985–992. (Mahesh Nerurkar) **93m:54066** 54H20 (28D20)

blasco de La Cruz, Oscar *see* **Blasco De La Cruz, Oscar**

Laczkovich, Miklós Paradoxical decompositions using Lipschitz functions. *Real Anal. Exchange* **17** (1991/92), *no.* 1, 439–444. (Janusz Pawlikowski) **93f:28008** 28A99 (04A20, 26A16)

— (*with* Humke, Paul D.) Parametric semicontinuity implies continuity. *Real Anal. Exchange* **17** (1991/92), *no.* 2, 668–680. (James Foran) **93g:26004** 26A15

— Uniformly spread discrete sets in $\mathbf{R}^d$. *J. London Math. Soc.* (2) **46** (1992), *no.* 1, 39–57. (Rita Giuliano Antonini) **93i:11088** 11K38 (11K36, 11K55)

— Decomposition of sets with small boundary. *J. London Math. Soc.* (2) **46** (1992), *no.* 1, 58–64. (Rita Giuliano Antonini) **93i:11089** 11K38 (04A20, 11K36, 28D20)

Lad, Frank (*with* Dickey, James M.; Rahman, Mohammad A.) Numerical application of the fundamental theorem of prevision. (English summary) *J. Statist. Comput. Simulation* **40** (1992), *no.* 3-4, 135–151. 62A99 (60E15)

Łada, Andrzej One gauge-invariant system for two-dimensional relativistic fields: global solutions, integrability. (English summary) *Math. Methods Appl. Sci.* **16** (1993), *no.* 2, 115–122. (Ian A. B. Strachan) **93j:58035** 58E20 (35Q75, 58E15)

Ladalia, Joseph N. A closed form approximation to the posterior distribution when sampling from multiparameter exponential family models. (English summary) *Sankhyā Ser. A* **52** (1990), *no.* 2, 192–217. (Summary) **93e:62087** 62F15 (62E20)

Ladanyi, B. (*with* Foriero, A.) The use of fractional exponential creep kernels for long-term behavior of laterally loaded piles in permafrost. *J. Engrg. Math.* **26** (1992), *no.* 2, 281–295. (Summary) **93c:73087** 73Q05 (73N20, 73V25)

Ladas, G. (*with* Győri, István) ★ Oscillation theory of delay differential equations. With applications. Oxford Mathematical Monographs. Oxford Science Publications. *The Clarendon Press, Oxford University Press, New York*, 1991. xii+368 *pp. ISBN* 0-19-853582-1 (Hiroshi Onose) **93m:34109** 34K15 (34–02, 34C10, 34K25, 45G10, 92B99)

— (*with* Qian, Chuan Xi) A comparison theorem for odd-order neutral differential equations. *J. Nigerian Math. Soc.* **10** (1991), 99–104. (Josef Diblík) **93e:34096** 34K15 (34K20)

— (*with* Jaroma, J. H.; Kuruklis, S. A.) Oscillations and stability of a discrete delay logistic model. (Russian and Ukrainian summaries) *Ukrain. Mat. Zh.* **43** (1991), *no.* 6, 734–744; *reprinted in Ukrainian Math. J.* **43** (1991), *no.* 6, 684–694 (1992). (I. P. Stavroulakis) **93a:39004** 39A10 (34K15, 34K20, 39A11, 92D25)

— (*with* Qian, Chuan Xi) Linearized oscillations for nonautonomous delay difference equations. *Oscillation and dynamics in delay equations (San Francisco, CA, 1991)*, 115–125, *Contemp. Math.*, 129, *Amer. Math. Soc., Providence, RI*, 1992. (Olusola Akinyele) **93f:39011** 39A12 (34K15)

— (*with* Schultz, S. W.; Wang, Zhi Cheng[1]) Oscillations of unbounded solutions of neutral equations with mixed arguments. (English summary) *Recent trends in differential equations*, 403–412, *World Sci. Ser. Appl. Anal.*, 1, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93f:34124** 34K15 (34K40)

— (*with* Qing, Chuanxi) Oscillations of systems of first order neutral differential equations. (English summary) *Ann. Differential Equations* **8** (1992), *no.* 2, 139–147. (I. P. Stavroulakis) **93m:34120** 34K15 (34K40)

— (*with* Georgiou, D. A.; Vlahos, P. N.) Oscillation and asymptotic behavior of a system of linear difference equations. *Appl. Anal.* **46** (1992), *no.* 3-4, 241–248. (Helmut Länger) **93d:39002** 39A10

— (*with* DeVault, R.; Kocić, V. Lj.) Global stability of a recursive sequence. *Dynamic Systems Appl.* **1** (1992), *no.* 1, 13–21. (Sui Sun Cheng) **93b:39002** 39A11 (39A10)

— (*with* Kocić, V. Lj.) Linearized oscillations for difference equations. *Hiroshima Math. J.* **22** (1992), *no.* 1, 95–102. (Shao Zhu Chen) **93e:39007** 39A12 (34K15, 92B20)

— (*with* Győri, István) Positive solutions of integro-differential equations with unbounded delay. (English summary) *J. Integral Equations Appl.* **4** (1992), *no.* 3, 377–390. (George Seifert) **93i:34132** 34K15 (45J05)

— (*with* Pakula, Lewis; Wang, Zhi Cheng[1]) Necessary and sufficient conditions for the oscillation of difference equations. *Panamer. Math. J.* **2** (1992), *no.* 1, 17–26. (Shao Zhu Chen) **93a:39005** 39A10 (34C10, 39A12)

— (*with* Kuruklis, S. A.) Oscillations and global attractivity in a discrete delay logistic model. *Quart. Appl. Math.* **50** (1992), *no.* 2, 227–233. (Summary) **93b:92013** 92D25 (34K15, 92B05)

— (*with* Kocić, V. Lj.; Qian, Chuan Xi) Linearized oscillations in nonautonomous delay differential equations. (English summary) *Differential Integral Equations* **6** (1993), *no.* 3, 671–683. (Binggen Zhang) **93k:34159** 34K15

Ladde, G. S. Modeling of dynamic systems by Itô-type systems of stochastic differential equations. (English summary) *Integral methods in science and engineering—90 (Arlington, TX, 1990)*, 63–74, *Ser. Comput. Phys. Process. Mech. Thermal Sci., Hemisphere, New York*, 1991. (Summary) **93g:60122** 60H10

— (*with* Sathananthan, S.) Itô-type systems of stochastic integro-differential equations. (English summary) *Integral methods in science and engineering—90 (Arlington, TX, 1990)*, 75–89, *Ser. Comput. Phys. Process. Mech. Thermal Sci., Hemisphere, New York*, 1991. (Summary) **93g:60133** 60H20

— (*with* Sathananthan, S.) Periodic boundary value problem for impulsive integro-differential equations of Volterra type. *J. Math. Phys. Sci.* **25** (1991), *no.* 2, 119–129. (H. E. Gollwitzer) **93d:45005** 45D05 (34A37, 34K10, 34K15)

— (*with* Sathananthan, S.) Stochastic integro-differential equations with random parameters. I. (English summary) *Dynamic Systems Appl.* **1** (1992), *no.* 4, 369–390. (D. Kannan) **93k:60160** 60H25 (34K50, 45J05)

— (*with* Kathirkamanayagan, M.) Singularly perturbed linear boundary value problems. (English summary) *J. Math. Anal. Appl.* **168** (1992), *no.* 2, 430–459. (Shu Mei Miao) **93g:34084** 34E15 (34B05)

— (*with* Golec, J.) On multitime method and the rate of convergence for a class of singularly perturbed stochastic systems. *J. Math. Systems Estim. Control* **2** (1992), *no.* 2, 245–262. (Wolfgang Kliemann) **93d:34101** 34F05 (34E15, 60H10, 93E03)

— (*with* Sathananthan, S.) Stability of Lotka-Volterra model. *Math. Comput. Modelling* **16** (1992), *no.* 3, 99–107. (Summary) **93i:92014** 92D25 (34D05, 34F05)

— (*with* Golec, J.) On an approximation method for a class of stochastic singularly perturbed systems. (English summary) *Dynamic Systems Appl.* **2** (1993), *no.* 1, 11–19. (Summary) **93j:60076** 60H10 (34E15, 34F05, 65L99, 65U05)

Ladegaillerie, Yves Courbes principales sur les surfaces. II. Classification. [Principal curves on surfaces. II. Classification] *Proc. London Math. Soc.* (3) **64** (1992), *no.* 3, 653–672. (John G. Ratcliffe) **93c:57013** 57N05

Ladeira, Luiz A. C. Continuity of fixed points. *J. Math. Anal. Appl.* **169** (1992), *no.* 2, 350–358. (R. R. Akhmerov) **93h:47065** 47H09 (34K05, 34K40, 47H10, 47H15, 47N20)

Ladelli, L. (*with* Sadi, H.) Propriété asymptotique d'un modèle statistique pour une chaîne de Markov à valeurs dans $\mathbf{R}^d$. (English summary) [Asymptotic property of a statistical model for an $\mathbf{R}^d$-valued Markov chain] *Ann. Inst. H. Poincaré Probab. Statist.* **27** (1991), *no.* 4, 519–535. (Hans M. Dietz) **93e:62215** 62M05 (60J05)

Ladevèze, P. (*with* Pelle, J.-P.; Rougeot, Ph.) Error estimation and mesh optimization for classical finite elements. (English summary) *Engrg. Comput.* **8** (1991), *no.* 1, 69–80. (Summary) **93f:73100** 73V05

Ladkin, Peter B. (*with* Kautz, Henry A.) Integrating metric and qualitative temporal reasoning. (English summary) *AAAI-91. Proceedings, Ninth National Conference on Artificial Intelligence, Vol.* 1, 2, 241–246, *AAAI Press, Menlo Park, CA*, 1991. (Summary) **93k:68088** 68T27 (03B45, 03B70)

— (*with* Reinefeld, Alexander) Effective solution of qualitative interval constraint problems. (English summary) *Artificial Intelligence* **57** (1992), *no.* 1, 105–124. (A. K. Lenstra) **93m:68082** 68Q25

Ladner, Richard (*with* Beame, Paul; Brisson, Erik) The complexity of computing symmetric functions using threshold circuits. *Theoret. Comput. Sci.* **100** (1992), *no.* 1, 253–265. (Summary) **93e:68024** 68Q20

Lado, F. (*with* Torquato, S.) Improved bounds on the effective elastic moduli of random arrays of cylinders. (English summary) *Trans. ASME J. Appl. Mech.* **59** (1992), *no.* 1, 1–6. (Summary) **93c:73007** 73B27 (73B35, 73K20)

Ladopoulos, E. G. Relativistic elastic stress analysis for moving frames. *Rev. Roumaine Sci. Tech. Sér. Méc. Appl.* **36** (1991), *no.* 3-4, 195–209. (Ilija Lukačević) **93f:73019** 73B99 (73C99, 83A05)

— New aspects for the generalization of the Sokhotski-Plemelj formulae for the solution of finite-part singular integrals used in fracture mechanics. *Internat. J. Fracture* **54** (1992), *no.* 4, 317–328. (Summary) **93c:45008** 45E10 (73M25, 73V35)

Ladouceur, S. (*with* Gauthier, Paul M.) Uniform approximation and fine potential theory. (English summary) *J. Approx. Theory* **72** (1993), *no.* 2, 138–140. (Summary) **93j:31006** 31B05

Laduguie, P. (*with* Lavanchy, A.; Touzani, R.) Study of a simple model for physical adsorption by active carbon beds. *Math. Engrg. Indust.* **3** (1992), *no.* 4, 247–264. (Summary) **93c:80006** 80A20 (80–08)

Ladygin, V. S. A high-speed algorithm for spline calculation. (Russian) *Akad. Nauk SSSR Inst. Prikl. Mat. Preprint* **1991**, *no.* 25, 15 *pp.* (Summary) **93b:76069** 76M99 (65D05, 65D07)

Ladyzhenskaya, O. A. Attractors for fully nonlinear parabolic equations of second order. (Italian summary) *Rend. Mat. Appl.* (7) **10** (1990), *no.* 4, 749–756 (1991). (Pierre A. Vuillermot) **93g:35076** 35K60 (35B05, 47H20, 47N20, 58F39)

— Some globally stable approximations for the Navier-Stokes equations and some other equations for viscous incompressible fluids. (English and French summaries) *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 4, 387–392. (Athanase Cotsiolis) **93i:35105** 35Q30 (76D05)

— (*with* Serëgin, G. A.) A method for the approximate solution of initial-boundary value problems for Navier-Stokes equations. (Russian. English summary) *Zap. Nauchn. Sem. S.-Peterburg. Otdel. Mat. Inst. Steklov. (POMI)* **197** (1992), *Kraev. Zadachi Mat. Fiz. Smezh. Voprosy Teor. Funktsii.* 23, 87–119, 180–181. (Summary) **93c:35131** 35Q30 (35A35, 58F12)

— *see also* **Proceedings: St. Petersburg Mathematical Society, 93k:00045**

Laederich, Stephane $\bar{\partial}$-torsion, foliations and holomorphic vector fields. *Comm. Math. Phys.* **145** (1992), *no.* 3, 447–458. (Steven Rosenberg) **93g:58154** 58G26 (32L05)

— $\bar{\partial}$-torsion for complex manifolds and the adiabatic limit. *Comm. Math. Phys.* **146** (1992), *no.* 1, 91–102. (Steven Rosenberg) **93g:58155** 58G26 (32L05)

— Boundary value problems for partial differential equations with exponential dichotomies. (English summary) *J. Differential Equations* **100** (1992), *no.* 1, 1–21. (Lev Lerman) **93m:35027** 35B35 (34G20, 35K55, 58F39)

— (*with* Levi, Mark L.) Qualitative dynamics of planar chains. *Phys. D* **54** (1992), *no.* 3, 173–182. (Galina G. Okuneva) **93a:58102** 58F10 (58F22, 70E99, 70F99, 70K99)

Laedke, E. W. (*with* Blaha, R.; Kuznetsov, Evgenii Alekseevich; Spatschek, K. H.) Collapsing solutions in Schrödinger- and KdV-s_2 stems. *Nonlinear world, Vol.* 1 (*Kiev*, 1989), 10–24, *World Sci. Publishing, River Edge, NJ*, 1990. (*see* **93b:00012**) 35Q53 (35Q55)

— (*with* Spatschek, K. H.; Pietsch, H.; Eickermann, Th.) Chaotic behavior in time in nonlinear-Schrödinger-systems. *Nonlinear world, Vol.* 2 (*Kiev*, 1989), 978–1001, *World Sci. Publishing, River Edge, NJ*, 1990. (*see* **93b:00013**) 58F39 (35Q55, 58F13)

Laenens, E. (*with* Vermeir, D.) A fixpoint semantics for ordered logic. *J. Logic Comput.* **1** (1990), *no.* 2, 159–185. (Summary) **93a:68085** 68Q55 (03B70)

Laeng, Enrico Analytic dependence of orthogonal polynomials. *Rev. Mat. Iberoamericana* **7** (1991), *no.* 3, 287–312. (Margaret A. M. Murray) **93f:42044** 42C05 (42A50)

Laevskiĭ, Yu. M. ★ Концентрирующие операторы в методе конечных элементов. Часть 1. (Russian) [Lumping operators in the finite element method. Part 1] With an English summary. Препринт [Preprint], 907. *Akad. Nauk SSSR Sibirsk. Otdel., Vychisl. Tsentr, Novosibirsk*, 1990. 45 *pp.* (Alexander Doktor) **93e:65118a** 65M60

— ★ Концентрирующие операторы в методе конечных элементов. Часть 2. (Russian) [Lumping operators in the finite element method. Part 2] Препринт [Preprint], 908. *Akad. Nauk SSSR Sibirsk. Otdel., Vychisl. Tsentr, Novosibirsk*, 1990. 46 *pp.* (Alexander Doktor) **93e:65118b** 65M60

— Construction of a system of m-dimensional barycentric sets. (Russian) *Numerical methods and mathematical modeling* (*Russian*), 112–120, *Akad. Nauk SSSR Sibirsk. Otdel., Vychisl. Tsentr, Novosibirsk*, 1990. (*see* **93i:65007**) 65N50

— (*with* Drobyshevich, V. I.) An algorithm of solution of parabolic equations with different time-steps in subdomains. *Russian J. Numer. Anal. Math. Modelling* **7** (1992), *no.* 3, 205–220. (V. Soundalgekar) **93e:65113** 65M12 (80A25, 92B05)

Lafalce, S. (*with* Cignoli, Roberto; Petrovich, A.) Remarks on Priestley duality for distributive lattices. *Order* **8** (1991), *no.* 3, 299–315. (H. A. Priestley) **93b:06023** 06D05 (03G10)

Lafarge, Denis Comments on: "Rigorous link between fluid permeability, electrical conductivity, and relaxation times for transport in porous media" [Phys. Fluids A 3 (1991), no. 11, 2529–2540; MR 92j:76090] by M. Avellaneda and S. Torquato. (English summary) *Phys. Fluids A* **5** (1993), *no.* 2, 500–502. (Summary) **93k:76111** 76S05 (76D07, 78A99, 82C70)

Lafay, J. F. (*with* Zagalak, Petr; Herrera H., Angel N.) Reduced form of the interactor matrix. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 11, 1778–1782. (Summary) **93i:93031** 93B28 (93C05)

Laffey, Thomas J. Products of matrices. (English summary) *Generators and relations in groups and geometries* (*Lucca*, 1990), 95–123, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 333, *Kluwer Acad. Publ., Dordrecht*, 1991. (Kent Kidman) **93m:15018** 15A23

— A structure theorem for some matrix algebras. Directions in matrix theory (Auburn, AL, 1990). *Linear Algebra Appl.* **162/164** (1992), 205–215. (J. F. Watters) **93b:15018** 15A30 (05C20, 16S50)

— (*with* Meehan, Eleanor) An extension of a factorization theorem of Wedderburn to matrix rings. Second NIU Conference on Linear Algebra, Numerical Linear Algebra and Applications (DeKalb, IL, 1991). *Linear Algebra Appl.* **172** (1992), 243–260. (Donald W. Robinson) **93k:16054** 16S50

— (*with* MacHale, Desmond) Polynomials that force a ring to be commutative. (English summary) *Proc. Roy. Irish Acad. Sect. A* **92** (1992), *no.* 2, 277–280. (Summary) **93k:16065** 16U80

— A finiteness theorem for rings. (English summary) *Proc. Roy. Irish Acad. Sect. A* **92** (1992), *no.* 2, 285–288. (Summary) **93m:16013** 16P10

— (*with* Beasley, LeRoy B.) Erratum: "Linear operators on matrices: the invariance of rank-k matrices" [Linear Algebra Appl. **133** (1990), 175–184; MR 91f:15008]. *Linear Algebra Appl.* **180** (1993), 2. (From the text) **93k:15002** 15A04

Laflamme, Claude A few σ-ideals of measure zero sets related to their covers. *Real Anal. Exchange* **17** (1991/92), *no.* 1, 362–370. (Jakub Jasiński) **93b:28010** 28A20 (03E35)

— Some possible covers of measure zero sets. *Colloq. Math.* **63** (1992), *no.* 2, 211–218. (Jakub Jasiński) **93i:03072** 03E35 (03E05, 03E65, 04A20, 28A05)

Laflamme, Raymond (*with* Brandenberger, Robert H.; Mijić, Milan) On the origin of classical density perturbations in the inflationary universe. *Quantum gravity* (*Moscow*, 1990), 659–677, *World Sci. Publishing, River Edge, NJ*, 1991. (*see* **93b:83004**) 83C45 (83F05)

— (*with* Brandenberger, Robert H.; Mijić, Milan) Classical perturbations from decoherence of quantum fluctuations in the inflationary universe. The birth and early evolution of our Universe (Gräftåvallen, 1990). *Phys. Scripta* **1991**, *Vol.* T36, 265–268. (Summary) **93a:83039** 83F05 (83C45)

Lafont, Yves Calcul des séquents et déduction naturelle. [Sequent calculus and natural deduction] *Logique et informatique: une introduction*, 99–115, *Collect. Didact.*, 8, *INRIA, Rocquencourt*, 1991. (*see* **93d:68003**) 03F05 (03B20, 68Q55)

— (*with* Prouté, Alain) Church-Rosser property and homology of monoids. *Math. Structures Comput. Sci.* **1** (1991), *no.* 3, 297–326. (Yuji Kobayashi) **93e:68048** 68Q42 (03D40, 20J05, 20M05)

— Diagrammes de Penrose et réécriture en dimension 2. (English summary) [Penrose diagrams and rewriting in dimension 2] *Cahiers Topologie Géom. Différentielle Catégoriques* **33** (1992), *no.* 3, 267–275. (V. Topencharov) **93i:68105** 68Q42 (18B40)

Laforgia, Andrea (*with* Elbert, Árpád; Lorch, Lee) Additional monotonicity properties of the zeros of Bessel functions. *Analysis* **11** (1991), *no.* 4, 293–299. (Evangelos Ifantis) **93a:33006** 33C10

— Inequalities for some special functions. *Approximation theory* (*Memphis, TN*, 1991), 385–391, *Lecture Notes in Pure and Appl. Math.*, 138, *Dekker, New York*, 1992. (Introduction) **93f:33003** 33C10 (41A17)

— A simple proof of the Bernstein inequality for ultraspherical polynomials. (Italian summary) *Boll. Un. Mat. Ital. A* (7) **6** (1992), *no.* 2, 267–269. (Summary) **93f:33011** 33C55 (41A17)

Lafrance, R. (*with* Bérubé, D.; Kröger, Helmut; Marleau, L.) Axial anomaly on a momentum lattice. *Phys. Rev. D* (3) **45** (1992), *no.* 4, 1332–1341. (Kornél Szlachányi) **93a:81141** 81T25 (81T50)

Laftit, Saïd (*with* Proth, Jean-Marie; Xie, Xiao-Lan) Optimization of invariant criteria for event graphs. *IEEE Trans. Automat. Control* **37** (1992), *no.* 5, 547–555. (Summary) **93d:68054** 68Q90 (05C85)

martínez de Lafuente, O. *see* **Martínez de Lafuente, O.**

Lafuente López, Javier (*with* Casal Urcera, Gerardo) Asymptotic behavior of the incomplete geodesics of a Lorentzian oriented torus. (Spanish. English summary) *Proceedings of the XVth Portuguese-Spanish Conference on Mathematics, Vol. III* (*Portuguese*) (*Évora*, 1990), 161–166, *Univ. Évora, Évora*, 1991. (Summary) **93a:53057** 53C50 (53C22)

— Light cones. (Spanish. English and Spanish summaries) *Rev. Mat. Univ. Complut. Madrid* **5** (1992), *no.* 1, 65–87. (H. W. Guggenheimer) **93g:51002** 51A05 (83A05)

Lagakos, Stephen (*with* Begg, Melissa Dowd) Effects of mismodeling on tests of association based on logistic regression models. (English summary) *Ann. Statist.* **20** (1992), *no.* 4, 1929–1952. (M. Hušková) **93k:62037** 62F05 (62J02)

Laganá, Antonio The impact of parallel computing on reactive scattering calculations. *Comput. Phys. Comm.* **70** (1992), *no.* 2, 223–241. 82C80

Lagare, Emmanuel M. (*with* Wang, Yuan) Dominant integrability in higher dimensions. *Matimyás Mat.* **13** (1990), *no.* 1, 11–23. (Ralph Henstock) **93a:26009** 26B15 (26A39, 26A42)

Lagarias, Jeffrey C. (*with* Füredi, Zoltán; Morgan, Frank) Singularities of minimal surfaces and networks and related extremal problems in Minkowski space. *Discrete and computational geometry* (*New Brunswick, NJ*, 1989/1990), 95–109, *DIMACS Ser. Discrete Math. Theoret. Comput. Sci.*, 6, *Amer. Math. Soc., Providence, RI*, 1991. (Roland Durier) **93d:52009** 52A37 (49Q05, 52A21, 53A10)

— Monotonicity properties of the Toda flow, the QR-flow, and subspace iteration. *SIAM J. Matrix Anal. Appl.* **12** (1991), *no.* 3, 449–462. (Summary) **93f:15014** 15A42 (34A34, 58F07)

— Number theory and dynamical systems. (English summary) *The unreasonable effectiveness of number theory* (*Orono, ME*, 1991), 35–72, *Proc. Sympos. Appl. Math.*, 46, *Amer. Math. Soc., Providence, RI*, 1992. (M. Mendès France) **93m:11143** 11Z50 (11K50, 58F27, 82D25)

— (*with* Shor, Peter W.) Keller's cube-tiling conjecture is false in high dimensions. *Bull. Amer. Math. Soc.* (*N.S.*) **27** (1992), *no.* 2, 279–283. (S. Stein) **93e:52040** 52C22 (05B45)

— (*with* Doyle, P. G.; Randall, Dana J.) Self-packing of centrally symmetric convex bodies in $\mathbf{R}^2$. *Discrete Comput. Geom.* **8** (1992), *no.* 2, 171–189. (Martin Henk) **93e:52038** 52C15 (05B40, 05C05, 11H31)

— (*with* Daubechies, Ingrid) Sets of matrices all infinite products of which converge. *Linear Algebra Appl.* **161** (1992), 227–263. (James Allen Fill) **93f:15006** 15A18 (15A51, 15A52, 39A10, 40A20, 60J10)

— A Lie bracket decomposition and its application to flows on symmetric matrices. (English summary) *Linear Algebra Appl.* **175** (1992), 239–257. (C. Tomei) **93h:58070** 58F07 (34A34)

— (*with* Daubechies, Ingrid) Two-scale difference equations. II. Local regularity, infinite products of matrices and fractals. *SIAM J. Math. Anal.* **23** (1992), *no.* 4, 1031–1079. (Evangelos Ifantis) **93g:39001** 39A10

lamnabhi-Lagarrigue, F. *see* **Lamnabhi-Lagarrigue, F.**

Lagergren, Jens An upper bound on the size of an obstruction. (English summary) *Graph structure theory* (*Seattle, WA*, 1991), 601–621, *Contemp. Math.*, 147, *Amer. Math. Soc., Providence, RI*, 1993. (*see* **93m:05004**) 05C35 (68Q25, 68R10)

Lagnese, John E. (*with* Leugering, G.) Uniform energy decay of a class of cantilevered nonlinear beams with nonlinear dissipation at the free end. *Differential equations with applications in biology, physics, and engineering* (*Leibnitz*, 1989), 227–239, *Lecture Notes in Pure and Appl. Math.*, 133, *Dekker, New York*, 1991. (Takashi Narazaki) **93e:35112** 35Q72 (73K05)

— Modelling and stabilization of nonlinear plates. *Estimation and control of distributed parameter systems* (*Vorau*, 1990), 247–264, *Internat. Ser. Numer. Math.*, 100, *Birkhäuser, Basel*, 1991. (Goong Chen) **93e:93050** 93D15 (73K12, 73K20, 73K50, 93C20)

— The Hilbert uniqueness method: a retrospective. *Optimal control of partial differential equations* (*Irsee*, 1990), 158–181, *Lecture Notes in Control and Inform. Sci.*, 149, *Springer, Berlin*, 1991. (Fumio Kojima) **93j:93020** 93B05 (35B37, 47N20, 93C20)

— (*with* Leugering, G.; Schmidt, E. J. P. G.) Modelling and controllability of networks of thin beams. *System modelling and optimization* (*Zurich*, 1991), 467–480, *Lecture*

Notes in Control and Inform. Sci., 180, *Springer, Berlin*, 1992. (From the introduction) **93i:93013** 93A30 (93B05, 93C20)

Lagno, V. I. (*with* Bondar', V. A.; Serov, N. I.) Invariant solutions of eikonal equation simulating process of corrosion. (Russian summary) *Dokl. Akad. Nauk Ukrainy* **1992**, *no.* 5, 24–27, 159. (Summary) **93f:82036** 82C24 (82D15)

Łagodowski, Zbigniew A. Fuk inequalities for random fields of backward martingales. (Russian) *Sibirsk. Mat. Zh.* **32** (1991), *no.* 2, 176–179, 214; *translation in Siberian Math. J.* **32** (1991), *no.* 2, 329–332. (Thomas Mikosch) **93a:60021** 60E15 (60G42, 60G60)

lópez Lagomasino, Guillermo *see* **López Lagomasino, Guillermo**

Lagoudas, D. C. (*with* Gavazzi, A. C.; Nigam, H.) Elastoplastic behavior of metal matrix composites based on incremental plasticity and the Mori-Tanaka averaging scheme. (English summary) *Comput. Mech.* **8** (1991), *no.* 3, 193–203. (Summary) **93g:73055** 73E05 (73B27, 73K20)

Lagrange, Joseph Louis *see* **Fraser, Craig G., 93a:01022; Panza, Marco, 93g:01035** *and* **93g:01036**

Lagunoff, Roger Fully endogenous mechanism selection on finite outcome sets. (English summary) *Econom. Theory* **2** (1992), *no.* 4, 465–480. (Summary) **93g:90017** 90A15 (90D40)

Lagunova, N. V. The problem of evading four pursuers. (Russian. Russian summary) *Vestnik Moskov. Univ. Ser. XV Vychisl. Mat. Kibernet.* **1992**, *no.* 3, 57–63, 65; *translation in Moscow Univ. Comput. Math. Cybernet.* **47** (1992), *no.* 3, 52–57. (From the introduction) **93m:90128** 90D26

Lagutina, L. A. Jordan triple homomorphisms of associative rings with involution. (Russian. Russian summary) *Algebra i Logika* **30** (1991), *no.* 3, 306–319, 380; *translation in Algebra and Logic* **30** (1991), *no.* 3, 199–208 (1992). (M. Stefănescu) **93j:16026** 16W10 (17C50)

Lahanas, A. B. (*with* Diamandis, G. A.; Georgalas, B. C.) Does σ-model conformal invariance imply a Robertson-Walker universe? (English summary) *Phys. Lett. B* **287** (1992), *no.* 1-3, 69–72. (Summary) **93d:83066** 83E30 (81T30, 83C15)

— (*with* Chiou-Lahanas, C.; Kapella-Economou, A.; Maintas, X. N.) Gravitational radiative corrections in $N = 1$ supergravity. *Phys. Rev. D* (3) **45** (1992), *no.* 2, 534–544. (Nguyen Anh Ky) **93c:83118** 83E50 (81T20, 81T60)

chiou-Lahanas, C. *see* **Chiou-Lahanas, C.**

piet-Lahanier, H. *see* **Piet-Lahanier, H.**

Lahiff, Maureen (*with* Whitcomb, Kathleen M.) An investigation of sample influence functions for the DS estimate of the optimum error rate in discriminant analysis. (English summary) *Comm. Statist. Theory Methods* **22** (1993), *no.* 1, 41–56. 62H30

Lahiri, Amitabha An alternative scenario for nonabelian quantum hair. (English summary) *Phys. Lett. B* **297** (1992), *no.* 3-4, 248–252. (Dmitri V. Vassilevich) **93m:83055** 83C57 (81T13)

Lahiri, B. K. (*with* Chakrabarti, Sadasiv) Density topology. *Math. Student* **59** (1991), *no.* 1-4, 89–108. (Eliza Wajch) **93c:28001** 28–02 (26–02, 54–02, 54C99)

— (*with* Chakrabarti, Sadasiv) Transformation of sets in topological group. *Mathematica (Cluj)* **33(56)** (1991), *no.* 1-2, 21–29. (A. Precupanu) **93i:28009** 28C10 (22A05)

Lahiri, Indrajit Generalisation of an inequality of C. T. Chuang to vector meromorphic functions. (English summary) *Bull. Austral. Math. Soc.* **46** (1992), *no.* 2, 317–333. (Chung-Chun Yang) **93h:30047** 30D35

Lahiri, Parthasarathi "Adjusted" Bayes and empirical Bayes estimation in finite population sampling. (English summary) *Sankhyā Ser. B* **52** (1990), *no.* 1, 50–66. (Summary) **93f:62007** 62C12 (62D05, 62F15)

— (*with* Tiwari, Ram C.) Nonparametric Bayes and empirical Bayes estimation of variance from stratified samples. (English summary) *Sankhyā Ser. B* **53** (1991), *no.* 1, 105–118. (Summary) **93e:62025** 62C12 (62D05, 62G05)

— (*with* Peddada, Shyamal Das) Bayes and empirical Bayes estimation of the finite population mean using auxiliary information. *Statist. Decisions* **10** (1992), *no.* 1-2, 67–80. (Glen Meeden) **93f:62011** 62D05 (62C12, 62C15)

— *see also* **Chen, Xu Dong, 93m:62030**

Lahiri, Somdeb Coalitional fairness and distortion of utilities. (English summary) *IEEE Trans. Systems Man Cybernet.* **21** (1991), *no.* 5, 1295–1298. 90A10

Lahiri, Soumendra Nath Bootstrapping M-estimators of a multiple linear regression parameter. (English summary) *Ann. Statist.* **20** (1992), *no.* 3, 1548–1570. (Gutti J. Babu) **93i:62038** 62G09 (62E20, 62J05)

— Edgeworth expansions for M-estimators of a regression parameter. (English summary) *J. Multivariate Anal.* **43** (1992), *no.* 1, 125–132. (M. Riedel) **93k:62072** 62F35 (62J05)

— On bootstrapping M-estimators. (English summary) *Sankhyā Ser. A* **54** (1992), *no.* 2, 157–170. (Gutti J. Babu) **93m:62096** 62G09 (62E20, 62F35)

Lahr, Joseph Recurrence relations in exponential functions and in damped sinusoids and their applications in electronics. *Applications of Fibonacci numbers, Vol.* 4 (*Winston-Salem, NC*, 1990), 189–202, *Kluwer Acad. Publ., Dordrecht*, 1991. (R. P. Singhal) **93k:33001** 33B10 (11B37)

Lahti, Pekka J. (*with* Busch, Paul; Mittelstaedt, Peter) ★ The quantum theory of measurement. Lecture Notes in Physics. New Series m: Monographs, 2. *Springer-Verlag, Berlin*, 1991. xiv+165 *pp. ISBN* 3-540-54334-1 (Koichiro Matsuno) **93m:81014** 81P15 (00A30, 00A79, 01A60, 81–01)

— (*with* Busch, Paul; Mittelstaedt, Peter) Some important classes of quantum measurements and their information gain. *J. Math. Phys.* **32** (1991), *no.* 10, 2770–2775. (Andrzej Luczak) **93f:81020** 81P15 (46L50)

— Measurement and probability in quantum mechanics. Application of statistical methods in theoretical physics and fluid mechanics (Calcutta, 1991). *Acta Appl. Math.* **26** (1992), *no.* 3, 237–247. (Andrzej Luczak) **93i:81012** 81P10 (81P15)

— (*with* Busch, Paul; Mittelstaedt, Peter) Weak objectification, joint probabilities, and Bell inequalities in quantum mechanics. (English summary) *Found. Phys.* **22** (1992), *no.* 7, 949–962. (Emilio Santos) **93k:81013** 81P10

— (*with* Mączyński, Maciej J.) Orthomodularity and quadratic transformations in probabilistic theories of physics. (English summary) *J. Math. Phys.* **33** (1992), *no.* 12, 4133–4138. (S. Gudder) **93k:81018** 81P10 (81P15)

Lahtinen, Aatos Finland, the home country of European mathematics. (Finnish. English summary) *Arkhimedes* **44** (1992), *no.* 3, 190–196. (Summary) **93k:01088** 01A74

— On the choice of parameters in shape-preserving quadratic spline interpolation. *J. Comput. Appl. Math.* **39** (1992), *no.* 1, 109–113. (Blagun Kalchev) **93c:41030** 41A29 (65D05, 65D07)

— Positive Hermite interpolation by quadratic splines. (English summary) *SIAM J. Math. Anal.* **24** (1993), *no.* 1, 223–233. (Blagun Kalchev) **93m:41014** 41A15 (65D07)

Lahtonen, Jyrki Lower bounds for the multiplicities of simple composition factors of the induced modules. *Comm. Algebra* **20** (1992), *no.* 7, 1873–1895. (Jia-Chen Ye) **93h:20050** 20G05 (20G10)

— An optimal polynomial for a covering radius problem. (English summary) *Discrete Math.* **105** (1992), *no.* 1-3, 313–317. (Summary) **93g:94032** 94B75

hoàng văn Lai *see* **Hoàng Văn Lai**

Lai, C. H. *see* **Lai, Choi Hong**

Lai, Chi Keung (*with* Shum, Kar Ping) On the decomposition of 0-simple dual semigroups. *Proceedings of Asian Mathematical Conference*, 1990 (*Hong Kong*, 1990), 263–266, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93b:00022**) 20M10

— (*with* Shum, Kar Ping) A note in inverse and dual semigroups. *Czechoslovak Math. J.* **42(117)** (1992), *no.* 1, 7–10. (From the text) **93a:20103** 20M18 (20M10)

Lai, Choi Hong An acceleration technique for a nonoverlapped domain decomposition method. (English summary) *Computational and applied mathematics, I* (*Dublin*, 1991), 289–293, *North-Holland, Amsterdam*, 1992. (*see* **93j:00007**) 65B99 (65M15)

Lai, Choy-Heng (*with* Ting, Christopher) Braid group representation and fractional quantum Hall effect. *Modern Phys. Lett. B* **5** (1991), *no.* 19, 1293–1299. (Paul A. Pearce) **93d:82056** 82C10 (20F36, 81V25)

Lai, Chun Hui The central problem in the field of uniform algebras. (Chinese. English and Chinese summaries) *Zhangzhou Shiyuan Xuebao* (*Ziran Kexue Ban*) **6** (1992), *no.* 2, 25–27, 17. (James Li Ming Wang) **93i:46087** 46J10

Lai, Han Ch'ing Optimization theory for infinite-dimensional set functions. *Approximation, optimization and computing*, 13–21, *North-Holland, Amsterdam*, 1990. (*see* **93a:41001**) 90C29 (49N15)

— Generalized gradient for integral functionals. *Functional analysis & related topics* (*Sapporo*, 1990), 117–126, *World Sci. Publishing, River Edge, NJ*, 1991. (J. Borwein) **93a:46085** 46G99 (28B20, 49J52)

— (*with* Lee, J. C.) Integral representations and convergences for Banach-valued multifunctions. (English summary) *Fixed point theory and applications* (*Halifax, NS*, 1991), 169–188, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93i:28007** 28B20 (26E25, 46E40, 46G99, 47H04)

— (*with* Candeal, Juan Carlos) Multipliers in continuous vector-valued function spaces. (English summary) *Bull. Austral. Math. Soc.* **46** (1992), *no.* 2, 199–204. (James Bell Cooper) **93j:46041** 46E40 (46J10, 46M15, 47B38)

— (*with* Chen, Cheng Hsiang) Some properties of Fourier transform for operators on homogeneous Banach spaces. *Hokkaido Math. J.* **21** (1992), *no.* 2, 259–271. (U. B. Tewari) **93h:43004** 43A32 (43A22, 47B38)

— (*with* Wu, Shun I) Extremal points and optimal solutions for general capacity problems. *Math. Programming* **54** (1992), *no.* 1, *Ser. A*, 87–113. (Summary) **93g:90086** 90C45 (49Q20, 90C08, 90C48)

Lai, Hong-Jian (*with* Catlin, Paul A.) Spanning trails joining two given edges. *Graph theory, combinatorics, and applications, Vol.* 1 (*Kalamazoo, MI*, 1988), 207–222, *Wiley-Intersci. Publ., Wiley, New York*, 1991. (Summary) **93e:05052** 05C38

— (*with* Lai, Hongyuan) Small cycle covers of planar graphs. Proceedings of the Twenty-second Southeastern Conference on Combinatorics, Graph Theory, and Computing (Baton Rouge, LA, 1991). *Congr. Numer.* **85** (1991), 203–209. (Roman Nedela) **93c:05046** 05C10

— Graphs of diameter at most two. (English summary) *Ars Combin.* **34** (1992), 331–343. (Summary) **93m:05100** 05C35 (05C45)

— (*with* Hobbs, Arthur M.; Weng, Guoqing; Lai, Hongyuan) Uniformly dense generalized prisms over graphs. (English summary) Proceedings of the Twenty-third Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, FL, 1992). *Congr. Numer.* **91** (1992), 99–105. (Summary) **93m:05164** 05C75

— (*with* Lai, Hongyuan) Duality in graph families. (English summary) *Discrete Math.* **110** (1992), *no.* 1-3, 165–177. (W. T. Tutte) **93m:05195** 05C99

— (*with* Zhang, Cun Quan) Nowhere-zero 3-flows of highly connected graphs. (English summary) *Discrete Math.* **110** (1992), *no.* 1-3, 179–183. (François Jaeger) **93m:05105** 05C38 (05C40)

Lai, Hongyuan (*with* Lai, Hong-Jian) Small cycle covers of planar graphs. Proceedings of the Twenty-second Southeastern Conference on Combinatorics, Graph Theory, and Computing (Baton Rouge, LA, 1991). *Congr. Numer.* **85** (1991), 203–209. (Roman Nedela) **93c:05046** 05C10

— k-multiple-free sets. (English summary) *Ars Combin.* **34** (1992), 17–24. (Summary) **93m:05200** 05D05

— (*with* Hobbs, Arthur M.; Lai, Hong-Jian; Weng, Guoqing) Uniformly dense generalized prisms over graphs. (English summary) Proceedings of the Twenty-third Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, FL, 1992). *Congr. Numer.* **91** (1992), 99–105. (Summary) **93m:05164** 05C75

— (*with* Lai, Hong-Jian) Duality in graph families. (English summary) *Discrete Math.* **110** (1992), *no.* 1-3, 165–177. (W. T. Tutte) **93m:05195** 05C99

Lai, King F. Orbital integrals on symmetric spaces. (French summary) *C. R. Acad. Sci. Paris Sér. I Math.* **312** (1991), *no.* 12, 913–917. (Gestur Olafsson) **93b:22015** 22E35 (43A85)

— Regular elliptic classes and the stable relative trace formula. *Canad. Math. Bull.* **35** (1992), *no.* 2, 230–236. (David Joyner) **93i:11061** 11F72 (11F70, 22E55)

Lai, Kwei Kwei (*with* Ch'ên, Miao Shêng) A monopoly agent's optimal control on inventory and prices over a given selling planning horizon. (English summary) *Internat. J. Inform. Management Sci.* **3** (1992), *no.* 2, 69–77. 49N55 (90B05)

Lai, Lan An algorithm of unconstrained minimization without derivative and its convergence. (English summary) *Acta Math. Sci.* (*English Ed.*) **12** (1992), *no.* 2, 139–143. 90C30

Lai, Meng Xia (*with* Chen, Ji Cheng) A theory of multiple pole assignment by output feedback and its algorithm. (Chinese. English summary) *Gaoxiao Yingyong Shuxue Xuebao* **6** (1991), *no.* 3, 392–400. (Zheng Zhi Han) **93a:93056** 93B55 (93B05, 93B10)

Lai, Michael (*with* Martin, Ursula) Some experiments with a completion theorem prover. *J. Symbolic Comput.* **13** (1992), *no.* 1, 81–100. (Alexander Leitsch) **93e:68114** 68T15 (03B35, 68Q40)

Lai, Min Tsai (*with* Yuan, John) An optimal replacement period for a parallel system with single and multiple failures. (English summary) *Comm. Statist. Stochastic Models* **9** (1993), *no.* 1, 81–89. (Summary) **93k:60218** 60K10 (90B22)

Lai, Ming Jun A characterization theorem of multivariate splines in blossoming form. *Comput. Aided Geom. Design* **8** (1991), *no.* 6, 513–521. (Summary) **93a:41019** 41A15 (65D07)

— Asymptotic formulae of multivariate Bernstein approximation. *J. Approx. Theory* **70** (1992), *no.* 2, 229–242. (D. D. Stancu) **93h:41021** 41A36 (41A60, 41A63)

Lai, Robert (*with* Bowen, James; Bahler, Dennis) Lexical imprecision in fuzzy constraint networks. (English summary) *AAAI-92. Proceedings, Tenth National Conference on Artificial Intelligence (San Jose, CA, 1992)*, 616–621, *Amer. Assoc. Artif. Intell., Menlo Park, CA*, 1992. (Summary) **93j:68189** 68T27 (03B52)

Lai, Shan Tao (*with* Chiu, Ying Nan) Exact computation of the 9-j symbols. *Comput. Phys. Comm.* **70** (1992), *no.* 3, 544–556. (Summary) **93d:81061** 81R05 (22E70, 81–04)

Lai, Shao Yong An improved form of L^p boundedness of pseudodifferential operators with nonregular symbols. (Chinese. English summary) *Sichuan Shifan Daxue Xuebao Ziran Kexue Ban* **14** (1991), *no.* 4, 41–44. (Qing Yi Chen) **93f:47063** 47G30 (35S05)

— L^p boundedness of a class of pseudodifferential operators with special symbols. (Chinese. English summary) *Sichuan Shifan Daxue Xuebao Ziran Kexue Ban* **14** (1991), *no.* 4, 45–48. (Qing Yi Chen) **93f:47064** 47G30 (35S05)

— The Gårding inequality of pseudodifferential operators with finite differential symbols. (Chinese. English summary) *Sichuan Shifan Daxue Xuebao Ziran Kexue Ban* **14** (1991), *no.* 5, 1–4. 35S05 (35B05)

Lai, Tze Leung Asymptotic optimality of generalized sequential likelihood ratio tests in some classical sequential testing problems. *Handbook of sequential analysis*, 121–144, *Statist. Textbooks Monographs*, 118, *Dekker, New York*, 1991. (*see* **93g:62102**) 62L10

— Certainty equivalence with uncertainty adjustments in stochastic adaptive control. (English summary) *Stochastic theory and adaptive control (Lawrence, KS, 1991)*, 270–284, *Lecture Notes in Control and Inform. Sci.*, 184, *Springer, Berlin*, 1992. (*see* **93g:93007**) 93E35

— (*with* Ying, Zhiliang) Linear rank statistics in regression analysis with censored or truncated data. *J. Multivariate Anal.* **40** (1992), *no.* 1, 13–45. (James N. Adichie) **93d:62124** 62J05 (62G05, 62G10)

— (*with* Ying, Zhiliang) Asymptotically efficient estimation in censored and truncated regression models. *Statist. Sinica* **2** (1992), *no.* 1, 17–46. (Keh-Wei Chen) **93e:62133** 62G20 (62J05)

Lai, Yan Lian (*with* Wei, Zeng Xin) A unified approach to the method of gradient projection with arbitrary initial point. *Systems Sci. Math. Sci.* **4** (1991), *no.* 3, 215–224. (Summary) **93b:90086** 90C30 (65K05)

— (*with* Wei, Zeng Xin) An optimization algorithm using linear approximation and a penalty function and its convergence. (Chinese. English summary) *J. Numer. Methods Comput. Appl.* **13** (1992), *no.* 1, 33–38. (Zun Quan Xia) **93d:90062** 90C30 (49M30)

Lai, Ying-Cheng (*with* Grebogi, Celso) Chaotic scattering in time-dependent Hamiltonian systems. *Internat. J. Bifur. Chaos Appl. Sci. Engrg.* **1** (1991), *no.* 3, 667–679. (Helmut Rüssmann) **93c:58139** 58F13 (58F05)

— (*with* Park, Bae-Sig; Grebogi, Celso) Abrupt dimension changes at basin boundary metamorphoses. (English summary) *Internat. J. Bifur. Chaos Appl. Sci. Engrg.* **2** (1992), *no.* 3, 533–541. (Summary) **93h:58090** 58F12 (58F13)

— (*with* Blümel, Reinhold; Ott, Edward; Grebogi, Celso) Quantum manifestations of chaotic scattering. *Phys. Rev. Lett.* **68** (1992), *no.* 24, 3491–3494. (Summary) **93b:81074** 81Q50 (58F13, 81U99)

Lai, Young-Jou (*with* Hwang, Ching Lai) Interactive fuzzy linear programming. *Fuzzy Sets and Systems* **45** (1992), *no.* 2, 169–183. (Summary) **93h:90104** 90C70 (04A72, 90C05)

— (*with* Hwang, Ching Lai) A new approach to some possibilistic linear programming problems. (English summary) *Fuzzy Sets and Systems* **49** (1992), *no.* 2, 121–133. (Friedrich Pukelsheim) **93h:90105** 90C70 (90C08)

— (*with* Hwang, Ching Lai) IFLP-II: a decision support system. (English summary) *Fuzzy Sets and Systems* **54** (1993), *no.* 1, 47–56. 90C70 (04A72, 90B50)

Laible, J. P. On the solution of the three-dimensional shallow water equations using the wave equation formulation. *Computational methods in water resources, IX, Vol. 2 (Denver, CO, 1992)*, 545–552, *Comput. Mech., Southampton*, 1992. (*see* **93g:76003**) 76B15

Laila, M. M. Positive definite functions on certain Banach spaces. (English summary) *Proc. Pakistan Acad. Sci.* **28** (1991), *no.* 2, 133–143. (Aleksandr Koldobsky) **93f:46068** 46G12 (46F25, 47A57, 47B99)

schmidt-Lainé, Cl. *see* **Schmidt-Lainé, Cl.**

Laine, Ilpo *see* **School: Potential Theory, 93b:31001**

Lainé, Jean On the Nash equilibrium property of an auction matching game. *Econom. Lett.* **38** (1992), *no.* 4, 399–403. (Marilda de Oliveira Sotomayor) **93e:90022** 90A60 (90D40)

Laird, Philip (*with* Minton, Steven; Johnston, Mark D.; Philips, Andrew B.) Minimizing conflicts: a heuristic repair method for constraint satisfaction and scheduling problems. (English summary) *Artificial Intelligence* **58** (1992), *no.* 1-3, 161–205. 68T20 (68M20, 90B35)

Laitila, Thomas A pseudo-R^2 measure for limited and qualitative dependent variable models. (English summary) *J. Econometrics* **56** (1993), *no.* 3, 341–356. (Summary) **93m:62219** 62P20 (62J05)

Laitko, Hubert (*with* Hoffmann, Dieter) Positionen zu Ernst Mach. [Viewpoints regarding Ernst Mach] *Ernst Mach (German)*, 13–103, *Deutscher Verlag Wissensch., Berlin*, 1991. (*see* **93g:01095**) 01A70 (00A30)

— *see also* **Ernst Mach, 93g:01095**

Laitoch, Miroslav The method of variation of parameters in the theory of linear sequences. *Acta Univ. Palack. Olomuc. Fac. Rerum Natur. Math.* **30** (1991), 211–218. (B. M. Agrawal) **93d:39004** 39A10

Laitochová, Jitka The Sturm comparison theorem for i-conjugate numbers. (Russian and Czech summaries) *Acta Univ. Palack. Olomuc. Fac. Rerum Natur. Math.* **29** (1990), 197–206. (G. A. Bogar) **93d:34059** 34C10

— A remark to the Floquet theorem for systems of linear differential equations. *Acta Univ. Palack. Olomuc. Fac. Rerum Natur. Math.* **30** (1991), 121–124. (Summary) **93c:34020** 34A30 (34C20)

de La Jara F., J. *see* **De La Jara F., J.**

Lajos, Sándor Notes on a class of weakly commutative semigroups. *Kyungpook Math. J.* **32** (1992), *no.* 2, 239–245. 20M14

— Some remarks on (2, 3)-commutative semigroups. *Math. Japon.* **37** (1992), *no.* 2, 201–204. (Summary) **93a:20095** 20M10 (20M14)

— Bi-ideals in semigroups. I. A survey. *Pure Math. Appl. Ser. A* **2** (1992), *no.* 3-4, 215–237. (Otokar Grošek) **93e:20083** 20M12

— Notes on (1, 3)-commutative semigroups. (English summary) *Soochow J. Math.* **19** (1993), *no.* 1, 43–51. 20M12

Lakaev, S. N. (*with* Abdullaev, Zh. I.) On the spectral properties of the matrix-valued Friedrichs model. *Many-particle Hamiltonians: spectra and scattering*, 1–37, *Adv. Soviet Math.*, 5, *Amer. Math. Soc., Providence, RI*, 1991. (H. Baumgärtel) **93e:47098** 47N50 (47A10, 47G99, 81T10)

— On an infinite number of three-particle bound states of a system of three quantum lattice particles. (Russian. English summary) *Teoret. Mat. Fiz.* **89** (1991), *no.* 1, 94–104; *translation in Theoret. and Math. Phys.* **89** (1991), *no.* 1, 1079–1086 (1992). (Gheorghe Nenciu) **93d:81041** 81Q10 (81U10)

— Bound states and resonances of an N-particle discrete Schrödinger operator. (Russian. English and Russian summaries) *Teoret. Mat. Fiz.* **91** (1992), *no.* 1, 51–65; *translation in Theoret. and Math. Phys.* **91** (1992), *no.* 1, 362–372. (Evgeni L. Korotyaev) **93k:81251** 81U10 (47N50)

Lakatos, Imre *see* **Koetsier, Teun, 93a:00005** *and* **Thomason, Neil, 93i:01022**

Lakatos, P. Modular group rings and wreath products of groups. Proceedings of the Second International Mathematical Miniconference, Part II (Budapest, 1988). *Period. Polytech. Transportation Engrg.* **19** (1991), *no.* 1-2, 57–60. (Wolfgang Lempken) **93f:20026** 20D15

Lake, Kayll Precursory singularities in spherical gravitational collapse. *Phys. Rev. Lett.* **68** (1992), *no.* 21, 3129–3132. (Summary) **93b:83048** 83C75

Lakernik, A. R. Some special Wiener-Hopf operators. (Russian) *Application of functional analysis in approximation theory (Russian)*, 83–89, *Tver. Gos. Univ., Tver'*, 1990. (*see* **93k:00021**) 47B35 (45E10, 93B28)

Lakhany, A. M. Magic cubes of even order. (English summary) *Bull. Inst. Math. Appl.* **28** (1992), *no.* 9-10, 149–151. 05B15

Lakhtakia, Akhlesh Certain quinary aspects of the Hindu civilization. *Fivefold symmetry*, 423–444, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93i:52002**) 01A32 (00A69)

— *see also* **Field representations and introduction to scattering, 93j:78018**

Lakoš, Nela (*with* Terman, David) Stable steady-state pattern formation on isothermal catalyst surfaces. (English summary) *Arch. Rational Mech. Anal.* **121** (1992), *no.* 4, 377–399. (Reinhard Redlinger) **93k:35030** 35B32 (35K57, 92E20)

Laksa, Arne (*with* Frøyland, Lars A.; Pajchel, Jan) Modelling geological structures using splines. *Mathematical methods in computer aided geometric design, II (Biri, 1991)*, 287–296, *Academic Press, Boston, MA*, 1992. (*see* **93d:65022**) 86A15 (65D07)

Lakser, H. (*with* Grätzer, George) Congruence lattices of planar lattices. *Acta Math. Hungar.* **60** (1992), *no.* 3-4, 251–268. (E. T. Schmidt) **93j:06006** 06B10

Lakshmanan, M. (*with* Murali, K.) Transition from quasiperiodicity to chaos and devil's staircase structures of the driven Chua's circuit. (English summary) *Internat. J. Bifur. Chaos Appl. Sci. Engrg.* **2** (1992), *no.* 3, 621–632. (Yi Yuan Chen) **93j:58118** 58F27 (34C15, 58F13, 58F30)

— (*with* Porsezian, K.; Daniel, Muthiah) On the integrability aspects of the one-dimensional classical continuum isotropic biquadratic Heisenberg spin chain. *J. Math. Phys.* **33** (1992), *no.* 5, 1807–1816. (M. Lawrence Glasser) **93c:82022** 82B23 (81T25, 82B20)

— (*with* Senthil Velan, M.) Direct integration of generalized Lie or dynamical symmetries of three degrees of freedom nonlinear Hamiltonian systems: integrability and separability. (English summary) *J. Math. Phys.* **33** (1992), *no.* 12, 4068–4077. (Manuel de León) **93m:70020** 70H33 (58F05, 58F35, 70H05)

— (*with* Senthil Velan, M.) Direct integration of generalized Lie symmetries of nonlinear Hamiltonian systems with two degrees of freedom: integrability and separability. *J. Phys. A* **25** (1992), *no.* 5, 1259–1272. (Alexander Burov) **93c:70011** 70H05 (34A26, 58F37, 70H33)

— (*with* Nakamura, Katsuhiro; Gaspard, Pierre; Rice, S. A.) Field-theoretical model inspired by adiabatic-ansatz eigenvalue problems. (English summary) *Phys. Rev. A* (3) **46** (1992), *no.* 10, 6311–6314. (Summary) **93j:81022** 81Q50

— (*with* Daniel, Muthiah; Porsezian, K.) On the integrable models of the higher order water wave equation. (English summary) *Phys. Lett. A* **174** (1993), *no.* 3, 237–240. (From the text) **93m:35160** 35Q53 (76B15)

Lakshmi, Damaraju V. (*with* Raghavarao, Damaraju) A test for detecting untruthful answering in randomized response procedures. *J. Statist. Plann. Inference* **31** (1992), *no.* 3, 387–390. (Introduction) **93f:62108** 62K99 (62F03)

jaya Lakshmi, K. *see* **Jaya Lakshmi, K.**

Lakshmibai, V. Schubert varieties and standard monomial theory. *Topics in algebra, Part 2 (Warsaw, 1988)*, 365–378, *Banach Center Publ.*, 26, *Part 2, PWN, Warsaw*, 1990. (Konrad Drechsler) **93i:14048** 14M15 (14B05)

— Standard monomial theory for $\widetilde{\mathrm{Sp}}_{2n}$. *Special functions (Okayama, 1990)*, 127–148, *ICM-90 Satell. Conf. Proc., Springer, Tokyo*, 1991. (Aigli Papantonopoulou) **93h:14037** 14M15

— (*with* Reshetikhin, N. Yu.) Quantum deformations of SL_n/B and its Schubert varieties. *Special functions (Okayama, 1990)*, 149–168, *ICM-90 Satell. Conf. Proc., Springer, Tokyo*, 1991. (H. H. Andersen) **93g:17028** 17B37 (14M15)

Lakshmikantham, V. (*with* Leela, S.; Martynyuk, A. A.) ★ Устойчивость движения: метод сравнения. (Russian. English and Russian summaries) [Stability of motion: the comparison method] Устойчивость: Теория, Методы и Приложения [Stability: Theory, Methods and Applications], 1. "*Naukova Dumka*", *Kiev*, 1991. 248 *pp. ISBN* 5-12-002212-X (Editors) **93i:34095** 34D20 (34–02, 34C10, 34D10, 34K20, 39A11, 45J05)

— Recent trends in the theory of impulsive differential equations. *Conference on Differential Equations and Applications (Ruse, 1989)*, 12–25, *Tech. Univ., Ruse*, 1991. (*see* **93f:34004**) 34A37 (34–02)

— (*with* Sun, Yong) Multiple solutions of nonlinear equations. *J. Math. Phys. Sci.* **25** (1991), *no.* 4, 403–411. (A. Corduneanu) **93f:45009** 45G10 (47H15, 47N20)

— (*with* Leela, S.) Trends in the method of vector Lyapunov functions. (English summary) *Computational and applied mathematics, II (Dublin, 1991)*, 77–84, *North-Holland, Amsterdam*, 1992. (*see* **93j:00008**) 34D20

— Recent trends in the method of vector Lyapunov functions. (English summary) *Differential equations (Plovdiv, 1991)*, 85–101, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93h:34086** 34D20

— (*with* Murty, K. N.; Sivasundaram, S.) Impulsive differential systems for two-point boundary value problems. *Appl. Math. Comput.* **50** (1992), *no.* 2-3, 157–166. (Yuri V. Rogovchenko) **93h:34034** 34B15 (34A37, 34B27)

— (*with* Martynyuk, A. A.) Certain directions in the development of the direct Lyapunov method in the theory of stability (a survey). (Russian. English and Ukrainian summaries) *Prikl. Mekh.* **28** (1992), *no.* 3, 3–13; *translation in Internat. Appl. Mech.* **28** (1992), *no.* 3, 135–144. (From the text) **93f:34001** 34–02 (34D20)

— *see also* **Agarwal, Ravi Prakash**, (**93e:34005**)

Lakshmy, B. (*with* Krishnamoorthy, A.) A continuous review inventory system with bulk demand and Markov dependent replenishment quantities. (English summary) *Calcutta Statist. Assoc. Bull.* **41** (1991), *no.* 161-164, 127–136. (Summary) **93f:90054** 90B05

Laksov, Dan (*with* Speiser, Robert) Determinantal criteria for transversality of morphisms. (English summary) *Pacific J. Math.* **156** (1992), *no.* 2, 307–328. (Ragni Piene) **93k:14067** 14M12 (14A15)

Lal, Arbind K. (*with* Sinha, Sagnik) Zero-sum two-person semi-Markov games. *J. Appl. Probab.* **29** (1992), *no.* 1, 56–72. (Heinz-Uwe Küenle) **93c:90115** 90D15 (90C40, 93E05)

Lal, Girdhari (*with* Chaurasia, V. B. L.) Use of the H-function of several complex variables and a general class of polynomials in heat conduction in a rod under the Robin condition. *Indian J. Pure Appl. Math.* **23** (1992), *no.* 7, 489–496. (Summary) **93f:33012** 33C60 (80A20)

Lal, Mange (*with* Mathur, Pradeep Kumar; Narain, Kuldeep) On the formal solution of simultaneous triple integral equations of N-variables. (English summary) *Ultra Sci. Phys. Sci.* **4** (1992), *no.* 2, 176–183. 45G15

Lala, Archana (*with* Shrivastava, P. N.) On dual series equations involving a pair of biorthogonal polynomials suggested by Laguerre polynomials. *Gaṇita Sandesh* **5** (1991), *no.* 1, 31–36. (Ram Kishore Saxena) **93a:33019** 33C45

Lalanne, J.-C. q-Bessel, arbres, et chemins valués. (English summary) [q-Bessels, trees and weighted paths] *J. Combin. Theory Ser. A* **60** (1992), *no.* 2, 225–245. (Jiang Zeng) **93j:33008** 33D05 (05A15, 33C10)

Laliena Clemente, Jesús A. Lattice isomorphisms of Jordan algebras. (English summary) *Nonassociative algebraic models (Zaragoza, 1989)*, 195–211, *Nova Sci. Publ., Commack, NY*, 1992. (Erhard Neher) **93j:17058** 17C10

— The Frattini subalgebra of a Bernstein algebra. (English summary) *Proc. Edinburgh Math. Soc.* (2) **35** (1992), *no.* 3, 397–403. (Santos González) **93j:17062** 17D92

Lallement, Gérard J. Completely regular finite prefix codes. *Semigroups with applications (Oberwolfach, 1991)*, 245–259, *World Sci. Publishing, River Edge, NJ*, 1992. (Pascal Weil) **93j:94013** 94A45 (20M17, 20M35)

Lalley, Steven P. Probabilistic methods in certain counting problems of ergodic theory. *Ergodic theory, symbolic dynamics, and hyperbolic spaces (Trieste, 1989)*, 223–258, *Oxford Sci. Publ., Oxford Univ. Press, New York*, 1991. (*see* **93e:58002**) 58F20 (28D05, 58F11)

— Saddle-point approximations and space-time Martin boundary for nearest-neighbor random walk on a homogeneous tree. *J. Theoret. Probab.* **4** (1991), *no.* 4, 701–723. (Summary) **93f:60114** 60J50 (60J15)

— (*with* Sellke, T.) Limit theorems for the frontier of a one-dimensional branching diffusion. (English summary) *Ann. Probab.* **20** (1992), *no.* 3, 1310–1340. (Paavo H. Salminen) **93i:60157** 60J80 (60J60)

— Mostow rigidity and the Bishop-Steger dichotomy for surfaces of variable negative curvature. *Duke Math. J.* **68** (1992), *no.* 2, 237–269. (Viviane Baladi) **93j:58108** 58F17 (53C22, 58F11)

— (*with* Gatzouras, Dimitrios) Hausdorff and box dimensions of certain self-affine fractals. (English summary) *Indiana Univ. Math. J.* **41** (1992), *no.* 2, 533–568. (Miguel Angel Martín) **93j:28011** 28A80

Lalli, B. S. Oscillation of second order nonlinear sublinear differential equations. (English summary) *Differential equations (Plovdiv, 1991)*, 103–113, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93i:34059** 34C10

— (*with* Grace, S. R.) Oscillations of second order general nonlinear differential equations. (English summary) *Recent trends in differential equations*, 413–429, *World Sci. Ser. Appl. Anal.*, 1, *World Sci. Publishing, River Edge, NJ*, 1992. (Wadi Mahfoud) **93j:34041** 34C10

— (*with* Zhang, Bing Gen) Boundary value problems for second-order functional-differential equations. (English summary) *Ann. Differential Equations* **8** (1992), *no.* 3, 261–268. (Galimzian G. Islamov) **93j:34095** 34K10

— (*with* Grace, S. R.) Oscillation theorems for second order neutral functional-differential equations. (English summary) *Appl. Math. Comput.* **51** (1992), *no.* 2-3, 119–133. (Summary) **93d:34120** 34K15 (34K40)

— (*with* Yu, Yuan Hong; Cui, Bao Tong) Oscillations of certain partial differential equations with deviating arguments. (English summary) *Bull. Austral. Math. Soc.* **46** (1992), *no.* 3, 373–380. (Summary) **93i:35149** 35R10 (35B05)

— (*with* Gopalsamy, K.; Zhang, Bing Gen) Oscillation of odd order neutral differential equations. (English summary) *Czechoslovak Math. J.* **42(117)** (1992), *no.* 2, 313–323. (Yiannis Sficas) **93f:34120** 34K15 (34K40)

— (*with* Gopalsamy, K.) Global attractivity and "level crossings" in a logistic integrodifferential equation. *Dynamic Systems Appl.* **1** (1992), *no.* 1, 23–50. (H. A. DeKleine) **93b:34086** 34K15 (34K20, 45J05, 45M99)

— (*with* Gopalsamy, K.) Oscillatory and asymptotic behaviour of a multiplicative delay logistic equation. *Dynamics Stability Systems* **7** (1992), *no.* 1, 35–42. (Curtis C. Travis) **93c:34076** 34C10 (34K20)

— (*with* Zhang, Bing Gen) Oscillation and nonoscillation of some neutral differential equations of odd order. *Internat. J. Math. Math. Sci.* **15** (1992), *no.* 3, 509–515. (Ch. G. Philos) **93e:34097** 34K15 (34K40)

— (*with* Grace, S. R.) Oscillation theorems for second order superlinear differential equations with damping. (English summary) *J. Austral. Math. Soc. Ser. A* **53** (1992), *no.* 2, 156–165. (Cheh-Chih Yeh) **93g:34046** 34C10

— (*with* Zhang, Bing Gen) On existence of positive solutions and bounded oscillations for neutral difference equations. *J. Math. Anal. Appl.* **166** (1992), *no.* 1, 272–287. (Anton Hut'a) **93f:39003** 39A10 (34K15, 34K40)

— (*with* Zhang, Bing Gen; Zhao, Tao) Oscillations of certain second order nonlinear differential equations. (English summary) *Period. Math. Hungar.* **25** (1992), *no.* 2, 167–177. (James M. D'Archangelo) **93k:34074** 34C10 (34A34, 34C15)

tedeschini-Lalli, Laura *see* **Tedeschini-Lalli, Laura**

Lalonde, François Hamiltonian collapsing of irrational Lagrangian submanifolds with small first Betti number. (English summary) *Comm. Math. Phys.* **149** (1992), *no.* 3, 613–622. (Yong-Geun Oh) **93k:58095** 58F05 (58E12)

— Suppression lagrangienne de points doubles et rigidité symplectique. [Lagrangian suppression of double points and symplectic rigidity] *J. Differential Geom.* **36** (1992), *no.* 3, 747–764. (Nikolai K. Smolentsev) **93k:58096** 58F05 (53C23, 57R40, 58E05)

Lalović, D. (*with* Davidović, D. M.) On one controversy about the smoothed Wigner function. *Phys. A* **182** (1992), *no.* 4, 643–648. (Paul Busch) **93f:81065** 81S30

— (*with* Davidović, D. M.; Bijedić, N.) Quantum mechanics in terms of nonnegative distribution functions. *Phys. A* **184** (1992), *no.* 1-2, 231–243. (Nicolaas P. Landsman) **93h:81071** 81S30

— (*with* Davidović, D. M.; Bijedić, N.) Quantum mechanics in terms of a two-parameter generalized Wigner function. *Phys. Lett. A* **166** (1992), *no.* 2, 99–106. (Jules Beckers) **93g:81066** 81S30

— (*with* Davidović, D. M.; Bijedić, N.) Quantum mechanics in terms of nonnegative smoothed Wigner functions. (English summary) *Phys. Rev. A* (3) **46** (1992), *no.* 3, 1206–1212. (Summary) **93g:81067** 81S30

Lalvani, Haresh Continuous transformations of nonperiodic tilings and space-fillings. *Fivefold symmetry*, 97–128, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93i:52002**) 52C20 (52C22)

— On the shape of five in early Hindu thought. *Fivefold symmetry*, 445–464, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93i:52002**) 01A32 (00A99)

Lam, C. S. (*with* Bougourzi, A. H.; Ho-Kim, Q.; Kikuchi, Yukio) Screening currents in free-field representations of Kac-Moody algebras. *Internat. J. Modern Phys. A* **6** (1991), *no.* 23, 4181–4208. (Alex Jay Feingold) **93a:17025** 17B67 (81R10, 81T40)

— (*with* Gannon, Terry) Gluing and shifting lattice constructions and rational equivalence. *Rev. Math. Phys.* **3** (1991), *no.* 3, 331–369. (Rainer Schulze-Pillot) **93i:11079** 11H55 (11E12, 81T30)

— (*with* Li, Z.-S.) Minimal-rank models from nonabelian orbifolds. (English summary) *Internat. J. Modern Phys. A* **7** (1992), *no.* 23, 5739–5760. (Stanislav Z. Pakuliak) **93k:81212a** 81T40 (81R05, 81T30, 81T50)

— (*with* Li, Z.-S.) Errata: "Minimal-rank models from nonabelian orbifolds". *Internat. J. Modern Phys. A* **7** (1992), *no.* 32, 8081. (Stanislav Z. Pakuliak) **93k:81212b** 81T40 (81R05, 81T30, 81T50)

— (*with* Gannon, Terry) Lattices and θ-function identities. I. Theta constants. *J. Math. Phys.* **33** (1992), *no.* 3, 854–870. (Rolf Berndt) **93d:14063** 14K25 (11E45, 11F27, 33C80)

— (*with* Gannon, Terry) Lattices and θ-function identities. II. Theta series. *J. Math. Phys.* **33** (1992), *no.* 3, 871–887. (Rolf Berndt) **93d:14064** 14K25 (11E45, 11F27, 33C80)

— (*with* Gannon, Terry) Can a lattice string have a vanishing cosmological constant? (English summary) *Phys. Rev. D* (3) **46** (1992), *no.* 4, 1710–1720. (Stanislav Z. Pakuliak) **93i:83088** 83E30 (11H06, 81T30)

Lam, C. W. H. (*with* Thiel, Larry Henry; Pautasso, A.) On ternary codes generated by Hadamard matrices of order 24. (English summary) Proceedings of the Twenty-third Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, FL, 1992). *Congr. Numer.* **89** (1992), 7–14. (Summary) **93k:94010** 94B60 (05B20)

Lam, C. Y. Teresa New better than used in expectation processes. *J. Appl. Probab.* **29** (1992), *no.* 1, 116–128. (Yadavalli V. S. Sarma) **93b:60203** 60K15 (60K20)

Lam, James (*with* Chung, K. W.) Error bounds for Padé approximations of e^{-z} on the imaginary axis. *J. Approx. Theory* **69** (1992), *no.* 2, 222–230. (H. Wallin) **93d:41014** 41A21

Lam, K. *see* **Lam, Kin**

Lam, K. S. (*with* Lim, C. K.) Annihilatingly uniqueness of q-diwheels. *Proceedings of Asian Mathematical Conference*, 1990 (*Hong Kong*, 1990), 267–270, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93b:00022**) 05C50

Lam, K. Y. (*with* Randall, Duane) Low-dimensional spinor representations, Adams maps and geometric dimension. *Adams Memorial Symposium on Algebraic Topology*, 1 (*Manchester*, 1990), 89–102, *London Math. Soc. Lecture Note Ser.*, 175, *Cambridge Univ. Press, Cambridge*, 1992. (Introduction) **93f:55019** 55R50 (57R15)

Lam, Kin Subset selection of normal populations under heteroscedasticity. (English summary) With discussion. *The frontiers of modern statistical inference procedures, II (Sydney*, 1987), 307–347, *Amer. Sci. Press Ser. Math. Management Sci.*, 28, *Amer. Sci. Press, Columbus, OH*, 1992. (Summary) **93j:62056** 62F07

— (*with* Ng, C. K.; Chen, H. J.) Multiple comparison of exponential location parameters with the best under type II censoring. (English summary) *Amer. J. Math. Management Sci.* **12** (1992), *no.* 4, 383–402. (Summary) **93k:62206** 62N05 (62F07, 62J15)

— (*with* Cowan, Richard) Stochastic reversibility in self-organizing systems. *Comm. Statist. Stochastic Models* **8** (1992), *no.* 2, 325–336. (Summary) **93c:68016** 68P10 (60J10)

— (*with* Yip, Paul) A class of nonparametric tests for the equality of failure rates in a competing risks model. (English summary) *Comm. Statist. Theory Methods* **21** (1992), *no.* 9, 2541–2556. 62G10

Lam, Lay Yong (*with* Ang, Tian Se) ★ Fleeting footsteps. Tracing the conception of arithmetic and algebra in ancient China. With an English translation of *The mathematical classic* of Sun Zi. *World Scientific Publishing Co., Inc., River Edge, NJ*, 1992. xvi+199 *pp. ISBN* 981-02-1118-X (Catherine Jami) **93m:01014** 01A25

Lam, M. M. (*with* Dewdney, C.; Horton, G.; Malik, Z.; Schmidt, Michael G.) Wave-particle dualism and the interpretation of quantum mechanics. (English summary) *Found. Phys.* **22** (1992), *no.* 10, 1217–1265. (Lawrence Sklar) **93i:81008** 81P05

Lam, S. H. On the RNG theory of turbulence. *Phys. Fluids A* **4** (1992), *no.* 5, 1007–1017. (Summary) **93m:76050** 76F05

Lam, Simon S. (*with* Shankar, A. Udaya) Specifying modules to satisfy interfaces: a state transition system approach. (English summary) *Distrib. Comput.* **6** (1992), *no.* 1, 39–63. (Summary) **93j:68132** 68Q60 (68P15)

Lam, T. Y. (*with* Leroy, André) Homomorphisms between Ore extensions. *Azumaya algebras, actions, and modules (Bloomington, IN*, 1990), 83–110, *Contemp. Math.*, 124, *Amer. Math. Soc., Providence, RI*, 1992. (P. M. Cohn) **93b:16052** 16S36 (16W20, 16W25)

Lam, Tak-Wah (*with* Ruzzo, Walter L.) Results on communication complexity classes. *J. Comput. System Sci.* **44** (1992), *no.* 2, 324–342. (William Gasarch) **93c:68030** 68Q15

(68Q30)
— (*with* Tiwari, Prasoon; Tompa, Martin) Trade-offs between communication and space. (English summary) *J. Comput. System Sci.* **45** (1992), *no.* 3, 296–315. (Summary) **93i:68088** 68Q25

Lam, William H. K. (*with* Huang, Hai Jun) Modified Evans' algorithms for solving the combined trip distribution and assignment problem. (English summary) *Transportation Res. Part B* **26** (1992), *no.* 4, 325–337. 90C35 (90B80)

Lam, Yeh Optimal geometric process replacement model. *Acta Math. Appl. Sinica* (*English Ser.*) **8** (1992), *no.* 1, 73–81. (Summary) **93b:90031** 90B25
— Optimal policy for a general repair replacement model: discounted reward case. *Comm. Statist. Stochastic Models* **8** (1992), *no.* 2, 245–267. (Howard Taylor) **93f:90082** 90B25
— Nonparametric inference for geometric processes. *Comm. Statist. Theory Methods* **21** (1992), *no.* 7, 2083–2105. (I. V. Basawa) **93i:62076** 62M09 (62G05)

LaMaire, Richard O. $M/G/1/N$ vacation model with varying E-limited service discipline. (English summary) *Queueing Systems Theory Appl.* **11** (1992), *no.* 4, 357–375. (Summary) **93g:60193** 60K25

Lamarche, François Quantitative domains and infinitary algebras. *Theoret. Comput. Sci.* **94** (1992), *no.* 1, 37–62. (Edmund Robinson) **93d:03022** 03B40 (03B70, 08C05, 18B35, 68Q55)

Lamarque, C.-H. (*with* Malasoma, J.-M.) Computation of basins of attraction for three coexisting attractors of a simple mechanical system. (English summary) *European J. Mech. A Solids* **11** (1992), *no.* 6, 781–790. (Summary) **93j:70011** 70K50 (34C15, 58F13)
— (*with* Stoffel, A.) Parametric resonance with a nonlinear term: comparison of averaging and the normal form method using a simple example. (English summary) *Mech. Res. Comm.* **19** (1992), *no.* 6, 495–504. (James A. Murdock) **93i:34065** 34C15 (34C29, 58F36, 70K28)

Lamb, D. J. (*with* Capri, A. Z.) The vacuum for an interacting scalar field. (English summary) *Nuovo Cimento B* (11) **107** (1992), *no.* 7, 799–804. (Summary) **93f:81153** 81T99

Lamb, J. S. W. Reversing symmetries in dynamical systems. *J. Phys. A* **25** (1992), *no.* 4, 925–937. (Manfred Andrié) **93d:58147** 58F37 (70H33)

Lamb, Kevin G. (*with* Pierrehumbert, Raymond T.) Steady-state nonlinear internal gravity-wave critical layers satisfying an upper radiation condition. *J. Fluid Mech.* **238** (1992), 371–404. (Summary) **93b:76021** 76C10 (76V05)

Lamb, Wilson (*with* McGhee, D. F.) Spectral theory and functional calculus for operators on spaces of generalized functions. *J. Math. Anal. Appl.* **163** (1992), *no.* 1, 238–260. (Ioana Ciorănescu) **93d:47047** 47B25 (47A60, 47A70, 47N20)

Lambe, L. A. (*with* Gugenheim, V. K. A. M.; Stasheff, J. D.) Perturbation theory in differential homological algebra. II. *Illinois J. Math.* **35** (1991), *no.* 3, 357–373. (Ronald Brown) **93e:55018** 55R20 (18G10, 55U15)

Lambeck, Ernst On distance regular graphs with $c_i = b_1$. (English summary) *Discrete Math.* **113** (1993), *no.* 1-3, 275–276. (Summary) **93k:05076** 05C25
— Some elementary inequalities for distance-regular graphs. *European J. Combin.* **14** (1993), *no.* 1, 53. 05E30

Lambek, J. On the ubiquity of Mal'cev operations. *Proceedings of the International Conference on Algebra, Part* 3 (*Novosibirsk*, 1989), 135–146, *Contemp. Math.*, 131, *Part* 3, *Amer. Math. Soc., Providence, RI*, 1992. (J. R. Isbell) **93h:08009** 08B05 (03D20)

Lamberson, Roland H. (*with* Carroll, Joseph E.) The owl's odyssey. A continuous model for the dispersal of territorial species. (English summary) *SIAM J. Appl. Math.* **53** (1993), *no.* 1, 205–218. (Summary) **93m:92022** 92D40 (92D25)

Lambert, Alan (*with* Embry-Wardrop, Mary) Measurable transformations and centred composition operators. *Proc. Roy. Irish Acad. Sect. A* **90** (1990), *no.* 2, 165–172. (Raj Kishor Singh) **93d:47060** 47B38 (28A20)
— (*with* Hoover, Thomas B.) Essentially normal composition operators on L^2. *Acta Sci. Math.* (*Szeged*) **55** (1991), *no.* 3-4, 403–408. (Valentin Matache) **93b:47060** 47B38 (47B15)
— Weighted shifts and composition operators on L^2. *Functional analysis and operator theory* (*New Delhi*, 1990), 10–17, *Lecture Notes in Math.*, 1511, *Springer, Berlin*, 1992. (Peng Fan) **93g:47037** 47B38 (47B20, 47B37)

Lambert, F. (*with* Willox, R.) A Lax-integrable equation suggestive of a hierarchy of soliton equations. *Inverse Problems* **7** (1991), *no.* 6, L45–L48. (David J. Kaup) **93b:58082** 58F07 (35Q51)
— (*with* Willox, R.) An integrable seventh order equation related to the Sawada-Kotera hierarchy. (English summary) *Nonlinear evolution equations and dynamical systems* (*Baia Verde*, 1991), 196–204, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93i:35118** 35Q51 (58F37)

Lambert, Jean-Luc The local catenativity of DOL-sequences in free commutative monoids is decidable in the binary case. (English and French summaries) *RAIRO Inform. Théor. Appl.* **26** (1992), *no.* 5, 425–437. (Summary) **93i:20068** 20M05 (15A24, 68Q45)
— A structure to decide reachability in Petri nets. *Theoret. Comput. Sci.* **99** (1992), *no.* 1, 79–104. (Bolesław Mikołajczak) **93i:68141** 68Q90
— Sorting the sums $(x_i + y_j)$ in $O(n^2)$ comparisons. (English summary) 7th Annual Symposium on Theoretical Aspects of Computer Science (STACS 90) (Rouen, 1990). *Theoret. Comput. Sci.* **103** (1992), *no.* 1, 137–141. (A. D. Booth) **93j:68044** 68P10

Lambert, Johann Heinrich ★ Neues Organon oder Gedanken über die Erforschung und Bezeichnung des Wahren und dessen Unterscheidung vom Irrtum und Schein. (German) [New organon or reflections on the exploration and designation of truth and its distinction from error and illusion] In two volumes and one appendix. Based on the first edition published by Johann Wendler in Leipzig in 1764, with the collaboration of Peter Heyl, published, edited and supplemented with an appendix by Günter Schenk. Philosophiehistorische Texte. [Philosophical-Historical Texts] *Akademie-Verlag, Berlin*, 1990. *Vol. I*: xvi+460 *pp.*; *Vol. II*: *pp.* 461–838; *Vol. III*: *pp.* 839–1107. *ISBN* 3-05-000602-1 (Peter M. Simons) **93a:01024** 01A50 (01A75, 03–03, 03A05)

Lambert, Joseph M. The fuzzy set membership problem using the hierarchy decision method. (English summary) *Fuzzy Sets and Systems* **48** (1992), *no.* 3, 323–330. 04A72

Lambert, Karel A theory about logical theories of "expressions of the form 'the so and so', where 'the' is in the singular". *Erkenntnis* **35** (1991), *no.* 1-3, 337–346. (Michael Scanlan) **93c:03008** 03A05 (03B10, 03B20, 03B65)
— Russell's version of the theory of definite descriptions. *Philos. Stud.* **65** (1992), *no.* 1-2, 153–167. (Francisco A. Rodriguez Consuegra) **93d:03012** 03A05 (01A60, 03–03, 03B10)

Lamberton, Damien (*with* Lapeyre, B.) Probabilités numériques et théorie des options. [Numerical probability and the theory of options] *Probabilités numériques*, 180–186, *Collect. Didact.*, 10, *INRIA, Rocquencourt*, 1992. (*see* **93k:65002**) 65U05
— (*with* Coulhon, Thierry) Quelques remarques sur la régularité L^p du semi-groupe de Stokes. [Some remarks on the L^p-regularity of the Stokes semigroup] *Comm. Partial Differential Equations* **17** (1992), *no.* 1-2, 287–304. (John Albert) **93f:35176** 35Q30 (35B65, 35G10, 47D06, 47N20, 76D05)

Lambrou, M. S. (*with* Longstaff, W. E.) Finite rank operators leaving double triangles invariant. *J. London Math. Soc.* (2) **45** (1992), *no.* 1, 153–168. (Kenneth R. Davidson) **93e:47056** 47D25 (47A15)

Lamèche, K. Hyra Propriétés algébriques des séries formelles liées au shuffle. [Algebraic properties of formal power series associated with shuffling] *Groupe de Travail en Théorie Analytique et Élémentaire des Nombres*, 1989–1990, 65–83, *Publ. Math. Orsay*, 92-01, *Univ. Paris XI, Orsay*, 1992. (Douglass L. Grant) **93k:13034** 13J05

Laminie, Jacques (*with* Pascal, Frédéric; Temam, Roger) Nonlinear Galerkin method with finite element approximation. *Twelfth International Conference on Numerical Methods in Fluid Dynamics* (*Oxford*, 1990), 278–282, *Lecture Notes in Phys.*, 371, *Springer, Berlin*, 1990. (*see* **93e:76002**) 76M25 (65N30, 76D05, 76M10)

Lamken, Esther (*with* Rees, Rolf Stephen; Vanstone, Scott A.) Class-uniformly resolvable pairwise balanced designs with block sizes two and three. *Discrete Math.* **92** (1991), *no.* 1-3, 197–209. (W. D. Wallis) **93a:05020** 05B05
— Existence results for generalized balanced tournament designs with block size 3. (English summary) *Des. Codes Cryptogr.* **3** (1993), *no.* 1, 33–61. (Dobromir Todorov) **93m:05022** 05B05 (05B15, 05B30)

Lamm, Patricia K. (*with* Rosen, I. G.) An approximation theory for the estimation of parameters in degenerate Cauchy problems. *J. Math. Anal. Appl.* **162** (1991), *no.* 1, 13–48. (Simeon Reich) **93c:47084** 47N20 (34G10, 41A58, 47D06, 65M60)
— Parameter estimation for distributed equations in parameter-dependent state spaces: applications to shape identification. *SIAM J. Control Optim.* **30** (1992), *no.* 4, 894–925. (Jan Sokołowski) **93f:49040** 49Q12 (49K20, 49K40, 93B30)

Lamma, Evelina (*with* Brogi, Antonio; Ciampolini, Anna; Mello, Paola) The implementation of a distributed model for logic programming based on multiple-headed clauses. (English summary) *Inform. Process. Lett.* **42** (1992), *no.* 6, 331–338. (Summary) **93e:68011** 68N17
— (*with* Mello, Paola; Natali, Antonio) An extended Warren abstract machine for the execution of structured logic programs. (English summary) *J. Logic Programming* **14** (1992), *no.* 3-4, 187–222. (Neculai Curteanu) **93j:68030** 68N17 (68N20)

Lämmerzahl, Claus The geometry of matter fields. *Quantum mechanics in curved space-time* (*Erice*, 1989), 23–48, *NATO Adv. Sci. Inst. Ser. B Phys.*, 230, *Plenum, New York*, 1990. (*see* **93d:83003**) 83D05 (53C60)
— (*with* Audretsch, Jürgen) Reasons for a physical field to obey linear partial differential equations. *J. Math. Phys.* **32** (1991), *no.* 5, 1354–1359. (Agostino Prástaro) **93i:53068** 53C80 (35Q75)

Lamnabhi-Lagarrigue, F. (*with* Crouch, P. E.) Realizations of input-output differential equations. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, II* (*Kobe*, 1991), 259–264, *Mita, Tokyo*, 1992. (*see* **93g:93006**) 93B15

Lamont, P. J. C. Unique factorization in Cayley arithmetics and cryptology. *Glasgow Math. J.* **33** (1991), *no.* 3, 267–273. (Bernard J. M. Smeets) **93k:94007** 94A60 (11R52)

Lamoreaux, Steve K. A review of the experimental tests of quantum mechanics. (English summary) *Internat. J. Modern Phys. A* **7** (1992), *no.* 27, 6691–6762. 81P05 (81–05)

Lampart, P. (*with* Wierciński, Z.) Application of the singular integral equations theory to the aerodynamic problems on example of the 2-dimensional flow past thin profile system. (English summary) Mathematische Wissenschaften gestern und heute. 300 Jahre Mathematische Gesellschaft in Hamburg, Teil 4 (Hamburg, 1990). *Mitt. Math. Ges. Hamburg* **12** (1991), *no.* 4, 1129–1139 (1992). (Summary) **93d:76035** 76G25 (76M25)

Lampe, Jürgen Ein Lokalitätskonzept für die parallele Sprachverarbeitung mit Attributgrammatiken. [A concept of locality for attribute-grammar-based language processing] *Wiss. Z. Tech. Univ. Dresden* **41** (1992), *no.* 4, 57–60. 68Q50

Lampe, William A. Further properties of lattices of equational theories. *Algebra Universalis* **28** (1991), *no.* 4, 459–486. (Marcel Erné) **93c:06011** 06B15 (08B15)
— (*with* Sichler, J.; Trnková, Věra) Homomorphisms of unary algebras and of their expansions. *Colloq. Math.* **64** (1993), *no.* 1, 79–92. (Danica Jakubíková-Studenovská) **93m:08014** 08C05 (08A60, 18B99)

Lamphere, Robert L. (*with* Andrews, George E.; Berndt, Bruce C.; Lorentzen, Lisa) The continued fractions found in the unorganized portions of Ramanujan's notebooks. *Mem. Amer. Math. Soc.* **99** (1992), *no.* 477, vi+71 *pp.* (Liang-Cheng Zhang) **93f:11008** 11A55 (01A60, 05A19, 11B65)

Lamport, Leslie (*with* Abadi, Martín) The existence of refinement mappings. *Theoret. Comput. Sci.* **82** (1991), *no.* 2, *Logic Semantics Theory Program.*, 253–284. (Summary) **93a:68090** 68Q60
— Critique of the Lake Arrowhead Three. *Distrib. Comput.* **6** (1992), *no.* 1, 65–71. 68Q60 (68P15)

Lampreia, J. P. (*with* Sousa Ramos, J.) Symbolic dynamics of trimodal maps. (English summary) *European Conference on Iteration Theory* (*Batschuns*, 1989), 184–193, *World Sci. Publishing, River Edge, NJ*, 1991. (Arkady S. Pikovsky) **93f:58065** 58F03 (58F08)

Lamy, D. Modelling and sensitivity analysis of neural networks. (English summary) *Mathematics of the analysis and design of process control* (*Dublin*, 1991/*Lille*, 1991), 515–523, *North-Holland, Amsterdam*, 1992. (*see* **93g:93004**) 93A30 (68T05, 92B20)

Lan, Kun Quan A generalization of the Krein-Rutman theorem. (Chinese. English summary) *Sichuan Shifan Daxue Xuebao Ziran Kexue Ban* **14** (1991), *no.* 5, 5–6. (Yi Hong Du) **93f:47079** 47H15
— Nonzero fixed points and positive eigenvalues of a class of noncompact mappings. (Chinese. English summary) *Sichuan Shifan Daxue Xuebao Ziran Kexue Ban* **14** (1991), *no.* 5, 7–10. (Jing Xian Sun) **93g:47073** 47H10 (47H12)
— (*with* Ding, Xie Ping) Minimal and maximal fixed point theorems and iterative technique for nonlinear operators in product spaces. *Appl. Math. Mech.* (*English Ed.*) **13** (1992), *no.* 3, 227–231; *translated from Appl. Math. Mech.* **13** (1992), *no.* 3, 209–213 (*Chinese. English summary*). (A. S. Vatsala) **93e:47076** 47H10

Lan, Ren Xia (*with* He, Guang; Wang, Zhen; et al.) ★ Xin E-Han zonghe keji cihui. (Chinese) [New Russian-Chinese polytechnic dictionary] *Kexue Chubanshe (Science Press), Beijing*, 1986. vi+1321 *pp.* (Summary) **93d:00009** 00A20

Lanari, Leonardo (*with* Wen, John T.) Asymptotically stable set point control laws for flexible robots. (English summary) *Systems Control Lett.* **19** (1992), *no.* 2, 119–129. 93C85 (70B15, 70Q05)

Lancaster, Kirk E. Qualitative behavior of solutions of elliptic free boundary problems. *Pacific J. Math.* **154** (1992), *no.* 2, 297–316. (Summary) **93d:35182** 35R35 (35J25)

Lancaster, Mark J. (*with* Dobbs, David E.) The probability of invertibility for a matrix over a finite commutative ring. *C. R. Math. Rep. Acad. Sci. Canada* **13** (1991), *no.* 5, 217–222. (John H. Hodges) **93a:15021** 15A33 (11T99, 20H25)

— (*with* Dobbs, David E.) The expected dimension of a sum of vector subspaces. *Bull. Austral. Math. Soc.* **45** (1992), *no.* 3, 467–477. (B. Reichstein) **93h:15002** 15A03 (60C05)

Lancaster, Peter (*with* Andrew, Alan L.; Chu, K.-w. Eric) Sensitivities of eigenvalues and eigenvectors of problems nonlinear in the eigenparameter. *Appl. Math. Lett.* **5** (1992), *no.* 3, 69–72. (Anna Lee) **93d:15013** 15A18 (15A54, 73K40)

— (*with* Barkwell, Lawrence; Markus, Alexander S.) Gyroscopically stabilized systems: a class of quadratic eigenvalue problems with real spectrum. *Canad. J. Math.* **44** (1992), *no.* 1, 42–53. (T. Ya. Azizov) **93a:47015** 47A56 (47A10, 47N70, 93D15)

— (*with* Barkwell, Lawrence) Overdamped and gyroscopic vibrating systems. (English summary) *Trans. ASME J. Appl. Mech.* **59** (1992), *no.* 1, 176–181. (Summary) **93f:70021** 70J25

Lancaster, Tony ★ The econometric analysis of transition data. Econometric Society Monographs, 17. *Cambridge University Press, Cambridge*, 1990. xii+352 *pp. ISBN* 0-521-26596-7 (Peter M. Robinson) **93f:90041** 90A19 (62P20, 90A06)

Lancia, M. R. (*with* Bassanini, P.; Casciola, C. M.; Piva, R.) A boundary integral formulation for the kinetic field in aerodynamics. I. Mathematical analysis. *European J. Mech. B Fluids* **10** (1991), *no.* 6, 605–627. (A. J. Meir) **93f:76060** 76G25 (31B10, 45E10, 76M15)

— (*with* Bassanini, P.) Boundary integral equations of the first kind for planar vector fields in multiply connected domains. *Acta Mech.* **94** (1992), *no.* 1-2, 43–57. (Summary) **93d:45010** 45K05 (35Q35, 76B05)

Lancien, Florence Inégalités à poids pour la transformée de Hilbert ergodique et extension à H^1 ergodique d'un théorème de Bourgain. [Weighted inequalities for the ergodic Hilbert transform and ergodic extension to H^1 of a theorem of Bourgain] *Séminaire d'Initiation à l'Analyse, Exp. No.* 10, 11 *pp., Publ. Math. Univ. Pierre et Marie Curie*, 95, *Univ. Paris VI, Paris*, 199?. (Nakhlé Asmar) **93f:43002** 43A17 (42A50)

Lancien, Gilles Indices de Szlenk et espaces de James. [Szlenk indices and James spaces] *Séminaire d'Initiation à l'Analyse, Exp. No.* 28, 10 *pp., Publ. Math. Univ. Pierre et Marie Curie*, 95, *Univ. Paris VI, Paris*, 199?. (R. C. James) **93h:46017** 46B20

— Indices de dentabilité et indice de Szlenk. (English summary) [Dentability indices and Szlenk index] *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 12, 905–910. (G. J. O. Jameson) **93e:46020** 46B20 (46B22, 46E15)

Lanckau, Eberhard (*with* Fischer, H.-J.) On the representation of solutions to linear partial differential equations of mixed type. (English summary) *Partial differential equations with complex analysis*, 29–34, *Pitman Res. Notes Math. Ser.*, 262, *Longman Sci. Tech., Harlow*, 1992. (Summary) **93j:35043** 35C15 (35M10)

— On the solution to the three-dimensional iterated potential equation. *Complex Variables Theory Appl.* **18** (1992), *no.* 1-2, 119–124. (Hideo Yamagata) **93b:35018** 35C05 (35A22, 35J30, 35L10)

Lançon, F. (*with* Godrèche, C.) A simple example of a non-Pisot tiling with five-fold symmetry. (English and French summaries) *J. Physique I* **2** (1992), *no.* 2, 207–220. (Hanna Nencka) **93j:52033** 52C20 (82D25)

Lanconelli, Ermanno (*with* Garofalo, Nicola) Existence and nonexistence results for semilinear equations on the Heisenberg group. *Indiana Univ. Math. J.* **41** (1992), *no.* 1, 71–98. (Jana D. Madjarova) **93h:35071** 35J65 (22E25)

Land, Thoralf (*with* Stückrad, Jürgen) Algorithmische P-Zerlegungen und Anwendungen. [Algorithmic P-decompositions and applications] *Beiträge Algebra Geom. No.* 32 (1991), 119–134. (Gennady Lyubeznik) **93c:13022** 13P99 (14M10)

Landa, P. S. (*with* Neĭmark, Yu. I.) ★ Stochastic and chaotic oscillations. With a section by B. A. Grishanin. Translated from the 1987 Russian original. Mathematics and its Applications (Soviet Series), 77. *Kluwer Academic Publishers Group, Dordrecht*, 1992. xii+500 *pp. ISBN* 0-7923-1530-8 (Editors) **93d:58103** 58F13 (34C15, 58F14, 70K50, 70L05, 76F20)

— (*with* Rozenblyum, M. G.) On the synchronization of chaotic self-oscillating systems. (Russian) *Dokl. Akad. Nauk* **324** (1992), *no.* 1, 65–68; *translation in Soviet Phys. Dokl.* **37** (1992), *no.* 5, 237–239. 34C15 (58F13, 70K50, 76Q05)

Landahl, M. T. (*with* Mollo-Christensen, E.) ★ Turbulence and random processes in fluid mechanics. Second edition. *Cambridge University Press, Cambridge*, 1992. xii+168 *pp. ISBN* 0-521-41992-1; 0-521-42213-2 (P. L. Sulem) **93m:76047** 76Fxx (76–02, 76Exx, 76M35)

Landau, Henry J. (*with* Gnanadesikan, Ramanathan) Yueh-Gin Gung and Dr. Charles Y. Hu award for distinguished service to Henry O. Pollak. *Amer. Math. Monthly* **100** (1993), *no.* 2, 115–116. 01A70

Landau, I. D. Adaptive control—robustness and performance enhancement. (English summary) *Adaptive systems in control and signal processing*, 1989 (*Glasgow*), 17–22, *IFAC Sympos. Ser.*, 1990, *No.* 1, *Pergamon, Oxford*, 1990. (*see* **93j:93007**) 93C40 (93E35)

— (*with* Lozano Leal, Rogelio; Brogliato, Bernard) Passivity and global stabilization of cascaded nonlinear systems. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 9, 1386–1388. (Mietek Brdyś) **93i:93107** 93D15

Landau, L. D. (*with* Lifshits, E. M.) ★ Lehrbuch der theoretischen Physik ("Landau-Lifschitz"). Band VI. (German) [Textbook of theoretical physics ("Landau-Lifschitz"). Vol. VI] Hydrodynamik. [Hydrodynamics] Translated from the Russian by Wolfgang Weller and Adolf Kühnel. Fifth edition. Translation edited by Weller and with a foreword by Weller and P. Ziesche. *Akademie-Verlag, Berlin*, 1991. xvi+683 *pp. ISBN* 3-05-500070-6 (Editors) **93b:00001c** 00–01 (00A79, 76–01, 83–01)

— (*with* Lifshits, E. M.) ★ Lehrbuch der theoretischen Physik ("Landau-Lifschitz"). Band VII. (German) [Textbook of theoretical physics ("Landau-Lifschitz"). Vol. VII] Elastizitätstheorie. [Elasticity theory] Translated from the Russian by Benjamin Kozik and Wolfgang Göhler. Translation edited by Hans-Georg Schöpf. With a foreword by Schöpf and P. Ziesche. Seventh edition. *Akademie-Verlag, Berlin*, 1991. x+223 *pp. ISBN* 3-05-500580-5 (Editors) **93b:00001d** 00–01 (00A79, 73–01)

Landau, Lawrence J. Experimental tests of distributivity. (English summary) *Lett. Math. Phys.* **25** (1992), *no.* 1, 47–50. (M. J. Mączyński) **93g:81008** 81P10 (06D05, 81R05)

Landau, Susan A note on "Zippel denesting". *J. Symbolic Comput.* **13** (1992), *no.* 1, 41–45. (Joe P. Buhler) **93b:11168** 11Y40

Lande, B. K. (*with* Agashe, S. D.) Pole assignment using output feedback. (English summary) *Mathematical theory of control (Bombay*, 1990), 225–232, *Lecture Notes in Pure and Appl. Math.*, 142, *Dekker, New York*, 1993. (*see* **93g:93003**) 93B55 (93B52)

Lande, Vivek (*with* Qureshi, K.) A fixed point theorem for compact metric space. (English summary) *Math. Ed. (Siwan)* **26** (1992), *no.* 3, 151–153. 54H25

Landes, Thomas R. (*with* Hudzik, Henryk) Characteristic of convexity of Köthe function spaces. *Math. Ann.* **294** (1992), *no.* 1, 117–124. (Ting Fu Wang) **93h:46041** 46E40 (46B20, 46E30)

Landgev, Ivan N. On block designs with repeated blocks. (English summary) A collection of contributions in honour of Jack van Lint. *Discrete Math.* **106/107** (1992), 317–328. (W. H. Mills) **93g:05017** 05B05

Landi, G. (*with* Reina, C.) Symplectic dynamics on the universal Grassmannian. *J. Geom. Phys.* **9** (1992), *no.* 3, 235–253. (Jacek Szmigielski) **93h:58071** 58F07 (58B25)

— (*with* Marmo, Giuseppe; Vilasi, Gaetano) Remarks on the complete integrability of dynamical systems with fermionic variables. (English summary) *J. Phys. A* **25** (1992), *no.* 16, 4413–4423. (Frans Cantrijn) **93h:81139** 81T60 (35Q58, 58A50, 58F07)

Landim, C. Hydrodynamical limit for asymmetric attractive particle systems on $\mathbf{Z}^d$. (French summary) *Ann. Inst. H. Poincaré Probab. Statist.* **27** (1991), *no.* 4, 559–581. (Pablo A. Ferrari) **93m:60200** 60K35 (82C20)

— Hydrodynamical equation for attractive particle systems on $\mathbf{Z}^d$. *Ann. Probab.* **19** (1991), *no.* 4, 1537–1558. (Summary) **93d:60167** 60K35 (35L67, 82C40)

— Large fluctuations for Markov processes: an application to interacting particle systems. (English summary) *Probabilistic methods in mathematical physics (Siena*, 1991), 276–289, *World Sci. Publishing, River Edge, NJ*, 1992. (Yun Gang Lu) **93m:82026** 82C22 (60K35, 81S20, 81S25)

— Occupation time large deviations for the symmetric simple exclusion process. *Ann. Probab.* **20** (1992), *no.* 1, 206–231. (Summary) **93f:60150** 60K35

Landman, Bruce M. Ramsey functions related to the van der Waerden numbers. *Discrete Math.* **102** (1992), *no.* 3, 265–278. (Jerrold W. Grossman) **93e:05100** 05D10

— (*with* Brown, Ezra A.; Portier, Frederick J.) Partitions of bi-partite numbers into at most j parts. *Graphs Combin.* **8** (1992), *no.* 1, 65–73. (George E. Andrews) **93c:11088** 11P82

— (*with* Vaughan, Theresa P.; Portier, Frederick J.) Concavity properties of numbers satisfying the binomial recurrence. (English summary) *J. Combin. Math. Combin. Comput.* **12** (1992), 23–32. (Summary) **93h:05007** 05A10

Landman, K. A. (*with* White, L. R.) Moving boundary problems in solid/liquid separation. *Mini-Conference on Free and Moving Boundary and Diffusion Problems (Canberra*, 1990), 196–211, *Proc. Centre Math. Appl. Austral. Nat. Univ.*, 30, *Austral. Nat. Univ., Canberra*, 1992. (Introduction) **93k:35279** 35R35 (76T05)

Lando, S. K. (*with* Zvonkin, A. K.) Meanders. Selected translations. *Selecta Math. Soviet.* **11** (1992), *no.* 2, 117–144. (Ira Gessel) **93k:05013** 05A15 (58C35)

Landowne, Elliott (*with* Pan, Victor; Sadikou, Akimou) Polynomial division with a remainder by means of evaluation and interpolation. (English summary) *Inform. Process. Lett.* **44** (1992), *no.* 3, 149–153. (Summary) **93m:68066** 68Q22

— (*with* Pan, Victor; Sadikou, Akimou; Tiga, Olen) A new approach to fast polynomial interpolation and multipoint evaluation. (English summary) *Comput. Math. Appl.* **25** (1993), *no.* 9, 25–30. (Summary) **93m:65011** 65D05 (65Y20)

sacchi Landriani, Giovanni *see* **Sacchi Landriani, Giovanni**

Landrock, Peter (*with* Manz, Olaf) Classical codes as ideals in group algebras. (English summary) *Des. Codes Cryptogr.* **2** (1992), *no.* 3, 273–285. (Thomas W. Cusick) **93i:94017** 94B15 (11T71, 94B35)

— (*with* Manz, Olaf) Symmetric forms, idempotents and involutary antiisomorphisms. *Nagoya Math. J.* **125** (1992), 33–51. (Wolfgang Willems) **93c:20021** 20C20

Landsberg, A. S. Geometrical phases and symmetries in dissipative systems. (English summary) *Phys. Rev. Lett.* **69** (1992), *no.* 6, 865–868. (Summary) **93d:81055** 81Q99 (70H05, 76E99)

Landsberg, J. M. Minimal submanifolds defined by first-order systems of PDE. (English summary) *J. Differential Geom.* **36** (1992), *no.* 2, 369–415. (Irl Bivens) **93k:58058** 58E15 (35A30, 35F99, 53C42, 58A15)

Landsburg, Steven E. On the spectral sequence for relative K-theory. *Algebraic K-theory, commutative algebra, and algebraic geometry (Santa Margherita Ligure*, 1989), 89–96, *Contemp. Math.*, 126, *Amer. Math. Soc., Providence, RI*, 1992. (Claudio Pedrini) **93i:19008** 19E20

— Some filtrations on higher K-theory and related invariants. (English summary) *K-Theory* **6** (1992), *no.* 5, 431–455. (Ross Staffeldt) **93m:19006** 19E08 (14C25, 14C35, 19E15)

Landshoff, P. V. (*with* Rebhan, A.) Covariant gauges at finite temperature. (English summary) *Nuclear Phys. B* **383** (1992), *no.* 3, 607–621. (Summary) **93f:81085** 81T13 (81T15)

Landsman, N. P. Algebraic theory of superselection sectors and the measurement problem in quantum mechanics. *Internat. J. Modern Phys. A* **6** (1991), *no.* 30, 5349–5371. (H. Araki) **93b:81027** 81P15 (46L60, 46N50)

— (*with* Linden, Noah) Superselection rules from Dirac and BRST quantisation of constrained systems. *Nuclear Phys. B* **371** (1992), *no.* 1-2, 415–433. (Rudolf Schmid) **93g:81193** 81T70 (81T05)

Landsman, Z. M. (*with* Levit, B. Ya.) Second order minimax estimation: the nuisance parameters and hypoelliptic operators. *Probability theory and mathematical statistics, Vol. II (Vilnius*, 1989), 47–58, "*Mokslas*", *Vilnius*, 1990. (Summary) **93a:62011** 62C20 (62F10)

Landstad, Magnus B. Ergodic actions of nonabelian compact groups. (English summary) *Ideas and methods in mathematical analysis, stochastics, and applications (Oslo*, 1988), 365–388, *Cambridge Univ. Press, Cambridge*, 1992. (A. I. Danilenko) **93j:46072** 46L55 (22C05, 22D25)

Landtman, M. Calculation of low lying states in the potential $V(r) = ar^2 + br^{-4} + cr^{-6}$ using B-spline basis sets. (English summary) *Phys. Lett. A* **175** (1993), *no.* 3-4, 147–149. 81Q05 (81–04)

Landweber, L. (*with* Stern, F.) Forces and moments on a body moving in an irrotational flow of an inviscid fluid. *Mathematical approaches in hydrodynamics*, 450–457, *SIAM, Philadelphia, PA*, 1991. (From the introduction) **93b:76017** 76B99

Landweber, Louis Properties of the Neumann kernel and interior irrotational flow for a nearly closed surface. *Engineering science, fluid dynamics (Pasadena, CA*, 1989), 415–428, *World Sci. Publishing, River Edge, NJ*, 1990. (Summary) **93c:76003** 76B10 (76M25)

Landwehr, M. (*with* Lefarth, U.; Wassmuth, E.) Parameter identification and optimization of nonlinear dynamic systems, exemplified by mechatronic systems. (English summary) *Computational systems analysis* 1992 (*Berlin*, 1992), 257–262, *Elsevier, Amsterdam*, 1992. (*see* **93e:00021**) 93E10 (49N55)

Lane, David A. (*with* Barnhill, Robert E.; Foley, Thomas A.) Interpolating scattered multivariate data as a function of time. (English summary) *Comput. Aided Geom. Design* **9** (1992), *no.* 5, 337–348. (Summary) **93i:65014** 65D05

Laneev, E. B. (*with* Dorofeev, I. F.; Mustakhishev, K. K.) An inverse problem of diffraction. (Russian) *Boundary value problems and spaces of differentiable functions* (*Russian*), 6–10, *Univ. Druzhby Narodov, Moscow*, 1989. (*see* **93m:35001**) 65P05

— On the Cauchy problem for the Helmholtz equation in a non-simply connected domain. (Russian) *Boundary value problems and spaces of differentiable functions* (*Russian*), 19–30, *Univ. Druzhby Narodov, Moscow*, 1989. (*see* **93m:35001**) 35J05

Lang, Gabriel (*with* Azaïs, Jean-Marc) Estimation de l'exposant de longue dépendance dans un cadre semi-paramétrique. (English and French summaries) [Nonparametric estimation of the long-range dependence exponent] *C. R. Acad. Sci. Paris Sér. I Math.* **316** (1993), *no.* 6, 611–614. (Summary) **93k:62078** 62G05

Lang, Guo Fang The fixed-point index at a conditional extreme point. (Chinese. English summary) *Shandong Daxue Xuebao Ziran Kexue Ban* **27** (1992), *no.* 1, 23–28. (Yi Hong Du) **93f:47080** 47H15 (47H11)

de Lang, H. Christiaan Huygens, originator of wave optics. *Huygens' principle* 1690–1990: *theory and applications* (*The Hague and Scheveningen*, 1990), 19–30, *Stud. Math. Phys.*, 3, *North-Holland, Amsterdam*, 1992. (Peter M. Harman) **93d:01024** 01A45 (01A70, 78–03)

Lang, Jens (*with* Walter, Artur) A finite element method adaptive in space and time for nonlinear reaction-diffusion systems. (English summary) *Impact Comput. Sci. Engrg.* **4** (1992), *no.* 4, 269–314. (Summary) **93j:65149** 65M60 (65M20, 92D40)

Lang, Jérôme (*with* Dubois, Didier; Prade, Henri) Timed possibilistic logic. *Fund. Inform.* **15** (1991), *no.* 3-4, 211–234. (Summary) **93a:03023** 03B60 (03B52, 68T30)

— (*with* Dubois, Didier; Prade, Henri) Advances in automated reasoning using possibilistic logic. *Fuzzy expert systems*, 125–134, *CRC, Boca Raton, FL*, 1992. (*see* **93g:68133**) 68T15 (03B52, 68T35)

Lang, Johann (*with* Röschel, Otto) Developable $(1, n)$-Bézier surfaces. (English summary) *Comput. Aided Geom. Design* **9** (1992), *no.* 4, 291–298. (Zong Min Wu) **93h:65025** 65D17 (53A05)

Lang, K. (*with* Rühl, W.) Field algebra for critical O(N) vector (nonlinear σ) models at $2 < d < 4$. *Nonperturbative methods in low-dimensional quantum field theories* (*Debrecen*, 1990), 413–419, *World Sci. Publishing, River Edge, NJ*, 1991. (*see* **93f:81005**) 81T40 (81R10, 81R50)

— (*with* Rühl, W.) The scalar ancestor of the energy-momentum field in critical σ-models at $2 < d < 4$. *Phys. Lett. B* **275** (1992), *no.* 1-2, 93–98. (From the text) **93a:81119** 81T10 (81T40)

Lang, Mong-Lung (*with* Chan, Shih-Ping; Lim, Chong-Hai) Some modular functions associated to the Lie algebra E_8. *Math. Z.* **211** (1992), *no.* 2, 223–246. (Steven N. Kass) **93i:11052** 11F22 (17B15)

— (*with* Cheng, Kai Nah; Deaconescu, M.; Shi, Wu Jie) Corrigendum and addendum to: "Classification of finite groups with all elements of prime order" [Proc. Amer. Math. Soc. **106** (1989), no. 3, 625–629; MR 89k:20038] by Deaconescu. *Proc. Amer. Math. Soc.* **117** (1993), *no.* 4, 1205–1207. (Summary) **93e:20031** 20D20

— *see also* **Connell, Ian, 93d:11057**

Lang, Patrick (*with* Locker, John) Eigenfunction expansions for the nonspectral differential operators determined by $-D^2$. *J. Differential Equations* **96** (1992), *no.* 2, 318–339. (R. C. Gilbert) **93i:47069** 47E05 (34B05, 34L10, 47B40)

Lang, Reinhard ★ Spectral theory of random Schrödinger operators. A genetic introduction. Lecture Notes in Mathematics, 1498. *Springer-Verlag, Berlin*, 1991. viii+125 *pp. ISBN* 3-540-54975-7 (Nariyuki Minami) **93d:47144** 47N50 (34F05, 34L40, 47E05, 60H25, 81Q10, 82D30)

Lang, Serge ★ Number theory. III. Diophantine geometry. Encyclopaedia of Mathematical Sciences, 60. *Springer-Verlag, Berlin*, 1991. xiv+296 *pp. ISBN* 3-540-53004-5 (Joseph H. Silverman) **93a:11048** 11Gxx (14Gxx)

— Primzahlen. [Prime numbers] *Elem. Math.* **47** (1992), *no.* 2, 49–61. (Adolf Hildebrand) **93f:11067** 11N05 (11-01, 11A41)

— ★ Complex analysis. Third edition. Graduate Texts in Mathematics, 103. *Springer-Verlag, New York*, 1993. xiv+458 *pp. ISBN* 0-387-97886-0 (Editors) **93k:30002** 30-01

Lang, Urs Quasi-minimizing surfaces in hyperbolic space. *Math. Z.* **210** (1992), *no.* 4, 581–592. (Ivan Sterling) **93e:53008** 53A10

Lang, W. C. On the entropy norm spaces and the Hardy space Re H^1. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 3, 861–863. (Romuald Dabrowski) **93j:42001** 42A16 (30D55, 42B30, 46E15)

Lang, Wolfdieter A combinatorial problem in the Fibonacci number system and two-variable generalizations of Chebyshev's polynomials. *Fibonacci Quart.* **30** (1992), *no.* 3, 199–210. (A. N. Philippou) **93i:05009** 05A15 (11B39, 33C45)

Langari, G. (*with* Shahruz, S. M.; Tomizuka, Masayoshi) Optimal damping ratio for linear second-order systems. *J. Optim. Theory Appl.* **73** (1992), *no.* 3, 563–576. (Summary) **93c:34137** 34H05 (35F20, 70Q05, 93C70)

Langaris, Christos (*with* Conolly, Brian) Solution of the stochastic birth-emigration model using continued fractions. (English summary) *Math. Sci.* **17** (1992), *no.* 2, 120–127. (Erik A. van Doorn) **93k:60212** 60J80

— *see also* **Borst, S. C., 93f:60134**

Langberg, Naftali A. (*with* Block, Henry W.; Savits, Thomas H.) Comparisons for maintenance policies involving complete and minimal repair. (English summary) *Topics in statistical dependence* (*Somerset, PA*, 1987), 57–68, *IMS Lecture Notes Monograph Ser.*, 16, *Inst. Math. Statist., Hayward, CA*, 1990. (Summary) **93i:62086** 62N05

— (*with* Block, Henry W.; Stoffer, David S.) Time series models for non-Gaussian processes. (English summary) *Topics in statistical dependence* (*Somerset, PA*, 1987), 69–83, *IMS Lecture Notes Monograph Ser.*, 16, *Inst. Math. Statist., Hayward, CA*, 1990. (Summary) **93i:62078** 62M10

— (*with* Block, Henry W.; Savits, Thomas H.) Repair replacement policies. (English summary) *J. Appl. Probab.* **30** (1993), *no.* 1, 194–206. (Summary) **93j:60129** 60K10 (60E15, 62N05, 90B25)

Lange, Adrian (*with* Behn, Ulrich) 1D random field Ising model and nonlinear dynamics. *From phase transitions to chaos*, 217–226, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93c:82031** 82B44

Lange, Bogdan Quantum statistics as a basis of the epistemological interpretation of quantum mechanics. (Polish) *Kwart. Hist. Nauk Tech.* **37** (1992), *no.* 2, 123–132. 01A60 (00A30, 81P99, 82B03)

Lange, H. *see* **Lange, Horst R.**

Lange, Herbert (*with* Birkenhake, Ch.) Norm-endomorphisms of abelian subvarieties. *Classification of irregular varieties* (*Trento*, 1990), 21–32, *Lecture Notes in Math.*, 1515, *Springer, Berlin*, 1992. (Wenchen Chi) **93g:14051** 14K05

Lange, Horst R. (*with* Heimsoeth, B.) Nonlocal nonlinear Schrödinger equations. *Semigroup theory and evolution equations* (*Delft*, 1989), 243–257, *Lecture Notes in Pure and Appl. Math.*, 135, *Dekker, New York*, 1991. (Piotr Biler) **93f:35216** 35Q55 (34G20, 47N20, 81Q05)

Lange, Kenneth (*with* Oyarzun, Francisco J.) The attractiveness of the Droop equations. (English summary) *Math. Biosci.* **111** (1992), *no.* 2, 261–278. (Summary) **93g:92023** 92D25 (92D40)

Lange, Klaus-Jörn Unambiguity of circuits. (English summary) Structure in complexity theory (Barcelona, 1990). *Theoret. Comput. Sci.* **107** (1993), *no.* 1, 77–94. (Summary) **93k:68035** 68Q15 (03D15, 68Q05)

de Lange, O. L. (*with* Welter, A.) Shape invariance with application to the momentum representation. (English summary) *J. Phys. A* **25** (1992), *no.* 21, 5753–5760. (Summary) **93i:81044** 81Q60

Lange, Ridgley (*with* Wang, Sheng Wang) ★ New approaches in spectral decomposition. Contemporary Mathematics, 128. *American Mathematical Society, Providence, RI*, 1992. x+273 *pp. ISBN* 0-8218-5139-X (Jörg Eschmeier) **93i:47039** 47B40 (47–02, 47A11, 47A13)

— (*with* Wang, Sheng Wang) Open-restriction decomposition property. (English summary) *J. Math. Anal. Appl.* **169** (1992), *no.* 1, 197–209. (Jörg Eschmeier) **93i:47040** 47B40 (47A11)

Langeland, Thore (*with* Johnson, Richard A.) A linear combination test for detecting serial correlation in multivariate samples. (English summary) *Topics in statistical dependence* (*Somerset, PA*, 1987), 299–313, *IMS Lecture Notes Monograph Ser.*, 16, *Inst. Math. Statist., Hayward, CA*, 1990. (Summary) **93i:62052** 62H20 (62F05)

Langenbach, Arno Bemerkungen zur Theorie der lokal bzw. global invertierbaren $\mathbf{R}^m$-Abbildungen. [Remarks on the theory of locally, respectively globally invertible mappings of $\mathbf{R}^m$] *Math. Nachr.* **148** (1990), 59–63. (Christian Fenske) **93a:58019** 58C15 (26B35, 47H15)

— Über ein eindimensionales Modell der finiten Elastostatik. (English summary) [On a one-dimensional model of finite elastostatics] *Z. Anal. Anwendungen* **10** (1991), *no.* 2, 183–192. (Summary) **93a:73045** 73G05 (34B15)

Langenbruch, Michael The splitting condition for the weighted $\overline{\partial}$-complex. *Results Math.* **22** (1992), *no.* 1-2, 560–597. (Emil Straube) **93k:32028** 32F20 (32F05)

— Splitting of the $\overline{\partial}$-complex in weighted spaces of square integrable functions. (English summary) *Rev. Mat. Univ. Complut. Madrid* **5** (1992), *no.* 2-3, 201–223. (Carlos A. Berenstein) **93m:32024** 32F20

Langer, Heinz (*with* Schenk, W.) Generalized second-order differential operators, corresponding gap diffusions and superharmonic transformations. *Math. Nachr.* **148** (1990), 7–45. (Jörg-Uwe Löbus) **93a:60116** 60J35 (60J60)

— (*with* Najman, Branko) Remarks on the perturbation of analytic matrix functions. III. (English summary) *Integral Equations Operator Theory* **15** (1992), *no.* 5, 796–806. (M. Tismenetsky) **93h:47014** 47A56 (15A42, 47A55)

— (*with* Mennicken, Reinhard; Möller, Manfred) On Floquet eigenvalue problems for first order differential systems in the complex domain. *J. Reine Angew. Math.* **425** (1992), 87–121. (Hendrik S. V. de Snoo) **93b:34033** 34B05 (34A20, 34L10, 47A56, 47N20)

— (*with* Najman, Branko; Veselić, Krešimir) Perturbation of the eigenvalues of quadratic matrix polynomials. *SIAM J. Matrix Anal. Appl.* **13** (1992), *no.* 2, 474–489. (Summary) **93d:15015** 15A18 (15A22, 47A55, 47A56, 93D09)

Länger, Helmut (*with* Nylen, Peter; Tam, Tin Yau) A remark on the fundamental theorem of natural selection. *Arch. Math. (Basel)* **60** (1993), *no.* 1, 103–104. 92D10 (92D15)

Langer, Ulrich[1] (*with* Haase, Gundolf; Meyer, Arnd) The approximate Dirichlet domain decomposition method. I. An algebraic approach. (German summary) *Computing* **47** (1991), *no.* 2, 137–151. (Jan Mandel) **93e:65146a** 65N55 (65F10, 65N22)

— (*with* Haase, Gundolf; Meyer, Arnd) The approximate Dirichlet domain decomposition method. II. Applications to 2nd-order elliptic BVPs. (German summary) *Computing* **47** (1991), *no.* 2, 153–167. (Jan Mandel) **93e:65146b** 65N55 (65F10, 65N22)

— (*with* Haase, Gundolf; Meyer, Arnd) Domain decomposition preconditioners with inexact subdomain solvers. *J. Numer. Linear Algebra Appl.* **1** (1992), *no.* 1, 27–41. (Summary) **93c:65153** 65N55 (65N30)

Langerman, M. A. (*with* MacKinnon, R. J.; Johnson, Richard W.) A higher-order accurate Petrov-Galerkin finite-element method for elliptic boundary value problems. (English summary) *Comm. Appl. Numer. Methods* **8** (1992), *no.* 12, 869–874. 65N30

Langevin, Michel Stimulateur cardiaque et suites de Farey. [The pacemaker and Farey sequences] *Period. Math. Hungar.* **23** (1991), *no.* 1, 75–86. (G. Turnwald) **93b:11017** 11B57 (11K99)

— Partie sans facteur carré d'un produit d'entiers voisins. (English summary) [Square-free part of a product of neighboring integers] *Approximations diophantiennes et nombres transcendants* (*Luminy*, 1990), 203–214, *de Gruyter, Berlin*, 1992. (C. L. Stewart) **93g:11081** 11J86 (11J25)

Langevin, P. *see* **Encyclopedia: Pure and applied mathematical sciences, 93m:00056**

Langevin, Philippe Covering radius of RM(1, 9) in RM(3, 9). *Eurocode '90* (*Udine*, 1990), 51–59, *Lecture Notes in Comput. Sci.*, 514, *Springer, Berlin*, 1991. (Iiro Honkala) **93c:94010** 94B75 (11T71, 94B05)

Langevin, Rémi (*with* Oliva, W. M.; De Oliveira, J. C. F.) Retarded functional-differential equations with white noise perturbations. (French summary) Multiscale phenomena (São Paulo, 1990). *Ann. Inst. H. Poincaré Phys. Théor.* **55** (1991), *no.* 2, 671–687. (Summary) **93i:60120** 60H99 (34K50)

— (*with* Rosenberg, Harold) Quand deux sous-variétés sont forcées par leur géométrie à se rencontrer. (English summary) [When two submanifolds may be forced to meet by their geometry] *Bull. Soc. Math. France* **120** (1992), *no.* 2, 227–235. (Sheila Carter) **93g:53080** 53C40 (53C22)

Langholz, Bryan (*with* Kronmal, Richard A.) Tests of distributional hypotheses with nuisance parameters using Fourier series methods. *J. Amer. Statist. Assoc.* **86** (1991), *no.* 416, 1077–1084. (Ryszard Zieliński) **93b:62073** 62G10 (62G05, 62G20)

Langlais, Michel (*with* Kubo, Masahiro) Periodic solutions for nonlinear population dynamics models with periodic supply. *Progress in partial differential equations: calculus of variations, applications* (*Pont-à-Mousson*, 1991), 214–220, *Pitman Res. Notes Math. Ser.*, 267, *Longman Sci. Tech., Harlow*, 1992. (G. F. Webb) **93m:92023** 92D40 (35B10, 35Q80, 92D25)

— (*with* Fabrie, Pierre) Mathematical analysis of miscible displacement in porous medium. (English summary) *SIAM J. Math. Anal.* **23** (1992), *no.* 6, 1375–1392. (Andro Mikelić) **93m:76069** 76S05 (35Q35, 76T05)

Langlands, Robert P. Rank-one residues of Eisenstein series. *Festschrift in honor of I. I. Piatetski-Shapiro on the occasion of his sixtieth birthday, Part II* (*Ramat Aviv*, 1989), 111–125, *Israel Math. Conf. Proc.*, 3, *Weizmann, Jerusalem*, 1990. (Shai Haran) **93f:11039** 11F70 (22E55)

— (*with* Ramakrishnan, Dinakar) The description of the theorem. *The zeta functions of Picard modular surfaces*, 255–301, *Univ. Montréal, Montreal, PQ*, 1992. (Shai Haran) **93d:11055** 11F70 (11G18, 14G35)

— Remarks on Igusa theory and real orbital integrals. *The zeta functions of Picard modular surfaces*, 335–347, *Univ. Montréal, Montreal, PQ*, 1992. (Stephen Gelbart) **93e:22036** 22E50

— (*with* Pichet, C.; Pouliot, Ph.; Saint-Aubin, Yvan) On the universality of crossing probabilities in two-dimensional percolation. *J. Statist. Phys.* **67** (1992), *no.* 3-4, 553–574. (Summary) **93e:82028** 82B43 (82–04, 82B28)

Langley, J. K. (*with* Bank, Steven B.) Oscillation theorems for higher order linear differential equations with entire periodic coefficients. *Comment. Math. Univ. St. Paul.* **41** (1992), *no.* 1, 65–85. (Wolfgang Bühring) **93e:34011** 34A20 (34C10)

Langley, R. S. (*with* Koliopulos, P. K.) Improved stability analysis of the response of a Duffing oscillator under filtered white noise. (English summary) *Internat. J. Non-Linear Mech.* **28** (1993), *no.* 2, 145–155. (Summary) **93k:70037** 70L05 (70K20)

Langlois, Bruno (*with* Barraquand, Jérôme; Latombe, Jean-Claude) Numerical potential field techniques for robot path planning. *IEEE Trans. Systems Man Cybernet.* **22** (1992), *no.* 2, 224–241. 68U05

Langmann, Edwin On Schwinger terms in $(3+1)$ dimensions. *Nonlinear fields: classical, random, semiclassical* (*Karpacz*, 1991), 557–567, *World Sci. Publishing, River Edge, NJ*, 1991. (Jouko Mickelsson) **93b:81096** 81R10 (58B25, 58G26, 81T10)

— (*with* Grosse, Harald) The geometric phase and the Schwinger term in some models. (English summary) *Internat. J. Modern Phys. A* **7** (1992), *no.* 21, 5045–5083. (Nicolaas P. Landsman) **93k:81229** 81T50 (81Q05, 81R10)

— (*with* Grosse, Harald) A superversion of quasifree second quantization. I. Charged particles. *J. Math. Phys.* **33** (1992), *no.* 3, 1032–1046. (Alan L. Carey) **93h:81075** 81T05 (81R10, 81T60)

— (*with* Semenoff, Gordon W.) Gauge theories on a cylinder. (English summary) *Phys. Lett. B* **296** (1992), *no.* 1-2, 117–120. (Summary) **93i:81138** 81T13

Langmann, Klaus $\mathscr{M}$-adische Topologie, Fréchettopologie und der Cartansche Abgeschlossenheitssatz. [$\mathscr{M}$-adic topology, Fréchet topology and Cartan's closure theorem] *Arch. Math.* (*Basel*) **57** (1991), *no.* 5, 456–459. (Martin Schottenloher) **93b:32016** 32E10 (13J99)

— Picardindex und ganzalgebraische Punkte. [Picard index and integral-algebraic points] *Math. Ann.* **291** (1991), *no.* 4, 663–690. (Camilla Horst) **93b:32035** 32H25 (11J99, 32H30)

— Minimale Erzeugendenanzahl von Moduln. [Minimal number of generators of modules] *Comment. Math. Helv.* **67** (1992), *no.* 3, 349–362. (G. Eisenreich) **93e:13030** 13E15

— Der 4-Werte-Satz in der Zahlentheorie. [The four-value theorem in number theory] *Compositio Math.* **82** (1992), *no.* 2, 137–142. (Péter Kiss) **93b:11159** 11R99

— Globale und lokale Erzeugendenanzahl im Reellen. [Number of global and local generators in the real] *Math. Z.* **210** (1992), *no.* 4, 655–659. (Gerd Müller) **93g:32014** 32C35 (14F05)

Langston, Michael A. (*with* Abrahamson, Karl; Fellows, Michael R.; Moret, Bernard M. E.) Constructive complexity. Combinatorics and theoretical computer science (Washington, DC, 1989). *Discrete Appl. Math.* **34** (1991), *no.* 1-3, 3–16. (Lane Hemaspaandra) **93a:68042** 68Q15

Langtangen, Hans Petter Stochastic breakthrough time analysis of an enhanced oil recovery process. (English summary) *SIAM J. Sci. Statist. Comput.* **13** (1992), *no.* 6, 1394–1417. 65C20 (65U05)

Lani-Wayda, Bernhard (*with* Ivanov, Anatolii Fiodorovich; Walther, Hans-Otto) Unstable hyperbolic periodic solutions of differential delay equations. (English summary) *Recent trends in differential equations*, 301–316, *World Sci. Ser. Appl. Anal.*, 1, *World Sci. Publishing, River Edge, NJ*, 1992. (John G. Milton) **93h:34125** 34K15 (34K20, 58F32)

movahedi-Lankarani, H. *see* **Movahedi-Lankarani, H.**

Lannes, Jean Sur les espaces fonctionnels dont la source est le classifiant d'un p-groupe abélien élémentaire. [Function spaces whose source is the classifying space of an elementary abelian p-group] With an appendix by Michel Zisman. *Inst. Hautes Études Sci. Publ. Math. No.* 75 (1992), 135–244. (Haynes R. Miller) **93j:55019** 55P99 (55M35, 55R35, 55S10, 55T15)

— (*with* Goerss, Paul G.; Morel, Fabien) Vecteurs de Witt non commutatifs et représentabilité de l'homologie modulo p. [Noncommutative Witt vectors and representability of homology modulo p] *Invent. Math.* **108** (1992), *no.* 1, 163–227. (Edgar H. Brown, Jr.) **93e:55014** 55P65 (55N99, 55P42)

Lano, Kevin Intuitionistic modal logic and set theory. *J. Symbolic Logic* **56** (1991), *no.* 2, 497–516. (Siegfried Gottwald) **93b:03108** 03F55 (03B45, 03E70, 03E72)

— Fuzzy sets and residuated logic. *Fuzzy Sets and Systems* **47** (1992), *no.* 2, 203–220. (Summary) **93b:03089** 03E70 (03E72)

— Formal frameworks for approximate reasoning. (English summary) *Fuzzy Sets and Systems* **51** (1992), *no.* 2, 131–146. (Jian Ming Gao) **93i:03030** 03B52 (03B45, 03E72, 68T30)

— The intuitionistic alternative set theory. (English summary) *Ann. Pure Appl. Logic* **59** (1993), *no.* 2, 141–156. (Summary) **93h:03078** 03E70 (03F55, 03H05)

Lano, R. P. (*with* Rodgers, V. G. J.) Applications of W algebras to BF theories, QCD and 4D gravity. *Modern Phys. Lett. A* **7** (1992), *no.* 19, 1725–1736. (Marc Henneaux) **93i:81265** 81T50 (81R10, 81V05, 81V17, 83C45)

Lansbury, A. N. (*with* Thompson, J. M. T.; Stewart, H. Bruce) Basin erosion in the twin-well Duffing oscillator: two distinct bifurcation scenarios. (English summary) *Internat. J. Bifur. Chaos Appl. Sci. Engrg.* **2** (1992), *no.* 3, 505–532. (Remo Badii) **93j:34048** 34C15 (34C23, 34C37, 34D45, 58F12, 70K50)

Lanski, Charles Lie ideals and central identities with derivation. (English summary) *Canad. J. Math.* **44** (1992), *no.* 3, 553–560. (Summary) **93h:16069** 16W25 (16N60)

— Derivations nilpotent on subsets of prime rings. *Comm. Algebra* **20** (1992), *no.* 5, 1427–1446. (Martha K. Smith) **93a:16030** 16W25 (16W10)

— An identity for matrix rings with involution. (English summary) *Linear Algebra Appl.* **174** (1992), 91–97. (William H. Gustafson) **93f:15009** 15A24 (16W10)

— Quadratic central polynomials with derivation and involution. *Pacific J. Math.* **155** (1992), *no.* 1, 111–127. (Louis Rowen) **93k:16046** 16R50 (16N60)

— An Engel condition with derivation. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 3, 731–734. (Miguel Ferrero) **93i:16050** 16W25 (16N60)

Lanteri, Antonio (*with* Andreatta, M.) On projective surfaces arising from an adjunction process. *Japan. J. Math.* (*N.S.*) **17** (1991), *no.* 2, 285–298. (Jonathan M. Wahl) **93f:14018** 14J10 (14J26)

— (*with* Maeda, Hidetoshi) Adjoint bundles of ample and spanned vector bundles on algebraic surfaces. *J. Reine Angew. Math.* **433** (1992), 181–199. (Takao Fujita) **93i:14037** 14J60 (14C20, 14J25)

— *see also* **Wiśniewski, Jarosław A., 93a:14018** *and* **Geometry of complex projective varieties, 93m:14001**

Lantz, David (*with* Heinzer, William J.; Shah, Kishor) The Ratliff-Rush ideals in a Noetherian ring. *Comm. Algebra* **20** (1992), *no.* 2, 591–622. (L. J. Ratliff, Jr.) **93c:13002** 13A15 (13C13)

— (*with* Heinzer, William J.; Johnston, Bernard L.; Shah, Kishor) The Ratliff-Rush ideals in a Noetherian ring: a survey. *Methods in module theory* (*Colorado Springs, CO*, 1991), 149–159, *Lecture Notes in Pure and Appl. Math.*, 140, *Dekker, New York*, 1993. (L. J. Ratliff, Jr.) **93k:13004** 13A15 (13C99, 13D40)

— (*with* Gilmer, Robert; Heinzer, William J.) The Noetherian property in rings of integer-valued polynomials. *Trans. Amer. Math. Soc.* **338** (1993), *no.* 1, 187–199. (Jean-Luc Chabert) **93j:13027** 13G05 (13B22, 13B25, 13E05)

Lanusse, P. (*with* Oustaloup, A.) New trends in CRONE control: generalized template and complex noninteger derivation. (English summary) *Mathematics of the analysis and design of process control* (*Dublin*, 1991/*Lille*, 1991), 395–407, *North-Holland, Amsterdam*, 1992. (*see* **93g:93004**) 93C85

Lanza, Antonio Multigrid in general relativity. II. Kerr spacetime. *Classical Quantum Gravity* **9** (1992), *no.* 3, 677–696. (Summary) **93b:83044** 83C57 (83–08)

Lanza de Cristoforis, Massimo Properties and pathologies of the composition and inversion operators in Schauder spaces. (Italian summary) *Rend. Accad. Naz. Sci. XL Mem. Mat.* (5) **15** (1991), 93–109. (P. P. Zabreiko) **93d:47062** 47B38 (47H30)

— (*with* Antman, Stuart S.) The large deformation of non-linearly elastic shells in axisymmetric flows. (English and French summaries) *Ann. Inst. H. Poincaré Anal. Non Linéaire* **9** (1992), *no.* 4, 433–464. (Frank Benkert) **93k:73066** 73K70 (35Q72, 73G05, 73K15, 76B99)

— A note on a continuation principle for compact perturbations of the identity. *Differential Integral Equations* **5** (1992), *no.* 4, 817–820. (Summary) **93d:47115** 47H15 (47H11, 58C30)

Lanzara, Flavia Theory and applications of intermediate operators: general results. I. (Italian. English summary) *Atti Accad. Naz. Lincei Cl. Sci. Fis. Mat. Natur. Rend. Lincei* (9) *Mat. Appl.* **3** (1992), *no.* 2, 79–101. (Seymour Goldberg) **93i:47111** 47N20 (35Q72, 47A50, 49R20)

— Theory and applications of intermediate operators. II. Elastostatics with discontinuous coefficients, the problem of displacements. (Italian. English and Italian summaries) *Atti Accad. Naz. Lincei Cl. Sci. Fis. Mat. Natur. Rend. Lincei* (9) *Mat. Appl.* **3** (1992), *no.* 3, 149–171. (Summary) **93i:47112** 47N20 (35Q72, 73C99)

Laoues, M. Linear operators in Clifford algebras. *Lett. Math. Phys.* **23** (1991), *no.* 4, 325–331. (Pierre Anglès) **93g:15019** 15A66

La Palme Reyes, Marie (*with* Reyes, Gonzalo E.) A Boolean-valued version of Gupta's semantics. (English summary) *Logique et Anal.* (*N.S.*) **32** (1989), *no.* 127-128, 247–265. 03B65 (03B45)

— (*with* Reyes, Gonzalo E.) Montague's semantics for intensional logic. (English summary) *Logique et Anal.* (*N.S.*) **32** (1989), *no.* 127-128, 319–335. 03B45 (03B65)

LaPaugh, Andrea S. (*with* Lipton, Richard J.; Sandberg, Jonathan S.) How to store a triangular matrix. (English summary) *IEEE Trans. Comput.* **41** (1992), *no.* 7, 896–899. (Summary) **93e:68016** 68P20 (11B25, 11J99)

san saturio Lapeña, María Eugenia *see* **San Saturio Lapeña, María Eugenia**

Lapeyre, B. (*with* Lamberton, Damien) Probabilités numériques et théorie des options. [Numerical probability and the theory of options] *Probabilités numériques*, 180–186, *Collect. Didact.*, 10, *INRIA, Rocquencourt*, 1992. (*see* **93k:65002**) 65U05

Lapidus, Michel L. Spectral and fractal geometry: from the Weyl-Berry conjecture for the vibrations of fractal drums to the Riemann zeta-function. *Differential equations and mathematical physics* (*Birmingham, AL*, 1990), 151–181, *Math. Sci. Engrg.*, 186, *Academic Press, Boston, MA*, 1992. (Alejandro Uribe) **93f:58239** 58G25 (11M26, 28A80, 35J25, 35P20, 58G18, 58G26)

— (*with* Pomerance, Carl) The Riemann zeta-function and the one-dimensional Weyl-Berry conjecture for fractal drums. (English summary) *Proc. London Math. Soc.* (3) **66** (1993), *no.* 1, 41–69. (Robert Brooks) **93k:58217** 58G18 (11M06, 35P05, 47F05, 58G25)

Lapin, S. V. Piecewise-constant stabilization of systems that are linear with respect to control. (Russian. Russian summary) *Avtomat. i Telemekh.* **1992,** *no.* 6, 37–45; *trans-*

lation in Automat. Remote Control **53** (1992), *no.* 6, *part* 1, 816–822. (Summary) **93g:93076** 93D15

— (*with* Egupov, N. D.) Analysis of continuous time-varying nonlinear systems using block-pulse expansions. (English summary) *Internat. J. Systems Sci.* **23** (1992), *no.* 7, 1201–1212. 93C10 (93C50)

— (*with* Egupov, N. D.) Determinant and statistical analysis of linear time-varying systems via block-pulse functions. (English summary) *Internat. J. Systems Sci.* **23** (1992), *no.* 7, 1213–1227. 93C05 (93E30)

Laporte, Gilbert (*with* Eiselt, Horst A.; Gendreau, Michel) Location of facilities on a network subject to a single-edge failure. *Networks* **22** (1992), *no.* 3, 231–246. (Summary) **93b:90039** 90B80 (05C35, 05C85, 90B10, 90B25)

— (*with* Gendreau, Michel; Hertz, Alain) New insertion and postoptimization procedures for the traveling salesman problem. (English summary) *Oper. Res.* **40** (1992), *no.* 6, 1086–1094. 90C10 (90C27)

— (*with* Eiselt, Horst A.) The existence of equilibria in the 3-facility Hotelling model in a tree. (English summary) *Transportation Sci.* **27** (1993), *no.* 1, 39–43. (Summary) **93m:90047** 90B80

Lappan, Peter (*with* Aulaskari, Rauno) On BMOA and additive automorphic functions. Analyse complexe (Bucharest, 1989). *Rev. Roumaine Math. Pures Appl.* **36** (1991), *no.* 7-8, 407–412. (T. A. Metzger) **93b:30038** 30F35 (30D45)

— (*with* Chen, Huai Hui) An integral bound for the spherical derivative. (English summary) *Analysis* **12** (1992), *no.* 3-4, 233–247. (David Minda) **93h:30052** 30D45

Lappas, Dionyssios 2-ended manifolds and locally splitting actions of abelian groups. (English summary) *Tokyo J. Math.* **15** (1992), *no.* 2, 437–440. (Francisco Gómez Ruiz) **93j:53037** 53C12 (57S15)

de La Pradelle, Arnaud Sur les perturbations d'espaces harmoniques. [On the perturbations of harmonic spaces] *Acad. Roy. Belg. Bull. Cl. Sci.* (6) **1** (1990), *no.* 6-9, 201–212. (Klaus Janssen) **93d:31010** 31D05

— (*with* Feyel, Denis) Capacités gaussiennes. (English summary) [Gaussian capacities] *Ann. Inst. Fourier* (*Grenoble*) **41** (1991), *no.* 1, 49–76. (Hélène Airault) **93b:60174** 60J45 (28A12, 31C15, 60B11, 60H07)

— (*with* Feyel, Denis) Opérateurs linéaires et espaces de Sobolev sur l'espace de Wiener. (English summary) [Linear operators and Sobolev spaces on Wiener space] *C. R. Acad. Sci. Paris Sér. I Math.* **313** (1991), *no.* 11, 727–729. (T. V. Panchapagesan) **93b:46066** 46E50 (46G12, 47N99)

— (*with* Feyel, Denis) Sur les processus browniens de dimension infinie. (English and French summaries) [Infinite-dimensional Brownian martingales] *C. R. Acad. Sci. Paris Sér. I Math.* **316** (1993), *no.* 2, 149–152. (Summary) **93j:60115** 60J65 (60H05)

— (*with* Feyel, Denis) Démonstration géométrique d'une loi de tout ou rien. (English and French summaries) [A geometric proof of a zero-one law] *C. R. Acad. Sci. Paris Sér. I Math.* **316** (1993), *no.* 3, 229–232. (Summary) **93k:31009** 31C45 (46G12, 60H07)

Lapsa, P. M. Resolution-limited measure and dimension. (English summary) *Appl. Math. Comput.* **52** (1992), *no.* 1, 1–27. (Summary) **93h:28012** 28A80

Lapshin, A. L. Asymptotic properties of a random chain with aftereffect. (Russian) *Mathematical analysis* (*Russian*), 49–55, *Ross. Gos. Ped. Univ., Leningrad*, 1991. (*see* **93d:00034**) 60J10 (15A18)

Laptev, A. A. Asymptotics of the negative discrete spectrum of a class of Schrödinger operators with large coupling constant. *Proc. Amer. Math. Soc.* **119** (1993), *no.* 2, 481–488. (Hideo Tamura) **93k:35199** 35P20 (35J10, 47F05)

Laptev, B. L. *see* **Norden, A. P., 93m:01080**

Lapushkin, S. S. Regularization of a boundary value problem for the Schrödinger equation with discontinuous perturbation. (Russian. Russian summary) *Boundary value problems* (*Russian*), 173–177, *Perm. Politekh. Inst., Perm'*, 1991. (*see* **93m:00017**) 35Q55

palencia de Lara, C. *see* **Palencia de Lara, C.**

neumann Lara, Víctor *see* **Neumann Lara, Víctor**

Laradji, A. (*with* Pawlikowski, Janusz) On a problem of saturation of certain reduced direct products. *Colloq. Math.* **62** (1991), *no.* 2, 189–191. (Paul Bankston) **93j:03018** 03C20 (03C05, 03C50, 08A45)

Laraudogoitia, Jon Perez On paradoxes in naive set theory. *Logique et Anal.* (*N.S.*) **32** (1989), *no.* 127-128, 241–245. 03E30 (03A05)

Larbani, Mussa (*with* Plotnikov, V. A.) Justification of a partial averaging scheme for systems with slow and fast variables. (Russian. Russian summary) *Differentsial'nye Uravneniya* **28** (1992), *no.* 3, 428–432, 547; *translation in Differential Equations* **28** (1992), *no.* 3, 360–364. (Summary) **93g:34067** 34C29 (34E15)

ben Larbi, Miloud *see* **Ben Larbi, Miloud**

Larcher, Gerhard Bemerkung zur Diskrepanz einer Klasse von Folgen. [Remark on the discrepancy of a class of sequences] *Anz. Österreich. Akad. Wiss. Math.-Natur. Kl.* **128** (1991), 1–5 (1992). (Robert F. Tichy) **93j:11050** 11K38

— On the cube-discrepancy of Kronecker-sequences. *Arch. Math.* (*Basel*) **57** (1991), *no.* 4, 362–369. (J. Patrick Lambert) **93a:11064** 11K38

Larcombe, P. J. On the control of a two-dimensional multi-link inverted pendulum: the form of the dynamic equations from choice of coordinate system. (English summary) *Internat. J. Systems Sci.* **23** (1992), *no.* 12, 2265–2289. (Bozhidar Cheshankov) **93m:93063** 93C85 (70Q05)

— (*with* Torsney, Ben) On the control of a two-dimensional uniform multi-link inverted pendulum: the enumeration and identification of equilibrium states. (English summary) *Internat. J. Systems Sci.* **23** (1992), *no.* 12, 2291–2308. (Bozhidar Cheshankov) **93m:93064** 93C85 (70Q05)

Lardner, R. W. (*with* Das, S. K.) Variational parameter estimation for a two-dimensional numerical tidal model. *Internat. J. Numer. Methods Fluids* **15** (1992), *no.* 3, 313–327. 86A05 (76M20)

Larecki, Wiesław Equations of heat transport based on approximate kinetic description of phonon processes. *Thermodynamics and kinetic theory* (*Mądralin*, 1990), 79–92, *Ser. Adv. Math. Appl. Sci.*, 12, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93a:82002**) 82C10

— *see also* **Thermodynamics and kinetic theory, 93a:82002**

Laredo, Catherine (*with* Istas, Jacques) Estimation de la fonction de covariance d'un processus gaussien stationnaire par méthodes d'échelles. (English and French summaries) [Estimation of the covariance function of a Gaussian stationary process using scaling methods] *C. R. Acad. Sci. Paris Sér. I Math.* **316** (1993), *no.* 5, 495–498. (Summary) **93j:62100** 62G05 (62M05)

Larher, Annie (*with* Gras, Régis) L'implication statistique, une nouvelle méthode d'analyse de données. (English and French summaries) [Statistical inference, a new method of data analysis] *Math. Inform. Sci. Humaines No.* 120 (1992), 5–31. 62H99 (62P15)

LaRiccia, V. N. (*with* Eubank, R. L.) Asymptotic comparison of Cramér-von Mises and nonparametric function estimation techniques for testing goodness-of-fit. (English summary) *Ann. Statist.* **20** (1992), *no.* 4, 2071–2086. (Arup Bose) **93k:62108** 62G10 (62E20)

Lari-Lavassani, Ali (*with* Lu, Yung-Chen) On the stability of equivariant bifurcation problems and their unfoldings. *Canad. Math. Bull.* **35** (1992), *no.* 2, 237–246. (Jean-Jacques Gervais) **93f:58021** 58C27

Larin, A. A. On the boundedness of powers of selfadjoint extensions of singular elliptic operators acting in weighted classes. (Russian. Russian summary) *Differentsial'nye Uravneniya* **28** (1992), *no.* 3, 528–529, 551. (Summary) **93i:47072** 47F05 (35J70, 47B25)

Larin, S. V. Groups with the maximality condition. (Russian) *Mat. Zametki* **51** (1992), *no.* 3, 58–62, 144; *translation in Math. Notes* **51** (1992), *no.* 3-4, 262–265. (From the introduction) **93d:20056** 20E15 (20F22)

Larin, V. B. A procedure for refining the matrix signum function. *Soviet J. Automat. Inform. Sci.* **23** (1990), *no.* 6, 23–25 (1992); *translated from Avtomatika* **1990,** *no.* 6, 25–27, 93 (*Russian. English summary*). (Summary) **93b:15005** 15A06

— (*with* Antonyuk, E. Ya.; Pedchenko, A. M.) An algorithm for the choice of generalized coordinates. (Russian) *Akad. Nauk Ukrainy Inst. Mat. Preprint* **1991,** *no.* 52, 36 *pp.* (Summary) **93b:70015** 70G10 (70B15, 70F99, 70Q05)

— (*with* Bordyug, B. A.) An algorithm for solving Riccati equations arising in H^∞-optimization problems. *Soviet J. Automat. Inform. Sci.* **24** (1991), *no.* 3, 40–48 (1992); *translated from Avtomatika* **1991,** *no.* 3, 42–49, 97 (*Russian. English summary*). (Morishige Kimura) **93i:93050** 93B40 (34A50, 93C55)

— Construction of a nonnegative-definite solution of a Lyapunov equation. (Russian) *Dokl. Akad. Nauk SSSR* **322** (1992), *no.* 3, 469–471; *translation in Soviet Math. Dokl.* **45** (1992), *no.* 1, 129–131. (Mihail Voicu) **93e:15006** 15A24 (15A23, 93D05)

— Calculation of the square root of a positive-definite matrix. *J. Comput. Systems Sci. Internat.* **30** (1992), *no.* 6, 141–145; *translated from Izv. Ross. Akad. Nauk Tekhn. Kibernet.* **1992,** *no.* 1, 210–213 (*Russian. Russian summary*). (Introduction) **93j:65061** 65F30

— Optimization in a Hardy space and a problem of parametrization of controllers (a survey). (Russian. English and Ukrainian summaries) *Prikl. Mekh.* **28** (1992), *no.* 2, 3–20; *translation in Internat. Appl. Mech.* **28** (1992), *no.* 2, 67–84. (Petko Petkov) **93g:93049** 93C35 (73K50, 93-02, 93B50, 93B51)

Lario, J. C. (*with* Bayer, P.) On Galois representations defined by torsion points of modular elliptic curves. (English summary) *Compositio Math.* **84** (1992), *no.* 1, 71–84. (Nigel Boston) **93j:11031** 11G05 (11F11, 11F80)

Larionov, E. A. Spectral properties of quasihyperbolic pencils. (Russian) *Sibirsk. Mat. Zh.* **32** (1991), *no.* 5, 182–186, 210; *translation in Siberian Math. J.* **32** (1991), *no.* 5, 884–888 (1992). (L. Rodman) **93b:47026** 47A56 (34G10, 47A10, 47A70)

ongay-Larios, F. *see* **Ongay-Larios, F.**

Lar'kin, N. A. On the theory of the Lin-Reissner-Tsien equation. (Russian) *Nonclassical equations and equations of mixed type* (*Russian*), 129–140, *Akad. Nauk SSSR Sibirsk. Otdel., Inst. Mat., Novosibirsk*, 1990. (*see* **93b:35002**) 35Q35 (76H05)

— ★ Гладкие решения уравнений трансзвуковой газодинамики. (Russian) [Smooth solutions of equations of transonic gas dynamics] "*Nauka*" *Sibirsk. Otdel., Novosibirsk*, 1991. 145 *pp. ISBN* 5-02-029345-8 (Aleksandr A. Papin) **93d:35169** 35Q99 (35M10, 76H05, 76N15, 76N20)

Larman, D. G. (*with* Bárány, Imre) A colored version of Tverberg's theorem. *J. London Math. Soc.* (2) **45** (1992), *no.* 2, 314–320. (Béla Uhrin) **93h:52008** 52A37 (52A35)

de Larminat, P. A survey on robust control. (English summary) *Mathematics of the analysis and design of process control* (*Dublin*, 1991/*Lille*, 1991), 3–23, *North-Holland, Amsterdam*, 1992. (Summary) **93i:93003** 93-02 (93B36, 93D09)

Larmor, Joseph *see* **Warwick, Andrew, 93d:01036**

Larmore, Lawrence L. (*with* Chrobak, Marek) The server problem and on-line games. *On-line algorithms* (*New Brunswick, NJ*, 1991), 11–64, *DIMACS Ser. Discrete Math. Theoret. Comput. Sci.*, 7, *Amer. Math. Soc., Providence, RI*, 1992. (Yuri Nazarovich Sotskov) **93f:68040** 68Q25 (90D80)

— (*with* Chrobak, Marek) Generosity helps, or an 11-competitive algorithm for three servers. *Proceedings of the Third Annual ACM-SIAM Symposium on Discrete Algorithms* (*Orlando, FL*, 1992), 196–202, *ACM, New York*, 1992. (*see* **93h:68005**) 90B22 (68Q20)

Larose, Benoit A property of projective ordered sets. (English summary) *European J. Combin.* **13** (1992), *no.* 5, 371–378. (From the text) **93h:06003** 06A06

gómez-Larrañaga, José Carlos *see* **Gómez-Larrañaga, José Carlos**

Larraza, Andrés (*with* Denardo, Bruce; Putterman, Seth; Roberts, Paul H.) Nonlinear theory of localized standing waves. *Phys. Rev. Lett.* **69** (1992), *no.* 4, 597–600. (Summary) **93d:73034** 73D99 (35Q53, 73B99)

Larrea, B. (*with* Martínez de Lafuente, O.; Pérez-García, Carlos) Treatment of Rayleigh scattering via the Boltzmann-Fokker-Planck equation. Implementation in S_N codes. (Spanish. Spanish summary) *Proceedings of the XII Congress on Differential Equations and Applications/II Congress on Applied Mathematics* (*Spanish*) (*Oviedo*, 1991), 523–528, *Univ. Oviedo, Oviedo*, 1991. (*see* **93j:00009**) 82C80

Larrouturou, Bernard (*with* Berestycki, Henri; Roquejoffre, Jean-Michel) Mathematical investigation of the cold boundary difficulty in flame propagation theory. *Dynamical issues in combustion theory* (*Minneapolis, MN*, 1989), 37–61, *IMA Vol. Math. Appl.*, 35, *Springer, New York*, 1991. (Introduction) **93f:80016** 80A25 (35Q99)

— Mathematics contribute to the progress of combustion science. *Fluid dynamical aspects of combustion theory*, 251–267, *Pitman Res. Notes Math. Ser.*, 223, *Longman Sci. Tech., Harlow*, 1991. (J. D. P. Donnelly) **93i:80005** 80A25 (80-08, 80A32)

— (*with* Berestycki, Henri) Quelques aspects mathématiques de la propagation des flammes prémélangées. (English summary) [Some mathematical aspects of premixed flame propagation] *Nonlinear partial differential equations and their applications. Collège de France Seminar, Vol. X* (*Paris*, 1987–1988), 65–129, *Pitman Res. Notes Math. Ser.*, 220, *Longman Sci. Tech., Harlow*, 1991. (Riccardo Ricci) **93a:80008** 80A25 (35Q99)

— (*with* Berestycki, Henri; Roquejoffre, Jean-Michel) Stability of travelling fronts in a model for flame propagation. I. Linear analysis. *Arch. Rational Mech. Anal.* **117** (1992), *no.* 2, 97–117. (Summary) **93g:80008a** 80A25 (35B35, 35K55)

— (*with* Chargy, D.; Abgrall, Rémi; Fezoui, L.) Conservative numerical schemes for multi-component inviscid flows. *Rech. Aérospat. (English Edition)* **1992**, *no.* 2, 61–80; *translated from Rech. Aérospat.* **1992**, *no.* 2, 61–80 (*French. English and French summaries*). (Summary) **93g:76083** 76M20

Larsen, A. L. Charged cosmic string near a black hole. *Phys. Lett. B* **283** (1992), *no.* 1-2, 47–51. (Summary) **93d:83047** 83C57 (83F05)

— A note on dispersive versus nondispersive strings. (English summary) *Classical Quantum Gravity* **10** (1993), *no.* 3, L35–L38. 81T30

Larsen, Christian (*with* Tind, Jørgen) Lagrangean duality for facial programs with applications to integer and complementarity problems. (English summary) *Oper. Res. Lett.* **11** (1992), *no.* 5, 293–302. (N. I. Yanev) **93h:90087** 90C30 (90C10, 90C27)

Larsen, Edward W. (*with* De Barros, Ricardo C.) A numerical method for multigroup slab-geometry discrete ordinates problems with no spatial truncation error. *Transport Theory Statist. Phys.* **20** (1991), *no.* 5-6, 441–462. (Luisa Arlotti) **93b:82077** 82C80 (82C70)

— (*with* Miften, M. M.) The quasi-diffusion method for solving transport problems in planar and spherical geometries. (English summary) Frontiers in numerical transport theory (College Station, TX, 1991). *Transport Theory Statist. Phys.* **22** (1993), *no.* 2-3, 165–186. (Summary) **93k:82061** 82C70 (82–08, 82C80)

Larsen, Jens Chr. Dynamic properties of mass action kinetic systems. *Acta Appl. Math.* **25** (1991), *no.* 2, 105–125. (Summary) **93f:80023** 80A30 (34C99, 58F10, 58F40)

— On the k-jet degeneracy of singular points. (English summary) *Dynamics Stability Systems* **7** (1992), *no.* 2, 91–109. (Frank Hubbuch) **93i:58116** 58F14

— Singular semi-Riemannian geometry. *J. Geom. Phys.* **9** (1992), *no.* 1, 3–23. (Marek Kossowski) **93e:53023** 53B30 (53A40, 53C50)

Larsen, Kim G. (*with* Liu, Xin Xin) Compositionality through an operational semantics of contexts. *J. Logic Comput.* **1** (1991), *no.* 6, 761–795. (Gabriel Ciobanu) **93h:68087** 68Q60 (03B70, 68Q10, 68Q55)

— (*with* Milner, Robin) A compositional protocol verification using relativized bisimulation. *Inform. and Comput.* **99** (1992), *no.* 1, 80–108. 68Q60

— (*with* Boudol, Gérard) Graphical versus logical specifications. (English summary) Fifteenth Colloquium on Trees in Algebra and Programming (CAAP '90) (Copenhagen, 1990). *Theoret. Comput. Sci.* **106** (1992), *no.* 1, 3–20. (Summary) **93i:68127** 68Q60 (03B70, 68Q10)

Larsen, Michael Jeffrey Two-dimensional systems of Galois representations. (English summary) *p-adic methods in number theory and algebraic geometry*, 163–169, *Contemp. Math.*, 133, *Amer. Math. Soc., Providence, RI*, 1992. (Summary) **93g:11042** 11F33 (11F80, 11F85, 11R32)

— Arithmetic compactification of some Shimura surfaces. *The zeta functions of Picard modular surfaces*, 31–45, *Univ. Montréal, Montreal, PQ*, 1992. (V. Kumar Murty) **93d:14037** 14G35 (14J10, 14K10)

— Homology of maximal orders in central simple algebras. *Comment. Math. Helv.* **67** (1992), *no.* 4, 613–634. (Lars Kadison) **93i:16018** 16E40 (16H05)

— (*with* Pink, Richard) On l-independence of algebraic monodromy groups in compatible systems of representations. *Invent. Math.* **107** (1992), *no.* 3, 603–636. (Jean-Yves Étesse) **93h:22031** 22E50 (11F80, 20G25)

— (*with* Lindenstrauss, A.) Cyclic homology of Dedekind domains. (English summary) *K-Theory* **6** (1992), *no.* 4, 301–334. (Bernhard Köck) **93k:19003** 19D55 (13D03)

— *see also* **Chai, Ching-Li, 93k:14058**

Larson, D. *see* **Larson, David R.**

Larson, D. J. (*with* Hewett, D. W.; Doss, S.) Solution of simultaneous partial differential equations using dynamic ADI: solution of the streamlined Darwin field equations. *J. Comput. Phys.* **101** (1992), *no.* 1, 11–24. 65P05 (76X05, 78A25)

Larson, David R. (*with* Kaftal, V.; Weiss, Gary) Quasitriangular subalgebras of semifinite von Neumann algebras are closed. *J. Funct. Anal.* **107** (1992), *no.* 2, 387–401. (Alan Hopenwasser) **93g:46060** 46L10 (47D25)

Larson, Everett G. (*with* Dukes, Phillip R.) The evolution of our probability image for the spin orientation of a spin-$\frac{1}{2}$- ensemble as measurements are made on several members of the ensemble—connections with information theory and Bayesian statistics. *Maximum entropy and Bayesian methods (Laramie, WY, 1990)*, 181–189, *Fund. Theories Phys.*, 43, *Kluwer Acad. Publ., Dordrecht*, 1991. (*see* **93b:00011**) 81P15

Larson, Jean A. (*with* Erdős, Paul) Matchings from a set below to a set above. Directions in infinite graph theory and combinatorics (Cambridge, 1989). *Discrete Math.* **95** (1991), *no.* 1-3, 169–182. (Andreas Blass) **93a:04001** 04A20 (03E05, 05C70)

— (*with* Drake, David A.) The nonexistence of certain projective planes of order 15. (English summary) *Experiment. Math.* **1** (1992), *no.* 1, 65–69. (J. C. Fisher) **93h:51013** 51E15 (05B25, 51E21)

Larson, Lee M. Approximate smoothness and Baire* 1. *Acta Math. Hungar.* **57** (1991), *no.* 3-4, 197–200. (Marek Balcerzak) **93a:26004** 26A21 (26A15, 54C10, 54C30)

— (*with* Ciesielski, Krzysztof) Various continuities with the density, $\mathcal{I}$-density and ordinary topologies on **R**. *Real Anal. Exchange* **17** (1991/92), *no.* 1, 183–210. (Władysław Wilczyński) **93b:26006** 26A21 (54C05, 54C30)

— (*with* Ciesielski, Krzysztof) The Peano curve and $\mathcal{I}$-approximate differentiability. *Real Anal. Exchange* **17** (1991/92), *no.* 2, 608–621. (Władysław Wilczyński) **93g:26003** 26A15 (26A24, 26A30)

— (*with* Ciesielski, Krzysztof) Level sets of density continuous functions. *Proc. Amer. Math. Soc.* **116** (1992), *no.* 4, 963–969. (From the introduction) **93d:26004** 26A21

— (*with* Ciesielski, Krzysztof; Ostaszewski, Krzysztof) Semigroups of $\mathcal{I}$-density continuous functions. *Semigroup Forum* **45** (1992), *no.* 2, 191–204. (Władysław Wilczyński) **93i:26004** 26A24 (20M20, 26A15, 54C35)

— (*with* Ciesielski, Krzysztof) Refinements of the density and $\mathcal{I}$-density topologies. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 2, 547–553. (William Eames) **93g:26018** 26A99 (54H99)

Larson, Richard G. (*with* Towber, Jacob) Two dual classes of bialgebras related to the concepts of "quantum group" and "quantum Lie algebra". *Comm. Algebra* **19** (1991), *no.* 12, 3295–3345. (Dmitrii I. Gurevich) **93b:16070** 16W30 (17B37, 18D10)

— (*with* Grossman, Robert) Symbolic computation of derivations using labelled trees. *J. Symbolic Comput.* **13** (1992), *no.* 5, 511–523. (A. K. Lenstra) **93f:68050** 68Q40

Larson, Suzanne (*with* Henriksen, Melvin; Smith, F. A.) When is every order ideal a ring ideal? *Comment. Math. Univ. Carolin.* **32** (1991), *no.* 3, 411–416. (James J. Madden) **93c:06024** 06F25 (13C05, 16D15, 16W80)

Larsson, Stig (*with* Asadzadeh, Mohammad; Kumlin, Peter) The discrete ordinates method for the neutron transport equation in an infinite cylindrical domain. (English summary) *Math. Models Methods Appl. Sci.* **2** (1992), *no.* 3, 317–338. (Edward W. Larsen) **93i:82064** 82C70 (65R20, 82–04)

Larsson, T. A. Conformal fields: a class of representations of Vect(N). (English summary) *Internat. J. Modern Phys. A* **7** (1992), *no.* 26, 6493–6508. (Janusz Grabowski) **93h:17053** 17B66 (17B81, 81R10)

— Central and noncentral extensions of multi-graded Lie algebras. *J. Phys. A* **25** (1992), *no.* 5, 1177–1184. (Eric J. Raiten) **93c:17047** 17B68 (17B67, 81R10)

— Universal solutions to the simplex equations. (English summary) *Nuclear Phys. B* **380** (1992), *no.* 3, 575–587. (Dmitrii I. Gurevich) **93i:82035** 82B23 (81R50)

Larsson, Torbjörn (*with* Hellstrand, Johan; Migdalas, Athanasios) A characterization of the uncapacitated network design polytope. (English summary) *Oper. Res. Lett.* **12** (1992), *no.* 3, 159–163. (Summary) **93f:90061** 90B10 (90C27, 90C35)

Lascar, B. (*with* Lascar, Richard) Propagation des singularités pour des opérateurs dont la matrice fondamentale contient des valeurs propres non purement imaginaires. [Propagation of singularities for operators whose fundamental matrix contains non-purely imaginary eigenvalues] *Comm. Partial Differential Equations* **17** (1992), *no.* 3-4, 437–446. (Todor V. Gramchev) **93k:35008** 35A20 (35B65, 35S99, 58G17)

Lascar, Daniel Les automorphismes d'un ensemble fortement minimal. (English summary) [The automorphisms of a strongly minimal set] *J. Symbolic Logic* **57** (1992), *no.* 1, 238–251. (Anand Pillay) **93c:03042** 03C45 (03C15, 20B27)

Lascar, Richard Schrödinger equation and propagation of singularities for a class of nonreal pseudo-differential equations. (English and French summaries) *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 10, 1045–1049. (Peter R. Popivanov) **93k:35284** 35S05 (35A27)

— (*with* Lascar, B.) Propagation des singularités pour des opérateurs dont la matrice fondamentale contient des valeurs propres non purement imaginaires. [Propagation of singularities for operators whose fundamental matrix contains non-purely imaginary eigenvalues] *Comm. Partial Differential Equations* **17** (1992), *no.* 3-4, 437–446. (Todor V. Gramchev) **93k:35008** 35A20 (35B65, 35S99, 58G17)

Lascoux, Alain Wronski's factorization of polynomials. *Topics in algebra, Part* 2 (*Warsaw*, 1988), 379–386, *Banach Center Publ.*, 26, *Part* 2, *PWN, Warsaw*, 1990. (A. O. Morris) **93d:05154** 05E05 (01A55)

— (*with* Schützenberger, Marcel-Paul) Décompositions dans l'algèbre des différences divisées. (English summary) [Decompositions in the algebra of divided differences] *Discrete Math.* **99** (1992), *no.* 1-3, 165–179. (Louis Solomon) **93c:20030** 20C30 (05E15, 14M15, 20G05)

— (*with* Akyıldız, Ersan; Pragacz, Piotr) Cohomology of Schubert subvarieties of GL_n/P. *J. Differential Geom.* **35** (1992), *no.* 3, 511–519. (V. L. Popov) **93g:14058** 14M15

— (*with* Kerber, Adalbert; Kohnert, Axel) SYMMETRICA, an object oriented computer-algebra system for the symmetric group. (English summary) *J. Symbolic Comput.* **14** (1992), *no.* 2-3, 195–203. (Summary) **93g:68062** 68Q40 (05E10, 20C30, 20C40)

— (*with* Leclerc, Bernard; Thibon, Jean-Yves) Fonctions de Hall-Littlewood et polynômes de Kostka-Foulkes aux racines de l'unité. (English and French summaries) [Hall-Littlewood functions and Kostka-Foulkes polynomials at roots of unity] *C. R. Acad. Sci. Paris Sér. I Math.* **316** (1993), *no.* 1, 1–6. (Summary) **93j:05168** 05E10

Lasdon, Leon (*with* Smith, Stuart) Solving large sparse nonlinear programs using GRG. (English summary) *ORSA J. Comput.* **4** (1992), *no.* 1, 2–15. 90C30

Lašhi, A. A. *see* **Lashkhi, A. A.**

Lashien, E. F. (*with* Abd El-Monsef, M. E.; Nasef, A. A.) On I-open sets and I-continuous functions. *Kyungpook Math. J.* **32** (1992), *no.* 1, 21–30. (Summary) **93c:54010** 54C10 (54D25, 54D30)

Lashkarizadeh-Bami, M. The L^∞-representation algebra of a foundation topological semigroup. (English summary) *Manuscripta Math.* **77** (1992), *no.* 2-3, 161–167. (Paul Milnes) **93j:43010** 43A30

— On various types of convergence of positive definite functions on foundation semigroups. *Math. Proc. Cambridge Philos. Soc.* **111** (1992), *no.* 2, 325–330. (Kelly McKennon) **93a:43006** 43A35

— (*with* Baker, John Walter) On the representations of certain idempotent topological semigroups. *Semigroup Forum* **44** (1992), *no.* 2, 245–254. (Bernard L. Madison) **93c:20106** 20M30 (06A12, 20M18)

— (*with* Baker, John Walter) The L^∞-representation algebra of an idempotent topological semigroup. *Semigroup Forum* **46** (1993), *no.* 1, 32–36. (M. Rajagopalan) **93m:22005** 22A20

Lashkevich, M. Yu. Bosonization of 2D conformal minimal-like field theories. (English summary) *Internat. J. Modern Phys. A* **7** (1992), *no.* 26, 6623–6637. (Hong Lu) **93i:81241** 81T40 (81R10)

Lashkhi, A. A. Lattices of subalgebras of solvable Lie algebras. *Proceedings of the International Conference on Algebra, Part* 2 (*Novosibirsk*, 1989), 69–89, *Contemp. Math.*, 131, *Part* 2, *Amer. Math. Soc., Providence, RI*, 1992. (Hans F. de Groote) **93j:17012** 17B30 (06C05)

Lasiecka, Irena (*with* Bartolomeo, Jerry; Triggiani, Roberto) Uniform exponential energy decay of Euler-Bernoulli equations by suitable boundary feedback operators. (Italian summary) *Atti Accad. Naz. Lincei Rend. Cl. Sci. Fis. Mat. Natur.* (8) **83** (1989), 121–128 (1990). (Sergei Alekseevich Ivanov) **93d:93046** 93C20 (35J25, 73K10, 73K50, 93D15)

— (*with* Triggiani, Roberto) Uniform stabilization of the wave equation with Dirichlet-feedback control without geometrical conditions. *Stabilization of flexible structures* (*Montpellier*, 1989), 62–108, *Lecture Notes in Control and Inform. Sci.*, 147, *Springer, Berlin*, 1990. (*see* **93c:93006**) 93D15 (93C20)

— (*with* Triggiani, Roberto) Further results on exact controllability of the Euler-Bernoulli equation with controls on the Dirichlet and Neumann boundary conditions. *Stabilization of flexible structures* (*Montpellier*, 1989), 226–234, *Lecture Notes in Control and Inform. Sci.*, 147, *Springer, Berlin*, 1990. (*see* **93c:93006**) 93B05 (93C20)

— Exponential stabilization, via Riccati operator, of hyperbolic systems with uncontrolled, unbounded perturbations. *Modelling and inverse problems of control for distributed parameter systems* (*Laxenburg*, 1989), 102–115, *Lecture Notes in Control and Inform. Sci.*, 154, *Springer, Berlin*, 1991. (*see* **93d:93006**) 93D15 (47N70, 93C20)

— (*with* Horn, Mary Ann) The Euler-Bernoulli plate is exactly controllable via bending moments only. *Optimal control of partial differential equations* (*Irsee*, 1990), 129–142,

Lecture Notes in Control and Inform. Sci., 149, *Springer, Berlin*, 1991. (Enrique Zuazua) **93j:35034** 35B37 (35Q72, 73K10, 73K50, 93B05)

— (*with* Triggiani, Roberto) Exact controllability and uniform stabilization of Kirchhoff plates with boundary control only on $\Delta w|_\Sigma$ and homogeneous boundary displacement. *Semigroup theory and evolution equations* (*Delft*, 1989), 267–294, *Lecture Notes in Pure and Appl. Math.*, 135, *Dekker, New York*, 1991. (Vilmos Komornik) **93e:93006** 93B05 (35B37, 73K10, 73K12, 73K50, 93C20, 93D15)

— (*with* Triggiani, Roberto) Regularity theory of hyperbolic equations with nonhomogeneous Neumann boundary conditions. II. General boundary data. *J. Differential Equations* **94** (1991), *no.* 1, 112–164. (Paul L. Davis) **93c:35016** 35B65 (35L20, 47N20)

— (*with* Triggiani, Roberto) Differential Riccati equations with unbounded coefficients: applications to boundary control/boundary observation hyperbolic problems. *Nonlinear Anal.* **17** (1991), *no.* 7, 655–682. (Angelo Favini) **93a:47083** 47N70 (34G20, 49K20, 93C20)

— (*with* Choudury, Gilbert) Optimal convergence rates for semidiscrete approximations of parabolic problems with nonsmooth boundary data. *Numer. Funct. Anal. Optim.* **12** (1991), *no.* 5-6, 469–485 (1992). (Dietmar Kröner) **93e:65134** 65N30 (65N12)

— Finite-dimensional compensator for flexible structures. *Boundary control and boundary variation* (*Sophia-Antipolis*, 1990), 253–271, *Lecture Notes in Control and Inform. Sci.*, 178, *Springer, Berlin*, 1992. (*see* **93b:49001**) 93C20 (93D15)

— (*with* Triggiani, Roberto) Uniform convergence of the solutions to Riccati equations arising in boundary/point control problems. *Stochastic theory and adaptive control* (*Lawrence, KS*, 1991), 285–305, *Lecture Notes in Control and Inform. Sci.*, 184, *Springer, Berlin*, 1992. (Vilmos Komornik) **93k:93057** 93C20 (34H05, 35B37, 47N20, 47N70)

— (*with* Triggiani, Roberto) Algebraic Riccati equations with unbounded input → solution operator: applications to boundary control for wave and plate problems. *System modelling and optimization* (*Zurich*, 1991), 530–538, *Lecture Notes in Control and Inform. Sci.*, 180, *Springer, Berlin*, 1992. (*see* **93e:90003**) 93C20 (49K20)

— (*with* Triggiani, Roberto) Uniform stabilization of the wave equation with Dirichlet or Neumann feedback control without geometrical conditions. *Appl. Math. Optim.* **25** (1992), *no.* 2, 189–224. (Enrique Zuazua) **93b:93099** 93D15 (35L05, 47N20, 93C20)

— (*with* Triggiani, Roberto) Optimal regularity, exact controllability and uniform stabilization of Schrödinger equations with Dirichlet control. *Differential Integral Equations* **5** (1992), *no.* 3, 521–535. (Hong Xing Zhou) **93d:93048** 93C20 (35B37, 47N70, 93B05, 93D15)

— (*with* Chen, Shu Ping) Feedback exact null controllability for unbounded control problems in Hilbert space. *J. Optim. Theory Appl.* **74** (1992), *no.* 2, 191–219. (Vera Winitzky de Spinadel) **93c:93013** 93B05 (47N70)

— Convergence rates for the approximations of the solutions to algebraic Riccati equations with unbounded coefficients: case of analytic semigroups. (English summary) *Numer. Math.* **63** (1992), *no.* 3, 357–390. (Fu Ming Ma) **93i:65088** 65M12 (34G20, 34H05, 93B40)

— (*with* Triggiani, Roberto) Riccati differential equations with unbounded coefficients and nonsmooth terminal condition—the case of analytic semigroups. *SIAM J. Math. Anal.* **23** (1992), *no.* 2, 449–481. (Summary) **93c:47090** 47N70 (34G10, 34H05, 35R20, 47D06, 93C40)

— (*with* Tătaru, Daniel) Uniform boundary stabilization of semilinear wave equation with nonlinear boundary damping. (English summary) *Mathematical theory of control* (*Bombay*, 1990), 233–254, *Lecture Notes in Pure and Appl. Math.*, 142, *Dekker, New York*, 1993. (Vilmos Komornik) **93k:93056** 93C20 (34H05, 35B37, 47N20, 47N30, 93D15)

— *see also* **Modelling and inverse problems of control for distributed parameter systems, 93d:93006**

jona-Lasinio, G. *see* **Jona-Lasinio, G.**

Laska, Eugene M. (*with* Tang, Dei-In; Meisner, Morris J.) Testing hypotheses about an identified treatment when there are multiple endpoints. (English summary) *J. Amer. Statist. Assoc.* **87** (1992), *no.* 419, 825–831. (Summary) **93g:62035** 62F03 (62P10)

Laskar, Jacques (*with* Froeschlé, Claude; Celletti, Alessandra) The measure of chaos by the numerical analysis of the fundamental frequencies. Application to the standard mapping. *Phys. D* **56** (1992), *no.* 2-3, 253–269. (Summary) **93c:58140** 58F13

Laskar, Renu C. (*with* Domke, Gayla S.; Hedetniemi, Stephen T.; Fricke, Gerd) Relationships between integer and fractional parameters of graphs. *Graph theory, combinatorics, and applications, Vol.* 1 (*Kalamazoo, MI*, 1988), 371–387, *Wiley-Intersci. Publ., Wiley, New York*, 1991. (Summary) **93c:05060** 05C35

— (*with* Fricke, Gerd) Strong matchings on trees. (English summary) Proceedings of the Twenty-third Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, FL, 1992). *Congr. Numer.* **89** (1992), 239–243. (Summary) **93k:05127** 05C70 (05C05, 68R10)

— (*with* Majumdar, Aniket) Covering and packing parameters in hypergraphs defined by neighborhoods in graphs. (English summary) *J. Combin. Inform. System Sci.* **17** (1992), *no.* 1-2, 9–18. 05C70 (05C65)

— (*with* Dunbar, Jean) Universal and global irredundancy in graphs. (English summary) *J. Combin. Math. Combin. Comput.* **12** (1992), 179–185. (Summary) **93h:05099** 05C35 (05C85, 68Q25)

Laskin, M. B. Justification of the convergence of the Braun method for convex-concave functions by means of the Lyapunov function. (Russian. Russian summary) *Arch. Math.* (*Brno*) **27A** (1991), 43–51. (J. S. Lipiński) **93h:26022** 26B99 (26B25)

Laskowski, Michael Chris (*with* Pillay, Anand; Rothmaler, Philipp) Tiny models of categorical theories. (English summary) *Arch. Math. Logic* **31** (1992), *no.* 6, 385–396. (O. V. Belegradek) **93g:03030** 03C45 (03C35, 03C55, 03C60, 03E05, 03E35)

— Vapnik-Chervonenkis classes of definable sets. *J. London Math. Soc.* (2) **45** (1992), *no.* 2, 377–384. (Summary) **93d:03039** 03C45 (03E15, 60A10, 60F05)

— (*with* Kueker, D. W.) On generic structures. *Notre Dame J. Formal Logic* **33** (1992), *no.* 2, 175–183. (Elisabeth Bouscaren) **93k:03032** 03C15 (03C35, 03C50)

— The categoricity spectrum of pseudo-elementary classes. (English summary) *Notre Dame J. Formal Logic* **33** (1992), *no.* 3, 332–347. (O. V. Belegradek) **93i:03044** 03C35 (03C45, 03C52, 03E35)

Lasota, Andrzej Asymptotic behaviour of randomly perturbed discrete time dynamical systems. *Stochastic methods in experimental sciences* (*Szklarska Poręba*, 1989), 293–303, *World Sci. Publishing, River Edge, NJ*, 1990. (Summary) **93b:58132** 58F39 (58F40, 92B05)

— (*with* Baron, Karol) Asymptotic properties of Markov operators defined by Volterra type integrals. *Selected topics in functional equations and iteration theory* (*Graz*, 1991), 213–218, *Grazer Math. Ber.*, 316, *Karl-Franzens-Univ. Graz, Graz*, 1992. (*see* **93m:39001**) 45P05 (47B38)

— (*with* Mackey, Michael C.; Tyrcha, Joanna) The statistical dynamics of recurrent biological events. (English summary) *J. Math. Biol.* **30** (1992), *no.* 8, 775–800. (Dieter H. Mayer) **93m:92009** 92C20 (58F11, 58F30, 58F40, 82C31)

Lasry, Jean-Michel (*with* Conze, A.; Scheinkman, J. A.) A system of nonlinear functional-differential equations arising in an equilibrium model of an economy with borrowing constraints. (French summary) *Ann. Inst. H. Poincaré Anal. Non Linéaire* **8** (1991), *no.* 5, 523–559. (Summary) **93a:90013** 90A14 (34K35)

— (*with* Courty, Pascal; Morel, Jean-Michel; Yip, Cheuk Wai) Immunisation financière, incomplétude des marchés et ondelettes. (English and French summaries) [Financial immunization, market incompleteness and wavelets] *C. R. Acad. Sci. Paris Sér. I Math.* **316** (1993), *no.* 4, 399–402. 90A09

Lassak, Marek Approximation of convex bodies by parallelotopes. (English summary) *Bull. Polish Acad. Sci. Math.* **39** (1991), *no.* 3-4, 219–223. (G. D. Chakerian) **93k:52004** 52A27 (52A40)

Lassalle, Michel Polynômes de Hermite généralisés. (English summary) [Generalized Hermite polynomials] *C. R. Acad. Sci. Paris Sér. I Math.* **313** (1991), *no.* 9, 579–582. (W. A. Al-Salam) **93a:33020** 33C45

Lasseigne, D. Glenn (*with* Hussaini, M. Y.) Interaction of disturbances with an oblique detonation wave attached to a wedge. (English summary) *Phys. Fluids A* **5** (1993), *no.* 4, 1047–1058. (Summary) **93k:76074** 76L05 (76E99, 76K05, 80A25)

Lasser, Dieter (*with* Hagen, Hans) Interval weighted tau-splines. *Curve and surface design* (*Tempe, AZ*, 1989), 41–53, *Geom. Des. Publ., SIAM, Philadelphia, PA*, 1992. (*see* **93g:65027**) 65D07 (65D17)

Lasser, Rupert (*with* Rösler, M.) Linear mean estimation of weakly stationary stochastic processes under the aspects of optimality and asymptotic optimality. *Stochastic Process. Appl.* **38** (1991), *no.* 2, 279–293. (N. Leonenko) **93b:62128** 62M10

— (*with* Hösel, Volker) One-step prediction for P_n-weakly stationary processes. *Monatsh. Math.* **113** (1992), *no.* 3, 199–212. (Michael Voit) **93f:60044** 60G10 (43A62, 60G25)

Lassere, Patrice Interpolation d'opérateurs entre espaces de fonctions holomorphes. (English summary) [Operator interpolation between holomorphic function spaces] *Ann. Polon. Math.* **56** (1991), *no.* 1, 97–102. (Mario Milman) **93c:46039** 46E10 (32A37, 46M35)

Lasserre, J. B. Sur l'inversion de matrice. (English summary) [On matrix inversion] *RAIRO Rech. Opér.* **26** (1992), *no.* 2, 177–182. (Summary) **93b:65049** 65F05 (15A09, 65F10)

Lassez, Catherine (*with* Huynh, Tien; Joskowicz, Leo; Lassez, Jean-Louis) Practical tools for reasoning about linear constraints. *Fund. Inform.* **15** (1991), *no.* 3-4, 357–379. (Summary) **93a:68134** 68T27

Lassez, Jean-Louis (*with* Huynh, Tien; Joskowicz, Leo; Lassez, Catherine) Practical tools for reasoning about linear constraints. *Fund. Inform.* **15** (1991), *no.* 3-4, 357–379. (Summary) **93a:68134** 68T27

— (*with* McAloon, K. W.) A canonical form for generalized linear constraints. *J. Symbolic Comput.* **13** (1992), *no.* 1, 1–24. (M. I. Dekhtyar) **93f:68082** 68T25 (68N15, 68N17, 68Q25)

Lässig, Michael Multiple crossover phenomena and scale hopping in two dimensions. (English summary) *Nuclear Phys. B* **380** (1992), *no.* 3, 601–618. (Filippo Colomo) **93g:81159** 81T40

— New hierarchies of multicriticality in two-dimensional field theory. *Phys. Lett. B* **278** (1992), *no.* 4, 439–442. (Summary) **93c:81214** 81T40

Lassiter, Ray R. (*with* Hallam, Thomas G.; Jaworska, Joanna; McKinney, William) Physiologically based models in predator-prey ecology: an introduction. (English summary) *Recent trends in differential equations*, 285–299, *World Sci. Ser. Appl. Anal.*, 1, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93e:34005**) 92D40

Lassmann, Wolfgang (*with* Rogge, Rolf) Discrete optimization with bilinear objective function and linear constraints. *System modelling and optimization* (*Zurich*, 1991), 185–188, *Lecture Notes in Control and Inform. Sci.*, 180, *Springer, Berlin*, 1992. (*see* **93e:90003**) 90C10 (90C27)

Lassner, W. (*with* Gerdt, V. P.) ★ Verifying isomorphisms of finite-dimensional Lie algebras by Gröbner basis technique. (English. English and Russian summaries) Сообщения Объединенного Института Ядерных Исследований. Дубна [Communications of the Joint Institute for Nuclear Research. Dubna], E5-92-145. *Joint Inst. Nuclear Res., Dubna*, 1992. 13 *pp.* (From the introduction) **93h:17003** 17-08 (13P10)

Lassonde, Marc (*with* Granas, Andrzej) Sur un principe géométrique en analyse convexe. (English summary) [On a geometric principle in convex analysis] *Studia Math.* **101** (1991), *no.* 1, 1–18. (Jean-Pierre Crouzeix) **93b:49009** 49J40 (46N10, 47H10, 47N10)

Lassoued, Leïla Periodic solutions of a nonlinear second order system. *Variational methods* (*Paris*, 1988), 455–468, *Progr. Nonlinear Differential Equations Appl.*, 4, *Birkhäuser Boston, Boston, MA*, 1990. (Maria Letizia Bertotti) **93k:34093** 34C25 (34B15, 58E05, 58F22)

— (*with* Mathlouthi, Salem) A numerical method for finding homoclinic orbits of Hamiltonian systems. *Numer. Funct. Anal. Optim.* **13** (1992), *no.* 1-2, 155–172. (Zdzisław W. Trzaska) **93e:65081** 65J10 (34C37, 58F05, 65L99, 70H05)

Last, Günter On Bayes' formula for doubly stochastic point processes on the real half-line. *Statistics* **22** (1991), *no.* 3, 431–448. (Alan F. Karr) **93c:60068** 60G55

Last, Y. On the measure of gaps and spectra for discrete 1D Schrödinger operators. (English summary) *Comm. Math. Phys.* **149** (1992), *no.* 2, 347–360. (Russell A. Johnson) **93i:47035** 47B39 (47N50, 81Q10, 82B10)

— (*with* Wilkinson, Michael) A sum rule for the dispersion relations of the rational Harper equation. (English summary) *J. Phys. A* **25** (1992), *no.* 22, 6123–6133. (M. Znojil) **93j:81017** 81Q15 (39A10, 39A12, 39A70, 47B39, 47N50, 65Q05)

— A relation between a.c. spectrum of ergodic Jacobi matrices and the spectra of periodic approximants. (English summary) *Comm. Math. Phys.* **151** (1993), *no.* 1, 183–192. (Summary) **93j:47053** 47B39 (34L40, 47A10, 47N50)

Lastaria, Federico G. Homogeneous metrics with the same curvature. *Simon Stevin* **65** (1991), *no.* 3-4, 267–281. (O. Kowalski) **93d:53061** 53C30 (53C20)

Lastman, G. J. (*with* Sinha, Naresh K.) Identification of linear multivariable time-invariant systems from samples of input-output data. (English summary) *Identification and system parameter estimation* 1991, *Vol.* 1,2 (*Budapest*, 1991), 299–303, *IFAC Sympos. Ser.*, 3, *Pergamon, Oxford*, 1992. (*see* **93h:93009**) 93B30 (93C35)

László, Lajos Optimal plane rotations for complex matrices. *Ann. Univ. Sci. Budapest. Sect. Comput.* **11** (1991), 155–163. (Bo Kågström) **93e:65061** 65F15 (15A57)

Latchman, H. A. (*with* Norris, R. J.) Calculation of the structured singular value with a reduced number of optimization variables. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 10, 1612–1616. 93B40

— (*with* Norris, R. J.) On the equivalence between similarity and nonsimilarity scaling in robustness analysis. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 11, 1849–1853. 93B36

Latfullin, T. G. Weight conditions that guarantee the similarity of weighted Sobolev spaces under conformal mappings of domains. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* **1991**, *no.* 11, 96–97 (1992); *translation in Soviet Math. (Iz. VUZ)* **35** (1991), *no.* 11, 98–99. (M. Yu. Vasil'chik) **93h:46039** 46E35 (30C35)

Latha, S. (*with* Nanjunda Rao, S.) A generalized class of analytic functions. *New trends in geometric function theory and applications* (*Madras*, 1990), 60–65, *World Sci. Publishing, River Edge, NJ*, 1991. (G. Lakshma Reddy) **93g:30019** 30C45

Latham, Geoff A. (*with* Grünbaum, F. Alberto; Zubelli, Jorge P.) An inverse problem for a model of scattered and diffused radiation. *Mini-Conference on Inverse Problems in Partial Differential Equations* (*Canberra*, 1990), 69–81, *Proc. Centre Math. Appl. Austral. Nat. Univ.*, 31, *Austral. Nat. Univ., Canberra*, 1992. (*see* **93i:00020**) 78A45

abd el-Latif, G. M. *see* **Abd El-Latif, G. M.**

Latifi, A. (*with* Claude, C.; Leon, Jérôme Jp.) Nonlinear resonant scattering and plasma instability: an integrable model. *J. Math. Phys.* **32** (1991), *no.* 12, 3321–3330. (Muthiah Daniel) **93g:35128** 35Q55 (58F40, 76E25, 76X05)

— Langmuir caviton: a universal soliton-like solution. (English summary) *Nonlinear evolution equations and dynamical systems* (*Baia Verde*, 1991), 144–147, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93g:00028**) 76X05 (35Q35)

Latifi, Shahram (*with* Zheng, Si-Qing) On Hamiltonian paths between two vertices in hypercube graphs. (English summary) Proceedings of the Twenty-third Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, FL, 1992). *Congr. Numer.* **89** (1992), 111–117. (Summary) **93j:05102** 05C45 (68R10)

— (*with* Kwon, Kyung Hee; Zheng, Si-Qing) Average distance of data communication in twisted hypercubes. *Finite fields, coding theory, and advances in communications and computing* (*Las Vegas, NV*, 1991), 329–340, *Lecture Notes in Pure and Appl. Math.*, 141, *Dekker, New York*, 1993. (From the introduction) **93m:68015** 68M10

— Combinatorial analysis of the fault-diameter of the n-cube. (English summary) *IEEE Trans. Comput.* **42** (1993), *no.* 1, 27–33. (Summary) **93i:68023** 68M15

Latiolais, M. Paul (*with* Hog-Angeloni, Cynthia; Metzler, Wolfgang[1]) Bias ideals and obstructions to simple-homotopy equivalence. *Topology and combinatorial group theory* (*Hanover, NH*, 1986/1987; *Enfield, NH*, 1988), 109–121, *Lecture Notes in Math.*, 1440, *Springer, Berlin*, 1990. (From the introduction) **93b:57024** 57Q10 (55P99, 57M20)

— When homology equivalence implies homotopy equivalence for 2-complexes. *J. Pure Appl. Algebra* **76** (1991), *no.* 2, 155–165. (Bruce A. Magurn) **93f:19005** 19J10 (55P15, 57M05, 57M20, 57Q10)

Latipov, Kh. R. *see* **Differential equations and applied problems in mathematics, 93m:00013**

Latombe, Jean-Claude (*with* Lazanas, Anthony; Shekhar, Shashank) Robot motion planning with uncertainty in control and sensing. *Artificial Intelligence* **52** (1991), *no.* 1, 1–47. (B. G. Mertzios) **93e:68131** 68U05

— (*with* Barraquand, Jérôme; Langlois, Bruno) Numerical potential field techniques for robot path planning. *IEEE Trans. Systems Man Cybernet.* **22** (1992), *no.* 2, 224–241. 68U05

La Tona, Letizia (*with* Mineo, Antonino) A new clustering criterion based on the distance matrix. (English and Italian summaries) *Statistica (Bologna)* **51** (1991), *no.* 3, 397–410 (1992). 62H30

Latorre, José Ignacio (*with* Freedman, Daniel Z.; Johnson, Kenneth A.) Differential regularization and renormalization: a new method of calculation in quantum field theory. *Nuclear Phys. B* **371** (1992), *no.* 1-2, 353–414. (Piotr Kosiński) **93b:81172** 81T15 (81T18)

— (*with* Cappelli, Andrea; Vilasís-Cardona, Xavier) Renormalization group patterns and c-theorem in more than two dimensions. *Nuclear Phys. B* **376** (1992), *no.* 3, 510–538. (R. Delbourgo) **93e:81104** 81T40

— *see also* **Random surfaces and 2D quantum gravity, 93d:81004**

casasús Latorre, L. *see* **Casasús Latorre, L.**

Latouche, Guy A simple proof for the matrix-geometric theorem. (English summary) *Appl. Stochastic Models Data Anal.* **8** (1992), *no.* 1, 25–29. (Summary) **93d:60156** 60K25 (60J10)

Latrach, Khalid Compacité et spectre essentiel d'opérateurs de transport avec des conditions aux limites abstraites. (English and French summaries) [Compactness and essential spectrum for transport operators with abstract boundary conditions] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 4, 479–484. (V. Protopopescu) **93f:47092** 47N55 (47A10, 47G20, 82C70)

— Compactness properties for linear transport operators with abstract boundary conditions in slab geometry. (English summary) *Transport Theory Statist. Phys.* **22** (1993), *no.* 1, 39–64. (Edward W. Larsen) **93k:82060** 82C70 (47G20, 47N55)

Latteux, Michel Some results on semi-commutations. *Words, languages and combinatorics* (*Kyoto*, 1990), 326–336, *World Sci. Publishing, River Edge, NJ*, 1992. (Jetty Kleijn) **93g:68064** 68Q45 (20M35, 68Q42, 68Q90)

— (*with* Harju, T.; Kleijn, H. C. M.) Deterministic sequential functions. (English summary) *Acta Inform.* **29** (1992), *no.* 6-7, 545–554. (Summary) **93h:68093** 68Q70 (68Q45)

— (*with* Harju, T.; Kleijn, H. C. M.) Compositional representation of rational functions. (French summary) *RAIRO Inform. Théor. Appl.* **26** (1992), *no.* 3, 243–255. (Pascal Weil) **93j:68144** 68Q70 (68Q45, 68Q68)

Lattis, James M. Homocentrics, eccentrics and Clavius's refutation of Fracastoro. (English summary) *Physis Riv. Internaz. Storia Sci. (N.S.)* **28** (1991), *no.* 3, 699–725 (1992). (Summary) **93h:01017** 01A40

Latushkin, Yu. D. (*with* Stěpin, A. M.) Linear skew-product flows and semigroups of weighted composition operators. (English summary) *Lyapunov exponents* (*Oberwolfach*, 1990), 98–111, *Lecture Notes in Math.*, 1486, *Springer, Berlin*, 1991. (Wojciech Bartoszek) **93g:47038** 47B38 (47A10, 47A35, 47D03)

Latvala, Visa (*with* Eriksson-Bique, Sirkka-Liisa A.) Convex cones in potential theory. *Summer School in Potential Theory* (*Joensuu*, 1990), 141–190, *Joensuun Yliop. Luonnont. Julk.*, 26, *Univ. Joensuu, Joensuu*, 1992. (I. Netuka) **93j:31013** 31D05 (46A55)

Latypov, A. R. (*with* Bakhtizin, R. N.) Estimation of the order of linear objects from experimental information. (Russian. Russian summary) *Avtomat. i Telemekh.* **1992**, *no.* 3, 108–112; *translation in Automat. Remote Control* **53** (1992), *no.* 3, *part* 2, 416–419. 93C40

Latypov, D. M. (*with* Mukhamedzhanov, A. M.) On the Coulomb singular kernel of Lippmann-Schwinger-type equation. (English summary) *J. Math. Phys.* **33** (1992), *no.* 9, 3105–3107. (Summary) **93g:81024** 81Q40 (81U99)

Latypov, Kh. R. *see* **Latipov, Kh. R.**

Latyshev, A. V. (*with* Spitkovsky, Ilya M.) The matrix Riemann-Hilbert boundary value problem and its application in kinetic theory. (Russian) *Conference on Differential Equations and Applications* (*Ruse*, 1989), 433–443, *Tech. Univ., Ruse*, 1991. (*see* **93f:34004**) 35Q15 (30E25, 82C40)

— (*with* Dolgosheina, E. B.; Yushkanov, A. A.) Exact solutions of model BGK Boltzmann equation in temperature jump and weak evaporation problems. *Fluid Dynamics* **27** (1992), *no.* 1, 122–128; *translated from Izv. Ross. Akad. Nauk Mekh. Zhidk. Gaza* **1992**, *no.* 1, 163–171 (*Russian. Russian summary*). (Summary) **93h:76065** 76P05 (45J05, 82C40)

— Analytic solution of the ellipsoidal-statistical model Boltzmann equation. *Fluid Dynamics* **27** (1992), *no.* 2, 267–277; *translated from Izv. Ross. Akad. Nauk Mekh. Zhidk. Gaza* **1992**, *no.* 2, 151–166 (*Russian. Russian summary*). (Luisa Arlotti) **93k:82054** 82C40 (76P05, 82C70)

— (*with* Yushkanov, A. A.) Analytic solution of inhomogeneous linear kinetic equations in a second-order heat slip problem. (Russian. English and Russian summaries) *Mat. Model.* **4** (1992), *no.* 4, 55–62. (Summary) **93h:82056** 82C40

— (*with* Lesskis, A. G.; Yushkanov, A. A.) Exact solution of a problem on the behavior of an electron plasma in a layer of metal in a variable electric field. (Russian. English and Russian summaries) *Teoret. Mat. Fiz.* **90** (1992), *no.* 2, 179–189; *translation in Theoret. and Math. Phys.* **90** (1992), *no.* 2, 119–126. (Summary) **93h:82072** 82D10

Lau, Anthony To Ming (*with* Paterson, Alan L. T.) Amenability for twisted covariance algebras and group C^*-algebras. *J. Funct. Anal.* **100** (1991), *no.* 1, 59–86. (Claire Anantharaman-Delaroche) **93a:46130** 46L55 (22D25, 46L05, 46M05)

— (*with* Bekka, Mohammed E. B.; Schlichting, G.) On invariant subalgebras of the Fourier-Stieltjes algebra of a locally compact group. *Math. Ann.* **294** (1992), *no.* 3, 513–522. (Ryszard Szwarc) **93k:43006** 43A30 (22D10)

— (*with* Ghahramani, Fereidoun) Isomorphisms and multipliers on second dual algebras of Banach algebras. *Math. Proc. Cambridge Philos. Soc.* **111** (1992), *no.* 1, 161–168. (R. J. Loy) **93b:46089** 46H05 (43A22, 46H10)

— (*with* Ülger, Ali) Some geometric properties on the Fourier and Fourier-Stieltjes algebras of locally compact groups, Arens regularity and related problems. *Trans. Amer. Math. Soc.* **337** (1993), *no.* 1, 321–359. (Keith Taylor) **93g:22007** 22D15 (22D25, 46H99, 46M05)

Lau, D. T. M. (*with* Ariyawansa, K. A.) On the updating scheme in a class of collinear scaling algorithms for sparse minimization. (English summary) *J. Optim. Theory Appl.* **75** (1992), *no.* 1, 183–193. (Summary) **93j:65095** 65K05 (90C30)

Lau, Dietlinde (*with* Denecke, K.; Pöschel, Reinhard; Schweigert, D.) Hyperidentities, hyperequational classes and clone congruences. *Contributions to general algebra*, 7 (*Vienna*, 1990), 97–118, *Hölder-Pichler-Tempsky, Vienna*, 1991. (Ewa Graczyńska) **93a:08001** 08A40 (03C05, 08B05)

— (*with* Denecke, K.) Congruences on maximal partial clones and strong regular varieties generated by preprimal partial algebras. II. Universal algebra, quasigroups and related systems (Jadwisin, 1989). *Demonstratio Math.* **24** (1991), *no.* 1-2, 105–119. (Ágnes Szendrei) **93a:08003** 08A55 (08A30, 08B99)

— Ein Vollständigkeitskriterium für durch h-adisch elementare Relationen beschriebene maximale Klassen von P_k. [A completeness criterion for maximal classes of P_k that are described by h-adic elementary relations] *Rostock. Math. Kolloq. No.* 45 (1991), 3–8. (Klaus Denecke) **93d:03033** 03B50 (03G20, 08A40)

Lau, Francis C. M. (*with* Cheung, Steven) Mesh permutation routing with locality. (English summary) *Inform. Process. Lett.* **43** (1992), *no.* 2, 101–105. (Summary) **93h:68006** 68M10

— (*with* Xu, Cheng Zhong) Analysis of the generalized dimension exchange method for dynamic load balancing. (English summary) *J. Parallel Distrib. Comput.* **16** (1992), *no.* 4, 385–393. 68M20

— (*with* Cheung, Steven) A lower bound for permutation routing on two-dimensional bused meshes. (English summary) *Inform. Process. Lett.* **45** (1993), *no.* 5, 225–228. (Summary) **93k:68007** 68M10

Lau, Hoong Chuin Preference-based scheduling via constraint satisfaction. (English summary) *Optimization, Vol.* 1, 2 (*Singapore*, 1992), 546–554, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93d:90005**) 90B35

Lau, Ka-Sing (*with* Ramachandran, Balasubrahmanyan) ★ Functional equations in probability theory. Probability and Mathematical Statistics. *Academic Press, Inc., Boston, MA*, 1991. xviii+249 *pp. ISBN* 0-12-437730-0 (P. Laurie Davies) **93c:60016** 60E05 (39–02, 62E10)

— (*with* Prakasa Rao, B. L. S.) Letter to the editor: "Characterization of the exponential distribution by the relevation transform" [J. Appl. Probab. **27** (1990), no. 3, 726–729; MR 91i:62026]. *J. Appl. Probab.* **29** (1992), *no.* 4, 1003–1004. (Editors) **93j:62031** 62E10 (60E99)

— Fractal measures and mean p-variations. (English summary) *J. Funct. Anal.* **108** (1992), *no.* 2, 427–457. (Miguel Angel Martín) **93g:28007** 28A80 (42B10)

— (*with* Hu, Tian You) Fractal dimensions and singularities of the Weierstrass type functions. *Trans. Amer. Math. Soc.* **335** (1993), *no.* 2, 649–665. (S. J. Taylor) **93d:28011** 28A75 (28A12)

Lau, Kim-Ming (*with* Chan, Fuk-Lok; Finkelstein, Robert J.) Grassmannian Legendre functions. *J. Math. Phys.* **33** (1992), *no.* 8, 2688–2696. (Summary) **93f:33010** 33C50

Lau, Kung Kiu (*with* Prestwich, Steven D.) Synthesis of a family of recursive sorting procedures. (English summary) *Logic programming* (*San Diego, CA*, 1991), 641–658, *MIT*

Press Ser. Logic Program., MIT Press, Cambridge, MA, 1991. (Summary) **93j:68045** 68P10

Lau, Ming K. (*with* Kosut, Robert L.; Boyd, Stephen P.) Set-membership identification of systems with parametric and nonparametric uncertainty. *IEEE Trans. Automat. Control* **37** (1992), *no.* 7, 929–941. (Rudolf Kulhavý) **93f:93042** 93B30 (93B36)

Lau, Richard L. *see* **Computational acoustics, 93j:76001**

Lau, S. L. (*with* Xu, Zhao) On internal resonance of nonlinear vibrating systems with many degrees of freedom. *Appl. Math. Mech.* (*English Ed.*) **13** (1992), *no.* 1, 29–37; *translated from Appl. Math. Mech.* **13** (1992), *no.* 1, 27–34 (*Chinese. English summary*). (Gershon Wolansky) **93f:34061** 34C15 (34C25, 70K30)

— (*with* Zhang, W.-S.) Nonlinear vibrations of piecewise-linear systems by incremental harmonic balance method. (English summary) *Trans. ASME J. Appl. Mech.* **59** (1992), *no.* 1, 153–160. (Summary) **93e:70010** 70K40 (73K12)

Lau, Tai-Shing The reliability of exchangeable binary systems. *Statist. Probab. Lett.* **13** (1992), *no.* 2, 153–158. (T. J. Sweeting) **93c:62160** 62N05 (62G05)

Lau, Y. K. (*with* Newman, Richard P. A. C.) The structure of null infinity for stationary simple spacetimes. (English summary) *Classical Quantum Gravity* **10** (1993), *no.* 3, 551–557. (Richard Hansen) **93m:83022** 83C30

Lau, Yun-Tung The "cocoon" bifurcations in three-dimensional systems with two fixed points. (English summary) *Internat. J. Bifur. Chaos Appl. Sci. Engrg.* **2** (1992), *no.* 3, 543–558. (Miklós Farkas) **93k:58170** 58F14 (34C23, 34C37)

— (*with* Finn, John M.) Dynamics of a three-dimensional incompressible flow with stagnation points. (English summary) *Phys. D* **57** (1992), *no.* 3-4, 283–310. (Helmut Rüssmann) **93h:58133** 58F27 (58F14, 76C99)

— Large-period turbulent solutions of the Kuramoto-Sivashinsky equation. (English summary) *Phys. Lett. A* **169** (1992), *no.* 5, 329–334. (Summary) **93h:35166** 35Q35 (58F39, 65P05)

Laub, Alan J. (*with* Pandey, Pradeep; Kenney, Charles) Solving the algebraic Riccati equation on supercomputers. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, II* (*Kobe*, 1991), 3–8, *Mita, Tokyo*, 1992. (Petko Petkov) **93j:93052** 93B40

— (*with* Gudmundsson, Thorkell; Kenney, Charles) Scaling of the discrete-time algebraic Riccati equation to enhance stability of the Schur solution method. *IEEE Trans. Automat. Control* **37** (1992), *no.* 4, 513–518. (Ian Petersen) **93b:93042** 93B40 (49N10, 93C55, 93D05)

— (*with* Williams, T. W. C.) Orthogonal canonical forms for second-order systems. *IEEE Trans. Automat. Control* **37** (1992), *no.* 7, 1050–1052. 93B10

— (*with* Gahinet, P.) Algebraic Riccati equations and the distance to the nearest uncontrollable pair. *SIAM J. Control Optim.* **30** (1992), *no.* 4, 765–786. (Petko Petkov) **93d:93028** 93B35 (93B05, 93B06, 93B40)

— (*with* Kenney, Charles) On scaling Newton's method for polar decomposition and the matrix sign function. *SIAM J. Matrix Anal. Appl.* **13** (1992), *no.* 3, 698–706. (Summary) **93a:65060** 65F35 (65F30)

Laubenbacher, Reinhard C. (*with* Webb, David L.) G_0 of integral group rings for groups with cyclic Sylow subgroups. *Algebraic K-theory, commutative algebra, and algebraic geometry* (*Santa Margherita Ligure*, 1989), 97–111, *Contemp. Math.*, 126, *Amer. Math. Soc., Providence, RI*, 1992. (V. P. Snaith) **93d:19001** 19A99 (20C10)

— (*with* Magurn, Bruce A.) SK_2 and K_3 of dihedral groups. (English summary) *Canad. J. Math.* **44** (1992), *no.* 3, 591–623. (Bruno Kahn) **93j:19003** 19D50 (16S34, 19C20, 19F99)

deLaubenfels, Ralph C-existence families. *Semigroup theory and evolution equations* (*Delft*, 1989), 295–309, *Lecture Notes in Pure and Appl. Math.*, 135, *Dekker, New York*, 1991. (Tamara G. Sukacheva) **93f:34095** 34G10 (47D06, 47N20)

— Incomplete iterated Cauchy problems. (English summary) *J. Math. Anal. Appl.* **168** (1992), *no.* 2, 552–579. (Yuri Sil'chenko) **93f:34096** 34G10 (47D09, 47N20)

— (*with* Boyadzhiev, Khristo N.) Semigroups and resolvents of bounded variation, imaginary powers and H^∞ functional calculus. (English summary) *Semigroup Forum* **45** (1992), *no.* 3, 372–384. (Ioana Cioranescu) **93i:47018** 47A60 (47D03)

— Holomorphic C-existence families. *Tokyo J. Math.* **15** (1992), *no.* 1, 17–38. (R. Nagel) **93e:47052** 47D06 (34G10, 47N20)

— (*with* Boyadzhiev, Khristo N.) Boundary values of holomorphic semigroups. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 1, 113–118. (Alberto Guzman) **93f:47043** 47D03 (35J10, 47F05)

Lauber, Marianne Nombres de Lelong microlocaux itérés et nombres de Lelong généralisés avec poids. (English summary) [Iterated microlocal Lelong numbers and weighted generalized Lelong numbers] *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 7, 517–522. (Summary) **93c:32014** 32C30 (32F05)

Läuchli, Peter ★ Algorithmische Graphentheorie. (German) [Algorithmic graph theory] Programm Praxis [Program Practice], 9. *Birkhäuser Verlag, Basel*, 1991. x+139 *pp. ISBN* 3-7643-2663-8 (Jürgen Ebert) **93m:05186** 05C85 (68Q20, 68R10)

Laud, Purushottam W. (*with* Ibrahim, Joseph G.) On Bayesian analysis of generalized linear models using Jeffreys's prior. *J. Amer. Statist. Assoc.* **86** (1991), *no.* 416, 981-986. (Joaquin Diaz Saiz) **93d:62045** 62F15 (62J12)

— *see also* **Basu, Asit P., 93d:62165**

Laudenbach, François *see* **Bismut, Jean-Michel, 93j:58138**

Laue, Gabriele *see* **Gnedenko, B. V., 93h:60001**

Laue, Hartmut (*with* Blessenohl, Dieter) Note über Idempotente im Gruppenring symmetrischer Gruppen. [Note on idempotents in a group ring of symmetric groups] *Arch. Math.* (*Basel*) **59** (1992), *no.* 6, 545–549. (Peter Fleischmann) **93m:20019** 20C30 (05E10, 20C05)

von Laue, Max *see* **Liu, Chuang, 93g:01048**

Laue, R. Konstruktion endlicher auflösbarer Gruppen. [Construction of finite solvable groups] *Séminaire Lotharingien de Combinatoire* (*Salzburg*, 1990), 131–133, *Publ. Inst. Rech. Math. Av.*, 462, *Univ. Louis Pasteur, Strasbourg*, 1991. (From the text) **93i:20018** 20D10

— (*with* Grund, R.; Kerber, Adalbert) MOLGEN, ein Computeralgebra-System für die Konstruktion molekularer Graphen. [MOLGEN, a computer algebra system for the construction of molecular graphs] *Match No.* 27 (1992), 87–131. 92E10 (05C90)

— *see also* **Constructive applications of algebra and combinatorics, 93k:00033**

Lauer, J. (*with* Erler, J.; Jungnickel, Dirk; Mas, Javier) String emission from twisted sectors: cocycle operators and modular background symmetries. (English summary) *Ann. Physics* **217** (1992), *no.* 2, 318–363. (C. Gauthier) **93h:81099** 81T30

— (*with* Stieberger, S.; Jungnickel, Dirk; Spaliński, Michal) Yukawa couplings for bosonic Z_N orbifolds: their moduli and twisted sector dependence. (English summary) *Modern Phys. Lett. A* **7** (1992), *no.* 33, 3059–3070. (Summary) **93g:81176** 81T40

Lauffenburger, Douglas A. (*with* Linderman, Jennifer J.) ★ Receptor/ligand sorting along the endocytic pathway. (English. English summary) Lecture Notes in Biomathematics, 78. *Springer-Verlag, Berlin*, 1989. vi+164 *pp. ISBN* 3-540-50849-X (H. W. Vayo) **93f:92013** 92C20 (34C99)

Laugel, M. L. *see* **Hilbert, David[1], 93f:01027**

Laugwitz, Detlef Cauchy-Zahlen als Grundlage der Infinitesimalmathematik. (English summary) [Cauchy numbers as a foundation for infinitesimal mathematics] *Math. Semesterber.* **38** (1991), *no.* 2, 175–213. (Summary) **93f:26017** 26E35 (01A55, 03H05, 26Axx)

— "Das letzte Ziel ist immer die Darstellung einer Funktion": Grundlagen der Analysis bei Weierstraß 1886, historische Wurzeln und Parallelen. (English, French and German summaries) ["The ultimate goal is always the representation of a function": the foundations of analysis in Weierstrass' lectures of 1886—historical roots and parallels] *Historia Math.* **19** (1992), *no.* 4, 341–355. (Jesper Lützen) **93m:01036** 01A55

— Early delta functions and the use of infinitesimals in research. (English and French summaries) Études sur Cauchy (1789–1857). *Rev. Histoire Sci.* **45** (1992), *no.* 1, 115–128. (Summary) **93h:01024** 01A55 (03H05, 46–03)

Laumon, Gérard La transformation de Fourier géométrique et ses applications. [The geometric Fourier transform and its applications] *Proceedings of the International Congress of Mathematicians, Vol. I, II* (*Kyoto*, 1990), 437–445, *Math. Soc. Japan, Tokyo*, 1991. (Jean-Yves Étesse) **93e:11095** 11L05 (11G25, 11L03, 14–02, 14F30)

Launchbury, John ★ Projection factorisations in partial evaluation. Distinguished Dissertations in Computer Science. *Cambridge University Press, Cambridge*, 1991. xii+163 *pp. ISBN* 0-521-41497-0 (David B. Benson) **93a:68025** 68N20 (68Q42)

— (*with* Hughes, John) Relational reversal of abstract interpretation. (English summary) *J. Logic Comput.* **2** (1992), *no.* 4, 465–482. (Summary) **93h:68079** 68Q55

— (*with* Hughes, John) Projections for polymorphic first-order strictness analysis. (English summary) *Math. Structures Comput. Sci.* **2** (1992), *no.* 3, 301–326. (Summary) **93g:68013** 68N20 (68Q55)

de Launey, Warwick A note on n-dimensional Hadamard matrices of order 2^t and Reed-Muller codes. *IEEE Trans. Inform. Theory* **37** (1991), *no.* 3, *part* 1, 664–667. (Summary) **93a:94039** 94B60 (15A57)

— A proper n-dimensional orthogonal design of order 8 on 8 indeterminates. (English summary) *Ars Combin.* **33** (1992), 337–342. (Summary) **93h:05026** 05B15

— (*with* Dawson, Jeremy E.) A note on the construction of GH($4tq$; EA(q)) for $t = 1, 2$. (English summary) *Australas. J. Combin.* **6** (1992), 177–186. (Summary) **93h:05031** 05B20 (05–04)

— Generalised Hadamard matrices which are developed modulo a group. *Discrete Math.* **104** (1992), *no.* 1, 49–65. (S. K. Tharthare) **93h:05032** 05B20 (20D60)

— Signing balanced incomplete block designs over the group of order two. *J. Combin. Math. Combin. Comput.* **11** (1992), 73–82. (Summary) **93a:05021** 05B05

— A product for twelve Hadamard matrices. (English summary) *Australas. J. Combin.* **7** (1993), 123–127. (Summary) **93k:05034** 05B20

— (*with* Horadam, K. J.) A weak difference set construction for higher-dimensional designs. (English summary) *Des. Codes Cryptogr.* **3** (1993), *no.* 1, 75–87. (Dieter Jungnickel) **93m:05041** 05B20 (05B10)

Laura, Patricio A. A. (*with* Schinzinger, Roland) ★ Conformal mapping: methods and applications. *Elsevier Science Publishers, B.V., Amsterdam*, 1991. xx+581 *pp. ISBN* 0-444-88806-3 (From the preface) **93g:00018** 00A69 (00A79, 30C20, 30C30, 73K99, 73V35, 78–08, 78A25)

Laure, P. (*with* Demay, Yves; Iooss, Gérard) Wave patterns in the small gap Couette-Taylor problem. (English summary) *European J. Mech. B Fluids* **11** (1992), *no.* 5, 621–634. (Peter E. Kloeden) **93k:76048** 76E30 (35B32, 35Q35)

Laurençot, Ph. (*with* Jaffard, Stéphane) Orthonormal wavelets, analysis of operators, and applications to numerical analysis. *Wavelets*, 543–601, *Wavelet Anal. Appl.*, 2, *Academic Press, Boston, MA*, 1992. (R. A. Lorentz) **93h:42024** 42C15 (65M60, 65N30, 65N55)

Laurent, M. *see* **Laurent, Monique**

Laurent, Michel Sur quelques résultats récents de transcendance. [Some recent results concerning transcendence] Journées Arithmétiques, 1989 (Luminy, 1989). *Astérisque No.* 198-200 (1991), 209–230 (1992). (Alain Faisant) **93b:11091** 11J81 (11J85, 11J86, 11J89)

— Hauteur de matrices d'interpolation. (English summary) [Height of interpolation matrices] *Approximations diophantiennes et nombres transcendants* (*Luminy*, 1990), 215–238, *de Gruyter, Berlin*, 1992. (Patrice Philippon) **93i:11072** 11G35 (14G40)

Laurent, Monique (*with* Deza, Michel) Extension operations for cuts. (English summary) A collection of contributions in honour of Jack van Lint. *Discrete Math.* **106/107** (1992), 163–179. (Konrad Engel) **93i:05046** 05B99 (90C27)

— (*with* Deza, Michel) The Fibonacci and parachute inequalities for l_1-metrics. *Fibonacci Quart.* **30** (1992), *no.* 1, 54–61. (B. Klotzek) **93c:51018** 51K05 (11B68)

— (*with* Sassano, Antonio) A characterization of knapsacks with the max-flow–min-cut property. *Oper. Res. Lett.* **11** (1992), *no.* 2, 105–110. (Jürgen Köhler) **93d:90044** 90C10 (90C27, 90C35)

Laurent, Pierre-Jean (*with* Kulkarni, Rekha; Mazure, Marie-Laurence) Nonaffine blossoms and subdivision for Q-splines. *Mathematical methods in computer aided geometric design, II* (*Biri*, 1991), 367–380, *Academic Press, Boston, MA*, 1992. (*see* **93d:65022**) 65D07 (65D17)

saint Laurent, Roy T. *see* **Saint Laurent, Roy T.**

Laurentiu, Tiplea Ferucio *see* **Ţiplea, Ferucio Laurenţiu**

Laurey, Corinne Le problème de Cauchy pour une équation de Schrödinger non linéaire d'ordre 3. [English and French summaries] [The Cauchy problem for a third-order nonlinear Schrödinger equation] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 2, 165–168. (Summary) **93j:35161** 35Q55

Laurie, Dirk P. Stratified sequences of nested quadrature formulas. (English summary) 17th South African Symposium on Numerical Mathematics (Umhlanga, 1991). *Quaestiones Math.* **15** (1992), *no.* 3, 365–384. (Summary) **93i:65039** 65D32

— *see also* **Symposium: Numerical Mathematics**

Laurinčikas, Antanas Limit theorems for the Riemann zeta-function in the complex space. *Probability theory and mathematical statistics, Vol. II (Vilnius, 1989)*, 59–69, "*Mokslas*", *Vilnius*, 1990. (Masumi Nakajima) **93b:11107** 11M06 (60F99)

— On the joint distribution of the values of arithmetic functions. (Russian. English and Lithuanian summaries) *Litovsk. Mat. Sb.* **31** (1991), *no.* 3, 433–454; *translation in Lithuanian Math. J.* **31** (1991), *no.* 3, 300–315 (1992). (Adolf Hildebrand) **93h:11088** 11K65 (11N37)

Lauritzen, Bent Semiclassical Poincaré map for integrable systems. (English summary) *Chaos* **2** (1992), *no.* 3, 409–412. (Viviane Baladi) **93k:58182** 58F20 (81Q50)

Lauritzen, Niels The Euler characteristic of a homogeneous line bundle. (English and French summaries) *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 6, 715–718. (Alexey N. Rudakov) **93m:14045a** 14M17 (14F05)

— Erratum: "The Euler characteristic of a homogeneous line bundle". (French) *C. R. Acad. Sci. Paris Sér. I Math.* **316** (1993), *no.* 1, 131. (Alexey N. Rudakov) **93m:14045b** 14M17 (14F05)

Lauritzen, Steffen L. (*with* Jensen, Søren Tolver; Johansen, Søren) Globally convergent algorithms for maximizing a likelihood function. *Biometrika* **78** (1991), *no.* 4, 867–877. (G. P. Bhattacharjee) **93c:62040** 62F10 (65K10, 65U05)

— Propagation of probabilities, means, and variances in mixed graphical association models. (English summary) *J. Amer. Statist. Assoc.* **87** (1992), *no.* 420, 1098–1108. (Summary) **93j:62040** 62E15 (62–09)

Lauro, S. (*with* Schucking, E. L.; Wang, Jia-Zhu) Pre-post-history of Tolman's cosmos. (English summary) *Gravitation and modern cosmology (Erice, 1990)*, 189–200, *Ettore Majorana Internat. Sci. Ser. Phys. Sci.*, 56, *Plenum, New York*, 1991. (*see* **93j:83004**) 83C15

Laursen, Kjeld B. (*with* Neumann, Michael M.) Local spectral properties of multipliers on Banach algebras. *Arch. Math. (Basel)* **58** (1992), *no.* 4, 368–375. (Peter Dixon) **93e:46058** 46J05 (43A10, 46H30, 47A99, 47B40, 47B48)

— Operators with finite ascent. *Pacific J. Math.* **152** (1992), *no.* 2, 323–336. (Summary) **93f:47003** 47A11 (46H40, 47A10, 47B15, 47B20, 47B40)

— (*with* Neumann, Michael M.) Decomposable multipliers and applications to harmonic analysis. *Studia Math.* **101** (1992), *no.* 2, 193–214. (Y. Domar) **93a:46102** 46J05 (43A25, 47B40, 47B48)

Lausen, Berthold (*with* Degens, Paul O.; Vach, Werner) Reconstruction of phylogenies by distance data: mathematical framework and statistical analysis. *Trees and hierarchical structures (Bielefeld, 1987)*, 9–42, *Lecture Notes in Biomath.*, 84, *Springer, Berlin*, 1990. (*see* **93f:92004**) 92B10 (62H30)

Lausen, Georg Locking based on a pairwise decomposition of the transaction system. (English summary) *Discrete Appl. Math.* **40** (1992), *no.* 2, 217–236. (Summary) **93g:68026** 68P15

Laušmanová, Monika (*with* Mandl, Petr) Discounted estimation and discretization in adaptive control. *Stochastic theory and adaptive control (Lawrence, KS, 1991)*, 321–329, *Lecture Notes in Control and Inform. Sci.*, 184, *Springer, Berlin*, 1992. (*see* **93g:93007**) 93E35 (93C40)

— Exponentially discounted estimates and oscillations in linear controlled systems. *Kybernetika (Prague)* **28** (1992), *no.* 3, 181–190. (Summary) **93c:93055** 93E35 (34F05)

Lauterbach, Jörg (*with* Stahlecker, Peter) A numerical method for an approximate minimax estimator in linear regression. (English summary) *Linear Algebra Appl.* **176** (1992), 91–108. (Kurt Hoffmann) **93j:62174** 62J05 (62C20)

Lauterbach, Reiner Spontaneous symmetry breaking in higher-dimensional fixed point spaces. *Z. Angew. Math. Phys.* **43** (1992), *no.* 3, 430–448. (Ian Melbourne) **93d:58031** 58E09 (34C23, 47H15, 58F14)

Lauterborn, Werner (*with* Geist, Karlheinz) The nonlinear dynamics of the damped and driven Toda chain. III. Classification of the nonlinear resonances and local bifurcations. *Phys. D* **52** (1991), *no.* 2-3, 551–559. (Summary) **93a:58130** 58F14 (58F27, 70H05, 70K40, 82C44)

Lauth, B. (*with* Zoubek, G.) Zur Rekonstruktion des Bohrschen Forschungsprogramms. I, II. [On the reconstruction of Bohr's research program. I, II] *Erkenntnis* **37** (1992), *no.* 2, 223–247, 249–273. (Dennis Dieks) **93j:81002** 81–03 (00A30, 00A79, 01A60)

Lautrup, B. Uniqueness of Parisi's scheme for replica symmetry breaking. *Ann. Physics* **216** (1992), *no.* 1, 73–97. (Anton Bovier) **93e:82052** 82D30 (20C30)

Laval, Frédéric (*with* Bernardi, Christine; Métivet, Brigitte; Pernaud-Thomas, Bernadette) Finite element approximation of viscous flows with varying density. (English and French summaries) *SIAM J. Numer. Anal.* **29** (1992), *no.* 5, 1203–1243. (Lech Slawik) **93g:65143** 65N30 (76D99, 76M10)

renardel de Lavalette, Gerard R. *see* **Renardel de Lavalette, Gerard R.**

Lavalle, Irving H. (*with* Fishburn, Peter C.) Nonstandard nontransitive utility on mixture sets. *Math. Social Sci.* **21** (1991), *no.* 3, 233–244. (Frank Wattenberg) **93c:90010** 90A06 (03H05, 03H10)

— (*with* Fishburn, Peter C.) Multiattribute expected utility without the Archimedean axiom. (English summary) *J. Math. Psych.* **36** (1992), *no.* 4, 573–591. (Reinhard Suck) **93j:90007** 90A05 (90A10, 92G05)

Lavallée, D. (*with* Schertzer, D.; Lovejoy, S.; Schmitt, F.) Universal hard multifractal turbulence: theory and observations. (English summary) *Nonlinear dynamics of structures (Vladimir Maiakovskii, 1990)*, 213–235, *World Sci. Publishing, River Edge, NJ*, 1991. (Summary) **93j:76038** 76F20 (58F40, 86A10)

Lavanchy, A. (*with* Laduguie, P.; Touzani, R.) Study of a simple model for physical adsorption by active carbon beds. *Math. Engrg. Indust.* **3** (1992), *no.* 4, 247–264. (Summary) **93c:80006** 80A20 (80–08)

lari-Lavassani, Ali *see* **Lari-Lavassani, Ali**

Lavenda, B. H. (*with* Florio, A.) Derivation of a new class of distributions for the microcanonical ensemble. (English summary) *Found. Phys. Lett.* **5** (1992), *no.* 5, 457–467. (Kurt Johansson) **93g:82049** 82B30 (60E07, 82B05, 82D99)

— (*with* Florio, A.) Thermodynamics of rare events. (English summary) *Internat. J. Theoret. Phys.* **31** (1992), *no.* 8, 1455–1475. (Lamberto Rondoni) **93h:82023** 82B30 (82B20, 82B41)

Laver, Richard The left distributive law and the freeness of an algebra of elementary embeddings. *Adv. Math.* **91** (1992), *no.* 2, 209–231. (Andreas Blass) **93b:08008** 08C99 (03B25, 03C50, 03E55)

Laverty, J. S. (*with* Leslie, F. M.; Carlsson, T.) Continuum theory for biaxial nematic liquid crystals. (English summary) *Quart. J. Mech. Appl. Math.* **45** (1992), *no.* 4, 595–606. (Summary) **93m:76003** 76A15 (73B99, 82D30)

Laville, Alain Comparison of priority rules in pattern matching and term rewriting. *J. Symbolic Comput.* **11** (1991), *no.* 4, 321–347. (Summary) **93g:68063** 68Q42 (68N05)

Laville, G. On Cauchy-Kovalewski extension. *J. Funct. Anal.* **101** (1991), *no.* 1, 25–37. (Ceferino Ruiz) **93c:30059** 30G35 (26E05)

Lavine, Michael Sensitivity in Bayesian statistics: the prior and the likelihood. *J. Amer. Statist. Assoc.* **86** (1991), *no.* 414, 396–399. (I. J. Good) **93g:62047** 62F15 (62A15, 62F35)

— (*with* Wasserman, Larry; Wolpert, Robert L.) Bayesian inference with specified prior marginals. *J. Amer. Statist. Assoc.* **86** (1991), *no.* 416, 964–971. (James M. Dickey) **93f:62035** 62F15 (62A15)

— Some aspects of Pólya tree distributions for statistical modelling. (English summary) *Ann. Statist.* **20** (1992), *no.* 3, 1222–1235. (A. L. Rukhin) **93k:62006b** 62A15 (62G99)

— (*with* West, Mike) A Bayesian method for classification and discrimination. (English and French summaries) *Canad. J. Statist.* **20** (1992), *no.* 4, 451–461. 62H30

— A note on bounding Monte Carlo variances. (English summary) *Comm. Statist. Theory Methods* **21** (1992), *no.* 10, 2855–2860. (Summary) **93j:62046** 62E25 (62F15, 62G05, 65C05)

Lavine, Shaughan Dual easy uniformization and model-theoretic descriptive set theory. *J. Symbolic Logic* **56** (1991), *no.* 4, 1290–1316. (Summary) **93h:03069** 03E15 (03C57)

— A Spector-Gandy theorem for $cPC_d(A)$ classes. *J. Symbolic Logic* **57** (1992), *no.* 2, 478–500. (David E. Marker) **93h:03053** 03C70

Lavinskii, G. V. (*with* Galitsyn, V. K.) Combinatorial algorithms for compressing the recording of ordered sequences. (Russian. English and Ukrainian summaries) *Kibernet. Sistem. Anal.* **1991**, *no.* 6, 121–128, 190; *translation in Cybernet. Systems Anal.* **27** (1991), *no.* 6, 902–908 (1992). 68P20

Laviolette, Michael (*with* Seaman, John W., Jr.) Evaluating fuzzy representations of uncertainty. *Math. Sci.* **17** (1992), *no.* 1, 26–41. 94D05 (04A72)

Lavrelashvili, G. (*with* Rubakov, V. A.; Tinyakov, P. G.) Third quantization of gravity and the cosmological constant problem. *Quantum gravity (Moscow, 1990)*, 27–43, *World Sci. Publishing, River Edge, NJ*, 1991. (Markku Lehto) **93m:83034** 83C45 (81V17, 83F05)

Lavrent'ev, M. M. (*with* Savel'ev, L. Ya.) ★ Линейные операторы и некорректные задачи. (Russian. English and Russian summaries) [Linear operators and ill-posed problems] Edited and with an appendix by A. L. Bukhgeĭm. "*Nauka*", *Moscow*, 1991. 332 *pp. ISBN* 5-02-000121-X (A. B. Bakushinskiĭ) **93m:47001** 47–01 (46N40, 47A50, 65–01, 65J20)

— *see also* **All-Union Symposium: Computational Tomography, 93e:00013**; **Questions of well-posedness in problems of analysis, 93e:00018**; **Anikonov, Yu. E. et al., 93h:01034**; **Methods for solving inverse problems, 93i:35002**; **Mathematical analysis and differential equations, 93m:00026** *and* **Birthday: Lavrent'ev, M. M.**

Lavrent'ev, M. M., Jr. An estimate for the highest derivative of the solutions of a series of equations with strong nonlinearities. (Russian) *Boundary value problems for nonclassical equations in mathematical physics (Russian) (Novosibirsk, 1989)*, 47–50, *Akad. Nauk SSSR Sibirsk. Otdel., Inst. Mat., Novosibirsk*, 1989. (*see* **93d:35001**) 35K55 (35B45)

— One method of solution of the inverse problems for layered media. (English summary) *Ill-posed problems in natural sciences (Moscow, 1991)*, 333–341, *VSP, Utrecht*, 1992. (*see* **93m:00041**) 35R30 (35J05, 35K05, 35L05)

— An inverse problem for the wave equation with a piecewise-constant coefficient. (Russian. Russian summary) *Sibirsk. Mat. Zh.* **33** (1992), *no.* 3, 101–111, 219; *translation in Siberian Math. J.* **33** (1992), *no.* 3, 452–461 (1993). (Summary) **93d:35177** 35R30 (35L05)

Lavrent'ev, Mikhail Mikhailovich *see* **Lavrent'ev, M. M.**

Lavrenyuk, S. P. Existence of a solution of the Cauchy problem for an equation that is of the transverse oscillation of a rod type with degeneration. (Ukrainian. Russian summary) *Visnik L'viv. Derzh. Univ. Ser. Mekh.-Mat. No.* 30 (1988), 3–5, 72. 35Q72

— Weak convergence of generalized solutions of an equation of transverse oscillations of a rod type. (Ukrainian) *Visnik L'viv. Derzh. Univ. Ser. Mekh.-Mat. No.* 32 (1989), 3–5. 73K12 (35Q72, 73D30)

— A mixed problem for an almost linear hyperbolic equation with degeneration. (Ukrainian) *Visnik L'viv. Univ. Ser. Mekh. Mat. No.* 34 (1990), 34–36. 35L80

— A mixed problem for a second-order degenerate hyperbolic equation. (Russian. Russian summary) *Mat. Metody i Fiz.-Mekh. Polya No.* 34 (1991), 39–42. (Genowefa Majcher) **93k:35179** 35L70 (35L80)

— On the Lyapunov stability of an evolution system. (Russian. English and Russian summaries) *Dokl. Akad. Nauk Ukrainy* **1992**, *no.* 2, 9–11, 168. (Summary) **93f:35096** 35K45 (35B35)

Lavrič, Boris On order principal modules. *An. Ştiinţ. Univ. "Al. I. Cuza" Iaşi Secţ. I a Mat. (N.S.)* **36** (1990), *no.* 3, 177–182. (W. A. Feldman) **93c:46009** 46A40 (46H25, 46J99)

— Orthomorphisms on Riesz spaces of Riesz space-valued functions. *Math. Balkanica (N.S.)* **5** (1991), *no.* 1, 15–19. (Z. Lipecki) **93a:46068** 46E40 (46A40, 47B60)

— A note on flat modules over f-algebras. *Tamkang J. Math.* **22** (1991), *no.* 4, 371–375. (Summary) **93c:13009** 13C11

— Archimedean ordered rings. (Slovenian. English and Slovenian summaries) *Obzornik Mat. Fiz.* **39** (1992), *no.* 3, 73–78. (Summary) **93e:13045** 13J25

— Ivan Vidav receives an award from Slovenia for his scientific activities. (Slovenian) *Obzornik Mat. Fiz.* **40** (1993), *no.* 1, 8. 01A70

Lavrik, A. A. Uniform approximations and zeros in short intervals of the derivatives of the Hardy Z-function. (Russian. English summary) *Anal. Math.* **17** (1991), *no.* 4, 257–279. (E. Stankus) **93h:11101** 11M26

— The strengthened Titchmarsh hypothesis in the discrete theory of the Riemann zeta function. (Russian) *Dokl. Akad. Nauk SSSR* **319** (1991), *no.* 6, 1305–1308; *translation in Soviet Math. Dokl.* **44** (1992), *no.* 1, 322–326. (Antanas Laurinčikas) **93c:11068** 11M06

— A strengthened conjecture of Titchmarsh in discrete Riemann zeta-function theory. (Russian) *Dokl. Akad. Nauk UzSSR* **1991**, *no.* 9, 3–5. (Matti Jutila) **93i:11101** 11M06

Lavrik, A. F. A functional equation of the Riemann zeta function and an interval of the Euler product. (Russian) *Dokl. Akad. Nauk SSSR* **320** (1991), *no.* 1, 29–33; *translation in Soviet Math. Dokl.* **44** (1992), *no.* 2, 386–390. (Jacek Fabrykowski) **93d:11088** 11M06

— Arithmetic equivalents of functional equations of Riemann type. (Russian) *Trudy Mat. Inst. Steklov.* **200** (1991), 213–221; *translation in Proc. Steklov Inst. Math.* **1993**, *no.* 2, 237–245. (Krystyna Bartz) **93b:11108** 11M06

— Equations for Dirichlet L-functions and the intervals of their Euler products in prime numbers. (Russian) *Uspekhi Mat. Nauk* **47** (1992), *no.* 2(284), 199–200; *translation in Russian Math. Surveys* **47** (1992), *no.* 2, 226–228. (From the text) **93k:11075** 11M06

Lavrik, V. N. A method for representing certain classes of algebraic systems in a G-algebra. (Russian. English and Ukrainian summaries) *Kibernet. Sistem. Anal.* **1991**, *no.* 6, 144–149, 191; *translation in Cybernet. Systems Anal.* **27** (1991), *no.* 6, 922–927 (1992). (V. Topencharov) **93m:08008** 08A55

Lavrinenko, T. A. *see* **de Fermat, Pierre, 93m:01023**

Lavrov, P. M. (*with* Batalin, I. A.; Tyutin, I. V.) Remarks on the Sp(2)-covariant Lagrangian quantization of gauge theories. *J. Math. Phys.* **32** (1991), *no.* 9, 2513–2521. (Tsou Sheung Tsun) **93c:81245** 81T70 (81T13)

Lavrov, S. S. Andrei P. Ershov—a friend and a rival. *Images of programming*, I35–I41, *North-Holland, Amsterdam*, 1991. (*see* **93i:68008**) 01A70

Law, A. G. (*with* Jódar, Lucas) Solving boundary value problems for systems $X'' - AX = f(t)$, without increasing the data dimension. *Differential equations and control theory* (*Iaşi*, 1990), 126–133, *Pitman Res. Notes Math. Ser.*, 250, *Longman Sci. Tech., Harlow*, 1991. (Editors) **93d:34027** 34B05

— (*with* Jódar, Lucas) Solving boundary value problems for systems $X'' - AX = f(t)$, without increasing the data dimension. Proceedings of the Twentieth Manitoba Conference on Numerical Mathematics and Computing (Winnipeg, MB, 1990). *Congr. Numer.* **80** (1991), 239–244. (E. S. Chichkin) **93a:34008** 34A12 (34B05)

— (*with* Jódar, Lucas; Legua Fernández, Matilde) A matrix method of Frobenius, and application to a generalized Bessel equation. Proceedings of the Twenty-first Manitoba Conference on Numerical Mathematics and Computing (Winnipeg, MB, 1991). *Congr. Numer.* **86** (1992), 7–17. (Summary) **93c:34018** 34A25

— (*with* Rezazadeh, A.; Zhang, C. N.; Weston, J. H.) A role for generalized inverses in designing systolic arrays. Proceedings of the Twenty-first Manitoba Conference on Numerical Mathematics and Computing (Winnipeg, MB, 1991). *Congr. Numer.* **87** (1992), 51–57. (Summary) **93b:68034** 68Q35 (15A09)

— (*with* Zhang, C. N.; Rezazadeh, A.; Jódar, Lucas) Evaluation of a rational function. (English summary) Extrapolation and rational approximation (Puerto de la Cruz, 1992). *Numer. Algorithms* **3** (1992), *no.* 1-4, 265–272. (Summary) **93h:65021** 65D15

— *see also* **Approximation, optimization and computing, 93a:41001**

Law, C. K. (*with* Ng, Kung Fu) Characterization of positive semigroups of operators on Banach spaces. (English summary) *J. Math. Anal. Appl.* **170** (1992), *no.* 1, 207–213. (R. Nagel) **93h:47049** 47D03 (47B65)

Law, J. (*with* Srivastava, M. K.; Bhaduri, R. K.; Khare, Avinash) Mott scattering of anyons: some exact results. *J. Phys. A* **25** (1992), *no.* 4, L183–L187. (Summary) **93b:81299** 81U05 (81S99)

— (*with* Murthy, M. V. N.; Bhaduri, R. K.; Date, G.) On a class of noninterpolating solutions of the many-anyon problem. (English summary) *J. Phys. A* **25** (1992), *no.* 23, 6163–6168. (Summary) **93k:81043** 81Q05 (81S05)

Law, Peter R. Neutral Einstein metrics in four dimensions. *J. Math. Phys.* **32** (1991), *no.* 11, 3039–3042. (Paul E. Ehrlich) **93e:53075** 53C50 (53C25)

Lawden, Gregor *see* **Barthélémy, Jean-Pierre, 93b:05042**

Lawler, E. L. *see* **Traveling salesman problem, 93g:90035**

Lawler, Gregory F. Intersection probabilities for random walks. *Mathematics of random media* (*Blacksburg, VA*, 1989), 73–85, *Lectures in Appl. Math.*, 27, *Amer. Math. Soc., Providence, RI*, 1991. (Thomas Polaski) **93f:60105** 60J15

— (*with* Durrett, Richard; Kesten, Harry) Making money from fair games. *Random walks, Brownian motion, and interacting particle systems*, 255–267, *Progr. Probab.*, 28, *Birkhäuser Boston, Boston, MA*, 1991. (A. Spătaru) **93a:60075** 60G50 (60J15)

— Estimates for differences and Harnack inequality for difference operators coming from random walks with symmetric, spatially inhomogeneous, increments. *Proc. London Math. Soc.* (3) **63** (1991), *no.* 3, 552–568. (S. J. Taylor) **93a:60103** 60J15 (31B05, 39A70)

— (*with* Kesten, Harry) A necessary condition for making money from fair games. *Ann. Probab.* **20** (1992), *no.* 2, 855–882. (N. H. Bingham) **93e:60140** 60J15 (60F99)

— (*with* Duplantier, Bertrand; Le Gall, Jean-François; Lyons, T. J.) The geometry of the Brownian curve. (English and French summaries) *Bull. Sci. Math.* (2) **117** (1993), *no.* 1, 91–106. (Krzysztof Burdzy) **93k:60205** 60J65 (31A20, 60G17, 60J15, 60J50, 60K35)

Lawlor, Gary Area-minimizing m-tuples of k-planes. (English summary) *The problem of Plateau*, 165–180, *World Sci. Publishing, River Edge, NJ*, 1992. (Timothy Murdoch) **93m:53068** 53C42 (53C40)

Lawrance, A. J. Uniformly distributed first-order autoregressive time series models and multiplicative congruential random number generators. (English summary) *J. Appl. Probab.* **29** (1992), *no.* 4, 896–903. (Summary) **93h:62163** 62M10 (65C10)

— (*with* Lewis, P. A. W.) Reversed residuals in autoregressive time series analysis. *J. Time Ser. Anal.* **13** (1992), *no.* 3, 253–266. (Hartmut Milbrodt) **93g:62117** 62M10

Lawrence, Dale A. (*with* Sethares, William A.; Ren, Wei) Parameter drift instability in disturbance-free adaptive systems. (English summary) *IEEE Trans. Automat. Control* **38** (1993), *no.* 4, 584–587. 93B40

Lawrence, James F. (*with* Spingarn, Jonathan E.) An intrinsic characterization of foldings of Euclidean space. (English summary) *Analyse non linéaire* (*Perpignan*, 1987), 364–383, *Univ. Montréal, Montreal, PQ*, 1989. (*see* **93h:49003**) 57Q99

Lawrence, John W. (*with* Burris, Stanley) Term rewrite rules for finite fields. *Internat. J. Algebra Comput.* **1** (1991), *no.* 3, 353–369. (Ralph W. Wilkerson) **93a:68069** 68Q42

— Algebraic ideals in group rings and tensor products. *Canad. Math. Bull.* **35** (1992), *no.* 1, 99–102. (G. Karpilovsky) **93a:16024** 16S34 (20C07)

Lawrence, Kent L. (*with* Bergmann, Brad E.; Nambiar, Rajiv V.) Explicit stiffness and error estimator expressions for a family of axisymmetric triangular finite elements. *Integral methods in science and engineering—90* (*Arlington, TX*, 1990), 191–200, *Ser. Comput. Phys. Process. Mech. Thermal Sci., Hemisphere, New York*, 1991. (*see* **93f:00014**) 73V05

Lawrence, R. J. Connections between CFT and topology via knot theory. *Differential geometric methods in theoretical physics* (*Rapallo*, 1990), 245–254, *Lecture Notes in Phys.*, 375, *Springer, Berlin*, 1991. (Toshitake Kohno) **93f:20051** 20F36 (32G34, 57M25, 81T40)

— (*with* Howison, Sam D.) Fluorescent transfer of light in dyed materials. (English summary) *SIAM J. Appl. Math.* **53** (1993), *no.* 2, 447–458. (Summary) **93k:92013** 92J30 (34A55, 45J05, 78A10)

Lawrencenko, Serge The variety of triangular embeddings of a graph in the projective plane. *J. Combin. Theory Ser. B* **54** (1992), *no.* 2, 196–208. (Saul Stahl) **93b:05049** 05C10

Lawrie, D. I. (*with* Fleming, P.) Fine-grain parallel processing implementations of Kalman filter algorithms. *Control '91, Vol.* 1, 2 (*Edinburgh*, 1991), 867–870, *IEE Conf. Publ. Ser.*, 332, *IEE, London*, 1991. (*see* **93h:93007**) 93E11

Lawrie, Ian D. ★ A unified grand tour of theoretical physics. *Adam Hilger, Ltd., Bristol*, 1990. xiv+380 *pp. ISBN* 0-85274-014-X; 0-85274-015-8 (Markku Lehto) **93a:00012** 00A79 (00A05, 81–01, 82–01, 83–01)

Lawry, K. A. (*with* Bellhouse, D. R.) Relative efficiency of certain randomization procedures in an $n \times n$ array when spatial correlation is present. (English summary) *J. Statist. Plann. Inference* **32** (1992), *no.* 3, 385–399. (Shahariar Huda) **93m:62173** 62K05 (62K10)

Lawrynowicz, Julian (*with* Rembieliński, Jakub) Erratum. Reprint of the article: "On the composition of nondegenerate quadratic forms with an arbitrary index" [Ann. Fac. Sci. Toulouse Math. (5) **10** (1989), no. 1, 141–168]. (English and French summaries) *Ann. Fac. Sci. Toulouse Math.* (5) **11** (1990), *no.* 1, 141–168. (Andrzej Sładek) **93m:15043** 15A63 (11E88, 15A66)

— (*with* Ramírez de Arellano, Enrique; Rembieliński, Jakub) The correspondence between type-reversing transformations of pseudo-Euclidean Hurwitz pairs and Clifford algebras. I, II. (Polish summary) *Bull. Soc. Sci. Lett. Łódź* **40** (1990), *no.* 1-10, 61–97, 99–129 (1991). (Pierre Anglès) **93m:15044** 15A66

— (*with* Kovacheva, Ralitza Krumova) Quasi-regular extension and approximation of dualities generated by the generalized Hurwitz problem. *Geometric function theory and applications of complex analysis to mechanics: studies in complex analysis and its applications to partial differential equations*, 2 (*Halle*, 1988), 100–117, *Pitman Res. Notes Math. Ser.*, 257, *Longman Sci. Tech., Harlow*, 1991. (John Ryan) **93b:30045** 30G35 (81R25)

— *see also* **Proceedings: School in Complex Analysis, 93m:30001**

Laws, C. N. Resource pooling in queueing networks with dynamic routing. *Adv. in Appl. Probab.* **24** (1992), *no.* 3, 699–726. (Yannis A. Phillis) **93h:90037** 90B15 (60K15, 90B22, 90B35, 93E20)

— (*with* Kelly, F. P.) Dynamic routing in open queueing networks: Brownian models, cut constraints and resource pooling. (English summary) *Queueing Systems Theory Appl.* **13** (1993), *no.* 1-3, 47–86. 60K25 (90B22)

Lawson, H. Blaine, Jr. (*with* Michelsohn, Marie-Louise) Algebraic cycles and group actions. *Differential geometry*, 261–277, *Pitman Monographs Surveys Pure Appl. Math.*, 52, *Longman Sci. Tech., Harlow*, 1991. (Stefan Müller-Stach) **93g:14007** 14C05 (55N35, 55P15)

— (*with* Friedlander, Eric Mark) A theory of algebraic cocycles. *Ann. of Math.* (2) **136** (1992), *no.* 2, 361–428. (Stefan Müller-Stach) **93g:14013** 14C25 (55P15, 55P20, 55Q52)

— *see also* **Differential geometry, 93b:53001**

Lawson, Jimmie D. Order and strongly sober compactifications. *Topology and category theory in computer science* (*Oxford*, 1989), 179–205, *Oxford Sci. Publ., Oxford Univ. Press, New York*, 1991. (*see* **93h:68004**) 68Q55 (54C08, 54D35, 54E99, 54F05)

— (*with* Lisan, Amha) Transitive flows: a semigroup approach. *Mathematika* **38** (1991), *no.* 2, 348–361 (1992). (Bernard L. Madison) **93c:22003** 22A30 (20M20, 54H15, 54H20)

— Polar and Ol'shanskiĭ decompositions. Seminar Sophus Lie (Darmstadt, 1991). *Sem. Sophus Lie* **1** (1991), *no.* 2, 163–173. (K. H. Hofmann) **93d:22025** 22E60 (20M99, 22A15, 22E15)

— Flows and compactifications. (English summary) *J. London Math. Soc.* (2) **46** (1992), *no.* 2, 349–363. (Helmut Ludescher) **93m:54070** 54H20 (54D35)

Lawson, Linda M. (*with* Haynes, Teresa W.; Boland, James W.) Observations regarding distance-n graphs. (English summary) Proceedings of the Twenty-third Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, FL, 1992). *Congr. Numer.* **89** (1992), 55–64. (Summary) **93j:05052** 05C12

— (*with* Haynes, Teresa W.) The effects of graph modifications on edge independence and edge covering numbers. (English summary) *J. Combin. Math. Combin. Comput.* **12** (1992), 129–140. (Summary) **93f:05073** 05C75

— (*with* Haynes, Teresa W.) E-graphs, a generalization of several network designs. (English summary) *Bull. Inst. Combin. Appl.* **7** (1993), 39–46. (Summary) **93j:05153** 05C90 (68M10, 94C15)

Lawson, Mark V. The geometric theory of inverse semigroups. II. E-unitary covers of inverse semigroups. (English summary) *J. Pure Appl. Algebra* **83** (1992), *no.* 2, 121–139. (S. Sribala) **93m:20098** 20M18 (06F05, 20L99)

Lawson, Terry Smooth embeddings of 2-spheres in 4-manifolds. *Exposition. Math.* **10** (1992), *no.* 4, 289–309. (Laurence R. Taylor) **93m:57041** 57R95 (57R40)

Lawvere, Danilo *see* **Lawvere, F. William, 93m:18001**

Lawvere, F. William (*with* Schanuel, Stephen H.) ★ Conceptual mathematics. A first introduction to categories. With the assistance of Emilio Faro, Fatima Fenaroli and Danilo Lawvere. *Buffalo Workshop Press, Buffalo, NY*, 1991. x+353 *pp. ISBN* 0-9631805-0-9 (Andreas Blass) **93m:18001** 18–01

— Some thoughts on the future of category theory. *Category theory* (*Como*, 1990), 1–13, *Lecture Notes in Math.*, 1488, *Springer, Berlin*, 1991. (Peter Johnstone) **93g:18001** 18–02 (03A05, 03G30, 18B25)

— Intrinsic co-Heyting boundaries and the Leibniz rule in certain toposes. *Category theory* (*Como*, 1990), 279–281, *Lecture Notes in Math.*, 1488, *Springer, Berlin*, 1991. (Shu Hao Sun) **93e:18007** 18B25 (06D20)

Lax, Peter D. (*with* Phillips, Ralph S.) Translation representation for automorphic solutions of the wave equation in non-Euclidean spaces. IV. *Comm. Pure Appl. Math.* **45** (1992), *no.* 2, 179–201. (P. Günther) **93c:58220** 58G25 (11F72, 35A22, 35L05)

— *see also* **Steele Prizes, 93m:01098**

Lax, R. F. (*with* Widland, Carl) Gap sequences at a singularity. *Pacific J. Math.* **150** (1991), *no.* 1, 111–122. (Raquel Mallavibarrena) **93d:14049** 14H55 (13H10, 14H20, 14M05)

— (*with* García, Arnaldo) Goppa codes and Weierstrass gaps. *Coding theory and algebraic geometry* (*Luminy*, 1991), 33–42, *Lecture Notes in Math.*, 1518, *Springer, Berlin*, 1992. (Stefan Dodunekov) **93m:94032** 94B27 (11G20, 11T71, 94B65)

Laxmi Prasanna, C. (*with* Vinay, V.) Improved space and time hierarchy theorems. *National Seminar on Theoretical Computer Science* (*Madras*, 1991), 125–128, *IMS Rep.*, 115, *Inst. Math. Sci., Madras*, 199?. (*see* **93b:68006**) 68Q15

Lay, David C. (*with* Ellis, Robert Lee) Factorization of finite rank Hankel and Toeplitz matrices. *Linear Algebra Appl.* **173** (1992), 19–38. (A. Böttcher) **93g:15009** 15A23 (15A57, 47B35)

Lay, Steven R. ★ Convex sets and their applications. Revised reprint of the 1982 original. *Robert E. Krieger Publishing Co., Inc., Malabar, FL*, 1992. xviii+244 *pp. ISBN* 0-89464-537-4 (Marilyn Breen) **93g:52001** 52-01 (49-01, 49N15, 90-01, 90C25)

Lay, W. (*with* Slavyanov, S.; Smirnov, A. O.) Asymptotic solutions of a Schrödinger equation with a second order pole. (English summary) *Phys. Lett. A* **172** (1993), *no.* 5, 305–312. (Summary) **93k:81041** 81Q05 (34E05)

Laydi, M. R. (*with* Besson, O.) Some estimates for the anisotropic Navier-Stokes equations and for the hydrostatic approximation. (English and French summaries) *RAIRO Modél. Math. Anal. Numér.* **26** (1992), *no.* 7, 855–865. (Rodolfo Salvi) **93m:35139** 35Q30 (76D05)

Layman, John W. Dynamics of multicellular automata with unbounded memory. (English summary) *Complex Systems* **6** (1992), *no.* 4, 315–331. (Zdzisław Grodzki) **93j:68149** 68Q80

Laytimi, Fatima Courbe des trisécantes à une courbe lisse de $\mathbf{P}_3$ de degré $d > 2g + 1$. [The curve of trisecants to a smooth curve in $\mathbf{P}_3$ of degree $d > 2g + 1$] *Math. Ann.* **294** (1992), *no.* 3, 459–462. (Gunnar Fløystad) **93i:14027** 14H50 (14H45)

Laywine, Charles F. (*with* Mullen, Gary L.) Generalizations of Bose's equivalence between complete sets of mutually orthogonal Latin squares and affine planes. (English summary) *J. Combin. Theory Ser. A* **61** (1992), *no.* 1, 13–35. (J. Dénes) **93k:05030** 05B15 (05B25, 51E15)

— Subsquares in orthogonal Latin squares as subspaces in affine geometries: a generalization of an equivalence of Bose. (English summary) *Des. Codes Cryptogr.* **3** (1993), *no.* 1, 21–28. (Gary L. Mullen) **93j:05021** 05B15 (05B05, 05B25)

— Complete sets of orthogonal frequency squares and affine resolvable designs. (English summary) *Utilitas Math.* **43** (1993), 161–170. (Summary) **93m:05045** 05B30

Lazalde, Carlos A. (*with* Barr, Lloyd) Four-state models and regulation of contraction of smooth muscle. I. Physical considerations, stability, and solutions. (English summary) *Math. Biosci.* **112** (1992), *no.* 1, 1–30. (Summary) **93i:92002** 92B05 (92C30)

— (*with* Barr, Lloyd) Four-state models and regulation of contraction of smooth muscle. II. Properties of the solutions and identification. (English summary) *Math. Biosci.* **112** (1992), *no.* 1, 31–54. (Summary) **93i:92003** 92B05 (92C30)

Lazanas, Anthony (*with* Latombe, Jean-Claude; Shekhar, Shashank) Robot motion planning with uncertainty in control and sensing. *Artificial Intelligence* **52** (1991), *no.* 1, 1–47. (B. G. Mertzios) **93e:68131** 68U05

Lazar, Aurel A. (*with* Ferrandiz, Josep M.) Monitoring the packet gap of real-time packet traffic. (English summary) *Queueing Systems Theory Appl.* **12** (1992), *no.* 3-4, 231–242. (Summary) **93i:60170** 60K25 (68M10, 90B12)

Lazard, D. A new method for solving algebraic systems of positive dimension. Applied algebra, algebraic algorithms, and error-correcting codes (Toulouse, 1989). *Discrete Appl. Math.* **33** (1991), *no.* 1-3, 147–160. (Timothy Stokes) **93b:12019** 12Y05 (13P99, 65H10)

— Solving zero-dimensional algebraic systems. *J. Symbolic Comput.* **13** (1992), *no.* 2, 117–131. (Summary) **93a:68066** 68Q40

— A note on upper bounds for ideal-theoretic problems. *J. Symbolic Comput.* **13** (1992), *no.* 3, 231–233. (Joachim Apel) **93b:13020** 13D02 (13P10)

Lazard, E. Broadcasting in DMA-bound bounded degree graphs. (English and French summaries) *Discrete Appl. Math.* **37/38** (1992), 387–400. (Summary) **93f:68019** 68M20 (05C90, 94A05)

Lazarev, A. G. Group-theoretic bases of methods for information transformation. (Russian. English and Ukrainian summaries) *Kibernet. Sistem. Anal.* **1992**, *no.* 4, 163–167, 191; *translation in Cybernet. Systems Anal.* **28** (1992), *no.* 4, 632–636 (1993). (From the text) **93j:94025** 94A99 (94B99)

Lazarev, A. Yu. (*with* Movshev, M. V.) Deformations of Hopf algebras. (Russian) *Uspekhi Mat. Nauk* **46** (1991), *no.* 1(277), 211–212; *translation in Russian Math. Surveys* **46** (1991), *no.* 1, 253–254. (J. Stasheff) **93k:16057** 16S80 (16E40, 16W30, 17B35, 17B37)

— (*with* Movshev, M. V.) Quantization of some Lie groups and algebras. (Russian) *Uspekhi Mat. Nauk* **46** (1991), *no.* 6(282), 215–216; *translation in Russian Math. Surveys* **46** (1991), *no.* 6, 225–226. (L. L. Vaksman) **93e:17021** 17B37 (16W30, 17B55)

— The Novikov homology in knot theory. (Russian) *Mat. Zametki* **51** (1992), *no.* 3, 53–57, 144; *translation in Math. Notes* **51** (1992), *no.* 3-4, 259–262. (Andrei V. Pazhitnov) **93g:57012** 57M25 (57R70)

Lazarev, V. A. Convergence of stochastic approximation procedures in the case of several roots of a regression equation. (Russian) *Problemy Peredachi Informatsii* **28** (1992), *no.* 1, 75–88; *translation in Problems Inform. Transmission* **28** (1992), *no.* 1, 66–78. (V. Fabian) **93d:62153** 62L20

Lazareva, B. V. Some procedures for the interpolation of a partially observable Markov process. (Russian) *Problemy Peredachi Informatsii* **27** (1991), *no.* 4, 57–69; *translation in Problems Inform. Transmission* **27** (1991), *no.* 4, 322–333 (1992). (Summary) **93m:62204** 62M20 (93E10)

— (*with* Khas'minskiĭ, R. Z.) On some filtration procedure for jump Markov process observed in white Gaussian noise. (English summary) *Ann. Statist.* **20** (1992), *no.* 4, 2153–2160. (A. F. Gualtierotti) **93m:60082** 60G35 (62M20)

Lazareva, Valentina (*with* Shelekhov, A. M.) An addition to the problem of analytic G-loops. (Russian summary) Quasigroups and nonassociative algebras in physics (Russian) (Tartu, 1989). *Eesti NSV Tead. Akad. Füüs. Inst. Uurim. No.* 66 (1990), 89–97. (M. A. Akivis) **93d:53027** 53A60

— On some 5-dimensional Moufang loops. (English summary) *Proceedings of the 3rd Congress of Geometry (Thessaloniki, 1991)*, 254–261, *Aristotle Univ. Thessaloniki, Thessaloniki*, 1992. (Karl H. Robinson) **93i:20086** 20N05 (17D10, 53A60)

Lazarov, R. D. (*with* Ewing, Richard E.; Vassilevski, Panayot S.) Finite difference schemes on grids with local refinement in time and in space for parabolic problems. Optimal order two-grid iterative methods. *Parallel algorithms for partial differential equations (Kiel, 1990)*, 70–93, *Notes Numer. Fluid Mech.*, 31, *Vieweg, Braunschweig*, 1991. (Summary) **93a:65113** 65M06 (65F10, 65M50)

— (*with* Ewing, Richard E.; Vassilevski, Panayot S.) Local refinement techniques for elliptic problems on cell-centered grids. III. Algebraic multilevel BEPS preconditioners. *Numer. Math.* **59** (1991), *no.* 5, 431–452. (Summary) **93e:65126** 65N06 (65N15, 65N50)

— (*with* Ewing, Richard E.; Vassilev, A. T.) Adaptive techniques for time-dependent problems. (English summary) Reliability in computational mechanics (Kraków, 1991). *Comput. Methods Appl. Mech. Engrg.* **101** (1992), *no.* 1-3, 113–126. (Summary) **93i:65099** 65M99

— (*with* Vassilevski, Panayot S.; Petrova, S. I.) Finite difference schemes on triangular cell-centered grids with local refinement. (English summary) *SIAM J. Sci. Statist. Comput.* **13** (1992), *no.* 6, 1287–1313. (I. P. Gavrilyuk) **93m:65156** 65N06 (65N15)

Lazarova, Tatiana B. (*with* Sgurev, Vasil S.) Stationary randomized strategies of a set of dependent semi-Markov decision-making processes with common linear constraints and without reward rate reevaluation. (Russian summary) *Problemi Tekhn. Kibernet. Robot.* **37** (1992), 26–32. (L. C. Thomas) **93m:90096** 90C40 (90C42)

— (*with* Sgurev, Vasil S.) Randomized policies and strategies at semi-Markov decision processes with additional linear constraints. (Russian summary) *Problemi Tekhn. Kibernet. Robot.* **37** (1992), 38–45. (L. C. Thomas) **93m:90097** 90C40 (90C42)

Lazarow, Ewa (*with* Carrese, Rosalba) Strong density topologies with respect to measure and category. *Real Anal. Exchange* **17** (1991/92), *no.* 1, 322–338. (Zbigniew Grande) **93e:54001** 54A10 (26B05, 54H05)

Lazarsfeld, Robert K. (*with* Bertram, Aaron; Ein, Lawrence) Surjectivity of Gaussian maps for line bundles of large degree on curves. *Algebraic geometry (Chicago, IL, 1989)*, 15–25, *Lecture Notes in Math.*, 1479, *Springer, Berlin*, 1991. (Enrique Arrondo) **93i:14031** 14H60

— Linear series on algebraic varieties. *Proceedings of the International Congress of Mathematicians, Vol. I, II (Kyoto, 1990)*, 715–723, *Math. Soc. Japan, Tokyo*, 1991. (Marco Andreatta) **93d:14014** 14C20 (14J60, 14N05)

— (*with* Ein, Lawrence) Syzygies and Koszul cohomology of smooth projective varieties of arbitrary dimension. *Invent. Math.* **111** (1993), *no.* 1, 51–67. (Gary P. Kennedy) **93m:13006** 13D02 (14F17, 14J60)

Lazaryants, A. È. (*with* Grigor'ev, A. I.) A method for solving the Navier-Stokes equation in curvilinear coordinate systems. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **32** (1992), *no.* 6, 929–938; *translation in Comput. Math. Math. Phys.* **32** (1992), *no.* 6, 803–810. (Summary) **93d:35115** 35Q30 (76D05, 76D45, 76E25)

Lazebnik, Felix On the number of maximal independent sets in some (v, e)-graphs. *Graph theory, combinatorics, and applications. Vol. 2 (Kalamazoo, MI, 1988)*, 743–752, *Wiley-Intersci. Publ., Wiley, New York*, 1991. (Summary) **93c:05065** 05C35

— (*with* Ebert, G. L.; Hemmeter, Joe; Woldar, Andrew J.) On the number of irregular assignments on a graph. *Discrete Math.* **93** (1991), *no.* 2-3, 131–142. (Michael Jacobson) **93b:05147** 05C78

Lazić, Dejan E. (*with* Šenk, Vojin) A direct geometrical method for bounding the error exponent for any specific family of channel codes. I. Cutoff rate lower bound for block codes. (English summary) *IEEE Trans. Inform. Theory* **38** (1992), *no.* 5, 1548–1559. 94A24 (94A40)

Laziun, V. (*with* Tudor, Gheorghe M.) Étude sur la répartition des zéros de certaines classes de fonctions. II. (Romanian summary) [Study of the distribution of zeros of certain classes of functions. II] *Inst. Politehn. "Traian Vuia" Timişoara Lucrăr. Sem. Mat. Fiz.* **1989**, *May-November*, 52–54. 30C15

— (*with* Neamţu, N. N.) About some mean formulas for the systems of functions. (Romanian summary) *Inst. Politehn. "Traian Vuia" Timişoara Lucrăr. Sem. Mat. Fiz.* **1989**, *May-November*, 59–62. 26A24

— (*with* Tudor, Gheorghe M.) Sur quelques inégalités intégrales. (Romanian summary) [On some integral inequalities] *Inst. Politehn. "Traian Vuia" Timişoara Lucrăr. Sem. Mat. Fiz.* **1989**, *May-November*, 67–68. 26D10

Lazo, Edmundo (*with* Kiwi, Miguel; Rössler, Jaime) Periodic modulation of a logistic oscillator. (English summary) *Instabilities and nonequilibrium structures, III (Valparaíso, 1989)*, 59–64, *Math. Appl.*, 64, *Kluwer Acad. Publ., Dordrecht*, 1991. (Summary) **93d:58046** 58F03

— (*with* Rössler, Jaime; Kiwi, Miguel) Effect of a resonant periodic perturbation on nonlinear processes. *Nonlinear phenomena in fluids, solids and other complex systems (Santiago, 1990)*, 419–433, *North-Holland Delta Ser., North-Holland, Amsterdam*, 1991. (Summary) **93b:58124** 58F30 (58F14)

Lazraq, Aziz (*with* Cléroux, Robert; Kiers, Henk A. L.) Mesures de liaison vectorielle et généralisation de l'analyse canonique. (English summary) [Vector measures of association and a generalization of the canonical analysis] *Rev. Statist. Appl.* **40** (1992), *no.* 1, 23–35. 62H20

Lazrieva, N. L. (*with* Torondzhadze, T. A.) On stable M-estimators in the partial likelihood scheme. (English summary) *New trends in probability and statistics, Vol. 1 (Bakuriani, 1990)*, 567–596, *VSP, Utrecht*, 1991. (Lai K. Chan) **93k:62060** 62F12 (62F35)

Lazutkin, V. F. Analytic integrals and separatrices splittings in Hamiltonian systems. *Conference on Differential Equations and Applications (Ruse, 1989)*, 116–123, *Tech. Univ., Ruse*, 1991. (*see* **93f:34004**) 58F05 (34C99, 58F15, 70H05)

— (*with* Gelfreich, V. G.; Simó, Carles; Tabanov, M. B.) Fern-like structures in the wild set of the standard and semistandard maps in $\mathbf{C}^2$. (English summary) *Internat. J. Bifur. Chaos Appl. Sci. Engrg.* **2** (1992), *no.* 2, 353–370. (Tim Bedford) **93f:58074** 58F05 (58F15)

Lazzari, Barbara (*with* Fabrizio, Mauro) Stability theory for nonlinear dissipative systems. (English summary) *Waves and stability in continuous media (Sorrento, 1989)*, 114–122, *Ser. Adv. Math. Appl. Sci.*, 4, *World Sci. Publishing, River Edge, NJ*, 1991. (*see* **93g:00030**) 78A25 (35Q60)

— (*with* Giorgi, Claudio) Uniqueness and stability in linear viscoelasticity: some counterexamples. (English summary) *Waves and stability in continuous media (Sorrento, 1989)*, 146–153, *Ser. Adv. Math. Appl. Sci.*, 4, *World Sci. Publishing, River Edge, NJ*, 1991. (Summary) **93i:73027** 73F15 (73B30, 73H10)

Lazzarini, S. (*with* Stora, Raymond) Ward identities for Lagrangian conformal models. *Knots, topology and quantum field theories (Florence, 1989)*, 549–555, *World Sci. Publishing, River Edge, NJ*, 1989. (Robert E. C. Perret) **93b:81257** 81T40 (81T50, 81T70)

— (*with* Knecht, M.; Stora, Raymond) On holomorphic factorization for free conformal fields. II. *Phys. Lett. B* **273** (1991), *no.* 1-2, 63–66. (A. K. Raina) **93a:81174** 81T40 (14H55, 58G26)

Lazzaro, D. (*with* Puccio, L.) Tikhonov regularization of ill-posed problems via cubic splines. (Italian. English summary) *Atti Accad. Peloritana Pericolanti Cl. Sci. Fis. Mat. Natur.* **68** (1990), 229–241 (1992). (Summary) **93c:65052** 65F10 (65C05, 65D07)

Lbekkouri, Aboubakr (*with* Kleiner, Mark) Splitters and relative homological algebra. *J. Algebra* **153** (1992), *no.* 2, 476–493. (Wolfgang Grölz) **93k:16015** 16E30 (16D99)

Le, Hui Ling The shapes of nongeneric figures, and applications to collinearity testing. (English summary) *Proc. Roy. Soc. London Ser. A* **439** (1992), *no.* 1905, 197–210. (T.

Keith Carne) **93k:60031** 60D05

Le, Jian (*with* Parlett, Beresford N.) Forward instability of tridiagonal *QR*. (English summary) *SIAM J. Matrix Anal. Appl.* **14** (1993), *no.* 1, 279–316. (James Weldon Demmel) **93k:65033** 65F15

Le, K. C. *see* **Le Khanh Chau**

Le, Mao Hua A note on primes p with $\sigma(p^m) = z^n$. *Colloq. Math.* **62** (1991), *no.* 2, 193–196. (Jacek Fabrykowski) **93b:11030** 11D41 (11A25)

— A note on the Diophantine equation $ax^m - by^n = k$. *Indag. Math. (N.S.)* **3** (1992), *no.* 2, 185–191. (T. N. Shorey) **93c:11016** 11D41

— On the Diophantine equation $x^2 + D = 4p^n$. *J. Number Theory* **41** (1992), *no.* 1, 87–97. (J. Wolfskill) **93b:11037** 11D61

— On the Diophantine equation $x^2 - D = 4p^n$. *J. Number Theory* **41** (1992), *no.* 3, 257–271. (Bela Brindza) **93e:11042** 11D61

— On the generalized Ramanujan-Nagell equation $x^2 - D = 2^{n+2}$. *Trans. Amer. Math. Soc.* **334** (1992), *no.* 2, 809–825. (Nikos Tzanakis) **93b:11038** 11D61

— The number of solutions of a certain quadratic congruence related to the class number of $\mathbf{Q}(\sqrt{p})$. *Proc. Amer. Math. Soc.* **117** (1993), *no.* 1, 1–3. (Kuniaki Horie) **93c:11021** 11D79 (11R11, 11R29)

— On the Diophantine equations $d_1x^2 + 2^{2m}d_2 = y^n$ and $d_1x^2 + d_2 = 4y^n$. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 1, 67–70. (Nikos Tzanakis) **93f:11031** 11D61

Le, Nhu D. (*with* Zidek, James V.) Interpolation with uncertain spatial covariances: a Bayesian alternative to Kriging. (English summary) *J. Multivariate Anal.* **43** (1992), *no.* 2, 351–374. (Raúl Pedro Mentz) **93k:62195** 62M20 (62H11)

Le, Van Bang *see* **Le Van Bang**

Leach, J. A. (*with* Merkin, J. H.; Scott, Stephen K.) An analysis of a two-cell coupled nonlinear chemical oscillator. *Dynamics Stability Systems* **6** (1991), *no.* 4, 341–366. (Summary) **93b:80009** 80A30 (34C10)

Leach, P. G. L. Group theoretical properties of nth order ordinary differential equations. *Proceedings of Asian Mathematical Conference*, 1990 (*Hong Kong*, 1990), 271–275, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93b:00022**) 34A25 (34A34)

— (*with* Maartens, R.; Maharaj, S. D.) Self-similar solutions of the generalized Emden-Fowler equation. (English summary) *Internat. J. Non-Linear Mech.* **27** (1992), *no.* 4, 575–582. (Summary) **93e:34006** 34A05 (34A26, 34A34)

— (*with* Maharaj, S. D.) A first integral for a class of time-dependent anharmonic oscillators with multiple anharmonicities. *J. Math. Phys.* **33** (1992), *no.* 6, 2023–2030. (Summary) **93d:34066** 34C15 (76W05, 83C55)

— (*with* Znojil, Miloslav) On the elementary Schrödinger bound states and their multiplets. *J. Math. Phys.* **33** (1992), *no.* 8, 2785–2794. (Martin Kummer) **93i:81029** 81Q05

— Comment on an aspect of a letter of B. K. Shivamoggi and L. Muilenburg: "On Lewis' exact invariant for the linear harmonic oscillator with time-dependent frequency" [Phys. Lett. A **154** (1991), no. 1-2, 24–28; MR 91m:81053]. (English summary) *Phys. Lett. A* **168** (1992), *no.* 5-6, 460–462. (Summary) **93g:70017** 70H33 (70H35)

— (*with* Gorringe, V. M.) The first integrals and their Lie algebra of the most general autonomous Hamiltonian of the form $H = T + V$ possessing a Laplace-Runge-Lenz vector. (English summary) *J. Austral. Math. Soc. Ser. B* **34** (1993), *no.* 4, 511–522. (Summary) **93m:70018** 70H05 (58F05, 70F05, 70H33)

Leaci, Antonio Free discontinuity problems with unbounded data: the two-dimensional case. *Manuscripta Math.* **75** (1992), *no.* 4, 429–441. (Summary) **93c:49004** 49J10 (49Q20)

Leadbetter, M. R. On a basis for "peaks over threshold" modeling. *Statist. Probab. Lett.* **12** (1991), *no.* 4, 357–362. (Summary) **93a:60077** 60G70 (60G55)

Leader, Imre Discrete isoperimetric inequalities. *Probabilistic combinatorics and its applications* (*San Francisco, CA*, 1991), 57–80, *Proc. Sympos. Appl. Math.*, 44, *Amer. Math. Soc., Providence, RI*, 1991. (Summary) **93j:60010** 60C05 (05C35, 60E15)

— The interior of an m-convex set. *Ars Combin.* **32** (1991), 285–288. (David C. Kay) **93e:52013** 52A30 (05B99)

— (*with* Diestel, Reinhard) A proof of the bounded graph conjecture. *Invent. Math.* **108** (1992), *no.* 1, 131–162. (Koduvayur R. Parthasarathy) **93f:05095** 05C99 (05C75, 05C78)

Leaf, Gary K. (*with* Garbey, Marc; Kaper, Hans G.; Matkowsky, Bernard J.) Quasi-periodic waves and the transfer of stability in condensed-phase surface combustion. *SIAM J. Appl. Math.* **52** (1992), *no.* 2, 384–395. (V. A. Sobolev) **93f:80019** 80A25 (35B32)

Leahu, A. *see* **Lyakhu, A. K.**

Leahu, A. K. *see* **Lyakhu, A. K.**

Leal, Guilherme (*with* Jespers, Eric; Polcino Milies, César) Indecomposable R.A. loops and their loop algebras. *C. R. Math. Rep. Acad. Sci. Canada* **14** (1992), *no.* 5, 189–194. (Orin Chein) **93m:20108** 20N05 (17D05)

ferrándiz Leal, José Manuel *see* **Ferrándiz Leal, José Manuel**

Leal, L. G. (*with* Kang, I. S.) Orthogonal grid generation in a 2D domain via the boundary integral technique. (English summary) *J. Comput. Phys.* **102** (1992), *no.* 1, 78–87. (Summary) **93f:76076** 76M25 (65N38)

— (*with* Feng, Zaichun) On energy transfer in resonant bubble oscillations. (English summary) *Phys. Fluids A* **5** (1993), *no.* 4, 826–836. 76Q05 (76N99)

Leal, Lorenzo Quantum kinematics of the Chern-Simons field with matter in the loop representation. (English summary) *Modern Phys. Lett. A* **7** (1992), *no.* 32, 3013–3021. (Jorge A. Pullin) **93i:81153** 81T16 (81T10, 83C45)

lozano Leal, Rogelio *see* **Lozano Leal, Rogelio**

kamphorst Leal da Silva, J. *see* **Kamphorst Leal da Silva, J.**

Leal Ferreira, P. *see* **Festschrift: Giambiagi, J. J., 93b:81004**

Leamer, Edward E. Bayesian elicitation diagnostics. *Econometrica* **60** (1992), *no.* 4, 919–942. (Summary) **93c:62054** 62F15 (62P20)

Léandre, Rémi (*with* Jones, John D. S.) L^p-Chen forms on loop spaces. *Stochastic analysis* (*Durham*, 1990), 103–162, *London Math. Soc. Lecture Note Ser.*, 167, *Cambridge Univ. Press, Cambridge*, 1991. (Hélène Airault) **93m:58009** 58B20 (58A10, 58B25, 58G32)

— (*with* Ben Arous, Gérard) Décroissance exponentielle du noyau de la chaleur sur la diagonale. I. (English summary) [Exponential decay of the heat kernel on the diagonal. I] *Probab. Theory Related Fields* **90** (1991), *no.* 2, 175–202. (Patrick Cattiaux) **93b:60136a** 60H30 (58G32, 60F10, 60H07, 60J60)

— (*with* Ben Arous, Gérard) Décroissance exponentielle du noyau de la chaleur sur la diagonale. II. (English summary) [Exponential decay of the heat kernel on the diagonal. II] *Probab. Theory Related Fields* **90** (1991), *no.* 3, 377–402. (Patrick Cattiaux) **93b:60136b** 60H30 (58G32, 60F10, 60H07, 60J60)

— Développement asymptotique de la densité d'une diffusion dégénérée. [Asymptotic expansion of the density of a degenerate diffusion] *Forum Math.* **4** (1992), *no.* 1, 45–75. (A. Badrikian) **93d:60100** 60H07 (58G11, 58G32, 60H30)

Lê Anh Vũ On the structure of the C^*-algebra of the foliation formed by the K-orbits of maximal dimension of the real diamond group. *J. Operator Theory* **24** (1990), *no.* 2, 227–238. (Jean N. Renault) **93b:46129** 46L55 (22D25, 46L80)

Leão, B. (*with* da Rocha, Armando Freitas; Giorno, F.; Theoto, M.) The physiology of the expert system. *Fuzzy expert systems*, 81–98, *CRC, Boca Raton, FL*, 1992. (*see* **93g:68133**) 68T35

Leary, Christopher C. Pleasant ideals. *Notre Dame J. Formal Logic* **32** (1991), *no.* 4, 612–617 (1992). (F. R. Drake) **93c:04004** 04A20 (03E05)

Leary, F. C. Dedekind finite objects in module categories. (English summary) *J. Pure Appl. Algebra* **82** (1992), *no.* 1, 71–80. (J. L. Gómez Pardo) **93k:16010** 16D80 (13C99, 16P99)

Leary, I. J. The integral cohomology rings of some p-groups. *Math. Proc. Cambridge Philos. Soc.* **110** (1991), *no.* 1, 25–32. (Introduction) **93a:20081** 20J06 (20D15)

— (*with* Yagita, Nobuaki) Some examples in the integral and Brown-Peterson cohomology of p-groups. *Bull. London Math. Soc.* **24** (1992), *no.* 2, 165–168. (U. Stammbach) **93c:20082** 20J06 (55N20)

Léauté, B. (*with* Pons, Roland; Marcilhacy, G.) Transformations between two normal differential equations. Application to the Bessel functions. *Nuovo Cimento B* (11) **107** (1992), *no.* 4, 443–452. (Kotik K. Lee) **93g:83070** 83C57 (34B05, 83C25)

Leavens, Gary T. (*with* Vermeulen, Mike) $3x + 1$ search programs. (English summary) *Comput. Math. Appl.* **24** (1992), *no.* 11, 79–99. (Gerald J. Janusz) **93k:68047** 68Q25 (11B83)

Leaver, Edward W. Comment on: "High-overtone normal modes of Schwarzschild black holes" [Classical Quantum Gravity **7** (1990), no. 2, L47–L53; MR 90m:83034] by J. W. Guinn, C. M. Will, Y. Kojima and B. F. Schutz. *Classical Quantum Gravity* **9** (1992), *no.* 6, 1643–1648. (Summary) **93g:83066** 83C57 (83C25)

Leavitt, J. L. (*with* Sherman, Gary J.; Walker, M. E.) Rewriteability in finite groups. *Amer. Math. Monthly* **99** (1992), *no.* 5, 446–452. (Editors) **93c:20047** 20D99

Lebah, M. (*with* Pellaumail, J.) Transient behavior for some Jackson networks. (English summary) *Performance Evaluation* **17** (1993), *no.* 2, 115–122. (Summary) **93k:90038** 90B22 (90B12)

Lê bá Long A new approach to representation of observables on fuzzy quantum posets. (English summary) *Appl. Math.* **37** (1992), *no.* 5, 357–368. (Pavel Pták) **93j:81008** 81P15 (04A72, 06C15)

Lebeau, Gilles Interaction des singularités faibles pour les équations d'ondes semi-linéaires. [Interaction of weak singularities for semilinear wave equations] *Proceedings of the International Congress of Mathematicians, Vol. I, II* (*Kyoto*, 1990), 1155–1164, *Math. Soc. Japan, Tokyo*, 1991. (Jean-Marc Delort) **93c:35106** 35L70 (58G17)

— Control for hyperbolic equations. *Journées "Équations aux Dérivées Partielles"* (*Saint-Jean-de-Monts*, 1992), 24 *pp., École Polytech., Palaiseau*, 1992. (Peter R. Popivanov) **93m:58112** 58G16 (35L20, 58G17, 93C20)

— (*with* Burq, Nicolas) Micro-local approach to the control for the plates equation. (English summary) *Optimization, optimal control and partial differential equations* (*Iaşi*, 1992), 111–122, *Internat. Ser. Numer. Math.*, 107, *Birkhäuser, Basel*, 1992. (*see* **93m:00044**) 49K20 (35B37, 73K10, 73K50)

— Singularités des solutions d'équations d'ondes semi-linéaires. (English summary) [Singularities of the solutions of semilinear wave equations] *Ann. Sci. École Norm. Sup.* (4) **25** (1992), *no.* 2, 201–231. (R. G. Airapetyan) **93k:35180** 35L70 (35A20, 35S15)

— Contrôle analytique. I. Estimations a priori. [Analytic control. I. A priori estimates] *Duke Math. J.* **68** (1992), *no.* 1, 1–30. (J. P. Babary) **93i:93019** 93B05 (35B37, 58G16, 93C20)

— Contrôle de l'équation de Schrödinger. (English summary) [Control of the Schrödinger equation] *J. Math. Pures Appl.* (9) **71** (1992), *no.* 3, 267–291. (Enrique Zuazua) **93i:35018** 35B37 (35A27, 35Q55, 93B05)

— (*with* Gérard, Patrick) Diffusion d'une onde par un coin. (English summary) [Diffusion of a wave by a corner] *J. Amer. Math. Soc.* **6** (1993), *no.* 2, 341–424. (Peter R. Popivanov) **93f:35130** 35L05 (35A27, 35B40, 35S15, 58G07)

Lebedev, A. L. (*with* Vorokhobko, Yu. A.) Theory of constructing optimal controllers in oscillatory systems under conditions of incomplete information. *J. Comput. Systems Sci. Internat.* **31** (1993), *no.* 2, 50–56; *translated from Izv. Akad. Nauk SSSR Tekhn. Kibernet.* **1991**, *no.* 6, 87–93 (*Russian*). 93B50 (93B35, 93C05)

Lebedev, D. R. (*with* Degasperis, A.; Ol'shanetskii, M. A.; Pakulyak, S. Z.; Perelomov, A. M.; Santini, Paolo Maria) Nonlocal integrable partners to generalized MKdV and two-dimensional Toda lattice equation in the formalism of a dressing method with quantized spectral parameter. *Comm. Math. Phys.* **141** (1991), *no.* 1, 133–151. (Allan P. Fordy) **93d:58064** 58F07 (35Q53)

— (*with* Khakimov, F. Kh.; Abdulloev, Kh. O.) The hierarchy of integrable nonlocal equations connected with the Riemann problem on a one-dimensional complex torus. (Russian. Tajiki summary) *Dokl. Akad. Nauk Tadzhik. SSR* **34** (1991), *no.* 1, 19–22. (B. A. Kupershmidt) **93c:35149** 35Q58 (35R10, 58F07)

— (*with* Golenishcheva-Kutuzova, M.) Vertex operator representation of some quantum tori Lie algebras. (English summary) *Comm. Math. Phys.* **148** (1992), *no.* 2, 403–416. (Chong Ying Dong) **93j:17046** 17B65 (17B37, 17B67, 81R10)

— (*with* Degasperis, A.; Ol'shanetskii, M. A.; Pakulyak, S. Z.; Perelomov, A. M.; Santini, Paolo Maria) Generalized intermediate long-wave hierarchy in zero-curvature representation with noncommutative spectral parameter. (English summary) *J. Math. Phys.* **33** (1992), *no.* 11, 3783–3793. (Yun Bo Zeng) **93i:58071** 58F07 (35Q40, 58F37, 81R10)

Lebedev, D. V. (*with* Tkachenko, A. I.) On the calculation of the parameters of the translational-rotational motion of a rigid body. (Russian. Russian summary) *Kibernet. i Vychisl. Tekhn. No.* 91 (1991), 13–18. 70E15 (70–08, 70B10)

Lebedev, L. E. The invariance algebra of Maxwell's equations in a fixed inertial frame of reference. (Russian. Russian summary) *Differential equations and their applications in physics* (*Russian*), 61–66, 106, *Dnepropetrovsk. Gos. Univ., Dnepropetrovsk*, 1990. (*see* **93k:00023**) 35Q60 (35A30, 78A25)

Lebedev, N. I. (*with* Sokolov, D. D.; Kaganovich, A. S.) Diffusion of a quantum particle in time-dependent random potential. (English summary) *J. Physique I* **1** (1991), *no.* 9,

1213–1215. 81Q15

Lebedev, O. V. (*with* Klin, M. Kh.; Pivina, T. S.; Zefirov, N. S.) Nonisomorphic cycles of maximum length in a series of chemical graphs and the problem of application of IUPAC nomenclature rules. (English summary) *Match No.* 27 (1992), 133–151. (Haruo Hosoya) **93j:92036** 92E10 (05C38, 05C90)

Lebedev, S. A. *see* **Cybernetics and computer technology, 93b:00025**

Lebedev, V. A. Stochastic integrals with respect to semimartingale measures and change of the filtration. *Probability theory and mathematical statistics, Vol. II* (*Vilnius*, 1989), 70–78, "*Mokslas*", *Vilnius*, 1990. (Summary) **93f:60080** 60H05

Lebedev, V. G. (*with* Rabinovich, B. I.; Kalinina, A. V.) Magnetohydrodynamics of a rotating magnetized plasma ring. (Russian) *Dokl. Akad. Nauk* **326** (1992), *no.* 5, 801–807; *translation in Soviet Phys. Dokl.* **37** (1992), *no.* 10, 502–505 (1993). (Introduction) **93m:85006** 85A30 (76W05)

Lebedev, V. I. How to solve stiff systems of differential equations by explicit methods. (Russian) *Computational processes and systems, No.* 8 (*Russian*), 237–291, "*Nauka*", *Moscow*, 1991. (A. M. Galperin) **93b:65117** 65L20 (65L06, 65L07)

Lebedev, V. S. Estimation of the parameters of an image that is observable in two-parameter white noise. (Russian) *Probabilistic processes and their applications* (*Russian*), 137–144, *Moskov. Inst. Èlektron. Mashinostroeniya, Moscow*, 1989. (*see* **93b:60003**) 62M40 (68U10)

Lebedev, Vladimir (*with* L'vov, V. S.; Paton, Miriam; Procaccia, Itamar) Proof of scale invariant solutions in the Kardar-Parisi-Zhang and Kuramoto-Sivashinksy equations in 1 + 1 dimensions: analytical and numerical results. (English summary) *Nonlinearity* **6** (1993), *no.* 1, 25–47. (Summary) **93m:81167** 81V70 (82C26, 82C27)

Lebedinskaya, N. B. (*with* Shakhbazyan, K. V.; Tushkina, T. A.) Lattices of processes in graphs and congruences with respect to an ideal in distributive lattices. (Russian. English and Ukrainian summaries) *Kibernet. Sistem. Anal.* **1992**, *no.* 1, 162–165, 191; *translation in Cybernet. Systems Anal.* **28** (1992), *no.* 1, 140–143. (E. T. Schmidt) **93m:06013** 06D05 (05C99, 06B10)

— *see also* **Venkov, A. B., 93a:11046**

Le Bellac, M. Recent developments in relativistic thermal field theories. *Recent aspects of quantum fields* (*Schladming*, 1991), 275–319, *Lecture Notes in Phys.*, 396, *Springer, Berlin*, 1991. (*see* **93d:81005**) 81T99 (81–02)

Lebeltel, Christophe Sur quelques modèles bidimensionnels de plaques en thermoélasticité linéarisée. (English summary) [On some bidimensional plate models in linearized thermoelasticity] *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 13, 1069–1072. (Summary) **93a:73057** 73K10 (73B30, 73C02)

Leben, Robert (*with* Freymuth, Peter; Gustafson, Karl E.) Visualization and computation of hovering mode vortex dynamics. *Vortex methods and vortex motion*, 143–169, *SIAM, Philadelphia, PA*, 1991. (*see* **93f:76078**) 76M25 (76C05, 76D05)

Leblanc, Hugues (*with* Roeper, Peter; Thau, Michael; Weaver, George) Henkin's completeness proof: forty years later. *Notre Dame J. Formal Logic* **32** (1991), *no.* 2, 212–232. (E. Mendelson) **93c:03010** 03B10 (03C07)

Leblanc, Martin (*with* İpekoğlu, Y.; Thomaz, M. T.) Thermal and quantum fluctuations in supersymmetric Chern-Simons theory. *Ann. Physics* **214** (1992), *no.* 1, 160–179. (Summary) **93h:81088** 81T13 (81T60)

— (*with* Lozano, Gustavo; Min, Hyunsoo) Extended superconformal Galilean symmetry in Chern-Simons matter systems. (English summary) *Ann. Physics* **219** (1992), *no.* 2, 328–348. (Boguslaw Broda) **93k:81234** 81T60 (81R05, 81T13)

— (*with* Thomaz, M. T.) Maxwell-Chern-Simons theory and an ambiguity in Chern-Simons perturbation theory. *Phys. Lett. B* **281** (1992), *no.* 3-4, 259–264. (Summary) **93b:81161** 81T13

— (*with* Thomaz, M. T.) Quantized and thermalized supersymmetric Maxwell-Chern-Simons theory. *Phys. Rev. D* (3) **46** (1992), *no.* 2, 726–736. (Summary) **93c:81239** 81T60 (81T13)

Leblanc, Raymond (*with* Martin, Louise; Nguyen Ky Toan) Tables for the Friedman rank test. (English and French summaries) *Canad. J. Statist.* **21** (1993), *no.* 1, 39–43. 62G10

Leblanc, Y. (*with* Georgelin, Y.) New nonequilibrium regimes of the reservoir model. *Thermal field theories* (*Ibaraki*, 1990), 529–538, *North-Holland Delta Ser., North-Holland, Amsterdam*, 1991. (Summary) **93b:82044** 82C10 (81T99)

— (*with* Harms, B.) Statistical mechanics of black holes. (English summary) *Phys. Rev. D* (3) **46** (1992), *no.* 6, 2334–2340. (Summary) **93e:83044** 83C57 (83C47)

— (*with* Harms, B.) Statistical mechanics of extended black objects. (English summary) *Phys. Rev. D* (3) **47** (1993), *no.* 6, 2438–2445. (Summary) **93k:83050** 83C57 (82C99, 83C47)

Leble, S. B. (*with* Sall', M. A.; Yurov, A. V.) Darboux transform of Davey-Stewartson-type equations and solitons. *Nonlinear world, Vol.* 1 (*Kiev*, 1989), 216–228, *World Sci. Publishing, River Edge, NJ*, 1990. (*see* **93b:00012**) 35Q55 (35A30, 58F37)

— Darboux transforms algebras in 2 + 1 dimensions. (English summary) *Nonlinear evolution equations and dynamical systems* (*Baia Verde*, 1991), 53–61, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93h:58142** 58F37 (35A30, 35Q58)

— (*with* Sall', M. A.; Yurov, A. V.) Darboux transforms for Davey-Stewartson equations and solitons in multidimensions. *Inverse Problems* **8** (1992), *no.* 2, 207–218. (Chris Athorne) **93h:35191** 35Q55 (35A30, 58F37)

Leblond, Juliette (*with* Conrad, Francis; Marmorat, Jean-Paul) Energy decay estimates for a beam with nonlinear boundary feedback. (English summary) *Stabilization of flexible structures* (*Montpellier*, 1989), 46–61, *Lecture Notes in Control and Inform. Sci.*, 147, *Springer, Berlin*, 1990. (*see* **93c:93006**) 93D15 (73K05, 73K50, 93C20)

— (*with* Conrad, Francis; Marmorat, Jean-Paul) Boundary control and stabilization of the one-dimensional wave equation. *Boundary control and boundary variation* (*Sophia-Antipolis*, 1990), 142–162, *Lecture Notes in Control and Inform. Sci.*, 178, *Springer, Berlin*, 1992. (Jerzy Klamka) **93e:93005** 93B05 (93C05, 93C20, 93D15)

— (*with* Alpay, Daniel; Baratchart, Laurent) Some extremal problems linked with identification from partial frequency data. (English summary) *Analysis and optimization of systems: state and frequency domain approaches for infinite-dimensional systems* (*Sophia-Antipolis*, 1992), 563–573, *Lecture Notes in Control and Inform. Sci.*, 185, *Springer, Berlin*, 1993. (*see* **93i:93005**) 93B30 (93C20)

Lebovitz, Norman (*with* Lifschitz, Alexander E.) Short wavelength instabilities of rotating, compressible fluid masses. (English summary) *Proc. Roy. Soc. London Ser. A* **438** (1992), *no.* 1903, 265–290. (A. S. Baranov) **93g:76055** 76E10 (76N10, 76U05, 85A30)

Lebowitz, Joel L. (*with* Eyink, Gregory L.; Spohn, Herbert) Lattice gas models in contact with stochastic reservoirs: local equilibrium and relaxation to the steady state. *Comm. Math. Phys.* **140** (1991), *no.* 1, 119–131. (Summary) **93b:82013** 82B20 (82B44)

— (*with* Cheng, Zheming; Speer, Eugene R.) Microscopic shock structure in model particle systems: the Boghosian-Levermore cellular automaton revisited. *Comm. Pure Appl. Math.* **44** (1991), *no.* 8-9, 971–979. (T. M. Liggett) **93b:60226** 60K35 (82C22)

— (*with* Macris, Nicolas; Martin, Philippe André[1]) Atomic versus ionized states in many-particle systems and the spectra of reduced density matrices: a model study. *J. Statist. Phys.* **67** (1992), *no.* 5-6, 909–956. (Summary) **93c:82077** 82D99 (81V70, 82B99)

— (*with* Bleher, Pavel M.; Jauslin, H. R.) Floquet spectrum for two-level systems in quasiperiodic time-dependent fields. *J. Statist. Phys.* **68** (1992), *no.* 1-2, 271–310. (Summary) **93c:81046** 81Q50 (58F30)

— (*with* Alexander, Francis J.; Cheng, Zheming; Janowsky, Steven A.) Shock fluctuations in the two-dimensional asymmetric simple exclusion process. (English summary) *J. Statist. Phys.* **68** (1992), *no.* 5-6, 761–785. (Summary) **93g:82066** 82C22 (60K35, 82–04, 82C24)

Le Breton, Alain Propriétés asymptotiques des martingales gaussiennes et application. (English and French summaries) [Asymptotic properties of Gaussian martingales and application] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 7, 839–844. (Summary) **93f:60061** 60G44 (60F05, 62L20)

— Adaptive control in the scalar linear-quadratic model in continuous time. *Statist. Probab. Lett.* **13** (1992), *no.* 3, 169–177. (Summary) **93a:93116** 93E35

Le Breton, Michel Stochastic orders in welfare economics. (English summary) *Stochastic orders and decision under risk* (*Hamburg*, 1989), 190–206, *IMS Lecture Notes Monograph Ser.*, 19, *Inst. Math. Statist., Hayward, CA*, 1991. (Summary) **93i:90009** 90A05 (90A10)

— (*with* Banks, Jeffrey S.; Bordes, Georges) Covering relations, closest orderings and Hamiltonian bypaths in tournaments. *Soc. Choice Welf.* **8** (1991), *no.* 4, 355–363. (M. Vlach) **93b:90014** 90A08 (05C20, 05C45, 90A28)

— (*with* Owen, Guillermo; Weber, Shlomo) Strongly balanced cooperative games. *Internat. J. Game Theory* **20** (1992), *no.* 4, 419–427. (Kensaku Kikuta) **93d:90077** 90D12 (05C65, 90D43)

— (*with* Bordes, Georges; Salles, Maurice) Gillies and Miller's subrelations of a relation over an infinite set of alternatives: general results and applications to voting games. (English summary) *Math. Oper. Res.* **17** (1992), *no.* 3, 509–518. (Vladimir I. Vol'skiĭ) **93g:90011** 90A08 (90A28, 90D40)

Le Brigand, Dominique Decoding of codes on hyperelliptic curves. *Eurocode '90* (*Udine*, 1990), 126–134, *Lecture Notes in Comput. Sci.*, 514, *Springer, Berlin*, 1991. (Introduction) **93a:94033** 94B27 (94B35)

Le Bris, Claude (*with* Goubault, Eric) Groupes Ext[1] et déformations de représentations de certaines algèbres de Lie nilpotentes. (English and French summaries) [Ext[1]-groups and deformations of representations of certain nilpotent Lie algebras] *Bull. Sci. Math.* (2) **116** (1992), *no.* 4, 465–486. (F. W. Lemire) **93h:17018** 17B30 (17B56)

Le Brizaut, Jean-Sébastien (*with* Burger, Jacques; Pogu, Marc) Comparison of two methods for the calculation of the gradient and of the Hessian of cost functions associated with differential systems. (English summary) *Math. Comput. Simulation* **34** (1992), *no.* 6, 551–562. (Summary) **93i:49036** 49M07 (49M15, 65K10, 93B30, 93B40)

carton-Lebrun, C. *see* **Carton-Lebrun, C.**

LeBrun, Claude Ambitwistors and conformal gravity. *Differential geometric methods in theoretical physics* (*Davis, CA*, 1988), 621–632, *NATO Adv. Sci. Inst. Ser. B Phys.*, 245, *Plenum, New York*, 1990. (*see* **93a:00022**) 83C60 (32C25)

— Complete Ricci-flat Kähler metrics on $\mathbf{C}^n$ need not be flat. *Several complex variables and complex geometry, Part* 2 (*Santa Cruz, CA*, 1989), 297–304, *Proc. Sympos. Pure Math.*, 52, *Part* 2, *Amer. Math. Soc., Providence, RI*, 1991. (Krzysztof Galicki) **93a:53038** 53C25 (32L07, 53C55)

— (*with* Eastwood, Michael G.) Fattening complex manifolds: curvature and Kodaira-Spencer maps. *J. Geom. Phys.* **8** (1992), *no.* 1-4, 123–146. (Nicholas Buchdahl) **93d:32048** 32L25 (32G05, 81R25)

Le Bruyn, Lieven Centers of generic division algebras, the rationality problem 1965–1990. (English summary) *Israel J. Math.* **76** (1991), *no.* 1-2, 97–111. (B. Fein) **93f:16024** 16K20 (12F20, 14D25, 16R30)

— (*with* Smith, S. Paul) Homogenized $\mathfrak{sl}(2)$. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 3, 725–730. (Bodo Pareigis) **93i:16056** 16W50 (17B37)

— (*with* Van den Bergh, Michel) On quantum spaces of Lie algebras. *Proc. Amer. Math. Soc.* **119** (1993), *no.* 2, 407–414. (Summary) **93k:17021** 17B35 (16W30, 17B37)

Le Cаĕr, G. Topological models of cellular structures. *J. Phys. A* **24** (1991), *no.* 6, 1307–1317. (Summary) **93a:82061a** 82D35 (82D30)

— Topological models of 2D cellular structures. II. $z \geq 5$. *J. Phys. A* **24** (1991), *no.* 19, 4655–4675. (Summary) **93a:82061b** 82D35 (82D30)

muñoz Lecanda, M. C. *see* **Muñoz Lecanda, M. C.**

Lechner, Kurt (*with* Iengo, Roberto; Li, Dingping) Chern-Simons-Maxwell theory on the torus. *Phys. Lett. B* **269** (1991), *no.* 1-2, 109–115. (Summary) **93h:81086** 81T13 (81S05)

— Anyons, modular invariance and anyon gauge for arbitrary rational statistics. *Phys. Lett. B* **273** (1991), *no.* 4, 463–470. (From the text) **93j:81067** 81T13 (11F11)

— (*with* Iengo, Roberto) Anyon mean field as a critical-field theory. (English summary) *Nuclear Phys. B* **384** (1992), *no.* 3, 541–558. (Summary) **93h:81087** 81T13 (81V70)

— (*with* Iengo, Roberto) Anyon quantum mechanics and Chern-Simons theory. *Phys. Rep.* **213** (1992), *no.* 4, 179–269. (Guillermo Zemba) **93e:81073** 81T13 (81S05, 81V70, 82D55)

Lechtenfeld, Olaf Semiclassical approach to finite-N matrix models. (English summary) *Internat. J. Modern Phys. A* **7** (1992), *no.* 28, 7097–7118. (Summary) **93i:81242** 81T40 (81T10)

— (*with* Nappi, Chiara R.) Dilaton gravity and no-hair theorem in two dimensions. (English summary) *Phys. Lett. B* **288** (1992), *no.* 1-2, 72–76. (Gheorghe Zet) **93g:81160** 81T40 (81V17)

LeClair, André q-deformation of SU(1, 1) conformal Ward identities and q-strings. *Differential geometric methods in theoretical physics* (*Davis, CA*, 1988), 353–357, *NATO Adv. Sci. Inst. Ser. B Phys.*, 245, *Plenum, New York*, 1990. (From the text) **93d:81141** 81T30 (17B37, 33D80, 81R50)

— Integrable restrictions of quantum soliton theory and minimal conformal series. *Physics, geometry, and topology* (*Banff, AB*, 1989), 605–622, *NATO Adv. Sci. Inst. Ser. B Phys.*, 238, *Plenum, New York*, 1990. (Summary) **93a:81176** 81T40 (81R50, 81T10)

— (*with* Bernard, Denis) Quantum group symmetries and nonlocal currents in 2D QFT. *Comm. Math. Phys.* **142** (1991), *no.* 1, 99–138. (Satoru Saito) **93d:81148** 81T40 (17B37, 81–02, 81R50)

— (*with* Felder, G.) Restricted quantum affine symmetry of perturbed minimal conformal models. (English summary) *Infinite analysis, Part A, B (Kyoto, 1991)*, 239–278, *Adv. Ser. Math. Phys.*, 16, *World Sci. Publishing, River Edge, NJ*, 1992. (Niall J. MacKay) **93i:81226** 81T40 (81R50, 81T70)

— (*with* Bernard, Denis) Nonlocal currents in 2D QFT: an alternative to the quantum inverse scattering method. *Quantum groups (Leningrad, 1990)*, 176–196, *Lecture Notes in Math.*, 1510, *Springer, Berlin*, 1992. (Filippo Colomo) **93i:81210** 81T40 (81R50)

— (*with* Smirnov, F. A.) Infinite quantum group symmetry of fields in massive 2D quantum field theory. *Internat. J. Modern Phys. A* **7** (1992), *no.* 13, 2997–3022. (C. Gauthier) **93h:81061** 81R50 (17B37, 81T40)

— (*with* Nemeschansky, D.; Warner, N. P.) S-matrices for perturbed $N = 2$ superconformal field theory from quantum groups. (English summary) *Nuclear Phys. B* **390** (1993), *no.* 3, 653–680. (Stanislav Z. Pakuliak) **93k:81211** 81T40 (81R10, 81R50, 81T60)

Leclerc, André La grammaire générale classique en tant que programme de recherche scientifique. [Classical general grammar as scientific research program] *Dialogue* **32** (1993), *no.* 1, 77–94. 03–03 (00A30, 01A45, 03B65)

Leclerc, Anthony (*with* Moore, R. E.; Hansen, Eldon) Rigorous methods for global optimization. *Recent advances in global optimization (Princeton, NJ, 1991)*, 321–342, *Princeton Ser. Comput. Sci., Princeton Univ. Press, Princeton, NJ*, 1992. (C. Bergthaller) **93c:90080** 90C30 (65K10)

Leclerc, Bernard (*with* Thibon, Jean-Yves) Analogues symétriques des polynômes de Bessel. (English and French summaries) [Symmetric analogues of Bessel polynomials] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 5, 527–530. (Piotr Pragacz) **93j:05165** 05E05 (05E35)

— (*with* Lascoux, Alain; Thibon, Jean-Yves) Fonctions de Hall-Littlewood et polynômes de Kostka-Foulkes aux racines de l'unité. (English and French summaries) [Hall-Littlewood functions and Kostka-Foulkes polynomials at roots of unity] *C. R. Acad. Sci. Paris Sér. I Math.* **316** (1993), *no.* 1, 1–6. (Summary) **93j:05168** 05E10

Leclerc, Bruno Aggregation of fuzzy preferences: a theoretic Arrow-like approach. Aggregation and best choices of imprecise opinions (Brussels, 1989). *Fuzzy Sets and Systems* **43** (1991), *no.* 3, 291–309. (Milan Mareš) **93g:90010** 90A07 (04A72, 90A05)

Leclerc, Louis-Jérôme (*with* Bauer, Peter H.) Bounded-input–bounded-output properties of nonlinear discrete difference equations—applications to fixed-point digital filters. (English summary) *IEEE Trans. Circuits Systems I Fund. Theory Appl.* **39** (1992), *no.* 8, 662–666. 93C55 (93E11)

Lecointe, Y. (*with* Piquet, J.) Computation of unsteady, laminar, incompressible, viscous flows using the vorticity streamfunction formulation. (English summary) *Computational methods in viscous aerodynamics*, 77–116, *Elsevier, Amsterdam*, 1990. (Summary) **93f:76073** 76M20 (76D05)

Lecompte, Alvaro (*with* Vargas, José G.; Torr, Douglas G.) Geometrization of the physics with teleparallelism. II. Towards a fully geometric Dirac equation. *Found. Phys.* **22** (1992), *no.* 4, 527–547. (Agostino Prástaro) **93h:53075** 53C80 (83D05)

Lecomte, Pierre B. A. (*with* Michor, Peter W.; Schicketanz, H.) The multigraded Nijenhuis-Richardson algebra, its universal property and applications. *J. Pure Appl. Algebra* **77** (1992), *no.* 1, 87–102. (Janusz Grabowski) **93d:17036** 17B70 (15A69, 16W50)

Lecroq, Thierry A variation on the Boyer-Moore algorithm. Combinatorial Pattern Matching School (Paris, 1990). *Theoret. Comput. Sci.* **92** (1992), *no.* 1, 119–144. (Vyacheslav Epel'stein) **93c:68040** 68Q25

L'Ecuyer, Pierre (*with* Breton, Michèle) Approximate solutions to continuous stochastic games. (English summary) *Differential games—developments in modelling and computation (Espoo, 1990)*, 257–264, *Lecture Notes in Control and Inform. Sci.*, 156, *Springer, Berlin*, 1991. (*see* **93c:90003**) 93E05

— Convergence rates for steady-state derivative estimators. (English summary) *Ann. Oper. Res.* **39** (1992), *no.* 1-4, 121–136 (1993). (Summary) **93j:90040** 90B22 (65K05, 93E10)

— (*with* Couture, Raymond; Tezuka, Shu) On the distribution of k-dimensional vectors for simple and combined Tausworthe sequences. (English summary) *Math. Comp.* **60** (1993), *no.* 202, 749–761, S11–S16. (Robert F. Tichy) **93h:11085** 11K45

vullierme-Ledard, M. *see* **Vullierme-Ledard, M.**

Ledder, Glenn (*with* Logan, J. David) A signalling problem for near-equilibrium flows in the Fickett-Majda model of combustion. *IMA J. Appl. Math.* **47** (1991), *no.* 3, 229–246. (Summary) **93d:80004** 80A25 (35L60, 35Q99)

— (*with* Logan, J. David) Weakly nonlinear asymptotic models and analogs of detonation processes. (English summary) *Internat. J. Engrg. Sci.* **30** (1992), *no.* 12, 1759–1772. (Summary) **93f:80020** 80A25

Ledermann, W. (*with* Vajda, Steven) On a problem in population structure. *Linear Algebra Appl.* **166** (1992), 97–113. (Petr Kůrka) **93f:15017** 15A48 (60J20)

— *see also* **Herglotz, G. et al., 93d:01095**

Ledger, A. J. (*with* Vanhecke, Lieven) Schur's theorem for naturally reductive Riemannian S-manifolds. *Nihonkai Math. J.* **2** (1991), *no.* 2, 131–138. (V. C. Gupta) **93a:53020** 53C15 (53C30, 53C35)

Le Dimet, François-Xavier (*with* Navon, I. M.; Zou, X.; Berger, M. F.; Phua, Paul Kang Hoh; Schlick, Tamar) Numerical experience with limited-memory quasi-Newton and truncated Newton methods. (English summary) *Optimization, Vol.* 1, 2 (*Singapore*, 1992), 33–48, *World Sci. Publishing, River Edge, NJ*, 1992. (K. Schittkowski) **93i:90090** 90C30 (90–08)

— (*with* Navon, I. M.; Zou, X.; Berger, M. F.; Phua, Paul Kang Hoh; Schlick, Tamar) Testing the reliability and robustness of optimization codes for large-scale optimization problems. (English summary) *Optimization, Vol.* 1, 2 (*Singapore*, 1992), 445–480, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93d:90005**) 90C30 (90C90)

— Optimization and optimal control in atmospheric sciences. (English summary) *Optimization, Vol.* 1, 2 (*Singapore*, 1992), 1220–1229, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93d:90005**) 90C90 (49N55)

Le Dimet, Jean-Yves Sur le problème de Schönflies semi-linéaire. (English summary) [On the PL Schoenflies problem] *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 11, 851–853. (P. J. Kahn) **93h:57036** 57Q35

Ledolter, Johannes (*with* Hackl, Peter) A new nonparametric quality control technique. *Comm. Statist. Simulation Comput.* **21** (1992), *no.* 2, 423–443. 62N10

Le Dourneuf, M. (*with* Vincke, M.; Baye, D.) Hydrogen atom in crossed electric and magnetic fields: transition from weak to strong electron-proton decentring. *J. Phys. B* **25** (1992), *no.* 12, 2787–2807. (Summary) **93b:81311** 81V45 (81Q05)

Le Doussal, Pierre Diffusion in layered random flows, polymers, electrons in random potentials, and spin depolarization in random fields. (English summary) *J. Statist. Phys.* **69** (1992), *no.* 5-6, 917–954. (Yu. P. Virchenko) **93j:82073** 82D30 (60J70, 60K99, 82D60)

Ledoux, Michel (*with* Talagrand, Michel) ★ Probability in Banach spaces. Isoperimetry and processes. Ergebnisse der Mathematik und ihrer Grenzgebiete (3) [Results in Mathematics and Related Areas (3)], 23. *Springer-Verlag, Berlin*, 1991. xii+480 *pp. ISBN* 3-540-52013-9 (Evarist Giné) **93c:60001** 60–02 (60Bxx, 60Fxx, 60Gxx)

— Sur les déviations modérées des sommes de variables aléatoires vectorielles indépendantes de même loi. (English summary) [On moderate deviations of sums of i.i.d. vector random variables] *Ann. Inst. H. Poincaré Probab. Statist.* **28** (1992), *no.* 2, 267–280. (Joseph E. Yukich) **93k:60017** 60B12 (60F10)

— A heat semigroup approach to concentration on the sphere and on a compact Riemannian manifold. *Geom. Funct. Anal.* **2** (1992), *no.* 2, 221–224. (J. S. Joel) **93c:58210** 58G11 (58G25)

— On an integral criterion for hypercontractivity of diffusion semigroups and extremal functions. *J. Funct. Anal.* **105** (1992), *no.* 2, 444–465. (Thierry Coulhon) **93g:47054** 47D07 (26D10, 35K99, 47F05, 47N20, 58G11)

Ledrappier, François Ergodic properties of the stable foliations. (English summary) *Ergodic theory and related topics, III (Güstrow, 1990)*, 131–145, *Lecture Notes in Math.*, 1514, *Springer, Berlin*, 1992. (P. G. Walczak) **93g:58116** 58F17 (58F18)

— A heat kernel characterization of asymptotic harmonicity. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 3, 1001–1004. (Ming Liao) **93i:58146** 58G11 (53C20)

Le Duc Kiem (*with* Makhmudov, A. P.) Approximation by S. N. Bernstein-type polynomials of solutions of the Goursat problem for a hyperbolic-type nonlinear equation. (Russian. Russian and Ukrainian summaries) *Ukrain. Mat. Zh.* **44** (1992), *no.* 8, 1116–1123; *translation in Ukrainian Math. J.* **44** (1992), *no.* 8, 1018–1025 (1993). (Vladimir Georgiev) **93m:35037** 35C10 (35L70, 35L80, 41A10)

Lê Dũng Tráng *see* **Seminar: Singularities, 93i:32047**

Ledwich, G. F. (*with* Teng, F. C.; Shannon, G.) Adaptive control scheme for a robot manipulator: direct decoupler and PID controller. (English summary) *Internat. J. Systems Sci.* **24** (1993), *no.* 2, 315–327. 93C40 (70B15, 70Q05, 93C85)

Ledwina, Teresa (*with* Inglot, Tadeusz; Kallenberg, Wilbert C. M.) Strong moderate deviation theorems. *Ann. Probab.* **20** (1992), *no.* 2, 987–1003. (S. A. Book) **93e:60052** 60F10 (60F17, 62G30)

Le Dyk Kiem *see* **Le Duc Kiem**

Lędzewicz-Kowalewska, U. Euler-Lagrange equation in the case of nonregular equality constraints. *J. Optim. Theory Appl.* **71** (1991), *no.* 3, 549–568. (Dominique Azé) **93a:49015** 49K27 (58E40, 90C29)

— On an abnormal optimal control problem. (English summary) *Mathematical theory of control (Bombay, 1990)*, 255–267, *Lecture Notes in Pure and Appl. Math.*, 142, *Dekker, New York*, 1993. (*see* **93g:93003**) 49K15 (49K30)

Lee, A. J. (*with* Fisher, Nicholas I.) Regression models for an angular response. (English and French summaries) *Biometrics* **48** (1992), *no.* 3, 665–677. (Summary) **93f:62079** 62H11 (62J05)

Lee, Allan Y. Solving constrained minimum-time robot problems using the sequential gradient restoration algorithm. (English summary) *Optimal Control Appl. Methods* **13** (1992), *no.* 2, 145–154. 93C85 (70B15, 70Q05, 93B40)

Lee, Andy H. (*with* Hui, Yer Van) Assessing influence in time series. (English summary) *Comm. Statist. Theory Methods* **21** (1992), *no.* 12, 3463–3478. (Summary) **93h:62158** 62M10 (62F35)

Lee, Bore Kuen (*with* Lin, Yu Ping) Extended LQG self-tuning controller in a mixed background. *Internat. J. Systems Sci.* **23** (1992), *no.* 5, 695–711. (Summary) **93a:93115** 93E24

Lee, Bu Young (*with* Choi, Jae Rong; Park, Jin Han) On fuzzy θ-continuous mappings. (English summary) *Fuzzy Sets and Systems* **54** (1993), *no.* 1, 107–113. (Summary) **93k:54017** 54A40 (04A72)

Lee, Bum-Hoon (*with* Lee, Choonkyu; Min, Hyunsoo) Supersymmetric Chern-Simons vortex systems and fermion zero modes. *Phys. Rev. D* (3) **45** (1992), *no.* 12, 4588–4599. (Summary) **93c:81240** 81T60 (58Z05)

Lee, Bum-Il (*with* Tcha, Dong-wan; Lee, Young-duck) Processors selection and traffic splitting in a parallel processors system. (English summary) *Acta Inform.* **29** (1992), *no.* 5, 415–423. 68M20

Lee, Byoungsoo (*with* Grantham, Walter J.) A chaotic limit cycle paradox. (English summary) *Dynamics Control* **3** (1993), *no.* 2, 159–173. (Alec Norton) **93k:58184** 58F21 (34C99, 34D08, 58F13)

Lee, Byung Chai (*with* Koo, Bon Ung) An efficient profile reduction algorithm based on the frontal ordering scheme and the graph theory. (English summary) *Comput. & Structures* **44** (1992), *no.* 6, 1339–1347. 65F50 (73V05)

— (*with* Lee, Yoon Joon) Derivation of stabilization matrices for Mindlin plates from the combined mixed functional and their mathematical characteristics. (English summary) *Comput. & Structures* **46** (1993), *no.* 1, 21–32. (Summary) **93k:73079** 73V05 (73K10)

Lee, Byung Gook (*with* Kim, Byung Chun) An efficient algorithm for the nonparametric regression estimation. (English summary) *J. Japanese Soc. Comput. Statist.* **5** (1992), *no.* 1, 65–73. 62G05

Lee, Byung-Joo A heteroskedasticity test robust to conditional mean misspecification. *Econometrica* **60** (1992), *no.* 1, 159–171. (Ryszard Zieliński) **93h:62094** 62G10 (62J02)

Lee, C. (*with* Chandler, Colston; Cohen, Leon; Scully, M.; Wódkiewicz, K.) Quasi-probability distribution for spin-$\frac{1}{2}$ particles. (English summary) *Found. Phys.* **22** (1992), *no.* 7, 867–878. (Kalyanapuram R. Parthasarathy) **93i:81114** 81S30

Lee, C. F. P. Thermodynamics of charged black holes attached to cosmic strings. (English summary) *Phys. Rev. D* (3) **46** (1992), *no.* 10, 4169–4178. (Summary) **93i:83061** 83C57 (83F05)

— Effects of Hawking radiation on black-hole–cosmic-string systems. (English summary) *Phys. Rev. D* (3) **47** (1993), *no.* 6, 2260–2270. 83C57 (83C47, 83F05)

Lee, C. K. (*with* Tan, S. T.) Inversed rational B-spline for interpolation. *Comput. & Structures* **43** (1992), *no.* 5, 889–895. (Summary) **93c:65017** 65D07

— (*with* Lo, Sai-Huen) An automatic adaptive refinement finite element procedure for 2D elastostatic analysis. (English summary) *Internat. J. Numer. Methods Engrg.* **35** (1992), no. 10, 1967–1989. (Summary) **93k:73078** 73V05

Lee, C. S. *see* **Lee, Cho Seng**

Lee, Carl W. Winding numbers and the generalized lower-bound conjecture. *Discrete and computational geometry (New Brunswick, NJ, 1989/1990)*, 209–219, *DIMACS Ser. Discrete Math. Theoret. Comput. Sci.*, 6, *Amer. Math. Soc., Providence, RI*, 1991. (P. McMullen) **93b:52014** 52B35 (52B05)

Lee, Chahn (*with* Kwon, Ohjong; Kim, Yong Duk) Berry's phase in a moving boundary problem. (English summary) *J. Phys. A* **25** (1992), no. 22, 6113–6121. (Piotr Kosiński) **93j:81015** 81Q05 (81S99)

— (*with* Kwon, Ohjong; Kim, Jae Kwan) Berry phase memorizes the motion of a boundary. *Phys. Rev. A* (3) **45** (1992), no. 9, 6884–6886. (Shinichi Tajima) **93i:81032** 81Q15

Lee, Chang Jae Covariance and uniqueness of the canonical fermion coherent state. (English summary) *Phys. Rev. A* (3) **46** (1992), no. 9, 6049–6051. (Summary) **93i:81086** 81R30 (81S05)

Lee, Chang-Yeong Renormalization of quantum gravity with local $\overline{\mathrm{GL}}(4, \mathbf{R})$ symmetry. (English summary) *Classical Quantum Gravity* **9** (1992), no. 9, 2001–2019. (Summary) **93g:83053** 83C45

— (*with* Ainsworth, Mark; Oden, J. Tinsley) Local a posteriori error estimators for variational inequalities. (English summary) *Numer. Methods Partial Differential Equations* **9** (1993), no. 1, 23–33. (Khalil Ahmad) **93m:49015** 49M25 (49J40, 65K10, 73V05, 73V25)

Lee, Che Ping Application of the Kalman filter to capital accumulation. (English summary) *J. Indian Soc. Statist. Oper. Res.* **13** (1992), no. 1-4, 13–22. 93E11 (90A16)

Lee, Cheol-Hoon (*with* Lee, Dongmyun; Kim, Myunghwan) Optimal task assignment in linear array networks. (English summary) *IEEE Trans. Comput.* **41** (1992), no. 7, 877–880. (Summary) **93h:68013** 68M20

Lee, Chien-Hua (*with* Li, Tzuu Hseng S.; K'ung, Fan Chü) *D*-stability analysis for discrete systems with a time delay. (English summary) *Systems Control Lett.* **19** (1992), no. 3, 213–219. (Summary) **93e:93046** 93D05 (93B55, 93C55)

Lee, Chin Cheng (*with* Kung, Chung Chun) Optimal tracking and rejection of persistent bounded signals for MIMO continuous systems. (English summary) *Optimal Control Appl. Methods* **13** (1992), no. 3, 193–210. (Daoyi Xu) **93k:93050** 93B52 (49K35)

Lee, Chin Rong (*with* Yu, Jyh Ping) On q-deformed free electron gases. *Phys. Lett. A* **164** (1992), no. 2, 164–166. (Summary) **93c:82007** 82B10 (81R50, 82D35)

Lee, Ching-Cheng (*with* Fatmi, H. A.) An adaptive control model for parallel program scheduling. *Control '91, Vol.* 1, 2 (*Edinburgh*, 1991), 871–874, *IEE Conf. Publ. Ser.*, 332, *IEE, London*, 1991. (*see* **93h:93007**) 93C40

Lee, Ching Tsung Moment problem for a density matrix and a biorthogonal set of operator bases. (English summary) *Phys. Rev. A* (3) **46** (1992), no. 9, 6097–6099. (K. Wódkiewicz) **93k:81259** 81V10 (81R30)

Lee, Cho Seng (*with* Rehbock, V.; Teo, Kok Lay; Jennings, L. S.) An exact penalty function approach to all-time-step constrained discrete-time optimal control problems. *Appl. Math. Comput.* **49** (1992), no. 2-3, 215–230. (M. Teboulle) **93d:49040** 49M30 (49J52, 65K10, 90C30, 90C45)

Lee, Choonkyu (*with* Lee, Bum-Hoon; Min, Hyunsoo) Supersymmetric Chern-Simons vortex systems and fermion zero modes. *Phys. Rev. D* (3) **45** (1992), no. 12, 4588–4599. (Summary) **93c:81240** 81T60 (58Z05)

— (*with* Cangemi, D.) Self-dual Chern-Simons solitons in $(2 + 1)$-dimensional Einstein gravity. (English summary) *Phys. Rev. D* (3) **46** (1992), no. 10, 4768–4771. (Summary) **93g:81088** 81T13 (81V17, 83C20)

Lee, Chu-In Charles On Laplace continued fraction for the normal integral. *Ann. Inst. Statist. Math.* **44** (1992), no. 1, 107–120. (Mir Masoom Ali) **93g:62031** 62E99

Lee, Chun-Nip On stable maps from Eilenberg-Mac Lane spaces to classifying spaces. *Amer. J. Math.* **114** (1992), no. 2, 405–412. (Donald W. Kahn) **93c:55007** 55P15 (55P42, 55P60)

Lee, Chung-Nim (*with* Poston, Timothy; Bae, Hyeong Ohk) Bifurcation structure of the Eckalbar stock-holding model. *Appl. Math. Comput.* **48** (1992), no. 1, 21–43. (Masafumi Sasaki) **93a:90022** 90B05 (58F14, 58F40)

Lee, Chung-Yee (*with* Lin, Chen-Sin) Stochastic flow-shop scheduling with lateness-related performance measures. (English summary) *Probab. Engrg. Inform. Sci.* **5** (1991), no. 2, 245–254. (Summary) **93f:90092** 90B35

— (*with* Liman, Surya Danusaputro) Single machine flow-time scheduling with scheduled maintenance. (English summary) *Acta Inform.* **29** (1992), no. 4, 375–382. (Summary) **93f:90093** 90B35

— (*with* Uzsoy, Reha; Martin-Vega, Louis A.) Efficient algorithms for scheduling semiconductor burn-in operations. (English summary) *Oper. Res.* **40** (1992), no. 4, 764–775. 90B35

— (*with* Liman, Surya Danusaputro) Capacitated two-parallel machines scheduling to minimize sum of job completion times. (English summary) *Discrete Appl. Math.* **41** (1993), no. 3, 211–222. (Summary) **93i:90054** 90B35 (68Q25)

— (*with* Chandru, Vijaya; Uzsoy, Reha) Minimizing total completion time on a batch processing machine with job families. (English summary) *Oper. Res. Lett.* **13** (1993), no. 2, 61–65. 90B35

Lee, D. K. *see* **Lee, Deok Kyo**

Lee, D. T. *see* **Lee, Der Tsai**

Lee, D. V. On the power-series expansion of a rational function. *Acta Arith.* **62** (1992), no. 3, 229–255. (Richard P. Lewis) **93m:11106** 11P83

Lee, Daniel On a minimal property of cardinal and periodic Lagrange splines. *J. Approx. Theory* **70** (1992), no. 3, 335–338. (Mao Dong Ye) **93f:41017** 41A15

Lee, Deok Kyo Calculation of coefficients in a power-series expansion of the nome $q = \exp[-\pi K(k')/K(k)]$. *Comput. Phys. Comm.* **70** (1992), no. 2, 292–296. (Summary) **93f:33023** 33E05 (65D20)

Lee, Der Tsai (*with* Yang, Chung-Do; Chen, T. H.) Shortest rectilinear paths among weighted obstacles. *Internat. J. Comput. Geom. Appl.* **1** (1991), no. 2, 109–124. (Summary) **93c:68102** 68U05

— (*with* Yang, Chung-Do; Wong, Chak Kuen) On bends and lengths of rectilinear paths: a graph-theoretic approach. *Internat. J. Comput. Geom. Appl.* **2** (1992), no. 1, 61–74. (Summary) **93a:68160** 68U05 (05C85, 68U30)

— (*with* Imai, Hiroshi; Yang, Chung-Do) 1-segment center problems. (English summary) *ORSA J. Comput.* **4** (1992), no. 4, 426–434. 90C27

— (*with* Lou, R. D.; Sarrafzadeh, Majid) An optimal algorithm for the maximum two-chain problem. *SIAM J. Discrete Math.* **5** (1992), no. 2, 285–304. (Summary) **93d:68024** 68Q20 (05C85, 68P10, 68R10)

Lee, Dik Lun (*with* Lu, Wenyu) Characterization and processing of simple prefixed-chain recursion. (English summary) *Inform. Sci.* **68** (1993), no. 3, 247–281. (Summary) **93j:68053** 68P20 (68P15)

Lee, Ding (*with* Schultz, Martin H.; Siegmann, William L.; Saint Mary, Donald F.) A numerical marching scheme to compute scattering in the ocean. (English summary) *Math. Comput. Simulation* **34** (1992), no. 6, 525–540. 86-08 (86A05)

— (*with* Saint Mary, Donald F.; Resasco, Diana C.) A hybrid marching technique for the solution of an elliptic model in underwater acoustics. (English summary) *Computational acoustics, Vol.* 1 (*Cambridge, MA*, 1991), 131–143, *North-Holland, Amsterdam*, 1993. (*see* **93j:76001**) 76Q05 (65P05, 76M25)

— *see also* **Computational acoustics, 93j:76001** *and* **93j:76002**

Lee, Dongmyun (*with* Lee, Cheol-Hoon; Kim, Myunghwan) Optimal task assignment in linear array networks. (English summary) *IEEE Trans. Comput.* **41** (1992), no. 7, 877–880. (Summary) **93h:68013** 68M20

Lee, Duan-Shin (*with* Li, San-Qi) Transient analysis of multi-server queues with Markov-modulated Poisson arrivals and overload control. (English summary) *Performance Evaluation* **16** (1992), no. 1-3, 49–66. (Summary) **93g:60194** 60K25

— (*with* Sengupta, Bhaskar) An approximate analysis of a cyclic server queue with limited service and reservations. (English summary) *Queueing Systems Theory Appl.* **11** (1992), no. 1-2, 153–178. (Summary) **93g:60195** 60K25 (68M20, 90B22)

— (*with* Li, San-Qi) Transient analysis of a switched Poisson arrival queue under overload control. (English summary) *Performance Evaluation* **17** (1993), no. 1, 13–29. 90B22 (60K25)

Lee, Duck-Sung (*with* Kim, Sang-Yoon) Transition to chaos in a dissipative standardlike map. *Phys. Rev. A* (3) **45** (1992), no. 8, 5480–5487. (Summary) **93b:58101** 58F13

Lee, E. Bruce (*with* Cai, Man-ping) Identification of linear systems using rational approximation techniques. (English summary) *Stochastic theory and adaptive control (Lawrence, KS*, 1991), 69–82, *Lecture Notes in Control and Inform. Sci.*, 184, *Springer, Berlin*, 1992. (*see* **93g:93007**) 93B30 (93E12)

— (*with* Li, Yanlin; Nagpal, Krishan M.) Stability analysis of polynomials with coefficients in disks. *IEEE Trans. Automat. Control* **37** (1992), no. 4, 509–513. (Long Wang) **93b:93085** 93D09 (93B35, 93B36, 93D25)

— (*with* Gu, Guoxiang; Khargonekar, Pramod P.; Misra, Pradeep) Finite-dimensional approximations of unstable infinite-dimensional systems. *SIAM J. Control Optim.* **30** (1992), no. 3, 704–716. (Vladimir B. Larin) **93c:93026** 93B40

Lee, E. Stanley Iterative computation in dynamic optimization. *Approximation, optimization and computing*, 23–33, *North-Holland, Amsterdam*, 1990. (*see* **93a:41001**) 49M05 (65K10)

— (*with* Zhu, Qing) Comparison and ranking of fuzzy numbers. (English summary) *Fuzzy regression analysis*, 21–44, *Stud. Fuzziness*, 1, *Omnitech Press, Warsaw*, 1992. (*see* **93k:62004**) 04A72

— (*with* Zhu, Qing) An interval Dempster-Shafer approach. (English summary) *Comput. Math. Appl.* **24** (1992), no. 7, 89–95. 68T30

— (*with* Yuan, Xue Hai; Wang, Pei Zhuang) Factor space and its algebraic representation theory. (English summary) *J. Math. Anal. Appl.* **171** (1992), no. 1, 256–276. (Summary) **93g:04004** 04A72 (18B30, 54A40)

— (*with* Negi, Devendra S.) Possibility programming by the comparison of fuzzy numbers. (English summary) *Comput. Math. Appl.* **25** (1993), no. 9, 43–50. 90C70 (04A72)

— (*with* Li, R.-J.) Fuzzy multiple objective programming and compromise programming with Pareto optimum. (English summary) *Fuzzy Sets and Systems* **53** (1993), no. 3, 275–288. (Summary) **93k:90104** 90C70 (04A72, 90C29)

— (*with* Li, R.-J.) De novo programming with fuzzy coefficients and multiple fuzzy goals. (English summary) *J. Math. Anal. Appl.* **172** (1993), no. 1, 212–220. (Summary) **93k:90105** 90C70 (04A72)

— (*with* Zhang, Dazhi; Ouyang, He; Yager, Ronald R.) On the convergence of fuzzy sets and the completeness of the space of fuzzy sets. (English summary) *J. Math. Anal. Appl.* **172** (1993), no. 1, 274–288. (Summary) **93k:54023** 54A40 (03E72, 04A72)

Lee, E. T. Y. On a class of data parametrizations: variations on a theme of Epstein. II. *Mathematical methods in computer aided geometric design, II (Biri*, 1991), 381–390, *Academic Press, Boston, MA*, 1992. (*see* **93d:65022**) 65D05 (65D07)

— Corners, cusps, and parametrizations: variations on a theorem of Epstein. *SIAM J. Numer. Anal.* **29** (1992), no. 2, 553–565. (Gheorghe Coman) **93c:41003** 41A05 (65D07)

Lee, Elisa T. ★ Statistical methods for survival data analysis. Second edition. Wiley Series in Probability and Mathematical Statistics: Applied Probability and Statistics. A Wiley-Interscience Publication. *John Wiley & Sons, Inc., New York*, 1992. xiv+482 *pp. ISBN* 0-471-61592-7 (Editors) **93m:62216** 62P10 (62N05, 92C60)

Lee, Eok Kyun (*with* Kim, Yong In) The subharmonic bifurcation in area-preserving maps. *J. Korean Math. Soc.* **29** (1992), no. 1, 91–115. (R. Dilão) **93c:58159** 58F14 (58F36)

Lee, Eric W. (*with* Wei, L. J.; Amato, David A.) Cox-type regression analysis for large numbers of small groups of correlated failure time observations. (English summary) With a discussion by Sue Leurgans and a rejoinder by the authors. *Survival analysis: state of the art (Columbus, OH*, 1991), 237–247, *NATO Adv. Sci. Inst. Ser. E Appl. Sci.*, 211, *Kluwer Acad. Publ., Dordrecht*, 1992. (*see* **93b:62005**) 62N05 (62F12, 62J02)

Lee, Eui Yong (*with* Baxter, Laurence A.) Further properties of a model for a system subject to continuous wear. *J. Korean Statist. Soc.* **20** (1991), no. 2, 139–146. (Howard Taylor) **93h:90044** 90B25

Lee, Eun-Hwi Continuity of higher derivations on commutative Banach algebras. (English summary) *Collection of papers dedicated to Prof. Jong Geun Park on his sixtieth birthday (Korean)*, 137–143, *Jeonbug, Seoul*, 1989. (J. Peter McClure) **93f:46080** 46J05 (46H40)

Lee, Fung F. (*with* Flynn, Michael J.; Morf, Martin) Design of compact high performance processing elements for the FCHC lattice gas models. (English summary) *Parallel processing for scientific computing (Houston, TX*, 1991), 616–622, *SIAM, Philadelphia, PA*, 1992. (*see* **93g:65178**) 65Y10 (76M25)

Lee, Gue Myung Optimality conditions in multiobjective optimization problems. *J. Inform. Optim. Sci.* **13** (1992), no. 1, 107–111. (Emil Iwanow) **93c:90069** 90C29 (49K15)

— Generalizations of Isermann's results in vector optimization. *Bull. Korean Math. Soc.* **30** (1993), *no.* 1, 1–7. 90C29

— (*with* Kim, Do Sang) On converse duality for nonsmooth optimization problem. (English summary) *J. Inform. Optim. Sci.* **14** (1993), *no.* 2, 149–153. 49J52 (49N15)

Lee, H. C. *see* **Lee, Hoong Chien**

Lee, Hahn Shik Maximum likelihood inference on cointegration and seasonal cointegration. (English summary) *J. Econometrics* **54** (1992), *no.* 1-3, 1–47. (D. E. A. Giles) **93k:62215** 62P20 (62M10, 90A20)

Lee, Hai Woong Wigner trajectories of a Gaussian wave packet perturbed by a weak potential. (English summary) *Found. Phys.* **22** (1992), *no.* 8, 995–1010. 81S20

Lee, Hai Yen *see* **Li, Hai Yen**

Lee, Hee Jung Maximal orders in split nonassociative quaternion algebras. *J. Algebra* **146** (1992), *no.* 2, 427–440. (Jan van Geel) **93c:17003a** 17A35 (11R54)

— (*with* Waterhouse, William C.) Maximal orders in nonassociative quaternion algebras. *J. Algebra* **146** (1992), *no.* 2, 441–453. (Jan van Geel) **93c:17003b** 17A35 (11R54)

Lee, Ho Soo (*with* Schor, Marshall I.) Match algorithms for generalized Rete networks. *Artificial Intelligence* **54** (1992), *no.* 3, 249–274. (Summary) **93e:68088** 68Q90 (68T10)

Lee, Hong Jae (*with* Lee, Ke An) Some properties of analytical indices on $K(B(M), S(M))$. *Honam Math. J.* **14** (1992), *no.* 1, 1–6. (Hiroshi Takai) **93g:58138** 58G10

Lee, Hong Youl (*with* Lee, Woo Young; Han, Young Min) The essential point spectrum of a regular operator. *Bull. Korean Math. Soc.* **29** (1992), *no.* 2, 295–300. (R. W. Cross) **93h:47003** 47A05 (47A10, 47A53)

Lee, Hoong Chien q-deformation of $\mathrm{sl}(2,\mathbf{C}) \times Z_N$ and link invariants. *Differential geometric methods in theoretical physics (Davis, CA, 1988)*, 359–371, *NATO Adv. Sci. Inst. Ser. B Phys.*, 245, *Plenum, New York*, 1990. (From the introduction) **93k:57016** 57M25 (17B37)

— Tangles, links and twisted quantum groups. *Physics, geometry, and topology (Banff, AB, 1989)*, 623–655, *NATO Adv. Sci. Inst. Ser. B Phys.*, 238, *Plenum, New York*, 1990. (From the introduction) **93h:17036** 17B37 (16W30, 57M25, 81R50)

— On Seifert circles and functors for tangles. (English summary) *Infinite analysis, Part A, B (Kyoto, 1991)*, 581–610, *Adv. Ser. Math. Phys.*, 16, *World Sci. Publishing, River Edge, NJ*, 1992. (David N. Yetter) **93j:57003** 57M25

— Tangle invariants and centre of the quantum group. (English summary) *Knots* 90 (*Osaka, 1990*), 341–361, *de Gruyter, Berlin*, 1992. (David N. Yetter) **93f:57011** 57M25 (17B37)

Lee, Hsun-Ming *see* **Li, Hsün Ming**

Lee, Hung Hwan (*with* Baek, In Soo) On d-measure and d-dimension. *Real Anal. Exchange* **17** (1991/92), *no.* 2, 590–596. (B. Rodríguez-Salinas) **93f:28005** 28A78 (26A27)

— (*with* Baek, In Soo) Dimensions of a Cantor type set and its distribution sets. *Kyungpook Math. J.* **32** (1992), *no.* 2, 149–152. (William Douglas Withers) **93m:58069** 58F12 (28A78, 28A80, 58F11)

Lee, Hyen Yeal (*with* Kawahara, Yasuo) On dynamical behaviors of cellular automata ca-60. *Bull. Inform. Cybernet.* **25** (1992), *no.* 1-2, 21–25. (Robert M. Baer) **93f:68068** 68Q80

Lee, Hyuk-Jae (*with* Park, Jae-Suk) Complex geometrical interpretation of BRST algebra in topological Yang-Mills theory. *Phys. Lett. B* **277** (1992), *no.* 1-2, 119–122. (Rudolf Schmid) **93b:81288** 81T70 (81T13)

Lee, Hyunkoo (*with* Kim, Hyuk; Yoon, Jaihan) Moduli of flat pseudo-Riemannian structures on nilpotent Lie groups. *Internat. J. Math.* **3** (1992), *no.* 4, 483–498. (Michel Nguiffo B. Boyom) **93g:53091** 53C50 (22E25, 53C30, 58D27)

— (*with* Kim, Hyuk) The Euler characteristic of projectively flat manifolds with amenable fundamental groups. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 1, 311–315. (Yoshinobu Kamishima) **93f:57028** 57R20

Lee, In-Sok (*with* Kim, Jae Moon; Bae, Sung Han) Cyclotomic units in $\mathbf{Z}_p$-extensions. *Israel J. Math.* **75** (1991), *no.* 2-3, 161–165. (Nancy Childress) **93i:11120** 11R23

Lee, J.-B. (*with* Vélez, W. Y.) Integral solutions in arithmetic progression for $y^2 = x^3 + k$. (English summary) *Period. Math. Hungar.* **25** (1992), *no.* 1, 31–49. (Andrew Bremner) **93k:11022** 11D25 (11G05)

Lee, J. C. (*with* Lai, Han Ch'ing) Integral representations and convergences for Banach-valued multifunctions. (English summary) *Fixed point theory and applications (Halifax, NS, 1991)*, 169–188, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93i:28007** 28B20 (26E25, 46E40, 46G99, 47H04)

Lee, J. H. An algorithm in finding partial volumes of 3-D 20-node elements in localization analysis. (English summary) *Comput. & Structures* **45** (1992), *no.* 2, 415–419. (Summary) **93i:73055** 73V05 (73E99)

Lee, J. H. M. (*with* van Emden, M. H.) Adapting CLP($\mathcal{R}$) to floating-point arithmetic. (English summary) *Fifth generation computer systems, Vol.* 1, 2 (*Tokyo*, 1992), 996–1003, *Ohm, Tokyo*, 1992. (Summary) **93m:68027** 68N15 (68N17, 68Q40)

Lee, J. Jack (*with* Li, Ker-Chau; Elashoff, Robert M.) On recensoring for censored paired data. (English summary) *J. Amer. Statist. Assoc.* **88** (1993), *no.* 421, 104–118. (Summary) **93k:62073** 62F35 (62P10)

Lee, J. P. *see* **Lee, Jong Pil**

Lee, J. S. (*with* It-s, E. N.) Green's function and energy integrals for magnetoelastic surface waves in perfectly conducting media. (English summary) *Internat. J. Solids Structures* **29** (1992), *no.* 23, 2959–2971. (Summary) **93f:73089** 73R05 (73D20, 78A25)

Lee, J. W. *see* **Lee, John Walter**

Lee, Jack Y. Some basic properties of the Fibonacci line-sequence. *Applications of Fibonacci numbers, Vol.* 4 (*Winston-Salem, NC*, 1990), 203–214, *Kluwer Acad. Publ., Dordrecht*, 1991. (John Christopher Turner) **93k:11011** 11B39

— The golden-Fibonacci equivalence. *Fibonacci Quart.* **30** (1992), *no.* 3, 216–220. (From the introduction) **93e:11024** 11B39

Lee, Jae Won (*with* DeMets, David L.) Sequential comparison of changes with repeated measurements data. *J. Amer. Statist. Assoc.* **86** (1991), *no.* 415, 757–762. (Paul Cabilio) **93e:62203** 62L10 (62J05)

— (*with* DeMets, David L.) Sequential rank tests with repeated measurements in clinical trials. *J. Amer. Statist. Assoc.* **87** (1992), *no.* 417, 136–142. (Paul Cabilio) **93d:62091** 62G10 (62L10)

Lee, Jaeun (*with* Kwak, Jin Ho) Isomorphism classes of cycle permutation graphs. (English summary) *Discrete Math.* **105** (1992), *no.* 1-3, 131–142. (Richard D. Ringeisen) **93k:05120** 05C60 (05C25, 05C38)

— (*with* Kwak, Jin Ho) Counting some finite-fold coverings of a graph. (English summary) *Graphs Combin.* **8** (1992), *no.* 3, 277–285. (Lyuben R. Mutafchiev) **93k:05131** 05C70 (05C30)

— (*with* Kwak, Jin Ho) Retracts in equiconnected spaces. (English summary) *Internat. J. Math. Math. Sci.* **16** (1993), *no.* 1, 199–200. (Summary) **93k:54037** 54C15

Lee, Jeffrey M. Finite inverse spectral geometry. *Geometry and nonlinear partial differential equations (Fayetteville, AR*, 1990), 85–100, *Contemp. Math.*, 127, *Amer. Math. Soc., Providence, RI*, 1992. (Józef Dodziuk) **93b:58154** 58G25 (53C21, 58G11)

— Dimension, volume, and spectrum of a Riemannian manifold. *Illinois J. Math.* **37** (1993), *no.* 1, 14–32. (Robert Brooks) **93k:58224** 58G25 (53C21, 58G11)

Lee, Jen Chi Superconformal deformation, zero-norm states and space-time symmetries of the superstring theories. *Z. Phys. C* **54** (1992), *no.* 2, 283–289. (Summary) **93b:81220** 81T30

Lee, Jia Ling (*with* Wang, Wên Chün) A simple condition for decentralized adaptive identification of partially known interconnected systems. (English summary) *Systems Control Lett.* **20** (1993), *no.* 1, 19–25. (Summary) **93i:93037** 93B30 (93A14, 93E12)

Lee, Jihong (*with* Chae, Seog) Analysis on function duplicating capabilities of fuzzy controllers. (English summary) *Fuzzy Sets and Systems* **56** (1993), *no.* 2, 127–143. 93C42 (04A72)

Lee, Jin-Rong (*with* Granas, Andrzej; Liu, Fêng Chê) Théorème de minimax sans topologie ni convexité. [A minimax theorem involving neither topology nor convexity] *Colloq. Math.* **63** (1992), *no.* 2, 141–144. (Hubertus Th. Jongen) **93f:49010** 49J35 (49K35, 90D44)

Lee, Jin S. (*with* Kuc, Tae-Yong; Nam, Kwanghee) An iterative learning control theory for a class of nonlinear dynamic systems. (English summary) *Automatica J. IFAC* **28** (1992), *no.* 6, 1215–1221. (Summary) **93i:93135** 93E35 (93C10)

Lee, Jing-Yee (*with* Tasaki, S.) Poincaré's theorem and subdynamics for driven systems. *Phys. A* **182** (1992), *no.* 1-2, 59–99. (B. H. Lavenda) **93g:82076** 82C35

Lee, Jinsik Mok On Burkholder's biconvex-function characterization of Hilbert spaces. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 2, 555–559. (Ryszard Grząślewicz) **93g:46020** 46C15 (46B20, 46E40)

Lee, John Walter (*with* O'Regan, Donal) Existence results for differential delay equations. II. *Nonlinear Anal.* **17** (1991), *no.* 7, 683–702. (From the introduction) **93e:34091** 34K10

— (*with* Anselone, P. M.) Nonlinear integral equations of the half line. *J. Integral Equations Appl.* **4** (1992), *no.* 1, 1–14. (J. Kolomý) **93d:47136** 47N20 (45L05, 45L10, 47H15)

Lee, Jon *see* **Lee, Jon²**

Lee, Jon¹ Topology of trajectories of the 2D Navier-Stokes equations. (English summary) *Chaos* **2** (1992), *no.* 4, 537–563. (Summary) **93k:76028** 76D05 (35Q30, 58F13, 58F40, 76F20)

Lee, Jon² (*with* Lee, Yew Sing) A spectral method for concordant polyhedral faces. *Linear Algebra Appl.* **159** (1991), 11–41. (Gerard Sierksma) **93e:52020** 52B05 (05C45, 52B12, 90C27)

— (*with* Anstreicher, Kurt M.; Rutherford, Thomas F.) Crashing a maximum-weight complementary basis. *Math. Programming* **54** (1992), *no.* 3, *Ser. A*, 281–294. (K. G. Murty) **93a:90069** 90C33

— (*with* Ryan, Jennifer) Matroid applications and algorithms. (English summary) *ORSA J. Comput.* **4** (1992), *no.* 1, 70–98. (Valentin E. Brimkov) **93h:52019** 52B40 (05B35, 90C10, 90C27)

Lee, Jong Pil (*with* Piotrowski, Z.) Invariance of dense subspaces under functions. *Math. Chronicle* **19** (1990), 45–53. (J. M. Aarts) **93i:54006** 54C10

— (*with* Piotrowski, Z.) Restrictions of certain transformations between linear topological spaces. *Classical analysis (Kazimierz Dolny*, 1991), 114–123, *World Sci. Publishing, River Edge, NJ*, 1992. (P. S. Kenderov) **93m:46002** 46A16 (47A99)

Lee, Jong Woo Some geometric results on S.E.S.-manifold X_{2n}. *Tensor (N.S.)* **50** (1991), *no.* 2, 165–169. (H. Rund) **93c:53009** 53B15 (53B50, 83D05)

Lee, Ju-Jang (*with* Xu, Yangsheng; Yoo, Dong Sang) Variable structure control using an adaptive boundary of system uncertainty. (English summary) *Internat. J. Systems Sci.* **24** (1993), *no.* 2, 277–287. (Summary) **93i:93026** 93B12

Lee, Jungjai (*with* Chung, Won-Sang; Cho, Jin-Ho) Quaternion solutions of four-dimensional Liouville and sine-Gordon equations. (English summary) *Modern Phys. Lett. A* **7** (1992), *no.* 27, 2527–2533. (Nicolae Anghel) **93h:81020** 81Q05 (30G35, 35Q53)

Lee, Jyh-Hao *see* **Li, Chih Hao**

Lee, K. C. (*with* Pesaran, M. H.; Pierse, R. G.) Persistence, cointegration, and aggregation: a disaggregated analysis of output fluctuations in the U.S. economy. (English summary) *J. Econometrics* **56** (1993), *no.* 1-2, 57–88. 62P20

Lee, K. R. (*with* Kapadia, C. H.) Restricted maximum likelihood estimation under Eisenhart model III. *Statist. Neerlandica* **45** (1991), *no.* 3, 271–282. (Masafumi Akahira) **93c:62041** 62F10 (62J05)

Lee, K. S. (*with* Mohler, R. R.) Nonlinear adaptive control in immunology and cancer. (English summary) *Mathematical theory of control (Bombay*, 1990), 269–282, *Lecture Notes in Pure and Appl. Math.*, 142, *Dekker, New York*, 1993. (*see* **93g:93003**) 93C95 (93C40)

Lee, K. T. *see* **Lee, King Tak**

Lee, Kai-Ming (*with* Alford, Mark G.; March-Russell, John; Preskill, John) Quantum field theory of nonabelian strings and vortices. (English summary) *Nuclear Phys. B* **384** (1992), *no.* 1-2, 251–317. (Emil Vinţeler) **93j:81077** 81T30

— (*with* Bucher, Martin; Preskill, John) On detecting discrete Cheshire charge. (English summary) *Nuclear Phys. B* **386** (1992), *no.* 1, 27–42. (Jacek Pawełczyk) **93k:81139** 81T13 (81R40, 81T30)

Lee, Ke An (*with* Lee, Hong Jae) Some properties of analytical indices on $K(B(M), S(M))$. *Honam Math. J.* **14** (1992), *no.* 1, 1–6. (Hiroshi Takai) **93g:58138** 58G10

Lee, Kee-Won (*with* Jeon, Jong Woo) Behrens-Fisher problem from a model selection point of view. *J. Korean Statist. Soc.* **20** (1991), *no.* 2, 99–107. 62F03

— (*with* Kim, Choongrak; Sohn, Keon Tae; Jeong, Kwang Mo) Bootstrapping generalized linear models with random regressors. (English summary) *J. Korean Statist. Soc.* **21** (1992), *no.* 1, 70–79. 62J12

— (*with* Chung, Han Yeong) On the model selection criteria in normal distributions. (English summary) *J. Korean Statist. Soc.* **21** (1992), *no.* 2, 93–110. (Summary) **93m:62061** 62F99

Lee, Keean *see* **Lee, Ke An**

Lee, Keon Hee (*with* Choi, Sung Kyu; Koo, Ki-Shik) Lipschitz stability and exponential asymptotic stability in perturbed systems. *J. Korean Math. Soc.* **29** (1992), *no.* 1, 175–190. (Zhivko S. Athanassov) **93f:34081** 34D10 (34D05)

— (*with* Chu, Chinku; Kim, Myung-Sun) Lipschitz stability and Lyapunov stability in dynamical systems. *Nonlinear Anal.* **19** (1992), *no.* 10, 901–909. (Frank Hubbuch) **93i:58086** 58F10 (34C35, 34D20)

Lee, Kesig (*with* Kothari, S. C.; Shin, Dongwan) Probabilistic information capacity of Hopfield associative memory. *Complex Systems* **6** (1992), *no.* 1, 31–46. (Zhao Zhi Zhang) **93h:92007** 92B20

Lee, Kimyeong (*with* Nair, V. P.; Weinberg, Erick J.) The fate of magnetically charged black holes. (English summary) *Gen. Relativity Gravitation* **24** (1992), *no.* 12, 1203–1207. (Michael B. Mensky) **93k:83051** 83C57 (83C47, 83C50)

— Charge violation by instantons in Chern-Simons theories. *Nuclear Phys. B* **373** (1992), *no.* 3, 735–748. (Summary) **93c:81130** 81T13

— (*with* Kao, Hsien-Chung) Self-dual Chern-Simons Higgs systems with an $N = 3$ extended supersymmetry. (English summary) *Phys. Rev. D* (3) **46** (1992), *no.* 10, 4691–4697. (Susan Mokhtari) **93m:81144** 81T60 (81T13)

Lee, King Tak (*with* Lee, L. Y.) On a discrete evasion game of Isaacs. *J. Optim. Theory Appl.* **74** (1992), *no.* 2, 259–271. (A. M. Tarasyev) **93f:90209** 90D26

Lee, Kotik K. ★ Lectures on dynamical systems, structural stability and their applications. *World Scientific Publishing Co., Inc., River Edge, NJ*, 1992. xviii+454 *pp. ISBN* 9971-50-965-2 (Alois Klíč) **93g:58039** 58Fxx (00A69, 34–01, 34D30, 58–01, 58F10)

Lee, Kuo Chun (*with* Takefuji, Yoshiyasu; Tanaka, Toshimitsu) A parallel string search algorithm. *IEEE Trans. Systems Man Cybernet.* **22** (1992), *no.* 2, 332–336. 68P10 (68Q22)

— (*with* Takefuji, Yoshiyasu) Neural network computing for knight's tour problems. (English summary) *Neurocomputing* **4** (1992), *no.* 5, 249–254. (Summary) **93g:68115** 68T05 (05C45)

Lee, Kyung Bai (*with* Raymond, Frank) Examples of solvmanifolds without certain affine structure. *Illinois J. Math.* **37** (1993), *no.* 1, 69–77. (Yoshinobu Kamishima) **93k:57072** 57S30 (22E40, 57M10)

Lee, L. (*with* Tits, André L.) On phase information in multivariable systems. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, I* (*Kobe*, 1991), 221–226, *Mita, Tokyo*, 1992. (*see* **93g:93005**) 93C35 (93C05)

Lee, L. Y. (*with* Lee, King Tak) On a discrete evasion game of Isaacs. *J. Optim. Theory Appl.* **74** (1992), *no.* 2, 259–271. (A. M. Tarasyev) **93f:90209** 90D26

Lee, Lung Fei Amemiya's generalized least squares and tests of overidentification in simultaneous equation models with qualitative or limited dependent variables. (English summary) *Econometric Rev.* **11** (1992), *no.* 3, 319–328. (Christiaan Heij) **93j:62073** 62F12 (62F30, 62P20)

— Semiparametric nonlinear least-squares estimation of truncated regression models. *Econometric Theory* **8** (1992), *no.* 1, 52–94. (Xuming He) **93c:62119** 62J05 (62F12, 62G05)

— On efficiency of methods of simulated moments and maximum simulated likelihood estimation of discrete response models. (English summary) *Econometric Theory* **8** (1992), *no.* 4, 518–552. (Kajal Lahiri) **93k:62218** 62P25 (62P20)

vaughan-Lee, M. R. *see* **Vaughan-Lee, M. R.**

Lee, Mei Ling Ting (*with* Douglas, Ruth; Fienberg, Stephen E.; Sampson, Allan R.; Whitaker, Lyn R.) Positive dependence concepts for ordinal contingency tables. (English summary) *Topics in statistical dependence* (*Somerset, PA*, 1987), 189–202, *IMS Lecture Notes Monograph Ser.*, 16, *Inst. Math. Statist., Hayward, CA*, 1990. (Summary) **93g:62080** 62H17

— Tests of independence against likelihood ratio dependence in ordered contingency tables. (English summary) *Topics in statistical dependence* (*Somerset, PA*, 1987), 351–357, *IMS Lecture Notes Monograph Ser.*, 16, *Inst. Math. Statist., Hayward, CA*, 1990. (*see* **93f:62004**) 62G10 (62H17, 62H20)

— (*with* Whitmore, G. Alex) Stochastic processes directed by randomized time. (English summary) *J. Appl. Probab.* **30** (1993), *no.* 2, 302–314. (Summary) **93k:60183** 60J25 (60E07, 60G05, 60G55, 60J30)

Lee, Min-Gar *see* **Li, Ming Chia**

Lee, Min Ho Periods of mixed cusp forms. *Manuscripta Math.* **73** (1991), *no.* 2, 163–177. (Summary) **93c:11033** 11F67

— On the monotonicity of the quotient of certain Abelian integrals. (English summary) *Internat. J. Math. Math. Sci.* **16** (1993), *no.* 1, 41–48. (Andreĭ Bolibrukh) **93m:34013** 34A34 (58F21)

Lee, Min-Young Bivariate Bonferroni inequalities. (English summary) *Aequationes Math.* **44** (1992), *no.* 2-3, 220–225. (E. Seneta) **93h:60028** 60E15

Lee, Moy Chee (*with* Lee, Yoong-Sin) On the derivation and computation of the Cornish-Fisher expansion. (English summary) *Austral. J. Statist.* **34** (1992), *no.* 3, 443–450. 62E20

Lee, Myoung-jae Winsorized mean estimator for censored regression. (English summary) *Econometric Theory* **8** (1992), *no.* 3, 368–382. (Jan Ámos Víšek) **93m:62165** 62J12 (62F15)

— Median regression for ordered discrete response. *J. Econometrics* **51** (1992), *no.* 1-2, 59–77. (D. S. Tracy) **93e:62180** 62J99 (62P20)

Lee, P. H. *see* **Li, Pai Fei**

Lee, Pascal (*with* Baadhio, Randy A.) On the global gravitational instanton and soliton that are homotopy spheres. *J. Math. Phys.* **32** (1991), *no.* 10, 2869–2874. (Summary) **93c:57026** 57R60 (81T30, 83E15)

Lee, Patricia (*with* Handy, Carlos R.) Positivity and the energy quantization of physical systems: the C-shift moment method. *J. Phys. A* **24** (1991), *no.* 7, 1565–1578. (Summary) **93a:81107** 81S99 (81Q05)

Lee, Peng Yee On the space of Henstock integrable functions. *Function spaces* (*Poznań*, 1989), 169–173, *Teubner-Texte Math.*, 120, *Teubner, Stuttgart*, 1991. (Summary) **93a:46050** 46E30 (26A39)

— (*with* Jiao, Kai Mei) On Saks-Henstock lemma for the Riemann-type integrals. *Real Anal. Exchange* **17** (1991/92), *no.* 2, 796–801. (Yôto Kubota) **93g:26013** 26A42 (26A39)

— (*with* Chew, Tuan Seng) Integration of highly oscillatory functions in the plane. *Proceedings of Asian Mathematical Conference*, 1990 (*Hong Kong*, 1990), 276–279, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93b:00022**) 26A39 (28A25)

Lee, Peter (*with* Pfenning, Frank) Metacircularity in the polymorphic λ-calculus. 1989 International Joint Conference on Theory and Practice of Software Development (TAPSOFT '89) (Barcelona, 1989). *Theoret. Comput. Sci.* **89** (1991), *no.* 1, 137–159. (John C. Mitchell) **93a:03015** 03B40 (68N15, 68N20, 68Q55)

Lee, Peter M. ★ Bayesian statistics. An introduction. Reprint of the 1989 original. A Charles Griffin Book. *Edward Arnold, London*; *copublished in the Americas by Halsted Press* [*John Wiley & Sons, Inc.*], *New York*, 1992. x+294 *pp. ISBN* 0-85264-309-8 (Editors) **93h:62002** 62–01 (62A15, 62F15)

Lee, Pjek-Hwee *see* **Li, Pai Fei**

Lee, R. C. T. (*with* Liou, W. T.; T'ang, Ch'uan I) Covering convex rectilinear polygons in linear time. *Internat. J. Comput. Geom. Appl.* **1** (1991), *no.* 2, 137–185. (Michael B. Dillencourt) **93e:68132** 68U05 (52B55, 52C15, 68Q20)

— (*with* Hsu, F. R.; Chang, Ruei Chuan) Parallel algorithms for computing the minimum visible vertex distance between two polygons. (English summary) *Parallel computing* '91 (*London*, 1991), 115–122, *Adv. Parallel Comput.*, 4, *North-Holland, Amsterdam*, 1992. (Summary) **93i:68176** 68U05 (52B55, 68Q22)

— (*with* Chang, Maw Shang; T'ang, Ch'uan I) Solving the Euclidean bottleneck matching problem by k-relative neighborhood graphs. (English summary) *Algorithmica* **8** (1992), *no.* 3, 177–194. (Summary) **93d:68066** 68U05

— (*with* Chen, Tung Shou; Yang, Wei Pang) Amortized analysis of some disk scheduling algorithms: SSTF, SCAN, and N-StepSCAN. (English summary) *BIT* **32** (1992), *no.* 4, 546–558. 68Q25

— (*with* Hsu, F. R.; Chang, Ruei Chuan) Special subgraphs of weighted visibility graphs. *Inform. Process. Lett.* **43** (1992), *no.* 2, 69–75. (Summary) **93g:68137** 68U05 (68Q25, 68R10)

— (*with* Hsu, F. R.; Chang, Ruei Chuan) Parallel algorithms for computing the closest visible vertex pair between two polygons. *Internat. J. Comput. Geom. Appl.* **2** (1992), *no.* 2, 135–162. (Ivan Stojmenović) **93h:52020** 52B55 (68U05)

— (*with* Hwang, R. Z.; Chang, Ruei Chuan) The slab dividing approach to solve the Euclidean P-center problem. (English summary) *Algorithmica* **9** (1993), *no.* 1, 1–22. (Summary) **93k:68103** 68U05 (68Q25, 90B80)

— (*with* Hwang, R. Z.; Chang, Ruei Chuan) The searching over separators strategy to solve some NP-hard problems in subexponential time. (English summary) *Algorithmica* **9** (1993), *no.* 4, 398–423. (Summary) **93m:65189** 65U05 (68Q25)

Lee, Richard A quasilinearization method for robust parameter estimation. *Proceedings of Asian Mathematical Conference*, 1990 (*Hong Kong*, 1990), 280–283, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93b:00022**) 93B30

Lee, Robert (*with* Cangellaris, Andreas) Numerical solution of the two-dimensional scalar Helmholtz equation using the bymoment method. *Integral methods in science and engineering*—90 (*Arlington, TX*, 1990), 249–259, *Ser. Comput. Phys. Process. Mech. Thermal Sci., Hemisphere, New York*, 1991. (*see* **93f:00014**) 65M60

Lee, Roderick N. (*with* Fisher, David C.; Knowles, Elizabeth) If f has Lipschitz constant less than 2.17008, then $x_{i+1} = x_i + f(x_i)$ has no odd periodic solutions. *J. Math. Anal. Appl.* **160** (1991), *no.* 2, 459–467. (C. Praagman) **93b:39004** 39B12 (58F08, 58F22)

Lee, Ronnie (*with* Wilczyński, Dariusz M.) Correction to: "Locally flat 2-spheres in simply connected 4-manifolds" [Comment. Math. Helv. **65** (1990), no. 3, 388–412; MR 91i:57011]. *Comment. Math. Helv.* **67** (1992), *no.* 2, 334–335. (Editors) **93a:57022** 57N35 (57N13)

— (*with* Hambleton, Ian) Perturbation of equivariant moduli spaces. *Math. Ann.* **293** (1992), *no.* 1, 17–37. (Terry Lawson) **93f:57023** 57N13 (57R99, 57S17, 58D19, 58D29)

— (*with* Brownstein, Alan) Cohomology of the symplectic group $Sp_4(\mathbf{Z})$. I. The odd torsion case. *Trans. Amer. Math. Soc.* **334** (1992), *no.* 2, 575–596. (Avner Ash) **93b:11067** 11F75 (11F46, 32G15)

Lee, S. (*with* Fakhre-Zakeri, I.) Sequential estimation of the mean of a linear process. *Sequential Anal.* **11** (1992), *no.* 2, 181–197. (Wolfgang Winkler) **93f:62115** 62L12

Lee, S. F. (*with* Leong, H.-W.) A new approach to game scheduling with preassignments. (English summary) *Optimization, Vol.* 1, 2 (*Singapore*, 1992), 197–208, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93f:90213** 90D46 (90B35, 90C27)

Lee, S. L. *see* **Lee, Seng Luan**

Lee, S.-M. (*with* Sheu, T. W. H.; Yang, K. O.; Chiou, B. J. Y.) A nonoscillating solution technique for skew upwind and QUICK-family schemes. (English summary) *Comput. Mech.* **8** (1991), *no.* 6, 365–382. 76M25

Lee, S. W. (*with* Hur, K.; Lim, P.-K.; Rhee, C. J.) Set-valued contractibility of hyperspaces. *J. Korean Math. Soc.* **29** (1992), *no.* 2, 341–350. (P. J. Collins) **93m:54056** 54F15 (54B20, 54E35)

Lee, Sa Ge The tensor product of dual spaces. (English summary) *Current topics in operator algebras* (*Nara*, 1990), 172–177, *World Sci. Publishing, River Edge, NJ*, 1991. (Summary) **93b:46102** 46M05 (46B28, 47D15)

— (*with* Cho, Sung Je; Kye, Seung-Hyeok) Generalized Choi maps in three-dimensional matrix algebra. *Linear Algebra Appl.* **171** (1992), 213–224. (John Phillips) **93g:46053** 46L05 (15A30)

— (*with* Jeong, Ja. A.) On purely infinite C^*-algebras. *Proc. Amer. Math. Soc.* **117** (1993), *no.* 3, 679–682. (William Paschke) **93d:46099** 46L05

— (*with* Jang, Sun Young) Simplicity of crossed products of C^*-algebras. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 3, 823–826. (Robert J. Archbold) **93i:46115** 46L55

Lee, Sang-Gu (*with* Beasley, LeRoy B.) Linear operators strongly preserving r-potent matrices over semirings. Directions in matrix theory (Auburn, AL, 1990). *Linear Algebra Appl.* **162/164** (1992), 589–599. (Walter S. Sizer) **93a:15029** 15A99 (16Y60)

Lee, Sang-Ho (*with* Kim, Byeong Man; Maeng, Seung Ryoul; Cho, Jung Wan) A new algorithm for subsumption test. (English summary) *Fifth generation computer systems, Vol.* 1, 2 (*Tokyo*, 1992), 643–649, *Ohm, Tokyo*, 1992. (Summary) **93j:68177** 68T15

Lee, Sang Hun (*with* Jung, Il Bong; Kim, Yong Chan) Coefficient multipliers of $H^{p,a}$ spaces. *Math. Japon.* **37** (1992), *no.* 2, 307–311. (Som Datt Sharma) **93g:30048** 30D55

Lee, Sang Keun (*with* Owa, Shigeyoshi) Certain generalized class of analytic functions with negative coefficients. *Bull. Calcutta Math. Soc.* **82** (1990), *no.* 4, 284–289. (Grigore Stefan Sălăgean) **93a:30011** 30C45

Lee, Sang-Kyu (*with* Park, Ju-Young Lee; Choi, Hyeong-Ah) Fault-tolerant broadcasting in circuit-switched mesh. (English summary) *Parallel processing for scientific computing, Vol. I, II* (*Norfolk, VA*, 1993), 887–890, *SIAM, Philadelphia, PA*, 1993. (*see* **93k:65003**) 65Y99

Lee, Sangchul (*with* Junkins, John L.) Explicit generalization of Lagrange's equations for hybrid coordinate dynamical systems. (English summary) *J. Guidance Control Dynamics* **15** (1992), *no.* 6, 1443–1452. (Summary) **93h:70012** 70H35 (70E99, 70F99)

Lee, Sangkyu (*with* Bera, Anil K.) Information matrix test, parameter heterogeneity and ARCH: a synthesis. (English summary) *Rev. Econom. Stud.* **60** (1993), *no.* 1, 229–240. (Summary) **93h:62191** 62P20 (62J05)

Lee, Sen Yung (*with* Ke, Huei Yaw) Flexural wave propagation in an elastic beam with periodic structure. (English summary) *Trans. ASME J. Appl. Mech.* **59** (1992), *no.* 2, *part* 2, 5189–5196. (Summary) **93c:73030** 73D15 (73K05, 73K12)

Lee, Seng Luan (*with* Phillips, G. M.) A recurrence relation for Gaussian multinomial coefficients. *Applications of Fibonacci numbers, Vol.* 3 (*Pisa*, 1988), 239–240, *Kluwer Acad. Publ., Dordrecht*, 1990. (From the text) **93e:11028** 11B65 (05A30)

— (*with* Tang, W.-S.) Approximation and spectral properties of periodic spline operators. *Proc. Edinburgh Math. Soc.* (2) **34** (1991), *no.* 3, 363–382. (Gheorghe Coman) **93f:41018** 41A15 (47N99)

— (*with* Tan, Roger C. E.; Tang, W.-S.) L_2-approximation by the translates of a function and related attenuation factors. *Numer. Math.* **60** (1992), *no.* 4, 549–568. (H. L. Loeb) **93d:41009** 41A15 (42A16, 65D07)

— (*with* Goodman, T. N. T.; Tang, W.-S.) Wavelets in wandering subspaces. *Trans. Amer. Math. Soc.* **338** (1993), *no.* 2, 639–654. (Dinh Dung) **93j:42017** 42C15 (41A15, 47B38)

Lee, Seok Jong (*with* Min, Kyung Chan) Fibrewise convergence and exponential laws. (English summary) *Tsukuba J. Math.* **16** (1992), *no.* 1, 53–62. (M. Hušek) **93i:54001** 54A20 (18A25, 54C35, 55R05)

Lee, Seung (*with* Ahn, Doo-Soo; Shim, Jae-Sun; Bae, Jong-Il) A study on estimation of bilinear systems via single term of orthogonal functions. *Control theory, stochastic analysis and applications* (*Hangzhou*, 1991), 236–245, *World Sci. Publishing, River Edge, NJ*, 1991. (*see* **93a:93005**) 93E10

Lee, Shie-Jue (*with* Plaisted, David A.) Eliminating duplication with the hyper-linking strategy. (English summary) *J. Automat. Reason.* **9** (1992), *no.* 1, 25–42. (Summary) **93g:68120** 68T15 (03B35)

Lee, Shyh Nan (*with* Shih, Mou Hsiang) A combinatorial Lefschetz fixed-point formula. (English summary) *J. Combin. Theory Ser. A* **61** (1992), *no.* 1, 123–129. (Helga Schirmer) **93i:55002** 55M20

Lee, Sik Yum (*with* Bentler, Peter M.) Some aspects of covariance structure analysis. *The development of statistics: recent contributions from China*, 107–124, *Pitman Res. Notes Math. Ser.*, 258, *Longman Sci. Tech., Harlow*, 1992. (*see* **93e:62004**) 62P15

— Bayesian analysis of stochastic constraints in structural equation models. (English summary) *British J. Math. Statist. Psych.* **45** (1992), *no.* 1, 93–107. 62P15

— (*with* Poon, Wai-Yin) Maximum likelihood and generalized least squares analyses of two-level structural equation models. *Statist. Probab. Lett.* **14** (1992), *no.* 1, 25–30. (Summary) **93d:62126** 62J05

— (*with* Yau, Linda H.-Y.; Poon, Wai-Yin) Covariance structure analysis with three-level data. (English summary) *Comput. Statist. Data Anal.* **15** (1993), *no.* 2, 159–178. 62H25 (62H12, 62H20, 62P15)

Lee, Simon (*with* Burris, Stanley) Small models of the high school identities. (English summary) *Internat. J. Algebra Comput.* **2** (1992), *no.* 2, 139–178. (Fuxing Shen) **93h:03050** 03C62 (03C13, 08C10, 68Q40)

Lee, Sin-Min (*with* Deretsky, Tatiana; Mitchem, John) On vertex prime labelings of graphs. *Graph theory, combinatorics, and applications, Vol.* 1 (*Kalamazoo, MI*, 1988), 359–369, *Wiley-Intersci. Publ., Wiley, New York*, 1991. (From the text) **93b:05146** 05C78

— (*with* Wang, Ai-Yun) On critical and cocritical diameter edge-invariant graphs. *Graph theory, combinatorics, and applications. Vol.* 2 (*Kalamazoo, MI*, 1988), 753–763, *Wiley-Intersci. Publ., Wiley, New York*, 1991. (Summary) **93b:05143** 05C75

— (*with* Liu, Andy C. F.) A construction of cordial graphs from smaller cordial graphs. *Ars Combin.* **32** (1991), 209–214. (Robin J. Wilson) **93e:05087** 05C78

— (*with* Shee, Sze Chin) On Skolem graceful graphs. *Discrete Math.* **93** (1991), *no.* 2-3, 195–200. (A. Rosa) **93a:05106** 05C78

— (*with* Schmeichel, Edward; Shee, Sze Chin) On felicitous graphs. *Discrete Math.* **93** (1991), *no.* 2-3, 201–209. (Severino V. Gervacio) **93a:05107** 05C78

— Simple graph algebras and simple rings. *Southeast Asian Bull. Math.* **15** (1991), *no.* 2, 117–121. (Summary) **93c:17001** 17A01 (20L05)

— (*with* Seah, Eric; Tan, Sie-Keng) On edge-magic graphs. Proceedings of the Twenty-first Manitoba Conference on Numerical Mathematics and Computing (Winnipeg, MB, 1991). *Congr. Numer.* **86** (1992), 179–191. (Summary) **93a:05108** 05C78

— (*with* Kong, M. C.; Sun, H. S. H.) Almost all graphs are Egyptian—old wine in new bottle. Proceedings of the Twenty-first Manitoba Conference on Numerical Mathematics and Computing (Winnipeg, MB, 1991). *Congr. Numer.* **87** (1992), 27–32. (Nora Hartsfield) **93h:05140** 05C78

— (*with* Liu, Andy C. F.; Tan, Sie-Keng) On balanced graphs. Proceedings of the Twenty-first Manitoba Conference on Numerical Mathematics and Computing (Winnipeg, MB, 1991). *Congr. Numer.* **87** (1992), 59–64. (Summary) **93a:05109** 05C78

— (*with* Lo, Sheng-Ping; Seah, Eric) On edge-gracefulness of 2-regular graphs. (English summary) *J. Combin. Math. Combin. Comput.* **12** (1992), 109–117. 05C78

Lee, Soo R. (*with* Jamshidi, M.) Stability analysis for large-scale time delay systems via the matrix Lyapunov function. (English summary) *Kybernetika* (*Prague*) **28** (1992), *no.* 4, 271–283. (A. Halanay) **93h:34139** 34K20 (93A15, 93C30, 93D05, 93D30)

Lee, Suk-Hoon (*with* Park, Nae Hyun; Choi, Jong-Suk) Bayesian ration estimation in finite populations. (Korean. English and Korean summaries) *Korean J. Appl. Statist.* **5** (1992), *no.* 1, 9–17. (Summary) **93e:62029** 62D05

Lee, Sung-Baik (*with* Cho, Jong-Ki; Kim, Nam-Gil) Real hypersurfaces with infinitesimal invariant Ricci tensor of a complex projective space. *Honam Math. J.* **13** (1991), *no.* 1, 15–20. (F. Urbano) **93a:53045** 53C40

— (*with* Kim, Nam-Gil; Ahn, Seong-Soo; Lim, In-Taik) On characterizations of a real hypersurface of type A in a complex space form. *Honam Math. J.* **14** (1992), *no.* 1, 37–44. (Alfonso Romero) **93j:53069** 53C40

— (*with* Ki, U-Hang; Kim, Nam-Gil) On certain real hypersurfaces of a complex space form. *J. Korean Math. Soc.* **29** (1992), *no.* 1, 63–77. (Stere Ianus) **93d:53069** 53C40

Lee, T. H. (*with* Nungam, S.) Investigative studies for a knowledge-based intelligent adaptive generalised predictive controller. (English summary) *Intelligent tuning and adaptive control* (*Singapore*, 1991), 223–228, *IFAC Sympos. Ser.*, 1991, *No.* 7, *Pergamon, Oxford*, 1991. (*see* **93i:93007**) 93C40

Lee, T. J. *see* **Lee, Taejin**

Lee, T. K. *see* **Li, Ch'iu K'un**

Lee, Tae-Hwy (*with* White, Halbert; Granger, Clive W. J.) Testing for neglected nonlinearity in time series models: a comparison of neural network methods and alternative tests. (English summary) *J. Econometrics* **56** (1993), *no.* 3, 269–290. (Summary) **93m:62199** 62M10

Lee, Taejin Bend intersection property and dendroids of type N. *Period. Math. Hungar.* **23** (1991), *no.* 2, 121–127. (Vladimir T. Todorov) **93f:54047** 54F15 (54F50)

— (*with* Charatonik, Janusz J.; Omiljanowski, K.) Interrelations between some noncontractibility conditions. (English summary) *Rend. Circ. Mat. Palermo* (2) **41** (1992), *no.* 1, 31–54. (Donald E. Bennett) **93i:54026** 54F15 (54F50)

Lee, Tai-Ming (*with* Gelfand, Alan E.; Smith, Adrian F. M.) Bayesian analysis of constrained parameter and truncated data problems using Gibbs sampling. *J. Amer. Statist. Assoc.* **87** (1992), *no.* 418, 523–532. 62F15

Lee, Tak C. (*with* Ho, James K.) Dynamics of information in distributed decision systems. (English summary) *Internat. J. Inform. Management Sci.* **2** (1991), *no.* 1, 95–117. 90C90 (90A05)

Lee, Tsiu-Kwen *see* **Li, Ch'iu K'un**

Lee, Tze Chiang (*with* Hayes, John P.) A fault-tolerant communication scheme for hypercube computers. (English summary) *IEEE Trans. Comput.* **41** (1992), *no.* 10, 1242–1256. 68M10 (68M15)

Lee, Tze-San A class of minimax ridge rules. (English and Italian summaries) *Metron* **49** (1991), *no.* 1-4, 419–429 (1992). (Summary) **93k:62143** 62J07

Lee, Tzong-Yow Some large-deviation theorems for branching diffusions. (English summary) *Ann. Probab.* **20** (1992), *no.* 3, 1288–1309. (Ross Pinsky) **93i:60052** 60F10 (60J60, 60J80)

— (*with* Rémillard, Bruno) Occupation times in systems of null recurrent Markov processes. *C. R. Math. Rep. Acad. Sci. Canada* **14** (1992), *no.* 1, 2–6. (Summary) **93a:60095** 60J10 (60F10)

Lee, Ven-Gen (*with* Hasegawa, Hisao; Mura, Toshio) Green's functions for axisymmetric problems of dissimilar elastic solids. (English summary) *Trans. ASME J. Appl. Mech.* **59** (1992), *no.* 2, *part* 1, 312–320. (Summary) **93e:73009** 73C02 (73B27)

Lee, W. M. F. (*with* Akcoglu, Mustafa; del Junco, Andrés) A solution to a problem of A. Bellow. *Almost everywhere convergence, II* (*Evanston, IL*, 1989), 1–7, *Academic Press, Boston, MA*, 1991. (Anzelm Iwanik) **93e:28018** 28D05

Lee, Wen Ho (*with* Kashiwa, Bryan) Comparisons between the cell-centered and staggered mesh Lagrangian hydrodynamics. (English summary) *Advances in the free-Lagrange method* (*Moran, WY*, 1990), 277–288, *Lecture Notes in Phys.*, 395, *Springer, Berlin*, 1991. (*see* **93g:76001**) 76M25 (76M20)

Lee, Woo Young (*with* Lee, Hong Youl; Han, Young Min) The essential point spectrum of a regular operator. *Bull. Korean Math. Soc.* **29** (1992), *no.* 2, 295–300. (R. W. Cross) **93h:47003** 47A05 (47A10, 47A53)

— (*with* Choi, Chun In) Almost regular operators. *J. Korean Math. Soc.* **29** (1992), *no.* 2, 401–407. (R. W. Cross) **93h:47004** 47A05 (47A53)

— A generalization of the punctured neighborhood theorem. *Proc. Amer. Math. Soc.* **117** (1993), *no.* 1, 107–109. (R. W. Cross) **93c:47005** 47A10

Lee, Wu Yen *see* **Li, Wu Yen**

Lee, Xin Jian (*with* Wu, You Lin) Five-dimensional Kaluza-Klein theory in Weitzenböck space. (English summary) *Phys. Lett. A* **165** (1992), *no.* 4, 303–306. (Gheorghe Zet) **93i:83085** 83E15

Lee, Y. *see* **Lee, Youngjo**

Lee, Y. J. *see* **Lee, Yoon Joon**

Lee, Yang (*with* Marubayashi, Hidetoshi; Park, Jae Keol) Polynomials determining hereditary prime PI-rings. *Comm. Algebra* **20** (1992), *no.* 9, 2503–2511. (Amiram Braun) **93g:16010** 16E60 (16R20)

Lee, Yew Sing (*with* Lee, Jon^2) A spectral method for concordant polyhedral faces. *Linear Algebra Appl.* **159** (1991), 11–41. (Gerard Sierksma) **93e:52020** 52B05 (05C45, 52B12, 90C27)

— Inequalities for M and N_0-matrices. *Linear and Multilinear Algebra* **29** (1991), *no.* 2, 149–154. (John Maroulas) **93a:15023** 15A45

Lee, Yong Hoon Multiplicity of periodic solutions for second order weakly coupled systems. *Houston J. Math.* **18** (1992), *no.* 4, 591–600. (Tassilo Küpper) **93m:34029** 34B15 (34C25, 47H15, 47N20)

— An Ambrosetti-Prodi type result for second order weakly coupled systems. *Nonlinear Anal.* **18** (1992), *no.* 8, 793–799. (Maria Patrizia Pera) **93d:34079** 34C25 (47H11, 47H15, 47N20)

Lee, Yoon Joon (*with* Lee, Byung Chai) Derivation of stabilization matrices for Mindlin plates from the combined mixed functional and their mathematical characteristics. (English summary) *Comput. & Structures* **46** (1993), *no.* 1, 21–32. (Summary) **93k:73079** 73V05 (73K10)

Lee, Yoong-Sin (*with* Lee, Moy Chee) On the derivation and computation of the Cornish-Fisher expansion. (English summary) *Austral. J. Statist.* **34** (1992), *no.* 3, 443–450. 62E20

Lee, Young-duck (*with* Tcha, Dong-wan; Lee, Bum-Il) Processors selection and traffic splitting in a parallel processors system. (English summary) *Acta Inform.* **29** (1992), *no.* 5, 415–423. 68M20

Lee, Youngjo (*with* Park, Byeong U.) A short note on superefficiency. *J. Korean Statist. Soc.* **20** (1991), *no.* 2, 202–207. (Summary) **93g:62046** 62F12

— (*with* Nelder, J. A.) Likelihood, quasi-likelihood and pseudolikelihood: some comparisons. *J. Roy. Statist. Soc. Ser. B* **54** (1992), *no.* 1, 273–284. (D. A. Sprott) **93e:62010** 62A10 (62F10)

Lee, Yu Lee (*with* Chu, C. I.; Miao, L. C.) On iterated manifolds of maps. *Soochow J. Math.* **17** (1991), *no.* 2, 189–192. (Liliana Maxim-Răileanu) **93b:58024** 58D15

— On squares of Jacobson radicals. *Kyungpook Math. J.* **32** (1992), *no.* 2, 217–218. 16N20

— A note on the Jacobson radical. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 2, 337–338. (N. Divinsky) **93g:16025** 16N20

Lee, Yueh-Ying (*with* Jan, Rong Hong; Hsü, Li Hsing) The most vital edges with respect to the number of spanning trees in two-terminal series-parallel graphs. (English summary)

BIT **32** (1992), *no.* 3, 403–412. (Summary) **93i:05123** 05C85 (68R10, 90C35)

Lee, Yuh-Jia *see* **Li, Yü Chia**

Lee, Yuh Jye (*with* Chang, Ch'i) A non-weakly balanced game with nonempty bargaining set. (English summary) *J. Math. Econom.* **22** (1993), *no.* 2, 195–198. (Summary) **93m:90117** 90D12

Lee, Yung-Chia (*with* Cho, Cheng-Hong) Flexible view update. *Inform. Sci.* **63** (1992), *no.* 1-2, 87–112. (Summary) **93c:68020** 68P15

Lee-Bapty, I. P. (*with* Crighton, D. G.) Spherical nonlinear wave propagation in a dissipative stratified atmosphere. *Wave Motion* **15** (1992), *no.* 4, 315–331. (Alexander Alenitsyn) **93i:76079** 76Q05 (76V05)

Leech, John *see* **Conway, J. H., 93h:11069**

Leech, Jonathan Normal skew lattices. *Semigroup Forum* **44** (1992), *no.* 1, 1–8. (Boris M. Schein) **93a:06008** 06B99 (06D99)

— The geometric structure of skew lattices. *Trans. Amer. Math. Soc.* **335** (1993), *no.* 2, 823–842. (T. S. Blyth) **93d:20107** 20M10 (06A06, 20M25)

Leela, S. (*with* Lakshmikantham, V.; Martynyuk, A. A.) ★ Устойчивость движения: метод сравнения. (Russian. English and Russian summaries) [Stability of motion: the comparison method] Устойчивость: Теория, Методы и Приложения [Stability: Theory, Methods and Applications], 1. "*Naukova Dumka*", *Kiev*, 1991. 248 *pp. ISBN* 5-12-002212-X (Editors) **93i:34095** 34D20 (34–02, 34C10, 34D10, 34K20, 39A11, 45J05)

— (*with* Lakshmikantham, V.) Trends in the method of vector Lyapunov functions. (English summary) *Computational and applied mathematics, II* (*Dublin*, 1991), 77–84, *North-Holland, Amsterdam*, 1992. (*see* **93j:00008**) 34D20

— (*with* Agarwal, Ravi Prakash) A tribute to Professor V. Lakshmikantham on his 65th birthday. *Recent trends in differential equations*, v–vii, *World Sci. Ser. Appl. Anal.*, 1, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93e:34005**) 01A70

— (*with* Heikkilä, Seppo) On the solvability of the second order initial value problems in Banach spaces. *Dynamic Systems Appl.* **1** (1992), *no.* 2, 141–170. (Tomás Domínguez Benavides) **93g:34097** 34G20 (34A12, 47N20)

Leeming, David J. (*with* Johnson, Bruce R.) A study of the digits of π, e and certain other irrational numbers. (English summary) *Sankhyā Ser. B* **52** (1990), *no.* 2, 183–189. (Summary) **93e:65010** 65C10 (11A63)

van Leemput, S. *see* **Van Leemput, S.**

Leeney, Mark G. LLI rings and modules of type LP. *Comm. Algebra* **20** (1992), *no.* 4, 943–953. (Daniel Simson) **93c:16008** 16D90 (16D40)

Leep, David B. (*with* Yeomans, Charles C.) Diagonal forms over fields with procyclic Galois group. *Comm. Algebra* **20** (1992), *no.* 7, 2029–2041. (A. Prószyński) **93g:11034** 11E76 (12F10)

van Leer, Bram The computation of steady solutions to the Euler equations: a perspective. *Numerical simulation of compressible Euler flows* (*Rocquencourt*, 1986), 21–38, *Notes Numer. Fluid Mech.*, 26, *Vieweg, Braunschweig*, 1989. (*see* **93b:76056**) 76Mxx

— (*with* Rumsey, Christopher L.; Roe, Philip L.) A multidimensional flux function with applications to the Euler and Navier-Stokes equations. (English summary) *J. Comput. Phys.* **105** (1993), *no.* 2, 306–323. (Summary) **93m:76060** 76M20

— *see also* **Numerical simulation of compressible Euler flows, 93b:76056**

Leermakers, René Recursive ascent parsing: from Earley to Marcus. (English summary) *Theoret. Comput. Sci.* **104** (1992), *no.* 2, 299–312. (Summary) **93i:68114** 68Q52

— (*with* Augusteijn, Lex; Kruseman Aretz, Frans E. J.) A functional LR parser. (English summary) *Theoret. Comput. Sci.* **104** (1992), *no.* 2, 313–323. (Summary) **93i:68115** 68Q52

de Leeuw, Jan *see* **Leurgans, Sue, 93e:62164**

van Leeuwen, J. *see* **van Leeuwen, Jan**

van Leeuwen, J. M. J. (*with* Kooiman, A.) Free fermion approximation for the Ising model with further-neighbor interactions on a triangular lattice. (English summary) *J. Statist. Phys.* **69** (1992), *no.* 1-2, 247–275. (Summary) **93g:82018** 82B20

van Leeuwen, Jan (*with* Knijnenburg, P. M. W.) On models for propositional dynamic logic. *Theoret. Comput. Sci.* **91** (1991), *no.* 2, 181–203. (Alexey P. Stolboushkin) **93h:03033** 03B70 (68Q60)

van Leeuwen, Marc A. A. An application of Hopf-algebra techniques to representations of finite classical groups. *J. Algebra* **140** (1991), *no.* 1, 210–246. (Jian-Pan Wang) **93c:20031** 20C33 (16W30)

van Leeuwen, W. A. *see* **Conference: Relativity, 93j:83003**

Lefarth, U. (*with* Landwehr, M.; Wassmuth, E.) Parameter identification and optimization of nonlinear dynamic systems, exemplified by mechatronic systems. (English summary) *Computational systems analysis* 1992 (*Berlin*, 1992), 257–262, *Elsevier, Amsterdam*, 1992. (*see* **93e:00021**) 93E10 (49N55)

Lefebvre, Mario Quelques résultats au sujet des densités de premier passage pour des processus de diffusion. (English summary) [Some results concerning hitting densities for diffusion processes] *Ann. Sci. Math. Québec* **15** (1991), *no.* 2, 165–175. (Summary) **93d:60127** 60J60

Le Fe Do (*with* Leonenko, N. N.) Asymptotic properties of estimates of the regression coefficients of random fields. (Russian. English summary) *Dokl. Akad. Nauk Ukrain. SSR* **1991**, *no.* 8, 52–55, 184. (M. I. Yadrenko) **93e:62247** 62M40 (62J02)

— Statistical properties of an estimate for the third-order moment function of a stationary process. (Ukrainian. Russian and Ukrainian summaries) *Teor. Ĭmovīr. ta Mat. Statist. No.* 46 (1992), 63–70. (Summary) **93j:62215** 62M09

Lefmann, Hanno Extremalprobleme in Verbänden. [Extremal problems in lattices] *Séminaire Lotharingien de Combinatoire* (*Oberfranken*, 1990), 68–75, *Publ. Inst. Rech. Math. Av.*, 413, *Univ. Louis Pasteur, Strasbourg*, 1990. (W. Moser) **93e:05099** 05D05

— (*with* Rödl, Vojtěch; Thomas, Robin) Monochromatic vs multicolored paths. (English summary) *Graphs Combin.* **8** (1992), *no.* 4, 323–332. (Zhong Fu Zhang) **93k:05064** 05C15

Lefton, Lew E. (*with* Shapiro, Victor L.) Resonance and quasilinear parabolic partial differential equations. *J. Differential Equations* **101** (1993), *no.* 1, 148–177. (Jesús Hernández) **93m:35111** 35K60 (35B10, 35K35, 47H15, 47N20)

Lega, J. Defects in macroscopic structures: Ginzburg-Landau approach. (English summary) *Nematics* (*Orsay*, 1990), 233–246, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 332, *Kluwer Acad. Publ., Dordrecht*, 1991. (*see* **93d:58007**) 82D99

Le Gac, B. Blocks of orthogonal random variables and the strong law of large numbers. (Russian summary) *Anal. Math.* **18** (1992), *no.* 2, 103–109. (F. Móricz) **93k:60075** 60F15

Le Gall, Jean-François On the connected components of the complement of a two-dimensional Brownian path. *Random walks, Brownian motion, and interacting particle systems*, 323–338, *Progr. Probab.*, 28, *Birkhäuser Boston, Boston, MA*, 1991. (Paul McGill) **93d:60132** 60J65

— Brownian excursions, trees and measure-valued branching processes. *Ann. Probab.* **19** (1991), *no.* 4, 1399–1439. (Klaus Fleischmann) **93b:60195** 60J80 (60G57, 60J55, 60J65)

— (*with* Meyre, T.) Points cônes du mouvement brownien plan, le cas critique. (English summary) [Cone points of planar Brownian motion: the critical case] *Probab. Theory Related Fields* **93** (1992), *no.* 2, 231–247. (Michio Shimura) **93m:60168** 60J65

— (*with* Duplantier, Bertrand; Lawler, Gregory F.; Lyons, T. J.) The geometry of the Brownian curve. (English and French summaries) *Bull. Sci. Math.* (2) **117** (1993), *no.* 1, 91–106. (Krzysztof Burdzy) **93k:60205** 60J65 (31A20, 60G17, 60J15, 60J50, 60K35)

Leganza, Krystina K. Representations of exceptional Lie algebras restricted to subalgebras. *Comm. Algebra* **20** (1992), *no.* 2, 509–525. (Mohammad Hailat) **93a:17005** 17B25 (17B10, 17B20)

Legat, Vincent (*with* Marchal, Jean-Marie) Die design: an implicit formulation for the inverse problem. (English summary) *Internat. J. Numer. Methods Fluids* **16** (1993), *no.* 1, 29–42. (Summary) **93i:76056** 76M10 (76A05, 76D99)

martínez-Legaz, Juan-Enrique *see* **Martínez-Legaz, Juan-Enrique**

molina Legaz, R. *see* **Molina Legaz, R.**

Legen'kii, V. I. A group-theoretic algorithm for solving problems of optimal control synthesis. (Russian. Russian summary) *Kibernet. i Vychisl. Tekhn. No.* 91 (1991), 41–48. (Summary) **93d:49044** 49N35 (49M05, 93B50)

— Symmetries and the reduction problem in the design of optimal systems. (Russian. Russian summary) *Kibernet. i Vychisl. Tekhn. No.* 95 (1992), 12–18. 49N35 (93B50)

Léger, A. (*with* Andrieux, Stéphane) Multiple scaling method for the calculation of threaded assemblies. (English summary) *Comput. Methods Appl. Mech. Engrg.* **102** (1993), *no.* 3, 293–317. (Luis Trabucho) **93m:73033** 73K99 (73V05)

— (*with* Potier-Ferry, M.) Elastic-plastic post-buckling from a heterogeneous state. (English summary) *J. Mech. Phys. Solids* **41** (1993), *no.* 4, 783–807. (Summary) **93m:73016** 73H05 (73E99, 73V25)

Léger, Christian (*with* Cléroux, Robert) Nonparametric age replacement: bootstrap confidence intervals for the optimal cost. (English summary) *Oper. Res.* **40** (1992), *no.* 6, 1062–1073. 62N05

— Erratum: "Operations on maps and metamorphoses of the category of G-sets" [Rev. Mat. Univ. Complut. Madrid **4** (1991), no. 1, 45–51; MR 92k:18001]. (French) *Rev. Mat. Univ. Complut. Madrid* **5** (1992), *no.* 1, 35. (Editors) **93i:18002** 18A22 (51A10, 52B70)

Legg, David A. (*with* Townsend, Douglas W.) A family of natural best L_1-approximants by nondecreasing functions. *Numer. Funct. Anal. Optim.* **13** (1992), *no.* 1-2, 173–183. (J. Prasad) **93c:41032** 41A30

Leggett, A. J. On the nature of research in condensed-state physics. *Found. Phys.* **22** (1992), *no.* 2, 221–233. (Pierre Kerszberg) **93c:00002** 00A30 (00A79, 82B03)

Le Gland, François (*with* Florchinger, Patrick) Particle approximation for first order stochastic partial differential equations. *Applied stochastic analysis* (*New Brunswick, NJ*, 1991), 121–133, *Lecture Notes in Control and Inform. Sci.*, 177, *Springer, Berlin*, 1992. (Jan I. Seidler) **93f:35252** 35R60 (65U05)

— (*with* James, Matthew R.) Numerical approximation for nonlinear filtering and finite-time observers. *Applied stochastic analysis* (*New Brunswick, NJ*, 1991), 159–175, *Lecture Notes in Control and Inform. Sci.*, 177, *Springer, Berlin*, 1992. (Alexander I. Matasov) **93f:93127** 93E11 (60G35, 62M20)

— Splitting-up approximation for SPDEs and SDEs with application to nonlinear filtering. (English summary) *Stochastic partial differential equations and their applications* (*Charlotte, NC*, 1991), 177–187, *Lecture Notes in Control and Inform. Sci.*, 176, *Springer, Berlin*, 1992. (*see* **93b:60006**) 60H15 (60G35, 93E11)

Legrain, I. (*with* Destuynder, Philippe; Castel, L.; Richard, N.) Piezoelectric wafers for reducing the structure vibrations. *Intelligent structural systems*, 243–284, *Solid Mech. Appl.*, 13, *Kluwer Acad. Publ., Dordrecht*, 1992. (*see* **93e:73030**) 73K50 (73K12)

hayat-Legrand, Claude *see* **Hayat-Legrand, Claude**

Legrand, Olivier (*with* Sornette, Didier) Quantum chaos and Sabine's law of reverberation in ergodic rooms. (English summary) *Large scale structures in nonlinear physics* (*Villefranche-sur-Mer*, 1991), 267–274, *Lecture Notes in Phys.*, 392, *Springer, Berlin*, 1991. (Summary) **93g:76103** 76Q05 (81Q50)

Legras, Bernard (*with* Dritschel, David G.) The elliptical model of two-dimensional vortex dynamics. I. The basic state. *Nonlinear world, Vol.* 1 (*Kiev*, 1989), 444–459, *World Sci. Publishing, River Edge, NJ*, 1990. (*see* **93b:00012**) 76C05

— (*with* Dritschel, David G.) The elliptical model of two-dimensional vortex dynamics. II. Disturbance equations. *Nonlinear world, Vol.* 1 (*Kiev*, 1989), 460–469, *World Sci. Publishing, River Edge, NJ*, 1990. (*see* **93b:00012**) 76C05

— (*with* Zeitlin, V. Yu.) Conformal dynamics for vortex motions. *Phys. Lett. A* **167** (1992), *no.* 3, 265–271. (Oscar F. Orellana) **93e:76015** 76C05 (76E99)

— (*with* Dritschel, David G.) A comparison of the contour surgery and pseudo-spectral methods. (English summary) *J. Comput. Phys.* **104** (1993), *no.* 2, 287–302. (Summary) **93i:76069** 76M25 (76C05)

Legris, Javier On S4 as the "logic of justified knowledge". (English summary) *J. Non-Classical Logic* **8** (1991), *no.* 2, 103–117. (Summary) **93m:03029** 03B45

Legros, Patrick Information revelation in repeated delegation. (English summary) *Games Econom. Behav.* **5** (1993), *no.* 1, 98–117. (Summary) **93k:90123** 90D40 (90A10)

Legros, W. (*with* Nicolet, A.; Dular, P.; Genon, A.) Boundary element singularities in 3D magnetostatic problems based on the vector potential. (English summary) *Boundary element technology, VII* (*Albuquerque, NM*, 1992), 319–329, *Comput. Mech., Southampton*, 1992. (*see* **93b:65002**) 65N38 (78A25)

— (*with* Nicolet, A.; Genon, A.; Umé, M.; Delincé, F.) An optimal adaptative numerical integral method. (English summary) *Boundary element technology, VII* (*Albuquerque, NM*, 1992), 919–933, *Comput. Mech., Southampton*, 1992. (*see* **93b:65002**) 65D30

Le Gruyer, Erwan (*with* Archer, Jean-Claude) Stabilité et convergence des schémas d'extension par fonctions continues dans des espaces métriques quelconques. (English and French summaries) [Stability and convergence of extension schemes by continuous functions in general metric spaces] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 7, 803–806. (Summary) **93k:54038** 54C20 (54E35)

— (*with* Archer, Jean-Claude) Deux résultats sur les champs tayloriens. (English and French summaries) [Two results on Taylor fields] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 8, 937–939. (Enrique Outerelo Domínguez) **93i:58018** 58C25 (26E20, 46G05, 58C20)

— (*with* Archer, Jean-Claude) A constructive proof of a Whitney extension theorem in one variable. (English summary) *J. Approx. Theory* **71** (1992), *no.* 3, 312–328. (Zygfryd Kominek) **93m:26008** 26A24 (41A10, 42C05)

Legua Fernández, Matilde (*with* Jódar, Lucas; Law, A. G.) A matrix method of Frobenius, and application to a generalized Bessel equation. Proceedings of the Twenty-first Manitoba Conference on Numerical Mathematics and Computing (Winnipeg, MB, 1991). *Congr. Numer.* **86** (1992), 7–17. (Summary) **93c:34018** 34A25

— (*with* Jódar, Lucas) Solving second-order matrix differential equations with regular singular points avoiding the increase of the problem dimension. (English summary) *Appl. Math. Comput.* **53** (1993), *no.* 2-3, 191–205. (Summary) **93j:34002** 34A05 (34A25)

Le Guernic, Paul (*with* Benveniste, Albert; Sorel, Yves; Sorine, Michel) A denotational theory of synchronous reactive systems. *Inform. and Comput.* **99** (1992), *no.* 2, 192–230. (Stefano Mazzanti) **93g:68034** 68Q10 (68Q55)

Leguillon, D. Asymptotic and numerical analysis of a crack branching in nonisotropic materials. (English summary) *European J. Mech. A Solids* **12** (1993), *no.* 1, 33–51. (Summary) **93i:73042** 73M25 (73B40)

Leguizamón, Carlos A. (*with* Zaretzky, Alba N.) The Heyting arrow lattice for qualitative relations in biological systems. *Math. Comput. Modelling* **16** (1992), *no.* 6-7, 237–244. (Leo Esakia) **93h:06020** 06D20 (03G10, 92B05)

— (*with* Zaretzky, Alba N.) The algebraic relational theory applied to low energy effects in malignant cells. (English summary) *Math. Comput. Modelling* **17** (1993), *no.* 6, 91–95. 92C50

Lehel, Jenő (*with* Erdős, Paul; Jacobson, Michael S.) Graphs realizing the same degree sequences and their respective clique numbers. *Graph theory, combinatorics, and applications, Vol.* 1 (*Kalamazoo, MI*, 1988), 439–449, *Wiley-Intersci. Publ., Wiley, New York*, 1991. (Summary) **93d:05149** 05C99

— Facts and quests on degree irregular assignments. *Graph theory, combinatorics, and applications. Vol.* 2 (*Kalamazoo, MI*, 1988), 765–781, *Wiley-Intersci. Publ., Wiley, New York*, 1991. (*see* **93b:05003**) 05C35

— (*with* Faudree, Ralph J.; Gyárfás, András) Minimal path pairable graphs. (English summary) Proceedings of the Twenty-third Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, FL, 1992). *Congr. Numer.* **88** (1992), 111–128. (Summary) **93j:05085** 05C35

— (*with* Csaba, László; Faudree, Ralph J.; Gyárfás, András; Schelp, Richard H.) Networks communicating for each pairing of terminals. (English summary) *Networks* **22** (1992), *no.* 7, 615–626. (Summary) **93h:05097** 05C35 (68M10, 90B10)

Lehman, Brad (*with* Bentsman, Joseph) Vibrational control of linear time lag systems with arbitrarily large but bounded delays. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 10, 1576–1582. (V. Kolmanovskiĭ) **93k:93059** 93C30 (93B52, 93D15)

Lehmann, Daniel Residues of higher order and holomorphic vector fields. (French summary) *Séminaire Gaston Darboux de Géométrie et Topologie Différentielle*, 1990–1991 (*Montpellier*, 1990–1991), v, 127–143, *Univ. Montpellier II, Montpellier*, 1992. (Hiroshi Takai) **93i:32055** 32S65 (32L30, 58G10)

Lehmann, Daniel J. (*with* Magidor, Menachem) What does a conditional knowledge base entail? *Artificial Intelligence* **55** (1992), *no.* 1, 1–60. (David Makinson) **93i:03035** 03B60 (68T27)

Lehmann, Detlef A probabilistic approach to Euclidean Dirac fields. *J. Math. Phys.* **32** (1991), *no.* 8, 2158–2166. (Summary) **93b:81141** 81T08

Lehmann, Erich Leo ★ Theory of point estimation. Reprint of the 1983 original. The Wadsworth & Brooks/Cole Statistics/Probability Series. *Wadsworth & Brooks/Cole Advanced Books & Software, Pacific Grove, CA*, 1991. xiv+506 *pp. ISBN* 0-534-15978-8 (Editors) **93c:62003a** 62-02 (62F10, 62F11, 62F12)

— ★ Теория точечного оценивания. (Russian) [Theory of point estimation] Translated from the English by Yu. V. Prokhorov. Теория Вероятностей и Математическая Статистика [Probability Theory and Mathematical Statistics], 43. "*Nauka*", *Moscow*, 1991. 445 *pp. ISBN* 5-02-013941-6 (Editors) **93c:62003b** 62-02 (62F10, 62F11, 62F12)

— (*with* Scholz, F.-W.) Ancillarity. *Current issues in statistical inference: essays in honor of D. Basu*, 32–51, *IMS Lecture Notes Monograph Ser.*, 17, *Inst. Math. Statist., Hayward, CA*, 1992. (A. L. Rukhin) **93j:62011** 62B05 (62A99, 62F99)

— (*with* Rojo, Javier) Invariant directional orderings. (English summary) *Ann. Statist.* **20** (1992), *no.* 4, 2100–2110. (Michael J. Evans) **93m:62010** 62A05 (60E05)

Lehmann, N. Joachim *see* **Hantzschmann, Karl, 93h:01040**

Lehmann, Th. (*with* Guo, Zhong Heng; Liang, Hao Yun) The conjugacy between Cauchy stress and logarithm of the left stretch tensor. *European J. Mech. A Solids* **10** (1991), *no.* 4, 395–404. (Summary) **93c:73019** 73B99

Lehmer, Derrick Henry The mathematical work of Morgan Ward. *Math. Comp.* **61** (1993), *no.* 203, 307–311. (Štefan Porubský) **93k:01071** 01A70 (11–03)

— (*with* Lehmer, Emma) The Lehmer project. *Math. Comp.* **61** (1993), *no.* 203, 313–317. (Duncan A. Buell) **93k:11100** 11R27 (11T22)

— *see also* **Brillhart, John, 93d:01057; 93m:01061a; 93m:01061b; Bibliography: Lehmer, Derrick Henry, 93m:01061c** *and* **Yates, Samuel, 93m:11135**

Lehmer, Emma (*with* Lehmer, Derrick Henry) The Lehmer project. *Math. Comp.* **61** (1993), *no.* 203, 313–317. (Duncan A. Buell) **93k:11100** 11R27 (11T22)

Lehner, Joseph Farey series and sums of continued fractions. *Discrete groups and geometry* (*Birmingham*, 1991), 165–170, *London Math. Soc. Lecture Note Ser.*, 173, *Cambridge Univ. Press, Cambridge*, 1992. (Thomas W. Cusick) **93j:11013** 11B57 (11A55, 11J06)

Lehnigk, S. H. A function and an associated inequality. *General inequalities*, 6 (*Oberwolfach*, 1990), 483–484, *Internat. Ser. Numer. Math.*, 103, *Birkhäuser, Basel*, 1992. (*see* **93k:26001**) 26D07

Lehoczky, John Statistical methods. *Stochastic models*, 255–293, *Handbooks Oper. Res. Management Sci.*, 2, *North-Holland, Amsterdam*, 1990. (*see* **93a:60001**) 62-01 (62M07, 62M09)

Lê Hông Vân (*with* Tsypkin, Ya. Z.; Jury, Eliahu I.; Tempo, Roberto; Polyak, B. T.) Discussion of the robustness problem in control systems. (Russian) *Avtomat. i Telemekh.* **1992**, *no.* 1, 165–176; *translation in Automat. Remote Control* **53** (1992), *no.* 1, *part* 2, 134–143. (Andrzej W. Olbrot) **93m:93078** 93D09 (93–02)

Lehr, S. A result about languages concerning paperfolding sequences. *Math. Systems Theory* **25** (1992), *no.* 4, 309–313. (Summary) **93c:68051** 68Q45 (11B85)

— Sums and rational multiples of q-automatic sequences are q-automatic. (English summary) *Theoret. Comput. Sci.* **108** (1993), *no.* 2, 385–391. (M. Mendès France) **93m:11022** 11B85

Lehr, Ulrike (*with* Schäfer, Lothar; von Ferber, Christian; Duplantier, Bertrand) Renormalization of polymer networks and stars. *Nuclear Phys. B* **374** (1992), *no.* 3, 473–495. (Summary) **93a:82072** 82D60 (82B28)

Lehrer, Ehud Correlated equilibria in two-player repeated games with nonobservable actions. *Math. Oper. Res.* **17** (1992), *no.* 1, 175–199. (James Bergin) **93a:90093** 90D20 (90D05)

— (*with* Sorin, Sylvain) A uniform Tauberian theorem in dynamic programming. *Math. Oper. Res.* **17** (1992), *no.* 2, 303–307. (Victor J. Baston) **93c:90099** 90C39 (49L20)

Lehrer, Gustav Isaac (*with* Thévenaz, Jacques) Sur la conjecture d'Alperin pour les groupes réductifs finis. (English and French summaries) [On Alperin's conjecture for finite reductive groups] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 13, 1347–1351. (Summary) **93k:20067** 20G40 (20C99)

— Rational tori, semisimple orbits and the topology of hyperplane complements. *Comment. Math. Helv.* **67** (1992), *no.* 2, 226–251. (James E. Humphreys) **93e:20065** 20G40 (17B45, 20D06, 52B30)

— (*with* Digne, F.; Michel, Jean) The characters of the group of rational points of a reductive group with nonconnected centre. *J. Reine Angew. Math.* **425** (1992), 155–192. (Bhama Srinivasan) **93c:20071** 20G05 (20C15)

Lehtinen, Aarni Recognizing the three best of a sequence. *Ann. Acad. Sci. Fenn. Ser. A I Math.* **17** (1992), *no.* 1, 73–79. (Krzysztof Szajowski) **93g:60090** 60G40 (62L15, 90A05)

— The best choice problem with an unknown number of objects. (English summary) *Z. Oper. Res.* **37** (1993), *no.* 1, 97–106. (Summary) **93m:60084** 60G40

Lehto, Mark (*with* Cho, Seongwon; Ersoy, Okan K.) An algorithm to compute the degree of match in fuzzy systems. (English summary) *Fuzzy Sets and Systems* **49** (1992), *no.* 3, 285–299. 68P20 (68T35)

Lehtola, Pasi Irregular points in a nonlinear harmonic space. Analyse complexe (Bucharest, 1989). *Rev. Roumaine Math. Pures Appl.* **36** (1991), *no.* 3-4, 155–159. (P. Lindqvist) **93a:31016** 31C45 (31D05)

Lehtonen, Tapani (*with* Nyrhinen, Harri) Simulating level-crossing probabilities by importance sampling. (English summary) *Adv. in Appl. Probab.* **24** (1992), *no.* 4, 858–874. (Sotiris Loukas) **93j:65009** 65C05 (60F10, 65U05)

— (*with* Nyrhinen, Harri) On asymptotically efficient simulation of ruin probabilities in a Markovian environment. (English summary) *Scand. Actuar. J.* **1992**, *no.* 1, 60–75. (Summary) **93h:60144** 60K20 (60F10, 62P05)

Lê Hùng So'n Extension problem in generalized complex analysis. *Functional analytic methods in complex analysis and applications to partial differential equations* (*Trieste*, 1988), 215–229, *World Sci. Publishing, River Edge, NJ*, 1990. (John Ryan) **93c:32019** 32D15

— Cousin problems in generalized complex analysis. *Functional analytic methods in complex analysis and applications to partial differential equations* (*Trieste*, 1988), 230–236, *World Sci. Publishing, River Edge, NJ*, 1990. (John Ryan) **93c:32020** 32D15

— The Cousin problems in the viewpoint of partial differential equations. *Geometry Seminars*, 1988–1991 (*Italian*) (*Bologna*, 1988–1991), 63–77, *Univ. Stud. Bologna, Bologna*, 1991. (Summary) **93d:32017** 32D15 (35N10)

— Extension problem for the solutions of partial differential equations in $\mathbf{R}^n$. *Complex Variables Theory Appl.* **18** (1992), *no.* 1-2, 135–139. (You-Shi Lou) **93c:35019** 35F05

Lei, Chin Laung (*with* Liaw, Heh Tyan; Wang, S. J.) A dynamic cryptographic key assignment scheme in a tree structure. (English summary) *Comput. Math. Appl.* **25** (1993), *no.* 6, 109–114. 94A60

Lei, Feng Chun Characteristics of a class of n-relator 3-manifolds. (Chinese. English summary) *Acta Sci. Natur. Univ. Jilin.* **1991**, *no.* 3, 17–22. (Summary) **93e:57028** 57N10

— Equivalence of n-relator 3-manifolds. (Chinese. English summary) *Acta Sci. Natur. Univ. Jilin.* **1991**, *no.* 4, 1–4. 57N10

— On non-strongly irreducible Heegaard splittings. (Chinese. English summary) *Acta Sci. Natur. Univ. Jilin.* **1992**, *no.* 1, 1–4. (Summary) **93e:57029** 57N10

— Seifert surfaces and even collections in an orientable handlebody. (Chinese. English summary) *Acta Sci. Natur. Univ. Jilin.* **1992**, *no.* 1, 5–10. (Summary) **93d:57030** 57N10

— Sufficient conditions for the incompressibility of the boundary of an n-relator 3-manifold. (English summary) *Topology Appl.* **48** (1992), *no.* 1, 19–23. (Michael Motto) **93j:57009** 57N10 (57M05)

Lei, Gong Yan (*with* Feng, Jian Feng; Qian, Min Ping) Second-order methods for solving stochastic differential equations. (English summary) *J. Comput. Math.* **10** (1992), *no.* 4, 376–387. (G. N. Mil'shtein) **93j:60074** 60H10 (65L99, 65U05)

Lei, Guang Yao The preconditioning technique and preconditioned conjugate gradient methods. (Chinese. English summary) *Adv. in Math.* (*China*) **21** (1992), *no.* 2, 129–139. 90C30

— On the approximate computation of extreme eigenvalues and the condition number of nonsingular matrices. *Appl. Math. Mech.* (*English Ed.*) **13** (1992), *no.* 2, 199–204; *translated from Appl. Math. Mech.* **13** (1992), *no.* 2, 181–186 (*Chinese. English summary*). (Summary) **93b:65066** 65F15 (15A18, 65F35)

Lei, Jin Gan (*with* Xu, Jia Mo) On the convergence of projective approximate solutions for nonlinear differential equation with discontinuous right-hand side. *Numerical methods for partial differential equations* (*Tianjin*, 1991), 52–60, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93b:65006**) 65N12 (35R05)

— (*with* Liu, Chun Lei; Ren, Yi Qiang) Finite-dimensional approximation and its computation for bifurcation problems for variational inequalities. (English summary) *Proceedings of International Conference on Scientific Computation* (*Hangzhou*, 1991), 66–75, *Ser. Appl. Math.*, 1, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93h:65082** 65J15 (65K10, 73V25)

Lei, Tan Matings of quadratic polynomials. (English summary) *Ergodic Theory Dynamical Systems* **12** (1992), *no.* 3, 589–620. (Fuyao Ren) **93h:58129** 58F23 (30D05)

Lei, Tian Gang On the generalized c-numerical range. (English summary) *Linear and Multilinear Algebra* **31** (1992), *no.* 1-4, 251–265. (Chi-Kwong Li) **93m:15042** 15A60

Lei, Yan Song Bifurcation of positive periodic solutions to a class of periodic reaction-diffusion equations with delay in population dynamics models. (Chinese. En-

glish summary) *Gaoxiao Yingyong Shuxue Xuebao* **6** (1991), *no.* 1, 110–117. (Xinhua Ji) **93d:92012** 92D25 (35B10, 35B32, 35K57, 47H15, 47N20)

Lei, Yun Xue (*with* Pi, Ming Zhi; Wei, Xiu Ting) The geometry model method (GMM) for multi-objective linear programming problems. (Chinese. English summary) *J. Systems Engrg.* **6** (1991), *no.* 1, 51–61. 90C29

Leibbrandt, G. (*with* Martín, C. P.) Perturbative Chern-Simons theory in the light-cone gauge. The one-loop vacuum polarization tensor in a gauge-invariant formalism. *Nuclear Phys. B* **377** (1992), *no.* 3, 593–621. (Summary) **93c:81140** 81T15 (81T13)

Leibenson, L. S. *see* **Bogolyubov, Aleksei Nikolaevich, 93k:01064**

Leibenzon, Z. L. A simple proof of the Macdonald identities for the series *A*. (Russian) *Funktsional. Anal. i Prilozhen.* **25** (1991), *no.* 3, 19–23, 95; *translation in Functional Anal. Appl.* **25** (1991), *no.* 3, 180–183 (1992). (Jozef Širáň) **93c:05016** 05A19

Leibniz, Gottfried Wilhelm ★ Sämtliche Schriften und Briefe. Reihe VII. (German) [Collected works and letters. Series VII] Mathematische Schriften. Erster Band. 1672–1676. [Mathematical writings. Vol. 1. 1672–1676] Geometrie—Zahlentheorie—Algebra (I. Teil). [Geometry—number theory—algebra (Part I)] With a foreword by Albert Heinekamp. Edited by E. Knobloch and Walter S. Contro. *Akademie-Verlag, Berlin*, 1990. xl+945 *pp. ISBN* 3-05-000015-5 (J. V. Field) **93h:01063** 01A75 (01A45, 11–03)

— ★ Sämtliche Schriften und Briefe. Reihe III. (German) [Collected writings and letters. Series III] Mathematischer, naturwissenschaftlicher und technischer Briefwechsel. Dritter Band. 1680–Juni 1683. [Mathematical, scientific and technical correspondence. Vol. 3. 1680–June 1683] Edited and with a foreword by Herbert Breger. *Akademie-Verlag, Berlin*, 1991. lx+895 *pp. ISBN* 3-05-000766-4 (E. J. Barbeau) **93m:01102** 01A75 (01A45)

— Circa geometrica generalia et calculum situs seu picturam characteristicam observationes miscellae constituendae analysi geometricae plane novae praeludentes. (Latin) G. W. Leibniz (1646–1716) (Spanish). *Theoria* (*San Sebastián*) (2) **6** (1991), *no.* 14-15, 55–66. (Luigi Pepe) **93e:01006b** 01A45 (03–03)

— *see also* **Bertoloni Meli, Domenico, 93a:01014**; **Fouke, Daniel, 93a:01015**; **Grant, Hardy, 93a:01016**; **de Mora-Charles, Maria Sol, 93a:01019**; **Doull, Floy Andrews, 93a:03004**; **Lenzen, Wolfgang, 93a:03005**; **Padilla-Gálvez, Jesús, 93a:03018**; **Echeverría, Javier, 93e:01006a**; **Development of calculus through Leibniz and the Bernoulli brothers, 93e:01009**; **Bosinelli, Fabio C. M., 93g:01029**; **Gottfried Wilhelm Leibniz in philosophical discourse on geometry and experience, 93g:01031**; **Robinet, André, 93m:01104a**; **93m:01104b**; **Hess, Heinz-Jürgen**, (**93e:01009**); **Nagel, Fritz**, (**93e:01009**); **Wurtz, Jean-Paul**, (**93c:01002**) *and* **Hecht, Hartmut**, (**93e:00008**)

Leibov, O. S. (*with* Fedorchuk, V. M.; Fedorchuk, I. M.) Reduction of the Born-Infeld, the Monge-Ampère and the eikonal equation to linear equations. (Russian. English summary) *Dokl. Akad. Nauk Ukrainy* **1991**, *no.* 11, 24–27, 173. (Summary) **93b:35091** 35L70 (35A30, 35C05, 35J60)

— (*with* Fedorchuk, V. M.) Separation of the variables of a five-dimensional wave equation. (Russian. English and Russian summaries) *Dokl. Akad. Nauk Ukrainy* **1992**, *no.* 5, 32–35, 159. 35A30 (35L05)

Leibovich, Sidney (*with* Mahalov, Alex) On the calculation of coupling coefficients in amplitude equations. *J. Comput. Phys.* **101** (1992), *no.* 2, 441–444. 65P05

— (*with* Cox, Stephen M.; Moroz, Irene M.; Tandon, Amit) Nonlinear dynamics in Langmuir circulations with O(2) symmetry. (English summary) *J. Fluid Mech.* **241** (1992), 669–704. (Mikhail Zaks) **93h:76032** 76E20 (58F36, 76E15, 76E30, 76V05, 86A05)

— (*with* Cox, Stephen M.; Moroz, Irene M.; Tandon, Amit) Hopf bifurcations in Langmuir circulations. (English summary) *Phys. D* **59** (1992), *no.* 1-3, 226–254. (Mikhail Zaks) **93k:76045** 76E20 (58F14, 58F39, 76E30, 76V05, 86A05)

Leibowitz, Elhanan (*with* Nissani, Noah) Experimental facts and gravitational energy in general relativity. (English summary) *Internat. J. Theoret. Phys.* **31** (1992), *no.* 12, 2065–2086. (Carl Brans) **93j:83032** 83C40 (83B05)

Leichner, P. K. (*with* Hawkins, W. G.; Yang, N.-C.) Theorems for the number of zeros of the projection radial modulators of the 2D exponential Radon transform. (English summary) *Mathematical methods in tomography* (*Oberwolfach*, 1990), 194–214, *Lecture Notes in Math.*, 1497, *Springer, Berlin*, 1991. (Summary) **93g:44006** 44A12 (92C55)

Leichtnam, Éric (*with* Gérard, Patrick) Équirépartition de fonctions propres pour des problèmes aux limites. [Uniform distribution of eigenfunctions for boundary value problems] *Journées "Équations aux Dérivées Partielles"* (*Saint-Jean-de-Monts*, 1992), *Exp. No. XI*, 7 *pp., École Polytech., Palaiseau*, 1992. (*see* **93e:35005**) 58G18 (58G25)

Leichtweiss, Kurt On the history of the affine surface area for convex bodies. *Affine differential geometry* (*Oberwolfach*, 1991), 650–656, *Tech. Univ. Berlin, Berlin*, 1991. (*see* **93g:53001**) 53A15

— Karl Strubecker zum Gedenken. [In memory of Karl Strubecker] *Jahresber. Deutsch. Math.-Verein.* **94** (1992), *no.* 3, 105–117. (Editors) **93g:01072** 01A70

Leiger, Toivo (*with* Boos, Johann) Consistency theory for operator valued matrices. *Analysis* **11** (1991), *no.* 4, 279–292. (Robert DeVos) **93f:40012** 40H05 (40J05, 46A45, 47B37)

— (*with* Boos, Johann) Product and direct sum of L_φ-$K(X)$-spaces and related $K(X)$-spaces. (Estonian summary) *Tartu Ül. Toimetised No.* 928 (1991), 29–40. (Jing Hui Qiu) **93d:46003** 46A03

Leigh, J. R. ★ Control theory. A guided tour. IEE Control Engineering Series, 45. *Peter Peregrinus, Ltd., London*, 1992. xii+180 *pp. ISBN* 0-86341-284-X (From the preface) **93j:93003** 93–01

Leighton, Frank Thomson (*with* Ma, Yuan; Plaxton, C. Greg) Highly fault-tolerant sorting circuits. (English summary) 32*nd Annual Symposium on Foundations of Computer Science* (*San Juan, PR*, 1991), 458–469, *IEEE Comput. Soc. Press, Los Alamitos, CA*, 1991. (*see* **93d:68005**) 68P10 (68M07, 94C12)

— (*with* Newman, Mark J.; Ranade, Abhiram G.; Schwabe, Eric J.) Dynamic tree embeddings in butterflies and hypercubes. *SIAM J. Comput.* **21** (1992), *no.* 4, 639–654. (Summary) **93f:68043** 68Q25 (68R05, 94C15)

— (*with* Heath, Lenwood S.; Rosenberg, Arnold L.) Comparing queues and stacks as mechanisms for laying out graphs. *SIAM J. Discrete Math.* **5** (1992), *no.* 3, 398–412. (Peter B. Gibbons) **93d:05150** 05C99 (68P05, 68R10, 94C15)

— (*with* Klawe, Maria M.) A tight lower bound on the size of planar permutation networks. (English summary) *SIAM J. Discrete Math.* **5** (1992), *no.* 4, 558–563. (Summary) **93h:05101** 05C35 (68R10, 94C15)

Leihkauf, H. (*with* Treder, Hans-Jürgen) The "Euler"-limit of GRT. (English summary) *Tensor* (*N.S.*) **51** (1992), *no.* 1, 6–8. (Carl Brans) **93m:83066** 83C99 (70A05, 83C55)

Leiko, S. G. Extremals of curve-turn functionals of a pseudo-Riemannian space and the trajectories of spinning particles in gravitational fields. (Russian) *Dokl. Akad. Nauk* **325** (1992), *no.* 4, 659–663; *translation in Russian Acad. Sci. Dokl. Math.* **46** (1993), *no.* 1, 84–87. (R. Schimming) **93k:70032** 70H40 (83C10)

Leimkuhler, B. (*with* Campbell, Stephen L.) Differentiation of constraints in differential-algebraic equations. *Mech. Structures Mach.* **19** (1991), *no.* 1, 19–39. (Kenneth D. Clark) **93b:65121** 65L99 (34A34)

Leinaas, J. M. (*with* Hansson, T. H.; Myrheim, J.) Dimensional reduction in anyon systems. (English summary) *Nuclear Phys. B* **384** (1992), *no.* 3, 559–580. (Summary) **93g:81054** 81S05 (81Q99, 81T99)

Leinartas, E. K. Multidimensional analogues of the Hadamard composition and some applications. (Russian. Russian summary) *Complex analysis and mathematical physics* (*Russian*) (*Divnogorsk*, 1987), 80–89, 159, *Akad. Nauk SSSR Sibirsk. Otdel., Inst. Fiz., Krasnoyarsk*, 1988. (*see* **93b:32001**) 32A05

Leindler, L. Embedding results pertaining to strong approximation. *Acta Sci. Math.* (*Szeged*) **55** (1991), *no.* 1-2, 67–73. (V. A. Baskakov) **93c:42002** 42A10 (42A24, 42A28)

Leinen, Felix Countable closed LFC-groups with p-torsion. *Trans. Amer. Math. Soc.* **336** (1993), *no.* 1, 193–217. (M. J. Tomkinson) **93e:20052** 20F24 (20E22)

Leischner, Martin On the compactness theorem of propositional temporal logics. *Fund. Inform.* **16** (1992), *no.* 1, 39–57. (Marcus Kracht) **93e:03029** 03B45 (68Q55)

Leite, J. B. An iterative method for the solution of linear algebraic systems. (English and Portuguese summaries) *Bol. Soc. Paran. Mat.* (2) **11** (1990), *no.* 2, 73–77 (1992). (Zdeněk Dostál) **93g:65050** 65F10

Leite, José Galvão (*with* Bolfarine, Heleno; Rodrigues, Josemar) On the estimation of the size of a finite and closed population. (English summary) *Biometrical J.* **34** (1992), *no.* 5, 577–593. (Tadashi Nakamura) **93k:62064** 62F15

— (*with* Pereira, Carlos Alberto de Bragança; Rodrigues, Flávio Wagner) Waiting time to exhaust lottery numbers. (English summary) *Comm. Statist. Theory Methods* **22** (1993), *no.* 1, 301–310. 60C05

da costa Leite, Manuel *see* **da Costa Leite, Manuel**

Leitenberger, Frank Orbitmethode und unitäre Darstellungen für eine Gruppe lokaler, reell analytischer Diffeomorphismen. [Orbit method and unitary representations for a group of local, real analytic diffeomorphisms] Seminar Sophus Lie (Darmstadt, 1991). *Sem. Sophus Lie* **1** (1991), *no.* 2, 235–242. (Helmut Boseck) **93d:22026** 22E65 (17B65)

Leites, D. A. Toward classification of classical Lie superalgebras. *Differential geometric methods in theoretical physics* (*Davis, CA*, 1988), 633–651, *NATO Adv. Sci. Inst. Ser. B Phys.*, 245, *Plenum, New York*, 1990. (Hartmut Schlosser) **93e:17005** 17A70 (17B70)

— (*with* Kochetkov, Yu. Yu.; Vaintrob, A. Yu.) New invariant differential operators on supermanifolds and pseudo-(co)homology. *General topology and applications* (*Staten Island, NY*, 1989), 217–238, *Lecture Notes in Pure and Appl. Math.*, 134, *Dekker, New York*, 1991. (Akira Asada) **93j:58016** 58C50 (17B65, 58G05)

— (*with* Kochetkov, Yu. Yu.) Simple Lie algebras in characteristic 2 recovered from superalgebras and on the notion of a simple finite group. *Proceedings of the International Conference on Algebra, Part* 2 (*Novosibirsk*, 1989), 59–67, *Contemp. Math.*, 131, *Part* 2, *Amer. Math. Soc., Providence, RI*, 1992. (Guang Yu Shen) **93g:17035** 17B50 (17B20)

— (*with* Poletaeva, E. I.) Analogues of the Riemannian structure for classical superspaces. *Proceedings of the International Conference on Algebra, Part* 1 (*Novosibirsk*, 1989), 603–612, *Contemp. Math.*, 131, *Part* 1, *Amer. Math. Soc., Providence, RI*, 1992. (Anargyros Fellouris) **93k:58008** 58A50 (14M30, 17B56, 53C10)

— *see also* **Leznov, A. N., 93d:58194** *and* **Berezin, F. A., 93i:81001**

Leithead, W. E. (*with* O'Reilly, John) New roles for feedforward in multivariable control by individual channel design. (English summary) *Internat. J. Control* **57** (1993), *no.* 6, 1357–1386. 93C35

el-Leithy, O. A. *see* **El-Leithy, O. A.**

Leitmann, George (*with* Rodellar Benedé, J.; Ryan, Eugene P.) Practically stable control of a class of uncertain dynamical systems. (Spanish) *Proceedings of the XII Congress on Differential Equations and Applications/II Congress on Applied Mathematics* (*Spanish*) (*Oviedo*, 1991), 337–341, *Univ. Oviedo, Oviedo*, 1991. (*see* **93j:00009**) 93D09

— (*with* Reithmeier, Eduard) Semiactive control of a vibrating system by means of electrorheological fluids. (English summary) *Dynamics Control* **3** (1993), *no.* 1, 7–33. 93C95 (70Q05, 73K50)

— (*with* Corless, Martin) Bounded controllers for robust exponential convergence. (English summary) *J. Optim. Theory Appl.* **76** (1993), *no.* 1, 1–12. (Hsi-han Yeh) **93k:93101** 93D21 (93B36, 93D09, 93D15)

Leitner, Martin Regularity and singularity of weakly stationary processes indexed by a commutative hypergroup. *Probability measures on groups, X* (*Oberwolfach*, 1990), 269–278, *Plenum, New York*, 1991. (M. M. Rao) **93j:60043** 60G10 (60G25, 62M10, 62M20)

Leizarowitz, Arie Variational problems on unbounded two-dimensional domains. *Optimization and nonlinear analysis* (*Haifa*, 1990), 169–177, *Pitman Res. Notes Math. Ser.*, 244, *Longman Sci. Tech., Harlow*, 1992. (*see* **93d:49004**) 49K10

— On infinite products of stochastic matrices. *Linear Algebra Appl.* **168** (1992), 189–219. (Winston T. Lin) **93b:15023** 15A51 (60G07, 93E20)

— Variational problems on unbounded two-dimensional domains. *Math. Models Methods Appl. Sci.* **2** (1992), *no.* 2, 183–201. (Françoise Berquier) **93e:49005** 49J10 (49K10, 49N60)

— (*with* Haurie, Alain) Overtaking optimal regulation and tracking of piecewise diffusion linear systems. *SIAM J. Control Optim.* **30** (1992), *no.* 4, 816–837. (Jacek B. Krawczyk) **93d:93087** 93E20 (93E10)

Le Jan, Yves A second order extension of Oseledets theorem. *Lyapunov exponents* (*Oberwolfach*, 1990), 81–85, *Lecture Notes in Math.*, 1486, *Springer, Berlin*, 1991. (Vadim A. Kaimanovich) **93g:58083** 58F11

— (*with* Fukushima, Masatoshi) On quasi-supports of smooth measures and closability of pre-Dirichlet forms. *Osaka J. Math.* **28** (1991), *no.* 4, 837–845. (T. J. Lyons) **93e:31013** 31C25

— (*with* Bertoin, Jean) Representation of measures by balayage from a regular recurrent point. *Ann. Probab.* **20** (1992), *no.* 1, 538–548. (F. B. Knight) **93b:60173** 60J45 (60J55)

— Sur l'enroulement géodésique des surfaces de Riemann. (English summary) [Winding of geodesics on Riemann surfaces] *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 10, 763–765. (Jacques Vauthier) **93g:58160** 58G32 (58F17, 60J65)

Lejarraga, Pablo The moduli of rational Weierstrass fibrations over $\mathbf{P}^1$: isotropy stratification. *Comm. Algebra* **20** (1992), *no.* 6, 1557–1590. (R. F. Lax) **93e:14044** 14J27 (14J10)

Lejeune, Michel (*with* Sarda, Pascal) Smooth estimators of distribution and density functions. (English summary) *Comput. Statist. Data Anal.* **14** (1992), *no.* 4, 457–471. 62G05

Lejeune-Jalabert, Monique (*with* Gonzalez-Sprinberg, Gerard) Modèles canoniques plongés. I. (French summary) [Embedded canonical models. I] *Kodai Math. J.* **14** (1991), *no.* 2, 194–209. (From the introduction) **93a:14030** 14J17 (14M25)

— (*with* Campillo López, Antonio; Gonzalez-Sprinberg, Gerard) Amas, idéaux à support fini et chaînes toriques. (English and French summaries) [Clusters, finitely supported ideals and toroidal chains] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 9, 987–990. (Summary) **93h:14001** 14B10 (14C20)

Le Khanh Chau (*with* Stumpf, Helmut) Variational formulation of the crack problem for an elastoplastic body at finite strain. (English, German and Russian summaries) *Z. Angew. Math. Mech.* **72** (1992), *no.* 9, 387–396. (G. Geymonat) **93k:73043** 73G20 (73M25, 73V25)

pham Le Kien *see* **Pham Le Kien**

Leksin, V. P. Relations in the algebra of manifold holonomy and Hopf's theorem on $H_2(\pi_1(M))$. (Russian) *Algebraic problems in analysis and topology (Russian)*, 130–136, 162, *Novoe Global. Anal., Voronezh. Gos. Univ., Voronezh*, 1990. (Summary) **93b:57030** 57R19 (58A17)

— The Riemann-Hilbert problem for analytic families of representations. (Russian. English summary) *Mat. Zametki* **50** (1991), *no.* 2, 89–97; *translation in Math. Notes* **50** (1991), *no.* 1-2, 832–838 (1992). (J. S. Joel) **93a:32056** 32S40 (14D05, 58A17)

Lekszycki, T. (*with* Frischmuth, K.; Kosiński, Witold) Free vibrations of finite-memory material beams. (English summary) *Internat. J. Engrg. Sci.* **31** (1993), *no.* 3, 385–395. (Summary) **93m:73022** 73K12 (73F15, 73K05)

Lele, Sanjiva K. (*with* Poinsot, T. J.) Boundary conditions for direct simulations of compressible viscous flows. *J. Comput. Phys.* **101** (1992), *no.* 1, 104–129. (Summary) **93d:76050** 76M25 (76D05, 76F99, 76N10)

— Compact finite difference schemes with spectral-like resolution. (English summary) *J. Comput. Phys.* **103** (1992), *no.* 1, 16–42. (Summary) **93g:76086** 76M20 (65M06)

— Vorticity form of turbulence transport equations. *Phys. Fluids A* **4** (1992), *no.* 8, 1767–1772. (Summary) **93c:76045** 76F10

Lele, Subhash (*with* Cressie, Noel) New models for Markov random fields. (English summary) *J. Appl. Probab.* **29** (1992), *no.* 4, 877–884. (Summary) **93i:60096** 60G60

Lelikova, E. F. On the asymptotic behavior of the fundamental solution of a parabolic equation as $t \to \infty$. (Russian) *Asymptotic properties of solutions of differential equations (Russian)*, 46–65, *Akad. Nauk SSSR Ural. Otdel., Bashkir. Nauchn. Tsentr, Ufa*, 1988. (*see* **93m:35033**) 35B40 (35K10)

Lellep, Jaan ★ Optimization of plastic structures. *Tartu Univ., Tartu*, 1991. 192 *pp.* (Z. Mróz) **93d:73055** 73K40 (73E99)

Lellouch, Joseph (*with* Falissard, Bruno) A new procedure for group sequential analysis in clinical trials. (French summary) *Biometrics* **48** (1992), *no.* 2, 373–388. 62P10

Lelong, Pierre Analyse complexe et géométrie algébrique: rôle des objets analytiques souples. [Complex analysis and algebraic geometry: the role of supple analytic objects] *Proceedings of the International Symposium on Mathematics and Theoretical Physics (Guarujá, 1989)*, 209–231, *Sympos. Gaussiana Ser. A Math. Theoret. Phys.*, 1, *Inst. Gaussianum, Toronto, ON*, 1990. (Lawrence Gruman) **93b:32019** 32F05 (32C30)

Lemaire, Bernard (*with* Alart, P.) Penalization in nonclassical convex programming via variational convergence. *Math. Programming* **51** (1991), *no.* 3, (*Ser. A*), 307–331. (Summary) **93c:90056** 90C25 (49M30)

Lemaître, Georges *see* **Godart, Odon**, **93k:01067**

Leman, È. *see* **Lehmann, Erich Leo**

Lemańczyk, Mariusz (*with* Gabriel, Patrick; Liardet, Pierre) Ensemble d'invariants pour les produits croisés de Anzai. (English summary) [Set of invariants for Anzai skew products] *Mém. Soc. Math. France (N.S.) No.* 47 (1991), 102 *pp.* (Andrés del Junco) **93b:28042** 28D05

— (*with* Ferenczi, Sébastien) Rank is not a spectral invariant. *Studia Math.* **98** (1991), *no.* 3, 227–230. (S. I. Bezuglyĭ) **93d:28021** 28D05

— (*with* Goodson, G. R.; Kwiatkowski, Jan; Liardet, Pierre) On the multiplicity function of ergodic group extensions of rotations. *Studia Math.* **102** (1992), *no.* 2, 157–174. (Vadim A. Kaĭmanovich) **93f:28015** 28D20

Lemarchand, A. (*with* Sulpice, E.; Lemarchand, H.) Normal form of stochastic equations for chemical systems near bifurcation points. *Phys. Lett. A* **158** (1991), *no.* 1-2, 43–50. (Giles Auchmuty) **93b:82041** 82C05 (80A30, 92E99)

Lemarchand, H. (*with* Sulpice, E.; Lemarchand, A.) Normal form of stochastic equations for chemical systems near bifurcation points. *Phys. Lett. A* **158** (1991), *no.* 1-2, 43–50. (Giles Auchmuty) **93b:82041** 82C05 (80A30, 92E99)

Lemarié, Pierre Gilles Fonctions à support compact dans les analyses multi-résolutions. (English summary) [Compactly supported functions in multiresolution analyses] *Rev. Mat. Iberoamericana* **7** (1991), *no.* 2, 157–182. (Jayakumar Ramanathan) **93b:42046** 42C15

— Wavelets, splines and divergence-free vector functions. *Approximation theory, spline functions and applications (Maratea, 1991)*, 381–390, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 356, *Kluwer Acad. Publ., Dordrecht*, 1992. (Xian Liang Shi) **93i:42022** 42C15 (41A15)

— Existence de "fonction-père" pour les ondelettes à support compact. (English summary) [Existence of "father functions" for compactly supported wavelets] *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 1, 17–19. (Summary) **93c:42033** 42C15

Lê Mâu Hai Holomorphic extension spaces and finite proper holomorphic surjections. *Acta Math. Vietnam.* **17** (1992), *no.* 1, 145–155. (Sergey Ivashkovich) **93m:32017** 32D15 (32H35)

— (*with* Nguyễn Vân Khuê) Meromorphic extension spaces. (English and French summaries) *Ann. Inst. Fourier (Grenoble)* **42** (1992), *no.* 3, 501–515. (Sergey Ivashkovich) **93m:32033** 32H04 (32D15, 32H02)

Le Mayu Khai (*with* Rogozin, S. V.) Continuation of holomorphic and meromorphic mappings with values in a locally convex space. (Russian) *Vestnik Beloruss. Gos. Univ. Ser. I Fiz. Mat. Mekh.* **1991**, *no.* 2, 46–49, 81. (Summary) **93j:32020** 32D15

Lembcke, Jörn (*with* Weber, Hans) Decomposition of group-valued and $[0, \infty]$-valued measures on Boolean rings. Measure theory (Oberwolfach, 1990). *Rend. Circ. Mat. Palermo (2) Suppl. No.* 28 (1992), 87–116. (Klaus D. Schmidt) **93m:28014** 28C10

Lemberger, P. (*with* Gruber, Ch.; Jędrzejewski, Janusz) Ground states of the spinless Falicov-Kimball model. II. *J. Statist. Phys.* **66** (1992), *no.* 3-4, 913–938. (Summary) **93b:82014** 82B20

Lembo, Marzio (*with* Coleman, Bernard D.; Dill, Ellis Harold; Lu, Zheng; Tobias, Irwin) On the dynamics of rods in the theory of Kirchhoff and Clebsch. *Arch. Rational Mech. Anal.* **121** (1992), *no.* 4, 339–359. (D. Ieşan) **93k:73046** 73K05 (73D99, 73K12)

paes-Leme, P. J. *see* **Paes-Leme, P. J.**

Le Méhauté, Alain *see* **le Méhauté, Alain**

Lemer, D. G. *see* **Lehmer, Derrick Henry**

Le Merdy, Christian Cas vectoriel du théorème d'Adamjan, Arov et Krein (d'après Treil') et applications. [Vector case of the Adamyan-Arov-Krein theorem (following Treil') and applications] *Séminaire d'Initiation à l'Analyse, Exp. No.* 7, 8 *pp., Publ. Math. Univ. Pierre et Marie Curie*, 104, *Univ. Paris VI, Paris*, 199?. (From the introduction) **93m:47031** 47B35 (47A57, 47B06)

— On module maps and bilinear forms defined on shift-invariant subspaces of $L^p(X)$. *J. Funct. Anal.* **106** (1992), *no.* 1, 18–34. (Takahiko Nakazi) **93d:47012** 47A20 (46E40, 47B20)

— Formes bilinéaires hankéliennes compactes sur $H^2(X) \times H^2(Y)$. [Compact Hankel bilinear forms on $H^2(X) \times H^2(Y)$] *Math. Ann.* **293** (1992), *no.* 2, 371–384. (M. Cotlar) **93h:47030** 47B35 (46E40, 47A68, 47A99, 47B38)

Le Métayer, D. (*with* Giorgi, J.-F.) Continuation-based compilation of functional languages for parallel machines. (English summary) 1990 ACM Conference on Lisp and Functional Programming (Nice, 1990). *Math. Structures Comput. Sci.* **2** (1992), *no.* 4, 393–414. (Summary) **93j:68057** 68Q10 (68Q45)

van nauta Lemke, H. R. *see* **van Nauta Lemke, H. R.**

Lemmer, John F. (*with* Kyburg, Henry E., Jr.) Conditions for the existence of belief functions corresponding to intervals of belief. (English summary) *AAAI-91. Proceedings, Ninth National Conference on Artificial Intelligence, Vol.* 1, 2, 488–493, *AAAI Press, Menlo Park, CA*, 1991. (*see* **93i:68011**) 68T30

Lemmers, P. L. (*with* Jones, S. E.; Butson, G. J.) On Abel's identity. II. The integration of a nonlinear, nonconservative system. (English summary) *J. Sound Vibration* **160** (1993), *no.* 2, 251–257. (Summary) **93k:34026b** 34A34

Lemmert, Roland (*with* Aziz, A. K.; Schneider, Manfred Friedrich) The existence of generalized solutions for a class of linear and nonlinear equations of mixed type. (English summary) Dedicated to the memory of Professor Gottfried Köthe. *Note Mat.* **10** (1990), *suppl.* 1, 47–64 (1992). (Megumi Saigo) **93k:35060** 35D05 (35M10)

— (*with* Schmidt, Sabina; Volkmann, Peter) Ein Existenzsatz für gewöhnliche Differentialgleichungen mit quasimonoton wachsender rechter Seite. [An existence theorem for ordinary differential equations with quasimonotonically increasing right-hand side] *Math. Nachr.* **153** (1991), 349–351. (Š. Schwabik) **93i:34118** 34G20 (34A12)

— Existence and uniqueness results for nonlinear Sturm-Liouville boundary value problems via shooting methods. *Differential equations (Plovdiv*, 1991), 115–122, *World Sci. Publishing, River Edge, NJ*, 1992. (Lucas Jódar) **93k:34049** 34B15

— (*with* Alzer, Horst) A note on an inequality of G. Talenti. (English summary) *General inequalities*, 6 (*Oberwolfach*, 1990), 441–443, *Internat. Ser. Numer. Math.*, 103, *Birkhäuser, Basel*, 1992. (*see* **93k:26001**) 26D10

Lemos, J. M. (*with* Mosca, Edoardo) A semi-infinite horizon LQ self-tuning regulator for ARMAX plants based on RLS. (English summary) *Adaptive systems in control and signal processing*, 1989 (*Glasgow*), 23–29, *IFAC Sympos. Ser.*, 1990, *No.* 1, *Pergamon, Oxford*, 1990. (*see* **93j:93007**) 93E35

Lempel, Abraham (*with* Seroussi, Gadiel) Systematic derivation of spline bases. (English summary) *Comput. Aided Geom. Design* **9** (1992), *no.* 5, 349–363. (Michael Kallay) **93j:65019** 65D07

— (*with* Roth, Ron M.) *t*-sum generators of finite abelian groups. *Discrete Math.* **103** (1992), *no.* 3, 279–292. (Harold N. Ward) **93f:94020** 94B05 (20K99)

— (*with* Weinberger, Marcelo J.; Ziv, Jacob) On the optimal asymptotic performance of universal ordering and of discrimination of individual sequences. *IEEE Trans. Inform. Theory* **38** (1992), *no.* 2, *part* 1, 380–385. (Summary) **93a:94012** 94A12 (93A13)

Lempert, László (*with* Andersén, Erik) On the group of holomorphic automorphisms of $\mathbf{C}^n$. *Invent. Math.* **110** (1992), *no.* 2, 371–388. (Marco Abate) **93i:32038** 32M05 (32E30)

— (*with* Catlin, David) A note on the instability of embeddings of Cauchy-Riemann manifolds. *J. Geom. Anal.* **2** (1992), *no.* 2, 99–104. (Zu Hong Han) **93g:32028** 32G07 (32F25, 32F40)

Lempio, Frank The numerical treatment of differential inclusions. *Conference on Differential Equations and Applications (Ruse*, 1989), 353–364, *Tech. Univ., Ruse*, 1991. (*see* **93f:34004**) 65L99 (34A50, 34A60)

— (*with* Dontchev, Asen L.) Difference methods for differential inclusions: a survey. *SIAM Rev.* **34** (1992), *no.* 2, 263–294. (Zvi Artstein) **93g:34024** 34A60 (34A50, 49J24, 65L05)

Lempken, W. (*with* Parker, Christopher; Rowley, P.) (S_3, S_6)-amalgams. *Groups, combinatorics & geometry (Durham*, 1990), 139–143, *London Math. Soc. Lecture Note Ser.*, 165, *Cambridge Univ. Press, Cambridge*, 1992. (*see* **93g:20001**) 20E06

Lempp, Steffen (*with* Cooper, S. Barry; Harrington, Leo; Lachlan, Alistair H.; Soare, Robert I.) The d.r.e. degrees are not dense. *Ann. Pure Appl. Logic* **55** (1991), *no.* 2, 125–151. (Xi Zhong Zheng) **93a:03045** 03D30

— (*with* Lerman, Manuel) The existential theory of the poset of r.e. degrees with a predicate for single jump reducibility. (English summary) *J. Symbolic Logic* **57** (1992), *no.* 3, 1120–1130. (C. G. Jockusch, Jr.) **93m:03072** 03D25 (03B25)

Lenagan, T. H. Enveloping algebras of solvable Lie superalgebras are catenary. (English summary) *Abelian groups and noncommutative rings*, 231–236, *Contemp. Math.*, 130, *Amer. Math. Soc., Providence, RI*, 1992. (Ian M. Musson) **93h:16039** 16P70 (16S30, 17A70, 17B35)

— (*with* Chatters, A. W.; Hajarnavis, C. R.) Ideal arithmetic in affine PI rings. *Quart. J. Math. Oxford Ser.* (2) **43** (1992), *no.* 171, 297–302. (Amiram Braun) **93g:16037** 16R20 (16P99)

Lenard, Andrew (*with* Glassey, Robert; Horst, Ernst; Schaeffer, Jack W.) On the inverse of the discrete two-dimensional wave operator at CFL. *SIAM J. Math. Anal.* **22** (1991), *no.* 6, 1763–1775. (A. O. Oganesyan) **93k:65069** 65M06 (35L05)

— A constructively defined maximal midpoint free set. *Rev. Roumaine Math. Pures Appl.* **37** (1992), *no.* 8, 701–703. (From the text) **93h:04001** 04A20

Lenard, Filip *see* **Pöss, Ondrej, 93g:01079**

Lenczewski, Romuald (*with* Podgórski, Krzysztof) A q-analog of the quantum central limit theorem for $SU_q(2)$. *J. Math. Phys.* **33** (1992), *no.* 8, 2768–2778. (Philip J. Feinsilver) **93m:81082** 81S25 (17B37, 46L60, 46N50, 60B99, 60F05, 81R50)

Lenders, L. G. V. M. (*with* Coolen, A. C. C.) Dual processes in neural network models. I. Neural dynamics versus dynamics of learning. *J. Phys. A* **25** (1992), *no.* 9, 2577–2592. (Min Ping Qian) **93f:82037a** 82C32 (68T05, 92B20)

— (*with* Coolen, A. C. C.) Dual processes in neural network models. II. Analysis of zero-temperature fixed-point equations. *J. Phys. A* **25** (1992), *no.* 9, 2593–2606. (Min Ping Qian) **93f:82037b** 82C32 (68T05, 92B20)

Leneaux, Grant F. *see* **Duhem, Pierre-Maurice-Marie, 93a:01063**

Leng, Gang Song (*with* Zhong, Jia Ming) A necessary and sufficient condition for embedding in E^n a parallelotope with prescribed dihedral angles. (Chinese. English summary) *Hunan Jiaoyu Xueyuan Xuebao (Ziran Kexue)* **10** (1992), *no.* 2, 34–36. (Ren Ding) **93h:51027** 51M20 (52B11)

— Logarithmic convexity of some basic elements of a triangle. (Chinese. English and Chinese summaries) *Hunan Jiaoyu Xueyuan Xuebao (Ziran Kexue)* **10** (1992), *no.* 5, 121–123. (Summary) **93m:51025** 51M16 (51M25)

Leng, Gerard (*with* Sri Namachchivaya, N.) Equivalence of stochastic averaging and stochastic normal forms. *Trans. ASME J. Appl. Mech.* **57** (1990), *no.* 4, 1011–1017. (Summary) **93b:70025** 70L05 (34C20, 34F05)

Leng, Xiaoling (*with* Ge, Yan Chao) An alternative deduction of the Hill-type surfaces of the spatial 3-body problem. *Celestial Mech. Dynam. Astronom.* **53** (1992), *no.* 3, 233–254. (George Bozis) **93e:70003** 70F07

Lengauer, Th. (*with* Wagner, Klaus Werner) The correlation between the complexities of the nonhierarchical and hierarchical versions of graph problems. *J. Comput. System Sci.* **44** (1992), *no.* 1, 63–93. (Václav Koubek) **93d:68035** 68Q25 (05C85, 68R10)

— *see also* **Symposium: Theoretical Aspects of Computer Science, 93c:68002** *and* **Combinatorial methods in VLSI, 93f:68005**

Le-Ngoc, Tho (*with* Jia, Ming; Benyamin-Seeyar, Anader) Exact lower bounds on the codelength of three-step permutation-decodable cyclic codes. (English summary) *IEEE Trans. Inform. Theory* **38** (1992), *no.* 6, 1812–1817. 93B20

Lengyel, Tamás (*with* Babai, László) A convergence criterion for recurrent sequences with application to the partition lattice. *Analysis* **12** (1992), *no.* 1-2, 109–119. (Edward A. Bender) **93f:05005** 05A15 (11B37, 40A05)

Lenhart, Suzanne M. (*with* Engler, Hans) Viscosity solutions for weakly coupled systems of Hamilton-Jacobi equations. *Proc. London Math. Soc.* (3) **63** (1991), *no.* 1, 212–240. (Gabriella Tarantello) **93a:35024** 35D05 (35F20)

— (*with* Bhat, Mahadev G.) Application of distributed parameter control model in wildlife damage management. (English summary) *Math. Models Methods Appl. Sci.* **2** (1992), *no.* 4, 423–439. (C. P. Ortlieb) **93j:92027** 92D25 (49K20, 49N55)

Le N'i Zyong (*with* Nguyen Tien Khiem) Spectral study of linear filters. (Russian. Russian summary) *Asymptotic methods in problems in the theory of random evolutions (Russian)*, 94–104, *Akad. Nauk Ukrain. SSR, Inst. Mat., Kiev*, 1991. (*see* **93e:60002**) 93E11

Lenk, Richard *see* **Lifshits, E. M., 93b:00001b**

Lenker, T. (*with* Angelos, James R.; Kaufman, E., Jr.; Henry, M. S.) Bounds for extended Lipschitz constants. *Acta Math. Hungar.* **58** (1991), *no.* 1-2, 81–93. (Martin Bartelt) **93c:41010** 41A10 (41A50)

Lennard, Chris Extremum characterizations of sums of eigenvalues of certain symmetrizable operators on Hilbert spaces. *J. Math. Anal. Appl.* **164** (1992), *no.* 1, 151–166. (A. R. Sourour) **93i:47024** 47A75 (47B15, 49R20)

— A generalization of Baire's category theorem. (English summary) *J. Math. Anal. Appl.* **168** (1992), *no.* 2, 367–371. (I. Blum) **93i:54022** 54E52 (54E50)

— (*with* Dowling, Patrick N.) Kadec-Klee properties of vector-valued Hardy spaces. *Math. Proc. Cambridge Philos. Soc.* **111** (1992), *no.* 3, 535–544. (Takahiko Nakazi) **93b:46063** 46E40 (46B99, 46J15)

Lennerstad, H. (*with* Adolfsson, Vilhelm; Goldberg, M.; Jawerth, Björn) Localized Galerkin estimates for boundary integral equations on Lipschitz domains. (English summary) *SIAM J. Math. Anal.* **23** (1992), *no.* 5, 1356–1374. (Weimin Han) **93f:65087** 65N38 (65N30, 65R20)

Lennox, James G. Between data and demonstration: the *Analytics* and the *Historia animalium*. *Science and philosophy in classical Greece*, 261–294, *Sources Stud. Hist. Philos. Class. Sci.*, 2, *Garland, New York*, 1991. (*see* **93g:01015**) 01A20

Lennox, John C. (*with* Hassanabadi, A. Mohammadi; Wiegold, James) Some commutativity criteria. II. *Rend. Sem. Mat. Univ. Padova* **86** (1991), 207–211 (1992). (J. R. J. Groves) **93a:20066** 20F99 (20M99)

Lenoir, Marc André (*with* Euvrard, Daniel) About nonhomogeneous free-surface conditions in hydrodynamics and underwater acoustics. *Mathematical approaches in hydrodynamics*, 101–115, *SIAM, Philadelphia, PA*, 1991. (Sergei Grudskii) **93a:76007** 76B10 (76M99, 76Q05)

— (*with* Vullierme-Ledard, M.; Hazard, C.) Variational formulations for the determination of resonant states in scattering problems. *SIAM J. Math. Anal.* **23** (1992), *no.* 3, 579–608. (Volker Vogelsang) **93c:35120** 35P25 (35J05, 65L60, 76Q05)

Lenstra, A. K. (*with* Lenstra, Hendrik W., Jr.; Manasse, M. S.; Pollard, J. M.) The factorization of the ninth Fermat number. (English summary) *Math. Comp.* **61** (1993), *no.* 203, 319–349. (Rhonda Lee Hatcher) **93k:11116** 11Y05 (11Y40)

Lenstra, Hendrik W., Jr. Algorithms in algebraic number theory. *Bull. Amer. Math. Soc. (N.S.)* **26** (1992), *no.* 2, 211–244. (René Schoof) **93g:11131** 11Y40 (11R27, 11R29)

— (*with* Gao, Xu Hong) Optimal normal bases. (English summary) *Des. Codes Cryptogr.* **2** (1992), *no.* 4, 315–323. (Summary) **93j:12003** 12F10

— On the inverse Fermat equation. (English summary) A collection of contributions in honour of Jack van Lint. *Discrete Math.* **106/107** (1992), 329–331. (Summary) **93e:11043** 11D61 (11D41)

— (*with* Lenstra, A. K.; Manasse, M. S.; Pollard, J. M.) The factorization of the ninth Fermat number. (English summary) *Math. Comp.* **61** (1993), *no.* 203, 319–349. (Rhonda Lee Hatcher) **93k:11116** 11Y05 (11Y40)

— (*with* Shallit, Jeffrey) Continued fractions and linear recurrences. (English summary) *Math. Comp.* **61** (1993), *no.* 203, 351–354. (Les Davison) **93k:11004** 11A55 (11B37)

Lenstra, J. K. *see* **Traveling salesman problem, 93g:90035** *and* **Computing, 93i:90038**

Lenyuk, M. P. (*with* Mangeron, Dumitru Ion; Crăciunaş, P. T.) Differential systems that generate classes of functions and their applications. I. Hybrid Hankel integral transforms of the Fourier first kind and some applications in mathematical physics. (Russian. French summary) *Mem. Secţ. Ştiinţ. Acad. Repub. Soc. România Ser. IV* **9** (1986), *no.* 1, 9–23 (1989). (A. M. Nagornij) **93b:44006** 44A15

— (*with* Mangeron, Dumitru Ion; Crăciunaş, P. T.) Differential systems that generate classes of functions and their applications. II. Hybrid Hankel integral transforms of the Fourier second kind and some applications to problems in mathematical physics. (Russian. French summary) *Mem. Secţ. Ştiinţ. Acad. Repub. Soc. România Ser. IV* **10** (1987), *no.* 1, 7–22 (1989). (A. M. Nagornij) **93b:44007** 44A15

— (*with* Paskar', A. A.) Quasistatic thermoelastic fields in a continuous bicomposite cylindrically anisotropic plate. Solution in stresses. (Russian. English, Russian and Moldavian summaries) *Izv. Akad. Nauk Respub. Moldova Mat.* **1991,** *no.* 3, 3–11, 91. (Andrzej Chrzęszczyk) **93f:73014** 73B30 (73K10, 73K20)

— Hybrid integral transformations (Bessel, Legendre, Bessel). (Russian. Ukrainian summary) *Ukrain. Mat. Zh.* **43** (1991), *no.* 6, 770–779; *translation in Ukrainian Math. J.* **43** (1991), *no.* 6, 719–728 (1992). (Semen Borisovich Yakubovich) **93b:44012** 44A40 (33B15, 44A15)

— (*with* Traskovets'ka, L. M.) Finite integral transformations (Fourier, Hankel, Fourier) with application to problems in mathematical physics. (Russian. Russian summary) *Akad. Nauk Ukrainy Inst. Mat. Preprint* **1992,** *no.* 12, 64 *pp.* (Summary) **93j:44008** 44A15

— (*with* Podil'chuk, N. B.) Integral transformations in a cylindrical-elliptic coordinate system, and temperature fields in elliptic domains. (Russian. Russian summary) *Akad. Nauk Ukrainy Inst. Mat. Preprint* **1992,** *no.* 13, 60 *pp.* (Summary) **93g:44014** 44A15 (80A20)

Lenz, F. (*with* Thies, M.; Levit, S.) Hamiltonian formulation of two-dimensional gauge theories on the light cone. *Ann. Physics* **208** (1991), *no.* 1, 1–89. (Summary) **93f:81138** 81T40

Lenz, H. *see* **Lenz, Hanfried**

Lenz, H.-J. *see* **Frontiers in statistical quality control, 93i:62002**

Lenz, Hanfried (*with* Ringel, Gerhard) A brief review on Egmont Köhler's mathematical work. *Discrete Math.* **97** (1991), *no.* 1-3, 3–16. (Robin J. Wilson) **93c:01035** 01A70 (05–03)

— Konvexität in Anordnungsräumen. [Convexity in ordered spaces] *Abh. Math. Sem. Univ. Hamburg* **62** (1992), 255–285. (W. J. Firey) **93k:52001** 52A01

Lenze, Burkhard Local error estimates for Bernstein and Kantorovič polynomials via maximal functions. Mathematische Wissenschaften gestern und heute. 300 Jahre Mathematische Gesellschaft in Hamburg, Teil 3 (Hamburg, 1990). *Mitt. Math. Ges. Hamburg* **12** (1991), *no.* 3, 713–722. (Ryozi Sakai) **93a:41009** 41A10

Lenzen, Wolfgang ★ Das System der Leibnizschen Logik. (German) [The system of Leibnizian logic] Foundations of Communication and Cognition. *Walter de Gruyter & Co., Berlin*, 1990. xvi+235 *pp. ISBN* 3-11-012353-3 (Marcel Guillaume) **93a:03005** 03–03 (01A45, 03A05)

— Leibniz on privative and primitive terms. G. W. Leibniz (1646–1716) (Spanish). *Theoria (San Sebastián)* (2) **6** (1991), *no.* 14-15, 83–96. (Summary) **93a:03006** 03–03 (01A45, 03A05)

Lenzerini, Maurizio (*with* Schaerf, Andrea) Concept languages as query languages. (English summary) *AAAI-91. Proceedings, Ninth National Conference on Artificial Intelligence, Vol.* 1, 2, 471–476, *AAAI Press, Menlo Park, CA*, 1991. (Summary) **93j:68101** 68Q45 (68P20, 68T30)

— (*with* Donini, Francesco M.; Nardi, Daniele; Hollunder, Bernhard; Nutt, Werner; Marchetti-Spaccamela, Alberto) The complexity of existential quantification in concept languages. *Artificial Intelligence* **53** (1992), *no.* 2-3, 309–327. (Summary) **93a:68138** 68T30 (03D15, 68Q25)

Lenzi, D. Some remarks on transitive collineation groups of finite projective planes. (Italian summary) *Rend. Mat. Appl.* (7) **11** (1991), *no.* 4, 843–847. (Ulrich Dempwolff) **93b:51011** 51E15 (05B25, 20B25)

Lenzing, Helmut (*with* Geigle, Werner) Perpendicular categories with applications to representations and sheaves. *J. Algebra* **144** (1991), *no.* 2, 273–343. (Jeremy Rickard) **93b:16011** 16D90 (16G20, 18E10, 18E30, 18E35)

— *see also* **Proceedings: Conference on Representations of Algebras, 93j:16001**

Lenzini, L. (*with* Conti, M.; Gregori, E.) On the approximation of the slot occupancy pattern in a DQDB network. (English summary) *Performance Evaluation* **16** (1992), *no.* 1-3, 159–176. 60K25

Leo, Perry H. (*with* Bruno, Oscar P.) On the stiffness of materials containing a disordered array of microscopic holes or hard inclusions. (English summary) *Arch. Rational Mech. Anal.* **121** (1992), *no.* 4, 303–338. (Andro Mikelić) **93k:73005** 73B27 (35B27, 35Q72, 73K20)

León, Carlos Antonio (*with* Massé, Jean-Claude) A counterexample on the existence of the L_1-median. *Statist. Probab. Lett.* **13** (1992), *no.* 2, 117–120. (Summary) **93b:60014** 60B11 (46B09, 62G99)

ponce de León, J. *see* **Ponce de León, J.**

Leon, Jeffrey S. Permutation group algorithms based on partitions. I. Theory and algorithms. Computational group theory, Part 2. *J. Symbolic Comput.* **12** (1991), *no.* 4-5, 533–583. (Jean Moulin Ollagnier) **93c:68043** 68Q40 (20B40)

— (*with* Pless, Vera S.; Tonchev, Vladimir D.) On the existence of a certain (64, 32, 12) extremal code. (English summary) *IEEE Trans. Inform. Theory* **39** (1993), *no.* 1, 214–215. (Summary) **93m:94040** 94B60

Leon, Jérôme Jp. (*with* Boiti, M.; Pempinelli, F.) A new spectral transform for the Davey-Stewartson I and the Kadomtsev-Petviashvili I equations. *Lie theory, differential equations and representation theory (Montreal, PQ*, 1989), 101–117, *Univ. Montréal, Montreal, PQ*, 1990. (Vadim G. Bakurov) **93e:35099** 35Q55 (35Q15, 35Q53, 58F07, 58F19)

— (*with* Boiti, M.; Pempinelli, F.) Solitons and spectral transform for the DSI equation. *Nonlinear world, Vol.* 1 (*Kiev*, 1989), 56–64, *World Sci. Publishing, River Edge, NJ*, 1990. (*see* **93b:00012**) 35Q55

— (*with* Pempinelli, F.; Boiti, M.; Martina, L.) Exponentially localized solitons in 2 + 1 dimensions. *Nonlinear world, Vol.* 1 (*Kiev*, 1989), 285–304, *World Sci. Publishing, River*

Edge, NJ, 1990. (*see* **93b:00012**) 35Q51
— (*with* Claude, C.; Latifi, A.) Nonlinear resonant scattering and plasma instability: an integrable model. *J. Math. Phys.* **32** (1991), *no.* 12, 3321–3330. (Muthiah Daniel) **93g:35128** 35Q55 (58F40, 76E25, 76X05)
— $\overline{\partial}$-problem and solitons in 3 + 1 dimensions. (English summary) *Nonlinear evolution equations and dynamical systems* (*Baia Verde*, 1991), 62–70, *World Sci. Publishing, River Edge, NJ*, 1992. (Tuncay Aktosun) **93j:35168** 35Q58 (35Q51)
— Integrable nonlinear boundary value problems. (English summary) *Phys. Lett. A* **170** (1992), *no.* 4, 283–288. (Summary) **93i:81296** 81V10 (35Q55, 78A45, 82D10)
León, Jorge A. (*with* Gorostiza, Luis G.) A stochastic Fubini theorem and equivalence of extended solutions of stochastic evolution equations in Hilbert space. *Random partial differential equations* (*Oberwolfach*, 1989), 85–94, *Internat. Ser. Numer. Math.*, 102, *Birkhäuser, Basel*, 1991. (Constantin Tudor) **93h:60095** 60H20 (34F05, 34G10, 47N20)
— Fubini theorem for anticipating stochastic integrals in Hilbert space. (English summary) *Appl. Math. Optim.* **27** (1993), *no.* 3, 313–327. (Denis R. Bell) **93k:60140** 60H05
León, José R. *see* **León R., José Rafael**
santos León, Juan C. *see* **Santos León, Juan C.**
álvarez León, Luis *see* **Álvarez León, Luis**
de León, Manuel (*with* Fernández, Marisa Luisa; Rozas, J. Iñaki) A remark on compact symplectic manifolds not admitting complex structures. (English summary) *Arch. Math. (Brno)* **26** (1990), *no.* 1, 49–54. (Mark J. Gotay) **93f:53024** 53C15
— (*with* Chinea, Domingo; Marrero, Juan C.) The constraint algorithm for degenerate nonautonomous Lagrangian systems. *Proceedings of the Workshop on Recent Topics in Differential Geometry* (*Puerto de la Cruz*, 1990), 13–29, *Informes*, 32, *Univ. La Laguna, La Laguna*, 1991. (From the introduction) **93e:58058** 58F05
— (*with* Méndez, Isabel; Salgado, Modesto) Integrable p-almost tangent manifolds and tangent bundles of p^1-velocities. *Acta Math. Hungar.* **58** (1991), *no.* 1-2, 45–54. (Josef Janyška) **93c:53020** 53C15
— (*with* Rodrigues, Paulo R.) Second-order differential equations and degenerate Lagrangians. (Italian summary) *Rend. Mat. Appl.* (7) **11** (1991), *no.* 4, 715–728. (Richard C. Churchill) **93b:58054** 58F05 (70H35)
— (*with* Mello, Maria Hermínia; Rodrigues, Paulo R.) Reduction of degenerate nonautonomous Lagrangians. (English summary) *Mathematical aspects of classical field theory* (*Seattle, WA*, 1991), 275–305, *Contemp. Math.*, 132, *Amer. Math. Soc., Providence, RI*, 1992. (Frans Cantrijn) **93i:58056** 58F05 (53C15, 70H35)
— (*with* Cordero, Luis A.; Méndez, Isabel; Salgado, Modesto) Existence of p-almost tangent structures. *Czechoslovak Math. J.* **42(117)** (1992), *no.* 2, 225–234. (Ion Mihai) **93g:53045** 53C15
— (*with* Rodrigues, Paulo R.) Higher-order mechanical systems with constraints. *Internat. J. Theoret. Phys.* **31** (1992), *no.* 7, 1303–1313. (Frans Cantrijn) **93d:58056** 58F05 (70F20, 70F25, 70G99, 70Hxx)
— (*with* Rodrigues, Paulo R.) The inverse problem of Lagrangian dynamics for higher-order differential equations: a geometrical approach. (English summary) *Inverse Problems* **8** (1992), *no.* 4, 525–540. (Jens Gamst) **93j:58051** 58F05 (70H35)
— (*with* Cantrijn, F.; Lacomba, Ernesto A.) Gradient vector fields on cosymplectic manifolds. *J. Phys. A* **25** (1992), *no.* 1, 175–188. (José F. Cariñena) **93e:58057** 58F05 (70H05)
— (*with* Oubiña, J. A.; Rodrigues, Paulo R.; Salgado, Modesto) Almost s-tangent manifolds of higher order. *Pacific J. Math.* **154** (1992), *no.* 2, 201–213. (I. Kolář) **93d:53034** 53C10 (58A20)
— (*with* de Andrés, Luis C.; Fernández, Marisa Luisa; Mencía, José J.) Some six-dimensional compact symplectic and complex solvmanifolds. (English and Italian summaries) *Rend. Mat. Appl.* (7) **12** (1992), *no.* 1, 59–67. (Elsa Abbena) **93h:53030** 53C15 (53C55)
León, R. V. (*with* Wu, C.-F. J.) A theory of performance measures in parameter design. (English summary) *Statist. Sinica* **2** (1992), *no.* 2, 335–358. (Kailash C. Kapur) **93i:62088** 62N10 (62K99)
segura de León, S. *see* **Segura de León, S.**
Leonard, Anthony (*with* Beigie, Darin; Wiggins, Stephen) Chaotic transport in the homoclinic and heteroclinic tangle regions of quasiperiodically forced two-dimensional dynamical systems. *Nonlinearity* **4** (1991), *no.* 3, 775–819. (Summary) **93c:58130** 58F13 (34C37, 70H05, 70K40)
— (*with* Beigie, Darin; Wiggins, Stephen) A global study of enhanced stretching and diffusion in chaotic tangles. (English summary) Symposium on Fluid Mechanics of Stirring and Mixing (La Jolla, CA, 1990). *Phys. Fluids A* **3** (1991), *no.* 5, *part* 2, 1039–1050. (Summary) **93k:76063** 76F20 (58F13, 76C99, 76R99)
Leonard, D. A. (*with* Hoffman, Dean G.; Lindner, Charles C.; Phelps, Kevin T.; Rodger, Chris A.; Wall, J. R.) ★ Coding theory. The essentials. Monographs and Textbooks in Pure and Applied Mathematics, 150. *Marcel Dekker, Inc., New York*, 1991. xiv+277 *pp. ISBN* 0-8247-8611-4 (Jonathan I. Hall) **93d:94001** 94-01 (94Bxx)
Léonard, Daniel (*with* Long, Ngo Van) ★ Optimal control theory and static optimization in economics. *Cambridge University Press, Cambridge*, 1992. x+353 *pp. ISBN* 0-521-33158-7; 0-521-33746-1 (B. Mordukhovich) **93d:49002** 49-01 (90-01, 90A16, 90A58, 93-01)
Leonard, J. (*with* Brown, Christopher; Durrant-Whyte, H.; Rao, B. Y.; Steer, Brian) Distributed data fusion using Kalman filtering: a robotics application. *Data fusion in robotics and machine intelligence*, 267–309, *Academic Press, Boston, MA*, 1992. (*see* **93g:68002**) 68T30 (68U05, 70B15, 70Q05, 93E11)
Leonard, P. A. Bruce A. Anderson (May 11, 1939–May 5, 1992). *Bull. Inst. Combin. Appl.* **8** (1993), 19–22. 01A70
Leoncini, Mauro (*with* Codenotti, B.) Matrix inversion in RNC^1. *J. Complexity* **7** (1991), *no.* 3, 282–295. (Summary) **93f:68041** 68Q25
Leończuk, Wojciech (*with* Prażmowski, Krzysztof) Projective quasiquadrangles and fan spaces. *Zeszyty Nauk. Geom.* **19** (1991), 33–45. (Tamás Szőnyi) **93b:51005** 51A50
— (*with* Kusak, Eugeniusz) An algebraical characterization of finite-dimension symplectic spaces. *Zeszyty Nauk. Geom.* **19** (1991), 47–53. (F. De Clerck) **93d:51008** 51A50 (51A25)
Leondes, Cornelius T. (*with* Wang, Dau Chung) Robust tracking control of nonlinear systems with uncertain dynamics. *Robust control system techniques and applications, Part* 1, 119–174, *Control Dyn. Syst. Adv. Theory Appl.*, 50, *Academic Press, San Diego, CA*, 1992. (Takehiro Mori) **93i:93067** 93C10 (93C15, 93C41, 93C85)
— (*with* Tekawy, Jonathan A.; Safonov, Michael G.) Robustness measures for systems with one-sided parameter uncertainties. (English summary) *Systems Control Lett.* **19** (1992), *no.* 2, 131–137. (Kathryn E. Lenz) **93k:93089** 93D09 (93B36, 93B40)
— *see also* **Robust control system techniques and applications, 93d:93007** *and* **93d:93008**
de Leone, R. *see* **De Leone, R.**
Leonenko, N. N. Limit distributions of measures of sojourns of vector Gaussian fields with strong dependence. *Probability theory and mathematical statistics, Vol. II* (*Vilnius*, 1989), 79–89, "*Mokslas*", *Vilnius*, 1990. (Simeon M. Berman) **93e:60043** 60F05 (60G15, 60G60)
— (*with* Le Fe Do) Asymptotic properties of estimates of the regression coefficients of random fields. (Russian. English summary) *Dokl. Akad. Nauk Ukrain. SSR* **1991**, *no.* 8, 52–55, 184. (M. I. Yadrenko) **93e:62247** 62M40 (62J02)
— (*with* Olenko, A. Ya.) Tauberian and abelian theorems for Hankel-type transformations, and limit theorems for functionals of random fields. (Russian. English summary) *Dokl. Akad. Nauk Ukrain. SSR* **1991**, *no.* 9, 61–64, 177. (Summary) **93b:60043** 60F05 (60G60)
— (*with* Parkhomenko, V. N.) Comparison theorems for measures of the sojourn time inside a "small" sphere of a vector Gaussian field. (Russian) *Teor. Veroyatnost. i Mat. Statist. No.* 45 (1991), 74–79; *translation in Theory Probab. Math. Statist. No.* 45 (1992), 71–75. (Raisa Feldman) **93f:60046** 60G15 (60G60)
— (*with* Olenko, A. Ya.) Tauberian and Abelian theorems for the correlation function of a homogeneous isotropic random field. (Russian. Ukrainian summary) *Ukrain. Mat. Zh.* **43** (1991), *no.* 12, 1652–1664; *translation in Ukrainian Math. J.* **43** (1991), *no.* 12, 1539–1548 (1992). (N. H. Bingham) **93f:60069** 60G60
Leong, Fook (*with* Teh, Pang Eng) Moufang loops of orders $2pq$. (English summary) *Bull. Malaysian Math. Soc.* (2) **15** (1992), *no.* 1, 27–29. (Summary) **93j:20142** 20N05
— (*with* Teh, Pang Eng) The companions of inner mapping groups. (English summary) *Publ. Math. Debrecen* **40** (1992), *no.* 3-4, 245–249. (Summary) **93e:20101** 20N05
Leong, H.-W. (*with* Lee, S. F.) A new approach to game scheduling with preassignments. (English summary) *Optimization, Vol.* 1, 2 (*Singapore*, 1992), 197–208, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93f:90213** 90D46 (90B35, 90C27)
— (*with* Tia, T. S.) New heuristic algorithms for precedence constrained scheduling. (English summary) *Optimization, Vol.* 1, 2 (*Singapore*, 1992), 565–575, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93d:90005**) 90B35
— (*with* Khoong, C. M.) Sorting by distribution in parallel. (English summary) Fifteenth Australian Computer Science Conference (ACSC-15) (Hobart, 1992). *Austral. Comput. Sci. Comm.* **14** (1992), *no.* 1, *part B*, 447–458. (Summary) **93m:68038** 68P10 (68Q22)
Leong, Thin Yin (*with* Hum, Sin Hoon) A weighted graph partitioning problem with side constraints. (English summary) *Optimization, Vol.* 1, 2 (*Singapore*, 1992), 235–240, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93d:90005**) 90C27 (90C35)
Leonhardson, Jorn (*with* Packard, Andy; Zhou, Kemin; Pandey, Pradeep; Balas, Gary) Optimal, constant I/O similarity scaling for full-information and state-feedback control problems. (English summary) *Systems Control Lett.* **19** (1992), *no.* 4, 271–280. (Summary) **93f:93050** 93B36
Leonhardt, S. A parallel algorithm for process identification. (English summary) *Identification and system parameter estimation* 1991, *Vol.* 1,2 (*Budapest*, 1991), 1037–1042, *IFAC Sympos. Ser.*, 3, *Pergamon, Oxford*, 1992. (*see* **93h:93009**) 93B30 (93B40)
Leonhardt, Ulf (*with* Knöll, Ludwig) Quantum optics in oscillator media. *J. Modern Opt.* **39** (1992), *no.* 6, 1253–1264. (Summary) **93b:81321** 81V80
Leoni, Giovanni (*with* Manfredini, Maria; Pucci, Patrizia) Stability properties for solutions of general Euler-Lagrange systems. *Differential Integral Equations* **5** (1992), *no.* 3, 537–552. (Zvi Artstein) **93e:49040** 49K40 (34D05, 35B35)
Leonov, A. S. On the accuracy of Tikhonov regularizing algorithms and the quasi-optimal choice of regularization parameter. (Russian) *Dokl. Akad. Nauk SSSR* **321** (1991), *no.* 3, 460–465; *translation in Soviet Math. Dokl.* **44** (1992), *no.* 3, 711–716. (V. V. Vasin) **93d:65061** 65J20 (47A50)
— Variational algorithms with a posteriori choice of the regularization parameter for solving ill-posed extremal problems. (English summary) *Ill-posed problems in natural sciences* (*Moscow*, 1991), 63–70, *VSP, Utrecht*, 1992. (*see* **93m:00041**) 90C30 (65J20, 90C48)
— *see also* **Ill-posed problems in natural sciences, 93m:00041**
Leonov, G. A. (*with* Boichenko, V. A.) Estimates for the dimension of attractors and for the global stability of the generalized Lorenz system. (Russian. English summary) *Vestnik Leningrad. Univ. Mat. Mekh. Astronom.* **1990**, *vyp.* 2, 7–13, 120; *translation in Vestnik Leningrad Univ. Math.* **23** (1990), *no.* 2, 6–12. (A. Bacciotti (Zbl 732:34046)) **93e:58117** 58F12 (34D45, 34H05, 58F25)
— (*with* Koksch, N.; Morozov, A. V.; Ponomarenko, D. V.) Zur Eingrenzung des Lorenz-Attraktors durch die Anwendung der nichtlokalen Reduktionsmethode und mit Hilfe von Vergleichssystemen zweiter Ordnung. (English and Russian summaries) [Estimation of the Lorenz attractor based on the nonlocal reduction method and on comparison systems of second order] *Z. Angew. Math. Mech.* **70** (1990), *no.* 2, 117–127. (Summary) **93e:58119** 58F12 (34C23, 34D45, 76D05)
— The orbital stability of trajectories and the estimation of the Hausdorff dimension of attractors. *Differential equations and control theory* (*Iaşi*, 1990), 163–170, *Pitman Res. Notes Math. Ser.*, 250, *Longman Sci. Tech., Harlow*, 1991. (Remo Badii) **93c:34115** 34D45 (34D08, 58F10, 58F12)
— (*with* Boichenko, V. A.) Lyapunov's direct method in the estimation of the Hausdorff dimension of attractors. *Acta Appl. Math.* **26** (1992), *no.* 1, 1–60. (Christian Beck) **93e:58132** 58F13 (34D45, 70E99, 76E30)
— (*with* Kravchuk, A. Yu.; Ponomarenko, D. V.) Criteria for strong orbital stability of trajectories of dynamical systems. I. (Russian. Russian summary) *Differentsial'nye Uravneniya* **28** (1992), *no.* 9, 1507–1520, 1652; *translation in Differential Equations* **28** (1992), *no.* 9, 1230–1241 (1993). (A. Halanay) **93k:34110** 34D20
Leonov, S. L. (*with* Korostelëv, A. P.) Action functional for diffusions in discontinuous media. (English summary) *Probab. Theory Related Fields* **94** (1993), *no.* 3, 317–333. (Tzong-Yow Lee) **93j:60030** 60F10
Leonov, V. A. (*with* Poplavskiĭ, B. K.) A method of linear transformations for identification of dynamical systems. (Russian. Russian summary) *Vestnik Kiev. Univ. Model. Optim. Slozhn. Sist. No.* 9 (1990), 53–58. 93B30
— (*with* Poplavskiĭ, B. K.) Filtering of measurement errors in the estimation of a linear transformation of a useful signal. *J. Comput. Systems Sci. Internat.* **30** (1992), *no.* 6, 99–106; *translated from Izv. Ross. Akad. Nauk Tekhn. Kibernet.* **1992**, *no.* 1, 163–170 (*Russian. Russian summary*). (Summary) **93j:93145** 93E11 (94A12)

León R., José Rafael (*with* Cotlar, Mischa; Pereyra, M. C.) Eigenfunction expansions of covariance kernels of Hilbert space processes. *Acta Cient. Venezolana* **38** (1987), *no.* 5-6, 563–569. (Summary) **93d:47001** 47–02 (47A40, 47A57, 47A70, 47N99)

— (*with* Ortega, Joaquín) Crossings and local times for regularized Gaussian processes: L^2 convergence. (French summary) *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 3, 227–231. (Summary) **93a:60060** 60G15 (60G17)

ponce de León Sentí, Eunice *see* **Ponce de León Sentí, Eunice**

Leont'ev, A. N. Optimal control of the form of a stamp in a problem on strong deflections of a plate. (Russian) *Proceedings of the XXVIII All-Union Scientific Student Conference "The Student and Scientific-Technological Progress"* (*Russian*) (*Novosibirsk*, 1990), 29–34, *Novosibirsk. Gos. Univ., Novosibirsk*, 1990. (*see* **93f:00017**) 73T05 (73K50, 73V25)

Leont'ev, V. K. (*with* Arocha Pérez, Jorge Luis; Fuentes Rodríguez, Alberto; Ruiz Shulcloper, José) On a certain metric in the n-dimensional unit cube. (Spanish. English summary) *An. Inst. Mat. Univ. Nac. Autónoma México* **31** (1991), 1–20 (1992). (Summary) **93e:52033** 52C07

Leontief, Wassily *see* **Kalyadina, S. A., 93f:01022** *and* **Biography: Leontief, Wassily W., 93f:01023**

Leontieff, Bladimir *see* **Leont'ev, V. K.**

Leopold, Hans-Gerd (*with* Schrohe, Elmar) Spectral invariance for algebras of pseudodifferential operators on Besov-Triebel-Lizorkin spaces. (English summary) *Manuscripta Math.* **78** (1993), *no.* 1, 99–110. (G. V. Rozenblyum) **93m:47061** 47G30 (35S05, 46L99)

LePage, Raoul (*with* Efron, Bradley) Introduction to bootstrap. *Exploring the limits of bootstrap* (*East Lansing, MI*, 1990), 3–10, *Wiley Ser. Probab. Math. Statist. Probab. Math. Statist., Wiley, New York*, 1992. (*see* **93f:62003**) 62G09

— Bootstrapping signs. (English summary) *Exploring the limits of bootstrap* (*East Lansing, MI*, 1990), 215–224, *Wiley Ser. Probab. Math. Statist. Probab. Math. Statist., Wiley, New York*, 1992. (Michael R. Chernick) **93m:62097** 62G09 (60F05)

— *see also* **Exploring the limits of bootstrap, 93f:62003**

Lepage, Yves (*with* Houde, Louis) L'effet de l'erreur d'arrondi sur l'estimateur d'une densité par la méthode du noyau. (English summary) [The effect of rounding error on the estimator of a density by the kernel method] *Canad. J. Statist.* **19** (1991), *no.* 4, 361–369. (Wolfgang Wertz) **93h:62080** 62G05

— (*with* Tricot, Jean-Marie) Tests de l'incertitude des observateurs dans une analyse de concordance sur une échelle nominale. (English and French summaries) [Testing observer uncertainty in a nominal-scale agreement analysis] *Rev. Statist. Appl.* **40** (1992), *no.* 3, 35–45. (Summary) **93g:62135** 62P15

Le Pas de Sécheval, H. *see* **le Pas de Sécheval, H.**

Lepasson, I. T-dual spaces with rate and T-sectionally summable spaces with rate in the case of double sequences. (Estonian summary) *Tartu Ül. Toimetised No.* 928 (1991), 53–60. (K. Chandrasekhara Rao) **93d:40005** 40C05 (46A45)

Lepelley, Dominique (*with* Berg, Sven) Note sur le calcul de la probabilité des paradoxes du vote. (English and French summaries) [Note on the computation of the voting paradox probability] *Math. Inform. Sci. Humaines No.* 120 (1992), 33–48. (Summary) **93j:90026** 90A28 (60C05)

— Une caractérisation du vote à la majorité simple. (English and French summaries) [A characterization of plurality voting] *RAIRO Rech. Opér.* **26** (1992), *no.* 4, 361–365. (Summary) **93h:90026** 90A28 (90A08)

— On the probability of electing the Condorcet loser. (English summary) *Math. Social Sci.* **25** (1993), *no.* 2, 105–116. (Summary) **93i:90032** 90A28

Lepeltier, J.-P. (*with* El Karoui, Nicole; Millet, Annie) A probabilistic approach to the reduite in optimal stopping. (English summary) *Probab. Math. Statist.* **13** (1992), *no.* 1, 97–121. (V. Mackevičius) **93k:60108** 60G40

Lepin, A. Ya. Classes of functions with bounded bending. (Russian. English, Russian and Latvian summaries) *Mathematics. Differential equations* (*Russian*), 111–141, ix, *Latv. Univ. Zināt. Raksti*, 570, *Latv. Univ., Riga*, 1992. (J. Král) **93m:26021** 26A45

— *see also* **Doctor of Physics and Mathematical Sciences Arnol'd Yanovich Lepin, 93g:01094**

Lépingle, Dominique Un schéma d'Euler pour équations différentielles stochastiques réfléchies. (English and French summaries) [An Euler scheme for stochastic differential equations with reflecting boundary conditions] *C. R. Acad. Sci. Paris Sér. I Math.* **316** (1993), *no.* 6, 601–605. (Summary) **93k:60146** 60H10 (65U05)

Le Potier, Joseph Fibrés de Higgs et systèmes locaux. [Higgs bundles and local systems] Séminaire Bourbaki, Vol. 1990/91. *Astérisque No.* 201-203 (1991), *Exp. No.* 737, 221–268 (1992). (Robert J. Fisher, Jr.) **93e:14012** 14C30 (14D07, 14D20, 32J25, 53C07)

Lepović, Mirko Some results on the reduced energy of graphs. I. (Serbo-Croatian summary) *Zb. Rad. Prirod.-Mat. Fak. Ser. Mat.* **20** (1990), *no.* 2, 43–52. (Summary) **93c:05083** 05C50

— Some results on the reduced energy of graphs. III. *Univ. Beograd. Publ. Elektrotehn. Fak. Ser. Mat.* **2** (1991), 82–88. (Summary) **93c:05084** 05C50

Lepp, Riho Approximation of decision rules in stochastic programming. *J. Comput. Systems Sci. Internat.* **31** (1993), *no.* 2, 46–49; *translated from Izv. Akad. Nauk SSSR Tekhn. Kibernet.* **1991**, *no.* 6, 83–86 (*Russian*). (Summary) **93m:90055** 90C15

— Discrete approximation of a problem of the continuous programming. (Russian summary) *Zh. Vychisl. Mat. i Mat. Fiz.* **33** (1993), *no.* 5, 643–658. (Asen L. Dontchev) **93m:90102** 90C45 (49M25)

Leppington, Frank G. Matched asymptotic methods in surface wave theory. *Wave asymptotics* (*Manchester*, 1990), 69–85, *Cambridge Univ. Press, Cambridge*, 1992. (Peter N. Zhevandrov) **93f:76011** 76B15 (35B40, 35C20)

Leprévost, Franck Famille de courbes de genre 2 munies d'une classe de diviseurs rationnels d'ordre 13. (English summary) [Family of curves of genus 2 with a rational divisor class of order 13] *C. R. Acad. Sci. Paris Sér. I Math.* **313** (1991), *no.* 7, 451–454. (David Grant) **93b:14053** 14H45 (14H40)

— Torsion sur des familles de courbes de genre g. (English summary) [Torsion on families of curves of genus g] *Manuscripta Math.* **75** (1992), *no.* 3, 303–326. (David Grant) **93k:11059** 11G30 (14H10)

Lepschy, A. (*with* Loro, S.; Mian, G. A.; Viaro, Umberto) A numerical procedure for rational L_2 approximation. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, I* (*Kobe*, 1991), 431–436, *Mita, Tokyo*, 1992. (*see* **93g:93005**) 93B11

— (*with* Viaro, Umberto) Complexity and feedback. *Systems, models and feedback: theory and applications* (*Capri*, 1992), 111–126, *Progr. Systems Control Theory*, 12, *Birkhäuser Boston, Boston, MA*, 1992. (*see* **93a:93006**) 93B52 (93B40)

— (*with* Krajewski, Wiesław; Mian, G. A.; Viaro, Umberto) Optimality conditions in multivariable L_2 model reduction. (English summary) *J. Franklin Inst.* **330** (1993), *no.* 3, 431–439. 93B50

Lepskiĭ, O. V. A problem of adaptive estimation in Gaussian white noise. (Russian) *Teor. Veroyatnost. i Primenen.* **35** (1990), *no.* 3, 459–470; *translation in Theory Probab. Appl.* **35** (1990), *no.* 3, 454–466 (1991). (Hans M. Dietz) **93j:62212** 62M05 (62G20)

— Asymptotically minimax adaptive estimation. I. Upper bounds. Optimally adaptive estimates. (Russian) *Teor. Veroyatnost. i Primenen.* **36** (1991), *no.* 4, 645–659; *translation in Theory Probab. Appl.* **36** (1991), *no.* 4, 682–697 (1992). (Ewaryst Rafajłowicz) **93d:62072** 62G05 (62F35)

Lequain, Yves (*with* Ferrero, Miguel A.; Nowicki, Andrzej Władysław) A note on locally nilpotent derivations. *J. Pure Appl. Algebra* **79** (1992), *no.* 1, 45–50. (Summary) **93b:13007** 13B10

Le Quere, P. (*with* Pécheux, J.) A three-dimensional pseudo-spectral algorithm for the computation of convection in a rotating annulus. (English summary) *Spectral and high order methods for partial differential equations* (*Como*, 1989), 261–271, *North-Holland, Amsterdam*, 1990. (*see* **93d:65005**) 65N35 (76M25, 76R99)

Leranoz, C. Uniqueness of unconditional bases of $c_0(l_p)$, $0 < p < 1$. *Studia Math.* **102** (1992), *no.* 3, 193–207. (Bor-Luh Lin) **93f:46007** 46A45 (46A35, 46B15, 46B45)

Lerat, A. (*with* Sidès, J.) Implicit transonic calculations without artificial viscosity or upwinding. *Numerical simulation of compressible Euler flows* (*Rocquencourt*, 1986), 227–250, *Notes Numer. Fluid Mech.*, 26, *Vieweg, Braunschweig*, 1989. (*see* **93b:76056**) 76M20 (76H05, 76N15)

Leray, J. Adaptation de la transformation de Laplace-d'Alembert à l'étude du demi-plan élastique. [Adaptation of the Laplace-d'Alembert transform to the study of the elastic half-plane] *J. Math. Pures Appl.* (9) **70** (1991), *no.* 4, 455–487. (P. Szeptycki) **93f:35013** 35A22 (73D99)

— (*with* Pecker, A.) Calcul explicite du déplacement ou de la tension du demi-plan élastique, isotrope et homogène, soumis à un choc en son bord. [Explicit calculation of the displacement and stress of the isotropic homogeneous elastic half-plane subject to a shock at its boundary] *J. Math. Pures Appl.* (9) **70** (1991), *no.* 4, 489–511. (P. Szeptycki) **93f:35014** 35A22 (73D05)

Lerche, W. (*with* Warner, N. P.) Polytopes and solitons in integrable, $N = 2$ supersymmetric Landau-Ginzburg theories. *Nuclear Phys. B* **358** (1991), *no.* 3, 571–599. (Introduction) **93h:81130** 81T40 (35Q40, 52B11, 58F07)

— (*with* Smit, Dirk-Jan; Warner, N. P.) Differential equations for periods and flat coordinates in two-dimensional topological matter theories. *Nuclear Phys. B* **372** (1992), *no.* 1-2, 87–112. (HoSeong La) **93e:32029** 32G20 (32J81, 81T40)

— (*with* Bershadskiĭ, M. A.; Nemeschansky, D.; Warner, N. P.) A BRST operator for noncritical W-strings. (English summary) *Phys. Lett. B* **292** (1992), *no.* 1-2, 35–41. (Stanislav Z. Pakuliak) **93i:81185** 81T30 (17B68, 81T40, 81T70)

Lerda, Alberto (*with* Dunne, Gerald; Sciuto, Stefano; Trugenberger, Carlo A.) Exact multi-anyon wave functions in a magnetic field. *Nuclear Phys. B* **370** (1992), *no.* 3, 601–635. (Joan Soto) **93c:81028** 81Q05 (81S99, 81T13)

Lerer, L. (*with* Gohberg, Israel; Kaashoek, Marinus A.) Minimality and realization of discrete time-varying systems. *Time-variant systems and interpolation*, 261–296, *Oper. Theory Adv. Appl.*, 56, *Birkhäuser, Basel*, 1992. (*see* **93d:47148**) 93B15 (47N70)

hernández-Lerma, Onésimo *see* **Hernández-Lerma, Onésimo**

Lerman, Israël César Conception et analyse de la forme limite d'une famille de coefficients statistiques d'association entre variables relationnelles. I. (English and French summaries) [Elaboration and analysis of the limit form of a family of statistical association coefficients between relational variables. I] *Math. Inform. Sci. Humaines No.* 118 (1992), 33–52. 62–07 (62H20)

— Conception et analyse de la forme limite d'une famille de coefficients statistique d'association entre variables relationnelles. II. (English and French summaries) [Elaboration and analysis of the limit form of a family of statistical association coefficients between relational variables. II] *Math. Inform. Sci. Humaines No.* 119 (1992), 75–100. 62–07 (62H20)

Lerman, Manuel Minimal degrees and recursively inseparable pairs of recursively enumerable sets. *Z. Math. Logik Grundlag. Math.* **37** (1991), *no.* 4, 331–342. (Rodney G. Downey) **93d:03047** 03D25 (03D30)

— (*with* Lempp, Steffen) The existential theory of the poset of r.e. degrees with a predicate for single jump reducibility. (English summary) *J. Symbolic Logic* **57** (1992), *no.* 3, 1120–1130. (C. G. Jockusch, Jr.) **93m:03072** 03D25 (03B25)

Lerman, Robert A. (*with* Kolk, W. Richard) ★ Nonlinear system dynamics. *Van Nostrand Reinhold Co., New York*, 1992. x+350 *pp. ISBN* 0-442-00428-1 (Florin Iacob) **93k:34027** 34A34 (34–04, 34C99, 34D99, 34H05, 93D05)

Lerme, C. S. (*with* Robinson, Alan G.; Jiang, N.) On the continuous quadratic knapsack problem. *Math. Programming* **55** (1992), *no.* 1, *Ser. A*, 99–108. (Jacques A. Ferland) **93e:90048** 90C20 (90C25, 90C30)

Lerner, David E. The linear system for self-dual gauge fields in a spacetime of signature 0. *J. Geom. Phys.* **8** (1992), *no.* 1-4, 211–219. (Nicholas Buchdahl) **93d:81127** 81T25 (32L25, 81T13)

Lerner, L. (*with* Harper, John F.) Stokes flow past a pair of stagnant-cap bubbles. *J. Fluid Mech.* **232** (1991), 167–190. (A. M. J. Davis) **93a:76026** 76D07

Lerner, M. E. (*with* Pul'kina, L. S.) On the unconditional solvability of a Tricomi-type problem. (Russian) *Boundary value problems for equations in mathematical physics* (*Russian*), 26–29, *Kuĭbyshev. Gos. Ped. Inst., Kuybyshev*, 1991. (*see* **93f:35006**) 35M10

— On a problem for a model equation of mixed elliptic-parabolic-hyperbolic type in a domain with a doubly connected subdomain of hyperbolicity. (Russian. Russian summary) *Differentsial'nye Uravneniya* **28** (1992), *no.* 8, 1456–1459, 1472. (Summary) **93k:35188** 35M10

Lerner, P. B. (*with* Andreev, V. A.) Supersymmetry of multiphoton transitions. *Nuovo Cimento A* (11) **105** (1992), *no.* 6, 773–779. (Alexei D. Kiselev) **93f:81168** 81V80 (81Q60)

Leroux, Brian G. Consistent estimation of a mixing distribution. (English summary) *Ann. Statist.* **20** (1992), *no.* 3, 1350–1360. (Keh-Wei Chen) **93i:62033** 62G05 (62F12)

— Maximum-likelihood estimation for hidden Markov models. *Stochastic Process. Appl.* **40** (1992), *no.* 1, 127–143. (Paul I. Nelson) **93d:62154** 62M05

Le Roux, H. J. *see* **le Roux, H. J.**

Le Roux, Joël (*with* Coroyer, Christophe; Rossille, Delphine) Bispectral analysis and reconstruction in the frequency domain of mono- and bidimensional deterministic sampled signals. (English summary) *Multidimens. Systems Signal Process.* **4** (1993), *no.* 1, 39–66. (Summary) **93j:94003** 94A12

Leroux, Pierre (*with* Miloudi, Brahim) Généralisations de la formule d'Otter. (English summary) [Generalizations of Otter's formula] *Ann. Sci. Math. Québec* **16** (1992), *no.* 1, 53–80. (Jozef Širáň) **93e:05044** 05C30

— (*with* Décoste, Hélène; Labelle, Gilbert) The functorial composition of species, a forgotten operation. *Discrete Math.* **99** (1992), *no.* 1-3, 31–48. (Wenchang Chu) **93c:05006** 05A15 (05E99, 18D35)

paysant-Le Roux, R. *see* **Paysant-Le Roux, R.**

Leroy, André (*with* Lam, T. Y.) Homomorphisms between Ore extensions. *Azumaya algebras, actions, and modules (Bloomington, IN, 1990)*, 83–110, *Contemp. Math.*, 124, *Amer. Math. Soc., Providence, RI*, 1992. (P. M. Cohn) **93b:16052** 16S36 (16W20, 16W25)

— (*with* Matczuk, Jerzy) The extended centroid and X-inner automorphisms of Ore extensions. *J. Algebra* **145** (1992), *no.* 1, 143–177. (P. M. Cohn) **93b:16053** 16S36

Leroy, J. P. (*with* Wallace, Robert; Rabitz, Herschel) A strategy to derive new internal coordinates by partitioning the internal configuration space according to invariance properties. (English summary) *J. Math. Chem.* **11** (1992), *no.* 4, 365–404. (Alexei D. Kiselev) **93k:81269** 81V70 (81R05, 81V55)

Leroy, Yves M. (*with* Molinari, Alain) Spatial patterns and size effects in shear zones: a hyperelastic model with higher-order gradients. (English summary) *J. Mech. Phys. Solids* **41** (1993), *no.* 4, 631–663. (Summary) **93k:73041** 73G05 (73H99, 73S10, 73V25)

Lértora Mendoza, Celina A. The astronomical tables copied by Robert Grosseteste. (Spanish) Mathesis. *Mathesis* **7** (1991), *no.* 4, 429–443. (Raymond Mercier) **93h:01015** 01A35

Le Saëc, Bertrand (*with* Pin, Jean-Eric; Weil, Pascal) Semigroups with idempotent stabilizers and applications to automata theory. *Internat. J. Algebra Comput.* **1** (1991), *no.* 3, 291–314. (Eckehart Hotzel) **93d:20120** 20M35 (20M07, 68Q70)

— (*with* Dõ Long Vân; Litovsky, Igor) On coding morphisms for zigzag codes. (English and French summaries) *RAIRO Inform. Théor. Appl.* **26** (1992), *no.* 6, 565–580. (Dong Yang Long) **93m:20105** 20M25 (68Q45, 94A45)

— (*with* Dõ Long Vân; Litovsky, Igor) Stability for the zigzag submonoids. (English and French summaries) *Theoret. Comput. Sci.* **108** (1993), *no.* 2, 237–249. (Wit Foryś) **93m:68098** 68Q45

Lesaint, P. (*with* Pousin, J.) Error estimates for a nonlinear degenerate parabolic problem. *Math. Comp.* **59** (1992), *no.* 200, 339–358. (Erwin Schechter) **93a:35094** 35K65 (65M06, 65M12, 65M15, 76M25, 76X05)

Lešanovský, Antonín (*with* Rataj, Jan; Hojek, Stanislav) 0-1 sequences having the same numbers of (1-1)-couples of given distances. (English summary) *Math. Bohem.* **117** (1992), *no.* 3, 271–282. (Gerhard Larcher) **93j:11048** 11K31 (11B05)

Lescanne, Pierre (*with* Hsiang, Jieh; Kirchner, Hélène; Rusinowitch, Michael) The term rewriting approach to automated theorem proving. (English summary) *J. Logic Programming* **14** (1992), *no.* 1-2, 71–99. (Michael Bauer) **93m:68148** 68T15 (03B35, 68Q42)

— Well rewrite orderings and well quasi-orderings. (English summary) *J. Symbolic Comput.* **14** (1992), *no.* 5, 419–435. (Ursula Martin) **93k:68053** 68Q42 (03B35, 03D35, 04A20, 68T15)

Lesch, Matthias (*with* Brüning, Jochen) Hilbert complexes. *J. Funct. Anal.* **108** (1992), *no.* 1, 88–132. (Jürgen Eichhorn) **93k:58208** 58G05 (46M20, 47A53, 58A12, 58G20)

Leschke, Hajo (*with* Fischer, Werner; Müller, Peter) Changing dimension and time: two well-founded and practical techniques for path integration in quantum physics. *J. Phys. A* **25** (1992), *no.* 13, 3835–3853. (Horacio Alberto Falomir) **93j:81062** 81S40 (58D30)

— (*with* Junker, Georg) Remarks on the quasi-classical propagator of area-preserving maps. *Phys. D* **56** (1992), *no.* 2-3, 135–150. (Nariyuki Minami) **93h:81031** 81Q50 (81Q20)

Lescop, Christine Sur l'invariant de Casson-Walker: formule de chirurgie globale et généralisation aux variétés de dimension 3 fermées orientées. (English and French summaries) [On the Casson-Walker invariant: global surgery formula and extension to closed oriented 3-manifolds] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 4, 437–440. (A. Marin) **93m:57020** 57N10 (57M05, 57M25)

Lescot, Jack (*with* Avramov, Luchezar L.; Foxby, Hans-Bjørn) Bass series of local ring homomorphisms of finite flat dimension. *Trans. Amer. Math. Soc.* **335** (1993), *no.* 2, 497–523. (Marc Aubry) **93d:13026** 13D03 (13C11, 13D25, 18G15, 55T20)

Lescot, Madeleine (*with* Debart, Françoise; Enjalbert, Patrice) Multimodal logic programming using equational and order-sorted logic. (English summary) Second International Conference on Algebraic and Logic Programming (Nancy, 1990). *Theoret. Comput. Sci.* **105** (1992), *no.* 1, 141–166. (Summary) **93i:68038** 68N17 (03B45, 03B70)

Lescure, François Action sur la cohomologie de Dolbeault. (English summary) [Action on the Dolbeault cohomology] *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 12, 923–926. (V. V. Chueshev) **93g:32041** 32L05 (32C10, 32C17, 55N99, 57R22)

Leshno, Moshe (*with* Spector, Yishay) An elementary proof of Blackwell's theorem. (English summary) *Math. Social Sci.* **25** (1992), *no.* 1, 95–98. (Kevin Donegan) **93m:62014** 62B15 (62B10)

Lesieur, Léonce (*with* Nicolas, Jean-Louis) On the Eulerian numbers $M_n = \max_{1\le k\le n} A(n,k)$. *European J. Combin.* **13** (1992), *no.* 5, 379–399. (Giuseppe Pellegrino) **93g:05007** 05A10 (11B68)

Lesieur, Marcel ★ Turbulence in fluids. Stochastic and numerical modelling. Second edition. Fluid Mechanics and its Applications, 1. *Kluwer Academic Publishers Group, Dordrecht*, 1990. xvi+412 *pp. ISBN* 0-7923-0645-7 (From the foreword) **93h:76040** 76Fxx

— (*with* Métais, Olivier) Spectral large-eddy simulation of isotropic and stably stratified turbulence. *J. Fluid Mech.* **239** (1992), 157–194. (Summary) **93e:76039** 76F05

Lesigne, E. (*with* Barrabès, Claude; Gramain, André; Letelier, Patricio S.) Geometric inequalities and the hoop conjecture. (English summary) *Classical Quantum Gravity* **9** (1992), *no.* 9, L105–L110. (Richard Hansen) **93f:83068** 83C99

Lesigne, Emmanuel Ergodic theorem along a return time sequence. (English summary) *Ergodic theory and related topics, III (Güstrow, 1990)*, 146–152, *Lecture Notes in Math.*, 1514, *Springer, Berlin*, 1992. (Nathaniel Friedman) **93g:28018** 28D05

Lesina, M. E. Axoids in a case of integrability of a problem on the motion of two bodies connected by a spherical hinge. (Russian) *Mekh. Tverd. Tela No.* 23 (1991), 43–50. (Summary) **93d:70014** 70E99

— Some exact solutions of a problem on the motion of two gyrostats connected by a spherical hinge. (Russian. Russian summary) *Mekh. Tverd. Tela No.* 24 (1992), 45–51. 70E99

— Equiaxoidal motions of gyrostats. (Russian. Russian summary) *Mekh. Tverd. Tela No.* 24 (1992), 51–56. 70E99

Leśkow, Jacek (*with* Hurd, Harry L.) Estimation of the Fourier coefficient functions and their spectral densities for φ-mixing almost periodically correlated processes. (English summary) *Statist. Probab. Lett.* **14** (1992), *no.* 4, 299–306. (P. A. Morettin) **93h:62172** 62M15 (62M20)

Lesky, Peter, Jr. Wave equations with time-dependent spatial operators of higher order. (English summary) *Math. Methods Appl. Sci.* **15** (1992), *no.* 7, 453–468. (Summary) **93f:35134** 35L30

Leslie, F. M. Flow-induced instabilities in nematic liquid crystals. (English summary) *Nematics (Orsay*, 1990), 223–232, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 332, *Kluwer Acad. Publ., Dordrecht*, 1991. (Summary) **93e:76006** 76A15 (76E99)

— (*with* Stewart, I. W.; Carlsson, T.; Nakagawa, Masahiro) Equivalent smectic C liquid crystal energies. *Contin. Mech. Thermodyn.* **3** (1991), *no.* 4, 237–250. (Ralph Saxton) **93f:73005** 73B05 (76A15, 82D30)

— Continuum theory for nematic liquid crystals. (English summary) *Contin. Mech. Thermodyn.* **4** (1992), *no.* 3, 167–175. (Summary) **93f:76004** 76A15 (73B40, 73B99)

— (*with* Laverty, J. S.; Carlsson, T.) Continuum theory for biaxial nematic liquid crystals. (English summary) *Quart. J. Mech. Appl. Math.* **45** (1992), *no.* 4, 595–606. (Summary) **93m:76003** 76A15 (73B99, 82D30)

Lesniak, Linda M. Neighborhood unions and graphical properties. *Graph theory, combinatorics, and applications. Vol.* 2 (*Kalamazoo, MI*, 1988), 783–800, *Wiley-Intersci. Publ., Wiley, New York*, 1991. (*see* **93b:05003**) 05C99 (05C45)

— (*with* Faudree, Ralph J.; Gould, Ronald J.; Jacobson, Michael S.) Generalized degrees, connectivity and Hamiltonian properties in graphs. (English summary) *J. Combin. Inform. System Sci.* **16** (1991), *no.* 1, 93–105. (Summary) **93c:05078** 05C40 (05C45)

— (*with* Faudree, Ralph J.; Gould, Ronald J.) Generalized degrees and Menger path systems. (English summary) *Discrete Appl. Math.* **37/38** (1992), 179–191. (László Pyber) **93d:05092** 05C40 (05C10)

— (*with* Faudree, Ralph J.; Gould, Ronald J.; Jacobson, Michael S.; Lindquester, Terri E.) On independent generalized degrees and independence numbers in $K(1,m)$-free graphs. *Discrete Math.* **103** (1992), *no.* 1, 17–24. (Douglas F. Rall) **93d:05115** 05C70

— (*with* Faudree, Ralph J.; Gould, Ronald J.; Jacobson, Michael S.) Neighborhood unions and a generalization of Dirac's theorem. (English summary) *Discrete Math.* **105** (1992), *no.* 1-3, 61–71. (Stanislav Jendrol') **93g:05094** 05C45 (05C38)

Leśniewicz, Maria (*with* Górzeńska, Maria; Rempulska, Lucyna) On approximation of 2π-periodic functions belonging to the Hölder classes. *Fasc. Math. No.* 21 (1990), 87–97 (1991). (V. V. Zhuk) **93b:42006** 42A10

— (*with* Górzeńska, Maria; Rempulska, Lucyna) Approximation theorems for functions of Hölder classes. *Comment. Math. Prace Mat.* **30** (1991), *no.* 2, 301–308. (Shri Nivas Bhatt) **93e:42005** 42A10 (41A65)

— (*with* Górzeńska, Maria; Rempulska, Lucyna) On summability of double Fourier series by some methods of the Abel type. (English summary) *Fasc. Math. No.* 22 (1991), 61–69 (1992). (S. Baron) **93k:42010** 42B08 (40C05)

Lesniewski, Andrzej (*with* Jaffe, Arthur) Geometry of supersymmetry. *Constructive quantum field theory, II (Erice*, 1988), 283–305, *NATO Adv. Sci. Inst. Ser. B Phys.*, 234, *Plenum, New York*, 1990. (*see* **93g:81074**) 81T60 (58B30, 58C50)

— (*with* Klimek, Slawomir) Pfaffians on Banach spaces. *J. Funct. Anal.* **102** (1991), *no.* 2, 314–330. (Alan L. Carey) **93e:58007** 58B15 (46G99, 47A99, 47B10, 58G26, 81T40)

— (*with* Klimek, Sławomir) Quantum Riemann surfaces. I. The unit disc. *Comm. Math. Phys.* **146** (1992), *no.* 1, 103–122. (Mauro Spera) **93g:58009** 58B30 (14H55, 46L87, 47B35, 47N99)

— (*with* Klimek, Sławomir) Quantum Riemann surfaces. II. The discrete series. *Lett. Math. Phys.* **24** (1992), *no.* 2, 125–139. (Mauro Spera) **93k:58011** 58B30 (30F35, 46L87, 58F06)

Lesokhin, M. M. (*with* Kuptsov, A. I.) Nontriviality of bilinear mappings of divisible semigroups. (Russian) *Semigroups and their homomorphisms (Russian)*, 34–38, *Ross. Gos. Ped. Univ., Leningrad*, 1991. (Summary) **93e:20085** 20M15

Lessard, E. (*with* Loulou, Richard; Savard, Gilles) Computation of cooperative and Stackelberg solutions when players are described by linear programs. *Differential games—developments in modelling and computation (Espoo*, 1990), 285–292, *Lecture Notes in Control and Inform. Sci.*, 156, *Springer, Berlin*, 1991. (*see* **93c:90003**) 90D12 (90C05)

Lesser, Martin A geometrical interpretation of Kane's equations. (English summary) *Proc. Roy. Soc. London Ser. A* **436** (1992), *no.* 1896, 69–87. (David A. Levinson) **93f:70005** 70E99 (53C80, 70F25)

Lesskis, A. G. (*with* Latyshev, A. V.; Yushkanov, A. A.) Exact solution of a problem on the behavior of an electron plasma in a layer of metal in a variable electric field. (Russian. English and Russian summaries) *Teoret. Mat. Fiz.* **90** (1992), *no.* 2, 179–189; *translation in Theoret. and Math. Phys.* **90** (1992), *no.* 2, 119–126. (Summary) **93h:82072** 82D10

Letac, Gérard (*with* Bar-Lev, Shaul K.; Bshouty, Daoud) Natural exponential families and self-decomposability. *Statist. Probab. Lett.* **13** (1992), *no.* 2, 147–152. (Ryuei Nishii) **93c:60012** 60E05 (62E10)

Le Tallec, Patrick (*with* Bourgat, Jean-François; Tidriri, Driss; Qiu, Youchim) Numerical coupling of nonconservative or kinetic models with the conservative compressible Navier-Stokes equations. (English summary) *Fifth International Symposium on Domain Decomposition Methods for Partial Differential Equations (Norfolk, VA*, 1991), 420–440, *SIAM, Philadelphia, PA*, 1992. (*see* **93g:65009**) 76M25 (65M99, 76N10)

— (*with* Cowsar, Lawrence C.; Dean, E. J.; Głowinski, Roland; Li, Chin Hsien; Périaux, Jacques; Wheeler, Mary Fanett) Decomposition principles and their applications in scientific computing. (English summary) *Parallel processing for scientific computing (Houston, TX*, 1991), 213–237, *SIAM, Philadelphia, PA*, 1992. (Summary) **93j:65200** 65N55 (65K10, 65N22, 65Y05)

— (*with* De Roeck, Yann-Hervé; Vidrascu, Marina) A domain-decomposed solver for nonlinear elasticity. (English summary) *Comput. Methods Appl. Mech. Engrg.* **99** (1992),

no. 2-3, 187–207. (Summary) **93g:73109** 73V05 (73–04, 73C50, 73H05)
— (*with* Mani, S.; Rochinha, F. A.) Finite element computation of hyperelastic rods in large displacements. (English and French summaries) *RAIRO Modél. Math. Anal. Numér.* **26** (1992), *no.* 5, 595–625. (N. Gass) **93f:65084** 65N30 (73G05, 73K05, 73V05)
Letavin, M. I. A singularly perturbed problem of metal heating. (Russian. Russian summary) *Zh. Vychisl. Mat. i Mat. Fiz.* **32** (1992), *no.* 9, 1476–1491; *translation in Comput. Math. Math. Phys.* **32** (1992), *no.* 9, 1323–1337 (1993). (Summary) **93m:80008** 80A20 (35Q99)
Lëtchikov, A. V. Random walks in a two-component recurrent environment. (Russian. Russian summary) *Nonlinear oscillations and control theory* (*Russian*), 68–74, 91, 93, *Udmurt. Gos. Univ., Izhevsk*, 1989. (*see* **93m:00031**) 60J15
— Asymptotic properties that hold with probability 1 for one-dimensional random walks in a random environment. (Russian) *Mat. Sb.* **182** (1991), *no.* 12, 1710–1728; *translation in Math. USSR-Sb.* **74** (1993), *no.* 2, 455–473. (Kai Long Ren) **93e:60141** 60J15 (65U05)
— Random walks on one-dimensional quasicrystals. (Russian. English summary) *Teoret. Mat. Fiz.* **88** (1991), *no.* 3, 333–339; *translation in Theoret. and Math. Phys.* **88** (1991), *no.* 3, 908–912 (1992). (Hanna Nencka) **93a:82026** 82B41 (82B44)
Letelier, Patricio S. On the interaction of cosmic strings with gravitational waves. *Classical Quantum Gravity* **9** (1992), *no.* 7, 1707–1710. (Summary) **93c:83038** 83C35 (83F05)
— (*with* Barrabès, Claude; Gramain, André; Lesigne, E.) Geometric inequalities and the hoop conjecture. (English summary) *Classical Quantum Gravity* **9** (1992), *no.* 9, L105–L110. (Richard Hansen) **93f:83068** 83C99
— Topological defects: cosmic strings with multipolar structure. (English summary) *Classical Quantum Gravity* **9** (1992), *no.* 9, 2057–2060. (Summary) **93i:83021** 83C15 (83F05)
Letelier, R. (*with* Díaz Díaz, Gregorio) Uniqueness for viscosity solutions of quasilinear elliptic equations in $\mathbf{R}^N$ without conditions at infinity. *Differential Integral Equations* **5** (1992), *no.* 5, 999–1016. (H. Mete Soner) **93g:35041** 35J60 (35D05)
Letessier, Jean (*with* Ismail, Mourad E. H.; Masson, David R.; Valent, Galliano) Birth and death processes and orthogonal polynomials. *Orthogonal polynomials* (*Columbus, OH*, 1989), 229–255, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 294, *Kluwer Acad. Publ., Dordrecht*, 1990. (Summary) **93c:42021** 42C05 (33C80, 60J80)
— (*with* Ismail, Mourad E. H.; Valent, Galliano) Birth and death processes with absorption. *Internat. J. Math. Math. Sci.* **15** (1992), *no.* 3, 469–480. (Erik A. van Doorn) **93f:60127** 60J80 (33C45, 42C05)
Leth, Steven C. (*with* Keisler, H. Jerome) Meager sets on the hyperfinite time line. *J. Symbolic Logic* **56** (1991), *no.* 1, 71–102. (Nigel J. Cutland) **93a:03074** 03H05 (54H05)
Letizia, M. (*with* Ghione, Franco) Effective divisors of higher rank on a curve and the Siegel formula. *Compositio Math.* **83** (1992), *no.* 2, 147–159. (Nitin Nitsure) **93j:14022** 14G10 (14C20, 14G15, 14H60)
Letniowski, Frank W. Three-dimensional Delaunay triangulations for finite element approximations to a second-order diffusion operator. *SIAM J. Sci. Statist. Comput.* **13** (1992), *no.* 3, 765–770. (Summary) **93a:65153** 65N30
Lett, G. Scott (*with* Mandel, Jan) Domain decomposition preconditioning for *p*-version finite elements with high aspect ratios. *Appl. Numer. Math.* **8** (1991), *no.* 4-5, 411–425. (Lutz Tobiska) **93c:65154** 65N55 (65N30, 65Y05)
Letta, Giorgio (*with* Fuchs, Aimé) Un résultat élémentaire de fiabilité. Application à la formule de Weierstrass sur la fonction gamma. (French summary) [An elementary reliability result. Application to the Weierstrass formula on the gamma function] *Séminaire de Probabilités, XXV*, 316–323, *Lecture Notes in Math.*, 1485, *Springer, Berlin*, 1991. (Walter Schlee) **93k:60034** 60E05 (33B15, 60G30, 60G70, 60K05)
— (*with* Pratelli, Luca) Sur une forme faible d'échangeabilité. (Italian summary) [On a weak form of exchangeability] *Rend. Accad. Naz. Sci. XL Mem. Mat.* (5) **15** (1991), 219–227. (Małgorzata Majsnerowska) **93b:60072** 60G09
Lettieri, Ada (*with* Di Nola, Antonio) Some results on matrix-eigenvectors in distributive lattices. Graphs, designs and combinatorial geometries (Catania, 1989). *J. Combin. Inform. System Sci.* **15** (1990), *no.* 1-4, 178–190. (John Maroulas) **93b:15004** 15A06 (05D99)
— (*with* Biacino, Loredana) L-σ-algebras and L-measures. *Fuzzy Sets and Systems* **44** (1991), *no.* 2, 219–225. (Endre Pap) **93b:28050** 28E10 (04A72)
— (*with* Cignoli, Roberto; Di Nola, Antonio) Priestley duality and quotient lattices of many-valued algebras. (Italian summary) *Rend. Circ. Mat. Palermo* (2) **40** (1991), *no.* 3, 371–384. (Introduction) **93f:06014** 06D99
— (*with* Cavaccini, V.) Some results on hyper-Archimedean MV-algebras. (English summary) *Combinatorics '90* (*Gaeta*, 1990), 71–79, *Ann. Discrete Math.*, 52, *North-Holland, Amsterdam*, 1992. (Summary) **93h:06022** 06D99 (03G25)
— (*with* Belluce, L. P.; Di Nola, Antonio) Subalgebras, direct products and associated lattices of MV-algebras. *Glasgow Math. J.* **34** (1992), *no.* 3, 301–307. (Jerzy Kotas) **93i:03093** 03G25 (06D99)
Lettl, Günter Analogien zwischen Fueters T-Funktion und der Tangensfunktion. [Analogies between Fueter's T-function and the tangent function] *VII. Mathematikertreffen Zagreb-Graz* (*Graz*, 1990), 29–38, *Grazer Math. Ber.*, 313, *Karl-Franzens-Univ. Graz, Graz*, 1991. (Ernst Kleinert) **93a:11096** 11R33 (11G99)
— Stickelberger elements and cotangent numbers. *Exposition. Math.* **10** (1992), *no.* 2, 171–182. (Juraj Kostra) **93g:11111** 11R29 (11R33)
Lê Tuán Hoa A note on projective monomial surfaces. *Math. Nachr.* **154** (1991), 183–188. (J. K. Verma) **93a:14031** 14J25 (13B22, 13H10)
— (*with* Fröberg, Ralf) Segre products and Rees algebras of face rings. *Comm. Algebra* **20** (1992), *no.* 11, 3369–3380. (Gert Naudé) **93j:13006** 13A30 (13H10)
— Reduction numbers and Rees algebras of powers of an ideal. *Proc. Amer. Math. Soc.* **119** (1993), *no.* 2, 415–422. (Aron Simis) **93k:13009** 13A30 (13D45, 13H10)
Letzter, Edward S. Prime and primitive ideals in enveloping algebras of solvable Lie superalgebras. (English summary) *Abelian groups and noncommutative rings*, 237–255, *Contemp. Math.*, 130, *Amer. Math. Soc., Providence, RI*, 1992. (Yu Cai Su) **93i:17003** 17A70 (17B35)
— On the ring extensions arising from completely solvable Lie superalgebras. *J. Algebra* **146** (1992), *no.* 1, 175–189. (Ian M. Musson) **93e:16049** 16S70 (17B35)
— Finite correspondence of spectra in Noetherian ring extensions. *Proc. Amer. Math. Soc.* **116** (1992), *no.* 3, 645–652. (Kenneth A. Brown) **93a:16003** 16D30 (16R20, 16S34, 16W55)
Letzter, Gail Nonisomorphic curves with isomorphic rings of differential operators. *J. London Math. Soc.* (2) **45** (1992), *no.* 1, 17–31. (Kenneth A. Brown) **93f:16029** 16S32 (13N10, 14H45)
Leu, Lii Yuh (*with* Gupta, Shanti S.; Liang, TaChen) Selection of the best with a preliminary test for location-scale parametric models. (English summary) *J. Combin. Inform. System Sci.* **16** (1991), *no.* 2-3, 221–233. (Summary) **93k:62042** 62F07
Leu, Ming Guang On a criterion for the quadratic fields $\mathbf{Q}(\sqrt{(n^2+4)})$ to be of class number two. *Bull. London Math. Soc.* **24** (1992), *no.* 4, 309–312. (Stéphane Louboutin) **93f:11075** 11R21 (11R29)
Leugering, G. (*with* Lagnese, John E.) Uniform energy decay of a class of cantilevered nonlinear beams with nonlinear dissipation at the free end. *Differential equations with applications in biology, physics, and engineering* (*Leibnitz*, 1989), 227–239, *Lecture Notes in Pure and Appl. Math.*, 133, *Dekker, New York*, 1991. (Takashi Narazaki) **93e:35112** 35Q72 (73K05)
— On control and stabilization of a rotating beam by applying moments at the base only. (English summary) *Optimal control of partial differential equations* (*Irsee*, 1990), 182–191, *Lecture Notes in Control and Inform. Sci.*, 149, *Springer, Berlin*, 1991. (*see* **93b:49002**) 93C20 (73K05, 73K50, 93D15)
— (*with* Lagnese, John E.; Schmidt, E. J. P. G.) Modelling and controllability of networks of thin beams. *System modelling and optimization* (*Zurich*, 1991), 467–480, *Lecture Notes in Control and Inform. Sci.*, 180, *Springer, Berlin*, 1992. (From the introduction) **93i:93013** 93A30 (93B05, 93C20)
— A decomposition method for integro-partial differential equations and applications. (English summary) *J. Math. Pures Appl.* (9) **71** (1992), *no.* 6, 561–587. (Summary) **93i:45012** 45K05 (47D06, 47N20, 73B30, 73F15, 73K05, 73K50, 93C20)
Leung, A. K. T. (*with* Mishra, Prateek) Reasoning about simple and exhaustive demand in higher-order lazy languages. *Functional programming languages and computer architecture* (*Cambridge, MA*, 1991), 328–351, *Lecture Notes in Comput. Sci.*, 523, *Springer, Berlin*, 1991. (Summary) **93b:68045** 68Q55 (03B70)
Leung, A. Y. T. (*with* Liu, Y. F.) A generalized complex symmetric eigensolver. *Comput. & Structures* **43** (1992), *no.* 6, 1183–1186. (Summary) **93e:65062** 65F15
— Nonlinear modal analysis of frames by the incremental harmonic-balance method. *Dynamics Stability Systems* **7** (1992), *no.* 1, 43–59. (Summary) **93c:73066** 73K12 (73D25, 73V05)
Leung, Allen *see* **Leung, A. K. T.**
Leung, Anthony Wing Kwok (*with* Xu, Rong Liang) Stability criteria for multiple limit cycles. (English summary) *Dynamic Systems Appl.* **1** (1992), *no.* 3, 283–315. (Josef Hainzl) **93i:58126** 58F21 (34C25, 34D99, 58F10)
— *see also* **Zhang, Zhi Fen et al., 93h:34002**
Leung, Chi-Ying Proportion estimation in mixtures with covariates. (English summary) *Comm. Statist. Theory Methods* **21** (1992), *no.* 11, 3123–3141. (Summary) **93j:62067** 62F10 (62P10)
Leung, Denny H. Embedding l^1 into tensor products of Banach spaces. *Functional analysis* (*Austin, TX*, 1987/1989), 171–176, *Lecture Notes in Math.*, 1470, *Springer, Berlin*, 1991. (P. Saphar) **93i:46134** 46M05 (46B20)
— Embedding $l^{p,\infty}$ into $L^{p,\infty}[0,1]$ complementably. *Bull. London Math. Soc.* **23** (1991), *no.* 6, 583–586. (Mikhail Ostrovskii) **93b:46037** 46B45 (46E30)
— $l^{p,\infty}$ has a complemented subspace isomorphic to l^2. (English summary) *Rocky Mountain J. Math.* **22** (1992), *no.* 3, 943–952. (Wolfgang Lusky) **93j:46013** 46B15 (46B45, 46E30)
Leung, Hing On some decision problems in finite automata. *Monoids and semigroups with applications* (*Berkeley, CA*, 1989), 509–526, *World Sci. Publishing, River Edge, NJ*, 1991. (Summary) **93b:68057** 68Q70 (03D05, 20M35)
Leung, Issic K. C. (*with* Shivakumar, P. N.) On some higher order derivatives of solutions of $y'' + p(x)y = 0$. *Utilitas Math.* **41** (1992), 3–10. (Summary) **93b:34032** 34A99 (34A50, 34C10)
Leung, Joseph Y.-T. (*with* Du, Jianzhong; Wong, Chin Siong) Minimizing the number of late jobs with release time constraint. *J. Combin. Math. Combin. Comput.* **11** (1992), 97–107. (Summary) **93a:90029** 90B35
— (*with* Hong, Kwang S.) Some results on Liu's conjecture. (English summary) *SIAM J. Discrete Math.* **5** (1992), *no.* 4, 500–523. (Jacek Błażewicz) **93i:90053** 90B35
— (*with* Du, Jianzhong) Minimizing mean flow time in two-machine open shops and flow shops. (English summary) *J. Algorithms* **14** (1993), *no.* 1, 24–44. (Summary) **93i:90050** 90B35 (68Q25)
— (*with* Du, Jianzhong) Minimizing mean flow time with release time and deadline constraints. (English summary) *J. Algorithms* **14** (1993), *no.* 1, 45–68. 90B35 (68M20)
Leung, Ka Hin (*with* Ma, Siu Lun; Wong, Yan Loi) Difference sets in dihedral groups. *Des. Codes Cryptogr.* **1** (1991), *no.* 4, 333–338. (R. C. Mullin) **93b:05022** 05B10 (20F55)
Leung, Kin K. An execution/sleep scheduling policy for serving an additional job in priority queuing systems. (English summary) *J. Assoc. Comput. Mach.* **40** (1993), *no.* 2, 394–417. 68M20 (90B22)
Leung, Pui Lam Estimation of eigenvalues of the scale matrix of the multivariate F distribution. *Comm. Statist. Theory Methods* **21** (1992), *no.* 7, 1845–1856. (Summary) **93e:62027** 62C15 (62H12)
van de Leur, Johan (*with* Kac, Victor G.) On classification of superconformal algebras. *Strings '88* (*College Park, MD*, 1988), 77–106, *World Sci. Publishing, Teaneck, NJ*, 1989. (From the introduction) **93e:17004** 17A70 (17B68, 81R10, 81T40)
— (*with* ten Kroode, Fons) Bosonic and fermionic realizations of the affine algebra $\widehat{so}_{2n}$. (English summary) *Comm. Algebra* **20** (1992), *no.* 11, 3119–3162. (Chong Ying Dong) **93j:17050** 17B67 (22E65)
Leurgans, Sue (*with* Ross, Robert T.) Multilinear models: applications in spectroscopy. (English summary) With comments by Jan de Leeuw, Pieter M. Kroonenberg and Donald S. Burdick and a rejoinder by the authors. *Statist. Sci.* **7** (1992), *no.* 3, 289–319. (Summary) **93e:62164** 62H99
— *see also* **Hjort, Nils Lid, (93b:62005)** *and* **Lee, Eric W. et al., (93b:62005)**
Leutwiler, Heinz (*with* Bandle, Catherine) On a quasilinear elliptic equation and a Riemannian metric invariant under Möbius transformations. *Aequationes Math.* **42** (1991), *no.* 2-3, 166–181. (Juan J. Manfredi) **93a:35044** 35J60 (53A30, 53C21)
— Modified Clifford analysis. *Complex Variables Theory Appl.* **17** (1992), *no.* 3-4, 153–171. (Wolfgang Sprössig) **93g:30067** 30G35 (15A66)

Leutwyler, H. Chiral effective Lagrangians. *Recent aspects of quantum fields* (*Schladming*, 1991), 1–37, *Lecture Notes in Phys.*, 396, *Springer, Berlin*, 1991. (*see* **93d:81005**) 81T13 (81–02, 81V25)

— (*with* Shifman, M.) Perturbation theory in the Wess-Zumino-Novikov-Witten model. *Internat. J. Modern Phys. A* **7** (1992), *no.* 4, 795–841. (From the introduction) **93g:81104** 81T15 (81T40)

— (*with* Smilga, A. V.) Spectrum of Dirac operator and role of winding number in QCD. (English summary) *Phys. Rev. D* (3) **46** (1992), *no.* 12, 5607–5632. (Summary) **93i:81292** 81V05 (58G25, 58Z05)

Leuze, Michael R. *see* **Parallel processing for scientific computing, 93k:65003**

Leuzinger, Enrico Sur une nouvelle classe d'actions d'Anosov. (English summary) [On a new class of Anosov actions] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 1, 65–68. (M. Rees) **93j:58103** 58F15 (43A85)

— On the trigonometry of symmetric spaces. *Comment. Math. Helv.* **67** (1992), *no.* 2, 252–286. (Philippos J. Xenos) **93h:53054** 53C35

Lev, Arieh (*with* Kozma, Gady) Bases and decomposition numbers of finite groups. *Arch. Math. (Basel)* **58** (1992), *no.* 5, 417–424. (Michael E. Mays) **93a:20035** 20D60

— On large subgroups of finite groups. *J. Algebra* **152** (1992), *no.* 2, 434–438. (Gerhard Kowol) **93m:20030** 20D60 (20E07)

Lev, F. M. Finiteness of physics and its possible consequences. (English summary) *J. Math. Phys.* **34** (1993), *no.* 2, 490–527. (A. U. Klimyk) **93k:81074** 81R05 (11Z50, 17B81)

bar-Lev, Shaul K. *see* **Bar-Lev, Shaul K.**

Le Van, Cuong Lagging and unlagging theorems: a quasi-equivalence. (English summary) *Comput. Math. Appl.* **24** (1992), *no.* 8-9, 149–156. (Summary) **93g:90020** 90A16

Le Van Bang (*with* Prisner, Erich) On inverse problems for the cycle graph operator. *Graphs Combin.* **8** (1992), *no.* 2, 155–164. (Summary) **93k:05094** 05C38

Le Van Hoang On the Green function for the MIC-Kepler problem. (Russian. English and Russian summaries) *Vestsī Akad. Navuk Belarusī Ser. Fīz. Mat. Navuk* **1992,** *no.* 2, 76–80, 127. (Summary) **93k:81130** 81S40 (81Q05)

Levasseur, Thierry Some properties of noncommutative regular graded rings. *Glasgow Math. J.* **34** (1992), *no.* 3, 277–300. (Michel Van den Bergh) **93k:16045** 16P90 (16W50)

Levatin, Joanne A. (*with* Hoover, William G.; Hoover, Carol G.; Evans, Will J.; Moran, William; Craig, Errol A.) Irreversible processes from reversible mechanics. *Microscopic simulations of complex flows* (*Brussels*, 1989), 199–231, *NATO Adv. Sci. Inst. Ser. B Phys.*, 236, *Plenum, New York*, 1990. (Summary) **93a:82035** 82C05 (58F13, 58F40)

Lévay, Péter Quaternionic gauge fields and the geometric phase. *J. Math. Phys.* **32** (1991), *no.* 9, 2347–2357. (Summary) **93b:81162** 81T13 (58Z05)

Levchenko, E. P. (*with* Khruslov, E. Ya.) Inverse problems of magnetotelluric sounding in the case of horizontal propagation of generating waves. (Russian) *Izv. Akad. Nauk SSSR Ser. Fiz. Zemli* **1991,** *no.* 12, 73–83. (From the introduction) **93e:86004** 86A22 (34A55, 34L25, 86–04, 86–08, 86A25)

Levchenkov, A. Yu. A problem of the simple pursuit of one object by two objects under various constraints on the control. (Russian) *Analysis and design of dynamical systems under conditions of uncertainty* (*Russian*), 41–46, *Moskov. Aviatsion. Inst., Moscow*, 1990. (*see* **93g:00022**) 90D26

— (*with* Pashkov, A. G.; Terekhov, S. D.) A construction of the value function in some differential games of approach with two pursuers and one evader. (English summary) *Differential games—developments in modelling and computation* (*Espoo*, 1990), 38–47, *Lecture Notes in Control and Inform. Sci.*, 156, *Springer, Berlin*, 1991. (Summary) **93g:90105** 90D26

Levchuk, V. M. Automorphisms of the group of invertible triangular matrices over a ring. (Russian) *Permanents: theory and applications* (*Russian*), 39–46, *Krasnoyarsk. Politekhn. Inst., Krasnoyarsk*, 1990. (S. Lajos) **93f:15010** 15A30

— Chevalley groups and their unipotent subgroups. *Proceedings of the International Conference on Algebra, Part* 1 (*Novosibirsk*, 1989), 227–242, *Contemp. Math.*, 131, *Part* 1, *Amer. Math. Soc., Providence, RI*, 1992. (A. S. Kondrat'ev) **93g:20031** 20D06 (20G35, 20G40)

— The commutator structure of certain subgroups of the Chevalley groups. (Russian. Russian and Ukrainian summaries) *Ukraïn. Mat. Zh.* **44** (1992), *no.* 6, 786–795; *translation in Ukrainian Math. J.* **44** (1992), *no.* 6, 710–718 (1993). (N. F. Kuzennyi) **93k:20038** 20D25 (20G40)

Levcopoulos, Christos (*with* Lingas, Andrzej) There are planar graphs almost as good as the complete graphs and almost as cheap as minimum spanning trees. (English summary) *Algorithmica* **8** (1992), *no.* 3, 251–256. (Summary) **93i:05124** 05C85 (05C10, 68R10)

— (*with* Lingas, Andrzej) Fast algorithms for greedy triangulation. *BIT* **32** (1992), *no.* 2, 280–296. (Gerard J. Chang) **93f:05039** 05C10 (05C85, 52B55, 68U05)

— (*with* Petersson, Ola) Matching parentheses in parallel. (English summary) *Discrete Appl. Math.* **40** (1992), *no.* 3, 423–431. (Summary) **93i:68078** 68Q22

Levcovitz, Daniel (*with* Hefez, Abramo) About inseparable morphisms. *Comm. Algebra* **21** (1993), *no.* 3, 1023–1028. (From the introduction) **93m:14014** 14E22

Levelt, A. H. M. (*with* van den Essen, Arno) An explicit description of all simple $k[\![x]\!][\partial]$-modules. (English summary) *Abelian groups and noncommutative rings*, 121–131, *Contemp. Math.*, 130, *Amer. Math. Soc., Providence, RI*, 1992. (Martin P. Holland) **93f:16028** 16S32 (13N10)

Levenberg, N. (*with* Martin, Gaven J.; Poletskiĭ, E. A.) Analytic disks and pluripolar sets. *Indiana Univ. Math. J.* **41** (1992), *no.* 2, 515–532. (Julià Cufí) **93h:46075** 46J15 (30D15)

— (*with* Bloom, Thomas; Bos, L. P.; Christensen, C.) Polynomial interpolation of holomorphic functions in **C** and $\mathbf{C}^n$. *Rocky Mountain J. Math.* **22** (1992), *no.* 2, 441–470. (Ahmed Zeriahi) **93i:32016** 32E30 (30E05)

Levendorskiĭ, S. Z. Twisted function algebras on a compact quantum group and their representations. (Russian) *Algebra i Analiz* **3** (1991), *no.* 2, 180–198; *translation in St. Petersburg Math. J.* **3** (1992), *no.* 2, 405–423. (Sergei Spirin) **93g:58010** 58B30 (17B37, 46J10, 46L87, 58F05)

— (*with* Soĭbel'man, Ya. S.) The quantum Weyl group and a multiplicative formula for the R-matrix of a simple Lie algebra. (Russian) *Funktsional. Anal. i Prilozhen.* **25** (1991), *no.* 2, 73–76; *translation in Functional Anal. Appl.* **25** (1991), *no.* 2, 143–145. (J. S. Joel) **93a:17017** 17B37

— An algebra of boundary value problems for a class of pseudodifferential operators of variable order. (Russian) *Izv. Akad. Nauk SSSR Ser. Mat.* **55** (1991), *no.* 1, 134–158; *translation in Math. USSR-Izv.* **38** (1992), *no.* 1, 131–154. (From the introduction) **93f:47065** 47G30 (47A53, 47F05, 47N20)

— A class of elliptic operators that degenerate in nonpower fashion on the boundary. (Russian. Russian summary) *Sibirsk. Mat. Zh.* **33** (1992), *no.* 5, 91–99, 222; *translation in Siberian Math. J.* **33** (1992), *no.* 5, 826–834 (1993). (Yu. V. Kostarchuk) **93k:35114** 35J70 (47F05)

Levene, Mark (*with* Loizou, George) Inferring null join dependencies in relational databases. (English summary) *BIT* **32** (1992), *no.* 3, 413–429. (Summary) **93m:68043** 68P15

Levenshtein, V. I. Designs as maximum codes in polynomial metric spaces. (English summary) Interactions between algebra and combinatorics. *Acta Appl. Math.* **29** (1992), *no.* 1-2, 1–82. (Michael Klemm) **93j:05012** 05B05 (94B65)

Leventides, John (*with* Karcanias, Nicos) A new sufficient condition for arbitrary pole placement by real constant output feedback. *Systems Control Lett.* **18** (1992), *no.* 3, 191–199. (Summary) **93a:93057** 93B55 (93B27)

LeVeque, Randall J. Cartesian grids and rotated difference methods for multi-dimensional flow. (English summary) *Proceedings of International Conference on Scientific Computation* (*Hangzhou*, 1991), 76–85, *Ser. Appl. Math.*, 1, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93g:65119** 65M50 (65M06, 76M20)

— (*with* Beyer, R. P.) Analysis of a one-dimensional model for the immersed boundary method. *SIAM J. Numer. Anal.* **29** (1992), *no.* 2, 332–364. (Dennis C. Jespersen) **93a:65123** 65M15 (76D05, 76M99, 76Z05)

Levermore, C. David (*with* Jin, Shi) The discrete-ordinate method in diffusive regimes. *Transport Theory Statist. Phys.* **20** (1991), *no.* 5-6, 413–439. (Marvin L. Adams) **93c:35004** 35A40 (65D30, 65N99, 82C70)

— (*with* Bayly, Bruce; Passot, T.) Density variations in weakly compressible flows. *Phys. Fluids A* **4** (1992), *no.* 5, 945–954. (Summary) **93a:76049** 76F05 (76N10, 85A30)

Levesque, Claude Groupe des unités de certains corps de degré 4 et de degré 8 sur **Q**. (English summary) [Unit group of certain fields of degree 4 and 8 over **Q**] *Utilitas Math.* **39** (1991), 191–209. (Constantine Kliorys) **93c:11098** 11R27 (11R16)

— Truncated units. *J. Number Theory* **41** (1992), *no.* 1, 48–68. (Jonathan W. Sands) **93b:11143** 11R27

Levesque, Hector J. Foundations of a functional approach to knowledge representation. *Reflexivity*, 285–342, *North-Holland, Amsterdam*, 1992. (*see* **93g:03005**) 68T30 (03A05)

— *see also* **Knowledge representation, 93e:68003**

Levi, A. R. An alternative approach to ergodic systems in thermal equilibrium with a reservoir. *Phys. Lett. A* **160** (1991), *no.* 1, 21–24. (Marc Henneaux) **93b:82009** 82B10

Levi, Beppo *see* **Coen, Salvatore, 93b:30002**

Levi, D. Lattice equations with n-dependent coefficients associated to the discrete Schroedinger spectral problem. *Nonlinear evolution equations and dynamical systems* (*Baia Verde*, 1991), 225–232, *World Sci. Publishing, River Edge, NJ*, 1992. (Mehmet Can) **93k:34153** 34K10 (35J10, 35P25, 35Q58, 39A12)

— (*with* Rodríguez, Miguel A.) Symmetry group of partial differential equations and of differential-difference equations: the Toda lattice versus the Korteweg-de Vries equation. (English summary) *J. Phys. A* **25** (1992), *no.* 15, L975–L979. (Summary) **93e:35097** 35Q53 (34K99, 35Q51)

simchi-Levi, David *see* **Simchi-Levi, David**

Levi, Giorgio (*with* Bossi, A.; Gabbrielli, Maurizio; Meo, M. C.) Contributions to the semantics of open logic programs. (English summary) *Fifth generation computer systems, Vol.* 1, 2 (*Tokyo*, 1992), 570–580, *Ohm, Tokyo*, 1992. (*see* **93i:68007**) 68N17 (68Q55)

— (*with* Giacobazzi, Roberto; Debray, Saumya K.) A generalized semantics for constraint logic programs. (English summary) *Fifth generation computer systems, Vol.* 1, 2 (*Tokyo*, 1992), 581–591, *Ohm, Tokyo*, 1992. (*see* **93i:68007**) 68N17 (68Q55)

— (*with* Gabbrielli, Maurizio) Unfolding and fixpoint semantics of concurrent constraint logic programs. (English summary) Second International Conference on Algebraic and Logic Programming (Nancy, 1990). *Theoret. Comput. Sci.* **105** (1992), *no.* 1, 85–128. (Gabriel Ciobanu) **93m:68030** 68N17 (68Q55)

— (*with* Alpuente Frasnedo, María; Falaschi, Moreno; Gabbrielli, Maurizio) The semantics of equational logic programming as an instance of CLP. (English summary) *Logic programming languages*, 49–81, *MIT Press, Cambridge, MA*, 1993. (*see* **93k:68020**) 68N17

Levi, Inessa Injective endomorphisms of $\mathscr{I}_X$-normal semigroups: infinite defects. *Semigroup Forum* **45** (1992), *no.* 1, 9–22. (K. D. Magill, Jr.) **93b:20107** 20M20

Levi, Isaac (*with* Kadane, Joseph B.; Seidenfeld, Teddy) Elicitation for games. *Knowledge, belief, and strategic interaction* (*Castiglioncello*, 1989), 21–26, *Cambridge Stud. Probab. Induc. Decis. Theory, Cambridge Univ. Press, Cambridge*, 1992. (*see* **93i:90006**) 90D40

Levi, Mark L. Quasiperiodic motions in superquadratic time-periodic potentials. *Comm. Math. Phys.* **143** (1991), *no.* 1, 43–83. (Alessandra Celletti) **93i:34080** 34C27 (70H05, 70K99)

— On Littlewood's counterexample of unbounded motions in superquadratic potentials. *Dynamics reported: expositions in dynamical systems*, 113–124, *Dynam. Report. (N.S.)*, 1, *Springer, Berlin*, 1992. (L. Håkan Eliasson) **93c:34080** 34C11 (70K99)

— Invariant foliations in forced oscillations. *Geometry and analysis in nonlinear dynamics* (*Groningen*, 1989), 34–40, *Pitman Res. Notes Math. Ser.*, 222, *Longman Sci. Tech., Harlow*, 1992. (From the introduction) **93e:34049** 34C15 (58F18, 70K40)

— (*with* Laederich, Stephane) Qualitative dynamics of planar chains. *Phys. D* **54** (1992), *no.* 3, 173–182. (Galina G. Okuneva) **93a:58102** 58F10 (58F22, 70E99, 70F99, 70K99)

Levi, S. (*with* Lucchetti, Roberto; Pelant, Jan) On the infimum of the Hausdorff and Vietoris topologies. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 3, 971–978. (A. G. Hitchcock) **93m:54022** 54B20 (54E35)

Leviant, V. M. (*with* Ivanov, Evgeniĭ Alekseevich[2]; Krivonos, S. O.) $N = 3$ and $N = 4$ superconformal WZNW sigma models in superspace. II. The $N = 4$ case. *Internat. J. Modern Phys. A* **7** (1992), *no.* 2, 287–316. (Sergey Merkulov) **93c:81209** 81T40 (17B81, 81R10)

Leviatan, A. (*with* Alhassid, Y.) Partial dynamical symmetry. (English summary) *J. Phys. A* **25** (1992), *no.* 23, L1265–L1271. (Summary) **93k:81069** 81R05 (22E70, 81V35)

Leviatan, Dany Improved estimates in Müntz-Jackson theorems. *Progress in approximation theory*, 575–582, *Academic Press, Boston, MA*, 1991. (D. J. Leeming) **93c:41014** 41A10 (41A25)

— (*with* DeVore, Ronald A.; Yu, Xiang Ming) Polynomial approximation in L_p $(0 < p < 1)$. *Constr. Approx.* **8** (1992), *no.* 2, 187–201. (J. Szabados) **93f:41011** 41A10

— (*with* Ditzian, Z.; Jiang, D.) Shape-preserving polynomial approximation in $C[-1, 1]$. *Math. Proc. Cambridge Philos. Soc.* **112** (1992), *no.* 2, 309–316. (B. Boyanov) **93h:41010** 41A10 (41A25)

— *see also* **Approximation interpolation and summability, 93k:41001**

Levichev, A. V. Three totally vicious homogeneous Lorentzian spaces. Siberian Advances in Mathematics. *Siberian Adv. Math.* **2** (1992), *no.* 1, 133–143. (Summary) **93f:53058** 53C50 (83C22)

— A time machine in the MTT-universe. (Russian) *Sibirsk. Mat. Zh.* **33** (1992), *no.* 1, 205–207, 222; *translation in Siberian Math. J.* **33** (1992), *no.* 1, 169–171. (Summary) **93d:83020** 83C22

Levikson, Benny (*with* Assaf, David) Optimal advertising policy for selling a single asset. *Probab. Engrg. Inform. Sci.* **5** (1991), *no.* 1, 89–100. (Syed N. U. A. Kirmani) **93f:90049** 90A60 (90B60, 90C40)

Levin, A. B. (*with* Mikhalëv, A. V.) Dimension polynomials of differential modules. (Russian. Russian summary) *Abelian groups and modules, No.* 9 (*Russian*), 51–67, 156–157, *Tomsk. Gos. Univ., Tomsk*, 1990. (Andrzej Nowicki) **93k:12013** 12H05

— (*with* Mikhalëv, A. V.) Dimensional polynomials of differential-difference modules and extensions of differential-difference fields. (Russian. English and Russian summaries) *Abelian groups and modules, No.* 10 (*Russian*), 56–82, 184, 190, *Tomsk. Gos. Univ., Tomsk*, 1991. (Summary) **93i:12011** 12H05 (12H10)

— (*with* Mikhalëv, A. V.) Type and dimension of finitely generated vector G-spaces. (Russian) *Vestnik Moskov. Univ. Ser. I Mat. Mekh.* **1991**, *no.* 4, 72–74; *translation in Moscow Univ. Math. Bull.* **46** (1991), *no.* 4, 51–52. 16D99

— (*with* Kondrat'eva, M. V.; Mikhalëv, A. V.; Pankrat'ev, E. V.) Computation of dimension polynomials. (English summary) *Internat. J. Algebra Comput.* **2** (1992), *no.* 2, 117–137. (Andrzej Nowicki) **93k:12012** 12H05 (12Y05)

Levin, A. G. (*with* Rabinovich, E. B.) Approximate algorithms for planarization of hypergraphs. (Russian. English and Russian summaries) *Vestst Akad. Navuk Belarusi Ser. Fiz. Mat. Navuk* **1992**, *no.* 2, 110–116, 128. (Summary) **93h:68114** 68R10 (05C85, 68Q35)

Levin, A. G. Lyapunov function construction for systems connected by a common coordinate. *J. Comput. Systems Sci. Internat.* **31** (1993), *no.* 1, 36–42; *translated from Izv. Akad. Nauk SSSR Tekhn. Kibernet.* **1991**, *no.* 4, 39–46 (*Russian. Russian summary*). (Summary) **93m:93065** 93D05 (34D20, 93A14)

Levin, A. L. (*with* Saff, E. B.) Generalization of the Gonchar inequality for rational functions to the case of the L_p metric. (Russian. Russian summary) *Mat. Sb.* **183** (1992), *no.* 6, 97–110. (Peter Boyadjiev) **93k:30065** 30E10 (31A15)

Levin, A. M. Regularization algorithms for solving ill-posed criterion problems. (English summary) *Ill-posed problems in natural sciences* (*Moscow*, 1991), 84–87, *VSP, Utrecht*, 1992. (*see* **93m:00041**) 90C30 (65J05, 65K05)

Levin, A. Yu. Absolute nonoscillation stability and related problems. (Russian) *Algebra i Analiz* **4** (1992), *no.* 1, 154–166. (B. Shekhter) **93f:34056** 34C10 (34C11, 34D05)

Levin, B. Ya. (*with* Gol'dberg, A. A.; Ostrovskiĭ, I. V.) Entire and meromorphic functions. (Russian) *Complex analysis. One variable*, 1 (*Russian*), 5–185, 256, *Itogi Nauki i Tekhniki, Akad. Nauk SSSR, Vsesoyuz. Inst. Nauchn. i Tekhn. Inform., Moscow*, 1991. (W. H. J. Fuchs) **93a:30031** 30D20 (30D30, 30D35)

— (*with* Aizenberg, L. A.; Gol'dberg, A. A.; et al.) Lev Isaakovich Ronkin (on the occasion of his sixtieth birthday). (Russian) *Uspekhi Mat. Nauk* **46** (1991), *no.* 5(281), 181–183; *translation in Russian Math. Surveys* **46** (1991), *no.* 5, 207–209. (Editors) **93e:01016** 01A70

— *see also* **Entire and subharmonic functions, 93e:30007**

Levin, Bruce Tests of odds ratio homogeneity with improved power in sparse fourfold tables. *Comm. Statist. Theory Methods* **21** (1992), *no.* 6, 1469–1500. (Summary) **93e:62153** 62H17 (62F03)

Levin, D. *see* **Levin, David**

Levin, D. A. (*with* Pykh, Yu. A.) Application of the method of "generated splines" for solving equations of turbulent heat and water exchange in plant cover. (Russian) *Dokl. Akad. Nauk SSSR* **319** (1991), *no.* 1, 113–116; *translation in Soviet Phys. Dokl.* **36** (1991), *no.* 7, 491–492 (1992). (From the text) **93a:92003** 92C05 (92–08)

Levin, David (*with* Dyn, Nira) Stationary and nonstationary binary subdivision schemes. *Mathematical methods in computer aided geometric design, II* (*Biri*, 1991), 209–216, *Academic Press, Boston, MA*, 1992. (*see* **93d:65022**) 65D17 (65D10)

— (*with* Dyn, Nira; Yad-Shalom, I.) Conditions for regular B-spline curves and surfaces. (French summary) Topics in computer aided geometric design (Erice, 1990). *RAIRO Modél. Math. Anal. Numér.* **26** (1992), *no.* 1, 177–190. (Geng Zhe Chang) **93f:41004** 41A05 (41A15, 65D07)

Levin, Genadii Mironovich Symmetries on a Julia set. *Dynamical systems and statistical mechanics* (*Moscow*, 1991), 131–142, *Adv. Soviet Math.*, 3, *Amer. Math. Soc., Providence, RI*, 1991. (Introduction) **93d:58135** 58F23 (30D05)

— (*with* Sodin, M. L.; Yuditskiĭ, P. M.) A Ruelle operator for a real Julia set. *Comm. Math. Phys.* **141** (1991), *no.* 1, 119–132. (Tim Bedford) **93c:58114** 58F11 (58F15, 58F23)

Levin, M. P. (*with* Sidorov, L. V.) ★ Расчет сверхзвуковых течений в пирамидальных соплах. (Russian) [Computation of supersonic flows in pyramidal nozzles] With an English summary. Сообщения по Прикладной Математике. [Reports in Applied Mathematics] *Ross. Akad. Nauk, Vychisl. Tsentr, Moscow*, 1991. 28 *pp.* (Summary) **93a:76061** 76J20 (76M20, 76N15)

— (*with* Sidorov, L. V.) A method for calculating three-dimensional supersonic flows in pyramidal nozzles. (Russian. Russian summary) *Zh. Vychisl. Mat. i Mat. Fiz.* **32** (1992), *no.* 7, 1138–1142; *translation in Comput. Math. Math. Phys.* **32** (1992), *no.* 7, 1023–1026. (Summary) **93h:76051** 76M20 (76J20)

— A quasicharacteristic difference scheme and its application for computing supersonic gas flows. (Russian. Russian summary) *Zh. Vychisl. Mat. i Mat. Fiz.* **33** (1993), *no.* 1, 131–141; *translation in Comput. Math. Math. Phys.* **33** (1993), *no.* 1, 113–121. (Reinhard Redlinger) **93m:65137** 65M25 (35L99, 76J20, 76M20)

Levin, Michael E. Still a horse-race. *Hist. Philos. Logic* **13** (1992), *no.* 1, 111–114. (Murray Kiteley) **93d:03013** 03A05 (03B65)

Levin, Orit (*with* Neuman, S. P.; Orr, S.; Paleologos, E.) Theory and high-resolution finite element analysis of 2-D and 3-D effective permeabilities in strongly heterogeneous porous media. (English summary) *Computational methods in water resources, IX, Vol.* 2 (*Denver, CO*, 1992), 117–136, *Comput. Mech., Southampton*, 1992. (*see* **93g:76003**) 76S05 (76M10)

— (*with* Peleg, Yoav; Peres, Asher) Quantum detector in an accelerated cavity. (English summary) *J. Phys. A* **25** (1992), *no.* 23, 6471–6481. (Enric Verdaguer) **93m:83043** 83C47 (81T20, 81V17)

Levin, P. L. (*with* Beatovic, D.; Gan, H.; Kokernak, J. M.; Hansen, A. J.) Numerical analysis of open boundary problems using finite element substructuring and Galerkin boundary elements. *COMPEL* **11** (1992), *no.* 2, 295–309. (Summary) **93c:65139** 65N30 (65N38)

Levin, Stewart A. (*with* Dodson, David S.) A tricyclic tridiagonal equation solver. (English summary) *SIAM J. Matrix Anal. Appl.* **13** (1992), *no.* 4, 1246–1254. (Summary) **93g:65176** 65Y05 (65F05)

Levin, Vitaliĭ Il'ich Discrete optimization under conditions of interval uncertainty. (Russian. Russian summary) *Avtomat. i Telemekh.* **1992**, *no.* 7, 97–106; *translation in Automat. Remote Control* **53** (1992), *no.* 7, *part* 2, 1039–1047. (Summary) **93i:90069** 90C10 (90C31)

— Calculation of dynamical processes in discrete automata with indeterminate parameters by means of nondeterministic infinite-valued logic. (Russian. English and Ukrainian summaries) *Kibernet. Sistem. Anal.* **1992**, *no.* 3, 15–30, 187; *translation in Cybernet. Systems Anal.* **28** (1992), *no.* 3, 335–347 (1993). 68Q70

Levine, A. (*with* Liukkonen, J.; Levine, D. W.) Predicting power changes under transformations in ANOVA tests. *Comm. Statist. Theory Methods* **21** (1992), *no.* 3, 679–692. (Jerome Senturia) **93f:62098** 62J10 (62F03)

Levine, D. W. (*with* Levine, A.; Liukkonen, J.) Predicting power changes under transformations in ANOVA tests. *Comm. Statist. Theory Methods* **21** (1992), *no.* 3, 679–692. (Jerome Senturia) **93f:62098** 62J10 (62F03)

Levine, David B. (*with* Bentley, Jon Louis; Clarkson, Kenneth L.) Fast linear expected-time algorithms for computing maxima and convex hulls. (English summary) *Algorithmica* **9** (1993), *no.* 2, 168–183. (Summary) **93m:68161** 68U05 (68Q25)

Levine, David K. (*with* Fudenberg, Drew) Maintaining a reputation when strategies are imperfectly observed. *Rev. Econom. Stud.* **59** (1992), *no.* 3, 561–579. (Jos Potters) **93i:90115** 90D05 (90D40)

— (*with* Fudenberg, Drew) Self-confirming equilibrium. (English summary) *Econometrica* **61** (1993), *no.* 3, 523–545. (Summary) **93m:90114** 90D10

— (*with* Fudenberg, Drew) Steady state learning and Nash equilibrium. (English summary) *Econometrica* **61** (1993), *no.* 3, 547–573. (Summary) **93m:90115** 90D10

Levine, Eugene (*with* Eswarathasan, Arulappah) p-integral harmonic sums. *Discrete Math.* **91** (1991), *no.* 3, 249–257. (Ronald J. Evans) **93b:11039** 11D68 (11A41)

Levine, Herbert *see* **Asymptotics beyond all orders, 93i:00016**

Levine, Howard A. Fujita type theorems for weakly coupled parabolic systems. *Progress in partial differential equations: elliptic and parabolic problems* (*Pont-à-Mousson*, 1991), 43–55, *Pitman Res. Notes Math. Ser.*, 266, *Longman Sci. Tech., Harlow*, 1992. (*see* **93f:35007**) 35K55 (35K45)

— (*with* Escobedo, Miguel) Explosion et existence globale pour un système faiblement couplé d'équations de réaction diffusion. (English summary) [Blow up and global existence for a weakly coupled reaction-diffusion system] *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 10, 735–739. (Elena Comparini) **93f:35095** 35K45 (35B05, 35K05, 35K57)

— (*with* Fila, Marek; Kawohl, Bernhard) Quenching for quasilinear equations. *Comm. Partial Differential Equations* **17** (1992), *no.* 3-4, 593–614. (Zhen Chao Cao) **93f:35101** 35K55 (35B05, 35B30, 35K60)

— (*with* Fila, Marek; Vázquez, Juan Luis) Stabilization of solutions of weakly singular quenching problems. *Proc. Amer. Math. Soc.* **119** (1993), *no.* 2, 555–559. (Yisong Yang) **93k:35146** 35K60 (35B65, 35D05)

— (*with* Kawohl, Bernhard; Velte, Waldemar) Buckling eigenvalues for a clamped plate embedded in an elastic medium and related questions. (English summary) *SIAM J. Math. Anal.* **24** (1993), *no.* 2, 327–340. (Summary) **93j:35121** 35P15 (35J40, 49R05, 73H05, 73K10)

Lévine, J. *see* **Lévine, Jean**

Levine, Jack (*with* Katzin, Gerald H.) Use of the characteristic functional structure of a symmetry mapping to obtain (by means of a related integral theorem) a prescribed deformation of a given set of constants of motion of a dynamical system. *Tensor* (*N.S.*) **50** (1991), *no.* 2, 110–121. (Frans Cantrijn) **93e:58165** 58F35 (34A26, 34A99)

— (*with* Chandler, Richard) The two-message problem in the Hill cryptographic system with unknown cipher alphabet. (English summary) *Cryptologia* **17** (1993), *no.* 1, 1–30. (Summary) **93m:94019** 94A60

Lévine, Jean Finite-dimensional realizations of stochastic PDEs and application to filtering. *Stochastics Stochastics Rep.* **37** (1991), *no.* 1-2, 75–103. (Katsuji Uosaki) **93d:93023** 93B15 (60H15, 93B20, 93C20, 93E11)

— (*with* Fliess, Michel; Rouchon, Pierre) Index of a general differential-algebraic implicit system. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, II* (*Kobe*, 1991), 289–294, *Mita, Tokyo*, 1992. (Summary) **93k:93029** 93B28 (34A09, 34A34)

— (*with* Fliess, Michel; Martin, Philippe; Rouchon, Pierre) Sur les systèmes non linéaires différentiellement plats. (English and French summaries) [On differentially flat nonlinear systems] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 5, 619–624. (Izabela Steckiewicz) **93j:93029** 93B18 (12H05, 34A34, 34H05, 93B25)

— (*with* Fliess, Michel; Martin, Philippe; Rouchon, Pierre) Défaut d'un système non linéaire et commande haute fréquence. (English and French summaries) [Defect of a nonlinear system and high-frequency control] *C. R. Acad. Sci. Paris Sér. I Math.* **316** (1993), *no.* 5, 513–518. (Summary) **93j:93070** 93C10

Levine, Lenore Regular language invariance under one-dimensional cellular automaton rules. *Complex Systems* **6** (1992), *no.* 2, 163–178. (Ivan Korec) **93f:68069** 68Q80

Levine, Marc Deligne-Beilinson cohomology for singular varieties. *Algebraic K-theory, commutative algebra, and algebraic geometry* (*Santa Margherita Ligure*, 1989), 113–146, *Contemp. Math.*, 126, *Amer. Math. Soc., Providence, RI*, 1992. (Hélène Esnault) **93a:14022** 14F99 (14C35, 19E20)

Levine, Raphael D. (*with* Wehrhahn, Rodolfo) Symmetry scattering for systems with internal structure. *Europhys. Lett.* **16** (1991), *no.* 8, 705–710. (Summary) **93a:81208** 81U99 (53C80, 81V35)

— (*with* Weeks, David E.) Sub-resonant distortion of phase space tori. (English summary) *Phys. Lett. A* **167** (1992), *no.* 1, 32–36. (Summary) **93c:58191** 58F30 (58F05, 70H05, 70K99)
— *see also* **Zalcman, Lawrence A., 93a:01041**

Levinsen, Mogens T. (*with* Christiansen, Bo; Alstrøm, Preben) Collective dynamics of coupled modulated oscillators with random pinning. *Phys. D* **56** (1992), *no.* 1, 23–35. (Summary) **93b:34047** 34C15 (70K99, 70L05)

Levinson, H. An algorithm to decide if a Cayley diagram is planar. *Graph theory, combinatorics, and applications. Vol. 2* (*Kalamazoo, MI*, 1988), 801–810, *Wiley-Intersci. Publ., Wiley, New York*, 1991. (Summary) **93b:05050** 05C10 (05C25, 05C85)

Levishchenko, S. S. (*with* Kuzennyĭ, N. F.) Finite Shmidt groups and their generalizations. (Russian. Ukrainian summary) *Ukrain. Mat. Zh.* **43** (1991), *no.* 7-8, 963–968; *translation in Ukrainian Math. J.* **43** (1991), *no.* 7-8, 898–904 (1992). (V. A. Belonogov) **93a:20031** 20D25
— (*with* Chernikov, S. N.) Constructive description of finite nondispersive groups in which all subgroups of nonprimary index are abelian. (Russian. Russian and Ukrainian summaries) *Ukraïn. Mat. Zh.* **44** (1992), *no.* 6, 818–822; *translation in Ukrainian Math. J.* **44** (1992), *no.* 6, 738–741 (1993). (L. A. Kurdachenko) **93j:20050** 20D99

Levit, B. Ya. (*with* Landsman, Z. M.) Second order minimax estimation: the nuisance parameters and hypoelliptic operators. *Probability theory and mathematical statistics, Vol. II* (*Vilnius*, 1989), 47–58, "*Mokslas*", *Vilnius*, 1990. (Summary) **93a:62011** 62C20 (62F10)
— On the integrable and approximately integrable linear statistical models. *Nonparametric functional estimation and related topics* (*Spetses*, 1990), 657–667, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 335, *Kluwer Acad. Publ., Dordrecht*, 1991. (Anatoliĭ B. Juditsky) **93c:62086** 62G20

Levit, S. (*with* Lenz, F.; Thies, M.) Hamiltonian formulation of two-dimensional gauge theories on the light cone. *Ann. Physics* **208** (1991), *no.* 1, 1–89. (Summary) **93f:81138** 81T40

Levitan, B. M. (*with* Danielyan, A. A.; Khasanov, A. B.) Asymptotics of the Weyl-Titchmarsh m-function in the case of the Dirac system. (Russian) *Mat. Zametki* **50** (1991), *no.* 2, 67–76; *translation in Math. Notes* **50** (1991), *no.* 1-2, 816–823 (1992). (P. A. Mishnayevskiy) **93c:34068** 34B20 (34L40)
— (*with* Khasanov, A. B.) An estimate for the Cauchy function in the case of finite-gap nonperiodic potentials. (Russian) *Funktsional. Anal. i Prilozhen.* **26** (1992), *no.* 2, 18–28, 96; *translation in Functional Anal. Appl.* **26** (1992), *no.* 2, 91–98. (Summary) **93c:34159** 34L25 (34A55, 34A99)

Levitan, Yu. L. (*with* Sobol', I. M.; Turchaninov, V. I.; Shukhman, B. V.) ★ Quasirandom sequence generators. (English. English and Russian summaries) *Russian Acad. Sci., Keldysh Inst. Appl. Math., Moscow*, 1992. 23 *pp.* 65C10

Levitin, Lev B. Physical information theory for 30 years: basic concepts and results. *Quantum aspects of optical communications* (*Paris*, 1990), 101–110, *Lecture Notes in Phys.*, 378, *Springer, Berlin*, 1991. (*see* **93e:81158**) 82B03 (94A15)

Levitin, M. R. (*with* Vasil'ev, D. G.; Lidskiĭ, V. B.) Forced oscillations of a shell immersed in a viscous compressible fluid. (Russian) *Funktsional. Anal. i Prilozhen.* **25** (1991), *no.* 4, 93–95; *translation in Functional Anal. Appl.* **25** (1991), *no.* 4, 309–311 (1992). (Oleg Limarchenko) **93k:73067** 73K70 (35Q35, 73K12, 73K15, 76N10)
— Vibrations of a viscous compressible fluid in bounded and unbounded domains. *Mathematical topics in fluid mechanics* (*Lisbon*, 1991), 251–255, *Pitman Res. Notes Math. Ser.*, 274, *Longman Sci. Tech., Harlow*, 1992. (*see* **93h:00019**) 35Q35 (76N10)
— On the spectrum of a generalized Cosserat problem. (English and French summaries) *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 8, 925–930. (Summary) **93i:35099** 35P30 (35J70, 47F05, 76N10)

Levitin, V. V. (*with* Khibnik, A. I.; Kuznetsov, Yurïĭ Aleksandrovich; Nikolaev, Eugene V.) Continuation techniques and interactive software for bifurcation analysis of ODEs and iterated maps. (English summary) Homoclinic chaos (Brussels, 1991). *Phys. D* **62** (1993), *no.* 1-4, 360–371. (Summary) **93k:58169** 58F14 (34–04, 34A50, 34C23, 65L99)

Levit-skaya, A. A. Invariance theorems for the rank of a random Boolean matrix with a fixed number of units in the rows. (Russian. English summary) *Dokl. Akad. Nauk Ukrain. SSR* **1991,** *no.* 9, 53–56, 176. (Summary) **93c:60049** 60F99

Levit-skiĭ, N. I. ★ Теория механизмов и машин. (Russian) [Theory of mechanisms and machines] Second edition. With an English summary. "*Nauka*", *Moscow*, 1990. 592 *pp. ISBN* 5-02-014188-7 (Simeon Patarinski) **93a:70001** 70–01 (70B15, 70E15, 70J35)

Levitt, Norman Dynamical polysystems and vector bundles. *Topology Appl.* **45** (1992), *no.* 1, 49–58. (Steven R. Costenoble) **93f:55016** 55R35 (54H15, 55R25, 93B29)

Levizov, S. V. On the central limit theorem for series with respect to periodical multiplicative systems. I. *Acta Sci. Math.* (*Szeged*) **55** (1991), *no.* 3-4, 333–359. (F. Móricz) **93c:42025** 42C10 (60F05)
— Lacunary series in the Walsh system. (Russian) *Mat. Zametki* **51** (1992), *no.* 3, 63–74, 144; *translation in Math. Notes* **51** (1992), *no.* 3-4, 265–273. (F. Móricz) **93d:42032** 42C10 (42A55, 60F05)
— The law of the iterated logarithm for lacunary series in the Walsh system. (Russian) *Sibirsk. Mat. Zh.* **33** (1992), *no.* 1, 69–77, 219; *translation in Siberian Math. J.* **33** (1992), *no.* 1, 54–61. (F. Móricz) **93d:60046** 60F15

Levkov, S. P. The solvability of the problem of synthesizing a regulator in a closed linear system. *Soviet J. Automat. Inform. Sci.* **23** (1990), *no.* 6, 7–11 (1992); *translated from Avtomatika* **1990,** *no.* 6, 9–13, 93 (*Russian. English summary*). (Summary) **93b:93044** 93B50 (47N20, 93C05)

Levkovitz, R. (*with* Andersen, J. A.; Mitra, Gautam) The interior point method for LP on parallel computers. (English summary) *System modelling and optimization* (*Zurich*, 1991), 241–250, *Lecture Notes in Control and Inform. Sci.*, 180, *Springer, Berlin*, 1992. (*see* **93e:90003**) 90C05

Lévy, Albert *see* **Hilbert, David[1], 93g:01101**

Levy, Arnon On Majda's model for dynamic combustion. *Comm. Partial Differential Equations* **17** (1992), *no.* 3-4, 657–698. (Michael Renardy) **93a:35108** 35L67 (35B30, 35D05, 35Q35, 80A25)

Levy, Bernard C. Regular and reciprocal multivariate stationary Gaussian processes over **Z** are necessarily Markov. *J. Math. Systems Estim. Control* **2** (1992), *no.* 2, 133–154. (R. Theodorescu) **93c:60051** 60G10 (60G15, 60G60)

Levy, Dan Lattice algebras and the hidden symmetry of the 2D Ising model in a magnetic field. *Internat. J. Modern Phys. A* **6** (1991), *no.* 28, 5127–5153. (Summary) **93i:82014** 82B20

Levy, Hanoch (*with* Sidi, Moshe; Fuhrmann, Steve W.) A queueing network with a single cyclically roving server. (English summary) *Queueing Systems Theory Appl.* **11** (1992), *no.* 1-2, 121–144. (Summary) **93g:60198** 60K25 (68M20, 90B22)

Levy, J. B. (*with* Astrauskas, A.; Taqqu, Murad S.) The asymptotic dependence structure of the linear fractional Lévy motion. (Russian and Lithuanian summaries) *Litovsk. Mat. Sb.* **31** (1991), *no.* 1, 3–28; *reprinted in Lithuanian Math. J.* **31** (1991), *no.* 1, 1–19 (1992). (Makoto Maejima) **93f:60049** 60G18 (60E07)

Lévy, Paul ★ Processus stochastiques et mouvement brownien. (French) [Stochastic processes and Brownian motion] Followed by a note by M. Loève. Reprint of the second (1965) edition. Les Grands Classiques Gauthier-Villars. [Gauthier-Villars Great Classics] *Éditions Jacques Gabay, Sceaux*, 1992. iv+437 *pp. ISBN* 2-87647-091-8 (Editors) **93i:60003** 60–02 (60G05, 60G12, 60J65)

Levy, Silvio V. F. (*with* Epstein, David B. A.; Cannon, James W.; Holt, Derek F.; Paterson, Michael S.; Thurston, William P.) ★ Word processing in groups. *Jones and Bartlett Publishers, Boston, MA*, 1992. xii+330 *pp. ISBN* 0-86720-244-0 (Richard M. Thomas) **93i:20036** 20F10 (03D40, 20–02, 68Q70)

Lévy, Thérèse (*with* Wodié, Jean-Christophe) Flow in a stratified porous medium with thin layers of large permeability. *Mech. Res. Comm.* **20** (1993), *no.* 3, 251–256. 76S05

Levy, Yonatan (*with* Arian, Yair) Algorithms for generalized round robin routing. (English summary) *Oper. Res. Lett.* **12** (1992), *no.* 5, 313–319. 90B22 (90C35)

Lévy-Bruhl, Pierre (*with* Mohamed, Abdérémane; Nourrigat, J.) Spectral theory and representations of nilpotent groups. *Bull. Amer. Math. Soc.* (*N.S.*) **26** (1992), *no.* 2, 299–303. (David Gurarie) **93g:35105** 35P20 (22E27, 35J10)

Lewandowska, Maria Quelques remarques sur les définitions des notions principales de la logique de l'action. (English summary) [Some remarks on the definitions of the main concepts of the logic of action] *Math. Inform. Sci. Humaines No.* 116 (1991), 63–68 (1992). (François Lepage) **93i:03025** 03B45 (03A05)

Lewandowski, Jerzy Reduced holonomy group and Einstein equations with a cosmological constant. (English summary) *Classical Quantum Gravity* **9** (1992), *no.* 10, L147–L151. (Jörg Frauendiener) **93i:83009** 83C05 (83C20)
— (*with* Goldberg, Joshua N.; Stornaiolo, C.) Degeneracy in loop variables. (English summary) *Comm. Math. Phys.* **148** (1992), *no.* 2, 377–402. (Peter Peldán) **93i:83047** 83C45 (83C05)

Lewandowski, Roger (*with* Carpio Rodriguez, A.; Comte, Myriam) A nonexistence result for a nonlinear equation involving critical Sobolev exponent. (French summary) *Ann. Inst. H. Poincaré Anal. Non Linéaire* **9** (1992), *no.* 3, 243–261. (M. Biroli) **93d:35050** 35J65 (35D05)
— (*with* Crouau, R.; Hadiji, Rejeb) Critical Sobolev exponent and the dimension three. *Houston J. Math.* **18** (1992), *no.* 2, 189–204. (Josef Voldřich) **93c:35044** 35J65
— (*with* Zheng, Xiao Min) Some remarks on a variational problem with lack of compactness. *Houston J. Math.* **18** (1992), *no.* 2, 205–214. (John Urbas) **93e:35035** 35J65 (35J20)

Lewanowicz, S. A new approach to the problem of constructing recurrence relations for the Jacobi coefficients. *Zastos. Mat.* **21** (1991), *no.* 2, 303–326. (Khélifa Trimèche) **93d:33006** 33C45 (39A70, 42C10, 65L99)

Lewbel, Arthur (*with* Gill, Len) Testing the rank and definiteness of estimated matrices with applications to factor, state-space and ARMA models. (English summary) *J. Amer. Statist. Assoc.* **87** (1992), *no.* 419, 766–776. (Raúl Pedro Mentz) **93m:62196** 62M10 (62H15)

Lewellen, David C. Sewing constraints for conformal field theories on surfaces with boundaries. *Nuclear Phys. B* **372** (1992), *no.* 3, 654–682. (Eric J. Raiten) **93d:81164** 81T40 (57N05)
— (*with* Cleaver, Gerald B.) On modular invariant partition functions for tensor product of conformal field theories. (English summary) *Phys. Lett. B* **300** (1993), *no.* 4, 354–360. (Summary) **93m:81126** 81T40 (11F22, 81R10)

Lewenkopf, C. H. (*with* Weidenmüller, H. A.) Stochastic versus semiclassical approach to quantum chaotic scattering. *Ann. Physics* **212** (1991), *no.* 1, 53–83. (T. Sasakawa) **93a:81206** 81U20 (81Q20, 81Q50)
— (*with* de Aguiar, M. A. M.; Furuya, Kyoko; Nemes, M. C.) Chaos in a spin-boson system: classical analysis. *Ann. Physics* **216** (1992), *no.* 2, 291–312. (Alfredo M. Ozorio de Almeida) **93c:81279** 81V80 (58F13, 58F40)

Lewicki, Grzegorz (*with* Kilmer, Shelby J.; Kozłowski, Wojciech M.) Sigma order continuity and best approximation in L_p-spaces. *Comment. Math. Univ. Carolin.* **32** (1991), *no.* 2, 241–250. (Khalil Ahmad) **93a:41065** 41A65 (41A50, 46E30)
— Bernstein's "lethargy" theorem in metrizable topological linear spaces. *Monatsh. Math.* **113** (1992), *no.* 3, 213–226. (J. Albrycht) **93h:46002** 46A16 (46E30)

Lewicki, Pawel Infinite interacting particle systems: the fluctuation phenomenon. *Demonstratio Math.* **25** (1992), *no.* 3, 623–640. (Luis G. Gorostiza) **93m:60066** 60F17 (60G20, 60K35)
— Non-Markovian fluctuation limits of infinite particle systems. *Stochastic Anal. Appl.* **10** (1992), *no.* 1, 17–44. (Luis G. Gorostiza) **93d:60071** 60G20 (60F17, 60J25)

Lewien, Dirk (*with* Steeb, Willi-Hans) ★ Algorithms and computation with REDUCE. (English. English summary) *Bibliographisches Institut, Mannheim*, 1992. viii+158 *pp. ISBN* 3-411-15651-1 (From the preface) **93j:65002** 65–04

Lewin, Andrew (*with* Fountain, John B.) Products of idempotent endomorphisms of an independence algebra of finite rank. (English summary) *Proc. Edinburgh Math. Soc.* (2) **35** (1992), *no.* 3, 493–500. (A. Schleiermacher) **93m:20101** 20M20

Lewin, Jacques (*with* Droms, Carl; Servatius, Herman) The length of elements in free solvable groups. *Proc. Amer. Math. Soc.* **119** (1993), *no.* 1, 27–33. (D. F. Holt) **93k:20051** 20F06 (20F14)

Lewin, Leonard Supernumary polylogarithmic ladders and related functional equations. *Special functions* (*Okayama*, 1990), 169–221, *ICM-90 Satell. Conf. Proc., Springer, Tokyo*, 1991. (Bruce C. Berndt) **93j:33013** 33E20
— The evolution of the ladder concept. *Structural properties of polylogarithms*, 1–10, *Math. Surveys Monographs*, 37, *Amer. Math. Soc., Providence, RI*, 1991. (*see* **93b:11158**) 33B10 (11R70)
— Dilogarithmic ladders. *Structural properties of polylogarithms*, 11–25, *Math. Surveys Monographs*, 37, *Amer. Math. Soc., Providence, RI*, 1991. (*see* **93b:11158**) 33B10 (11R70)

— (*with* Abouzahra, M.) Polylogarithmic ladders. *Structural properties of polylogarithms*, 27–47, *Math. Surveys Monographs*, 37, *Amer. Math. Soc., Providence, RI*, 1991. (*see* **93b:11158**) 33B10 (11R70)
— (*with* Abouzahra, M.) Ladders in the trans-Kummer region. *Structural properties of polylogarithms*, 49–68, *Math. Surveys Monographs*, 37, *Amer. Math. Soc., Providence, RI*, 1991. (*see* **93b:11158**) 33B10 (11R70)
— (*with* Abouzahra, M.) Supernumary ladders. *Structural properties of polylogarithms*, 69–96, *Math. Surveys Monographs*, 37, *Amer. Math. Soc., Providence, RI*, 1991. (*see* **93b:11158**) 33B10 (11R70)
— Functional equations and ladders. *Structural properties of polylogarithms*, 97–121, *Math. Surveys Monographs*, 37, *Amer. Math. Soc., Providence, RI*, 1991. (*see* **93b:11158**) 33B10 (11R70, 39B32)
— Some miscellaneous results. *Structural properties of polylogarithms*, 355–375, *Math. Surveys Monographs*, 37, *Amer. Math. Soc., Providence, RI*, 1991. (*see* **93b:11158**) 33B10 (11R70, 33B15)
— (*with* Cohen, Henri; Zagier, Don) A sixteenth-order polylogarithm ladder. (English summary) *Experiment. Math.* **1** (1992), *no.* 1, 25–34. (J. Browkin) **93i:11150** 11Y40 (11Y60, 33E20)
— *see also* **Structural properties of polylogarithms, 93b:11158**
Lewin, Marica On weak solutions of nonlinear Volterra stochastic equations. (English summary) *Integral methods in science and engineering—90 (Arlington, TX, 1990)*, 52–62, *Ser. Comput. Phys. Process. Mech. Thermal Sci., Hemisphere, New York*, 1991. (Summary) **93h:60096** 60H20
— (*with* Adler, Robert J.) An evolution equation for the intersection local times of superprocesses. *Stochastic analysis (Durham, 1990)*, 1–22, *London Math. Soc. Lecture Note Ser.*, 167, *Cambridge Univ. Press, Cambridge*, 1991. (Steven N. Evans) **93h:60077** 60G57 (60H99, 60J55)
— Weak solutions to nonlinear Itô-Volterra stochastic equations in Hilbert spaces. (English summary) *Stochastic Anal. Appl.* **10** (1992), *no.* 4, 443–464. (Krystyna Twardowska) **93j:60085** 60H20 (35R15, 35R60, 60H15)
— (*with* Adler, Robert J.) Local time and Tanaka formulae for super Brownian and super stable processes. *Stochastic Process. Appl.* **41** (1992), *no.* 1, 45–67. (Klaus Fleischmann) **93e:60169** 60J80 (60G57, 60J55)
Lewin, R. A. (*with* Mikenberg, I. F.; Schwarze, M. G.) Algebraization of paraconsistent logic P^1. *J. Non-Classical Logic* **7** (1990), *no.* 1-2, 79–88. 03B53 (03G25)
— (*with* Mikenberg, I. F.; Schwarze, M. G.) C_1 is not algebraizable. *Notre Dame J. Formal Logic* **32** (1991), *no.* 4, 609–611 (1992). (Itala M. L. D'Ottavianno) **93b:03118** 03G99 (03B53)
Lewiński, Tomasz (*with* Telega, Józef Joachim) Homogenization and effective properties of plates weakened by partially penetrating fissures: asymptotic analysis. *Internat. J. Engrg. Sci.* **29** (1991), *no.* 9, 1129–1155. (Christoph Schwab) **93f:73059** 73K10 (73B27, 73C50, 73K20, 73V25)
— (*with* Kucharski, St.) A model with length scales for composites with periodic structure. Steady state heat conduction problem. I. Formulation. (English summary) *Comput. Mech.* **9** (1992), *no.* 4, 249–265. (Serguei M. Kozlov) **93g:73010** 73B27 (73B30, 73K20, 80A20)
Lewinter, Martin (*with* Harary, Frank) Spanning subgraphs of a hypercube. VI. Survey and unsolved problems. *Graph theory, combinatorics, and applications. Vol. 2 (Kalamazoo, MI, 1988)*, 633–637, *Wiley-Intersci. Publ., Wiley, New York*, 1991. (*see* **93b:05003**) 05C99
— (*with* Widulski, William) Equipartition sets of hypercubes. (English summary) *J. Combin. Inform. System Sci.* **16** (1991), *no.* 1, 19–24. (Summary) **93d:05080** 05C35
— Graphs with special distance properties. (English summary) *Quo vadis, graph theory?*, 89–92, *Ann. Discrete Math.*, 55, *North-Holland, Amsterdam*, 1993. (*see* **93k:05003**) 05C12
— (*with* Harary, Frank) Which graphs are pluperfect? (English summary) *Australas. J. Combin.* **7** (1993), 81–86. (Summary) **93k:05147** 05C75
Lewis, Adrian S. (*with* Borwein, Jonathan) Decomposition of multivariate functions. (English summary) *Canad. J. Math.* **44** (1992), *no.* 3, 463–482. (Douglass L. Grant) **93k:54033** 54C05 (05C38, 08A45, 22C05, 26B40, 28A20)
— (*with* Borwein, Jonathan) Partially finite convex programming. I. Quasi relative interiors and duality theory. *Math. Programming* **57** (1992), *no.* 1, *Ser. B*, 15–48. (M. Teboulle) **93e:90069a** 90C48 (49J15, 65K05, 90C25)
— (*with* Borwein, Jonathan) Partially finite convex programming. II. Explicit lattice models. *Math. Programming* **57** (1992), *no.* 1, *Ser. B*, 49–83. (M. Teboulle) **93e:90069b** 90C48 (49N15, 65K05, 90C25)
Lewis, Alain A. On the effective content of asymptotic verifications of Edgeworth's conjecture. *Math. Social Sci.* **22** (1991), *no.* 3, 275–324. (Reinhard Suck) **93d:90020** 90A60 (03D35, 90A15)
— On Turing degrees of Walrasian models and a general impossibility result in the theory of decision-making. (English summary) *Math. Social Sci.* **24** (1992), *no.* 2-3, 141–171. (Marius Zimand) **93k:03042** 03D45 (90A15)
— Some aspects of effectively constructive mathematics that are relevant to the foundations of neoclassical mathematical economics and the theory of games. (English summary) *Math. Social Sci.* **24** (1992), *no.* 2-3, 209–235. (Douglas S. Bridges) **93i:90003** 90–02 (03D80, 03F60, 90Axx, 90D40)
Lewis, Andrew D. Lagrangian submanifolds and an application to the reduced Schrödinger equation in central force problems. (English summary) *Lett. Math. Phys.* **25** (1992), *no.* 3, 189–201. (Richard C. Churchill) **93h:58057** 58F05 (35J10, 35Q58, 70F05, 70H05, 81Q05)
— (*with* Otto, Kevin N.; Antonsson, Erik K.) Approximating α-cuts with the vertex method. (English summary) *Fuzzy Sets and Systems* **55** (1993), *no.* 1, 43–50. (Summary) **93m:04018** 04A72
Lewis, Cathryn M. The use of graph theory techniques to investigate genealogical structure. (English summary) *IMA J. Math. Appl. Med. Biol.* **9** (1992), *no.* 3, 145–159. (Summary) **93i:92023** 92K99
Lewis, D. *see* **Lewis, Donald Cain**
Lewis, D. W. Annihilating polynomials and positive forms. *Canad. Math. Bull.* **35** (1992), *no.* 1, 103–107. (Jurgen Hurrelbrink) **93b:11043** 11E04 (12E10)
Lewis, David K. Counterpart theory, quantified modal logic, and extra argument places. *Analysis (Oxford)* **53** (1993), *no.* 2, 69–71. 03B45
Lewis, Debra Lagrangian block diagonalization. *J. Dynamics Differential Equations* **4** (1992), *no.* 1, 1–41. (Richard C. Churchill) **93b:58055** 58F05 (58F10, 70H05, 70H35, 70K20)
Lewis, Donald Cain (*with* Ratiu, Tudor S.; Simo, Juan C.; Marsden, Jerrold Eldon) The heavy top: a geometric treatment. *Nonlinearity* **5** (1992), *no.* 1, 1–48. (Martin Kummer) **93b:70006** 70E15 (58F05, 70K20)
Lewis, Frank L. (*with* Banaszuk, A.; Kocięcki, M.; Beauchamps, G.) Observability with unknown input and dual properties for singular systems. (English summary) *Mathematical and intelligent models in system simulation, I, II (Brussels*, 1990), 125–129, *IMACS Ann. Comput. Appl. Math.*, 10, 11, *Baltzer, Basel*, 1991. (*see* **93c:93005**) 93B07
— (*with* Mertzios, B. G.) Efficient inversion of a generalized pencil of matrices. (English summary) *Mathematical and intelligent models in system simulation, I, II (Brussels*, 1990), 141–143, *IMACS Ann. Comput. Appl. Math.*, 10, 11, *Baltzer, Basel*, 1991. (*see* **93c:93005**) 93B25
— An introduction to 2-D implicit systems. (English summary) *Mathematical and intelligent models in system simulation, I, II (Brussels*, 1990), 147–152, *IMACS Ann. Comput. Appl. Math.*, 10, 11, *Baltzer, Basel*, 1991. (*see* **93c:93005**) 93E05 (93B25)
— (*with* Fountain, D. W.) Walsh function analysis of bilinear implicit systems with split boundary conditions. (English summary) *Computational and applied mathematics, II (Dublin*, 1991), 25–31, *North-Holland, Amsterdam*, 1992. (Summary) **93j:65119** 65L10
— (*with* Liu, Kai) Nonlinear feedback control of a nuclear reactor system. (English summary) *Mathematics of the analysis and design of process control (Dublin*, 1991/*Lille*, 1991), 193–200, *North-Holland, Amsterdam*, 1992. (*see* **93g:93004**) 93B52
— A tutorial on the geometric analysis of linear time-invariant implicit systems. *Automatica J. IFAC* **28** (1992), *no.* 1, 119–137. (Maria Letizia Corradini) **93b:93005** 93–02 (93B27, 93C05, 93C55)
— (*with* Syrmos, Vassilis L.) Robust eigenvalue assignment for generalized systems. (English summary) *Automatica J. IFAC* **28** (1992), *no.* 6, 1223–1228. 93B55 (93B36)
— (*with* Mertzios, B. G.) On the analysis of two-dimensional discrete singular systems. *Circuits Systems Signal Process.* **11** (1992), *no.* 3, 399–419. (George E. Antoniou) **93d:93051** 93C55 (93B05)
— (*with* Karamancıoğlu, A.) Geometric theory for the singular Roesser model. *IEEE Trans. Automat. Control* **37** (1992), *no.* 6, 801–806. (Summary) **93b:93028** 93B25 (93C05)
— (*with* Özçaldiran, Kadri; Fountain, D. W.) Some generalized notions of observability. *IEEE Trans. Automat. Control* **37** (1992), *no.* 6, 856–860. (Boris G. Zaslavskii) **93a:93021** 93B07
— (*with* Liu, Kai) An improved result on the stability analysis of nonlinear systems. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 9, 1425–1431. (Summary) **93f:93095** 93D05 (34D10, 34D99)
— (*with* Syrmos, Vassilis L.) State feedback design using reduced-order nonsquare descriptions. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 9, 1431–1436. (Summary) **93f:93068** 93B52 (93B55)
— (*with* Banaszuk, A.; Kocięcki, M.) Kalman decomposition for implicit linear systems. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 10, 1509–1514. (Henk Nijmeijer) **93h:93035** 93C05 (93B25, 93B27)
Lewis, Gwenda J. (*with* Bofinger, Eve) Simultaneous comparisons with a control and with the best: two stage procedures. (English summary) With discussion. *The frontiers of modern statistical inference procedures, II (Sydney*, 1987), 25–45, *Amer. Sci. Press Ser. Math. Management Sci.*, 28, *Amer. Sci. Press, Columbus, OH*, 1992. (Summary) **93k:62039** 62F07 (62L10)
— (*with* Bofinger, Eve) Two-stage procedures for multiple comparisons with a control. (English summary) *Amer. J. Math. Management Sci.* **12** (1992), *no.* 4, 253–275. (Summary) **93k:62041** 62F07 (62J15)
— *see also* **Frontiers of modern statistical inference procedures, 93g:62002**
Lewis, J. (*with* Katok, A.) Local rigidity for certain groups of toral automorphisms. *Israel J. Math.* **75** (1991), *no.* 2-3, 203–241. (Steven E. Hurder) **93g:58076** 58F10 (22A30, 22D40, 22E40, 58F15, 58F30)
Lewis, J. T. *see* **Lewis, John Trevor**
Lewis, John L. (*with* Erëmenko, A. È.) Uniform limits of certain A-harmonic functions with applications to quasiregular mappings. *Ann. Acad. Sci. Fenn. Ser. A I Math.* **16** (1991), *no.* 2, 361–375. (Juha Heinonen) **93b:35039** 35J60 (30C65, 35B40)
— (*with* Vogel, Andrew) On some almost everywhere symmetry theorems. *Nonlinear diffusion equations and their equilibrium states*, 3 (*Gregynog*, 1989), 347–374, *Progr. Nonlinear Differential Equations Appl.*, 7, *Birkhäuser Boston, Boston, MA*, 1992. (Rolando Magnanini) **93j:35078** 35J65 (35B05, 35K60)
— (*with* Murray, Margaret A. M.) Absolute continuity of parabolic measure. *Partial differential equations with minimal smoothness and applications (Chicago, IL*, 1990), 173–188, *IMA Vol. Math. Appl.*, 42, *Springer, New York*, 1992. (Neil A. Watson) **93b:31002** 31A15 (28A15, 35K05)
Lewis, John Trevor (*with* Dorlas, T. C.; Pulé, J. V.) Condensation in some perturbed meanfield models of a Bose gas. *Helv. Phys. Acta* **64** (1991), *no.* 8, 1200–1224. (Yun Gang Lu) **93c:82035** 82C10 (60K35)
— (*with* Dorlas, T. C.; Pulé, J. V.) Condensation in a variational problem on the space of measures. *Arch. Rational Mech. Anal.* **118** (1992), *no.* 3, 245–256. (John M. Ball) **93g:49033** 49Q20 (82B30)
Lewis, Keith (*with* Wermer, John) On the theorems of Pick and von Neumann. *Function spaces (Edwardsville, IL*, 1990), 273–280, *Lecture Notes in Pure and Appl. Math.*, 136, *Dekker, New York*, 1992. (Joseph A. Ball) **93a:47017** 47A57 (30E05, 46E15)
— (*with* Cole, B. J.; Wermer, John) Pick conditions on a uniform algebra and von Neumann inequalities. *J. Funct. Anal.* **107** (1992), *no.* 2, 235–254. (Keiji Izuchi) **93e:46059** 46J10 (47A63)
Lewis, L. Gaunce, Jr. Equivariant Eilenberg-Mac Lane spaces and the equivariant Seifert-van Kampen and suspension theorems. (English summary) *Topology Appl.* **48** (1992), *no.* 1, 25–61. (Steven R. Costenoble) **93i:55016** 55P91 (55M35, 55P20, 55Q91, 57S15)
Lewis, P. A. W. (*with* Lawrance, A. J.) Reversed residuals in autoregressive time series analysis. *J. Time Ser. Anal.* **13** (1992), *no.* 3, 253–266. (Hartmut Milbrodt) **93g:62117** 62M10
Lewis, Paul W. (*with* Bator, Elizabeth M.) Weak precompactness and the weak RNP. (Russian summary) *Bull. Polish Acad. Sci. Math.* **37** (1989), *no.* 7-12, 443–452 (1990). (Lawrence H. Riddle) **93c:46017** 46B20

— (*with* Bator, Elizabeth M.; Bilyeu, Russell G.) The Vitali integral convergence theorem and uniform absolute continuity. *Canad. J. Math.* **43** (1991), *no.* 5, 939–947. (Constantin Dumitrescu) **93b:28014** 28A33 (46E40, 46G05, 58C20)

Lewis, Richard P. Relations between the rank and the crank modulo 9. *J. London Math. Soc.* (2) **45** (1992), *no.* 2, 222–231. (George E. Andrews) **93e:11118** 11P83

Lewis, Roger T. (*with* Evans, W. D.; Saitō, Yoshimi) Geometric spectral properties of *N*-body Schrödinger operators. II. *Philos. Trans. Roy. Soc. London Ser. A* **338** (1992), *no.* 1649, 113–144. (B. Hellwig) **93f:35163** 35P15 (35J10, 47F05, 47N50, 81U10)

jang-Lewis, Ruey-Jen *see* **Jang-Lewis, Ruey-Jen**

Lewis, T. G. (*with* Al-Bassam, Sulaiman; El-Rewini, Hesham; Bose, Bella) Processor allocation for hypercubes. (English summary) *J. Parallel Distrib. Comput.* **16** (1992), *no.* 4, 394–401. 68M07

Lewis, Thomas M. A self-normalized law of the iterated logarithm for random walk in random scenery. (English summary) *J. Theoret. Probab.* **5** (1992), *no.* 4, 629–659. (P. Révész) **93i:60062** 60F15 (60G50)

Lewis, Wayne The classification of homogeneous continua. *Soochow J. Math.* **18** (1992), *no.* 1, 85–121. (Summary) **93d:54049** 54F15

Lewittes, Joseph Different and trace. *J. Pure Appl. Algebra* **80** (1992), *no.* 3, 299–304. (Summary) **93c:12005** 12F10

Lewkowicz, Izchak (*with* Sivan, Raphael) Inverse radial matrices and maximal stability robustness. (English summary) *Control of uncertain systems* (*Bremen*, 1989), 179–196, *Progr. Systems Control Theory*, 6, *Birkhäuser Boston, Boston, MA*, 1990. (Summary) **93i:93098** 93D09

— When are the complex and the real stability radii equal? *IEEE Trans. Automat. Control* **37** (1992), *no.* 6, 880–883. (Summary) **93b:93084** 93D09

— (*with* Sivan, Raphael) Stability robustness of almost linear state equations. (English summary) *IEEE Trans. Automat. Control* **38** (1993), *no.* 2, 262–266. (Summary) **93j:93108** 93D09 (93C10)

Lewowicz, J. *see* **Dynamical systems, 93k:58074**

Leybourne, S. J. (*with* McCabe, B. P. M.) Testing for parameter variation in nonlinear regression models. (English summary) *J. Roy. Statist. Soc. Ser. B* **55** (1993), *no.* 1, 133–144. (Summary) **93k:62132** 62J02

Leyk, Zbigniew (*with* Bramble, James H.; Pasciak, Joseph E.) Iterative schemes for nonsymmetric and indefinite elliptic boundary value problems. *Math. Comp.* **60** (1993), *no.* 201, 1–22. (L. W. Ehrlich) **93d:65034** 65F10 (65N22)

Leysieffer, Frederick (*with* Proschan, Michael) A partial ordering of rank densities. *J. Multivariate Anal.* **40** (1992), *no.* 1, 84–93. (J. V. Deshpande) **93b:62024** 62E99 (62F07, 62G99)

Leyva-Ramos, J. A new look at partial fraction expansion of transfer function matrices from a computational viewpoint. (English summary) *Comput. Math. Appl.* **26** (1993), *no.* 3, 27–35. 93C80

Leyvraz, F. (*with* Seligman, T. H.) Structural invariance and the statistics of quasi-energies. (English summary) *Phys. Lett. A* **168** (1992), *no.* 5-6, 348–352. (Nicolaas P. Landsman) **93h:81034** 81Q50 (70H05, 70K50)

Lezama, Oswaldo (*with* Linares, Héctor) Quotient rings: noncommutative case. (Spanish) *Bol. Mat.* **21** (1987), *no.* 2-3, 145–169. 16S90

— (*with* Sepulveda Uribe, Luis Guillermo) Solvability of certain matrix groups over rings. (Spanish. Spanish summary) *Bol. Mat.* **22** (1988), *no.* 1-3, 47–61 (1991). 20F16

Lezaun Iturralde, Mikel (*with* Gaultier, Maurice) Quelques propriétés du spectre de l'opérateur $-\mathrm{div}(-\Delta)^{-1}\mathrm{grad}$ dans $L^2(\Omega)/\mathbf{R}$. (English and French summaries) [Spectral properties of the operator $-\mathrm{div}(-\Delta)^{-1}\mathrm{grad}$ in $L^2(\Omega)/\mathbf{R}$] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 7, 799–802. (Summary) **93g:47061** 47F05 (35P05)

— (*with* Gaultier, Maurice) An existence and uniqueness theorem for the transfer of mass and heat in a rectangular cavity. *IMA J. Appl. Math.* **48** (1992), *no.* 2, 125–148. (Summary) **93c:35156** 35Q99 (80A20)

Lezina, Z. M. (*with* Vol'skiĭ, V. I.) Comparative analysis of voting procedures (a survey of the current state and new problems). (Russian. Russian summary) *Avtomat. i Telemekh.* **1992**, *no.* 2, 3–29; *translation in Automat. Remote Control* **53** (1992), *no.* 2, *part* 1, 155–172. (Summary) **93f:90045** 90A28 (90–02)

Leznov, A. N. Toda lattices in classical and quantum regions. *Nonperturbative methods in low-dimensional quantum field theories* (*Debrecen*, 1990), 273–278, *World Sci. Publishing, River Edge, NJ*, 1991. (*see* **93f:81005**) 81R10 (17B65, 82B23)

— (*with* Savel'ev, M. V.) ★ Group-theoretical methods for integration of nonlinear dynamical systems. Translated and revised from the Russian. Translated by D. A. Leites. Progress in Physics, 15. *Birkhäuser Verlag, Basel*, 1992. xviii+290 *pp. ISBN* 3-7643-2615-8 (Editors) **93d:58194** 58G35 (22E70, 35Qxx)

— (*with* Aliev, B. N.) The problem of the principal chiral field with the parameters depending on free arguments and its integration. (English summary) *Acta Appl. Math.* **28** (1992), *no.* 3, 201–217. (R. S. Ward) **93i:58065** 58F07 (81T13)

— (*with* Aliev, B. N.) Einstein's vacuum fields with nonabelian group of motion G_2 II. *Classical Quantum Gravity* **9** (1992), *no.* 5, 1261–1270. (Jörg Frauendiener) **93i:83024** 83C20 (83C05, 83C40)

— (*with* Aliev, B. N.) Exact solutions of the vacuum Einstein's equations allowing for two noncommutative Killing vectors (type G_2II of Petrov classification). *J. Math. Phys.* **33** (1992), *no.* 7, 2567–2573. (Nora Bretón Báez) **93e:83023** 83C20 (83C15)

Lhallabi, T. (*with* Kachkachi, M.) $N = 2$ superconformal anomalies and curved harmonic superspace. *Internat. J. Modern Phys. A* **7** (1992), *no.* 15, 3601–3621. (Boris Moiseevich Zupnik) **93d:81177** 81T60 (58C50, 81T50, 81T70)

— (*with* Kachkachi, M.) $N = 2$ supergravity in superspace and the BRS symmetry. (English summary) *Internat. J. Modern Phys. A* **7** (1992), *no.* 22, 5461–5474. (Boris Moiseevich Zupnik) **93h:83036** 83E50 (81T50, 81T60)

picavet-L'Hermitte, Martine *see* **Picavet-L'Hermitte, Martine**

L'Hermitte-Picavet, Martine *see* **Picavet-L'Hermitte, Martine**

de L'Hospital, Guillaume *see* **Wurtz, Jean-Paul, (93c:01002)**

Li, An Min A characterization of ellipsoids. *Affine differential geometry* (*Oberwolfach*, 1991), 657–659, *Tech. Univ. Berlin, Berlin*, 1991. (*see* **93g:53001**) 53A15

— (*with* Wang, Chang Ping) Canonical centroaffine hypersurfaces in $\mathbf{R}^{n+1}$. *Affine differential geometry* (*Oberwolfach*, 1991), 660–681, *Tech. Univ. Berlin, Berlin*, 1991. (*see* **93g:53001**) 53A15

— (*with* Nomizu, Katsumi; Wang, Chang Ping) A generalization of Lelieuvre's formula. *Affine differential geometry* (*Oberwolfach*, 1991), 682–690, *Tech. Univ. Berlin, Berlin*, 1991. (*see* **93g:53001**) 53A15

— Affine completeness and Euclidean completeness. *Global differential geometry and global analysis* (*Berlin*, 1990), 115–125, *Lecture Notes in Math.*, 1481, *Springer, Berlin*, 1991. (Vladislav Goldberg) **93f:53009** 53A15

— A characterization of ellipsoids. Affine differential geometry (Oberwolfach, 1991). *Results Math.* **20** (1991), *no.* 3-4, 657–659. (Jane R. Sangwine-Yager) **93e:53011** 53A15 (52A22)

— (*with* Wang, Chang Ping) Canonical centroaffine hypersurfaces in $\mathbf{R}^{n+1}$. Affine differential geometry (Oberwolfach, 1991). *Results Math.* **20** (1991), *no.* 3-4, 660–681. (Martin A. Magid) **93f:53010** 53A15

— (*with* Nomizu, Katsumi; Wang, Chang Ping) A generalization of Lelieuvre's formula. Affine differential geometry (Oberwolfach, 1991). *Results Math.* **20** (1991), *no.* 3-4, 682–690. (Franki Dillen) **93c:53005** 53A15

— (*with* Li, Ji Min) An intrinsic rigidity theorem for minimal submanifolds in a sphere. *Arch. Math.* (*Basel*) **58** (1992), *no.* 6, 582–594. (Bang-yen Chen) **93b:53050** 53C42 (53C40)

— Calabi conjecture on hyperbolic affine hyperspheres. II. *Math. Ann.* **293** (1992), *no.* 3, 485–493. (Udo Simon) **93g:53016** 53A15

Li, Ang Sheng A strong decomposition theorem for recursively enumerable degrees. (Chinese. Chinese summary) *Acta Math. Sinica* **35** (1992), *no.* 2, 251–256. (Lei Qian) **93k:03039** 03D25

guo-Li, Ao *see* **Guo-Li, Ao**

Li, B. H. *see* **Li, Bang He**

Li, Bai Bing (*with* Wu, Jian Zhong) Hierarchical dynamic planned-economy models with central government coordination of one-step delay information. (English summary) *Dynamic games in economic analysis* (*Espoo*, 1990), 213–220, *Lecture Notes in Control and Inform. Sci.*, 157, *Springer, Berlin*, 1991. (*see* **93d:90003**) 90A15

— (*with* Wu, Jian Zhong) A study on decentralized feedback Stackelberg strategies for LQG systems with one-step delay information sharing pattern. (Chinese. English summary) *J. Systems Engrg.* **6** (1991), *no.* 1, 9–20. (Han Sheng Wu) **93e:93058** 93E05 (90D05, 90D25)

Li, Bang He Embeddings of surfaces in 4-manifolds. I, II. *Chinese Sci. Bull.* **36** (1991), *no.* 24, 2025–2029, 2030–2033. (V. P. Snaith) **93d:57037** 57N35 (57R20, 57R40)

— (*with* Li, Gui Song) Immersions with nonzero normal vector fields. *Math. Proc. Cambridge Philos. Soc.* **112** (1992), *no.* 2, 281–285. (J. P. E. Hodgson) **93e:57049** 57R42 (57R25)

— (*with* Liu, Rong; Zhang, Ping[1]) A simplified approach to embedding problems in normal bordism framework. (English summary) *Systems Sci. Math. Sci.* **5** (1992), *no.* 2, 180–192. (R. E. Stong) **93i:57040** 57R40

— (*with* Mahowald, M. E.) On immersions of k-connected n-manifolds. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 1, 297–300. (Donald M. Davis) **93f:57034** 57R42

Li, Bao Qin (*with* Dai, Chong Ji; Drasin, David) Correction to: "On the growth of entire and meromorphic functions of infinite order" [J. Analyse Math. **55** (1990), 217–228; MR 92a:30031]. *J. Anal. Math.* **57** (1991), 299. (Editors) **93k:30043** 30D35

— (*with* Yang, Chung-Chun) On the complete meromorphic functions. *Kodai Math. J.* **15** (1992), *no.* 3, 341–353. (W. H. J. Fuchs) **93j:30029** 30D30

Li, Bao Xiu (*with* Shen, Yu; Yu, Zai Hua) Highly parallel algorithms for unconstrained optimization. (Chinese. English summary) *J. Numer. Methods Comput. Appl.* **14** (1993), *no.* 1, 22–27. 90C30 (65K05, 65Y05)

Li, Bao Yi (*with* Zhang, Zhi Fen) High order Mel'nikov functions and the problem of uniformity in global bifurcation. (English summary) *Ann. Mat. Pura Appl.* (4) **161** (1992), 181–212. (From the text) **93i:34070** 34C23 (34C05, 34C37, 58F05, 58F14, 58F15, 58F21, 70H05)

Li, Ben Hai (*with* Zhang, Xu Jun) Fuzzy decision-making analysis for classification problems. (Chinese. English summary) *Mohu Xitong yu Shuxue* **6** (1992), *no.* 1, 81–86. (Xiang Li) **93e:04002** 04A72

Li, Bing (*with* Wong, Wing Hung) Laplace expansion for posterior densities of nonlinear functions of parameters. (English summary) *Biometrika* **79** (1992), *no.* 2, 393–398. (Summary) **93f:62038** 62F15

Li, Bing Kun (*with* Sun, Jia Chang) Parallel multilevel B-spline preconditioners for the biharmonic problem. (English summary) *Proceedings of International Conference on Scientific Computation* (*Hangzhou*, 1991), 137–151, *Ser. Appl. Math.*, 1, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93d:65004**) 65N30 (65D07, 65F35, 65N55, 73V05)

Li, Bing Ren (*with* Jiang, Xin Hui) Traces on AF-algebras. (English summary) *Lecture notes in contemporary mathematics*, 1989, 88–99, *Science Press, Beijing*, 1990. (Judith A. Packer) **93i:46106** 46L30 (06F20, 46A55, 46L80)

— (*with* Pier, Jean-Paul) Amenability with respect to a closed subgroup of a product group. *Adv. in Math.* (*China*) **21** (1992), *no.* 1, 97–112. (Tianxuan Miao) **93e:43003** 43A07 (43A15)

— *see also* **Lecture notes in contemporary mathematics, 93d:00033**

Li, Bing Tuan Estimation of the bounds of nonoscillatory solutions to second-order nonhomogeneous equations. (Chinese. English and Chinese summaries) *Xi'an Jiaotong Daxue Xuebao* **26** (1992), *no.* 5, 33–34, 50, 18. 34C10

Li, Bo (*with* Wang, Xiu Feng) Identification of time-varying bilinear systems via shifted Legendre polynomials. (Chinese. English and Chinese summaries) *Control Theory Appl.* **9** (1992), *no.* 5, 538–544. (Summary) **93i:93038** 93B30 (93B40, 93E12)

Li, Bo Yu Finite antichain cutsets in posets. A Chinese summary appears in Acta Math. Sinica **35** (1992), no. 2, 287. *Acta Math. Sinica* (*N.S.*) **7** (1991), *no.* 1, 51–61. (Marcel Erné) **93b:06007** 06A07

Li, Bo Zang (*with* Wu, Jian Hua[4]) A simple algebraic method for deriving the second quantization representation. (Chinese. English and Chinese summaries) *Acta Phys. Sinica* **41** (1992), *no.* 7, 1063–1071. 81S99

Li, C. H. *see* **Li, Chin Hsien**

Li, C. K. (*with* Koh, E. L.) The complex Hankel transformation on M'_μ. Proceedings of the Twenty-first Manitoba Conference on Numerical Mathematics and Computing (Winnipeg, MB, 1991). *Congr. Numer.* **87** (1992), 145–151. (Summary) **93d:44009** 44A15

— (*with* Koh, E. L.) The Hankel transformation of Banach-space-valued generalized functions. *Proc. Amer. Math. Soc.* **119** (1993), *no.* 1, 153–163. (Jean Lavoine) **93k:46032** 46F12 (44A15)

Li, Cai Zhong (*with* Zhang, Xue Yi) Existence of global solutions to a special K-class of systems of equations. (Chinese. English summary) *J. Chengdu Univ. Sci. Tech.* **1991**, *no.* 4, 71–83. (Song Mu Zheng) **93h:35044** 35F25

— (*with* Liu, Fa Gui) Globally smooth solutions to the Cauchy problem for the system of equations for a model of combustion and their formation of singularities. (Chinese. English and Chinese summaries) *J. Chengdu Univ. Sci. Tech.* **1992**, *no.* 2, 21–28, 34. (Guo Chun Wen) **93m:35045** 35F25 (35A20)

Li, Chang-Jin (*with* Sankar, T. S.) Systematic methods for efficient modeling and dynamics computation of flexible robot manipulators. (English summary) *IEEE Trans. Systems Man Cybernet.* **23** (1993), *no.* 1, 77–95. 93C85

Li, Cheng Kuan (*with* Cheng, Lin Zhi) Convolution of generalized functions. (Chinese) *Math. Appl.* **5** (1992), *no.* 4, 103–105. 46F10

Li, Chi-Kwong (*with* Tsing, Nam-Kiu) Linear preserver problems: a brief introduction and some special techniques. Directions in matrix theory (Auburn, AL, 1990). *Linear Algebra Appl.* **162/164** (1992), 217–235. (William Watkins) **93b:15003** 15A04 (15A72)

— (*with* Hong, Yoo Pyo; Horn, Roger A.) Linear operators preserving t-congruence on matrices. (English summary) *Linear Algebra Appl.* **175** (1992), 191–211. (Mihail Voicu) **93h:15004** 15A04 (15A24, 15A57, 47A99)

— (*with* Hemasinha, Rohan; Weaver, James R.) Norms induced by symmetric gauge functions. (English summary) *Linear and Multilinear Algebra* **31** (1992), *no.* 1-4, 217–224. (Dragomir Ž. Djoković) **93k:15042** 15A60

Li, Chih Hao An $N \times N$ Zakharov-Shabat system with a polynomial spectral parameter. (English summary) *Nonlinear evolution equations and dynamical systems (Baia Verde, 1991)*, 148–152, *World Sci. Publishing, River Edge, NJ*, 1992. (C. Tomei) **93k:34034** 34A55 (34L25, 35Q55, 58F07)

Li, Chin Hsien (*with* Cowsar, Lawrence C.; Dean, E. J.; Glowinski, Roland; Le Tallec, Patrick; Périaux, Jacques; Wheeler, Mary Fanett) Decomposition principles and their applications in scientific computing. (English summary) *Parallel processing for scientific computing (Houston, TX, 1991)*, 213–237, *SIAM, Philadelphia, PA*, 1992. (Summary) **93j:65200** 65N55 (65K10, 65N22, 65Y05)

Li, Ch'iu K'un Semiprime rings with differential identities. *Bull. Inst. Math. Acad. Sinica* **20** (1992), *no.* 1, 27–38. (W. K. Nicholson) **93e:16039** 16R50 (16N60, 16W25)

— (*with* Shên, P'èng Yu) On derivations of prime rings with involution. *Chinese J. Math.* **20** (1992), *no.* 2, 191–203. (Dinh Van Huynh) **93e:16029** 16N60 (16W99)

Li, Chong Uniform strong unicity of rational simultaneous Chebyshev approximation. (Chinese. Chinese summary) *Acta Math. Sinica* **35** (1992), *no.* 4, 460–471. (Gen Sun Fang) **93k:41016** 41A20 (41A28, 41A52)

Li, Chuan Rong (*with* Yang, Ya Wei) A qualitative analysis of the Kolmogorov model for a class of predator-prey systems with constant stocking rate of prey. (Chinese. English and Chinese summaries) *Xi'an Jiaotong Daxue Xuebao* **26** (1992), *no.* 4, 9–12. (Summary) **93i:34087** 34C99 (34C05, 34C11, 92D25, 92D40)

Li, Chuan Xiang Structure of computative tree for computable function. (English summary) *Acta Math. Sci. (English Ed.)* **12** (1992), *no.* 3, 346–354. 68Q05 (03D20)

— (*with* Li, Zhong Zhang; Wang, Han Fei) Some problems in partial abstract data type. (English summary) *Acta Math. Sci. (English Ed.)* **12** (1992), *no.* 3, 355–360. (Summary) **93m:68121** 68Q65

Li, Chuan Zhong (*with* Yang, Lu; Zhang, Jing Zhong) ★ A prover for parallel numerical verification of a class of constructive geometry theorems. Shuli Kexue [Mathematical Sciences. Research Reports IMS], 42. *Academia Sinica, Institute of Mathematical Sciences, Chengdu*, 1992. 15 *pp.* (Dorothy Bollman) **93j:68181** 68T15 (03B35, 51-04, 65Y05)

Li, Chun *see* **Li, Chun**[3]

Li, Chun[2] (*with* McIntosh, Alan; Semmes, Stephen W.) Convolution singular integrals on Lipschitz surfaces. *J. Amer. Math. Soc.* **5** (1992), *no.* 3, 455–481. (Margaret A. M. Murray) **93b:42029** 42B20 (30G35, 47B35, 47G10)

Li, Chun[3] (*with* Chen, Han Lin) The estimation of n-widths of certain periodic function classes. *Approximation, optimization and computing*, 49–52, *North-Holland, Amsterdam*, 1990. (Summary) **93c:41041** 41A46

— $L^1(\mathbf{R})$-optimal recovery on some differentiable function classes. *Approximation, optimization and computing*, 113–116, *North-Holland, Amsterdam*, 1990. (Summary) **93b:41016** 41A15 (41A60)

— (*with* Chen, Han Lin) Exact and asymptotic estimates for n-widths of some classes of periodic functions. *Constr. Approx.* **8** (1992), *no.* 3, 289–307. (Dinh Dung) **93h:41024** 41A46 (41A15)

— Infinite-dimensional widths in the spaces of functions. II. *J. Approx. Theory* **69** (1992), *no.* 1, 15–34. (Summary) **93g:41022** 41A46 (41A15)

Li, Chun Lin Variable-driven AND-parallelism. (English summary) *J. Southeast Univ. (English Ed.)* **7** (1991), *no.* 2, 1–6. (Summary) **93k:68018** 68N17 (03B70)

Li, Chun Ming A class of integral operators defined on the family of Bazilevich functions. (Chinese. English summary) *Heilongjiang Daxue Ziran Kexue Xuebao* **9** (1992), *no.* 2, 26–32, 5. 30C45

Li, Chung-Lun (*with* McCormick, S. Thomas; Simchi-Levi, David) The point-to-point delivery and connection problems: complexity and algorithms. *Discrete Appl. Math.* **36** (1992), *no.* 3, 267–292. (Neville G. F. Sancho) **93c:90031** 90B10 (68Q25, 68R05, 90B06)

— (*with* McCormick, S. Thomas; Simchi-Levi, David) Finding disjoint paths with different path-costs: complexity and algorithms. (English summary) *Networks* **22** (1992), *no.* 7, 653–667. (Summary) **93g:68056** 68Q25 (05C38, 05C85, 68R10)

— (*with* Simchi-Levi, David; Desrochers, Martin) On the distance constrained vehicle routing problem. (English summary) *Oper. Res.* **40** (1992), *no.* 4, 790–799. 90B06

— (*with* McCormick, S. Thomas; Simchi-Levi, David) On the minimum-cardinality-bounded-diameter and the bounded-cardinality-minimum-diameter edge addition problems. (English summary) *Oper. Res. Lett.* **11** (1992), *no.* 5, 303–308. (Summary) **93i:68144** 68R10 (05C85, 68Q25, 90C35, 90C60)

— (*with* Chen, Z. L.; Cheng, T. C. E.) A note on one-processor scheduling with asymmetric earliness and tardiness penalties. (English summary) *Oper. Res. Lett.* **13** (1993), *no.* 1, 45–48. (Summary) **93k:90044** 90B35

Li, Chunhui (*with* Tingley, Maureen) A note on obtaining confidence intervals for discrete parameters. (English summary) *Amer. Statist.* **47** (1993), *no.* 1, 20–23. 62E25

Li, Congming (*with* Chen, Wen Xiong) Classification of solutions of some nonlinear elliptic equations. *Duke Math. J.* **63** (1991), *no.* 3, 615–622. (From the introduction) **93c:35009** 35B05 (35J60)

Li, D. *see* **Li, De Ning**

Li, Da Qian Life-span of classical solutions to nonlinear wave equations. *Qualitative aspects and applications of nonlinear evolution equations (Trieste, 1990)*, 43–76, *World Sci. Publishing, River Edge, NJ*, 1991. (Enrique Zuazua) **93c:35107** 35L70 (35B05)

— (*with* Zhao, Yan Chun) Global shock solutions to a class of piston problems for the system of one-dimensional isentropic flow. A Chinese summary appears in Chinese Ann. Math. Ser. A **12** (1991), no. 5, 645. *Chinese Ann. Math. Ser. B* **12** (1991), *no.* 4, 495–499. (Gholam-Ali Zakeri) **93a:76084** 76N15 (76L05)

— (*with* Chen, Yun Mei) ★ Global classical solutions for nonlinear evolution equations. Pitman Monographs and Surveys in Pure and Applied Mathematics, 45. *Longman Scientific & Technical, Harlow; copublished in the United States with John Wiley & Sons, Inc., New York*, 1992. xiv+209 *pp. ISBN* 0-582-05588-1 (Ioan I. Vrabie) **93g:35002** 35-02 (35K22, 35K55, 35L70, 35Q55)

— (*with* Yu, Xin[2]; Zhou, Yi) Life-span of classical solutions to one-dimensional nonlinear wave equations. (English summary) A Chinese summary appears in Chinese Ann. Math. Ser. A **13** (1992), no. 4, 516. *Chinese Ann. Math. Ser. B* **13** (1992), *no.* 3, 266–279. (Summary) **93i:35093** 35L70 (35B30)

— (*with* Zhou, Yi) Life-span of classical solutions to fully nonlinear wave equations. II. *Nonlinear Anal.* **19** (1992), *no.* 9, 833–853. (Mehmet Can) **93k:35181** 35L70 (35B05, 58G16)

— (*with* Serre, Denis; Zhang, Hao) The generalized Riemann problem for the motion of elastic strings. (English summary) *SIAM J. Math. Anal.* **23** (1992), *no.* 5, 1189–1203. (M. Shearer) **93k:35168** 35L65 (73D35, 73K03)

Li, Daniel A class of Riesz sets. (English summary) *Proc. Amer. Math. Soc.* **119** (1993), *no.* 3, 889–892. (Kathryn Hare) **93m:43004** 43A46

Li, De Lang Sextic cyclic fields containing cubic root of unity. *Chinese Sci. Bull.* **34** (1989), *no.* 22, 1854–1856. (Gerhard Kowol) **93m:11112** 11R16

Li, De Li (*with* Wu, Zhi Quan) The law of the iterated logarithm for B-valued I.I.D. random variables indexed by T_θ^d. (Chinese. English and Chinese summaries) *Chinese J. Appl. Probab. Statist.* **7** (1991), *no.* 3, 231–238. 60B12

— (*with* Wang, Xiang Chen) Convergence rates for probabilities of moderate deviations for sums of B-valued random variables. (English summary) *Probability and statistics (Tianjin, 1988/1989)*, 100–110, *Nankai Ser. Pure Appl. Math. Theoret. Phys., World Sci. Publishing, River Edge, NJ*, 1992. (V. J. Paulauskas) **93j:60006** 60B12

— (*with* Rao, M. Bhaskara; Wang, Xiang Chen) The law of the iterated logarithm for independent random variables with multidimensional indices. *Ann. Probab.* **20** (1992), *no.* 2, 660–674. (Thomas Mikosch) **93d:60047** 60F15 (60B12, 60G60)

— (*with* Wang, Xiang Chen; Rao, M. Bhaskara) Almost sure behaviour of F-valued random fields. (English summary) *Probab. Theory Related Fields* **93** (1992), *no.* 3, 393–405. (Thomas Mikosch) **93h:60049** 60F15 (60B12, 60G50, 60G60)

— (*with* Rao, M. Bhaskara; Wang, Xiang Chen) Complete convergence of moving average processes. *Statist. Probab. Lett.* **14** (1992), *no.* 2, 111–114. (Thomas Mikosch) **93g:60065** 60F15 (60G50, 62M10)

Li, De Mao (*with* Wang, Gang[1]) Finite element methods for singular boundary value problems in one space dimension. (Chinese. English and Chinese summaries) *Nei Mongol Daxue Xuebao Ziran Kexue* **23** (1992), *no.* 3, 306–311. (Summary) **93j:65152** 65M60 (34A50, 34B05)

Li, De Ning Riemann problem for multi-dimensional hyperbolic conservation laws. *Free boundary problems in fluid flow with applications (Montreal, PQ, 1990)*, 64–69, *Pitman Res. Notes Math. Ser.*, 282, *Longman Sci. Tech., Harlow*, 1993. (*see* **93k:00036**) 35L65 (76L05)

Li, De Ying A note: "On the Akiyama-Harary problem about complementary plane graphs" [J. Central China Normal Univ. Natur. Sci. **22** (1988), no. 1, 1–8; MR 89i:05106] by Li, J. Z. Mao and B. L. Liu. (Chinese summary) *J. Central China Normal Univ. Natur. Sci.* **26** (1992), *no.* 1, 25–26. 05C10

— (*with* Mao, Jing Zhong) Degree sequences of maximal outerplanar graphs. (Chinese. English and Chinese summaries) *J. Central China Normal Univ. Natur. Sci.* **26** (1992), *no.* 3, 270–273. (Ko-Wei Lih) **93m:05166** 05C75

Li, Deng Xin Isomorphic decomposition of complete graphs into graceful forests. (English and Chinese summaries) *J. Math. Res. Exposition* **12** (1992), *no.* 4, 612–616. (Charles H. C. Little) **93h:05126** 05C70

Li, Di The study of the history of Chinese mathematics is still a broad field. (Chinese) *Collected research papers on the history of mathematics, Vol.* 1 (*Chinese*), 1–7, *Inner Mongolia Univ. Press, Hohhot*, 1990. (*see* **93i:01004**) 01A25

— Some historical data on Shan Lan Li. (Chinese) *Collected research papers on the history of mathematics, Vol.* 1 (*Chinese*), 140–148, *Inner Mongolia Univ. Press, Hohhot*, 1990. (*see* **93i:01004**) 01A25

— (*with* Lu, Si Xian) Calculation tools in early China. (Chinese) *Collected research papers on the history of mathematics, Vol.* 2 (*Chinese*), 24–26, *Inner Mongolia Univ. Press, Hohhot*, 1991. (*see* **93i:01005**) 01A25

— (*with* Wang, Rong Bin) A brief introduction to the newly discovered historical document *Yi hong suanfa*. (Chinese) *Collected research papers on the history of mathematics, Vol.* 2 (*Chinese*), 80–84, *Inner Mongolia Univ. Press, Hohhot*, 1991. (*see* **93i:01005**) 01A25

— (*with* Feng, Li Sheng) An investigation of the *Xie cha wei suanjing*. (Chinese) *Collected research papers on the history of mathematics, Vol.* 3 (*Chinese*), 58–65, *Inner Mongolia Univ. Press, Hohhot*, 1992. (*see* **93i:01006**) 01A25

— *see also* **Collected research papers on the history of mathematics**, **93i:01004**; **93i:01005**; **93i:01006** *and* **Nakata, Kifu**, (**93i:01006**)

Li, Dingping (*with* Iengo, Roberto; Lechner, Kurt) Chern-Simons-Maxwell theory on the torus. *Phys. Lett. B* **269** (1991), *no.* 1-2, 109–115. (Summary) **93h:81086** 81T13 (81S05)

Li, Dong Recursive operations in image algebra. *J. Math. Imaging Vision* **1** (1992), *no.* 1, 23–42. (Gilbert Crombez) **93g:68149** 68U10

Li, Dong Hui On the global convergence of the DFP method. (Chinese. English and Chinese summaries) *Hunan Daxue Xuebao* **20** (1993), *no.* 2, 16–20, 39. (Summary) **93m:90078** 90C30 (65K05)

Li, Dong Lin (*with* Guo, Su Yun; Tian, Zi Yun) A new pseudodiagonalization algorithm with automatic weighting. (Chinese. English and Chinese summaries) *J. Harbin Inst. Tech.* **24** (1992), *no.* 6, 31–37. 65F99

Li, Fan² Application of the resolution principle in inexact reasoning. (Chinese. English and Chinese summaries) *J. Huazhong Univ. Sci. Tech.* **20** (1992), *no.* 1, 27–32. 68T27 (03B35, 03B52)

Li, Fang The weak regularity of semigroup rings. *Northeast. Math. J.* **8** (1992), *no.* 1, 1–3. (Jan Okniński) **93h:16053** 16S36 (16E50, 20M25)

— The existence of identity of orthodox semigroup rings. (English summary) *Semigroup Forum* **46** (1993), *no.* 1, 27–31. (Summary) **93h:20072** 20M25

Li, Feng Gao *see* **Li, Feng Gao²**

Li, Feng Gao¹ (*with* Liu, Xing Shu; Li, Min) A theorem on generating elements for orthogonal groups over a full ring. (Chinese. English and Chinese summaries) *Dongbei Shida Xuebao* **1992**, *no.* 2, 28–33. 20G30

Li, Feng Gao² (*with* Huo, Yuan Ji; Su, Jing Guo) Some nonexistence theorems for cyclic near difference sets of type II. (Chinese) *J. Math. (Wuhan)* **11** (1991), *no.* 2, 205–210. (Siu Lun Ma) **93a:05029** 05B10

Li, Feng Lai (*with* Guo, Da Chang) Nilpotency and solvability of Lie algebras. (Chinese. English and Chinese summaries) *Natur. Sci. J. Harbin Normal Univ.* **7** (1991), *no.* 2, 21–25. (Summary) **93k:17015** 17B30

Li, Fu An Homological meaning of systems $(\varphi, \alpha, \sigma)$. A Chinese summary appears in Acta Math. Sinica **35** (1992), no. 5, 719. *Acta Math. Sinica (N.S.)* **7** (1991), *no.* 4, 348–353. (Alexander J. Hahn) **93c:13007** 13B10

Li, Fu Bin Correction: "Proof of the noninteraction theorem for a system of N relativistic particles in direct interaction" [J. Math. Phys. **31** (1990), no. 6, 1395–1399; MR 92a:70013]. *J. Math. Phys.* **33** (1992), *no.* 8, 2938. (Text of the correction) **93f:70020** 70H40 (58F05)

Li, Fu Bin The crystallographic group of infinite Coxeter groups. *J. Algebra* **146** (1992), *no.* 1, 190–204. (Mehmet Akbas) **93d:20090** 20H15 (20F55)

Li, G. *see* **Li, Gang**

Li, Gai Yang Matching uniqueness of several classes of graphs. (Chinese. English and Chinese summaries) *Math. Appl.* **5** (1992), *no.* 3, 53–59. (Summary) **93j:05118** 05C70

Li, Gang (*with* Anderson, Brian D. O.; Gevers, Michel) Optimal FWL design of state-space digital systems with weighted sensitivity minimization and sparseness consideration. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, I (Kobe,* 1991), 549–554, *Mita, Tokyo,* 1992. (*see* **93g:93005**) 93B51 (93C57)

— (*with* Verriest, E. I.; Gevers, Michel) Computationally optimal implementations via polynomial operators. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, I (Kobe,* 1991), 555–560, *Mita, Tokyo,* 1992. (*see* **93g:93005**) 93B40

Li, Gongqin A boundary integral method for an interface problem in acoustic propagation. (English summary) *Computational acoustics, Vol.* 2 (*Cambridge, MA,* 1991), 395–411, *North-Holland, Amsterdam,* 1993. (Summary) **93m:65162** 65N38 (76M15, 76Q05)

Li, Guang Di *see* **Guo, Shi Rong, (93i:01005)**

Li, Guang Hua² Oscillatory behavior of solutions to a generalized, nonautonomous, delay logistic equation. *Ann. Differential Equations* **7** (1991), *no.* 4, 432–438. (Yiannis Sficas) **93b:34089** 34K15 (34C10)

Li, Guang Ye² (*with* Wang, Zhuo Jin) A pseudospectral method for the nonlinear Schrödinger equation. (Chinese. English and Chinese summaries) *Heilongjiang Daxue Ziran Kexue Xuebao* **9** (1992), *no.* 3, 6–13, 18. (Summary) **93i:65098** 65M70 (35Q55)

Li, Gui Bin Estimates of orders and parameters in general ARMA models. (English summary) *Probability and statistics (Tianjin,* 1988/1989), 111–137, *Nankai Ser. Pure Appl. Math. Theoret. Phys., World Sci. Publishing, River Edge, NJ,* 1992. (Robert V. Foutz) **93i:62082** 62M10 (62F12)

Li, Gui Song Codimension 1 and 2 immersions of Dold manifolds in complex projective spaces. (English summary) *Systems Sci. Math. Sci.* **3** (1990), *no.* 3, 286–288. (Oziride Manzolli Neto) **93g:57036** 57R42 (57Q35)

— Generalizations of J-homomorphism and the Rohlin theorem. *Chinese Sci. Bull.* **36** (1991), *no.* 1, 7–11. (Laurence R. Taylor) **93d:55022** 55R50 (55Q50, 57R19)

— Some results on higher order immersions of manifolds. (English summary) *Acta Math. Sinica (N.S.)* **8** (1992), *no.* 2, 113–121. (Summary) **93e:57050** 57R42

— (*with* Li, Bang He) Immersions with nonzero normal vector fields. *Math. Proc. Cambridge Philos. Soc.* **112** (1992), *no.* 2, 281–285. (J. P. E. Hodgson) **93e:57049** 57R42 (57R25)

— The second normal bordism group of a space pair. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 1, 259–262. (R. E. Stong) **93f:57046** 57R90

Li, Guo Jie (*with* Yao, Xin) General simulated annealing. *J. Comput. Sci. Tech. (English Ed.)* **6** (1991), *no.* 4, 329–338. 90C27

Li, Guo Ying¹ (*with* Tang, Xiang Lian) PP U-statistics and their applications. (English summary) *Probability and statistics (Tianjin,* 1988/1989), 209–227, *Nankai Ser. Pure Appl. Math. Theoret. Phys., World Sci. Publishing, River Edge, NJ,* 1992. (Wanxi Chen) **93h:62118** 62H40 (62E20, 62H15)

— (*with* Zha, Wen Xing) PP Neyman tests for multivariate goodness-of-fit. *The development of statistics: recent contributions from China,* 261–274, *Pitman Res. Notes Math. Ser.,* 258, *Longman Sci. Tech., Harlow,* 1992. (L. Rejto) **93h:62113** 62H15 (62G10, 62H40)

— (*with* Shi, Pei De) A class of PP L-statistics for tests. *Acta Math. Appl. Sinica (English Ser.)* **8** (1992), *no.* 1, 27–44. (Wanxi Chen) **93b:62090** 62H40 (62G30, 62H15)

— (*with* Cheng, Ping¹) Some recent developments in projection pursuit in China. (English summary) *Statist. Sinica* **3** (1993), *no.* 1, 35–51. (Summary) **93m:62141** 62H40

Li, Gyun Y Inversion of Toeplitz matrices and the determination of impulse reactions of discrete electric transmission lines without loss. (Russian. Russian summary) *Mat. Metody i Fiz.-Mekh. Polya No.* 34 (1991), 22–24. (Summary) **93g:94004** 94A05 (15A09, 94C05)

Li, H. *see* **Li, He Nong**

Li, H. G. (*with* Ouyang, Zhao; Schreuder, Hans T.) Robust sampling strategies for regression estimation. (English summary) *Comm. Statist. Theory Methods* **21** (1992), *no.* 11, 3309–3326. (V. K. Srivastava) **93k:62023** 62D05 (62J05)

Li, H. S. (*with* Mahanthappa, K. T.) One-loop threshold correction to the coupling of the antisymmetric tensor field and the Chern-Simons term in string theory. (English summary) *Phys. Rev. D* (3) **46** (1992), *no.* 8, 3663–3666. (Summary) **93g:81128** 81T30 (81V17)

Li, Hai Yen (*with* Li, Hsün Ming; Chang, Chên Hua) Cordial labelings of graphs. (English summary) *Chinese J. Math.* **20** (1992), *no.* 3, 263–273. (Robert C. Brigham) **93h:05142** 05C78

Li, Hai Zhong Stability of surfaces with constant mean curvature in $H^3(c)$. (Chinese) *Acta Math. Sinica* **34** (1991), *no.* 5, 599–603. (Guo Ying Jiang) **93b:53011** 53A10 (53C42)

— Curvature pinching for totally real minimal submanifolds in a complex projective space. (Serbo-Croatian summary) *Rad. Mat.* **7** (1991), *no.* 2, 345–354. (Juan de D. Pérez) **93a:53049** 53C40

Li, Han Lin (*with* Yang, Chao Chih) Using integer programming to find minimum deduction graphs for accomplishing inferences. (English summary) *Internat. J. Inform. Management Sci.* **3** (1992), *no.* 2, 39–56. (Summary) **93k:90056** 90C10 (90C35, 90C90)

Li, Hao *see* **Li, Hao²**

Li, Hao¹ (*with* Jackson, Bill; Zhu, Yong Jin) Dominating cycles in regular 3-connected graphs. *Discrete Math.* **102** (1992), *no.* 2, 163–176. (H. A. Jung) **93g:05081** 05C38

— (*with* Zhu, Yong Jin) Hamilton cycles in regular 3-connected graphs. (English summary) *Discrete Math.* **110** (1992), *no.* 1-3, 229–249. (S. F. Kapoor) **93i:05091** 05C45

— (*with* Flandrin, E.; Fouquet, J.-L.) On Hamiltonian claw-free graphs. (English summary) Graph theory and combinatorics (Marseille-Luminy, 1990). *Discrete Math.* **111** (1993), *no.* 1-3, 221–229. (Summary) **93m:05121** 05C45

Li, Hao² (*with* Wu, Fu Chao) Optimal ω-nonnegative approximation of subnormal operators. (Chinese. Chinese summary) *Chinese Ann. Math. Ser. A* **13** (1992), *no.* 3, 410–414. (Peng Fan) **93k:47037** 47B20 (47A58)

Li, He Nong (*with* Hou, Zong Yi) A coefficient inverse problem for an elliptic equation. (English summary) *Partial differential equations with real analysis,* 93–101, *Pitman Res. Notes Math. Ser.,* 263, *Longman Sci. Tech., Harlow,* 1992. (Summary) **93m:35184** 35R30 (35C99, 35J15)

— (*with* Hou, Zong Yi) The general Arcangeli method for operator equations of the first kind. (Chinese. English and Chinese summaries) *J. Fudan Univ. Natur. Sci.* **31** (1992), *no.* 2, 142–147. (Summary) **93i:65064** 65J10 (47A50)

Li, Hin-Ming On the deficiency of algebroid functions. *Chinese J. Math.* **20** (1992), *no.* 2, 161–175. (N. Toda) **93g:30041** 30D35

— The deficiencies of algebroid functions of order less than one. *Chinese J. Math.* **20** (1992), *no.* 2, 177–184. (N. Toda) **93g:30042** 30D35

— On a theorem of Gundersen and Laine. (English summary) *Math. Scand.* **70** (1992), *no.* 2, 302–310. (W. Balser) **93i:34011** 34A20 (34D99)

Li, Hong (*with* Xu, Jin) Chromatic polynomials of connection n-cycle graphs. (Chinese. English and Chinese summaries) *J. Northwest Univ.* **22** (1992), *no.* 2, 147–152. 05C15

Li, Hong Xiang (*with* Wang, Cun Zheng) Formulas for solutions of second order ordinary differential equations and their applications. (English summary) *Ann. Differential Equations* **8** (1992), *no.* 4, 438–446. 34A05 (73K12)

Li, Hong Xing (*with* Wang, Pei Zhuang; Yan, Jian Ping; Lu, Gao; Huang, Chong Fu) Fuzzy set operations in the theory of falling shadow representation. (Chinese. English and Chinese summaries) Fuzzy information processing and machine intelligence (Chinese). *Mohu Xitong yu Shuxue* **6** (1992), *no.* 2, 86–92, 124. (Summary) **93m:04023** 04A72

— (*with* Luo, Cheng Zhong; Wang, Pei Zhuang) The cardinality of fuzzy sets and the continuum hypothesis. (English summary) *Fuzzy Sets and Systems* **55** (1993), *no.* 1, 61–77. (Summary) **93k:03053** 03E72

Li, Hong Ze The distribution of a polynomial function $f(n)$ modulo 1. (Chinese. English summary) *Adv. in Math. (China)* **21** (1992), *no.* 2, 216–221. (Summary) **93f:11057** 11K06

— On Diophantine inequalities. (Chinese. English summary) *Adv. in Math. (China)* **21** (1992), *no.* 3, 350–358. (Jian Hua Ren) **93m:11056** 11J25 (11P05, 11P55)

— On Waring's problem for ninth and tenth powers. (Chinese. English summary) *Shandong Daxue Xuebao Ziran Kexue Ban* **27** (1992), *no.* 1, 1–11. (Summary) **93f:11070** 11P05

Li, Hsün Ming (*with* Li, Hai Yen; Chang, Chên Hua) Cordial labelings of graphs. (English summary) *Chinese J. Math.* **20** (1992), *no.* 3, 263–273. (Robert C. Brigham) **93h:05142** 05C78

— (*with* Chang, Chên Hua) Set to set broadcasting in communication networks. (English summary) *Discrete Appl. Math.* **40** (1992), *no.* 3, 411–421. (Summary) **93i:90043** 90B12 (05C90, 68M10, 68R10)

Li, Hua Xia (*with* Zhou, Shu Zi) Quasi-Newton methods for nonlinear variational inequalities. (Chinese. English summary) *J. Numer. Methods Comput. Appl.* **13** (1992), *no.* 1, 51–57. 65K10 (47H17, 47H19)

Li, Hui Ping BMO, VMO and Hankel operators on the Bergman space of strongly pseudoconvex domains. *J. Funct. Anal.* **106** (1992), *no.* 2, 375–408. (Ke He Zhu) **93d:47055** 47B35 (32A37, 32F15, 32H15)

Li, J. (*with* Ingber, Marc S.) A method of regularization of the hypersingular integral contained in the traction boundary integral equation for the Stokes flow problem. (English summary) *Boundary element technology, VII (Albuquerque, NM,* 1992), 75–89, *Comput. Mech., Southampton,* 1992. (*see* **93b:65002**) 76M15 (65R20, 76D07)

Li, J.-S. *see* **Li, Jian-Shu**

Li, Jen Hsing (*with* Li, Tzuu Hseng S.) Stabilization bound of discrete two-time-scale systems. *Systems Control Lett.* **18** (1992), *no.* 6, 479–489. (V. V. Krakhotko) **93e:93051** 93D15 (93C05, 93C55, 93C70)

Li, Ji Bin (*with* Lin, Yi Ping) The normal form of a planar autonomous system and critical points of the period of closed orbits. (Chinese) *Acta Math. Sinica* **34** (1991), *no.* 4, 490–501. (Chengzhi Li) **93b:34036** 34C05 (34A20, 34C20, 34C23, 58F14)

— (*with* Zhao, Xiao Hua; Kwek, Keng Huat; Huang, Ke Lei) Chaotic and resonant streamlines in the ABC flow. (English summary) *SIAM J. Appl. Math.* **53** (1993), *no.* 1, 71–77. (Summary) **93j:76039** 76F20 (58F13, 76C05, 76E99)

Li, Ji Chun A class of uniformly convergent difference schemes for the problem of a turning point without resonance. (Chinese. English summary) *Numer. Math. J. Chinese Univ.* **14** (1992), *no.* 2, 120–129. (Summary) **93j:65105** 65L05 (34A45, 34E20)

Li, Ji Min (*with* Li, An Min) An intrinsic rigidity theorem for minimal submanifolds in a sphere. *Arch. Math. (Basel)* **58** (1992), *no.* 6, 582–594. (Bang-yen Chen) **93b:53050** 53C42 (53C40)

Li, Jia² Periodic solutions of population models in a periodically fluctuating environment. *Math. Biosci.* **110** (1992), *no.* 1, 17–25. (Summary) **93a:92011** 92D25

— (*with* Hu, Shi Geng) On eventual boundedness of Lotka-Volterra ecological systems. *Nonlinear Anal.* **18** (1992), *no.* 10, 917–928. (Guo Ren Dai) **93f:92029** 92D40 (34C99,

34D40, 92D25)

Li, Jia Liang Some results on Padé approximants. *Approximation, optimization and computing*, 117–119, *North-Holland, Amsterdam*, 1990. (*see* **93a:41001**) 41A21

— Hayman directions of entire functions of zero order that are associated with multivalues. (Chinese. English and Chinese summaries) *J. Central China Normal Univ. Natur. Sci.* **26** (1992), *no.* 4, 395–399. 30D20

Li, Jia Xu Existence of limit cycles for the system $dx/dt = \varphi(y) - F(x)$, $dy/dt = -g(x)$. (Chinese. English summary) *Heilongjiang Daxue Ziran Kexue Xuebao* **9** (1992), *no.* 2, 6–12. (Jian Hua Sun) **93e:34040** 34C05

Li, Jia Yu[2] The spaces Λ_α of Lipschitz continuous functions on a complete Riemannian manifold with nonnegative curvature. *J. Math. Res. Exposition* **12** (1992), *no.* 1, 117–126. (Luigi Rodino) **93f:46047** 46E35 (35S05, 58G99)

— The problem of eigenvalue on noncompact complete Riemannian manifold. (English summary) *J. Partial Differential Equations* **5** (1992), *no.* 4, 87–95. (Dennis M. DeTurck) **93k:58225** 58G25 (58G11)

— Boundedness of the Riesz potential on a complete manifold with nonnegative Ricci curvature. (English summary) *Proc. Amer. Math. Soc.* **118** (1993), *no.* 4, 1075–1077. (Dennis M. DeTurck) **93m:58111** 58G11 (43A22, 53C21)

Li, Jian Guo (*with* Tian, Qing Hui) Unbalanced assignment problems. (Chinese. English and Chinese summaries) *Natur. Sci. J. Xiangtan Univ.* **14** (1992), *no.* 2, 78–82. 90B80

Li, Jian Hua[1] Quasi-Einsteinian manifolds with harmonic curvature tensor. (Chinese. English summary) *J. Northeast Univ. Tech.* **12** (1991), *no.* 4, 420–425. (Sheng Jiang) **93e:53055** 53C25

Li, Jian Kui Rank 1 operators in reflexive algebra modules. (Chinese. English and Chinese summaries) *Qufu Shifan Daxue Xuebao Ziran Kexue Ban* **18** (1992), *no.* 2, 20–22. 47D25

Li, Jian Lin On a series of Erdős-Turán type. (English summary) *Analysis* **12** (1992), *no.* 3-4, 315–317. (Jozef Antoni) **93j:40002** 40A25 (65B10)

— On the Milin-Lebedev inequality. (Chinese. Chinese summary) *Math. Practice Theory* **1992**, *no.* 3, 85–90. (Summary) **93m:30025** 30C50 (30A10, 30C40)

Li, Jian Ming (*with* Wu, Zhao Yan) Geometry of quantal adiabatic evolution for systems with a degenerate Hamiltonian. (English summary) *Phys. Lett. A* **168** (1992), *no.* 5-6, 335–342. (Piotr Kosiński) **93k:81064** 81Q99 (81S99)

Li, Jian Quan Bäcklund transformations for the isospectral and nonisospectral Kaup-Newell hierarchies. (Chinese. English and Chinese summaries) *J. China Univ. Sci. Tech.* **22** (1992), *no.* 2, 245–254. (Summary) **93i:35113** 35Q35 (58F37)

Li, Jian-Shu (*with* Cogdell, J.; Piatetski-Shapiro, Ilya Iosifovitch; Sarnak, Peter C.) Poincaré series for SO(n, 1). *Acta Math.* **167** (1991), *no.* 3-4, 229–285. (J. Elstrodt (Zbl 743:11028)) **93h:11050** 11F72 (11L05, 11M41)

— Nonexistence of singular cusp forms. *Compositio Math.* **83** (1992), *no.* 1, 43–51. (Stephen Gelbart) **93f:11040** 11F70 (22E50, 22E55)

— (*with* Duke, W.; Howe, Roger E.) Estimating Hecke eigenvalues of Siegel modular forms. *Duke Math. J.* **67** (1992), *no.* 1, 219–240. (T. C. Vasudevan) **93i:11057** 11F60 (11F30, 11F46, 11F70)

— Nonvanishing theorems for the cohomology of certain arithmetic quotients. *J. Reine Angew. Math.* **428** (1992), 177–217. (Stephen Gelbart) **93e:11067** 11F70 (22E50, 22E55)

— Some results on the unramified principal series of p-adic groups. *Math. Ann.* **292** (1992), *no.* 4, 747–761. (Marko Tadić) **93d:22023** 22E50

— Theta series and construction of automorphic forms. *Representation theory of groups and algebras*, 237–248, *Contemp. Math.*, 145, *Amer. Math. Soc., Providence, RI*, 1993. (*see* **93k:00028**) 22E46 (22E45, 22E47)

— *see also* **Representation theory of groups and algebras, 93k:00028**

Li, Jian Xin A new algorithm for the greatest solution of fuzzy bilinear equations. *Fuzzy Sets and Systems* **46** (1992), *no.* 2, 193–210. (From the summary) **93b:15034** 15A99 (04A72)

— Periodicity of powers of fuzzy matrices (finite fuzzy relations). (English summary) *Fuzzy Sets and Systems* **48** (1992), *no.* 3, 365–369. (Summary) **93d:15045** 15A99 (04A72)

— An upper bound on indices of finite fuzzy relations. (English summary) *Fuzzy Sets and Systems* **49** (1992), *no.* 3, 317–321. (Summary) **93f:04004** 04A72

Li, Jian Zeng A higher-dimensional Vaidya-like space-time with electromagnetic fields and nonzero cosmological constant. (Chinese. English and Chinese summaries) *Acta Phys. Sinica* **41** (1992), *no.* 9, 1389–1395. (Summary) **93m:83044** 83C50 (83E15)

— Space-times with plane-symmetric scalar waves. (English summary) *J. Math. Phys.* **33** (1992), *no.* 10, 3506–3508. (S. Kichenassamy) **93j:83022** 83C20

Li, Jiang Fan Stationary surfaces in Minkowski spaces. I. A representation formula. (English summary) *Pacific J. Math.* **158** (1993), *no.* 2, 353–363. (Timothy Murdoch) **93k:53009** 53A10 (53A40)

Li, Jiang Fan Interior solutions of a static charged perfect fluid sphere in general relativity. (Chinese. Chinese summary) *Acta Math. Sci. (Chinese)* **11** (1991), *no.* 4, 467–472. (Can-Bin Liang) **93f:83014** 83C15 (83C55)

Li, Jiangfan *see* **Li, Jiang Fan**

Li, Jiayu *see* **Li, Jia Yu[2]**

Li, Jie (*with* Zhang, Zhong Yun; Zhu, Ming Fa) Partitioning of independent tasks for minimizing completion time and total waiting time. *J. Comput. Sci. Tech. (English Ed.)* **6** (1991), *no.* 3, 276–281. 68M20

Li, Jin Jin A characterization of countably compact spaces. (Chinese. English and Chinese summaries) *Zhangzhou Shiyuan Xuebao (Ziran Kexue Ban)* **6** (1992), *no.* 4, 16–18. 54D20

Li, Jin Mei The atomic decomposion [decomposition] of local weak H^p ($0 < p < 1$) spaces. (Chinese summary) *Acta Sci. Natur. Univ. Norm. Hunan.* **14** (1991), *no.* 4, 289–296. (Introduction) **93m:42010** 42B30 (46F05)

Li, Jin Ping Empirical Bayes rules for selecting good populations from one-dimensional discrete exponential families. (Chinese. Chinese summary) *J. Math. Res. Exposition* **12** (1992), *no.* 3, 455–462. (K. F. Yu) **93m:62021** 62C12 (62F07)

Li, Jinlu (*with* Karatzas, Ioannis; Ocone, Daniel L.) An extension of Clark's formula. *Stochastics Stochastics Rep.* **37** (1991), *no.* 3, 127–131. (Ali Süleyman Üstünel) **93f:60078** 60H05 (60H07)

Li, Ju Da Opial-type integral inequalities involving several higher order derivatives. *J. Math. Anal. Appl.* **167** (1992), *no.* 1, 98–110. (B. G. Pachpatte) **93h:26025** 26D10

Li, Jun Algebraic geometric interpretation of Donaldson's polynomial invariants. *J. Differential Geom.* **37** (1993), *no.* 2, 417–466. (Zhenbo Qin) **93m:14007** 14D20 (14J60, 57R55, 57R57)

Li, Jun (*with* Lin, Zong De) Dimensions of fractals created by strict recursive methods. (Chinese. English and Chinese summaries) *Shanghai Shifan Daxue Xuebao Ziran Kexue Ban* **21** (1992), *no.* 3, 44–47. (Summary) **93m:54059** 54F45

Li, Junfang (*with* Ouyang, Zhao; Schreuder, Hans T.) Regression estimation under sampling with one unit per stratum. *Comm. Statist. Theory Methods* **20** (1991), *no.* 8, 2431–2449. (David Bellhouse) **93b:62016** 62D05

Li, Kai Long A general form of the Schwarz lemma. (Chinese. English and Chinese summaries) *Shandong Kuangye Xueyuan Xuebao* **11** (1992), *no.* 4, 424–426. 30C80

Li, Kai Tai (*with* Huang, Ai Xiang; He, Yin Nian) Full discrete nonlinear Galerkin method. *Numerical methods for partial differential equations (Tianjin*, 1991), 61–82, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93b:65006**) 65M60 (34G20, 35Q30)

— (*with* Liu, Xiao Zhong) Bifurcation with symmetry breaking for the flow between two concentric rotating spheres. (English summary) *Proceedings of International Conference on Scientific Computation (Hangzhou*, 1991), 86–108, *Ser. Appl. Math.*, 1, *World Sci. Publishing, River Edge, NJ*, 1992. (G. W. Hedstrom) **93h:65083** 65J15 (35B32, 65H17, 65N30, 76D05, 76E99)

— (*with* Huang, Ai Xiang) A method for approximating inertial manifolds and approximation of multilevel finite elements. (Chinese. English summary) *Xi'an Jiaotong Daxue Xuebao* **26** (1992), *no.* 1, 51–58, 80. (Summary) **93b:65142** 65M60 (34G20, 47H17)

Li, Kam-Shun (*with* Chan, Wai Leung; Li, Yi Shen) Line soliton interactions of a nonisospectral and variable-coefficient Kadomtsev-Petviashvili equation. (English summary) *J. Math. Phys.* **33** (1992), *no.* 11, 3759–3773. (Summary) **93h:35172** 35Q51 (35Q53)

Li, Keqin (*with* Cheng, Kam-Hoi) Heuristic algorithms for on-line packing in three dimensions. (English summary) *J. Algorithms* **13** (1992), *no.* 4, 589–605. (Summary) **93h:68059** 68Q25 (52B55)

Li, Ker-Chau Sliced inverse regression for dimension reduction. With discussion and a rejoinder by the author. *J. Amer. Statist. Assoc.* **86** (1991), *no.* 414, 316–342. (Summary) **93f:62084** 62H25 (62J02)

— Uncertainty analysis for mathematical models with SIR. (English summary) *Probability and statistics (Tianjin*, 1988/1989), 138–162, *Nankai Ser. Pure Appl. Math. Theoret. Phys., World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93b:60004**) 62M99 (62K99, 65C20, 93A30)

— (*with* Lee, J. Jack; Elashoff, Robert M.) On recensoring for censored paired data. (English summary) *J. Amer. Statist. Assoc.* **88** (1993), *no.* 421, 104–118. (Summary) **93k:62073** 62F35 (62P10)

Li, Kin Y. Interpolating Blaschke products and the left spectrum of multiplication operators on the Bergman space. *Hokkaido Math. J.* **21** (1992), *no.* 2, 295–304. (Kenneth Stephenson) **93h:30053** 30D50 (46E20, 47B38)

Li, Kuiyuan (*with* Li, Tien-Yien) A homotopy algorithm for a symmetric generalized eigenproblem. (English summary) *Numer. Algorithms* **4** (1993), *no.* 1-2, 167–195. (Summary) **93j:65054** 65F15

— (*with* Li, Tien-Yien) An algorithm for symmetric tridiagonal eigenproblems: divide and conquer with homotopy continuation. (English summary) *SIAM J. Sci. Comput.* **14** (1993), *no.* 3, 735–751. (Summary) **93m:65048** 65F15

Li, Kuo Wei The understanding of angles in ancient China. (Chinese) *Collected research papers on the history of mathematics, Vol.* 2 (*Chinese*), 6–14, *Inner Mongolia Univ. Press, Hohhot*, 1991. (*see* **93i:01005**) 01A25

Li, L. *see* **Li, Lihong**

Li, L. Y. (*with* Krätzig, W. B.; Nawrotzki, P.) Stability conditions for nonconservative dynamical systems. (English summary) *Comput. Mech.* **8** (1991), *no.* 3, 145–151. (Summary) **93f:73066** 73K12 (73H10)

Li, La Yuan Distributed optimal local double loop network. (English summary) *Acta Math. Sci. (English Ed.)* **12** (1992), *no.* 3, 248–259. (Summary) **93m:68016** 68M10

Li, Lang Ru (*with* Gu, Cheng Lin; Zhou, Ke Ding) A network analysis and the graph theory of three-dimensional difference schemes. (Chinese. English summary) *J. Huazhong Univ. Sci. Tech.* **19** (1991), *no.* 6, 29–33. (Summary) **93c:65124** 65N06 (65N50)

Li, Lei A fast algorithm for polynomial matrices. (Chinese) *Math. Practice Theory* **1991**, *no.* 4, 33–35. (Ching-Tsuan Pan) **93c:65058** 65F30

Li, Li[1] (*with* Zhang, Wei; Huo, Quan Zhong) Heteroclinic orbit and subharmonic bifurcations and chaos of nonlinear oscillator. *Appl. Math. Mech. (English Ed.)* **13** (1992), *no.* 3, 217–226; *translated from Appl. Math. Mech.* **13** (1992), *no.* 3, 199–208 (*Chinese. English summary*). (Summary) **93f:34067** 34C23 (34C15, 34C37, 58F14, 70K50)

Li, Li Kang (*with* Babuška, Ivo M.) The corner singularity and boundary layer and computation for hierarchic plate model. (English summary) *Proceedings of International Conference on Scientific Computation (Hangzhou*, 1991), 109–120, *Ser. Appl. Math.*, 1, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93d:65004**) 73V05 (65N30)

Li, Li Xin (*with* Liu, Liao) Properties of radiation near the black-hole horizon and the second law of thermodynamics. (English summary) *Phys. Rev. D* (3) **46** (1992), *no.* 8, 3296–3301. (Summary) **93g:83067** 83C57 (83C47)

Li, Li Yuan (*with* Cao, Da Zhu) Optimal prediction of road traffic flow and optimal control of signals at intersections. (Chinese. English and Chinese summaries) *Control Theory Appl.* **10** (1993), *no.* 1, 67–72. 49N55 (90B06)

Li, Lige (*with* Liu, Yaping) Positive solutions to certain nonlinear elliptic biological interacting systems of three variables. *Proceedings of Asian Mathematical Conference*, 1990 (*Hong Kong*, 1990), 284–290, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93b:00022**) 35J65 (35B05, 35J55, 92D25, 92D40)

Li, Lihong (*with* Cao, Zhi Qiang; Kandel, Abraham; Han, J.) The mechanism of fuzzy logic controllers. (English summary) *Analysis and management of uncertainty: theory and applications (College Park, MD*, 1990), 199–208, *Mach. Intell. Pattern Recogn.*, 13, *North-Holland, Amsterdam*, 1992. (*see* **93f:68004**) 03B52

— (*with* Kandel, Abraham; Cao, Zhi Qiang) Fuzzy inference and its applicability to control systems. *Fuzzy Sets and Systems* **48** (1992), *no.* 1, 99–111. 93C42 (04A72)

Li, Lin (*with* Dang, Xin Yi) A study on the existence and uniqueness of limit cycles of a class of Kolmogorov systems. (Chinese. English and Chinese summaries) *J. Northwest Univ.* **22** (1992), *no.* 3, 255–258. (Summary) **93h:34038** 34C05 (34C25)

Li, Lin Zhong (*with* He, Yi Liang) A_0-stability and $A(\alpha)$-stability of implicit linear 3-step methods of order 3. (Chinese. English summary) *Numer. Math. J. Chinese Univ.* **14** (1992), *no.* 2, 158–168. (Xu Hai Xu) **93m:65093** 65L05

Li, Ling Yuan Four-valued logic and an analysis of competition and risk in digital circuits. (Chinese. English and Chinese summaries) *J. Central China Normal Univ. Natur. Sci.* **26** (1992), *no.* 4, 432–436. 94C05 (03B50)

Li, Lode (*with* Hausch, Donald B.) A common value auction model with endogenous entry and information acquisition. (English summary) *Econom. Theory* **3** (1993), *no.* 2, 315–334. 90A60

Li, Long Tu Stability of solutions to first-order linear differential equations of neutral type. (Chinese. English and Chinese summaries) *Math. Appl.* **5** (1992), *no.* 2, 59–63. (Summary) **93e:34103** 34K20

Li, Lu Shu (*with* Hua, Wen Xiu) The g_λ-measures and conditional g_λ-measures on measurable spaces. *Fuzzy Sets and Systems* **46** (1992), *no.* 2, 211–219. (Summary) **93b:28051** 28E10 (04A72)

Li, Luen Chau (*with* Deift, P. A.; Demmel, James; Tomei, Carlos) Dynamical aspects of the bidiagonal singular value decomposition. *The geometry of Hamiltonian systems (Berkeley, CA, 1989)*, 81–96, *Math. Sci. Res. Inst. Publ.*, 22, *Springer, New York*, 1991. (Summary) **93e:15003** 15A18 (58F07)

— (*with* Deift, P. A.; Tomei, Carlos) Loop groups, discrete versions of some classical integrable systems, and rank 2 extensions. *Mem. Amer. Math. Soc.* **100** (1992), *no.* 479, viii+101 *pp.* (Malcolm Adams) **93d:58065** 58F07 (22E67)

Li, Lung An (*with* Fu, James C.) Method of pao-zhuan yin-yu: a method of stochastic point estimation. *Statist. Sinica* **2** (1992), *no.* 1, 171–188. (Michael R. Chernick) **93d:62083** 62G09 (62G20, 62L20)

Li, Luo Luo Necessary and sufficient conditions for solvability of the multiplicative inverse matrix eigenvalue problem. (Chinese. English and Chinese summaries) *Acta Sci. Natur. Univ. Sunyatseni* **31** (1992), *no.* 2, 115–117. 15A09 (65F15)

Li, Luo Qing The approximation of bivariate functions by certain integral type operators. *Progress in approximation theory*, 649–660, *Academic Press, Boston, MA*, 1991. (Jia-Ding Cao) **93a:41041** 41A36 (41A25, 41A35)

— Approximation for spherical functions by Bochner-Riesz means. *Approx. Theory Appl.* **7** (1991), *no.* 4, 93–120. (Walter Trebels) **93f:42029** 42B08 (33C55, 41A25)

— (*with* Liang, Xue Zhang) On bivariate osculatory interpolation. Proceedings of the International Symposium on Computational Mathematics (Matsuyama, 1990). *J. Comput. Appl. Math.* **38** (1991), *no.* 1-3, 271–282. (G. Baszenski) **93f:41007** 41A05 (41A10, 65D05)

Li, M. Z. *see* **Li, Ming Zhong**

Li, Ma *see* **Ma, Li**

Li, Miao Correlators of special states in $c = 1$ Liouville theory. (English summary) *Nuclear Phys. B* **382** (1992), *no.* 2, 242–258. 81T70 (81T40)

— (*with* Carini, Paolo; Feng, Long Long; Ruffini, Remo) Phase evolution of the photon in Kerr spacetime. (English summary) *Phys. Rev. D* (3) **46** (1992), *no.* 12, 5407–5413. (Summary) **93g:83028** 83C22 (83C57)

Li, Min (*with* Liu, Xing Shu; Li, Feng Gao[1]) A theorem on generating elements for orthogonal groups over a full ring. (Chinese. English and Chinese summaries) *Dongbei Shida Xuebao* **1992**, *no.* 2, 28–33. 20G30

Li, Ming *see* **Li, Ming[5]**

Li, Ming[1] (*with* Foulser, David E.; Yang, Qiang) Theory and algorithms for plan merging. (English summary) *Artificial Intelligence* **57** (1992), *no.* 2-3, 143–181. (Summary) **93e:68115** 68T20

— (*with* Vitányi, Paul M. B.) Average case complexity under the universal distribution equals worst-case complexity. *Inform. Process. Lett.* **42** (1992), *no.* 3, 145–149. 68Q25

— (*with* Vitányi, Paul M. B.) Optimality of wait-free atomic multiwriter variables. (English summary) *Inform. Process. Lett.* **43** (1992), *no.* 2, 107–112. (Summary) **93h:68044** 68Q10

— (*with* Jiang, Tao[1]; Du, Ding Zhu) A note on shortest superstrings with flipping. (English summary) *Inform. Process. Lett.* **44** (1992), *no.* 4, 195–199. (Summary) **93j:68225** 68U15 (68R15, 92D20)

— (*with* Vitányi, Paul M. B.) Inductive reasoning and Kolmogorov complexity. *J. Comput. System Sci.* **44** (1992), *no.* 2, 343–384. (M. I. Dekhtyar) **93e:68039** 68Q30 (68T05, 68T27)

— (*with* Longpré, Luc; Vitányi, Paul M. B.) The power of the queue. *SIAM J. Comput.* **21** (1992), *no.* 4, 697–712. (Joan Boyar) **93h:68039** 68Q05 (68Q30)

Li, Ming[5] (*with* Wu, Yong Shi[2]) Realizability and synthesis methods for semiuniform frequency-dependent lossy broadband matching networks. (Chinese. English and Chinese summaries) *J. Tianjin Univ.* **1992**, *no.* 2, 1–6. 94C05

Li, Ming Chia (*with* Lin, Sung Shan) Multiplicity of positive solutions for nonlinear elliptic equations on annulus. *Chinese J. Math.* **19** (1991), *no.* 3, 257–276. (H. J. Kuiper) **93b:35048** 35J65 (35B30, 35J20)

Li, Ming Chu A note on circumferences of 3-connected claw-free graph. *Nanjing Daxue Xuebao Ziran Kexue Ban* **27** (1991), *Special Issue*, 98–105. (Summary) **93b:05094** 05C38 (05C40)

— Pancyclicity of claw-free graphs. (Chinese. English summary) *Nanjing Daxue Xuebao Ziran Kexue Ban* **27** (1991), *Special Issue*, 123–126. (Summary) **93b:05093** 05C38

— (*with* Liu, Zhen Hong[1]) A survey of studies on Hamiltonian problems in claw-free graphs. (Chinese. English summary) *Nanjing Daxue Xuebao Ziran Kexue Ban* **27** (1991), *Special Issue*, 223–231. (Summary) **93f:05054** 05C38 (05C45)

— (*with* Liu, Zhen Hong[1]) Hamiltonian cycles of 3-connected regular claw-free graphs. (Chinese. English and Chinese summaries) *Qufu Shifan Daxue Xuebao Ziran Kexue Ban* **18** (1992), *no.* 4, 1–8. (Summary) **93m:05123** 05C45

— (*with* Li, Zhong Xiang) Longest cycles in claw-free graphs. (Chinese. English and Chinese summaries) *J. Math. Res. Exposition* **13** (1993), *no.* 1, 131–136. (Summary) **93k:05095** 05C38 (05C35)

Li, Ming Zhong On nonlinear boundary value problems for a class of first order overdetermined elliptic system in a bicylinder. *Partial differential equations with complex analysis*, 178–185, *Pitman Res. Notes Math. Ser.*, 262, *Longman Sci. Tech., Harlow*, 1992. (Heinrich Begehr) **93m:35132** 35N10 (30E25, 35J65, 35Q15)

Li, Mu Lan (*with* Jia, Lei) A new method for solving time-varying bilinear systems. (Chinese. English and Chinese summaries) *Math. Appl.* **5** (1992), *no.* 4, 66–71. (Summary) **93k:15026** 15A24 (93B25)

Li, Nian Zu (*with* Whitehead, Earl Glen, Jr.) The chromatic uniqueness of W_{10}. *Discrete Math.* **104** (1992), *no.* 2, 197–199. (Summary) **93e:05034** 05C15

— On graphs having σ-polynomials of the same degree. (English summary) *Discrete Math.* **110** (1992), *no.* 1-3, 185–196. (Yousef Alavi) **93k:05065** 05C15

Li, Pai Fei On powers of symmetric elements in prime rings. *Proceedings of the First China-Japan International Symposium on Ring Theory (Guilin, 1991)*, 92–94, *Okayama Univ., Okayama*, 1992. (*see* **93k:16001**) 16N60

— (*with* Wang, Ts'ai Lien) Powers of skew elements in simple rings. (English summary) *Chinese J. Math.* **20** (1992), *no.* 4, 367–374. (Summary) **93i:16030** 16K40

Li, Pei Ye The problem of ascertaining the era when rod-arithmetic operations were replaced by abacus calculations. (Chinese) *Collected research papers on the history of mathematics, Vol.* 2 (*Chinese*), 74–79, *Inner Mongolia Univ. Press, Hohhot*, 1991. (*see* **93i:01005**) 01A25

— A study on the *Suanfa zuanyao*. (Chinese) *Collected research papers on the history of mathematics, Vol.* 2 (*Chinese*), 85–90, *Inner Mongolia Univ. Press, Hohhot*, 1991. (*see* **93i:01005**) 01A25

— A study on the *Chen Hou Yao suanshu*. (Chinese) *Collected research papers on the history of mathematics, Vol.* 3 (*Chinese*), 72–77, *Inner Mongolia Univ. Press, Hohhot*, 1992. (*see* **93i:01006**) 01A25

Li, Peter (*with* Treibergs, Andrejs) Applications of eigenvalue techniques to geometry. *Contemporary geometry*, 21–52, *Univ. Ser. Math., Plenum, New York*, 1991. (Johan Tysk) **93i:58159** 58G25 (53C42)

— (*with* Tam, Luen-Fai) The heat equation and harmonic maps of complete manifolds. *Invent. Math.* **105** (1991), *no.* 1, 1–46. (From the introduction) **93e:58039** 58E20 (58G11)

— (*with* Tam, Luen-Fai) Harmonic functions and the structure of complete manifolds. *J. Differential Geom.* **35** (1992), *no.* 2, 359–383. (Yang Lian Pan) **93b:53033** 53C21 (53C20, 58G30)

— (*with* Tam, Luen-Fai) Uniqueness and regularity of proper harmonic maps. *Ann. of Math.* (2) **137** (1993), *no.* 1, 167–201. (Andrea Ratto) **93m:58027** 58E20 (35D10, 35J65)

Li, Ping Asymptotic expansion for Bernstein polynomials defined on a simplex and the higher difference about degree. (Chinese summary) *J. China Univ. Sci. Tech.* **22** (1992), *no.* 1, 1–11. (Sushil Sharma) **93i:41022** 41A60

Li, Ping Qian (*with* Wen, Guo Chun) Finite element approximations for some nonlinear quasiconformal mappings in multiply connected domains. *Proceedings of Asian Mathematical Conference*, 1990 (*Hong Kong*, 1990), 478–485, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93b:00022**) 65N30 (65N50)

Li, Qi (*with* Stengos, Thanasis) A Hausman specification test based on root-N-consistent semiparametric estimators. (English summary) *Econom. Lett.* **40** (1992), *no.* 2, 141–146 (1993). 62P20 (62G99)

— (*with* Baltagi, Badi H.) A note on the estimation of simultaneous equations with error components. *Econometric Theory* **8** (1992), *no.* 1, 113–119. (Hilmar Drygas) **93k:62212** 62P20

— (*with* Baltagi, Badi H.) A monotonic property for iterative GLS in the two-way random effects model. (English summary) *J. Econometrics* **53** (1992), *no.* 1-3, 45–51. (Tom Wansbeek) **93m:62145** 62J05 (62P20)

Li, Qian Convergence of the predictor-corrector Galerkin method for nonlinear parabolic equations. (Chinese. English summary) *Shandong Daxue Xuebao Ziran Kexue Ban* **26** (1991), *no.* 3, 271–281. 65M60 (65M12)

— (*with* Chou, So-Hsiang) Error estimates for mixed finite element methods for nonlinear parabolic problems. *Numer. Methods Partial Differential Equations* **8** (1992), *no.* 4, 395–404. (Peter B. Monk) **93e:65133** 65N30 (65N15)

Li, Qing Yang (*with* Xie, Jin Xing) A continuous minimization method for solving nonlinear least-squares problems. (Chinese. English summary) *J. Numer. Methods Comput. Appl.* **12** (1991), *no.* 4, 215–223. (Summary) **93a:65087** 65K10

— (*with* Xie, Jing Dong) A linear multistep method for solving stiff ordinary differential equations. (Chinese. English summary) *J. Tsinghua Univ.* **31** (1991), *no.* 6, 1–11. (Summary) **93c:65090** 65L06

Li, R. *see* **Li, Rong Sheng[1]**

Li, R.-J. (*with* Lee, E. Stanley) Fuzzy multiple objective programming and compromise programming with Pareto optimum. (English summary) *Fuzzy Sets and Systems* **53** (1993), *no.* 3, 275–288. (Summary) **93k:90104** 90C70 (04A72, 90C29)

— (*with* Lee, E. Stanley) De novo programming with fuzzy coefficients and multiple fuzzy goals. (English summary) *J. Math. Anal. Appl.* **172** (1993), *no.* 1, 212–220. (Summary) **93k:90105** 90C70 (04A72)

Li, Ren Cang Compute multiply nonlinear eigenvalues. *J. Comput. Math.* **10** (1992), *no.* 1, 1–20. (J. Segethová) **93c:65054** 65F15 (15A18, 65H17)

— Algorithms for inverse eigenvalue problems. *J. Comput. Math.* **10** (1992), *no.* 2, 97–111. (Summary) **93a:65053** 65F15

— On eigenvalues of a Rayleigh quotient matrix. *Linear Algebra Appl.* **169** (1992), 249–255. (Jorma Kaarlo Merikoski) **93a:15013** 15A18 (65F15)

Li, Ren Hou (*with* Zhang, Lan) A reachability analysis algorithm for generalized stochastic Petri nets. (Chinese. English summary) *Xi'an Jiaotong Daxue Xuebao* **25** (1991), *no.* 3, 63–72. (Summary) **93a:68113** 68Q90

Li, Ren Wei (*with* Sernadas, Amílcar) Reasoning about objects using a tableau method. *J. Logic Comput.* **1** (1991), *no.* 5, 575–611. (Summary) **93a:68140** 68T30 (03B45, 03B70)

Li, Rong Heng (*with* Yao, En Yu; He, Yong) New progress on optimal partitioning problems. (English summary) *Optimization, Vol.* 1, 2 (*Singapore*, 1992), 229–234, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93d:90005**) 90C27

Li, Rong Hua (*with* Hua, Xue Jiao) Generalized upwind difference methods for convection-dominated diffusion problems. *Numerical methods for partial differential equations (Tianjin*, 1991), 83–90, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93b:65006**) 65M06 (76M20, 76Rxx)

Li, Rong Lu (*with* Chu, Lan Ying; Cho, Min Hyung) An equivalence theorem on infinite matrices. *Northeast. Math. J.* **7** (1991), *no.* 3, 253–255. 15A99

— (*with* Cho, Min Hyung) Bounded multiplier convergent series and its applications. *Bull. Korean Math. Soc.* **29** (1992), *no.* 2, 215–220. (C. W. Swartz) **93g:46005** 46A35

Li, Rong Qing (*with* Zhao, Yao Nan) Deformation and breaking of nonlinear wave in water of gradually varying depth. (English summary) *J. Hydrodyn. Ser. B (English Ed.)* **4** (1992), *no.* 3, 6–16. 76B15

Li, Rong Sheng *see* **Li, Rong Sheng[2]**

Li, Rong Sheng[1] (*with* Jonckheere, Edmond A.) Inner functions and bounded real lemma over simply-connected domain. (English summary) *Recent advances in mathematical*

theory of systems, control, networks and signal processing, I (*Kobe*, 1991), 71–76, *Mita, Tokyo*, 1992. (*see* **93g:93005**) 93B25 (30D50, 93C80)

— (*with* Jonckheere, Edmond A.) Model reduction over simply-connected domain. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, I* (*Kobe*, 1991), 461–466, *Mita, Tokyo*, 1992. (*see* **93g:93005**) 93B11

Li, Rong Sheng[2] The effect of changing the elements in the payoff matrix on the saddle-points in a matrix game. (Chinese. English and Chinese summaries) *Qufu Shifan Daxue Xuebao Ziran Kexue Ban* **18** (1992), *suppl.*, 53–56. 90D06

Li, Rui *see* **Guo, Shi Rong**, (**93i:01004**)

Li, Rui Sheng (*with* Ma, Ping; Hong, Hui Min) Robustness and convergence of least-squares identification and adaptive tracking for stochastic system. (English and Chinese summaries) *Control Theory Appl.* **9** (1992), *no.* 3, 268–278. (Yuandong Ji) **93m:93094** 93E12 (93E10, 93E24, 93E35)

Li, San-Qi (*with* Lee, Duan-Shin) Transient analysis of multi-server queues with Markov-modulated Poisson arrivals and overload control. (English summary) *Performance Evaluation* **16** (1992), *no.* 1-3, 49–66. (Summary) **93g:60194** 60K25

— (*with* Lee, Duan-Shin) Transient analysis of a switched Poisson arrival queue under overload control. (English summary) *Performance Evaluation* **17** (1993), *no.* 1, 13–29. 90B22 (60K25)

Li, Shai He (*with* Duan, Qi) An error estimate for a class of bivariate splines. (Chinese. Chinese summary) *J. Math.* (*Wuhan*) **12** (1992), *no.* 1, 20–26. 65D07

Li, Shan Lan *see* **Guan, Ai Wen**, **93f:05012**; **Martzloff, Jean-Claude**, **93j:01002**; **Li, Di**, (**93i:01004**); **Luo, Jian Jin**, (**93i:01006**); (**93i:01006**) *and* **Feng, Li Sheng**, (**93i:01006**)

Li, Shang Zhi Overgroups of a unitary group in GL(2, *K*). *J. Algebra* **149** (1992), *no.* 2, 275–286. (Zong Zhu Lin) **93e:20067** 20H25

Li, Shao Jiang (*with* Jiang, Chang Jin) On iterative method with multi-parameters for numerical solution of linear systems. (English summary) *Proceedings of International Conference on Scientific Computation* (*Hangzhou*, 1991), 187–191, *Ser. Appl. Math.*, 1, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93d:65004**) 65F10

Li, Shao Kuan A guess about positive approximation. *Chinese Sci. Bull.* **35** (1990), *no.* 21, 1763–1764. (Richard Bouldin) **93j:47023** 47A58 (47A30, 47B15)

— Quasinormal operators on Krein space. A Chinese summary appears in Acta Math. Sinica **35** (1992), no. 5, 720. *Acta Math. Sinica (N.S.)* **7** (1991), *no.* 4, 370–374. (Yu. M. Arlins'kiĭ) **93i:47047** 47B50 (47B20)

— Taylor joint essential spectra of tensor products in Banach spaces. (Chinese. Chinese summary) *Chinese Ann. Math. Ser. A* **13** (1992), *no.* 2, 239–242. (Sheng Wang Wang) **93h:47006** 47A13 (46M20, 47A80)

— An inequality for positive operators in Krein spaces. (Chinese. Chinese summary) *Chinese Ann. Math. Ser. A* **13** (1992), *no.* 4, 479–481. (Yu Sun Tong) **93i:47048** 47B50 (46C20, 47A63)

Li, She Huan (*with* Xiang, Guang Ping) Isometric approximation of almost isometric operators in the space $B(C)$. (Chinese. English summary) *Natur. Sci. J. Xiangtan Univ.* **13** (1991), *no.* 3, 20–25. (Sen-Yen Shaw) **93c:47024** 47A58 (47B38)

Li, Shên Ming (*with* Chao, Lien Chü) Estimating population size for continuous-time capture-recapture models via sample coverage. (English summary) *Biometrical J.* **35** (1993), *no.* 1, 29–45. 62P10

Li, Sheng Xun (*with* Huang, Sha) The fundamental theorem for quasiconformal mappings and a class of boundary value problems for systems of complex equations. (Chinese. English summary) *J. Math.* (*Wuhan*) **11** (1991), *no.* 1, 7–16. (Fuyao Ren) **93a:30023** 30C62 (30E25, 35J55)

Li, Shi Hai Dynamical properties of the shift maps on the inverse limit spaces. *Ergodic Theory Dynamical Systems* **12** (1992), *no.* 1, 95–108. (Alexander M. Blokh) **93g:58044** 58F03 (54H20, 58F13)

— ω-chaos and topological entropy. *Trans. Amer. Math. Soc.* **339** (1993), *no.* 1, 243–249. (Arkady S. Pikovsky) **93k:58153** 58F13 (58F08)

Li, Shi Peng (*with* Zhu, Jin Kang) p-ary GMW sequences. (Chinese. English summary) *J. China Univ. Sci. Tech.* **21** (1991), *no.* 4, 433–446. (Summary) **93f:65010** 65C10

Li, Shi Zheng A generalization of the Cayley-Hamilton theorem. (Chinese. English summary) *Qufu Shifan Daxue Xuebao Ziran Kexue Ban* **17** (1991), *no.* 4, 13–14. (E. L. Yip) **93e:15012** 15A99

— A separation theorem for convex sets in complete vector lattices. (Chinese) *Chinese Ann. Math. Ser. A* **13** (1992), *no.* 1, 25–32. (Tian Xiong Han) **93e:52018** 52A41 (52A07, 90C25)

— (*with* Liu, Zhen Hong[2]) A note on injections of abelian groups. (Chinese. English and Chinese summaries) *Qufu Shifan Daxue Xuebao Ziran Kexue Ban* **18** (1992), *no.* 4, 28–30. (Summary) **93k:20091** 20M14 (18B99)

— Characterizations of proper efficient solutions in terms of saddle points and duality. (English summary) *Systems Sci. Math. Sci.* **5** (1992), *no.* 1, 9–18. (Emil Iwanow) **93j:90089** 90C29 (90C25, 90C30, 90C31)

Li, Shou Fan (*with* Niu, Tie Jun; Wang, Zai Shen; Liang, Yan Chun) Half flexible simplex method and applications in engineering. *Approximation, optimization and computing*, 407–410, *North-Holland, Amsterdam*, 1990. (*see* **93a:41001**) 90C05 (90C90)

Li, Shou Fo Nonlinear stability of general linear methods. *J. Comput. Math.* **9** (1991), *no.* 2, 97–104. (Gabriela Kirlinger) **93d:34021** 34A50 (34A65, 65L05, 65L20)

— (*with* Chen, Li Rong) Parallel algorithms of iterated defect correction methods. (English summary) *Proceedings of International Conference on Scientific Computation* (*Hangzhou*, 1991), 202–206, *Ser. Appl. Math.*, 1, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93d:65004**) 65L05 (65Y05)

— (*with* Cao, Xue Nian) The BH-algebraic stability of general multivalue methods. (Chinese. English summary) *Numer. Math. J. Chinese Univ.* **14** (1992), *no.* 1, 67–77. (Summary) **93e:65099** 65L05

Li, Shu (*with* Yakowitz, Sid; Jayawardena, Thusitha) Theory for automatic learning under partially observed Markov-dependent noise. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 9, 1316–1324. (Vivek S. Borkar) **93j:90127** 90C40 (90B22, 90C15, 93E35)

Li, Shu Jie Periodic solutions for Hamiltonian systems in a nonconvex potential well. *Acta Math. Sci.* (*English Ed.*) **12** (1992), *no.* 2, 171–178. (Gabriella Tarantello) **93j:58116** 58F22 (34C25, 58E05, 58F05, 70H05)

— (*with* Ding, Yan Heng) Periodic solutions to singular dynamical systems on a potential well. (Chinese. Chinese summary) *Chinese Ann. Math. Ser. A* **13** (1992), *no.* 5, 546–554. (De Ming Zhu) **93k:58191** 58F22 (34C25, 58F05)

— Periodic solutions of nonautonomous second order systems with superlinear terms. (English summary) *Differential Integral Equations* **5** (1992), *no.* 6, 1419–1424. (Michele Matzeu) **93i:34075** 34C25 (49J45, 58E05)

— (*with* Liu, Jia Quan) Nontrivial critical points for asymptotically quadratic function. *J. Math. Anal. Appl.* **165** (1992), *no.* 2, 333–345. (Laurent Véron) **93d:58027** 58E05 (35J65, 47H99, 49R05)

— (*with* Ding, Yan Heng) A remark on periodic solutions of singular Hamiltonian systems with sublinear terms. (English summary) *Systems Sci. Math. Sci.* **5** (1992), *no.* 2, 121–126. (Gabriella Tarantello) **93i:58127** 58F22 (34C25, 70H05)

— Nontrivial periodic solutions of a semilinear wave equation without assumption of monotonicity. (English summary) *Systems Sci. Math. Sci.* **5** (1992), *no.* 3, 193–204. (Pavel Krejčí) **93k:35020** 35B10 (35L70)

Li, Shu Rong (*with* Qin, Hua Shu; Song, Qian) Precise tracking in a robot arm control. (Polish summary) *Systems Sci.* **17** (1991), *no.* 3, 63–72 (1992). 93C85

Li, Shu Xian (*with* Fang, Li Zhi) ★ Creation of the Universe. Translated from the Chinese by T. Kiang. *World Scientific Publishing Co., Inc., River Edge, NJ*, 1989. xii+180 *pp. ISBN* 9971-50-600-9; 9971-50-601-7 (Kenneth Dunn) **93b:83065** 83F05 (83–01)

Li, Shuanhu (*with* Clément, Philippe; van Duijn, C. J.) On a nonlinear elliptic-parabolic partial differential equation system in a two-dimensional groundwater flow problem. *SIAM J. Math. Anal.* **23** (1992), *no.* 4, 836–851. (Themistocles M. Rassias) **93h:35089** 35K50 (47H15, 47N20)

Li, Shuhe Far-sighted strong equilibrium and oligopoly. (English summary) *Econom. Lett.* **40** (1992), *no.* 1, 39–44. 90A56

Li, Song Limit-point classification of a class of nonsymmetric ordinary differential operators. (Chinese. English summary) *Nei Mongol Daxue Xuebao Ziran Kexue* **22** (1991), *no.* 2, 147–169. (Jing Lin Liu) **93e:34035** 34B20 (34L05, 47E05)

Li, Song Ying Corona problem of several complex variables. (English summary) *The Madison Symposium on Complex Analysis* (*Madison, WI*, 1991), 307–328, *Contemp. Math.*, 137, *Amer. Math. Soc., Providence, RI*, 1992. (Carlos A. Berenstein) **93m:32011** 32A35 (30D50, 46J15, 47A99)

— Toeplitz operators on Hardy space $H^p(S)$ with $0 < p \leq 1$. (English summary) *Integral Equations Operator Theory* **15** (1992), *no.* 5, 807–824. (Richard Rochberg) **93g:47032** 47B35

Li, T. Y. *see* **Li, Tien-Yien**

Li, Ta-Hsin (*with* Kedem, Benjamin) Monotone gain, first-order autocorrelation and zero-crossing rate. *Ann. Statist.* **19** (1991), *no.* 3, 1672–1676. (I. V. Basawa) **93c:62149** 62M10

Li, Ta-Tsien *see* **Li, Da Qian**

Li, Tao Sheng The Moore-Penrose inverse of a morphism in an abelian category. (Chinese. English and Chinese summaries) *J. Central China Normal Univ. Natur. Sci.* **26** (1992), *no.* 3, 265–269. 18E99

— Identities for the rank of matrices over p-division rings. (Chinese. English summary) *J. Math. Res. Exposition* **13** (1993), *no.* 2, 275–278. 16S50 (16K40)

Li, Tatsien *see* **Li, Da Qian**

Li, Tian Min The structure identification problem for complex system models. (Chinese. English and Chinese summaries) *J. Huazhong Univ. Sci. Tech.* **20** (1992), *no.* 4, 61–68. 93B30

Li, Tien-Yien (*with* Zeng, Zhong Gang; Lin, Xiaola) An efficient parallel homotopy algorithm for nonsymmetric eigenvalue problems with $O(N)$ running time. (English summary) *Parallel processing for scientific computing* (*Houston, TX*, 1991), 29–32, *SIAM, Philadelphia, PA*, 1992. (*see* **93g:65178**) 65F15 (65Y05)

— (*with* Zeng, Zhong Gang) Homotopy-determinant algorithm for solving nonsymmetric eigenvalue problems. *Math. Comp.* **59** (1992), *no.* 200, 483–502. (Summary) **93a:65054** 65F15 (65F40, 65H17, 65H20)

— (*with* Chiu, Chichia; Du, Qiang) Error estimates of the Markov finite approximation of the Frobenius-Perron operator. *Nonlinear Anal.* **19** (1992), *no.* 4, 291–308. (Wojciech Bartoszek) **93f:28014** 28D05 (47A35, 47A50, 47B38)

— (*with* Wang, Xiao Shen) Nonlinear homotopies for solving deficient polynomial systems with parameters. *SIAM J. Numer. Anal.* **29** (1992), *no.* 4, 1104–1118. (Gerd Pönisch) **93h:65076** 65H20 (58C15, 65H10)

— (*with* Wang, Xiao Shen) Solving real polynomial systems with real homotopies. *Math. Comp.* **60** (1993), *no.* 202, 669–680. (E. Kaucher) **93h:65077** 65H20

— (*with* Li, Kuiyuan) A homotopy algorithm for a symmetric generalized eigenproblem. (English summary) *Numer. Algorithms* **4** (1993), *no.* 1-2, 167–195. (Summary) **93j:65054** 65F15

— (*with* Li, Kuiyuan) An algorithm for symmetric tridiagonal eigenproblems: divide and conquer with homotopy continuation. (English summary) *SIAM J. Sci. Comput.* **14** (1993), *no.* 3, 735–751. (Summary) **93m:65048** 65F15

Li, Tong On the Riemann problem for a combustion model. (English summary) *SIAM J. Math. Anal.* **24** (1993), *no.* 1, 59–75. (Long An Ying) **93m:35154** 35Q35 (35L65, 35L67, 76L05, 80A25)

Li, Tzuu Hseng S. (*with* Cheng, Chiu Pin; Sun, Yü I) Model-following control of linear proper nonminimum-phase systems. (English summary) *Internat. J. Systems Sci.* **23** (1992), *no.* 10, 1657–1665. 93B50 (93C05)

— (*with* Cheng, Chiu Pin; Sun, Yü I) Stability margins of singularly perturbed discrete-time systems based on state feedback and linear quadratic optimal control. (English summary) *Optimal Control Appl. Methods* **13** (1992), *no.* 3, 227–245. (Summary) **93j:93095** 93D05 (49N10, 93C55, 93C70)

— (*with* Li, Jen Hsing) Stabilization bound of discrete two-time-scale systems. *Systems Control Lett.* **18** (1992), *no.* 6, 479–489. (V. V. Krakhotko) **93e:93051** 93D15 (93C05, 93C55, 93C70)

— (*with* Lee, Chien-Hua; K'ung, Fan Chü) D-stability analysis for discrete systems with a time delay. (English summary) *Systems Control Lett.* **19** (1992), *no.* 3, 213–219. (Summary) **93e:93046** 93D05 (93B55, 93C55)

Li, W. *see* **Li, Wu**

Li, W. K. *see* **Li, Wai Kee**

Li, W. L. (*with* Wu, T. W.; Seybert, A. F.) Boundary element analysis of acoustic radiation and scattering in half space using a generalized Green's function. (English summary) *Boundary element technology, VII* (*Albuquerque, NM*, 1992), 493–499, *Comput. Mech., Southampton*, 1992. (*see* **93b:65002**) 76M15 (65N38, 73D25, 76Q05)

Li, Wai Kee On the asymptotic standard errors of residual autocorrelations in nonlinear time series modelling. (English summary) *Biometrika* **79** (1992), *no.* 2, 435–437. (Summary) **93f:62125** 62M10

Li, Wan Tong Limit cycles of a class of Kolmogorov systems of degree n. (Chinese. English and Chinese summaries) *Math. Appl.* **5** (1992), *no.* 2, 13–17. (Summary) **93g:34042** 34C05 (34D99)

Li, Wan Xuan (*with* Wang, Ling Ying) A method for finding special solutions to nonhomogeneous linear differential equations with constant coefficients. (Chinese. English and Chinese summaries) *Qufu Shifan Daxue Xuebao Ziran Kexue Ban* **18** (1992), *no.* 2, 76–78. 34A05

Li, Wang Lai The second cohomology group of a derivation Lie algebra. (Chinese. English summary) *Adv. in Math. (China)* **21** (1992), *no.* 3, 342–349. (Summary) **93i:17025** 17B56

Li, Wei (*with* Shi, Ding Hua) Availability analysis of a two-unit series system with shut-off rule and "first-fail, first-repaired". *Acta Math. Appl. Sinica (English Ser.)* **9** (1993), *no.* 1, 88–91. 60K10 (62N05)

Li, Wei[1] Remarks on rings of constants of derivations. II. *Comm. Algebra* **20** (1992), *no.* 8, 2191–2194. (Andrzej Nowicki) **93g:13022** 13N05 (12H05)

— (*with* Yu, Jie Tai) Reconstructing birational maps from their face functions. *Manuscripta Math.* **76** (1992), *no.* 3-4, 353–366. (J. Čižmár) **93j:14014** 14E07 (13P10)

Li, Wei[3] A type-theoretic approach to program development. *J. Comput. Sci. Tech. (English Ed.)* **5** (1990), *no.* 3, 209–224. (Edmund Robinson) **93c:68062** 68Q55 (03B40, 03B70, 68Q60)

Li, Wei Gu (*with* Zhang, Zhi Fen) The "blue sky catastrophe" on closed surfaces. *Dynamical systems and related topics (Nagoya, 1990)*, 316–332, *Adv. Ser. Dyn. Syst.*, 9, *World Sci. Publishing, River Edge, NJ*, 1991. (Vladislav S. Medvedev) **93i:58022** 58C28 (58F14)

— On a class of semilocal bifurcations of Lorenz type. (English summary) *Acta Math. Sinica (N.S.)* **8** (1992), *no.* 2, 158–176. (Georgii Osipenko) **93i:58099** 58F12 (34C23, 34C37, 58F14)

Li, Wei Xuan (*with* Ewacha, Kevin; Rival, Ivan) Order, genus, and diagram invariance. *Order* **8** (1991), *no.* 2, 107–113. (Summary) **93c:06002** 06A06 (05C10)

— A polynomial algorithm for finding a bump optimal extension of an ordered set. (English summary) *Systems Sci. Math. Sci.* **4** (1991), *no.* 1, 14–19. (Summary) **93f:06001** 06A06

Li, Wen (*with* Tang, Long Ji) Numerical solutions to the Ramm integral equation. II. (Chinese. English and Chinese summaries) *Math. Appl.* **5** (1992), *no.* 3, 70–76. 45L10

Li, Wen-Ch'ing Winnie (*with* Hwang, F. K.) Reliabilities of double-loop networks. (English summary) *Probab. Engrg. Inform. Sci.* **5** (1991), *no.* 3, 255–272. (Summary) **93e:05057** 05C40 (90B25)

— Character sums and abelian Ramanujan graphs. With an appendix by Ke Qin Feng and the author. *J. Number Theory* **41** (1992), *no.* 2, 199–217. (Anant R. Rajwade) **93h:11092** 11L05 (05C25)

Li, Wen Hsiung (*with* Fu, Yun-Xin) Necessary and sufficient conditions for the existence of linear invariants in phylogenetic inference. *Math. Biosci.* **108** (1992), *no.* 2, 203–218. (James L. Cornette) **93d:92011** 92D20

— (*with* Fu, Yun-Xin) Construction of linear invariants of phylogenetic inference. *Math. Biosci.* **109** (1992), *no.* 2, 201–228. (Lisa Sattenspiel) **93f:92003** 92B10 (15A99, 92D15, 92D20)

Li, Wen Hua A class of dynamic input-output models with variable coefficients. (Chinese. Chinese summary) *Math. Practice Theory* **1992**, *no.* 2, 1–7. 93A25 (93C05, 93C50)

Li, Wen Jian (*with* Yu, Yuan Hong) Stability conditions for Volterra equations. (Chinese. English summary) *J. Xinjiang Univ. Natur. Sci.* **8** (1991), *no.* 3, 14–17. (Zhicheng Wang) **93b:34100** 34K20 (45J05)

Li, Wen Jun (*with* Ke, Heng Yu; Huang, Si Wen) A study of electromagnetic scattering from a dielectric-coated conducting cylinder. (English summary) *Acta Math. Sci. (English Ed.)* **12** (1992), *no.* 2, 179–189. (Summary) **93j:78017** 78A45

Li, Wen Lin On ancient and medieval Chinese algorithms. (Chinese) *Collected research papers on the history of mathematics, Vol. 2 (Chinese)*, 1–5, *Inner Mongolia Univ. Press, Hohhot*, 1991. (*see* **93i:01005**) 01A25

— Optimum self-tuning controllers for regulation and tracking. (Chinese. English and Chinese summaries) *Control Theory Appl.* **9** (1992), *no.* 4, 445–448. 93B52 (93E03)

Li, Wen Ming Selfadjoint extensions of ordinary differential operators on vector function spaces. (Chinese. English summary) *Nei Mongol Daxue Xuebao Ziran Kexue* **22** (1991), *no.* 4, 447–454. (Jing Lin Liu) **93i:47068** 47E05 (34B20, 34L05, 47A20, 47B25)

Li, Wen Ming A preliminary proof of Zi Sun's theorem and the art of solving congruences by Zong Xian Huang. (Chinese) *Collected research papers on the history of mathematics, Vol. 3 (Chinese)*, 112–116, *Inner Mongolia Univ. Press, Hohhot*, 1992. (*see* **93i:01006**) 01A25

Li, Wen Qing (*with* Zheng, Shu Zhen) Stability of slope differential systems. (Chinese. English and Chinese summaries) *Xiamen Daxue Xuebao Ziran Kexue Ban* **32** (1993), *no.* 1, 16–21. (Wan Zhuang) **93m:34076** 34D99 (34A34)

Li, Wen Shen (*with* Lü, Hai Bo; Luo, Si Qing) The initial-boundary value problem for a class of nonlinear equations. (Chinese. English and Chinese summaries) *Heilongjiang Daxue Ziran Kexue Xuebao* **9** (1992), *no.* 3, 42–47. (Xian Guo Geng) **93k:35264** 35Q99 (35G25, 35G30)

— (*with* Wang, Tian Ming; Zhang, Xiang De) Enumeration of row-strict plane partitions with even length. (Chinese) *J. Math. Res. Exposition* **13** (1993), *no.* 1, 137–138. (Wen Li Chen) **93m:05017** 05A17 (05A15)

Li, Wen Xiu Fuzzy models for estimation of surface ground subsidence. (English summary) *Systems Sci. Math. Sci.* **3** (1990), *no.* 3, 231–242. 86A60 (00A69, 04A72)

Li, Wen Zhu Lattice approach of the antiferromagnetic Heisenberg model in 2 + 1 dimensions and the Hopf Chern-Simons terms. *Differential geometric methods in theoretical physics (Davis, CA, 1988)*, 769–778, *NATO Adv. Sci. Inst. Ser. B Phys.*, 245, *Plenum, New York*, 1990. (Miroslav Kolesík) **93i:81178** 81T27 (81T13, 82B20)

Li, Wenbo V. (*with* Kuelbs, James) Metric entropy and the small ball problem for Gaussian measures. (English and French summaries) *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 7, 845–850. (Summary) **93g:60007** 60B11 (46G12, 60G15)

— Comparison results for the lower tail of Gaussian seminorms. *J. Theoret. Probab.* **5** (1992), *no.* 1, 1–31. (Summary) **93k:60088** 60G15 (60B11)

— Lim inf results for the Wiener process and its increments under the L_2-norm. *Probab. Theory Related Fields* **92** (1992), *no.* 1, 69–90. (M. Csörgő) **93g:60077** 60G15 (60F15, 60G17)

— Limit theorems for the square integral of Brownian motion and its increments. *Stochastic Process. Appl.* **41** (1992), *no.* 2, 223–239. (Endre Csáki) **93e:60061** 60F15 (60F17, 60G15, 60J65)

Li, Wentian Phenomenology of nonlocal cellular automata. (English summary) *J. Statist. Phys.* **68** (1992), *no.* 5-6, 829–882. (J. S. Joel) **93h:68103** 68Q80 (58F08, 90A16, 92B05)

Li, Wing Suet (*with* Bercovici, Hari) Normal boundary dilations and rationally invariant subspaces. *Integral Equations Operator Theory* **15** (1992), *no.* 5, 709–721. (Lawrence Fialkow) **93j:47006** 47A15 (47A20, 47A25, 47A65)

Li, Wu ★ Continuous selections for metric projections and interpolating subspaces. Approximation & Optimization, 1. *Peter Lang, Frankfurt am Main*, 1991. ii+108 *pp. ISBN* 3-631-43521-5 (Manfred Sommer) **93a:41067** 41A65 (41A50, 46B99, 46E15, 49J45)

— Various continuities of metric projections in $L_1(T, \mu)$. *Progress in approximation theory*, 583–607, *Academic Press, Boston, MA*, 1991. (G. Godini) **93a:41066** 41A65 (49J45)

— Best approximation in polyhedral spaces and linear programs. *Approximation theory (Memphis, TN, 1991)*, 393–400, *Lecture Notes in Pure and Appl. Math.*, 138, *Dekker, New York*, 1992. (*see* **93b:41001**) 41A65 (90C05)

— (*with* Pardalos, Panos M.; Han, Chi-Geun) Gauss-Seidel method for least-distance problems. (English summary) *J. Optim. Theory Appl.* **75** (1992), *no.* 3, 487–500. (Klaus Tammer) **93j:90074** 90C20 (65K05)

— Remarks on convergence of the matrix splitting algorithm for the symmetric linear complementarity problem. (English summary) *SIAM J. Optim.* **3** (1993), *no.* 1, 155–163. (K. G. Murty) **93j:90118** 90C33 (90C20)

Li, Wu Yen On graph representation for co-diagonal groups. *Tamkang J. Math.* **23** (1992), *no.* 2, 81–85. (Pin Chao Wang) **93g:20101** 20K15

Li, X. (*with* Baird, C. Robert) A disturbance rejection self-tuning controller for a class of MIMO nonminimum phase systems. (English summary) *Internat. J. Systems Sci.* **23** (1992), *no.* 10, 1549–1557. 93B50 (93C05)

Li, X. S. *see* **Li, Xing Si**

Li, Xi[2] Alternative algebras and genetic algebras. (Chinese. English summary) *Nanjing Daxue Xuebao Shuxue Bannian Kan* **9** (1992), *no.* 1, 44–51. (Summary) **93j:17063** 17D92

Li, Xian Hua On $[m, n, p_1, p_2, \cdots, p_s]$ index type groups. (Chinese. Chinese summary) *Acta Math. Sinica* **35** (1992), *no.* 2, 273–278. (Hui Ling Li) **93m:20021** 20D05 (20E28)

Li, Xiang Wen (*with* Song, Wen Jie; Yao, Tian Xing) A sufficient condition for pancyclicity of linear graphs. (Chinese. English summary) *Nanjing Daxue Xuebao Ziran Kexue Ban* **27** (1991), *Special Issue*, 35–37. (Summary) **93b:05095** 05C38

Li, Xiangdong (*with* Wiberg, Nils-Erik; Zeng, Lingfu) Error estimation and adaptivity in elastodynamics. (English summary) Reliability in computational mechanics (Kraków, 1991). *Comput. Methods Appl. Mech. Engrg.* **101** (1992), *no.* 1-3, 369–395. (Summary) **93h:73041** 73V05

Li, Xiao-Fan (*with* Caflisch, Russel E.) Lagrangian theory for 3D vortex sheets with axial or helical symmetry. (English summary) Proceedings of the Fourth International Workshop on Mathematical Aspects of Fluid and Plasma Dynamics (Kyoto, 1991). *Transport Theory Statist. Phys.* **21** (1992), *no.* 4-6, 559–578. (Summary) **93h:76014** 76C05

Li, Xiao Gang (*with* Yang, Ming Zhu) Solvability of a class of integro-differential equations with integral boundary conditions. (Chinese. Chinese summary) *Acta Math. Sci. (Chinese)* **12** (1992), *no.* 1, 1–8. (T.-P. Lin) **93i:45013** 45K05 (47G20, 47N20)

Li, Xiao Mei (*with* Jiang, Zeng Rong) ★ Bingxing suanfa. (Chinese. English and Chinese summaries) [Parallel algorithms] *Hunan Science and Technology Publishing House, Changsha*, 1992. xvi+786 *pp. ISBN* 7-5357-1033-6 (Zeng Rong Chen) **93k:65116** 65Y05 (65Fxx, 65K99, 68Q22)

Li, Xiao Ming[1] (*with* Boesch, F. T.; Stivaros, C.; Suffel, C.) Reliable graphs with unreliable nodes. *Graph theory, combinatorics, and applications, Vol. 1 (Kalamazoo, MI, 1988)*, 159–177, *Wiley-Intersci. Publ., Wiley, New York*, 1991. (Summary) **93c:05107** 05C90

— (*with* Boesch, F. T.) Some new results in algebraic graph theory. (English and Chinese summaries) *Math. Appl.* **5** (1992), *no.* 2, 70–75. (Jing Zhong Mao) **93h:05115** 05C50

Li, Xiao Pei A generalization of Alperin's theorem. (Chinese) *Chinese Ann. Math. Ser. A* **12** (1991), *no.* 6, 731–735. (Jian-Pan Wang) **93f:20017** 20C20

Li, Xiao Ping[2] (*with* Bai, Dong Hua; Tao, Fu Zhou; et al.) Mathematical inversion for two-sided logging. (Chinese. English and Chinese summaries) *Sichuan Daxue Xuebao* **29** (1992), *no.* 3, 352–359. (Summary) **93k:86013** 86A22 (65P05, 86-08)

Li, Xiao Zhong (*with* Luo, Cheng Zhong) A class of fuzzy neurons and their applications. (Chinese. English and Chinese summaries) *Beijing Shifan Daxue Xuebao* **28** (1992), *no.* 2, 141–147. 68T05 (04A72)

Li, Xie Zhang (*with* Chui, Charles K.; Ward, Joseph D.) On the convergence rate of s-numbers of compact Hankel operators. *Circuits Systems Signal Process.* **11** (1992), *no.* 2, 353–362. (Summary) **93d:47052** 47B35 (47B10, 47N70, 93B25)

— An adaptive method for solving nonsymmetric linear systems involving applications of SCPACK. (English summary) *J. Comput. Appl. Math.* **44** (1992), *no.* 3, 351–370. (Summary) **93h:65060** 65F30

Li, Xin (*with* Chui, Charles K.) Approximation by ridge functions and neural networks with one hidden layer. *J. Approx. Theory* **70** (1992), *no.* 2, 131–141. (Summary) **93d:41018** 41A30 (92B20)

Li, Xin[3] (*with* Ismail, Mourad E. H.) On sieved orthogonal polynomials. IX. Orthogonality on the unit circle. *Pacific J. Math.* **153** (1992), *no.* 2, 289–297. (W. A. Al-Salam) **93b:42038** 42C05 (33C45)

— A note on orthogonal polynomials. *Rocky Mountain J. Math.* **22** (1992), *no.* 3, 953–956. (Hans G. Feichtinger) **93j:42014** 42C05

— (*with* Mohapatra, Ram Narayan) On the divergence of Lagrange interpolation with equidistant nodes. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 4, 1205–1212. (P. Vértesi) **93j:41004** 41A05

Li, Xin[5] (*with* Pan, K. C.) Asymptotics for L_p extremal polynomials on the unit circle. *J. Approx. Theory* **67** (1991), *no.* 3, 270–283. (D. S. Lubinsky) **93b:30005** 30C10 (41A10, 42C05)

— (*with* He, X.) Uniform convergence of polynomials associated with varying Jacobi weights. Proceedings of the U.S.-Western Europe Regional Conference on Padé

Approximants and Related Topics (Boulder, CO, 1988). *Rocky Mountain J. Math.* **21** (1991), *no.* 1, 281–300. (J. A. Siddiqi) **93f:41012** 41A10 (41A25)

Li, Xin Wei A discussion on multistate life distributions relative to σ-fields ($\mathcal{P}_t$). (Chinese. English and Chinese summaries) *J. Shanghai Jiaotong Univ.* **25** (1991), *no.* 6, 99–106. 60K99 (62N05)

Li, Xing Hui (*with* Guo, Jing Zhen) A characterization of infinite fields from a matrix point of view. (Chinese. English and Chinese summaries) *Natur. Sci. J. Harbin Normal Univ.* **8** (1992), *no.* 1, 20–22. 15A99

Li, Xing Min A simplified proof of l'Hospital's rule and its applications. (Chinese) *Qufu Shifan Daxue Xuebao Ziran Kexue Ban* **18** (1992), *no.* 2, 112, 81. 26A24 (26A03)

Li, Xing Si (*with* Templeman, A. B.) An informational entropy approach to optimization. *Approximation, optimization and computing*, 263–266, *North-Holland, Amsterdam*, 1990. (Summary) **93c:90052** 90C15 (65K10, 90C30)

— A smoothing technique for nonsmooth optimization problems. (English summary) *Optimization, Vol.* 1, 2 (*Singapore*, 1992), 90–97, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93d:90005**) 90C30 (49J52)

Li, Xing Xiao (*with* Liao, Hua Kui) Compact minimal n-submanifolds of the sphere S^{n+p}. (Chinese. English summary) *Sichuan Daxue Xuebao* **29** (1992), *no.* 2, 180–187. (Hong You Wu) **93c:53052** 53C42

Li, Xining (*with* Cleary, John Gerald; Unger, Brian) Virtual time and virtual space. (English summary) *Internat. J. Parallel Programming* **21** (1992), *no.* 2, 123–150. 68U20

Li, Xue Chao A group testing method for distinguishing two defectives. (Chinese. English and Chinese summaries) *J. Central China Normal Univ. Natur. Sci.* **26** (1992), *no.* 4, 413–418. (Summary) **93k:90039** 90B25

Li, Xue Liang A proof of Balinski and Russakoff's conjecture on connectivity of assignment polytopes. (Chinese) *Chinese Ann. Math. Ser. A* **12** (1991), *no.* 5, 608–611. (Yixun Lin) **93b:90073** 90C27 (05C40, 52B12, 90C35)

— (*with* Zhang, Fu Ji) On the numbers of spanning trees and Eulerian tours in generalized de Bruijn graphs. *Discrete Math.* **94** (1991), *no.* 3, 189–197. (Frank K. Hwang) **93d:05102** 05C45

— (*with* Zhang, Fu Ji; Huang, Qiong Xiang; Liu, Xin[2]) Digraph categories and line digraph functors. (English summary) A Chinese summary appears in Chinese Ann. Math. Ser. A **13** (1992), no. 4, 517. *Chinese Ann. Math. Ser. B* **13** (1992), *no.* 3, 368–373. (R. L. Hemminger) **93j:05073** 05C20 (05C99, 18A99)

Li, Xun Jing (*with* Chen, Shu Ping; Peng, Shi Ge; Yong, Jiong Min) H^∞ type optimal control problems, algebraic Riccati equations and differential games. *Control theory, stochastic analysis and applications* (*Hangzhou*, 1991), 79–95, *World Sci. Publishing, River Edge, NJ*, 1991. (Antonis I. G. Vardulakis) **93e:93023** 93B36 (49N10, 90D25)

Li, Y. *see* **Li, Yong[5]**

Li, Y.-F. (*with* Nemat-Nasser, Sia) A new explicit algorithm for finite-deformation elastoplasticity and elastoviscoplasticity: performance evaluation. (English summary) *Comput. & Structures* **44** (1992), *no.* 5, 937–963. (Summary) **93f:73110** 73V20 (73E05, 73E60, 73G20, 73G25, 73V05)

— (*with* Nemat-Nasser, Sia) Errata: "A new explicit algorithm for finite-deformation elastoplasticity and elastoviscoplasticity: performance evaluation" [Comput. & Structures **44** (1992), no. 5, 937–963; MR 93f:73110]. *Comput. & Structures* **46** (1993), *no.* 4, 771. (Editors) **93k:73085** 73V20 (73E05, 73E60, 73G20, 73G25, 73V05)

Li, Y. M. (*with* d'Ambrumenil, N.) A self-energy functional for the infinite-dimensional Hubbard model. (English summary) *Modern Phys. Lett. B* **6** (1992), *no.* 28, 1827–1833. 82D99

Li, Y.-N. (*with* Liang, R. Y.; Wang, Da Jun) On convergence rate of finite element eigenvalue analysis with mass lumping by nodal quadrature. (English summary) *Comput. Mech.* **8** (1991), *no.* 4, 249–256. (Summary) **93f:73101** 73V05

Li, Ya Qing What can a product of distribution zero and itself be? (English summary) *Systems Sci. Math. Sci.* **3** (1990), *no.* 4, 381–383. (Todor Dimitrov Todorov) **93f:46059** 46F10 (03H05, 46S20)

Li, Yan Bin (*with* Wang, Xiao Chun[1]; Wu, Xu Tang) Curvature catering—a new concept for machining sculptured surfaces. (Chinese. English and Chinese summaries) *Xi'an Jiaotong Daxue Xuebao* **26** (1992), *no.* 5, 51–58, 109–110. (Summary) **93h:65027** 65D17

Li, Yan Guang Bäcklund transformations and homoclinic structures for the integrable discretization of the NLS equation. *Phys. Lett. A* **163** (1992), *no.* 3, 181–187. (Summary) **93c:35146** 35Q55 (58F37)

Li, Yan Yan Existence of multiple solutions of semilinear elliptic equations in $\mathbf{R}^N$. (English summary) *Variational methods* (*Paris*, 1988), 133–159, *Progr. Nonlinear Differential Equations Appl.*, 4, *Birkhäuser Boston, Boston, MA*, 1990. (From the introduction) **93k:35091** 35J60

— Existence of infinitely many critical values of some nonsymmetric functionals. *J. Differential Equations* **95** (1992), *no.* 1, 140–153. (V. Raghavendra) **93c:35047** 35J65 (35B05)

— (*with* Alama, Stanley) Existence of solutions for semilinear elliptic equations with indefinite linear part. *J. Differential Equations* **96** (1992), *no.* 1, 89–115. (Rainer Hempel) **93d:47135** 47N20 (35J60, 47F05, 47H15, 58E05)

— (*with* Chanillo, Sagun) Continuity of solutions of uniformly elliptic equations in $\mathbf{R}^2$. *Manuscripta Math.* **77** (1992), *no.* 4, 415–433. (Genowefa Majcher) **93k:35033** 35B35 (35B05, 35J25)

Li, Yan Zhao (*with* Liu, Qiang; Zhong, Wan Xie) The cutting problem for the layout of rectangle graph units in a rectangular domain. (Chinese. English summary) *J. Numer. Methods Comput. Appl.* **13** (1992), *no.* 3, 182–188. 90B10 (05C90)

Li, Yanlin (*with* Nagpal, Krishan M.; Lee, E. Bruce) Stability analysis of polynomials with coefficients in disks. *IEEE Trans. Automat. Control* **37** (1992), *no.* 4, 509–513. (Long Wang) **93b:93085** 93D09 (93B35, 93B36, 93D25)

— (*with* Gu, Guoxiang; Khargonekar, Pramod P.) Robust convergence of two-stage nonlinear algorithms for identification in $\mathcal{H}_\infty$. *Systems Control Lett.* **18** (1992), *no.* 4, 253–263. (R. Haber) **93b:93110** 93E12 (93B36, 93B40)

Li, Yao Tang (*with* Zhang, Shi Sheng) I-diagonally quasi-convex [-concave] functions and their applications to the problem of saddle points and variational inequalities. (Chinese. English and Chinese summaries) *J. Math.* (*Wuhan*) **11** (1991), *no.* 3, 346–352. (Guang Ya Chen) **93m:26028** 26B25 (49J40)

— (*with* Zhang, Shi Sheng) Nonlinear complementary problems and set-valued nonlinear complementary problems in Hilbert spaces. (Chinese. English summary) *Qufu Shifan Daxue Xuebao Ziran Kexue Ban* **17** (1991), *no.* 3, 45–49. (Xiaojun Chen) **93d:90066** 90C33 (90C48)

Li, Yao Xing Some remarks on the Braess method. (Chinese. English and Chinese summaries) *Natur. Sci. J. Xiangtan Univ.* **14** (1992), *no.* 2, 35–39. (Summary) **93g:65155** 65N55

Li, Yi *see* **Li, Yi[5]**

Li, Yi[1] A class of three-level explicit difference schemes. (English summary) *J. Comput. Math.* **10** (1992), *no.* 4, 301–304. (Summary) **93h:65112** 65M06

— (*with* Li, Yi[5]) Absolutely stable difference schemes for the evolution equation $u_t = au_p$. (Chinese. English summary) *Sichuan Daxue Xuebao* **29** (1992), *no.* 1, 32–37. (Summary) **93b:65129** 65M06 (65M12)

— (*with* Wang, Hong Chuan) Eight-point explicit difference schemes for the dispersive equation $u_t = au_{xxx}$. (Chinese. English and Chinese summaries) *Sichuan Daxue Xuebao* **30** (1993), *no.* 1, 17–22. 65M06

Li, Yi[2] Symmetry properties of finite total mass solutions of Matukuma equation. *Nonlinear diffusion equations and their equilibrium states*, 3 (*Gregynog*, 1989), 375–389, *Progr. Nonlinear Differential Equations Appl.*, 7, *Birkhäuser Boston, Boston, MA*, 1992. (A. Simon) **93g:35010** 35B05 (35J60)

— (*with* Ni, Wei-Ming) On the asymptotic behavior and radial symmetry of positive solutions of semilinear elliptic equations in $\mathbf{R}^n$. I. Asymptotic behavior. *Arch. Rational Mech. Anal.* **118** (1992), *no.* 3, 195–222. (Pavel Năslău) **93e:35036** 35J65 (35B40, 53A07)

— (*with* Ni, Wei-Ming) On the asymptotic behavior and radial symmetry of positive solutions of semilinear elliptic equations in $\mathbf{R}^n$. II. Radial symmetry. *Arch. Rational Mech. Anal.* **118** (1992), *no.* 3, 223–243. (Pavel Năslău) **93e:35037** 35J65 (35B40, 53A07)

— Asymptotic behavior of positive solutions of equation $\Delta u + K(x)u^p = 0$ in $\mathbf{R}^n$. *J. Differential Equations* **95** (1992), *no.* 2, 304–330. (Enrique Zuazua) **93k:35048** 35B40 (35B05, 35J60)

Li, Yi[5] (*with* Li, Yi[1]) Absolutely stable difference schemes for the evolution equation $u_t = au_p$. (Chinese. English summary) *Sichuan Daxue Xuebao* **29** (1992), *no.* 1, 32–37. (Summary) **93b:65129** 65M06 (65M12)

Li, Yi Fu A highly accurate quadrature method. (Chinese) *Math. Practice Theory* **1991**, *no.* 3, 67–72, 96. (Zeng Fu Qin) **93b:65045** 65D30

Li, Yi Shen (*with* Cheng, Yi[1]; Zeng, Yun Bo) A Lie algebraic structure of G.J. and its gauge equivalent Yang hierarchies. *Nonlinear physics* (*Shanghai*, 1989), 47–52, *Res. Rep. Phys., Springer, Berlin*, 1990. (Summary) **93d:58074** 58F07 (17B65, 35Q99)

— (*with* Chan, Wai Leung; Li, Kam-Shun) Line soliton interactions of a nonisospectral and variable-coefficient Kadomtsev-Petviashvili equation. (English summary) *J. Math. Phys.* **33** (1992), *no.* 11, 3759–3773. (Summary) **93h:35172** 35Q51 (35Q53)

— (*with* Xu, Bing) $(1+1)$-dimensional Hamiltonian systems as symmetry constraints of the Kadomtsev-Petviashvili equation. *J. Phys. A* **25** (1992), *no.* 10, 2957–2968. (Keti Tenenblat) **93f:58120** 58F07 (35Q53)

— New forms of the Darboux transformation for KdV and KP equation. (English summary) *Sci. China Ser. A* **35** (1992), *no.* 9, 1050–1055. (Summary) **93j:35154** 35Q53 (35A30, 58F37)

Li, Yong *see* **Li, Yong[6]**

Li, Yong[3] (*with* Hu, Xing Biao) The Bäcklund transform for the DJKM equations and its nonlinear superposition formulas. (Chinese) *Acta Math. Sci.* (*Chinese*) **11** (1991), *no.* 2, 164–172. (Hong You Wu) **93c:58196** 58F37 (35A30, 35Q58)

Li, Yong[5] (*with* Ushio, Toshimitsu; Wonham, W. Murray) Concurrency and state feedback in discrete-event systems. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 8, *part I*, 1180–1184. 93B52

Li, Yong[6] (*with* Wei, Bao She) Singularly perturbed Robin boundary value problems with turning points. (Chinese. English summary) *Acta Sci. Natur. Univ. Jilin.* **1991**, *no.* 3, 9–16. (P. F. Hsieh) **93i:34098** 34E15 (34B10, 34B15, 34E20)

— Singular two-point boundary value problems for second order differential equations. *J. Math. Anal. Appl.* **170** (1992), *no.* 1, 245–254. (Donal O'Regan) **93i:34039** 34B15

Li, Yong Hua (*with* Gao, Wei Bing) Heuristic supervision of discrete event systems. (English summary) *Systems Sci. Math. Sci.* **3** (1990), *no.* 4, 298–307. 93C55 (93A30)

Li, Yong Jin (*with* Han, Jing Luan) Strongly even Banach spaces. (Chinese. English and Chinese summaries) *Acta Sci. Natur. Univ. Sunyatseni* **31** (1992), *no.* 3, 117–119. 46B20

— Complex convexity and complex smoothness. (Chinese. English and Chinese summaries) *J. Math.* (*Wuhan*) **12** (1992), *no.* 2, 233–236. (Summary) **93m:46012** 46B20

Li, Yong Sheng On the initial-boundary value problems for two-dimensional systems of Zakharov equations and of complex-Schrödinger–real-Boussinesq equations. (English summary) *J. Partial Differential Equations* **5** (1992), *no.* 2, 81–93. (Xian Guo Geng) **93g:35129** 35Q55

Li, You Ming Estimates of $\|B^{-1}A\|$ and their applications. (Chinese. English summary) *Numer. Math. J. Chinese Univ.* **13** (1991), *no.* 2, 122–130. (Ching-Tsuan Pan) **93c:65049** 65F10 (65F35, 65G10)

Li, You Quan General form of BGR associated with A_n and its Yang-Baxterization. *Phys. Lett. A* **161** (1992), *no.* 5, 411–415. (Summary) **93b:20071** 20F36 (82B23)

— (*with* Wang, Lu Yu; Zhang, Jun) Representations of braid group and Birman-Wenzl algebra. *Phys. Lett. A* **162** (1992), *no.* 6, 449–452. (Tetsuo Deguchi) **93f:20052** 20F36 (17B37)

Li, Yū Chia A characterization of generalized functions on infinite-dimensional spaces and Bargman-Segal analytic functions. *Gaussian random fields* (*Nagoya*, 1990), 272–284, *Ser. Probab. Statist.*, 1, *World Sci. Publishing, River Edge, NJ*, 1991. (Jan Ubøe) **93f:46064** 46F25 (30G30, 46G12, 60H99)

Li, Yu Mei Oscillation of two classes of second-order advanced functional-differential equations. (Chinese. English and Chinese summaries) *Acta Sci. Natur. Univ. Norm. Hunan.* **15** (1992), *no.* 3, 193–198. 34K15

Li, Yu Qiang (*with* Chen, Jing Fa; Wang, Jian Fang) The isomorphic factorizations of a class of 2-circulant graphs. *Graph theory, combinatorics, and applications, Vol.* 1 (*Kalamazoo, MI*, 1988), 223–231, *Wiley-Intersci. Publ., Wiley, New York*, 1991. (Summary) **93e:05074** 05C70

Li, Yuan Chuan (*with* Hsiao, Shêng Yen) Generalization of Baire and Mittag-Leffler theorems. *Functional analysis & related topics* (*Sapporo*, 1990), 138–140, *World Sci. Publishing, River Edge, NJ*, 1991. (Winfried Kaballo) **93c:46138** 46M99 (46A04, 46G99, 47A99)

— (*with* Hsiao, Shêng Yen) Representation formulas for C-semigroups. *Semigroup Forum* **46** (1993), *no.* 1, 123–125. (Frank Neubrander) **93m:47043** 47D03

Li, Yuan Jie (*with* Wang, Da Zhi) Fermions and Schwarzschild black holes. (Chinese. English summary) *J. Huazhong Univ. Sci. Tech.* **18** (1990), *no.* 3, 9–12. 83C57

— Entropy variation in the collapsing process caused by self-gravitation. (Chinese. English summary) *J. Huazhong Univ. Sci. Tech.* **19** (1991), *no.* 4, 37–42. (Summary) **93b:83045** 83C57

— Cosmic inflation and cosmic string. (English summary) *Internat. J. Theoret. Phys.* **31** (1992), *no.* 8, 1417–1420. 83F05 (83E15)

— (*with* Wang, Zhi Jun) Inhomogeneous R^2 inflationary models. (English summary) *Internat. J. Theoret. Phys.* **31** (1992), *no.* 12, 2053–2059. (Summary) **93g:83099** 83F05 (83C15, 83D05)

Li, Yuan Lin Finitely presented dimensions of Cartesian squares. *Proceedings of the First China-Japan International Symposium on Ring Theory* (*Guilin*, 1991), 95–97, *Okayama Univ., Okayama*, 1992. (*see* **93k:16001**) 16D80

— (*with* Lu, Dian Chen) Finitely presented dimensions of Cartesian squares. (Chinese. English summary) *Nanjing Daxue Xuebao Shuxue Bannian Kan* **9** (1992), *no.* 1, 102–112. (Summary) **93i:16013** 16D80

Li, Yuan Shu (*with* Duan, Wen Ze) Extension and application of the regularizing method for singular control. (Chinese. English and Chinese summaries) *Control Theory Appl.* **9** (1992), *no.* 3, 288–291. 49K40

Li, Yuan Xiang Lattice gas simulation for the Bénard pattern. (English summary) *Proceedings of International Conference on Scientific Computation* (*Hangzhou*, 1991), 207–210, *Ser. Appl. Math.*, 1, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93d:65004**) 65P05 (80–08)

Li, Yuan Zhong (*with* Feng, Han Qiao) On the asymptotic behavior of the intermediate point in the higher-order Lagrange mean value theorem. *J. Math.* (*Wuhan*) **11** (1991), *no.* 3, 298–300. (Xing Wei Zhou) **93j:26001** 26A06

Li, Yue Sheng (*with* Chao, Hong Yang) RS method for solving integral equations and its error estimate. *Approximation, optimization and computing*, 121–124, *North-Holland, Amsterdam*, 1990. (Summary) **93c:45002** 45B05 (45L10, 65R20)

Li, Yun The Hopf bifurcation of a simple food chain with group defense. (Chinese. English summary) *Math. Appl.* **5** (1992), *no.* 1, 102–110. (Summary) **93b:92021** 92D40 (58F14)

Li, Yun Long (*with* Fu, Chang Lin; Zou, Dang Rong) Some commutativity theorems for rings. (Chinese. English and Chinese summaries) *Heilongjiang Daxue Ziran Kexue Xuebao* **9** (1992), *no.* 4, 24–27. 16U80

Li, Yuying (*with* Coleman, Thomas F.) A globally and quadratically convergent affine scaling method for linear l_1 problems. (English summary) *Math. Programming* **56** (1992), *no.* 2, *Ser. A*, 189–222. (Summary) **93g:65073** 65H10 (65K05, 90C05)

— (*with* Coleman, Thomas F.) A global and quadratically convergent method for linear l_∞ problems. *SIAM J. Numer. Anal.* **29** (1992), *no.* 4, 1166–1186. (Summary) **93d:65050** 65H10 (65K05, 65K10)

— (*with* Conn, Andrew R.) A structure-exploiting algorithm for nonlinear minimax problems. *SIAM J. Optim.* **2** (1992), *no.* 2, 242–263. (G. Mühlbach) **93d:90060** 90C30 (49K35, 65F20, 65K05)

Li, Z. *see* **Li, Zheng**

Li, Z. C. *see* **Li, Zi-Cai**

Li, Z.-S. (*with* Lam, C. S.) Minimal-rank models from nonabelian orbifolds. (English summary) *Internat. J. Modern Phys. A* **7** (1992), *no.* 23, 5739–5760. (Stanislav Z. Pakuliak) **93k:81212a** 81T40 (81R05, 81T30, 81T50)

— (*with* Lam, C. S.) Errata: "Minimal-rank models from nonabelian orbifolds". *Internat. J. Modern Phys. A* **7** (1992), *no.* 32, 8081. (Stanislav Z. Pakuliak) **93k:81212b** 81T40 (81R05, 81T30, 81T50)

Li, Ze Zhi A notable example of a nonstationary ARMA process. (Chinese. English summary) *Xiamen Daxue Xuebao Ziran Kexue Ban* **31** (1992), *no.* 1, 12–14. (Editors) **93d:60062** 60G12 (62M10)

— A 0-1 law for convex measures. (Chinese. English summary) *Xiamen Daxue Xuebao Ziran Kexue Ban* **32** (1993), *no.* 1, 112–113. 60B11 (28C20)

Li, Zeng Fu (*with* Zheng, Zhi Hui) Boundary element analysis for the theory of bending elastic plates with three generalized displacements. *Theory and applications of boundary element methods* (*Beijing*, 1991), 343–350, *Internat. Acad. Publ., Beijing*, 1991. (*see* **93b:65008**) 73V10 (65N38)

Li, Zeng Hu A note on the multitype measure branching process. *Adv. in Appl. Probab.* **24** (1992), *no.* 2, 496–498. (Summary) **93e:60172** 60J80 (60G57)

— Measure-valued branching processes with immigration. (English summary) *Stochastic Process. Appl.* **43** (1992), *no.* 2, 249–264. (Kiyoshi Kawazu) **93k:60214** 60J80 (60G57)

Li, Zhao Hua A mathematical postscript to two manuscripts of Jing Lu. (Chinese) *Collected research papers on the history of mathematics, Vol.* 1 (*Chinese*), 170–171, *Inner Mongolia Univ. Press, Hohhot*, 1990. (*see* **93i:01004**) 01A25

— Ri Chun Shi's study on *Bai ji shu yan*. (Chinese) *Collected research papers on the history of mathematics, Vol.* 2 (*Chinese*), 123–132, *Inner Mongolia Univ. Press, Hohhot*, 1991. (*see* **93i:01005**) 01A25

— A study on the second volume of *Heng qi suanxue*. (Chinese) *Collected research papers on the history of mathematics, Vol.* 3 (*Chinese*), 78–82, *Inner Mongolia Univ. Press, Hohhot*, 1992. (*see* **93i:01006**) 01A25

Li, Zhaohai (*with* Zhang, Cun-Hui) Asymptotically efficient allocation rules for two Bernoulli populations. *J. Roy. Statist. Soc. Ser. B* **54** (1992), *no.* 2, 609–616. (Mayer Alvo) **93f:62109** 62L05

Li, Zheng (*with* Unbehauen, H.) Adaptive control of systems subject to deterministic time-varying disturbances via an additional measurement. *Control* '91, *Vol.* 1, 2 (*Edinburgh*, 1991), 311–316, *IEE Conf. Publ. Ser.*, 332, *IEE, London*, 1991. (*see* **93h:93007**) 93C40

— (*with* Unbehauen, H.) Adaptive control of fast time-varying systems. (English summary) *Identification and system parameter estimation* 1991, *Vol.* 1,2 (*Budapest*, 1991), 441–446, *IFAC Sympos. Ser.*, 3, *Pergamon, Oxford*, 1992. (*see* **93h:93009**) 93C40

Li, Zheng Feng (*with* Chang, Qian Shun; Wong, Yau Shu) New interpolation formulas of using geometric assumptions in the algebraic multigrid method. *Appl. Math. Comput.* **50** (1992), *no.* 2-3, 223–254. (Summary) **93d:65014** 65D05 (65F05)

Li, Zheng Liang (*with* Zhang, Zhong Fu; Wang, Jian Fang) On the 3-chromatic numbers of graphs. (Chinese. English and Chinese summaries) *Dianzi Keji Daxue Xuebao* **20** (1991), *no.* 1, 88–91. (Summary) **93j:05062** 05C15

Li, Zheng Mao (*with* Miao, Yong Feng) Prediction of nonlinear systems on the basis of multilayer neural networks. (Chinese. English and Chinese summaries) *Dianzi Keji Daxue Xuebao* **21** (1992), *no.* 3, 247–252. 93E10 (92B20)

Li, Zheng Wu A discrete approximate solution to a class of nonlinear singular integral equations and their error estimation. (Chinese. English and Chinese summaries) *Math. Appl.* **5** (1992), *no.* 2, 81–87. (Zhicheng Wang) **93g:45015** 45L10

Li, Zheng Yuan (*with* Ye, Qi Xiao; Wang, Ming Xin[2]) Traveling wave solutions for reaction-diffusion systems. *Proceedings of Asian Mathematical Conference*, 1990 (*Hong Kong*, 1990), 524–530, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93b:00022**) 35K57

— (*with* Peletier, L. A.) A comparison principle for the porous media equation with absorption. *J. Math. Anal. Appl.* **165** (1992), *no.* 2, 457–471. (Hong Fei Zhang) **93a:35088** 35K60 (35B50, 76S05)

— (*with* de Mottoni, Piero) Bifurcation for some systems of cooperative and predator-prey type. (English summary) *J. Partial Differential Equations* **5** (1992), *no.* 2, 25–36. (Summary) **93i:35017** 35B32 (35K50, 35K60, 92D25)

Li, Zhenyu (*with* Milenkovic, Victor) Constructing strongly convex hulls using exact or rounded arithmetic. (English summary) 1990 Computational Geometry Symposium (Berkeley, CA, 1990). *Algorithmica* **8** (1992), *no.* 5-6, 345–364. (Nikolaj M. Korneenko) **93k:68104** 68U05 (52B55)

Li, Zhi Bin (*with* Luo, Xue Bo) The initial value problem for the generalized heat operator on the Heisenberg group. *Chinese Sci. Bull.* **36** (1991), *no.* 9, 710–712. (Stig I. Andersson) **93d:58157** 58G11 (22E25, 35A22, 35K15)

Li, Zhi Liang (*with* Yang, Zhong Hua[1]) Bifurcation study on the laminar flow in the coiled tube with the triangular cross section. *Numerical methods for partial differential equations* (*Tianjin*, 1991), 126–138, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93b:65006**) 65N22 (76E99, 76M20)

Li, Zhi Ping Globally 1-1 solutions and finite element method for elastic-contact problems in nonlinear elasticity. *Northeast. Math. J.* **7** (1991), *no.* 2, 158–169. (J. T. Oden) **93h:73034** 73T05 (65N30, 73C50, 73G05, 73V05)

— Element removal method for singular minimizers in variational problems involving Lavrentiev phenomenon. (English summary) *Proc. Roy. Soc. London Ser. A* **439** (1992), *no.* 1905, 131–137. (T. Giec) **93j:65096** 65K10

Li, Zhi Qiang Asymptotic solutions to a class of Bayesian discrimination problems. (Chinese. English and Chinese summaries) *Chinese J. Appl. Probab. Statist.* **8** (1992), *no.* 2, 181–189. (Dongchen Zhuang) **93m:62018** 62C10 (62A15, 62G05)

Li, Zhi Shen (*with* Fisher, Brian) The product of the distributions x_+^λ and $x_-^{-\lambda-p}$ defined by a distribution vector. (Serbo-Croatian summary) *Zb. Rad. Prirod.-Mat. Fak. Ser. Mat.* **20** (1990), *no.* 2, 81–89. (Stevan Pilipović) **93a:46072** 46F10

Li, Zhong On the geometry of infinite-dimensional Teichmüller spaces. *Proceedings of Asian Mathematical Conference*, 1990 (*Hong Kong*, 1990), 291–295, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93b:00022**) 32G15

— *see also* **Proceedings: Mathematical Conference, 93b:00022**

Li, Zhong Ding (*with* Zhang, Bao Cai) Commutator representations of the family of Li-equations and a stationary system. (Chinese. English summary) *Gaoxiao Yingyong Shuxue Xuebao* **6** (1991), *no.* 4, 474–480. (Summary) **93g:58068** 58F07 (34L99, 35Q99)

Li, Zhong Fei (*with* Rong, Wei Dong) Properly efficient solutions to nonconvex nonsmooth vector extremal problems in ordered linear topological spaces. (Chinese. English summary) *Nei Mongol Daxue Xuebao Ziran Kexue* **23** (1992), *no.* 2, 152–156. (Summary) **93b:90079** 90C29 (49J52)

Li, Zhong Fu A method for selecting operators for the union and intersection of fuzzy subsets. (Chinese. English and Chinese summaries) Fuzzy information processing and machine intelligence (Chinese). *Mohu Xitong yu Shuxue* **6** (1992), *no.* 2, 31–37, 30. (Summary) **93m:04015** 04A72

Li, Zhong Hua (*with* Zhang, Si Ying) Noninteracting control for nonlinear systems possessing symmetries. *Control theory, stochastic analysis and applications* (*Hangzhou*, 1991), 119–124, *World Sci. Publishing, River Edge, NJ*, 1991. (*see* **93a:93005**) 93C10 (93A30)

— (*with* Zhang, Si Ying) Feedback decoupling of general nonlinear systems. (Chinese. English summary) *Inform. and Control* (*Shenyang*) **20** (1991), *no.* 5, 1–5. (Zheng Zhi Han) **93g:93026** 93B29 (93B52, 93C10)

— Comments on: "Linearization of discrete-time nonlinear systems and a canonical structure" [IEEE Trans. Automat. Control **34** (1989), no. 1, 119–122; MR 89k:93031] by K. Nam. (English summary) *IEEE Trans. Automat. Control* **38** (1993), *no.* 2, 383. (Summary) **93k:93023** 93B10 (93B17, 93C55)

Li, Zhong Kui Elimination of the singularity of the fundamental solution in infinite space of transversely isotropic material. *Theory and applications of boundary element methods* (*Beijing*, 1991), 45–52, *Internat. Acad. Publ., Beijing*, 1991. (*see* **93b:65008**) 73V10 (65N38)

Li, Zhong Lin Infinitesimal transformations that preserve curvature in manifolds of quasiconstant curvature. (Chinese) *J. Math.* (*Wuhan*) **11** (1991), *no.* 4, 422–424. (Bang-yen Chen) **93i:53019** 53B20

— (*with* Jia, Xing Qin) Submanifolds with parallel mean curvature vector fields. (Chinese. English summary) *Chinese Quart. J. Math.* **7** (1992), *no.* 1, 101–106. (Xue Shan Zhang) **93e:53069** 53C42 (53C20, 53C40)

Li, Zhong Xiang (*with* Li, Ming Chu) Longest cycles in claw-free graphs. (Chinese. English and Chinese summaries) *J. Math. Res. Exposition* **13** (1993), *no.* 1, 131–136. (Summary) **93k:05095** 05C38 (05C35)

Li, Zhong Zhang (*with* Li, Chuan Xiang; Wang, Han Fei) Some problems in partial abstract data type. (English summary) *Acta Math. Sci.* (*English Ed.*) **12** (1992), *no.* 3, 355–360. (Summary) **93m:68121** 68Q65

Li, Zhonggang (*with* Wu, Jie) A novel method of function decomposition. (English summary) Proceedings of the Twenty-third Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, FL, 1992). *Congr. Numer.* **90** (1992), 161–179. (Summary) **93j:68021** 68M15 (94C12)

Li, Zhongshan A determinantal description of GCD-closed sets and k-sets. (English summary) *Linear and Multilinear Algebra* **31** (1992), *no.* 1-4, 245–250. (H. L. Abbott) **93k:11001** 11A05 (11C20, 15A15)

Li, Zhu Xiang (*with* Yang, Xiao Yun) A discussion on the moments of the number of times $\|S_n\|$ exceeds $\varepsilon(n \lg n)^{1/2}$, of the supremum of the excess, and of the last such time. (Chinese) *Acta Math. Sinica* **34** (1991), *no.* 4, 440–450. (Xiang Chen Wang) **93d:60008** 60B11

Li, Zhu Yu (*with* Chai, Gen Xiang; Tian, Hong) Consistent nonparametric estimation of error distributions in linear model. *Acta Math. Appl. Sinica (English Ser.)* **7** (1991), *no.* 3, 245–256. (M. Bertrand-Retali) **93b:62091** 62J05 (62G05, 62G20)

— An asymptotic optimality of the discriminant procedure based on a nearest neighbor density estimator. *Hiroshima Math. J.* **22** (1992), *no.* 3, 649–655. (Z. Šidák) **93k:62127** 62H30 (62G05)

Li, Zhuo On central extensions of groups ${}^2G_2(K)$. (English and Chinese summaries) *Natur. Sci. J. Xiangtan Univ.* **14** (1992), *no.* 1, 138–144. (Summary) **93e:20025** 20D06 (20C25)

Li, Zi-Cai (*with* Bui, Tien Dai; Tang, Yuan Yan; Suen, Ching Yun) ★ Computer transformation of digital images and patterns. World Scientific Series in Computer Science, 17. *World Scientific Publishing Co., Inc., River Edge, NJ*, 1989. xiv+260 *pp. ISBN* 9971-50-951-2 (From the preface) **93i:68188** 68U10 (68–02, 68T10)

— (*with* Bui, Tien Dai) Penalty-combined method and applications in solving elliptic problems with singularities. *Comput. Methods Appl. Mech. Engrg.* **97** (1992), *no.* 3, 291–316. (Summary) **93a:65154** 65N30

— Optimal convergence rates for the combined methods of different finite element methods. *Numer. Methods Partial Differential Equations* **8** (1992), *no.* 3, 203–220. (Long An Ying) **93b:65170** 65N30 (65N12, 65N15)

Li, Zi Ming Determinant polynomial sequences. *Chinese Sci. Bull.* **34** (1989), *no.* 19, 1595–1599. (Summary) **93k:12001** 12D05 (68Q40)

Li, Zi Ping Gauge symmetries and their generators. (Chinese. English summary) *J. Xinjiang Univ. Natur. Sci.* **8** (1991), *no.* 3, 46–52. (Qi Keith Chen) **93a:58063** 58F05 (58E30, 70G99, 81T13)

— The Poincaré-Cartan invariant for a constrained Hamiltonian system. (Chinese. English summary) *J. Xinjiang Univ. Natur. Sci.* **8** (1991), *no.* 4, 51–55. (Yi-Sui Sun) **93a:70019** 70H05

— Gauge generators in Dirac's theory of constrained systems. (Chinese. English and Chinese summaries) *J. Xinjiang Univ. Natur. Sci.* **9** (1992), *no.* 2, 59–63. (Summary) **93i:70015** 70H05 (58F05, 70F99, 70G99)

— Generalized Noether theorems in canonical formalism for field theories and their applications. (English summary) *Internat. J. Theoret. Phys.* **32** (1993), *no.* 1, 201–215. (R. J. McKellar) **93j:58038** 58E40 (58E15, 70G50, 70H33)

Li, Zu Quan (*with* Liu, Xiu Zhen) Star quasicontinuity of set-valued mappings. (Chinese. English and Chinese summaries) *Heilongjiang Daxue Ziran Kexue Xuebao* **9** (1992), *no.* 3, 39–41. 54C60

— Some characterizations of Hausdorff quasicontinuity of set-valued mappings. (Chinese. English and Chinese summaries) *Heilongjiang Daxue Ziran Kexue Xuebao* **10** (1993), *no.* 1, 28–29, 50. 54C60

Lian, Bong H. (*with* Zuckerman, Gregg J.) Semi-infinite homology and 2D gravity. I. *Comm. Math. Phys.* **145** (1992), *no.* 3, 561–593. (Mehmet Koca) **93h:81131** 81T40 (17B68, 81T70)

Lian, Wen Yu (*with* Aubry, Nadine; Titi, Edriss S.) Preserving symmetries in the proper orthogonal decomposition. (English summary) *SIAM J. Sci. Comput.* **14** (1993), *no.* 2, 483–505. (Summary) **93m:65149** 65M99 (76M25)

Liandrat, J. (*with* Perrier, V.; Tchamitchian, Ph.) Numerical resolution of nonlinear partial differential equations using the wavelet approach. *Wavelets and their applications*, 227–238, *Jones and Bartlett, Boston, MA*, 1992. (*see* **93e:00031**) 65M99

Liang, Ben Zhong (*with* Zhu, Guang Tian; Wu, Jin Gang; Ji, Xin Hua; Yang, Xue Shi) Existence of solution to transpiration control problem. (English summary) *J. Appl. Math. Stochastic Anal.* **5** (1992), *no.* 4, 339–361. (Summary) **93m:93050** 93C20 (35Q99, 80A20, 93C95)

Liang, Bin (*with* Yu, Huan Ran) Optimal design of minimax deflection of a cylindrical shell. *Approximation, optimization and computing*, 427–430, *North-Holland, Amsterdam*, 1990. (*see* **93a:41001**) 73K40 (49Q10)

Liang, C. (*with* Rogers, C. A.) A multidimensional constitutive model for shape memory alloys. (English summary) *J. Engrg. Math.* **26** (1992), *no.* 3, 429–443. 73B30 (73B05)

Liang, Can Bin (*with* Kuang, Zhi Quan) On the Rácz and Szabados constructions of the c-boundary. (English summary) *Phys. Rev. D* (3) **46** (1992), *no.* 10, 4253–4256. (Robert J. Low) **93i:83070** 83C75

Liang, Chungti (*with* Tsai, Wei T.) On the reconfigurability of embedded loops on hypercubes and its application. (English summary) *Inform. Sci.* **66** (1992), *no.* 3, 191–224. (Summary) **93f:68017** 68M15

Liang, Dong A characteristics mixed finite element method of numerical simulation for 2-phase immiscible flow. *Sci. China Ser. A* **34** (1991), *no.* 11, 1281–1289. (Summary) **93d:76040** 76M10 (65N30, 76S05, 76T05)

— Generalized difference scheme methods for second-order elliptic equations. (Chinese. English summary) *Shandong Daxue Xuebao Ziran Kexue Ban* **26** (1991), *no.* 4, 391–400. (Summary) **93c:65125** 65N06 (65N12, 65N30)

— A viscosity splitting numerical simulation method for two-phase miscible displacement problem. *Proceedings of International Conference on Scientific Computation (Hangzhou, 1991)*, 197–201, *Ser. Appl. Math.*, 1, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93d:65004**) 65N12 (76M25, 76S05)

Liang, Fa Xun A necessary and sufficient condition for equivalence of stability of neutral difference-differential equations and ordinary differential equations in the first critical case. (Chinese. English and Chinese summaries) *J. Math. (Wuhan)* **12** (1992), *no.* 1, 92–98. (Qing Kai Kong) **93k:34167** 34K20 (34K40)

Liang, Fei-Tsen An absolute gradient bound for nonparametric surfaces of constant mean curvature. (English summary) *Indiana Univ. Math. J.* **41** (1992), *no.* 3, 569–604. (M. Elisa G. G. de Oliveira) **93i:53008** 53A10 (49Q05)

Liang, Gang Xian Solutions to the Pythagorean array. (Chinese. English and Chinese summaries) *Qufu Shifan Daxue Xuebao Ziran Kexue Ban* **18** (1992), *no.* 3, 69–71. 11D09

Liang, Gin Shuh System reliability evaluation using fuzzy fault tree analysis. *Tamsui Oxford J. Management Sci.* **7** (1991), 29–59. 90B25 (04A72)

Liang, Hao Yun (*with* Lehmann, Th.; Guo, Zhong Heng) The conjugacy between Cauchy stress and logarithm of the left stretch tensor. *European J. Mech. A Solids* **10** (1991), *no.* 4, 395–404. (Summary) **93c:73019** 73B99

Liang, J. *see* **Liang, Jin**

Liang, J. Q. *see* **Liang, Jiu Qing**

Liang, Ji Hua (*with* Liu, Ying Ming) Product characterizations of lattice-valued semicontinuous mappings. (Chinese. English and Chinese summaries) *Sichuan Daxue Xuebao* **29** (1992), *no.* 4, 463–467. 54A40 (04A72, 06B30)

Liang, Jin (*with* Xiao, Ti Jun) Solutions to abstract functional-differential equations with infinite delay. (Chinese) *Acta Math. Sinica* **34** (1991), *no.* 5, 631–644. (Bo Zhang) **93a:34088** 34K30 (34G20, 35R10)

— (*with* Xiao, Ti Jun) Second order linear differential equations with almost periodic solutions. A Chinese summary appears in Acta Math. Sinica **35** (1992), no. 5, 719–720. *Acta Math. Sinica (N.S.)* **7** (1991), *no.* 4, 354–359. (Frank Neubrander) **93e:34086** 34G10 (47D09, 47N20)

— (*with* Xiao, Ti Jun) Well-posedness of the Cauchy problem for second-order linear differential equations in Fréchet spaces. (Chinese. Chinese summary) *Acta Math. Sinica* **35** (1992), *no.* 3, 354–363. (Yubo Chen) **93m:34089** 34G10 (34A12, 47N20)

— (*with* Xiao, Ti Jun) Complete second order linear differential equations with almost periodic solutions. *J. Math. Anal. Appl.* **163** (1992), *no.* 1, 136–146. (Evgenii Mel'nikov) **93d:34106** 34G10 (34A12, 34C27, 47D09, 47N20)

— (*with* Xiao, Ti Jun) Analyticity of the propagators of second order linear differential equations in Banach spaces. *Semigroup Forum* **44** (1992), *no.* 3, 356–363. (Angelo Favini) **93c:47047** 47D09 (34G10, 47N20)

— On the problem of piston-like displacements in porous media. *Free boundary problems in fluid flow with applications (Montreal, PQ, 1990)*, 114–120, *Pitman Res. Notes Math. Ser.*, 282, *Longman Sci. Tech., Harlow*, 1993. (*see* **93k:00036**) 76S05

Liang, Jiu Qing (*with* Guo, Ben Hong; Morandi, G.) Extended Feynman formula for harmonic oscillator and its application. *Sci. China Ser. A* **34** (1991), *no.* 11, 1346–1353. (Summary) **93a:81104** 81S40 (81T13)

— (*with* Müller-Kirsten, H. J. W.) Time-dependent gauge transformations and Berry's phase. (English summary) *Ann. Physics* **219** (1992), *no.* 1, 42–54. (J. S. Joel) **93i:81034** 81Q20 (58Z05)

— Quantum anholonomy and geometrical phase interference. (English summary) *Internat. J. Modern Phys. A* **7** (1992), *no.* 20, 4747–4755. (Nicolae Anghel) **93i:81049** 81Q99 (81P15, 81T70)

— (*with* Müller-Kirsten, H. J. W.; Tchrakian, D. H.) Solitons, bounces and sphalerons on a circle. *Phys. Lett. B* **282** (1992), *no.* 1-2, 105–110. (Summary) **93a:81120** 81T10

Liang, Kaiyang (*with* Wachs, Michelle L.) Mahonian statistics on labeled forests. *Discrete Math.* **99** (1992), *no.* 1-3, 181–197. (E. Keith Lloyd) **93a:05010** 05A15 (06A07)

Liang, Kung-Yee (*with* Tsou, Daniel) Empirical Bayes and conditional inference with many nuisance parameters. (English summary) *Biometrika* **79** (1992), *no.* 2, 261–270. (Françoise Garcia-Brouaye) **93i:62007** 62C12 (62F15)

Liang, Miao Lian Oscillation of functional-differential equations of neutral type. (Chinese. English summary) *J. South China Normal Univ. Natur. Sci. Ed.* **1989**, *no.* 2, 74–85. (Jun Jie Wei) **93d:34122** 34K15 (34K40)

Liang, R. Y. (*with* Li, Y.-N.; Wang, Da Jun) On convergence rate of finite element eigenvalue analysis with mass lumping by nodal quadrature. (English summary) *Comput. Mech.* **8** (1991), *no.* 4, 249–256. (Summary) **93f:73101** 73V05

Liang, TaChen (*with* Gupta, Shanti S.; Leu, Lii Yuh) Selection of the best with a preliminary test for location-scale parametric models. (English summary) *J. Combin. Inform. System Sci.* **16** (1991), *no.* 2-3, 221–233. (Summary) **93k:62042** 62F07

— Empirical Bayes selection for the highest success probability in Bernoulli processes with negative binomial sampling. *Statist. Decisions* **9** (1991), *no.* 3, 213–234. (Yung L. Tong) **93b:62033** 62F07

— (*with* Panchapakesan, S.) On a monotone empirical Bayes test procedure in geometric model. *Ann. Inst. Statist. Math.* **44** (1992), *no.* 1, 133–140. (Yukio Suzuki) **93m:62022** 62C12 (62F03, 62F05)

— (*with* Balakrishnan, Narayanaswamy) A characterization of exponential distributions through conditional independence. *J. Roy. Statist. Soc. Ser. B* **54** (1992), *no.* 1, 269–271. (Summary) **93c:62022** 62E10

Liang, Wên Ch'i On asymptotic optimum rules for the selection of variables in regression analysis. *Bull. Inst. Math. Acad. Sinica* **20** (1992), *no.* 1, 1–18. (Kajal Lahiri) **93e:62171** 62J05 (62P20)

— (*with* Chao, Chern Ching) Arranging n distinct numbers on a line or a circle to reach extreme total variations. (English summary) *European J. Combin.* **13** (1992), *no.* 5, 325–334. (Wayne M. Dymacek) **93g:05006** 05A10 (05A05)

Liang, X. T. *see* **Liang, Xi Ting**

Liang, X. Z. *see* **Liang, Xue Zhang**

Liang, Xi Ting (*with* Lu, You Wen) Boundedness and integrability of generalized solutions to degenerate elliptic systems in diagonal form. (Chinese. English summary) *J. Math. Res. Exposition* **11** (1991), *no.* 4, 589–594. (Zuchi Chen) **93b:35053** 35J70 (35J45)

— A note on the Hölder continuity for generalized solutions of elliptic equations. *Northeast. Math. J.* **7** (1991), *no.* 3, 279–283. (Summary) **93c:35038** 35J60 (35D10)

— (*with* Lu, You Wen) A note on global solutions to the Cauchy problem for parabolic equations. (Chinese. Chinese summary) *Acta Math. Sinica* **35** (1992), *no.* 6, 803–808. 35K55 (35K10)

— The Hölder continuity of the gradients of solutions to problems of quasiminina of nondifferentiable functionals. (Chinese. English and Chinese summaries) *Acta Sci. Natur. Univ. Sunyatseni* **31** (1992), *no.* 1, 106–109. (Fuan Zhao) **93i:49051** 49N60 (49J52, 49K40)

— (*with* Wang, Xiang Dong) The Hölder continuity for the gradient of solutions to one-sided obstacle problems. *Appl. Math. Mech. (English Ed.)* **13** (1992), *no.* 9, 841–850; *translated from Appl. Math. Mech.* **13** (1992), *no.* 9, 811–820 (*Chinese. English and Chinese summaries*). (Summary) **93i:35060** 35J85 (35B65, 49J40)

— (*with* Wang, Xiang Dong; Liang, Xue Xin) Local boundedness of generalized solutions to quasilinear parabolic equations. (Chinese. English and Chinese summaries) *Math. Appl.* **5** (1992), *no.* 2, 88–95. (Summary) **93f:35106** 35K55 (35D05)

— (*with* Lu, You Wen) A Phragmén-Lindelöf theorem. *Pacific J. Math.* **153** (1992), *no.* 2, 299–311. (L. Hsiao) **93c:35068** 35K55 (35B05, 35D99)

— (*with* Wang, Xiang Dong) A priori estimates of the maximum modulus of generalized solutions to a class of quasilinear elliptic equations. (Chinese. Chinese summary) *Acta Math. Sinica* **36** (1993), *no.* 1, 1–12. 35B45 (35J60)

Liang, Xing Chang (*with* Yan, Ge Xing; Wu, Ya Zhou) Fundamental theorems on Schwarz derivatives. II. (Chinese. English and Chinese summaries) *Natur. Sci. J. Harbin Normal Univ.* **7** (1991), *no.* 2, 1–8. 26A24

Liang, Xue Xin (*with* Wu, Zai De; Gu, Yong Geng; Jiao, Yang) Existence and decay estimates of global solutions to a class of quasilinear degenerate parabolic equations. (Chinese. English summary) *Math. Appl.* **4** (1991), *no.* 4, 98–106. (Yun Gang Chen) **93j:35102** 35K65 (35A05, 35B45, 35K55)

— (*with* Wang, Xiang Dong; Liang, Xi Ting) Local boundedness of generalized solutions to quasilinear parabolic equations. (Chinese. English and Chinese summaries) *Math. Appl.* **5** (1992), *no.* 2, 88–95. (Summary) **93f:35106** 35K55 (35D05)

Liang, Xue Zhang (*with* Han, X. M.) On Chebyshev approximation in several variables. III. *Approximation, optimization and computing*, 125–128, *North-Holland, Amsterdam*, 1990. (*see* **93a:41001**) 41A50

— (*with* Li, Luo Qing) On bivariate osculatory interpolation. Proceedings of the International Symposium on Computational Mathematics (Matsuyama, 1990). *J. Comput. Appl. Math.* **38** (1991), *no.* 1-3, 271–282. (G. Baszenski) **93f:41007** 41A05 (41A10, 65D05)

Liang, Y. Daniel (*with* Rhee, Chongkye) Finding a maximum matching in a circular-arc graph. (English summary) *Inform. Process. Lett.* **45** (1993), *no.* 4, 185–190. (Summary) **93k:05132** 05C70 (05C85, 68Q25, 68R10)

Liang, Yan Chun (*with* Niu, Tie Jun; Li, Shou Fan; Wang, Zai Shen) Half flexible simplex method and applications in engineering. *Approximation, optimization and computing*, 407–410, *North-Holland, Amsterdam*, 1990. (*see* **93a:41001**) 90C05 (90C90)

Liang, Yi-Gao (*with* Chang, Lay-Nam) A global theory of parametrized quantum mechanics. *Differential geometric methods in theoretical physics* (*Davis, CA*, 1988), 787–791, *NATO Adv. Sci. Inst. Ser. B Phys.*, 245, *Plenum, New York*, 1990. (Summary) **93b:81078** 81Q99

Liang, You Dong (*with* Ma, Li Zhuang; Peng, Qun Sheng) A new approach for smoothing polyhedra with arbitrary topologies. *Computer-aided design & computer graphics* (*Hangzhou*, 1991), 221–228, *Internat. Acad. Publ., Beijing*, 1991. (Summary) **93c:65169** 65Y25 (65D10)

— (*with* Zheng, Jian Min; Wang, Guo Zhao) Curvature continuity between adjacent rational Bézier patches. (English summary) *Comput. Aided Geom. Design* **9** (1992), *no.* 5, 321–335. (Ewald Quak) **93j:65029** 65D17

— (*with* Lü, Wei[1]) A new representation and algorithm for constructing convex hulls in higher-dimensional spaces. *J. Comput. Sci. Tech.* (*English Ed.*) **7** (1992), *no.* 1, 1–5. (Summary) **93b:68089** 68U05 (52A20)

Liang, Yuan Di A class of Fourier integral operators with finitely smooth phase and their application. (Chinese. English summary) *J. Chengdu Univ. Sci. Tech.* **1991,** *no.* 3, 13–19. (Qing Yi Chen) **93e:35124** 35S30 (35A20, 47G30)

Liang, Zhao Jun (*with* Ye, Yan Qian) Characteristics of structurally stable polynomial differential systems. (Chinese) *Chinese Ann. Math. Ser. A* **12** (1991), *no.* 5, 578–582. (Bei Ye Feng) **93d:34093** 34D30 (34C35, 58F10)

— (*with* Mu, Xian Zhong) Global analysis of a class of polynomial systems with symmetric cusps of order three. (Chinese. English and Chinese summaries) *J. Central China Normal Univ. Natur. Sci.* **26** (1992), *no.* 4, 404–407. 34C05 (58F21)

— A geometric property of polynomial differential systems of degree $2k$. *J. Math. Anal. Appl.* **168** (1992), *no.* 1, 163–170. (A. P. Sadovskii) **93f:34053** 34C05 (58F25)

— (*with* Chen, Guang Qing) Affine classification for the quadratic vector fields without the critical points at infinity. (English summary) *J. Math. Anal. Appl.* **172** (1993), *no.* 1, 62–72. (Robert Roussarie) **93m:58087** 58F21 (34C05)

Liang, Zhi An (*with* Gardner, B. J.) Small and large radical classes. *Comm. Algebra* **20** (1992), *no.* 9, 2533–2551. (Chuan He Li) **93g:16027** 16N80 (06B20)

Liang, Zhi Yuan (*with* Cheng, Hong) The one-phase Stefan problem of energy integral type. (Chinese. English summary) *J. Harbin Inst. Tech.* **23** (1991), *no.* 6, 15–22. (Summary) **93a:35156** 35R35 (35K05)

— (*with* Cheng, Hong) A class of free boundary problems with two boundaries arising in combustion of solids. (Chinese. English and Chinese summaries) *J. Harbin Inst. Tech.* **24** (1992), *no.* 2, 1–6. (Summary) **93e:35121** 35R35

Liang, Zi Hao Continuity of equilibria in exchange economies. (English summary) *J. Math. Econom.* **22** (1993), *no.* 1, 27–34. (Summary) **93j:90030** 90A53 (90A56)

Liao, An Ping Symmetric positive definite solutions to a class of matrix equations. (Chinese. English and Chinese summaries) *Hunan Jiaoyu Xueyuan Xuebao* (*Ziran Kexue*) **10** (1992), *no.* 5, 124–126. (Summary) **93m:15020** 15A24

Liao, Ching Jong Optimal release time on a stochastic single machine. (English summary) *Internat. J. Systems Sci.* **23** (1992), *no.* 10, 1693–1701. 90B35

Liao, Da Qing Observation in mathematics. (Chinese. English and Chinese summaries) *Qufu Shifan Daxue Xuebao Ziran Kexue Ban* **18** (1992), *no.* 2, 93–99. 00A30 (00A69)

Liao, Guojun G. (*with* Costa, David Goldstein) Existence and multiplicity results for a class of elliptic problems with critical Sobolev exponents. *Rocky Mountain J. Math.* **21** (1991), *no.* 4, 1207–1223. (A. Simon) **93d:35051** 35J65 (35B05, 47H15, 47N20)

— (*with* Tam, Luen-Fai) On the heat equation for harmonic maps from noncompact manifolds. *Pacific J. Math.* **153** (1992), *no.* 1, 129–145. (Dennis M. DeTurck) **93b:58040** 58E20 (58G11)

— (*with* Smale, Nathan) Harmonic maps with nontrivial higher-dimensional singularities. *Geometric analysis and nonlinear partial differential equations* (*Denton, TX*, 1990), 79–89, *Lecture Notes in Pure and Appl. Math.*, 144, *Dekker, New York*, 1993. (Zhi Ren Jin) **93k:58066** 58E20 (35J60, 58E12)

Liao, He Shan (*with* Xu, Zhi Xin) A method for direct evaluation of singular integral in direct boundary element method. (English summary) *Internat. J. Numer. Methods Engrg.* **35** (1992), *no.* 7, 1473–1485. (Summary) **93g:73111** 73V10

Liao, Hua Kui (*with* Li, Xing Xiao) Compact minimal n-submanifolds of the sphere S^{n+p}. (Chinese. English summary) *Sichuan Daxue Xuebao* **29** (1992), *no.* 2, 180–187. (Hong You Wu) **93c:53052** 53C42

Liao, Jian Wen (*with* Yang, Shu Guang) Solution of an overdetermined system of linear equations in L_2, L_∞, L_p norm using L.S. techniques. *J. Comput. Math.* **10** (1992), *no.* 1, 29–38. (Zeng Rong Chen) **93b:65069** 65F20

Liao, Li (*with* Song, Xing Chang) Quantum Lie superalgebras and "nonstandard" braid group representations. *Modern Phys. Lett. A* **6** (1991), *no.* 11, 959–968. (Summary) **93d:81088** 81R50 (17B37, 20F36, 57M25, 81R10)

— (*with* Song, Xing Chang) New type covariant differential calculus on the quantum planes. (English summary) *Comm. Theoret. Phys.* **17** (1992), *no.* 3, 323–330. (Summary) **93k:58014** 58B30 (17B37, 81R50)

— (*with* Song, Xing Chang) The quantum Schrödinger equation and the q-deformation of the hydrogen atom. *J. Phys. A* **25** (1992), *no.* 3, 623–634. (A. J. Coleman) **93b:81117** 81R50 (17B37, 58B30, 81Q05)

Liao, Liang Wen Factorization of meromorphic functions with Borel exceptional values. (Chinese. English summary) *Adv. in Math.* (*China*) **21** (1992), *no.* 4, 445–453. (Summary) **93m:30039** 30D35

Liao, Liang Yuan Regularity of solutions to elliptic Monge-Ampère equations in the plane. (Chinese. English and Chinese summaries) *Acta Sci. Natur. Univ. Sunyatseni* **31** (1992), *no.* 1, 46–51. (Summary) **93f:35028** 35B65 (35J60)

Liao, Ming The asymptotic behaviour of the canonical stochastic flow on a symmetric space. (English summary) *Probability and statistics* (*Tianjin*, 1988/1989), 91–99, *Nankai Ser. Pure Appl. Math. Theoret. Phys., World Sci. Publishing, River Edge, NJ*, 1992. (Jacques Vauthier) **93f:58250** 58G32 (60H10, 60J65)

— Symmetry groups of Markov processes. *Ann. Probab.* **20** (1992), *no.* 2, 563–578. (Joseph Glover) **93a:60107** 60J25 (31C12, 58G32)

Liao, Shi Xiang (*with* Luo, Liao Fu) A spin-glass model for asymmetrical neural networks and its transition temperature. (Chinese. English and Chinese summaries) *Nei Mongol Daxue Xuebao Ziran Kexue* **23** (1992), *no.* 4, 529–533. 82C32

Liao, T. Y. J. (*with* Joseph, Daniel D.; Saut, Jean-Claude) Kelvin-Helmholtz mechanism for side branching in the displacement of light with heavy fluid under gravity. *European J. Mech. B Fluids* **11** (1992), *no.* 3, 253–264. (Summary) **93c:76032** 76E10 (76V05)

Liao, Ts'ung Ming Design of a two-degree-of-freedom controller for motor drives. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 8, *part I*, 1215–1220. 93C95

— (*with* Chao, K. H.) On the design of an optimal automatic generation controller for interconnected power systems. (English summary) *Internat. J. Control* **58** (1993), *no.* 1, 113–127. 93C95 (93B50)

Liao, Xiao Xin Stability of nonlinear continuous neural networks. (Chinese summary) *J. Central China Normal Univ. Natur. Sci.* **26** (1992), *no.* 1, 1–4. 34D99 (92B20)

— (*with* Ruan, Shi Gui) Stability of large scale neutral functional-differential systems. (Chinese summary) *J. Central China Normal Univ. Natur. Sci.* **26** (1992), *no.* 1, 5–12. (A. Haimovici) **93f:34132** 34K20 (34K40, 39B99)

— Stability, boundedness, dissipation of partial variables for nonlinear systems with separating variables. (English summary) *Sci. China Ser. A* **35** (1992), *no.* 9, 1025–1039. (Anthony N. Michel) **93k:34105** 34D05 (34A34, 34C11, 34D40, 34H05)

Liardet, Pierre (*with* Gabriel, Patrick; Lemańczyk, Mariusz) Ensemble d'invariants pour les produits croisés de Anzai. (English summary) [Set of invariants for Anzai skew products] *Mém. Soc. Math. France* (*N.S.*) *No.* 47 (1991), 102 *pp.* (Andrés del Junco) **93b:28042** 28D05

— (*with* Broglio, Annie) Predictions with automata. (English summary) *Symbolic dynamics and its applications* (*New Haven, CT*, 1991), 111–124, *Contemp. Math.*, 135, *Amer. Math. Soc., Providence, RI*, 1992. (Hans B. Sieburg) **93k:68071** 68Q70 (11B85, 68Q30)

— (*with* Goodson, G. R.; Kwiatkowski, Jan; Lemańczyk, Mariusz) On the multiplicity function of ergodic group extensions of rotations. *Studia Math.* **102** (1992), *no.* 2, 157–174. (Vadim A. Kaimanovich) **93f:28015** 28D20

Liau, Churn Jung (*with* Lin, I P'ëng) Abstract minimality and circumscription. *Artificial Intelligence* **54** (1992), *no.* 3, 381–396. (G. A. W. Vreeswijk) **93j:68194** 68T27 (03B60)

Liaw, C. M. *see* **Liao, Ts'ung Ming**

Liaw, Heh Tyan (*with* Lin, Chen Shang) On the OBDD-representation of general Boolean functions. *IEEE Trans. Comput.* **41** (1992), *no.* 6, 661–664. (Summary) **93f:68044** 68Q25 (03G05, 06E30)

— (*with* Wang, S. J.; Lei, Chin Laung) A dynamic cryptographic key assignment scheme in a tree structure. (English summary) *Comput. Math. Appl.* **25** (1993), *no.* 6, 109–114. 94A60

Liaw, JerJiann (*with* Taha, Thiab R.) An algorithm for solving a 4-diagonal Toeplitz linear system of equations on vector computers. (English summary) *Parallel processing for scientific computing, Vol. I, II* (*Norfolk, VA*, 1993), 510–514, *SIAM, Philadelphia, PA*, 1993. (*see* **93k:65003**) 65F30 (65Y05)

Liaw, Y. S. (*with* Anderson, Ian) Addendum to: "Z-cyclic Room squares" [Bull. Inst. Combin. Appl. **5** (1992), 51–57; MR 92m:05034]. *Bull. Inst. Combin. Appl.* **6** (1992), 56. (From the text) **93i:05029** 05B15

Libby, Paul A. (*with* Bray, K. N. C.) Premixed turbulent combustion. *Fluid dynamical aspects of combustion theory*, 113–140, *Pitman Res. Notes Math. Ser.*, 223, *Longman Sci. Tech., Harlow*, 1991. (From the introduction) **93i:80004** 80A25 (76F99, 76N15)

— (*with* Kim, J. S.; Williams, Forman A.) Influences of swirl on the structure and extinction of strained premixed flames. II. Strong rates of rotation. *Phys. Fluids A* **4** (1992), *no.* 2, 391–408. (Summary) **93b:80008** 80A25

Liberzon, M. R. (*with* Beklemishev, N. N.) Investigation of the dynamical properties of systems for the control of technological processes using the electromagnetic field effect. (Russian. Russian summary) *Development and application of the method of Lyapunov functions* (*Russian*) (*Irkutsk*, 1989), 156–161, 285, "*Nauka*" *Sibirsk. Otdel., Novosibirsk*, 1992. (*see* **93m:93005**) 93C95

Libgober, A. (*with* Yau, Stephen Shing-Toung) Erratum: "An obstruction to smoothing of Gorenstein surface singularities" [Comment. Math. Helv. **65** (1990), no. 3, 413–433; MR 91m:14005]. *Comment. Math. Helv.* **67** (1992), *no.* 4, 670. (From the text) **93j:14004** 14B07 (14J17, 32S30, 32S55)

— On the homology of finite abelian coverings. *Topology Appl.* **43** (1992), *no.* 2, 157–166. (Jonathan A. Hillman) **93e:57003** 57M10

— (*with* Teitelbaum, Jeremy T.) Lines on Calabi-Yau complete intersections, mirror symmetry, and Picard-Fuchs equations. *Internat. Math. Res. Notices* **1993,** *no.* 1, 29–39. (Claire Voisin) **93k:14013** 14C30 (14J30, 14M10, 14N10, 32G20)

Libkin, L. O. Separability in lattices. (Russian) *Ordered sets and lattices, No.* 10 (*Russian*), 78–88, *Saratov. Gos. Univ., Saratov*, 1991. (E. T. Schmidt) **93h:06005** 06B10 (06D05)

— (*with* Demetrovics, János; Hencsey, Gusztáv; Muchnik, I. B.) On the interaction between closure operations and choice functions with applications to relational databases. (English summary) *Acta Cybernet.* **10** (1992), *no.* 3, 129–139. (Summary) **93k:68024** 68P15

— (*with* Demetrovics, János; Hencsey, Gusztáv; Muchnik, I. B.) Normal form relation schemes: a new characterization. (English summary) *Acta Cybernet.* **10** (1992), *no.* 3,

141–163. (Summary) **93m:68042** 68P15
— (*with* Demetrovics, János; Muchnik, I. B.) Functional dependencies in relational databases: a lattice point of view. (English summary) *Discrete Appl. Math.* **40** (1992), *no.* 2, 155–185. (Summary) **93g:68024** 68P15
— Parallel axiom in convexity lattices. *Period. Math. Hungar.* **24** (1992), *no.* 1, 1–12. (Mary Katherine Bennett) **93c:06016** 06C99 (03G10)
Libura, Marek Sensitivity analysis for minimum weight base of a matroid. (English, Russian and Polish summaries) *Control Cybernet.* **20** (1991), *no.* 3, 7–24. (Summary) **93m:90064** 90C27
Li Calzi, M. (*with* Beccacece, F.) On the decomposition of stochastic discounted cash flows. (English and Italian summaries) *Riv. Mat. Sci. Econom. Social.* **14** (1991), *no.* 2, 59–73. (Summary) **93k:90017** 90A09
tràn gia Lịch *see* **Tràn Gia Lịch**
Lich, Tran Gia *see* **Tràn Gia Lịch**
Lichnerowicz, André L'œuvre scientifique de Carlo Cattaneo. [The scientific work of Carlo Cattaneo] *Classical mechanics and relativity: relationship and consistency* (*Elba*, 1989), 1–8, *Monographs Textbooks Phys. Sci. Lecture Notes*, 20, *Bibliopolis, Naples*, 1991. (Editors) **93m:01075** 01A70
— Les groupes kählériens. (English summary) [Kähler groups] *Symplectic geometry and mathematical physics* (*Aix-en-Provence*, 1990), 245–259, *Progr. Math.*, 99, *Birkhäuser Boston, Boston, MA*, 1991. (Alberto Medina) **93d:32042** 32L07 (32M10, 53C55)
— Mathematics and general relativity: a recollection. (French summary) *Studies in the history of general relativity* (*Luminy*, 1988), 103–108, 463, *Einstein Stud.*, 3, *Birkhäuser Boston, Boston, MA*, 1992. (*see* **93a:01001**) 01A60 (83–03)
— Spineurs-twisteurs hermitiens et géométrie conformément kählerienne. (English summary) [Hermitian twistor-spinors and conformal Kähler geometry] *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 11, 841–846. (Oussama Hijazi) **93m:53076** 53C55 (58G30)
Licht, C. (*with* Thoulouze-Pratt, Elaine; Raous, M.) Remarks on a numerical method for unilateral contact including friction. *Unilateral problems in structural analysis, IV* (*Capri*, 1989), 129–144, *Internat. Ser. Numer. Math.*, 101, *Birkhäuser, Basel*, 1991. (Muhammad Aslam Noor) **93g:73105** 73T05 (49J40, 73V25)
Lichtblau, Daniel A. Invariant proper holomorphic maps between balls. *Indiana Univ. Math. J.* **41** (1992), *no.* 1, 213–231. (G. Khudaĭberganov) **93h:32036** 32H35
— (*with* D'Angelo, John P.) Spherical space forms, CR mappings, and proper maps between balls. (English summary) *J. Geom. Anal.* **2** (1992), *no.* 5, 391–415. (**James J. Faran, V**) **93k:32056** 32H35 (32H02, 57S25)
Lichtenberg, Allan J. (*with* Lieberman, M. A.) ★ Regular and chaotic dynamics. Second edition. Applied Mathematical Sciences, 38. *Springer-Verlag, New York*, 1992. xxii+692 *pp. ISBN* 0-387-97745-7 (Remo Badii) **93c:58071** 58F05 (34Cxx, 58F13, 70–02, 70H05, 70K50)
— The application of mappings to physical systems. *Nonlinear dynamics and chaos* (*Canberra*, 1991), 277–317, *World Sci. Publishing, River Edge, NJ*, 1992. (Olec Troshkin) **93g:58133** 58F40 (00A69, 00A79, 82C31)
— (*with* Goedde, C. G.; Lieberman, M. A.) Chaos and the approach to equilibrium in a discrete sine-Gordon equation. (English summary) *Phys. D* **59** (1992), *no.* 1-3, 200–225. (Bei Ye Feng) **93m:58072** 58F13 (39A12)
— Arnol'd diffusion in a torus with time-varying fields. (English summary) *Phys. Fluids B* **4** (1992), *no.* 10, 3132–3137. (Summary) **93g:76116** 76X05 (58F40, 76M99)
Lichter, Seth Quasiperiodicity, chaos, and damping in cross-waves. (English summary) *Nonlinear dispersive wave systems* (*Orlando, FL*, 1991), 365–381, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93i:76031** 76D33 (58F13, 76B15, 76E30)
Lichtin, Ben Periods and the asymptotics of a Diophantine problem. II. *Canad. J. Math.* **43** (1991), *no.* 4, 770–791. (S. Allen Broughton) **93b:11112** 11M41 (11P05, 32S40)
— On the moderate growth of generalized Dirichlet series for hypoelliptic polynomials. *Compositio Math.* **80** (1991), *no.* 3, 337–354. (Boris Datskovsky) **93d:11093** 11M41 (11P99)
— The asymptotics of a lattice point problem associated to a finite number of polynomials. I. *Duke Math. J.* **63** (1991), *no.* 1, 139–192. (Hartmut Menzer) **93d:11107** 11P21 (11M41, 11M45, 11P05)
— Periods and the asymptotics of a Diophantine problem. I. *Ark. Mat.* **30** (1992), *no.* 1, 105–131. (Jan Stevens) **93j:32044** 32S40 (11M41, 32G20)
— On the average period of an elliptic curve. *Duke Math. J.* **67** (1992), *no.* 2, 291–332. (Philippe Satgé) **93g:11059** 11G05 (14H52)
Lichtzier, I. M. *see* **Likhttsier, I. M.**
Lick, Don R. (*with* Alavi, Yousef; Zou, Hung-Bin) Second order degree regular graphs. *Graph theory, combinatorics, and applications, Vol.* 1 (*Kalamazoo, MI*, 1988), 1–8, *Wiley-Intersci. Publ., Wiley, New York*, 1991. (Koduvayur R. Parthasarathy) **93d:05125** 05C75 (05C12)
— (*with* Alavi, Yousef; Behzad, Mehdi; Erdős, Paul) Double vertex graphs. (English summary) *J. Combin. Inform. System Sci.* **16** (1991), *no.* 1, 37–50. (Summary) **93d:05126** 05C75
Lickorish, W. B. R. Variants on 3-manifold invariants. *Knots* 90 (*Osaka*, 1990), 1–7, *de Gruyter, Berlin*, 1992. (Katura Miyazaki) **93k:57017** 57M25 (57N10)
— Distinct 3-manifolds with all $SU(2)_q$ invariants the same. *Proc. Amer. Math. Soc.* **117** (1993), *no.* 1, 285–292. (Louis H. Kauffman) **93d:57031** 57N10 (17B37, 57M25)
Lickteig, Thomas (*with* Bürgisser, Peter; Karpiński, Marek) Some computational problems in linear algebra as hard as matrix multiplication. *Comput. Complexity* **1** (1991), *no.* 2, 131–155. (D. Bini) **93d:68030** 68Q25 (68Q40)
— (*with* Bürgisser, Peter; Shub, Michael) Test complexity of generic polynomials. (English summary) *J. Complexity* **8** (1992), *no.* 3, 203–215. (Zhuo Jun Liu) **93j:68070** 68Q25
Liddell, H. *see* **Parallel computing '91, 93f:00016**
Liddle, Andrew R. (*with* Mellor, Felicity) de Sitter solutions in higher order gravity. *Gen. Relativity Gravitation* **24** (1992), *no.* 8, 897–909. (Summary) **93b:83056** 83D05 (83F05)
Lidl, Rudolf (*with* Müller, Winfried B.) Generalizations of the Fibonacci pseudoprimes test. *Discrete Math.* **92** (1991), *no.* 1-3, 211–220. (Summary) **93g:11010** 11A51 (11B39, 11Y11)
— (*with* Mullen, Gary L.) Cycle structure of Dickson permutation polynomials. *Math. J. Okayama Univ.* **33** (1991), 1–11. (Stefan Dodunekov) **93g:11125** 11T06
Lidouh, Abdel (*with* Bouchitté, Guy; Suquet, Pierre) Homogénéisation de frontière pour la modélisation du contact entre un corps déformable non linéaire et un corps rigide. (English summary) [Boundary homogenization and modeling of friction between a nonlinear deformable body and a rigid body] *C. R. Acad. Sci. Paris Sér. I Math.* **313** (1991), *no.* 13, 967–972. (Andro Mikelić) **93c:73090** 73T05 (49J45, 73B27)
Lidsey, James E. Multiple and anisotropic inflation with exponential potentials. *Classical Quantum Gravity* **9** (1992), *no.* 5, 1239–1253. (Summary) **93a:83041** 83F05 (83D05)
— The fragility and rigidity of cosmological theories. (English summary) *Gen. Relativity Gravitation* **25** (1993), *no.* 4, 399–407. (Summary) **93k:83073** 83F05 (83D05, 83E15)
Lidskii, B. V. sl(n)-modules with finite weight multiplicity. (Russian) *Funktsional. Anal. i Prilozhen.* **26** (1992), *no.* 2, 74–77; *translation in Functional Anal. Appl.* **26** (1992), *no.* 2, 136–138. (Sen Qiu) **93d:17010** 17B10
Lidskii, V. B. (*with* Vasil'ev, D. G.; Levitin, M. R.) Forced oscillations of a shell immersed in a viscous compressible fluid. (Russian) *Funktsional. Anal. i Prilozhen.* **25** (1991), *no.* 4, 93–95; *translation in Functional Anal. Appl.* **25** (1991), *no.* 4, 309–311 (1992). (Oleg Limarchenko) **93k:73067** 73K70 (35Q35, 73K12, 73K15, 76N10)
Lie, Ivar Heterogeneous domain decomposition for acoustic bottom interaction problems. (English summary) *Fifth International Symposium on Domain Decomposition Methods for Partial Differential Equations* (*Norfolk, VA*, 1991), 506–517, *SIAM, Philadelphia, PA*, 1992. (Summary) **93i:76083** 76Q05 (65M55, 65Q05, 73D99, 76M25)
Lie, Sophus *see* **Straume, Eldar, 93h:01026; 93h:01027; Svare, Helge, 93h:01052; Abel, Niels Henrik, 93i:01028a; 93i:01028b** *and* **Galois, Évariste, 93k:01091**
Lieb, Elliott H. (*with* Almgren, Frederick J., Jr.) The (non)continuity of symmetric decreasing rearrangement. (English summary) *Variational methods* (*Paris*, 1988), 3–16, *Progr. Nonlinear Differential Equations Appl.*, 4, *Birkhäuser Boston, Boston, MA*, 1990. (Bernhard Kawohl) **93m:49020** 49Q15 (46E30, 47H99)
— (*with* Almgren, Frederick J., Jr.) How many singularities can there be in an energy minimizing map from the ball to the sphere? (English summary) *Ideas and methods in mathematical analysis, stochastics, and applications* (*Oslo*, 1988), 394–408, *Cambridge Univ. Press, Cambridge*, 1992. (Wei Yue Ding) **93k:58061** 58E20 (49Q20)
— Absence of ferromagnetism for one-dimensional itinerant electrons. *Probabilistic methods in mathematical physics* (*Siena*, 1991), 290–294, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93g:81002**) 82B10 (82–02, 82C10)
— The flux-phase problem on planar lattices. (English summary) Physics in two dimensions (Neuchâtal, 1991). *Helv. Phys. Acta* **65** (1992), *no.* 2-3, 247–255. (Summary) **93e:82012** 82B20
— (*with* Solovej, Jan Philip) Atoms in the magnetic field of a neutron star. *Differential equations with applications to mathematical physics*, 221–237, *Math. Sci. Engrg.*, 192, *Academic Press, Boston, MA*, 1993. (Summary) **93m:81165** 81V45 (85A15)
Liebeck, Martin W. (*with* Saxl, Jan) Maximal subgroups of finite simple groups and their automorphism groups. *Proceedings of the International Conference on Algebra, Part* 1 (*Novosibirsk*, 1989), 243–259, *Contemp. Math.*, 131, *Part* 1, *Amer. Math. Soc., Providence, RI*, 1992. (A. S. Kondrat'ev) **93g:20032** 20D06 (20D08, 20E28)
— (*with* Praeger, Cheryl E.) Affine distance-transitive groups with alternating or symmetric point stabiliser. (English summary) *European J. Combin.* **13** (1992), *no.* 6, 489–501. (K. Chandrasekhara Rao) **93k:05077** 05C25
— (*with* Praeger, Cheryl E.) Relation algebras and finite permutation groups. *J. London Math. Soc.* (2) **45** (1992), *no.* 3, 433–445. (Alberto Delgado) **93h:20002** 20B05 (20B20)
— (*with* Saxl, Jan; Seitz, Gary M.) Subgroups of maximal rank in finite exceptional groups of Lie type. *Proc. London Math. Soc.* (3) **65** (1992), *no.* 2, 297–325. (Ulrich Dempwolff) **93e:20026** 20D06 (20E28, 20G40)
— (*with* Hall, Jonathan I.; Seitz, Gary M.) Generators for finite simple groups, with applications to linear groups. *Quart. J. Math. Oxford Ser.* (2) **43** (1992), *no.* 172, 441–458. (Richard Lyons) **93k:20030** 20D06 (20F05, 20F50, 20G15)
— *see also* **Groups, combinatorics & geometry, 93g:20001**
Lieberman, Gary M. Existence of solutions to the first initial-boundary value problem for parabolic equations via elliptic regularization. *Progress in partial differential equations: elliptic and parabolic problems* (*Pont-à-Mousson*, 1991), 193–206, *Pitman Res. Notes Math. Ser.*, 266, *Longman Sci. Tech., Harlow*, 1992. (Russell M. Brown) **93m:35095** 35K20 (35K05)
— On the regularity of the minimizer of a functional with exponential growth. *Comment. Math. Univ. Carolin.* **33** (1992), *no.* 1, 45–49. (Elvira Mascolo) **93g:49029** 49N60 (35J65)
— Intermediate Schauder theory for second order parabolic equations. IV. Time irregularity and regularity. *Differential Integral Equations* **5** (1992), *no.* 6, 1219–1236. (Piotr Biler) **93i:35068** 35K15 (35B45, 35B65, 35K20)
Lieberman, Gerald J. (*with* Ross, Sheldon M.) On the variance of the hazard estimator in simulation. (English summary) *Probab. Engrg. Inform. Sci.* **5** (1991), *no.* 3, 355–359. 62M99
Lieberman, M. A. (*with* Lichtenberg, Allan J.) ★ Regular and chaotic dynamics. Second edition. Applied Mathematical Sciences, 38. *Springer-Verlag, New York*, 1992. xxii+692 *pp. ISBN* 0-387-97745-7 (Remo Badii) **93c:58071** 58F05 (34Cxx, 58F13, 70–02, 70H05, 70K50)
— (*with* Goedde, C. G.; Lichtenberg, Allan J.) Chaos and the approach to equilibrium in a discrete sine-Gordon equation. (English summary) *Phys. D* **59** (1992), *no.* 1-3, 200–225. (Bei Ye Feng) **93m:58072** 58F13 (39A12)
Liebert, W. (*with* Pawelzik, K.; Schuster, H. G.) Optimal embeddings of chaotic attractors from topological considerations. *Europhys. Lett.* **14** (1991), *no.* 6, 521–526. (Summary) **93f:58155** 58F13
Liebscher, D.-E. (*with* Bleyer, U.; Polnarev, A. G.) Kaluza-Klein models: from quantum state to observations. *Quantum gravity* (*Moscow*, 1990), 613–632, *World Sci. Publishing, River Edge, NJ*, 1991. (Summary) **93d:83062** 83E15 (83C45, 83F05)
Liedl, Roman (*with* Netzer, Norbert) ★ Die Lösung der Translationsgleichung mittels schneller Pilgerschritttransformation. (German) [The solution of the translation equation by means of the fast Pilgerschritt transform] Grazer Mathematische Berichte [Graz Mathematical Reports], 314. *Karl-Franzens-Universität Graz, Graz*, 1991. vi+54 *pp.* (Z. Moszner) **93a:39017** 39B12 (22A99, 39B52, 57S99)
— (*with* Netzer, Norbert) Fast Pilgerschritt transformation. (English summary) *European Conference on Iteration Theory* (*Batschuns*, 1989), 279–293, *World Sci. Publishing, River Edge, NJ*, 1991. (K. H. Hofmann) **93k:22003** 22E05 (22E15, 34A99)
— *see also* **Yearbook: Surveys on mathematics, 93j:00006**

vo thanh Liem *see* **Vo Thanh Liem**

Liem, Chin Bo (*with* Lü, Tao; Shih, Tsi Min) An analysis of splitting extrapolation for multidimensional problems. (English summary) *Systems Sci. Math. Sci.* **3** (1990), *no.* 3, 261–272. (Summary) **93e:65004** 65B05 (65D30, 65M12, 65R20)

— (*with* Lü, Tao; Shih, Tsi Min) Parallel algorithms for variational inequalities based on domain decomposition. *Systems Sci. Math. Sci.* **4** (1991), *no.* 4, 341–348. (Ya. I. Al'ber) **93b:49010** 49J40 (47H19, 49M27, 65K10, 65Y05)

Liem, Vo Thanh *see* **Vo Thanh Liem**

Lien, Da-Hsiang Donald (*with* Balakrishnan, Narayanaswamy; Balasubramanian, Krishnaswami) Moments of order statistics from a non-overlapping mixture model with applications to truncated Laplace distribution. *Comm. Statist. Theory Methods* **21** (1992), *no.* 7, 1909–1928. 62G30

— (*with* Rearden, David) On the information content of partial observations. (English summary) *Comm. Statist. Theory Methods* **21** (1992), *no.* 10, 2869–2880. (Syed N. U. A. Kirmani) **93b:62122** 62J05 (62F12)

Lienert, Cindy R. (*with* Butler, Philip H.) Racah-Wigner algebra for q-deformed algebras. *J. Phys. A* **25** (1992), *no.* 5, 1223–1235. (G. Vanden Berghe) **93a:81083** 81R50 (17B37)

Lienhard, Clarence W. An optimal curtailment of a randomized UMP test for a proportion. *Sequential Anal.* **11** (1992), *no.* 1, 17–35. (Adnan M. Awad) **93e:62055** 62F03 (62L10)

Liepiņš, A. (*with* Kapräne, I.) Fixed time of a sand glass. (Latvian. English and Russian summaries) *Mathematics (Russian)*, 167–170, *Latv. Univ. Zinät. Raksti*, 562, *Latv. Univ., Riga*, 1991. (*see* **93f:00009**) 54H25

— (*with* Kapräne, I.) To Jonathan Livingston Seagull. (English, Russian and Latvian summaries) *Mathematics (Russian)*, 171–174, *Latv. Univ. Zinät. Raksti*, 562, *Latv. Univ., Riga*, 1991. (*see* **93f:00009**) 54A40 (54H25)

— (*with* Kampe, L.) A semi-illusion of continuity. (English, Russian and Latvian summaries) *Mathematics (Russian)*, 175–176, *Latv. Univ. Zinät. Raksti*, 562, *Latv. Univ., Riga*, 1991. (Editors) **93b:54028** 54H25 (54C30, 54D30)

— (*with* Zirvite, R.; Kopeika, E.) A balanced cloudscape with fixed points. (English, Russian and Latvian summaries) *Mathematics (Russian)*, 177–180, *Latv. Univ. Zinät. Raksti*, 562, *Latv. Univ., Riga*, 1991. (*see* **93f:00009**) 54H25 (54C60)

Liero, Hannelore Asymptotic normality of a weighted integrated squared error of kernel regression estimates with data-dependent bandwidth. *J. Statist. Plann. Inference* **30** (1992), *no.* 3, 307–325. (M. Bertrand-Retali) **93g:62055** 62G05 (62G20)

Liese, Friedrich (*with* Danielyan, È. A.) The analysis of a $M_r/G_r/1/\infty$ model with time dependent priorities. *Rostock. Math. Kolloq. No.* 43 (1991), 39–54. (B. Dimitrov) **93b:60211** 60K25

— (*with* Kutoyants, Yu. A.) On minimum distance estimation for spatial Poisson processes. *Ann. Acad. Sci. Fenn. Ser. A I Math.* **17** (1992), *no.* 1, 65–71. (Jan Grandell) **93j:62214** 62M09 (60G55)

— Every continuous first order autoregressive stochastic process is a Gaussian process. *Kybernetika (Prague)* **28** (1992), *no.* 3, 227–233. (Jiří Anděl) **93e:60077** 60G15 (62M10)

Liess, Otto Lacunary iterates and regularity in Denjoy-Carleman classes. *Ann. Univ. Ferrara Sez. VII (N.S.)* **36** (1990), 185–194 (1991). (Todor V. Gramchev) **93k:35068** 35H05 (26E10, 35A20, 35B65)

Liestman, Arthur L. (*with* Bermond, Jean-Claude; Hell, Pavol; Peters, Joseph G.) Sparse broadcast graphs. *Discrete Appl. Math.* **36** (1992), *no.* 2, 97–130. (Summary) **93a:68011** 68M10 (05C90, 90B12, 90C35)

— (*with* Peters, Joseph G.) Minimum broadcast digraphs. (English summary) *Discrete Appl. Math.* **37/38** (1992), 401–419. (C. Peyrat) **93j:94041** 94C15 (05C20, 05C90, 68M20, 90B12)

— (*with* Shermer, Thomas C.) Grid spanners. (English summary) *Networks* **23** (1993), *no.* 2, 123–133. (Summary) **93j:68017** 68M10 (05C90, 90B12)

Lifanov, I. I. (*with* Anfinogenov, A. Yu.) On numerical solution of integral equations of planar and spatial diffraction problems. (English summary) *Russian J. Numer. Anal. Math. Modelling* **7** (1992), *no.* 5, 387–403. (Summary) **93i:78001** 78–08 (65P05, 76M25, 76Q05)

Lifanov, I. K. (*with* Poltavskiĭ, L. N.) Generalized Fourier operators and their application to the justification of some numerical methods in aerodynamics. (Russian. Russian summary) *Mat. Sb.* **183** (1992), *no.* 5, 79–114. (Corneliu Berbente) **93k:76088** 76M25 (42B20, 76G25)

— (*with* Matveev, A. F.; Molyakov, I. M.) Flow around permeable and thick airfoils and numerical solution of singular integral equations. *Russian J. Numer. Anal. Math. Modelling* **7** (1992), *no.* 2, 109–144. (Corneliu Berbente) **93e:76009** 76B05

Lifsches, Shmuel (*with* Shelah, Saharon) The monadic theory of $(\omega_2, <)$ may be complicated. *Arch. Math. Logic* **31** (1992), *no.* 3, 207–213. (N. C. A. da Costa) **93b:03064** 03D15 (03B15, 03C85, 03E35)

Lifschitz, Alexander E. On the instability of three-dimensional flows of an ideal incompressible fluid. *Phys. Lett. A* **167** (1992), *no.* 5-6, 465–474. (Summary) **93f:76041** 76E10 (76C05)

— (*with* Lebovitz, Norman) Short wavelength instabilities of rotating, compressible fluid masses. (English summary) *Proc. Roy. Soc. London Ser. A* **438** (1992), *no.* 1903, 265–290. (A. S. Baranov) **93g:76055** 76E10 (76N10, 76U05, 85A30)

— (*with* Turkington, Bruce; Eydeland, Alexander; Spruck, Joel) Multiconstrained variational problems in magnetohydrodynamics: equilibrium and slow evolution. (English summary) *J. Comput. Phys.* **106** (1993), *no.* 2, 269–285. (Summary) **93m:76075** 76W05 (76M30, 76X05)

Lifshits, E. M. (*with* Pitaevskiĭ, L. P.) ★ Lehrbuch der theoretischen Physik ("Landau-Lifschitz"). Band V. (German) [Textbook of theoretical physics ("Landau-Lifschitz"). Vol. V] Statistische Physik. Teil 1. [Statistical physics. Part 1] Translated from the Russian by Eberhard Jäger. Eighth edition. Translation edited by Richard Lenk and with a foreword by Lenk and P. Ziesche. *Akademie-Verlag, Berlin*, 199?. xviii+517 *pp. ISBN* 3-05-500069-2 (Editors) **93b:00001b** 00–01 (00A79, 80–01, 82–01)

— (*with* Berestetskiĭ, V. B.; Pitaevskiĭ, L. P.) ★ Lehrbuch der theoretischen Physik ("Landau-Lifschitz"). Band IV. (German) [Textbook of theoretical physics ("Landau-Lifschitz"). Vol. IV] Quantenelektrodynamik. [Quantum electrodynamics] Translated from the Russian by Adolf Kühnel. Translation edited by Paul Ziesche. With a foreword by Ziesche and Kühnel. Seventh edition. *Akademie-Verlag, Berlin*, 1991. xvi+614 *pp. ISBN* 3-05-500068-4 (Editors) **93b:00001a** 00–01 (81–01)

— (*with* Landau, L. D.) ★ Lehrbuch der theoretischen Physik ("Landau-Lifschitz"). Band VI. (German) [Textbook of theoretical physics ("Landau-Lifschitz"). Vol. VI] Hydrodynamik. [Hydrodynamics] Translated from the Russian by Wolfgang Weller and Adolf Kühnel. Fifth edition. Translation edited by Weller and with a foreword by Weller and P. Ziesche. *Akademie-Verlag, Berlin*, 1991. xvi+683 *pp. ISBN* 3-05-500070-6 (Editors) **93b:00001c** 00–01 (00A79, 76–01, 83–01)

— (*with* Landau, L. D.) ★ Lehrbuch der theoretischen Physik ("Landau-Lifschitz"). Band VII. (German) [Textbook of theoretical physics ("Landau-Lifschitz"). Vol. VII] Elastizitätstheorie. [Elasticity theory] Translated from the Russian by Benjamin Kozik and Wolfgang Göhler. Translation edited by Hans-Georg Schöpf. With a foreword by Schöpf and P. Ziesche. Seventh edition. *Akademie-Verlag, Berlin*, 1991. x+223 *pp. ISBN* 3-05-500580-5 (Editors) **93b:00001d** 00–01 (00A79, 73–01)

— (*with* Pitaevskiĭ, L. P.) ★ Lehrbuch der theoretischen Physik ("Landau-Lifschitz"). Band IX. (German) [Course of theoretical physics ("Landau-Lifschitz"). Vol. IX] Statistische Physik. Teil 2. Theorie des kondensierten Zustandes. [Statistical physics. Part 2. Theory of the condensed state] Translated from the Russian by Eberhard Jäger. Edited and with a preface by P. Ziesche and H. Eschrig. Fourth edition. *Akademie-Verlag, Berlin*, 1992. xi+390 *pp. ISBN* 3-05-501395-6 (Editors) **93g:00002** 00–01 (00A79, 82–01)

Lifshits, M. A. On the norm distribution of Gaussian and other stable vectors. *Probability theory and mathematical statistics, Vol. II (Vilnius, 1989)*, 97–104, "*Mokslas*", *Vilnius*, 1990. (Michal Ryznar) **93f:60007** 60B11 (60E07)

— Gaussian large deviations of a smooth seminorm. (Russian. Russian summary) *Zap. Nauchn. Sem. S.-Peterburg. Otdel. Mat. Inst. Steklov. (POMI)* **194** (1992), *Problemy Teorii Veroyatnost. Raspred.* 12, 106–113, 178–179. (Werner Linde) **93h:60060** 60G15 (60B11, 60F10)

Ligęza, Antoni Extensible frame logic. A modification of first order logic incorporating variable arity terms. (English summary) *Found. Comput. Decision Sci.* **16** (1991), *no.* 2, 71–97. 68T27 (03B35, 03B70, 68T15)

— A knowledge-based approach to decision support. (English and Polish summaries) *Systems Sci.* **18** (1992), *no.* 1-2, 91–108 (1993). 90A05

Liggett, Thomas M. The periodic threshold contact process. *Random walks, Brownian motion, and interacting particle systems*, 339–358, *Progr. Probab.*, 28, *Birkhäuser Boston, Boston, MA*, 1991. (Mu Fa Chen) **93b:60230** 60K35 (82C41)

— Spatially inhomogeneous contact processes. *Spatial stochastic processes*, 105–140, *Progr. Probab.*, 19, *Birkhäuser Boston, Boston, MA*, 1991. (Mu Fa Chen) **93a:60158** 60K35 (82C05)

— L_2 rates of convergence for attractive reversible nearest particle systems: the critical case. *Ann. Probab.* **19** (1991), *no.* 3, 935–959. (Mu Fa Chen) **93a:60159** 60K35 (82C05)

— Remarks on the sufficient condition for survival of spatially inhomogeneous contact processes. *Probability and statistics (Tianjin, 1988/1989)*, 163–173, *Nankai Ser. Pure Appl. Math. Theoret. Phys., World Sci. Publishing, River Edge, NJ*, 1992. (Neal Madras) **93k:60238** 60K35

— (*with* Chen, Da Yue) Finite reversible nearest particle systems in inhomogeneous and random environments. *Ann. Probab.* **20** (1992), *no.* 1, 152–173. (H. Kesten) **93b:60225** 60K35

— (*with* Cohen, Joel E.) Random arithmetic-geometric means and random pi: observations and conjectures. *Stochastic Process. Appl.* **41** (1992), *no.* 2, 261–271. (M. Iosifescu) **93f:60098** 60J05 (65D20, 65U05)

— (*with* Andjel, Enrique D.; Mountford, Thomas S.) Clustering in one-dimensional threshold voter models. *Stochastic Process. Appl.* **42** (1992), *no.* 1, 73–90. (H. Kesten) **93i:60181** 60K35

Ligh, Steve (*with* Beslin, Scott J.; Jones, Pat) On group-theoretic properties of divisors. *Bull. Number Theory Related Topics* **12** (1988), 3–9. (Jean-Marie De Koninck) **93f:11007** 11A25

— (*with* Beslin, Scott J.) GCD-closed sets and the determinants of GCD matrices. *Fibonacci Quart.* **30** (1992), *no.* 2, 157–160. (H. L. Abbott) **93e:11003** 11A05

— (*with* Bourque, Keith) On GCD and LCM matrices. (English summary) *Linear Algebra Appl.* **174** (1992), 65–74. (Summary) **93h:15005** 15A09

Light, W. A. (*with* Cheney, E. W.; Xu, Yuan) On kernels and approximation orders. *Approximation theory (Memphis, TN, 1991)*, 227–242, *Lecture Notes in Pure and Appl. Math.*, 138, *Dekker, New York*, 1992. (From the introduction) **93d:41020** 41A35 (41A63)

— Some aspects of radial basis function approximation. *Approximation theory, spline functions and applications (Maratea, 1991)*, 163–190, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 356, *Kluwer Acad. Publ., Dordrecht*, 1992. (Summary) **93b:41026** 41A30 (41A46)

— (*with* Cheney, E. W.) Quasi-interpolation with translates of a function having noncompact support. *Constr. Approx.* **8** (1992), *no.* 1, 35–48. (D. Leviatan) **93a:41027** 41A25

— (*with* von Golitschek, M.; Cheney, E. W.) Approximation with monotone norms in tensor product spaces. *J. Approx. Theory* **68** (1992), *no.* 2, 183–205. (Dirk Werner) **93b:46139** 46M05 (41A65, 46B28, 46E40)

— (*with* Cheney, E. W.) Interpolation by periodic radial basis functions. *J. Math. Anal. Appl.* **168** (1992), *no.* 1, 111–130. (Dietrich Braess) **93f:41039** 41A46 (41A05)

— (*with* von Golitschek, M.) Approximation by solutions of the planar wave equation. *SIAM J. Numer. Anal.* **29** (1992), *no.* 3, 816–830. (Alexander Doktor) **93g:35083** 35L05 (35A35, 41A30, 65N99)

Lighthill, Michael James Hydrodynamic far fields. *Mathematical approaches in hydrodynamics*, 3–20, *SIAM, Philadelphia, PA*, 1991. (A. Pozzi) **93a:76018** 76B99 (76C99, 76Z10)

— Asymptotic behaviour of anisotropic wave systems stimulated by oscillating sources. *Wave asymptotics (Manchester, 1990)*, 1–23, *Cambridge Univ. Press, Cambridge*, 1992. (E. Cumberbatch) **93h:76011** 76B15 (35Q35, 76B20)

— Acoustic streaming in the ear itself. *J. Fluid Mech.* **239** (1992), 551–606. (Summary) **93d:76081** 76Z99 (76Q05, 92C05)

— Biofluiddynamics: a survey. (English summary) *Fluid dynamics in biology (Seattle, WA, 1991)*, 1–32, *Contemp. Math.*, 141, *Amer. Math. Soc., Providence, RI*, 1993. (Summary) **93k:76130** 76Z10 (92C05)

— Acoustic streaming in the ear itself. (English summary) *Fluid dynamics in biology (Seattle, WA, 1991)*, 187–236, *Contemp. Math.*, 141, *Amer. Math. Soc., Providence, RI*, 1993. (Summary) **93k:76131** 76Z99 (76Q05, 92J30)

— *see also* **Berger, Stanley A.**, (**93j:76003**)

Lignola, M. B. (*with* Dolecki, S.; Guillerme, J.; Malivert, C.) Γ-inequalities and stability of generalized extremal convolutions. *Math. Nachr.* **152** (1991), 299–323. (Jean-Paul Penot) **93e:49020** 49J45 (47H19, 54A20)

Ligun, A. A. (*with* Karmazina, V. V.) Reconstruction of a probability distribution function by means of spline-normal distributions. (Russian. Russian summary) *Model. Mekh.* **5** (1991), *no.* 5, 61–69. (Summary) **93j:65228** 65U05

— (*with* Doronin, V. G.) On the problem of sharpening Jackson-type inequalities. (Russian. Russian and Ukrainian summaries) *Ukraïn. Mat. Zh.* **44** (1992), *no.* 4, 475–480; *translation in Ukrainian Math. J.* **44** (1992), *no.* 4, 416–421. (A. Kroó) **93i:41017** 41A44

Liguori, A. (*with* Mintchev, M.) Spectral parameters of the quantum Yang-Baxter equation. *Phys. Lett. B* **275** (1992), *no.* 3-4, 371–374. (Chang Pu Sun) **93b:17048** 17B37 (82B23)

— (*with* Mintchev, M.; Rossi, M.) Anyon quantum fields without a Chern-Simons term. (English summary) *Phys. Lett. B* **305** (1993), *no.* 1-2, 52–58. 81T13

Lihová, Judita Direct factors of directed groups. (English summary) *Arch. Math. (Brno)* **27B** (1991), 221–227. (Michael Darnel) **93j:06019** 06F15

Lii, Keh-Shin (*with* Rosenblatt, Murray) Cumulant spectral estimates: bias and covariance. *Limit theorems in probability and statistics (Pécs, 1989)*, 365–405, *Colloq. Math. Soc. János Bolyai*, 57, *North-Holland, Amsterdam*, 1990. (Tata Subba Rao) **93c:62153** 62M15

— (*with* Helland, K.; Rosenblatt, Murray) Monte Carlo and turbulence. *Nonparametric functional estimation and related topics (Spetses, 1990)*, 405–418, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 335, *Kluwer Acad. Publ., Dordrecht*, 1991. (Summary) **93a:65006** 65C05 (76F99, 76M35)

— (*with* Chou, I-Shang) Spectral analysis of random fields with random sampling. (English summary) *Probabilistic and stochastic methods in analysis, with applications (Il Ciocco, 1991)*, 343–368, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 372, *Kluwer Acad. Publ., Dordrecht*, 1992. (*see* **93e:00029**) 62M15 (62M40)

— (*with* Masry, Elias) Model fitting for continuous-time stationary processes from discrete-time data. *J. Multivariate Anal.* **41** (1992), *no.* 1, 56–79. (N. Leonenko) **93e:62235** 62M10

— (*with* Rosenblatt, Murray) An approximate maximum likelihood estimation for non-Gaussian non-minimum phase moving average processes. (English summary) *J. Multivariate Anal.* **43** (1992), *no.* 2, 272–299. (Jiří Anděl) **93j:62229** 62M10

— (*with* Tsou, T.-H.) Detecting sinusoids in non-Gaussian noise. (English summary) *J. Time Ser. Anal.* **13** (1992), *no.* 5, 391–409. (Tarmo Pukkila) **93h:62164** 62M10 (62M15)

Likang, Li *see* **Li, Li Kang**

Likhachev, V. N. (*with* Ivanov, A. Yu.) The focusing of convergent weak shock waves in a viscous fluid. (Russian. Russian summary) *Applied numerical analysis and mathematical modeling (Russian)*, 54–60, 175, *Akad. Nauk SSSR, Dal'nevostochn. Otdel., Vladivostok*, 1989. (*see* **93d:00029**) 76L05

Likhacheva, N. N. The de la Vallée-Poussin theorem for nth-order equations with distributed deviation of the argument. (Russian. Russian summary) *Boundary value problems (Russian)*, 71–75, *Perm. Politekh. Inst., Perm'*, 1990. (*see* **93g:00023**) 49J05 (34K10)

Likhoded, N. A. (*with* Sobolevskiĭ, P. I.) An approach to the design of one-dimensional systolic arrays. (Russian. English and Russian summaries) *Vestst Akad. Navuk Belarust Ser. Fiz.-Mat. Navuk* **1992**, *no.* 2, 81–88, 127. 68M07

Li Kh'ong Von *see* **Lê Hồng Vân**

Likhttsier, I. M. (*with* Odintsov, S. D.; Bytsenko, A. A.) Thermodynamic properties of open noncritical string in external electromagnetic field. *Acta Phys. Polon. B* **22** (1991), *no.* 9, 761–770. (Helmut Rumpf) **93a:81155** 81T30

— (*with* Odintsov, S. D.) Strings at nonzero temperature. (Russian) *Izv. Vyssh. Uchebn. Zaved. Fiz.* **34** (1991), *no.* 12, 3–49 (1992); *translation in Soviet Phys. J.* **34** (1991), *no.* 12, 1053–1089 (1992). (M. I. Monastyrskiĭ) **93f:81117** 81T30 (81-02)

Lila, S. *see* **Leela, S.**

Lilja, Mats (*with* Åström, Karl Johan) Approximate pole placement approach. (English summary) *J. Guidance Control Dynamics* **15** (1992), *no.* 5, 1082–1086. 93B55

Lilley, F. E. M. (*with* Heinson, G. S.) Examples in the inversion of seafloor magnetotelluric data. *Mini-Conference on Inverse Problems in Partial Differential Equations (Canberra, 1990)*, 121–142, *Proc. Centre Math. Appl. Austral. Nat. Univ.*, 31, *Austral. Nat. Univ., Canberra*, 1992. (*see* **93i:00020**) 86A25

de Lillo, Silvana *see* **De Lillo, Silvana**

Lilly, Glenn M. (*with* Milne, Stephen C.) The A_l and C_l Bailey transform and lemma. *Bull. Amer. Math. Soc. (N.S.)* **26** (1992), *no.* 2, 258–263. (Robert A. Gustafson) **93g:33016** 33D70 (05A19, 11B65, 11P83)

Lim, Andrew (*with* Chee, Yeow Meng) The algorithmic complexity of colour switching. (English summary) *Inform. Process. Lett.* **43** (1992), *no.* 2, 63–68. (Summary) **93g:68106** 68R10 (05C85, 68Q25)

Lim, C. C. *see* **Lim, Chjan C.**

Lim, C. K. (*with* Lam, K. S.) Annihilatingly uniqueness of q-diwheels. *Proceedings of Asian Mathematical Conference, 1990 (Hong Kong, 1990)*, 267–270, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93b:00022**) 05C50

Lim, Chjan C. (*with* Pimbley, J. M.; Schmeiser, C.; Schwendeman, D. W.) Rotating waves for semiconductor inverter rings. *SIAM J. Appl. Math.* **52** (1992), *no.* 3, 676–690. (Summary) **93b:78012** 78A55 (58F40)

Lim, Chong-Hai Endomorphisms of Jacobian varieties of Fermat curves. *Compositio Math.* **80** (1991), *no.* 1, 85–110. (Glenn Stevens) **93a:14025** 14H40 (11D41, 11G10, 14H45)

— The Fermat curve of fourth degree. *J. Algebra* **151** (1992), *no.* 2, 322–331. (Andrew Bremner) **93k:11057** 11G10 (11D41, 14H40)

— (*with* Chan, Shih-Ping) The Eisenstein ideal of a Fermat curve. (English summary) *J. Algebra* **153** (1992), *no.* 2, 458–467. (Henri Darmon) **93i:11070** 11G30 (14H40)

— The geometry of the Jacobian of the Fermat curve of exponent five. *J. Number Theory* **41** (1992), *no.* 1, 102–115. (Allen Tannenbaum) **93j:14030** 14H40 (11G10, 14H45, 14K05)

— (*with* Chan, Shih-Ping; Lang, Mong-Lung) Some modular functions associated to the Lie algebra E_8. *Math. Z.* **211** (1992), *no.* 2, 223–246. (Steven N. Kass) **93i:11052** 11F22 (17B15)

— The Jacobian of a cyclic quotient of a Fermat curve. *Nagoya Math. J.* **125** (1992), 73–92. (Allen Tannenbaum) **93i:14024** 14H40 (11G10, 14H45, 14K05)

— (*with* Chan, Shih-Ping) Relative Galois module structure of rings of integers of cyclotomic fields. *J. Reine Angew. Math.* **434** (1993), 205–220. (Nigel Byott) **93i:11127** 11R33 (11R18)

Lim, Chong John (*with* McMahon, Graham B.) A decomposition process for the recognition of series-parallel subgraphs. (English summary) *Optimization, Vol.* 1, 2 (*Singapore*, 1992), 241–247, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93d:90005**) 90C35

Lim, H. (*with* Schneider, Moti; Shoaff, W.) The utilization of fuzzy sets in the recognition of imperfect strings. (English summary) *Fuzzy Sets and Systems* **49** (1992), *no.* 3, 331–337. (Summary) **93g:68117** 68T10 (04A72)

Lim, In-Taik (*with* Kim, Nam-Gil; Ahn, Seong-Soo; Lee, Sung-Baik) On characterizations of a real hypersurface of type A in a complex space form. *Honam Math. J.* **14** (1992), *no.* 1, 37–44. (Alfonso Romero) **93j:53069** 53C40

Lim, K. S. On the stability and ergodicity of a threshold AR(1) without intercepts. (English summary) *Comm. Statist. Theory Methods* **22** (1993), *no.* 2, 369–373. 62M10

Lim, P. *see* **Lim, Paul H.**

Lim, P.-K. (*with* Baik, B. S.; Hur, K.; Rhee, C. J.) Hyperspace contractibility of type $\sin(1/x)$-continua. *J. Korean Math. Soc.* **29** (1992), *no.* 1, 15–42. (Sarah E. Holte) **93h:54008** 54B20 (54F15)

— (*with* Hur, K.; Lee, S. W.; Rhee, C. J.) Set-valued contractibility of hyperspaces. *J. Korean Math. Soc.* **29** (1992), *no.* 2, 341–350. (P. J. Collins) **93m:54056** 54F15 (54B20, 54E35)

Lim, Paul H. (*with* Wesson, Paul S.) Astrophysical implications of a solution in Kaluza-Klein gravity. (English summary) *Astronom. and Astrophys.* **261** (1992), *no.* 2, 373–376. (María A. H. Vozmediano) **93g:83091** 83E15

Lim, Sook (*with* Um, Jung Koog) The concept of fuzzy probability. (English summary) *J. Korean Statist. Soc.* **21** (1992), *no.* 2, 111–125. 60A99 (03E72)

Lim, Teck-Cheong (*with* Kulesza, John S.) Some examples concerning fixed points of nonexpansive mappings in metric spaces. (English summary) *Fixed point theory and applications (Halifax, NS, 1991)*, 164–168, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93k:54078** 54H25

Lim, Yong B. Exact D_s-efficient designs for quadratic response surface model. *J. Korean Statist. Soc.* **20** (1991), *no.* 2, 156–161. 62K05

— D-optimal design in polynomial spline regression. (Korean summary) *Korean J. Appl. Statist.* **4** (1991), *no.* 2, 171–178. (William I. Notz) **93b:62103** 62K05

Lima, Ricardo Describing the dynamics with a bi-orthogonal decomposition. (English summary) *Chaos* **2** (1992), *no.* 3, 315–321. (Summary) **93f:58221** 58F40

— (*with* Aubry, Nadine; Guyonnet, Régis) Spatio-temporal symmetries and bifurcations via bi-orthogonal decompositions. *J. Nonlinear Sci.* **2** (1992), *no.* 2, 183–215. (Yi Yuan Chen) **93e:58136** 58F14 (34C23)

— (*with* Aubry, Nadine; Guyonnet, Régis) Turbulence spectra. *J. Statist. Phys.* **67** (1992), *no.* 1-2, 203–228. (Olec Troshkin) **93f:76052** 76F05 (76F99)

pedroso de Lima, Teresa *see* **Pedroso de Lima, Teresa**

Lima-de-Faria, J. *see* **Historical atlas of crystallography, 93b:01001**

Lima-Filho, Paulo Lawson homology for quasiprojective varieties. *Compositio Math.* **84** (1992), *no.* 1, 1–23. (Andrzej Kozlowski) **93j:14007** 14C05 (14C25, 14F35)

Lima Montenegro, S. (*with* Pashaev, O. K.) ★ Динамика вихрей модели магнетика Ишимори. (Russian. English and Russian summaries) [Dynamics of vortices in the Ishimori magnet model] Сообщения Объединенного Института Ядерных Исследований. Дубна [Communications of the Joint Institute for Nuclear Research. Dubna], R4-92-418. *Joint Inst. Nuclear Res., Dubna*, 1992. 33 *pp.* 82C20

Liman, F. N. Groups all of whose abelian noncyclic pd-subgroups are normal. (Russian. Ukrainian summary) *Ukrain. Mat. Zh.* **43** (1991), *no.* 7-8, 974–980; *translation in Ukrainian Math. J.* **43** (1991), *no.* 7-8, 908–913 (1992). (R. Stöhr) **93a:20043** 20E34

— Groups in which all infinite abelian pd-subgroups are normal. (Russian. Russian and Ukrainian summaries) *Ukraïn. Mat. Zh.* **44** (1992), *no.* 6, 796–800; *translation in Ukrainian Math. J.* **44** (1992), *no.* 6, 718–721 (1993). (L. A. Kurdachenko) **93j:20073** 20F22

Liman, Surya Danusaputro (*with* Lee, Chung-Yee) Single machine flow-time scheduling with scheduled maintenance. (English summary) *Acta Inform.* **29** (1992), *no.* 4, 375–382. (Summary) **93f:90093** 90B35

— (*with* Lee, Chung-Yee) Capacitated two-parallel machines scheduling to minimize sum of job completion times. (English summary) *Discrete Appl. Math.* **41** (1993), *no.* 3, 211–222. (Summary) **93i:90054** 90B35 (68Q25)

makar-Limanov, L. G. *see* **Makar-Limanov, L. G.**

Limarchenko, O. S. Unsteady rotation of a viscous fluid with a free surface in a cylindrical tank. (Russian. Russian summary) *Problems in the dynamics and stability of multidimensional systems (Russian)*, 30–40, *Akad. Nauk Ukrainy, Inst. Mat., Kiev*, 1991. (Summary) **93h:76076** 76U05 (76D05)

— Modeling the dynamics of structures that carry a fluid with a free surface in cavities of revolution. (Russian) *Akad. Nauk Ukrain. SSR Inst. Mat. Preprint* **1991**, *no.* 16, 57 *pp.* (Summary) **93c:76009** 76B99

Limaye, B. V. (*with* Kulkarni, S. H.) ★ Real function algebras. Monographs and Textbooks in Pure and Applied Mathematics, 168. *Marcel Dekker, Inc., New York*, 1992. viii+186 *pp. ISBN* 0-8247-8653-X (S. J. Sidney) **93m:46059** 46J10 (46-02)

Limebeer, David J. N. (*with* Shaked, U.) New results on $\mathscr{H}_\infty$ optimal filtering. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, I (Kobe, 1991)*, 317–322, *Mita, Tokyo*, 1992. (*see* **93g:93005**) 93B36 (93E11)

— (*with* Anderson, Brian D. O.; Hendel, B.) Mixed H_2/H_∞ filtering by the theory of Nash games. (English summary) *Robust control (Tokyo, 1991)*, 9–15, *Lecture Notes in Control and Inform. Sci.*, 183, *Springer, Berlin*, 1992. (*see* **93f:93006**) 93E11 (93B36)

— (*with* Anderson, Brian D. O.; Hendel, B.) Nash games and mixed H_2/H_∞ control. (English summary) *Robust control (Tokyo, 1991)*, 210–217, *Lecture Notes in Control and Inform. Sci.*, 183, *Springer, Berlin*, 1992. (*see* **93f:93006**) 93B36

— (*with* Anderson, Brian D. O.; Khargonekar, Pramod P.; Green, Michael) A game-theoretic approach to $\mathscr{H}^\infty$ control for time-varying systems. *SIAM J. Control Optim.* **30** (1992), *no.* 2, 262–283. (Tamer Başar) **93c:93022** 93B36 (90D25, 93C60)

— (*with* Kasenally, E. M.; Perkins, J. D.) On the design of robust two degree of freedom controllers. (English summary) *Automatica J. IFAC* **29** (1993), *no.* 1, 157–168. 93B51 (93B36)

Limić, N. Relationship between compartmental masses and transition rates in stochastic compartmental models. (English summary) *Math. Biosci.* **114** (1993), *no.* 1, 59–79. 92C45

Limnios, N. Repairable failure-delay systems with elementary structure. (English summary) *Appl. Stochastic Models Data Anal.* **8** (1992), *no.* 2, 79–90. 62N05 (60K10)

Limongelli, C. (*with* Temperini, M.) Abstract specification of structures and methods in symbolic mathematical computation. (English summary) Theoretical issues of design and implementation of symbolic computation systems (Capri, 1990). *Theoret. Comput. Sci.* **104** (1992), *no.* 1, 89–107. (Summary) **93j:68089** 68Q40 (68Q65)

Lin, A Long A new qualitative simulation algorithm. (English summary) *J. Southeast Univ. (English Ed.)* **7** (1991), *no.* 2, 7–14. 68U20

Lin, Bertrand I-peng *see* **Lin, I P'êng**

Lin, Bin (*with* Hu, Bambi) Frenkel-Kontorova model with Toda interactions. (English summary) *J. Statist. Phys.* **69** (1992), *no.* 5-6, 1047–1068. (Summary) **93g:82019** 82B20 (82D25)

Lin, Bor-Luh (*with* Quan, Xiu Chi) Two functions minimax theorem with staircase. *Bull. Inst. Math. Acad. Sinica* **19** (1991), *no.* 4, 279–287. (S. Simons) **93f:49011** 49J35

— (*with* Hu, Zhibao) On the asymptotic-norming property of Banach spaces. *Function spaces (Edwardsville, IL,* 1990), 195–210, *Lecture Notes in Pure and Appl. Math.*, 136, *Dekker, New York,* 1992. (Gilles Godefroy) **93d:46031** 46B20

— (*with* Zhang, Wen Yao) Some geometric properties related to uniform convexity of Banach spaces. *Function spaces (Edwardsville, IL,* 1990), 281–293, *Lecture Notes in Pure and Appl. Math.*, 136, *Dekker, New York,* 1992. (Russell G. Bilyeu) **93c:46024** 46B20 (46B22)

— (*with* Hu, Zhibao) Smoothness and the asymptotic-norming properties of Banach spaces. *Bull. Austral. Math. Soc.* **45** (1992), *no.* 2, 285–296. (John R. Giles) **93d:46026** 46B10 (46B20, 46B22)

— (*with* Chen, Dong Jian; Hu, Zhibao) Balls intersection properties of Banach spaces. *Bull. Austral. Math. Soc.* **45** (1992), *no.* 2, 333–342. (T. S. S. R. K. Rao) **93c:46021; EA 93m** 46B20 (46B10, 46B22)

— *see also* **Banach spaces, 93i:46003**

Lin, C. A. (*with* Chiu, Tai Yih) Model reduction via frequency weighted balanced realization. (English summary) *Control Theory Adv. Tech.* **8** (1992), *no.* 2, 341–351. (Summary) **93f:93031** 93B15 (93C70)

Lin, C. H. (*with* Sukhatme, Shashikala) On the choice of precedence tests. (English summary) *Comm. Statist. Theory Methods* **21** (1992), *no.* 10, 2949–2968. (Summary) **93g:62123** 62N05

Lin, C.-S. *see* **Lin, Chia-Shiang**

Lin, C. Y. *see* **Lin, Ts'ung Yu'an**

Lin, Cantian (*with* Wallis, Walter; Zhu, Lie[1]) Extended 4-profiles of Hadamard matrices. *Fourth Czechoslovakian Symposium on Combinatorics, Graphs and Complexity (Prachatice,* 1990), 175–180, *Ann. Discrete Math.*, 51, *North-Holland, Amsterdam,* 1992. (*see* **93i:05004**) 05B20

— (*with* Gregory, John[1]; Gregory, Robert; Zeman, Marvin) A global $O(h^4)$ pointwise error numerical algorithm for the extremal solution in the calculus of variations. Proceedings of the Twenty-first Manitoba Conference on Numerical Mathematics and Computing (Winnipeg, MB, 1991). *Congr. Numer.* **86** (1992), 129–147. (Summary) **93b:49036** 49M25 (65K10)

— (*with* Lin, Hai Ping; Wallis, Walter; Yucas, Joseph L.) Codes from Hadamard matrices and profiles of Hadamard matrices. (English summary) *J. Combin. Math. Combin. Comput.* **12** (1992), 57–64. (Summary) **93h:05033** 05B20 (94B05)

Lin, Chang Hao The Liouville property of regular integral functionals. (Chinese. English summary) *J. South China Normal Univ. Natur. Sci. Ed.* **1989,** *no.* 2, 68–73. (From the text) **93g:49004** 49J10 (45P05)

Lin, Chang Sheng (*with* Han, Qing Shu) Numerical simulations of separating low-Reynolds-number viscous fluid flow. *Theory and applications of boundary element methods (Beijing,* 1991), 183–190, *Internat. Acad. Publ., Beijing,* 1991. (*see* **93b:65008**) 76M15 (65N38)

Lin, Chê Hsiung (*with* Chuang, Chêng Liang) Rings with nil and power central kth commutators. (English summary) *Rend. Circ. Mat. Palermo* (2) **41** (1992), *no.* 1, 62–68. (A. Yaqub) **93j:16022** 16U80 (16N60)

Lin, Chê Yen (*with* Liu, Han Ch'u) On selecting a subset containing the most probable multinomial event. *Comm. Statist. Theory Methods* **20** (1991), *no.* 10, 3381–3387. (S. Panchapakesan) **93a:62024** 62F07

— Subset selection with a composite inverse sampling procedure in a multinomial distribution. *Soochow J. Math.* **17** (1991), *no.* 2, 193–204. (S. Panchapakesan) **93b:62034** 62F07

Lin, Chen Shang (*with* Liaw, Heh Tyan) On the OBDD-representation of general Boolean functions. *IEEE Trans. Comput.* **41** (1992), *no.* 6, 661–664. (Summary) **93f:68044** 68Q25 (03G05, 06E30)

Lin, Chen-Sin (*with* Lee, Chung-Yee) Stochastic flow-shop scheduling with lateness-related performance measures. (English summary) *Probab. Engrg. Inform. Sci.* **5** (1991), *no.* 2, 245–254. (Summary) **93f:90092** 90B35

Lin, Chia-Shiang On uniformly convex and uniformly 2-convex 2-normed spaces. *Demonstratio Math.* **25** (1992), *no.* 1-2, 161–168. (S. Swaminathan) **93h:46018** 46B20 (46A19)

— On strictly convex and strictly 2-convex 2-normed spaces. II. *Internat. J. Math. Math. Sci.* **15** (1992), *no.* 3, 417–423. (A. Alexiewicz) **93i:46040** 46B99 (46A99)

Lin, Chih Min (*with* Tu, Maan Huang; Lin, Yu Ping) Robust optimization of multivariable feedback systems with time-varying nonlinear uncertainties. (English summary) *Internat. J. Systems Sci.* **24** (1993), *no.* 3, 599–608. (Summary) **93j:93136** 93D21 (93B36)

— (*with* Tu, Maan Huang) Synthesis of deadbeat controllers with minimum control input and finite-step control input. (English summary) *J. Franklin Inst.* **330** (1993), *no.* 2, 401–412. 93B51 (93B36)

Lin, Chin E. (*with* Yeh, Fang Bo; Young, Jieh Shian) State-space formulae for the parametrization of discrete-time H^∞ control problem. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, I (Kobe,* 1991), 253–259, *Mita, Tokyo,* 1992. (B. G. Mertzios) **93j:93050** 93B36 (93C55)

— (*with* Young, Jieh Shian) Construction of the maximal Schmidt pair for the 4-block H^∞-optimal control problem. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 8, *part I,* 1250–1252. 93B36

Lin, Chin Yuan (*with* Goldstein, Jerome A.) Parabolic problems with strong degeneracy at the spatial boundary. *Semigroup theory and evolution equations (Delft,* 1989), 181–191, *Lecture Notes in Pure and Appl. Math.*, 135, *Dekker, New York,* 1991. (Kazuaki Taira) **93d:35082** 35K65 (47H20, 47N20)

— (*with* Chen, Goong; Huang, Fa Lun) "More boundary energy dissipation" does not necessarily imply larger asymptotic decay rates. (English summary) *Asymptotic Anal.* **6** (1992), *no.* 2, 191–203. (Summary) **93j:35105** 35L05 (35B30)

Lin, Ching Fang (*with* Yang, Chun; Bar-Shalom, Yaakov) Discrete-time point process filter for mode estimation. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 11, 1812–1816. 93E11

Lin, Ch'ing Ho Gevrey property of formal solutions of a differential system. *Bull. Inst. Math. Acad. Sinica* **19** (1991), *no.* 4, 297–301. (Hussain S. Nur) **93d:34096** 34E15 (34D15, 34E05, 34E10)

Lin, Chûn Liang (*with* Ch'ên, Po Hsien) On the design of stabilizing controllers for singularly perturbed systems. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 11, 1828–1834. (V. A. Sobolev) **93k:93095** 93D15 (34D15, 34H05, 93C73)

Lin, Chun Tu Extremes of ratios of determinants and canonical correlation variables. *Acta Math. Appl. Sinica (English Ser.)* **7** (1991), *no.* 3, 272–278. (Dennis L. Young) **93e:62154** 62H20 (15A15)

— The efficiency of least squares estimators of a seemingly unrelated regression model. *Comm. Statist. Simulation Comput.* **20** (1991), *no.* 4, 919–925. (Luis Firinguetti) **93c:62120** 62J05 (62P20)

— (*with* Lin, Wên Yüan) Generalized correlation coefficients and some extrema. (Chinese. English summary) *Gaoxiao Yingyong Shuxue Xuebao* **6** (1991), *no.* 2, 222–228. (Summary) **93d:15029** 15A45

— Canonical correlation equations and their extremal properties. *Gaoxiao Yingyong Shuxue Xuebao* **7** (1992), *no.* 1, 32–38. (Summary) **93d:62111** 62H20

Lin, Chung Yuan *see* **Lin, Ts'ung Yu'an**

Lin, Cui Qin Isomorphic factorizations of hypercube graphs and hypercube digraphs. (Chinese. English and Chinese summaries) *J. Tsinghua Univ.* **32** (1992), *no.* 3, 24–29. (Summary) **93k:05133** 05C70

Lin, D. L. (*with* Che, Hao; Xia, Yu) Critical temperature of $(d+1)$-dimensional Ising films. (English summary) *Phys. Rev. A* (3) **46** (1992), *no.* 4, 1805–1809. (Summary) **93e:82013** 82B20 (82B26)

Lin, D. Y. (*with* Liu, P. Y.) Nonparametric sequential tests against ordered alternatives in multiple-armed clinical trials. (English summary) *Biometrika* **79** (1992), *no.* 2, 420–425. (Summary) **93h:62145** 62L10

— Sequential log rank tests adjusting for covariates with the accelerated life model. (English summary) *Biometrika* **79** (1992), *no.* 3, 523–529. (Summary) **93j:62202** 62L10 (62G10, 62N05)

Lin, Da Xing Totally unimodular matrices in algebraic graph theory. (Chinese. English and Chinese summaries) *Xiamen Daxue Xuebao Ziran Kexue Ban* **31** (1992), *no.* 5, 469–473. (Yuan Hong) **93j:05106** 05C50

Lin, Da Zheng Viewing minimal primitive roots of primes via computations. (Chinese. Chinese summary) *Math. Practice Theory* **1992,** *no.* 3, 91–95. (Wen Peng Zhang) **93j:11081** 11Y70

Lin, Dennis K. J. (*with* Draper, Norman R.) Generating alias relationships for two-level Plackett and Burman designs. (English summary) *Comput. Statist. Data Anal.* **15** (1993), *no.* 2, 147–157. 62K10

Lin, Dong Dai (*with* Liu, Mu Lan) Enumeration of linear recurring m-arrays. *Systems Sci. Math. Sci.* **4** (1991), *no.* 4, 368–373. (Bernard J. M. Smeets) **93d:94027** 94C05

— (*with* Liu, Mu Lan) Syntheses of arrays. (English summary) *Systems Sci. Math. Sci.* **5** (1992), *no.* 1, 70–80. (Zdzisław Grodzki) **93m:94049** 94B99

Lin, F. *see* **Lin, Feng**

Lin, F. J. (*with* Marsden, Jerrold Eldon) Symplectic reduction and topology for applications in classical molecular dynamics. *J. Math. Phys.* **33** (1992), *no.* 4, 1281–1294. (Jair Koiller) **93c:58072** 58F05 (70F10, 70H33)

Lin, Fa Xing C^r local linearization and exponential dichotomy. (English summary) *Ann. Differential Equations* **8** (1992), *no.* 3, 295–306. (Ivan N. Grod) **93j:34050** 34C20 (34A34, 34D20)

Lin, Fang-Hua Nematic liquid crystals with variable degree of orientation. *Nematics (Orsay,* 1990), 247–259, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 332, *Kluwer Acad. Publ., Dordrecht,* 1991. (Helmut Kaul) **93i:58031** 58E12 (76A15)

— Static and moving defects in liquid crystals. *Proceedings of the International Congress of Mathematicians, Vol. I, II (Kyoto,* 1990), 1165–1171, *Math. Soc. Japan, Tokyo,* 1991. (Martin Fuchs) **93b:58032** 58E12 (76A15)

— (*with* Hardt, Robert M.; Poon, Chi-Cheung) Axially symmetric harmonic maps minimizing a relaxed energy. *Comm. Pure Appl. Math.* **45** (1992), *no.* 4, 417–459. (Martin Fuchs) **93c:58054** 58E20

— (*with* Ding, Wei Yue) A generalization of Eells-Sampson's theorem. (English summary) *J. Partial Differential Equations* **5** (1992), *no.* 4, 13–22. (Caio J. C. Negreiros) **93j:58032** 58E20

Lin, Fang Zhen (*with* Shoham, Yoav) Concurrent actions in the situation calculus. (English summary) *AAAI-92. Proceedings, Tenth National Conference on Artificial Intelligence (San Jose, CA,* 1992), 590–595, *Amer. Assoc. Artif. Intell., Menlo Park, CA,* 1992. (*see* **93j:68007**) 68T30 (03B70)

Lin, Feng (*with* Brandt, Robert D.; Sun, Jing) Robust control of nonlinear systems: compensating for uncertainty. (English summary) *Internat. J. Control* **56** (1992), *no.* 6, 1453–1459. 93B36 (93C73)

— (*with* Mortazavian, H.) Decentralized supervisory control of discrete event systems with nonhomogeneous control structure. (English summary) *Inform. Sci.* **68** (1993), *no.* 3, 233–246. (Summary) **93i:68028** 68M20

Lin, Fêng Ch'ing (*with* Chung, Kuo Liang; Chen, Wen Chin) On the complexity of search algorithms. (English summary) *IEEE Trans. Comput.* **41** (1992), *no.* 9, 1172–1176. (Summary) **93g:68018** 68P10

— (*with* Wang, Feng Hsu) On constructing multiple spanning trees in a hypercube. (English summary) *Inform. Process. Lett.* **45** (1993), *no.* 4, 177–183. (Summary) **93k:68011** 68M10 (05C05, 68R10)

Lin, Gwo Dong *see* **Lin, Kuo Tung**

Lin, H. F. (*with* Chang, Chên Ch'êng; Chen, C. Y.) Optimality properties of the disc modulo allocation method for k-ary multiple key hashing files. (English summary) *Comput. J.* **35** (1992), *no.* 4, 390–394. (Summary) **93h:68036** 68P20

Lin, Hai Ping (*with* Lin, Cantian; Wallis, Walter; Yucas, Joseph L.) Codes from Hadamard matrices and profiles of Hadamard matrices. (English summary) *J. Combin. Math. Combin. Comput.* **12** (1992), 57–64. (Summary) **93h:05033** 05B20 (94B05)

Lin, He Zeng (*with* Zhu, Yu Can) First-order differential subordinations. (Chinese. English summary) *Acta Sci. Natur. Univ. Sunyatseni* **30** (1991), *no.* 4, 114–118. (Summary) **93b:30022** 30C80

Lin, Hua (*with* Lu, Mi; Abello, James) An efficient parallel algorithm for longest common subsequence problem. (English summary) *Parallel computing* '91 (*London*, 1991), 123–130, *Adv. Parallel Comput.*, 4, *North-Holland, Amsterdam*, 1992. (Summary) **93i:68080** 68Q22 (68R15)

— (*with* Abello, James; Pisupati, Sekhar) On visibility graphs of simple polygons. (English summary) Proceedings of the Twenty-third Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, FL, 1992). *Congr. Numer.* **90** (1992), 119–128. (Summary) **93j:05121** 05C75

Lin, Hua Xin Invariant subspaces and eigenvalues of elements in C^*-algebras. (English summary) *Lecture notes in contemporary mathematics*, 1989, 100–106, *Science Press, Beijing*, 1990. (H. Halpern) **93g:46055** 46L05 (47A15, 47C15)

— Hilbert C^*-modules and their bounded module maps. *Sci. China Ser. A* **34** (1991), *no.* 12, 1409–1421. (Michael Frank) **93i:46099** 46L05 (46H25, 46M20)

— Skeleton C^*-subalgebras. *Canad. J. Math.* **44** (1992), *no.* 2, 324–341. (J. A. Mingo) **93h:46080** 46L05 (46L80)

— Invariant subspaces and eigenvalues of elements in C^*-algebras. (English summary) A Chinese summary appears in Chinese Ann. Math. Ser. A. **13** (1992), no. 5, 653. *Chinese Ann. Math. Ser. B* **13** (1992), *no.* 4, 422–429. (Il Bong Jung) **93m:46067** 46L05 (46K10, 47A15, 47D25)

— (*with* Zhang, Shuang) Certain simple C^*-algebras with nonzero real rank whose corona algebras have real rank zero. *Houston J. Math.* **18** (1992), *no.* 1, 57–71. (J. A. Mingo) **93f:46104** 46L80 (46L05, 46L87)

— Injective Hilbert C^*-modules. *Pacific J. Math.* **154** (1992), *no.* 1, 131–164. (William Paschke) **93c:46110** 46L05 (46H25, 46M20)

Lin, Hui Min "Inductionless induction" and relative completeness. *Chinese Sci. Bull.* **34** (1989), *no.* 23, 2011–2014. (From the introduction) **93k:68068** 68Q65 (03B70, 08A70)

Lin, I P'ëng (*with* Liau, Churn Jung) Abstract minimality and circumscription. *Artificial Intelligence* **54** (1992), *no.* 3, 381–396. (G. A. W. Vreeswijk) **93j:68194** 68T27 (03B60)

Lin, J. (*with* Shih, H.-R.; Duffield, R. C.) Boundary-finite element model for eccentrically stiffened plates under transverse loading. (English summary) *Boundary element technology, VII* (*Albuquerque, NM*, 1992), 555–571, *Comput. Mech., Southampton*, 1992. (*see* **93b:65002**) 73V10 (65N30, 65N38, 73K10, 73V05)

Lin, J. E. On the symmetries, constants of motion, and the Hamiltonian structure of the modified Kadomtsev-Petviashvili equation. *Bull. Inst. Math. Acad. Sinica* **19** (1991), *no.* 1, 11–19. (Kilkothur M. Tamizhmani) **93a:58152** 58F37 (35Q53, 58F07)

Lin, J.-L. (*with* Postlethwaite, Ian; Gu, Da-Wei) μ-K iteration: a new algorithm for μ-synthesis. (English summary) *Automatica J. IFAC* **29** (1993), *no.* 1, 219–224. 93B36

Lin, J. S. (*with* Wei, L. J.) Linear regression analysis for multivariate failure time observations. (English summary) *J. Amer. Statist. Assoc.* **87** (1992), *no.* 420, 1091–1097. (Summary) **93j:62175** 62J05 (62H99)

Lin, J. Y. (*with* Mingori, D. L.) Linear-quadratic-Gaussian synthesis with reduced parameter sensitivity. (English summary) *Internat. J. Control* **56** (1992), *no.* 4, 901–922. (Nikolai N. Sal'nikov) **93j:93054** 93B51 (93B35, 93D20)

Lin, James P. (*with* Jeanneret, Alain) Connexité des H-espaces finis. (English and French summaries) [Connectivity in finite H-spaces] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 7, 829–832. (A. H. Copeland, Jr.) **93j:55013** 55P45

— (*with* Williams, Frank) On six-connected finite H-spaces. (English summary) *Pacific J. Math.* **156** (1992), *no.* 1, 185–199. (Zafer Mahmud) **93j:55014** 55P45 (55R35, 55S05, 55S20)

— Cup products and finite loop spaces. *Topology Appl.* **45** (1992), *no.* 1, 73–84. (Donald M. Davis) **93c:55021** 55S20 (55R35, 55S45)

Lin, Jer-Shyong *see* **Lin, Chê Hsiung**

Lin, Jer Yan *see* **Lin, Chê Yen**

Lin, Ji (*with* Zhang, Jie Fang) Similarity solutions of the cubic nonlinear Klein-Gordon equation. (English summary) *Internat. J. Theoret. Phys.* **32** (1993), *no.* 1, 39–42. (Summary) **93k:35185** 35L70 (35Q53)

Lin, Jia Keng (*with* Wang, Lin Jiang) Using complex series and boundary collocation method calculate elastic plane problem. *Theory and applications of boundary element methods* (*Beijing*, 1991), 307–312, *Internat. Acad. Publ., Beijing*, 1991. (*see* **93b:65008**) 73V10 (65E05)

Lin, Jian Xing (*with* Lin, Yuan Lie) Moment optimal models for discrete-time Markov decision processes with discount depending on histories. (Chinese. English and Chinese summaries) *Chinese J. Appl. Probab. Statist.* **8** (1992), *no.* 1, 27–34. (Feng Zhi Zhao) **93i:90109** 90C40

Lin, Jie (*with* Roberts, P. D.; Wynn, P.) Modified two-step approach to the solution of constrained nonlinear optimisation problems. (English summary) *Control* '91, *Vol.* 1, 2 (*Edinburgh*, 1991), 750–755, *IEE Conf. Publ. Ser.*, 332, *IEE, London*, 1991. (*see* **93h:93007**) 90C30

Lin, Jin Kun Nonsplit ring spectra and products of β-elements in the stable homotopy of Moore spaces. *Pacific J. Math.* **155** (1992), *no.* 1, 129–142. (Hal Sadofsky) **93e:55016** 55Q10 (55P42, 55T15)

Lin, Jyh-Han (*with* Vitter, Jeffrey Scott) Approximation algorithms for geometric median problems. (English summary) *Inform. Process. Lett.* **44** (1992), *no.* 5, 245–249. (Summary) **93m:05187** 05C85 (68Q25, 68R10, 68U05)

Lin, K. Y. *see* **Lin, K'ê Ying**

Lin, Kai (*with* Sun, Yong Qiang) Confluence of left-linear rewriting systems. (Chinese. English and Chinese summaries) *J. Shanghai Jiaotong Univ.* **25** (1991), *no.* 6, 1–6. (Summary) **93e:68049** 68Q42

Lin, Kai-Ching The corona theorem and interpolating Blaschke products. (English summary) *Indiana Univ. Math. J.* **41** (1992), *no.* 3, 851–859. (Oleg V. Ivanov) **93j:30036** 30D50 (30E05, 46J15)

Lin, Kao Chêng (*with* Chern, Maw Sheng) The most vital edges in the minimum spanning tree problem. (English summary) *Inform. Process. Lett.* **45** (1993), *no.* 1, 25–31. (Summary) **93m:68136** 68R10 (05C85, 68Q25, 90B25)

Lin, Ke Rong (*with* Chen, Rong Si; Huang, Hai Yan) Realization of k-coverable coronoid systems. (Chinese summary) *J. Xinjiang Univ. Natur. Sci.* **9** (1992), *no.* 1, 16–21. (N. Trinajstić) **93e:92019** 92E10

Lin, K'ê Ying (*with* Tzeng, W. J.) On the row-convex polygon generating function for the checkerboard lattice. *Internat. J. Modern Phys. B* **5** (1991), *no.* 20, 3275–3285. (H. N. V. Temperley) **93b:82016** 82B20

— Number of almost-convex polygons on the square lattice. *J. Phys. A* **25** (1992), *no.* 7, 1835–1842. (H. N. V. Temperley) **93e:82025** 82B41

— (*with* Tsai, T. R.) Spontaneous magnetization of the Ising model on the Asanoha lattice. (English summary) *Modern Phys. Lett. B* **6** (1992), *no.* 16-17, 1025–1028. (Summary) **93f:82010** 82B20

Lin, Kuo Tung Characterizations of continuous distributions via expected values of two functions of order statistics. (English summary) *Sankhya Ser. A* **52** (1990), *no.* 1, 84–90. 62E10

— Characterizations of distributions via moments. (English summary) *Sankhya Ser. A* **54** (1992), *no.* 1, 128–132. (Summary) **93j:62032** 62E10 (60E10)

Lin, Kwei-Jay (*with* Han, Ching-Chih) Scheduling real-time computations with separation constraints. *Inform. Process. Lett.* **42** (1992), *no.* 2, 61–66. (Summary) **93c:90037** 90B35 (05C85, 68M20, 68Q25, 90B12)

Lin, Lai Chü On the optimality of differentiable nonconvex n-set functions. (English summary) *J. Math. Anal. Appl.* **168** (1992), *no.* 2, 351–366. (Siegfried Schaible) **93f:90144** 90C29 (49K30, 49N15)

Lin, Lei (*with* Zhang, Yong Zheng) Lie algebra $K(n, \mu_j, m)$ of Cartan type of characteristic $p = 2$. (English summary) A Chinese summary appears in Chinese Ann. Math. Ser. A **13** (1992), no. 4, 516–517. *Chinese Ann. Math. Ser. B* **13** (1992), *no.* 3, 315–326. (Gordon E. Brown) **93j:17043** 17B50 (17B40)

— Nonalternating Hamiltonian algebra $P(n, \mathrm{m})$ of characteristic two. (English summary) *Comm. Algebra* **21** (1993), *no.* 2, 399–411. (Summary) **93k:17011** 17B05

Lin, Li (*with* Zhang, Shi Ying; Yang, Bao Chen) Extensions of De Novo programming. (Chinese. English and Chinese summaries) *J. Tianjin Univ.* **1993,** *no.* 1, 55–63. 90C29 (04A72)

Lin, Lin (*with* Wang, Le Yi) On metric dimensions of discrete-time systems. (English summary) *Systems Control Lett.* **19** (1992), *no.* 4, 287–291. (Summary) **93g:93034** 93B36 (41A46, 93C55)

Lin, Long Wei (*with* Xie, Fei Peng) Perturbations of rarefaction waves. (English summary) *Acta Math. Sinica* (*N.S.*) **8** (1992), *no.* 2, 122–134. (Summary) **93f:35143** 35L65 (35B20)

Lin, Marlon (*with* Huang, Han Pang) Robust force control for robotic manipulators. (English summary) *Internat. J. Control* **56** (1992), *no.* 3, 631–653. 93C85 (70B15, 70Q05, 93B36)

Lin, Meily (*with* Dean, Angela M.) Trend-free block designs for varietal and factorial experiments. *Ann. Statist.* **19** (1991), *no.* 3, 1582–1596. (Summary) **93f:62106** 62K10

Lin, Meng Lei A note on the Weierstrass representation and the fundamental forms of minimal surfaces. (Chinese. English and Chinese summaries) *Zhangzhou Shiyuan Xuebao* (*Ziran Kexue Ban*) **6** (1992), *no.* 2, 33–35. (Cun-Jin Sun) **93m:53006** 53A10

Lin, Meng Xiong Parallel algorithms for constrained nonlinear optimization—a review. (Chinese. English summary) *J. Numer. Methods Comput. Appl.* **14** (1993), *no.* 1, 48–57. 90C30 (90–02)

Lin, Miao Tsong (*with* Tseng, Shian Shyong) Relocation problems of maximizing new capacities under a common due date. (English summary) *Internat. J. Systems Sci.* **23** (1992), *no.* 9, 1433–1448. (Summary) **93f:90094** 90B35

Lin, Michael (*with* Wittmann, Rainer) Pointwise ergodic theorems for certain order preserving mappings in L^1. *Almost everywhere convergence, II* (*Evanston, IL*, 1989), 191–207, *Academic Press, Boston, MA*, 1991. (Radu Zaharopol) **93a:47061** 47H09 (28D05, 47A35, 47B38, 47H07, 47H10)

— (*with* Khamsi, Mohamed Amine; Sine, Robert) On the fixed points of commuting nonexpansive maps in hyperconvex spaces. (English summary) *J. Math. Anal. Appl.* **168** (1992), *no.* 2, 372–380. (Simeon Reich) **93j:47080** 47H09 (47H10, 47H20, 54H25)

Lin, Ming Zhou (*with* Feng, De Yi; Chen, Rong Hua; Jiang, Chun) Application of fuzzy statistical decision making in countermeasures against great earthquakes. *Combining fuzzy imprecision with probabilistic uncertainty in decision making*, 374–388, *Lecture Notes in Econom. and Math. Systems*, 310, *Springer, Berlin*, 1988. (*see* **93c:90002**) 90A05 (04A72, 90C70)

Lin, Mu Ren A sufficient condition for generalized exponential dichotomies. *Ann. Differential Equations* **8** (1992), *no.* 1, 33–41. (Summary) **93f:34015** 34A30 (34D05)

Lin, Pei-Kee Full 2-convexity in Bochner L^p-spaces. *Rocky Mountain J. Math.* **21** (1991), *no.* 3, 1071–1081. (Peter Greim) **93f:46054** 46E40 (46B20)

— (*with* Yu, Xin Tai) Some remarks of the nearly uniformly convex sets. *Arch. Math. (Basel)* **59** (1992), *no.* 6, 581–587. (Elisabetta Maluta) **93k:46013** 46B20 (52A07)

Lin, Pin Yen De Moivre-type identities for the Tetrabonacci numbers. *Applications of Fibonacci numbers, Vol.* 4 (*Winston-Salem, NC*, 1990), 215–218, *Kluwer Acad. Publ., Dordrecht*, 1991. (Piero Filipponi) **93i:11015** 11B39

Lin, Ping *see* **Lin, Ping²**

Lin, Ping¹ A uniformly convergent difference scheme for a semilinear turning point problem. (Chinese summary) *Numer. Math. J. Chinese Univ.* **13** (1991), *no.* 3, 237–244. (G. S. Tabidze) **93g:65098** 65L10

— (*with* Vulanović, Relja) Numerical solution of quasilinear attractive turning point problems. *Comput. Math. Appl.* **23** (1992), *no.* 12, 75–82. (Summary) **93a:65098** 65L10 (34A50, 34E20)

Lin, Ping² Boundedness of infinite matrix transformation sets in echelon spaces. (Chinese. English summary) *J. Math. Res. Exposition* **12** (1992), *no.* 2, 253–257. (Cong Xin Wu) **93f:47030** 47B37 (46B45)

Lin, Qiang Existence of solutions to the set-valued system $x \in F(x, y)$, $y \in G(x, y)$. (Chinese. English summary) *J. Math. Res. Exposition* **12** (1992), *no.* 1, 33–36. (Summary) **93b:47129** 47H15 (47H10)

Lin, Qing Imbedded operators with finite Blaschke product symbol. A Chinese summary appears in Acta Math. Sinica **34** (1991), no. 2, 287. *Acta Math. Sinica* (*N.S.*) **6** (1990), *no.* 1, 72–79. (B. D. Khanh (Zbl 723:47020)) **93c:47032** 47B35

Lin, Qing Rong (*with* Gong, Fu Zhou; Tong, Song Lin; Sun, Wan Gui) Condensation extensions of condensing maps and their multiple fixed points. (Chinese. English

summary) *Pure Appl. Math.* **7** (1991), *no.* 1, 34–43. (Hong Kun Xu) **93j:47081** 47H09 (47H10)

Lin, Qun (*with* Zhu, Qi Ding) ★ Youxianyuan chaoshoulian lilun. (Chinese) [The hyperconvergence theory of finite elements] *Hunan Science and Technology Publishing House, Changsha*, 1989. iv+314 *pp. ISBN* 7-5357-0597-9 (Weimin Han) **93j:65191** 65N30 (65M60)

— (*with* Ding, Yan Heng) Quadrature and extrapolation for the variable coefficient elliptic eigenvalue problem. (English summary) *Systems Sci. Math. Sci.* **3** (1990), *no.* 4, 327–336. (I. P. Gavrilyuk) **93g:65138** 65N25

— Extrapolation of finite element gradients on nonconvex domains. (English summary) *Extrapolation and defect correction* (1990), 21–29, *Bonner Math. Schriften*, 228, *Univ. Bonn, Bonn*, 1991. (Summary) **93f:65085** 65N30

— Superconvergence of FEM for singular solution. *J. Comput. Math.* **9** (1991), *no.* 2, 111–114. (Stephen W. Brady) **93b:65171** 65N30

— (*with* Yang, Yi Du) Interpolation and correction of finite element methods. (Chinese) *Math. Practice Theory* **1991**, *no.* 3, 29–35. (Weimin Han) **93a:65155** 65N30 (65D05, 65N25)

— Interpolated finite elements and global superconvergence. *Numerical methods for partial differential equations (Tianjin*, 1991), 91–95, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93b:65006**) 65N30 (65N12)

— (*with* Graham, I. G.; Xie, Rui Feng) Extrapolation of Nyström solutions of boundary integral equations on nonsmooth domains. *J. Comput. Math.* **10** (1992), *no.* 3, 231–244. (Summary) **93a:65179** 65R20

— (*with* Zhou, Ai Hui) Defect correction for finite element gradient. (English summary) *Systems Sci. Math. Sci.* **5** (1992), *no.* 3, 287–288. (Summary) **93h:65039** 65D99 (65N30)

— (*with* Chen, Hong Sen) A high accuracy analysis of the mixed finite element method for biharmonic equations. (English summary) *Systems Sci. Math. Sci.* **5** (1992), *no.* 4, 352–364. (Georges A. Lebaud) **93k:65091** 65N30

— (*with* Chen, Chuan Dan) The Lax equivalence theorem for nonlinear multilevel difference schemes. (Chinese. English summary) *Xiamen Daxue Xuebao Ziran Kexue Ban* **31** (1992), *no.* 2, 121–125. (Wei Zhong Dai) **93d:65075** 65M06

— (*with* Rokne, J. G.) A family of centered forms for rational functions. (English summary) *Comput. Math. Appl.* **25** (1993), *no.* 4, 87–93. (Summary) **93h:65067** 65G10 (65D15)

Lin, Rui (*with* Lu, Qi Shao; Huang, Ke Lei) Subharmonic bifurcations, stability and chaos. *Advances in applied mathematics and mechanics in China, Vol.* 3, 85–93, *Internat. Acad. Publ., Beijing*, 1991. (Georgii Osipenko) **93c:58160** 58F14 (34C23, 58F13, 70K50)

Lin, S. F. (*with* Sheu, W. Y.; Chen, C. H.) A linear model tracker using adaptive indirect D-step-ahead control with saturating input. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, II (Kobe*, 1991), 425–430, *Mita, Tokyo*, 1992. (*see* **93g:93006**) 93C40

Lin, S. P. *see* **Lin, Sung P.**

Lin, Sen Mao (*with* Zhang, Shu Qun) Optical parallel fuzzy logic based on a space-variant technique. (Chinese. English and Chinese summaries) *Xiamen Daxue Xuebao Ziran Kexue Ban* **32** (1993), *no.* 2, 163–166. 03B35 (03B52)

Lin, Shang P. (*with* Tang, Dei-In) Extension of the pool-adjacent-violators algorithm. *Comm. Statist. Theory Methods* **20** (1991), *no.* 8, 2633–2643. (F. T. Wright) **93d:62041** 62F10 (62J02)

Lin, Shian-Jiann Contour dynamics of tornado-like vortices. (English summary) *J. Atmospheric Sci.* **49** (1992), *no.* 18, 1745–1756. (Summary) **93f:76021** 76C15 (76C05, 76E20, 86A10)

Lin, Shih Ch'ang (*with* Hwang, Guang Chyan) A stability approach to fuzzy control design for nonlinear systems. (English summary) *Fuzzy Sets and Systems* **48** (1992), *no.* 3, 279–287. (J. J. Buckley) **93f:93080** 93C42 (04A72)

Lin, Shin Yeu Complete decomposition algorithm for nonconvex separable optimization problems and applications. (English summary) *Automatica J. IFAC* **28** (1992), *no.* 6, 1249–1254. (Summary) **93i:90079** 90C26 (49M27)

Lin, Shou A decomposition theorem for Σ^*-spaces. *Topology Proc.* **15** (1990), 117–120. (Yuh-Ching Chen) **93b:54010** 54C05 (54B15)

— (mod K)-bases and paracompact p-spaces. *Northeast. Math. J.* **7** (1991), *no.* 4, 492–496. (Summary) **93d:54035** 54D20

— On the quotient compact images of metric spaces. *Adv. in Math. (China)* **21** (1992), *no.* 1, 93–96. (Summary) **93c:54024** 54E35 (54C05)

Lin, Shu (*with* Kasami, Tadao; Takata, Toyoo; Fujiwara, Toru) On the optimum bit orders with respect to the state complexity of trellis diagrams for binary linear codes. (English summary) *IEEE Trans. Inform. Theory* **39** (1993), *no.* 1, 242–245. (Summary) **93m:94027** 94B05

Lin, Shy Der (*with* Tu, Shih T'ung; Nishimoto, Katsuyuki) A generalization of Legendre's equation by fractional calculus method. *J. Fract. Calc.* **1** (1992), 35–43. (Summary) **93h:33005** 33C45 (26A33, 33B15, 34A05)

— (*with* Tu, Shih T'ung) A generalized partial differential equations of the second order via fractional calculus. (English summary) *J. Fract. Calc.* **2** (1992), 55–65. (K. S. Miller) **93m:26014** 26A33 (35C99)

Lin, Song-Sun *see* **Lin, Sung Shan**

Lin, Sung P. (*with* Ibrahim, E. A.) Corrigenda: "Instability of a viscous liquid jet surrounded by a viscous gas in a vertical pipe" [J. Fluid Mech. **218** (1990), 641–658; MR 91f:76027]. *J. Fluid Mech.* **240** (1992), 685–686. 76E10 (76D25, 76D45)

Lin, Sung Shan (*with* Li, Ming Chia) Multiplicity of positive solutions for nonlinear elliptic equations on annulus. *Chinese J. Math.* **19** (1991), *no.* 3, 257–276. (H. J. Kuiper) **93b:35048** 35J65 (35B30, 35J20)

— Symmetry-breakings for semilinear elliptic equations on finite cylindrical domains. *Proc. Amer. Math. Soc.* **117** (1993), *no.* 3, 803–811. (Summary) **93d:35010** 35B05 (35B32, 35J65, 35P30)

Lin, Tao (*with* Wang, Hong) Solving a source term inverse problem of the diffusion equations by the interpolated quadratic finite element method. *Computational methods in water resources, IX, Vol.* 1 (*Denver, CO*, 1992), 413–420, *Comput. Mech., Southampton*, 1992. (*see* **93g:76002**) 65M30 (76M10, 86–08, 86A22)

— (*with* Ewing, Richard E.) Direct numerical method for an inverse problem of hyperbolic equations. (English summary) *Numer. Methods Partial Differential Equations* **8** (1992), *no.* 6, 551–574. (V. D. Glushenkov) **93k:65070** 65M06 (65M12)

— Physical and numerical interfaces in the numerical simulation of wave propagations. (English summary) *Computational acoustics, Vol.* 1 (*Cambridge, MA*, 1991), 411–428, *North-Holland, Amsterdam*, 1993. (Summary) **93m:65124** 65M06 (65M12, 76M20)

Lin, Ts'ung Wu (*with* Chung, Ming Hui; Huang, Chin T'ien) Solving optimization problems by searching along a curve. (English and Chinese summaries) *J. Chinese Inst. Engrs.* **15** (1992), *no.* 4, 427–434. 65K10

— (*with* Hsiao, Hsing T'ai; Huang, Chin T'ien) Decomposition of singular large sparse matrix by adding dummy links and dummy degrees. (English and Chinese summaries) *J. Chinese Inst. Engrs.* **15** (1992), *no.* 6, 723–727. 65F50

Lin, Ts'ung Yu'an A reciprocity formula for quadratic forms. (English summary) *Bull. Inst. Math. Acad. Sinica* **20** (1992), *no.* 2, 97–108. (D. R. Heath-Brown) **93i:11046** 11E20

— On an algorithm for the Dedekind sums. (English summary) *Chinese J. Math.* **20** (1992), *no.* 3, 275–282. (Kiyoshi Katase) **93i:11051** 11F20

Lin, Tzu-Chu Some variants of a generalization of a theorem of Ky Fan. (Russian summary) *Bull. Polish Acad. Sci. Math.* **37** (1989), *no.* 7-12, 629–635 (1990). (O. P. Kapoor) **93f:47073** 47H10

Lin, W. *see* **Lin, Wei[1]**

Lin, W. C. (*with* Chang, Fan Jên; Ch'ên, Hung Chou) Weierstrass decomposition by the standard form approach. *Control theory, stochastic analysis and applications (Hangzhou*, 1991), 260–268, *World Sci. Publishing, River Edge, NJ*, 1991. (Summary) **93d:93019** 93B11 (93B40)

Lin, Wei *see* **Lin, Wei[2]**

Lin, Wei[1] (*with* Dai, Dao Qing) The Riemann-Hilbert boundary value problems associated with linear and semilinear pseudoparabolic systems of two space variables. (English summary) *Partial differential equations with complex analysis*, 165–177, *Pitman Res. Notes Math. Ser.*, 262, *Longman Sci. Tech., Harlow*, 1992. (Summary) **93j:35103** 35K70 (30G35, 35Q15, 35S05)

— (*with* Begehr, Heinrich) A mixed-contact boundary problem in orthotropic elasticity. (English summary) *Partial differential equations with real analysis*, 219–239, *Pitman Res. Notes Math. Ser.*, 263, *Longman Sci. Tech., Harlow*, 1992. (Summary) **93m:35175** 35Q72 (73B40, 73C35, 73T05)

— (*with* Dai, Dao Qing) Piecewise continuous solutions of nonlinear pseudoparabolic equations in two space dimensions. (English summary) *Proc. Roy. Soc. Edinburgh Sect. A* **121** (1992), *no.* 3-4, 203–217. (Erwin Schechter) **93g:35082** 35K70

Lin, Wei[2] (*with* Yong, Jiong Min) Direct adaptive control of a class of MIMO nonlinear systems. (English summary) *Internat. J. Control* **56** (1992), *no.* 5, 1103–1120. (Summary) **93j:93078** 93C40 (93C10, 93C35, 93C55, 93D15)

Lin, Wei Gan (*with* Huang, Ka Ma) Using the method of operator expansions to solve Fredholm integral equations. (Chinese. English and Chinese summaries) *Dianzi Keji Daxue Xuebao* **20** (1991), *no.* 2, 138–144. (Summary) **93j:65222** 65R20 (65J10)

— (*with* Jia, Bao Fu; Liu, Shu Zhang) A strong fluctuation theory and its development. (Chinese. English summary) *Dianzi Keji Daxue Xuebao* **20** (1991), *no.* 5, 473–480. (From the summary) **93a:78017** 78A45

— (*with* Zeng, Xue Gang; Ruan, Cheng Li) Accurate computations of eigenvalues of prolate spheroidal wave functions. (Chinese. English and Chinese summaries) *Dianzi Keji Daxue Xuebao* **21** (1992), *no.* 1, 7–10. 65N25

Lin, Wei Ming (*with* Huang, Han Pang) Development of a simplified fuzzy controller and its relation to PID controller. (English and Chinese summaries) *J. Chinese Inst. Engrs.* **16** (1993), *no.* 1, 59–72. 93C42 (04A72)

Lin, Wen-Guo (*with* Wang, Shun Hsiang) On the analysis of eigenvalue assignment robustness. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 10, 1561–1564. 93B60

Lin, Wên Hsiung Unstable ext groups over the Steenrod algebra by injective resolutions. *Math. Z.* **210** (1992), *no.* 2, 255–265. (John C. Harris) **93h:55011** 55S10 (55T15)

— Nonneutrality of the Stiefel manifolds $V_{n,k}$. *Topology* **32** (1993), *no.* 1, 105–120. (Donald M. Davis) **93k:55023** 55S37 (55S20)

Lin, Wen Wei (*with* Hwang, Tsung Min; Yang, Eugene K.) Rank revealing LU factorizations. (English summary) *Linear Algebra Appl.* **175** (1992), 115–141. (Mei-Qin Chen) **93i:15016** 15A23 (65F30)

Lin, Wên Yüan (*with* Lin, Chun Tu) Generalized correlation coefficients and some extrema. (Chinese. English summary) *Gaoxiao Yingyong Shuxue Xuebao* **6** (1991), *no.* 2, 222–228. (Summary) **93d:15029** 15A45

Lin, Wu Zhong (*with* Ni, Ming Kang) A class of conditionally stable boundary value problems for a singularly perturbed system of equations with several small parameters. (Chinese. English and Chinese summaries) *J. East China Norm. Univ. Natur. Sci. Ed.* **1992**, *no.* 1, 16–23. (Summary) **93e:34078** 34E15 (34B15)

— (*with* Xiao, Cheng You) Asymptotic analysis of a system of singularly perturbed integral equations. (Chinese. English and Chinese summaries) *J. East China Norm. Univ. Natur. Sci. Ed.* **1992**, *no.* 4, 1–11. (Summary) **93j:45013** 45M05 (34K99)

Lin, Xi (*with* Guo, Tie Xin) Random metric spaces and their applications. (Chinese summary) *J. Math. Res. Exposition* **12** (1992), *no.* 4, 499–504. (Jin Xuan Fang) **93k:46061** 46S50 (54E70)

— (*with* Guo, Tie Xin) Complete W-spaces. (Chinese. English and Chinese summaries) *Xi'an Jiaotong Daxue Xuebao* **26** (1992), *no.* 4, 13–18, 52. (Jin Xuan Fang) **93m:54052** 54E70 (54F99)

Lin, Xiao Dong On the global stability of a delay epidemic model. *J. Austral. Math. Soc. Ser. B* **34** (1992), *no.* 1, 26–34. (H. W. Hethcote) **93f:92025** 92D30 (34K20)

— (*with* van den Driessche, P.) A threshold result for an epidemiological model. *J. Math. Biol.* **30** (1992), *no.* 6, 647–654. (Summary) **93d:92014** 92D30

— (*with* So, Joseph W.-H.; Wu, Jian Hong) Centre manifolds for partial differential equations with delays. (English summary) *Proc. Roy. Soc. Edinburgh Sect. A* **122** (1992), *no.* 3-4, 237–254. (Curtis C. Travis) **93j:34116** 34K30 (34K15, 35K99, 35R10)

— (*with* So, Joseph W.-H.) Global stability of the endemic equilibrium and uniform persistence in epidemic models with subpopulations. (English summary) *J. Austral. Math. Soc. Ser. B* **34** (1993), *no.* 3, 282–295. (H. W. Hethcote) **93k:92010** 92D30 (34C99, 34D05)

Lin, Xiao Hui (*with* Zhang, Cheng Xue; Yang, Yuan Sheng; Sun, Qiang) Results on the graph-coloring constant $N((3,3),5)$. (Chinese. English summary) *J. Dalian Univ. Tech.* **32** (1992), *no.* 4, 489–491. (Summary) **93k:05119** 05C55

Lin, Xiao Song[2] Null k-cobordant links in S^3. *Comment. Math. Helv.* **66** (1991), *no.* 3, 333–339. (U. Koschorke (translated from Zbl 734:57009)) **93e:57034** 57N70 (57M25)

— A knot invariant via representation spaces. *J. Differential Geom.* **35** (1992), *no.* 2, 337–357. (Christine Lescop) **93e:57012** 57M25 (57M05)

Lin, Xiaola (*with* Zeng, Zhong Gang; Li, Tien-Yien) An efficient parallel homotopy algorithm for nonsymmetric eigenvalue problems with $O(N)$ running time. (English summary) *Parallel processing for scientific computing (Houston, TX, 1991)*, 29–32, *SIAM, Philadelphia, PA*, 1992. (*see* **93g:65178**) 65F15 (65Y05)

Lin, Xin *see* **Xin, Lin**

Lin, Y. Joseph The Becker-Brock efficient matching theorem with a supermodular technology defined on an n-lattice. (English summary) *Math. Social Sci.* **24** (1992), *no.* 1, 105–109. (Summary) **93f:90011** 90A06 (90C35)

Lin, Y. K. (*with* Sri Namachchivaya, N.) Method of stochastic normal forms. *Internat. J. Non-Linear Mech.* **26** (1991), *no.* 6, 931–943. (V. G. Kolomiets) **93c:34123** 34F05 (34C20)

— (*with* Cai, Guo Qiang; Elishakoff, Isaac) A new approximate solution technique for randomly excited nonlinear oscillators. II. (English summary) *Internat. J. Non-Linear Mech.* **27** (1992), *no.* 6, 969–979. (Summary) **93g:70028** 70L05 (70–08)

Lin, Y.-X. (*with* Heyde, C. C.) Approximate confidence zones in an estimating function context. *Estimating functions*, 161–168, *Oxford Statist. Sci. Ser.*, 7, *Oxford Univ. Press, New York*, 1991. (Summary) **93a:62119** 62M09 (62F10)

— (*with* Heyde, C. C.) On quasi-likelihood methods and estimation for branching processes and heteroscedastic regression models. (English summary) *Austral. J. Statist.* **34** (1992), *no.* 2, 199–206. (Summary) **93j:62210** 62M05

Lin, Ya Nan (*with* Peng, Lian Gang) An effective criterion for uniqueness of the tilting module. *Proceedings of the First China-Japan International Symposium on Ring Theory (Guilin, 1991)*, 98, *Okayama Univ., Okayama*, 1992. (*see* **93k:16001**) 16G10

— (*with* Zhang, Ying Bo) Some tame algebras with one parameter and their corresponding bocses. *Proceedings of the First China-Japan International Symposium on Ring Theory (Guilin, 1991)*, 99–101, *Okayama Univ., Okayama*, 1992. (*see* **93k:16001**) 16G60

Lin, Yan Ping (*with* Cannon, John R.) A remark on the solvability for nonlinear parabolic integro-differential equations in one-dimensional spaces. (Italian summary) *Boll. Un. Mat. Ital. B* (7) **5** (1991), *no.* 4, 853–874. (Narahari Parhi) **93b:45009** 45K05

— Nonclassical elliptic projections and L^2-error estimates for Galerkin methods for parabolic integro-differential equations. *J. Comput. Math.* **9** (1991), *no.* 3, 238–246. (Weimin Han) **93b:65172** 65N30 (65R20)

— (*with* Cannon, John R.; van der Hoek, John) Semi-linear heat equation subject to the specification of energy. (English summary) *Modeling and analysis of diffusive and advective processes in geosciences*, 40–51, *SIAM, Philadelphia, PA*, 1992. (Summary) **93f:35098** 35K55 (35B30)

— (*with* Zhang, Tie) Finite element methods for nonlinear Sobolev equations with nonlinear boundary conditions. *J. Math. Anal. Appl.* **165** (1992), *no.* 1, 180–191. (Bernd Heinrich) **93b:65173** 65N30

— (*with* Yin, Hong Ming) Nonlinear parabolic equations with nonlinear functionals. *J. Math. Anal. Appl.* **168** (1992), *no.* 1, 28–41. (Alan V. Lair) **93d:35080** 35K60 (35R10)

Lin, Yi[3] Connectedness of general systems. (Polish summary) *Systems Sci.* **16** (1990), *no.* 4, 5–17 (1991). (Yonghao Ma) **93d:93010** 93A05 (08A02, 93A10)

— Disconnected general systems. *Internat. J. Systems Sci.* **22** (1991), *no.* 11, 2239–2248. (K. Seitz) **93a:93008** 93A10

— Prime products of general systems. *Internat. J. Systems Sci.* **22** (1991), *no.* 11, 2249–2261. (R. Salia) **93c:93008** 93A10 (93A30)

— Similarity between general systems. *Systems Anal. Modelling Simulation* **8** (1991), *no.* 8, 607–615. (Yonghao Ma) **93a:93009** 93A10

— A systems study: the comparisons of "whole" and "parts". *Kybernetes* **21** (1992), *no.* 3, 33–41. 08A05

Lin, Yi Ping (*with* Li, Ji Bin) The normal form of a planar autonomous system and critical points of the period of closed orbits. (Chinese) *Acta Math. Sinica* **34** (1991), *no.* 4, 490–501. (Chengzhi Li) **93b:34036** 34C05 (34A20, 34C20, 34C23, 58F14)

Lin, Yi Xun A level structure approach on the bandwidth problem for special graphs. *Graph theory and its applications: East and West (Jinan, 1986)*, 344–357, *Ann. New York Acad. Sci.*, 576, *New York Acad. Sci., New York*, 1989. (M. M. Sysło) **93b:05148** 05C78

— (*with* Chinn, Phyllis Zweig) Decomposing graphs into primary graphs. *Graph theory, combinatorics, algorithms, and applications (San Francisco, CA, 1989)*, 125–139, *SIAM, Philadelphia, PA*, 1991. (H. Joseph Straight) **93b:05131** 05C70

— (*with* Liu, Yu Min; Xu, Ji Chao) The bandwidth of graphs formed by meridian and latitude lines on a sphere. I. (Chinese summary) *J. Xinjiang Univ. Natur. Sci.* **8** (1991), *no.* 3, 5–13. (Mukkai S. Krishnamoorthy) **93a:05110** 05C78 (05C85)

— (*with* Chinn, Phyllis Zweig; Yuan, Jin Jiang) The bandwidth of the corona of two graphs. Proceedings of the Twenty-third Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, FL, 1992). *Congr. Numer.* **91** (1992), 141–152. (From the text) **93m:05171** 05C78

Lin, Yi Zhong An existence and equivalence problem for bounded solutions to equations of advanced type and differential equations. (Chinese. English summary) *Fujian Shifan Daxue Xuebao Ziran Kexue Ban* **7** (1991), *no.* 4, 30–35. (Kotik K. Lee) **93d:34115** 34K05 (34K15)

Lin, Ying Biao Some empirical estimates for solutions to mixed boundary value problems for elliptic equations. (Chinese. English summary) *Xiamen Daxue Xuebao Ziran Kexue Ban* **31** (1992), *no.* 2, 130–136. (Yao Tian Shen) **93f:35051** 35J25 (35B45)

— Mixed boundary value problems for quasilinear elliptic equations. (Chinese. English and Chinese summaries) *Xiamen Daxue Xuebao Ziran Kexue Ban* **31** (1992), *no.* 5, 465–468. (Ya Zhe Chen) **93k:35107** 35J65

Lin, Ying Ju (*with* Ding, Guan Dong) A feasible descent algorithm for nonsmooth optimization with linear inequality constraints. (Chinese. English summary) *J. Numer. Methods Comput. Appl.* **12** (1991), *no.* 4, 203–214. (Xiang-Sun Zhang) **93f:90147** 90C30 (49J52, 65K05)

Lin, Yong (*with* He, Yu Zan) On factorization of meromorphic functions satisfying nonlinear ordinary differential equations. *International Symposium in Memory of Hua Loo Keng, Vol. II (Beijing, 1988)*, 123–133, *Springer, Berlin*, 1991. (Fred Gross) **93a:30034** 30D30

— Meromorphic solutions to six classes of classical nonlinear ordinary differential equations. I. (Chinese. Chinese summary) *Acta Math. Sci. (Chinese)* **12** (1992), *no.* 3, 241–247. (Hong Xun Yi) **93k:34013** 34A20 (30D05, 30D30, 30D35)

Lin, You Hao (*with* Cheng, Cao Zong) A generalization of minimax theorems of fixed-point type. (Chinese) *Acta Math. Sinica* **34** (1991), *no.* 4, 502–507. (Bor-Luh Lin) **93c:49008** 49J35 (47H99, 49J45)

Lin, You Lian (*with* Han, Li Xing; Xi, Shao Lin) A trust region algorithm for equality constrained optimization. (Chinese. English and Chinese summaries) *J. Tianjin Univ.* **1992**, *no.* 3, 87–94. (H. T. Lau) **93h:90084** 90C30 (65K10)

Lin, Yu Hua (*with* Wang, Guo Rong[1]) A new extension of Leverrier's algorithm. (English summary) *Linear Algebra Appl.* **180** (1993), 227–238. (Summary) **93m:65040** 65F05 (15A09)

Lin, Yǔ Jēn (*with* Yang, Kuo Shêng) On companion inequalities related to Heinig's. *Tamkang J. Math.* **22** (1991), *no.* 4, 313–322. (B. Crstici) **93c:26021** 26D15

Lin, Yu Ping (*with* Lee, Bore Kuen) Extended LQG self-tuning controller in a mixed background. *Internat. J. Systems Sci.* **23** (1992), *no.* 5, 695–711. (Summary) **93a:93115** 93E24

— (*with* Tu, Maan Huang; Lin, Chih Min) Robust optimization of multivariable feedback systems with time-varying nonlinear uncertainties. (English summary) *Internat. J. Systems Sci.* **24** (1993), *no.* 3, 599–608. (Summary) **93j:93136** 93D21 (93B36)

Lin, Yuan Lie A continuous-time discounted optimal Markov-decision model and its relation with discrete-time quasidiscounted optimal models—the case of the family of Q-matrices not being necessarily conservative. (Chinese) *Acta Math. Sinica* **35** (1992), *no.* 1, 8–19. (Jin De Wang) **93f:90181** 90C40

— (*with* Lin, Jian Xing) Moment optimal models for discrete-time Markov decision processes with discount depending on histories. (Chinese. English and Chinese summaries) *Chinese J. Appl. Probab. Statist.* **8** (1992), *no.* 1, 27–34. (Feng Zhi Zhao) **93i:90109** 90C40

Lin, Yuan Qu Qualitative analysis of a general phase-locked loop equation with frequency modulated input. (Chinese. Chinese summary) *Chinese Ann. Math. Ser. A* **13** (1992), *suppl.*, 57–61. (Yuan-Tong Xu) **93j:34059** 34C25 (34C15, 58F22)

Lin, Z. Y. *see* **Lin, Zheng Yan**

Lin, Zhen Sheng C^r closing lemma. II. *Ann. Differential Equations* **7** (1991), *no.* 1, 68–77. (Bahman K. Honary) **93a:58103** 58F10 (58F25)

— Structural stability of vector fields. *Ann. Differential Equations* **8** (1992), *no.* 1, 42–52. (Xin-Zhi Liu) **93c:58106** 58F10 (34C35, 34D30, 58F15)

Lin, Zheng A distributed fair polling scheme applied to OR-parallel logic programming. (English summary) *Internat. J. Parallel Programming* **20** (1991), *no.* 4, 315–339. 68Q22 (68N17)

Lin, Zheng Guo Singular limits of the initial-boundary value problem for compressible fluids. (Chinese) *Chinese Ann. Math. Ser. A* **12** (1991), *no.* 5, 554–565. (Song Jiang) **93f:35180** 35Q30 (76N10)

Lin, Zheng Yan (*with* Csáki, Endre; Csörgő, Miklós; Révész, Pál) On infinite series of independent Ornstein-Uhlenbeck processes. *Stochastic Process. Appl.* **39** (1991), *no.* 1, 25–44. (Byron Schmuland) **93a:60058** 60G15

— (*with* Lu, Chuan Rong) ★ Strong limit theorems. Mathematics and its Applications (Chinese Series). *Kluwer Academic Publishers Group, Dordrecht*; *Science Press, Beijing*, 1992. x+195 *pp. ISBN* 0-7923-1798-X (Endre Csáki) **93k:60076** 60F15 (60G17)

Lin, Zhengshen *see* **Lin, Zhen Sheng**

Lin, Zhi Fang (*with* Tao, Rui Bao) Phase transition of quantum Ising spin models on g-letter generalized Thue-Morse aperiodic chains. *J. Phys. A* **25** (1992), *no.* 9, 2483–2488. (Summary) **93a:82022** 82B26 (82B20)

Lin, Zhi Ping On primitive factorizations for 3-D polynomial matrices. (English summary) *IEEE Trans. Circuits Systems I Fund. Theory Appl.* **39** (1992), *no.* 12, 1024–1027. (Summary) **93m:93028** 93B28

Lin, Zhong Yan Three identities about Sturm-Liouville problem and their applications. (English and Chinese summaries) *Hunan Daxue Xuebao* **19** (1992), *no.* 5, 30–36. (Jan Bochenek) **93k:34056** 34B24 (34A55, 34L40)

Lin, Zhuang Peng Existence of a class of saturated maximal and minimal solutions to differential equations in abstract spaces. (Chinese) *Acta Math. Sinica* **35** (1992), *no.* 1, 133–139. (Yubo Chen) **93g:34098** 34G20 (34A12)

Lin, Zong De (*with* Li, Jun) Dimensions of fractals created by strict recursive methods. (Chinese. English and Chinese summaries) *Shanghai Shifan Daxue Xuebao Ziran Kexue Ban* **21** (1992), *no.* 3, 44–47. (Summary) **93m:54059** 54F45

Lin, Zong Zhu Filtrations of the modules for Chevalley groups arising from admissible lattices. *Math. Z.* **210** (1992), *no.* 2, 167–180. (H. H. Andersen) **93g:20087** 20G05 (20G10)

Lin, Zuo Quan (*with* Shi, Chun Yi) A generalization of circumscription. *J. Comput. Sci. Tech. (English Ed.)* **7** (1992), *no.* 2, 97–104. (Summary) **93c:68097** 68T30 (03B45, 03B60, 03B70)

Lina, Jean-Marc (*with* Isler, Karl) Canonical quantization of the induced 2D gravity. *Nuclear Phys. B* **358** (1991), *no.* 3, 713–736. (Summary) **93c:81207** 81T40 (81R10, 81T70)

— (*with* Panigrahi, Prasanta K.) Lax-pair formulation of the w-gravity theories in two dimensions. (English summary) *Internat. J. Modern Phys. A* **7** (1992), *no.* 27, 6907–6932. (Stanislav Z. Pakuliak) **93i:81192** 81T30 (58F07, 81R10, 81T25)

Liñán, A. The structure of diffusion flames. *Fluid dynamical aspects of combustion theory*, 11–29, *Pitman Res. Notes Math. Ser.*, 223, *Longman Sci. Tech., Harlow*, 1991. (From the introduction) **93h:80006** 80A25

Linardatos, D. Determination of two-dimensional magnetostatic equilibria and analogous Euler flows. (English summary) *J. Fluid Mech.* **246** (1993), 569–591. (Summary) **93i:76100** 76W05 (76C05, 76E25, 76M30, 78A25, 85A30)

Linares, Héctor (*with* Lezama, Oswaldo) Quotient rings: noncommutative case. (Spanish) *Bol. Mat.* **21** (1987), *no.* 2-3, 145–169. 16S90

Linares Linares, M. (*with* Méndez Pérez, J. M. R.) A Hankel type integral transformation on certain space of distributions. (English summary) *Bull. Calcutta Math. Soc.* **83** (1991), *no.* 5, 447–456. (Summary) **93m:44004** 44A15 (33C10)

— (*with* Méndez Pérez, J. M. R.) Hankel complementary integral transformations of arbitrary order. *Internat. J. Math. Math. Sci.* **15** (1992), *no.* 2, 323–332. (J. P. Singhal) **93e:44001** 44A05 (26A33, 33C10, 46F12)

Linares Pérez, Josefa (*with* Hermoso Carazo, A.) Some properties of the isometric stochastic integral with respect to a Hilbert-valued martingale. *Rebrape* **5** (1991), *no.* 1, 65–80. (Summary) **93i:60102** 60H05

Lincoln, Patrick (*with* Mitchell, John C.; Scedrov, Andre; Shankar, Natarajan) Decision problems for propositional linear logic. *31st Annual Symposium on Foundations of Computer Science, Vol. I, II (St. Louis, MO,* 1990), 662–671, *IEEE Comput. Soc. Press, Los Alamitos, CA,* 1990. (Fangmin Song) **93e:03042b** 03B70 (03D35, 68Q55)

— (*with* Mitchell, John C.; Scedrov, Andre; Shankar, Natarajan) Decision problems for propositional linear logic. *Ann. Pure Appl. Logic* **56** (1992), *no.* 1-3, 239–311. (Fangmin Song) **93e:03042a** 03B70 (03D35, 68Q55)

Lind, Douglas (*with* Goldberger, Jacob; Smorodinsky, Meir) The entropies of renewal systems. *Israel J. Math.* **75** (1991), *no.* 1, 49–64. (Summary) **93e:58053** 58F03 (28D20)

Lind, Günter Das Verhältnis von angewandter Mathematik und Physik in den Lehrbüchern des 18. Jahrhunderts. [The relation of applied mathematics and physics in textbooks of the 18th century] *Mathematikdidaktik, Bildungsgeschichte, Wissenschaftsgeschichte, II (Georgsmarienhütte,* 1986), 61–76, *IDM-Reihe,* 15, *Aulis/Deubner, Cologne,* 1990. (Hans Niels Jahnke) **93k:01032** 01A50 (00A69, 00A79, 01A72)

Lindae, Andreas On shooting methods for the discrete Helmholtz equation with constant coefficients. (English summary) *Numer. Math.* **64** (1993), *no.* 1, 127–145. (Summary) **93i:65104** 65N06 (65Y20)

Lindberg, David C. ★ The beginnings of Western science. The European scientific tradition in philosophical, religious, and institutional context, 600 B.C. to A.D. 1450. *University of Chicago Press, Chicago, IL,* 1992. xviii+455 *pp. ISBN* 0-226-48231-6 (A. G. Molland) **93i:01001** 01A05

Lindblad, Göran Quantum entropy and quantum measurements. *Quantum aspects of optical communications (Paris,* 1990), 71–80, *Lecture Notes in Phys.,* 378, *Springer, Berlin,* 1991. (*see* **93e:81158**) 81P15 (81–02, 81P99)

— Fokker-Planck equations for eigenstate distributions. (English summary) *Lett. Math. Phys.* **25** (1992), *no.* 2, 161–174. (Dimitri Petritis) **93i:82054** 82C31

Lindblad, H. Blow-up and large time existence for solutions of nonlinear wave equations with small initial data. *Nonlinear hyperbolic equations and field theory (Lake Como,* 1990), 144–153, *Pitman Res. Notes Math. Ser.,* 253, *Longman Sci. Tech., Harlow,* 1992. (*see* **93d:35003**) 35L70 (35Q60)

Lindblom, Lee On the symmetries of equilibrium stellar models. (English summary) *Philos. Trans. Roy. Soc. London Ser. A* **340** (1992), *no.* 1658, 353–364. (Summary) **93h:85002** 85A30 (76U05, 76Y05)

Linde, A. D. Inflation and quantum cosmology. *General relativity and gravitation,* 1989 (*Boulder, CO,* 1989), 177–204, *Cambridge Univ. Press, Cambridge,* 1990. (*see* **93b:83002**) 83F05 (83C45)

— Cosmological constant, quantum cosmology and anthropic principle. (English summary) *Gravitation and modern cosmology (Erice,* 1990), 101–119, *Ettore Majorana Internat. Sci. Ser. Phys. Sci.,* 56, *Plenum, New York,* 1991. (Summary) **93k:83031** 83C45 (83F05)

— Inflationary cosmology. *Particles, strings and cosmology (Boston, MA,* 1990), 635–656, *World Sci. Publishing, River Edge, NJ,* 1991. (Summary) **93c:83126** 83F05 (81V17, 83C47)

— Inflation and quantum cosmology. The birth and early evolution of our Universe (Gräftåvallen, 1990). *Phys. Scripta* **1991,** *Vol.* T36, 30–54. (Contents) **93c:83127** 83F05 (83C45)

— Strings, textures, inflation and spectrum bending. *Phys. Lett. B* **284** (1992), *no.* 3-4, 215–222. (Summary) **93c:83128** 83F05

van der Linde, Angelika On least squares estimation of generalized covariance functions. (English summary) *Math. Geol.* **25** (1993), *no.* 1, 1–7. (Summary) **93k:86016** 86A32

Linde, Johan (*with* Snellman, Håkan) Approximate analytic solutions to the Skyrme equation. (English summary) *J. Math. Phys.* **33** (1992), *no.* 11, 3740–3745. (Summary) **93h:81023** 81Q05 (34A99)

Linde, Werner Gaussian measures of large balls in $\mathbf{R}^n$. *Stable processes and related topics (Ithaca, NY,* 1990), 1–25, *Progr. Probab.,* 25, *Birkhäuser Boston, Boston, MA,* 1991. (S. A. Chobanyan) **93c:60018** 60E07 (60B05, 60G15)

— Gaussian measure of large balls in l_p. *Ann. Probab.* **19** (1991), *no.* 3, 1264–1279. (S. A. Chobanyan) **93e:60012** 60B11 (60F10, 60G15)

Lindeberg, Tony Scale-space behaviour of local extrema and blobs. *J. Math. Imaging Vision* **1** (1992), *no.* 1, 65–99. (J. S. Joel) **93g:68150** 68U10 (35B32, 35Q99, 58C27, 92J30)

Lindell, Steven The invariant problem for binary string structures and the parallel complexity theory of queries. *J. Comput. System Sci.* **44** (1992), *no.* 3, 385–410. (Marius Zimand) **93h:68048** 68Q15 (03D15, 68Q25)

Lindelöf, Ernst ★ Le calcul des résidus et ses applications à la théorie des fonctions. (French) [The calculus of residues and its applications to the theory of functions] Reprint of the 1905 original. Les Grands Classiques Gauthier-Villars. [Gauthier-Villars Great Classics] *Éditions Jacques Gabay, Sceaux,* 1989. viii+145 *pp. ISBN* 2-87647-060-8 (Editors) **93f:30001** 30–01 (01A75)

Lindemann, Ina Stability of hyperbolic partial differential equations with random loads. *SIAM J. Appl. Math.* **52** (1992), *no.* 2, 347–367. (Paul L. Davis) **93b:35138** 35R60 (34D08, 34F05, 34G20, 35L20, 93D05)

Linden, C. N. The characterization of orders for regular functions. *Math. Proc. Cambridge Philos. Soc.* **111** (1992), *no.* 2, 299–307. (L. R. Sons) **93a:30043** 30D60

Linden, Hansjörg Linearization, trace, and determinant of certain meromorphic operator functions. *Integral Equations Operator Theory* **15** (1992), *no.* 4, 568–588. (Winfried Kaballo) **93h:47015** 47A56 (47A10, 47B10)

Linden, J. *see* **Linden, Johannes**

van der Linden, Johannes Solutions of the Davey-Stewartson equation with nonzero boundary condition. *Phys. A* **182** (1992), *no.* 1-2, 155–189. (Peter L. Christiansen) **93d:35154** 35Q55

Linden, Johannes (*with* Schüller, A.; Trottenberg, U.) Methodological aspects of high performance scientific computing. (English summary) *Computational systems analysis* 1992 (*Berlin,* 1992), 1–10, *Elsevier, Amsterdam,* 1992. (*see* **93e:00021**) 65Y05

Linden, Noah (*with* Landsman, N. P.) Superselection rules from Dirac and BRST quantisation of constrained systems. *Nuclear Phys. B* **371** (1992), *no.* 1-2, 415–433. (Rudolf Schmid) **93g:81193** 81T70 (81T05)

— Inequivalent quantisations of the Neumann model. (English summary) *Phys. Lett. B* **288** (1992), *no.* 1-2, 104–108. (Summary) **93i:81104** 81S10 (22E70, 58F06)

Lindenbaum, Michael (*with* Bruckstein, Alfred) Reconstruction of polygonal sets by constrained and unconstrained double probing. *Ann. Math. Artificial Intelligence* **4** (1991), *no.* 3-4, 345–361. (Summary) **93a:68153** 68U05

— (*with* Bruckstein, Alfred) Parallel strategies for geometric probing. *J. Algorithms* **13** (1992), *no.* 2, 320–349. (W. A. Gruver) **93m:68171** 68U05

Lindenmayer, Aristid (*with* de Boer, Martin J. M.; Tuza, Zsolt) A periodic division pattern that cannot be generated by DOL systems. *Theoret. Comput. Sci.* **83** (1991), *no.* 2, *Algorithms Automat. Complexity Games,* 205–218. (K. G. Subramanian) **93a:68068** 68Q42 (68R10, 68U05)

Lindenstrauss, A. (*with* Larsen, Michael Jeffrey) Cyclic homology of Dedekind domains. (English summary) *K-Theory* **6** (1992), *no.* 4, 301–334. (Bernhard Köck) **93k:19003** 19D55 (13D03)

Linder, Eric V. (*with* Jacobs, Mark W.; Wagoner, Robert V.) Obtaining the metric of our universe. *Phys. Rev. D* (3) **45** (1992), *no.* 10, R3292–R3295. (Summary) **93b:83068** 83F05

Linder, N. V. An elementary differential search game under mixed strategies. (Russian) *Avtomat. i Telemekh.* **1991,** *no.* 11, 31–40; *translation in Automat. Remote Control* **52** (1991), *no.* 11, *part* 1, 1505–1512 (1992). (Summary) **93i:90123** 90D25 (90D26)

Linder, T. (*with* Faragó, A.; Lugosi, Gábor) Nearest neighbor search and classification in $O(1)$ time. (Russian summary) *Problems Control Inform. Theory/Problemy Upravlen. Teor. Inform.* **20** (1991), *no.* 6, 383–395. (Summary) **93a:68056** 68Q25 (65Y20, 68T10)

Linderman, Jennifer J. (*with* Lauffenburger, Douglas A.) ★ Receptor/ligand sorting along the endocytic pathway. (English. English summary) Lecture Notes in Biomathematics, 78. *Springer-Verlag, Berlin,* 1989. vi+164 *pp. ISBN* 3-540-50849-X (H. W. Vayo) **93f:92013** 92C20 (34C99)

Lindgren, Kristian Evolution in a population of mutating strategies. (English summary) *Theory & control of dynamical systems (Huddinge,* 1991), 95–107, *World Sci. Publishing, River Edge, NJ,* 1992. (*see* **93d:92001**) 92D40

Lindner, Charles C. Graph decompositions and quasigroup identities. Graphs, designs and combinatorial geometries (Catania, 1989). *Matematiche (Catania)* **45** (1990), *no.* 1, 83–118 (1991). (R. C. Mullin) **93g:05029** 05B30 (08B99)

— (*with* Hoffman, Dean G.; Leonard, D. A.; Phelps, Kevin T.; Rodger, Chris A.; Wall, J. R.) ★ Coding theory. The essentials. Monographs and Textbooks in Pure and Applied Mathematics, 150. *Marcel Dekker, Inc., New York,* 1991. xiv+277 *pp. ISBN* 0-8247-8611-4 (Jonathan I. Hall) **93d:94001** 94–01 (94Bxx)

— (*with* Hoffman, Dean G.; Phelps, Kevin T.) Blocking sets in designs with block size four. II. *Discrete Math.* **89** (1991), *no.* 3, 221–229. (M. J. Grannell) **93a:05018** 05B05

— (*with* Colbourn, Charles J.; Hoffman, Dean G.) Intersections of $S(2, 4, v)$ designs. (English summary) *Ars Combin.* **33** (1992), 97–111. (Jozef Širáň) **93h:05016** 05B05

— (*with* Rodger, Chris A.; Stinson, Douglas R.) Corrigendum: "Nestings of directed cycle systems" [Ars Combin. **32** (1991), 153–159; MR 92j:05112]. *Ars Combin.* **33** (1992), 319. 05C38

— (*with* Adams, Peter; Billington, Elizabeth J.) The spectrum for 3-perfect 9-cycle systems. *Australas. J. Combin.* **5** (1992), 103–108. (Summary) **93a:05076** 05C38 (05C70)

— (*with* Rodger, Chris A.) Small embeddings of partial directed cycle systems. (English summary) *Bull. Austral. Math. Soc.* **46** (1992), *no.* 2, 213–224. (Ian Anderson) **93k:05096** 05C38 (05B15)

— (*with* Rodger, Chris A.) 2-perfect m-cycle systems. *Discrete Math.* **104** (1992), *no.* 1, 83–90. (Zeng Min Song) **93h:05107** 05C38

— (*with* Billington, Elizabeth J.) The spectrum for lambda-fold 2-perfect 6-cycle systems. *European J. Combin.* **13** (1992), *no.* 1, 5–14. (Ke Min Zhang) **93b:05128** 05C70 (05B07)

— A brief history of the embedding of partial odd cycle systems. *J. Combin. Math. Combin. Comput.* **12** (1992), 201–214. (D. P. Roselle) **93i:05040** 05B30 (05C70)

Lindquester, Terri E. (*with* Faudree, Ralph J.; Gould, Ronald J.) Hamiltonian properties and adjacency conditions in $K(1, 3)$-free graphs. *Graph theory, combinatorics, and applications, Vol.* 1 (*Kalamazoo, MI,* 1988), 467–479, *Wiley-Intersci. Publ., Wiley, New York,* 1991. (Summary) **93c:05079** 05C45

— (*with* Faudree, Ralph J.; Gould, Ronald J.; Jacobson, Michael S.; Lesniak, Linda M.) On independent generalized degrees and independence numbers in $K(1, m)$-free graphs. *Discrete Math.* **103** (1992), *no.* 1, 17–24. (Douglas F. Rall) **93d:05115** 05C70

Lindquist, Anders (*with* Picci, Giorgio) A geometric approach to modelling and estimation of linear stochastic systems. *J. Math. Systems Estim. Control* **1** (1991), *no.* 3, 241–333. (Engin Yaz) **93a:93103** 93E10 (60J30, 94A12)

Lindquist, W. Brent (*with* Glimm, James) Scaling laws for macrodispersion. (English summary) *Computational methods in water resources, IX, Vol.* 2 (*Denver, CO,* 1992), 35–49, *Comput. Mech., Southampton,* 1992. (*see* **93g:76003**) 76S05

Lindqvist, Bo Henry Moment inequalities for the reliability function. *Statist. Probab. Lett.* **13** (1992), *no.* 2, 85–88. (Summary) **93k:62204** 62N05 (60K10)

— (*with* Karlin, Samuel; Yao, Yi-Ching) Markov chains on hypercubes: spectral representations and several majorization relations. (English summary) *Random Structures Algorithms* **4** (1993), *no.* 1, 1–36. (David J. Aldous) **93k:60168** 60J10

Lindqvist, Peter Addendum: "On the equation $\operatorname{div}(|\nabla u|^{p-2}\nabla u) + \lambda|u|^{p-2}u = 0$" [Proc. Amer. Math. Soc. **109** (1990), no. 1, 157–164; MR 90h:35088]. *Proc. Amer. Math. Soc.* **116** (1992), *no.* 2, 583–584. 35J60 (35P05)

Lindsay, Bruce G. (*with* Basak, P.) On using bivariate moment equations in mixed normal problems. *Estimating functions,* 305–317, *Oxford Statist. Sci. Ser.,* 7, *Oxford Univ. Press, New York,* 1991. (Summary) **93a:62017** 62E15 (62F10)

— (*with* Roeder, Kathryn) Residual diagnostics for mixture models. (English summary) *J. Amer. Statist. Assoc.* **87** (1992), *no.* 419, 785–794. (A. D. Gordon) **93h:62065** 62F99 (62–09, 62G99)

— *see also* **Böhning, Dankmar, 93e:62048**

Lindsay, J. Martin On set convolutions and integral-sum kernel operators. *Probability theory and mathematical statistics, Vol. II (Vilnius,* 1989), 105–123, "*Mokslas*", *Vilnius,* 1990. (David Applebaum) **93c:47087** 47N50 (46L60, 47G10, 60H05, 81S25)

— Independence for quantum stochastic integrators. *Quantum probability & related topics,* 325–332, *QP-PQ, VI, World Sci. Publishing, River Edge, NJ,* 1991. (Gennady Berman) **93f:81063** 81S25 (46L50, 60H05)

— (*with* Meyer, P.-A.) Fermionic hypercontractivity. *Quantum probability & related topics,* 211–220, *QP-PQ, VII, World Sci. Publishing, River Edge, NJ,* 1992. (David Applebaum) **93k:81065** 81Q99 (46L50, 47N50)

— (*with* Barnett, Chris; Wilde, Ivan F.) Quantum stochastic integrals as belated integrals. *Glasgow Math. J.* **34** (1992), *no.* 2, 165–173. (S. Gudder) **93e:46091** 46N50 (46G12, 81S25)

— (*with* Davies, E. Brian) Noncommutative symmetric Markov semigroups. *Math. Z.* **210** (1992), *no.* 3, 379–411. (Yun Gang Lu) **93f:46088** 46L05 (46L57, 47D03, 47N55, 60J60, 82C10)

Lindsay, Jeffrey D. A new solution for the probability of completing sets in random sampling: definition of a "two-dimensional factorial". (English summary) *Math. Sci.* **17** (1992), *no.* 2, 101–110. (Summary) **93h:60017** 60C05

Lindsay, K. A. (*with* Straughan, Brian) Nonlinear temperature-dependent surface tension driven convection. *Stability Appl. Anal. Contin. Media* **1** (1991), *no.* 3, 283–305. (John Harper) **93e:76025** 76E15 (76D45, 76E30)

— (*with* Straughan, Brian) Penetrative convection in a micropolar fluid. (English summary) *Internat. J. Engrg. Sci.* **30** (1992), *no.* 12, 1683–1702. (Summary) **93g:76007** 76A05 (76E15, 76R05)

— (*with* Ogden, R. R.) A practical implementation of spectral methods resistant to the generation of spurious eigenvalues. (English summary) *Internat. J. Numer. Methods Fluids* **15** (1992), *no.* 11, 1277–1294. (Summary) **93f:65059** 65L10 (34A50, 34B15, 65L60, 76M20)

— (*with* Rooney, C. E.) A note on compound matrices. *J. Comput. Phys.* **103** (1992), *no.* 2, 472–477. 65P05

— The application of compound matrices to convection problems in multi-layered continua. *Math. Models Methods Appl. Sci.* **2** (1992), *no.* 2, 121–141. (Corneliu Berbente) **93h:65051** 65F15 (65N22, 76M25, 76R99)

— The second-order deformation of an incompressible isotropic slab under torsion. (English summary) *Quart. J. Mech. Appl. Math.* **45** (1992), *no.* 4, 529–544. (Summary) **93k:73042** 73G05 (73C99)

Lindsey, J. K. (*with* Mersch, G.) Fitting and comparing probability distributions with log linear models. *Comput. Statist. Data Anal.* **13** (1992), *no.* 4, 373–384. 62J99

Lindsey, J. P. (*with* Fox, James W.) A method of factoring long z-transform polynomials. (English summary) *Computational methods in geosciences*, 78–90, *SIAM, Philadelphia, PA*, 1992. (*see* **93d:86001**) 86–08

Lindström, Bernt (*with* Björner, Anders; Karlander, Johan) Communication complexity of two decision problems. (English summary) *Discrete Appl. Math.* **39** (1992), *no.* 2, 161–163. (Summary) **93f:94001** 94A05 (68Q25)

— Another theorem on families of sets. *Ars Combin.* **35** (1993), 123–124. 05D05

Lindström, Mikael (*with* Ryan, Raymond A.) Limited holomorphic mappings on Banach spaces. *Proc. Roy. Irish Acad. Sect. A* **91** (1991), *no.* 1, 57–62. (G. Coeuré) **93h:46054** 46G20

— (*with* Llavona, José G.) Compact and weakly compact homomorphisms between algebras of continuous functions. *J. Math. Anal. Appl.* **166** (1992), *no.* 2, 325–330. (Christopher C. White) **93d:46086** 46J10 (46E25)

— (*with* Biström, Peter; Bjon, Sten) Remarks on homomorphisms on certain subalgebras of $C(X)$. *Math. Japon.* **37** (1992), *no.* 1, 105–109. (Richard M. Aron) **93c:46059** 46E50 (46G99, 46J15)

— (*with* Bonet, José; Valdivia, Manuel) Two theorems of Josefson-Nissenzweig type for Fréchet spaces. *Proc. Amer. Math. Soc.* **117** (1993), *no.* 2, 363–364. (Aydın Aytuna) **93d:46005** 46A04

Lindström, Sten (*with* Rabinowicz, Włodzimierz) Belief revision, epistemic conditionals and the Ramsey test. *Synthese* **91** (1992), *no.* 3, 195–237. (David Makinson) **93h:03028** 03B60 (03B45)

Lindstrøm, Tom (*with* Øksendal, Bernt; Ubøe, Jan) Stochastic modelling of fluid flow in porous media. *Control theory, stochastic analysis and applications* (*Hangzhou*, 1991), 156–172, *World Sci. Publishing, River Edge, NJ*, 1991. (*see* **93a:93005**) 76S05 (76M35)

— (*with* Øksendal, Bernt; Ubøe, Jan) Stochastic differential equations involving positive noise. *Stochastic analysis* (*Durham*, 1990), 261–303, *London Math. Soc. Lecture Note Ser.*, 167, *Cambridge Univ. Press, Cambridge*, 1991. (Mylan Redfern) **93f:60051** 60G20 (60H10)

— (*with* Albeverio, Sergio; Fenstad, Jens Erik; Høegh-Krohn, Raphael; Karwowski, Witold) Schrödinger operators with potentials supported by null sets. (English summary) *Ideas and methods in quantum and statistical physics* (*Oslo*, 1988), 63–95, *Cambridge Univ. Press, Cambridge*, 1992. (Sylvie Paycha) **93m:81025** 81Q10 (31B99, 35J10, 47F05, 47N50, 81Q15)

— *see also* **Ideas and methods in mathematical analysis, stochastics, and applications, 93e:00033** *and* **Ideas and methods in quantum and statistical physics, 93e:00034**

Lindström, U. Weyl-invariance of membranes. *Supermembranes and physics in* 2+1 *dimensions* (*Trieste*, 1989), 158–164, *World Sci. Publishing, River Edge, NJ*, 1990. (*see* **93g:81003**) 81T30

— (*with* Isberg, J.; Sundborg, B.) Space-time symmetries of quantized tensionless strings. (English summary) *Phys. Lett. B* **293** (1992), *no.* 3-4, 321–326. (Summary) **93i:81188** 81T30

Lindvall, T. A simple coupling of renewal processes. (English summary) *Adv. in Appl. Probab.* **24** (1992), *no.* 4, 1010–1011. (Summary) **93j:60128** 60K05

Lines, L. R. *see* **Geophysical inversion, 93e:86007**

Linet, B. The Euclidean thermal Green function in the spacetime of a cosmic string. (English summary) *Classical Quantum Gravity* **9** (1992), *no.* 11, 2429–2436. (Summary) **93g:83055** 83C47 (83F05)

Linetskiĭ, V. Ya. (*with* Fradkin, E. S.) Higher spin symmetry in lower dimensions. *Supermembranes and physics in* 2+1 *dimensions* (*Trieste*, 1989), 390–417, *World Sci. Publishing, River Edge, NJ*, 1990. (*see* **93g:81003**) 81R10

— (*with* Fradkin, E. S.) On the anti-de Sitter quantum (super)strings. *Phys. Lett. B* **261** (1991), *no.* 1-2, 26–34. (Summary) **93f:81109** 81T30 (83E30)

— (*with* Fradkin, E. S.) Results of the classification of superconformal algebras in two dimensions. *Phys. Lett. B* **282** (1992), *no.* 3-4, 352–356. (Summary) **93e:81039** 81R10 (17A70)

— (*with* Fradkin, E. S.) Classification of superconformal and quasisuperconformal algebras in two dimensions. (English summary) *Phys. Lett. B* **291** (1992), *no.* 1-2, 71–76. (Summary) **93h:17068** 17B70 (17A70, 81R10)

Ling, Fu Hua (*with* Schmidt, George; Kook, Hyung-tae) Universal behavior of coupled nonlinear oscillators. *Internat. J. Bifur. Chaos Appl. Sci. Engrg.* **1** (1991), *no.* 2, 363–368. (Summary) **93b:58104** 58F13 (34C10)

— (*with* Xu, Ru Jin) Nonintegrability and chaos of a conservative compound pendulum. *Appl. Math. Mech.* (*English Ed.*) **13** (1992), *no.* 1, 51–59; *translated from Appl. Math. Mech.* **13** (1992), *no.* 1, 45–52 (*Chinese. English summary*). (Summary) **93a:70023** 70K50 (34C15, 58F13, 70H05)

— (*with* Schmidt, George) Mixing windows in discontinuous cavity flows. *Phys. Lett. A* **165** (1992), *no.* 3, 221–230. (Summary) **93d:76030** 76F20 (58F13, 58F40)

Ling, Jun Unique continuation for a class of degenerate elliptic operators. *J. Math. Anal. Appl.* **168** (1992), *no.* 2, 511–517. (Vadim D. Kryakvin) **93h:35076** 35J70 (35B60)

Ling, K. D. A generalization of the sooner and later waiting time problems for Bernoulli trials: frequency quota. (English summary) *Statist. Probab. Lett.* **14** (1992), *no.* 5, 401–405. 60C05 (62E15)

Ling, Ling Properties of solutions to ultrahyperbolic equations. (Chinese. English summary) *J. Northwest Univ.* **21** (1991), *no.* 3, 1–8. (Summary) **93c:35093** 35L25 (35B05)

Ling, Robert F. (*with* Barrett, Bruce E.) General classes of influence measures for multivariate regression. *J. Amer. Statist. Assoc.* **87** (1992), *no.* 417, 184–191. (Summary) **93m:62166** 62J20 (62H99)

Ling, San (*with* Oesterlé, Joseph) The Shimura subgroup of $J_0(N)$. (French summary) Courbes modulaires et courbes de Shimura (Orsay, 1987/1988). *Astérisque No.* 196-197 (1991), 6, 171–203 (1992). (Bas Edixhoven) **93b:14038** 14G35 (11G18, 14H40)

— Shimura subgroups of Jacobians of Shimura curves. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 2, 385–390. (Bas Edixhoven) **93h:11061** 11G18 (14G35, 14H40)

Ling, Yi (*with* Bao, Ge Jun) On some classes of analytic functions with negative coefficient. *J. Harbin Inst. Tech.* **23** (1991), *no.* 4, 100–103. (Waleed M. Deeb) **93e:30020** 30C45

— Some properties of two classes of families of analytic functions. (Chinese. English summary) *Chinese Quart. J. Math.* **7** (1992), *no.* 1, 96–100. (De Lin Tan) **93g:30016** 30C45

— (*with* Bao, Ge Jun) A class of analytic functions defined by Hadamard products. (Chinese. English and Chinese summaries) *J. Harbin Inst. Tech.* **24** (1992), *no.* 6, 6–11. 30C45

— (*with* Bao, Ge Jun; Luo, Sheng Zheng) Some properties of certain analytic functions. *Nihonkai Math. J.* **3** (1992), *no.* 1, 31–37. (Shigeyoshi Owa) **93g:30017** 30C45

— (*with* Bao, Ge Jun; Luo, Sheng Zheng) On multivalent functions with negative and missing coefficients. *Nihonkai Math. J.* **3** (1992), *no.* 1, 39–48. (S. L. Shukla) **93i:30010** 30C45

Ling, Yong Xiang (*with* Xu, Zong Ben) A monotone iteration method of Steffensen type for nonlinear equations. (Chinese. English summary) *Xi'an Jiaotong Daxue Xuebao* **26** (1992), *no.* 1, 59–68. (Hong Kun Xu) **93d:65058** 65J15 (47H17)

Lingappaiah, G. S. Distribution of the sum of independent right truncated geometric variables. (English and Italian summaries) *Statistica* (*Bologna*) **51** (1991), *no.* 3, 411–421 (1992). 62E15

— On the modified binomial distribution. (English summary) *J. Indian Soc. Statist. Oper. Res.* **13** (1992), *no.* 1-4, 1–11. 62E15 (62F15)

— Prediction in samples from a gamma population where switch points are present. (English summary) *J. Bihar Math. Soc.* **14** (1993), 67–78. 62E15 (62F15)

Lingas, Andrzej (*with* Levcopoulos, Christos) There are planar graphs almost as good as the complete graphs and almost as cheap as minimum spanning trees. (English summary) *Algorithmica* **8** (1992), *no.* 3, 251–256. (Summary) **93i:05124** 05C85 (05C10, 68R10)

— (*with* Levcopoulos, Christos) Fast algorithms for greedy triangulation. *BIT* **32** (1992), *no.* 2, 280–296. (Gerard J. Chang) **93f:05039** 05C10 (05C85, 52B55, 68U05)

— (*with* Djidjev, Hristo N.; Sack, Jörg-Rüdiger) An $O(n \log n)$ algorithm for computing the link center of a simple polygon. *Discrete Comput. Geom.* **8** (1992), *no.* 2, 131–152. (Nikolaj M. Korneenko) **93g:52011** 52B55 (68Q25, 68U05)

Lingenberg, Hans-Martin Interpolating sets in the maximal ideal space of H^∞. *Michigan Math. J.* **39** (1992), *no.* 1, 53–63. (Pamela Gorkin) **93a:46105** 46J15 (30E05, 46E15)

Linhares, Cesar A. (*with* Mignaco, Juan A.) New symmetries for the Dirac equation. *J. J. Giambiagi Festschrift*, 281–296, *World Sci. Publishing, River Edge, NJ*, 1990. (Dominique Lambert) **93e:81044** 81R20 (15A66)

Linhares, Odelar Leite Some types of integral test matrices with explicit integral inverses. (Portuguese. English and Portuguese summaries) *Rev. Mat. Estatíst.* **9** (1991), 53–59. 65F99 (15A09)

Linhart, Peter B. *see* **Bargaining with incomplete information**

Linhartová, Petra Extremal solutions of a general marginal problem. *Comment. Math. Univ. Carolin.* **32** (1991), *no.* 4, 743–748. (Summary) **93b:28015** 28A33 (46A55, 46N30, 60B05)

Linial, Nathan (*with* Kahn, Jeff) Balancing extensions via Brunn-Minkowski. *Combinatorica* **11** (1991), *no.* 4, 363–368. (A. Florian) **93e:52017** 52A39 (06A06, 52B11)

— (*with* Alon, Noga; Bar-Noy, Amotz; Peleg, David) Single round simulation on radio networks. (English summary) *J. Algorithms* **13** (1992), *no.* 2, 188–210. (Summary) **93m:68011** 68M10 (90B12)

— (*with* Borodin, Allan; Saks, Michael E.) An optimal on-line algorithm for metrical task system. (English summary) *J. Assoc. Comput. Mach.* **39** (1992), *no.* 4, 745–763. (Summary) **93g:68008** 68M20 (68Q25, 90B35)

— (*with* Füredi, Zoltán) A geometric parallel search problem related to group testing. (English summary) *J. Combin. Math. Combin. Comput.* **12** (1992), 3–6. (Summary) **93g:68019** 68P10 (68Q25)

— (*with* Gotsman, C.) The equivalence of two problems on the cube. (English summary) *J. Combin. Theory Ser. A* **61** (1992), *no.* 1, 142–146. (Summary) **93d:05074** 05C35

— (*with* Jaeger, François; Payan, Charles; Tarsi, Michael) Group connectivity of graphs—a nonhomogeneous analogue of nowhere-zero flow properties. (English summary) *J. Combin. Theory Ser. B* **56** (1992), *no.* 2, 165–182. (W. T. Tutte) **93h:05088** 05C25 (05C40)

Liniger, Werner (*with* Odeh, Farouk; Hara, Veikko) A second-order sparse factorization method for Poisson's equation with mixed boundary conditions. (English summary) *J. Comput. Appl. Math.* **44** (1992), *no.* 2, 201–218. (Summary) **93k:65085** 65N06 (65F10)

Link, Robert Anomalies and the quantum theory of chiral matter on a line. *Fortschr. Phys.* **39** (1991), *no.* 5-6, 393–452. (Marc Henneaux) **93c:81232** 81T50 (81-02, 81T70)

— Phase holonomy of the vacuum in three-dimensional gauge theories. (English summary) *Internat. J. Modern Phys. A* **7** (1992), *no.* 20, 4937–4948. (Nicolae Anghel) **93i:81050** 81Q99 (81T13, 81T40)

— (*with* Diamantini, Maria Cristina; Sodano, Pasquale) Chern-Simons effective action for nonrelativistic planar electrons. (English summary) Topological and quantum group methods in field theory and condensed matter physics. *Internat. J. Modern Phys. B* **6** (1992), *no.* 11-12, 2241–2252. (Summary) **93h:81082** 81T13 (81V10, 81V70, 82B20)

Linke, Yu. Ė. Sublinear operators without subdifferentials. (Russian) *Sibirsk. Mat. Zh.* **32** (1991), *no.* 3, 219–221; *translation in Siberian Math. J.* **32** (1991), *no.* 3, 538–540 (1992). (Pando Georgiev) **93b:47137** 47H30 (46G99, 47N10, 49J52)

Linkens, D. A. (*with* Nie, Jun Hong) A unified real-time approximate reasoning approach for use in intelligent control. I. Theoretical development. (English summary) *Internat. J. Control* **56** (1992), *no.* 2, 347–363. 93C83

— (*with* Nie, Jun Hong) A unified real-time approximate reasoning approach for use in intelligent control. II. Application to multivariable blood pressure control. (English summary) *Internat. J. Control* **56** (1992), *no.* 2, 365–397. 93C83

— (*with* Nie, Jun Hong) Neural network-based approximate reasoning: principles and implementation. (English summary) *Internat. J. Control* **56** (1992), *no.* 2, 399–413. 93C83 (92B20)

— (*with* Mahfouf, M.) Generalized predictive control with feedforward (GPCF) for multivariable anaesthesia. (English summary) *Internat. J. Control* **56** (1992), *no.* 5, 1039–1057. 93C95 (93B51)

— (*with* Nie, Jun Hong) Constructing rule-bases for multivariable fuzzy control by self-learning. I. System structure and learning algorithms. (English summary) *Internat. J. Systems Sci.* **24** (1993), *no.* 1, 111–127. 93C42

— (*with* Nie, Jun Hong) Constructing rule-bases for multivariable fuzzy control by self-learning. II. Rule-base formation and blood pressure control application. (English summary) *Internat. J. Systems Sci.* **24** (1993), *no.* 1, 129–157. 93C42

Linkevich, A. D. A sequential pseudo-inverse learning rule for networks of formal neurons. (English summary) *J. Phys. A* **25** (1992), *no.* 15, 4139–4146. (Dimitri Petritis) **93f:82039** 82C32 (92B20)

Lin-Kriz, Yu (*with* Pan, Victor) On parallel complexity of integer linear programming, GCD and the iterated mod function. *Proceedings of the Third Annual ACM-SIAM Symposium on Discrete Algorithms* (*Orlando, FL*, 1992), 124–137, *ACM, New York*, 1992. (Valentin E. Brimkov) **93f:90119** 90C10 (65K05, 65Y20, 90C60)

Links, J. R. (*with* Gould, M. D.; Bracken, Anthony J.) Matrix elements and Wigner coefficients for $U_q[\mathfrak{gl}(n)]$. *J. Math. Phys.* **33** (1992), *no.* 3, 1008–1022. (Chang Pu Sun) **93g:81049** 81R50 (16W30, 17B37, 81R05, 82B23)

— (*with* Gould, M. D.) Two variable link polynomials from quantum supergroups. (English summary) *Lett. Math. Phys.* **26** (1992), *no.* 3, 187–198. (Petr Hellinger) **93k:57018** 57M25 (17B37, 81R50)

Linnaeus, Staffan (*with* Andersson, Nils) Quasinormal modes of a Schwarzschild black hole: improved phase-integral treatment. (English summary) *Phys. Rev. D* (3) **46** (1992), *no.* 10, 4179–4187. (Summary) **93f:83055** 83C57

Linnell, Peter A. Zero divisors and $L^2(G)$. (French summary) *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 1, 49–53. (Summary) **93d:20010** 20C07 (46L99)

— (*with* Hillman, Jonathan A.) Elementary amenable groups of finite Hirsch length are locally-finite by virtually-solvable. *J. Austral. Math. Soc. Ser. A* **52** (1992), *no.* 2, 237–241. (Javier Otal) **93b:20067** 20F19 (20F38)

— Minimal free resolutions and (G, n)-complexes for finite abelian groups. (English summary) *Proc. London Math. Soc.* (3) **66** (1993), *no.* 2, 303–326. (K. W. Roggenkamp) **93k:20010** 20C10 (55U15)

Linnemann, Arno $\mathscr{L}_\infty$-induced optimal performance in sampled-data systems. *Systems Control Lett.* **18** (1992), *no.* 4, 265–275. (Summary) **93b:93069** 93C57 (93B36)

— (*with* Wang, Qing Guo) Block decoupling with stability by unity output feedback—solution and performance limitations. (English summary) *Automatica J. IFAC* **29** (1993), *no.* 3, 735–744. (Summary) **93m:93025** 93B17 (93B52, 93D05, 93D15)

Linnik, Yu. V. *see* **Ibragimov, I. A., 93c:01044**

Lins, Sóstenes (*with* Kauffman, Louis H.) Decomposition of the vertex group of 3-manifolds. *Discrete Math.* **103** (1992), *no.* 1, 49–55. (Mario Pezzana) **93i:57026** 57N10 (57M05, 57M15)

Linsky, Bernard The logical form of descriptions. *Dialogue* **31** (1992), *no.* 4, 677–683. 03A05 (03B10, 03B65)

— A note on the "carving up content" principle in Frege's theory of sense. *Notre Dame J. Formal Logic* **33** (1992), *no.* 1, 126–135. (George F. Schumm) **93b:03024** 03B45 (03A05)

Lins Neto, A. (*with* Cerveau, Dominique) Holomorphic foliations in $\mathbf{CP}(2)$ having an invariant algebraic curve. (French summary) *Ann. Inst. Fourier* (*Grenoble*) **41** (1991), *no.* 4, 883–903. (M. G. Soares) **93b:32050** 32L30 (34A20, 58F18)

— (*with* Camacho, César; Sad, P.) Foliations with algebraic limit sets. *Ann. of Math.* (2) **136** (1992), *no.* 2, 429–446. (Dominique Cerveau) **93i:32035** 32L30

van Lint, J. H., Jr. Coding for channels with localized errors. *Beauty is our business*, 274–279, *Texts Monographs Comput. Sci., Springer, New York*, 1990. (Introduction) **93b:94013** 94A24

— (*with* Cameron, Peter J.) ★ Designs, graphs, codes and their links. London Mathematical Society Student Texts, 22. *Cambridge University Press, Cambridge*, 1991. x+240 *pp. ISBN* 0-521-41325-7; 0-521-42385-6 (E. F. Assmus, Jr.) **93c:05001** 05–01 (94B05)

— (*with* Hollmann, H. D. L.) Nonblocking self-routing switching networks. (English summary) *Discrete Appl. Math.* **37/38** (1992), 319–340. (David H. Green) **93g:94033** 94C10 (68M10)

— (*with* Tonchev, Vladimir D.) A class of nonembeddable designs. (English summary) *J. Combin. Theory Ser. A* **62** (1993), *no.* 2, 252–260. (R. C. Mullin) **93m:05023** 05B05

— *see also* **Cameron, Peter J., 93g:01064a**; **Bibliography: van Lint, Jacobus Hendricus, 93g:01064b**; **Collection: Contributions in honour of Jack van Lint**

Linton, C. M. (*with* Evans, D. V.) Trapped modes above a submerged horizontal plate. *Quart. J. Mech. Appl. Math.* **44** (1991), *no.* 3, 487–506. (Summary) **93f:76012** 76B15

— (*with* Evans, D. V.) Integral equations for a class of problems concerning obstacles in waveguides. (English summary) *J. Fluid Mech.* **245** (1992), 349–365. (Summary) **93i:76084** 76Q05 (76B15)

— (*with* Evans, D. V.) Sloshing frequencies. (English summary) *Quart. J. Mech. Appl. Math.* **46** (1993), *no.* 1, 71–87. (Summary) **93m:76006** 76B10

Linton, S. A. Constructing matrix representations of finitely presented groups. Computational group theory, Part 2. *J. Symbolic Comput.* **12** (1991), *no.* 4-5, 427–438. (Gerhard Hiss) **93c:20032** 20C40

Linttner, Małgorzata The Green functions and the limit problem for the equation $D_x^4 Pu(x,t) = 0$. (English summary) *Fasc. Math. No.* 22 (1991), 107–111 (1992). (From the summary) **93f:35093** 35K35 (35C15)

Linz, Peter (*with* Wang, Richard L. C.) Error bounds for the solution of Volterra and delay equations. International Conference on the Numerical Solution of Volterra and Delay Equations (Tempe, AZ, 1990). *Appl. Numer. Math.* **9** (1992), *no.* 3-5, 201–207. (Summary) **93a:65079** 65J10 (65L05, 65R20)

Linz, S. J. (*with* Kornadt, O.; Lücke, M.) Parametric perturbations of a pitchfork bifurcation—the Ricker map. *From phase transitions to chaos*, 372–386, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93c:58189** 58F30 (58F14)

Linzer, Elliot On the stability of solution methods for band Toeplitz systems. *Linear Algebra Appl.* **170** (1992), 1–32. (Michael J. C. Gover) **93g:65041** 65F05 (15A57, 65F35, 65Gxx)

— On the stability of transform-based circular deconvolution. (English summary) *SIAM J. Numer. Anal.* **29** (1992), *no.* 5, 1482–1492. (Summary) **93e:65044** 65F05 (65G05, 65T20)

— (*with* Feig, Ephraim) Modified FFTs for fused multiply-add architectures. *Math. Comp.* **60** (1993), *no.* 201, 347–361. (Dale H. Mugler) **93d:65118** 65T20

Lioen, Walter M. (*with* Winter, Dik T.) Solving large dense systems of linear equations on systems with virtual memory and with cache. *Appl. Numer. Math.* **10** (1992), *no.* 1, 73–85. 65F05 (65–04)

Liolios, A. A direct derivation of dual extremum principles in dynamic anisotropic coupled thermoelasticity. (Bulgarian summary) *J. Theoret. Appl. Mech.* **22** (1991), *no.* 2, 5, 47–54. (From the text) **93a:73009** 73B30 (73B40, 73V05, 73V25)

Lions, Jacques-Louis Sur quelques équations aux derivées partielles de la famille des équations de Navier Stokes. [On some partial differential equations of the family of Navier-Stokes equations] *Nonlinear analysis*, 205–216, *Quaderni, Scuola Norm. Sup., Pisa*, 1991. (Rodolfo Salvi) **93m:35146** 35Q30

— Earth system models and mathematical remarks. Second World Congress on Computational Mechanics, Part I (Stuttgart, 1990). *Comput. Methods Appl. Mech. Engrg.* **89** (1991), *no.* 1-3, 1–9. (Andrew C. Fowler) **93e:00012** 00A71 (00A69, 86–02, 86A05, 86A10)

— ★ Sentinelles pour les systèmes distribués à données incomplètes. (French) [Sentinels for distributed systems with incomplete data] Recherches en Mathématiques Appliquées [Research in Applied Mathematics], 21. *Masson, Paris*, 1992. xii+228 *pp. ISBN* 2-225-82697-8 (Claudia Simionescu-Badea) **93j:35002** 35–02 (35G20, 93B05, 93C20)

— On some hyperbolic equations with a pressure term. *Partial differential equations and related subjects* (*Trento*, 1990), 196–208, *Pitman Res. Notes Math. Ser.*, 269, *Longman Sci. Tech., Harlow*, 1992. (*see* **93e:35004**) 35L10 (73C99, 73D99)

— (*with* Temam, Roger; Wang, Shou Hong) New formulations of the primitive equations of atmosphere and applications. *Nonlinearity* **5** (1992), *no.* 2, 237–288. (Themistocles M. Rassias) **93e:35088** 35Q35 (58F12, 76C15, 76U05, 86A10)

— (*with* Temam, Roger; Wang, Shou Hong) On the equations of the large-scale ocean. (English summary) *Nonlinearity* **5** (1992), *no.* 5, 1007–1053. (John Brindley) **93k:86004** 86A05 (35Q53, 86A10)

— *see also* **Analysis and optimization of systems: state and frequency domain approaches for infinite-dimensional systems, 93i:93005**

Lions, Pierre-Louis (*with* Perthame, Benoît) An impulsive control problem with state constraint. (English summary) *Analyse non linéaire* (*Perpignan*, 1987), 384–414, *Univ. Montréal, Montreal, PQ*, 1989. (*see* **93h:49003**) 49K20 (49K30)

— Lagrange multipliers, Morse indices and compactness. *Variational methods* (*Paris*, 1988), 161–184, *Progr. Nonlinear Differential Equations Appl.*, 4, *Birkhäuser Boston, Boston, MA*, 1990. (Maria J. Esteban) **93k:49039** 49Q20 (35J60, 35J85, 58E05)

— On kinetic equations. *Proceedings of the International Congress of Mathematicians, Vol. I, II* (*Kyoto*, 1990), 1173–1185, *Math. Soc. Japan, Tokyo*, 1991. (Carlo Cercignani) **93c:82051** 82C40 (35Q99, 76P05, 76X05, 82–02)

— Remarks on incompressible models of fluid mechanics. *Developments in partial differential equations and applications to mathematical physics* (*Ferrara*, 1991), 59–64, *Plenum, New York*, 1992. (*see* **93j:35004**) 73D05 (35Qxx, 76C05)

— Viscosity solutions and optimal control. *ICIAM* 91 (*Washington, DC*, 1991), 182–195, *SIAM, Philadelphia, PA*, 1992. (*see* **93b:00026**) 35B37 (35D05, 35R60, 49L25)

— (*with* Bahri, Abbas) Solutions of superlinear elliptic equations and their Morse indices. *Progress in variational methods in Hamiltonian systems and elliptic equations* (*L'Aquila*, 1990), 10–20, *Pitman Res. Notes Math. Ser.*, 243, *Longman Sci. Tech., Harlow*, 1992. (Xin Kang Guo) **93g:35044** 35J65 (58E05)

— On some minimization problems in mathematical physics: how to check strict subadditivity conditions? *Progress in variational methods in Hamiltonian systems and elliptic equations* (*L'Aquila*, 1990), 119–126, *Pitman Res. Notes Math. Ser.*, 243, *Longman Sci. Tech., Harlow*, 1992. (Michele Mininni) **93m:49002** 49J10 (81V35)

— (*with* Perthame, Benoît) Lemmes de moments, de moyenne et de dispersion. (English summary) [Moments, averaging and dispersion lemmas] *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 11, 801–806. (Andrzej Palczewski) **93f:35217** 35Q55 (82C70)

— (*with* Alvino, Angelo; Díaz Díaz, Jesús Ildefonso; Trombetti, Guido) Équations elliptiques et symétrisation de Steiner. (English summary) [Elliptic equations and Steiner symmetrization] *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 13, 1015–1020. (J. Chrastina) **93f:35047** 35J25 (35A30)

— (*with* Álvarez León, Luis; Guichard, Frédéric; Morel, Jean-Michel) Équations fondamentales de l'analyse multiéchelle des films. (English and French summaries) [Fundamental equations of the multiscale analysis of movies] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 11, 1145–1148. (Summary) **93j:68217** 68U10

— (*with* Caglioti, E.; Marchioro, Carlo; Pulvirenti, Mario) A special class of stationary flows for two-dimensional Euler equations: a statistical mechanics description. *Comm. Math. Phys.* **143** (1992), *no.* 3, 501–525. (Boguslaw Zegarlinski) **93i:82060** 82C40 (35Q30, 76F99, 76M99, 82B40)

— (*with* Bahri, Abbas) Solutions of superlinear elliptic equations and their Morse indices. (English summary) *Comm. Pure Appl. Math.* **45** (1992), *no.* 9, 1205–1215. (Vittorio Coti Zelati) **93m:35077** 35J65 (58E05)

— (*with* Kutev, N. D.) Nonlinear second-order elliptic equations with jump discontinuous coefficients. I. Quasilinear equations. (English summary) *Differential Integral Equations* **5** (1992), *no.* 6, 1201–1217. (Yoshihito Tomita) **93h:35072** 35J65 (35R05)

— (*with* Duffie, Darrell) PDE solutions of stochastic differential utility. (English summary) *J. Math. Econom.* **21** (1992), *no.* 6, 577–606. (Yu. M. Kabanov) **93j:90020** 90A10 (60H20, 60H30, 90A43)

— (*with* Catté, Francine; Morel, Jean-Michel; Coll, Tomeu) Image selective smoothing and edge detection by nonlinear diffusion. *SIAM J. Numer. Anal.* **29** (1992), *no.* 1, 182–193. (Summary) **93a:94005** 94A12 (35K55, 68U10, 93D05)

— (*with* Álvarez León, Luis; Morel, Jean-Michel) Image selective smoothing and edge detection by nonlinear diffusion. II. *SIAM J. Numer. Anal.* **29** (1992), *no.* 3, 845–866. (Summary) **93a:35072** 35K55 (35–04, 49J45, 49L25, 65M12, 94A99)

Liopo, V. A. Matrix representation of the point symmetry group of the dodecahedron in three- and six-dimensional spaces. *Soviet Phys. Cryst.* **36** (1991), *no.* 4, 452–454 (1992); *translated from Kristallografiya* **36** (1991), *no.* 4, 809–812 (*Russian*). (Summary) **93b:20084** 20H15

— Point symmetry and the lattice of a crystal. (Russian. English and Russian summaries) *Vestsi Akad. Navuk Belarusi Ser. Fiz. Mat. Navuk* **1992**, *no.* 1, 77–82, 126. (Summary) **93k:82068** 82D25

Liou, Ching-Tien *see* **Liu, Ch'ing T'ien**

Liou, Jiunntyng (*with* Tezduyar, T. E.; Ganjoo, D. K.; Behr, M.; Glowinski, Roland) Unsteady incompressible flow computations with the finite-element method. *Finite elements in fluids, Vol.* 8 (*Huntsville, AL*, 1989), 177–209, *Ser. Comput. Phys. Process. Mech. Thermal Sci., Hemisphere, Washington, DC*, 1992. (Max D. Gunzburger) **93b:76050** 76M10 (65M60, 76D05)

— (*with* Tezduyar, T. E.; Behr, M.) A new strategy for finite element computations involving moving boundaries and interfaces—the deforming-spatial-domain/space-time procedure. I. The concept and the preliminary numerical tests. *Comput. Methods Appl. Mech. Engrg.* **94** (1992), *no.* 3, 339–351. (Summary) **93a:76069a** 76M10

— (*with* Tezduyar, T. E.; Behr, M.; Mittal, S.) A new strategy for finite element computations involving moving boundaries and interfaces—the deforming-spatial-domain/space-time procedure. II. Computation of free-surface flows, two-liquid flows, and flows with drifting cylinders. *Comput. Methods Appl. Mech. Engrg.* **94** (1992), *no.* 3, 353–371. (Summary) **93a:76069b** 76M10

— (*with* Pironneau, Olivier; Tezduyar, T. E.) Characteristic-Galerkin and Galerkin/least-squares space-time formulations for the advection-diffusion equations with time-dependent domains. (English summary) *Comput. Methods Appl. Mech. Engrg.* **100** (1992), *no.* 1, 117–141. (Erwin Schechter) **93j:65150** 65M60 (76M25, 76R99, 76U05)

Liou, Meng Sing (*with* Loh, Ching-Yuen) Lagrangian solution of supersonic real gas flows. (English summary) *J. Comput. Phys.* **104** (1993), *no.* 1, 150–161. (Summary) **93g:76087** 76M20 (76K05, 76L05, 76N15)

Liou, Tian-Shy (*with* Wang, Mao Jiun J.) Fuzzy weighted average: an improved algorithm. (English summary) *Fuzzy Sets and Systems* **49** (1992), *no.* 3, 307–315. (Summary) **93i:04004** 04A72

— (*with* Wang, Mao Jiun J.) Ranking fuzzy numbers with integral value. (English summary) *Fuzzy Sets and Systems* **50** (1992), *no.* 3, 247–255. (Summary) **93h:04004** 04A72 (90A05)

Liou, W. T. (*with* T'ang, Ch'uan I; Lee, R. C. T.) Covering convex rectilinear polygons in linear time. *Internat. J. Comput. Geom. Appl.* **1** (1991), *no.* 2, 137–185. (Michael B. Dillencourt) **93e:68132** 68U05 (52B55, 52C15, 68Q20)

Liou, Yuan Chang (*with* Jeng, Yih Nen) A new adaptive grid generation by elliptic equations with orthogonality at all of the boundaries. *J. Sci. Comput.* **7** (1992), *no.* 1, 63–80. (Summary) **93c:76063** 76M20 (65N50)

Liouville, Joseph *see* **Lützen, Jesper, 93d:01034** *and* **Galois, Évariste, 93k:01091**

Lipatov, L. N. (*with* Bender, Carl M.; Boettcher, Stefan) Almost zero-dimensional quantum field theories. (English summary) *Phys. Rev. D* (3) **46** (1992), *no.* 12, 5557–5573. (Summary) **93k:81152** 81T16 (81–04)

Lipeck, Udo Walter (*with* Ehrich, Hans-Dieter; Gogolla, Martin) ★ Algebraische Spezifikation abstrakter Datentypen. (German) [Algebraic specification of abstract data types] Eine Einführung in die Theorie [An introduction to the theory]. Leitfäden und Monographien der Informatik. [Guides and Monographs in Information Science] *B. G. Teubner, Stuttgart*, 1989. x+236 *pp. ISBN* 3-519-02266-4 (Eric G. Wagner) **93a:68098** 68Q65

Lipecki, Z. On extreme extensions of quasi-measures. *Arch. Math.* (*Basel*) **58** (1992), *no.* 3, 288–293. (B. Rodríguez-Salinas) **93a:28005** 28A12

Lipeika, Antanas (*with* Lipeikienė, Joana) Estimation of many change-points in long autoregressive sequences. (English, Russian and Lithuanian summaries) *Informatica* **3** (1992), *no.* 1, 37–46, 121, 129. 62M10

Lipeikienė, Joana (*with* Lipeika, Antanas) Estimation of many change-points in long autoregressive sequences. (English, Russian and Lithuanian summaries) *Informatica* **3** (1992), *no.* 1, 37–46, 121, 129. 62M10

Lipicky, R. J. (*with* Hung, Hsien Ming; Chi, G. Y. H.) Testing for the existence of a desirable dose combination. (English and French summaries) *Biometrics* **49** (1993), *no.* 1, 85–94. (Summary) **93m:62215** 62P10

Lipiński, S. Solitons in a one-dimensional degenerate Hubbard model. *Acta Phys. Polon. A* **80** (1991), *no.* 1, 117–128. (Yuri Kivshar) **93c:82064** 82D20 (81V55, 92C40)

Lipitakis, Elias A. (*with* Gravvanis, George A.) The numerical solution of large finite element systems by explicit preconditioning semi-direct methods. *Bull. Greek Math. Soc.* **32** (1991), 63–82. (Summary) **93b:65073** 65F50 (65N30)

Lipman, Marc J. (*with* Bagga, Kunwarjit S.; Beineke, Lowell W.; Pippert, Raymond E.) The concept of leverage in network vulnerability. *Graph theory, combinatorics, and applications, Vol.* 1 (*Kalamazoo, MI*, 1988), 29–39, *Wiley-Intersci. Publ., Wiley, New York*, 1991. (*see* **93b:05002**) 05C90

— (*with* Bagga, Kunwarjit S.; Beineke, Lowell W.; Pippert, Raymond E.) Extensions of an algorithm for computing the edge-integrity of trees. *Graph theory, combinatorics, and applications, Vol.* 1 (*Kalamazoo, MI*, 1988), 41–53, *Wiley-Intersci. Publ., Wiley, New York*, 1991. (*see* **93b:05002**) 05C85

— (*with* Beineke, Lowell W.; Bagga, Kunwarjit S.; Pippert, Raymond E.) Explorations into graph vulnerability. *Graph theory, combinatorics, and applications, Vol.* 1 (*Kalamazoo, MI*, 1988), 143–158, *Wiley-Intersci. Publ., Wiley, New York*, 1991. (*see* **93b:05002**) 05C90

— Integer realizations of sphere-of-influence graphs. (English summary) Proceedings of the Twenty-third Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, FL, 1992). *Congr. Numer.* **91** (1992), 63–70. (Summary) **93j:05130** 05C75

Lipovan, O. (*with* Brăiloiu, G.) A criterion of probabilistic submeasurability for statistic space valued functions. (Romanian summary) *Inst. Politehn. "Traian Vuia" Timişoara Lucrăr. Sem. Mat. Fiz.* **1988**, *November*, 15–20. 28B20

Lipovskii, V. D. (*with* Gutshabash, E. Sh.) A boundary value problem for a two-dimensional stationary Heisenberg magnet with nontrivial background. I. (Russian. English and Russian summaries) *Teoret. Mat. Fiz.* **90** (1992), *no.* 2, 259–272; *translation in Theoret. and Math. Phys.* **90** (1992), *no.* 2, 175–184. (Miroslav Kolesík) **93j:82007** 82B20 (35Q60)

— (*with* Gutshabash, E. Sh.) Exact solutions of the nonlinear sigma model in curved space and the theory of magneto-ordered media with variable saturation time. (Russian. English summary) *Zap. Nauchn. Sem. S.-Peterburg. Otdel. Mat. Inst. Steklov.* (*POMI*) **199** (1992), *Voprosy Kvant. Teor. Polya Statist. Fiz.* 11, 71–80, 185. (Summary) **93c:82071** 82D40

Lipowski, Adam (*with* Suzuki, Masuo) Convergence of mean-field approximations in site percolation and application of CAM to $d = 1$ further-neighbors percolation problem. (English summary) *J. Statist. Phys.* **69** (1992), *no.* 1-2, 1–16. 82B43

Lipparini, Paolo The compactness spectrum of abstract logics, large cardinals and combinatorial principles. (Italian summary) *Boll. Un. Mat. Ital. B* (7) **4** (1990), *no.* 4, 875–903. (S. R. Kogalovskiĭ) **93d:03043** 03C95 (03C55)

Lipscomb, Stephen L. Problems and applications of finite inverse semigroups. *Words, languages and combinatorics* (*Kyoto*, 1990), 337–352, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93a:20104** 20M18

— Centralizers in symmetric inverse semigroups: structure and order. *Semigroup Forum* **44** (1992), *no.* 3, 347–355. (Branka P. Alimpić) **93b:20108** 20M20 (20M18)

— Presentations of alternating semigroups. *Semigroup Forum* **45** (1992), *no.* 2, 249–260. (L. Bokut') **93i:20069** 20M05 (20M20)

Lipshitz, Leonard (*with* van der Poorten, Alfred J.) Rational functions, diagonals, automata and arithmetic. *Number theory* (*Banff, AB*, 1988), 339–358, *de Gruyter, Berlin*, 1990. (M. Mendès France) **93b:11095** 11J99

Lipskiĭ, L. A. (*with* Tsvetkov, V. I.) Generalized quadrature formulas based on orthogonal Legendre polynomials. (Russian. English and Russian summaries) *Vestsi Akad. Navuk Belarusi Ser. Fiz. Mat. Navuk* **1992**, *no.* 2, 8–11, 123. (Summary) **93g:65035** 65D32

Lipsman, Ronald L. The orbital decomposition of a representation induced from a nil-subgroup. *Japan. J. Math.* (*N.S.*) **17** (1991), *no.* 2, 357–382. (Yves Benoist) **93a:22006** 22E27

— The Penney-Fujiwara Plancherel formula for abelian symmetric spaces and completely solvable homogeneous spaces. *Pacific J. Math.* **151** (1991), *no.* 2, 265–295. (Brian E. Blank) **93d:22015** 22E45 (22E27, 43A85)

— *see also* **Representation theory of groups and algebras, 93k:00028**

Lipton, R. *see* **Lipton, Robert**

Lipton, Richard J. (*with* LaPaugh, Andrea S.; Sandberg, Jonathan S.) How to store a triangular matrix. (English summary) *IEEE Trans. Comput.* **41** (1992), *no.* 7, 896–899. (Summary) **93e:68016** 68P20 (11B25, 11J99)

— (*with* Cai, Jin-Yi; Condon, Anne) On games of incomplete information. 7th Annual Symposium on Theoretical Aspects of Computer Science (STACS 90) (Rouen, 1990). *Theoret. Comput. Sci.* **103** (1992), *no.* 1, 25–38. (Akira Okada) **93h:90108** 90D05 (68Q10, 90D12, 90D46)

— (*with* Naughton, Jeffrey F.) Clocked adversaries for hashing. (English summary) *Algorithmica* **9** (1993), *no.* 3, 239–252. (Summary) **93i:68061** 68P20

Lipton, Robert (*with* Lur'e, K. A.) Direct solution of an optimal layout problem for isotropic heat conductors in three dimensions. *Theoretical aspects of industrial design* (*Wright-Patterson Air Force Base, OH*, 1990), 1–11, *SIAM, Philadelphia, PA*, 1992. (Wen Huan Yu) **93b:49029** 49K20 (35R30, 49M49, 73B30, 73V25)

Liptser, R. Sh. (*with* Shiryaev, A. N.) Large deviation for martingales with independent and homogeneous increments. *Probability theory and mathematical statistics, Vol. II* (*Vilnius*, 1989), 124–133, "*Mokslas*", *Vilnius*, 1990. (De Li Li) **93c:60035** 60F10 (60G44)

— (*with* Lototskiĭ, S. V.) Diffusion approximation and robust Kalman filter. *J. Math. Systems Estim. Control* **2** (1992), *no.* 3, 263–274. (Keigo Watanabe) **93b:93109** 93E11 (60H10, 62M20)

Liron, Nadav (*with* Barta, Efrath) Motion of a rigid particle in Stokes flow: a new second-kind boundary-integral equation formulation. *J. Fluid Mech.* **238** (1992), 579–598. (A. M. J. Davis) **93c:76019** 76D07

de Lisa, Francisco (*with* Hojman, Sergio A.; Pardo, Francisco; Aulestia, Luis) Lagrangians for differential equations of any order. *J. Math. Phys.* **33** (1992), *no.* 2, 584–590. (José F. Cariñena) **93e:49052** 49N45 (34A99, 70G99, 70H35)

Lisak, M. (*with* Helander, P.; Semenov, V. E.) Generalized adiabatic invariants in one-dimensional Hamiltonian systems. *Phys. Rev. Lett.* **68** (1992), *no.* 25, 3659–3662. (Summary) **93a:70016** 70H05 (58F05)

Lisan, Amha (*with* Lawson, Jimmie D.) Transitive flows: a semigroup approach. *Mathematika* **38** (1991), *no.* 2, 348–361 (1992). (Bernard L. Madison) **93c:22003** 22A30 (20M20, 54H15, 54H20)

Lisbona, F. (*with* Clavero Gracia, Carmelo; Jorge, J. C.) Exponential-fitting and alternating-directions schemes for multidimensional stationary convection-diffusion problems. (Spanish. English summary) *Proceedings of the XII Congress on Differential Equations and Applications/II Congress on Applied Mathematics* (*Spanish*) (*Oviedo*, 1991), 215–220, *Univ. Oviedo, Oviedo*, 1991. (*see* **93j:00009**) 65N06

Liseĭkin, V. D. (*with* Petrenko, V. E.) ★ Адаптивно-инвариантный метод численного решения задач с пограничными и внутренними слоями. (Russian) [An adaptive-invariant method for the numerical solution of problems with boundary and interior layers] *Akad. Nauk SSSR Sibirsk. Otdel., Vychisl. Tsentr, Novosibirsk*, 1989. 259 *pp.* (J. B. Butler, Jr.) **93i:65003** 65–02 (34A45, 34E15, 35A35, 35B25)

— On the construction of adaptive grids. (Russian. Russian summary) *Model. Mekh.* **5** (1991), *no.* 5, 77–85. 65M50

— On the construction of regular grids on n-dimensional surfaces. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **31** (1991), *no.* 11, 1670–1683; *translation in Comput. Math. Math. Phys.* **31** (1991), *no.* 11, 47–57 (1992). (Andris Buikis) **93c:65112** 65M50 (76M20)

Liseo, Brunero A note on a counterexample against the likelihood principle. *Comm. Statist. Theory Methods* **21** (1992), *no.* 2, 547–556. (G. K. Robinson) **93e:62009** 62A10 (62A15)

Lisevich, L. M. Some generalizations of Demidovich's lemma. (Ukrainian. Russian summary) *Visnik L'viv. Derzh. Univ. Ser. Mekh.-Mat. No.* 30 (1988), 61–64, 79. 26A15

— Some sufficient conditions for the existence of an N-almost periodic solution of a second-order nonlinear differential equation with an S^p-almost periodic right-hand side. (Ukrainian) *Visnik L'viv. Derzh. Univ. Ser. Mekh.-Mat. No.* 32 (1989), 26–29. 34C37

Lishevskiĭ, V. P. ★ Охотники за истиной. (Russian. Russian summary) [Hunters for truth] Рассказы о творцах науки. [Stories about the creators of science] "*Nauka*", *Moscow*, 1990. 288 *pp. ISBN* 5-02-003483-5 (B. Rosenfeld) **93j:01011** 01A70 (01A05)

Lisiecki, Wojciech A symplectic analog of Mackey's theory of representations of group extensions. *Classical analysis* (*Kazimierz Dolny*, 1991), 124–131, *World Sci. Publishing, River Edge, NJ*, 1992. (Ivailo M. Mladenov) **93h:22009** 22D30 (58F05)

Lisitsa, M. P. (*with* Bar'yakhtar, V. G.; Brodin, M. S.; et al.) Aleksandr Sergeevich Davydov (on the occasion of his eightieth birthday). (Russian) *Ukraïn. Fiz. Zh.* **37** (1992), *no.* 12, 1767–1769. 01A70

Lisitskiĭ, A. D. The asymptotics of stable measures on $\mathbf{R}^n$ for small values of the exponent. Stability problems for stochastic models. *J. Soviet Math.* **59** (1992), *no.* 4, 946–951. (Alexander Ulanovskiĭ) **93m:60033** 60E07

Liska, R. Numerical code generation for finite difference schemes solving. (English summary) *Computational and applied mathematics, I* (*Dublin*, 1991), 295–303, *North-Holland, Amsterdam*, 1992. (*see* **93j:00007**) 65–04 (65M06)

Liskevich, V. A. (*with* Semenov, Yu. A.) Dirichlet operators: a priori estimates and the uniqueness problem. (English summary) *J. Funct. Anal.* **109** (1992), *no.* 1, 199–213. (J. A. Van Casteren) **93k:47057** 47F05 (34G10, 35R15, 46G05, 47B25, 47N50)

Liski, Erkki P. On a relationship between minimax-linear and admissible estimators in linear regression. (English summary) *Linear Algebra Appl.* **176** (1992), 109–120. (Khursheed Alam) **93j:62176** 62J05 (62C15, 62C20)

Liśkiewicz, Maciej On the relationship between deterministic time and deterministic reversal. (English summary) *Inform. Process. Lett.* **45** (1993), *no.* 3, 143–146. (Summary) **93m:68053** 68Q15

Liskova, N. A. (*with* Kirillov, A. N.) Clebsch-Gordan and Racah-Wigner coefficients for $U_q(\mathrm{SU}(1,1))$. (English summary) *Infinite analysis, Part A, B* (*Kyoto*, 1991), 611–621, *Adv. Ser. Math. Phys.*, 16, *World Sci. Publishing, River Edge, NJ*, 1992. (A. U. Klimyk) **93i:17017** 17B37 (33D80, 81R50)

Liskowski, Marian On additivity of Orlicz-Slobodeckiĭ space. *Demonstratio Math.* **25** (1992), *no.* 1-2, 121–128. (Abdelmoujib Benkirane) **93j:46038** 46E35

Lisky, S. (*with* Blum, Heribert; Rannacher, Rolf) A domain splitting algorithm for parabolic problems. (English and German summaries) *Computing* **49** (1992), *no.* 1, 11–23. (Summary) **93f:65071** 65M55 (65M60, 65Y05)

Lismont, Luc Une classe universelle anti-fondée pour les croyances. (English and French summaries) [An anti-founded universal belief class] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 11, 1117–1120. (Summary) **93j:03026** 03E70 (03E75, 90D40)

Lisovik, L. P. An unsolvable problem for countable Markov chains. (Russian. English and Ukrainian summaries) *Kibernetika* (*Kiev*) **1991,** *no.* 2, 1–6, 15, 133; *translation in Cybernetics* **27** (1991), *no.* 2, 163–169. (Summary) **93b:03077** 03D35

— Problems of the interpolation of entire functions by an infinite set of nodes. (Russian) *Vychisl. Prikl. Mat.* (*Kiev*) *No.* 75 (1991), 26–34. (Georgi Grozev) **93f:41008** 41A05 (65D05)

— Macrotransducers over marked trees, and partial continuous operators. (Russian. English and Ukrainian summaries) *Kibernet. Sistem. Anal.* **1992,** *no.* 1, 16–25, 187; *translation in Cybernet. Systems Anal.* **28** (1992), *no.* 1, 11–18. 26A15

Lisovskaya, V. P. (*with* Lopushnyak, T. K.) Limit properties of T-periodic solutions of nonlinear impulse systems with a small parameter multiplying the derivative. (Ukrainian. Russian and Ukrainian summaries) *Visnik Kiïv. Univ. Mat. Mekh. No.* 32 (1990), 96–103. 34D15

Lisowski, Tomasz Expectation values of squeezing Hamiltonians in the SU(1, 1) coherent states. (English summary) *J. Phys. A* **25** (1992), *no.* 23, L1295–L1298. (Summary) **93k:81087** 81R30

Lister, G. M. S. (*with* Judd, B. R.) Complementary groups in the quark model of the atom. *J. Phys. A* **25** (1992), *no.* 9, 2615–2630. (Summary) **93d:81194** 81V45 (81R05)

Lister, John R. Viscous flows down an inclined plane from point and line sources. (English summary) *J. Fluid Mech.* **242** (1992), 631–653. (Summary) **93g:76040** 76D08 (76D99)

Listopadova, V. V. (*with* Luchka, A. Yu.) Application of a nonstationary projection-iteration method to a multipoint problem for functional-differential equations with small nonlinearity that contain parameters. (Russian. Russian summary) *Asymptotic solutions of nonlinear equations with a small parameter* (*Russian*), 84–95, *Akad. Nauk Ukrainy, Inst. Mat., Kiev*, 1991. (*see* **93f:34003**) 65L10

— Application of the projection-iteration method to a multipoint problem for differential equations with deviating argument that contain parameters. (Russian. Russian summary) *Nonlinear problems in the theory of differential equations* (*Russian*), 41–48, *Akad. Nauk Ukrain. SSR, Inst. Mat., Kiev*, 1991. (J. Švejda) **93k:34154** 34K10 (34B10)

— A multipoint problem for functional-differential equations with a small nonlinearity that contain parameters, and its solution by projection-iterative method. (Russian. English summary) *Dokl. Akad. Nauk Ukrainy* **1991,** *no.* 11, 16–20, 172. (Summary) **93b:34083** 34K10 (65Q05)

— A multipoint problem for neutral-type differential equations that contain parameters, and its solution by a projection-iterative method. (Russian. English and Russian summaries) *Dokl. Akad. Nauk Ukrainy* **1992,** *no.* 5, 11–15, 158. (Summary) **93e:34092** 34K10 (34K40)

Lisyanoi, V. F. (*with* Belitskiĭ, G. R.) Formal classification of vector fields with structurally stable singularities in a neighborhood of a circle. (Russian. Ukrainian summary) *Ukrain. Mat. Zh.* **43** (1991), *no.* 10, 1338–1343; *translation in Ukrainian Math. J.* **43** (1991), *no.* 10, 1243–1247 (1992). (Henryk Żołądek) **93d:34069** 34C20 (34A34, 58F14, 58F36)

Litkouhi, B. (*with* Beck, J. V.; Cole, K. D.; Haji-Sheikh, A.) ★ Heat conduction using Green's functions. Series in Computational and Physical Processes in Mechanics and Thermal Sciences. *Hemisphere Publishing Corp., London*, 1992. xxviii+523 *pp. ISBN* 1-56032-096-6 (P. M. Gupta) **93g:80005** 80A20 (35–01, 35C15, 35K05, 80–01)

Litovchenko, V. A. (*with* Gorodetskiĭ, V. V.) The Cauchy problem for parabolic pseudo-differential equations in spaces of generalized functions of type S'. (Russian. English and Russian summaries) *Dokl. Akad. Nauk Ukrainy* **1992,** *no.* 10, 6–9, 169. (Summary) **93i:35162** 35S10 (35K45, 46F10, 47N20)

Litovsky, Igor (*with* Métivier, Yves) Computing trees with graph rewriting systems with priorities. (English summary) *Tree automata and languages* (*Le Touquet*, 1990), 115–139, *Stud. Comput. Sci. Artif. Intell.*, 10, *North-Holland, Amsterdam*, 1992. (Mirosław Truszczyński) **93m:68108** 68Q50 (05C85, 68Q42, 68R10)

— (*with* Đỗ Long Vân; Le Saëc, Bertrand) On coding morphisms for zigzag codes. (English and French summaries) *RAIRO Inform. Théor. Appl.* **26** (1992), *no.* 6, 565–580. (Dong Yang Long) **93m:20105** 20M25 (68Q45, 94A45)

— (*with* Đỗ Long Vân; Le Saëc, Bertrand) Stability for the zigzag submonoids. (English and French summaries) *Theoret. Comput. Sci.* **108** (1993), *no.* 2, 237–249. (Wit Foryś) **93m:68098** 68Q45

Litow, Bruce On iterated integer product. (English summary) *Inform. Process. Lett.* **42** (1992), *no.* 5, 269–272. (Summary) **93e:68034** 68Q25

Litsyn, S. N. (*with* Cohen, Gérard Denis) On the covering radius of Reed-Muller codes. (English summary) A collection of contributions in honour of Jack van Lint. *Discrete Math.* **106/107** (1992), 147–155. (Summary) **93e:94016** 94B27 (94B05)

— (*with* Blaum, Mario; Buskens, Vincent; van Tilborg, Henk C. A.) Error-correcting codes with bounded running digital sum. (English summary) *IEEE Trans. Inform. Theory* **39** (1993), *no.* 1, 216–227. (Summary) **93m:94036** 94B50

Littl, R. Dzh. A. *see* **Little, Roderick J. A.**

Little, C. H. C. (*with* Eggleton, R. B.; Holton, D. A.) Cycles and paths in multigraphs. *Australas. J. Combin.* **5** (1992), 3–11. (Summary) **93a:05077** 05C38

— (*with* Bonnington, C. P.) The classification of combinatorial surfaces using 3-graphs. *Australas. J. Combin.* **5** (1992), 87–102. (Summary) **93a:05054** 05C10 (05C15)

— (*with* Archdeacon, Dan; Bonnington, C. P.) Cycles, cocycles and diagonals: a characterization of planar graphs. (English summary) *Planar graphs* (*New Brunswick, NJ*, 1991), 1–3, *DIMACS Ser. Discrete Math. Theoret. Comput. Sci.*, 9, *Amer. Math. Soc., Providence, RI*, 1993. (*see* **93m:05005**) 05C10 (05C75)

Little, Graham The spectral type of a symmetric analytic kernel. *Bull. London Math. Soc.* **24** (1992), *no.* 2, 169–175. (V. S. Sunder) **93b:47104** 47G10 (45P05, 46E20, 47A10, 47B38)

Little, John B. (*with* Cox, David A.; O'Shea, Donal) ★ Ideals, varieties, and algorithms. An introduction to computational algebraic geometry and commutative algebra. Undergraduate Texts in Mathematics. *Springer-Verlag, New York*, 1992. xii+513 *pp. ISBN* 0-387-97847-X (Timothy Stokes) **93j:13031** 13P10 (13–01, 14–01, 14Qxx, 68Q40)

Little, Robert D. Self-intersection of fixed manifolds and relations for the multisignature. *Math. Scand.* **69** (1991), *no.* 2, 167–178 (1992). (Katsuo Kawakubo) **93a:57030** 57R20 (57S17, 57S25)

— (*with* Dovermann, Karl Heinz) Involutions of cohomology complex projective space with codimension-two fixed points. *Indiana Univ. Math. J.* **41** (1992), *no.* 1, 197–211. (Mikiya Masuda) **93d:57068** 57S17 (57R55, 57R85)

Little, Roderick J. A. (*with* Rubin, Donald B.) ★ Статистический анализ данных с пропусками. (Russian) [Statistical analysis with missing data] Translated from the 1987 English original, and with a preface and an appendix by A. M. Nikiforov. Математико-Статистические Методы за Рубежом. [Mathematical-Statistical Methods Abroad] "*Finansy i Statistika*", *Moscow*, 1991. 336 *pp. ISBN* 5-279-00443-X (Editors) **93a:62029** 62F10 (62D05)

Littlejohn, L. L. (*with* Brown, B. Malcolm; Evans, W. D.) Discrete inequalities, orthogonal polynomials and the spectral theory of difference operators. *Proc. Roy. Soc. London Ser. A* **437** (1992), *no.* 1900, 355–373. (David R. Masson) **93g:47043** 47B39 (33C45, 39A10, 47A10, 47A57)

— (*with* Krall, Allan M.; Everitt, W. N.) The Legendre type operator in a left definite Hilbert space. (English summary) *Quaestiones Math.* **15** (1992), *no.* 4, 467–475. (Summary) **93j:34122** 34L40 (34B05, 34B30, 34L10)

— (*with* Everitt, W. N.; Krall, Allan M.; Onyango-Otieno, V. P.) Differential operators and the Laguerre type polynomials. *SIAM J. Math. Anal.* **23** (1992), *no.* 3, 722–736. (N. Hayek Calil) **93e:33002** 33C45 (34B99, 34L05, 34L10, 47E05)

Littlejohn, R. P. Discrete minification processes and reversibility. *J. Appl. Probab.* **29** (1992), *no.* 1, 82–91. (Michael R. Chernick) **93a:60096** 60J10 (62M10)

— An operation which inverts Bernoulli multiplication and associated stationary reversible Markov processes. *J. Appl. Probab.* **29** (1992), *no.* 1, 234–238. (Ed McKenzie) **93b:60143** 60J10

Littlejohn, Robert G. (*with* Flynn, William G.) Phase integral theory, coupled wave equations, and mode conversion. *Chaos* **2** (1992), *no.* 1, 149–158. (Summary) **93a:81043** 81Q20 (81R20)

— (*with* Creagh, Stephen C.) Semiclassical trace formulae for systems with nonabelian symmetry. *J. Phys. A* **25** (1992), *no.* 6, 1643–1669. (Summary) **93b:81067** 81Q20 (58Z05, 70H99)

— The Van Vleck formula, Maslov theory, and phase space geometry. *J. Statist. Phys.* **68** (1992), *no.* 1-2, 7–50. (Alexander D. Popov) **93h:81024** 81Q05 (81Q20, 81S10, 81S30)

— (*with* Flynn, William G.) Semiclassical theory of spin-orbit coupling. *Phys. Rev. A* (3) **45** (1992), *no.* 11, 7697–7717. (Summary) **93a:81044** 81Q20 (81V35, 81V70)

Littlestone, Nick (*with* Haussler, David; Kearns, Michael J.; Warmuth, Manfred K.) Equivalence of models for polynomial learnability. *Inform. and Comput.* **95** (1991), *no.* 2, 129–161. (Summary) **93b:68074** 68T05

Littlewood, J. E. *see* **Hardy, Godfrey Harold**, **93g:01100**

Littman, Walter Recent work on the SCOLE model. *Stabilization of flexible structures* (*Montpellier*, 1989), 1–5, *Lecture Notes in Control and Inform. Sci.*, 147, *Springer, Berlin*, 1990. (*see* **93c:93006**) 93B05 (93C20)

— Remarks on boundary control for polyhedral domains and related results. *Boundary control and boundary variation* (*Sophia-Antipolis*, 1990), 272–284, *Lecture Notes in Control and Inform. Sci.*, 178, *Springer, Berlin*, 1992. (*see* **93b:49001**) 93C20 (93D15)

Litvakov, B. M. (*with* Vol'skiĭ, V. I.) Generalized extremizational choice by pseudocriteria. *Math. Social Sci.* **22** (1991), *no.* 1, 43–55. (Fouad T. Aleskerov) **93b:90012** 90A05

Litvin, A. I. (*with* Gnativ, L. A.; Kozhukhovskiĭ, A. D.) Organizing vector calculations of orthogonal Walsh transformations. *Soviet J. Automat. Inform. Sci.* **24** (1991), *no.* 4, 86–90 (1992); *translated from Avtomatika* **1991,** *no.* 4, 87–91, 96 (*Russian. English, Russian and Ukrainian summaries*). 93C55

— (*with* Kozhukhovskiĭ, A. D.) Expansion of functions in Fourier-Chebyshev series in biased Chebyshev polynomials of the first kind. (Russian) *Vychisl. Prikl. Mat.* (*Kiev*) *No.* 73 (1992), 25–27. 42C10

Litvin, I. N. (*with* Boreĭsha, Yu. E.) The stochastic Routh-Hurwitz problem. (Russian. English and Ukrainian summaries) *Kibernet. Sistem. Anal.* **1991,** *no.* 4, 61–70, 188; *translation in Cybernet. Systems Anal.* **27** (1991), *no.* 4, 527–534. (Zhao-Pan Zeng) **93a:93111** 93E15

Litvin, O. N. Polynomial interflatation of functions of three variables on M ($M \geq 3$) intersecting planes without preserving the class $C^r(\mathbf{R}^3)$. (Russian. English summary) *Dokl. Akad. Nauk Ukrainy* **1991,** *no.* 11, 40–43, 173. (Summary) **93c:41004** 41A05 (41A63, 65D05)

— Optimal schemes of the finite element method that are exact on the class of problems $(-1)^n y^{(2n)}(x) = f(x)$ $(a < x < b,\ y^{(s)}(a) = y^{(s)}(b) = 0)$ $(s = 0, \cdots, n-1)$. (Russian) *Dokl. Akad. Nauk Ukrainy* **1992,** *no.* 6, 33–37, 171. (Summary) **93d:65073** 65L60

Litvinchev, I. S. Iterative aggregation and decomposition in block-separable extremal problems. (Russian. Russian summary) *Zh. Vychisl. Mat. i Mat. Fiz.* **32** (1992), *no.* 8, 1320–1323; *translation in Comput. Math. Math. Phys.* **32** (1992), *no.* 8, 1179–1181. (Summary) **93f:65051** 65K05

Litvinchuk, G. S. (*with* Aizenshtat, A. V.; Karlovich, Yu. I.) Defect numbers of the D. Kveselava–N. Vekua operator with a discontinuous shift derivative. (Russian) *Dokl. Akad. Nauk SSSR* **318** (1991), *no.* 1, 11–16; *translation in Soviet Math. Dokl.* **43** (1991), *no.* 3, 633–638 (1992). (Sergei Grudskii) **93d:30008** 30C35 (30E25, 31A25, 45E10, 47G10)

— *see also* **Vladimirov, V. S. et al., 93e:01028**

Litvinko, P. G. (*with* Rublev, B. V.; Petunin, Yu. I.) The structure of homothetic linearly separable sets in an n-dimensional Euclidean space. I. (Russian. English and Ukrainian summaries) *Kibernet. Sistem. Anal.* **1992,** *no.* 1, 3–15, 187; *translation in Cybernet. Systems Anal.* **28** (1992), *no.* 1, 1–11. (Béla Uhrin) **93m:52001a** 52A10 (52B55, 68U05)

— (*with* Rublev, B. V.; Petunin, Yu. I.) The structure of homothetic linearly separable sets in an n-dimensional Euclidean space. II. (Russian. English and Ukrainian summaries) *Kibernet. Sistem. Anal.* **1992,** *no.* 2, 23–33, 188; *translation in Cybernet. Systems Anal.* **28** (1992), *no.* 2, 180–188. (Béla Uhrin) **93m:52001b** 52A10 (52B55, 68U05)

Litvinov, E. V. On the Segal isomorphism. (English and Russian summaries) *Akad. Nauk Ukrainy Inst. Mat. Preprint* **1992,** *no.* 31, 52 *pp.* (Summary) **93m:47021** 47A99 (46E50, 46F25, 46G12, 47A70, 47B99, 47N50)

— (*with* Berezanskiĭ, Yu. M.; Livinskiĭ, V. O.) A generalization of the Segal transformation. (Russian. English and Russian summaries) *Dokl. Akad. Nauk Ukrainy* **1992,** *no.* 5, 16–20, 158. (From the introduction) **93g:46040** 46F25 (46G12, 46N50)

Litvinov, G. L. *see* **Berezin, F. A., 93i:81001**

Litvinov, S. N. Bicyclic WJ^*-algebras in a Pontryagin space of type Π_1. (Russian) *Funktsional. Anal. i Prilozhen.* **26** (1992), *no.* 3, 46–54; *translation in Functional Anal. Appl.* **26** (1992), *no.* 3, 188–195. (Khristo N. Boyadzhiev) **93i:46125** 46L70 (46C20, 47B50, 47D25)

Litvinova, M. V. Product of finitely based varieties of lattice-ordered groups. (Russian) *Proceedings of the XXIX All-Union Scientific Student Conference "The Student and Scientific-Technological Progress"* (*Russian*) (*Novosibirsk*, 1991), 29–34, *Novosibirsk. Gos. Univ., Novosibirsk*, 1991. (*see* **93k:00038**) 08B25 (06F15)

Litvintsev, A. I. (*with* Pyatnitskiĭ, E. S.) The dynamics and control of a multilink transportation mechanism. (Russian. Russian summary) *Avtomat. i Telemekh.* **1993,** *no.* 1, 141–153; *translation in Automat. Remote Control* **54** (1993), *no.* 1, *part* 2, 133–143. 93C95

Liu, A. *see* **Liu, Andy C. F.**

Liu, Ai Yi (*with* Wang, Song Gui) Biased estimators for the parameters of a class of related regression systems. (Chinese. English and Chinese summaries) *Chinese J. Appl. Probab. Statist.* **7** (1991), *no.* 3, 266–274. 62J05

Liu, An Ping (*with* He, Meng Xing) Existence and stability of global solutions to abstract functional-differential equations. (Chinese. English summary) *Math. Appl.* **4** (1991), *no.* 4, 29–35. (Yang Kuang) **93f:35235** 35R10 (34K30)

Liu, Andy C. F. (*with* Lee, Sin-Min) A construction of cordial graphs from smaller cordial graphs. *Ars Combin.* **32** (1991), 209–214. (Robin J. Wilson) **93e:05087** 05C78

— (*with* Lee, Sin-Min; Tan, Sie-Keng) On balanced graphs. Proceedings of the Twenty-first Manitoba Conference on Numerical Mathematics and Computing (Winnipeg, MB, 1991). *Congr. Numer.* **87** (1992), 59–64. (Summary) **93a:05109** 05C78

Liu, Bao (*with* Zhang, Wei[2]) Hypotheses tests in absolute selection of separate models. (Chinese. English summary) *J. Systems Engrg.* **6** (1991), *no.* 2, 34–38. 62F03

Liu, Bao Ding (*with* Gu, Ji Fa) Probability criterion in inventory systems. (English summary) *Systems Sci. Math. Sci.* **6** (1993), *no.* 1, 70–75. (Summary) **93m:90026** 90B05

Liu, Bao Yong (*with* Wu, Zhong Qi) Using the optimization convex hull method to find intersections of B-spline curves. (Chinese. English summary) *Zhejiang Daxue Xuebao Ziran Kexue Ban* **26** (1992), *no.* 2, 211–217. 65D17 (65K99)

Liu, Bin An application of KAM theorem of reversible systems. *Sci. China Ser. A* **34** (1991), *no.* 9, 1068–1078. (Mikhail B. Sevryuk) **93d:58143** 58F27 (34C25, 34C27)

— Boundedness for solutions of nonlinear periodic differential equations via Moser's twist theorem. A Chinese summary appears in Acta Math. Sinica **36** (1993), no. 2, 287. *Acta Math. Sinica (N.S.)* **8** (1992), *no.* 1, 91–98. (Urs Kirchgraber) **93h:58134** 58F27 (34A34, 34C11)

Liu, Bo Han (*with* Yang, Wei Qi) A generalization of the de Branges theorem and the coefficients of symmetric univalent functions. (Chinese. English summary) *Pure Appl. Math.* **7** (1991), *no.* 1, 58–67. (Summary) **93k:30020** 30C50 (30C45)

Liu, Bo Lian A matrix method to solve linear recurrences with constant coefficients. *Fibonacci Quart.* **30** (1992), *no.* 1, 2–8. (Shiro Ando) **93a:11011** 11B37

— (*with* Cheng, Bo) A conjecture on the exponents of nearly decomposable matrices. (Chinese. English and Chinese summaries) *Gaoxiao Yingyong Shuxue Xuebao* **7** (1992), *no.* 4, 615–617. (Summary) **93k:15030** 15A36

— *see also* **Li, De Ying**

Liu, Bo Shun (*with* Wang, Rong Hua) Structural properties of the Carathéodory matrix linear system. (Chinese. English summary) *Natur. Sci. J. Harbin Normal Univ.* **7** (1991), *no.* 1, 22–25. (P. F. Hsieh) **93c:34120** 34E15 (34A12)

Liu, C. *see* **Liu, Chao Qun**

Liu, Chang Xiao (*with* Liu, Jun; Wang, Zhao Ming) A study on relations between inputs and outputs of neurons and computational properties of neural networks. (Chinese. English and Chinese summaries) *Dianzi Keji Daxue Xuebao* **21** (1992), *no.* 2, 127–132. 68T05 (92B20)

Liu, Chao (*with* Lü, Jing Fa; Ge, Mo Lin) On the group aspects of Riemann-Hilbert transformations. *J. Math. Phys.* **33** (1992), *no.* 1, 56–63. (Tuncay Aktosun) **93e:17036** 17B67 (58F07, 58G37, 81T13)

Liu, Chao Jie The two-uniqueness and uniqueness of limit cycles of system $\dot{x} = y - F(x)$, $\dot{y} = -g(x)$. *Ann. Differential Equations* **8** (1992), *no.* 1, 53–59. (Carmen Chicone) **93e:34041** 34C05 (58F21)

Liu, Chao Qun (*with* Liu, Z.; McCormick, Stephen F.) An efficient multigrid scheme for elliptic equations with discontinuous coefficients. (English summary) *Comm. Appl. Numer. Methods* **8** (1992), *no.* 9, 621–631. 65N55

Liu, Chêng Ch'uan *see* **Loridan, P.**

Liu, Chin Hsing Robustness of optimal nonlinear regulators under actuator and additive perturbations. (English summary) *Control Theory Adv. Tech.* **8** (1992), *no.* 4, 779–787. (Summary) **93i:93106** 93D15 (93C10, 93D09)

— Augmented decouplable outputs selection for redundantly actuated systems. *Systems Control Lett.* **19** (1992), *no.* 1, 53–60. 93B11 (93B40)

— (*with* Chou, Yung Shan; Chang, Fan Jên) Decoupling of continuous-time linear time-invariant systems using generalized sampled-data hold functions. *Systems Control Lett.* **19** (1992), *no.* 1, 61–69. 93C05 (93B11, 93C57)

Liu, Ch'ing T'ien (*with* Sheu, Shey Huei) Optimum ordering policies with age-dependent minimal repair and two types of lead times. (English summary) *Internat. J. Systems Sci.* **24** (1993), *no.* 2, 253–264. (Summary) **93i:90047** 90B25

Liu, Chongshan From a theorem of Radner. (English summary) *Econom. Lett.* **39** (1992), *no.* 4, 401–404. 90A56

Liu, Chu Zhong Determination of coefficients for a class of nonlinear parabolic equations. (Chinese. English and Chinese summaries) *Hunan Daxue Xuebao* **19** (1992), *no.* 2, 100–105. (Summary) **93j:35188** 35R30 (35K55)

Liu, Chuang Einstein and relativistic thermodynamics in 1952: a historical and critical study of a strange episode in the history of modern physics. *British J. Hist. Sci.* **25** (1992), *no.* 85, *part* 2, 185–206. (Dennis Dieks) **93g:01048** 01A60 (83–03)

Liu, Chun Lei (*with* Lei, Jin Gan; Ren, Yi Qiang) Finite-dimensional approximation and its computation for bifurcation problems for variational inequalities. (English summary) *Proceedings of International Conference on Scientific Computation* (*Hangzhou*, 1991), 66–75, *Ser. Appl. Math.*, 1, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93h:65082** 65J15 (65K10, 73V25)

— An estimate for a special exponential sum. (Chinese. English summary) *Adv. in Math.* (*China*) **21** (1992), *no.* 2, 222–231. (Summary) **93e:11096** 11L07

Liu, Ci Hua The maximum likelihood estimation of change-points of an ARMA model. (Chinese) *Math. Appl.* **5** (1992), *no.* 3, 111–113. 62M10

Liu, Dai Fang (*with* Guan, Zhi Hong) Oscillation of solutions to linear retarded differential systems with matrix coefficients. (Chinese. English summary) *J. Central China Normal Univ. Natur. Sci.* **26** (1992), *no.* 4, 533–534. 34K15

Liu, Dan (*with* Neuts, Marcel F.; Narayana, Surya) Local Poissonification of the Markovian arrival process. *Comm. Statist. Stochastic Models* **8** (1992), *no.* 1, 87–129. (D. J. Daley) **93e:60092** 60G55 (60K25)

Liu, Daphne Der-Fen T-colorings of graphs. Special volume to mark the centennial of Julius Petersen's "Die Theorie der regulären Graphs", Part II. *Discrete Math.* **101** (1992), *no.* 1-3, 203–212. (Adrian Riskin) **93d:05054** 05C15

Liu, De Gang (*with* Cui, Jin Chuan; Zhang, Xiang Sun) Improvements on the sensitivity analysis of parametric linear programming. (Chinese) *Math. Practice Theory* **1991,** *no.* 4, 41–49. (Hang-Ling Chang) **93g:90071** 90C31 (90C05)

Liu, De Lin (*with* Cao, Xin; Sheng, Zhao Han) Nonergodicity and transience of a class of nonlinear time series models. (Chinese. English and Chinese summaries) *J. Southeast Univ.* **22** (1992), *no.* 1, 73–77. 60J10 (62M10)

Liu, De Rong (*with* Michel, Anthony N.) Asymptotic stability of systems operating on a closed hypercube. (English summary) *Systems Control Lett.* **19** (1992), *no.* 4, 281–285. (Mark R. Liberzon) **93k:93100** 93D20 (34D25)

Liu, Dong C. (*with* Byrd, Richard H.; Nocedal, Jorge) On the behavior of Broyden's class of quasi-Newton methods. (English summary) *SIAM J. Optim.* **2** (1992), *no.* 4, 533–557. (Andreas Griewank) **93m:90076** 90C30 (65K05)

Liu, Duo Ming The triangle inequality for prime n-tuples with $n = 7, 8, 9$ is false. (Chinese) *Math. Practice Theory* **1991,** *no.* 3, 73–80. (Wen Peng Zhang) **93a:11109** 11Y70

Liu, Fa Gui (*with* Li, Cai Zhong) Globally smooth solutions to the Cauchy problem for the system of equations for a model of combustion and their formation of singularities. (Chinese. English and Chinese summaries) *J. Chengdu Univ. Sci. Tech.* **1992,** *no.* 2, 21–28, 34. (Guo Chun Wen) **93m:35045** 35F25 (35A20)

— (*with* Yang, Ze Jiang) Formation of singularities of solutions for Cauchy problem of quasilinear hyperbolic systems with dissipative terms. *J. Partial Differential Equations* **5** (1992), *no.* 1, 79–89. (Todor V. Gramchev) **93k:35169** 35L65 (35A20, 35B65, 35L45)

Liu, Fa Wang (*with* Fitzsimons, Conor J.; Miller, John J. H.) A second-order L-stable time discretisation of the semiconductor device equations. (English summary) *J. Comput. Appl. Math.* **42** (1992), *no.* 2, 175–186. (G. W. Hedstrom) **93i:65100** 65M99 (62L99)

Liu, Fan[1] Further comment on the least-squares method. (English and Chinese summaries) *J. Central China Normal Univ. Natur. Sci.* **26** (1992), *no.* 4, 437–448. (Summary) **93m:65015** 65D10

Liu, Fang You (*with* Su, Bu Qing; Chern, Shiing Shen; Cheng, Yu Huai) In memory of Dr. J. Z. Zeng. (Chinese) *Collected research papers on the history of mathematics, Vol.* 3 (*Chinese*), 1–5, *Inner Mongolia Univ. Press, Hohhot*, 1992. (*see* **93i:01006**) 01A70 (01A25)

Liu, Fêng Chê Approximation-extension properties of functions. *Proceedings of Asian Mathematical Conference*, 1990 (*Hong Kong*, 1990), 296–303, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93b:00022**) 26A15 (26A16)

— (*with* Granas, Andrzej; Lee, Jin-Rong) Théorème de minimax sans topologie ni convexité. [A minimax theorem involving neither topology nor convexity] *Colloq. Math.* **63** (1992), *no.* 2, 141–144. (Hubertus Th. Jongen) **93f:49010** 49J35 (49K35, 90D44)

Liu, G. C. *see* **Liu, Guang Chun**

Liu, G. L. *see* **Liu, Gao Lian**

Liu, G. P. Mean controllers for discrete systems. (English summary) *Internat. J. Systems Sci.* **23** (1992), *no.* 12, 2219–2230. (Hong-Gi Lee) **93k:93117** 93E15 (93C55)

— Input space and output performance in the frequency domain for critical systems. (English summary) *IEEE Trans. Automat. Control* **38** (1993), *no.* 1, 152–155. 93B51 (93C05)

Liu, G.-Q. (*with* Ge, Mo Lin; Jing, Nai Huan) On quantum groups for Z_N models. *J. Phys. A* **25** (1992), *no.* 13, L799–L806. (Summary) **93d:82031** 82B23 (17B37, 81R50)

Liu, G. X. *see* **Liu, Guang Xu**

Liu, Gang Block implicit mixed one-step methods with higher-order derivatives. (Chinese. Chinese summary) *Acta Math. Sci.* (*Chinese*) **12** (1992), *no.* 2, 188–198. (Ming Zhu Liu)

93k:65060 65L05

Liu, Gao Lian (*with* Wang, Chung-Lie) Inverses and variants of inequalities of l_p norms for matrices. Proceedings of the Twentieth Manitoba Conference on Numerical Mathematics and Computing (Winnipeg, MB, 1990). *Congr. Numer.* **80** (1991), 299–304. (Summary) **93a:15024** 15A45 (65F35)

— (*with* Wang, Chung-Lie) Hölder inequality and its applications in Banach algebras. Proceedings of the Twenty-first Manitoba Conference on Numerical Mathematics and Computing (Winnipeg, MB, 1991). *Congr. Numer.* **86** (1992), 43–53. (Sever S. Dragomir) **93i:26017** 26D15 (46H05)

Liu, Gengshen Application of EKF technique to ship resistance measurement. (English summary) *Automatica J. IFAC* **29** (1993), *no.* 2, 275–283. 93C95

Liu, Guang Chun (*with* Cheng, Yi[1]; Ge, Mo Lin; Xue, Kang) New solutions of Yang-Baxter equation and new link polynomials. *J. Knot Theory Ramifications* **1** (1992), *no.* 1, 31–46. (Summary) **93d:57012** 57M25 (20F36, 82B23)

Liu, Guang Rong Nonnegative solutions to the matrix equation $AX = XB$. (Chinese) *Hunan Jiaoyu Xueyuan Xuebao (Ziran Kexue)* **10** (1992), *no.* 2, 28–33. (Shao Kuan Li) **93c:15014** 15A24 (15A48)

Liu, Guang Xu Asymptotic solutions of the vector nonlinear boundary value problems. *Approximation, optimization and computing*, 129–132, *North-Holland, Amsterdam*, 1990. (*see* **93a:41001**) 65L10 (34B15)

— (*with* Shi, Yu Ming) Mixed boundary value problems for nth-order differential equations. I. Existence theorems. (Chinese. English summary) *Gaoxiao Yingyong Shuxue Xuebao* **6** (1991), *no.* 4, 581–590. (Man Kam Kwong) **93f:34048** 34B15

— (*with* Chang, K. W.) Boundary and angular layer behavior in singularly perturbed quasilinear systems. (English summary) *Recent trends in differential equations*, 71–81, *World Sci. Ser. Appl. Anal.*, 1, *World Sci. Publishing, River Edge, NJ*, 1992. (Vasiliy Pavlovich Yakovets) **93h:34090** 34E15

Liu, Guang Yao Notes on blow-up of solutions to a class of quasilinear parabolic equations. (Chinese. English summary) *Math. Appl.* **4** (1991), *no.* 2, 101–105. (L. Hsiao) **93b:35008** 35B05 (35K55)

Liu, Guang Zhong (*with* Han, Guang Xue) Optimality conditions in multiobjective quasidifferentiable programming. (English summary) *Pure Math. Appl. Ser. B* **2** (1991), *no.* 4, 227–238 (1992). (Juan García Laguna) **93m:90070** 90C29 (49J52)

— (*with* Han, Guang Xue) Optimality conditions for multi-objective subdifferentiable programming. (Chinese. English summary) *J. Chengdu Univ. Sci. Tech.* **1992**, *no.* 1, 39–46. 90C29 (49J52)

Liu, Gui Long (*with* Gao, Wei Dong) Congruence and the chromatic number. (Chinese. English summary) *Acta Sci. Natur. Univ. Jilin.* **1991**, *no.* 4, 30–32. (Summary) **93c:05049** 05C15

— (*with* Meng, Lan Ying; Liu, Lin) Strongly prime modules and strongly prime radicals. (Chinese. English summary) *Dongbei Shida Xuebao* **1991**, *no.* 2, 9–12. (Summary) **93b:16033** 16N60

Liu, Gui Zhen On Enomoto and Saito's conjecture. (Chinese. English summary) *Shandong Daxue Xuebao Ziran Kexue Ban* **26** (1991), *no.* 3, 282–285. (Summary) **93c:05095** 05C70

— (*with* Alspach, Brian; Heinrich, Katherine) Some results on orthogonal factorizations. (Chinese. English and Chinese summaries) *Adv. in Math. (China)* **21** (1992), *no.* 2, 211–215. (Zhong Fu Zhang) **93g:05114** 05C70

— (*with* Chen, Ci Ping) Toughness of graphs and $[a, b]$-factors with prescribed properties. (English summary) *J. Combin. Math. Combin. Comput.* **12** (1992), 215–221. (Summary) **93i:05097** 05C70

— Pseudo-matching covered graphs. (Chinese. English and Chinese summaries) *Shandong Daxue Xuebao Ziran Kexue Ban* **27** (1992), *no.* 4, 391–394. (Summary) **93m:05153** 05C70

— Paths between two vertices in a tree graph. (English summary) *Systems Sci. Math. Sci.* **5** (1992), *no.* 2, 108–110. (Cun-Quan Zhang) **93k:05046** 05C05 (05C38)

Liu, Gui Zhong Regular spaces and hyper-spaces. (English summary) *J. Math. Res. Exposition* **12** (1992), *no.* 3, 319–338. (José Bonet) **93i:46012** 46A13 (46F05, 46M35, 47B99)

Liu, H. Q. (*with* Xia, R. W.) First and second order sensitivity analysis of shape optimization based on variational method. *Approximation, optimization and computing*, 267–270, *North-Holland, Amsterdam*, 1990. (*see* **93a:41001**) 49Q12

Liu, Ha Sheng (*with* Wu, Cong Xin) On RSu integral of interval-valued functions and fuzzy-valued functions. (English summary) *Fuzzy Sets and Systems* **55** (1993), *no.* 1, 93–106. 28E10 (04A72)

Liu, Han Bing (*with* Chen, Su Huan) Shape design-sensitivity analysis for structural dynamic character using BEM. *Theory and applications of boundary element methods (Beijing, 1991)*, 407–412, *Internat. Acad. Publ., Beijing*, 1991. (*see* **93b:65008**) 73V10 (65K10, 65N38)

Liu, Han Ch'u (*with* Lin, Chê Yen) On selecting a subset containing the most probable multinomial event. *Comm. Statist. Theory Methods* **20** (1991), *no.* 10, 3381–3387. (S. Panchapakesan) **93a:62024** 62F07

Liu, He Guo (*with* Qian, Ji Lin) An inequality for the multiplicities of matrix eigenvalues. (Chinese. English summary) *J. Central China Normal Univ. Natur. Sci.* **25** (1991), *no.* 3, 384–386. (Summary) **93c:15011** 15A18

— Solvable SD_2-groups of infinite order. (Chinese. Chinese summary) *Acta Math. Sinica* **35** (1992), *no.* 3, 339–349. (Pin Chao Wang) **93k:20055** 20F16

Liu, He Ping The weak H^p spaces on homogeneous groups. *Harmonic analysis (Tianjin, 1988)*, 113–118, *Lecture Notes in Math.*, 1494, *Springer, Berlin*, 1991. (Mario Milman) **93k:42015** 42B30 (42B20)

— (*with* Zhang, Yan[2]) Criterion of L^2-boundedness for a class of oscillatory integrals. *Approx. Theory Appl.* **7** (1991), *no.* 4, 1–5. (Stephen Buckley) **93e:42030** 42B20 (41A60)

Liu, He Tao (*with* Grimmer, Ronald) Integrodifferential equations with non-densely defined operators. *Differential equations with applications in biology, physics, and engineering (Leibnitz, 1989)*, 185–199, *Lecture Notes in Pure and Appl. Math.*, 133, *Dekker, New York*, 1991. (Qing Rong Liu) **93g:47088** 47N20 (34G10, 34K30, 45J05, 47D03)

— (*with* Grimmer, Ronald) Liapunov-Razumikhin methods for integrodifferential equations in Hilbert space. *Delay and differential equations (Ames, IA, 1991)*, 9–24, *World Sci. Publishing, River Edge, NJ*, 1992. (H. Brunner) **93f:45013** 45J05 (34K20, 34K30, 47N20)

Liu, Hong Fei (*with* Huang, Shou-Hsuan Stephen; Viswanathan, Venkatraman) A sublinear parallel algorithm for some dynamic programming problems. (English summary) *Theoret. Comput. Sci.* **106** (1992), *no.* 2, 361–371. (Summary) **93j:90124** 90C39 (68Q22, 68Q25)

Liu, Hong Ya (*with* Wesson, Paul S.) Exact solutions of general relativity derived from 5-D "black hole" solutions of Kaluza-Klein theory. (English summary) *J. Math. Phys.* **33** (1992), *no.* 11, 3888–3891. (Nora Bretón Báez) **93i:83062** 83C57 (83C15, 83E15)

Liu, Hore Yuan (*with* Wang, Chi Hsu; Wen, Rong Sheng) Pipelined computations of B-spline curve. *IEEE Trans. Systems Man Cybernet.* **22** (1992), *no.* 2, 327–331. 65D17 (65D07)

Liu, Howard (*with* Chang, Yih-Long; Shen, Sheldon) Analysis of a CSMA/CD priority protocol. (English summary) *Internat. J. Inform. Management Sci.* **2** (1991), *no.* 2, 101–133. (Summary) **93f:90063** 90B12 (68M20)

Liu, Huai Jun Some problems in pansystems approximation theory. *Approximation, optimization and computing*, 133–134, *North-Holland, Amsterdam*, 1990. (*see* **93a:41001**) 41A30

Liu, Hui *see* **Dauben, Joseph W., 93a:01009**; **Feng, Li Sheng, (93i:01004)**; **Guo, Shi Rong, (93i:01005)** *and* **Feng, Li Sheng, (93i:01005)**

Liu, Hui Li Harmonic indefinite metrics, harmonic tensors and harmonic immersions. *Northeast. Math. J.* **7** (1991), *no.* 4, 397–405. (Paul E. Ehrlich) **93g:53092** 53C50 (58E20)

— Minimal submanifolds and harmonic mappings of pseudo-Riemannian manifolds. (Chinese. English summary) *J. Northeast Univ. Tech.* **13** (1992), *no.* 1, 94–100. (S. Walter Wei) **93h:53064** 53C42 (58E20)

— Minimal immersion of pseudo-Riemannian manifolds. *Tsukuba J. Math.* **16** (1992), *no.* 1, 1–10. (Bang-yen Chen) **93f:53052** 53C42 (53C50)

Liu, Hung-Kung (*with* Hwang, Jiunn Tzon) Existence and nonexistence theorems of finite diameter sequential confidence regions for errors-in-variables models. *Statist. Probab. Lett.* **13** (1992), *no.* 1, 45–55. (K. F. Yu) **93a:62045** 62F25 (62L12)

Liu, I-Shih Extended thermodynamics of viscoelasticity. *Thermodynamics and kinetic theory (Mądralin, 1990)*, 93–106, *Ser. Adv. Math. Appl. Sci.*, 12, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93a:82002**) 73F15 (73B30)

— On interface equilibrium and inclusion problems. (English summary) *Contin. Mech. Thermodyn.* **4** (1992), *no.* 3, 177–186. (Introduction) **93f:73015** 73B30 (73C99)

Liu, J. *see* **Liu, Jun**

Liu, J. C. *see* **Liu, Chêng Ch'uan**

Liu, J. Q. *see* **Liu, Jia Quan**

Liu, J.-S. *see* **Liu, Chin Hsing**

Liu, James T. (*with* Dolan, L.) Running gauge couplings and thresholds in the type-II superstring. (English summary) *Nuclear Phys. B* **387** (1992), *no.* 1, 86–96. 81T30 (81V22)

Liu, Ji Zhi Isotropic submanifolds in spaces with constant curvature. (Chinese. English summary) *Beijing Shifan Daxue Xuebao* **27** (1991), *no.* 4, 385–392. (An-Min Li) **93c:53045** 53C40 (53C42)

Liu, Jia (*with* Luo, Yue Hu) One-rank perturbation problems for the class $(D)^m$ of operators. (Chinese. English summary) *J. Systems Sci. Math. Sci.* **11** (1991), *no.* 3, 207–216. (Jin-Chuan Hou) **93b:47021** 47A55

Liu, Jia Qi (*with* Kuang, Zheng; Han, Bo) A modified algorithm for the PST method. (English summary) *Mathematical and intelligent models in system simulation, I, II (Brussels, 1990)*, 17–19, *IMACS Ann. Comput. Appl. Math.*, 10, 11, *Baltzer, Basel*, 1991. (*see* **93c:93005**) 65N99 (35R30)

— (*with* Han, Bo) A widely convergent method (CHM) for the inverse problem of operator identification. (English summary) *Computational and applied mathematics, II (Dublin, 1991)*, 253–258, *North-Holland, Amsterdam*, 1992. (*see* **93j:00008**) 65P05

Liu, Jia Quan Multiple solutions for Hamiltonian systems with periodic nonlinearity and strong resonance. *Acta Math. Sci. (English Ed.)* **11** (1991), *no.* 4, 417–423. (Michele Matzeu) **93i:34076** 34C25 (49J40, 58F22, 70H05)

— (*with* Zhang, Gong Qing) Morse theory under general boundary conditions. (English summary) *Systems Sci. Math. Sci.* **4** (1991), *no.* 1, 78–83. (Maria Letizia Bertotti) **93i:58029** 58E05 (57R70)

— (*with* Li, Shu Jie) Nontrivial critical points for asymptotically quadratic function. *J. Math. Anal. Appl.* **165** (1992), *no.* 2, 333–345. (Laurent Véron) **93d:58027** 58E05 (35J65, 47H99, 49R05)

Liu, Jia Shan *see* **Lecture notes in contemporary mathematics, 93d:00033**

Liu, Jian (*with* Qian, Ming Hai; Wu, Hong Ji; An, Li Bang) A study on saddle point programming and geometric error evaluation theory. (Chinese. English and Chinese summaries) *J. Dalian Univ. Tech.* **33** (1993), *no.* 1, 33–38. 49J35 (90C30)

Liu, Jian[3] (*with* Brockwell, Peter J.) Estimating the noise parameters from observations of a linear process with stable innovations. (English summary) *J. Statist. Plann. Inference* **33** (1992), *no.* 2, 175–186. (Paul Embrechts) **93j:62220** 62M10 (62F12)

— (*with* Brockwell, Peter J.; Tweedie, Richard L.) On the existence of stationary threshold autoregressive moving-average processes. *J. Time Ser. Anal.* **13** (1992), *no.* 2, 95–107. (Summary) **93k:62180** 62M10

— Spectral radius, Kronecker products and stationarity. *J. Time Ser. Anal.* **13** (1992), *no.* 4, 319–325. (Tarmo Pukkila) **93k:62187** 62M10 (60G10)

— (*with* Davis, Richard Alan; Knight, Keith) M-estimation for autoregressions with infinite variance. *Stochastic Process. Appl.* **40** (1992), *no.* 1, 145–180. (Pham Dinh Tuan) **93c:62145** 62M10 (62F12, 62F35)

Liu, Jian Guo (*with* Xin, Zhou Ping) L^1-stability of stationary discrete shocks. *Math. Comp.* **60** (1993), *no.* 201, 233–244. (Benoit Perthame) **93d:35097** 35L65 (35L67, 65M12)

Liu, Jian Yong (*with* Liu, Ke) Bellman's optimal principle in average cost problem. *Southeast Asian Bull. Math.* **16** (1992), *no.* 1, 71–80. (Summary) **93c:90103** 90C40 (49L20)

— (*with* Liu, Ke) Markov decision programming—the first passage model with denumerable state space. (English summary) *Systems Sci. Math. Sci.* **5** (1992), *no.* 4, 340–351. (Linn I. Sennott) **93j:90125** 90C40 (60J10)

Liu, Jian Zhou (*with* Xie, Qing Ming) Eigenvalue inequalities for products of self-conjugate quaternion matrices. (Chinese. English and Chinese summaries) *J. Math. Res. Exposition* **12** (1992), *no.* 3, 379–384. 15A42

— (*with* Xie, Qing Ming) Some properties of the Hadamard product and the Kronecker product of generalized positive definite matrices. (Chinese. English and Chinese summaries) *J. Math. (Wuhan)* **12** (1992), *no.* 2, 155–161. (Ying Chen Yang) **93m:15047** 15A69 (15A18)

Liu, Jin E (*with* Xu, Kan) Limit behavior of convolution sequences of probability measures on compact commutative semigroups. (Chinese. English summary) *J. Systems Sci. Math. Sci.* **12** (1992), *no.* 1, 89–93. 60B15

Liu, Jin Quan Simultaneous estimation of mean parameters of some discrete distributions under a class of weighted loss functions. (Chinese. English summary) *Acta Sci. Natur. Univ. Jilin.* **1991**, *no.* 3, 31–36. 62F10

— (*with* Zhou, Guang Ya) The problem of robustness of loss functions. (Chinese. English summary) *Acta Sci. Natur. Univ. Jilin.* **1991**, *no.* 4, 10–14. 62F10 (62C99, 62F35)

Liu, Jin Shan An efficient procedure for estimating two seemingly unrelated regressions. *Chinese Sci. Bull.* **36** (1991), *no.* 13, 1062–1064. 62J05

Liu, Jin Xian (*with* Tang, Gong You; Liu, Yong Qing) Weighted vector norm form Lyapunov functions and their application in stability of large-scale discrete systems. (Polish summary) *Systems Sci.* **17** (1991), *no.* 1, 5–15. (Engin Yaz) **93f:93119** 93D30 (34D20, 39A11, 93A15, 93D20)

Liu, Jing Lin J selfadjoint extensions of J symmetric operators. (Chinese. English and Chinese summaries) *Nei Mongol Daxue Xuebao Ziran Kexue* **23** (1992), *no.* 3, 312–316. (Wen Ming Li) **93i:47049** 47B50 (47A20, 47E05)

— An attractor for a nonlinear dynamical system. (Chinese. English and Chinese summaries) *Nei Mongol Daxue Xuebao Ziran Kexue* **23** (1992), *no.* 4, 455–464. (Summary) **93j:35094** 35K57 (34G20, 47H20, 47N20)

Liu, Jing-Sin *see* **Liu, Chin Hsing**

Liu, Jingyu Precedence probabilities and their applications. *Comm. Statist. Theory Methods* **21** (1992), *no.* 6, 1667–1682. (Summary) **93e:62139** 62G30 (62N05)

Liu, Jiping (*with* Chen, Chuan Chong; Yu, Qing Lin) On the classification of 2-extendable Cayley graphs on dihedral groups. (English summary) *Australas. J. Combin.* **6** (1992), 209–219. (Summary) **93i:05071** 05C25

Liu, Jiu Qiang (*with* Alavi, Yousef; McCanna, Joseph; Erdős, Paul) On the minimum size of graphs with a given bandwidth. (English summary) *Bull. Inst. Combin. Appl.* **6** (1992), 22–32. (Summary) **93g:05071** 05C35 (05C78)

— (*with* Alavi, Yousef; Wang, Jian Fang; Zhang, Zhong Fu) On total covers of graphs. Special volume to mark the centennial of Julius Petersen's "Die Theorie der regulären Graphs", Part I. *Discrete Math.* **100** (1992), *no.* 1-3, 229–233. (Linda Lesniak) **93h:05120** 05C70

— (*with* Alavi, Yousef; Wang, Jian Fang) Highly irregular digraphs. (English summary) Graph theory and combinatorics (Marseille-Luminy, 1990). *Discrete Math.* **111** (1993), *no.* 1-3, 3–10. (Summary) **93j:05063** 05C20

Liu, Joseph W. H. (*with* Ng, Esmond G.; Peyton, Barry W.) On finding supernodes for sparse matrix computations. (English summary) *SIAM J. Matrix Anal. Appl.* **14** (1993), *no.* 1, 242–252. (Summary) **93h:65064** 65F50 (65Y20)

— (*with* Bhat, M. V.; Habashi, W. G.; Nguyen, V. N.; Peeters, M. F.) A note on nested dissection for rectangular grids. (English summary) *SIAM J. Matrix Anal. Appl.* **14** (1993), *no.* 1, 253–258. 65F50

— (*with* Eisenstat, Stanley C.) Exploiting structural symmetry in a sparse partial pivoting code. (English summary) *SIAM J. Sci. Comput.* **14** (1993), *no.* 1, 253–257. 65F50 (65F05)

Liu, Jun (*with* Zohdy, Mohamed A.; Fadali, M. S.) Variable structure control using system decomposition. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 10, 1514–1517. (Summary) **93g:93019** 93B12

Liu, Jun (*with* Wang, Zhao Ming; Liu, Chang Xiao) A study on relations between inputs and outputs of neurons and computational properties of neural networks. (Chinese. English and Chinese summaries) *Dianzi Keji Daxue Xuebao* **21** (1992), *no.* 2, 127–132. 68T05 (92B20)

Liu, Jun A multiresolution method for distributed parameter estimation. (English summary) *SIAM J. Sci. Comput.* **14** (1993), *no.* 2, 389–405. (Summary) **93i:65124** 65P05 (35R30, 93B10)

Liu, Jun[1] The action of harmonic condition on the study of gravitational waves. (English summary) *Sci. China Ser. A* **35** (1992), *no.* 2, 186–199. (A. H. Taub) **93h:83020** 83C35 (83C25)

Liu, K. *see* **Liu, Ketao**

Liu, Kai (*with* Lewis, Frank L.) Nonlinear feedback control of a nuclear reactor system. (English summary) *Mathematics of the analysis and design of process control (Dublin, 1991/Lille, 1991)*, 193–200, *North-Holland, Amsterdam*, 1992. (*see* **93g:93004**) 93B52

— (*with* Lewis, Frank L.) An improved result on the stability analysis of nonlinear systems. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 9, 1425–1431. (Summary) **93f:93095** 93D05 (34D10, 34D99)

Liu, Kai Di The quasi-distribution law on rational grey number multiplication. (English summary) *J. Grey System* **4** (1992), *no.* 2, 143–152. 03E72

Liu, Ke (*with* Liu, Jian Yong) Bellman's optimal principle in average cost problem. *Southeast Asian Bull. Math.* **16** (1992), *no.* 1, 71–80. (Summary) **93c:90103** 90C40 (49L20)

— (*with* Liu, Jian Yong) Markov decision programming—the first passage model with denumerable state space. (English summary) *Systems Sci. Math. Sci.* **5** (1992), *no.* 4, 340–351. (Linn I. Sennott) **93j:90125** 90C40 (60J10)

Liu, Ke Jian (*with* Shi, Xi Quan[1]) Resampling method under dependent models. A Chinese summary appears in Chinese Ann. Math. Ser. A **13** (1992), no. 1, 131. *Chinese Ann. Math. Ser. B* **13** (1992), *no.* 1, 25–34. (Tapas K. Chandra) **93f:62064** 62G09

— A new class of biased estimate in linear regression. (English summary) *Comm. Statist. Theory Methods* **22** (1993), *no.* 2, 393–402. 62J05

Liu, Ke Qin The quantum Witt algebra and quantizations of some Witt-modules. *C. R. Math. Rep. Acad. Sci. Canada* **14** (1992), *no.* 1, 7–12. (Chang Pu Sun) **93e:17022** 17B37 (16W30, 17B70, 81R50, 82B23)

— Characterizations of the quantum Witt algebra. *Lett. Math. Phys.* **24** (1992), *no.* 4, 257–265. (Aleksandr Panov) **93i:17018** 17B37 (17B05)

Liu, Ke-shun (*with* Sun, Che) The characteristic-finite element analysis for nonlinear convection-diffusion problems. *Numerical methods for partial differential equations (Tianjin, 1991)*, 96–106, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93b:65006**) 65M60 (76M10, 76Rxx)

Liu, Kefeng On mod 2 and higher elliptic genera. (English summary) *Comm. Math. Phys.* **149** (1992), *no.* 1, 71–95. (Andrew J. Baker) **93i:57034** 57R20 (11F11, 58G10)

Liu, Ketao (*with* Grigoriadis, Karolos; Skelton, Robert E.) Optimizing linear controllers for finite precision synthesis using additive quantization models. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, I (Kobe, 1991)*, 543–548, *Mita, Tokyo*, 1992. (*see* **93g:93005**) 93B40

— (*with* Skelton, Robert E.; Grigoriadis, Karolos) Optimal controllers for finite wordlength implementation. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 9, 1294–1304. (Summary) **93f:93087** 93C83

Liu, Ko-Fei (*with* Mei, Chiang C.) Long waves in shallow water over a layer of Bingham-plastic fluid-mud. I. Physical aspects. (English summary) *Internat. J. Engrg. Sci.* **31** (1993), *no.* 1, 125–144. (Summary) **93i:86001a** 86A05 (73N20, 76A99)

— (*with* Mei, Chiang C.) Long waves in shallow water over a layer of Bingham-plastic fluid-mud. II. Mathematical derivation of long wave equations. (English summary) *Internat. J. Engrg. Sci.* **31** (1993), *no.* 1, 145–155. (Summary) **93i:86001b** 86A05 (73N20, 76A99)

Liu, Kun Hui Some results on random walks. (Chinese) *Acta Math. Sinica* **34** (1991), *no.* 5, 577–587. (Kai Long Ren) **93m:60150** 60J15

— Optimal impulse stochastic control in a local field. (Chinese. Chinese summary) *Acta Math. Sinica* **35** (1992), *no.* 3, 289–295. (Ning Mao Xia) **93j:93154** 93E20

Liu, L. C. (*with* Haider, Q.) Fourier or Bessel transformations of highly oscillatory functions. (English summary) *J. Phys. A* **25** (1992), *no.* 24, 6755–6760. 65T99 (65R10)

Liu, L. Y. (*with* Shyamasundar, R. K.) Compositional priority specification in real-time distributed systems. *Sadhana* **17** (1992), *no.* 1, 75–93. 68Q10 (68Q55)

Liu, Li Ming A limited repair and continuous review (Q, S) inventory model. (Chinese. English and Chinese summaries) *J. Huazhong Univ. Sci. Tech.* **20** (1992), *no.* 3, 77–82. 90B05

Liu, Li Ping[1] Causal relation analysis. (Chinese. English and Chinese summaries) *J. Huazhong Univ. Sci. Tech.* **20** (1992), *no.* 1, 13–20. 90A05

Liu, Li Shan (*with* Sun, Jing Xian) Existence and uniqueness of solutions to a class of nonincreasing operator equations. (Chinese. English and Chinese summaries) *Qufu Shifan Daxue Xuebao Ziran Kexue Ban* **18** (1992), *no.* 2, 9–13. (Yi Hong Du) **93f:47083** 47H15 (47H10)

Liu, Li Shi Kostant's formula for Kac-Moody Lie algebras. *J. Algebra* **149** (1992), *no.* 1, 155–178. (Yu Cai Su) **93d:17011** 17B10 (17B67)

Liu, Li Zhu (*with* Jiang, Zong Li; Wang, Yi He) Case-based reasoning: a new technique for artificial intelligence. (Chinese. English and Chinese summaries) *J. Harbin Inst. Tech.* **24** (1992), *no.* 3, 25–29. 68T27 (03B70)

Liu, Liao (*with* Zhao, Zheng) Unruh thermal fields are gauge fields. (Chinese. English and Chinese summaries) *Beijing Shifan Daxue Xuebao* **28** (1992), *no.* 2, 164–166. (Summary) **93h:83026** 83C47 (83C57)

— (*with* Li, Li Xin) Properties of radiation near the black-hole horizon and the second law of thermodynamics. (English summary) *Phys. Rev. D* (3) **46** (1992), *no.* 8, 3296–3301. (Summary) **93g:83067** 83C57 (83C47)

Liu, Lin (*with* Liu, Gui Long; Meng, Lan Ying) Strongly prime modules and strongly prime radicals. (Chinese. English summary) *Dongbei Shida Xuebao* **1991**, *no.* 2, 9–12. (Summary) **93b:16033** 16N60

Liu, Lin Zhong (*with* Zhang, Zhong Fu; Gu, Shou Huai; Zhang, Si Hai; Zhang, Lan) An algorithm of the shortest path for the network with negative arcs. (English summary) *Optimization, Vol. 1, 2 (Singapore, 1992)*, 294–296, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93d:90005**) 90C35

Liu, Lixin (*with* Russell, Robert D.) Linear system solvers for boundary value ODEs. (English summary) *J. Comput. Appl. Math.* **45** (1993), *no.* 1-2, 103–117. 65L10

Liu, Lu Qin The Hausdorff dimensions of the image, graph and level sets of a self-similar process. *Stochastics and quantum mechanics (Swansea, 1990)*, 178–188, *World Sci. Publishing, River Edge, NJ*, 1992. (Svend-Erik Graversen) **93j:60102** 60J25

Liu, Ming Chit (*with* Tsang, Kai Man) Small prime solutions of a pair of linear equations in five variables. *International Symposium in Memory of Hua Loo Keng, Vol. I (Beijing, 1988)*, 163–182, *Springer, Berlin*, 1991. (D. R. Heath-Brown) **93a:11085** 11P32 (11P55)

— (*with* Choi, Kwok-Kwong; Tsang, Kai Man) Conditional bounds for small prime solutions of linear equations. *Manuscripta Math.* **74** (1992), *no.* 3, 321–340. (D. R. Heath-Brown) **93a:11084** 11P32 (11M26)

Liu, Mu Lan Homomorphisms of 2-D de Bruijn-Good graphs. *Chinese Sci. Bull.* **35** (1990), *no.* 21, 1765–1768. (Zhe-xian Wan) **93m:05084** 05C20

— Automorphism group of 2-D de Bruijn-Good graph. *Chinese Sci. Bull.* **36** (1991), *no.* 4, 270–274. (Cheryl E. Praeger) **93b:20008** 20B25 (05C25)

— (*with* Lin, Dong Dai) Enumeration of linear recurring m-arrays. *Systems Sci. Math. Sci.* **4** (1991), *no.* 4, 368–373. (Bernard J. M. Smeets) **93d:94027** 94C05

— (*with* Lin, Dong Dai) Syntheses of arrays. (English summary) *Systems Sci. Math. Sci.* **5** (1992), *no.* 1, 70–80. (Zdzisław Grodzki) **93m:94049** 94B99

Liu, Nai Gong The generalized degree for 1-set contraction mapping perturbation of m-accretive operator and applications. *Nonlinear Anal.* **18** (1992), *no.* 7, 605–618. (A. G. Kartsatos) **93g:47077** 47H11 (47H06, 47H09, 47H15)

Liu, P. Y. (*with* Lin, D. Y.) Nonparametric sequential tests against ordered alternatives in multiple-armed clinical trials. (English summary) *Biometrika* **79** (1992), *no.* 2, 420–425. (Summary) **93h:62145** 62L10

Liu, Pei De Fefferman's inequalities and the conjugate space of ${}_a\widetilde{H}_p(X)$. (Chinese) *Chinese Ann. Math. Ser. A* **12** (1991), *no.* 3, 356–364. (Weixing Zheng) **93d:46024** 46B09 (42B25, 42B30, 46B20, 46E40, 60B12, 60G46)

— (*with* Gan, Shi Xin) A uniform integrability condition for B-valued martingales and geometric properties of Banach spaces. (Chinese. English and Chinese summaries) *Chinese J. Appl. Probab. Statist.* **7** (1991), *no.* 1, 18–23. (Summary) **93m:46007** 46B09 (60B11, 60G42)

— Martingale transforms and geometric properties of Banach spaces. (Chinese. English summary) *J. Wuhan Univ. Natur. Sci. Ed.* **1991**, *no.* 4, 1–10. (Summary) **93c:46014** 46B09

— Quasimartingale transformations and UMD spaces. (Chinese. Chinese summary) *Acta Math. Sci. (Chinese)* **12** (1992), *no.* 2, 166–175. (Ting Fu Wang) **93m:46029** 46E30 (46B09, 60B11, 60G48)

— (*with* Long, Rui Lin) Boundedness of several operators on martingale spaces and the geometry of Banach spaces. (English summary) A Chinese summary appears in Chinese Ann. Math. Ser. A **13** (1992), no. 2, 279. *Chinese Ann. Math. Ser. B* **13** (1992), *no.* 2, 167–179. (Xin Tai Yu) **93i:46030** 46B20 (46B09, 47B99, 47N30, 60G48)

— (*with* Hou, You Liang) Pettis integration and nuclearity in Fréchet spaces. (Chinese. English and Chinese summaries) *J. Wuhan Univ. Natur. Sci. Ed.* **1992,** *no.* 2, 1–8. (Summary) **93m:46046** 46G12 (46A11)

Liu, Pei Dong The R-stability of C^1 self-mapping orbit spaces. (Chinese) *Chinese Ann. Math. Ser. A* **12** (1991), *no.* 4, 415–421. (Ding Jun Luo) **93i:58090** 58F10 (58F15)

— (*with* Gong, Guang Lu; Qian, Min) Ruelle's inequality for the entropy of random diffeomorphisms. (English summary) *Sci. China Ser. A* **35** (1992), *no.* 9, 1056–1065. (M. L. Blank) **93j:58072** 58F11 (28D05, 28D20)

Liu, Philip L.-F. (*with* Yoon, Sung B.; Cho, Yong-Sik) Shoaling of wave groups in shallow water. (English summary) *Nonlinear dispersive wave systems (Orlando, FL, 1991)*, 41–56, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93f:00015**) 76B15

— (*with* Mei, Chiang C.) Surface waves and coastal dynamics. *Annual review of fluid mechanics, Vol. 25*, 215–240, *Annual Reviews, Palo Alto, CA*, 1993. (*see* **93h:76003**) 76B15 (86A05)

Liu, Pin (*with* Wang, Zheng Zhi[2]; Zhang, Liang Qi) The H^∞-optimal control problem in state space form. I. (Chinese. English summary) *Control Theory Appl.* **8** (1991), *no.* 4, 358–364. (Hua Lin Tan) **93a:93042** 93B36 (93B40)

— (*with* Wang, Zheng Zhi[2]; Zhang, Liang Qi) The H_∞ optimal control problem in state space form. II. (Chinese. English and Chinese summaries) *Control Theory Appl.* **9** (1992), *no.* 2, 129–134. (Summary) **93f:93049** 93B36

— (*with* Zhang, Zhong Jun) A Kalman filter with H_∞ error bound. (Chinese. English and Chinese summaries) *Control Theory Appl.* **9** (1992), *no.* 4, 343–348. (Min Sun) **93i:93123** 93E11 (93B36)

Liu, Ping A direct algorithm for determining complex bifurcation points of ordinary differential equations. (Chinese. English summary) *J. Central China Normal Univ. Natur. Sci.* **26** (1992), *no.* 1, 13–18. 34A50 (34C23)

Liu, Pu (*with* Wang, Cai Hua) Fuzzy stochastic multi-objective programming. *Approximation, optimization and computing*, 299–302, *North-Holland, Amsterdam*, 1990. (*see* **93a:41001**) 90C29 (90C70)

Liu, Pu Yin A class of fuzzy measures and their extension theorems. (Chinese. English summary) *Mohu Xitong yu Shuxue* **6** (1992), *no.* 1, 29–38, 47. (Cong Xin Wu) **93d:28033** 28E10 (04A72)

Liu, Qiang (*with* Li, Yan Zhao; Zhong, Wan Xie) The cutting problem for the layout of rectangle graph units in a rectangular domain. (Chinese. English summary) *J. Numer. Methods Comput. Appl.* **13** (1992), *no.* 3, 182–188. 90B10 (05C90)

Liu, Qin Sheng Some developments in methods for solving linear least squares problems. (Chinese) *Math. Practice Theory* **1991,** *no.* 4, 49–56. (Guo Liang Chen) **93d:65032** 65F05

Liu, Qing Courbes stables de genre 2 et leur schéma de modules. [Stable curves of genus 2 and their moduli scheme] *Math. Ann.* **295** (1993), *no.* 2, 201–222. (Luca Chiantini) **93m:14008** 14D20 (14D25, 14H25)

Liu, Qing Ping (*with* Marshall, Ian) Two modifications of Ito's equation. *Phys. Lett. A* **160** (1991), *no.* 2, 155–160. (Marek Antonowicz) **93b:58067** 58F07 (35Q58)

— A new integrable hierarchy of lattice equations. *J. Phys. A* **25** (1992), *no.* 12, 3603–3608. (From the summary) **93d:35160** 35Q58 (34L40, 58F07, 58F19)

Liu, Qing Rong Some problems on condensing mappings. (Chinese. English summary) *J. Northwest Univ.* **21** (1991), *no.* 3, 9–14. (Shulang Yang) **93j:47082** 47H09 (47H10)

Liu, Qiu-Sheng (*with* Ohno, Katsuhisa; Sumita, Ushio) Structural properties of optimal tool replacement policy in a machining center. (English summary) *Oper. Res. Lett.* **11** (1992), *no.* 3, 179–185. (Summary) **93f:90083** 90B25

Liu, Quan Hui Deterministic properties contained in quantum systems with continuous spectrum. (Chinese. English and Chinese summaries) *Acta Phys. Sinica* **41** (1992), *no.* 5, 697–703. (Summary) **93f:81015** 81P05

— A precise correspondence relation of quantum mechanical matrix elements and Fourier amplitudes of a classical quantity. (Chinese. English and Chinese summaries) *Hunan Daxue Xuebao* **20** (1993), *no.* 2, 29–32. 81Q99

Liu, Qun Sheng Functional dependence of random variables. (Chinese. English and Chinese summaries) *Qufu Shifan Daxue Xuebao Ziran Kexue Ban* **19** (1993), *no.* 1, 61–66. 60E05 (62H20)

Liu, R. *see* **Liu, Ruey Wen**

Liu, Regina Y. Data depth and multivariate rank tests. (English summary) *L_1-statistical analysis and related methods (Neuchâtel, 1992)*, 279–294, *North-Holland, Amsterdam*, 1992. (Summary) **93m:62112** 62G10 (62H15)

— (*with* Singh, Kesar) Efficiency and robustness in resampling. *Ann. Statist.* **20** (1992), *no.* 1, 370–384. (Jan Mielniczuk) **93d:62097** 62G99 (62G20)

— (*with* Singh, Kesar) Ordering directional data: concepts of data depth on circles and spheres. (English summary) *Ann. Statist.* **20** (1992), *no.* 3, 1468–1484. (A. D. Gordon) **93h:62108** 62H11

Liu, Ren Huai (*with* Wu, Jian Cheng) Nonlinear vibration of rectangular sandwich plates. (English summary) *Sci. China Ser. A* **35** (1992), *no.* 4, 472–486. 73K12 (73K10, 73K20)

Liu, Ren Ren Some results on the minimal covering of precomplete classes in partial K-valued logic. (Chinese. English and Chinese summaries) *Natur. Sci. J. Xiangtan Univ.* **14** (1992), *no.* 1, 123–129. (Fuxing Shen) **93h:03023** 03B50

Liu, Richard C. (*with* Donoho, David L.) Geometrizing rates of convergence. II, III. *Ann. Statist.* **19** (1991), *no.* 2, 633–667, 668–701. (M. Hušková) **93f:62066** 62G10 (62G05)

Liu, Rong (*with* Li, Bang He; Zhang, Ping[1]) A simplified approach to embedding problems in normal bordism framework. (English summary) *Systems Sci. Math. Sci.* **5** (1992), *no.* 2, 180–192. (R. E. Stong) **93i:57040** 57R40

Liu, Rong Guan (*with* Shi, Yong Bing) The maximum number of edges of an odd [even] cycle-distributed graph. (Chinese. English and Chinese summaries) *Shanghai Shifan Daxue Xuebao Ziran Kexue Ban* **21** (1992), *no.* 4, 21–23. (Summary) **93m:05101** 05C35 (05C38)

Liu, Ru Xun The design of characterizing-integral schemes and the application to the shallow water wave problems. *Appl. Math. Mech. (English Ed.)* **13** (1992), *no.* 3, 233–240; *translated from Appl. Math. Mech.* **13** (1992), *no.* 3, 215–222 (*Chinese. English summary*). (Summary) **93c:65111** 65M25 (76B15, 76M20)

Liu, Ru Ying The path chromatic number of graphs. (Chinese. English summary) *Neimenggu Shida Xuebao Ziran Kexue Ban* **1990,** *no.* 4, 14–18. (Fu Ji Zhang) **93b:05059** 05C15 (05C38)

Liu, Ruey Wen (*with* Tong, L.; Inouye, Y.) Waveform-preserving blind estimation of multiple independent sources. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, I (Kobe*, 1991), 607–612, *Mita, Tokyo*, 1992. (*see* **93g:93005**) 93E12

Liu, Rui Tang (*with* Guo, Dong Hui; Chen, Zhen Xiang; Wu, Bo Xi) A modified Hopfield model of neural networks. (Chinese. English and Chinese summaries) *Xiamen Daxue Xuebao Ziran Kexue Ban* **32** (1993), *no.* 1, 33–38. (Summary) **93m:92004** 92B20

Liu, Rui Zhi (*with* Duan, Guang Ren; Lü, Hai Bo) Eigenstructure assignment via state feedback for linear systems—a case with uncontrollable modes. (Chinese. English and Chinese summaries) *Heilongjiang Daxue Ziran Kexue Xuebao* **9** (1992), *no.* 3, 48–52. 93B55

Liu, Shao Min (*with* Hu, Shao Hua) A method of generating control rule model and its application. (English summary) *Fuzzy Sets and Systems* **52** (1992), *no.* 1, 33–37. 93C42 (04A72)

Liu, Shao Wu A class of commutative rings with n ($n > 5$) zero divisors. (Chinese. English summary) *Heilongjiang Daxue Ziran Kexue Xuebao* **9** (1992), *no.* 2, 13–16. (Summary) **93d:13012** 13A99

Liu, Shao Xue (*with* Beattie, Margaret; Fang, Hong Jin) Graded division rings and the Jacobson density theorem. (Chinese summary) *Beijing Shifan Daxue Xuebao* **27** (1991), *no.* 2, 129–134. (Patrick J. Morandi) **93a:16032** 16W50 (16K99)

— (*with* Năstăsescu, Constantin; Van Oystaeyen, Freddy) Graded modules over G-sets. II. *Math. Z.* **207** (1991), *no.* 3, 341–358. (Piotr Grzeszczuk) **93b:16078** 16W50

— Tensor products of path algebras and direct products of directed graphs. (Chinese. Chinese summary) *Chinese Ann. Math. Ser. A* **13** (1992), *no.* 2, 153–160. (Xiaodong Liu) **93h:16014** 16G10 (05C10)

Liu, Shao Yue (*with* Yang, Xiang Qun) Differential properties of standard three-point transition functions for two-parameter Markov chains. (Chinese. English and Chinese summaries) *Natur. Sci. J. Xiangtan Univ.* **14** (1992), *no.* 1, 23–25. 60J27

Liu, Sheng Mao The existence of the solutions for a class of semilinear evolution equations. (English summary) A Chinese summary appears in Chinese Ann. Math. Ser. A. **13** (1992), no. 5, 654. *Chinese Ann. Math. Ser. B* **13** (1992), *no.* 4, 507–512. (Ioan I. Vrabie) **93j:34090** 34G20 (35K55, 47N20)

Liu, Shi Da (*with* Liu, Shi Kuo) KdV-Burgers equation modelling of turbulence. (English summary) *Sci. China Ser. A* **35** (1992), *no.* 5, 576–586. (Summary) **93g:76072** 76F99 (86A10)

Liu, Shi Kuo (*with* Liu, Shi Da) KdV-Burgers equation modelling of turbulence. (English summary) *Sci. China Ser. A* **35** (1992), *no.* 5, 576–586. (Summary) **93g:76072** 76F99 (86A10)

Liu, Shi Ping Degrees of irreducible maps and the shapes of Auslander-Reiten quivers. *J. London Math. Soc.* (2) **45** (1992), *no.* 1, 32–54. (Sverre O. Smalø) **93f:16015** 16G10 (16G60, 16G70)

Liu, Shu Qin Another proof of L. de Branges' theorem. (Chinese. English summary) *J. Northwest Univ.* **21** (1991), *no.* 3, 122–124. (Summary) **93c:30024** 30C50

Liu, Shu Tang (*with* Yang, Ju Ping) Computation of long convolutions through Mersenne number transforms. (Chinese. English and Chinese summaries) *Xi'an Jiaotong Daxue Xuebao* **26** (1992), *no.* 5, 35–42. (Summary) **93k:65023** 65D99 (11Y16, 65Q05)

Liu, Shu Yi *see* **Progress in physical chemistry and mechanics, 93h:80001**

Liu, Shu Zhang (*with* Jia, Bao Fu; Lin, Wei Gan) A strong fluctuation theory and its development. (Chinese. English summary) *Dianzi Keji Daxue Xuebao* **20** (1991), *no.* 5, 473–480. (From the summary) **93a:78017** 78A45

Liu, Shuang Ying An almost-periodic solution to a system of linear differential equations. (Chinese. English summary) *Xiamen Daxue Xuebao Ziran Kexue Ban* **31** (1992), *no.* 3, 309–311. 34C27 (34A30)

Liu, Shuang Zhe (*with* Guan, Ying Nan) Applications of the theory of linear structure for Hankel matrices and matrix equations. (Chinese. English and Chinese summaries) *J. Northeast Univ. Tech.* **13** (1992), *no.* 2, 200–210. (Gong Ning Chen) **93m:15039** 15A57 (15A24)

Liu, Shyh-Chang (*with* Komo, John J.) Nonbinary Kasami sequences over GF(p). *IEEE Trans. Inform. Theory* **38** (1992), *no.* 4, 1409–1412. (Bernard J. M. Smeets) **93f:94013** 94A55 (94B50)

Liu, Si Feng The three axioms of buffer operator and their application to GM(1, 1) prediction. (English summary) *J. Grey System* **3** (1991), *no.* 1, 39–47. 93C42

Liu, T. S. (*with* Huang, G. R.) Fatigue reliability of structures based on probability and possibility measures. (English summary) *Comput. & Structures* **45** (1992), *no.* 2, 361–368. 73M25 (04A72)

Liu, Tai-Ping (*with* Xiao, Ling) Convergence to nonlinear diffusion waves for solutions of a system of hyperbolic conservation laws with damping. *Comm. Math. Phys.* **143** (1992), *no.* 3, 599–605. (M. Shearer) **93e:35072** 35L65 (76R50, 76S05)

— (*with* Xin, Zhou Ping) Stability of viscous shock waves associated with a system of non-strictly hyperbolic conservation laws. *Comm. Pure Appl. Math.* **45** (1992), *no.* 4, 361–388. (Darrell L. Hicks) **93k:35170** 35L65 (35L67, 73D40, 76L05)

Liu, Tian Shi (*with* Zhao, Bao Hua) Density of states of generalized Fibonacci chains. (Chinese. English and Chinese summaries) *J. Northeast Univ. Tech.* **13** (1992), *no.* 2, 216–220. 82B28

Liu, Tie Niu (*with* Xu, Dao Lin) Large range analysis for nonlinear dynamic systems—element mapping method. *Appl. Math. Mech. (English Ed.)* **13** (1992), *no.* 6, 577–586; *translated from Appl. Math. Mech.* **13** (1992), *no.* 6, 553–561 (*Chinese. English and Chinese summaries*). (Summary) **93g:65156** 65N55 (65H10, 65N30)

Liu, Vincent Xiaosong Instability for the Navier-Stokes equations on the 2-dimensional torus and a lower bound for the Hausdorff dimension of their global attractors. *Comm. Math. Phys.* **147** (1992), *no.* 2, 217–230. (Piotr Biler) **93f:35185** 35Q35 (58F12, 76D05, 76E30)

— An example of instability for the Navier-Stokes equations on the 2-dimensional torus. (English summary) *Comm. Partial Differential Equations* **17** (1992), *no.* 11-12, 1995–2012. (Summary) **93i:35106** 35Q30

Liu, W. Predictive screening. (English summary) *Comm. Statist. Theory Methods* **21** (1992), *no.* 8, 2349–2366. (J. A. Melamed) **93k:62068** 62F15

— Simultaneous prediction intervals for all distances from the "best". (English summary) *Comm. Statist. Theory Methods* **22** (1993), *no.* 2, 505–518. 62F25 (62J10)

Liu, W. B. *see* **Liu, Wen Bin**

Liu, W. S. *see* **Liu, Wen Sen**

Liu, Wan Quan (*with* Yan, Wei Yong) Control of descriptor decentralized control systems with no impulsive modes. (Chinese. English and Chinese summaries) *Control Theory Appl.* **9** (1992), *no.* 3, 232–237. 93A14

— (*with* Chu, Xue Dao) Feedback control of singular decentralized control systems with direct feedthrough. (English and Chinese summaries) *Qufu Shifan Daxue Xuebao Ziran Kexue Ban* **18** (1992), *suppl.*, 57–63. 93A14 (93B05)

— (*with* Xi, Yu Geng; Zhang, Zhong Jun) A geometric characterization of generalized decentralized systems. (Chinese. English and Chinese summaries) *Qufu Shifan Daxue Xuebao Ziran Kexue Ban* **18** (1992), *suppl.*, 71–76. 93A14 (93C05)

— (*with* Wang, En Ping) Impulsive controllability of generalized decentralized control systems. (Chinese. English and Chinese summaries) *Control Theory Appl.* **10** (1993), *no.* 1, 103–107. 93B05 (93A14)

Liu, Wang Jin (*with* Wang, Xue Ping[2]) Kronecker products of L-fuzzy matrices. (English summary) *Northeast. Math. J.* **8** (1992), *no.* 2, 201–207. (Summary) **93e:15014** 15A99 (04A72)

— (*with* Wang, Xue Ping[2]) Fuzzy regular subsemigroups in semigroups. (English summary) *Inform. Sci.* **68** (1993), *no.* 3, 225–231. (Summary) **93k:20093** 20M17 (04A72, 20N25)

Liu, Wei (*with* Mori, Masao) A location problem of an entering firm's facilities in a competitive environment. (English summary) *Asia-Pacific J. Oper. Res.* **9** (1992), *no.* 1, 31–43. 90B80

Liu, Wei Guo[2] (*with* Shi, Pei Lin) A generalization of an integral inequality of Wendroff type and the application in the characteristic initial value problem for the differential equation. *J. Harbin Inst. Tech.* **23** (1991), *no.* 5, 111–114. (B. G. Pachpatte) **93a:26015** 26D15

Liu, Wei Jiu Positive fixed point theorems for β-semidifferentiable k-set-contractive mappings with application to an infectious disease model. *Gaoxiao Yingyong Shuxue Xuebao* **7** (1992), *no.* 1, 91–101. (Introduction) **93k:47063** 47H15 (47H09, 47H10, 47N20, 92D30)

Liu, Wei Min (*with* Chin, Raymond C. Y.) Domain decomposition method and slow passage through a Hopf bifurcation. (English summary) *Fifth International Symposium on Domain Decomposition Methods for Partial Differential Equations* (*Norfolk, VA*, 1991), 250–257, *SIAM, Philadelphia, PA*, 1992. (*see* **93g:65009**) 65L99 (34A50, 34C23, 58F14)

Liu, Wei Qian (*with* Sun, Shen Chu) Numerical analysis for wave forces by boundary element method. *Theory and applications of boundary element methods* (*Beijing*, 1991), 473–474, *Internat. Acad. Publ., Beijing*, 1991. (*see* **93b:65008**) 76M15 (65N38)

Liu, Wei Yi An efficient algorithm for processing multi-relation queries in relational databases. *J. Comput. Sci. Tech.* (*English Ed.*) **5** (1990), *no.* 3, 236–240. (Vijay V. Raghavan) **93h:68033** 68P15 (68Q25)

— The reduction of the fuzzy data domain and fuzzy consistent join. (English summary) *Fuzzy Sets and Systems* **50** (1992), *no.* 1, 89–96. 68P15 (04A72)

Liu, Weiguo *see* **Liu, Wei Guo[2]**

Liu, Wen An extension of a strong law of large numbers of Markov chains. *Approximation, optimization and computing*, 135–137, *North-Holland, Amsterdam*, 1990. (Summary) **93b:60144** 60J10 (60F15)

Liu, Wen Bin Boundary value problems for the Thomas-Fermi equation. (Chinese. English summary) *Acta Sci. Natur. Univ. Jilin.* **1991**, *no.* 2, 26–35. (Summary) **93c:34056** 34B15 (34B30)

— (*with* Rubio, J. E.) Maximum principles for optimal controls for elliptic variational inequalities of the second kind. *IMA J. Math. Control Inform.* **8** (1991), *no.* 3, 211–230. (Urszula Ledzewicz) **93b:49028** 49K20 (35B50, 35J85, 49J40)

— (*with* Zhou, Qin De) Singular boundary value problems. (Chinese. Chinese summary) *Chinese Ann. Math. Ser. A* **13** (1992), *suppl.*, 15–21. (Shao Zhu Chen) **93i:34040** 34B15

— (*with* Rubio, J. E.) Optimal shape design for systems governed by variational inequalities. III. Necessary conditions in the elliptic case. *J. Optim. Theory Appl.* **74** (1992), *no.* 2, 273–304. (Summary) **93h:49061** 49Q10 (49J40, 49K20)

Liu, Wen Sen (*with* Tombesi, P.) Eigenstates of a time-dependent quadratic Hamiltonian, a kind of generalized squeezed number states. (English summary) *Nuovo Cimento B* (11) **107** (1992), *no.* 5, 595–602. (K. Wódkiewicz) **93f:81049** 81R30 (81V80)

Liu, Wen Xiong (*with* Friedman, Avner) An augmented drift-diffusion model in a semiconductor device. (English summary) *J. Math. Anal. Appl.* **168** (1992), *no.* 2, 401–412. (Summary) **93d:35162** 35Q60 (82D99)

Liu, Wen Yu (*with* Zhu, Yao Ting; Zhu, Guang Xi) A description of fractal and natural texture. (Chinese. English and Chinese summaries) *J. Huazhong Univ. Sci. Tech.* **20** (1992), *no.* 4, 45–50. 68U10

Liu, X. (*with* Klein, D. J.) Theorems for carbon cages. (English summary) Concepts in mathematical chemistry (Bled, 1991). *J. Math. Chem.* **11** (1992), *no.* 1-3, 199–205. (Summary) **93h:92041** 92E10

Liu, Xi Yuan[1] (*with* Yang, Zhi) An optimal prediction algorithm for self-tuning pole assignment PID controllers of systems with time-varying fractional delays. (Chinese. English and Chinese summaries) *Control Theory Appl.* **9** (1992), *no.* 3, 292–295. 93B55

Liu, Xian Gao Existence of multiple solutions to variable coefficient elliptic equations with critical Sobolev exponents. (Chinese. English and Chinese summaries) *Hunan Daxue Xuebao* **19** (1992), *no.* 2, 106–112. (Zhi Ren Jin) **93j:35079** 35J65 (35B99)

Liu, Xiang Yang Bloch functions of several complex variables. *Pacific J. Math.* **152** (1992), *no.* 2, 347–363. (Richard M. Timoney) **93b:32033** 32H02 (32A17)

Liu, Xiao Chun *see* **Progress in physical chemistry and mechanics, 93h:80001**

Liu, Xiao Fan (*with* Xie, Wei Xin; Guo, Chun Biao) A fuzzy region feature method in fuzzy pyramid data structures. (Chinese. English and Chinese summaries) *Xi'an Jiaotong Daxue Xuebao* **26** (1992), *no.* 4, 115–125. 68T10 (04A72)

Liu, Xiao-Gao (*with* Buzacott, John A.) The reversibility of cyclic queues. (English summary) *Oper. Res. Lett.* **11** (1992), *no.* 4, 233–241. (Gunter Ritter) **93k:68014** 68M20 (60K25, 90B22)

Liu, Xiao Hua The L_1-exact penalty function in Lipschitz programming. (Chinese. English and Chinese summaries) *Math. Appl.* **5** (1992), *no.* 2, 7–12. (Xiao Dong Hu) **93f:90152** 90C30

Liu, Xiao Ping[2] (*with* Zhang, Si Ying) Three-level Stackelberg strategies in linear-quadratic descriptor system. (English, Russian and Polish summaries) *Control Cybernet.* **20** (1991), *no.* 3, 73–83. 90D25 (49N10, 93C55)

— (*with* Zhang, Si Ying) Stackelberg strategies for singular dynamic games. (Russian and Lithuanian summaries) *Informatica* **2** (1991), *no.* 2, 233–247, 315, 323. (Summary) **93a:90095** 90D25

— (*with* Zhang, Si Ying) Three-level Stackelberg strategies in linear-quadratic singular systems. (English, Russian and Lithuanian summaries) *Informatica* **2** (1991), *no.* 3, 414–433, 460, 467. 49Q10 (90A05, 93A13)

— Output regulation of strongly coupled symmetric composite systems. (English summary) *Automatica J. IFAC* **28** (1992), *no.* 5, 1037–1041. (Summary) **93f:93011** 93A15 (93C35)

— (*with* Zhang, Si Ying) Optimal incentive strategy for leader-follower games. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 12, 1957–1961. (Summary) **93j:90142** 90D26 (90D40)

— (*with* Zhang, Si Ying; Wang, Jing Cai) Differential geometry algorithms and nonlinear control systems. V. (Chinese. English summary) *Inform. and Control* (*Shenyang*) **21** (1992), *no.* 5, 288–294. 93B29 (93C10)

— (*with* Zhang, Si Ying) Comments on: "Stabilization of interconnected uncertain discrete systems via decentralized control" [Inform. Decision Tech. **15** (1989), no. 3, 163–177] by A. A. Bahnasawi, A. S. Al-Fuhaid and M. S. Mahmoud. With a response by Bahnasawi, Al-Fuhaid and Mahmoud. *Inform. Decision Tech.* **18** (1992), *no.* 3, 221–222, 223. 93D15 (93A15)

— Symmetric structures and disturbance decoupling of nonlinear control systems. (Chinese. English and Chinese summaries) *J. Northeast Univ. Tech.* **13** (1992), *no.* 3, 248–252. 93C10 (93B51)

— (*with* Wang, Jing Cai; Zhang, Si Ying) The canonical form of uncontrollable nonlinear control systems. (English summary) *Sci. China Ser. A* **35** (1992), *no.* 7, 889–896. (Claude H. Moog) **93i:93024** 93B10 (93B27, 93C10, 93C15)

Liu, Xiao Qing (*with* Kim, Junguk L.) An efficient parallel sorting algorithm. *Inform. Process. Lett.* **43** (1992), *no.* 3, 129–133. (From the introduction) **93i:68079** 68Q22 (68P10)

Liu, Xiao Shi Pointwise compactness of pointwise topologies on lattices. (Chinese. English and Chinese summaries) *J. Chengdu Univ. Sci. Tech.* **1992,** *no.* 2, 35–40. 54A40 (04A72, 06F30, 54H12)

Liu, Xiao Xian Stability of grey symmetric systems. (English summary) *J. Grey System* **3** (1991), *no.* 1, 27–37. 93C42 (93D05)

Liu, Xiao Yan (*with* Iserles, Arieh; Saff, E. B.) On zeros of Hankel determinants with iterated polynomial entries. (English summary) IMA Conference on Dynamics of Numerics and Numerics of Dynamics (Bristol, 1990). *IMA J. Numer. Anal.* **12** (1992), *no.* 3, 387–403. (Kiyoko Nishizawa) **93m:58093** 58F23 (11Z50, 30D05, 65H05)

Liu, Xiao Zhong (*with* Li, Kai Tai) Bifurcation with symmetry breaking for the flow between two concentric rotating spheres. (English summary) *Proceedings of International Conference on Scientific Computation* (*Hangzhou*, 1991), 86–108, *Ser. Appl. Math.*, 1, *World Sci. Publishing, River Edge, NJ*, 1992. (G. W. Hedstrom) **93h:65083** 65J15 (35B32, 65H17, 65N30, 76D05, 76E99)

Liu, Xiaoping *see* **Liu, Xiao Ping[2]**

Liu, Xiaosong Gevrey class regularity and approximate inertial manifolds for the Kuramoto-Sivashinsky equation. *Phys. D* **50** (1991), *no.* 1, 135–151. (Paul G. Schmidt) **93a:35124** 35Q35 (35B45, 35B65, 80A25)

— A note on Gevrey class regularity for the solutions of the Navier-Stokes equations. *J. Math. Anal. Appl.* **167** (1992), *no.* 2, 588–595. (I. Aganović) **93i:35107** 35Q30 (76D05)

Liu, Xin[2] (*with* Zhang, Fu Ji; Li, Xue Liang; Huang, Qiong Xiang) Digraph categories and line digraph functors. (English summary) A Chinese summary appears in Chinese Ann. Math. Ser. A **13** (1992), no. 4, 517. *Chinese Ann. Math. Ser. B* **13** (1992), *no.* 3, 368–373. (R. L. Hemminger) **93j:05073** 05C20 (05C99, 18A99)

— (*with* Huang, Qiong Xiang) The lower boundary of strong connectivity of circulant digraphs. (Chinese) *Math. Appl.* **5** (1992), *no.* 1, 120–121. (Cun-Quan Zhang) **93b:05099** 05C40 (05C20, 05C25)

Liu, Xin Xin (*with* Larsen, Kim G.) Compositionality through an operational semantics of contexts. *J. Logic Comput.* **1** (1991), *no.* 6, 761–795. (Gabriel Ciobanu) **93h:68087** 68Q60 (03B70, 68Q10, 68Q55)

Liu, Xing Ping Convergence of some iterative methods. (Chinese. English summary) *J. Numer. Methods Comput. Appl.* **13** (1992), *no.* 1, 58–64. 65F10

Liu, Xing Shu (*with* Li, Min; Li, Feng Gao[1]) A theorem on generating elements for orthogonal groups over a full ring. (Chinese. English and Chinese summaries) *Dongbei Shida Xuebao* **1992,** *no.* 2, 28–33. 20G30

Liu, Xing Ye (*with* Zheng, Jian Jun) Dynamic fundamental solutions of symmetric problems in elasticity. *Theory and applications of boundary element methods* (*Beijing*, 1991), 235–240, *Internat. Acad. Publ., Beijing*, 1991. (*see* **93b:65008**) 73C99 (33C10, 35A08)

— (*with* Zheng, Jian Jun) Dynamic ring fundamental solutions of plate on Winkler foundation. *Theory and applications of boundary element methods* (*Beijing*, 1991), 351–356, *Internat. Acad. Publ., Beijing*, 1991. (*see* **93b:65008**) 73K10 (33C10, 35A08)

Liu, Xinzhi On attractivity for nonautonomous differential systems. (English summary) *Differential equations* (*Plovdiv*, 1991), 123–132, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93i:34096** 34D20 (34D05)

— (*with* Wong, Yau Shu; Ji, Xing Zhi) Monotone iterations for numerical solutions of nonlinear elliptic partial differential equations. *Appl. Math. Comput.* **50** (1992), *no.* 1, 59–91. (Lubor Malina) **93g:65135** 65N22 (65H10)

— On (h_0, h)-stability of autonomous systems. (English summary) *J. Appl. Math. Stochastic Anal.* **5** (1992), *no.* 4, 331–337. (Summary) **93k:34111** 34D20

— (*with* Erbe, Lynn H.; Guo, Da Jun) Positive solutions of a class of nonlinear integral equations and applications. *J. Integral Equations Appl.* **4** (1992), *no.* 2, 179–195. (N. K. Karapetyants) **93h:45002** 45G15 (34K15)

— Practical stabilization of control systems with impulse effects. *J. Math. Anal. Appl.* **166** (1992), *no.* 2, 563–576. (M. M. Konstantinov) **93c:34031** 34A37 (34H05, 93D15)

Liu, Xiu Zhen (*with* Li, Zu Quan) Star quasicontinuity of set-valued mappings. (Chinese. English and Chinese summaries) *Heilongjiang Daxue Ziran Kexue Xuebao* **9** (1992), *no.* 3, 39–41. 54C60

Liu, Xu Feng (*with* Sun, Chang Pu; Xue, Kang; Ge, Mo Lin) Boson realization of nongeneric $sl_q(2)$-*R* matrices for the Yang-Baxter equation. *J. Phys. A* **24** (1991), *no.* 10, L545–L548. (Summary) **93a:81084** 81R50 (17B37, 82B23)

— (*with* Ge, Mo Lin; Sun, Chang Pu; Xue, Kang) General solutions of $R^{\frac{1}{2}}(x)$ and quantum group structure. *J. Phys. A* **24** (1991), *no.* 21, 4955–4963. (A. U. Klimyk) **93d:82030** 82B23 (17B37)

— (*with* Ge, Mo Lin; Sun, Chang Pu) New boson representations of the $sl_q(2)$ with multiplicity two and new solutions to the Yang-Baxter equation at $q^p = 1$. *Lett. Math. Phys.* **23** (1991), *no.* 3, 169–178. (Dmitrii I. Gurevich) **93b:17042** 17B37 (81R50, 82B23)

— (*with* Ge, Mo Lin; Sun, Chang Pu) The *q*-boson realization of new solutions for the Yang-Baxter equation associated with the quantum algebra $U_q sl(3)$ at $q^p = 1$. *Phys. Lett. A* **160** (1991), *no.* 5, 433–436. (Chang Pu Sun) **93c:17025** 17B37 (16W30, 82B23)

— (*with* Ge, Mo Lin; Sun, Chang Pu) Representations of quantum matrix algebra $M_q(2)$ and its *q*-boson realization. *J. Math. Phys.* **33** (1992), *no.* 7, 2541–2545. (A. M. Gavrilik) **93e:17017** 17B37 (81R50)

— (*with* Ge, Mo Lin; Sun, Chang Pu) The cyclic representations of the quantum algebra $U_q(\mathrm{osp}(2,1))$ in terms of the Z^n-algebra. *J. Phys. A* **25** (1992), *no.* 10, 2907–2909. (A. M. Gavrilik) **93j:17026** 17B37 (17A70, 81R50)

— (*with* Ge, Mo Lin) Construction of a new quantum double and new solutions to the Yang-Baxter equation. *Lett. Math. Phys.* **24** (1992), *no.* 3, 197–203. (Dmitrii I. Gurevich) **93g:17025** 17B37 (16W30)

— (*with* Ge, Mo Lin) A new kind of *R*-matrix associated with the Hopf algebra $U_q(A_2(\mu))$. *Phys. Lett. A* **167** (1992), *no.* 2, 161–164. (Roland Berger) **93i:81092** 81R50 (17B37, 82B23)

Liu, Xue Cheng Entropy, distance measure and similarity measure of fuzzy sets and their relations. (English summary) *Fuzzy Sets and Systems* **52** (1992), *no.* 3, 305–318. (Summary) **93m:04016** 04A72

— Further discussion on convergence theorems for seminormed fuzzy integrals and semiconormed fuzzy integrals. (English summary) *Fuzzy Sets and Systems* **55** (1993), *no.* 2, 219–226. 28E10 (04A72)

Liu, Xue Kun Existence of common Borel points of an algebroid function and its derivatives in the unit disc. (Chinese. English and Chinese summaries) *J. Wuhan Univ. Natur. Sci. Ed.* **1992**, *no.* 3, 9–16. (Summary) **93m:30040** 30D35

Liu, Xue Peng (*with* Tang, You Hua) The sum of generalized higher-order arithmetic sequences. (Chinese. English summary) *Natur. Sci. J. Xiangtan Univ.* **13** (1991), *no.* 4, 36–42. (Tian Xin Cai) **93g:11021** 11B83 (11B73)

Liu, Xue Pu Invariance principle for the integral periodogram of a multiple time series. *Gaoxiao Yingyong Shuxue Xuebao* **7** (1992), *no.* 1, 102–113. (Summary) **93f:62129** 62M15 (62M10)

Liu, Y. *see* **Liu, Yu[3]**

Liu, Y. F. (*with* Leung, A. Y. T.) A generalized complex symmetric eigensolver. *Comput. & Structures* **43** (1992), *no.* 6, 1183–1186. (Summary) **93e:65062** 65F15

Liu, Yu Cheng Initial-boundary value problems for the equation $u_{tt} = u_{xxt} + \sigma(u_x)_x$ with boundary conditions of the second kind. (Chinese. English and Chinese summaries) *J. Xinjiang Univ. Natur. Sci.* **9** (1992), *no.* 2, 35–38, 23. (Summary) **93j:35113** 35L75

Liu, Yan (*with* Meng, Ji Xiang) The Hamiltonian property and connectivity of the Cartesian product of infinite graphs. (Chinese. English and Chinese summaries) *J. Xinjiang Univ. Natur. Sci.* **9** (1992), *no.* 4, 23–26. (Summary) **93m:05119** 05C40 (05C45)

Liu, Yan Pei (*with* Yan, Ji Yi) Asymptotic enumerations for rooted planar maps and rooted outerplanar maps. *Chinese Sci. Bull.* **36** (1991), *no.* 3, 188–192. (E. Rodney Canfield) **93c:05012** 05A16 (05C30)

— On the loopless Eulerian vertex partition equation. *Chinese Sci. Bull.* **36** (1991), *no.* 19, 1585–1589. (Jing Zhong Mao) **93a:05084** 05C45 (05C30)

— On the vertex partition equation of loopless Eulerian planar maps. *Acta Math. Appl. Sinica (English Ser.)* **8** (1992), *no.* 1, 45–58. (Cun-Quan Zhang) **93b:05072** 05C30 (05C45)

— A note on the number of loopless Eulerian planar maps. (Chinese summary) *J. Math. Res. Exposition* **12** (1992), *no.* 2, 165–170. (Summary) **93f:05049** 05C30 (05C15, 05C45)

Liu, Yaping (*with* Li, Lige) Positive solutions to certain nonlinear elliptic biological interacting systems of three variables. *Proceedings of Asian Mathematical Conference*, 1990 (*Hong Kong*, 1990), 284–290, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93b:00022**) 35J65 (35B05, 35J55, 92D25, 92D40)

Liu, Yi *see* **Liu, Yi[4]**

Liu, Yi[3] *see* **Te, Gu Si**, **(93i:01004)**

Liu, Yi[4] Foundations of geometry and Hilbert's projective metric principle. (Chinese) *Collected research papers on the history of mathematics, Vol.* 2 (*Chinese*), 158–164, *Inner Mongolia Univ. Press, Hohhot*, 1991. (*see* **93i:01005**) 01A55

— Comments on the theory of limits in Chinese and Western mathematics. (Chinese) *Collected research papers on the history of mathematics, Vol.* 3 (*Chinese*), 36–44, *Inner Mongolia Univ. Press, Hohhot*, 1992. (*see* **93i:01006**) 01A25 (01A05)

Liu, Yi Cheng *see* **Tian, Miao**, **(93i:01006)**

Liu, Yi-Hsin (*with* Konvalina, John) Subsets without unit separation and products of Fibonacci numbers. *Fibonacci Quart.* **29** (1991), *no.* 2, 141–144. (David Singmaster) **93a:05009** 05A10 (05A05, 11B39, 11B65)

— (*with* Konvalina, John) A combinatorial interpretation of the square of a Lucas number. *Fibonacci Quart.* **29** (1991), *no.* 3, 268–270. (Summary) **93b:11014** 11B39

Liu, Yi Min The relation between the representations of SU(2) Kac-Moody algebra and those of the Virasoro algebra and modular invariance. (Chinese. Chinese summary) *Acta Math. Sci. (Chinese)* **11** (1991), *no.* 4, 413–419. (Yu Ting Jia) **93i:81070** 81R10 (17B67, 17B68)

Liu, Yi Rong Answer to a conjecture about the indices of critical points for the *n*-polynomial system. *Ann. Differential Equations* **7** (1991), *no.* 3, 278–281. (Anna Cima) **93c:34073** 34C05 (58F21)

— Focal values and some kinds of bifurcation of limit cycles for planar *n*th-order autonomous differential systems. (Chinese. Chinese summary) *Chinese Ann. Math. Ser. A* **13** (1992), *no.* 5, 589–597. (Mao An Han) **93k:34083** 34C23 (34C05)

Liu, Yijun (*with* Rizzo, F. J.) A weakly singular form of the hypersingular boundary integral equation applied to 3-D acoustic wave problems. *Comput. Methods Appl. Mech. Engrg.* **96** (1992), *no.* 2, 271–287. (From the summary) **93b:76077** 76Q05 (76M15)

Liu, Ying Ming (*with* Liang, Ji Hua) Product characterizations of lattice-valued semicontinuous mappings. (Chinese. English and Chinese summaries) *Sichuan Daxue Xuebao* **29** (1992), *no.* 4, 463–467. 54A40 (04A72, 06B30)

— (*with* Luo, Mao Kang) Lattice-valued Hahn-Dieudonné-Tong insertion theorem and stratification structure. (English summary) Proceedings of the Tsukuba Topology Symposium (Tsukuba, 1990). *Topology Appl.* **45** (1992), *no.* 3, 173–188. (J. Karásek) **93j:54011** 54D15 (06B99)

— (*with* Zhang, De Xue) Weak induction for *L*-fuzzy topological spaces. (Chinese. Chinese summary) *Acta Math. Sinica* **36** (1993), *no.* 1, 68–73. 54A40 (04A72)

Liu, Yingsheng (*with* Huo, Yuan Ji; Wan, Zhe Xian) Lattices generated by transitive sets of subspaces under finite classical groups. I. *Comm. Algebra* **20** (1992), *no.* 4, 1123–1144. (Martin W. Liebeck) **93b:51008** 51D25 (14L30, 20G40)

— (*with* Huo, Yuan Ji; Wan, Zhe Xian) Lattices generated by transitive sets of subspaces under finite classical groups. II. The orthogonal case of odd characteristic. *Comm. Algebra* **20** (1992), *no.* 9, 2685–2727. (Martin W. Liebeck) **93j:20097** 20G40

Liu, Yong Hui On small projective modules. (Chinese. English summary) *J. Math. Res. Exposition* **12** (1992), *no.* 2, 231–234. (Robert Wisbauer) **93e:16005** 16D40

Liu, Yong Ping (*with* Sun, Yong Sheng) Optimal recovering of the Sobolev-Wiener class of smooth functions by multiple sampling. (Chinese. English summary) *Beijing Shifan Daxue Xuebao* **28** (1992), *no.* 1, 15–18. (Summary) **93c:41006** 41A05 (46E35)

— (*with* Fang, Gen Sun) On the optimal quadrature least L_∞-norm of monosplines with free knots on the real axis. (English summary) *J. Complexity* **8** (1992), *no.* 4, 467–487. (Georgi Grozev) **93j:65039** 65D32 (41A55)

Liu, Yong Qing (*with* Tang, Gong You; Liu, Jin Xian) Weighted vector norm form Lyapunov functions and their application in stability of large-scale discrete systems. (Polish summary) *Systems Sci.* **17** (1991), *no.* 1, 5–15. (Engin Yaz) **93f:93119** 93D30 (34D20, 39A11, 93A15, 93D20)

— (*with* Xie, Sheng Li) On the robust stability of interval neutral type control systems with time-delays. (Polish summary) *Systems Sci.* **17** (1991), *no.* 1, 35–43. (Jerzy Klamka) **93d:93065** 93D09 (93B05, 93C05)

— (*with* Feng, Zhao Shu; Guo, Feng Wei) Criteria for practical stability in the *p*th mean of nonlinear stochastic systems. *Appl. Math. Comput.* **49** (1992), *no.* 2-3, 251–260. (Arcady Ponosov) **93f:34130** 34K20 (34F05, 34K50, 60H10)

— (*with* Xiao, Hui Min) Asymptotic stability of nonlinear time-varying discrete systems. (Chinese. English summary) *Gaoxiao Yingyong Shuxue Xuebao* **7** (1992), *no.* 2, 281–293. (Ke Chen) **93f:39009** 39A11 (65Q05)

— (*with* Tang, Gong You) Stability of time-varying discrete large-scale systems. (Chinese. English and Chinese summaries) *Math. Appl.* **5** (1992), *no.* 3, 62–69. (Lian Wang) **93i:93093** 93D05 (93A15, 93C55)

— *see also* **Theory of ordinary differential equations and its applications**, **93g:34003**

Liu, Yu Idempotence-preserving linear transformations of spaces of symmetric matrices over a field. (Chinese. English and Chinese summaries) *Heilongjiang Daxue Ziran Kexue Xuebao* **9** (1992), *no.* 4, 33–34. 15A04

Liu, Yu[3] (*with* Khoda, K. M.; Storey, Colin) Generalized Polak-Ribière algorithm. (English summary) *J. Optim. Theory Appl.* **75** (1992), *no.* 2, 345–354. 65K10

Liu, Yu Min (*with* Xu, Ji Chao; Lin, Yi Xun) The bandwidth of graphs formed by meridian and latitude lines on a sphere. I. (Chinese summary) *J. Xinjiang Univ. Natur. Sci.* **8** (1991), *no.* 3, 5–13. (Mukkai S. Krishnamoorthy) **93a:05110** 05C78 (05C85)

— (*with* Xu, Ji Chao; Nan, Bin) All solutions of clustering for attributes. (English summary) *Optimization, Vol.* 1, 2 (*Singapore*, 1992), 360–367, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93e:05067** 05C45 (05C85, 90C35)

— (*with* Xu, Ji Chao) All optimal solutions to the 0-1 bottleneck problem. (Chinese. English summary) *J. Numer. Methods Comput. Appl.* **13** (1992), *no.* 3, 231–240. (Xue Liang Li) **93m:05128** 05C45 (05C90, 68R10, 90C27)

— (*with* Xu, Ji Chao) General algorithms for finding minimal trees. (Chinese. English and Chinese summaries) *Math. Appl.* **5** (1992), *no.* 4, 32–37. (Summary) **93k:05173** 05C85 (05C05, 68Q22, 68R10)

Liu, Yu Qi (*with* Feng, Zhen Xing) An unified treatment of the singular integrals in BEM model for 3-D elastoplastic crack analysis. *Theory and applications of boundary element methods (Beijing*, 1991), 279–286, *Internat. Acad. Publ., Beijing*, 1991. (*see* **93b:65008**) 65R20 (73V10)

Liu, Z. (*with* Liu, Chao Qun; McCormick, Stephen F.) An efficient multigrid scheme for elliptic equations with discontinuous coefficients. (English summary) *Comm. Appl. Numer. Methods* **8** (1992), *no.* 9, 621–631. 65N55

Liu, Z. J. *see* **Liu, Zhi Jun**

Liu, Zai Ming A note on uniqueness of honest *Q*-processes with stable initial states and infinite instantaneous states. (Chinese) *Chinese Ann. Math. Ser. A* **12** (1991), *no.* 5, 619–626. (Min Ping Qian) **93e:60147** 60J27

— (*with* Zou, Jie Zhong) A class of *Q*-matrices with instantaneous states. (Chinese. English and Chinese summaries) *Chinese J. Appl. Probab. Statist.* **7** (1991), *no.* 2, 125–132. (Summary) **93k:60190** 60J27

Liu, Ze Qing On coincidence point theorems in pseudocompact Tichonov spaces. (English summary) *Bull. Calcutta Math. Soc.* **84** (1992), *no.* 6, 573–574. 54H25

— Extensions of a fixed point theorem of Gerald Jungck. (English summary) *Chinese J. Math.* **21** (1993), *no.* 2, 159–164. 54H25

Liu, Zeng Rong (*with* Dong, Guang Mao; Xu, Zheng Fan) Stochasticity near resonances in a kind of near-integrable Hamiltonian systems based on Smale horseshoes. *Appl. Math. Mech. (English Ed.)* **13** (1992), *no.* 1, 11–16; *translated from Appl. Math. Mech.* **13** (1992), *no.* 1, 11–16 (*Chinese. English summary*). (Richard C. Churchill) **93a:70015** 70H05 (58F05, 58F14, 70K50)

— (*with* Xie, Hui Ming; Zhu, Zhao Xuan; Lu, Qin He) The strange attractor of the Lozi mapping. (English summary) *Internat. J. Bifur. Chaos Appl. Sci. Engrg.* **2** (1992), *no.* 4, 831–839. (W.-H. Steeb) **93m:58074** 58F13

Liu, Zhang Ju (*with* Qian, Min) Classical *R*-matrix and semisimple Lie algebras. *Nonlinear physics (Shanghai*, 1989), 146–151, *Res. Rep. Phys., Springer, Berlin*, 1990. (Introduction) **93e:58087** 58F07 (17B20)

— Quantization and quantum integrability of the Neumann system. (Chinese. English and Chinese summaries) *Adv. in Math. (China)* **21** (1992), *no.* 2, 202–210. (Summary) **93d:81093** 81S10 (58F07)

— (*with* Qian, Min) Generalized Yang-Baxter equations, Koszul operators and Poisson Lie groups. *J. Differential Geom.* **35** (1992), *no.* 2, 399–414. (Vladimir A. Stukopin) **93f:17024** 17B37 (16W30, 22E10, 58F07)

— (*with* Xu, Ping) On quadratic Poisson structures. (English summary) *Lett. Math. Phys.* **26** (1992), *no.* 1, 33–42. (K. C. H. Mackenzie) **93k:58097** 58F05 (58H05)

Liu, Zhao Li Integral equations of Hammerstein type with general kernels. (Chinese. English summary) *Shandong Daxue Xuebao Ziran Kexue Ban* **27** (1992), *no.* 1, 12–22. (Summary) **93e:47091** 47H30 (45G10, 47H15, 47N20)

Liu, Zhen (*with* Jean-Marie, Alain) Stochastic comparisons for queueing models via random sums and intervals. (English summary) *Adv. in Appl. Probab.* **24** (1992), *no.* 4, 960–985. (T. Rolski) **93k:60227** 60K25

— (*with* Baccelli, François) On a class of stochastic recursive sequences arising in queueing theory. *Ann. Probab.* **20** (1992), *no.* 1, 350–374. (Volker Schmidt) **93c:60137** 60K25

— (*with* Baccelli, François) Comparison properties of stochastic decision free Petri nets. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 12, 1905–1920. (Summary) **93k:68076** 68Q90

— (*with* Baccelli, François) Generalized precedence-based queueing systems. (English summary) *Math. Oper. Res.* **17** (1992), *no.* 3, 615–639. (Summary) **93f:60144** 60K25 (68M20, 90B22)

— (*with* Altman, Eitan; Konstantopoulos, Panagiotis) Stability, monotonicity and invariant quantities in general polling systems. (English summary) *Queueing Systems Theory Appl.* **11** (1992), *no.* 1-2, 35–57. (Summary) **93f:60131** 60K25 (68M20)

— (*with* Nain, Philippe; Towsley, Donald) On optimal polling policies. (English summary) *Queueing Systems Theory Appl.* **11** (1992), *no.* 1-2, 59–83. (Micha Hofri) **93h:60156** 60K25 (68M20, 90B35)

Liu, Zhen (*with* Shieh, Leang San; Sunkel, John W.) Optimal uniform-damping ratio controller for sequential design of multivariable systems. *Internat. J. Systems Sci.* **22** (1991), *no.* 8, 1371–1389. (Summary) **93a:93051** 93B51

Liu, Zhen Hong *see* **Liu, Zhen Hong[2]**

Liu, Zhen Hong[1] (*with* Li, Ming Chu) A survey of studies on Hamiltonian problems in claw-free graphs. (Chinese. English summary) *Nanjing Daxue Xuebao Ziran Kexue Ban* **27** (1991), *Special Issue*, 223–231. (Summary) **93f:05054** 05C38 (05C45)

— (*with* Jin, Guo Ping) Spanning trails of graphs. (English summary) *Systems Sci. Math. Sci.* **4** (1991), *no.* 1, 55–67. (Paul A. Catlin) **93k:05107** 05C45

— (*with* Li, Ming Chu) Hamiltonian cycles of 3-connected regular claw-free graphs. (Chinese. English and Chinese summaries) *Qufu Shifan Daxue Xuebao Ziran Kexue Ban* **18** (1992), *no.* 4, 1–8. (Summary) **93m:05123** 05C45

— (*with* Jin, Guo Ping; Wang, Chang Fan) Two sufficient conditions for pancyclic graphs. (English summary) *Ars Combin.* **35** (1993), 281–290. (Summary) **93m:05106** 05C38

Liu, Zhen Hong[2] (*with* Li, Shi Zheng) A note on injections of abelian groups. (Chinese. English and Chinese summaries) *Qufu Shifan Daxue Xuebao Ziran Kexue Ban* **18** (1992), *no.* 4, 28–30. (Summary) **93k:20091** 20M14 (18B99)

Liu, Zhen Rong (*with* Jing, Zhu Jun) Qualitative analysis for a third-order differential equation in a model of chemical systems. (English summary) *Systems Sci. Math. Sci.* **5** (1992), *no.* 4, 299–311. (Summary) **93i:34068** 34C23 (34C25, 58F40, 80A32)

Liu, Zhenhong *see* **Liu, Zhen Hong[1]**

Liu, Zhi Hong (*with* Huang, Yu Ying) An arbitrary Lagrangian-Eulerian boundary element method for large-amplitude sloshing problems. *Theory and applications of boundary element methods* (*Beijing*, 1991), 153–160, *Internat. Acad. Publ., Beijing*, 1991. (*see* **93b:65008**) 76M15 (65N38)

Liu, Zhi Jun Bootstrapping one way analysis of Rao's quadratic entropy. *Comm. Statist. Theory Methods* **20** (1991), *no.* 5-6, 1683–1703. (Zhao Zhi Zhang) **93a:62007** 62B10 (62H17, 62J10)

— Nonparametric estimates of the nuisance parameter in the LAD tests. *Comm. Statist. Theory Methods* **21** (1992), *no.* 4, 861–881. (M. M. Siddiqui) **93j:62101** 62G05 (62G20)

Liu, Zhi Xin Approximation of the Kantorovič-Bézier operators in $L^p(0,1)$. *Northeast. Math. J.* **7** (1991), *no.* 2, 199–205. (From the summary) **93a:41036** 41A35

— Multipliers on real Hardy spaces. *Sci. China Ser. A* **35** (1992), *no.* 1, 55–69. (Takahiko Nakazi) **93h:42014** 42B15 (42B30, 46E10)

Liu, Zhi Yong (*with* You, Jia-Huai) An implementation of a nonlinear skewing scheme. *Inform. Process. Lett.* **42** (1992), *no.* 4, 209–215. 68M07

— (*with* You, Jia-Huai) Conflict-free routing for BPC-permutations on synchronous hypercubes. (English summary) *Parallel Comput.* **19** (1993), *no.* 3, 323–342. 68M10 (65Y05)

Liu, Zhong Kui Excellent extensions of rings. (Chinese) *Acta Math. Sinica* **34** (1991), *no.* 6, 818–824. (Shi Zhong Pan) **93i:16042** 16S99

— Injective strong precovers. (Chinese. English summary) *J. Math.* (*Wuhan*) **11** (1991), *no.* 4, 378–386. 16D50

— Characterization for two kinds of rings by using the quasi-injectivity of some modules. *Northeast. Math. J.* **7** (1991), *no.* 2, 141–149. (J. L. Gómez Pardo) **93e:16009** 16D50 (16D80, 16E50, 16L30)

Liu, Zhong Sheng (*with* Chen, Su Huan; Xu, Tao) A new method for solving nonlinear eigenproblems of vibrations. (English summary) *Comput. & Structures* **46** (1993), *no.* 2, 339–342. (Summary) **93m:73021** 73K12 (73V05)

Liu, Zhong Zhu (*with* Chen, Zong Yun; Huang, Nian Ning; Xiao, Yi) An explicit expression of the dark N-soliton solution of the MKdV equation by means of the Darboux transformation. (English summary) *J. Phys. A* **26** (1993), *no.* 6, 1365–1374. (Summary) **93k:35231** 35Q53 (58F37)

Liu, Zhuo Jun The characteristic set of elementary symmetric function systems. (Chinese. English summary) *J. Systems Sci. Math. Sci.* **11** (1991), *no.* 3, 267–272. (Jian-Pan Wang) **93b:12003** 12E05 (05E05)

Liu, Zi Cheng (*with* Hu, Xiao Dong; Du, Ding Zhu; Chen, Bo) A note on Rosen's algorithm. (Chinese. English summary) *J. Systems Sci. Math. Sci.* **12** (1992), *no.* 1, 94–96. 90C08

Liu, Zu De (*with* Pan, Gu Ning; Jiang, Tong) Analysis of piles in layered soils by the coupling method of FEM-BEM. *Theory and applications of boundary element methods* (*Beijing*, 1991), 453–459, *Internat. Acad. Publ., Beijing*, 1991. (*see* **93b:65008**) 73V05 (65N30, 65N38, 73Q05, 73V10)

Liubinskas, K. (*with* Bentkus, Vidmantas) Convergence rates of moments and related functionals in the invariance principle in Banach spaces. (Russian and Lithuanian summaries) *Litovsk. Mat. Sb.* **31** (1991), *no.* 2, 258–274; *reprinted in Lithuanian Math. J.* **31** (1991), *no.* 2, 169–182 (1992). (Xiang Chen Wang) **93d:60009** 60B12 (60F17)

Liukkonen, J. (*with* Levine, A.; Levine, D. W.) Predicting power changes under transformations in ANOVA tests. *Comm. Statist. Theory Methods* **21** (1992), *no.* 3, 679–692. (Jerome Senturia) **93f:62098** 62J10 (62F03)

Liverance, Eric (*with* Adams, William W.; Shanks, Daniel) Infinitely many necessary and sufficient conditions for primality. *Bull. Inst. Combin. Appl.* **3** (1991), 69–76. (Samuel S. Wagstaff, Jr.) **93e:11011** 11A51

Liverani, Carlangelo (*with* Bunimovich, L. A.; Pellegrinotti, Alessandro; Sukhov, Yu. M.) Ergodic systems of n balls in a billiard table. *Comm. Math. Phys.* **146** (1992), *no.* 2, 357–396. (András Krámli) **93e:58107** 58F11 (58F15)

Livesey, Mike A network model of barrier synchronization algorithms. *Internat. J. Parallel Programming* **20** (1991), *no.* 1, 55–74. (A. I. Nikitin) **93f:68011** 68M10

Livi, R. (*with* Politi, Antonio; Ruffo, Stefano) Repeller structure in a hierarchical model. I. Topological properties. *J. Statist. Phys.* **65** (1991), *no.* 1-2, 53–72. (C. Eugene Wayne) **93a:58115** 58F12 (58F19, 82B28)

— (*with* Politi, Antonio; Ruffo, Stefano) Repeller structure in a hierarchical model. II. Metric properties. *J. Statist. Phys.* **65** (1991), *no.* 1-2, 73–95. (C. Eugene Wayne) **93d:58092** 58F12 (81Q05, 82B10)

— (*with* Politi, Antonio; Ruffo, Stefano) Scaling-law for the maximal Lyapunov exponent. (English summary) *J. Phys: A* **25** (1992), *no.* 18, 4813–4826. (Summary) **93g:82087** 82C44 (82–04, 82D60)

Livingston, Albert E. Univalent harmonic mappings. (English summary) *Ann. Polon. Math.* **57** (1992), *no.* 1, 57–70. (Walter Hengartner) **93i:30016** 30C55 (31A05)

Livingston, Charles (*with* Gilmer, Patrick) An algebraic link concordance group for $(p, 2p-1)$-links in S^{2p+1}. *Proc. Edinburgh Math. Soc.* (2) **34** (1991), *no.* 3, 455–462. (Masayuki Yamasaki) **93a:57024** 57Q45 (57M25)

— (*with* Gilmer, Patrick) The Casson-Gordon invariant and link concordance. *Topology* **31** (1992), *no.* 3, 475–492. (Daniel Lines) **93h:57037** 57Q45 (57M25, 57N70)

Livinskii, V. O. (*with* Berezanskii, Yu. M.; Litvinov, E. V.) A generalization of the Segal transformation. (Russian. English and Russian summaries) *Dokl. Akad. Nauk Ukrainy* **1992**, *no.* 5, 16–20, 158. (From the introduction) **93g:46040** 46F25 (46G12, 46N50)

Livotsky, Igor (*with* Phan Trung Huy; Đỗ Long Vân) Which finite monoids are syntactic monoids of rational ω-languages. *Inform. Process. Lett.* **42** (1992), *no.* 3, 127–132. (Ludwig Staiger) **93f:68061** 68Q45 (20M35)

Livshits, A. N. (*with* Vershik, A. M.) Adic models of ergodic transformations, spectral theory, substitutions, and related topics. *Representation theory and dynamical systems*, 185–204, *Adv. Soviet Math.*, 9, *Amer. Math. Soc., Providence, RI*, 1992. (From the introduction) **93i:46131** 46L89 (28D05, 47A35)

— About a certain weakly mixing substitution. *Representation theory and dynamical systems*, 241–251, *Adv. Soviet Math.*, 9, *Amer. Math. Soc., Providence, RI*, 1992. (Mariusz Lemańczyk) **93j:28026** 28D05 (28D20)

— Some examples of adic transformations and automorphisms of substitutions. Selected translations. *Selecta Math. Soviet.* **11** (1992), *no.* 1, 83–104. (G. R. Goodson) **93d:28024** 28D05 (54H20)

Livshits, Leonya Locally finite-dimensional sets of operators. *Proc. Amer. Math. Soc.* **119** (1993), *no.* 1, 165–169. (Edward Azoff) **93k:47054** 47D99 (47A99, 47D15)

Liz, Eduardo (*with* Nieto, Juan J.) Impulsive differential equations (a periodic boundary value problem). (Spanish) *Proceedings of the XII Congress on Differential Equations and Applications/II Congress on Applied Mathematics* (*Spanish*) (*Oviedo*, 1991), 159–164, *Univ. Oviedo, Oviedo*, 1991. (*see* **93j:00009**) 34A37 (34B15, 34C25)

Lizama, Carlos A note on the compactness of resolvent families of operators. (Spanish) *Proyecciones* **10** (1991), *no.* 17, 35–41. (Alberto Venni) **93b:47004** 47A10 (47B07)

— On Volterra equations associated with a linear operator. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 4, 1159–1166. (Paolo Acquistapace) **93j:47095** 47N20 (45D05, 47A50, 47D06, 47G10)

arregi Lizarraga, Jesús María *see* **Arregi Lizarraga, Jesús María**

Lizogub, P. P. The measure, invariant with respect to the general Lorentz group, of the set of planes in a four-dimensional Minkowski space. (Russian. Russian summary) *Numerical mathematics and mathematical physics* (*Russian*), 129–133, 190, "*Prometeĭ*", *Moscow*, 1988. (*see* **93m:00032**) 53C05

Lizorkin, P. I. Classes of functions that are constructed on the basis of averagings over spheres (the case of Sobolev-type spaces). (Russian) Translated in Proc. Steklov Inst. Math. **1992**, no. 3, 131–149. Differential equations and function spaces (Russian). *Trudy Mat. Inst. Steklov.* **192** (1990), 122–139. (V. M. Gol'dshteĭn) **93b:46059** 46E35

— (*with* Guliev, V. S.) $\mathscr{B}$- and $\mathscr{L}$-classes of harmonic and holomorphic functions in the disc, and classes of boundary values. (Russian) *Dokl. Akad. Nauk SSSR* **319** (1991), *no.* 4, 806–810; *translation in Soviet Math. Dokl.* **44** (1992), *no.* 1, 215–219. (Jacques Mayer) **93c:30091** 30H05 (46E35, 46J99)

— Approximation on a Riemannian manifold. (Russian) *Trudy Mat. Inst. Steklov.* **200** (1991), 222–235; *translation in Proc. Steklov Inst. Math.* **1993**, *no.* 2, 247–260. (R. P. Boas) **93c:41033** 41A30 (53A99)

— (*with* Rustamov, Kh. P.) On some equivalent norms of the Nikol'skiĭ-Besov space on a sphere. (Russian) *Dokl. Akad. Nauk SSSR* **322** (1992), *no.* 2, 228–232; *translation in Soviet Math. Dokl.* **45** (1992), *no.* 1, 58–62. (Josef Voldřich) **93a:46058** 46E35

Lizunova, I. V. (*with* Azamatova, V. I.) Noethericity of an integral operator of convolution type. (Russian. English summary) *Vestst Akad. Navuk BSSR Ser. Fiz.-Mat. Navuk* **1991**, *no.* 6, 16–19, 123. (Summary) **93b:47102** 47G10 (45E10, 47A35, 47B35)

Ljolje, K. (*with* Botrić, S.) On the self-interaction in classical electrodynamics. *Nuovo Cimento B* (11) **107** (1992), *no.* 1, 51–57. (Paul Urbach) **93f:78010** 78A35

Ljubičić, A. (*with* Logan, B. A.) A proposed test of the general validity of Mach's principle. (English summary) *Phys. Lett. A* **172** (1992), *no.* 1-2, 3–5. (Summary) **93k:83005** 83B05 (83–05)

Ljung, Lennart System identification in a noise free environment. (English summary) *Adaptive systems in control and signal processing*, 1989 (*Glasgow*), 411–420, *IFAC Sympos. Ser.*, 1990, *No.* 1, *Pergamon, Oxford*, 1990. (*see* **93j:93007**) 93B30

— ★ Идентификация систем. Теория для пользователя. (Russian) [System identification. Theory for the user] Translated from the 1987 English original by A. S. Mandel' and A. V. Nazin. Translation edited and with a preface by Ya. Z. Tsypkin. "*Nauka*", *Moscow*, 1991. 432 *pp. ISBN* 5-02-014511-4 (Zbigniew Nahorski) **93e:93002** 93–02 (93B30, 93E12, 93E30)

— Model accuracy in system identification. (English summary) *Intelligent tuning and adaptive control* (*Singapore*, 1991), 277–281, *IFAC Sympos. Ser.*, 1991, *No.* 7, *Pergamon, Oxford*, 1991. (*see* **93i:93007**) 93B30
— (*with* Pflug, G. Ch.; Walk, Harro) ★ Stochastic approximation and optimization of random systems. DMV Seminar, 17. *Birkhäuser Verlag, Basel*, 1992. vi+113 *pp. ISBN* 3-7643-2733-2 (V. Dupač) **93j:62206** 62L20 (93E10)
— An exact formula for the tracking ability of adaptive algorithms: implications for the general case. (English summary) *Identification and system parameter estimation* 1991, *Vol.* 1,2 (*Budapest*, 1991), 115–119, *IFAC Sympos. Ser.*, 3, *Pergamon, Oxford*, 1992. (*see* **93h:93009**) 93E35
— (*with* Wahlberg, B.; Söderström, T.) On sampling and reconstruction of continuous time stochastic systems. (English summary) *Identification and system parameter estimation* 1991, *Vol.* 1,2 (*Budapest*, 1991), 281–285, *IFAC Sympos. Ser.*, 3, *Pergamon, Oxford*, 1992. (*see* **93h:93009**) 93E03 (93E10)
— (*with* Nagy, P. A. J.) Estimating time-delays via state-space identification methods. (English summary) *Identification and system parameter estimation* 1991, *Vol.* 1,2 (*Budapest*, 1991), 717–720, *IFAC Sympos. Ser.*, 3, *Pergamon, Oxford*, 1992. (*see* **93h:93009**) 93E10
— (*with* Forsman, K.) On the dead-zone in system identification. (English summary) *Identification and system parameter estimation* 1991, *Vol.* 1,2 (*Budapest*, 1991), 959–963, *IFAC Sympos. Ser.*, 3, *Pergamon, Oxford*, 1992. (*see* **93h:93009**) 93B30
— A (simple) perspective on adaptation and performance of adaptation mechanisms. (English summary) *Stochastic theory and adaptive control* (*Lawrence, KS*, 1991), 306–320, *Lecture Notes in Control and Inform. Sci.*, 184, *Springer, Berlin*, 1992. (*see* **93g:93007**) 93E35
— An introduction to system identification concepts. *Theory & control of dynamical systems* (*Huddinge*, 1991), 120–136, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93d:92001**) 93–02 (93B30, 93E12)
— (*with* Wahlberg, B.) Asymptotic properties of the least-squares method for estimating transfer functions and disturbance spectra. *Adv. in Appl. Probab.* **24** (1992), *no.* 2, 412–440. (Eduard Eitelberg) **93c:93051** 93E12 (93E24)
— (*with* Wahlberg, B.) Hard frequency-domain model error bounds from least-squares like identification techniques. *IEEE Trans. Automat. Control* **37** (1992), *no.* 7, 900–912. (Caro Lucas) **93f:93053** 93B36 (93C80)
— (*with* Hjalmarsson, Håkan) Estimating model variance in the case of undermodeling. *IEEE Trans. Automat. Control* **37** (1992), *no.* 7, 1004–1008. 93E10
Lladó, Anna S. (*with* Serra, O.) Hamiltonian cycles in Cayley digraphs with two generators. Graphs, designs and combinatorial geometries (Catania, 1989). *J. Combin. Inform. System Sci.* **15** (1990), *no.* 1-4, 271–280. (Summary) **93e:05065** 05C45 (05C20, 05C25)
— (*with* Hamidoune, Yahya Ould; Serra, O.) The connectivity of hierarchical Cayley digraphs. (English summary) *Discrete Appl. Math.* **37/38** (1992), 275–280. (Stephan Rosebrock) **93e:05041** 05C25 (05C40)
— (*with* Fiol, Miguel A.) The partial line digraph technique in the design of large interconnection networks. (English summary) *IEEE Trans. Comput.* **41** (1992), *no.* 7, 848–857. (Wiktor Kulesza) **93j:68011** 68M10 (05C20)
Llanes-Santiago, Orestes (*with* Sira-Ramirez, Hebertt J.) Pulse-width-modulation control of some mechanical systems. (English summary) *Dynamics Control* **3** (1993), *no.* 1, 35–51. 93C95 (70Q05, 93C85)
— (*with* Sira-Ramirez, Hebertt J.; Tarantino-Alvarado, Rocco) Adaptive feedback stabilization in PWM-controlled DC-to-DC power supplies. (English summary) *Internat. J. Control* **57** (1993), *no.* 3, 599–625. 93D15 (93B52)
de Llano, M. (*with* Esebbag, C.; Getino, J. M.; et al.) Cooper pairing in one, two, and three dimensions. *J. Math. Phys.* **33** (1992), *no.* 3, 1221–1223. (Guang Shan Tian) **93a:82068** 82D55
Llatas, P. M. (*with* Labastida, J. M. F.) Topological matter in two dimensions. *Nuclear Phys. B* **379** (1992), *no.* 1-2, 220–258. (Hong Lu) **93h:81129** 81T40
de la Llave, Rafael A renormalization group explanation of numerical observations of analyticity domains. *J. Statist. Phys.* **66** (1992), *no.* 5-6, 1631–1634. (Helmut Rüssmann) **93b:58122** 58F27 (58F05, 70K50)
— (*with* Falcolini, Corrado) A rigorous partial justification of Greene's criterion. *J. Statist. Phys.* **67** (1992), *no.* 3-4, 609–643. (Alessandra Celletti) **93f:58210** 58F27 (70H05)
— (*with* Falcolini, Corrado) Numerical calculation of domains of analyticity for perturbation theories in the presence of small divisors. *J. Statist. Phys.* **67** (1992), *no.* 3-4, 645–666. (Alessandra Celletti) **93d:58145** 58F30 (70H05, 70K99)
Llavona, José G. Weak topologies on bounded sets of a Banach space. Associated function spaces. *Progress in functional analysis* (*Peñíscola*, 1990), 307–318, *North-Holland Math. Stud.*, 170, *North-Holland, Amsterdam*, 1992. (Carsten Schütt) **93c:46060** 46E50 (46B20, 46G99)
— (*with* Lindström, Mikael) Compact and weakly compact homomorphisms between algebras of continuous functions. *J. Math. Anal. Appl.* **166** (1992), *no.* 2, 325–330. (Christopher C. White) **93d:46086** 46J10 (46E25)
— (*with* Gutiérrez del Alamo, Joaquín M.) Composition operators between algebras of differentiable functions. *Trans. Amer. Math. Soc.* **338** (1993), *no.* 2, 769–782. (Richard M. Aron) **93j:46048** 46G20 (26E15, 46E25, 47B38)
Lledó, M. (*with* Martín, I.; Restuccia, A.; Mendoza, A.) Yang-Mills instantons over Riemann surfaces. *Lett. Math. Phys.* **24** (1992), *no.* 4, 275–281. (Emil Vinţeler) **93f:58039** 58E15 (53C07, 81T13, 81T40)
Llerena Achutegui, Agustín (*with* Fernandez Rodriguez, Fernando) On fields having the extension property. *J. Pure Appl. Algebra* **77** (1992), *no.* 2, 183–187. (Guang Xing Zeng) **93f:12008** 12F20 (12D15, 12J10)
Llibre, Jaume Periodic points of one-dimensional maps. (English summary) *European Conference on Iteration Theory* (*Batschuns*, 1989), 194–198, *World Sci. Publishing, River Edge, NJ*, 1991. (Michael Hurley) **93g:58119** 58F20
— (*with* Mumbrú, Pere) Extending the *-product operator. (English summary) *European Conference on Iteration Theory* (*Batschuns*, 1989), 199–214, *World Sci. Publishing, River Edge, NJ*, 1991. (Arkady S. Pikovsky) **93f:58125** 58F08 (58F03)
— (*with* Nunes, Ana; Casasayas, Josefina) A perturbation of the relativistic Kepler problem. (English summary) *Predictability, stability, and chaos in N-body dynamical systems* (*Cortina d'Ampezzo*, 1990), 547–554, *NATO Adv. Sci. Inst. Ser. B Phys.*, 272, *Plenum, New York*, 1991. (Summary) **93k:70011** 70F05 (58F05, 58F40, 70H05, 70H40)
— Bounded polynomial vector fields. II. (English summary) *Proceedings of the XII Congress on Differential Equations and Applications/II Congress on Applied Mathematics* (*Spanish*) (*Oviedo*, 1991), 49–59, *Univ. Oviedo, Oviedo*, 1991. (Douglas S. Shafer) **93m:58088** 58F21 (34A34, 34C05, 34C11, 58F25)
— (*with* Lacomba, Ernesto A.) Integrals, invariant manifolds, and degeneracy for central force problems in $\mathbf{R}^n$. *J. Math. Phys.* **33** (1992), *no.* 6, 2138–2147. (Galina G. Okuneva) **93d:70016** 70F05 (58F05, 58F07, 70H05)
— (*with* MacKay, Robert S.) Pseudo-Anosov homeomorphisms on a sphere with four punctures have all periods. (English summary) *Math. Proc. Cambridge Philos. Soc.* **112** (1992), *no.* 3, 539–549. (Helena E. Nusse) **93h:58120** 58F20 (58F15)
— (*with* Alsedà i Soler, Lluís) Periods for triangular maps. (English summary) *Bull. Austral. Math. Soc.* **47** (1993), *no.* 1, 41–53. (Peter E. Kloeden) **93m:58033** 58F03 (26A18)
Lloid, E. *see* **Lloyd, Emlyn H.**
rosselló-Llompart, Francesc *see* **Rosselló-Llompart, Francesc**
ferrer Llop, Josep *see* **Ferrer Llop, Josep**
Llorens Fuster, E. (*with* García Falset, J.; Jiménez-Melado, A.) A characterization of normal structure in Banach spaces. (English summary) *Fixed point theory and applications* (*Halifax, NS*, 1991), 122–129, *World Sci. Publishing, River Edge, NJ*, 1992. (Józef Banaś) **93j:46019** 46B20
— (*with* Jiménez-Melado, A.) Stability of the fixed point property for nonexpansive mappings. *Houston J. Math.* **18** (1992), *no.* 2, 251–257. (K. Goebel) **93d:47097** 47H09 (46B20, 47H10)
— (*with* García Falset, J.) A geometric property of Banach spaces related to the fixed point property. (English summary) *J. Math. Anal. Appl.* **172** (1993), *no.* 1, 39–52. (H. H. Bauschke) **93m:46009** 46B20 (47H10)
Llorente, J. G. (*with* Fernández, José L.) A note on the boundary behaviour of harmonic functions. *J. London Math. Soc.* (2) **46** (1992), *no.* 2, 295–300. (A. Yu. Rashkovskiĭ) **93h:31002** 31A20 (30D40)
pardo Llorente, Julio Ángel *see* **Pardo Llorente, Julio Ángel**
Llosa, J. (*with* Blázquez, C. M.) Classical spin particles: a kinematical approach. (English summary) *Rep. Math. Phys.* **30** (1991), *no.* 2, 131–148 (1992). (Akira Yoshioka) **93i:58049** 58F05 (70G99, 70H05)
Llosa, R. (*with* Velilla Cerdán, Santiago) A result in optimal design with application in particle physics. *Comm. Statist. Theory Methods* **21** (1992), *no.* 1, 203–212. (Summary) **93k:62150** 62K05
Llovet, Juan (*with* Sendra, J. Rafael) An extended polynomial GCD algorithm using Hankel matrices. *J. Symbolic Comput.* **13** (1992), *no.* 1, 25–39. (Summary) **93a:68067** 68Q40
Lloyd, Christopher Effective conditioning. (English summary) *Austral. J. Statist.* **34** (1992), *no.* 2, 241–260. (Henry E. Kyburg, Jr.) **93m:62012** 62A15 (62B10)
— Testing capture homogeneity in a recapture model. (English summary) *Biometrika* **79** (1992), *no.* 3, 555–561. 62P10 (62D05)
Lloyd, E. Keith Marks of permutation groups and isomer enumeration. (English summary) Concepts in mathematical chemistry (Bled, 1991). *J. Math. Chem.* **11** (1992), *no.* 1-3, 207–222. (Summary) **93h:92042** 92E10
Lloyd, Emlyn H. *see* **Handbook: Applied statistics**, **93d:62002a** *and* **93d:62002b**
Lloyd, G. E. R. The definition, status, and methods of the medical τέχνη in the fifth and fourth centuries. *Science and philosophy in classical Greece*, 249–260, *Sources Stud. Hist. Philos. Class. Sci.*, 2, *Garland, New York*, 1991. (*see* **93g:01015**) 01A20
Lloyd, N. G. (*with* Pearson, Jane Margaret) Computing centre conditions for certain cubic systems. *J. Comput. Appl. Math.* **40** (1992), *no.* 3, 323–336. (A. P. Sadovskiĭ) **93h:34039** 34C05 (34A34)
Lloyd, Sheelagh Characterising and counting functions satisfying the strict avalanche criterion of order $(n-3)$. *Cryptography and coding, II* (*Cirencester*, 1989), 165–172, *Inst. Math. Appl. Conf. Ser. New Ser.*, 33, *Oxford Univ. Press, New York*, 1992. (B. Ya. Ryabko) **93c:94003** 94A60 (94C10)
— (*with* Jedwab, Jonathan) A note on the nonexistence of Barker sequences. *Des. Codes Cryptogr.* **2** (1992), *no.* 1, 93–97. (Jeffrey O. Shallit) **93e:11032** 11B85
— Counting binary functions with certain cryptographic properties. *J. Cryptology* **5** (1992), *no.* 2, 107–131. (Thomas W. Cusick) **93e:94010** 94A60
— Balance, uncorrelatedness and the strict avalanche criterion. (English summary) *Discrete Appl. Math.* **41** (1993), *no.* 3, 223–233. (Summary) **93i:94012** 94A60 (68P25)
Lluis-Puebla, E. (*with* Loday, Jean-Louis; Gillet, Henri; Soulé, C.; Snaith, Victor P.) ★ Higher algebraic K-theory: an overview. Lecture Notes in Mathematics, 1491. *Springer-Verlag, Berlin*, 1992. x+164 *pp. ISBN* 3-540-55007-0 (J. F. Jardine) **93h:19001** 19–02 (11E70, 19D99, 19F99, 20J06)
Lo, Albert Y. Bayesian bootstrap clones and a biometry function. (English summary) *Sankhyā Ser. A* **53** (1991), *no.* 3, 320–333. (Arup Bose) **93h:62059** 62F15 (62G09)
Lo, Chi-Chang (*with* Mukherjea, Arunava) Convergence in distribution of products of $d \times d$ random matrices. *J. Math. Anal. Appl.* **162** (1991), *no.* 1, 71–91. (Göran Högnäs) **93b:60022** 60B15 (15A51, 60F05, 60J15)
Lo, Chiaming (*with* Zhang, Zhen) Linear inequalities for covering codes. II. Triple covering inequalities. (English summary) *IEEE Trans. Inform. Theory* **38** (1992), *no.* 6, 1648–1662. (Iiro Honkala) **93m:94048** 94B75 (05B40, 11T71, 94B65)
Lo, Gane Samb Sur la caractérisation empirique des extrêmes. [Empirical characterization of extremes] *C. R. Math. Rep. Acad. Sci. Canada* **14** (1992), *no.* 2-3, 89–94. (Summary) **93b:60105** 60G70 (62G30)
Lo, Hing Po (*with* Wani, Jagannath K.) Generalized Stirling numbers in the structure invariant abundance distributions. (English summary) *J. Indian Statist. Assoc.* **30** (1992), *no.* 1, 1–11. (Summary) **93g:62028** 62E15 (05A10)
Lo, Hoi-Kwong (*with* Bucher, Martin; Preskill, John) Topological approach to Alice electrodynamics. (English summary) *Nuclear Phys. B* **386** (1992), *no.* 1, 3–26. (Jacek Pawełczyk) **93k:81138** 81T13 (81R40, 81T30)
Lo, Libo *see* **Luo, Li Bo**
Lo, Sai-Huen On bandsolver using skyline storage. (English summary) *Comput. & Structures* **44** (1992), *no.* 6, 1187–1196. 65F99 (73V05)
— (*with* Lee, C. K.) An automatic adaptive refinement finite element procedure for 2D elastostatic analysis. (English summary) *Internat. J. Numer. Methods Engrg.* **35** (1992), *no.* 10, 1967–1989. (Summary) **93k:73078** 73V05

Lo, Shaw-Hwa (*with* Bassiakos, Yiannis C.; Meng, Xiao-Li) A general estimator of the treatment effect when the data are heavily censored. *Biometrika* **78** (1991), *no.* 4, 741–748. (Summary) **93d:62051** 62G05 (62N05)

— Estimating a survival function with incomplete cause-of-death data. *J. Multivariate Anal.* **39** (1991), *no.* 2, 217–235. (Jagbir Singh) **93f:62134** 62N05 (62P10)

— From the species problem to a general coverage problem via a new interpretation. *Ann. Statist.* **20** (1992), *no.* 2, 1094–1109. (I. J. Good) **93g:62056** 62G05

Lo, Sheng-Ping (*with* Lee, Sin-Min; Seah, Eric) On edge-gracefulness of 2-regular graphs. (English summary) *J. Combin. Math. Combin. Comput.* **12** (1992), 109–117. 05C78

Loach, P. D. (*with* Wathen, A. J.) On the best least squares approximation of continuous functions using linear splines with free knots. *IMA J. Numer. Anal.* **11** (1991), *no.* 3, 393–409. (Summary) **93b:65016** 65D07

Loader, Clive R. Boundary crossing probabilities for locally Poisson processes. *Ann. Appl. Probab.* **2** (1992), *no.* 1, 199–228. (Summary) **93f:60064** 60G55 (60F10, 60G40)

— (*with* Hawkins, D. L.; Kochar, Subhash C.) Testing exponentiality against IDMRL distributions with unknown change point. *Ann. Statist.* **20** (1992), *no.* 1, 280–290. (J. V. Deshpande) **93b:62071** 62G10 (62N05)

— A log-linear model for a Poisson process change point. (English summary) *Ann. Statist.* **20** (1992), *no.* 3, 1391–1411. (Wen Tao Huang) **93k:62200** 62M99 (60G55, 62F03, 62G05)

nguyen thuc Loan *see* **Nguyen Thuc Loan**

van Loan, Charles *see* **Van Loan, Charles**

Loan, N. T. *see* **Nguyen Thuc Loan**

Loan, Nguyen Thuc *see* **Nguyen Thuc Loan**

Lobanov, A. V. Mutual information coordination with identification of faults in distributed computer systems. (Russian. Russian summary) *Avtomat. i Telemekh.* **1992,** *no.* 4, 137–146; *translation in Automat. Remote Control* **53** (1992), *no.* 4, *part* 2, 594–600. 68M15 (94C12)

Lobanov, S. G. Peano's theorem is invalid for any infinite-dimensional Fréchet space. (Russian. Russian summary) *Mat. Sb.* **184** (1993), *no.* 2, 83–86. (Summary) **93m:34095** 34G20 (34A12, 46A04)

Lobarev, I. V. ★ Оценки собственных значений некоторого класса самосопряженных операторов. (Russian) [Estimates for the eigenvalues of a class of selfadjoint operators] *Akad. Nauk SSSR Sibirsk. Otdel., Vychisl. Tsentr, Novosibirsk*, 1989. 137 *pp.* (From the introduction) **93k:47031** 47A75 (47B25, 47G10, 49R05)

Lo Bello, Anthony J. (*with* Barry, Michael J. J.) The moment generating function of the geometric distribution of order k. *Fibonacci Quart.* **31** (1993), *no.* 2, 178–180. 60E10 (60C05)

Lobitz, D. W. (*with* Segalman, D. J.) SuperCHIEF: a modified CHIEF method. (English summary) *Boundary element technology, VII* (*Albuquerque, NM*, 1992), 511–528, *Comput. Mech., Southampton*, 1992. (*see* **93b:65002**) 76M15 (65N38, 76Q05)

Lobo, Jorge (*with* Minker, Jack; Rajasekar, Arcot) Circumscription and disjunctive logic programming. *Artificial intelligence and mathematical theory of computation*, 281–304, *Academic Press, Boston, MA*, 1991. (J.-J. Ch. Meyer) **93b:68024** 68Q10 (03B60, 68N15, 68N17, 68T30)

— (*with* Minker, Jack; Rajasekar, Arcot) ★ Foundations of disjunctive logic programming. MIT Press Series in Logic Programming. *MIT Press, Cambridge, MA*, 1992. xx+307 *pp. ISBN* 0-262-12165-4 (M. I. Dekhtyar) **93i:68160** 68T25 (03B20, 03B35, 03B70, 68–02, 68N17, 68Q55)

— (*with* Subrahmanian, V. S.) Relating minimal models and prerequisite-free normal defaults. (English summary) *Inform. Process. Lett.* **44** (1992), *no.* 3, 129–133. (Summary) **93m:03051** 03B70 (68N17, 68T27)

Lobo, José Alberto Effect of a weak plane GW on a light beam. *Classical Quantum Gravity* **9** (1992), *no.* 5, 1385–1394. (Summary) **93b:83020** 83C35 (83B05)

Lobo, Miguel *see* **Lobo-Hidalgo, Miguel**

Loboda, A. V. Normal surface equations that contain a two-dimensional completely real submanifold. (Russian. Russian summary) *Mat. Zametki* **52** (1992), *no.* 1, 76–86, 156; *translation in Math. Notes* **52** (1992), *no.* 1-2, 687–694 (1993). (Roman Dwilewicz) **93k:32035** 32F25 (32F30)

Lobo-Hidalgo, Miguel (*with* Pérez, Eugenia) Vibration of systems with many concentrated masses. (Spanish) *Proceedings of the XII Congress on Differential Equations and Applications/II Congress on Applied Mathematics* (*Spanish*) (*Oviedo*, 1991), 491–496, *Univ. Oviedo, Oviedo*, 1991. (*see* **93j:00009**) 73D30 (73B27)

— (*with* Pérez, Eugenia) Boundary homogenization of certain elliptic problems for cylindrical bodies. (English and French summaries) *Bull. Sci. Math.* (2) **116** (1992), *no.* 3, 399–426. (Alexander Belyaev) **93i:35015** 35B27 (35B45, 35J05, 73B27, 73K20)

Lobry, Claude Dynamic bifurcations. *Dynamic bifurcations* (*Luminy*, 1990), 1–13, *Lecture Notes in Math.*, 1493, *Springer, Berlin*, 1991. (J. S. Joel) **93d:58112** 58F14 (03H05, 34C23)

— Control theory and environmental problems: slow fast models for management of renewable resources. (English summary) *Optimization, optimal control and partial differential equations* (*Iaşi*, 1992), 219–229, *Internat. Ser. Numer. Math.*, 107, *Birkhäuser, Basel*, 1992. (*see* **93m:00044**) 49N55 (93C95)

— A propos du sens des textes mathématiques. Un exemple: La théorie des "bifurcations dynamiques". (English summary) [On the meaning of mathematical texts. One example: the theory of "dynamical bifurcations"] *Ann. Inst. Fourier* (*Grenoble*) **42** (1992), *no.* 1-2, 327–351. (J. S. Joel) **93e:58142** 58F14 (00A30, 03F65, 03H05, 34C23)

Lobstein, Antoine-C. (*with* Barthélémy, Jean-Pierre; Cohen, Gérard Denis) ★ Complexité algorithmique et problèmes de communications. (French) [Algorithmic complexity and communications problems] With a preface by M. Minoux. Collection Technique et Scientifique des Télécommunications. [Scientific and Technical Collection on Telecommunications] *Masson, Paris*, 1992. xxviii+228 *pp. ISBN* 2-225-82672-2 (Cristian Calude) **93h:68046** 68Q15 (68–02, 68Q25, 94–02)

— On perfect arithmetic codes. (English summary) A collection of contributions in honour of Jack van Lint. *Discrete Math.* **106/107** (1992), 333–336. (Sirpa Ernvall) **93g:94026** 94B40

Lobzhanidze, G. B. (*with* Korshiya, T. K.) Decomposition approaches to the numerical solution of nonlocal boundary value problems. (Russian. English and Georgian summaries) *Tbiliss. Gos. Univ. Inst. Prikl. Mat. Trudy* **40** (1990), 150–181, 248. (J. B. Butler, Jr.) **93b:65104** 65L10 (65L60, 65N12)

Lo Cascio, L. (*with* Persico, F.) Strong-field theory of dressed atoms and dressed photons. *J. Modern Opt.* **39** (1992), *no.* 1, 87–101. (Suresh V. Lawande) **93e:81156** 81V80 (81P20, 81V45)

Lochak, Georges Nonlinear spinorial wave equation for a magnetic monopole. *Nonlinear world, Vol.* 2 (*Kiev*, 1989), 1505–1518, *World Sci. Publishing, River Edge, NJ*, 1990. (*see* **93b:00013**) 81R20 (35Q60)

— Louis de Broglie's conception of physics. (English summary) *Found. Phys.* **23** (1993), *no.* 1, 123–131. (Lawrence Sklar) **93m:81003** 81–03 (01A60)

Lochak, Pierre The blow-up of the supercritical nonlinear Schrödinger equation and a class of spectral problems. *Nonlinear world, Vol.* 1 (*Kiev*, 1989), 196–211, *World Sci. Publishing, River Edge, NJ*, 1990. (*see* **93b:00012**) 35Q55

Lock, N. (*with* Wong, K. H.; Kaji, K.) Output feedback for a class of linear-quadratic systems with jump stochastic parameters. (English summary) *Optimization, Vol.* 1, 2 (*Singapore*, 1992), 645–652, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93d:90005**) 93B52 (93E20)

Lock, Patti Frazer (*with* Dean, Alice M.; Knickerbocker, C. J.; Sheard, Michael) A survey of graphs Hamiltonian-connected from a vertex. *Graph theory, combinatorics, and applications, Vol.* 1 (*Kalamazoo, MI*, 1988), 297–313, *Wiley-Intersci. Publ., Wiley, New York*, 1991. (*see* **93b:05002**) 05C45

Locke, J. *see* **Durand-Richard, Marie-José, 93b:01025**

Locke, S. C. (*with* Zhang, Cun Quan) Cycles through three vertices in 2-connected graphs. *Graphs Combin.* **7** (1991), *no.* 3, 265–269. (Akira Saito) **93a:05078** 05C38 (05C40)

— (*with* Bondy, J. A.) Triangle-free subgraphs of powers of cycles. *Graphs Combin.* **8** (1992), *no.* 2, 109–118. (Marko Razpet) **93e:05079** 05C75 (05C78)

Locker, John (*with* Lang, Patrick) Eigenfunction expansions for the nonspectral differential operators determined by $-D^2$. *J. Differential Equations* **96** (1992), *no.* 2, 318–339. (R. C. Gilbert) **93i:47069** 47E05 (34B05, 34L10, 47B40)

— The spectral theory of second order two-point differential operators. I. A priori estimates for the eigenvalues and completeness. (English summary) *Proc. Roy. Soc. Edinburgh Sect. A* **121** (1992), *no.* 3-4, 279–301. (Reinhard Mennicken) **93g:34128** 34L05 (34B05, 34L10, 47E05)

Lockhart, Jody Meyer The conjugacy problem for graph products with finite cyclic edge groups. *Proc. Amer. Math. Soc.* **117** (1993), *no.* 4, 897–898. (David Meier) **93e:20045** 20F10 (20E06)

Loday, Jean-Louis (*with* Lluis-Puebla, E.; Gillet, Henri; Soulé, C.; Snaith, Victor P.) ★ Higher algebraic K-theory: an overview. Lecture Notes in Mathematics, 1491. *Springer-Verlag, Berlin*, 1992. x+164 *pp. ISBN* 3-540-55007-0 (J. F. Jardine) **93h:19001** 19–02 (11E70, 19D99, 19F99, 20J06)

— Excision en K-théorie algébrique, d'après A. Suslin et M. Wodzicki. (French summary) [Excision in algebraic K-theory, after A. Suslin and M. Wodzicki] Séminaire Bourbaki, Vol. 1991/92. *Astérisque No.* 206 (1992), *Exp. No.* 752, 4, 251–271. (Sue Geller) **93k:19004** 19D55 (19–02, 19C40)

Lodge, A. S. (*with* Pritchard, W. G.; Scott, L. R.) Corrigendum to: "The hole-pressure problem" [IMA J. Appl. Math. **46** (1991), no. 1-2, 39–66; MR 92b:76025]. *IMA J. Appl. Math.* **49** (1992), *no.* 3, 311. (From the text) **93k:76029** 76D05 (76M10, 76M20)

Lodkin, A. A. (*with* Makarov, B. M.; Goluzina, M. G.; Podkorytov, A. N.) ★ Selected problems in real analysis. Translated from the Russian by H. H. McFaden. Translations of Mathematical Monographs, 107. *American Mathematical Society, Providence, RI*, 1992. x+370 *pp. ISBN* 0-8218-4559-4 (R. G. Bartle) **93i:26001** 26–01 (00A07)

Lodovici, C. (*with* Bartoloni, A.; Zirilli, Francesco) Inverse problem for a class of one-dimensional wave equations with piecewise constant coefficients. (English summary) *J. Optim. Theory Appl.* **76** (1993), *no.* 1, 13–32. (Summary) **93i:35152** 35R30 (35L05, 49N45)

Lods, Véronique Différentes formulations du modèle d'arche, permettant de comparer le gradient discret et le gradient continu discrétisé. (English summary) [Different formulations of the arch model allowing one to compare the discrete gradient and the discretized continuous gradient] *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 1, 83–86. (Muhammad Aslam Noor) **93c:65081** 65K05 (49M25)

— Formulation mixte d'un problème de jonctions de poutres adaptée à la résolution d'un problème d'optimisation. (English summary) [A mixed formulation for a model of junctions of beams adapted to the solution of an optimization problem] *RAIRO Modél. Math. Anal. Numér.* **26** (1992), *no.* 4, 523–553. (Ognyan Kounchev) **93g:73095** 73K40 (73K05, 73V05)

Lodwick, Weldon A. Preprocessing nonlinear functional constraints with applications to the pooling problem. (English summary) *ORSA J. Comput.* **4** (1992), *no.* 2, 119–131. (Summary) **93e:65093** 65K10 (65K05)

Loeb, Arthur L. ★ Space structures. Their harmony and counterpoint. With a foreword by Cyril Stanley Smith. Revised reprint of the 1976 original. Design Science Collection. *Birkhäuser Boston, Inc., Boston, MA*, 1991. xx+188 *pp. ISBN* 0-8176-3588-2 (Ren Ding) **93a:52010** 52B20 (51–01, 51M20, 52–01)

— (*with* Chorbachi, Wasma'a K.) An Islamic pentagonal seal (from scientific manuscripts of the geometry of design). *Fivefold symmetry*, 283–305, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93i:52002**) 01A30

Loeb, Daniel E. (*with* Rota, Gian-Carlo) Recent contributions to the calculus of finite differences: a survey. *Geometry and complex variables* (*Bologna*, 1988/1990), 239–276, *Lecture Notes in Pure and Appl. Math.*, 132, *Dekker, New York*, 1991. (Luis Verde-Star) **93f:39013** 39A70 (05A40, 33E20)

— Sets with a negative number of elements. *Adv. Math.* **91** (1992), *no.* 1, 64–74. (Ira Gessel) **93c:05008** 05A15 (04A20, 05A10)

— A generalization of the Stirling numbers. *Discrete Math.* **103** (1992), *no.* 3, 259–269. (Giorgio Nicoletti) **93g:05008** 05A10 (11B73)

— A generalization of the binomial coefficients. (English summary) *Discrete Math.* **105** (1992), *no.* 1-3, 143–156. (Andrea Brini) **93h:05006** 05A10 (05A40)

Loeb, J.-J. Les noyaux de Bergman et Szegő pour des domaines strictement pseudo-convexes qui généralisent la boule. (English summary) [Bergman and Szegő kernels for strictly pseudoconvex domains generalizing the unit ball] *Publ. Mat.* **36** (1992), *no.* 1, 65–72. (I. P. Ramadanov) **93g:32034** 32H10 (32F15, 32M05)

— (*with* Azad, H.) Plurisubharmonic functions and the Kempf-Ness theorem. *Bull. London Math. Soc.* **25** (1993), *no.* 2, 162–168. (Michel Brion) **93m:32044** 32M05 (32E10, 32F05, 32M10)

Loeb, Peter A. (*with* Bliedtner, Jürgen) A reduction technique for limit theorems in analysis and probability theory. *Ark. Mat.* **30** (1992), *no.* 1, 25–43. (Albert E. Hurd) **93k:28005** 28A33 (03H05)
— An optimization of the Besicovitch covering. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 3, 715–716. (Robert A. Herrmann) **93i:03098** 03H05 (28A75, 28E05, 52C17, 54J05)
Loebl, Martin (*with* Nešetřil, Jaroslav) Fast and slow growing (a combinatorial study of unprovability). *Surveys in combinatorics*, 1991 (*Guildford*, 1991), 119–160, *London Math. Soc. Lecture Note Ser.*, 166, *Cambridge Univ. Press, Cambridge*, 1991. (Alessandro Berarducci) **93d:03061** 03F30 (03D15, 03D20, 03D55)
— (*with* Matoušek, Jiří) Hercules versus Hidden Hydra Helper. *Comment. Math. Univ. Carolin.* **32** (1991), *no.* 4, 731–741. (Summary) **93c:90123** 90D46 (03B25, 03F30, 05C05)
— (*with* Crama, Y.; Poljak, Svatopluk) A decomposition of strongly unimodular matrices into incidence matrices of digraphs. *Discrete Math.* **102** (1992), *no.* 2, 143–147. (Ernie S. Solheid) **93g:05097** 05C50 (15A21)
— Unprovable combinatorial statements. (English summary) Topological, algebraical and combinatorial structures. Frolík's memorial volume. *Discrete Math.* **108** (1992), *no.* 1-3, 333–342. (Christian Bennet) **93k:03059** 03F25 (03F30, 05D10)
— (*with* Nešetřil, Jaroslav) An unprovable Ramsey-type theorem. *Proc. Amer. Math. Soc.* **116** (1992), *no.* 3, 819–824. (Christian Bennet) **93a:03067** 03F30
Loeser, François (*with* Denef, Jan) Polyèdres de Newton et poids de sommes exponentielles. [Newton polyhedra and weights of exponential sums] *p-adic analysis* (*Trento*, 1989), 217–222, *Lecture Notes in Math.*, 1454, *Springer, Berlin*, 1990. (From the introduction) **93c:14040** 14M25 (11L03)
— Arrangements d'hyperplans et sommes de Gauss. [Arrangements of hyperplanes and Gauss sums] *Ann. Sci. École Norm. Sup.* (4) **24** (1991), *no.* 4, 379–400. (Daniel Barsky) **93c:11063** 11L05 (11T24, 52B30)
— Polytopes secondaires et discriminants. [Secondary polytopes and discriminants] Séminaire Bourbaki, Vol. 1990/91. *Astérisque No.* 201-203 (1991), *Exp. No.* 742, 387–420 (1992). (Michael M. Kapranov) **93h:14039** 14M25 (32S30)
— (*with* Sabbah, Claude) Caractérisation des $\mathscr{D}$-modules hypergéométriques irréductibles sur le tore. (English summary) [Characterization of irreducible hypergeometric $\mathscr{D}$-modules on the torus] *C. R. Acad. Sci. Paris Sér. I Math.* **312** (1991), *no.* 10, 735–738. (Summary) **93c:13020** 13N10 (14L10, 16S32)
— (*with* Sabbah, Claude) Équations aux différences finies et déterminants d'intégrales de fonctions multiformes. (English summary) [Finite-difference equations and determinants of integrals of multivalent functions.] *Comment. Math. Helv.* **66** (1991), *no.* 3, 458–503. (Michael M. Kapranov) **93a:32057** 32S40 (33B15)
— (*with* Denef, Jan) Weights of exponential sums, intersection cohomology, and Newton polyhedra. *Invent. Math.* **106** (1991), *no.* 2, 275–294. (F. Baldassarri) **93a:14019** 14F32 (11L03, 11T23, 14F20, 14M25)
— (*with* Denef, Jan) Caractéristiques d'Euler-Poincaré, fonctions zêta locales et modifications analytiques. [Euler-Poincaré characteristics, local zeta functions and analytic modification] *J. Amer. Math. Soc.* **5** (1992), *no.* 4, 705–720. (Daniel Barsky) **93g:11118** 11S40 (11M41, 14E15, 32S45)
Loève, M. *see* **Lévy, Paul, 93i:60003**
Loewe, Mark E. (*with* Bohm, Arno; Kendrick, Brian; Boya, Luis J.) The Berry connection and Born-Oppenheimer method. *J. Math. Phys.* **33** (1992), *no.* 3, 977–989. (Shinichi Tajima) **93d:81051** 81Q99 (81V55)
Loewen, P. D. (*with* Clarke, Frank H.) Variational problems with Lipschitzian minimizers. (English summary) *Analyse non linéaire* (*Perpignan*, 1987), 184–209, *Univ. Montréal, Montreal, PQ*, 1989. (*see* **93h:49003**) 49N60
— Limits of Fréchet normals in nonsmooth analysis. *Optimization and nonlinear analysis* (*Haifa*, 1990), 178–188, *Pitman Res. Notes Math. Ser.*, 244, *Longman Sci. Tech., Harlow*, 1992. (J. Borwein) **93h:49028** 49J52 (46N10)
Loewner, Charles *see* **May, Angelika, 93d:01046**
Loewy, Raphael (*with* Hartwig, Robert E.) Maximal elements under the three partial orders. (English summary) *Linear Algebra Appl.* **175** (1992), 39–61. (John Maroulas) **93i:15035** 15A99
Lo Faro, Giovanni (*with* Gionfriddo, Mario) On blocking sets in $S_\lambda(t, t+1, v)$. Proceedings of the First International Conference on Blocking Sets (Giessen, 1989). *Mitt. Math. Sem. Giessen No.* 201 (1991), 55–58. (Summary) **93e:51013** 51E21 (05B05)
— (*with* Innamorati, Stefano) Constructing Steiner triple systems partially embedded in a projective plane. (English summary) *J. Inform. Optim. Sci.* **13** (1992), *no.* 2, 267–277. (Summary) **93g:05023** 05B07 (05B25)
— (*with* Gionfriddo, Mario) 2-colourings in $S(t, t+1, v)$. (English summary) Graph theory and combinatorics (Marseille-Luminy, 1990). *Discrete Math.* **111** (1993), *no.* 1-3, 263–268. (Summary) **93j:05028** 05B30
Loffler, Cristophe (*with* Mielcarek, Didier; Ragot, José; Bloch, Gérard) A comparative study of some recursive parameters estimation algorithms for multivariable systems. (English summary) *Mathematical and intelligent models in system simulation, I, II* (*Brussels*, 1990), 59–64, *IMACS Ann. Comput. Appl. Math.*, 10, 11, *Baltzer, Basel*, 1991. (*see* **93c:93005**) 93E10 (93C35)
Loffredo, Maria I. *see* **Probabilistic methods in mathematical physics, 93g:81002**
Löfström, Jörgen A new approach to interpolation in Hilbert spaces. *J. Funct. Anal.* **101** (1991), *no.* 1, 177–193. (L. İ. Nikolova) **93d:46129** 46M35 (47A05)
— Interpolation of boundary value problems of Neumann type on smooth domains. (English summary) *J. London Math. Soc.* (2) **46** (1992), *no.* 3, 499–516. (H. Triebel) **93m:46036** 46E35 (35J15, 46M35)
Löfwall, Clas (*with* Fröberg, Ralf) On Hilbert series for commutative and noncommutative graded algebras. *J. Pure Appl. Algebra* **76** (1991), *no.* 1, 33–38. (Rafael H. Villarreal) **93a:13008** 13D40 (16W50)
Logachev, A. S. A recursive algorithm for decoding some subsets of first-order Reed-Muller codes. (Russian. Russian summary) *Diskret. Mat.* **4** (1992), *no.* 2, 130–135. (Summary) **93f:94025** 94B35 (68Q25)
Logachëv, D. Yu. (*with* Kolyvagin, V. A.) Finiteness of Ш over totally real fields. (Russian) *Izv. Akad. Nauk SSSR Ser. Mat.* **55** (1991), *no.* 4, 851–876; *translation in Math. USSR-Izv.* **39** (1992), *no.* 1, 829–853. (Jan Nekovář) **93d:11063** 11G18 (11G10, 11G40, 14G35)
Logan, B. A. (*with* Ljubičić, A.) A proposed test of the general validity of Mach's principle. (English summary) *Phys. Lett. A* **172** (1992), *no.* 1-2, 3–5. (Summary) **93k:83005** 83B05 (83–05)
Logan, B. F. (*with* Donoho, David L.) Signal recovery and the large sieve. *SIAM J. Appl. Math.* **52** (1992), *no.* 2, 577–591. (Hans-Jürgen Schmeisser) **93d:42003** 42A05 (30D10, 30D15, 94A12)
Logan, J. David (*with* Ledder, Glenn) A signalling problem for near-equilibrium flows in the Fickett-Majda model of combustion. *IMA J. Appl. Math.* **47** (1991), *no.* 3, 229–246. (Summary) **93d:80004** 80A25 (35L60, 35Q99)
— An inhomogeneous nonlinear boundary value problem in model reactive media. *Appl. Math. Modelling* **16** (1992), *no.* 6, 291–299. (Kuppalapalle Vajravelu) **93f:80008** 80A20 (34B15, 65L10)
— (*with* Dunbar, Steven R.) Travelling waves in model reacting flows with reversible kinetics. (English summary) *IMA J. Appl. Math.* **49** (1992), *no.* 2, 103–121. (Summary) **93h:80008** 80A32 (35B20, 35Q35)
— (*with* Ledder, Glenn) Weakly nonlinear asymptotic models and analogs of detonation processes. (English summary) *Internat. J. Engrg. Sci.* **30** (1992), *no.* 12, 1759–1772. (Summary) **93f:80020** 80A25
— Weakly nonlinear reactive shocks with lateral divergence. (English summary) *J. Phys. A* **26** (1993), *no.* 2, 411–426. (Summary) **93k:80017** 80A32 (35L67, 76L05)
— (*with* Shores, Thomas S.) Travelling waves produced by moving sources in a nonlinear reactive-convective system. (English summary) *Math. Models Methods Appl. Sci.* **3** (1993), *no.* 1, 1–18. (Summary) **93j:35095** 35K57 (34A09, 80A32)
Loganathan, M. (*with* Chandrasekaran, V. M.) Regular semigroups with a split map. *Semigroup Forum* **44** (1992), *no.* 2, 199–212. (R. B. McFadden) **93b:20103** 20M17
Logemann, Hartmut (*with* Zwart, H. J.) On robust PI-control of infinite-dimensional systems. *SIAM J. Control Optim.* **30** (1992), *no.* 3, 573–593. (Zbigniew Emirsajlow) **93d:93077** 93D21 (47N70, 93C80)
— (*with* Ilchmann, Achim) High-gain adaptive stabilization of multivariable linear systems—revisited. (English summary) *Systems Control Lett.* **18** (1992), *no.* 5, 355–364. (Rui Sheng Li) **93j:93132** 93D21
Loges, Frido Mathematisierung der Physik—Wesen und Notwendigkeit. [Mathematization of physics—substance and necessity] *Mathematik und Wirklichkeit*, 87–98, *Akademie-Verlag, Berlin*, 1991. (*see* **93e:00008**) 00A30
Loginov, A. S. Interpolation of continuous functions by Bernstein polynomials on triangulable domains. (Russian) *Mat. Sb.* **182** (1991), *no.* 9, 1311–1314; *translation in Math. USSR-Sb.* **74** (1993), *no.* 1, 57–61. (Summary) **93d:41006** 41A05
Loginov, B. V. (*with* Rusak, Yu. B.; Kim-Tyan, L. R.) Stability of branching solutions under group symmetry conditions. (Russian) *Current group analysis* (*Russian*) (*Baku*, 1988), 146–151, "*Élm*", *Baku*, 1989. (*see* **93d:58002**) 47H15 (58E09)
— (*with* Kim-Tyan, L. R.) On the stability of solutions of differential equations with an operator of zero index multiplying the derivative. (Russian) *Boundary value problems for differential equations of mixed types* (*Russian*), 27–34, 201, "*Fan*", *Tashkent*, 1991. (Summary) **93a:34076** 34G20 (34A47, 34D20, 47H15, 47N20)
— (*with* Azizova, A. A.; Kuznetsov, A. O.) The method of group transformations in computations of the bending forms of rods. (Russian) *Boundary value problems for differential equations of mixed types* (*Russian*), 43–49, 202, "*Fan*", *Tashkent*, 1991. (From the text) **93c:73057** 73K05 (34B15, 65L06, 65L10)
— (*with* Kuznetsov, A. O.) Construction of the asymptotics of small solutions with an irregular hexagonal periodicity lattice for a problem on capillary-gravity waves over an even bottom. (Russian) *Mathematical analysis* (*Russian*), 40–49, *Ross. Gos. Ped. Univ., Leningrad*, 1991. (From the text) **93i:76012** 76B15 (35Q35, 76B45)
— (*with* Pospeev, V. E.; Rakhmatova, Kh. R.) Application of some generalizations of the Pincherle basis to the solution of a system of infinite-order differential equations. (Russian) *Partial differential equations* (*Russian*), 79–82, "*Obrazovanie*", *St. Petersburg*, 1992. (*see* **93m:00035**) 34A35 (34A20)
— Group analysis methods for construction and investigation of the bifurcation equation. *Appl. Math.* **37** (1992), *no.* 4, 241–248. (Reiner Lauterbach) **93j:58026** 58E09 (47H15, 58G28)
Logunov, P. I. Comparison of expenditures with an optimal and a random control in a particular technical system. *Soviet J. Comput. Systems Sci.* **30** (1992), *no.* 4, 108–114; *translated from Izv. Akad. Nauk SSSR Tekhn. Kibernet.* **1991**, *no.* 4, 115–121 (*Russian. Russian summary*). (Summary) **93d:90026** 90B35 (93E20)
— Asymptotic properties of random matrices that are expressed in terms of conditional probabilities. (Russian) *Diskret. Mat.* **4** (1992), *no.* 1, 117–125. (Summary) **93e:60066** 60F99 (60C05, 68R99)
— On estimates of the probability of domination with fixed marginal distributions. Stability problems for stochastic models. *J. Soviet Math.* **59** (1992), *no.* 4, 952–954. (S. T. Rachev) **93f:60021** 60E05 (60F05)
Logvin, Yu. A. (*with* Kruglov, V. I.; Volkov, V. M.) The theory of spiral laser beams in nonlinear media. (English summary) *J. Modern Opt.* **39** (1992), *no.* 11, 2277–2291. (Summary) **93j:78021** 78A60
Logvinenko, V. N. Multidimensional analogues of Cartwright and Plancherel-Pólya theorems. Their applications. (Russian. Russian summary) *Complex analysis and mathematical physics* (*Russian*) (*Divnogorsk*, 1987), 90–98, 159, *Akad. Nauk SSSR Sibirsk. Otdel., Inst. Fiz., Krasnoyarsk*, 1988. (*see* **93h:32001**) 32A22
— (*with* Agranovich, P. Z.) Polynomial asymptotic representation of a function that is subharmonic in the plane. (Russian) *Sibirsk. Mat. Zh.* **32** (1991), *no.* 1, 3–21, 219; *translation in Siberian Math. J.* **32** (1991), *no.* 1, 1–16. (Summary) **93a:31002** 31A05 (30D99)
— (*with* Favorov, S. Yu.) Lacunary series and Fourier integrals of functions of several variables. *Entire and subharmonic functions*, 223–235, *Adv. Soviet Math.*, 11, *Amer. Math. Soc., Providence, RI*, 1992. (Yi Biao Pan) **93j:42005** 42B10
Loh, Ching-Yuen (*with* Hui, W. H.) A new Lagrangian method for steady supersonic flow computation. II. Slip-line resolution. (English summary) *J. Comput. Phys.* **103** (1992), *no.* 2, 450–464. (Summary) **93j:76044a** 76M20 (76J20, 76L05)
— (*with* Hui, W. H.) A new Lagrangian method for steady supersonic flow computation. III. Strong shocks. *J. Comput. Phys.* **103** (1992), *no.* 2, 465–471. (From the introduction) **93j:76044b** 76M20 (76J20, 76L05)
— (*with* Liou, Meng Sing) Lagrangian solution of supersonic real gas flows. (English summary) *J. Comput. Phys.* **104** (1993), *no.* 1, 150–161. (Summary) **93g:76087** 76M20 (76K05, 76L05, 76N15)

Loh, H. T. (*with* Teng, C. S.; Wong, Y. S.) An algorithm for linear interpolation of cubic Bézier curves. (English summary) *Optimization, Vol.* 1, 2 (*Singapore*, 1992), 815–822, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93d:90005**) 41A05 (41A99)

Loh, Nan K. (*with* Hu, Hong Xing) Active suspension design via frequency-shaping optimal parametric control theory. (English and Polish summaries) *Systems Sci.* **18** (1992), *no.* 1-2, 5–18 (1993). 93C85

— (*with* Gu, Keqin) Direct computation of stability bound for systems with polytopic uncertainties. (English summary) *IEEE Trans. Automat. Control* **38** (1993), *no.* 2, 363–366. (Summary) **93j:93105** 93D09 (93C50)

Loh, R. P. (*with* Shannon, A. G.; Horadam, Alwyn F.) Generalized Fibonacci and Lucas factorizations. *Applications of Fibonacci numbers, Vol.* 4 (*Winston-Salem, NC*, 1990), 271–276, *Kluwer Acad. Publ., Dordrecht*, 1991. (James N. Ridley) **93m:11014** 11B39

Loh, Wei-Liem Stein's method and multinomial approximation. (English summary) *Ann. Appl. Probab.* **2** (1992), *no.* 3, 536–554. (Malgorzata Majsnerowska) **93f:60040** 60F17

— (*with* Barbour, A. D.; Chen, Louis H. Y.) Compound Poisson approximation for nonnegative random variables via Stein's method. (English summary) *Ann. Probab.* **20** (1992), *no.* 4, 1843–1866. (Dietmar Pfeifer) **93k:60044** 60E15 (60J10)

Loh, Wei-Yin (*with* Chen, Han Feng) Bounds on AREs of tests following Box-Cox transformations. (English summary) *Ann. Statist.* **20** (1992), *no.* 3, 1485–1500. (Z. Šidák) **93j:62135** 62G20 (62G10)

Lohe, M. A. (*with* Biedenharn, L. C.) Symmetries of quantum group coupling coefficients. (English summary) *Differential geometry, group representations, and quantization*, 193–206, *Lecture Notes in Phys.*, 379, *Springer, Berlin*, 1991. (*see* **93c:81004**) 81R50 (17B37)

— (*with* Biedenharn, L. C.) Induced representations and tensor operators for quantum groups. (English summary) *Quantum groups* (*Leningrad*, 1990), 197–209, *Lecture Notes in Math.*, 1510, *Springer, Berlin*, 1992. (Andy R. Magid) **93j:17021** 17B37 (81R50)

— (*with* Biedenharn, L. C.; Bincer, A. M.; Louck, James D.) New relations and identities for generalized hypergeometric coefficients. *Adv. in Appl. Math.* **13** (1992), *no.* 1, 62–121. (Robert A. Gustafson) **93g:33009** 33C50 (22E70, 33C80)

— (*with* Biedenharn, L. C.) An extension of the Borel-Weil construction to the quantum group $U_q(n)$. *Comm. Math. Phys.* **146** (1992), *no.* 3, 483–504. (Andrew Pressley) **93h:17023** 17B37 (16W30, 81R50)

Lohéac, J.-P. (*with* Nataf, Frédéric; Schatzman, Michelle) Parabolic approximations of the convection-diffusion equation. *Math. Comp.* **60** (1993), *no.* 202, 515–530. (C. Wayne Mastin) **93h:65129** 65N06 (65N15, 76M20, 76R99)

Lohkamp, Jochen Negatively Ricci curved manifolds. *Bull. Amer. Math. Soc.* (*N.S.*) **27** (1992), *no.* 2, 288–291. (Robert Brooks) **93c:53026** 53C21 (57R99)

— The space of negative scalar curvature metrics. *Invent. Math.* **110** (1992), *no.* 2, 403–407. (Viktor Schroeder) **93h:58025** 58D17 (53C21)

Lõhmus, Jaak (*with* Paal, Eugen; Sorgsepp, Leo) Nonassociativity in mathematics and physics. (Russian. English summary) Quasigroups and nonassociative algebras in physics (Russian) (Tartu, 1989). *Eesti NSV Tead. Akad. Füüs. Inst. Uurim. No.* 66 (1990), 8–22. (A. L. Onishchik) **93b:17082** 17Dxx (01A55, 01A60, 81R99)

— (*with* Sorgsepp, Leo) Aspect of self-duality in the hypercomplex formalism. (Russian summary) Quasigroups and nonassociative algebras in physics (Russian) (Tartu, 1989). *Eesti NSV Tead. Akad. Füüs. Inst. Uurim. No.* 66 (1990), 180–199. (Dominique Lambert) **93a:53063** 53C80 (30G35, 81T13)

— (*with* Paal, Eugen; Sorgsepp, Leo) Moufang symmetries and conservation laws. (English, Russian and Estonian summaries) *Eesti Tead. Akad. Toimetised Füüs. Mat.* **41** (1992), *no.* 2, 133–141, 174. (Summary) **93k:58238** 58G35 (17D10, 70G99)

Lõhnberg, Peter (*with* Franke, B.) Model quality and optimal identification for control. (English summary) *Identification and system parameter estimation* 1991, *Vol.* 1,2 (*Budapest*, 1991), 817–822, *IFAC Sympos. Ser.*, 3, *Pergamon, Oxford*, 1992. (*see* **93h:93009**) 93B30

— (*with* Berghuis, Harry; Nijmeijer, Henk) An addendum on: "Robust control of robots by the computed torque method [law]" [Systems Control Lett. **16** (1991), no. 1, 25–32; MR 91j:93066] by Z. Qu, J. F. Dorsey, X. Zhang and D. M. Dawson. (English summary) *Systems Control Lett.* **18** (1992), *no.* 5, 403–407. (Summary) **93g:93055** 93C85 (70B15, 70Q05)

Löhner, Rainald Adaptive remeshing for transient problems with moving bodies. *Finite elements in fluids, Vol.* 8 (*Huntsville, AL*, 1989), 31–45, *Ser. Comput. Phys. Process. Mech. Thermal Sci., Hemisphere, Washington, DC*, 1992. (*see* **93e:76050**) 76M10 (65M60)

Lohner, Rudolf J. Interval arithmetic in staggered correction format. (English summary) *Scientific computing with automatic result verification*, 301–321, *Math. Sci. Engrg.*, 189, *Academic Press, Boston, MA*, 1993. (H. Ratschek) **93j:68010** 68M07 (65G10)

Lohoué, Noël Transformées de Riesz et fonctions sommables. [Riesz transforms and summable functions] *Amer. J. Math.* **114** (1992), *no.* 4, 875–922. (Gerald B. Folland) **93k:58214** 58G15 (42B20, 43A85)

— Estimations des sommes de Riesz d'opérateurs de Schrödinger sur les variétés riemanniennes et les groupes de Lie. (English summary) [Estimates of Riesz sums of Schrödinger operators on Riemannian manifolds and Lie groups] *C. R. Acad. Sci. Paris Sér. I Math.* **315** (1992), *no.* 1, 13–18. (Nicolae Anghel) **93j:58133** 58G16 (22E30, 43A15, 47F05)

Loi, N. H. On the equiconvergence of the Riesz means with exact order. *Acta Math. Hungar.* **58** (1991), *no.* 1-2, 55–61. (Ahmed I. Zayed) **93b:40004** 40G99 (34L10, 34L40, 42C15)

Loinger, Angelo *see* **Weyl, Hermann, 93g:01104**

Loiseau, Bruno A nonstandard analysis characterization of Arzelà's quasi-uniform convergence for sequences of real functions. *Portugal. Math.* **49** (1992), *no.* 1, 1–9. (Albert E. Hurd) **93i:26023** 26E35 (03H05, 26A15)

Loiseau, Jean J. Pole placement and related problems. *Kybernetika* (*Prague*) **28** (1992), *no.* 2, 90–99. (T. Kaczorek) **93c:93031** 93B55 (93–02)

Loizou, George (*with* Levene, Mark) Inferring null join dependencies in relational databases. (English summary) *BIT* **32** (1992), *no.* 3, 413–429. (Summary) **93m:68043** 68P15

Lojasiewicz, Stanisław In memoriam: Andrzej Pliś (March 19, 1929–November 28, 1991). *J. Differential Equations* **103** (1993), *no.* 1, 1–2. 01A70

Lojasiewicz, Stanisław, Jr. (*with* Kaśkosz, Barbara) Lagrange-type extremal trajectories in differential inclusions. (English summary) *Systems Control Lett.* **19** (1992), *no.* 3, 241–247. (B. Mordukhovich) **93i:49030** 49K24 (34A60, 49J24, 49J52)

Lok, K. (*with* Brdyś, M. A.) Fast integrated system optimization and parameter estimation algorithms. *Control* '91, *Vol.* 1, 2 (*Edinburgh*, 1991), 632–637, *IEE Conf. Publ. Ser.*, 332, *IEE, London*, 1991. (*see* **93h:93007**) 90C30 (93B40)

Lokar, Matija (*with* Kozak, Jernej) On piecewise quadratic G^2 approximation and interpolation. *Mathematical methods in computer aided geometric design, II* (*Biri*, 1991), 359–366, *Academic Press, Boston, MA*, 1992. (*see* **93d:65022**) 65D05 (65D17)

— Bézier curves. (Slovenian. English and Slovenian summaries) *Obzornik Mat. Fiz.* **39** (1992), *no.* 2, 33–42. (Summary) **93d:65017** 65D10

Løkberg, Ole J. (*with* Pedersen, Hans M.) Coherence and radiative energy transfer for linear surface gravity waves in water of constant depth. (English summary) *J. Phys. A* **25** (1992), *no.* 20, 5263–5278. (Alan Jeffrey) **93i:76016** 76B15 (86A05)

Lokin, V. V. (*with* Vaĭnshteĭn, A. A.; Girs, V. N.) Tensors of the sixth rank as characteristics of random tensor fields. (Russian) *Dokl. Akad. Nauk* **323** (1992), *no.* 6, 1048–1051; *translation in Soviet Phys. Dokl.* **37** (1992), *no.* 4, 203–204. (From the text) **93i:73007** 73B35 (73B99, 73C99, 73R05)

Lokotkov, N. N. Some direction fields on the graph of a mapping. (Russian) *Geometry of embedded manifolds* (*Russian*), 46–49, "*Prometeĭ*", *Moscow*, 1989. (*see* **93g:53003**) 53A07

Lokowandt, B. (*with* Farooq, A.; Owens, David H.; Pfeiffer, B. M.) Model-based expert system for computer aided design of feedback controllers. (English summary) *Control* '91, *Vol.* 1, 2 (*Edinburgh*, 1991), 1246–1250, *IEE Conf. Publ. Ser.*, 332, *IEE, London*, 1991. (*see* **93h:93007**) 93B40 (93B52)

Lokshin, A. A. (*with* Itskovitš, M.) Exact solution to the reflection problem in a hereditary nonlinear composite bar. *Internat. J. Non-Linear Mech.* **27** (1992), *no.* 3, 337–340. (Piotr Borejko) **93c:73034** 73D35 (73C50, 73K12)

Loktionova, N. Yu. (*with* Ryazanov, M. A.) A difference scheme on arbitrary moving grids for equations of magnetohydrodynamics with an azimuthal field. (Russian. Russian summary) *Direct and inverse problems in mathematical physics* (*Russian*), 56–64, 260, *Moskov. Gos. Univ., Moscow*, 1991. (*see* **93f:00006**) 76M20 (65P05, 76W05)

Loll, R. (*with* Aldaya, Víctor; Navarro-Salas, José) Quantum dynamics on (super)groups: constraints and the "BRST" supergroup. *J. Math. Phys.* **32** (1991), *no.* 12, 3346–3360. (Rudolf Schmid) **93a:81195** 81T70 (58F06)

— Canonical and BRST-quantization of constrained systems. (English summary) *Mathematical aspects of classical field theory* (*Seattle, WA*, 1991), 503–530, *Contemp. Math.*, 132, *Amer. Math. Soc., Providence, RI*, 1992. (Mark J. Gotay) **93m:81149** 81T70 (58Z05, 70G35, 81T13)

— (*with* Aldaya, Víctor; Navarro-Salas, José; Bisquert, J.) Symmetry and quantization: higher-order polarization and anomalies. (English summary) *J. Math. Phys.* **33** (1992), *no.* 9, 3087–3097. (Alexander D. Popov) **93h:81037** 81R05 (22E70, 81S10)

— Independent SU(2)-loop variables and the reduced configuration space of SU(2)-lattice gauge theory. *Nuclear Phys. B* **368** (1992), *no.* 1, 121–142. (James E. Hetrick) **93a:81142** 81T25

Lomas, Dennis (*with* Mathon, Rudolf) A census of 2-(9, 3, 3) designs. *Australas. J. Combin.* **5** (1992), 145–158. (Summary) **93a:05023** 05B05

garcía Lomba, Guillermo *see* **García Lomba, Guillermo**

terceiro Lomba, Jaime *see* **Terceiro Lomba, Jaime**

Lombard, R. J. (*with* Carstoiu, F.) A new method of evaluating folding type integrals. (English summary) *Ann. Physics* **217** (1992), *no.* 2, 279–303. (Summary) **93f:81165** 81V70 (65D30, 81–08, 81U99)

Lombardi, Éric Bifurcation d'ondes solitaires à oscillations de faible amplitude à l'infini, pour un nombre de Froude proche de 1. (English summary) [Bifurcation of solitary waves with oscillations of small amplitude at infinity, for a Froude number near 1] *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 6, 493–496. (Summary) **93a:35018** 35B32 (35Q35, 58F39, 76B25, 76E99)

Lombardi, G. (*with* Ghelardoni, P.) On some Toeplitz and Haenkel [Hankel] matrices with elements 0, 1 and −1. (Italian summary) *Rend. Istit. Mat. Univ. Trieste* **21** (1989), *no.* 1, 105–121 (1991). (Israel Koltracht) **93a:15025** 15A57 (15A09)

Lombardi, Henri (*with* Labhalla, Salah) Real numbers, continued fractions and complexity classes. (French summary) *Ann. Pure Appl. Logic* **50** (1990), *no.* 1, 1–28. (Robert E. Byerly) **93a:03070** 03F60 (03D15)

— (*with* Roy, Marie-Françoise) Théorie constructive élémentaire des corps ordonnés. (English summary) [Elementary constructive theory of ordered fields] *Théorie des nombres, Années* 1989/90–1990/91, 21 *pp., Publ. Math. Fac. Sci. Besançon, Univ. Franche-Comté, Besançon*, 1991. (Niels Schwartz) **93d:12014** 12J15 (03F65)

— (*with* Delzell, C. N.; González-Vega, Laureano) A new rational and continuous solution for the Hilbert's 17th problem. *Extracta Math.* **7** (1992), *no.* 1, 59–64. (Thomas C. Craven) **93j:12002** 12D15 (14P10)

Lombardo, Rocky (*with* Gewali, Laxmi P.) Watchman routes for a pair of convex polygons. (English summary) *Finite fields, coding theory, and advances in communications and computing* (*Las Vegas, NV*, 1991), 279–289, *Lecture Notes in Pure and Appl. Math.*, 141, *Dekker, New York*, 1993. (Nikolaj M. Korneenko) **93m:68166** 68U05 (52B55)

Lomdahl, Peter S. (*with* Christiansen, Peter L.; Rionero, Salvatore; Muto, Virginia) Stability of a solitary wave solution to a set of coupled Boussinesq-like equations. (English summary) *Waves and stability in continuous media* (*Sorrento*, 1989), 49–59, *Ser. Adv. Math. Appl. Sci.*, 4, *World Sci. Publishing, River Edge, NJ*, 1991. (*see* **93g:00030**) 35Q53 (82C20, 92D20)

— (*with* Muto, Virginia; Scott, A. C.; Christiansen, Peter L.) Nonlinear discrete models for DNA dynamics. (English summary) *Waves and stability in continuous media* (*Sorrento*, 1989), 60–65, *Ser. Adv. Math. Appl. Sci.*, 4, *World Sci. Publishing, River Edge, NJ*, 1991. (*see* **93g:00030**) 92D20 (82C20)

Lommatzsch, Klaus *see* **Sobol', I. M., 93g:65005**

Lomonaco, Luciano A basis of admissible monomials for the universal Steenrod algebra. (English and Italian summaries) *Ricerche Mat.* **40** (1991), *no.* 1, 137–147. (Jin Kun Lin) **93i:55024** 55S10

— The iterated total squaring operation. *Proc. Amer. Math. Soc.* **115** (1992), *no.* 4, 1149–1155. (N. J. Kuhn) **93b:55024** 55S10 (55R40, 55S12)

Lomonosov, M. V. (*with* Colbourn, Charles J.) Renewal networks: connectivity and reachability on a time interval. (English summary) *Probab. Engrg. Inform. Sci.* **5** (1991), *no.* 3, 361–368. (Summary) **93f:68016** 68M15 (05C40)

Lomonosov, V. An extension of Burnside's theorem to infinite-dimensional spaces. *Israel J. Math.* **75** (1991), *no.* 2-3, 329–339. (Edward Azoff) **93h:47007** 47A15 (47B07, 47D25)

— (*with* Anderson, James Milne; Khavinson, Dmitry) Spectral properties of some integral operators arising in potential theory. *Quart. J. Math. Oxford Ser.* (2) **43** (1992), *no.* 172, 387–407. (Krzysztof Samotij) **93j:47073** 47G10 (30E20, 31A15, 31B15, 47A10)

Lomonosova, I. V. (*with* Chanov, A. V.) Numerical solution of problems in two-component sorption dynamics. (Russian. English and Russian summaries) *Mat. Model.* **4** (1992), *no.* 8, 75–84. (Summary) **93j:65165** 65N06

Lomont, J. S. (*with* Cheema, M. S.) Generalizations of the Kermack-McCrea identity. *J. Indian Math. Soc. (N.S.)* **57** (1991), *no.* 1-4, 79–93. (Khristo N. Boyadzhiev) **93i:47044** 47B47

— ★ Applications of finite groups. (English. English summary) Corrected reprint of the 1959 original. *Dover Publications, Inc., New York*, 1993. xii+346 *pp. ISBN* 0-486-67376-6 (Editors) **93k:20002** 20-01 (20C35, 81R05, 82D25)

Lomov, A. S. (*with* Gaponov-Grekhov, A. V.; Osipov, G. V.; Rabinovich, M. I.) Generation and dynamics of two-dimensional structures in nonequilibrium dissipative media. (Russian) *Nonlinear waves (Russian)*, 61–83, "*Nauka*", *Moscow*, 1989. (From the introduction) **93f:58220** 58F40 (35Q55, 76E20, 76E99)

— (*with* Gorshkov, K. A.; Rabinovich, M. I.) Chaotic scattering of two-dimensional solitons. (English summary) *Nonlinearity* **5** (1992), *no.* 6, 1343–1353. (Remo Badii) **93j:35147** 35Q51 (35B30, 35P30, 58F13, 65P05)

Lomov, I. S. A theorem on the unconditional basis property of root vectors of second-order weighted differential operators. (Russian) *Differentsial'nye Uravneniya* **27** (1991), *no.* 9, 1550–1563, 1653; *translation in Differential Equations* **27** (1991), *no.* 9, 1098–1107 (1992). (From the text) **93g:34130** 34L10 (47E05)

Lomov, S. A. Pseudo-analyticity and the problem of mathematical description of a boundary layer. (Russian) *Dokl. Akad. Nauk* **325** (1992), *no.* 2, 231–236; *translation in Russian Acad. Sci. Dokl. Math.* **46** (1993), *no.* 1, 47–52. (Vasiliy Pavlovich Yakovets) **93k:34122** 34E15 (34G10, 76D99)

— *see also* **Birthday: Lomov, S. A.**

Lomovtsev, F. E. (*with* Yurchuk, N. I.) Boundary value problems for operator-differential equations with a variable domain of the operator coefficients. (Russian) *Differentsial'nye Uravneniya* **27** (1991), *no.* 10, 1754–1766, 1836–1837; *translation in Differential Equations* **27** (1991), *no.* 10, 1242–1251 (1992). (Jan Bochenek) **93d:34105** 34G10 (34B05, 47N20)

— Necessary and sufficient conditions for the unique solvability of the Cauchy problem for second-order hyperbolic differential equations with a variable domain of operator coefficients. (Russian. Russian summary) *Differentsial'nye Uravneniya* **28** (1992), *no.* 5, 873–886, 919; *translation in Differential Equations* **28** (1992), *no.* 5, 712–722. (Tie Hu Qin) **93k:34139** 34G10 (34A12, 35L20, 47D09, 47N20)

Lonc, Zbigniew Partitions, packings and coverings by families with nonempty intersections. (English summary) *J. Combin. Theory Ser. A* **61** (1992), *no.* 2, 263–278. (D. P. Roselle) **93i:05045** 05B40

Lončar, Ivan Extensions of the inverse limit. (English and Serbo-Croatian summaries) *Rad Jugoslav. Akad. Znan. Umjet. No.* 450 (1990), 77–92. (Summary) **93d:54024** 54B35

— Inverse systems of quasicompact spaces. (English summary) *Publ. Math. Debrecen* **40** (1992), *no.* 3-4, 229–242. (Ion Doru Albu) **93k:54031** 54B99 (54D20)

Londen, Stig-Olof On a nonlinear hyperbolic integrodifferential equation with singular kernel. *Semigroup theory and evolution equations (Delft*, 1989), 325–336, *Lecture Notes in Pure and Appl. Math.*, 135, *Dekker, New York*, 1991. (Hans Engler) **93g:35135** 35R10 (45K05)

London, R. R. Fekete-Szegő inequalities for close-to-convex functions. *Proc. Amer. Math. Soc.* **117** (1993), *no.* 4, 947–950. (Wolfram Koepf) **93e:30029** 30C45

hoang ngoc Long *see* **Hoang Ngoc Long**

Long, Calvin (*with* Ando, Shiro) Two generalizations of Gould's Star of David theorem. *Applications of Fibonacci numbers, Vol.* 4 (*Winston-Salem, NC*, 1990), 219–230, *Kluwer Acad. Publ., Dordrecht*, 1991. (F. T. Howard) **93j:11015** 11B65 (05A10)

Long, Darren (*with* Cooper, Daryl) An undetected slope in a knot manifold. *Topology* '90 (*Columbus, OH*, 1990), 111–121, *Ohio State Univ. Math. Res. Inst. Publ.*, 1, *de Gruyter, Berlin*, 1992. (Kimihiko Motegi) **93i:57022** 57N10 (57M05)

Long, Dong Yang Semilattice decompositions of eventually regular semigroups that satisfy permutation identities. (Chinese. English and Chinese summaries) *Acta Sci. Natur. Univ. Sunyatseni* **31** (1992), *no.* 1, 110–112. (Summary) **93e:20086** 20M17 (06A12)

— A necessary and sufficient condition for the Shevrin problem. (Chinese. Chinese summary) *Chinese Ann. Math. Ser. A* **13** (1992), *no.* 3, 360–363. (Yu Qi Guo) **93j:20128** 20M10

— On the structure of some group codes. *Semigroup Forum* **45** (1992), *no.* 1, 38–44. (H. Jürgensen) **93e:94008** 94A45 (20M35)

Long, He Ping A result on graceful trees. (Chinese. English summary) *Shandong Daxue Xuebao Ziran Kexue Ban* **26** (1991), *no.* 4, 379–384. 05C05

Long, Le Ba *see* **Lê bá Long**

Long, Lyle N. (*with* Richardson, John L.; Ferrell, Robert C.) Unconditionally stable explicit algorithms for nonlinear fluid dynamics problems. (English summary) *J. Comput. Phys.* **104** (1993), *no.* 1, 69–74. (Summary) **93g:76088** 76M20 (76Rxx)

Long, Ngo Van (*with* Léonard, Daniel) ★ Optimal control theory and static optimization in economics. *Cambridge University Press, Cambridge*, 1992. x+353 *pp. ISBN* 0-521-33158-7; 0-521-33746-1 (B. Mordukhovich) **93d:49002** 49-01 (90-01, 90A16, 90A58, 93-01)

— Pollution control: a differential game approach. (English summary) Nonlinear methods in economic dynamics and optimal control (Vienna, 1990). *Ann. Oper. Res.* **37** (1992), *no.* 1-4, 283–296. (Summary) **93j:90028** 90A30 (90D25)

— (*with* Crabbé, Philippe) Entry deterrence and overexploitation of the fishery. (English summary) *J. Econom. Dynamics Control* **17** (1993), *no.* 4, 679–704. (Summary) **93m:90019** 90A30 (93C95)

Long, Qi Hao (*with* Ding, Hui Liang; Sun, Xian Xue; Chen, Wen Pu; Pan, Bing Chen) YIDOYU—an optimization program system for wing structures. *Approximation, optimization and computing*, 381–384, *North-Holland, Amsterdam*, 1990. (*see* **93a:41001**) 90-08 (90C30)

Long, Qi Wei (*with* Deng, K. M.; Wang, K. L.) A gauge field theory of dislocations and disclinations with irreversible processes. *Internat. J. Engrg. Sci.* **30** (1992), *no.* 2, 231–236. (Summary) **93a:73071** 73S10 (73B30)

Long, Rui Lin (*with* Liu, Pei De) Boundedness of several operators on martingale spaces and the geometry of Banach spaces. (English summary) A Chinese summary appears in Chinese Ann. Math. Ser. A **13** (1992), no. 2, 279. *Chinese Ann. Math. Ser. B* **13** (1992), *no.* 2, 167–179. (Xin Tai Yu) **93i:46030** 46B20 (46B09, 47B99, 47N30, 60G48)

— (*with* Chao, J.-A.) Martingale transforms and Hardy spaces. *Probab. Theory Related Fields* **91** (1992), *no.* 3-4, 399–404. (R. F. Gundy) **93d:60081** 60G42 (46E99, 60G46)

Long, Wen Ting Generalized inverses of some partitioned matrices. (Chinese. English and Chinese summaries) *J. Harbin Inst. Tech.* **24** (1992), *no.* 3, 1–5. 15A09

Long, Yi Ming Maslov-type index, degenerate critical points and asymptotically linear Hamiltonian systems. (English summary) *Lecture notes in contemporary mathematics*, 1989, 107–116, *Science Press, Beijing*, 1990. (Norman Dancer) **93g:58026** 58E05 (34C25, 58F22)

— Maslov-type index theory and asymptotically linear Hamiltonian systems. *Dynamical systems and related topics (Nagoya*, 1990), 333–341, *Adv. Ser. Dyn. Syst.*, 9, *World Sci. Publishing, River Edge, NJ*, 1991. (Marco Degiovanni) **93f:58202** 58F22 (34C25, 58E05, 58F05, 70H05)

— An unbounded solution of a superlinear Duffing's equation. A Chinese summary appears in Acta Math. Sinica **35** (1992), no. 5, 720. *Acta Math. Sinica (N.S.)* **7** (1991), *no.* 4, 360–369. (James M. D'Archangelo) **93d:34063** 34C11 (34A34)

— The structure of the singular symplectic matrix set. *Sci. China Ser. A* **34** (1991), *no.* 8, 897–907. (Martin Kummer) **93e:58065** 58F05

Long, Yong Hong[2] Using Diophantine equations to construct public-key cryptosystems. (Chinese. English and Chinese summaries) *Natur. Sci. J. Xiangtan Univ.* **14** (1992), *no.* 2, 116–122. (Mu Lan Liu) **93j:94024** 94A60 (11T71, 68P25)

Long, Yu Grey relational method for discriminating system factors. (English summary) *J. Grey System* **3** (1991), *no.* 1, 11–26. 90A05 (93C42)

Longani, V. (*with* Chokboworn paishand, V.) Lower bounds for some Ramsey numbers. *Southeast Asian Bull. Math.* **15** (1991), *no.* 2, 105–107. (Jerrold W. Grossman) **93b:05119** 05C55

Longás, C. (*with* Cid, R.) Correction of orbits of visual binary stars via Fourier series of the mean anomaly. (Spanish. English summary) *Rev. Acad. Cienc. Zaragoza* (2) **47** (1992), 129–135. (Summary) **93j:85003** 85A05 (85-08)

Longchamp, R. (*with* Partovi, M.) Adaptation of the switching hyperplanes in cautious sliding control with application to mechanical systems. (English summary) *Adaptive systems in control and signal processing*, 1989 (*Glasgow*), 141–146, *IFAC Sympos. Ser.*, 1990, *No.* 1, *Pergamon, Oxford*, 1990. (*see* **93j:93007**) 93B12

— (*with* Du, X. C.; Brella, A.) Fast algorithm of Chandrasekhar type for ARMA model identification. (English summary) *Automatica J. IFAC* **28** (1992), *no.* 5, 927–934. 93B40 (93E10)

Longford, N. T. Classes of multivariate exponential and multivariate geometric distributions derived from Markov processes. (English summary) *Topics in statistical dependence (Somerset, PA*, 1987), 359–369, *IMS Lecture Notes Monograph Ser.*, 16, *Inst. Math. Statist., Hayward, CA*, 1990. (Summary) **93g:60027** 60E05 (60G40, 62E15)

Longhi, Sauro (*with* Conte, Giuseppe; Perdon, Anna-Maria) On the geometry of singular periodic systems. (English summary) *Mathematical and intelligent models in system simulation, I, II (Brussels*, 1990), 119–124, *IMACS Ann. Comput. Appl. Math.*, 10, 11, *Baltzer, Basel*, 1991. (*see* **93c:93005**) 93B27

— (*with* Grasselli, Osvaldo Maria) Invariant zeros of linear systems connected in series. *Appl. Math. Lett.* **4** (1991), *no.* 6, 5–9. (From the introduction) **93f:93038** 93B25 (93B60, 93C10, 93C80)

— (*with* Jetto, L.; Fratini, A.) Adaptive deadbeat trajectory tracking for robotic manipulators. (English summary) *Mathematics of the analysis and design of process control (Dublin*, 1991/*Lille*, 1991), 483–492, *North-Holland, Amsterdam*, 1992. (*see* **93g:93004**) 93C40 (70B15, 70Q05, 93C85)

— (*with* Grasselli, Osvaldo Maria) Block decoupling of linear periodic discrete-time systems. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, I (Kobe*, 1991), 529–534, *Mita, Tokyo*, 1992. (*see* **93g:93005**) 93C55 (93B17)

— (*with* Perdon, Anna-Maria; Conte, Giuseppe) Invertibility and inversion of linear periodic systems. *Automatica J. IFAC* **28** (1992), *no.* 3, 645–648. (Summary) **93b:93053** 93C05 (93B17, 93C55)

Longman, Richard W. (*with* Phan, Minh; Juang, Jer-Nan) Identification of linear multivariable systems by identification of observers with assigned real eigenvalues. *J. Astronaut. Sci.* **40** (1992), *no.* 2, 261–279. (Summary) **93c:93054** 93E30 (73K50, 93C05)

Longo, E. (*with* Bellomo, N.) Shock wave profiles in one dimension by the discrete Boltzmann equation with multiple collisions. (English summary) *Waves and stability in continuous media (Sorrento*, 1989), 22–33, *Ser. Adv. Math. Appl. Sci.*, 4, *World Sci. Publishing, River Edge, NJ*, 1991. (*see* **93g:00030**) 82C40 (76L05, 76P05)

Longo, Giuseppe[1] (*with* Asperti, Andrea) ★ Categories, types, and structures. An introduction to category theory for the working computer scientist. Foundations of Computing Series. *MIT Press, Cambridge, MA*, 1991. xii+306 *pp. ISBN* 0-262-01125-5 (Philip J. Scott) **93i:18001** 18-01 (03B40, 03G30, 68Q55)

— (*with* Bruce, Kim B.; Di Cosmo, Roberto) Provable isomorphisms of types. International Conference on Symbolic Computation (Zurich, 1990). *Math. Structures Comput. Sci.* **2** (1992), *no.* 2, 231–247. (Summary) **93g:68072** 68Q55 (03B20, 03B40, 03B70, 68Q65)

Longo, Placido (*with* Chiarenza, Filippo; Frasca, Michele) Interior $W^{2,p}$ estimates for nondivergence elliptic equations with discontinuous coefficients. (English summary) *Ricerche Mat.* **40** (1991), *no.* 1, 149–168. (Michelangelo Franciosi) **93k:35051** 35B45 (35J30, 35R05)

— (*with* Chiarenza, Filippo; Frasca, Michele) $W^{2,p}$-solvability of the Dirichlet problem for nondivergence elliptic equations with VMO coefficients. *Trans. Amer. Math. Soc.* **336** (1993), *no.* 2, 841–853. (Ya. A. Roitberg) **93f:35232** 35R05 (35J25)

Longo, Roberto Index theory of subfactors and braid group statistics. *The algebraic theory of superselection sectors (Palermo*, 1989), 485–488, *World Sci. Publishing, River Edge, NJ*, 1990. (*see* **93i:81122**) 46L37 (81T05)

— (*with* Guido, Daniele) Relativistic invariance and charge conjugation in quantum field theory. (English summary) *Comm. Math. Phys.* **148** (1992), *no.* 3, 521–551. (Stephen J. Summers) **93i:81121** 81T05 (46L60, 81T40)

— (*with* Kosaki, Hideki) A remark on the minimal index of subfactors. *J. Funct. Anal.* **107** (1992), *no.* 2, 458–470. (Fumio Hiai) **93i:46108** 46L37

— Minimal index and braided subfactors. (English summary) *J. Funct. Anal.* **109** (1992), *no.* 1, 98–112. (H. Araki) **93i:46109** 46L37 (81T05)

Longobardi, Patrizia (*with* Maj, Mercede) The classification of groups with the small squaring property on 3-sets. (English summary) *Bull. Austral. Math. Soc.* **46** (1992), *no.* 2, 263–270. (Summary) **93h:20027** 20D60

— (*with* Maj, Mercede; Rhemtulla, A. H.) Infinite groups in a given variety and Ramsey's theorem. *Comm. Algebra* **20** (1992), *no.* 1, 127–139. (Annabelle McIver) **93d:20054** 20E10 (20F18)

— (*with* Maj, Mercede; Rhemtulla, A. H.; Smith, Howard) Periodic groups with many permutable subgroups. *J. Austral. Math. Soc. Ser. A* **53** (1992), *no.* 1, 116–119. (Summary) **93b:20074** 20F50

— (*with* Maj, Mercede) Some remarks on P_n-sequenceable groups. *Arch. Math. (Basel)* **60** (1993), *no.* 1, 15–19. (D. J. S. Robinson) **93m:20056** 20F99

Longpré, Luc (*with* Li, Ming[1]; Vitányi, Paul M. B.) The power of the queue. *SIAM J. Comput.* **21** (1992), *no.* 4, 697–712. (Joan Boyar) **93h:68039** 68Q05 (68Q30)

Longstaff, W. E. Atomic Boolean subspace lattices. (English summary) *Operator algebras and operator theory* (*Craiova*, 1989), 140–156, *Pitman Res. Notes Math. Ser.*, 271, *Longman Sci. Tech., Harlow*, 1992. (Summary) **93h:47058** 47D30 (06B30, 46B15, 47A15, 47D25)

— (*with* Lambrou, M. S.) Finite rank operators leaving double triangles invariant. *J. London Math. Soc.* (2) **45** (1992), *no.* 1, 153–168. (Kenneth R. Davidson) **93e:47056** 47D25 (47A15)

Longuet-Higgins, Michael S. Theory of weakly damped Stokes waves: a new formulation and its physical interpretation. *J. Fluid Mech.* **235** (1992), 319–324. (Summary) **93d:76019** 76D33

— Capillary rollers and bores. (English summary) *J. Fluid Mech.* **240** (1992), 659–679. (Summary) **93e:76020** 76D33 (76B15, 76D45)

— Highly accelerated, free-surface flows. (English summary) *J. Fluid Mech.* **248** (1993), 449–475. (Summary) **93k:76015** 76B15

Longuski, James M. (*with* Ostoja-Starzewski, Martin) Stochastic Hill's equations for the study of errant rocket burns in orbit. (English summary) *Celestial Mech. Dynam. Astronom.* **54** (1992), *no.* 4, 295–303. (Summary) **93i:70028** 70M20 (60H10, 70L05, 70Q05)

đỗ Long Vân *see* **Đỗ Long Vân**

Loo, Bonaventure (*with* Verjovsky, Alberto) The Hopf fibration over S^8 admits no S^1-subfibration. *Topology* **31** (1992), *no.* 2, 239–254. (Donald M. Davis) **93d:57047** 57Q99 (55R05)

Looges, Peter J. (*with* Olariu, Stephan) Optimal greedy algorithms for indifference graphs. (English summary) *Comput. Math. Appl.* **25** (1993), *no.* 7, 15–25. (Summary) **93i:90010** 90A05

Looijenga, E. (*with* Rapoport, Michael) Weights in the local cohomology of a Baily-Borel compactification. *Complex geometry and Lie theory* (*Sundance, UT*, 1989), 223–260, *Proc. Sympos. Pure Math.*, 53, *Amer. Math. Soc., Providence, RI*, 1991. (Min Ho Lee) **93b:14022** 14C30 (14F32)

Look, D. C., Jr. Eigenvalue-dependent series. *J. Math. Anal. Appl.* **172** (1993), *no.* 2, 385–389. 35C99 (65P05)

Lookman, Turab (*with* Zhao, Dongming) Critical exponents for c-animals with nearest-neighbour interaction. *J. Phys. A* **25** (1992), *no.* 8, 2181–2189. (Summary) **93a:82029** 82B41 (82B24)

— (*with* Zhao, Dongming; Essam, J. W.) Exact results for fully directed polymer networks in two dimensions. (English summary) *J. Phys. A* **25** (1992), *no.* 19, L1181–L1185. (J. Šťastna) **93j:82077** 82D60 (60J15, 82C41)

— (*with* Zhao, Dongming; Wu, Yanan) On the critical exponent ν for c-animals. (English summary) *J. Phys. A* **25** (1992), *no.* 19, L1187–L1190. (E. J. Janse van Rensburg) **93i:82043** 82B41 (05A16, 60J15, 82B20)

Loone, L. On cores of semicontinuous sequential summability methods. (Estonian summary) *Tartu Ül. Toimetised No.* 928 (1991), 61–66. (Shri Nivas Bhatt) **93e:40003** 40C15

— Inclusion between the cores concerning weighted means and power series. (Estonian summary) *Tartu Ül. Toimetised No.* 928 (1991), 67–72. (John A. Fridy) **93e:40004** 40D25 (40G10)

Lootsma, Freerk A. Parallel nonlinear optimization. (Russian) *Optimization: models, methods, solutions* (*Russian*) (*Irkutsk*, 1989), 142–166, "*Nauka*" *Sibirsk. Otdel., Novosibirsk*, 1992. (*see* **93k:90002**) 90C30 (90–02)

Loparo, Kenneth A. (*with* Ji, Yuandong; Chizeck, Howard Jay; Feng, Xiangbo) Stability and control of discrete-time jump linear systems. *Control Theory Adv. Tech.* **7** (1991), *no.* 2, 247–270. (Summary) **93a:93071** 93C55 (93D05)

— (*with* Feng, Xiangbo; Ji, Yuandong; Chizeck, Howard Jay) Stochastic stability properties of jump linear systems. *IEEE Trans. Automat. Control* **37** (1992), *no.* 1, 38–53. (Summary) **93a:93110** 93E15

— (*with* Tsai, Yweting A.; Casiello, Francisco A.) Discrete-time entropy formulation of optimal and adaptive control problems. *IEEE Trans. Automat. Control* **37** (1992), *no.* 7, 1083–1088. (Summary) **93f:93082** 93C55 (49K45, 93E35)

— (*with* Feng, Xiangbo) A nonrandom spectrum theorem for products of random matrices and linear stochastic systems. *J. Math. Systems Estim. Control* **2** (1992), *no.* 3, 323–338. (Hubert Hennion) **93f:60087** 60H10 (34D08, 34F05)

— (*with* Feng, Xiangbo) Chaotic motion and its probabilistic description in a family of two-dimensional nonlinear systems with hysteresis. (English summary) *J. Nonlinear Sci.* **2** (1992), *no.* 4, 417–452. (Hans-Peter Herzel) **93j:58088** 58F13 (34D45, 34H05, 58F40)

— (*with* Fashoro, M.; Hájek, O.) Controllability properties of constrained linear systems. *J. Optim. Theory Appl.* **73** (1992), *no.* 2, 329–346. (F. S. Van Vleck) **93i:93017** 93B05 (93C05, 93C15)

— (*with* Feng, Xiangbo) Lyapunov exponent and rotation number of two-dimensional linear stochastic systems with telegraphic noise. (English summary) *SIAM J. Appl. Math.* **53** (1993), *no.* 1, 283–300. (Wolfgang Kliemann) **93m:60120** 60H10 (34D08, 34F05)

Lopatin, A. K. (*with* Ageeva, I. Yu.) A new criterion for the diagonalizability of a matrix, and an algorithm for reducing it to canonical form. (Russian) *Akad. Nauk Ukrainy Inst. Mat. Preprint* **1991**, *no.* 48, 26 *pp.* 15A21

— (*with* Belkina, S. R.) On normal Bulgakov coordinates. (Russian. Russian summary) *Asymptotic integration of nonlinear equations* (*Russian*), 66–71, *Akad. Nauk Ukrainy, Inst. Mat., Kiev*, 1992. (*see* **93m:00016**) 34A30

— (*with* Belkina, S. R.) Constructive methods for the decomposition of systems of differential equations with constant coefficients. (Russian. Russian summary) *Akad. Nauk Ukrainy Inst. Mat. Preprint* **1992**, *no.* 35, 18 *pp.* (Summary) **93m:34010** 34A30

Lopatkov, M. G. ★ Ступенчатые и Λ-архимедовы группы. (Russian. Russian summary) [Step-like and Λ-Archimedean groups] Препринт [Preprint], 921. *Akad. Nauk SSSR Sibirsk. Otdel., Vychisl. Tsentr, Novosibirsk*, 1991. 38 *pp.* (Summary) **93d:20080** 20F99

Lopatyuk, I. N. (*with* Yanovich, L. A.) Obtaining asymptotic expansions of continual integrals with respect to the Gaussian measure by the method of integration by parts. (Russian. English summary) *Dokl. Akad. Nauk Belarusi* **36** (1992), *no.* 1, 5–8, 92. (V. A. Romanov) **93h:28021** 28C20 (46G12, 65D30)

Loper, D. E. A nonequilibrium theory of a slurry. (English summary) *Contin. Mech. Thermodyn.* **4** (1992), *no.* 3, 213–245. (Andrew C. Fowler) **93g:76108** 76T05 (73B30, 73N20, 76A99, 76E20, 80A22)

Lopes, E. Exact solution of the multi-component generalized six-vertex model. *Nuclear Phys. B* **370** (1992), *no.* 3, 636–658. (Yu Kui Zhou) **93f:82022** 82B23

nussenzveig Lopes, H. J. *see* **Nussenzveig Lopes, H. J.**

mendes Lopes, Maria de Nazaré *see* **Mendes Lopes, Maria de Nazaré**

Lopes, Orlando (*with* Ceron, Suely do Carmo Siqueira) α-contractions and attractors for dissipative semilinear hyperbolic equations and systems. *Ann. Mat. Pura Appl.* (4) **160** (1991), 193–206 (1992). (D. N. Cheban) **93f:34099** 34G20 (34C25, 34D45, 35L70, 35R20, 47H09, 47N20)

Lopes, Silvia (*with* Kedem, Benjamin) Fixed points in mixed spectrum analysis. (English summary) *Probabilistic and stochastic methods in analysis, with applications* (*Il Ciocco*, 1991), 573–591, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 372, *Kluwer Acad. Publ., Dordrecht*, 1992. (*see* **93e:00029**) 60G35 (62M15)

Lopes dos Santos, J. M. B. (*with* Dias, Ricardo G.) Simple representation of the eigenstates of the $U \to \infty$ one-dimensional Hubbard model. (English summary) *J. Physique I* **2** (1992), *no.* 10, 1889–1897. (Summary) **93k:82070** 82D55 (82B20)

Lopes Gagean, David (*with* da Costa Leite, Manuel) General relativity and Portugal: a few pointers towards peripheral reception studies. (French summary) *Studies in the history of general relativity* (*Luminy*, 1988), 3–14, 463, *Einstein Stud.*, 3, *Birkhäuser Boston, Boston, MA*, 1992. (*see* **93a:01001**) 01A60 (83–03)

jeremías López, Ana *see* **Jeremías López, Ana**

vera López, Antonio *see* **Vera López, Antonio**

fernández López, Antonio[1] *see* **Fernández López, Antonio[1]**

fernández López, Antonio[2] *see* **Fernández López, Antonio[2]**

bezanilla López, Arnoldo *see* **Bezanilla López, Arnoldo**

gonzález-López, Artemio *see* **González-López, Artemio**

marijuán López, Carlos *see* **Marijuán López, Carlos**

martínez López, Consuelo *see* **Martínez López, Consuelo**

Lopez, D. F. (*with* Arigazin, A. K.; Jannussis, A.; Nishioka, M.; Veljanoski, B.) ★ Santilli's Lie-isotopic generalization of Galilei's and Einstein's relativities. *Kostakaris Publishers, Athens*, 1991. xii+392 *pp.* *ISBN* 0-911767-56-8 (Maurizio Gasperini) **93j:17056** 17B81 (22E70, 58–01, 70G99, 70H40, 81R05)

benavent López, Enrique *see* **Benavent López, Enrique**

Lopez, Francisco J. The classification of complete minimal surfaces with total curvature greater than -12π. *Trans. Amer. Math. Soc.* **334** (1992), *no.* 1, 49–74. (Kichoon Yang) **93a:53008** 53A10

barón López, Francisco Javier *see* **Barón López, Francisco Javier**

vera López, Francisco José *see* **Vera López, Francisco José**

Lopez, J. M. *see* **Lopez, Juan Manuel**

lafuente López, Javier *see* **Lafuente López, Javier**

alvarez López, Jesús A. *see* **Alvarez López, Jesús A.**

Lopez, Jorge L. (*with* Kalara, S.; Nanopoulos, D. V.) Modular invariance and nonrenormalizable interactions. (English summary) *Phys. Lett. B* **287** (1992), *no.* 1-3, 82–88. (Summary) **93c:81174** 81T30

López, Jorge M. Egyptian fractions. (Spanish) *Rev. Mat. Dominicana No.* 3-4 (1987), 3–19. (Carl E. Linderholm) **93h:11035** 11D68

Lopez, Juan Manuel Axisymmetric vortex breakdown. I. Confined swirling flow. *J. Fluid Mech.* **221** (1990), 533–552. (Summary) **93c:76041a** 76E99 (58F40, 76–05, 76F99)

— (*with* Brown, G. L.) Axisymmetric vortex breakdown. II. Physical mechanisms. *J. Fluid Mech.* **221** (1990), 553–576. (Summary) **93c:76041b** 76E99 (58F40, 76–05, 76F99)

— (*with* Perry, A. D.) Axisymmetric vortex breakdown. III. Onset of periodic flow and chaotic advection. *J. Fluid Mech.* **234** (1992), 449–471. (Summary) **93c:76041c** 76E99 (58F40, 76–05, 76F99)

Lopez, Luciano Stability of a three-point scheme for linear second order singularly perturbed BVPs with turning points. (English summary) *Appl. Math. Comput.* **52** (1992), *no.* 2-3, 279–300. (Summary) **93i:65078** 65L10 (34B15, 34E20)

— (*with* Trigiante, D.) Boundary value methods and BV-stability in the solution of initial value problems. (English summary) Parallel methods for ordinary differential equations (Grado, 1991). *Appl. Numer. Math.* **11** (1993), *no.* 1-3, 225–239. (Summary) **93i:65071** 65L05 (65Y05)

López, Luis M. (*with* Cabrera, Eliseo Antonio) Historical development of the calculator. (Spanish) *Rev. Mat. Dominicana No.* 1-2 (1986), 1–20. 01A05 (68–03)

Lopez, M. A. *see* **López, Marco Antonio**

López, M. C. (*with* Noriega, R. J.; Schifini, C. G.) Equivalence and s-equivalence of vector-tensor Lagrangians. *J. Math. Phys.* **32** (1991), *no.* 8, 2063–2064. (Chris Athorne) **93e:70007** 70G99 (70H35, 81T13)

gonzález-López, M. J. *see* **González-López, M. J.**

cachafeiro López, Ma. Alicia *see* **Cachafeiro López, Ma. Alicia**

López, Marco Antonio (*with* Goberna, M. A.) Conditions for the uniqueness of the optimal solution in linear semi-infinite programming. *J. Optim. Theory Appl.* **72** (1992), *no.* 2, 225–246. (Thomas Fischer) **93a:49019** 49M39 (90C34)

López, María Teresa (*with* Martínez, Ignacio; Gil, María Angeles) Analysis of mutual information measures in cluster sampling. (English summary) *Appl. Math. Comput.* **52** (1992), *no.* 2-3, 389–402. 62D05 (62B10)

López, Martín (*with* Che Soler, Justo) On the anisotropic continuity of solutions of second-order linear elliptic equations. (Spanish. English and Spanish summaries) *Cienc. Mat. (Havana)* **11** (1990), *no.* 3, 197–210. (Summary) **93h:35052** 35J15 (35B65)

— First boundary value problem for linear and nonlinear parabolic equations. (Spanish. English and Spanish summaries) *Cienc. Mat. (Havana)* **13** (1992), *no.* 1, 3–20. (Summary) **93m:35096** 35K20 (35K60)

García López, Ricardo *see* **García López, Ricardo**

Jiménez López, Víctor *see* **Jiménez López, Víctor**

López Acedo, Genaro Extension of the multivalued degree for mappings that are the uniform limit of A-compact mappings. (Spanish. English summary) *Proceedings of the XVth Portuguese-Spanish Conference on Mathematics, Vol. II (Portuguese) (Évora, 1990)*, 337–340, *Univ. Évora, Évora*, 1991. (Summary) **93b:47126** 47H11

— (*with* Domínguez Benavides, T.) Lower bounds for normal structure coefficients. (English summary) *Proc. Roy. Soc. Edinburgh Sect. A* **121** (1992), *no.* 3-4, 245–252. (Józef Banaś) **93i:46025** 46B20

López Bonilla, J. (*with* Morales, Jesus; Peña, J. J.) Algebraic approach to matrix elements: recurrence relations and closed formulas for hydrogenlike wave functions. *Phys. Rev. A* (3) **45** (1992), *no.* 7, *part A*, 4259–4266. (Summary) **93b:81045** 81Q05 (33C45)

López de Haro, M. (*with* del Río, J. A.; Vázquez, F.; Cuevas, S.) On the contribution of the Mexican school to extended irreversible thermodynamics. (English and Spanish summaries) *Rev. Mexicana Fís.* **39** (1993), *no.* 1, 63–76. 01A60 (80–03)

López de Màntaras, R. (*with* Agusti, J.; Plaza, E.; Sierra, C.) MILORD: a fuzzy expert systems shell. *Fuzzy expert systems*, 213–223, *CRC, Boca Raton, FL*, 1992. (*see* **93g:68133**) 68T35 (03B52)

López de Medrano, Santiago (*with* Pérez Esteva, Salvador) An inverse problem, area, and Morse theory. *J. Math. Anal. Appl.* **157** (1991), *no.* 2, 495–505. (Introduction) **93b:58033** 58E12 (35R30, 58E05)

López de Silanes, M. C. (*with* Arcangéli, R.) Sur la convergence des D^m-splines d'ajustement pour des données exactes ou bruitées. (English summary) [On the convergence of fitting D^m-splines for exact or noisy data] *Rev. Mat. Univ. Complut. Madrid* **4** (1991), *no.* 2-3, 279–294. (D. Zwick) **93g:41008** 41A15

López-Escobar, E. G. K. Global discharge conditions for natural deduction systems. (English summary) *J. Non-Classical Logic* **8** (1991), *no.* 1, 39–44. (Summary) **93m:03094** 03F03 (03B05, 03B10)

López García, José (*with* Fuertes Martínez, J. Félix) Roger Boscovich: precursor of field theory? (Spanish. English summary) Theory, history and foundations of the natural and social sciences (Spanish). *Theoria (San Sebastián)* (2) **7** (1992), *no.* 16-18, *B*, 687–701. (Summary) **93k:01029** 01A50

López-Gómez, Julián (*with* Pardo, Rosa) Existence and uniqueness for some competition models with diffusion. *Proceedings of the XII Congress on Differential Equations and Applications/II Congress on Applied Mathematics (Spanish) (Oviedo, 1991)*, 239–244, *Univ. Oviedo, Oviedo*, 1991. (From the text) **93k:35262** 35Q80 (35J55, 92D25)

— (*with* Pardo, Rosa) Existence and uniqueness for some competition models with diffusion. (French summary) *C. R. Acad. Sci. Paris Sér. I Math.* **313** (1991), *no.* 13, 933–938. (From the text) **93h:35058** 35J55 (92D25)

— (*with* Pardo, Rosa) Existence and uniqueness for the predator-prey model with diffusion in the scalar case. *Extracta Math.* **6** (1991), *no.* 2-3, 115–118. 92D40 (34B15)

— Positive periodic solutions of Lotka-Volterra reaction-diffusion systems. *Differential Integral Equations* **5** (1992), *no.* 1, 55–72. (Yuzo Hosono) **93d:35074** 35K57 (35B10, 35K40, 92D25)

— (*with* Eilbeck, J. C.; Molina-Meyer, Marcela; Duncan, K. N.) Structure of solution manifolds in a strongly coupled elliptic system. (English summary) IMA Conference on Dynamics of Numerics and Numerics of Dynamics (Bristol, 1990). *IMA J. Numer. Anal.* **12** (1992), *no.* 3, 405–428. (Summary) **93f:35058** 35J55 (35B32, 58G28)

— (*with* Pardo, Rosa) Coexistence in a simple food chain with diffusion. (English summary) *J. Math. Biol.* **30** (1992), *no.* 7, 655–668. (V. N. Razzhevaikin) **93j:35096** 35K57 (92D25)

— (*with* Pardo, Rosa) Coexistence regions in Lotka-Volterra models with diffusion. *Nonlinear Anal.* **19** (1992), *no.* 1, 11–28. (Mario Primicerio) **93j:35089** 35K50 (92D25)

López Lacasta, Carlos (*with* Cariñena, José F.; del Olmo, Mariano A.; Santander, Mariano) Conformal geometry of the Kepler orbit space. *Celestial Mech. Dynam. Astronom.* **52** (1991), *no.* 4, 307–343. (Galina G. Okuneva) **93d:70015** 70F05

— (*with* Cariñena, José F.; Gracia-Bondía, José M.; Ibort, Luis A.; Várilly, Joseph C.) Distinguished Hamiltonian theorem for homogeneous symplectic manifolds. *Lett. Math. Phys.* **23** (1991), *no.* 1, 35–44. (Summary) **93i:58051** 58F05 (58B20, 70H05, 70H15, 81S10)

— (*with* Cariñena, José F.) Geometric study of Hamilton's variational principle. *Rev. Math. Phys.* **3** (1991), *no.* 4, 379–401. (Manuel de León) **93a:58055** 58F05 (58E30, 70H05, 70H25, 70H35)

— (*with* Cariñena, José F.) The time-evolution operator for higher-order singular Lagrangians. *Internat. J. Modern Phys. A* **7** (1992), *no.* 11, 2447–2468. (Manuel de León) **93d:58049** 58F05 (70H05, 70H35, 81T99)

López Lagomasino, Guillermo (*with* Hernández Herrera, René) Relative asymptotic behavior of sequences of orthogonal polynomials on the real line. (Spanish. English and Spanish summaries) *Cienc. Mat. (Havana)* **12** (1991), *no.* 2-3, 155–169. (José Javier Guadalupe Hernández) **93m:42012** 42C05

López Marcos, J. C. A Crank-Nicolson scheme for Hodgkin-Huxley equations. (Spanish) *Proceedings of the XII Congress on Differential Equations and Applications/II Congress on Applied Mathematics (Spanish) (Oviedo, 1991)*, 497–502, *Univ. Oviedo, Oviedo*, 1991. (From the introduction) **93j:65135** 65M06 (35Q80)

— (*with* Fairweather, Graeme) A box method for a nonlinear equation of population dynamics. *IMA J. Numer. Anal.* **11** (1991), *no.* 4, 525–538. (Ezio Venturino) **93c:92006** 92D25 (65C20, 65M12, 65R20, 92–08)

López-Mimbela, J. Alfredo Fluctuation limits of multitype branching random fields. *J. Multivariate Anal.* **40** (1992), *no.* 1, 56–83. (Ingemar Kaj) **93b:60044** 60F05 (60G20, 60G60, 60J80)

— (*with* Gorostiza, Luis G.) The demographic variation process of multitype branching random fields. *J. Multivariate Anal.* **41** (1992), *no.* 1, 102–116. (Thomas G. Kurtz) **93j:60065** 60G60 (60F17, 60G15, 60J80)

López Molina, Juan A. (*with* Díaz Alcaide, Juan Carlos; Rivera Ortún, María José) The approximation property of order (p, q) in Banach spaces. *Collect. Math.* **41** (1990), *no.* 3, 217–232 (1992). (N. Tiţa) **93e:46016** 46B20 (46M05)

— (*with* Díaz Alcaide, Juan Carlos) A note on reflexivity of projective tensor products. *Portugal. Math.* **48** (1991), *no.* 4, 423–427. (Andreas Defant) **93c:46131** 46M05 (46A04)

— (*with* Díaz Alcaide, Juan Carlos) On the projective tensor product of Fréchet spaces. *Proc. Edinburgh Math. Soc.* (2) **34** (1991), *no.* 2, 169–178. (Andreas Defant) **93b:46138** 46M05 (46A04, 46A45)

— (*with* Rivera Ortún, María José) Quasibarrelled and DF spaces of (q', p')-dominated operators. (Turkish summary) *Doğa Mat.* **16** (1992), *no.* 1, 12–32. (Klaus-Dieter Bierstedt) **93e:46005** 46A32 (46A08, 46M05, 47D20)

López Morales, Martín *see* **López, Martín**

López Moreno, Enrique (*with* Grether, Marcela) Hamiltonian characteristic functions in the design of an aspherical lens. (Spanish. English and Spanish summaries) *Rev. Mexicana Fís.* **38** (1992), *no.* 6, 968–983. 78A10

López Pellicer, M. (*with* Sánchez Ruiz, Luis M.) On linearly topologized spaces and real-compact spaces. I, II. *Portugal. Math.* **48** (1991), *no.* 4, 397–404, 475–482. (I. Blum) **93h:46003** 46A16 (54D60)

— (*with* Ferrer Villanueva, José R.; Sánchez Ruiz, Luis M.) Some properties of $C_S(K)$. (Serbo-Croatian summary) *Rad. Mat.* **7** (1991), *no.* 1, 99–102. (J. Schmets) **93a:46039** 46E10 (46A19, 54D60)

— (*with* Ferrando, J. C.) Vector valued function spaces which are barrelled of class $\aleph_0$ but not totally barrelled. *Math. Japon.* **37** (1992), *no.* 1, 117–121. (James Bell Cooper) **93a:46067** 46E40 (46A08)

— (*with* Ferrando, J. C.) Barrelled spaces of class $\aleph_0$ which are not totally barrelled. *Math. Japon.* **37** (1992), *no.* 3, 465–471. (P. P. Narayanaswami) **93d:46007** 46A08

— (*with* Ferrer Villanueva, José R.; Sánchez Ruiz, Luis M.) Some properties of continuous function spaces. *Portugal. Math.* **49** (1992), *no.* 1, 23–28. (J. Schmets) **93d:46040** 46E10 (46A19, 57N17)

— (*with* Ferrando, J. C.) A note on a theorem of J. Diestel and B. Faires. *Proc. Amer. Math. Soc.* **115** (1992), *no.* 4, 1077–1081. (Summary) **93c:46078** 46G10 (46A08)

López-Peña, R. (*with* Urrutia, Luis F.; Zertuche, Federico) Realizations for $SU(2)_q$ and $SU(1,1)_q$ in terms of underlying Lie algebras. (English and Spanish summaries) *Rev. Mexicana Fís.* **38** (1992), *suppl.* 2, S102–S113. (A. U. Klimyk) **93j:81047** 81R50 (17B37)

López-Permouth, Sergio R. (*with* Jain, Surender Kumar; Singh, Surjeet) On a class of QI-rings. *Glasgow Math. J.* **34** (1992), *no.* 1, 75–81. (Giuseppe Baccella) **93e:16008** 16D50 (16E60, 16L30)

— Rings characterized by their weakly-injective modules. *Glasgow Math. J.* **34** (1992), *no.* 3, 349–353. (S. S. Page) **93i:16009** 16D50 (16D80)

— Lifting Morita equivalence to categories of fuzzy modules. *Inform. Sci.* **64** (1992), *no.* 3, 191–201. (Summary) **93b:16013** 16D90 (04A72, 18B99)

— (*with* Al-Huzali, A. H.; Jain, Surender Kumar) Rings whose cyclics have finite Goldie dimension. (English summary) *J. Algebra* **153** (1992), *no.* 1, 37–40. (Summary) **93k:16006** 16D70 (16D50)

— (*with* Al-Huzali, A. H.; Jain, Surender Kumar) Weakly-injective rings and modules. *Osaka J. Math.* **29** (1992), *no.* 1, 75–87. (Alberto Facchini) **93b:16005** 16D50 (16L60)

López Pouso, Óscar (*with* Bermúdez de Castro, Alfredo) Analysis of a flux method for computing heat radiation. (Spanish. English summary) *Proceedings of the XII Congress on Differential Equations and Applications/II Congress on Applied Mathematics (Spanish) (Oviedo, 1991)*, 381–386, *Univ. Oviedo, Oviedo*, 1991. (*see* **93j:00009**) 80–08

López-Ruiz, R. (*with* Pérez-García, Carlos) Dynamics of two logistic maps with a multiplicative coupling. (English summary) *Internat. J. Bifur. Chaos Appl. Sci. Engrg.* **2** (1992), *no.* 2, 421–425. (Summary) **93c:58141** 58F13

López-Sánchez, Jesús (*with* Durand-Alegría, Ana Isabel; Pérez de Vargas, Alberto) Zygotic algebra for k-linked multiallelic loci with sexually different recombination rates. *Nonassociative algebraic models (Zaragoza, 1989)*, 101–117, *Nova Sci. Publ., Commack, NY*, 1992. (Sebastian Walcher) **93k:17062** 17D92 (92D10)

Lopotko, O. V. Even-positive-definite functions of an infinite number of variables. (Russian. English summary) *Dokl. Akad. Nauk Ukrain. SSR* **1991,** *no.* 8, 12–14, 182. (A. Precupanu) **93c:43006** 43A35 (46G12)

Lopuhaä, Hendrik P. Multivariate τ-estimators for location and scatter. (French summary) *Canad. J. Statist.* **19** (1991), *no.* 3, 307–321. (Song Gui Wang) **93c:62061** 62F35 (62H12)

— Highly efficient estimators of multivariate location with high breakdown point. *Ann. Statist.* **20** (1992), *no.* 1, 398–413. (Hannu Oja) **93c:62097** 62F35 (62E20, 62F10, 62H10)

Lopushans'ka, G. P. A method for solving a parabolic problem of nonlinear conjugation. (Ukrainian. Russian summary) *Visnik L'viv. Derzh. Univ. Ser. Mekh.-Mat. No.* 30 (1988), 20–23, 74. 35K20

— A nonlocal problem in the space of generalized functions. (Ukrainian) *Visnik L'viv. Derzh. Univ. Ser. Mekh.-Mat. No.* 32 (1989), 5–8. 35J25 (35D05)

— (*with* Novinyuk, A. A.) On the solution in closed form of classical and nonclassical boundary value problems for the equation of the vibration of a string in a semiband. (Ukrainian) *Visnik L'viv. Derzh. Univ. Ser. Mekh.-Mat. No.* 32 (1989), 8–12. 35C05 (35L05)

— The Dirichlet problem for quasilinear elliptic equations in a space of distributions. (Ukrainian) *Visnik L'viv. Univ. Ser. Mekh. Mat. No.* 34 (1990), 26–31. 35J65

— On the existence and some properties of the Green function of the conjugation problem for an equation of mixed type. (Ukrainian. Russian summary) *Mathematical investigations (Ukrainian)*, 98–103, 121, *Zb. Nauk. Prats' L'viv. Mat. Tov.*, 1, *L'viv. Mat. Tov., L'viv*, 1991. (*see* **93e:00014**) 35M10

— (*with* Koval'chuk, B. V.) The Green function method in stationary and nonstationary problems of nonlinear heat conduction. (Russian. Russian summary) *Mat. Metody i Fiz.-Mekh. Polya No.* 34 (1991), 42–47. (Summary) **93h:35085** 35K20 (35J25, 80A20)

Lopushanskiĭ, O. V. Bounded solutions of the Cauchy problem in locally convex algebras. (Russian) *Differentsial'nye Uravneniya* **27** (1991), *no.* 2, 357–359, 367–368. (Boris Zadvorni) **93e:34084** 34G10 (34A12, 46H99, 47D03, 47D06, 47N20)

— Nonuniform completions and hypocontinuity of multiplication of locally convex algebras. (Russian) *Sibirsk. Mat. Zh.* **32** (1991), *no.* 3, 89–96; *translation in Siberian Math. J.* **32** (1991), *no.* 3, 425–430 (1992). (Maria Fragoulopoulou) **93a:46093** 46H05

— Spectral theory of locally convex algebras. (Russian. English and Russian summaries) *Dokl. Akad. Nauk Ukrainy* **1992,** *no.* 7, 3–7, 177. (Jaroslav Zemánek) **93i:46083** 46H30 (47A60)

— Operator calculus on ultrasmooth vectors. (Ukrainian. Russian and Ukrainian summaries) *Ukraïn. Mat. Zh.* **44** (1992), *no.* 4, 502–513; *translation in Ukrainian Math. J.* **44** (1992), *no.* 4, 443–453. (Vitali V. Shevchik) **93g:47020** 47A60 (46H99, 47B99, 47C99)

Lopushnyak, T. K. (*with* Lisovskaya, V. P.) Limit properties of T-periodic solutions of nonlinear impulse systems with a small parameter multiplying the derivative. (Ukrainian. Russian and Ukrainian summaries) *Visnik Kiïv. Univ. Mat. Mekh. No.* **32** (1990), 96–103. 34D15

Lopuszański, Jan On the action of the Pauli-Lubanski Casimir operator in a relativistic supersymmetric quantum field theory. *J. Math. Phys.* **32** (1991), *no.* 11, 3189–3194. (From the summary) **93a:81191** 81T60

— Some comments on one-parameter Lie-groups of two-dimensional real matrices. *Fortschr. Phys.* **40** (1992), *no.* 2, 161–172. (Chon Hu Cheng) **93c:22012** 22E15

mena-Lorca, Jaime *see* **Mena-Lorca, Jaime**

Lorch, Lee (*with* Elbert, Árpád; Laforgia, Andrea) Additional monotonicity properties of the zeros of Bessel functions. *Analysis* **11** (1991), *no.* 4, 293–299. (Evangelos Ifantis) **93a:33006** 33C10

— (*with* Muldoon, Martin E.; Szego, Peter) Inflection points of Bessel functions of negative order. *Canad. J. Math.* **43** (1991), *no.* 6, 1309–1322. (Andrea Laforgia) **93a:33009** 33C10 (34B30)

Lorch, Richard Some remarks on the *Almagestum parvum*. *Amphora*, 407–437, *Birkhäuser, Basel*, 1992. (Anne Tihon) **93k:01014** 01A35 (01A20, 01A30)

Lord, Denise J. (*with* O'Farrell, Anthony G.) Removable singularities for analytic functions of Zygmund class. *Proc. Roy. Irish Acad. Sect. A* **91** (1991), *no.* 2, 195–204. (P. Lappan) **93h:30036** 30C85 (30D40)

Lordkipanidze, A. N. (*with* Basin, M. A.; Tkach, A. Ya.) Hydrodynamic characteristics of a carrying complex that moves near the free surface of a heavy fluid. (Russian) *Trudy Sem. Kraev. Zadacham No.* 26 (1991), 29–60. (Adrian Carabineanu) **93j:76013** 76B10

Lo Re, Pia Maria Finite linear space with $p^2 + p + 1$ mutually intersecting long lines. (Italian. English summary) *Ricerche Mat.* **40** (1991), *no.* 1, 19–26. (Tamás Szönyi) **93m:51012** 51E26 (05B25, 51E30)

Lórencz, Róbert (*with* Morháč, Miroslav) A modular system for solving linear equations exactly. I. Architecture and numerical algorithms. (English summary) *Comput. Artificial Intelligence* **11** (1992), *no.* 4, 351–361. (Summary) **93g:65057** 65F30 (65Y05)

Lorents, A. Statistical properties of the integral standards method. (Russian. English, Russian and Latvian summaries) *Mathematics (Russian)*, 53–64, *Latv. Univ. Zināt. Raksti*, 562, *Latv. Univ., Riga*, 1991. (*see* **93f:00009**) 68T10 (62H30)

— *see also* **Mathematics, 93f:00009**

Lorentsi, A. *see* **Lorenzi, Alfredo**

Lorentz, Hendrik Antoon *see* **Kox, A. J., 93h:01030**

Lorentz, Rudolph Alexander (*with* Joppich, W.) High-order positive, monotone and convex multigrid interpolations. (English summary) *COMPEL* **12** (1993), *no.* 1, 59–79. 65M55

Lorentzen, Lisa (*with* Waadeland, Haakon) ★ Continued fractions with applications. Studies in Computational Mathematics, 3. *North-Holland Publishing Co., Amsterdam*, 1992. xvi+606 *pp. ISBN* 0-444-89265-6 (Olav Njåstad) **93g:30007** 30B70 (40–02, 40A15, 41A21, 42C05)

— Bestness of the parabola theorem for continued fractions. *J. Comput. Appl. Math.* **40** (1992), *no.* 3, 297–304. (André Hautot) **93f:40005** 40A15

— (*with* Andrews, George E.; Berndt, Bruce C.; Lamphere, Robert L.) The continued fractions found in the unorganized portions of Ramanujan's notebooks. *Mem. Amer. Math. Soc.* **99** (1992), *no.* 477, vi+71 *pp.* (Liang-Cheng Zhang) **93f:11008** 11A55 (01A60, 05A19, 11B65)

Lorenz, Falko ★ Lineare Algebra. I. (German. German summary) [Linear algebra. I] Third edition. *Bibliographisches Institut, Mannheim*, 1992. x+226 *pp. ISBN* 3-411-15193-5 15–01

— ★ Lineare Algebra. II. (German. German summary) [Linear algebra. II] Third edition. *Bibliographisches Institut, Mannheim*, 1992. viii+195 *pp. ISBN* 3-411-15233-8 15–01

Lorenz, Jens Computation of invariant manifolds. *Numerical analysis* 1991 (*Dundee*, 1991), 118–127, *Pitman Res. Notes Math. Ser.*, 260, *Longman Sci. Tech., Harlow*, 1992. (Urs Kirchgraber) **93g:65107** 65L99 (34A50, 34C30)

— (*with* Van de Velde, Eric F.) Adaptive data distribution for concurrent continuation. *Numer. Math.* **62** (1992), *no.* 2, 269–294. (Summary) **93b:65052** 65F05 (15A23, 65H10, 65Y05, 65Y20)

— (*with* Morlet, Anne C.) Numerical solution of a functional equation on a circle. (English summary) *SIAM J. Numer. Anal.* **29** (1992), *no.* 6, 1741–1768. (Summary) **93j:65212** 65Q05 (34C15)

— (*with* Dieci, Luca) Block M-matrices and computation of invariant tori. *SIAM J. Sci. Statist. Comput.* **13** (1992), *no.* 4, 885–903. (Zdzisław W. Trzaska) **93h:65109** 65L99 (34C30, 65J10, 65N22, 73K12)

Lorenz, Martin (*with* Brown, K. A.) Colimits of functors, and Grothendieck groups of infinite group algebras. (English summary) *Abelian groups and noncommutative rings*, 89–109, *Contemp. Math.*, 130, *Amer. Math. Soc., Providence, RI*, 1992. (Reinhard C. Laubenbacher) **93h:16009** 16E20 (16S34, 19A31, 20C07)

— On the homology of graded algebras. *Comm. Algebra* **20** (1992), *no.* 2, 489–507. (Jean-Louis Cathelineau) **93b:19003** 19D55 (16E40, 16W50, 18G60)

Lorenz, Michael (*with* Schulze, Bert-Wolfgang) Propagation of branching conormal asymptotics for hyperbolic Cauchy problems. *Symposium "Analysis on Manifolds with Singularities"* (*Breitenbrunn*, 1990), 104–117, *Teubner-Texte Math.*, 131, *Teubner, Stuttgart*, 1992. (*see* **93k:35004**) 35C20 (35B40, 35L35, 58G16)

Lorenzen, Gunter A reformulation of Pearson's chi-square statistic and some extensions. (English summary) *Statist. Probab. Lett.* **14** (1992), *no.* 4, 327–331. (Summary) **93e:62128** 62G10

Lorenzetti, M. Suggestions for a possible notion of translation. *Pure Math. Appl. Ser. A* **2** (1991), *no.* 1-2, 77–86. (Summary) **93b:03112** 03G10 (03B65, 92K20)

Lorenzi, Alfredo (*with* Grasselli, Maurizio) Abstract nonlinear Volterra integrodifferential equations with nonsmooth kernels. (Italian summary) *Atti Accad. Naz. Lincei Cl. Sci. Fis. Mat. Natur. Rend. Lincei* (9) *Mat. Appl.* **2** (1991), *no.* 1, 43–53. (J. A. Nohel) **93b:45004** 45D05 (45J05, 47H15, 47N20)

— (*with* Celada, P.) An identification problem related to the bidimensional wave equation. (Italian summary) *Boll. Un. Mat. Ital. B* (7) **6** (1992), *no.* 1, 125–145. (Hideo Soga) **93g:35085** 35L20 (35L05, 35R30, 47N20)

— (*with* Denisov, A. M.) Identification of nonlinear terms in boundary value problems related to ordinary differential equations. *Differential Integral Equations* **5** (1992), *no.* 3, 567–579. (Brian D. Sleeman) **93b:34024** 34A55 (34B15)

— (*with* Paparoni, E.) Direct and inverse problems in the theory of materials with memory. (English summary) *Rend. Sem. Mat. Univ. Padova* **87** (1992), 105–138. (Hans Engler) **93i:45014** 45K05 (35R30, 73F15)

— (*with* Grasselli, Maurizio; Kabanikhin, S. I.) An inverse problem for an integro-differential equation. (Russian. Russian summary) *Sibirsk. Mat. Zh.* **33** (1992), *no.* 3, 58–68, 218; *translation in Siberian Math. J.* **33** (1992), *no.* 3, 415–426 (1993). (P. P. Zabreĭko) **93i:45010** 45K05 (35R30)

Lorenzini, Dino J. A finite group attached to the Laplacian of a graph. *Discrete Math.* **91** (1991), *no.* 3, 277–282. (David Riley Witte) **93a:05091** 05C50 (05C25, 20K01)

— The characteristic polynomial of a monodromy transformation attached to a family of curves. *Comment. Math. Helv.* **68** (1993), *no.* 1, 111–137. (Jean D'Almeida) **93k:14037** 14H10 (14H40)

jiménez Lorenzo, Fernando *see* **Jiménez Lorenzo, Fernando**

de Lorenzo, Javier Mathematics: incomplete, random, experimental? Considerations about some consequences of different versions of Gödel's incompleteness theorem. (Spanish. Spanish summary) Theory, history and foundations of the formal sciences (Spanish). *Theoria (San Sebastián)* (2) **7** (1992), *no.* 16-18, *A*, 423–450. (N. C. A. da Costa) **93k:00009** 00A30 (00A69, 03A05)

mata-Lorenzo, Luis E. *see* **Mata-Lorenzo, Luis E.**

Loret, Benjamin (*with* Hammoum, F.; Dafalias, Y. F.) A note on the accuracy of stress-point algorithms for anisotropic elastic-plastic solids. (English summary) *Comput. Methods Appl. Mech. Engrg.* **98** (1992), *no.* 3, 399–409. (Summary) **93c:73094** 73V05 (73E05)

— Does deviation from deviatoric associativity lead to the onset of flutter instability? (English summary) *J. Mech. Phys. Solids* **40** (1992), *no.* 6, 1363–1375. (Summary) **93i:73024** 73E50 (73B40, 73D99, 73E05, 73E70, 73H99)

— (*with* Hammoum, F.; Dafalias, Y. F.) Computational aspects of large elastoplastic deformations in the presence of anisotropy and plastic spin. (English summary) *Comput. Methods Appl. Mech. Engrg.* **105** (1993), *no.* 2, 151–180. 73G20 (73V20)

Loreto, V. (*with* Dattoli, G.; Mari, C.; Richetta, M.; Torre, Amalia) Biunitary transformations and ordinary differential equations. I, II, III. *Nuovo Cimento B* (11) **106** (1991), *no.* 12, 1357–1374, 1375–1390, 1391–1399. (P. G. L. Leach) **93e:34015** 34A26 (81Q05)

Loridan, P. Technical comment: "ε-duality theorem of nondifferentiable nonconvex multiobjective programming" [J. Optim. Theory Appl. **69** (1991), no. 1, 153–167; MR 92d:90072] by C. C. Liu. (English summary) With a reply by Liu. *J. Optim. Theory Appl.* **74** (1992), *no.* 3, 565–568. 90C29 (49J52, 49N15)

Lorimer, J. W. (*with* Biszkriczky, T.) On hyperplanes and free subspaces of affine Klingenberg spaces. (English summary) *Proceedings of the 3rd Congress of Geometry* (*Thessaloniki*, 1991), 69–78, *Aristotle Univ. Thessaloniki, Thessaloniki*, 1992. (Günter Törner) **93g:51006** 51C05

— The classification of compact right chain rings. *Forum Math.* **4** (1992), *no.* 4, 335–347. (S. Warner) **93h:16071** 16W80 (51C05)

Lorimer, P. J. (*with* Solomon, W.) The Ramsey numbers for stripes and complete graphs 1. *Discrete Math.* **104** (1992), *no.* 1, 91–97. (Ralph Faudree) **93g:05100** 05C55

Loring, Terry A. Berg's technique for pseudo-actions with applications to AF embeddings. *Canad. J. Math.* **43** (1991), *no.* 1, 119–157. (Lothar M. Schmitt) **93d:46100** 46L05 (46L40, 46L55, 46L80, 47D25, 54H20)

— The K-theory of AF embeddings of the rational rotation algebras. *K-Theory* **4** (1991), *no.* 3, 227–243. (Lothar M. Schmitt) **93d:46120** 46L80 (19K99, 19L10, 46M20)

— (*with* Exel, Ruy) Finite-dimensional representations of free product C^*-algebras. *Internat. J. Math.* **3** (1992), *no.* 4, 469–476. (Robert S. Doran) **93f:46091** 46L05

— (*with* Elliott, George A.) AF embeddings of $C(\mathbf{T}^2)$ with a prescribed K-theory. *J. Funct. Anal.* **103** (1992), *no.* 1, 1–25. (Cornel Pasnicu) **93b:46134** 46L80 (19A99, 46L05)

Loro, S. (*with* Lepschy, A.; Mian, G. A.; Viaro, Umberto) A numerical procedure for rational L_2 approximation. (English summary) *Recent advances in mathematical theory of systems, control, networks and signal processing, I* (*Kobe*, 1991), 431–436, *Mita, Tokyo*, 1992. (*see* **93g:93005**) 93B11

Lorz, Udo (*with* Schüle, Eik) An algorithm for the planar Johnson-Mehl tessellation. (English summary) *Theoretical foundations of computer vision* (*Buckow*, 1992), 25–34, *Math. Res.*, 69, *Akademie-Verlag, Berlin*, 1992. (Summary) **93k:68105** 68U05

Los, Jérôme E. Pseudo-Anosov maps and invariant train tracks in the disc: a finite algorithm. (English summary) *Proc. London Math. Soc.* (3) **66** (1993), *no.* 2, 400–430. (Athanase Papadopoulos) **93k:57067** 57S05 (57M07, 57R30, 58F18)

Losev, A. S. (*with* Turbiner, A. V.) Multidimensional exactly solvable problems in quantum mechanics and pullbacks of affine coordinates on the Grassmannian. *Internat. J. Modern Phys. A* **7** (1992), *no.* 7, 1449–1465. (Jacek Szmigielski) **93i:58074** 58F07 (81Q05)

Loseva, N. N. On the stability of a mechanical system with incomplete dissipation of energy. (Russian) *Mekh. Tverd. Tela No.* 23 (1991), 56–61. (Summary) **93a:70022** 70K20 (70E99)

Loshakov, V. A. (*with* Mitropol'skiĭ, Yu. A.; Gomozov, V. I.; Yatsyuk, V. T.) Problems in the theory of frequency-controllable autogenerators. (Russian. Russian summary) *Akad. Nauk Ukrainy Inst. Mat. Preprint* **1991**, *no.* 45, 17 *pp.* (Summary) **93d:34067** 34C15 (78A55)

Loshchinin, N. V. An algorithm for determining stable and unstable periodic regimes of motion of a machine aggregate with a three-phase asynchronous motor. (Russian) *Differential equations (qualitative theory)* (*Russian*), 89–102, *Ryazan. Gos. Ped. Inst., Ryazan'*, 1990. (*see* **93b:34003**) 70K20 (34D99)

Loskutov, V. G. Models, algorithms and software of stochastic optimization. (English summary) *Computational aspects of model choice* (*Prague*, 1991), 177–186, *Contrib. Statist., Physica, Heidelberg*, 1993. (*see* **93k:62001**) 90C15 (90-02)

Loskutov, Yu. M. Gravitational wave radiation in the case of a nonzero graviton mass. (Russian. English summary) *Teoret. Mat. Fiz.* **89** (1991), *no.* 1, 151–155; *translation in Theoret. and Math. Phys.* **89** (1991), *no.* 1, 1119–1123 (1992). (Edward Malec) **93a:83033** 83D05 (35Q75)

— A conjecture on the P-odd contribution to gravitational interactions and its consequences. (Russian. English and Russian summaries) *Teoret. Mat. Fiz.* **91** (1992), *no.* 2, 309–319; *translation in Theoret. and Math. Phys.* **91** (1992), *no.* 2, 543–550. (Michael B. Mensky) **93k:81158** 81T20 (83C10, 83C47)

Losonczi, László An extension theorem for the Levi-Civita functional equation and its applications. *Contributions to the theory of functional equations* (*Graz*, 1991), 51–68,

Grazer Math. Ber., 315, *Karl-Franzens-Univ. Graz, Graz*, 1991. (J. Aczél) **93g:39007** 39B32 (15A03, 15A24)
— On a functional equation of sum form with three unknown functions. *Period. Math. Hungar.* **23** (1991), *no.* 3, 199–209. (Pl. Kannappan) **93d:39013** 39B32
— (*with* Páles, Zsolt) A simple proof for a quadratic inequality. *General inequalities*, 6 (*Oberwolfach*, 1990), 445–447, *Internat. Ser. Numer. Math.*, 103, *Birkhäuser, Basel*, 1992. (*see* **93k:26001**) 26D15
— Eigenvalues and eigenvectors of some tridiagonal matrices. *Acta Math. Hungar.* **60** (1992), *no.* 3-4, 309–322. (Marc Artzrouni) **93f:15023** 15A57 (15A18)
Loss, M. (*with* Carlen, Eric A.) Competing symmetries, the logarithmic HLS inequality and Onofri's inequality on S^n. *Geom. Funct. Anal.* **2** (1992), *no.* 1, 90–104. (J. Alfredo Jiménez) **93b:58170** 58G40 (49J40, 58E15)
Losson, Jérôme Bifurcations and chaos in a paradigm equation for delayed mixed feedback. 1990 *lectures in complex systems* (*Santa Fe, NM*, 1990), 527–534, *Santa Fe Inst. Stud. Sci. Complexity Lectures, III, Addison-Wesley, Redwood City, CA*, 1991. (*see* **93h:68003**) 92B05
— (*with* Mackey, Michael C.) A Hopf-like equation and perturbation theory for differential delay equations. (English summary) *J. Statist. Phys.* **69** (1992), *no.* 5-6, 1025–1046. (Igor D. Chueshov) **93k:34172** 34K99 (34C35, 58F11, 82C05)
Losta, Mansor M. (*with* Argyros, Ioannis K.) Integral equations for two-point boundary value problems. *Rev. Acad. Cienc. Zaragoza* (2) **46** (1991), 25–35. (Ján Pekár) **93b:65205** 65R20 (65L10)
Lo Surdo, C. Uniqueness theorems in ideal magnetofluid dynamics. *Nuovo Cimento D* (1) **13** (1991), *no.* 6, 709–717. (V. D. Sharma) **93a:76108** 76W05 (76E25)
Lotfullin, M. V. Interaction of profiles near the free surface of a heavy fluid. (Russian) *Trudy Sem. Kraev. Zadacham No.* 26 (1991), 171–187. 76B99 (76B05)
— (*with* Filippov, S. I.) Modeling of interfaces in problems on the flow of a heavy fluid around a wing profile. (Russian) *Prikl. Mekh. Tekhn. Fiz.* **1992**, *no.* 4, 84–89; *translation in J. Appl. Mech. Tech. Phys.* **33** (1992), *no.* 4, 552–557 (1993). (From the text) **93j:76012** 76B05 (76B15)
Lothe, J. (*with* Barnett, D. M.; Chadwick, Paul) Addendum: "The behaviour of elastic surface waves polarized in a plane of material symmetry. I. General analysis" [Proc. Roy. Soc. London Ser. A **430** (1990), no. 1878, 213–240; MR 92c:73037] by Chadwick. *Proc. Roy. Soc. London Ser. A* **433** (1991), *no.* 1889, 699–710. (Bair V. Budaev) **93f:73037** 73D20 (73B40)
Lototskiĭ, S. V. (*with* Liptser, R. Sh.) Diffusion approximation and robust Kalman filter. *J. Math. Systems Estim. Control* **2** (1992), *no.* 3, 263–274. (Keigo Watanabe) **93b:93109** 93E11 (60H10, 62M20)
Lototskiĭ, V. A. (*with* Mandel′, A. S.) ★ Модели и методы управления запасами. (Russian. English and Russian summaries) [Models and methods of inventory control] "*Nauka*", *Moscow*, 1991. 190 *pp. ISBN* 5-02-006560-9 (B. Dimitrov) **93k:90032** 90B05 (60K10, 90-02, 90B25)
— (*with* Grīnbergs, A.; Shklyar, B. Sh.) Identification of systems with distributed parameters. (Russian. Russian summary) *Avtomat. i Telemekh.* **1992**, *no.* 2, 36–49; *translation in Automat. Remote Control* **53** (1992), *no.* 2, *part* 1, 178–189. (S. T. Tikhonchuk) **93i:93033** 93B30 (93C20)
Lototsky, Sergey V. *see* **Lototskiĭ, S. V.**
Lotov, V. I. Asymptotic expansions for the CUSUM procedure in a change point problem. (English summary) Siberian Advances in Mathematics. *Siberian Adv. Math.* **2** (1992), *no.* 3, 158–172. (Summary) **93k:60057** 60F05 (62E20, 62L10)
Lotspiech, Jeffrey B. (*with* Birk, Yitzhak) On finding nonintersecting straightline connections of grid points to the boundary. (English summary) *J. Algorithms* **13** (1992), *no.* 4, 636–656. (Summary) **93h:68141** 68U10 (68Q35, 68R10)
Lötstedt, Per Grid independent convergence of the multigrid method for first-order equations. (English summary) *SIAM J. Numer. Anal.* **29** (1992), *no.* 5, 1370–1394. (Dietrich Braess) **93g:65076** 65H10 (65N22, 76M20)
Lott, John (*with* Connes, Alain) Particle models and noncommutative geometry. Recent advances in field theory (Annecy-le-Vieux, 1990). *Nuclear Phys. B Proc. Suppl.* **18B** (1990), 29–47 (1991). (Robert Coquereaux) **93a:58015** 58B30 (46L60, 46L87, 81V25)
— (*with* Rothenberg, Melvin G.) Analytic torsion for group actions. *J. Differential Geom.* **34** (1991), *no.* 2, 431–481. (Steven Rosenberg) **93a:58171** 58G26 (57R91, 57S30, 58G25)
— (*with* Connes, Alain) The metric aspect of noncommutative geometry. *New symmetry principles in quantum field theory* (*Cargèse*, 1991), 53–93, *NATO Adv. Sci. Inst. Ser. B Phys.*, 295, *Plenum, New York*, 1992. (Palle E. T. Jørgensen) **93m:58011** 58B30 (22E40, 46L87, 81T60, 81V22)
— Superconnections and higher index theory. (English summary) *Geom. Funct. Anal.* **2** (1992), *no.* 4, 421–454. (John Roe) **93j:58128** 58G12 (19D55, 19K56, 57R20)
— Heat kernels on covering spaces and topological invariants. *J. Differential Geom.* **35** (1992), *no.* 2, 471–510. (Jürgen Eichhorn) **93b:58140** 58G11 (57R19, 58G25)
— Higher eta-invariants. (English summary) *K-Theory* **6** (1992), *no.* 3, 191–233. (John Roe) **93j:58129** 58G12 (19D55, 19K56, 46L87)
Lottati, Itzhak (*with* Eidelman, Shmuel; Drobot, Adam) Solution of Euler's equations on adaptive grids using a fast unstructured grid second order Godunov solver (FUGGS). (English summary) *Advances in the free-Lagrange method* (*Moran, WY*, 1990), 37–46, *Lecture Notes in Phys.*, 395, *Springer, Berlin*, 1991. (*see* **93g:76001**) 76M20 (76N15)
Lottermoser, M. A convergent post-Newtonian approximation for the constraint equations in general relativity. (English and French summaries) *Ann. Inst. H. Poincaré Phys. Théor.* **57** (1992), *no.* 3, 279–317. (Philippe-A. Dionne) **93i:83033** 83C25 (83C05)
Lotti, Grazia (*with* Favati, P.; Romani, Francesco; Rózsa, Pál) Generalized band matrices and their inverses. (English summary) *Calcolo* **28** (1991), *no.* 1-2, 45–92 (1992). (Summary) **93d:15006** 15A09 (65F05)
— (*with* Favati, P.; Romani, Francesco) Asymptotic expansion of error in interpolatory quadrature. (English summary) *Comput. Math. Appl.* **24** (1992), *no.* 10, 99–104. (Summary) **93e:65016** 65D05 (65G05)
— Fast solution of linear systems with polynomial coefficients over the ring of integers. (English summary) *J. Algorithms* **13** (1992), *no.* 4, 564–576. (D. Bini) **93m:65192** 65Y20 (15A54, 68Q25, 68Q40)
Lotulelei, T. (*with* Achuthan, N. R.) Project crashing with earliness and tardiness penalties: a goal programming model. (English summary) *Optimization, Vol.* 1, 2 (*Singapore*, 1992), 375–384, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93d:90005**) 90C29
Lou, Ding Jun (*with* Holton, D. A.; Plummer, Michael D.) On the 2-extendability of planar graphs. *Discrete Math.* **96** (1991), *no.* 2, 81–99. (J. Sedláček) **93f:05038** 05C10 (05C70)
— (*with* Xie, Shang Wu; Yao, Tian Xing) Hamiltonian cycles containing specific edges in power graphs. (Chinese. English summary) *Nanjing Daxue Xuebao Ziran Kexue Ban* **27** (1991), *Special Issue*, 71–73. (Summary) **93b:05108** 05C45
— (*with* Holton, D. A.) Matching extensions of strongly regular graphs. (English summary) *Australas. J. Combin.* **6** (1992), 187–208. (Summary) **93j:05170** 05E30 (05C40)
Lou, Ji Han (*with* Wang, Yue Yun; Zhang, Zhong Jun) The Kharitonov theorem and stability robustness. (Chinese. English and Chinese summaries) *J. Shanghai Jiaotong Univ.* **26** (1992), *no.* 3, 96–103. 93D09
Lou, Jiann Hua *see* **Probability theory, 93e:60005**
Lou, Jie Han *see* **Lou, Ji Han**
Lou, Meng Lin Approximate solutions to generalized eigenvalue problems with additional mass matrices. (Chinese. English summary) *J. Dalian Univ. Tech.* **32** (1992), *no.* 2, 231–236. (Summary) **93a:65103** 65L15
Lou, R. D. (*with* Sarrafzadeh, Majid; Rim, C. S.; Nakajima, Kazuo; Masuda, Sumio) General circular permutation layout. *Math. Systems Theory* **25** (1992), *no.* 4, 269–292. (Klaus Jansen) **93e:68041** 68Q35 (68M07)
— (*with* Sarrafzadeh, Majid; Lee, Der Tsai) An optimal algorithm for the maximum two-chain problem. *SIAM J. Discrete Math.* **5** (1992), *no.* 2, 285–304. (Summary) **93d:68024** 68Q20 (05C85, 68P10, 68R10)
— (*with* Sarrafzadeh, Majid) Maximum k-covering of weighted transitive graphs with applications. (English summary) *Algorithmica* **9** (1993), *no.* 1, 84–100. (Summary) **93j:68084** 68Q35 (05C85, 68Q25, 68R10)
Lou, Sen Yue (*with* Ruan, Hang Yu) Symmetry reductions of Whitham-Broer-Kaup equations in shallow water. (Chinese. English and Chinese summaries) *Acta Phys. Sinica* **41** (1992), *no.* 8, 1213–1221. (Summary) **93k:76017** 76B15 (35Q53, 58F07)
— Nonclassical symmetry reductions for the dispersive wave equations in shallow water. (English summary) *J. Math. Phys.* **33** (1992), *no.* 12, 4300–4305. (Summary) **93j:35140** 35Q35 (76B15)
— (*with* Zhu, Yao Jin) New multiple soliton solutions of high-dimensional nonlinear Klein-Gordon equation. *Math. Appl.* **5** (1992), *no.* 4, 113–114. 35Q53
Lou, Sheldon (*with* Sethi, Suresh P.; Sorger, Gerhard) Stability of real-time lot scheduling policies for an unreliable machine. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 12, 1966–1970. 90B35
Lou, Shi Tuo (*with* Borwein, Jonathan) Asymptotics of a sequence of Witt vectors. *J. Approx. Theory* **69** (1992), *no.* 3, 326–337. (Jiang Zeng) **93f:05007** 05A16 (05E05, 05E10, 13K05)
Lou, Shu Xian On invertibility of general Wiener-Hopf operators and factorization of an operator. *Northeast. Math. J.* **8** (1992), *no.* 1, 57–64. (A. Böttcher) **93h:47031** 47B35 (47A53, 47A68)
Lou, Y.-S. (*with* Boyarsky, A.) Matrix method for approximating fractal measures. *Internat. J. Bifur. Chaos Appl. Sci. Engrg.* **2** (1992), *no.* 1, 167–175. (Colleen D. Cutler) **93e:58105** 58F11 (28A80)
Lou, Yu Tong A generalization of Schweitzer's inequality and Grüss's inequality and their relationship. (Chinese. English summary) *Qufu Shifan Daxue Xuebao Ziran Kexue Ban* **17** (1991), *no.* 4, 24–28. 26D15
— (*with* Chen, Yu Zhang) A generalization of Chebyshev's inequalities. (Chinese. English and Chinese summaries) *Qufu Shifan Daxue Xuebao Ziran Kexue Ban* **18** (1992), *no.* 4, 49–54. (Summary) **93m:26041** 26D15
Lou, Yuan Ren On the overconvergence of Hermite interpolating polynomials. *Adv. in Math.* (*China*) **21** (1992), *no.* 1, 79–92. (Ambikeswar Sharma) **93e:30079** 30E05 (41A10, 65D05)
Lou, Z. *see* **You, Zhiping**
Lou, Zhi Wen (*with* Zang, Yue Long) Three-dimensional ship wave-making problem by two-dimensional boundary element method. *Theory and applications of boundary element methods* (*Beijing*, 1991), 209–214, *Internat. Acad. Publ., Beijing*, 1991. (*see* **93b:65008**) 76M15 (65N38)
— (*with* Zhang, Ming) Elastoplastic boundary element analysis of two-dimensional bimaterial. *Theory and applications of boundary element methods* (*Beijing*, 1991), 255–262, *Internat. Acad. Publ., Beijing*, 1991. (*see* **93b:65008**) 73V10 (65N38)
Louani, D. Limit laws of Erdős-Rényi-type indexed by sets. (English summary) *Statist. Decisions* **10** (1992), *no.* 3, 291–305. (J. Steinebach) **93h:60050** 60F15 (60F10)
Loubaton, Philippe (*with* Chonavel, Thierry) Le problème des moments trigonométriques sur un intervalle. (English summary) [The trigonometric moment problem on an interval] *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 1, 41–44. (Summary) **93c:42009** 42A70 (44A60)
— A regularity criterion for lexicographical prediction of multivariate wide-sense stationary processes on $\mathbf{Z}^2$ with non-full-rank spectral densities. *J. Funct. Anal.* **104** (1992), *no.* 1, 198–228. (Mohsen Pourahmadi) **93b:60085** 60G25 (60G60)
Louboutin, Stéphane Norme relative de l'unité fondamentale et 2-rang du groupe des classes d'idéaux de certains corps biquadratiques. [Relative norm of the fundamental unit and two-rank of the ideal class group of certain biquadratic fields] *Acta Arith.* **58** (1991), *no.* 3, 273–288. (Peter Stevenhagen) **93a:11090** 11R16 (11R11, 11R29)
— Majoration au point 1 des fonctions L associées aux caractères de Dirichlet primitifs, ou au caractère d'une extension quadratique d'un corps quadratique imaginaire principal. [Upper bound at the point 1 of L-functions associated with primitive Dirichlet characters or with the character of a quadratic extension of a principal imaginary quadratic field] *J. Reine Angew. Math.* **419** (1991), 213–219. (From the text) **93e:11101** 11M20 (11R11, 11R42)
— Minoration au point 1 des fonctions L et détermination des corps sextiques abéliens totalement imaginaires principaux. [Lower bound at the point 1 of L-functions and determination of the principal totally imaginary abelian sextic fields] *Acta Arith.* **62** (1992), *no.* 2, 109–124. (John B. Friedlander) **93h:11100** 11M20 (11R20, 11R29, 11R42)
— (*with* Mollin, R. A.; Williams, Hugh Cowie) Class numbers of real quadratic fields, continued fractions, reduced ideals, prime-producing quadratic polynomials and quadratic residue covers. (English summary) *Canad. J. Math.* **44** (1992), *no.* 4, 824–842. (W. Narkiewicz) **93h:11117** 11R11 (11N25, 11N32, 11R29)
— Norme relative de l'unité fondamentale de certains corps biquadratiques et parité des longueurs de cycles d'idéaux réduits. (English and French summaries) [Relative norm of the fundamental unit of some biquadratic fields and parity of the lengths of cycles of

reduced ideals] *J. Number Theory* **42** (1992), *no.* 3, 361–368. (Amara Hédi) **93i:11121** 11R27 (11R16)

— Détermination des corps quartiques cycliques totalement imaginaires à groupe des classes d'idéaux d'exposant ≤ 2. (English summary) [Determining totally imaginary cyclic quartic fields with ideal class group of exponent ≤ 2] *Manuscripta Math.* **77** (1992), *no.* 4, 385–404. (Teruo Takeuchi) **93m:11114** 11R29 (11R16)

— Majorations explicites de $|L(1,\chi)|$. (English and French summaries) [Explicit upper bounds on $|L(1,\chi)|$] *C. R. Acad. Sci. Paris Sér. I Math.* **316** (1993), *no.* 1, 11–14. (Don Redmond) **93m:11084** 11M20

Louchard, G. Robust variations of interpolation search: an asymptotic analysis. (German summary) *Computing* **46** (1991), *no.* 3, 193–222. (E. Rodney Canfield) **93c:68017** 68P10 (05A16, 60C05, 68Q25)

— (*with* Randrianarimanana, B.; Schott, René) Dynamic algorithms in D. E. Knuth's model: a probabilistic analysis. *Theoret. Comput. Sci.* **93** (1992), *no.* 2, 201–225. (Colin J. H. McDiarmid) **93k:68048** 68Q25 (60J20, 68P05)

Louck, James D. (*with* Galbraith, Harold W.) Canonical solution of the SU(3) ↓ SO(3) reduction problem from the SU(3) pattern calculus. *Acta Appl. Math.* **24** (1991), *no.* 1, 59–108. (Mariano A. del Olmo) **93a:20024** 20C35 (20G05, 20G45)

— Survey of zeros of $3j$ and $6j$ coefficients by Diophantine equation methods. (English summary) *Group theory and special symmetries in nuclear physics (Ann Arbor, MI, 1991)*, 268–275, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93e:81150**) 33C80 (11D41, 33-02, 81R05)

— (*with* Biedenharn, L. C.; Bincer, A. M.; Lohe, M. A.) New relations and identities for generalized hypergeometric coefficients. *Adv. in Appl. Math.* **13** (1992), *no.* 1, 62–121. (Robert A. Gustafson) **93g:33009** 33C50 (22E70, 33C80)

rosset-Loučrat, Marie-Minerve *see* **Rosset-Loučrat, Marie-Minerve**

Loui, Michael C. (*with* Luginbuhl, David R.) The complexity of on-line simulations between multidimensional Turing machines and random access machines. *Math. Systems Theory* **25** (1992), *no.* 4, 293–308. (Robert M. Baer) **93g:68033** 68Q05 (68Q10)

— (*with* Luginbuhl, David R.) Optimal on-line simulations of tree machines by random access machines. (English summary) *SIAM J. Comput.* **21** (1992), *no.* 5, 959–971. (Klaus W. Wagner) **93i:68068** 68Q05 (03D10, 03D15, 68Q15)

Loui, Ronald P. (*with* Simari, Guillermo R.) A mathematical treatment of defeasible reasoning and its implementation. *Artificial Intelligence* **53** (1992), *no.* 2-3, 125–157. (Summary) **93a:68136** 68T27 (03B70)

Louie, K. (*with* Ockendon, J. R.) Mathematical aspects of the theory of inviscid hypersonic flow. *Philos. Trans. Roy. Soc. London Ser. A* **335** (1991), *no.* 1637, 121–138. (Introduction) **93c:76055** 76K05

Louis, Alfred K. Mathematical questions of a biomagnetic imaging problem. (English summary) *Mathematical methods in tomography (Oberwolfach, 1990)*, 126–132, *Lecture Notes in Math.*, 1497, *Springer, Berlin*, 1991. (*see* **93d:44001**) 92C55

— Medical imaging: state of the art and future development. (English summary) *Inverse Problems* **8** (1992), *no.* 5, 709–738. (Summary) **93g:65163** 65R10 (35R30, 44A12, 92C55)

— *see also* **Mathematical methods in tomography, 93d:44001**

Louis, J.-Cl. (*with* Wexler, D.) The Hilbert space regulator problem and operator Riccati equation under stabilizability. (English summary) *Ann. Soc. Sci. Bruxelles Sér. I* **105** (1991), *no.* 4, 137–165 (1992). (R. F. Datko) **93h:93059** 93D15 (47N70, 49N10, 93C25)

Louis, Jan (*with* Ferrara, Sergio) Flat holomorphic connections and Picard-Fuchs identities from $N = 2$ supergravity. *Phys. Lett. B* **278** (1992), *no.* 3, 240–245. (Summary) **93k:32065** 32J81 (32C17, 32G81, 53C55, 81T60)

Louis, Thomas A. (*with* Anderson, Jon E.; Holm, Niels V.; Harvald, Bent) Time-dependent association measures for bivariate survival distributions. (English summary) *J. Amer. Statist. Assoc.* **87** (1992), *no.* 419, 641–650. (Summary) **93f:62133** 62N05 (62P10)

Louisell, James Growth estimates and asymptotic stability for a class of differential-delay equation having time-varying delay. *J. Math. Anal. Appl.* **164** (1992), *no.* 2, 453–479. (Mary E. Parrott) **93b:34101** 34K20

Loukas, S. Some methods of estimation for a trivariate Poisson distribution. (English summary) *Zastos. Mat.* **21** (1993), *no.* 4, 503–510. 62E15 (62F10)

Louko, Jorma (*with* Giulini, Domenico) Gravitational theta-states in $(2+1)$-dimensional quantum cosmology. *Proceedings of the 4th Canadian Conference on General Relativity and Relativistic Astrophysics (Winnipeg, MB, 1991)*, 81–85, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93c:83050** 83C45 (81T13)

— (*with* Tuckey, Philip A.) Regge calculus in anisotropic quantum cosmology. *Classical Quantum Gravity* **9** (1992), *no.* 1, 41–67. (Annalisa Marzuoli) **93c:83033** 83C27 (83C45)

— (*with* Whiting, Bernard F.) Energy spectrum of a quantum black hole. *Classical Quantum Gravity* **9** (1992), *no.* 2, 457–473. (Asghar Qadir) **93c:83077** 83C57 (83C45)

— (*with* Giulini, Domenico) No-boundary θ sectors in spatially flat quantum cosmology. (English summary) *Phys. Rev. D* (3) **46** (1992), *no.* 10, 4355–4364. (Vladimir Soloviev) **93m:83030** 83C45

Loula, Abimael F. D. (*with* Franca, Leopoldo P.; Karam Filho, José; Stenberg, R.) A convergence analysis of a stabilized method for the Stokes flow. (Portuguese summary) *Mat. Apl. Comput.* **10** (1991), *no.* 1, 19–26. (Rolf Rannacher) **93b:65168** 65N30 (76D07, 76M10)

— (*with* Karam Filho, José) A nonstandard application of Babuška-Brezzi theory to finite element analysis of Stokes problem. (English and Portuguese summaries) *Mat. Apl. Comput.* **10** (1991), *no.* 3, 243–262. (Summary) **93c:65117** 65M60 (65M12, 76D07, 76M10)

— (*with* Karam Filho, José) On stable equal-order finite element formulations for incompressible flow problems. The Second World Congress of Computational Mechanics, Part II (Stuttgart, 1990). *Internat. J. Numer. Methods Engrg.* **34** (1992), *no.* 2, 655–665. (W. Langlois) **93e:76049** 76M10 (76D05)

Loulou, Richard (*with* Savard, Gilles; Lessard, E.) Computation of cooperative and Stackelberg solutions when players are described by linear programs. *Differential games—developments in modelling and computation (Espoo, 1990)*, 285–292, *Lecture Notes in Control and Inform. Sci.*, 156, *Springer, Berlin*, 1991. (*see* **93c:90003**) 90D12 (90C05)

— (*with* Haurie, Alain; Savard, Gilles) A two-player game model of power cogeneration in New England. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 9, 1451–1456. 90D40 (90D05)

— Minimal cut cover of a graph with an application to the testing of electronic boards. (English summary) *Oper. Res. Lett.* **12** (1992), *no.* 5, 301–305. (Summary) **93h:05160** 05C90 (05C85, 68R10, 90C35, 94C12)

Lounesto, Pertti Clifford algebra calculations with a microcomputer. (English summary) *Clifford algebras and their applications in mathematical physics (Montpellier, 1989)*, 39–55, *Fund. Theories Phys.*, 47, *Kluwer Acad. Publ., Dordrecht*, 1992. (*see* **93f:00011**) 81R25 (15A66)

Loupekine, Feodor (*with* Holroyd, F. C.) The four colour problem is not dead. *Graph colourings (Milton Keynes, 1988)*, 37–44, *Pitman Res. Notes Math. Ser.*, 218, *Longman Sci. Tech., Harlow*, 1990. (*see* **93k:05072**) 05C15

Loupias, Guy (*with* Iochum, Bruno) Banach power-associative algebras: the complex and (or) noncommutative cases. With a corrigendum: "Banach-power-associative algebras and J-B algebras" [Ann. Inst. H. Poincaré Phys. Théor. **43** (1985), no. 2, 211–225; MR 87e:46093] by Iochum. *Ann. Sci. Univ. Clermont-Ferrand II Math. No.* 27 (1991), 93–106 (1992). (Antonio Fernández López) **93f:46078** 46H70 (17A05)

— (*with* Iochum, Bruno) Remarks on the bidual of Banach algebras (the C^* case). *Ann. Sci. Univ. Clermont-Ferrand II Math. No.* 27 (1991), 107–118 (1992). (Horst Behncke) **93d:46115** 46L70 (46H70, 46L05)

Loustau, John (*with* Dillon, Meighan) ★ Linear geometry with computer graphics. (English. English summary) With 1 IBM-PC floppy disk (3.5 inch; DD). Monographs and Textbooks in Pure and Applied Mathematics, 170. *Marcel Dekker, Inc., New York*, 1993. x+440 *pp. ISBN* 0-8247-8898-2 (E. J. F. Primrose) **93j:51001** 51-01 (51A05, 68U05)

Loustó, C. O. (*with* Sánchez, Norma) The ultrarelativistic limit of the boosted Kerr-Newman geometry and the scattering of spin-$\frac{1}{2}$ particles. (English summary) *Nuclear Phys. B* **383** (1992), *no.* 1-2, 377–394. (Enric Verdaguer) **93k:83039** 83C47 (81T20, 83C45)

Louter-Nool, Margreet Block-Cholesky for parallel processing. *Appl. Numer. Math.* **10** (1992), *no.* 1, 37–57. (Summary) **93c:65043** 65F05 (65Y05)

Louveau, Alain Classification des structures boréliennes. [Classification of Borel structures] *Séminaire d'Initiation à l'Analyse, Exp. No.* 5, 6 *pp., Publ. Math. Univ. Pierre et Marie Curie*, 95, *Univ. Paris VI, Paris*, 199?. (*see* **93d:00039**) 03E15 (28A05, 54H05)

— (*with* Kechris, Alexander S.) Descriptive set theory and harmonic analysis. *J. Symbolic Logic* **57** (1992), *no.* 2, 413–441. (Marek Balcerzak) **93e:04001** 04A15 (42A63, 54H05)

— (*with* Becker, Howard; Kahane, Sylvain) Some complete Σ^1_2 sets in harmonic analysis. *Trans. Amer. Math. Soc.* **339** (1993), *no.* 1, 323–336. (Jakub Jasiński) **93k:04002** 04A15 (03E35, 43A46)

Louveaux, François V. (*with* Peeters, D.) A dual-based procedure for stochastic facility location. (English summary) *Oper. Res.* **40** (1992), *no.* 3, 564–573. (Odile Lefebvre) **93g:90044** 90B80 (90C11, 90C15)

Louvish, David *see* **Proceedings: St. Petersburg Mathematical Society, 93k:00045**

Louzada Neto, Francisco (*with* Achcar, Jorge Alberto) Accelerated life tests with one stress variable: a Bayesian analysis of the Eyring model. (English summary) *Rebrape* **5** (1991), *no.* 2, 169–179. 62N05

— (*with* Achcar, Jorge Alberto) A Bayesian approach for accelerated life tests considering the Weibull distribution. (English summary) *Comput. Statist.* **7** (1992), *no.* 4, 355–369. 62N05 (62F15)

Lovass-Nagy, Victor (*with* Powers, David L.; Schilling, Robert J.) On inversion of linear descriptor-variable control systems containing input derivatives. (English summary) *IMA J. Math. Control Inform.* **9** (1992), *no.* 1, 35–45. (Summary) **93d:93025** 93B17 (93C05)

— (*with* Ibrahim, E. Y.; Mukundan, Rangaswamy; Schilling, Robert J.) Remarks on optimal control and state estimation of a class of linear time-invariant descriptor-variable control systems. (English summary) *IMA J. Math. Control Inform.* **9** (1992), *no.* 2, 103–111. (G. A. Kurina) **93j:93065** 93C05 (49K15, 93C45)

— (*with* Harris, S. L.; Ibrahim, E. Y.; Schilling, Robert J.) Minimum energy control of linear time-invariant systems with input derivatives. (English summary) *Internat. J. Systems Sci.* **23** (1992), *no.* 7, 1191–1200. 49N10 (93C10)

— (*with* Schilling, Robert J.; Harris, S. L.) Tracking control of linear time-invariant descriptor systems. (English summary) *Internat. J. Systems Sci.* **23** (1992), *no.* 11, 1953–1963. (Summary) **93h:93036** 93C05 (93B51)

Lovász, László (*with* Erdős, Paul; Vesztergombi, K.) The chromatic number of the graph of large distances. *Combinatorics (Eger, 1987)*, 547–551, *Colloq. Math. Soc. János Bolyai*, 52, *North-Holland, Amsterdam*, 1988. (*see* **93m:05002**) 05C15

— Geometric algorithms and algorithmic geometry. A plenary address presented at the International Congress of Mathematicians held in Kyoto, August 1990. ICM-90. *Mathematical Society of Japan, Tokyo; distributed outside Asia by the American Mathematical Society, Providence, RI*, 1990. 1 *videocassette (NTSC; 1/2 inch; VHS)* (60 *min.*); *sd., col. ISBN* 0-8218-8052-7 (Michael B. Dillencourt) **93e:52030** 52B55 (68Q20, 68U05)

— (*with* Simonovits, Miklós) The mixing rate of Markov chains, an isoperimetric inequality, and computing the volume. 31*st Annual Symposium on Foundations of Computer Science, Vol. I, II (St. Louis, MO*, 1990), 346–354, *IEEE Comput. Soc. Press, Los Alamitos, CA*, 1990. (Mark R. Jerrum) **93e:68035** 68Q25 (52A38, 52B55, 60J05)

— (*with* Korte, Bernhard; Schrader, Rainer) ★ Greedoids. Algorithms and Combinatorics, 4. *Springer-Verlag, Berlin*, 1991. viii+211 *pp. ISBN* 3-540-18190-3 (Ulrich Faigle) **93f:90003** 90–02 (05B35, 90C10, 90C27)

— The work of A. A. Razborov. *Proceedings of the International Congress of Mathematicians, Vol. I, II (Kyoto*, 1990), 37–40, *Math. Soc. Japan, Tokyo*, 1991. (Norbert Blum) **93e:01012** 01A60 (01A70, 68Q15, 68Q30, 68R10)

— Geometric algorithms and algorithmic geometry. *Proceedings of the International Congress of Mathematicians, Vol. I, II (Kyoto*, 1990), 139–154, *Math. Soc. Japan, Tokyo*, 1991. (Rade Živaljević) **93e:52001** 52–02 (52A38, 52B12, 52B55, 68U05)

— (*with* Bárány, Imre; Howe, Roger E.) On integer points in polyhedra: a lower bound. (English summary) *Combinatorica* **12** (1992), *no.* 2, 135–142. (Martin Henk) **93g:52012** 52C07 (11H56, 52B20)

— (*with* Csima, J.) A matching algorithm for regular bipartite graphs. *Discrete Appl. Math.* **35** (1992), *no.* 3, 197–203. (Dieter Kratsch) **93a:05100** 05C70 (68R10)

— (*with* Scarf, Herbert E.) The generalized basis reduction algorithm. (English summary) *Math. Oper. Res.* **17** (1992), *no.* 3, 751–764. (Béla Uhrin) **93h:52023** 52C07 (90C10)

— *see also* **Sets, graphs and numbers, 93k:05004** *and* **Combinatorics, 93m:05002**

Love, Alex (*with* Bailin, David; Dunbar, David C.) Generations in irreducible $N = 2$ superconformal coset theories. *Internat. J. Modern Phys. A* **6** (1991), *no.* 10, 1659–1674. (Young-Hun Kwon) **93e:81089** 81T30 (17B81, 81R10)
— (*with* Bailin, David; Katechou, E. K.) Flipped SU(5) × U(1) in superconformal models. *Internat. J. Modern Phys. A* **7** (1992), *no.* 1, 153–169. (Summary) **93m:81159** 81V22 (81T30, 81T40)
— (*with* Bailin, David) Matter field Kähler potentials for $Z_3 \times Z_3$ and Z_3 orbifold theories. (English summary) *Modern Phys. Lett. A* **7** (1992), *no.* 31, 2931–2941. (Ilya Shapiro) **93i:81184** 81T30 (83E30)
— (*with* Bailin, David) Errata: "Fractional charged color singlet states and string unification" [Modern Phys. Lett. A **7** (1992), no. 16, 1485–1495]. *Modern Phys. Lett. A* **7** (1992), *no.* 31, 2963. 81T30 (81V22)
— (*with* Bailin, David; Sabra, W. A.) Twisted sector Yukawa couplings for the $Z_3 \times Z_3$ orbifold. (English summary) *Modern Phys. Lett. A* **7** (1992), *no.* 38, 3607–3615. (C. Gauthier) **93k:81164** 81T30
— (*with* Bailin, David) String unification in $Z_3 \times Z_3$ orbifold models. *Phys. Lett. B* **278** (1992), *no.* 1-2, 125–130. (Summary) **93d:81133** 81T30 (81T17, 81V22, 83E30)
— (*with* Bailin, David) String unification and extra matter multiplets below the string scale. *Phys. Lett. B* **280** (1992), *no.* 1-2, 26–30. (Summary) **93b:81203** 81T30 (81V22)
— (*with* Bailin, David) Kähler potentials for twisted sectors of Z_N orbifolds. (English summary) *Phys. Lett. B* **288** (1992), *no.* 3-4, 263–268. (Yi Xin Chen) **93j:81079** 81T30 (32G81, 83E30)
— (*with* Bailin, David) String unification, grand unification and string loop threshold corrections. (English summary) *Phys. Lett. B* **292** (1992), *no.* 3-4, 315–320. (Summary) **93h:81149** 81V22
Love, E. R. A Fourier integral expansion for a Weyl fractional integral. (English summary) *Univalent functions, fractional calculus, and their applications* (*Kōriyama*, 1988), 113–120, *Ellis Horwood Ser. Math. Appl., Horwood, Chichester*, 1989. (Summary) **93m:42001** 42A38 (26A33)
— A conjecture of Richard Hall. *J. Math. Anal. Appl.* **163** (1992), *no.* 2, 297–316. (R. S. Booth) **93d:40001** 40A10 (26A99)
— (*with* Hunter, M. N.) Expansions in series of Legendre functions. *Proc. London Math. Soc.* (3) **64** (1992), *no.* 3, 579–601. (K. Tandori) **93d:42027** 42C05
Lovejoy, S. (*with* Schertzer, D.; Lavallée, D.; Schmitt, F.) Universal hard multifractal turbulence: theory and observations. (English summary) *Nonlinear dynamics of structures* (*Vladimir Maiakovskii*, 1990), 213–235, *World Sci. Publishing, River Edge, NJ*, 1991. (Summary) **93j:76038** 76F20 (58F40, 86A10)
Lovejoy, William S. Suboptimal policies, with bounds, for parameter adaptive decision processes. (English summary) *Oper. Res.* **41** (1993), *no.* 3, 583–599. 90C40
Loveland, Donald W. (*with* Valtorta, Marco) On the complexity of belief network synthesis and refinement. (English summary) *Internat. J. Approx. Reason.* **7** (1992), *no.* 3-4, 121–148. (Summary) **93f:68088** 68T30
Loveland, L. D. (*with* Loveland, S. M.) Finite equidistant sets in plane continua. (English summary) *Houston J. Math.* **18** (1992), *no.* 3, 349–360. (L. E. Ward, Jr.) **93i:54027** 54F15
— No continuum in E^2 has the TMP. II. Triodic continua. (English summary) *Rocky Mountain J. Math.* **22** (1992), *no.* 3, 957–971. (Wayne Lewis) **93m:54061** 54F50 (51K05, 54F15, 54F65)
Loveland, S. M. (*with* Loveland, L. D.) Finite equidistant sets in plane continua. (English summary) *Houston J. Math.* **18** (1992), *no.* 3, 349–360. (L. E. Ward, Jr.) **93i:54027** 54F15
Loveys, James G. Abelian groups with modular generic. *J. Symbolic Logic* **56** (1991), *no.* 1, 250–259. (Anand Pillay) **93b:03048** 03C45 (03C60, 20K99)
— (*with* Herwig, Bernhard; Pillay, Anand; Tanović, Predag; Wagner, Frank O.) Stable theories without dense forking chains. *Arch. Math. Logic* **31** (1992), *no.* 5, 297–303. (John Rosenthal) **93i:03046** 03C45
— (*with* Wagner, Frank O.) Le Canada semi-dry. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 1, 217–221. (John T. Baldwin) **93f:03023** 03C60 (03C45, 20A15)
Lovicar, Vladimír (*with* Straškraba, Ivan) Remark on cavitation solutions of stationary compressible Navier-Stokes equations in one dimension. *Czechoslovak Math. J.* **41(116)** (1991), *no.* 4, 653–662. (Aleksandr A. Papin) **93d:35120** 35Q30 (76D05, 76N10)
Lovíšek, Ján (*with* Bock, Igor) An optimal control problem for a pseudoparabolic variational inequality. (Slovak summary) *Appl. Math.* **37** (1992), *no.* 1, 62–80. (Summary) **93f:49012** 49J40 (47H19, 73F15, 73K10, 73K40, 73V25)
Lovyagin, Yu. N. Spaces with an abstract metric. (Russian. Russian summary) *Ordered spaces and operator equations* (*Russian*), 24–32, 159, *Syktyvkar. Gos. Univ., Syktyvkar*, 1989. (*see* **93m:00034**) 46A40 (54E35)
Low, Lee Fong (*with* Pillay, Anand) Superstable theories with few countable models. (English summary) *Arch. Math. Logic* **31** (1992), *no.* 6, 457–465. (M. A. Taĭtslin) **93i:03047** 03C45 (03C15)
Low, Mark G. Renormalization and white noise approximation for nonparametric functional estimation problems. *Ann. Statist.* **20** (1992), *no.* 1, 545–554. (Wolfgang Wertz) **93d:62073** 62G05
— Nonexistence of an adaptive estimator for the value of an unknown probability density. *Ann. Statist.* **20** (1992), *no.* 1, 598–602. (Wolfgang Wertz) **93d:62074** 62G05
— (*with* Donoho, David L.) Renormalization exponents and optimal pointwise rates of convergence. *Ann. Statist.* **20** (1992), *no.* 2, 944–970. (Theo Gasser) **93m:62070** 62G05
Lowe, Bruce D. (*with* Pilant, Michael; Rundell, William) The recovery of potentials from finite spectral data. *SIAM J. Math. Anal.* **23** (1992), *no.* 2, 482–504. (Basudeb Ray Paladhi) **93f:34024** 34A55 (34B24, 34L05, 34L40)
Lowe, David A. Unitarity relations in $c = 1$ Liouville theory. (English summary) *Modern Phys. Lett. A* **7** (1992), *no.* 28, 2647–2657. 81T30
— Semiclassical approach to black hole evaporation. (English summary) *Phys. Rev. D* (3) **47** (1993), *no.* 6, 2446–2453. 83C57 (83C47)
Löwe, Stefan Solutions of quadratic equations in a groupring and partial addition sets. *Advances in finite geometries and designs* (*Chelwood Gate*, 1990), 289–298, *Oxford Sci. Publ., Oxford Univ. Press, New York*, 1991. (Andrew Woldar) **93b:05068** 05C25 (05E20, 05E30)
Lowe, Timothy J. (*with* Francis, Richard Lane) On worst-case aggregation analysis for network location problems. (English summary) Locational decisions (Fullerton, CA, 1990). *Ann. Oper. Res.* **40** (1992), *no.* 1-4, 229–246 (1993). (Summary) **93m:90030** 90B10 (90B80)
Lowen, E. *see* **Lowen-Colebunders, Eva**
Löwen, R. (*with* Kühne, Regina) Topological projective spaces. *Abh. Math. Sem. Univ. Hamburg* **62** (1992), 1–9. (H. Salzmann) **93g:51013** 51H05
Lowen, Robert (*with* Bentley, H. L.; Herrlich, Horst) Improving constructions in topology. *Category theory at work* (*Bremen*, 1990), 3–20, *Res. Exp. Math.*, 18, *Heldermann, Berlin*, 1991. (Y. T. Rhineghost) **93b:54009** 54B30 (54A05, 54D20, 54E17)
— (*with* Lowen-Colebunders, Eva) A topological universe extension of FTS. *Applications of category theory to fuzzy subsets* (*Linz*, 1989), 153–176, *Theory Decis. Lib. Ser. B Math. Statist. Methods*, 14, *Kluwer Acad. Publ., Dordrecht*, 1992. (M. Hušek) **93d:18011** 18B99 (04A72, 54A40, 54B30)
— (*with* Srivastava, Arun Kumar[2]) On Preuss' connectedness concept in FTS. *Fuzzy Sets and Systems* **47** (1992), *no.* 1, 99–104. (Summary) **93d:54015** 54A40 (04A72)
— (*with* Robeys, K.) Completions of products of metric spaces. *Quart. J. Math. Oxford Ser.* (2) **43** (1992), *no.* 171, 319–338. (H. L. Bentley) **93i:54016** 54D35 (54B10, 54B30, 54C35, 54E35)
Lowen-Colebunders, Eva (*with* Herrlich, Horst; Schwarz, Friedhelm) Improving Top: PrTop and PsTop. *Category theory at work* (*Bremen*, 1990), 21–34, *Res. Exp. Math.*, 18, *Heldermann, Berlin*, 1991. (Jiří Adámek) **93d:18007** 18B30 (18D15, 54B30)
— (*with* Bentley, H. L.) Completely regular spaces. *Comment. Math. Univ. Carolin.* **32** (1991), *no.* 1, 129–153. (Summary) **93d:54028** 54C30 (18B30, 54C40, 54E17)
— (*with* Lowen, Robert) A topological universe extension of FTS. *Applications of category theory to fuzzy subsets* (*Linz*, 1989), 153–176, *Theory Decis. Lib. Ser. B Math. Statist. Methods*, 14, *Kluwer Acad. Publ., Dordrecht*, 1992. (M. Hušek) **93d:18011** 18B99 (04A72, 54A40, 54B30)
Lowengrub, J. (*with* Hou, Thomas Y.; Shelley, M. J.) The convergence of an exact desingularization for vortex methods. (English summary) *SIAM J. Sci. Comput.* **14** (1993), *no.* 1, 1–18. (Summary) **93k:65075** 65M12 (76C05, 76M25)
Lowenstein, J. H. Interpolating Hamiltonians for a stochastic-web map with quasicrystalline symmetry. (English summary) *Chaos* **2** (1992), *no.* 3, 413–422. (Summary) **93f:58213** 58F30 (58F05, 70H05)
Lowry, Michael R. Symmetry as bias: rediscovering special relativity. (English summary) *AAAI-92. Proceedings, Tenth National Conference on Artificial Intelligence* (*San Jose, CA*, 1992), 56–62, *Amer. Assoc. Artif. Intell., Menlo Park, CA*, 1992. (*see* **93j:68007**) 68T05 (83A05)
Loxton, J. H. Partition identities and the dilogarithm. *Structural properties of polylogarithms*, 287–299, *Math. Surveys Monographs*, 37, *Amer. Math. Soc., Providence, RI*, 1991. (*see* **93b:11158**) 11P82 (33B10)
— (*with* Yeung, Hang-Fai) Common summands in partitions. *Acta Arith.* **60** (1992), *no.* 4, 307–320. (Jörg Brüdern) **93c:11089** 11P82
— (*with* Khoo, David S. P.; Bird, Gregory J.; Seberry, Jennifer) A cubic RSA code equivalent to factorization. *J. Cryptology* **5** (1992), *no.* 2, 139–150. (Summary) **93c:94004** 94A60
Loyens, Ludovicus Daniël Joseph Carolus ★ A design method for parallel programs. Dissertation, Technische Universiteit Eindhoven, Eindhoven, 1992. *Technische Universiteit Eindhoven, Eindhoven*, 1992. vi+117 *pp.* (From the introduction) **93f:65099** 65Y05 (65–04, 65F99, 68Q22)
Loyola, G. (*with* Moshinsky, M.; Szczepaniak, A.) The two-body Dirac oscillator. (English summary) *J. J. Giambiagi Festschrift*, 324–349, *World Sci. Publishing, River Edge, NJ*, 1990. (Summary) **93f:81028** 81Q05 (81R05)
— (*with* Moshinsky, M.; Benet, L.; Salinas, A.) Comparison of perturbative and variational procedures in a relativistic problem. (English and Spanish summaries) *Rev. Mexicana Fís.* **38** (1992), *no.* 5, 778–790. 81Q15
Lozada, Abraham (*with* De Sarrazin, G.; Torres, P. L.) Complete sets of commuting observables and irreducible sets of observables. (English summary) *Helv. Phys. Acta* **65** (1992), *no.* 7, 887–897. (Carol Sisson Regehr) **93k:81008** 81P05
— Multipole in an external electromagnetic field. *J. Phys. A* **25** (1992), *no.* 14, 4043–4055. (Summary) **93e:83040** 83C50 (46F10)
rodríguez-Lozano, A. *see* **Rodríguez-Lozano, A.**
Lozano, Carlos J. (*with* Özsoy, Emin; Robinson, Allan R.) A consistent baroclinic quasigeostrophic ocean model in multiply connected ocean domains. (English summary) *Math. Comput. Simulation* **34** (1992), *no.* 1, 51–79. 86A05
roanes Lozano, E. *see* **Roanes Lozano, E.**
Lozano, Gustavo (*with* Leblanc, Martin; Min, Hyunsoo) Extended superconformal Galilean symmetry in Chern-Simons matter systems. (English summary) *Ann. Physics* **219** (1992), *no.* 2, 328–348. (Bogusław Broda) **93k:81234** 81T60 (81R05, 81T13)
— Ground state energy for nonrelativistic bosons coupled to Chern-Simons gauge fields. *Phys. Lett. B* **283** (1992), *no.* 1-2, 70–74. (From the introduction) **93e:81076** 81T13
Lozano, María Teresa (*with* Hilden, Hugh M.; Montesinos, José María) On the Borromean orbifolds: geometry and arithmetic. *Topology '90* (*Columbus, OH*, 1990), 133–167, *Ohio State Univ. Math. Res. Inst. Publ.*, 1, *de Gruyter, Berlin*, 1992. (B. N. Apanasov) **93h:57021** 57M50 (20F32)
— (*with* Hilden, Hugh M.; Montesinos, José María) The arithmeticity of the figure eight knot orbifolds. *Topology '90* (*Columbus, OH*, 1990), 169–183, *Ohio State Univ. Math. Res. Inst. Publ.*, 1, *de Gruyter, Berlin*, 1992. (B. N. Apanasov) **93k:57012** 57M25 (57M50)
Lozano Leal, Rogelio (*with* Brogliato, Bernard; Trofino-Neto, Alexandre) Robust adaptive control of a class of nonlinear first order systems. *Automatica J. IFAC* **28** (1992), *no.* 4, 795–801. 93D21 (93C10)
— (*with* Brogliato, Bernard; Landau, I. D.) Passivity and global stabilization of cascaded nonlinear systems. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 9, 1386–1388. (Mietek Brdyś) **93i:93107** 93D15
— (*with* Brogliato, Bernard) Adaptive hybrid force-position control for redundant manipulators. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 10, 1501–1505. (Summary) **93g:93057** 93C85 (93C95)
— (*with* Dion, Jean Michel; Dugard, Luc) Singularity-free adaptive pole placement using periodic controllers. (English summary) *IEEE Trans. Automat. Control* **38** (1993), *no.* 1, 104–108. (Krzysztof Kuźmiński) **93j:93060** 93B55
Lozanov-Crvenković, Z. (*with* Pilipović, Stevan) Representation theorems for Gaussian generalized random processes on $\Omega \times C[0, 1]$ and $\Omega \times L^1(G)$. (English summary) *Math.*

Japon. **37** (1992), *no.* 5, 897–900. (Summary) **93i:60081** 60G20

Lozanovskiĭ, G. Ya. (*with* Abramovich, Yu. A.) Three new cardinal invariants for normed lattices. *Proc. Roy. Irish Acad. Sect. A* **90** (1990), *no.* 2, 191–200. (W. A. J. Luxemburg) **93c:46033** 46B40 (06B99)

Lozhkin, S. A. (*with* Koshkin, M. A.) On the complexity of realization of certain systems of Boolean functions by switching and generalized switching circuits. (Russian) *Mathematical problems in cybernetics, No.* 3 (*Russian*), 257–285, "*Nauka*", *Moscow*, 1991. (From the introduction) **93e:94020** 94C10 (03G05, 06E30)

— (*with* Hromkovič, Juraj; Rybko, A. I.; Sapozhenko, A. A.; Shkalikova, N. A.) Lower bounds on the area complexity of Boolean circuits. *Theoret. Comput. Sci.* **97** (1992), *no.* 2, 285–300. (Norbert Blum) **93g:68042** 68Q15 (68Q25, 68Q35, 68R05)

Lozier, D. W. (*with* Turner, Peter R.) Robust parallel computation in floating-point and SLI arithmetic. (English and German summaries) *Computing* **48** (1992), *no.* 3-4, 239–257. (Summary) **93e:65161** 65Y05 (65–04, 65G05)

Lozinskii, Eliezer L. Counting propositional models. *Inform. Process. Lett.* **41** (1992), *no.* 6, 327–332. (Summary) **93a:03040** 03D15 (03B05, 03B35, 68Q25)

Ložkin, Sergej A. *see* **Lozhkin, S. A.**

Lozovanu, D. D. (*with* Prodan, N. V.) On the search for minimax paths in networks. (Russian. English, Russian and Moldavian summaries) *Izv. Akad. Nauk Respub. Moldova Mat.* **1991,** *no.* 3, 32–36, 92. 90C35

— (*with* Stancu-Minasian, I. M.; Ţigan, Ştefan; Solomon, D. I.) On a parametrical method for solving bicriterion max-min fractional problems. (English, Russian and Moldavian summaries) *Izv. Akad. Nauk Respub. Moldova Mat.* **1992,** *no.* 3, 56–61, 94. 90C32 (90C30)

Lozovik, Yu. E. (*with* Belov, A. A.) Calculation of the Green function of an electron on a lattice in a homogeneous magnetic field. (Russian. English summary) *Teoret. Mat. Fiz.* **89** (1991), *no.* 1, 48–55; *translation in Theoret. and Math. Phys.* **89** (1991), *no.* 1, 1046–1052 (1992). (Gheorghe Nenciu) **93d:81027** 81Q05

— (*with* Belov, A. A.) Renormalization-group flux on an affine-Virasoro space in connection with sporadic conformal deformations. *JETP Lett.* **55** (1992), *no.* 6, 307–311; *translated from Pis'ma Zh. Èksper. Teoret. Fiz.* **55** (1992), *no.* 6, 309–312 (*Russian*). (Summary) **93c:81193** 81T40 (17B81, 81R10)

— (*with* Belov, A. A.) Deformations of conformal field theories with extended symmetries. *Soviet J. Nuclear Phys.* **55** (1992), *no.* 2, 307–317; *translated from Yadernaya Fiz.* **55** (1992), *no.* 2, 553–573 (*Russian*). (Summary) **93a:81165** 81T40 (81R10, 81T17)

— (*with* Belov, A. A.) Exact solution of the renormalization-group equations for the two-dimensional chiral field theory. *Soviet J. Nuclear Phys.* **55** (1992), *no.* 8, 1256–1264; *translated from Yadernaya Fiz.* **55** (1992), *no.* 8, 2263–2279 (*Russian*). (Summary) **93f:81126** 81T40 (81R10, 81T18)

Lü, Bi Hu (*with* Yin, Bao Qun; Chen, Qiu Gui; Yang, Xiao Xian) Transfer functions of nonlinear integro-differential equations. (Chinese. English and Chinese summaries) *J. China Univ. Sci. Tech.* **22** (1992), *no.* 2, 188–194. (Yubo Chen) **93k:45001** 45J05 (93C80)

Lü, Bing Chao A design of adaptive control algorithms for robot manipulator systems. (Chinese. English and Chinese summaries) *Dianzi Keji Daxue Xuebao* **20** (1991), *no.* 4, 418–424. (Summary) **93h:93047** 93C85 (70B15, 70Q05)

Lu, C. *see* **Lu, Chun Qing**

Lu, Cai Hui The finite-dimensional solvable Lie algebras with nondegenerate invariant symmetric bilinear form. (Chinese) *Acta Math. Sinica* **35** (1992), *no.* 1, 121–132. (Yong Zheng Zhang) **93g:17016** 17B30

Lu, Chang Yu (*with* Zhou, Guang Ya) Estimation of the normal mean vector parameter. (Chinese. English summary) *Acta Sci. Natur. Univ. Jilin.* **1991,** *no.* 4, 5–9. 62J07

— Admissibility of nonnegative quadratic estimators for combined variance components. (Chinese) *Chinese Ann. Math. Ser. A* **12** (1991), *no.* 6, 699–707. (Summary) **93b:62093** 62J05 (62C15)

Lu, Chao (*with* Tolimieri, Richard; An, Myoung) ★ Algorithms for discrete Fourier transform and convolution. *Spriñger-Verlag, New York*, 1989. xv+350 *pp. ISBN* 0-387-97118-1 (Y. Kobayashi (Zbl 705:65105)) **93i:65131** 65T20 (65D99)

Lu, Chin-Pi Modules and rings satisfying (accr). *Proc. Amer. Math. Soc.* **117** (1993), *no.* 1, 5–10. (Daniel D. Anderson) **93c:13011** 13E05 (13C05, 13F05, 13J10)

Lu, Chuan Rong (*with* Lin, Zheng Yan) ★ Strong limit theorems. Mathematics and its Applications (Chinese Series). *Kluwer Academic Publishers Group, Dordrecht; Science Press, Beijing*, 1992. x+195 *pp. ISBN* 0-7923-1798-X (Endre Csáki) **93k:60076** 60F15 (60G17)

— A uniform central limit theorem for set-indexed partial sum processes when the variance is infinite. *Gaoxiao Yingyong Shuxue Xuebao* **7** (1992), *no.* 1, 157–162. (Summary) **93e:60044** 60F05

Lü, Chun Lian (*with* Mathes, H.) A quadratic logistic discrimination algorithm in matrix form. *CSQ—Comput. Statist. Quart.* **6** (1991), *no.* 4, 269–280. (Song Gui Wang) **93b:62088** 62H30

Lu, Chun Qing (*with* Fife, Paul C.; Hastings, Stuart P.) An asymptotic and rigorous study of flames with reversible chain branching. *Asymptotic Anal.* **5** (1991), *no.* 1, 1–26. (Riccardo Ricci) **93a:80009** 80A25 (34E15, 80A32)

— (*with* An, Myoung; Prince, E.; Tolimieri, Richard) Fast Fourier transform algorithms for real and symmetric data. *Acta Cryst. Sect. A* **48** (1992), *no.* 4, 415–418. (Summary) **93a:65185** 65T20

— (*with* MacGillivray, A. Dean; Hastings, Stuart P.) Asymptotic behaviour of solutions of a similarity equation for laminar flows in channels with porous walls. (English summary) *IMA J. Appl. Math.* **49** (1992), *no.* 2, 139–162. (William H. H. Banks) **93h:76020** 76D05 (34E99)

Lu, Di Ming (*with* Xu, Yong Hua[1]; Zhu, Hong Xin) A necessary and sufficient condition for dual algebras of coalgebras to be prime. *Proceedings of Asian Mathematical Conference*, 1990 (*Hong Kong*, 1990), 502–510, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93b:00022**) 16W30

Lu, Dian Chen (*with* Li, Yuan Lin) Finitely presented dimensions of Cartesian squares. (Chinese. English summary) *Nanjing Daxue Xuebao Shuxue Bannian Kan* **9** (1992), *no.* 1, 102–112. (Summary) **93i:16013** 16D80

Lü, Fang A necessary and sufficient condition for a class of operators to be reducible. *Northeast. Math. J.* **7** (1991), *no.* 2, 170–175. (Thomas Hoover) **93g:47006** 47A15 (47B37)

Lu, Gao (*with* Wang, Pei Zhuang; Li, Hong Xing; Yan, Jian Ping; Huang, Chong Fu) Fuzzy set operations in the theory of falling shadow representation. (Chinese. English and Chinese summaries) Fuzzy information processing and machine intelligence (Chinese). *Mohu Xitong yu Shuxue* **6** (1992), *no.* 2, 86–92, 124. (Summary) **93m:04023** 04A72

Lu, Gui Zhang (*with* Wang, Guo Li) Modelling and control of nonslender flexible robot links. (English summary) *Internat. J. Systems Sci.* **23** (1992), *no.* 10, 1571–1601. 93C85 (70B15, 70Q05, 73K50)

Lu, Guozhen Covering lemmas and BMO estimates for eigenfunctions on Riemannian surfaces. *Rev. Mat. Iberoamericana* **7** (1991), *no.* 3, 221–246. (Robert Brooks) **93c:58221** 58G25

— Existence and size estimates for the Green's functions of differential operators constructed from degenerate vector fields. *Comm. Partial Differential Equations* **17** (1992), *no.* 7-8, 1213–1251. (Philip W. Schaefer) **93i:35030** 35D05 (35C15)

— Covering lemmas and an application to nodal geometry on Riemannian manifolds. *Proc. Amer. Math. Soc.* **117** (1993), *no.* 4, 971–978. (Robert Brooks) **93e:58188** 58G25

Lu, H. (*with* Pope, C. N.; Shen, Xiang) Topological w_∞ and W_N gravities from flat $SL(\infty, \mathbf{R})$ connections. *Nuclear Phys. B* **366** (1991), *no.* 1, 95–121. (Alexander W. Smith) **93b:81258** 81T40 (17B81, 81T13)

— (*with* Pope, C. N.; Schrans, Stany; Wang, X.-J.) New realizations of W algebras and W strings. *Modern Phys. Lett. A* **7** (1992), *no.* 20, 1835–1842. (Summary) **93c:17048** 17B68 (81R10, 81T30)

— (*with* Bieńkowska, Jadwiga) A note on $N = 2$ superstrings. (English summary) *Modern Phys. Lett. A* **7** (1992), *no.* 39, 3639–3646. (Jacek Pawełczyk) **93k:81167** 81T30

— (*with* Pope, C. N.; Wang, X.-J.; Xu, K. W.) Anomaly freedom and realisations for super-W_3 strings. *Nuclear Phys. B* **379** (1992), *no.* 1-2, 24–46. (Katsushi Ito) **93g:81129** 81T30 (81R10)

— (*with* Pope, C. N.; Schrans, Stany; Wang, X.-J.) On sibling and exceptional W-strings. *Nuclear Phys. B* **379** (1992), *no.* 1-2, 47–62. (Katsushi Ito) **93g:81130** 81T30 (17B68, 81R10)

— (*with* Pope, C. N.; Wang, X.-J.; Xu, K. W.) $N = 2$ superstrings with $(1, 2m)$ spacetime signature. *Phys. Lett. B* **284** (1992), *no.* 3-4, 268–272. (Summary) **93c:81176** 81T30

— (*with* Pope, C. N.) On realisations of W algebras. (English summary) *Phys. Lett. B* **286** (1992), *no.* 1-2, 63–70. (D. V. Yur'ev) **93g:81037** 81R10 (17B68, 17B81, 81T30)

Lü, Hai Bo (*with* Li, Wen Shen; Luo, Si Qing) The initial-boundary value problem for a class of nonlinear equations. (Chinese. English and Chinese summaries) *Heilongjiang Daxue Ziran Kexue Xuebao* **9** (1992), *no.* 3, 42–47. (Xian Guo Geng) **93k:35264** 35Q99 (35G25, 35G30)

— (*with* Duan, Guang Ren; Liu, Rui Zhi) Eigenstructure assignment via state feedback for linear systems—a case with uncontrollable modes. (Chinese. English and Chinese summaries) *Heilongjiang Daxue Ziran Kexue Xuebao* **9** (1992), *no.* 3, 48–52. 93B55

— A class of Hamilton algebras. (Chinese. English summary) *J. Math. Res. Exposition* **12** (1992), *no.* 3, 375–378. 15A03 (15A99)

Lu, Hao Some complexity problems for computations with polynomials. (Chinese. English summary) *Numer. Math. J. Chinese Univ.* **14** (1992), *no.* 1, 1–10. (Summary) **93e:65162** 65Y20 (65D05, 65Y05)

Lu, Hong Wen Hecke operator and Pellian equation conjecture. *International Symposium in Memory of Hua Loo Keng, Vol. I (Beijing*, 1988), 183–191, *Springer, Berlin*, 1991. (K.-B. Gundlach) **93d:11112** 11R11 (11D09, 11F25)

— Hecke operator and Pellian equation conjecture. III. *Systems Sci. Math. Sci.* **4** (1991), *no.* 2, 97–103. (K.-B. Gundlach) **93d:11113** 11R11 (11D09, 11F25)

— Hecke operators and Pellian equation conjecture. II. A Chinese summary appears in Chinese Ann. Math. Ser. A **13** (1992), no. 1, 132. *Chinese Ann. Math. Ser. B* **13** (1992), *no.* 1, 46–53. (K.-B. Gundlach) **93k:11039** 11F25 (11D09, 11R11)

Lu, Hongmin (*with* Mathis, Frank H.) Surface approximation by spline smoothing and generalized cross-validation. (English summary) *Math. Comput. Simulation* **34** (1992), *no.* 6, 541–549. 65D17

Lu, Hung Ching Stabilization of time delay systems with saturating actuator frequency domain approach. (English summary) *Mathematics of the analysis and design of process control (Dublin*, 1991/*Lille*, 1991), 313–322, *North-Holland, Amsterdam*, 1992. (*see* **93g:93004**) 93D15

Lu, I-Tai (*with* Jung, H. K.; Tsai, C. M.) Hybrid combinations of global and local operators for solving Helmholtz and Poisson equations. (English summary) *J. Comput. Phys.* **103** (1992), *no.* 2, 390–401. (Summary) **93k:78013** 78A45 (65N99, 78–08)

Lu, J. X. *see* **Lu, Jian Xin**

Lu, Jian Ke On relative pseudo-centre and pseudo-radius. *Approximation, optimization and computing*, 139–141, *North-Holland, Amsterdam*, 1990. (Maria Moszyńska) **93g:51014** 51K99

Lu, Jian Xin (*with* Duff, M. J.) Duality for strings and membranes. *Supermembranes and physics in* 2+1 *dimensions (Trieste*, 1989), 111–125, *World Sci. Publishing, River Edge, NJ*, 1990. (*see* **93g:81003**) 81T30

— (*with* Duff, M. J.) A duality between strings and 5-branes. *Classical Quantum Gravity* **9** (1992), *no.* 1, 1–16. (Helmut Rumpf) **93b:81210** 81T30 (83E30)

— (*with* Duff, M. J.; Khuri, Ramzi R.) String and five-brane solitons: singular or nonsingular? *Nuclear Phys. B* **377** (1992), *no.* 1-2, 281–294. (Summary) **93c:83113** 83E30 (81T30, 83E50)

Lu, Jiang-Hua (*with* Ginzburg, Viktor L.) Poisson cohomology of Morita-equivalent Poisson manifolds. *Internat. Math. Res. Notices* **1992,** *no.* 10, 199–205. (Charles-Michel Marle) **93k:58091** 58F05 (17B56)

Lu, Jin (*with* Chiang, Hsiao-Dong; Thorp, James S.) Eigenstructure assignment by decentralized feedback control. (English summary) *IEEE Trans. Automat. Control* **38** (1993), *no.* 4, 587–594. (Summary) **93m:93043** 93B55

Lu, Jin Fu (*with* Wang, Guang De) A characteristic-difference method for solving vorticity equations for stream functions. (Chinese. English summary) *Gaoxiao Yingyong Shuxue Xuebao* **7** (1992), *no.* 2, 192–200. (Summary) **93d:76044** 76M20 (65N06, 76D05)

— Upstream weighted schemes for unsteady convection-diffusion equations. (Chinese. English and Chinese summaries) *J. Tsinghua Univ.* **32** (1992), *no.* 3, 1–7. (Summary) **93m:65132** 65M12

Lu, Jing *see* **Li, Zhao Hua, (93i:01004)**

Lü, Jing Fa (*with* Sun, Chang Pu; Ge, Mo Lin) q-deformed Verma representations of quantum algebra $sl_q(3)$ and new type Yang-Baxter matrices. *Sci. China Ser. A* **34** (1991), *no.* 12, 1474–1483. (Vladimir A. Stukopin) **93f:17026** 17B37

— (*with* Ge, Mo Lin; Liu, Chao) On the group aspects of Riemann-Hilbert transformations. *J. Math. Phys.* **33** (1992), *no.* 1, 56–63. (Tuncay Aktosun) **93e:17036** 17B67 (58F07, 58G37, 81T13)

Lu, Ju Fu (*with* Wei, Chun Yan) Orbits of fluid elements accreting onto a black hole. (English summary) *Astrophys. Space Sci.* **197** (1992), *no.* 2, 283–288. (Summary) **93i:83063** 83C57

Lu, Jun *see* **Lu, Jun²**

Lu, Jun¹ Convergence rates for the law of the iterated logarithm for independent random variables. (Chinese. English summary) *J. Systems Sci. Math. Sci.* **12** (1992), *no.* 2, 178–183. 60F15

Lu, Jun² (*with* Hu, Yang Zeng; Gu, Xing Sheng; Ge, Zu Guang) A piecewise multiple general orthogonal polynomial method for identifying parameters of a class of systems. (Chinese. English summary) *Inform. and Control (Shenyang)* **20** (1991), *no.* 3, 25–32. (De Xing Feng) **93c:93020** 93B30

Lü, Jun Li (*with* Zhou, Qi Huang) A study on the interior metric of an axisymmetric perfect fluid—a family of exact analytic solutions to the Einstein field equations. (Chinese. English summary) *Acta Sci. Natur. Univ. Norm. Hunan.* **15** (1992), *no.* 2, 131–133. (Jian-Zeng Li) **93m:83011** 83C15

Lu, Jye-Chyi Effects of dependence on modeling system reliability and mean life via a multivariate Weibull distribution. (English summary) *IAPQR Trans.* **17** (1992), *no.* 1, 1–22. 62N05

Lu, Ke Ping Notes on heat diffusion semigroups on Riemannian manifolds. (Chinese. English summary) *Chinese Quart. J. Math.* **7** (1992), *no.* 1, 89–95. (Hongcang Yang) **93f:58228** 58G11 (47D03, 58G25)

Lu, Kening (*with* Burchard, Almut; Deng, Bo) Smooth conjugacy of centre manifolds. *Proc. Roy. Soc. Edinburgh Sect. A* **120** (1992), *no.* 1-2, 61–77. (A. Vanderbauwhede) **93c:58197** 58F39 (34C45, 35K55, 58F25)

Lu, Lian Hua (*with* Kuang, Jiao Xun) On the conditions for the existence and uniqueness of solution to the nonlinear equations in multiderivative block methods. (Chinese summary) *Shanghai Shifan Daxue Xuebao Ziran Kexue Ban* **20** (1991), *no.* 3, 1–6. (Xin Yuan Wu) **93c:65087** 65L05 (34A45, 47H15)

— The stability of the block θ-methods. (English summary) *IMA J. Numer. Anal.* **13** (1993), *no.* 1, 101–114. (Summary) **93i:65079** 65L20 (34A50)

Lu, Liming (*with* Dobson, Ian) Computing an optimum direction in control space to avoid saddle node bifurcation and voltage collapse in electric power systems. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 10, 1616–1620. 93B40 (93C95)

Lu, Lin Zhang A sign function method for solving discrete time algebraic Riccati equations. (Chinese. English and Chinese summaries) *Xiamen Daxue Xuebao Ziran Kexue Ban* **31** (1992), *no.* 5, 460–464. (Summary) **93i:65047** 65F30 (65Q05)

Lu, Mei Extendability of cycles in tournaments. (Chinese. English summary) *Nanjing Daxue Xuebao Ziran Kexue Ban* **27** (1991), *Special Issue*, 147–152. (Summary) **93d:05087** 05C38 (05C20)

Lu, Mi (*with* Lin, Hua; Abello, James) An efficient parallel algorithm for longest common subsequence problem. (English summary) *Parallel computing '91 (London, 1991)*, 123–130, *Adv. Parallel Comput.*, **4**, *North-Holland, Amsterdam*, 1992. (Summary) **93i:68080** 68Q22 (68R15)

— (*with* Chiang, Jen-Shiun) A novel division algorithm for the residue number system. (English summary) *IEEE Trans. Comput.* **41** (1992), *no.* 8, 1026–1032. (Summary) **93i:68012** 68M07

Lu, Ming (*with* Wise, Mark B.) Black holes with a generalized gravitational action. (English summary) *Phys. Rev. D* (3) **47** (1993), *no.* 8, R3095–R3098. (Summary) **93m:83056** 83C57

Lu, Ning A simple presentation of the Siegel modular groups. *Linear Algebra Appl.* **166** (1992), 185–194. (Shigeaki Tsuyumine) **93b:11054** 11F46 (11F06, 20F05, 57N05)

Lu, Pei Zhong Newman's problem for sums of powers of matrices. (Chinese. English and Chinese summaries) *J. Math. (Wuhan)* **11** (1991), *no.* 3, 335–345. (Summary) **93m:11024** 11C20 (11T99, 15A33)

— (*with* Song, Guo Wen; Zhou, Jin Jun) Tensor products with applications to linear recurring sequences. (English and Chinese summaries) *J. Math. Res. Exposition* **12** (1992), *no.* 4, 551–558. (Summary) **93j:94018** 94A55 (68Q40, 94A60)

Lu, Pin (*with* Huang, Mao Guang; Wang, Jian Guo) Boundary element methods for some moderately thick plate and shallow shell problems. *Theory and applications of boundary element methods (Beijing, 1991)*, 333–341, *Internat. Acad. Publ., Beijing*, 1991. (*see* **93b:65008**) 73V10 (65N38)

— (*with* Huang, Mao Guang) Boundary element analysis of shallow shells involving shear deformation. *Theory and applications of boundary element methods (Beijing, 1991)*, 365–372, *Internat. Acad. Publ., Beijing*, 1991. (*see* **93b:65008**) 73V10 (65N38)

Lu, Ping (*with* Vinh, Nguyen X.) Optimal control problems with maximum functional. *J. Guidance Control Dynamics* **14** (1991), *no.* 6, 1215–1223. (Michele Mininni) **93c:49012** 49K15 (49N65)

Lu, Qi Keng The theory of functions of several complex variables in China from 1949 to 1989. *Contemporary geometry*, 53–93, *Univ. Ser. Math., Plenum, New York*, 1991. (Zong Yuan Yao) **93i:32001** 32-03 (01A60)

Lu, Qi Shao (*with* Lin, Rui; Huang, Ke Lei) Subharmonic bifurcations, stability and chaos. *Advances in applied mathematics and mechanics in China, Vol. 3*, 85–93, *Internat. Acad. Publ., Beijing*, 1991. (Georgii Osipenko) **93c:58160** 58F14 (34C23, 58F13, 70K50)

Lu, Qin He (*with* Liu, Zeng Rong; Xie, Hui Ming; Zhu, Zhao Xuan) The strange attractor of the Lozi mapping. (English summary) *Internat. J. Bifur. Chaos Appl. Sci. Engrg.* **2** (1992), *no.* 4, 831–839. (W.-H. Steeb) **93m:58074** 58F13

Lu, Ru Qian P/R nets and process concepts. I. *Sci. China Ser. A* **35** (1992), *no.* 1, 21–31. (Anna Bagyinszkiné-Orosz) **93g:68101** 68Q90

— P/R nets and process concepts. II. (English summary) *Sci. China Ser. A* **35** (1992), *no.* 2, 148–157. (Anna Bagyinszkiné-Orosz) **93m:68128** 68Q90

Lu, S. H. *see* **Lu, Shi Hui**

Lu, Shan Nian Nonexistence of a class of minimal surfaces. (Chinese. Chinese summary) *Acta Math. Sinica* **35** (1992), *no.* 3, 296–304. (Xiao Wei Peng) **93j:53009** 53A10

Lu, Shan Zhen (*with* Yang, Da Chun) The molecular characterization of new Hardy $HA^p(\mathbf{R}^n)$ spaces and some application. (Chinese summary) *Beijing Shifan Daxue Xuebao* **27** (1991), *no.* 2, 135–145. (Aleš Založnik) **93a:42008** 42B20

— (*with* Jiang, Yin Sheng) A note on oscillatory singular integrals with rough kernel. (Chinese summary) *Beijing Shifan Daxue Xuebao* **27** (1991), *no.* 4, 398–402. (S. G. Samko) **93f:42033** 42B20 (42B25)

— Calderón-Zygmund operator on the weighted Hardy-block spaces. *Chinese Sci. Bull.* **36** (1991), *no.* 4, 265–269. (C. Carton-Lebrun) **93b:42030** 42B20 (42B30, 47G10)

— (*with* Jiang, Yin Sheng) L^p boundedness of a class of maximal singular integral operators. (Chinese) *Acta Math. Sinica* **35** (1992), *no.* 1, 63–72. (Bi Yun Yao) **93b:42016** 42B20 (47G10)

— (*with* Wang, Shi Ming) Spaces generated by smooth blocks. *Constr. Approx.* **8** (1992), *no.* 3, 331–341. (G. V. Welland) **93e:42019** 42B08 (41A65, 46E99)

— (*with* Yang, Da Chun) The Littlewood-Paley function and φ-transform characterizations of a new Hardy space HK_2 associated with the Herz space. *Studia Math.* **101** (1992), *no.* 3, 285–298. (Douglas Kurtz) **93b:42031** 42B25 (46E15)

Lu, Shi Hui (*with* Hansen, Pierre; Jaumard, Brigitte) Global optimization of univariate Lipschitz functions. (Russian) *Optimization: models, methods, solutions (Russian) (Irkutsk, 1989)*, 287–316, "*Nauka*" *Sibirsk. Otdel., Novosibirsk*, 1992. (*see* **93k:90002**) 90C30

— (*with* Hansen, Pierre; Jaumard, Brigitte) Global optimization of univariate Lipschitz functions. II. New algorithms and computational comparison. (Russian) *Optimization: models, methods, solutions (Russian) (Irkutsk, 1989)*, 317–338, "*Nauka*" *Sibirsk. Otdel., Novosibirsk*, 1992. (*see* **93k:90002**) 90C30

— (*with* Hansen, Pierre; Jaumard, Brigitte) On using estimates of Lipschitz constants in global optimization. (English summary) *J. Optim. Theory Appl.* **75** (1992), *no.* 1, 195–200. (Ebu Tamm) **93j:90098** 90C30 (65K10)

— (*with* Hansen, Pierre; Jaumard, Brigitte) Global optimization of univariate Lipschitz functions. I. Survey and properties. *Math. Programming* **55** (1992), *no.* 3, *Ser. A*, 251–272. (G. R. Wood) **93f:90149** 90C30 (49M37)

— (*with* Hansen, Pierre; Jaumard, Brigitte) Global optimization of univariate Lipschitz functions. II. New algorithms and computational comparison. *Math. Programming* **55** (1992), *no.* 3, *Ser. A*, 273–292. (G. R. Wood) **93f:90150** 90C30 (49M37)

Lü, Shu Hong The eighteenth century mathematician de Moivre. (Chinese) *Collected research papers on the history of mathematics, Vol.* 1 (*Chinese*), 172–178, *Inner Mongolia Univ. Press, Hohhot*, 1990. (*see* **93i:01004**) 01A50

Lu, Shu Huan On the gracefulness of the plum blossom graph. (Chinese) *Math. Practice Theory* **1992**, *no.* 2, 95–96, 58. 05C78

Lu, Si Xian An archaeological investigation of "vertical and horizontal diagrams". (Chinese) *Collected research papers on the history of mathematics, Vol.* 2 (*Chinese*), 15–23, *Inner Mongolia Univ. Press, Hohhot*, 1991. (*see* **93i:01005**) 01A25

— (*with* Li, Di) Calculation tools in early China. (Chinese) *Collected research papers on the history of mathematics, Vol.* 2 (*Chinese*), 24–26, *Inner Mongolia Univ. Press, Hohhot*, 1991. (*see* **93i:01005**) 01A25

Lu, Steven Shin-Yi On meromorphic maps into varieties of log-general type. *Several complex variables and complex geometry, Part* 2 (*Santa Cruz, CA*, 1989), 305–333, *Proc. Sympos. Pure Math.*, 52, *Part* 2, *Amer. Math. Soc., Providence, RI*, 1991. (Junjiro Noguchi) **93a:32039** 32H04 (14E05, 32H35)

Lu, Szu-Min (*with* Barlow, Jesse L.) Parallel computation of orthogonal factors of sparse matrices. (English summary) *Parallel processing for scientific computing, Vol. I, II (Norfolk, VA*, 1993), 486–490, *SIAM, Philadelphia, PA*, 1993. (*see* **93k:65003**) 65F50 (65Y05)

Lü, Tao (*with* Shih, Tsi Min; Liem, Chin Bo) An analysis of splitting extrapolation for multidimensional problems. (English summary) *Systems Sci. Math. Sci.* **3** (1990), *no.* 3, 261–272. (Summary) **93e:65004** 65B05 (65D30, 65M12, 65R20)

— (*with* Liem, Chin Bo; Shih, Tsi Min) Parallel algorithms for variational inequalities based on domain decomposition. *Systems Sci. Math. Sci.* **4** (1991), *no.* 4, 341–348. (Ya. I. Al'ber) **93b:49010** 49J40 (47H19, 49M27, 65K10, 65Y05)

— (*with* Neittaanmäki, Pekka; Tai, Xue Cheng) A parallel splitting-up method for partial differential equations and its applications to Navier-Stokes equations. (English and French summaries) *RAIRO Modél. Math. Anal. Numér.* **26** (1992), *no.* 6, 673–708. (Rolf Rannacher) **93i:65111** 65N30 (65M60, 65N50, 65Y05, 76D05)

Lu, Tian Hong (*with* Wang, Jing Long) Generalized linear models with additional parameters in link functions. (Chinese. Chinese summary) *Math. Practice Theory* **1993**, *no.* 1, 23–28. 62J12

Lu, Tong Chao (*with* Yang, Dan Ping) High order difference-boundary integral differential equation method for 2-D parabolic equation and error analysis. *Theory and applications of boundary element methods (Beijing, 1991)*, 17–23, *Internat. Acad. Publ., Beijing*, 1991. (*see* **93b:65008**) 65N38 (65N06, 65N15)

— A characteristic-collocation method for convection-diffusion problems. (Chinese. English summary) *Shandong Daxue Xuebao Ziran Kexue Ban* **27** (1992), *no.* 1, 35–44. (Summary) **93c:65145** 65N35 (65N15, 76M25, 76Rxx)

Lu, Tu (*with* Gu, Wen Xiang) Fuzzy linear spaces. (English summary) *Fuzzy Sets and Systems* **49** (1992), *no.* 3, 377–380. (Summary) **93f:15029** 15A99 (04A72)

— (*with* Gu, Wen Xiang) Some properties of divisible and pure fuzzy subgroups. *Mohu Xitong yu Shuxue* **6** (1992), *no.* 1, 48–53. (Phullendu Das) **93e:20105** 20N25 (04A72)

— (*with* Gu, Wen Xiang) Fuzzy algebras over fuzzy fields redefined. (English summary) *Fuzzy Sets and Systems* **53** (1993), *no.* 1, 105–107. 16D99 (04A72)

— (*with* Gu, Wen Xiang) The properties of fuzzy divisible groups. (English summary) *Fuzzy Sets and Systems* **56** (1993), *no.* 2, 195–198. 20N25 (04A72)

Lü, Wei¹ (*with* Liang, You Dong) A new representation and algorithm for constructing convex hulls in higher-dimensional spaces. *J. Comput. Sci. Tech.* (*English Ed.*) **7** (1992), *no.* 1, 1–5. (Summary) **93b:68089** 68U05 (52A20)

Lu, Wei² (*with* Shi, Xi Quan[1]) Berry-Esseen bound for jackknifing function of *U*-statistics. (English summary) *Probability and statistics (Tianjin, 1988/1989)*, 174–182, *Nankai Ser. Pure Appl. Math. Theoret. Phys., World Sci. Publishing, River Edge, NJ*, 1992. (Noël Veraverbeke) **93g:60051** 60F05 (62G05)

Lu, Wen Da (*with* Yang, Zheng Wen) Analysis of dynamic interaction between soil and cooling tower by hybrid method. *Theory and applications of boundary element methods (Beijing, 1991)*, 443–452, *Internat. Acad. Publ., Beijing*, 1991. (*see* **93b:65008**) 73V05 (65N30, 65N38, 73Q05, 73V10, 86A15)

Lu, Wen Zhao A topological invariant of Riemannian manifold. (Chinese summary) *Nanjing Daxue Xuebao Shuxue Bannian Kan* **8** (1991), *no.* 2, 103–108. (Louis Funar)

93a:57036 57R45 (53C20, 58E05)

— A theorem on the critical points of symmetric functionals and its applications. (Chinese. English summary) *Nanjing Daxue Xuebao Ziran Kexue Ban* **27** (1991), *no.* 4, 631–635. (Summary) **93c:35029** 35J20 (35J65, 58E05)

Lu, Wenyu (*with* Lee, Dik Lun) Characterization and processing of simple prefixed-chain recursion. (English summary) *Inform. Sci.* **68** (1993), *no.* 3, 247–281. (Summary) **93j:68053** 68P20 (68P15)

Lu, Wu Du Oscillations of even order neutral differential equations with mixed type deviating arguments. *Ann. Differential Equations* **7** (1991), *no.* 4, 439–452. (Yiannis Sficas) **93a:34085** 34K15 (34K40)

Lü, Xian Qing Asymptotic analysis of a travelling wave solution to the KdVB equation. (Chinese. English and Chinese summaries) *Acta Phys. Sinica* **41** (1992), *no.* 2, 177–181. (Summary) **93h:35180** 35Q53 (35B40)

Lu, Xiao Yun[1] A characterization on n-critical economical generalized tic-tac-toe games. (English summary) *Discrete Math.* **110** (1992), *no.* 1-3, 197–203. (Summary) **93m:90131** 90D46 (90D43)

— Hamiltonian games. *J. Combin. Theory Ser. B* **55** (1992), *no.* 1, 18–32. (Summary) **93b:90128** 90D43 (05C45)

Lu, Xin Ming (*with* Gao, Zi You; Zhao, Mao Xian) Some effective algorithms for linear programming. (Chinese. English summary) *J. Numer. Methods Comput. Appl.* **12** (1991), *no.* 4, 228–236. (Chang Yu Wang) **93j:90053** 90C05

— Properties and solutions of a class of nonlinear power network equations and their applications. (Chinese. English summary) *J. Systems Engrg.* **6** (1991), *no.* 2, 99–107. 94C05

— An unconstrained optimization method for solving large-scale linear programming problems. (Chinese. English and Chinese summaries) *Shandong Kuangye Xueyuan Xuebao* **11** (1992), *no.* 1, 85–90. 90C08

Lü, Xin Zhong The problem of when two real quadratic forms $a(x^2+3y^2)+bz^2$ represent the same numbers. (Chinese. English summary) *J. Lanzhou Railway College* **10** (1991), *no.* 2, 1–6. (Qi Sun) **93d:11040** 11E10 (11E20)

— An irreducibility theorem for polynomials with integral coefficients. (Chinese. English summary) *J. Lanzhou Railway Inst.* **10** (1991), *no.* 3, 75–81. (Summary) **93a:12002** 12E05

Lu, Xu Guang On L_1-mean approximation to convex functions by positive linear operators. *Approximation, optimization and computing*, 143–146, *North-Holland, Amsterdam*, 1990. (Sen-Yen Shaw) **93h:41022** 41A36 (41A63)

Lu, Xue Wen Nearest neighbour estimates of nonparametric regression functions under dependent observations. (Chinese. English and Chinese summaries) *Acta Sci. Natur. Univ. Norm. Hunan.* **15** (1992), *no.* 3, 199–205. 62G05 (62J02)

Lu, Y. G. *see* **Lu, Yun Gang**

Lu, Y. N. *see* **Lü, Yan Nan**

Lu, Y. W. *see* **Lu, You Wen**

Lu, Y. Y. (*with* Belytschko, Ted) Stability analysis of elemental explicit-implicit partitions by Fourier methods. *Comput. Methods Appl. Mech. Engrg.* **95** (1992), *no.* 1, 87–96. (Summary) **93a:73077** 73V05 (73V15)

— (*with* Belytschko, Ted) Convergence and stability analyses of multi-time step algorithm for parabolic systems. (English summary) *Comput. Methods Appl. Mech. Engrg.* **102** (1993), *no.* 2, 179–198. (Summary) **93h:65114** 65M12

Lu, Ya Yan (*with* Yau, Shing-Tung) Reducing the symmetric matrix eigenvalue problem to matrix multiplications. (English summary) *SIAM J. Sci. Comput.* **14** (1993), *no.* 1, 121–136. (Summary) **93m:65053** 65F15 (65N25, 65Y20)

— Bifurcation to mean flows in convection. (English summary) *Stud. Appl. Math.* **88** (1993), *no.* 1, 1–23. (Adelina Georgescu) **93m:76035** 76E15 (76E30)

Lü, Yan Ming (*with* Chen, Shu Tao; Wang, Bao Xiang) On property (WM), (CLUR) and (LKR) of Orlicz sequence spaces. (English summary) *Fasc. Math. No.* 22 (1991), 19–25 (1992). (O. P. Kapoor) **93i:46038** 46B45 (46A45, 46B20, 46E30)

Lü, Yan Nan (*with* Ding, E Jiang) The Lyapunov exponents in a periodic window for a weak-coupled map lattice. *J. Phys. A* **25** (1992), *no.* 10, 2897–2906. (Summary) **93c:58133** 58F13

Lu, Yang (*with* Strantzen, John) Regular simple geodesic loops on a tetrahedron. *Geom. Dedicata* **42** (1992), *no.* 2, 139–153. (E. J. F. Primrose) **93c:51023** 51M15 (52B99)

Lu, Yi Jun Applicability of the odd-even reduction algorithm and the Gaussian elimination odd-even reduction algorithm. (Chinese summary) *Numer. Math. J. Chinese Univ.* **14** (1992), *no.* 2, 144–150. 65F05

Lü, Yong Zai (*with* Zhao, Ming Wang) Identification of randomly time-varying parameters by stochastic approximation and a convergence analysis. (Chinese. English and Chinese summaries) *Control Theory Appl.* **9** (1992), *no.* 3, 256–261. 93E10

Lu, You Wen (*with* Liang, Xi Ting) Boundedness and integrability of generalized solutions to degenerate elliptic systems in diagonal form. (Chinese. English summary) *J. Math. Res. Exposition* **11** (1991), *no.* 4, 589–594. (Zuchi Chen) **93b:35053** 35J70 (35J45)

— (*with* Liang, Xi Ting) A note on global solutions to the Cauchy problem for parabolic equations. (Chinese. Chinese summary) *Acta Math. Sinica* **35** (1992), *no.* 6, 803–808. 35K55 (35K10)

— (*with* Liang, Xi Ting) A Phragmén-Lindelöf theorem. *Pacific J. Math.* **153** (1992), *no.* 2, 299–311. (L. Hsiao) **93c:35068** 35K55 (35B05, 35D99)

Lu, Yuan Zhang (*with* Han, Zhi Jun; Huang, Ming Shen) A minimum variance self-tuning controller with fixed closed-loop holes. (Chinese. English and Chinese summaries) *J. Shanghai Jiaotong Univ.* **25** (1991), *no.* 6, 45–53. 93B55 (93E35)

Lu, Yun Gang (*with* Accardi, Luigi) The low density limit and the quantum Poisson process. *Probability theory and mathematical statistics, Vol. I (Vilnius, 1989)*, 1–27, "*Mokslas*", *Vilnius*, 1990. (Summary) **93i:46122** 46L60 (81S25, 82C10)

— (*with* Accardi, Luigi) The low density limit in the finite temperature case. I. *Gaussian random fields (Nagoya, 1990)*, 70–85, *Ser. Probab. Statist.*, 1, *World Sci. Publishing, River Edge, NJ*, 1991. (Summary) **93c:82033** 82C10

— (*with* Accardi, Luigi) Squeezing noises as weak coupling limit of Hamiltonian system. *Rep. Math. Phys.* **29** (1991), *no.* 2, 227–256. (Gennady Berman) **93c:81091** 81S25

— (*with* Accardi, Luigi) On the weak coupling limit for quantum electrodynamics. (English summary) *Probabilistic methods in mathematical physics (Siena, 1991)*, 16–29, *World Sci. Publishing, River Edge, NJ*, 1992. (David Applebaum) **93i:81293** 81V10 (81S25, 81V80)

— (*with* Accardi, Luigi; Frigerio, Alberto) On the relation between the singular and the weak coupling limits. Application of statistical methods in theoretical physics and fluid mechanics (Calcutta, 1991). *Acta Appl. Math.* **26** (1992), *no.* 3, 197–208. (Kalyanapuram R. Parthasarathy) **93i:81109** 81S25 (81–02, 82C99)

— The boson and fermion Brownian motion as quantum central limits of the quantum Bernoulli processes. (Italian summary) *Boll. Un. Mat. Ital. B* (7) **6** (1992), *no.* 2, 245–273. (Kalyanapuram R. Parthasarathy) **93f:81064** 81S25

— The weak coupling limit for quadratic interaction. (English summary) *J. Math. Phys.* **33** (1992), *no.* 9, 3060–3086. (Robert Alicki) **93i:82049** 82C10 (46L50)

— (*with* Accardi, Luigi) The low density limit in finite temperature case. *Nagoya Math. J.* **126** (1992), 25–87. (Kalyanapuram R. Parthasarathy) **93j:81056** 81S25 (46L60, 82C99)

— (*with* Fagnola, Franco) The weak coupling limit for free noise. (English summary) *Riv. Mat. Pura Appl. No.* 11 (1992), 93–112. (Kalyanapuram R. Parthasarathy) **93j:82048** 82C22 (81S25, 81V80)

Lu, Yun Guang Convergence of the viscosity method for a non-strictly hyperbolic system. (English summary) *Acta Math. Sci. (English Ed.)* **12** (1992), *no.* 2, 230–239. (Enrique Zuazua) **93k:35171** 35L65 (35A05, 35B25, 35L67)

— (*with* Wang, Jing Hua) The interactions of elementary waves of nonstrictly hyperbolic system. *J. Math. Anal. Appl.* **166** (1992), *no.* 1, 136–169. (Robert Peszek) **93a:35105** 35L65 (35L67, 76L05)

— Cauchy problem for an extended model of combustion. *Proc. Roy. Soc. Edinburgh Sect. A* **120** (1992), *no.* 3-4, 349–360. (Qi Xiao Ye) **93f:80021** 80A25 (35D05, 35L45)

Lu, Yung-Chen (*with* Lari-Lavassani, Ali) On the stability of equivariant bifurcation problems and their unfoldings. *Canad. Math. Bull.* **35** (1992), *no.* 2, 237–246. (Jean-Jacques Gervais) **93f:58021** 58C27

Lü, Zhen Hua (*with* Feng, Zhen Dong) Perturbation method for reanalysis of the matrix singular value decomposition. *Appl. Math. Mech. (English Ed.)* **12** (1991), *no.* 7, 705–715; *translated from Appl. Math. Mech.* **12** (1991), *no.* 7, 661–670 (*Chinese. English summary*). (Summary) **93c:15012** 15A18 (70J99)

Lu, Zheng (*with* Coleman, Bernard D.; Dill, Ellis Harold; Lembo, Marzio; Tobias, Irwin) On the dynamics of rods in the theory of Kirchhoff and Clebsch. *Arch. Rational Mech. Anal.* **121** (1992), *no.* 4, 339–359. (D. Ieşan) **93k:73046** 73K05 (73D99, 73K12)

Lu, Zheng Yi (*with* Takeuchi, Yasuhiro) Permanence and global stability for cooperative Lotka-Volterra diffusion systems. *Nonlinear Anal.* **19** (1992), *no.* 10, 963–975. (Hal Leslie Smith) **93j:92002** 92B05 (34C35, 34D05, 93D25)

Lu, Zhi Cheng Star-products and phase space realizations of quantum groups. (English summary) *Lett. Math. Phys.* **25** (1992), *no.* 1, 51–59. (Aleksandr Panov) **93h:17037** 17B37 (81R50)

Lu, Zhi Hui (*with* Xue, Gui Zhang) Automorphisms of matrix rank semigroups. (Chinese. English and Chinese summaries) *Heilongjiang Daxue Ziran Kexue Xuebao* **9** (1992), *no.* 4, 1–4. (Summary) **93m:20096** 20M15

Lu, Zhi Qi (*with* Wolkowicz, Gail S. K.) Global dynamics of a mathematical model of competition in the chemostat: general response functions and differential death rates. *SIAM J. Appl. Math.* **52** (1992), *no.* 1, 222–233. (Summary) **93b:92019** 92D25 (34C35)

Lu, Zhi Qin Estimates of the first eigenvalue of a convex region of the sphere. (Chinese) *Acta Math. Sinica* **34** (1991), *no.* 5, 588–598. (Hongcang Yang) **93d:58177** 58G25 (35P15)

— (*with* Chen, Zhi Hua) Essential spectrum of complete Riemannian manifolds. (English summary) *Sci. China Ser. A* **35** (1992), *no.* 3, 276–282. (Jeffrey M. Lee) **93k:58221** 58G25

Lu, Zhunwei (*with* Grey, D. R.) Extinction probabilities of branching processes in random environments. (English summary) *Selected Proceedings of the Sheffield Symposium on Applied Probability (Sheffield*, 1989), 205–211, *IMS Lecture Notes Monograph Ser.*, 18, *Inst. Math. Statist., Hayward, CA*, 1991. (Kiyoshi Kawazu) **93j:60119** 60J80

Lu, Zong Yuan Some classes of bipartite graphs determined by their cycle length distributions. (Chinese. English and Chinese summaries) *Shanghai Shifan Daxue Xuebao Ziran Kexue Ban* **21** (1992), *no.* 4, 24–28. (Summary) **93m:05107** 05C38

Luan, Chang Fu The main [mean] field approximation to the finite nearest particle system. (English summary) *Soochow J. Math.* **18** (1992), *no.* 3, 313–319. (Dimitri Petritis) **93i:82027** 82B21 (82B27)

Luat, Le Kim (*with* Trần Gia Lịch) Boundary conditions for the two-dimensional Saint-Venant equation system. *Appl. Math. Modelling* **16** (1992), *no.* 9, 498–502. (L. Debnath) **93m:76012** 76B99 (76M99)

Lubashevskiĭ, I. A. (*with* Gafiichuk, V. V.) Analysis of dissipative structures based on the Gaussian variational principle. (Ukrainian. Russian and Ukrainian summaries) *Ukraïn. Mat. Zh.* **44** (1992), *no.* 9, 1186–1192. (Summary) **93m:58031** 58E30 (35K57, 49S05, 58F05, 58F39)

Lube, G. Streamline diffusion finite element method for quasilinear elliptic problems. *Numer. Math.* **61** (1992), *no.* 3, 335–357. (Zhimin Zhang) **93c:65143** 65N30 (76M10)

— An asymptotically fitted finite element method for convection dominated convection-diffusion-reaction problems. (German and Russian summaries) *Z. Angew. Math. Mech.* **72** (1992), *no.* 3, 189–200. (Adel N. Boules) **93b:65143** 65M60 (35J55, 35K57, 76M10, 76R99)

Lubell, David (*with* Eswarathasan, Arulappah) On the densities of some sequences. (English summary) *J. Number Theory* **42** (1992), *no.* 1, 88–99. (B. Garrison) **93f:11010** 11B05 (11P32)

Lubenets, Yu. V. Mappings that increase the fundamental dimension Fd. (Russian) *Uspekhi Mat. Nauk* **46** (1991), *no.* 5(281), 169–170; *translation in Russian Math. Surveys* **46** (1991), *no.* 5, 191–192. (Jerzy Dydak) **93g:54027** 54C56 (54F45)

Lubich, Ch. Extrapolation integrators for constrained multibody systems. *Impact Comput. Sci. Engrg.* **3** (1991), *no.* 3, 213–234. (Michael Hanke) **93d:70004** 70–08 (34A09, 34A50, 65L06, 65P05, 70E99)

— Chebyshev acceleration of Picard-Lindelöf iteration. *BIT* **32** (1992), *no.* 3, 535–538. (Ekkehard Wagenführer) **93h:65092** 65L05 (65B99)

— (*with* Schneider, Reinhold) Time discretization of parabolic boundary integral equations. (English summary) *Numer. Math.* **63** (1992), *no.* 4, 455–481. (Teodor Potra) **93j:65224** 65R20 (65M99)

— (*with* Ostermann, Alexander) Runge-Kutta methods for parabolic equations and convolution quadrature. *Math. Comp.* **60** (1993), *no.* 201, 105–131. (John C. Strikwerda) **93d:65082** 65M12 (65D30, 65M15, 65R20, 76D05, 76M25)

— (*with* Eggermont, P. P. B.) Operational quadrature methods for Wiener-Hopf integral equations. *Math. Comp.* **60** (1993), *no.* 202, 699–718. (John W. Hilgers) **93h:65166** 65R20 (45E10, 45L05, 47B35, 47G10)

Lubinsky, D. S. (*with* Driver, K. A.; Petruska, György; Sarnak, Peter C.) Irregular distribution of $\{n\beta\}$, $n = 1, 2, 3\cdots$, quadrature of singular integrands, and curious basic hypergeometric series. *Indag. Math. (N.S.)* **2** (1991), *no.* 4, 469–481. (Mizan Rahman) **93b:33016** 33D15 (41A10)

— (*with* Rabinowitz, Philip) Hermite and Hermite-Fejér interpolation and associated product integration rules on the real line: the L_1 theory. (English summary) *Canad. J. Math.* **44** (1992), *no.* 3, 561–590. (Z. Ziegler) **93j:41005** 41A05 (41A55, 42C05, 65D05, 65D30)

— Hermite and Hermite-Fejér interpolation and associated product integration rules on the real line: the L_∞ theory. (English summary) *J. Approx. Theory* **70** (1992), *no.* 3, 284–334. (P. Vértesi) **93h:41004** 41A05 (41A10)

— (*with* Bloom, Thomas; Stahl, Herbert) Interpolatory integration rules and orthogonal polynomials with varying weights. (English summary) Extrapolation and rational approximation (Puerto de la Cruz, 1992). *Numer. Algorithms* **3** (1992), *no.* 1-4, 55–65. (Summary) **93h:65031** 65D30

Lubiw, Anna (*with* Coullard, Collette R.) Distance visibility graphs. (English summary) *Internat. J. Comput. Geom. Appl.* **2** (1992), *no.* 4, 349–362. (Summary) **93j:68221** 68U10 (05C85)

— (*with* Hutton, Michael D.) Upward planar drawing of single source acyclic digraphs. (English summary) *Planar graphs (New Brunswick, NJ,* 1991), 41–57, *DIMACS Ser. Discrete Math. Theoret. Comput. Sci.*, 9, *Amer. Math. Soc., Providence, RI,* 1993. (*see* **93m:05005**) 05C10 (05C85, 06A07, 68Q20, 68R10)

Lubkin, Elihu New nondestructive tests, from frames. *Internat. J. Theoret. Phys.* **31** (1992), *no.* 6, 945–964. (Dennis Dieks) **93c:81019** 81P15

Lublinsky, B. (*with* Fradkov, A.) A comparison of adaptive and nonadaptive feedback for discrete-time plants with dead time. (English summary) *IEEE Trans. Automat. Control* **38** (1993), *no.* 3, 492–495. 93C40 (93B52)

Lubuma, Mbaro-Saman (*with* Bourlard, Maryse; Dauge, Monique; Nicaise, Serge) Coefficients of the singularities for elliptic boundary value problems on domains with conical points. III. Finite element methods on polygonal domains. *SIAM J. Numer. Anal.* **29** (1992), *no.* 1, 136–155. (Enrique Zuazua) **93a:65146** 65N30 (35A20, 35J05)

Luby, Michael (*with* Ben-David, Shai; Chor, Benny; Goldreich, Oded) On the theory of average case complexity. *J. Comput. System Sci.* **44** (1992), *no.* 2, 193–219. (Helmut Alt) **93d:68020** 68Q15 (03D15, 68Q10)

Lubyagin, I. A. (*with* Pozharskii, D. A.; Chebakov, M. I.) Generalization of Boussinesq and Cerruti problems for the case of an elastic three-dimensional wedge. (Russian) *Dokl. Akad. Nauk SSSR* **321** (1991), *no.* 1, 58–62; *translation in Soviet Phys. Dokl.* **36** (1991), *no.* 11, 797–799 (1992). (From the text) **93b:73013** 73C02

— (*with* Pozharskii, D. A.; Chebakov, M. I.) Penetration of a stamp in the form of an elliptic paraboloid into an elastic three-dimensional wedge. (Russian. Russian summary) *Prikl. Mat. Mekh.* **56** (1992), *no.* 2, 286–295; *translation in J. Appl. Math. Mech.* **56** (1992), *no.* 2, 244–252. 73T05

Lubyshev, F. V. (*with* Battalov, R. M.) On an optimal control problem. (Russian) *Numerical methods for solving boundary value problems (Russian)*, 75–89, *Akad. Nauk SSSR Ural. Otdel., Bashkir. Nauchn. Tsentr, Ufa,* 1989. (*see* **93m:00033**) 49N55 (49K20)

dinh thé Lục *see* **Dinh Thé Lục**

Luc, D. T. *see* **Dinh Thé Lục**

Luc, Dinh The *see* **Dinh Thé Lục**

de Luca, Aldo (*with* Varricchio, Stefano) On finitely recognizable semigroups. (English summary) *Acta Inform.* **29** (1992), *no.* 5, 483–498. (John M. Howie) **93i:20082** 20M35 (03D40, 20M05)

— (*with* Varricchio, Stefano) On noncounting regular classes. *Theoret. Comput. Sci.* **100** (1992), *no.* 1, 67–104. (David B. Benson) **93i:68136** 68Q70 (03D40, 20M35)

— (*with* Varricchio, Stefano) On a conjecture of Brown. (English summary) *Semigroup Forum* **46** (1993), *no.* 1, 116–119. (Summary) **93i:20070** 20M05

de Luca, L. *see* **De Luca, L.**

Luca, Rodica Oscillatory solutions for equations with deviating arguments. (Romanian summary) *Bul. Inst. Politehn. Iaşi Secţ. I* **36(40)** (1990), *no.* 1-4, 41–46. (G. Ladas) **93i:34136** 34K15

— (*with* Moroşanu, Gheorghe) Hyperbolic problems in integrated circuits modelling. *Stud. Cerc. Mat.* **44** (1992), *no.* 5, 355–373. (Tie Hu Qin) **93k:35162** 35L50 (94C05)

Lucanu, M. (*with* Munteanu, Valeriu; Păstrăvanu, Adriana) A new method for BCH binary codes decoding. (Romanian summary) *Bul. Inst. Politehn. Iaşi Sect. I* **36(40)** (1990), *no.* 1-4, 1–5. 94B35

Lucas, André (*with* Heij, Christiaan; Kloek, Teun) Positivity conditions for stochastic state space modelling of time series. (English summary) *Econometric Rev.* **11** (1992), *no.* 3, 379–396. (Luis Firinguetti) **93m:62197** 62M10 (62P20)

Lucas, Joan M. (*with* Sackrowitz, Marian Gunsher) Efficient parallel algorithms for path problems in directed graphs. *Algorithmica* **7** (1992), *no.* 5-6, 631–648. (Summary) **93a:68051** 68Q22 (05C85)

Lucas, Pascual (*with* Ferrández, Angel; Garay, Oscar J.) On a certain class of conformally flat Euclidean hypersurfaces. *Global differential geometry and global analysis (Berlin,* 1990), 48–54, *Lecture Notes in Math.*, 1481, *Springer, Berlin,* 1991. (Bang-yen Chen) **93h:53059** 53C40

— (*with* Ferrández, Angel) Ruled surfaces of finite type. (Spanish. English summary) *Proceedings of the XVth Portuguese-Spanish Conference on Mathematics, Vol. III (Portuguese)* (*Évora,* 1990), 167–172, *Univ. Évora, Évora,* 1991. (Summary) **93a:53046** 53C40 (53A25)

— (*with* Ferrández, Angel) Null finite type hypersurfaces in space forms. *Kodai Math. J.* **14** (1991), *no.* 3, 406–419. (P. J. Ryan) **93a:53047** 53C40

— (*with* Ferrández, Angel) Null 2-type hypersurfaces in a Lorentz space. (English summary) *Canad. Math. Bull.* **35** (1992), *no.* 3, 354–360. (Bang-yen Chen) **93g:53079** 53C40 (53C50)

— (*with* Alías, Luis J.; Ferrández, Angel) Submanifolds in pseudo-Euclidean spaces satisfying the condition $\Delta x = Ax + B$. *Geom. Dedicata* **42** (1992), *no.* 3, 345–354. (Thomas Hasanis) **93d:53066** 53C40 (53C50)

— (*with* Ferrández, Angel) Classifying hypersurfaces in the Lorentz-Minkowski space with a characteristic eigenvector. *Tokyo J. Math.* **15** (1992), *no.* 2, 451–459. (P. J. Ryan) **93m:53058** 53C40

Lucas, Robert E., Jr. (*with* Atkeson, Andrew) On efficient distribution with private information. *Rev. Econom. Stud.* **59** (1992), *no.* 3, 427–453. (Christian Gilles) **93e:90015** 90A16 (90A35, 90C39)

— *see also* **Huo, Teh Ming, 93d:90015**

Lucas, T. N. Some further observations on the differentiation method of model reduction. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 9, 1389–1391. (Summary) **93e:93010** 93B11

— New matrix method for multipoint Padé approximation of transfer functions. (English summary) *Internat. J. Systems Sci.* **24** (1993), *no.* 5, 809–818. (Summary) **93k:93067** 93C80 (41A21, 41A30)

— Optimal model reduction by multipoint Padé approximation. (English summary) *J. Franklin Inst.* **330** (1993), *no.* 1, 79–93. 93B11

Lucas, Thomas G. (*with* Dobbs, David E.; Houston, Evan G.; Roitman, Moshe; Zafrullah, Muhammad) On t-linked overrings. *Comm. Algebra* **20** (1992), *no.* 5, 1463–1488. (Marco Fontana) **93e:13034** 13F05 (13B02, 13G05)

— Strong Prüfer rings and the ring of finite fractions. (English summary) *J. Pure Appl. Algebra* **84** (1993), *no.* 1, 59–71. (David F. Anderson) **93k:13026** 13F05 (13B22, 13B30)

Lucchesi, Claudio (*with* Piguet, Olivier) Local supersymmetry of the Chern-Simons theory and finiteness. (English summary) *Nuclear Phys. B* **381** (1992), *no.* 1-2, 281–300. (From the introduction) **93k:81144** 81T13 (81T60)

Lucchesi, M. (*with* Owen, David Ross; Podio-Guidugli, Paolo) Materials with elastic range: a theory with a view toward applications. III. Approximate constitutive relations. *Arch. Rational Mech. Anal.* **117** (1992), *no.* 1, 53–96. (Hilmi Demiray) **93a:73046** 73G05 (73B05, 73E05, 73G20)

Lucchetti, Roberto (*with* Attouch, Hédy; Wets, Roger J.-B.) The topology of the ρ-Hausdorff distance. *Ann. Mat. Pura Appl.* (4) **160** (1991), 303–320 (1992). (Julian Revalski) **93d:54022** 54B20 (46N10, 49J45)

— (*with* Beer, Gerald) The epi-distance topology: continuity and stability results with applications to convex optimization problems. (English summary) *Math. Oper. Res.* **17** (1992), *no.* 3, 715–726. (P. S. Kenderov) **93k:49011** 49J45 (26A51, 46N10, 54C35, 90C31)

— (*with* Levi, S.; Pelant, Jan) On the infimum of the Hausdorff and Vietoris topologies. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 3, 971–978. (A. G. Hitchcock) **93m:54022** 54B20 (54E35)

— (*with* Beer, Gerald) Weak topologies for the closed subsets of a metrizable space. *Trans. Amer. Math. Soc.* **335** (1993), *no.* 2, 805–822. (Julian Revalski) **93d:54023** 54B20 (54E35)

Lucchini, Andrea On imprimitive groups with small degree. *Rend. Sem. Mat. Univ. Padova* **86** (1991), 131–142 (1992). (Brian Mortimer) **93a:20002** 20B05

Luccio, Fabrizio (*with* De Iaco, Bettina) Finding all the palindromes in a binary tree in linear time and space. *Inform. Process. Lett.* **44** (1992), *no.* 2, 73–77. (Juhani Karhumäki) **93m:68140** 68R15 (68Q25)

— (*with* Pietracaprina, Andrea; Pucci, Geppino) Analysis and implementation of parallel uniform hashing. *Internat. J. Found. Comput. Sci.* **3** (1992), *no.* 1, 55–63. (Martin Dietzfelbinger) **93k:68022** 68P05 (68Q10, 68Q22)

Luce, R. Duncan Singular points in generalized concatenation structures that otherwise are homogeneous. (English summary) *Math. Social Sci.* **24** (1992), *no.* 1, 79–103. (Joseph D. Cole) **93i:90011** 90A05 (62C05, 90A08, 90D35, 90D40)

Lucheroni, Carlo (*with* Cooper, Fred; Shepard, Harvey) Variational method for studying self-focusing in a class of nonlinear Schrödinger equations. (English summary) *Phys. Lett. A* **170** (1992), *no.* 3, 184–188. (Summary) **93i:81024** 81Q05 (49S05)

— (*with* Cooper, Fred; Shepard, Harvey; Sodano, Pasquale) Variational method for studying solitons in the Korteweg-de Vries equation. (English summary) *Phys. Lett. A* **173** (1993), *no.* 1, 33–36. (Summary) **93h:35175** 35Q53

Luchini, P. (*with* Lupo, M.; Pozzi, A.) Unsteady Stokes flow in a distensible pipe. (German and Russian summaries) *Z. Angew. Math. Mech.* **71** (1991), *no.* 10, 367–378. (Summary) **93m:76021** 76D07 (73K70, 76Z05)

— (*with* Manzo, F.) A fast conformal mapping algorithm with no FFT. *J. Comput. Phys.* **101** (1992), *no.* 2, 368–374. (Summary) **93c:65044** 65F05 (65R20)

Luchinskaya, E. A. (*with* Tareeva, E. E.) Spin glass with $S = 1$. (Russian. English and Russian summaries) *Teoret. Mat. Fiz.* **90** (1992), *no.* 2, 273–277; *translation in Theoret. and Math. Phys.* **90** (1992), *no.* 2, 185–188. (Summary) **93i:82078** 82D30

— (*with* Tareeva, E. E.) An isotropic model of quadrupolar glass. II. Breakdown of replica symmetry. (Russian. English and Russian summaries) *Teoret. Mat. Fiz.* **91** (1992), *no.* 1, 157–167; *translation in Theoret. and Math. Phys.* **91** (1992), *no.* 1, 438–445. (Summary) **93j:82071** 82D20

Luchka, A. Yu. (*with* Listopadova, V. V.) Application of a nonstationary projection-iteration method to a multipoint problem for functional-differential equations with small nonlinearity that contain parameters. (Russian. Russian summary) *Asymptotic solutions of nonlinear equations with a small parameter (Russian)*, 84–95, *Akad. Nauk Ukrainy, Inst. Mat., Kiev,* 1991. (*see* **93f:34003**) 65L10

Luchko, I. Ya. (*with* Ivanchov, M. I.) On an inverse problem for determining the coefficients of a parabolic equation. (Ukrainian) *Visnik L'viv. Univ. Ser. Mekh. Mat. No.* 34 (1990), 7–10. 35R30 (35K10)

Luchko, Yu. F. (*with* Yakubovich, S. B.) The generalizations of integral analog of the Leibniz rule on the G-convolutions. *Extracta Math.* **6** (1991), *no.* 2-3, 119–122. 44A15

Lucht, Lutz (*with* Knopfmacher, Arnold) The radius of convergence of power product expansions. *Analysis* **11** (1991), *no.* 1, 91–99. (Summary) **93a:40003** 40A20 (30B10)

Luchuk, A. M. Identification of signals of different forms. *J. Automat. Inform. Sci.* **25** (1992), *no.* 1, 86–87 (1993); *translated from Avtomatika* **1992**, *no.* 1, 92–93, 96 (*Russian. Russian summary*). 93B30 (93E12)

sols Lucía, Ignacio *see* **Sols Lucía, Ignacio**

de Lucia, Paolo *see* **De Lucia, Paolo**

Lucibello, P. (*with* Di Benedetto, Maria Domenica) An inversion procedure for nonlinear time-varying systems. (English summary) *Advanced robot control (Grenoble,* 1990), 207–215, *Lecture Notes in Control and Inform. Sci.*, 162, *Springer, Berlin,* 1991. (Summary) **93e:93044** 93C85 (70B15, 70Q05)

Lucic, D. (*with* Henderson, W.) Aggregation and disaggregation through insensitivity in stochastic Petri nets. (English summary) *Performance Evaluation* **17** (1993), *no.* 2, 91–114. (Summary) **93k:68077** 68Q90

Lucidi, Stefano New results on a continuously differentiable exact penalty function. (English summary) *SIAM J. Optim.* **2** (1992), *no.* 4, 558–574. (Pierre Loridan) **93j:90099** 90C30 (49M30, 65K05)

— (*with* Facchinei, Francisco) Nonmonotone bundle-type scheme for convex nonsmooth minimization. (English summary) *J. Optim. Theory Appl.* **76** (1993), *no.* 2, 241–257. (Giorgio Giorgi) **93m:90058** 90C25 (49J52)

Lucier, Bradley J. (*with* DeVore, Ronald A.) Wavelets. *Acta numerica*, 1992, 1–56, *Cambridge Univ. Press, Cambridge*, 1992. (S. D. Riemenschneider) **93g:42022** 42C15 (41A30, 65T99)

— Wavelets and image compression. *Mathematical methods in computer aided geometric design, II (Biri*, 1991), 391–400, *Academic Press, Boston, MA*, 1992. (*see* **93d:65022**) 94A12 (65T99)

— (*with* DeVore, Ronald A.; Jawerth, Björn) Surface compression. (English summary) *Comput. Aided Geom. Design* **9** (1992), *no.* 3, 219–239. (S. Dubuc) **93i:65029** 65D17

Lucio-Carrasco, Francisca (*with* Gavilanes-Franco, Antonio) A first order logic for partial functions. *Theoret. Comput. Sci.* **74** (1990), *no.* 1, 37–69. (Summary) **93c:03029** 03B50 (03B70, 03C07, 68Q60)

Luck, J. M. *see* **From number theory to physics, 93m:11001**

Lück, Wolfgang (*with* Rothenberg, Melvin G.) Reidemeister torsion and the K-theory of von Neumann algebras. *K-Theory* **5** (1991), *no.* 3, 213–264. (Mi-Soo Smith) **93g:57025** 57Q10 (19K99, 46L80, 46L85, 57S17)

— (*with* Ranicki, Andrew) Surgery obstructions of fibre bundles. (English summary) *J. Pure Appl. Algebra* **81** (1992), *no.* 2, 139–189. (Karl Heinz Dovermann) **93h:19006** 19J25 (19G24, 57R67)

Lücke, M. (*with* Kornadt, O.; Linz, S. J.) Parametric perturbations of a pitchfork bifurcation—the Ricker map. *From phase transitions to chaos*, 372–386, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93c:58189** 58F30 (58F14)

Lücke, W. *see* **Differential geometry, group representations, and quantization, 93c:81004**

Luckhardt, H. Complexity versus the Church-Rosser property and confluence. *Z. Math. Logik Grundlag. Math.* **37** (1991), *no.* 1, 85–92. (P. Štěpánek) **93e:03020** 03B40 (68Q15, 68Q42)

Luckhaus, Stephan (*with* Gilardi, Gianni) Extension of a regularity result concerning the dam problem. (Italian summary) *Atti Accad. Naz. Lincei Cl. Sci. Fis. Mat. Natur. Rend. Lincei* (9) *Mat. Appl.* **2** (1991), *no.* 4, 287–296. (Charles Bu) **93c:35166** 35R35 (35B65)

Luckock, H. C. (*with* McKane, A. J.) A nondiagrammatic method for perturbative calculations in field theory. *J. Phys. A* **25** (1992), *no.* 11, 3435–3442. (Summary) **93b:81173** 81T15

Lucquin-Desreux, B. (*with* Degond, Pierre) The Fokker-Planck asymptotics of the Boltzmann collision operator in the Coulomb case. *Math. Models Methods Appl. Sci.* **2** (1992), *no.* 2, 167–182. (Carlo Cercignani) **93g:82083** 82C40 (76P05, 82D10)

— (*with* Mas-Gallic, S.) A conservative particle approximation for a boundary advection-diffusion problem. (English and French summaries) *RAIRO Modél. Math. Anal. Numér.* **26** (1992), *no.* 6, 757–791. (Summary) **93f:35089** 35K20 (35A35, 35Q30)

Luczak, Andrzej On some symmetry properties of infinitely divisible and operator-semi-stable measures. *Stochastic methods in experimental sciences (Szklarska Poręba*, 1989), 304–311, *World Sci. Publishing, River Edge, NJ*, 1990. (Summary) **93b:60032** 60E07

— Operator-semistable operator Lévy's measures on finite-dimensional vector spaces. *Probab. Theory Related Fields* **90** (1991), *no.* 3, 317–340. (Jerry Alan Veeh) **93a:60017** 60E05 (60B11, 60E07)

— Invariant states and ergodic dynamical systems on W^*-algebras. *Math. Proc. Cambridge Philos. Soc.* **111** (1992), *no.* 1, 181–192. (Justin Peters) **93d:46112** 46L55 (20M30, 22D25)

Luczak, Tomasz On the number of sparse connected graphs. *Random Structures Algorithms* **1** (1990), *no.* 2, 171–173. (E. Rodney Canfield) **93a:05012** 05A16 (05C30, 05C80, 60C05)

— (*with* Ruciński, Andrzej) Balanced extensions of spare graphs. (English summary) *Fourth Czechoslovakian Symposium on Combinatorics, Graphs and Complexity (Prachatice*, 1990), 191–203, *Ann. Discrete Math.*, 51, *North-Holland, Amsterdam*, 1992. (Summary) **93j:05089** 05C35

— Sparse random graphs with a given degree sequence. *Random graphs, Vol.* 2 (*Poznań*, 1989), 165–182, *Wiley-Intersci. Publ., Wiley, New York*, 1992. (G. N. Bagaev) **93h:05144** 05C80

— (*with* Cohen, Joel E.) Giant components in three-parameter random directed graphs. (English summary) *Adv. in Appl. Probab.* **24** (1992), *no.* 4, 845–857. (G. N. Bagaev) **93m:05176** 05C80

— (*with* Pittel, Boris) Components of random forests. *Combin. Probab. Comput.* **1** (1992), *no.* 1, 35–52. (G. N. Bagaev) **93i:05118** 05C80 (05C05)

— (*with* Ruciński, Andrzej) Convex hulls of dense balanced graphs. (English summary) Asymptotic methods in analysis and combinatorics. *J. Comput. Appl. Math.* **41** (1992), *no.* 1-2, 205–213. (Lane Clark) **93m:05177** 05C80 (05C35)

Łuczak-Kumorek, E. (*with* Janiak, T.) The theorem of middling for functional-differential equations of neutral type. (English summary) *Discuss. Math.* **11** (1991), 63–73 (1992). (P. K. Palamides) **93i:34133** 34K15 (34K40)

Łuczka, J. (*with* Niemiec, M.; Piotrowski, E.) Randomly interrupted diffusion. *Phys. Lett. A* **167** (1992), *no.* 5-6, 475–478. (Summary) **93d:82071** 82C44 (60J60)

— On randomly interrupted diffusion. (English summary) *Acta Phys. Polon. B* **24** (1993), *no.* 4, 717–724. 60J60

Lüdde, Mirko (*with* Constantinescu, Florin) Braid modules. (English summary) *J. Phys. A* **25** (1992), *no.* 23, L1273–L1280. (Uwe Grimm) **93j:20082** 20F36 (81T40)

— Yang-Baxter deformations of semisimple Lie algebras. (English summary) *J. Math. Phys.* **34** (1993), *no.* 2, 864–874. (Zhong Qi Ma) **93j:17032** 17B37 (81R50)

Ludeña, Eduardo V. (*with* Kryachko, E. S.; Koga, Toshikatsu) Formulation of N- and v-representable density functional theory. III. Excited states. (English summary) *J. Math. Chem.* **11** (1992), *no.* 4, 325–339. (A. O. Barut) **93m:81164** 81V45

Lüder, E. (*with* Schaepperle, J.) Optimization of systems with deterministic and statistical search procedures. (English summary) *Computational and applied mathematics, I (Dublin*, 1991), 315–320, *North-Holland, Amsterdam*, 1992. (*see* **93j:00007**) 90C90

Luderer, Bernd *see* **Gohberg, Israel, 93c:47061**

Lüders, O. (*with* Denecke, K.) Tolerance-primal algebras with one nontrivial tolerance, their dualities and equivalences. *General algebra and applications (Potsdam*, 1992), 70–85, *Res. Exp. Math.*, 20, *Heldermann, Berlin*, 1993. (Ivan Chajda) **93m:08005** 08A30 (08C05)

Ludvigsen, Malcolm (*with* Herberthson, Magnus) A relationship between future and past null infinity. (English summary) *Gen. Relativity Gravitation* **24** (1992), *no.* 11, 1185–1193. (Richard Hansen) **93i:83036** 83C30

Ludwig, Garry Complex coordinate transformations and the generation of twist. *Tensor (N.S.)* **50** (1991), *no.* 1, 90–98. (M. A. H. MacCallum) **93f:83020** 83C20

— Twisting type N vacuum metrics. *Proceedings of the 4th Canadian Conference on General Relativity and Relativistic Astrophysics (Winnipeg, MB*, 1991), 66–70, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93c:83021** 83C20 (83C15)

— (*with* Yu, Yaozhu Brian) Type N twisting vacuum gravitational fields. *Gen. Relativity Gravitation* **24** (1992), *no.* 1, 93–110. (Nora Bretón Báez) **93b:83010** 83C15 (83C20)

Ludwig, Jean (*with* Arnal, Didier) La convexité de l'application moment d'un groupe de Lie. (English summary) [Convexity of the moment mapping of a Lie group] *J. Funct. Anal.* **105** (1992), *no.* 2, 256–300. (T. Sund) **93j:22013** 22E27 (22E60, 58F06)

— (*with* Bekka, Mohammed E. B.) On L^1-kernels of unitary representations of semisimple Lie groups. *Math. Proc. Cambridge Philos. Soc.* **112** (1992), *no.* 2, 343–348. (Adolf R. Mirotin) **93e:22007** 22D10 (22E46)

Luecking, Daniel H. (*with* Zhu, Ke He) Composition operators belonging to the Schatten ideals. *Amer. J. Math.* **114** (1992), *no.* 5, 1127–1145. (Barbara D. MacCluer) **93i:47032** 47B38 (47B10)

— Characterizations of certain classes of Hankel operators on the Bergman spaces of the unit disk. (English summary) *J. Funct. Anal.* **110** (1992), *no.* 2, 247–271. (Ke He Zhu) **93j:47039** 47B35 (47B07, 47B10)

Luenberger, David G. A double look at duality. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 10, 1474–1482. (Roberto Cominetti) **93k:49033** 49N15 (90C05, 90C30, 90C35, 93C05)

— Benefit functions and duality. (English summary) *J. Math. Econom.* **21** (1992), *no.* 5, 461–481. (Edward W. Packel) **93h:90006** 90A08 (90A06)

Luengo, Ignacio (*with* Gómez-Mont, Xavier) Germs of holomorphic vector fields in $\mathbf{C}^3$ without a separatrix. *Invent. Math.* **109** (1992), *no.* 2, 211–219. (Felipe Cano Torres) **93m:32049** 32S65

Luft, E. (*with* Sjerve, D.) On regular coverings of 3-manifolds by homology 3-spheres. *Pacific J. Math.* **152** (1992), *no.* 1, 151–163. (Paul Igodt) **93a:57019** 57M60 (57N10, 57S17, 57S25)

Lugavov, V. S. (*with* Rogozin, B. A.) Ladder subordinators and factorization identities for processes with independent increments on a Markov chain. (Russian) *Sibirsk. Mat. Zh.* **32** (1991), *no.* 4, 66–87, 227; *translation in Siberian Math. J.* **32** (1991), *no.* 4, 592–609 (1992). (N. H. Bingham) **93b:60169b** 60J30

Luginbuhl, David R. (*with* Loui, Michael C.) The complexity of on-line simulations between multidimensional Turing machines and random access machines. *Math. Systems Theory* **25** (1992), *no.* 4, 293–308. (Robert M. Baer) **93g:68033** 68Q05 (68Q10)

— (*with* Loui, Michael C.) Optimal on-line simulations of tree machines by random access machines. (English summary) *SIAM J. Comput.* **21** (1992), *no.* 5, 959–971. (Klaus W. Wagner) **93i:68068** 68Q05 (03D10, 03D15, 68Q15)

Lugosi, Gábor (*with* Faragó, A.; Linder, T.) Nearest neighbor search and classification in $O(1)$ time. (Russian summary) *Problems Control Inform. Theory/Problemy Upravlen. Teor. Inform.* **20** (1991), *no.* 6, 383–395. (Summary) **93a:68056** 68Q25 (65Y20, 68T10)

— Pattern classification from distorted sample. (Russian summary) *Problems Control Inform. Theory/Problemy Upravlen. Teor. Inform.* **20** (1991), *no.* 6, 465–473. (Summary) **93d:62075** 62G05 (62H30)

— (*with* Györfi, László) Kernel density estimation from ergodic sample is not universally consistent. (English summary) *Comput. Statist. Data Anal.* **14** (1992), *no.* 4, 437–442. (M. Bertrand-Retali) **93m:62076** 62G05 (62G20)

Lugovaya, G. D. Characterization of bilinear forms that determine measures on projectors. (Russian) *Constructive theory of functions and functional analysis, No. VI (Russian*), 92–95, *Kazan. Gos. Univ., Kazan'*, 1987. (V. I. Chilin) **93a:46122** 46L50 (47B99)

— (*with* Sherstnev, A. N.) Ordered finite-dimensional vector spaces with a spectral theorem. (Russian) *Constructive theory of functions and functional analysis, No.* 7 (*Russian*), 52–58, *Kazan. Gos. Univ., Kazan'*, 1990. (Sh. A. Ayupov) **93c:46010** 46A40 (46B40, 47B60)

van der Lugt, Anna *see* **Bolzano, Bernard, 93e:01033**

Luh, Peter B. (*with* Miao, Xiyi; Kleinman, David L.) Distributed hierarchical team resource allocation. (English summary) *Dynamic games in economic analysis (Espoo*, 1990), 48–57, *Lecture Notes in Control and Inform. Sci.*, 157, *Springer, Berlin*, 1991. (*see* **93d:90003**) 90B80

— (*with* Guan, Xiaohong) A new parallel algorithm for optimal control problems of interconnected systems. (English summary) *Internat. J. Control* **56** (1992), *no.* 6, 1275–1297. (E. S. Lee) **93k:49028** 49M30 (93A14, 93B40, 93C55)

Luh, Yih Ping (*with* Psiaki, Mark L.) Nonlinear system stability boundary approximation by polytopes in state space. (English summary) *Internat. J. Control* **57** (1993), *no.* 1, 197–224. (From the summary) **93j:93114** 93D09 (93C10)

Luhandjula, M. K. (*with* Ichihashi, Hidetomo; Inuiguchi, Masahiro) Fuzzy and semi-infinite mathematical programming. *Inform. Sci.* **61** (1992), *no.* 3, 233–250. (Stefan Chanas) **93f:90183** 90C70 (04A72, 90C34)

Lui, P. K. (*with* Muzio, J. C.) Boolean matrix transforms for the minimization of modulo-2 canonical expansions. *IEEE Trans. Comput.* **41** (1992), *no.* 3, 342–347. (Summary) **93a:94045** 94C10

Lui, Roger (*with* Dockery, Jack D.) Existence of travelling wave solutions for a bistable evolutionary ecology model. *SIAM J. Math. Anal.* **23** (1992), *no.* 4, 870–888. (Jian Hong Wu) **93h:35098** 35K57 (92D10, 92D25)

Luis, A. (*with* Sánchez-Soto, L. L.) Phase and statistical properties of multiphoton states. (English summary) *Quantum Opt.* **5** (1993), *no.* 1, 33–41. 81V80 (81R30)

rodríguez-Luis, A. J. *see* **Rodríguez-Luis, A. J.**

armando Luis, K. *see* **Armando Luis, K.**

de Luis, M. A. *see* **De Luis, M. A.**

Luk, Franklin T. (*with* Boley, Daniel L.; Brent, Richard P.; Golub, Gene H.) Algorithmic fault tolerance using the Lanczos method. *SIAM J. Matrix Anal. Appl.* **13** (1992), *no.* 1, 312–332. (Herbert J. Bernstein) **93f:65034** 65F15 (94B05)

Luka, A. G. (*with* Palistrant, A. F.) Crystallographic homology groups and generalized antihomology of two-sided rosettes. (Russian) *Algebraic structures and geometry* (*Russian*), 106–129, 161, "*Shtiintsa*", *Kishinev*, 1991. (Vojtěch Kopský) **93d:20093** 20H15 (20C99, 82D25)

Lukáč, I. ★ A covariant form of the Maxwell's equations in four-dimensional spaces with an arbitrary signature. With a Russian summary. Сообщения Объединенного Института Ядерных Исследований. Дубна [Communications of the Joint Institute for Nuclear Research. Dubna], E2-91-448. *Joint Inst. Nuclear Res., Dubna*, 1991. 25 *pp.* (A. P. Stone) **93a:78009** 78A25

Lukačević, I. (*with* Čatović, Z.) Nonstatic spherically symmetric space-times in Rosen's bimetric gravitation theory. *Gen. Relativity Gravitation* **24** (1992), *no.* 8, 827–834. (Summary) **93b:83057** 83D05

Lukács, Béla (*with* Banai, Miklós) Economic examples for exactly solvable variational problems. (Hungarian. English summary) *Mat. Lapok* **34** (1983/87), *no.* 4, 307–319 (1991). (From the summary) **93b:90016** 90A09 (49K05)

— On the Bonnor counterparts of the Tomimatsu-Sato solutions. (English summary) *Acta Phys. Hungar.* **70** (1991), *no.* 4, 289–297. (Shin-ichi Kitamura) **93g:83030** 83C22 (83C15)

Lukas, Frank (*with* Kerner, Otto) Regular modules over wild hereditary algebras. *Representations of finite-dimensional algebras* (*Tsukuba*, 1990), 191–208, *CMS Conf. Proc.*, 11, *Amer. Math. Soc., Providence, RI*, 1991. (Peter Dräxler) **93c:16017** 16G60 (16D20, 16G70)

— Infinite-dimensional modules over wild hereditary algebras. *J. London Math. Soc.* (2) **44** (1991), *no.* 3, 401–419. (Frank Okoh) **93b:16021** 16G60

Lukas, M. A. (*with* Teo, Kok Lay) A computational method for a general class of optimal control problems involving integrodifferential equations. (English summary) *Optimal Control Appl. Methods* **12** (1991), *no.* 3, 141–162. 49M05

Lukashenko, T. P. On the equimeasurability of maximal functions. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* **1991,** *no.* 5, 29–31; *translation in Soviet Math.* (*Iz. VUZ*) **35** (1991), *no.* 5, 29–31. (Petr Gurka) **93b:42032** 42B25

Lukaszewicz, Grzegorz (*with* Tôn, Bùi An) On a transmission problem for second order elliptic equations. (English summary) *Bull. Polish Acad. Sci. Math.* **39** (1991), *no.* 1-2, 11–19. (Manuel A. Del Pino) **93m:35059** 35J25 (35B65)

— On diffusion in viscous fluids mixed boundary conditions. *Progress in partial differential equations: calculus of variations, applications* (*Pont-à-Mousson*, 1991), 228–243, *Pitman Res. Notes Math. Ser.*, 267, *Longman Sci. Tech., Harlow*, 1992. (Jacob Rubinstein) **93k:35216** 35Q35 (76D99, 76R50)

— On diffusion in viscous fluids. Existence and uniqueness of solutions. (English summary) *J. Fac. Sci. Univ. Tokyo Sect. IA Math.* **39** (1992), *no.* 3, 507–524. (Summary) **93j:35141** 35Q35 (76D99, 76R50)

— (*with* Tôn, Bùi An) On a transmission problem for second order elliptic and parabolic equations in planar domains. (English and Italian summaries) *Rend. Accad. Naz. Sci. XL Mem. Mat.* (5) **16** (1992), 49–76. (Li Shang Jiang) **93m:35058** 35J25 (35K20)

Lukatskiĭ, A. M. (*with* Shapot, D. V.) Estimation of the sensitivity of the optimal solution of a linear programming problem to variations of the matrix coefficients. (Russian. English and Ukrainian summaries) *Kibernet. Sistem. Anal.* **1992,** *no.* 4, 176–178, 192; *translation in Cybernet. Systems Anal.* **28** (1992), *no.* 4, 647–650 (1993). 90C05

Luke, Jon C. On particle-like solutions for a nonlinear complex-valued Klein-Gordon equation. (English summary) *Nonlinear dispersive wave systems* (*Orlando, FL*, 1991), 611–623, *World Sci. Publishing, River Edge, NJ*, 1992. (*see* **93f:00015**) 35Q53 (81Q05)

Lukeš, Jaroslav (*with* Malý, Jan) Thinness, Lebesgue density and fine topologies (an interplay between real analysis and potential theory). *Summer School in Potential Theory* (*Joensuu*, 1990), 35–70, *Joensuun Yliop. Luonnont. Julk.*, 26, *Univ. Joensuu, Joensuu*, 1992. (Tero Kilpeläinen) **93j:31001** 31–02 (28A05, 31B15, 31C45)

Lukierski, Jerzy (*with* Nowicki, Anatol; Ruegg, Henri) Real forms of complex quantum anti-de Sitter algebra $U_q(\mathrm{Sp}(4;\mathbf{C}))$ and their contraction schemes. *Phys. Lett. B* **271** (1991), *no.* 3-4, 321–328. (Vadim B. Kuznetsov) **93a:17018** 17B37 (81R50)

— (*with* de Azcárraga, J. A.; Niederle, Jiří) Contractions yielding new supersymmetric extensions of the Poincaré algebra. *Rep. Math. Phys.* **30** (1991), *no.* 1, 33–40 (1992). (J. F. Cornwell) **93h:17009** 17A70 (17B70, 81R05, 81T60)

— (*with* Nowicki, Anatol) Real forms of $U_q(\mathrm{OSp}(1|2))$ and quantum $D = 2$ supersymmetry algebras. *J. Phys. A* **25** (1992), *no.* 4, L161–L169. (Nigel B. Backhouse) **93e:17023** 17B37 (81R50)

— (*with* Nowicki, Anatol) Quantum deformations of $D = 4$ Poincaré and Weyl algebra from q-deformed $D = 4$ conformal algebra. *Phys. Lett. B* **279** (1992), *no.* 3-4, 299–307. (Ladislav Hlavatý) **93g:17029** 17B37 (16S30, 16W30, 81R50)

— *see also* **Quantum groups and related topics, 93h:00021**

Lukovskiĭ, I. A. (*with* Timokha, A. N.) A class of boundary value problems in the theory of surface waves. (Russian. Ukrainian summary) *Ukrain. Mat. Zh.* **43** (1991), *no.* 3, 359–364; *translation in Ukrainian Math. J.* **43** (1991), *no.* 3, 322–328. (Hideo Yamagata) **93e:76012** 76B15 (35Q30, 76Q05)

— (*with* Pil'kevich, A. M.) Oscillation of a fluid in a cylindrical vessel in the case of longitudinal excitation. (Russian. Russian summary) *Mathematical methods for studying applied problems of the dynamics of fluid-carrying bodies* (*Russian*), 16–25, *Akad. Nauk Ukrainy, Inst. Mat., Kiev*, 1992. (*see* **93m:00027**) 76B15

— *see also* **Problems in the dynamics and stability of multidimensional systems, 93g:00025** *and* **Mathematical methods for studying applied problems of the dynamics of fluid-carrying bodies, 93m:00027**

Lukowski, Piotr Matrix-frame semantics for ISCI and INT. *Bull. Sect. Logic Univ. Łódź* **21** (1992), *no.* 4, 156–162. 03B20 (03G25)

Lukš, A. (*with* Ben-Aryeh, Y.; Peřinová, V.) The concept of equal space commutators in quantum optics. *Phys. Lett. A* **165** (1992), *no.* 1, 19–27. (K. Wódkiewicz) **93d:81189** 81V10 (81S05, 81V80)

Lukšan, Ladislav Variationally derived scaling and variable metric updates from the preconvex part of the Broyden family. *J. Optim. Theory Appl.* **73** (1992), *no.* 2, 299–307. (S. R. Mohan) **93f:90153** 90C30

— Computational experience with improved conjugate gradient methods for unconstrained minimization. (English summary) *Kybernetika* (*Prague*) **28** (1992), *no.* 4, 249–262. (Georgi Khristov) **93h:90088** 90C30 (65K05, 90–08)

Lukshin, A. V. (*with* Vorob'eva, M. O.) On a model of sorption dynamics with feedback. (Russian) *Dokl. Akad. Nauk* **324** (1992), *no.* 2, 314–315; *translation in Soviet Phys. Dokl.* **37** (1992), *no.* 5, 231–232. (Ulrich Tautenhahn) **93m:35156** 35Q35 (35R30)

Luk'yanov, L. G. Zero-velocity surfaces in the restricted three-body problem with variable masses. *Soviet Astronom.* **36** (1992), *no.* 3, 326–329; *translated from Astronom. Zh.* **69** (1992), *no.* 3, 640–648 (*Russian*). (From the text) **93k:70014** 70F07 (70P05)

Luk'yanov, S. L. (*with* Fateev, V. A.) Vertex operators and representations of quantum universal enveloping algebras. *Internat. J. Modern Phys. A* **7** (1992), *no.* 7, 1325–1359. (Vladimir A. Stukopin) **93g:17024** 17B37 (81R50, 81T40)

Luk'yanova, E. A. (*with* Bondar', A. V.) Sets of σ-monogeneity and criteria for pseudo-analyticity of continuous functions. (Russian. Russian summary) *Akad. Nauk Ukrainy Inst. Mat. Preprint* **1992,** *no.* 7, 28 *pp.* (Summary) **93j:30050** 30G20

Lulek, B. Impurities in the Heisenberg magnet and the general recipe of Weyl. (English summary) *Séminaire Lotharingien de Combinatoire* (*Thurnau*, 1991), 55–62, *Publ. Inst. Rech. Math. Av.*, 476, *Univ. Louis Pasteur, Strasbourg*, 1992. (*see* **93g:00029**) 82B20

Lulek, T. (*with* Florek, W.) Combinatorial analysis of magnetic configurations. (English summary) *Séminaire Lotharingien de Combinatoire* (*Thurnau*, 1991), 17–28, *Publ. Inst. Rech. Math. Av.*, 476, *Univ. Louis Pasteur, Strasbourg*, 1992. (A. Kerber) **93i:05134** 05E15 (82B20)

— (*with* Florek, W.) Gauge symmetries in the Heisenberg model of a magnet. (English summary) *Séminaire Lotharingien de Combinatoire* (*Thurnau*, 1991), 63–67, *Publ. Inst. Rech. Math. Av.*, 476, *Univ. Louis Pasteur, Strasbourg*, 1992. (*see* **93g:00029**) 82B20

Lumer, Gunter Generalized evolution operators and (generalized) C-semigroups. *Semigroup theory and evolution equations* (*Delft*, 1989), 337–345, *Lecture Notes in Pure and Appl. Math.*, 135, *Dekker, New York*, 1991. (Frank Neubrander) **93i:47059** 47D06 (34G10, 47N20)

— Examples and results concerning the behavior of generalized solutions, integrated semigroups, and dissipative evolution problems. *Semigroup theory and evolution equations* (*Delft*, 1989), 347–356, *Lecture Notes in Pure and Appl. Math.*, 135, *Dekker, New York*, 1991. (Frank Neubrander) **93i:47060** 47D06 (34G10, 47N20)

— Semi-groupes irréguliers et semi-groupes intégrés: application à l'identification de semi-groupes irréguliers analytiques et résultats de génération. (English summary) · [Irregular semigroups and integrated semigroups: application to the identification of irregular analytic semigroups and generation results] *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 13, 1033–1038. (Anton Schep) **93i:47055** 47D03 (47D06)

— Problèmes d'évolution avec chocs (changements brusques de conditions au bord) et valeurs au bord variables entre chocs consécutifs. (English and French summaries) [Evolution problems with shocks (sudden changes in boundary conditions) and variable boundary values between consecutive shocks] *C. R. Acad. Sci. Paris Sér. I Math.* **316** (1993), *no.* 1, 41–46. (Summary) **93m:35105** 35K57 (34G20, 35L67, 47D06, 47N20)

Luminati, Domenico Factorizations of generic mappings between surfaces. *Proc. Amer. Math. Soc.* **118** (1993), *no.* 1, 247–253. (Alexandru Dimca) **93f:57035** 57R42 (57R45)

Lumiste, Ülo On submanifolds with parallel higher order fundamental form in Euclidean spaces. *Global differential geometry and global analysis* (*Berlin*, 1990), 126–137, *Lecture Notes in Math.*, 1481, *Springer, Berlin*, 1991. (Bang-yen Chen) **93i:53054** 53C40

— Semisymmetric submanifolds. (Russian) *Problems in geometry, Vol.* 23 (*Russian*), 3–28, 187, *Itogi Nauki i Tekhniki, Akad. Nauk SSSR, Vsesoyuz. Inst. Nauchn. i Tekhn. Inform., Moscow*, 1991. (Eugene Dmitrievich Rodionov) **93d:53071** 53C40

— (*with* Chakmazyan, A. V.) Covariant derivative and parallelism of the second fundamental form of a normalized submanifold in projective space. (Russian and Estonian summaries) *Eesti NSV Tead. Akad. Toimetised Füüs.-Mat.* **40** (1991), *no.* 1, 9–16, 62. (Summary) **93h:53057** 53C40

— Second order envelopes of symmetric Segre submanifolds. (Russian summary) *Tartu Ül. Toimetised No.* 930 (1991), 15–26. (An-Min Li) **93b:53051** 53C42

— Second-order envelopes of m-dimensional Veronese submanifolds. (Russian summary) *Tartu Ül. Toimetised No.* 930 (1991), 35–46. (Summary) **93e:53072** 53C42

— Semi-symmetric submanifolds and modified Nomizu problem. (English summary) *Proceedings of the* 3*rd Congress of Geometry* (*Thessaloniki*, 1991), 263–274, *Aristotle Univ. Thessaloniki, Thessaloniki*, 1992. (Ion Mihai) **93h:53061** 53C40

Lumley, John L. (*with* Holmes, Philip J.; Berkooz, Gal) Turbulence, dynamical systems and the unreasonable effectiveness of empirical eigenfunctions. *Proceedings of the International Congress of Mathematicians, Vol. I, II* (*Kyoto*, 1990), 1607–1617, *Math. Soc. Japan, Tokyo*, 1991. (Zengrong Liu) **93c:76046** 76F20 (76M99)

— (*with* Berkooz, Gal; Holmes, Philip J.) Control of the turbulent boundary layer and dynamical systems theory: an update. *The global geometry of turbulence* (*Rota*, 1990), 211–220, *NATO Adv. Sci. Inst. Ser. B Phys.*, 268, *Plenum, New York*, 1991. (*see* **93b:76001**) 76F20 (76D10)

— (*with* Berkooz, Gal; Holmes, Philip J.) Intermittent dynamics in simple models of the turbulent wall layer. *J. Fluid Mech.* **230** (1991), 75–95. (Mikhail Zaks) **93f:76054** 76F20 (34C37, 58F40)

— (*with* Berkooz, Gal; Holmes, Philip J.) Low-dimensional models of the wall region in a turbulent boundary layer: new results. (English summary) Interpretation of time series from nonlinear systems (Warwick, 1991). *Phys. D* **58** (1992), *no.* 1-4, 402–406. (Summary) **93i:76043** 76Fxx (76D10)

— *see also* **Annual review of fluid mechanics, 93h:76003**

wieners-Lummer, Charlotte *see* **Wieners-Lummer, Charlotte**

Lumsden, E. (*with* Aitchison, I. R.; Rubinstein, J. H.) Cusp structures of alternating links. (English summary) *Invent. Math.* **109** (1992), *no.* 3, 473–494. (Charles Livingston) **93h:57007** 57M25

Lunardi, Alessandra Stabilizability of parabolic equations. (Italian. English summary) *Rend. Sem. Mat. Fis. Milano* **59** (1989), 25–35 (1992). (Paolo Acquistapace) **93b:35058** 35K20 (35B35, 35B37, 47N20, 93D05)

— Neumann boundary stabilization of structurally damped time periodic wave and plate equations. *Differential equations with applications in biology, physics, and engineering* (*Leibnitz*, 1989), 241–257, *Lecture Notes in Pure and Appl. Math.*, 133, *Dekker, New York*, 1991. (Ján Lovíšek) **93g:35087** 35L20 (35B37, 73D30, 73K10, 73K50)

— An introduction to geometric theory of fully nonlinear parabolic equations. *Qualitative aspects and applications of nonlinear evolution equations* (*Trieste*, 1990), 107–131, *World Sci. Publishing, River Edge, NJ*, 1991. (J. A. Goldstein) **93b:47141** 47N20 (34G20, 35K55, 35R20, 47H20)

— Stability of the travelling waves in a class of free boundary problems arising in combustion theory. *Boundary control and boundary variation (Sophia-Antipolis, 1990)*, 285–296, *Lecture Notes in Control and Inform. Sci.*, 178, *Springer, Berlin*, 1992. (Charles Bu) **93h:35220** 35R35 (35B35, 35K99)

— (*with* Sinestrari, Eugenio; von Wahl, Wolf) A semigroup approach to the time dependent parabolic initial-boundary value problem. (English summary) *Differential Integral Equations* **5** (1992), *no.* 6, 1275–1306. (Paolo Acquistapace) **93j:35088** 35K35 (34G10, 47D06, 47N20)

— (*with* Brauner, C.-M.; Schmidt-Lainé, Cl.) Stability of travelling waves with interface conditions. *Nonlinear Anal.* **19** (1992), *no.* 5, 455–474. (H. J. Kuiper) **93k:35145** 35K60 (34G20, 35R35, 47N20, 80A22)

Lunardon, G. (*with* Pasini, Antonio) Finite C_n geometries: a survey. *Note Mat.* **10** (1990), *no.* 1, 1–35. (Hendrik Van Maldeghem) **93d:51029** 51E24

— *see also* **Combinatorics '88, 93m:00039** *and* **93m:00040**

Lund, Carsten (*with* Boyar, Joan; Friedl, Katalin) Practical zero-knowledge proofs: giving hints and using deficiencies. (English summary) *J. Cryptology* **4** (1991), *no.* 3, 185–206. (Hans B. Sieburg) **93m:68144** 68T15 (94A60)

— (*with* Babai, László; Fortnow, Lance) Addendum to: "Nondeterministic exponential time has two-prover interactive protocols" [Comput. Complexity **1** (1991), no. 1, 3–40; MR 92h:68031]. *Comput. Complexity* **2** (1992), *no.* 4, 374. 68Q15 (68Q60)

Lund, E. J. (*with* Balchen, Jens Glad; Foss, B. A.) Multiple model estimation with inter-residual distance feedback. (English summary) *Identification and system parameter estimation* 1991, *Vol.* 1,2 (*Budapest*, 1991), 889–894, *IFAC Sympos. Ser.*, 3, *Pergamon, Oxford*, 1992. (*see* **93h:93009**) 93B52

Lund, Fernando Dynamics of nonlinear Schrödinger defects in three dimensions. (English summary) *Instabilities and nonequilibrium structures, III (Valparaíso, 1989)*, 331–336, *Math. Appl.*, 64, *Kluwer Acad. Publ., Dordrecht*, 1991. (*see* **93b:00027**) 35Q55 (81Q05)

— Defect dynamics for the nonlinear Schrödinger equation derived from a variational principle. *Phys. Lett. A* **159** (1991), *no.* 4-5, 245–251. (Woodford W. Zachary) **93e:35103** 35Q55 (76E99)

Lund, John (*with* Bowers, Kenneth L.; Carlson, Timothy S.) Fully sinc-Galerkin computation for boundary feedback stabilization. *J. Math. Systems Estim. Control* **1** (1991), *no.* 2, 165–182. (Takao Nambu) **93b:65144** 65M60 (65M12, 93C20, 93D15)

— (*with* Bowers, Kenneth L.) ★ Sinc methods for quadrature and differential equations. *Society for Industrial and Applied Mathematics (SIAM), Philadelphia, PA*, 1992. x+304 *pp. ISBN* 0-89871-298-X (Reinhard Scholz) **93i:65004** 65-02 (65L60, 65M60)

— (*with* McArthur, Kelly M.; Smith, Ralph C.; Bowers, Kenneth L.) The sinc-Galerkin method for parameter-dependent selfadjoint problems. *Appl. Math. Comput.* **50** (1992), *no.* 2-3, 175–202. (Ian Gladwell) **93g:65104** 65L60 (65L10)

Lund, Steven M. (*with* Davidson, Ronald C.) A class of coherent vortex structures in rotating nonneutral plasma. (English summary) *Phys. Fluids B* **5** (1993), *no.* 5, 1421–1429. 76X05 (76E25)

Lundberg, Anders Sûto's method applied to a problem of Färe and Mitchell. *Aequationes Math.* **43** (1992), *no.* 2-3, 127–144. (Witold Jarczyk) **93c:39003** 39B22

Lundberg, Bruce N. (*with* Poore, Aubrey B.) Numerical continuation and singularity detection methods for parametric nonlinear programming. (English summary) *SIAM J. Optim.* **3** (1993), *no.* 1, 134–154. (Hubertus Th. Jongen) **93m:90085** 90C31

Lundelius Welch, Jennifer (*with* Coan, Brian A.) Modular construction of a Byzantine agreement protocol with optimal message bit complexity. *Inform. and Comput.* **97** (1992), *no.* 1, 61–85. (Summary) **93a:68012** 68M10 (68M15, 68Q25)

— (*with* Coan, Brian A.) Modular construction of an efficient 1-bit Byzantine agreement protocol. (English summary) *Math. Systems Theory* **26** (1993), *no.* 1, 131–154. (Summary) **93i:68018** 68M10

Lundell, Albert T. Concise tables of James numbers and some homotopy of classical Lie groups and associated homogeneous spaces. *Algebraic topology (San Feliu de Guíxols, 1990)*, 250–272, *Lecture Notes in Math.*, 1509, *Springer, Berlin*, 1992. (M. Mimura) **93g:55019** 55Q52 (57T20)

— A short proof of the Frobenius theorem. *Proc. Amer. Math. Soc.* **116** (1992), *no.* 4, 1131–1133. (Irl Bivens) **93c:58005** 58A30 (58A15)

Lundgren, J. Richard (*with* Maybee, John S.) Some properties of a class of recursively defined digraphs. (English summary) *J. Combin. Inform. System Sci.* **16** (1991), *no.* 1, 29–36. (Summary) **93c:05054** 05C20

— (*with* de Caen, D.; Gregory, David A.; Henson, Teresa D.; Maybee, John S.) Real rank as a bound for nonnegative integer rank. *J. Combin. Math. Combin. Comput.* **11** (1992), 47–53. (J. Sedláček) **93f:05061** 05C50

— (*with* Hefner, Kim A. S.; Maybee, John S.) Biclique covers and partitions of unipathic digraphs. (English summary) *Graphs, matrices, and designs*, 213–224, *Lecture Notes in Pure and Appl. Math.*, 139, *Dekker, New York*, 1993. (Brian Alspach) **93m:05081** 05C20 (05C38)

Lundina, D. Sh. (*with* Marchenko, V. A.) Limits of multisoliton solutions of the nonlinear Schrödinger operator. (Russian. English and Russian summaries) *Dokl. Akad. Nauk Ukrainy* **1992**, *no.* 8, 21–24, 169. (Summary) **93i:35133** 35Q55 (35B99)

— (*with* Marchenko, V. A.) Compactness of the set of multisoliton solutions of the nonlinear Schrödinger equation. (Russian. Russian summary) *Mat. Sb.* **183** (1992), *no.* 4, 3–19; *translation in Russian Acad. Sci. Sb. Math.* **75** (1993), *no.* 2, 429–443. (Vladimir Mikhalev) **93h:35192** 35Q55 (34A55, 34L25, 34L40, 35B65)

Lundquist, Michael (*with* Johnson, Charles Royal) An inertia formula for Hermitian matrices with sparse inverses. Directions in matrix theory (Auburn, AL, 1990). *Linear Algebra Appl.* **162/164** (1992), 541–556. (Shao Kuan Li) **93b:15027** 15A57 (15A18)

Lundy, G. M. Specification and analysis of a composition of protocols. (English summary) *Inform. Sci.* **70** (1993), *no.* 3, 221–239. (Summary) **93m:68117** 68Q60 (68M10)

van de Lune, J. (*with* Granville, Andrew; te Riele, H. J. J.) Checking the Goldbach conjecture on a vector computer. *Number theory and applications (Banff, AB, 1988)*, 423–433, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 265, *Kluwer Acad. Publ., Dordrecht*, 1989. (Summary) **93c:11085** 11P32 (11Y99)

Lüneburg, Heinz Fibonaccis aufsteigende Kettenbrüche, ein elegantes Werkzeug mittelalterlicher Rechenkunst. [Fibonacci's ascending continued fractions—an elegant tool in medieval arithmetic] *Séminaire Lotharingien de Combinatoire (Salzburg, 1990)*, 135–149, *Publ. Inst. Rech. Math. Av.*, 462, *Univ. Louis Pasteur, Strasbourg*, 1991. (H. L. L. Busard) **93k:01015** 01A35 (11A55)

— Fibonaccis aufsteigende Kettenbrüche, ein elegantes Werkzeug mittelalterlicher Rechenkunst. (English summary) [Fibonacci's ascending continued fractions, an elegant tool of medieval arithmetic] *Sudhoffs Arch.* **75** (1991), *no.* 2, 129–139. (F. Beukers) **93f:11001** 11–03 (01A35, 11A55)

— ★ Leonardi Pisani *Liber abbaci* oder Lesevergnügen eines Mathematikers. (German) [Leonardi Pisani *Liber abbaci* or reading pleasure of a mathematician] *Bibliographisches Institut, Mannheim*, 1992. ii+340 *pp. ISBN* 3-411-15461-6 (Eberhard Knobloch) **93i:01012** 01A35 (00A08, 01A05)

Lüneburg, Martin Involutionen, auflösbare Gruppen und die Klassifikation topologischer Ebenen. [Involutions, solvable groups and the classification of topological planes] *Mitt. Math. Sem. Giessen No.* 209 (1992), 113 *pp.* (Rainer Löwen) **93i:51032** 51H10 (20F16)

Lunel, S. M. Verduyn *see* **Verduyn Lunel, Sjoerd M.**

verduyn Lunel, Sjoerd M. *see* **Verduyn Lunel, Sjoerd M.**

Lunev, F. A. Field theory models that admit alternative Lagrangian formulations. I. (Russian. English summary) *Teoret. Mat. Fiz.* **89** (1991), *no.* 1, 121–131; *translation in Theoret. and Math. Phys.* **89** (1991), *no.* 1, 1098–1105 (1992). (Paweł Urbanski) **93f:58053** 58E30 (49N45, 49S05, 70G50)

— Field theory models that admit alternative Lagrangian formulations. II. (Russian. English summary) *Teoret. Mat. Fiz.* **90** (1992), *no.* 1, 55–64; *translation in Theoret. and Math. Phys.* **90** (1992), *no.* 1, 35–41. (Paweł Urbanski) **93f:58054** 58E30 (49N45, 49S05, 70G50)

Lunëv, V. V. (*with* Voitkova, G. V.) Discontinuous solutions of boundary layer equations with a positive pressure gradient. *Fluid Dynamics* **26** (1991), *no.* 5, 680–688 (1992); *translated from Izv. Akad. Nauk SSSR Mekh. Zhidk. Gaza* **1991,** *no.* 5, 53–62 (*Russian*). (E. J. Watson) **93d:76018** 76D10

Lung, C. W. *see* **Long, Qi Wei**

Lungu, A. P. Foundations of the theory of approximate symmetry of discrete systems of points. (Russian) *Algebraic structures and geometry (Russian)*, 74–77, 159, "*Shtiintsa*", *Kishinev*, 1991. (K. Burian) **93e:51022** 51F15

— On the theory of ε-statistical symmetry transformations of (r, R)-systems. (Russian. English, Russian and Moldavian summaries) *Izv. Akad. Nauk Respub. Moldova Mat.* **1991,** *no.* 3, 52–57, 92. (Béla Uhrin) **93h:52024** 52C07

Lunin, A. A. A vector $\bar{\partial}$-problem and self-similar solutions of the Kadomtsev-Petviashvili equation. (Russian) *Mat. Zametki* **49** (1991), *no.* 3, 52–56, 159; *translation in Math. Notes* **49** (1991), *no.* 3-4, 263–266. (M. I. Monastyrskii) **93f:58103** 58F07 (35Q53)

Lun'kov, V. A. Preservation of stabilizability under difference approximation of linear systems. (Russian. Russian summary) *Nonlinear oscillations and control theory (Russian)*, 75–85, 93, *Udmurt. Gos. Univ., Izhevsk*, 1989. (*see* **93m:00031**) 93D15 (49M25)

Lunn, A. D. (*with* Fisher, Nicholas I.; Davies, S. J.) Spherical median axes. (English summary) *J. Roy. Statist. Soc. Ser. B* **55** (1993), *no.* 1, 117–124. (Summary) **93k:62118** 62H05 (62H11)

Lunney, K. E. (*with* Anh, V. V.) Spectral representation and ergodicity of asymptotically stationary processes. *Austral. J. Statist.* **33** (1991), *no.* 1, 85–94. (Ed McKenzie) **93b:60075** 60G12

— (*with* Anh, V. V.) Generalised harmonic analysis of a class of nonstationary random fields. (English summary) *J. Austral. Math. Soc. Ser. A* **53** (1992), *no.* 3, 385–401. (M. M. Rao) **93i:60093** 60G60 (42B10, 62M99)

Lunnon, Rachel (*with* Aczel, Peter) Universes and parameters. *Situation theory and its applications, Vol.* 2 (*Loch Rannoch*, 1990), 3–24, *CSLI Lecture Notes*, 26, *Stanford Univ., Stanford, CA*, 1991. (*see* **92m:68006**) 68Q55 (03B70)

— Many sorted universes, SRDs, and injective sums. *Situation theory and its applications, Vol.* 2 (*Loch Rannoch*, 1990), 51–79, *CSLI Lecture Notes*, 26, *Stanford Univ., Stanford, CA*, 1991. (B. H. Mayoh) **93g:68077** 68Q55 (03B70)

Lunnon, W. F. (*with* Pleasants, P. A. B.) Characterization of two-distance sequences. (English summary) *J. Austral. Math. Soc. Ser. A* **53** (1992), *no.* 2, 198–218. (Jacek Fabrykowski) **93h:11027** 11B83

Lunts, G. L. (*with* Volkovyskii, L. I.; Aramanovich, I. G.) ★ A collection of problems on complex analysis. Translated from the 1960 Russian original by J. Berry. Reprint of the 1965 English translation. *Dover Publications, Inc., New York*, 1991. x+426 *pp. ISBN* 0-486-66913-0 (Editors) **93e:30003** 30-01 (00A07)

Lunze, Jan Modelling and analysis of symmetric control systems. (English summary) *Computational systems analysis*, 179–206, *Elsevier, Amsterdam*, 1992. (*see* **93b:93006**) 93A30 (93B51)

Luo, Cheng (*with* Chen, Jie Cheng) Duality of H^1 and BMO on positively curved manifolds and their characterizations. (English summary) *Harmonic analysis (Tianjin*, 1988), 23–38, *Lecture Notes in Math.*, 1494, *Springer, Berlin*, 1991. (Margaret A. M. Murray) **93j:42010** 42B30 (46E30)

Luo, Cheng Hui Constructions of power bases of cyclotomic fields. (English summary) A Chinese summary appears in Chinese Ann. Math. Ser. A **13** (1992), no. 2, 280. *Chinese Ann. Math. Ser. B* **13** (1992), *no.* 2, 244–250. (Summary) **93g:11107** 11R18 (11R04)

Luo, Cheng Zhong Countable nested sets. (Chinese. English summary) *Mohu Xitong yu Shuxue* **5** (1991), *no.* 1, 1–6, 16. (Summary) **93c:04005** 04A72

— (*with* Li, Xiao Zhong) A class of fuzzy neurons and their applications. (Chinese. English and Chinese summaries) *Beijing Shifan Daxue Xuebao* **28** (1992), *no.* 2, 141–147. 68T05 (04A72)

— Random fuzzy sets and the theorem of great numbers for falling shadows. (Chinese. English and Chinese summaries) Fuzzy information processing and machine intelligence (Chinese). *Mohu Xitong yu Shuxue* **6** (1992), *no.* 2, 93–102. (Summary) **93m:04017** 04A72

— (*with* Li, Hong Xing; Wang, Pei Zhuang) The cardinality of fuzzy sets and the continuum hypothesis. (English summary) *Fuzzy Sets and Systems* **55** (1993), *no.* 1, 61–77. (Summary) **93k:03053** 03E72

Luo, Chuan Ping A new method for processing compressions of computer image operators—simplification of multivalued logic functions. (Chinese. English and Chinese summaries) *J. Wuhan Univ. Natur. Sci. Ed.* **1992,** *no.* 1, 55–62. 68U10 (03B50, 68P20, 94C10)

Luo, Ding Jun Several kinds of limit cycle bifurcations. *Dynamical systems and related topics (Nagoya*, 1990), 342–352, *Adv. Ser. Dyn. Syst.*, 9, *World Sci. Publishing, River Edge, NJ*, 1991. (Summary) **93k:58185** 58F21 (34C05, 34C23, 58F14)

— (*with* Han, Mao An; Zhu, De Ming) Uniqueness of limit cycles bifurcating from a singular closed orbit. I. (Chinese. Chinese summary) *Acta Math. Sinica* **35** (1992), *no.* 3,

407–417. (Chengzhi Li) **93k:34084** 34C23 (34C05, 34C37, 58F21)
— (*with* Han, Mao An; Zhu, De Ming) Uniqueness of limit cycles bifurcating from a singular closed orbit. II. (Chinese. Chinese summary) *Acta Math. Sinica* **35** (1992), *no.* 4, 541–548. (Chengzhi Li) **93k:34085** 34C23 (34C05, 58F21)
Luo, En (*with* Yang, Yong) A spline synthetic discrete method (SSDM) for the analysis of plane problems. (Chinese. English summary) *J. Numer. Methods Comput. Appl.* **12** (1991), *no.* 4, 237–244. (Summary) **93b:65020** 65D07 (73K05)
Luo, Fei Jin *see* **Ang, Tian Se**, **(93i:01006)**
Luo, Feng Constructing conformally flat structures on some Seifert fibred 3-manifolds. *Math. Ann.* **294** (1992), *no.* 3, 449–458. (Michael Kapovich) **93h:57023** 57M50 (30F40, 53A30, 57N10)
— Actions of finite groups on knot complements. *Pacific J. Math.* **154** (1992), *no.* 2, 317–329. (Colin C. Adams) **93d:57018** 57M25 (57M60)
— (*with* Tian, Gang) Liouville equation and spherical convex polytopes. *Proc. Amer. Math. Soc.* **116** (1992), *no.* 4, 1119–1129. (Robert McOwen) **93b:53034** 53C21 (52A55)
— Triangulations in Möbius geometry. *Trans. Amer. Math. Soc.* **337** (1993), *no.* 1, 181–193. (William Goldman) **93g:57026** 57Q15 (57M10)
— (*with* Stong, Richard) Combinatorics of triangulations of 3-manifolds. *Trans. Amer. Math. Soc.* **337** (1993), *no.* 2, 891–906. (Mario Pezzana) **93h:57035** 57Q15 (57M15)
Luo, Gang (*with* Bochmann, Gregor V.; Das, Anindya; Wu, Cheng) Failure-equivalent transformation of transition systems to avoid internal actions. (English summary) *Inform. Process. Lett.* **44** (1992), *no.* 6, 333–343. (Summary) **93h:68088** 68Q60 (68Q90)
Luo, Gui Lie (*with* Zheng, Bu Nan; Chen, Wu Hua) Convergence and stability of solutions of certain differential equations with distributed delay. *Ann. Differential Equations* **8** (1992), *no.* 1, 129–138. (Summary) **93d:34134** 34K20
Luo, J. S. (*with* Johnson, Alan) Stability robustness of the discrete-time LQG system under plant perturbation and noise uncertainty. *Internat. J. Control* **55** (1992), *no.* 6, 1491–1502. 93D09
Luo, Jenn-Ching A domain decomposition method for eigenvalue problems. (English summary) *Fifth International Symposium on Domain Decomposition Methods for Partial Differential Equations (Norfolk, VA, 1991)*, 306–321, *SIAM, Philadelphia, PA*, 1992. (Summary) **93h:65133** 65N25 (65N55)
— Algorithms for reducing the bandwidth and profile of a sparse matrix. (English summary) *Comput. & Structures* **44** (1992), *no.* 3, 535–548. (Summary) **93c:65062** 65F50
— An incomplete inverse as a preconditioner for the conjugate gradient method. (English summary) *Comput. Math. Appl.* **25** (1993), *no.* 2, 73–79. 65F35
— A new class of decomposition for inverting asymmetric and indefinite matrices. (English summary) *Comput. Math. Appl.* **25** (1993), *no.* 4, 95–104. (Ming Kui Chen) **93m:65038** 65F05 (15A09, 65Y05, 65Y20)
— A sparsity for decomposing a symmetric matrix. (English summary) *Comput. Math. Appl.* **25** (1993), *no.* 5, 83–90. 65F30 (65F50)
— Extended concept of stair-shape sparsity for the inverse of an asymmetric matrix. (English summary) *Comput. Math. Appl.* **25** (1993), *no.* 5, 113–122. (Summary) **93i:65052** 65F50
Luo, Jia Gui A generalization of the Störmer theorem and some applications. (Chinese. English summary) *Sichuan Daxue Xuebao* **28** (1991), *no.* 4, 469–474. (Qi Sun) **93d:11032** 11D09
Luo, Jian Jin The Xu Dai numbers—a special function related to the Euler numbers. (Chinese) *Collected research papers on the history of mathematics, Vol.* 1 (*Chinese*), 131–139, *Inner Mongolia Univ. Press, Hohhot*, 1990. (*see* **93i:01004**) 01A25
— An Tu Ming's higher-level computation and its test results. (Chinese) *Collected research papers on the history of mathematics, Vol.* 2 (*Chinese*), 96–104, *Inner Mongolia Univ. Press, Hohhot*, 1991. (*see* **93i:01005**) 01A25
— Shan Lan Li's *Duo ji bi lei*: a masterpiece in early combinatorial mathematics. (Chinese) *Collected research papers on the history of mathematics, Vol.* 3 (*Chinese*), 90–97, *Inner Mongolia Univ. Press, Hohhot*, 1992. (*see* **93i:01006**) 01A25
— Poems and essays by Shan Lan Li. (Chinese) *Collected research papers on the history of mathematics, Vol.* 3 (*Chinese*), 98–99, *Inner Mongolia Univ. Press, Hohhot*, 1992. (*see* **93i:01006**) 01A25
Luo, Jun Bo On the width of class of periodic functions of two variables. *Approximation, optimization and computing*, 147–150, *North-Holland, Amsterdam*, 1990. (Minoru Yanagawa) **93i:42016** 42B99 (41A46, 42A10)
Luo, Li Bo Functions and functionals on finite systems. *J. Symbolic Logic* **57** (1992), *no.* 1, 118–130. (Uwe Schöning) **93b:03065** 03D15 (68Q15)
Luo, Liao Fu Second entropy and complexity. (English and Chinese summaries) *Nei Mongol Daxue Xuebao Ziran Kexue* **23** (1992), *no.* 3, 400–404. 94A17
— (*with* Liao, Shi Xiang) A spin-glass model for asymmetrical neural networks and its transition temperature. (Chinese. English and Chinese summaries) *Nei Mongol Daxue Xuebao Ziran Kexue* **23** (1992), *no.* 4, 529–533. 82C32
Luo, Mao Kang (*with* Liu, Ying Ming) Lattice-valued Hahn-Dieudonné-Tong insertion theorem and stratification structure. (English summary) Proceedings of the Tsukuba Topology Symposium (Tsukuba, 1990). *Topology Appl.* **45** (1992), *no.* 3, 173–188. (J. Karásek) **93j:54011** 54D15 (06B99)
Luo, Ming On triangular Lucas numbers. *Applications of Fibonacci numbers, Vol.* 4 (*Winston-Salem, NC*, 1990), 231–240, *Kluwer Acad. Publ., Dordrecht*, 1991. (Pentti Haukkanen) **93i:11016** 11B39
Luo, Qun (*with* Zhang, Shi Sheng; Kang, Shi Kun) A generalization of Ky Fan's section theorem. (Chinese. English summary) *J. Chengdu Univ. Sci. Tech.* **1991,** *no.* 4, 61–64, 84. (Yuan Guo Zhu) **93e:47089** 47H19 (49J40)
Luo, Rong Gui An industry inventory model with variable demand and an optimal inventory policy. (Chinese. Chinese summary) *Acta Math. Sci. (Chinese)* **12** (1992), *no.* 3, 338–344. 90B05
Luo, Shao Kai (*with* Mei, Feng Xiang) The principles of least action of variable mass nonholonomic nonconservative system in noninertial reference frames. *Appl. Math. Mech. (English Ed.)* **13** (1992), *no.* 9, 851–859; *translated from Appl. Math. Mech.* **13** (1992), *no.* 9, 821–828 (*Chinese. English and Chinese summaries*). (A. Sumbatov) **93j:70006** 70H30 (70F25, 70P05)
— (*with* Zhang, Kong Hui) The generalized Tsenov method for variable mass arbitrary order nonlinear nonholonomic systems in noninertial reference frames. (Chinese. English and Chinese summaries) *Natur. Sci. J. Harbin Normal Univ.* **8** (1992), *no.* 1, 41–52. (Summary) **93m:70016** 70F25 (70H30, 70P05)
Luo, Sheng Xiong *see* **Lecture notes in contemporary mathematics, 93d:00033**
Luo, Sheng Zheng (*with* Ren, Shi Jun) Existence of a Hamiltonian cycle and its semi-independence number. (Chinese. English summary) *Nanjing Daxue Xuebao Ziran Kexue Ban* **27** (1991), *Special Issue*, 7–10. (Summary) **93d:05104** 05C45
— (*with* Ren, Shi Jun) A sufficient condition for Hamiltonian graphs in terms of neighborhood unions. (Chinese. English summary) *Nanjing Daxue Xuebao Ziran Kexue Ban* **27** (1991), *Special Issue*, 17–22, 10. (Summary) **93e:05066** 05C45
— (*with* Ling, Yi; Bao, Ge Jun) Some properties of certain analytic functions. *Nihonkai Math. J.* **3** (1992), *no.* 1, 31–37. (Shigeyoshi Owa) **93g:30017** 30C45
— (*with* Bao, Ge Jun; Ling, Yi) On multivalent functions with negative and missing coefficients. *Nihonkai Math. J.* **3** (1992), *no.* 1, 39–48. (S. L. Shukla) **93i:30010** 30C45
— (*with* Ren, Shi Jun) A sufficient condition for a graph to be traceable. *Nihonkai Math. J.* **3** (1992), *no.* 1, 73–80. (Günter Schaar) **93k:05097** 05C38 (05C12, 05C45)
Luo, Shengwu (*with* Ahmad, Shaheen) Predicting the drift motion for kinematically redundant robots. (English summary) *IEEE Trans. Systems Man Cybernet.* **22** (1992), *no.* 4, 717–728. (Summary) **93g:68141** 68U05 (70B15)
Luo, Shou Jun Gaussian random fields and symmetric Q-processes. (English summary) *Probability and statistics (Tianjin, 1988/1989)*, 183–194, *Nankai Ser. Pure Appl. Math. Theoret. Phys., World Sci. Publishing, River Edge, NJ*, 1992. (Xiang Qun Yang) **93k:60125** 60G60 (60J25)
Luo, Si Qing (*with* Li, Wen Shen; Lü, Hai Bo) The initial-boundary value problem for a class of nonlinear equations. (Chinese. English and Chinese summaries) *Heilongjiang Daxue Ziran Kexue Xuebao* **9** (1992), *no.* 3, 42–47. (Xian Guo Geng) **93k:35264** 35Q99 (35G25, 35G30)
Luo, Wen Zhi On the nonvanishing of Rankin-Selberg L-functions. *Duke Math. J.* **69** (1993), *no.* 2, 411–425. (Alexey A. Panchishkin) **93m:11040** 11F66 (11M41)
Luo, Xiao (*with* Peng, Xiao Lin) Algebraic criteria for stability and instability of grey discrete systems. (Chinese. English summary) *Math. Appl.* **4** (1991), *no.* 2, 76–81. (Summary) **93a:93079** 93D05 (93C42)
Luo, Xiao Ming (*with* Sun, You Xian; Zhou, Chun Hui) Reducing generalized predictive control dynamic iterations by using a time delay precompensator. (Chinese. English and Chinese summaries) *Control Theory Appl.* **9** (1992), *no.* 6, 578–584. 93B52 (90C30)
Luo, Xiaolong The Richardson model in a random environment. (English summary) *Stochastic Process. Appl.* **42** (1992), *no.* 2, 283–289. (Bernard Ycart) **93k:60239** 60K35
— (*with* Castillo-Chavez, Carlos) Limit behavior of pair formation for a large dissolution rate. (English summary) *J. Math. Systems Estim. Control* **3** (1993), *no.* 2, 247–264. (Summary) **93j:92031** 92D30
Luo, Xue Bo (*with* Jiang, Ya Ping) The nilpotent Lie group G^{d+2} and a class of differential operators with multiple characteristics. *Harmonic analysis (Tianjin, 1988)*, 82–83, *Lecture Notes in Math.*, 1494, *Springer, Berlin*, 1991. (*see* **93d:42002**) 22E25 (58G99)
— (*with* Li, Zhi Bin) The initial value problem for the generalized heat operator on the Heisenberg group. *Chinese Sci. Bull.* **36** (1991), *no.* 9, 710–712. (Stig I. Andersson) **93d:58157** 58G11 (22E25, 35A22, 35K15)
Luo, Yao Hu *see* **Luo, Yue Hu**
Luo, Yuan Quan A square root iterative method for solving nonlinear systems of equations. (Chinese. English and Chinese summaries) *J. Dalian Univ. Tech.* **32** (1992), *no.* 4, 373–377. (Summary) **93k:65043** 65H10
Luo, Yue Hu (*with* Liu, Jia) One-rank perturbation problems for the class $(D)^m$ of operators. (Chinese. English summary) *J. Systems Sci. Math. Sci.* **11** (1991), *no.* 3, 207–216. (Jin-Chuan Hou) **93b:47021** 47A55
Luo, Zhao Hua Ramification divisor of regular schemes. *Proceedings of the International Symposium on Mathematics and Theoretical Physics (Guarujá, 1989)*, 308–334, *Sympos. Gaussiana Ser. A Math. Theoret. Phys.*, 1, *Inst. Gaussianum, Toronto, ON*, 1990. (Reinhold Hübl) **93a:14014** 14E22 (13F30, 13N05, 14E40)
Luo, Zhen Ou A more accurate algorithm of convection-diffusion equations. *Chinese Sci. Bull.* **35** (1990), *no.* 17, 1485–1488. (Tian Xiao Zhou) **93m:65125** 65M06
Luo, Zheng Hua On existence and uniqueness of solutions of a class of perturbed second order evolution equations. *Systems Control Lett.* **17** (1991), *no.* 5, 401–408. (Paolo Acquistapace) **93h:34104** 34G10 (47A55, 47D06, 47N20, 93C85)
Luo, Zhi Ming (*with* Zeng, Fan Ping) Existence of unimodal periodic orbits of $RL^{n-2}C$ ($n \geq 3$) type. (Chinese. English and Chinese summaries) *Natur. Sci. J. Xiangtan Univ.* **14** (1992), *no.* 2, 58–62. (Summary) **93h:58124** 58F20
Luo, Zhi-Quan (*with* Tseng, Paul) On the convergence of the affine-scaling algorithm. (English summary) *Math. Programming* **56** (1992), *no.* 3, *Ser. A*, 301–319. (Summary) **93i:90064** 90C05
— (*with* Tseng, Paul) On a global error bound for a class of monotone affine variational inequality problems. (English summary) *Oper. Res. Lett.* **11** (1992), *no.* 3, 159–165. (Joaquim J. Júdice) **93i:90097** 90C33 (49J40, 90C31)
— (*with* Tseng, Paul) On the linear convergence of descent methods for convex essentially smooth minimization. *SIAM J. Control Optim.* **30** (1992), *no.* 2, 408–425. (E. G. Gol'shteĭn) **93a:90064** 90C30 (65K10)
Luo, Zhong Xian (*with* Wang, Ren Hong) Structure and application of algebraic spline curve and surface. (English summary) *J. Math. Res. Exposition* **12** (1992), *no.* 4, 579–582. (Summary) **93i:65030** 65D17
Luo, Zhu Hua *see* **Luo, Zu Hua**
Luo, Zong Jun A piecewise linear programming problem and its algorithm. (Chinese. English summary) *J. Numer. Methods Comput. Appl.* **13** (1992), *no.* 1, 20–32. (Xiang-Sun Zhang) **93f:90116** 90C08 (90C30)
Luo, Zong Qian The matrix sign function method for solving dual Riccati equations. (Chinese. English and Chinese summaries) *Control Theory Appl.* **9** (1992), *no.* 5, 551–554. 93B40
Luo, Zu Hua (*with* Chen, Ya Hua) A class of joint best approximations by function pairs. (Chinese. English summary) *J. Math. Res. Exposition* **11** (1991), *no.* 4, 501–505. (Summary) **93a:41032** 41A28
— Generalized simultaneous Chebyshev approximation. (English summary) *Approx. Theory Appl.* **8** (1992), *no.* 1, 87–96. (Summary) **93f:41029** 41A28 (41A50)
Luo, Zu Ying The famous mathematician Jian Gong Chen. (Chinese) Biography: Chen, Jian Gong. *Collected research papers on the history of mathematics, Vol.* 2 (*Chinese*),

133–141, *Inner Mongolia Univ. Press, Hohhot*, 1991. (*see* **93i:01005**) 01A70 (01A25)

Luongo, Angelo Perturbation methods in the eigenvalue analysis of imperfect structures with high modal density. I. Theory. (Italian) *Atti Accad. Peloritana Pericolanti Cl. Sci. Fis. Mat. Natur.* **68** (1990), 401–423 (1992). 73K12

— Perturbation methods in the eigenvalue analysis of imperfect structures with high modal density. II. Applications to a string and a beam on an elastic foundation. (Italian) *Atti Accad. Peloritana Pericolanti Cl. Sci. Fis. Mat. Natur.* **68** (1990), 425–447 (1992). 73K12

Luosto, Kerkko (*with* Hella, Lauri) The Beth-closure of $\mathscr{L}(Q_a)$ is not finitely generated. *J. Symbolic Logic* **57** (1992), *no.* 2, 442–448. (Henry Africk) **93i:03054** 03C80 (03C40, 03C75, 03C85)

Lupacciolu, Guido (*with* Stout, Edgar Lee) Removable singularities for $\overline{\partial}_b$. *Several complex variables* (*Stockholm*, 1987/1988), 507–518, *Math. Notes*, **38**, *Princeton Univ. Press, Princeton, NJ*, 1993. (Xiaoqin Wang) **93k:32019** 32D20 (32F40)

— Topological properties of q-convex sets. *Trans. Amer. Math. Soc.* **337** (1993), *no.* 1, 427–435. (Mihnea Coltoiu) **93g:32022** 32F10 (32E20)

Lupanov, O. B. (*with* Belyaev, Yu. K.; Solov′ev, A. D.; Afanas′eva, L. G.; Bulinskaya, E. V.; Tyurin, Yu. N.) Boris Vladimirovich Gnedenko (on the occasion of his 80th birthday). (Russian) *Vestnik Moskov. Univ. Ser. I Mat. Mekh.* **1992**, *no.* 3, 86–89. 01A70

Luperini, Cristina On the geometry of the parameter space in two-dimensional generalized U(N) Thirring models. *Phys. Lett. B* **285** (1992), *no.* 3, 221–224. (From the text) **93f:81086** 81T13

Lupieri, G. (*with* Barchielli, Alberto) Convolution semigroups of instruments in quantum probability. *Probability theory and mathematical statistics, Vol. I* (*Vilnius*, 1989), 78–90, "*Mokslas*", *Vilnius*, 1990. (S. Gudder) **93c:46115** 46L50 (47N50, 81P15)

Lupini, R. (*with* Messia, M. G.) Phase-plane analysis of the modal structure of optical waves in nonlinear dielectric slabs. *Math. Engrg. Indust.* **3** (1990), *no.* 1, 25–35. (I. Kay) **93e:78003** 78A50 (34C05, 58F40)

Lupo, D. (*with* Ramos, Miguel) Some multiplicity results for two-point boundary value problems near resonance. *Rend. Sem. Mat. Univ. Politec. Torino* **48** (1990), *no.* 2, 125–135 (1992). (Jesús Hernández) **93f:34045** 34B15 (34A47, 47H15, 47N20)

Lupo, M. (*with* Luchini, P.; Pozzi, A.) Unsteady Stokes flow in a distensible pipe. (German and Russian summaries) *Z. Angew. Math. Mech.* **71** (1991), *no.* 10, 367–378. (Summary) **93m:76021** 76D07 (73K70, 76Z05)

Lupşa, Liana Linear integer and linear rational inequalities. *Anal. Numér. Théor. Approx.* **19** (1990), *no.* 1, 49–52. (Chanchal Singh) **93f:90185** 90C99

— On the relationship between efficient points and d-bases. *Seminar on Mathematical Analysis* (*Cluj-Napoca*, 1991–1992), 87–100, *Preprint*, 92-7, "*Babeş-Bolyai*" *Univ., Cluj-Napoca*, 1992. (*see* **93m:26001**) 90C29 (90C05)

Lupton, Gregory (*with* Umble, Ronald) Rational homotopy types with the rational cohomology algebra of stunted complex projective space. (English summary) *Canad. J. Math.* **44** (1992), *no.* 6, 1241–1261. (Daniel Tanré) **93m:55020** 55P62 (55P15)

Lupu, Mircea Obtaining and studying Beltrami type equations for axially symmetric jets in magnetogasdynamics (MGD). *Differential equations and control theory* (*Iaşi*, 1990), 171–182, *Pitman Res. Notes Math. Ser.*, 250, *Longman Sci. Tech., Harlow*, 1991. (V. D. Sharma) **93e:76068** 76W05 (35Q99, 76D25, 76N15)

— Generalization and study of the Zhukovskiĭ-Roshko-Eppler model in the case of axially symmetric jets using the theory of (P, Q)-analytic functions. (Romanian) *Stud. Cerc. Mec. Apl.* **50** (1991), *no.* 3-4, 167–183. (Simona Popp) **93d:76055** 76N10 (76N15)

— (*with* Postelnicu, Adrian) L'écoulement lent d'un fluide visqueux-élastique, visqueux-plastique dans un conduit annulaire ayant les parois ondulées. (Romanian summary) [Slow flow of a viscoplastic viscoelastic fluid in an annular duct with undulatory walls] *Bull. Transylv. Univ. Braşov Ser. C* **34** (1992), 23–29 (1993). 76A10

Luqin, Liu *see* **Liu, Lu Qin**

Luquín Martínez, Francisco A note on the approximation of the functions $\ln x$ and zero by polynomials. *Atti Sem. Mat. Fis. Univ. Modena* **40** (1992), *no.* 2, 647–652. (A. Bultheel) **93m:41011** 41A10

— (*with* de la Cal, Jesús) A note on limiting properties of some Bernstein-type operators. *J. Approx. Theory* **68** (1992), *no.* 3, 322–329. (Dinh Dung) **93a:41039** 41A36 (41A25)

Lur′e, B. B. (*with* Ishkhanov, V. V.) An embedding problem with a noncommutative kernel of order p^4. III. (Russian) *Zap. Nauchn. Sem. Leningrad. Otdel. Mat. Inst. Steklov.* (*LOMI*) **198** (1991), *Voprosy Teor. Predstav. Algebr Grupp.* 2, 20–27, 111; *translation in J. Soviet Math.* **64** (1993), *no.* 1, 716–721. (W. Narkiewicz) **93d:12006** 12F12 (11R32)

Lur′e, K. A. (*with* Lipton, Robert) Direct solution of an optimal layout problem for isotropic heat conductors in three dimensions. *Theoretical aspects of industrial design* (*Wright-Patterson Air Force Base, OH*, 1990), 1–11, *SIAM, Philadelphia, PA*, 1992. (Wen Huan Yu) **93b:49029** 49K20 (35R30, 49M49, 73B30, 73V25)

— Direct solution of an optimal layout problem for isotropic and anisotropic heat conductors on a plane. *J. Optim. Theory Appl.* **72** (1992), *no.* 3, 553–575. (S. Bhargava) **93b:49005** 49J20 (49J35, 73B30, 80A20)

— (*with* Cherkaev, A. V.; Milton, Graeme W.) Invariant properties of the stress in plane elasticity and equivalence classes of composites. (English summary) *Proc. Roy. Soc. London Ser. A* **438** (1992), *no.* 1904, 519–529. (Summary) **93g:73009** 73B27 (73C99, 73K20)

Lusanna, Luca An enlarged phase space for finite-dimensional constrained systems, unifying their Lagrangian, phase- and velocity-space descriptions. *Phys. Rep.* **185** (1990), *no.* 1, 1–54. (S. V. Talalov) **93h:58058** 58F05 (70G35, 70H05)

— Classical observables of gauge theories from the multitemporal approach. *Mathematical aspects of classical field theory* (*Seattle, WA*, 1991), 531–549, *Contemp. Math.*, 132, *Amer. Math. Soc., Providence, RI*, 1992. (Alexander D. Popov) **93m:81091** 81S99 (58F05, 81T70)

— (*with* Colomo, F.) Wigner theory of the Nambu string. II. The closed string. (English summary) *Internat. J. Modern Phys. A* **7** (1992), *no.* 17, 4107–4148. (Gheorghe Zet) **93k:81172** 81T30

Lüscher, Martin (*with* Narayanan, Rajamani S.; Weisz, Peter; Wolff, Ulli) The Schrödinger functional—a renormalizable probe for nonabelian gauge theories. (English summary) *Nuclear Phys. B* **384** (1992), *no.* 1-2, 168–228. (Summary) **93f:81087** 81T13

Luscher, Norbert Calculations of curvature continuous cubic splines. (English summary) *Comput. Aided Geom. Design* **9** (1992), *no.* 6, 425–433. (Summary) **93i:65024** 65D07

Luschgy, Harald Ordering regression models of Gaussian processes. (English summary) *Stochastic orders and decision under risk* (*Hamburg*, 1989), 207–230, *IMS Lecture Notes Monograph Ser.*, 19, *Inst. Math. Statist., Hayward, CA*, 1991. (Dieter Mussmann) **93m:62015** 62B15 (60G15)

— Choquet type representation of transition kernels and applications. *Atti Sem. Mat. Fis. Univ. Modena* **39** (1991), *no.* 1, 171–180. (Donald L. Cohn) **93b:28017** 28A50 (28C15, 60A10)

— Approximations and time-discretization in testing one-sided hypotheses for the mean of a Gaussian process. *Metrika* **39** (1992), *no.* 2, 95–105. (I. V. Basawa) **93c:62140** 62M07

— Local asymptotic mixed normality for semimartingale experiments. *Probab. Theory Related Fields* **92** (1992), *no.* 2, 151–176. (M. Arató) **93e:62020** 62B15 (60G55, 62E20, 62M07)

— (*with* Rukhin, Andrew L.; Vajda, Igor) Adaptive tests for stochastic processes in the ergodic case. (English summary) *Stochastic Process. Appl.* **45** (1993), *no.* 1, 45–59. (Paul I. Nelson) **93k:62034** 62F03 (62F05, 62M07)

Lusk, Ewing (*with* Wos, Larry; Overbeek, Ross; Boyle, James M.) ★ Automated reasoning. Introduction and applications. Second edition. With 1 IBM-PC floppy disk (5.25 inch). *McGraw-Hill, Inc., New York*, 1992. xvi+656 *pp. ISBN* 0-07-911251-X (Ralph W. Wilkerson) **93a:68129** 68T15 (03B35)

Luskin, Mitchell (*with* Cohen, Robert Adam) Field-induced instabilities in nematic liquid crystals. (English summary) *Nematics* (*Orsay*, 1990), 261–278, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 332, *Kluwer Acad. Publ., Dordrecht*, 1991. (Helmut Kaul) **93k:58055** 58E12 (49J45, 76A15, 76E99)

Lusky, Wolfgang On Banach spaces with the commuting bounded approximation property. *Arch. Math.* (*Basel*) **58** (1992), *no.* 6, 568–574. (Bor-Luh Lin) **93d:46032** 46B20 (47A58)

Lusnikov, A. V. (*with* Dement′eva, A. M.; Tronel′, Zh.) Positive periodic oscillations in controlled systems. (Russian. Russian summary) *Avtomat. i Telemekh.* **1992**, *no.* 8, 187–189; *translation in Automat. Remote Control* **53** (1992), *no.* 8, *part* 2, 1297–1299 (1993). 93C05 (93C80)

Luss, Hanan (*with* Klein, Rachelle S.; Smith, Donald Robert) A lexicographic minimax algorithm for multiperiod resource allocation. *Math. Programming* **55** (1992), *no.* 2, *Ser. A*, 213–234. (I. Norman Katz) **93c:90097** 90C35 (90A80, 90B80)

Lüst, Dieter (*with* Ibáñez, Luis E.) Duality-anomaly cancellation, minimal string unification and the effective low-energy Lagrangian of 4D strings. (English summary) *Nuclear Phys. B* **382** (1992), *no.* 2, 305–361. (Piret Kuusk) **93i:81264** 81T50 (81T30)

— (*with* Muñoz, Carlos) Duality-invariant gaugino condensation and one-loop corrected Kähler potentials in string theory. *Phys. Lett. B* **279** (1992), *no.* 3-4, 272–280. (Summary) **93a:81156** 81T30 (81R40)

— (*with* Kounnas, Costas) Cosmological string backgrounds from gauged WZW models. (English summary) *Phys. Lett. B* **289** (1992), *no.* 1-2, 56–60. (Summary) **93g:83094** 83E30 (81T40, 83F05)

Lustfeld, H. (*with* Eilenberger, G.; Juhnke, M.) On Schröder's "generating function" for the logistic map. *From phase transitions to chaos*, 387–412, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93d:58136** 58F23 (30D05)

Lustig, Irvin J. (*with* Bixby, Robert E.; Gregory, John W.; Marsten, Roy E.; Shanno, David F.) Very large-scale linear programming: a case study in combining interior point and simplex methods. (English summary) *Oper. Res.* **40** (1992), *no.* 5, 885–897. 90C06

— (*with* Marsten, Roy E.; Shanno, David F.) On implementing Mehrotra's predictor-corrector interior-point method for linear programming. *SIAM J. Optim.* **2** (1992), *no.* 3, 435–449. (Charles E. Blair) **93h:90059** 90C05 (65K05)

Lust-Piquard, Françoise Ensembles lacunaires en analyse harmonique, l'exemple des nombres premiers. [Lacunary sets in harmonic analysis, the example of primes] *Séminaire d'Initiation à l'Analyse, Exp. No.* 22, 5 *pp., Publ. Math. Univ. Pierre et Marie Curie*, 95, *Univ. Paris VI, Paris*, 199?. (J. D. Stegeman) **93i:11097** 11K70 (42A99, 43A46)

Lusztig, George Canonical bases arising from quantized enveloping algebras. II. Common trends in mathematics and quantum field theories (Kyoto, 1990). *Progr. Theoret. Phys. Suppl. No.* 102 (1990), 175–201 (1991). (Ya. S. Soĭbel′man) **93g:17019** 17B35

— Intersection cohomology methods in representation theory. *Proceedings of the International Congress of Mathematicians, Vol. I, II* (*Kyoto*, 1990), 155–174, *Math. Soc. Japan, Tokyo*, 1991. (Toshiaki Shoji) **93e:20059** 20G05 (17B10, 20C33, 20G10, 55N33)

— (*with* Smelt, J. M.) Fixed point varieties on the space of lattices. *Bull. London Math. Soc.* **23** (1991), *no.* 3, 213–218. (From the text) **93e:14065** 14N99

— Remarks on computing irreducible characters. *J. Amer. Math. Soc.* **5** (1992), *no.* 4, 971–986. (Toshiaki Shoji) **93g:20092** 20G40 (20C15, 20G05)

— Canonical bases in tensor products. (English summary) *Proc. Nat. Acad. Sci. U.S.A.* **89** (1992), *no.* 17, 8177–8179. (Chon Hu Cheng) **93j:17033** 17B37 (17B10)

— (*with* Kazhdan, David) Tensor structures arising from affine Lie algebras. I, II. *J. Amer. Math. Soc.* **6** (1993), *no.* 4, 905–947, 949–1011. (Ya. S. Soĭbel′man) **93m:17014** 17B67 (17B37)

Luterotti, Fabio Some regularity results for a class of Fuchs' abstract differential equations. (English and Italian summaries) *Atti Sem. Mat. Fis. Univ. Modena* **40** (1992), *no.* 2, 391–408. (Alan V. Lair) **93k:34140** 34G10 (47N20)

Lutfullina, S. I. (*with* Ivanova, T. V.) Asymptotics of the moments of the number of cells containing a given number of particles in an occupancy scheme with evolution. (Russian) *Probabilistic processes and their applications* (*Russian*), 80–84, *Moskov. Inst. Élektron. Mashinostroeniya, Moscow*, 1989. (*see* **93b:60003**) 60C05

Luthar, I. S. (*with* Passi, I. B. S.) Torsion units in matrix group rings. *Comm. Algebra* **20** (1992), *no.* 4, 1223–1228. (D. A. R. Wallace) **93c:20008** 20C05 (16S34)

Lütkepohl, Helmut ★ Introduction to multiple time series analysis. *Springer-Verlag, Berlin*, 1991. xxii+545 *pp. ISBN* 3-540-53194-7 (B. G. Quinn) **93d:62162** 62M10

— (*with* Poskitt, D. S.) Estimating orthogonal impulse responses via vector autoregressive models. *Econometric Theory* **7** (1991), *no.* 4, 487–496. (Uwe Küchler) **93e:62236** 62M10 (62F12)

— Testing for time varying parameters in vector autoregressive models. (English summary) *Readings in econometric theory and practice*, 243–264, *Contrib. Econom. Anal.*, 209, *North-Holland, Amsterdam*, 1992. (*see* **93m:62006**) 62M10

— *see also* **Readings in econometric theory and practice, 93m:62006**

Lutoborski, Adam On the convergence of the Euler-Jacobi method. *Numer. Funct. Anal. Optim.* **13** (1992), *no.* 1-2, 185–202. (J. Segethová) **93d:65041** 65F15 (65F10)

Lutsenko, I. M. (*with* Granovskiĭ, Ya. I.; Zhedanov, A. S.) Mutual integrability, quadratic algebras, and dynamical symmetry. *Ann. Physics* **217** (1992), *no.* 1, 1–20. (A. O. Barut) **93k:81072** 81R05 (17B35, 58F35)

Lutsenko, V. I. (*with* Yulmukhametov, R. S.) Weighted Laplace transform. *Boundary value and initial value problems in complex analysis: studies in complex analysis and its applications to partial differential equations*, 1 (*Halle*, 1988), 232–240, *Pitman Res. Notes Math. Ser.*, 256, *Longman Sci. Tech., Harlow*, 1991. (Saburou Saitoh) **93a:44001** 44A10 (32A15, 42B10)

Lutsko, J. (*with* Aurell, Erik; Frisch, Uriel; Vergassola, M.) On the multifractal properties of the energy dissipation derived from turbulence data. *J. Fluid Mech.* **238** (1992), 467–486. (Summary) **93b:76043** 76F05

Lut·sma, F. A. *see* **Lootsma, Freerk A.**

Lutterodt, Clement H. An approach to meromorphic approximation in a Stein manifold. *Approximation theory, spline functions and applications* (*Maratea*, 1991), 391–403, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 356, *Kluwer Acad. Publ., Dordrecht*, 1992. (Wiesław Pleśniak) **93f:32015** 32E99 (32A20, 32E10, 41A20)

Lüttgens, G. (*with* Büttgenbach, B.; Esser, Henning; Nessel, R. J.) A sharp error estimate for the numerical solution of a Dirichlet problem for the Poisson equation. (English summary) *J. Comput. Appl. Math.* **44** (1992), *no.* 3, 331–337. (J. Mikliček) **93m:65152** 65N06 (65N12)

Lutwak, Erwin On the semicontinuity of curvatures. *Comment. Math. Helv.* **67** (1992), *no.* 4, 664–669. (W. J. Firey) **93i:52006** 52A20

— Inequalities for mixed projection bodies. *Trans. Amer. Math. Soc.* **339** (1993), *no.* 2, 901–916. (G. D. Chakerian) **93m:52011** 52A39 (52A40)

Luty, Brock A. (*with* Davis, Malcolm E.; McCammon, J. Andrew) Solving the finite-difference nonlinear Poisson-Boltzmann equation. (English summary) *J. Comput. Chem.* **13** (1992), *no.* 9, 1114–1118. (Summary) **93g:65109** 65M06 (65K10, 65M12)

Lutz, Jack H. Almost everywhere high nonuniform complexity. *J. Comput. System Sci.* **44** (1992), *no.* 2, 220–258. (Marius Zimand) **93c:68031** 68Q15 (68Q30)

— (*with* Book, Ronald V.) On languages with very high space-bounded Kolmogorov complexity. (English summary) *SIAM J. Comput.* **22** (1993), *no.* 2, 395–402. (Summary) **93m:68097** 68Q45 (03D15)

— (*with* Schmidt, William J.) Circuit size relative to pseudorandom oracles. (English summary) Structure in complexity theory (Barcelona, 1990). *Theoret. Comput. Sci.* **107** (1993), *no.* 1, 95–120. (Summary) **93k:68036** 68Q15 (03D15)

Lutz, Robert Quelques remarques historiques et prospectives sur la géométrie de contact. [Some historical remarks on and prospects for contact geometry] Conference on Differential Geometry and Topology (Sardinia, 1988). *Rend. Sem. Fac. Sci. Univ. Cagliari* **58** (1988), *suppl.*, 361–393. (Introduction) **93b:53025** 53C15 (53–03, 58A17)

— (*with* Musio, Monica) Suites aléatoires et degré de fantaisie. (English and French summaries) [Random sequences and fantasy level] *C. R. Acad. Sci. Paris Sér. I Math.* **316** (1993), *no.* 4, 385–387. 68Q30

Lützen, Jesper The birth of spectral theory—Joseph Liouville's contributions. *Proceedings of the International Congress of Mathematicians, Vol. I, II* (*Kyoto*, 1990), 1651–1663, *Math. Soc. Japan, Tokyo*, 1991. (F. Smithies) **93d:01034** 01A55 (01A70)

— The mathematical correspondence between Julius Petersen and Ludvig Sylow. *Amphora*, 439–467, *Birkhäuser, Basel*, 1992. (Jean-Luc Steffan) **93m:01037** 01A55 (12–03, 20–03)

— (*with* Sabidussi, Gert; Toft, Bjarne) Julius Petersen 1839–1910. A biography. Special volume to mark the centennial of Julius Petersen's "Die Theorie der regulären Graphs", Part I. *Discrete Math.* **100** (1992), *no.* 1-3, 5–82. (E. Keith Lloyd) **93k:01072** 01A70 (05–03)

— (*with* Christiansen, Margit; Sabidussi, Gert; Toft, Bjarne) Julius Petersen annotated bibliography. Special volume to mark the centennial of Julius Petersen's "Die Theorie der regulären Graphs", Part I. *Discrete Math.* **100** (1992), *no.* 1-3, 83–97. (E. Keith Lloyd) **93k:01073** 01A70 (05–03)

Lutzenko, I. M. *see* **Lutsenko, I. M.**

đỗ văn Lu'u *see* **Đỗ Văn Lu'u**

Luu, D. Q. Convergence and lattice properties of a class of martingale-like sequences. *Acta Math. Hungar.* **59** (1992), *no.* 3-4, 273–281. (Jerzy Szulga) **93j:60003** 60B11 (46B42, 60G48)

Luukkainen, Jouni Embeddings of n-dimensional locally compact metric spaces to $2n$-manifolds. *Math. Scand.* **68** (1991), *no.* 2, 193–209. (Leonard R. Rubin) **93b:57022** 57N35 (54C25)

Luus, Rein On the application of iterative dynamic programming to singular optimal control problems. (English summary) *IEEE Trans. Automat. Control* **37** (1992), *no.* 11, 1802–1806. 49K15

— (*with* Spaans, R.) Importance of search-domain reduction in random optimization. (English summary) *J. Optim. Theory Appl.* **75** (1992), *no.* 3, 635–638. 90C15

— (*with* Dadebo, Solomon) Optimal control of time-delay systems by dynamic programming. (English summary) *Optimal Control Appl. Methods* **13** (1992), *no.* 1, 29–41. 49K25 (49M25)

— (*with* Howitt, George D.) Control of a collection of linear systems by linear state feedback control. (English summary) *Internat. J. Control* **58** (1993), *no.* 1, 79–96. (Summary) **93m:93042** 93B52 (93D15)

Luxemburg, W. A. J. (*with* Arens, Richard F.; Goldberg, Moshe) Multiplicativity factors for seminorms. II. (English summary) *J. Math. Anal. Appl.* **170** (1992), *no.* 2, 401–413. (John Duncan) **93k:46039** 46H05 (46H70)

— *see also* **Positive operators and semigroups on Banach lattices, 93e:47003**

Luzyanina, T. B. (*with* Borisyuk, G. N.; Borisyuk, R. M.; Kazanovich, Ya. B.; Turova, T. S.; Tsymbalyuk, G. S.) Oscillatory neural networks. Mathematical results and applications. (Russian. English and Russian summaries) *Mat. Model.* **4** (1992), *no.* 1, 3–43. (Summary) **93b:92004** 92B20 (34C99, 58F40)

r.-grandjeán L.-Valcárcel, Alfredo *see* **R.-Grandjeán L.-Valcárcel, Alfredo**

L'vov, V. A. A probabilisitic problem that arises in describing the motion of solid particles in a fluid. (Russian) *Vestnik Khar'kov. Univ. No.* 361, *Prikl. Mat. Mekh.* (1991), 42–63. (Grzegorz Łukaszewicz) **93i:76071** 76M35 (76D07, 76T05)

L'vov, V. S. Influence of external scale upon statistical properties of developed hydrodynamic turbulence. *Nonlinear world, Vol. 1* (*Kiev*, 1989), 515–530, *World Sci. Publishing, River Edge, NJ*, 1990. (*see* **93b:00012**) 76F99

— Scale invariant theory of fully developed hydrodynamic turbulence—Hamiltonian approach. *Phys. Rep.* **207** (1991), *no.* 1, 47 *pp.* (From the text) **93c:76043** 76F05 (76–02)

— (*with* Fal'kovich, G. E.) Conservation laws and two-flux spectra of hydrodynamic convective turbulence. *Phys. D* **57** (1992), *no.* 1-2, 85–95. (Summary) **93c:76052** 76F99

— (*with* Lebedev, Vladimir; Paton, Miriam; Procaccia, Itamar) Proof of scale invariant solutions in the Kardar-Parisi-Zhang and Kuramoto-Sivashinksy equations in $1 + 1$ dimensions: analytical and numerical results. (English summary) *Nonlinearity* **6** (1993), *no.* 1, 25–47. (Summary) **93m:81167** 81V70 (82C26, 82C27)

L'vova, L. V. On the theory of Euclidean line congruences of the space S^1_3. (Russian) *Geometry and topology of homogeneous spaces* (*Russian*), 44–55, *Altaisk. Gos. Univ., Barnaul*, 1988. (V. Oproiu) **93c:53008** 53A25

L'vovskii, S. M. Extensions of projective varieties and deformations. I, II. *Michigan Math. J.* **39** (1992), *no.* 1, 41–51, 65–70. (Jonathan M. Wahl) **93b:14009** 14C05 (14D20, 14J10)

Lwin, T. (*with* Maritz, J. S.) Assessing the performance of empirical Bayes estimators. (English summary) *Ann. Inst. Statist. Math.* **44** (1992), *no.* 4, 641–657. 62C12

Ly, B. L. Symmetrization of some conservative systems of the second kind. *Trans. ASME J. Appl. Mech.* **58** (1991), *no.* 4, 1098–1101. (Introduction) **93e:73020** 73H10

thiong Ly, J.-A. *see* **Thiong Ly, J.-A.**

Ly, Uy-Loi (*with* Chen, Ben M.; Saberi, Ali) Exact computation of the infimum in H_∞-optimization via state feedback. *Control Theory Adv. Tech.* **8** (1992), *no.* 1, 17–35. (Kazuhiko Terashima) **93d:93036** 93B40 (93B36)

— (*with* Chen, Ben M.; Saberi, Ali) A noniterative method for computing the infimum in H_∞-optimization. (English summary) *Internat. J. Control* **56** (1992), *no.* 6, 1399–1418. (Petko Petkov) **93k:93036** 93B36

Lyakhov, L. N. Inversion of Riesz B-potentials. (Russian) *Dokl. Akad. Nauk SSSR* **321** (1991), *no.* 3, 466–469; *translation in Soviet Math. Dokl.* **44** (1992), *no.* 3, 717–720. (S. G. Samko) **93i:31007** 31C45 (42B20, 47G10)

Lyakhovich, S. L. (*with* Batalin, I. A.; Tyutin, I. V.) Split involution and second class constraints. *Modern Phys. Lett. A* **7** (1992), *no.* 21, 1931–1943. (Rudolf Schmid) **93i:81274a** 81T70

— (*with* Batalin, I. A.; Tyutin, I. V.) Errata: "Split involution and second class constraints". *Modern Phys. Lett. A* **7** (1992), *no.* 24, 2249. (Rudolf Schmid) **93i:81274b** 81T70

Lyakhovskii, V. D. (*with* Filanovskii, I. A.) Reduction of representations of unitary Lie algebras. (Russian. English summary) Quasigroups and nonassociative algebras in physics (Russian) (Tartu, 1989). *Eesti NSV Tead. Akad. Füüs. Inst. Uurim. No.* 66 (1990), 213–222. (J. Lõhmus) **93b:17024** 17B10 (17B81, 22E70)

Lyakhu, A. K. (*with* Poshtaru, A. I.) ★ Probabilitate, procese aleatoare şi aplicaţii. (Moldavian. Russian and Moldavian summaries) [Probability theory, random processes and applications] "*Ştiinţa*", *Chişinău*, 1991. 152 *pp. ISBN* 5-376-01104-6 (Publisher's description) **93j:60001** 60–01

— (*with* Matveev, V. F.) Finite projection of regenerative processes. (Russian. English, Russian and Moldavian summaries) *Izv. Akad. Nauk Respub. Moldova Mat.* **1991**, *no.* 3, 74–77, 93. 60K05 (60K25)

— (*with* Hlibiciuc, A. V.) On finite projection of nonstationary $M/GI/1$ queueing systems. (English, Russian and Moldavian summaries) *Izv. Akad. Nauk Respub. Moldova Mat.* **1992**, *no.* 1, 81–83, 93. (Summary) **93j:60144** 60K25

Lyalinov, M. A. (*with* Buldyrev, V. S.) Asymptotic theory of the reflection of electromagnetic radiation by moderately- and well-conducting bodies. (Russian. English and Russian summaries) *Zap. Nauchn. Sem. S.-Peterburg. Otdel. Mat. Inst. Steklov.* (*POMI*) **203** (1992), *Mat. Voprosy Teor. Rasprostr. Voln.* 22, 68–82, 174. (D. Stanomir) **93j:78015** 78A45 (78A55)

Lyapin, E. S. Generability of classes of semigroups by means of homomorphisms. (Russian) *Semigroups and their homomorphisms* (*Russian*), 39–52, *Ross. Gos. Ped. Univ., Leningrad*, 1991. (Mária B. Szendrei) **93e:20077** 20M07

— *see also* **Semigroups and their homomorphisms, 93d:20003**

Lyapunov, A. A. *see* **Anniversary: Birth of Lyapunov, A. A.**

Lyapunov, A. M. The general problem of the stability of motion. Translated by A. T. Fuller from Édouard Davaux's French translation (1907) of the 1892 Russian original. With an editorial (historical introduction) by Fuller, a biography of Lyapunov by V. I. Smirnov, and the bibliography of Lyapunov's works collected by J. F. Barrett. Lyapunov centenary issue. *Internat. J. Control* **55** (1992), *no.* 3, 521–790. (J. W. Macki) **93e:01035** 01A75 (34D05, 34D20, 70K15, 70K20, 93D05)

— *see also* **Dobrovol'skii, V. A., 93d:01032** *and* **Shcherbakov, P. S., 93g:01084**

Lyapunov, Alekseĭ Andreevich *see* **Lyapunov, A. A.**

Lyapunov, Alexander Mikhailovitch *see* **Lyapunov, A. M.**

Lyashenko, A. A. The Sobolev problem in domains with corner points. (Russian) *Boundary value problems for nonclassical equations in mathematical physics* (*Russian*) (*Novosibirsk*, 1989), 133–137, *Akad. Nauk SSSR Sibirsk. Otdel., Inst. Mat., Novosibirsk*, 1989. (*see* **93d:35001**) 35E15

— Solvability of the Dirichlet problem for an equation of the vibration of a string in domains with corner points. (Russian) *Sibirsk. Mat. Zh.* **32** (1991), *no.* 5, 68–81, 208; *translation in Siberian Math. J.* **32** (1991), *no.* 5, 782–795 (1992). (Summary) **93c:35092** 35L20 (31A25, 73D30)

— On the normal solvability of the Dirichlet problem for an equation of the vibration of a string in domains with nonsmooth boundaries. (Russian. Russian summary) *Sibirsk. Mat. Zh.* **33** (1992), *no.* 3, 112–122, 220; *translation in Siberian Math. J.* **33** (1992), *no.* 3, 462–470 (1993). (Summary) **93g:35088** 35L20 (47F05, 47N20)

Lyashenko, B. N. Approximation of the eigenvalues of a singular Sturm-Liouville problem that is nonlinear with respect to the parameter. (Russian) *Vychisl. Prikl. Mat.* (*Kiev*) *No.* 72 (1990), 11–16 (1991). (Summary) **93b:65115** 65L15 (34A45, 34B24)

— A method for minimizing the total energy of quantum-mechanical systems. (Russian. English and Ukrainian summaries) *Kibernetika* (*Kiev*) **1991**, *no.* 3, 46–52, 134; *translation in Cybernetics* **27** (1991), *no.* 3, 367–376 (1992). (Aleksandar R. Miković) **93g:81033** 81Q99 (49Q10)

Lyashenko, E. A. (*with* Ryashko, L. B.) Estimation by means of a filter that contains random noise. (Russian. Russian summary) *Avtomat. i Telemekh.* **1992**, *no.* 2, 75–83; *translation in Automat. Remote Control* **53** (1992), *no.* 2, *part* 1, 213–219. (Summary) **93d:93083** 93E11 (93E10)

Lyashenko, I. N. (*with* Embergenov, A.; Meredov, Kh.) A combined difference scheme for the eigenvalue problem of the Laplace operator. (Russian) *Vychisl. Prikl. Mat.* (*Kiev*) *No.* 75 (1991), 55–60. (Summary) **93b:65164** 65N25 (65N06)

Lyashko, A. D. (*with* Karchevskii, M. M.; Pavlova, M. F.) ★ Методы вычислений: численные методы решения дифференциальных уравнений. (Russian) [Computational methods: numerical methods for solving differential equations] *Kazan. Gos. Univ.*,

Kazan', 1990. 127 *pp. ISBN* 5-7464-0319-9 (Editors) **93a:65001** 65-01 (65Lxx, 65Mxx, 65Nxx)

Lyashko, I. I. (*with* Chernyĭ, N. I.) A numerical method for solving problems of nonstationary filtration. (Russian. English and Russian summaries) *Dokl. Akad. Nauk Ukrainy* **1992**, *no.* 10, 73–77, 172. (Summary) **93h:76072** 76S05 (65P05, 76M10, 76M30)

Lyatambur, K. N. Relations between left and right multiplicative evolution systems without the continuity condition. (Russian. Russian summary) *Asymptotic methods in problems in the theory of random evolutions* (*Russian*), 81–89, *Akad. Nauk Ukrain. SSR, Inst. Mat., Kiev*, 1991. (Summary) **93j:60089** 60H25

Lyazrhi, Faouzi Détection de ruptures dans un modèle linéaire gaussien: optimalité de procédures de décision multiple basées sur le rapport de vraisemblance. (English and French summaries) [Change-point detection in a Gaussian linear model: optimality of multiple-decision procedures based on the likelihood ratio] *Statist. Anal. Données* **16** (1991), *no.* 3, 107–125. 62J05 (62F15)

Lyberopoulos, Athanasios N. Large-time structure of solutions of scalar conservation laws without convexity in the presence of a linear source field. (English summary) *J. Differential Equations* **99** (1992), *no.* 2, 342–380. (Robert Peszek) **93i:35088** 35L65 (35B05)

Lychagin, V. V. (*with* Gurevich, D. I.; Rubtsov, V. V.) Cohomologie de "grand crochet" et filtration "non-holonome". (English summary) ["Big bracket" cohomology and "nonholonomic" filtration] *C. R. Acad. Sci. Paris Sér. I Math.* **313** (1991), *no.* 12, 855–858. (J. S. Joel) **93b:58171** 58H10 (17B55, 17B65)

— Solvability of Fuchsian equations that depend on a parameter. (Russian) *Mat. Zametki* **50** (1991), *no.* 6, 71–84, 158; *translation in Math. Notes* **50** (1991), *no.* 5-6, 1263–1273 (1992). (Andreĭ Bolibrukh) **93c:34014** 34A20 (32G34, 34E05)

— Homogeneous structures on manifolds: differential geometry from the point of view of differential equations. (Russian) *Mat. Zametki* **51** (1992), *no.* 4, 54–68, 141; *translation in Math. Notes* **51** (1992), *no.* 3-4, 364–373. (Summary) **93f:58258** 58H10 (53C05)

— (*with* Gurevich, D. I.; Rubtsov, V. N.) Nonholonomic filtration of the cohomology of Lie algebras and "large brackets". (Russian. Russian summary) *Mat. Zametki* **52** (1992), *no.* 1, 36–41, 155; *translation in Math. Notes* **52** (1992), *no.* 1-2, 657–661 (1993). (Jan Kubarski) **93k:17044** 17B56

Lychak, M. (*with* Kuntsevich, V. M.) ★ Guaranteed estimates, adaptation and robustness in control systems. Lecture Notes in Control and Information Sciences, 169. *Springer-Verlag, Berlin*, 1992. iv+209 *pp. ISBN* 3-540-54925-0 (Kimio Kanai) **93b:93004** 93-02 (93B36, 93B40, 93C40, 93D09)

Lyche, Tom (*with* Dæhlen, Morten) Decomposition of splines. *Mathematical methods in computer aided geometric design, II* (*Biri*, 1991), 135–160, *Academic Press, Boston, MA*, 1992. (Summary) **93e:65019** 65D07 (65D17)

— *see also* **Mathematical methods in computer aided geometric design, 93d:65022**

Lychman, V. V. (*with* Goncharenko, V. M.) Numerical solution of a boundary value problem in the theory of elasticity for a body with an inclusion. (Russian) *Vychisl. Prikl. Mat. (Kiev) No.* 75 (1991), 83–87. 73D30

Lygerŏs, Nik (*with* Fraïssé, Roland) Petits posets: dénombrement, représentabilité par cercles et "compenseurs". (English summary) [Small posets: enumeration, circle orders, and "compensors"] *C. R. Acad. Sci. Paris Sér. I Math.* **313** (1991), *no.* 7, 417–420. (Ira Gessel) **93c:06006** 06A07 (05A15)

— Exemple d'une courbe ni classique, ni fractale. [Example of a curve neither classical nor fractal] *Gaz. Math.* **1991**, *no.* 49, 71–74. (Summary) **93c:28007** 28A75 (28A80)

— (*with* Chaunier, Claude) Progrès dans l'énumération des posets. (English summary) [Progress in the enumeration of posets] *C. R. Acad. Sci. Paris Sér. I Math.* **314** (1992), *no.* 10, 691–694. (Summary) **93b:06003** 06A07 (05A15)

— (*with* Chaunier, Claude) The number of orders with thirteen elements. (English summary) *Order* **9** (1992), *no.* 3, 203–204. (Summary) **93m:06001** 06-04 (04A20, 05A15, 06A07)

Lykhmus, Ya. *see* **Lõhmus, Jaak**

Lykin, M. A. A multidimensional generalization of a theorem of S. Lie. (Russian) *Izv. Vyssh. Uchebn. Zaved. Fiz.* **34** (1991), *no.* 10, 22–28; *translation in Soviet Phys. J.* **34** (1991), *no.* 10, 864–870 (1992). (Summary) **93d:53086** 53C50

Lykken, Joseph D. (*with* Sonnenschein, Jacob; Weiss, Nathan) The theory of anyonic superconductivity: a review. *Internat. J. Modern Phys. A* **6** (1991), *no.* 29, 5155–5214. (Joan Soto) **93b:81314** 81V70 (81T10, 82D55)

Lykosov, V. N. (*with* Platov, G. A.) A numerical model of interaction between atmospheric and oceanic boundary layers. (English summary) *Russian J. Numer. Anal. Math. Modelling* **7** (1992), *no.* 5, 419–439. 86-08 (76F99, 86A05, 86A10)

Lykova, O. B. (*with* Baris, Ya. S.) Integral manifolds and the reduction principle in stability theory. IV. (Russian. Ukrainian summary) *Ukrain. Mat. Zh.* **43** (1991), *no.* 12, 1696–1702; *translation in Ukrainian Math. J.* **43** (1991), *no.* 12, 1582–1588 (1992). (Summary) **93d:34085** 34D05 (34C20, 34C30, 34D35)

— Development of the Bogolyubov-Mitropol'skiĭ method of integral manifolds. (Russian. Russian and Ukrainian summaries) *Ukraïn. Mat. Zh.* **44** (1992), *no.* 1, 33–46; *translation in Ukrainian Math. J.* **44** (1992), *no.* 1, 28–40. (Ya. S. Baris) **93h:34076** 34C45 (34-02, 34C30, 34D99)

Lykova, Z. A. The lower estimate of the global homological dimension of infinite-dimensional CCR-algebras. *Operator algebras and topology* (*Craiova*, 1989), 93–129, *Pitman Res. Notes Math. Ser.*, 270, *Longman Sci. Tech., Harlow*, 1992. (Claude Schochet) **93m:46089** 46L85 (46M20)

— On nonzero values of the central homological dimension of C^*-algebras. *Glasgow Math. J.* **34** (1992), *no.* 3, 369–378. (Bola O. Balogun) **93m:46090** 46L85 (46H25, 46M20)

Lyman, Edwin (*with* Chung, Stephen-wei; Tye, S.-H. Henry) Fractional supersymmetry and minimal coset models in conformal field theory. *Internat. J. Modern Phys. A* **7** (1992), *no.* 14, 3339–3377. (Stanislav Z. Pakuliak) **93d:81152** 81T40 (81R10, 81T70)

— (*with* Argyres, Philip C.; Tye, S.-H. Henry) Low-lying states of the six-dimensional fractional superstring. (English summary) *Phys. Rev. D* (3) **46** (1992), *no.* 10, 4533–4565. (David Sénéchal) **93i:81182** 81T30

Lynch, Daniel R. (*with* Boyse, William E.; Paulsen, Keith D.; Minerbo, Gerald N.) Nodal-based finite-element modeling of Maxwell's equations. *IEEE Trans. Antennas and Propagation* **40** (1992), *no.* 6, 642–651. (Summary) **93c:78002** 78-08 (78A25)

Lynch, James F. Probabilities of sentences about very sparse random graphs. 31*st Annual Symposium on Foundations of Computer Science, Vol. I, II* (*St. Louis, MO*, 1990), 689–696, *IEEE Comput. Soc. Press, Los Alamitos, CA*, 1990. (Colin J. H. McDiarmid) **93f:05091** 05C80 (03B10, 03C13)

Lynch, Nancy (*with* Herlihy, Maurice; Merritt, Michael; Weihl, William) On the correctness of orphan management algorithms. (English summary) *J. Assoc. Comput. Mach.* **39** (1992), *no.* 4, 881–930. (Summary) **93j:68013** 68M10 (68M20, 68Q10)

Lynch, R. (*with* Mavromatis, H. A.) Consideration of the general state which minimizes the *N*th order minimum uncertainty product. (English summary) *J. Math. Phys.* **34** (1993), *no.* 2, 528–534. (Summary) **93m:81168** 81V80 (81R30)

Lynden-Bell, D. (*with* Bičák, Jiří; Katz, Joseph) Relativistic disks as sources of static vacuum spacetimes. (English summary) *Phys. Rev. D* (3) **47** (1993), *no.* 10, 4334–4343. (Summary) **93m:83008** 83C15

Lyness, J. N. On handling singularities in finite elements. (English summary) *Numerical integration* (*Bergen*, 1991), 219–233, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 357, *Kluwer Acad. Publ., Dordrecht*, 1992. (Summary) **93h:65038** 65D32 (65N38)

— (*with* Sørevik, T.) An algorithm for finding optimal integration lattices of composite order. (English summary) *BIT* **32** (1992), *no.* 4, 665–675. (Summary) **93i:65038** 65D30

Lynge, Walter C. A combined method for polynomial roots using modified Newton-Raphson with minimum searching. (English summary) *J. Comput. Appl. Math.* **42** (1992), *no.* 3, 339–355. (W. Govaerts) **93g:65063** 65H05 (30C15)

Lyons, Alex Wormholes in string theory and low energy quantum gravity. *Proceedings of the* 4*th Canadian Conference on General Relativity and Relativistic Astrophysics* (*Winnipeg, MB*, 1991), 177–182, *World Sci. Publishing, River Edge, NJ*, 1992. (Summary) **93c:81177** 81T30 (81V17, 83C45, 83E30)

Lyons, C. G. (*with* Mason, Gordon) Endomorphism near-rings of dicyclic and generalised dihedral groups. *Proc. Roy. Irish Acad. Sect. A* **91** (1991), *no.* 1, 99–111. (Summary) **93a:16038** 16Y30

Lyons, Glenn W. Complex solutions for the scalar field model of the Universe. (English summary) *Phys. Rev. D* (3) **46** (1992), *no.* 4, 1546–1550. (Summary) **93f:83043** 83C45 (81V17)

Lyons, N. I. (*with* McCormick, William P.; Hutcheson, K.) Distributional properties of Jaccard's index of similarity. *Comm. Statist. Theory Methods* **21** (1992), *no.* 1, 51–68. (Tapas K. Chandra) **93e:62046** 62E15 (62P10)

Lyons, Richard (*with* Guralnick, Robert M.; Kleidman, Peter B.) Sylow p-subgroups and subnormal subgroups of finite groups. *Proc. London Math. Soc.* (3) **66** (1993), *no.* 1, 129–151. (È. M. Pal'chik) **93k:20036** 20D20 (20D35)

Lyons, Russell (*with* Adams, S. R.) Amenability, Kazhdan's property and percolation for trees, groups and equivalence relations. *Israel J. Math.* **75** (1991), *no.* 2-3, 341–370. (Wolfgang Woess) **93j:43001** 43A07 (22D05)

— (*with* Pemantle, Robin) Random walk in a random environment and first-passage percolation on trees. *Ann. Probab.* **20** (1992), *no.* 1, 125–136. (Neal Madras) **93c:60103** 60J15 (60F10, 60K35, 82B41)

— Random walks, capacity and percolation on trees. (English summary) *Ann. Probab.* **20** (1992), *no.* 4, 2043–2088. (Robin Pemantle) **93k:60175** 60J15 (60K35, 82B41, 82B43)

Lyons, T. J. (*with* Erëmenko, A. È.) Finely open sets in the limit set of a finitely generated Kleinian group. *Approximation by solutions of partial differential equations* (*Hanstholm*, 1991), 61–67, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 365, *Kluwer Acad. Publ., Dordrecht*, 1992. (Peter M. Makienko) **93c:30057** 30F40 (31A05)

— Random thoughts on reversible potential theory. *Summer School in Potential Theory* (*Joensuu*, 1990), 71–114, *Joensuun Yliop. Luonnont. Julk.*, 26, *Univ. Joensuu, Joensuu*, 1992. (Michael Röckner) **93k:31008** 31C25 (60J45, 60J60)

— (*with* Röckner, Michael) A note on tightness of capacities associated with Dirichlet forms. *Bull. London Math. Soc.* **24** (1992), *no.* 2, 181–184. (Byron Schmuland) **93a:60008** 60B11 (31C25, 60G17, 60J45)

— (*with* Duplantier, Bertrand; Lawler, Gregory F.; Le Gall, Jean-François) The geometry of the Brownian curve. (English and French summaries) *Bull. Sci. Math.* (2) **117** (1993), *no.* 1, 91–106. (Krzysztof Burdzy) **93k:60205** 60J65 (31A20, 60G17, 60J15, 60J50, 60K35)

deLyra, Jorge L. (*with* DeWitt, Bryce S.; Foong, See Kit; Gallivan, Timothy; et al.) Lattice quantization of the $O(1,2)/O(2) \times Z_2$ sigma model in 4 dimensions. *Quantum gravity* (*Moscow*, 1990), 18–26, *World Sci. Publishing, River Edge, NJ*, 1991. (Ilya Shapiro) **93m:81112** 81T25 (81T13)

— (*with* DeWitt, Bryce S.; Foong, See Kit; et al.) The quantized $O(1,2)/O(2) \times Z_2$ sigma model has no continuum limit in four dimensions. I. Theoretical framework. (English summary) *Phys. Rev. D* (3) **46** (1992), *no.* 6, 2527–2537. 81T13 (81T27)

— (*with* DeWitt, Bryce S.; Foong, See Kit; et al.) The quantized $O(1,2)/O(2) \times Z_2$ sigma model has no continuum limit in four dimensions. II. Lattice simulation. (English summary) *Phys. Rev. D* (3) **46** (1992), *no.* 6, 2538–2552. 81T13 (81-04, 81T80)

Lysanov, Yu. P. (*with* Brekhovskikh, L. M.) ★ Fundamentals of ocean acoustics. Second edition. Springer Series on Wave Phenomena, 8. *Springer-Verlag, Berlin*, 1991. xii+270 *pp. ISBN* 3-540-52976-4 (John S. Robertson) **93a:76086** 76Q05 (86A05)

Lysenko, I. V. (*with* Ptushkin, A. I.) The equivalent transformation method for network models. (Russian. Russian summary) *Kibernet. i Vychisl. Tekhn. No.* 91 (1991), 63–68. (Qiao Li) **93k:90099** 90C35 (05C35, 90B70)

Lysenko, Z. M. A boundary value problem of N. P. Vekua with a piecewise-smooth shift. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* **1991**, *no.* 3, 78–81; *translation in Soviet Math. (Iz. VUZ)* **35** (1991), *no.* 3, 77–80. (Zbigniew Binderman) **93b:47105** 47G10 (30E25, 45E05, 47A53, 47N20)

— A boundary value problem of N. P. Vekua with a piecewise-smooth shift on a piecewise-Lyapunov contour. (Russian) *Sibirsk. Mat. Zh.* **33** (1992), *no.* 2, 108–115, 221; *translation in Siberian Math. J.* **33** (1992), *no.* 2, 272–279. (Petras Alekna) **93i:30030** 30E25

Lysënok, I. G. (*with* Adyan, S. I.) Groups, all of whose proper subgroups are finite cyclic. (Russian) *Izv. Akad. Nauk SSSR Ser. Mat.* **55** (1991), *no.* 5, 933–990; *translation in Math. USSR-Izv.* **39** (1992), *no.* 2, 905–957. (H. Heineken) **93b:20063** 20F10

— (*with* Adyan, S. I.) The method of classification of periodic words and the Burnside problem. (English summary) *Proceedings of the International Conference on Algebra, Part* 1 (*Novosibirsk*, 1989), 13–28, *Contemp. Math.*, 131, *Part* 1, *Amer. Math. Soc., Providence, RI*, 1992. (F. Levin) **93j:20083** 20F50 (20F05)

— Infinity of Burnside groups of period 2^k for $k \geq 13$. (Russian) *Uspekhi Mat. Nauk* **47** (1992), *no.* 2(284), 201–202; *translation in Russian Math. Surveys* **47** (1992), *no.* 2, 229–230. (From the text) **93g:20077** 20F50

Lytkina, D. V. Algebraically nonequivalent constructivization for infinite-dimensional vector space. *Algebra and Logic* **29** (1990), *no.* 6, 430–440 (1991). (From the text) **93c:03043** 03C57 (15A03, 46S30)

Lytvynov, E. W. *see* **Litvinov, E. V.**

Lyu, Syaotszyun' (*with* Matevosyan, L. A.) Totally geodesic surfaces in Riemannian spaces of orthogonal composition. (Russian. English and Armenian summaries) *Erevan. Gos. Univ. Uchen. Zap. Estestv. Nauki* **1990**, *no.* 2, 37–42 (1991). (Summary) **93a:53050** 53C40 (53C22)

Lyubarskiĭ, Yu. I. Frames in the Bargmann space of entire functions. *Entire and subharmonic functions*, 167–180, *Adv. Soviet Math.*, 11, *Amer. Math. Soc., Providence, RI*, 1992. (Kristian Seip) **93k:30036** 30D10 (30E05, 42A65, 46E22)

— *see also* **Fel'dman, G. M., 93m:60022**

Lyubashenko, V. V. Real and imaginary forms of quantum groups. (English summary) *Quantum groups* (*Leningrad*, 1990), 67–78, *Lecture Notes in Math.*, 1510, *Springer, Berlin*, 1992. (D. A. Jordan) **93k:17033** 17B37 (16B50, 16W30)

— *see also* **Goldstein, Jerome A., 93i:47054**

Lyubasova, G. Yu. Bifurcation of periodic solutions from a complex focus. (Russian) *Nonlinear operators in global analysis* (*Russian*), 136–141, 164, *Novoe Global. Anal., Voronezh. Gos. Univ., Voronezh*, 1991. (Summary) **93a:34047** 34C23 (34C25)

Lyubetskiĭ, V. A. Model completeness of a theory and valuation of formulas. (Russian) *Algebra i Logika* **29** (1990), *no.* 1, 15–28, 129; *translation in Algebra and Logic* **29** (1990), *no.* 1, 10–22 (1991). (S. R. Kogalovskiĭ) **93f:03024** 03C60 (03C35, 16S60)

— Intuitionistic theory of algebraic systems and Heyting-valued analysis. (Russian. Russian summary) *Algebra i Logika* **30** (1991), *no.* 3, 320–332, 380–381; *translation in Algebra and Logic* **30** (1991), *no.* 3, 208–216 (1992). (V. Ya. Kreinovich) **93m:03100** 03F55 (03G25, 12L99, 13L05, 16B99, 54H13)

— Heyting-valued analysis: P. S. Novikov's hypotheses. *Proceedings of the International Conference on Algebra, Part* 3 (*Novosibirsk*, 1989), 565–582, *Contemp. Math.*, 131, *Part* 3, *Amer. Math. Soc., Providence, RI*, 1992. (Ieke Moerdijk) **93i:03084** 03F55 (03C90, 03F50)

Lyubeznik, Gennady The number of defining equations of affine algebraic sets. *Amer. J. Math.* **114** (1992), *no.* 2, 413–463. (N. Mohan Kumar) **93b:13018** 13C40 (14M10)

— Étale cohomological dimension and the topology of algebraic varieties. *Ann. of Math.* (2) **137** (1993), *no.* 1, 71–128. (R. T. Hoobler) **93m:14016** 14F20 (14B15, 14M07)

Lyubich, M. Yu. (*with* Blokh, A. M.) Measurable dynamics of S-unimodal maps of the interval. *Ann. Sci. École Norm. Sup.* (4) **24** (1991), *no.* 5, 545–573. (Summary) **93f:58132** 58F11 (58F12, 58F13)

— (*with* Vol'berg, A. L.) A comparison of harmonic and maximal measures for rational functions. *Approximation by solutions of partial differential equations* (*Hanstholm*, 1991), 127–139, *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 365, *Kluwer Acad. Publ., Dordrecht*, 1992. (Mikhail L. Sodin) **93h:30037** 30C85 (31A15, 58F23)

— (*with* Erëmenko, A. È.) Dynamical properties of some classes of entire functions. (English and French summaries) *Ann. Inst. Fourier* (*Grenoble*) **42** (1992), *no.* 4, 989–1020. (Ben Bielefeld) **93k:30034** 30D05 (58F23)

— (*with* Milnor, John) The Fibonacci unimodal map. *J. Amer. Math. Soc.* **6** (1993), *no.* 2, 425–457. (Fuyao Ren) **93h:58080** 58F08 (26A18, 30D05, 39B12, 58F03)

Lyubimov, D. V. (*with* Byelousova, S. L.) Onset of homoclinic chaos due to degeneracy in the spectrum of the saddle. (English summary) Homoclinic chaos (Brussels, 1991). *Phys. D* **62** (1993), *no.* 1-4, 317–322. (Summary) **93k:58154** 58F13 (34C37)

Lyubishkin, V. A. The Gel'fand-Levitan and Krein trace formulas. (Russian) *Mat. Sb.* **182** (1991), *no.* 12, 1786–1795; *translation in Math. USSR-Sb.* **74** (1993), *no.* 2, 531–540. (Evgeney V. Cheremnikh) **93a:47014** 47A55 (47B25, 47E05)

— A regularized trace of a two-dimensional oscillator. (Russian) *Mat. Zametki* **53** (1993), *no.* 3, 156–158. 35P05 (47F05)

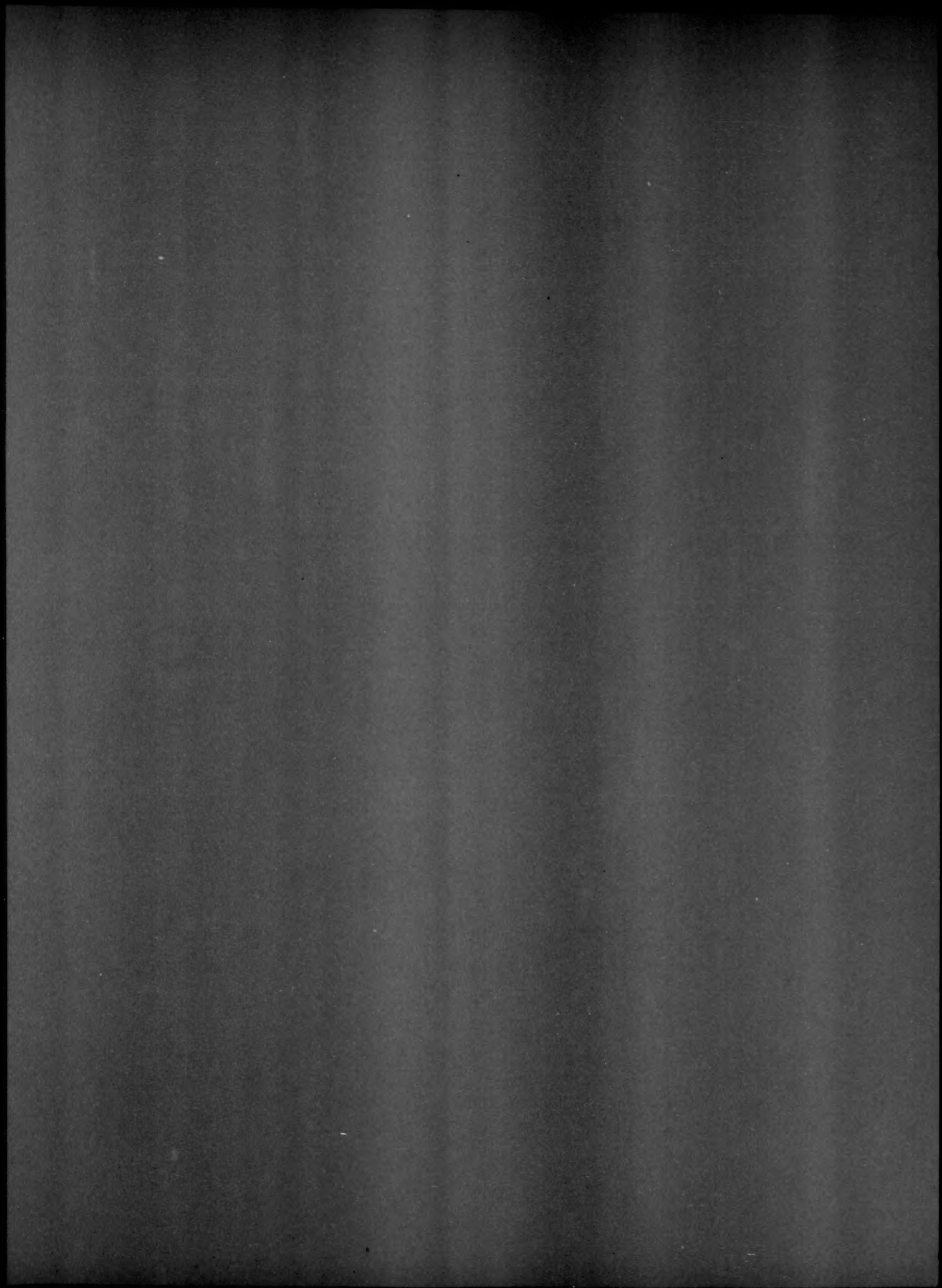
Lyudkevich, I. V. (*with* Skaskiv, R. B.) Numerical solution of the Dirichlet boundary value problem for the heat equation by the methods of integral transformations and integral equations in the case of nonclosed axisymmetric surfaces. (Ukrainian) *Visnik L'viv. Derzh. Univ. Ser. Mekh.-Mat. No.* 31 (1989), 3–8. 65M99

Lyudkovskiĭ, S. V. Compact relationships between invariant classical Lie groups and sums of powers. (Russian. English summary) *Teoret. Mat. Fiz.* **89** (1991), *no.* 3, 380–387; *translation in Theoret. and Math. Phys.* **89** (1991), *no.* 3, 1281–1286 (1992). (J. S. Joel) **93b:22023** 22E45 (22E70, 33C80, 81R05)

L'yung, L. *see* **Ljung, Lennart**

Lyuu, Yuh-Dauh Fast fault-tolerant parallel communication and on-line maintenance for hypercubes using information dispersal. Parallel algorithms and architectures (Crete, 1990). *Math. Systems Theory* **24** (1991), *no.* 4, 273–294. (Neville G. F. Sancho) **93a:68013** 68M10 (90B12)

Lyzzaik, Abdallah Local properties of light harmonic mappings. *Canad. J. Math.* **44** (1992), *no.* 1, 135–153. (V. G. Sheretov) **93e:30048** 30C62



ISBN 0-8218-4035-5

